### **SECOND REVISED** DRAFT GENERIC ENVIRONMENTAL IMPACT STATEMENT

FOR THE

### WESTWOOD NEIGHBORHOOD October 2015



A Traditional Neighborhood in the heart of Amherst.

Project Site located at 772 North Forest Road, and 385 and 391 Maple Road Town of Amherst, Erie County, New York

## **APPENDIX IV** Revised DGEIS Submission Reports, **Studies & Public Correspondence**

### **LEAD AGENCY:**



### TOWN OF AMHERST TOWN BOARD

5583 Main Street Williamsville, New York 14221 Mr. Eric W. Gillert, AICP, Planning Director Telephone: (716) 631-7051

### PREPARED BY:

MENSCH CAPITAL PARTNERS, LLC - PROJECT SPONSOR

5477 Main Street

Williamsville, New York 14221

Mr. Andrew J. Shaevel – (716) 580-3133 Mr. Brad A. Packard, AICP - (716) 631-8000 Mr. Sean W. Hopkins, Esq. - (716) 510-4338







# Westwood Neighborhood

772 North Forest Road, Williamsville, New York 14221

### Clubhouse and Golf Course Assessment August 2014

### **Prepared for:**

New York State Office of Parks Recreation, and Historic Preservation
-Division of Buildings, Structures & Districts-



Mensch Capital Partners, LLC 5477 Main Street Williamsville, NY 14221 Phone: 716.362.7880



A Traditional Neighborhood in the heart of Amherst.

August 19, 2014

Nancy Herter, Historic Preservation Program Analyst, Archaeology New York State Office of Parks, Recreation and Historic Preservation Division for Historic Preservation P.O. Box 189 Waterford, NY 12188-0189

Re: SEQRA Type I Action Review- Buildings & Structures Review

Project Name: Westwood Neighborhood

Project Site: 772 North Forest Road, 385 & 391 Maple Road (Town of Amherst, Erie

County)

Applicant/Project Sponsor: Mensch Capital Partners, LLC

**OPRHP File #12PR04942** 

Dear Ms. Herter:

Thank you for providing a response letter to our request for comments concerning the proposed Westwood Neighborhood mixed use project ("Westwood") located within the Town of Amherst, Erie County. As noted within your letter dated June 10, 2014, you have previously received the Phase 1A and Phase 1B Cultural Resource Investigation Reports as prepared by Robert Dean of Heritage Preservation & Interpretation Inc. ("HPI") for the Westwood Project Site.

We are currently coordinating with HPI to have further Phase II Site Evaluation work performed at the project site in the late summer and fall of this year. Upon completion of that work and preparation of a full Phase II Site Evaluation Report by HPI, we will forward a copy of the Report to you for your review and consideration.

Attached to your response letter was a request for additional information from the Buildings, Structures and Districts Division of the New York State Office of Parks, Recreation and Historic Preservation. In an effort to provide a complete evaluation and opinion regarding the potential historic significance of the existing Westwood Country Club Golf Course and Clubhouse, the Division of Buildings, Structures and Districts has requested additional information concerning the history, construction and current condition of the facilities. Please find attached the following exhibits intended to provide the necessary information as per its request:

• Exhibit "A": Project Site and History Description;

• Exhibit "B": Project Site and Clubhouse Photographs; and

• Exhibit "C": Town of Amherst Historic Preservation Commission Site Assessment as

per the Updated Local Reconnaissance Level Survey of Historic

Resources

In terms of our current plans regarding future use of the Clubhouse structure, as stated within the previously provided Rezoning Application and Draft Generic Environmental Impact Statement ("DGEIS") for the Westwood Neighborhood Project, it is the Project Sponsor's intention to maintain the original historic Clubhouse structure and incorporate the facility into the mixed use redevelopment project plan for the Project Site. The Project Sponsor recognizes the cultural and potential historic value of the original clubhouse structure and is proposing a project layout that would result in the original clubhouse structure becoming a focal point for the proposed mixed use redevelopment project.

Please review the attached documents and advise if additional information is needed by the Buildings, Structures and Districts Division to complete its review. Thank you for your time concerning this matter and please feel free to contact me with any further questions or concerns.

Sincerely,

**Brad Packard** Project Manager Cell: 716.907.0746

Email: bpackard@ciminelli.com

Enc.

Robert T. Englert, Program Analyst, NYSOPRHP [w/enclosures] cc: Andrew J. Shaevel, Managing Partner, Mensch Capital Partners, LLC

Sean Hopkins, Esq., Hopkins & Sorgi PLLC

EXHIBIT "A"  Project Site & History Description	

EXHIBIT "A"

**Project Site and History Description** 

A. <u>Project Site Description</u>:

The 170-acre Westwood Project Site is located at 772 North Forest Road, 385 Maple

Road and 391 Maple Road in the south-central portion of the Town of Amherst, Erie County,

New York ("Project Site"). The Project Site is bounded by Sheridan Drive (State Route 324) on

the south; Maple Road (County Road 192) on the north; North Forest Road (County Road 294),

Ellicott Creek, and the Audubon Par 3 Golf Course on the east; and Frankhauser Road and

Fairways Boulevard on the west (refer to Figure A-1, General Project Location Map, located at

the end of this Exhibit). The Project Site is situated approximately 0.25 mile east of Interstate

290 and approximately one mile south of the State University of New York (SUNY) at Buffalo

North Campus ("UB North Campus"). Ellicott Creek crosses the south eastern boundary of the

Project Site.

The Project Site is currently operated as the Westwood Country Club ("WCC" or

"Club"), a private, members-only club that includes an 18-hole golf course, swimming pool and

clubhouse. The original clubhouse banquet facilities, kitchen and locker rooms were built in

1928. Access to the Project Site is currently via a private driveway that connects to North Forest

Road. This existing driveway extends to the entrance of the clubhouse and the existing parking

spaces.

**B.** Westwood Country Club History:

The Project Site has been occupied by the WCC since 1945. However, the use of the

Project Site as a private golf course dates to 1919, when the Willowdale Golf Club was

Westwood Neighborhood Buildings & Structures Review

organized; the club began operations in 1921, when a 9-hole golf course opened on the site. The

existing WCC clubhouse, built in a Tudor style, was constructed by Willowdale and opened in

1928.

After the golf club membership was adversely affected by the stock market crash of 1929

and the subsequent Great Depression, the Willowdale joined with another Jewish men's club in

Buffalo (the Montefiore Club) to create the Wilmont Town and Country Club. However, this

arrangement failed, and by the early 1930s, the Westwood property was opened as the Blossom

Heath Country Club and was later used as a casino. In conjunction with the Forest Road

Corporation (which owned the land), the WCC was re-established as a private golf and social

club in 1945. For a brief narrative describing the historic transition of the Westwood site

ownership, please refer to Figure A-2, Summary of Historic Map Data, located at the end of this

Exhibit.

In 2011, the Project Sponsor acquired the Project Site from the equity members of the

Forest Road Corporation. The equity members of Forest Road Corporation decided to sell the

Project Site based on the fact the country club was no longer financially viable and the

membership was only 350 members at the time of the sale. The WCC currently includes an 18-

hole golf course, pool, tennis courts, and clubhouse. Although a privately-owned, members-only

(non-equity) club, the WCC includes a restaurant in the clubhouse open to the public.

C. Golf Course History

Prior to being established as the 18-hole Westwood Country Club in 1945, the original

club and course was founded as The Willowdale club, a 9-hole course, in 1921 [refer to Figure

A-3, Willowdale Club Aerial (1927), located at the end of this Exhibit]. Anecdotal history,

Westwood Neighborhood Buildings & Structures Review

Page 2

Westwood Club records, and all golf trade sources surveyed credit William Edward Harries (1886-1972) with designing and overseeing construction of the original Willowdale Club golf course in 1921. Furthermore, original design plans for the initial 9-hole golf course are currently on display within the Westwood men's locker room and clearly establish the firm of Harries & Hall Landscape Architects as the course designer within the plan title block (please refer to Figure A-4, Willowdale Club Golf Course Design Plan, located at the end of this Exhibit). The work was performed in association with the firm that Harries was partner of, that is, Harries & Hall of Toronto and Buffalo, originally founded in Toronto circa 1911 (the Buffalo office being established in 1916).<sup>2</sup> Harries was a well-known Landscape Architect whose work influenced and was responsible for many of the public works in New York, Canada, and England. One such example of a public course designed by Harries is the Town of Amherst Audubon Golf Course, originally opened in 1942 and located directly across Maple Road from the WCC.<sup>3</sup> A native of Buffalo, NY, Harries obtained a Bachelor of Science in Agriculture from Cornell University (1904-1908), where he studied Landscape Architecture. Mr. Harries partnered with college associates to create a very successful architectural firm that eventually had offices in both Toronto and Buffalo.4

The majority of historical records note Geoffrey Cornish (1914-2012) as having provided renovation design work to the Westwood Country Club. Cornish's biography identifies that he

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http://www.oneontacountryclub.org/course-design/.

<sup>&</sup>lt;sup>1</sup> Golf Digest Magazine Online. <a href="http://courses.golfdigest.com/l/25759/Westwood-Country-Club-Westwood">http://courses.golfdigest.com/l/25759/Westwood-Country-Club-Westwood</a>.

<sup>&</sup>lt;sup>2</sup> "Forgotten landscape architectural firm of Harries, Hall and Kruse of Toronto and Buffalo.." <u>The Free Library</u>. 1999 Wilfrid Laurier University 25 Jul. 2014

 $<sup>\</sup>frac{http://www.thefreelibrary.com/Forgotten+landscape+architectural+firm+of+Harries\%2c+Hall+and+Kruse+of...-a030235619}{\text{2}}$ 

<sup>&</sup>lt;sup>3</sup> Golf Link Online. http://www.golflink.com/golf-courses/course.aspx?course=766845.

<sup>&</sup>lt;sup>4</sup> "Course Designer: Mr. William E. Harries." Oneonta Country Club. 2013.

had provided design oversight in the addition of a number of lakes to the Westwood course in 1959 as well as some minor green modification work.<sup>5</sup> Cornish was a golf course architect, author, and a fellow of the American Society of Golf Course Architects, he designed over 200

courses, including 9-hole additions, around the world.<sup>6</sup>

D. Westwood Clubhouse History:

The original structure of the current Westwood Clubhouse was designed by Louis Greenstein (1886-1972) in 1921 as commissioned by the owner at the time, Willowdale Country Club (Please refer to figure A-5, Louis Greenstein- Willowdale Clubhouse Construction Bid Listing, located at the end of this Exhibit). The original building was limited to a 2 story structure approximately 4,800 sq. ft. in size (48'x101') and was opened for use in 1928. Due to financial hardship associated with the stock market crash of 1929, the Willowdale Club combined with the Montefiore Club, another Jewish men's club located in the City of Buffalo. Upon foreclosing on the current Westwood Country Club site and Clubhouse, the Willowdale club membership moved their records and belongings into the Montefiore Club. Unfortunately, the Montefiore Club was subject to a fire that resulted in the destruction of the building and its contents (Please refer to Figure A-6, Montefiore Club Fire Newspaper Article, located at the end of this Exhibit). It is believed that the building plans and legal records associated with

In terms of the historical integrity of the current Westwood Clubhouse structure, much of the original building fabric has been significantly altered both on the exterior and interior over

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http://www.golfclubatlas.com/forum/index.php/topic,55850.10/wap2.html

construction of the Willowdale Clubhouse were lost in the fire.

<sup>&</sup>lt;sup>5</sup> GolfClubAtlas.com. "Golf Course Architecture- "Wiilowdale (now Westwood CC)".

<sup>&</sup>lt;sup>6</sup> "Geoffrey Cornish - golf course architect - golf courses built, articles, related information". www.worldgolf.com. Retrieved 2014-07-25.

the approximately 80 years since its original construction. Additions, alteration, and renovations to the structure beginning in the 1950's and continuing more recently within the last 20 years

have resulted in a clubhouse that is substantially larger than the original structure at a total

building area of approximately 33,891 sq. ft. (compared to the original approximately 4,800 sq.

ft. structure). The additions were typically constructed to accommodate larger banquet halls and

shower/locker room areas and these additions have greatly compromised the appearance of the

original clubhouse structure. An analysis of the Clubhouse site aerial photographs spanning from

1926 to 2014 clearly depicts the level of additions and alterations that have occurred over time

(Please refer to Figure A-7, Historical Clubhouse Aerial Comparison, located at the end of this

Exhibit).

Westwood Neighborhood Buildings & Structures Review Exhibit "A" – Project Site and History Description August 2014

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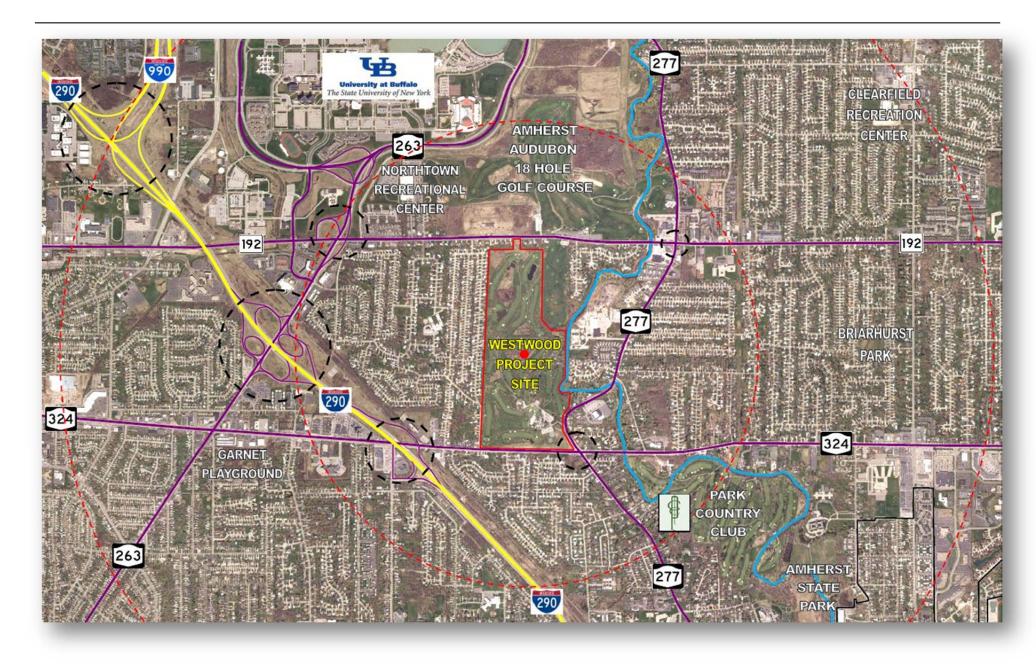


Figure A-1 General Project Location

### Summary of Historic Map Data, Westwood Country Club Locality

**1854 Samuel Geil**: First indication of roadways and there are several residences within the project area. Neither of the current major east-west roadways (Maple Road and Sheridan Drive) exist. The roads across the southern part of the project area continue to be shown on maps and aerials up to 1938.

**1866**: Roads shown in 1854 remain and there are two residences present: "G. Gretsinger" and "D. Cole". The latter residence shows continuity with the 1854 listing. The "Christman" residence, north of those along the roadways is now attributed to "J. Covey".

**1880:** Roads in the southern part of the property are still present but their shapes have changed somewhat. One residence is still shown along the north side of the road and is attributed to "G. Gretsinger" showing continuity with the 1866 map. A portion of the property to the north of the roadway is labeled as the "Kibler Estate" and may include one or more structure symbols in the area where the "Covey" residence had been drawn. There do not appear to be any structures in the area where the Christman/Covey residence had been shown.

**1900/1901:** The roads in the southern part of the property conform to the arrangement shown on the 1880 map. Only two structure symbols are present along the north side of the road and appear to be in the same locations as residences previously attributed to "G. Gretsinger" and "D. Cole"

**1909/1915**: The majority of the area is attributed to "G. Gretzinger"(sic). Two residential structures are shown in the general locations where these have been previously plotted. This map provides additional detail indicating that the western structure had an associated barn or similar outbuilding on the south side of the road. The eastern structure is associated with two structures to the northwest.

**1927:** Aerial photos show the roadways that have been present since the late-19th century. They also show that construction of the country club has been started. Sheridan Drive, on the south edge of the project area, has been constructed or is in the process of being constructed. A rectangular vegetation zone is evident in the northwest quarter of the property. That general area, apparently a wooded section, is still evident on current maps and aerial photographs.

1948: The roadways that had been evident in the southern part of the property since 1866 are no longer represented. A newer roadway off North Forest Road accesses the country club buildings and the area is identified as the "Wilmot Country Club". The small wooded zone in the northwest is still apparent. There is an apparent structure symbol in the southwest quarter of this map. It seems rather outsized for symbols used for residential locations. There is no structure shown on the 1951 aerial photograph in this general area. For that reason it was thought that the symbol might have been added to the particular map that was scanned. However, other digital versions of the map do show the structure symbol.

**1951:** The country club locale shows more clearly and does not appear to have significantly expanded beyond its 1927 limits. The 19th century roadways in the south are more clearly defined but are probably only used as private accesses with the exception of the portion on the east representing the country club entrance.

The expansion of the country club golf course to its current extent occurred prior to 1994. Aerial photographs from 1994, 2002, 2005, and 2011 show the minimal changes to the area.

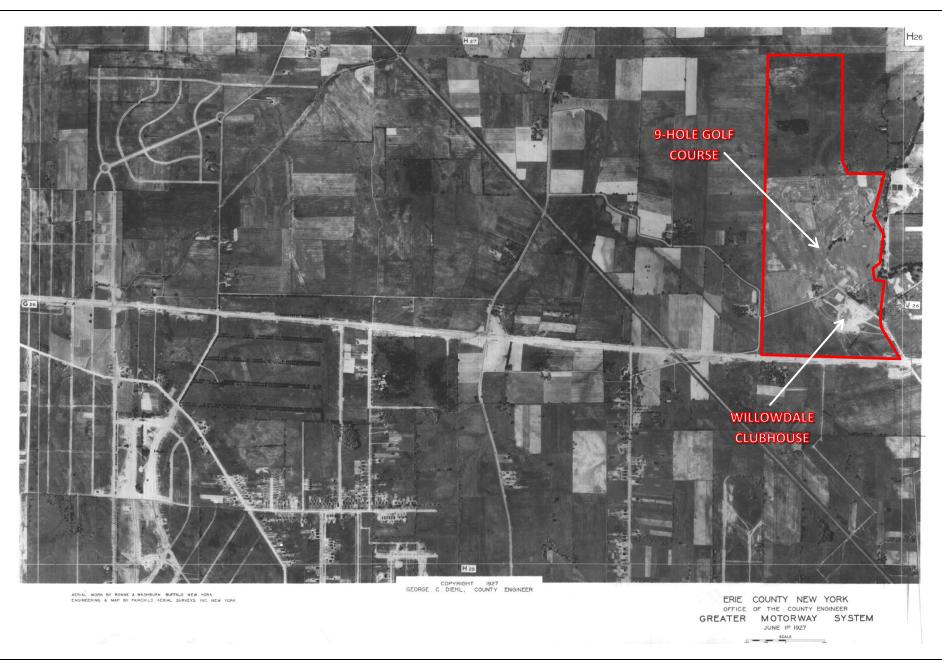


Figure A-3 Willowdale Club Aerial (1927)

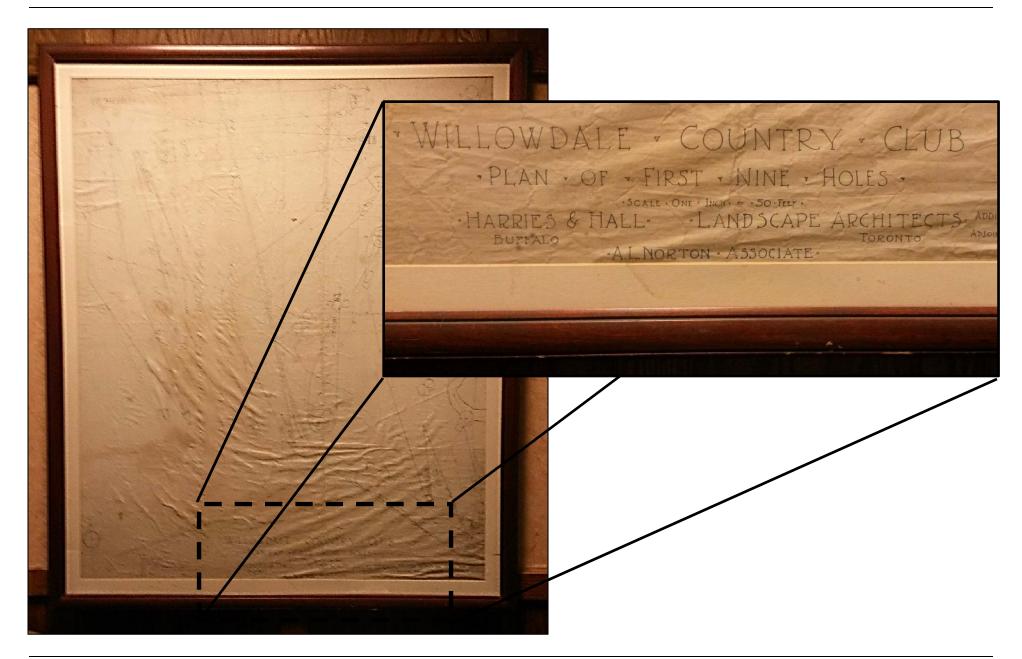


Figure A-4 Willowdale Club Golf Course Design Plan

#### 72

### THE AMERICAN CONTRACTOR

February 5, 1921.

YONKERS, N. Y.

Apt. Homses 2 sty. 34x57. 105 Poch
Hill av. Priv. plans. Owner & Bidr.
P. A. Sarubbi, 2 Cak pl. Brk. Fdns.
Res. (2, 2 fam. ca.): Ea. \$18,000. 2½
sty. 25x44. Jerome & Tonkers av. Archt.
Wm. Heapy, 288 Hawthorne av. Owner
& Bidr. Diehl Constr. Co., Mansion av.
Frame. Excav.

\*Rea: \$18,000. 2 sty. 21x48, Red-ford st. Archt. J. W. Kirst. 221 McL an av. Owner & Bidr. P. H. McGrath. 23 Purser pl. Brk. Owner taking bids on

Centracis Awardes,

\*Stores (5): \$20,000, 1 sty, \$0x\$0. S.
Bway & Ludlow st, Yonkers. Archt,
Seelig & Finkelstein, 44 Court st., Brooklyn, N. Y., & care owner. Owner Merchants Holding Corp., J. A. Dilliard,
prea, 44 Court st., Brooklyn. Gen. contr.,
let to James E. Dollen, 67 Radford st.,
Yonkers. Excav. (Note contr.).

New Rechelle, N. T.—Office Bidg.: 3 sty. 5ex100. Hugunot at. New Rochelle. Archt. Geo. B. Post & Sons, 101 Park av. N. T. C. Owner Professional Office Corp. Dr. C. C. Gullon, 175 Center av., New Rochelle. Brk. & limestone. Archt. will take bids on gen. contr. abt. April. Drawing plans.

### ALBANY, N. Y.

Bldg. (State Agricultural: add. radia-tion to 4th fir., hig. wk.): State & Lodge st. State Archt. Lewis F. Pilcher. Capi-

on gen. & sep. contrs. abt. March 1st. Drawing plans.

on gen. & sep. contrs. abt. March 1st. Drawing plans.

"Brewery (alt.): Sharpsburg, Pa. Consit. Engr. Julius Schultz, 1370 Main st., Butfalo. Owner Cr. Filt Brewing Co. Wm. Saul Jeff., Charpsburg. Drawing prace Owner will take bids in abt. 1 month.

"Clesh House (new bids.): 2 sty. 48x 191. Williamswille, N. Y. Archt. Louis Greenstein, Prudential bidg., Buffalo. Landscape Archt, Hall & Harris, 110 Franklin st., Buffalo. Owner Willow Dals Country Club. Eugene Warner, chrm. bidg. comm., 312 Frudential bidg., Buffalo. Frame & wide shingles. Drawing plans. Archt. will take bids on gen. contr. abt. March. 1st. (Note project.)

"Fractery (add.): \$2,500.000. 1 sty. 1872. Ettivar rd. Priv. plans. Owner Bidd. Wickwire, Spencer Step! Corp., River rd. Steel. Brawing plans.

"Plant (packing, add.): \$2,500.000. Altoona, Pa. Archt. & Engr. Abpac Engr. Co., 63 William st., Buffalo. Owner United Home Dressed Meat Co., Frank Enders, Altoona. Plans drawn.

"Hea., \$30,000. 2½ sty. Cleveland av., nr. Delaware av. Archt. E. B. Green & Son, 75 Niagara st. Owner Geo. F. Pilimpton, 50-2 Swan st. Frame, Archt. will soon ask for new bids on gen. contr. Plans drawn.

Res. & Garage: \$15,000. 14 sty. 22x 55. Hediey av. Archt. Geo. Dietel.

Res. & Garage: \$15,000, 14 sty. 22x 56, 25 Hedley av. Archt, Geo. Dictel, 706 Humboldt Parkway. Owner Henry M. Heubusch, 20 Kretther st. Frame & brk, vener. Archt, will take bids abt. Feb. 10. Drawing plans.

cuse. Archt. M. E. Granger, Gurney bldg., Syracuse. Owner U. S. Hoffman Machine Co., 715 Fayette st., Syracuse. Gen. contr., mas. & carp. let to Dawson Bros., Union bldg., Syracuse. Rfg. to U. S. Gypsum Co., 1170 Broadway, N. Y. C. Fdas. com-nicted.

\*Theater, Stores & Offices; \$400,000, 1 & 2 sty. State st. Schenectady. Archt. J. W. Morrow, care owner. Assoc. Archt. Thos. W. Lamb, 644 8th av. N. Y. C. Owner F. F. Froctor, Fred E. Proctor, pres., 1544 I'way N. Y. C. Brk. & terra cotta. Arch. will take bids on gen. contr. abt. March 15th. Drawing plans. (Note archt.)

POTGIIKEEPSIE, N. Y. \*Chapel & Vaults Wappingers Palls, N. Y. Archt, W. J. Beardsley, 49 Market st., Poughkeepsle, Owner Wappingers Falls Cemetery Assn., Inc., Rolan F. Bogle, South av., Wappingers Falls. Stone. Drawing plans.

Biotel (add.): 350,090, Archt, Du Bois Carpenter, 47 Market st. Owner Hotel Windor, King & Rosen, at site, Brk. Drawing plans.

Schoel (high): \$20,000, Yorktown

School (high): \$70,000. Yorktown Heights, N. Y. Archt. W. J. Beardsley, 49 Market st., Poughkeepsie. Owner S. of E. Yorkstown Heights. Brk. Drawing plans.

Contracts Awarded. Club House (fire repairs): Priv. plans. Owner Portchester Country Club, John S.

Source: "Building and Construction News Section." American Contractor, Business Journal of Construction 1 Jan. 1921.

http://books.google.com/books?id=OjVYAAAAYAAJ&printsec=frontcover&source=gbs ge summary r&cad=0#v=onepa ge&q&f=false



OBSERVER - REPORTER, WASHINGTON, PA.-Tuesday, Dec. 30, 1969

# Budget Set In Charleroi

Two-Year Term For Dr. Betz

By Authority | CSC Professor Selected President Of State Gro

CHARLEROI - A \$776,000 budget containing items for time since its formation 23 years capital improvements of \$525,000 ago, the 4,500 - member was approved by the Authority College and University Faculties of the Borough of Charleroi.

the municipal water systems for president. four boroughs and the city of

CALIFORNIA - For the first (APSCUF) has a California The authority, which operates State College professor as its

Dr. Gabriel P. Betz has been



Dr. Betz career in I and later ta (Ill.) High joining the taught at Junior College at the Univer

Dr. Betz h Pennsylvan

For for a journey to Arizona a deep into Mexico," wrote Mrs. Chapman.

"It has been rewarding. Since leaving Miami last May 20 we have had a wonderful me.
Enjoy Cowboy Life
"We spent weeks forking on a ranch in Wyoming Billy really chart's gins

turned norm and enjoyed san the Monteliore Club, a down-francisco, a lovely city with town landmark more than 120 years old.

"But we came back south to Las Vegas. There we gambled fire commissioner, estimated and won — a tray bit.

"In Death Valley and at Lake outside walls of the three-story was a start of the programment of the commissioner."

Chihuahua for 10 days enjoying Howard blamed the burst on warm weather

promptly," he said.

ashington, Pa. art time help needed II departments.

Lingerie Infants

• Cashiers Wrappers

# \$550,000 Fire

rance in wyonings buy reasy liked being a cochoy. Finally after some side typs we headed gas-fed fire, thought to be unfor Reno on Oct. 6. Yes, yes, we'der control, exploded in a burst gambled and lost. Then we lof flames Honday, destroying turned north and enjoyed San the Montefiore Club, a down-francisco a byely city with leave leadings was they are

"In Death value and at Lake outside wais of the infections whead, as the suit poured down, brick structure remained standwe soaked it up. Golf almost in gatter the blaze.

"At last came the trie land in the building when the fire bemexico. It is primitive but gan, but no injuries were redelightful. We have been here in ported.

raw gas seeping up the walls. "We could have saved the structure from destruction had the gas supply been shut off

The fire apparently started in the basement, and firemen said they would be unable to determine a cause until the basement was pumped out. They said water in the basement was more than five feet deep.

The building was erected about 1840. The Montefiore Club, an exclusive social organization, purchased the building in 1922

# QUARTE

### REGULAR PASSB

Now the highest passbook interest and it's COMPOUNDED QUARTER valuable. No minimum deposit. Depo and you'll get a big 5% per annum Open your account today and reap passbook savings interest and quart

rate way to save. 5% interest become

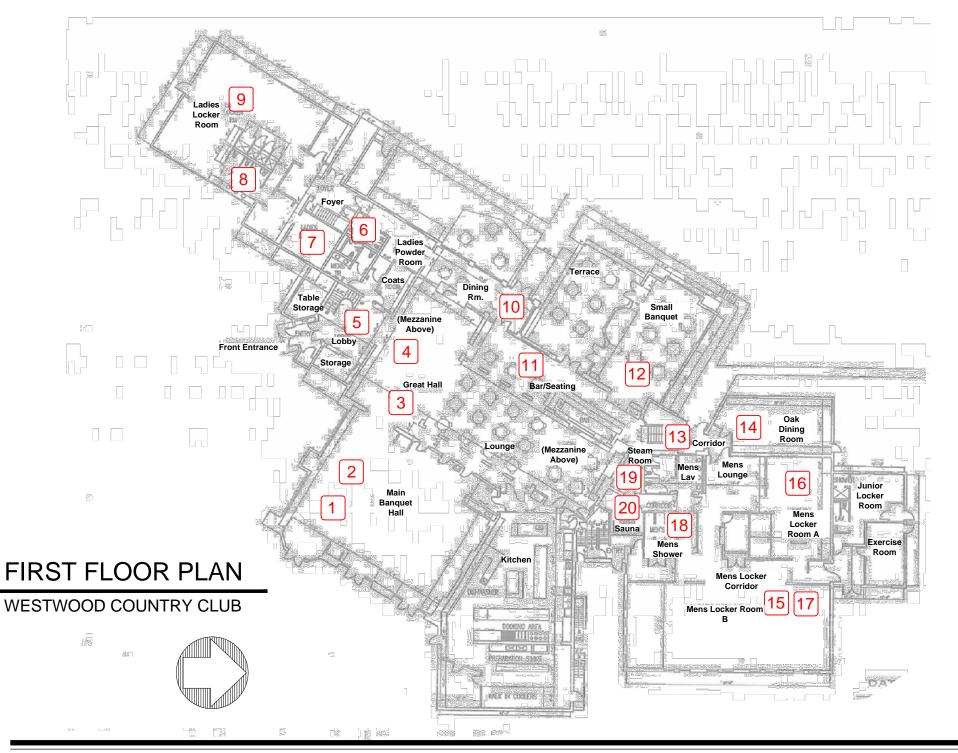


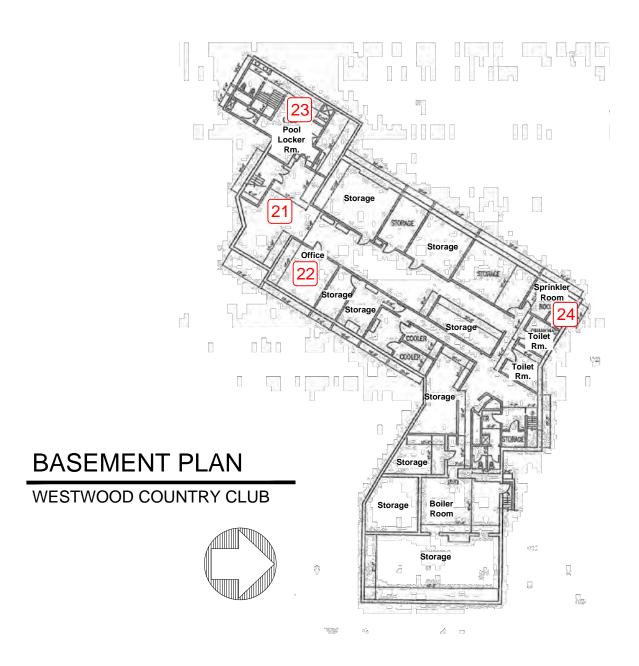


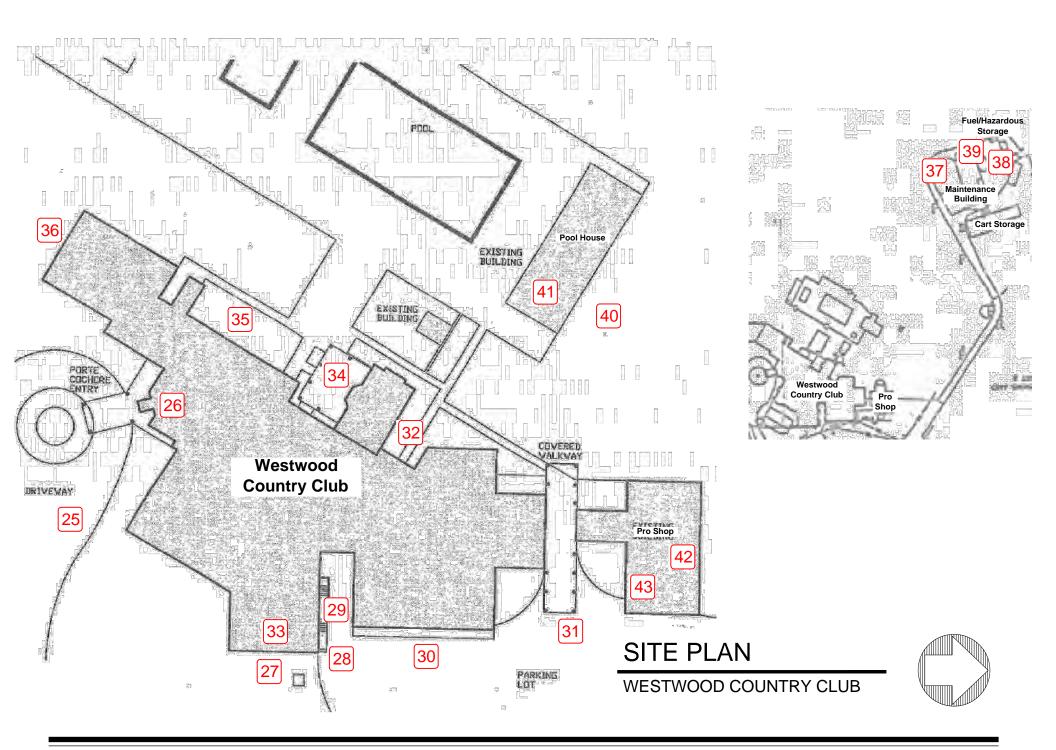


Figure A-7 Historical Clubhouse Aerial Comparison

EXHIBIT "B"  Project Site & Clubhouse Photographs	











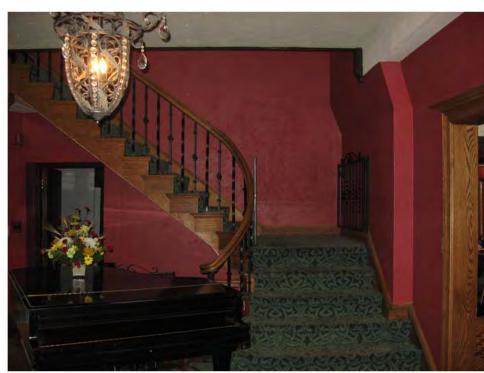


1 Main Banquet Hall

2 Main Banquet Hall

3 Great Hall







4 Great Hall

5 Front Entrance Lobby

6 Ladies Toilet Room







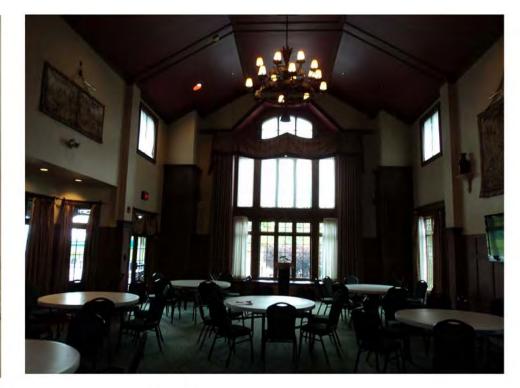
7 Ladies Locker Room

8 Ladies Locker Room

9 Ladies Locker Room







10 Dining Room

11 Bar/Seating/Walkway

12 Banquet Room



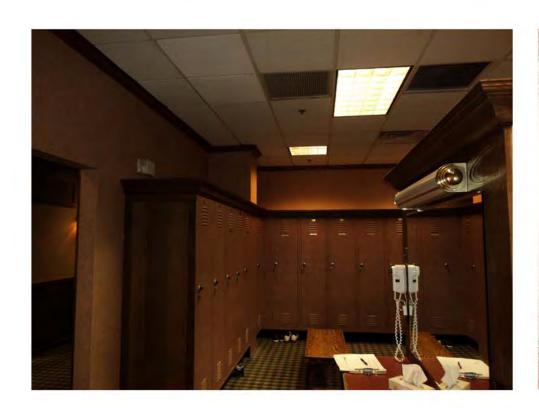




14 Oak Dining Room



15 Mens Locker Room







17 Mens Locker Room



18 Mens Shower





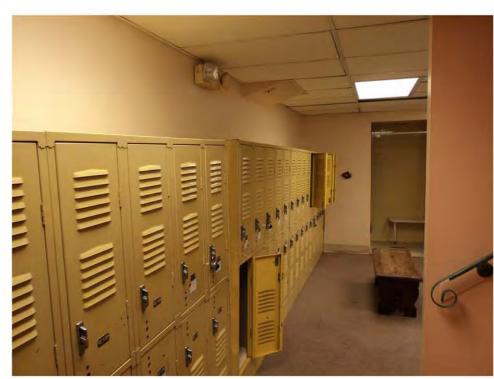


19 Steam Room

20 Steam Room Entry Door

21 Basement Hallway







Basement - Womens Pool Lockers

24 Sprinkler Room







[25] Front Entrance

26 Front Entrance Turret

27 Exterior Elevation (Kitchen/Mens Locker)







28 Exterior Elevation (Kitchen)

[29] Exterior Elevation (Kitchen)

BO Exterior Elevation(Mens Locker)



31 Exterior Elevation



32 Entrance near Bar/Small Banquet Room



33 Exterior Elevation



34 Exterior Terrace



35 Exterior Elevation



Door exiting from Ladies Locker Rm.







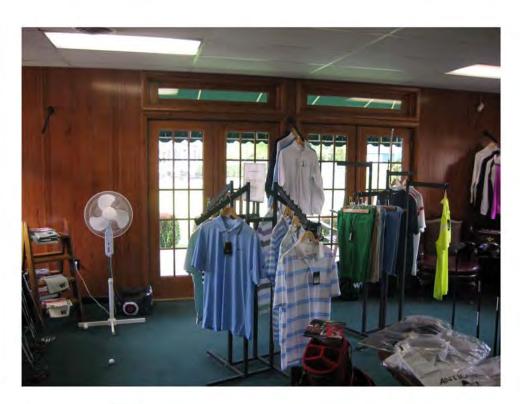
[37] Maintinance Building

38 Hazardous Storage

39 Fuel Storage







40 Pool House

41 Pool House Interior

2 Pro Shop



43 Pro Shop Bag Storage

 EXHIBIT "C"
therst Historic Preservation Commission Site Assessment dated Reconnaissance Level Survey of Historic Resources (August 2011)

### EXHIBIT "C"

Town of Amherst Historic Preservation Commission Site Assessment as per the Updated Reconnaissance Level Survey of Historic Resources (August 2011)

### A. Reconnaissance Level Survey Process and Description:

Beginning in 1997, The Town of Amherst and the Amherst Historic Preservation Commission utilized the services Bero Associates Architects to complete a *Reconnaissance Level Survey of Historic Resources* ("Reconnaissance Survey") within the community. Additionally, in 1998, the Town utilized the services of Bero Associates Architects to complete an *Intensive Level Survey of Historic Resources*. The intent of both surveys was to identify and evaluate historic resources within the Town so they might be considered in future town planning and preservation planning. Subsequently, in August of 2011, the services of KTA Preservation Specialist ("KTA") were utilized to develop an Updated Reconnaissance Level Survey of Historic Resources ("Updated Survey"). The Updated Survey was conducted as a joint effort between KTA and UB Archaeological Survey. The persons conducting the survey and involved in the historic research were all 36 CFR qualified. The resumes of the principal investigators are included in Appendix 6 of the Updated Survey.

The Updated Survey re-evaluates the properties included in the Reconnaissance Survey and documents their existing condition. The survey was limited to above-ground historic

Westwood Neighborhood Buildings & Structures Review Exhibit "C" – Town of Amherst Historic Preservation Commission Site Assessment August 2014

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<sup>&</sup>lt;sup>1</sup> KTA Preservation Specialist. "Town of Amherst Updated Reconnaissance Level Survey of Historic Resources". *Town of Amherst Historic Preservation Commission*. Town of Amherst, August 2011. Web. 28 July 2014.

<sup>&</sup>lt; http://www.amherst.ny.us/pdf/committees/additional/historic/methodology.pdf>

<sup>&</sup>lt;sup>2</sup> KTA Preservation Specialist. "Town of Amherst Updated Reconnaissance Level Survey of Historic Resources". Town of Amherst Historic Preservation Commission. Town of Amherst, August 2011. Web. 28 July 2014.

<sup>&</sup>lt; http://www.amherst.ny.us/pdf/committees/additional/historic/methodology.pdf>

<sup>&</sup>lt;sup>3</sup> Copy of the Updated Survey can be downloaded from the following web page address:

<sup>&</sup>lt;a href="http://www.amherst.ny.us/govt/committees/govt">http://www.amherst.ny.us/govt/committees/govt</a> committeeadditional.asp?board code=Historic>

resources. The property selection criteria and guidelines used in the evaluation of properties as

historic resources consider both the historic context and architectural fabric of properties. The

selection criteria and guidelines were based on the local criteria for the designation of landmarks

under the Town of Amherst's Local Law Establishing Regulations for Historic Preservation<sup>4</sup>,

and the National Register Criteria for Evaluation, which are contained in the National Park

Service Publications: National Register Bulletin, 15 Standards and Guidelines for Evaluation;

Standards and Guidelines for Identification, and National Register Bulletin, 24, Guidelines for

Local Surveys: A Basis for Preservation Planning.<sup>5</sup>

A rating system was established to provide a basis of comparison for the relative merit of

properties on a town-wide and regional context. The architectural significance – locally,

regionally and nationally; the architectural integrity; the integrity of the setting or context, and

the historic significance – locally, regionally and nationally were all considered when evaluating

a property. It should be noted that a local resource might be given a higher rating despite a loss

of integrity if the resource is rare and not well represented in the Town.

Each of the properties on the Annotated Lists (Appendix 1 and 2) within the Updated

Survey has been assigned one of the following color codes:

• **BLUE-** Extremely high architectural and/or historic significance. These properties would

likely also meet the criteria to be considered National Register eligible. A locally significant district. A resource that is rare and lacks individual distinction. All districts

are considered Blue as are most farmsteads.

• GREEN- Above average architectural and/or historical significance. May have some

alterations that compromise the integrity such as replacement windows. Would possibly

<sup>4</sup> The local law establishing regulations for Historic Preservation is located in Chapter 121 of the Code of the Town

of Amherst is available online at the Town of Amherst website at http://www.amherst.ny.us

<sup>5</sup> KTA Preservation Specialist. "Town of Amherst Updated Reconnaissance Level Survey of Historic Resources".

Town of Amherst Historic Preservation Commission. Town of Amherst, August 2011. Web. 28 July 2014

Westwood Neighborhood Buildings & Structures Review

meet the criteria for to be considered National Register eligible.

 YELLOW- Moderate architectural and/or historical significance. Has been altered, but still retains sufficient historic fabric to convey historic meaning. Important local resources. Would likely not meet the criteria for to be considered National Register eligible.

The color ratings are further qualified by the following designations:

- + More significant than the average property within its color category.
- Less significant than the average property within its color category.

### **B.** Westwood Property and Clubhouse Evaluation:

The evaluation of the Westwood Property and Clubhouse is included within Appendix 1 of the Updated Survey (refer to Figure C-1, Westwood Property & Clubhouse Evaluation, located at the end of this Exhibit). The Updated Survey identifies the reason for inclusion as "early 20<sup>th</sup> century social/recreational architecture in Tudor Revival style (social history)." The Westwood Property is further identified as a "Green" color code property, suggesting the property contains above average architectural and/or historical significance that *would possibly* meet the criteria for National Register consideration. It is important to note that the Description Section of the Update Survey only identifies changes that include the "replacement of some slate roof shingles with asphalt shingles and a large flat roof addition." The description section fails to identify the significant alterations that have been made to the original clubhouse structure as a result of substantial exterior additions and renovations that have taken place beyond the period of potential cultural/historical significance and that have not been consistent with the appearance and material utilized for the original clubhouse structure.

Name of Resource/Address	Photo Number		Construction	Resource Type/Description	Reason for Inclusion	Potential Threats	Rarity of Resource	Color Code	USN/Determination I (individually eligible); N (not eligible); D (District); U (undetermined); blank (no determination) SHPO NR Listing Number	in Intensive
432 Mill Street	7-5	Area 7 (7BGS)	ca. 1860	2.1/2-story front gabled frame residence. Main street entrance with analight and sidelights at center of the north elevation. Segmental arch window crowns. Replacement windows and siding. New side porch addition. Contributing gable roof English barn north of house.	Example of 19th century vernacular residential architecture.	_	_	Green-	_	_
156 Mona Drive	5-152	Area 5 (5BG152)	ca. 1925	1 1/2-story side gable with intersecting front and entrance gables. Stone embellished entrance. Leaded lattice work casement windows. Some of the slate roof has been replaced.	Early 20th century Tudor Revival style residential architecture. Association with history of suburban development.		_0	Green	_	-
8 Morton Drive	5-153	Area 5 (5BG153)	ca. 1927	2 1/2-story cross gable with intersecting entrance gable. Prominent chimney with detailed brickwork adjacent to entrance.	Early 20th century Tudor Revival style residential architecture. Association with history of suburban development.	_	<u>_</u> ;	Green	_	-
120 New Road	1-9	Area 1 (1BG9)	ca. 1881	2-story L-plan gable roof frame vernacular farmhouse with cement asbestos siding. The side-gabled wing has an added cross gable in front. Shelr ord prorch. Replacement windows with false muntins. Decorative trim at front gable non-historic. Porch rails look recently added. Contributing garage.	Late 19th century farm complex. Agricultural history, though context is lost. Vernacular farmhouse architecture.	_	Moderate threat: encroaching development	Green	2902.000159	-
155 New Road	1-10	Area 1 (1BGF10)	ca. 1935	Colonial Revival brick house with hip-on-gable roof. Contributing brick garage with hip-on-gable roof. Agricultural buildings associated with property have been demolished.	Significant as a pre-World War II era agricultural complex. Agriculture construction still occurring in this area of town, while suburban development in the southern area of town. Barn is currently used as a garage.	-	_	Green (F)	_	-
1025 New Road	2-28	Area 2 (2BB28)	са. 1880	2-story L-plan cross-gable frame vernacular Italianate farmhouse with wood clapboard siding. Segmential arch window crowns. The roof porch in front of wing with turned posts and scroll work. 1 non- contributing frame shed. Rural setting.	Late 19th century vernacular Italianate residential (farmhouse) architecture.	House is deteriorated.	-	Blue	02902.000483	х
White Chapel Memorial Park 3210 Niagara Falls Blvd. (At Tonawanda Creek Rd.)	3-13	Area 3 (3SiB13- NRE)	1930	Non-denominational cemetery with picturesque landscape plan. Entrance has Neoclassical stone posts, a central stone arch, and cast iron fates.	May be significant as an example of funerary landscape design of the early 20th century. High quality of design at stone arch and gates. National Register Eligible District.	-	-	Blue	02902.000874/I	-
110 North Ellicott Creek Road	3-14	Area 3 (3BB14- NRE)	ca. 1855-60		Mid-19th century vernacular Italianate residential architecture of brick construction. Association with history of Vincent's Corners. National Register Eligible. The property was included in the Intensive Level Survey, 1998.	-	19th century brick residential construction is relatively rare in Amherst.	Blue	02902.000484/I	х
Former District No. 16 School (Present Amherst Youth Board-Ellicott Creek Youth Center) 154 North Ellicott Creek Road	3-15	Area 3 (3BB15- NRE)	ca. 1910-15	1-story with raised basement brick clad school building. Flat roof with parapet. Symmetrical center entrance façade with Georgian Revival inspired door surround. Blank end walls with decorative brickwork. Original 3/3 and 6/6 double-hung sash. Original front doors have been replaced. Asphalt parking lot in front; playground in back.	Early 20th century institutional architecture. Utilitarian design with Georgian revival entrance. Association with the history of public education in Amherst. National Register Eligible.	-	-	Blue	02902.000752/I	-
Westwood Country Club 772 North Forest Road (Corner of Sheridan Drive)	4-2	Area 4 (4BG2)	ca. 1920s	Tudor Revival style clubhouse with stucco clad walls and slate- shingled gable roof. Main entrance has a timber frame porte cochere with gable roof attached to a 2 IV2-story octaponal "tower" with decorative half-timbering. Changes include the replacement of some slate roof shingles with asphalt shingles, and a large flat roof addition.	Early 20th century social/recreational architecture in Tudor Revival style, Social history,	-	-	Green	-	-
The J. Getz House. 829 North Forest Road	4-3	Area 4 (4BB3- NRE)	ca. 1840s	2-story front gable brick vernacular residence with late 19th century hip roof porch at front featuring wood scrollwork. 6/6 double-hung sash with stone sils and lintels. One-story frame wing at side. Non- contributing garage.	Early to mid-19th century brick vernacular residential architecture. Greek Revival inspired massing and form. National Register Eligible.	_	19th century brick residential construction is relatively rare in Amherst.	Blue	02902.000257/I	х
The Stimm House. 895 North Forest Road (Part of the Chapel property)	4-4	Area 4 (4BB4- NRE)	1942	2-story flat roof international style residence with concrete block walls. Asymmetrical plan with broad roof overhang and cantilevered concrete balcony at 2nd story. Random stonework chimney. Windows grouped in bands of three. Contributing garage. 19th century raceway on property.	Outstanding example of WWII-era international style residential architecture. Possible significance for technology; early use of radiant heat.	-	International style is relatively rare	Blue +	02902.000485/I	x
954 North Forest Road	9-2	Area 9 (9BY2)	ca. 1890	2 1/2-story cross gabled frame Queen Anne style farmhouse clapboard and shingles have been replaced with synthetic siding. Warp around porch with Tuscan columns (balustrade is missing) and rock faced cast concrete block-foundation. Palladian windows in gable ends have been removed. Vinyl siding.	Late 19th century Queen Anne residential architecture.	-	Queen Anne's are rare in Amherst.	Yellow	02902.000486	x

# Habitat Assessment for

## Westwood Neighborhood Project 722 North Forest Road

Town of Amherst Erie County, New York

for

Mensch Capital Partners, LLC

EARTH DIMENSIONS, INC.

1091 Jamison Road • Elma New York 14059 (716) 655-1717 • Fax (716) 655-2915 • www.earthdimensions.com

October 30, 2014 EDI Project Code: W1I09c

### REPORT SUMMARIZING THE RESULTS OF A HABITAT ASSESSMENT OF

### Westwood Neighborhood Project 722 North Forest Road

Prepared for Submission to

TOWN OF AMHERST TOWN BOARD 5583 MAIN STREET WILLIAMSVILLE, NEW YORK 14221

Prepared by

EARTH DIMENSIONS, INC. 1091 JAMISON ROAD ELMA, NEW YORK 14059

for

MENSCH CAPITAL PARTNERS, LLC 5477 MAIN STREET WILLIAMSVILLE, NEW YORK 14221

DATE PREPARED

October 30, 2014 Project Code: W1109c

### PROJECT INFORMATION

Project Name	
Street Address	772 North Forest Road, 385 & 391 Maple Road
Town	Amherst
County	Erie
State	New York
Latitude/Longitude (NAD83)	42.98485° N, 78.77298° W
Investigation Area	
USGS 7.5 Minute Topographical M	Iap Buffalo NE Quadrangle
Consultant	Earth Dimensions, Inc.
	1091 Jamison Road
	Elma, New York 14059
Point of Contact	
	(716) 655-1717
Engineer	
Property Owner	
Waterway	Ellicott Creek
Hydrologic Unit Code	04120104

### **ACKNOWLEDGMENTS**

Mensch Capital Partners, LLC has retained Earth Dimensions Inc. (EDI) to complete a site vegetation, biological resource and wildlife assessment investigation for the Westwood Neighborhood Project site located in the Town of Amherst, County of Erie, State of New York. EDI would like to thank Copy Market, Inc. for providing the duplicating and binding services.

Duplicated onto recycled paper.

#### **EXECUTIVE SUMMARY**

Mensch Capital Partners, LLC has proposed the development of a mixed use project on the west side of North Forest Road, north of Sheridan Drive and south of Maple Road in the Town of Amherst, County of Erie, State of New York. The project has been given the name Westwood Neighborhood Project and is located on USGS 7.5 minute quadrangle map indexed as Buffalo NE /2002 DeLorme (Figure 1). Mensch Capital Partners, LLC has retained Earth Dimensions, Inc. ("EDI") to perform a biological resource and wildlife assessment evaluation of the Project Site in response to comments issued by the Town of Amherst Town Board and Planning Department based on its review of the initial version of Draft Generic Environmental Impact Statement ("DGEIS") prepared pursuant to the State Environmental Quality Review Act ("SEQRA").

The comment contained pertaining to potential adverse impacts to biological and wildlife resources contained in the Memorandum issued by the Town's Planning Department dated September 3, 2014 that formed the basis for the Town Board determining that the initial version of the DGEIS was not yet adequate for public review are reproduced below in italics as follows:

### **Biological Resources:**

- DEC Freshwater Wetland BN-01 is 1/2 mile south of the site but not mentioned
- No discussion of unique specimen trees or vegetated areas, hardwood forest and type
- No mention of invasive vegetative species on site their removal and/or only using native species in the future
- No mention of potential future people/vehicle/animal interactions as a result of the project
- No mention of where mammals tend to specifically exist on the site

### Water Resources:

- Conjecture: "Westwood Park...will preserve and enhance the natural resource of the Creek, associated jurisdictional wetlands and adjacent riparian areas" (Section 5, pg 9). "The project will result in the preservation and enhancement of the Ellicott Creek corridor" (Section 5, pg 10).

A comprehensive review of relevant background sources of information pertaining to soils, hydrology and threatened & endangered species in the project area was conducted by EDI prior to conducting a field investigation at the Project Site. Sources of relevant information that were evaluated included the United States Geological Survey ("USGS"), Soil Conservation Service ("SCS"), National Wetland Inventory ("NWI"), NYSDEC Freshwater Wetland and USFWS Endangered Species maps. EDI applied methodology specified by the New York Natural Heritage Program and USFWS in performing threatened and endangered species habitat assessments within the Project Site.

Within the project area, EDI identified ten (10) ecological communities. These consisted of successional old field, successional shrubland, successional northern hardwood, mown lawn (including greens and fairways), mown lawn with trees, shallow emergent marsh, scrub-shrub swamp, hardwood swamp, open water and lower perennial stream communities. During the preliminary review, the U.S Fish and Wildlife Service website identified the Northern long-eared bat (Myotis septentrionalis) as potentially occurring on-site. The Northern long-eared bat is a species proposed to be listed as endangered in the State of New York. This listing is scheduled to become effective in April 2015. It is recommended that potential habitat and species be documented with the USFWS. The New York Natural Heritage Program ("NYNHP") did not identify any state protected species potentially occurring on-site.

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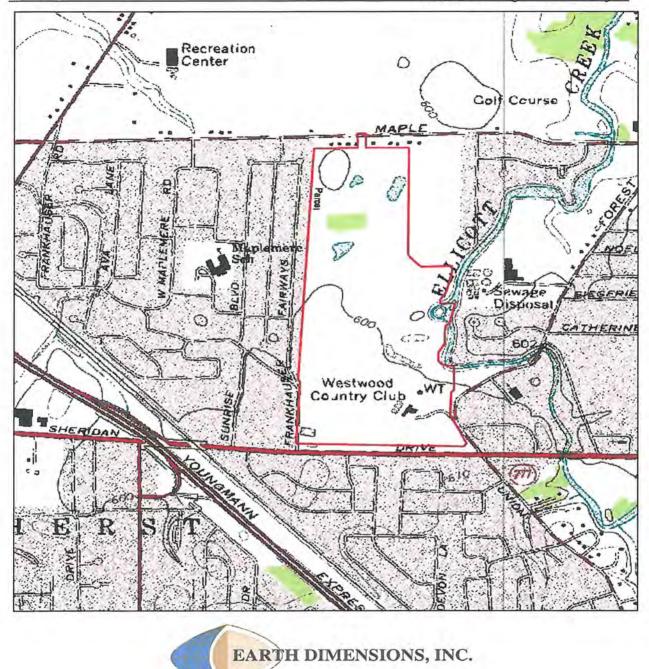


Figure 1: <u>USGS 7.5 Minute Topographical Map</u> Buffalo NE Quadrangle/ 2002 DeLorme

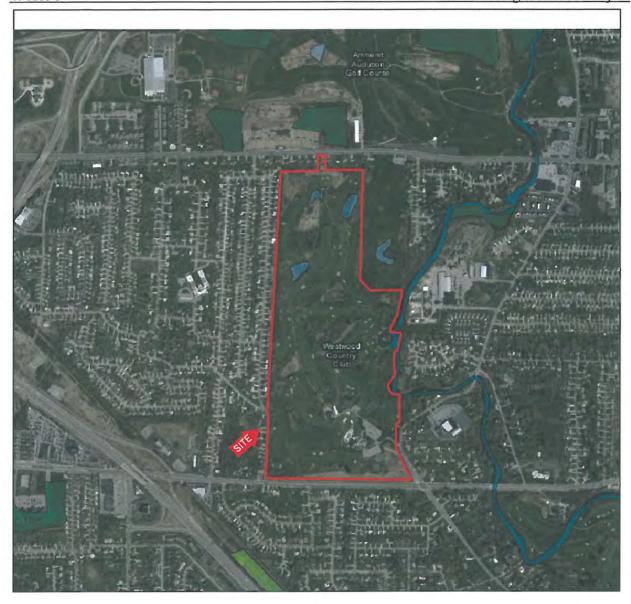
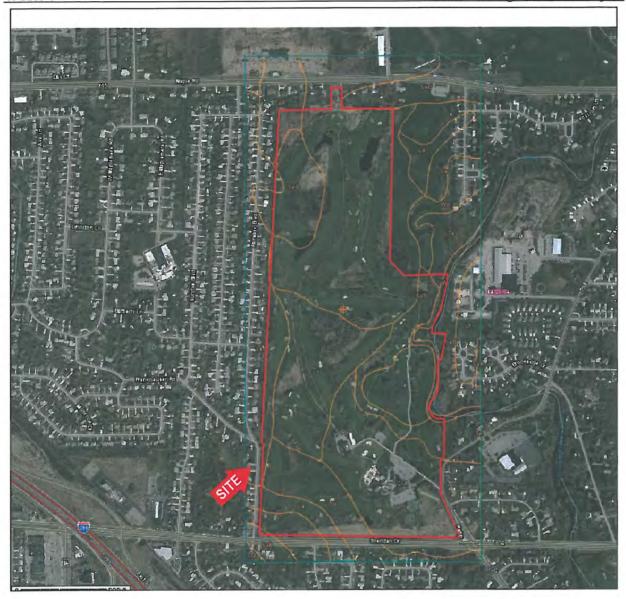




Figure 2: <u>National Wetlands Inventory Map</u> <u>http://wetlandsfws.er.usgs.gov</u>

Site visited 9/29/2014





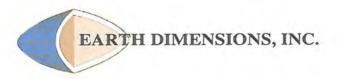


Figure 3: NRCS Erie County Soil Survey Map

http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx Site visited 9/29/2014



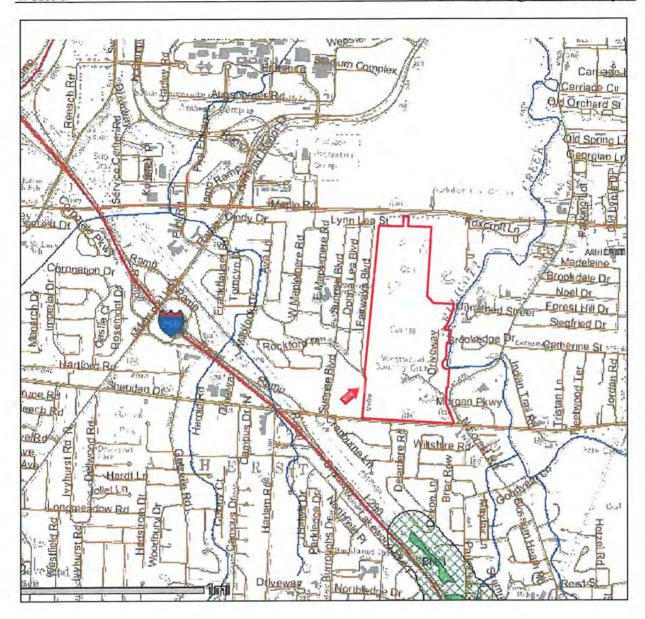




Figure 4: NYSDEC Environmental Resource Mapper
<a href="http://www.dec.ny.gov/imsmaps/ERM/Viewer.htm">http://www.dec.ny.gov/imsmaps/ERM/Viewer.htm</a>
Site visited 9/28/2014

### INTRODUCTION

Mensch Capital Partners, LLC has proposed the development of a mixed use project on the west side of North Forest Road, north of Sheridan Drive and south of Maple Road in the Town of Amherst, County of Erie, State of New York. The Project Site is located on the property of the Westwood Country Club and Golf Course. Mensch Capital Partners, LLC has retained Earth Dimensions, Inc. ("EDI") to complete a site vegetation, biological resource and wildlife assessment investigation at the site in response to comments provided by the Town of Amherst during the Draft Generic Environmental Impact Statement (DGEIS) process.

Mensch Capital Partners is proposing a 171.1± acre mixed use project including mixed residential buildings, office space, hotel, senior living facility and open space. Access to the site is proposed from the north side of Sheridan Drive and the south side of Maple Road. During review of the DGEIS, Town of Amherst Planning Staff issued comments regarding site vegetation status, biological resources and potential wildlife population impacts.

USFWS identified the northern long-eared bat as potentially being present within the project area. The northern long-eared bat (*Myotis septentrionalis*) is a medium-sized bat about 3 to 3.7 inches in size with a wingspan of 9 to 10 inches. Its fur color can be medium to dark brown on the back and tawny to pale-brown on the underside. As its name suggests, this bat is distinguished by its long ears, particularly as compared to other bats in its genus, *Myotis*, which are actually bats noted for their small ears.

The purpose of this report is to present EDI's methods, results and conclusions relative to the comprehensive habitat assessment of the Westwood Neighborhood Project Site that has been conducted.

### SITE DESCRIPTION

The Project Site is comprised of 171.1± acres of land with multiple access points and is outlined in Figure 1. Current site use is a golf course and country club. The site is bound to the south by Sheridan Drive, east by North Forest Road and Ellicott Creek, north by Maple Road and residential homes, and west by Frankhauser Road and residential homes. The natural topography of the Westwood Neighborhood Project is generally flat to gently sloping. The on-site communities consisted of successional old field, successional shrubland, successional northern hardwood, mown lawn (including greens and fairways), mown lawn with trees, shallow emergent marsh, shrub-swamp, hardwood swamp, open water and lower perennial stream communities. The vegetative communities of the investigation area are described according to *Ecological Communities of New York State* (Edinger et al. 2002).

Ellicott Creek borders a portion of the east property boundary. The riparian buffer along Ellicott Creek is minimal, due to adjacent development and associated land uses. Ellicott Creek flows northward along the property boundary, then flows northwesterly for approximately 8 miles before emptying into the Niagara River.

The National Wetland inventory ("NWI") map displays 3 wetlands identified as PUBHx (Palustrine, Unconsolidated Bottom, Permanently Flooded, Excavated) and 1 stream identified as R2UBH (Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded) within the investigation area. The field investigation confirmed the NWI descriptions, with the addition of one (1) PUBHx pond within the southern portion of the investigation area, two (2) shallow emergent marsh communities, one (1) shrub-swamp community and three (3) hardwood swamp communities. All of the identified wetlands and drainages were described in the Wetland Delineation Report prepared by Earth Dimensions, Inc on September 26, 2012.

The majority of the Project Site is an active golf course, with manicured lawn and asphalt paths. Several small woodlots and ponds are scattered throughout the course, as well as some areas that are not mowed on a yearly schedule. Much of the site is identified as mowed lawn (including greens and fairways) or mowed lawn with trees.

### FIELD INVESTIGATION PROCEDURES

The site vegetation, biological resource and wildlife assessment was conducted by an Ecologist from EDI on September 26, 2014. During the investigation, all vegetative communities were thoroughly described, wildlife populations were assessed, invasive plant species were documented and quantified, Ellicott Creek corridor was described and potential threatened and endangered species habitats were assessed. The investigation area was studied for suitable habitat for the northern long-eared bat (Myotis septentrionalis). The investigation also included the search for any unique specimen trees. Transects and foot surveys were used to investigate the 171.1± acre project area.

The timing of the field investigation was appropriate for all components of the requested assessment. Peak vegetative growth and flowering/seeding, peak mammal activity, and the endangered species survey were all within the timeframe.

EDI used USFWS protocol for the Northern long-eared bat survey. Surveys were conducted in order to find possible roost trees within the project area. Summer roost trees for the northern long-eared bat consists of cracks, crevices (snags), or exfoliating bark on trees with a 3 inch or greater diameter breast height ("DBH").

#### RESULTS & CONCLUSIONS

Earth Dimensions, Inc. ("EDI") has completed a site vegetation, biological resource and wildlife assessment at the proposed Westwood Neighborhood Project located in the Town of Amherst, County of Erie, State of New York. The purpose of the comprehensive analysis conducted by our firm is to provide more detailed descriptions addressing comments received by Mensch Capital Partners, LLC ("Project Sponsor") during the coordinated environmental review of the Project pursuant to SEQRA including comments issued by the Town Board based on its review of the initially submitted Draft Generic Environmental Impact Statement ("DGEIS"). Our firm's comprehensive review of the potential adverse impacts to biological and wildlife resources resulting from the project involved an analysis of the existing vegetative communities, wildlife populations and habitats, and invasive plant species in an effort to evaluate the anticipated potential impacts the Project will have on those natural resources.

As currently designed, the Project will result in unavoidable impacts to existing wildlife habitats, wetland areas, and site vegetation. However, the Project Sponsor has deliberately designed the layout of the mixed use project to avoid disturbance of the more mature northern hardwood vegetative communities on the Project Site. In addition, the project layout will sustain large areas of open space and natural vegetative communities totaling approximately 64 acres, which will be permanently protected by the recording of deed restrictions. The Project Sponsor's effort to preserve large areas of permanent open land will provide for permanent areas of suitable wildlife habitat including migratory bird nesting. Furthermore, the increase of wetland areas and open water resources in close proximity to the Ellicott Creek corridor combined with the filing of a deed restriction for the permanent protection of the portion of the project site along the Ellicott Creek corridor will help to preserve and enhance the creek corridor, which is the most significant natural feature of the Project Site.

The analysis conducted by our firm provides the Town of Amherst, the designated lead agency, and involved and interested agencies, with information to allow it to take a hard look at the identified potential adverse impacts to biological and wildlife resources resulting from the Project.

In conclusion, while the Project will result in permanent unavoidable impacts to the vegetation, wildlife, and habitats that exist on the Project Site, these impacts will not be significant and the measures being implemented to minimize impacts to these resources to the maximum extent practicable including permanent protection of evenly distributed open space areas, avoidance of disturbance to mature northern hardwood vegetative communities, and the net increase of open water wetland areas throughout the Project Site represent sufficient mitigation measures for the anticipated adverse impacts as identified and evaluated by our firm in this Report. The comments and EDI's findings are below:

<u>Comment</u>: No discussion of unique specimen trees or vegetated areas, hardwood forest and type.

Response: The vegetative communities within the project area consist of successional old field, successional shrubland, successional northern hardwood, mown lawn (including greens and fairways), mown lawn with trees, shallow emergent marsh, shrub-swamp, hardwood swamp, open water and lower perennial stream communities. The following are community descriptions:

The <u>successional old field</u> community consisted of the following species: white ash (Fraxinus americana), green ash (Fraxinus pennsylvanica), pin oak (Quercus palustris), glossy buckthorn (Frangula alnus), bebb willow (Salix bebbiana), cockspur hawthorn (Crataegus crus-galli), gray dogwood (Cornus racemosa), silky dogwood (Cornus amomum), perennial rye (Lolium perenne), timothy (Phleum pratense), Kentucky bluegrass (Poa pratensis), Virginia strawberry (Fragaria virginiana), common selfheal (Prunella vulgaris), path rush (Juncus tenuis), winter bentgrass (Agrostis hyemale), Fuller's teasel (Dipsacus fullonum), white clover (Trifolium repens), Queen Anne's lace (Daucus carota), chicory (Cichorium intybus), New England aster (Symphyotrichum novae-angliae), Canada thistle (Cirsium arvense), spotted knapweed (Centaurea stoebe), early goldenrod (Solidago juncae), Canada goldenrod (Solidago canadensis), calico aster (Symphyotrichum lateriflorum), smooth white old field aster (Symphyotrichum racemosum), common milkeweed (Asclepias syriaca), tall blazing star (Liatris aspera), curly dock (Rumex crispus) and annual ragweed (Ambrosia artemisiifolia).

The <u>successional shrubland</u> community consisted of the following species: green ash (Fraxinus pennsylvanica), Norway spruce (Picea abies), black walnut (Juglans nigra), glossy buckthorn (Frangula alnus), gray dogwood (Cornus racemosa), apple (Malus sp), pin cherry (Prunus pensylvanica), eastern cottonwood (Populus deltoides), pin oak (Quercus palustris), silver maple (Acer saccharinum), red maple (Acer rubrum), catalpa (Catalpa speciosa), Canada goldenrod (Solidago canadensis), fox sedge (Carex vulpinoidea), Kentucky bluegrass (Poa pratensis), smooth white old field aster (Symphyotrichum racemosum), indian hemp (Apocynum cannabinum), and common milkweed (Asclepias syriaca).

The <u>successional northern hardwood</u> community consisted of the following species: northern red oak (*Quercus rubra*), northern white oak (*Quercus alba*), pin oak (*Quercus palustris*), American elm (*Ulmus americana*), red maple (*Acer rubrum*), sugar maple (*Acer saccharum*), bur oak (*Quercus macrocarpus*), green ash (*Fraxinus pennsylvanica*), quaking aspen (*Populus tremuloides*), eastern cottonwood (*Populus deltoides*), black cherry (*Prunus serotina*), black walnut (*Juglans nigra*), American basswood (*Tilia americana*), box elder (*Acer negundo*), common buckthorn (*Rhamnus eathartica*), hophornbeam (*Ostrya virginiana*), tatarian honeysuckle (*Lonicera tatarica*) and gray dogwood (*Cornus racemosa*).

The mown lawn with trees community consisted of the following species: silver maple (Acer saccharinum), corkscrew willow (Salix matsudana), weeping willow (Salix babylonica), black locust (Rubinia pseudoacacia), blue spruce (Picea pungens), American sycamore (Platanus occidentalis), red maple (Acer rubrum), pin oak (Quercus palustris), white clover (Trifolium repens), common dandelion (Taraxacum officinale), Kentucky blue grass (Poa pratensis) and perennial rye (Lolium perenne).

The <u>shallow emergent marsh</u> community of consisted of the following species: green ash (*Fraxinus pennsylvanica*), red-osier dogwood (*Cornus sericea*), red maple (*Acer rubrum*), calico aster (*Symphyotrichum lateriflorum*), creeping bentgrass (*Agrostis stolonifera*), flat-top goldenrod (*Euthamia graminifolia*), Canada cocklebur (*Xanthium* 

strumarium), Pennsylvania smartweed (Polygonum pennsylvanica), paleyellow iris (Iris pseudacorus), devil's beggarticks (Bidens frondosa), reed canary grass (Phalaris arundinacea), purple loosestrife (Lythrum salicaria), common boneset (Eupatorium perfoliatum), spotted joe pye weed (Eutrochium maculatum), arrowleaf tearthumb (Polygonum sagittatum), broadleaf cattail (Typha latifolia), narrowleaf cattail (Typha angustifolia), rice cutgrass (Leersia oryzoides) and common threesquare (Schoenoplectus pungens).

The <u>shrub-swamp</u> community consisted of the following species: red maple (*Acer rubrum*), silver maple (*Acer saccharinum*), pin oak (*Quercus palustris*), bebb willow (*Salix bebbiana*), green ash (*Fraxinus pennsylvanica*), gray dogwood (*Cornus racemosa*), glossy buckthorn (*Frangula alnus*), New England aster (*Symphyotrichum novea-angliae*), path rush (*Juncus tenuis*), calico aster (*Symphyotrichum lateriflorum*), purple loosestrife (*Lythrum salicaria*), creeping bentgrass (*Agrostis stolonifera*), flat-top goldenrod (*Euthamia graminifolia*), woolgrass (*Scirpus cyperinus*), green bulrush (*Scirpus atrovirens*), soft rush (*Juncus effusus*), blunt broom sedge (*Carex tribuloides*) and Canada wildrye (*Elymus canadensis*).

The <u>hardwood swamp</u> community consisted of the following species: pin oak (*Quercus palustris*), bur oak (*Quercus macrocarpa*), green ash (*Fraxinus pennsylvanica*), red maple (*Acer rubrum*), silver maple (*Acer saccharinum*), eastern cottonwood (*Populus deltoides*), American elm (*Ulmus americana*), spicebush (*Lyndera benzoin*), glossy buckthorn (*Frangula alnus*), calico aster (*Symphyotrichum lateriflorum*), fowl mannagrass (*Glyceria striata*), broom sedge (*Carex scoparia*) and sweet woodreed (*Cinna arundinacea*).

No specific vegetative data was taken in the mown lawn, open water and lower perennial stream communities, however, communities were consistent with descriptions provided by Reschke.

The comment provided to Mensch Capital Partners, LLC specifically mentions unique specimen trees and hardwood forest types. There were no trees identified on site that are

characterized as unique due to size or species. Large northern red oak are present within the successional northern hardwood communities, however, are not larger than average growth. The hardwood forest type "successional northern hardwood" is the most common classification of a hardwood forest in western New York. Trees present within the "mown lawn with trees" community were also identified as average growth for the identified species. Therefore, no unique specimen trees or other unique vegetative communities were identified within the project area.

### Comment: No mention of where animals tend to specifically exist on the site.

Response: During the site investigation, twelve (12) species of mammals, reptiles and amphibians were identified. Those species included eastern gray squirrel (Sciurus carolinensis), eastern chipmunk (Tamias striatus), striped skunk (Mephitis mephitis), raccoon (Procyon lotor), Virginia opossum (Didelphis virginiana), white-tailed deer (Odocoileus virginianus), eastern garter snake (Thamnophis sirtalis), eastern painted turtle (Chrysemys picta), American bullfrog (Lithobates catesbeianus), green frog (Rana clamitans), northern leopard frog (Lithobates pipiens) and American toad (Anaxyrus americanus).

Mammals were identified by observing species individuals on site included eastern gray squirrel, eastern chipmunk and white-tailed deer. These species were all observed only within the successional northern hardwood and hardwood swamp communities, although they likely use the entire golf course when active golfing is not occurring. All other species were documented by sign (tracks, scat, etc) throughout the northern successional hardwood and hardwood swamp communities.

All reptile and amphibian species noted were identified by observing the species individual. The eastern painted turtle, American bullfrog and green frog were observed only within the open water and emergent marsh habitats. The northern leopard frog and American toad were observed in the shallow emergent marsh communities. These species would not be expected to travel outside of these communities. The species identified tend to exist in open water and wetland communities, rarely traveling in upland or open areas for extended periods of time. The wetland and open water communities identified within the project area provide isolated habitats for the identified species.

During the investigation, fourteen (14) species of bird were identified by sound and sight.

Bird species identified included: blue jay (Cyanocitta cristata), house sparrow (Passer domesticus), European starling (Sturnus vulgaris), Canada goose (Branta canadensis), American robin (Turdus migratorius), American goldfinch (Spinus tristis), white-breasted nuthatch (Sitta carolinensis), cooper's hawk (Accipiter cooperii), golden-crowned kinglet (Regulus satrapa), northern flicker (Colaptes auratus), American crow (Corvus brachyrhynchos), black-capped chickadee (Poecile atricapillus), great blue heron (Ardea herodias) and hairy woodpecker (Picoides villosus). The identified bird species were present throughout the site, in different habitats. Other species of birds can be expected to use the site knowing the specific habitats that are present. Waterfowl such as mallard and wood duck would be common during spring and late fall. The mallard would be found in the open water habitat while the wood duck would utilize the open water and hardwood swamp communities. Wood duck feed heavily on pin oak acorns, which was a dominant tree species in the hardwood swamp community. Raptors such as American kestrel and red-tailed hawk can also be expected on the site, primarily feeding within the successional old field communities. Summer breeding song birds such as yellow warbler, northern oriole, scarlet tanager, mourning dove, red-eyed vireo and others can be expected within the successional old field and successional northern hardwood communities.

<u>Comment</u>: No mention of invasive vegetative species on site - their removal and/or only using native species in the future,

Response: During the investigation, many invasive plant species were identified. Species specifically noted and mapped were purple loosestrife, narrowleaf cattail, common buckthorn and glossy buckthorn. Species identified in lesser amounts that are not considered noxious, but are introduced, included reed canary grass, Tatarian honeysuckle, chicory, Canada thistle and spotted knapweed.

All of the successional northern hardwood and successional shrubland communities identified had scattered occurrences of glossy and common buckthorn. Glossy buckthorn is more common in the wetter areas with denser canopy cover, such as the forest sections. Common buckthorn is more common in the shrubland community. Treating and removing both species of buckthorn is straight forward. During the winter months (when the plant is dormant), a

combination of cutting the stem and herbicide application with stump oil is very effective. A follow up foliar (leaf) treatment is recommended for the 2 growing seasons following the initial treatment. Tatarian honeysuckle can be treated the same way as buckthorn species. Typically, these areas do not need to be replanted with native plants because there is already a canopy cover of desired species.

Purple loosestrife and narrowleaf cattail were identified in all shallow emergent marsh communities. The open water communities are surrounded by dense populations of narrowleaf cattail, with scattered purple loosestrife. It is likely that the hybrid cattail (*Typha x glauca*) is present on site due to scattered populations of the native broadleaf cattail. Removal of purple loosestrife and narrowleaf cattail is much less successful than buckthorn species. EDI recommends that invasive species be mowed during construction to prevent seed heads from maturing and potentially spreading fresh seed on areas of exposed soil. The newly developed areas will be seeded at the completion of final grading, which will help in preventing invasive species from growing. EDI also recommends that topsoil with invasive species present not be used during any aspect of development. Topsoil with invasive species should be removed from the site and clean topsoil should be used in its place. Aquatic plugs (sedges, arrowhead, iris, etc) can be used to revegetate the new topsoil Planting native trees that will eventually outgrow and choke out the purple loosestrife and narrowleaf cattail is another option, but the timeframe is not desirable. Any work such as this in a jurisdictional wetland requires a permit from the U.S. Army Corps of Engineers.

Invasive plant species found in successional old field and shrubland communities included reed canary grass, Tatarian honeysuckle, chicory, Canada thistle and spotted knapweed. These species can be managed with a mowing schedule. Brush-hogging the areas will prevent seeding from occurring, and native species can become more dominant. Tatarian honeysuckle can be treated with similar methods as buckthorn; a winter cutting and spraying schedule will prevent new sprouts in the spring. The remaining herbaceous species can be mown as previously suggested, or native shrub species can be planted to eventually out-compete the herbaceous species.

Comment: NYSDEC Freshwater Wetland BN-01 is 1/2 mile south of the site but not

#### mentioned.

Response: NYSDEC Freshwater Wetland BN-01 is identified by NYSDEC as a 10.8 acre Class II invasive species/shallow emergent marsh community. The wetland is dominated by common reed (*Phragmites australis*) and other invasive plant species. The wetland is located between the abandoned Lehigh Valley Railroad and Interstate 290. Any proposed development within the project site will not negatively impact NYSDEC wetland BN-01 because historic water flow is to the northwest and does not intersect Ellicott Creek until approximately 2 miles north of the project area near the University of Buffalo North Campus. Therefore, water flow from within the investigation area cannot enter the NYSDEC wetland. The Lehigh Valley Railroad grade is elevated and prevents any overland water flow from the wetland to the northeast. NYSDEC Wetland BN-01 is part of a dendritic water pattern that is flowing north and northwest, ultimately ending at Ellicott Creek and then Tonawanda Creek.

<u>Comment</u>: "Westwood Park...will preserve and enhance the natural resource of the creek, associated jurisdictional wetlands and adjacent riparian areas." "The project will result in the preservation and enhancement of the Ellicott Creek corridor."

Response: The Preliminary Conceptual Master Plan for the Westwood Neighborhood identifies several stormwater ponds adjacent to the existing Ellicott Creek corridor. The Plan also identifies the riparian area as being vegetated and without any development. It is EDI's professional opinion that the development of the Project Site consistent with the Preliminary Conceptual Master Plan will help to preserve and enhance the Ellicott Creek corridor, which is currently largely devoid of dense vegetation and riparian areas. The large stormwater pond will prevent excess sediment from entering the creek and storm water quantity measures be implemented per the NYSDEC's stringent standards..

<u>Comment</u>: No discussion of potential future people/vehicle/animal interactions as a result of the project.

**Response:** As a result of the project, both negative and positive people/vehicle/wildlife interactions can be expected.

Negative interactions:

Although most of the existing hardwood swamp and successional northern hardwood habitats will be maintained, the development of the Project Site will result in some unavoidable habitat loss. This may cause the deer population to become more dependent on developed areas for food and shelter. Removal of any portions of the wooded areas will displace other small mammals including the gray squirrel, raccoon, opossum and skunk. These animals can interact with people when they are displaced and looking for food and shelter. The displacement can also cause an increase negative vehicle/animal interactions.

The successional old field and successional shrubland communities that are currently present within the site provide habitat for small mammals, as well as a food source for migratory birds. Removal of these habitats, along with the removal of the wooded areas, will reduce on-site habitat for migratory birds.

### Positive interactions:

The Preliminary Conceptual Master Plan identifies approximately 64 acres (38%) of open space within the project area. This will enable displaced small mammals to repopulate, and even provide viewing by residents within the developed areas. If specific species of shrubs and trees are planted in the open space (nut and fruit bearing plants, native wildflowers), they will provide sufficient food for small mammal populations and may even decrease the number of negative interactions between people and animals.

The Preliminary Conceptual Master Plan identifies nine (9) small stormwater ponds, one (1) large stormwater pond and the restored riparian corridor of Ellicott Creek. These ponds will provide sufficient habitat for any displaced turtles and amphibians that currently exist within the site. The restored Ellicott Creek corridor will enhance stream quality, possibly providing recreational opportunities (fishing, wildlife viewing) for nearby residents. An increase in suitable aquatic habitat will likely occur with the proposed development plan.

Although negative interactions between animals and vehicles will be highest during the beginning of project development, it can be expected that as the displaced mammals find new suitable habitat, the negative interactions will decrease over time. During construction, displaced mammals will be actively looking for new habitat, possibly leading to more negative interactions

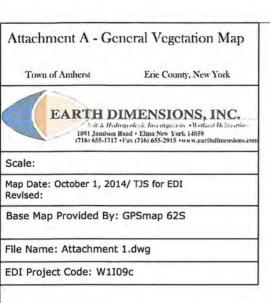
with vehicles. Once the project is completed, the permanent open space will provide stable habitat and food for mammals and should decrease the likelihood of negative vehicle interactions.

The opportunities for wildlife viewing will be increased within the development, specifically with birds and small mammals. Residents will likely attract migratory and resident birds with bird feeders and water baths.

### Westwood Neighborhood Project



# ATTACHMENT A General Vegetation Maps

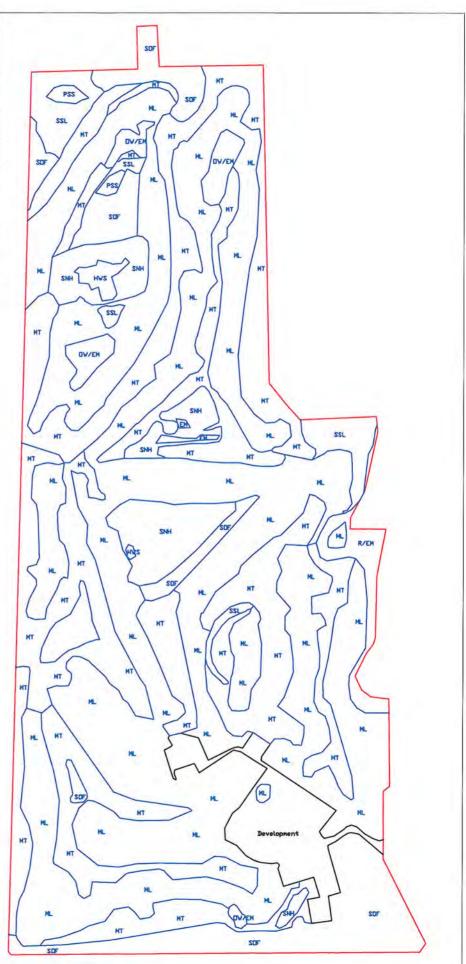


### Westwood Neighborhood

### **LEGEND**



Riverine





Attachment A: General Vegetation Map with aerial photo



### Westwood Neighborhood Project



# ATTACHMENT B Aerial Photograph



Attachment B: Aerial Photograph

http://gis1.erie.gov/GC/ErieCountyNY/default.htm

Site visited 9/20/2014





### Westwood Neighborhood Project



# ATTACHMENT C Site Photographs & Location Map

# Attachment C - Photo Location Map Town of Amherst Erie County, New York EARTH DIMENSIONS, INC. S & Hydrogeologic Investation, - Weels a Deliscotic 1091 Jamison Road - Elma New York 14059 (716) 655-1717 - Fax (716) 655-2915 - www.earthdimensions.com Scale: Map Date: October 1, 2014/ TJS for EDI Base Map Provided By: GPSmap 62S File Name: Attachment 1.dwg EDI Project Code: W1I09c



**Photo 1:** Facing west. Depicts the mown lawn community along the northern property boundary.



**Photo 2:** Facing south. Depicts the manicured lawn of the greens and fairways.



**Photo 3:** Facing north. Depicts the successional old field community in the north portion of the property.



**Photo 4:** Facing north. Depicts the successional old field community adjacent to Maple Road.



**Photo 5:** Facing west. Depicts the shrub-swamp community in the northwest portion of the site.



**Photo 6:** Facing north. Depicts a successional old field community.



**Photo 7:** Facing north. Depicts an open water and shallow emergent marsh community.



**Photo 8:** Facing north. Depicts a hardwood swamp community in the northern portion of the site.



**Photo 9:** Facing west. Depicts a large northern red oak within a successional northern hardwood community.



**Photo 10:** Facing south. Depicts the greens and fairways within the central portion of the site.



**Photo 11:** Facing west. Depicts varying habitats in the central portion of the investigation area.



**Photo 12:** Facing north. Depicts shrub-swamp and successional shrubland communities.



**Photo 13:** Facing south. Depicts an open water and shallow emergent marsh community.



**Photo 14:** Facing southwest. Depicts a successional old field community.



**Photo 15:** Facing east. Depicts a section of the lower perennial stream and associated wetlands.



**Photo 16:** Facing west. Depicts the shallow emergent marsh connected to Ellicott Creek.



**Photo 17:** Facing north. Depicts a shrubland community along the eastern property limits.



**Photo 18:** Facing east. Depicts an old field community along the southern property limits.



**Photo 19:** Facing east. Depicts a linear drainage feature in the southern portion of the site.



**Photo 20:** The most common mammal species within the investigation area; eastern grey squirrel.

### Westwood Neighborhood Project



ATTACHMENT D
Informational References

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# Westwood Neighborhood Project



# ATTACHMENT E Investigation Personnel

#### FIELD INVESTIGATION PERSONNEL

Vegetation Sampling Tom Somerville, Ecologist Earth Dimensions Inc. 1091 Jamison Road Elma, New York 14059 (716) 655-1717

Report Preparation
Tom Somerville, Ecologist
Earth Dimensions Inc.
1091 Jamison Road
Elma, New York 14059
(716) 655-1717

T&E Habitat Assessment Tom Somerville, Ecologist Earth Dimensions Inc. 1091 Jamison Road Elma, New York 14059 (716) 655-1717



A Traditional Neighborhood in the heart of Amherst.

# Phase 2 Environmental Site Assessment Soil/Sediment Sampling Report

November 12, 2014

#### **Prepared For:**

Andrew J. Shaevel, Managing Partner Mensch Capital Partners, LLC 5477 Main Street Williamsville, NY 14221

#### Prepared By:



Mark Colmerauer, Environmental Service Manager 141 Elm Street, Suite 100

Buffalo, NY 14203

Office Phone: 716.847.1630 Fax: 716.847.1454

www.cscos.com



C&S Companies
141 Elm Street
Suite 100
Buffalo, NY 14203
p: (716) 847-1630
f: (716) 847-1454
www.cscos.com

November 12, 2014

Mensch Capital Partners, LLC 5477 Main Street Williamsville, New York 14221

Care of:

Brad Packard Project Manager Ciminelli Real Estate Corporation 350 Essjay Road Williamsville, NY 14221

Re: Soil/Sediment Sampling – Westwood Golf Course, Amherst, New York

Mr. Packard:

At the request of Mensch Capital Partners ("Mensch"), C&S Engineers, Inc. ("C&S") conducted soil and sediment sampling at the Westwood County Club ("Site") in Amherst New York.

#### I. PROJECT DESCRIPTION

Ciminelli Real Estate Corporation is assisting Mensch with the future redevelopment of the golf course. Future plans for the Westwood site included a mixed use neighborhood with residential and retail developments. As part of the review process for the proposed project, an Environmental Impact Statement has been prepared and is undergoing comment and review by several agencies. Subsequently, the Erie County Department of Health ("ECDOH") has recommended the implementation of a soil management plan at the site due to past and current use of pesticides and herbicides on site. Ciminelli has requested that C&S prepare a sampling plan to assess whether a soil management plan is necessary during the future development of the project.

In response to the ECDOH's concern, C&S completed a soil and sediment characterization program at the Site as described below.

#### II. SAMPLING METHODS

A total of fifteen soil samples were collected from the Site on September 29, 2014. Based on the results of that sampling, sediment samples were collected in a subsequent field visit. A soil and sediment sample log is provided as attached Table 1, and attached Figure 1 presents sampling locations.

The soil samples targeted the area surrounding the pesticide/herbicide-fertilizer storage facility behind the maintenance facility; fairways; greens; and areas adjacent to ponds or within drainage swales. Table 2-1 below summarizes the sampling locations.

**Table 2-1: Soil Sample Collection** 

Sample ID	Sample Date	Sample Location	Start Depth	End Depth (inches)
12F-06	9/29/2014	Hole 12 Fairway	0	14
12G-02	9/29/2014	Hole 12 Green	0	14
15G-01	9/29/2014	Hole 15 Green	0	14
16F-06	9/29/2014	Hole 16 Fairway	0	14
2F-02	9/29/2014	Hole 2 Fairway	0	16
3F-03	9/29/2014	Hole 3 Fairway	0	16
4F-04	9/29/2014	Hole 4 Fairway	0	14
6G-04	9/29/2014	Hole 6 Green	0	5
9F-01	9/29/2014	Hole 9 Fairway	0	14
DF-01	9/29/2014	Swale West of 9 Hole	0	14
DF-02	9/29/2014	Adjacent to 3 Hole Pond	0	14
DF-03	9/29/2014	Adjacent to 15 Hole Pond	0	14
DF-04	9/29/2014	Swale South of Ox Bow	0	14
SA-01	9/29/2014	Storage Area	0	14
SA-02	9/29/2014	Storage Area	0	7

The soil samples were collected using a hand push soil probe. Samples were collected within the first 14 inches from the surface. The soil samples were collected by peeling back the turf to expose the underlying soil, with the exception of the samples collected from the greens. Sample 6G-04 was collected from the circular plugs of sod created by an aerating machine. The plugs were approximately 0.25" diameter and five to six inches long. The other samples from the greens were collected from the edge of the green using a hand push soil probe. The resulting soil samples were collected for pesticides, herbicides and arsenic using USEPA Methods 8081, 8151, and 6010, respectively.

The sediment samples were collected using a hand shovel. Sediment from the first 6 inches was collected and placed into jars for analysis of arsenic using USEPA Method 6010.

Sediment was collected from four ponds. Sediment samples were collected using a decontaminated shovel approximately 5 to 8 feet from the edge of the pond. From each pond, a discrete sample was collected from a location adjacent to a green, and composite sample was collected at the discharge point of the pond.

Sample pairs (one discrete and one composite) were also collected from Ellicott Creek. One pair (EC-01 and EC-02) was collected to characterize background sediment concentrations in Ellicott Creek at an upstream location. The other pair (DO-01 and DO-02) was collected from Ellicott Creek immediately downstream of the drainage outfall for the golf course. The ponds at the golf course drain into this single outlet that discharges into Ellicott Creek.

**Table 2-2: Sediment Sample Collection** 

Sample ID	Sample Date	Sample Location	Sample Type	Start Depth	End Depth (inches)
15PD-01	10/23/2014	Hole 15 Pond	Discrete	0	3
15PD-02	10/23/2014	Hole 15 Pond	Composite	0	3
17PD-01	10/23/2014	Hole 17 Pond	Discrete	0	3
17PD-02	10/23/2014	Hole 17 Pond	Composite	0	3
3PD-01	10/23/2014	Hole 3 Pond	Discrete	0	3
3PD-02	10/23/2014	Hole 3 Pond	Composite	0	3
4PD-01	10/23/2014	Hole 4 Pond	Discrete	0	3
4PD-02	10/23/2014	Hole 4 Pond	Composite	0	3
DO-01	10/23/2014	Ellicott Creek (at Drainage Outfall)	Discrete	0	3
DO-02	10/23/2014	Ellicott Creek (at Drainage Outfall)	Composite	0	3
EC-01	10/23/2014	Ellicott Creek (Upstream)	Discrete	0	3
EC-02	10/23/2014	Ellicott Creek (Upstream)	Composite	0	3

#### III. SAMPLING RESULTS

Site soils generally consist of silty clay loam. Soil samples collected from greens contained trace amounts of fine sand. Sediment samples from ponds and drainage features consisted of 2 to 3 inches of black decomposing organic material followed by silty clay. Sediment samples from areas within Ellicott Creek (drainage outfall and upstream locations) consisted of coarse sand and gravel from the creek bottom and silty clay from the creek edge.

#### September 29, 2014 – Soil Sampling

The fifteen soil samples were analyzed for herbicides, pesticides and arsenic. Table 2 presents the analytical results, which are summarized below:

- No herbicides or pesticides were detected in the samples.
- Five of the fifteen soil samples contained concentrations that **exceeded Industrial Use SCO for arsenic**.
- Three samples were collected from greens, and arsenic in all three samples exceeded the New York State Department of Environmental Conservation ("NYSDEC") Industrial Use Soil Cleanup Objective ("SCO").
- The arsenic concentrations in the soil sample collected from the green located at Hole 12 was approximately four times higher (66 mg/kg) than the Industrial Use SCO (16 mg/kg).
- Of the six samples collected from fairways, one sample exceeded for arsenic (3F-03). The soil sample in the maintenance storage area exceeded arsenic for Industrial Use SCO.

#### October 15, 2014 – Sediment Sampling

The twelve sediment samples were analyzed for total arsenic. Table 2 presents the analytical results, which are summarized below:

Mensch Capital Partners, LLC November 12, 2014 Page 4

- Arsenic was detected in all twelve sediment samples.
- All arsenic concentrations were below Unrestricted Use SCO and Protection of Ecological Resources.
- Using the NYSDEC's June 24, 2014 "Screening and Assessment of Contaminated Sediments Guidance," eleven of the concentrations are characterized as Class A, which is defined as sediments that present little to no potential for risk to aquatic life. One sample, the discrete sample collected from the pond on Hole 15, contained arsenic concentrations falling within the Class B classification, indicating that the additional information is needed to determine the potential risk to aquatic life.

#### IV. DISCUSSION AND CONCLUSIONS

Soil

Although pesticides and herbicides were not detected in on-site soils, the characterization program described above identified the presence of arsenic in on-site soils at concentrations above the NYSDEC Industrial Use SCO. The highest detected concentrations were identified in samples collected from greens, although samples collected from a fairway and from the pesticide/herbicide-fertilizer storage facility behind the maintenance facility also contained elevated arsenic concentrations.

Arsenic-containing ("arsenical") pesticides such as monosodium methane arsenate, lead arsenate, sodium arsenate and calcium arsenate were historically used for treating lawns and ornamental turf.<sup>1</sup> From the early 1900s to 1980s, these inorganic arsenical pesticides were widely used for commercial and agricultural applications, although most inorganic arsenical pesticides have been banned from use since that time. Considering that Westwood Country Club has been operating since 1921, it is likely that arsenical pesticides have been used at the Site in the past.

Of note, the highest concentrations of arsenic were identified in the samples collected from the greens, which is consistent with typical golf course maintenance practices. Golf greens are highly managed turfs that require consistent application of pesticides. It is likely that in the history of Westwood Country Club arsenical pesticides were used with applications targeting greens.

C&S obtained Westwood documentation of the pesticide use for the 2014 season. The pesticides currently used were checked using the EPA Pesticide Product Label System.<sup>2</sup> Based on the documentation provided, no arsenic containing pesticides are currently used.

Currently, the entire site is vegetated and the likelihood of exposure to arsenic contaminated soil is low. Arsenic in the soil is a concern if the soil is disturbed, creating exposure routes, or if the material is placed in other areas of the Site or moved off-site during redevelopment.

<sup>&</sup>lt;sup>2</sup> EPA Pesticide Product Label System: <a href="http://iaspub.epa.gov/apex/pesticides/f?p=PPLS:1">http://iaspub.epa.gov/apex/pesticides/f?p=PPLS:1</a>



<sup>&</sup>lt;sup>1</sup> EPA, "Arsenical Pesticides, Man, and the Environment," 1972.

Mensch Capital Partners, LLC November 12, 2014 Page 5

#### **Sediment**

There were no exceedances of the Unrestricted Use Soil Cleanup Objective or Protection of Ecological Resources for arsenic in the sediments in ponds, the outflow to Ellicott Creek or the samples collected at upstream locations within Ellicott Creek. However, a sediment sample collected from one of the ponds contained an arsenic concentration falling within the NYSDEC's Class B sediment category, indicating that additional information is needed to evaluate the potential risk to aquatic life. The remaining sediment sample results fellow within the Class A range, indicating that the sediments that present little to no potential for risk to aquatic life. Additional studies may be necessary to adequately characterize the sediments in the pond proximal to Hole 15.

Thank you for the opportunity to work with you on this project. Should you have any questions regarding this proposal or require additional information, please feel free to contact me at (716) 847-1630.

Sincerely,

C&S ENGINEERS, INC

Mark Colmerauer

Regional Environmental Service Manager

cc: B. Packard, Ciminelli Real Estate Corporation



Date:

1

9/29/2014

# **Westwood Soil and Sediment Sampling**

#### **Description:**

Sample location adjacent to above ground storage tanks.



**Westwood Soil and Sediment Sampling** 

**Exhibit:** 

Date:

2

9/29/2014

#### **Description:**

Sample location adjacent to pesticide storage building.



Date:

3

9/29/2014

#### **Westwood Soil and Sediment Sampling**

#### **Description:**

Soil sample from Hole 9 fairway.



**Exhibit:** 

Date:

4

9/29/2014

**Westwood Soil and Sediment Sampling** 

#### **Description:**

Cut section of fairway for soil sampling.



Date:

5

9/29/2014

#### **Description:**

View of sample location from drainage feature. Drainage ditch between Hole 8 and Hole 9.

#### **Westwood Soil and Sediment Sampling**



**Exhibit:** 

Date:

6

9/29/2014

#### **Description:**

Soil sample location on Hole 12 fairway.

#### **Westwood Soil and Sediment Sampling**



7

Date:

9/29/2014

#### **Westwood Soil and Sediment Sampling**

#### **Description:**

Soil sample location adjacent to Hole 3 pond.



**Exhibit:** 

Date:

8 9/29/2014

#### **Westwood Soil and Sediment Sampling**

#### **Description:**

Soil sample location adjacent to Hole 15 pond.



Date:

9

9/30/2014

#### **Westwood Soil and Sediment Sampling**

#### **Description:**

Soil sample location on Hole 15 green.



**Exhibit:** 

10

**Date:** 9/29/2014

# **Westwood Soil and Sediment Sampling**

#### **Description:**

Soil sample location from drainage feature adjacent to Hole 10 and Hole 17. Drainage ditch to ox bow around Hole 17 green.



Date:

11

10/23/2014

#### **Westwood Soil and Sediment Sampling**

#### **Description:**

Sediment sample from Hole 3 pond adjacent to green.



**Exhibit:** 

Date:

12

10/23/2014

#### **Westwood Soil and Sediment Sampling**

#### **Description:**

Sediment sample location at drainage point on Hole 3 pond.



Date:

13

10/23/2014

# Westwood Soil and Sediment Sampling

#### **Description:**

Sediment sample location adjacent to Hole 4 pond.



**Exhibit:** 

Date:

14

10/23/2014

#### **Westwood Soil and Sediment Sampling**

#### **Description:**

Sediment sample location at drainage point on Hole 4 pond.





# Table 1

# Soil/Sediment Sample Log

roject Name:	roject Name: WESTWOOD COUNTRY CLUB SOIL/SEDIMENT SAMPLING	
ocation:	AMHERST, NEW YORK	
lient:	MENSCH CAPITAL PARTNERS	
)ate:	Monday, October 27, 2014	Confractor:

Sample ID	Sample Date	Collection Time	Analysis	Sample Location	Start Depth	End Depth	Depth Unit	COC No.	Description	Color	Remarks
12F-06	9/29/2014	12:00 PM	8151A, 8081B, 6010 - ARSENIC ONLY	12 HOLE FAIRWAY	0	14	INCH	480-68232	480-68232 SILTY CLAY LOAM	DARK BROWN	MOIST
12G-02	9/29/2014	12:20 PM	8151A, 8081B, 6010 - ARSENIC ONLY	12 HOLE GREEN	0	14	INCH	480-68232	SILTY CLAY LOAM	DARK BROWN	MOIST; TRACE SAND
15G-01	9/29/2014	11:00 AM	8151A, 8081B, 6010 - ARSENIC ONLY	15 HOLE GREEN	0	14	INCH	480-68232	480-68232 SILTY CLAY LOAM	DARK BROWN	TRACE SAND
16F-06	9/29/2014	11:40 AM	8151A, 8081B, 6010 - ARSENIC ONLY	16 HOLE FAIRWAY	0	14	INCH	480-68232	SILTY CLAY LOAM	BLACK/BROWN	WET
2F-02	9/29/2014	9:20 AM	8151A, 8081B, 6010 - ARSENIC ONLY	2 HOLE FAIRWAY	0	16	INCH	480-68232	480-68232 SILTY CLAY LOAM	BROWN	DENSE SITY CLAY
3F-03	9/29/2014	9:50 AM	8151A, 8081B, 6010 - ARSENIC ONLY	3 HOLE FAIRWAY	0	16	INCH	480-68232	SILTY CLAY LOAM	BROWN	
4F-04	9/29/2014	10:30 AM	8151A, 8081B, 6010 - ARSENIC ONLY	4 HOLE FAIRWAY	0	14	INCH	480-68232	480-68232 SILTY CLAY LOAM	DARK BROWN	WET
6G-04	9/29/2014	12:50 PM	8151A, 8081B, 6010 - ARSENIC ONLY	6 HOLE GREEN	0	5	INCH	480-68232	480-68232 SILTY CLAY LOAM	DARK BROWN	TRACE SAND
9F-01	9/29/2014	8:30 AM	8151A, 8081B, 6010 - ARSENIC ONLY	9 HOLE FAIRWAY	0	14	INCH	480-68232	480-68232 SILTY SAND	BROWN	MOIST; 50% SILT
DF-01	9/29/2014	9:00 AM	8151A, 8081B, 6010 - ARSENIC ONLY	SWALE WEST OF 9 HOLE	0	14	INCH	480-68232	480-68232 SILT WITH ORGANIC MATERIAL	BLACK/BROWN	
DF-02	9/29/2014	10:10 AM	8151A, 8081B, 6010 - ARSENIC ONLY	AJACENT TO 3 HOLE POND	0	14	INCH	480-68232	480-68232 SILTY CLAY LOAM	DARK BROWN	DENSE TAN SITY CLAY AT 10"-12"
DF-03	9/29/2014	11:20 AM	8151A, 8081B, 6010 - ARSENIC ONLY	ADJACENT TO 15 HOLE POND	0	14	INCH	480-68232	480-68232   SILTY CLAY	BROWN	DRY 20% SILT
DF-04	9/29/2014	12:30 PM	8151A, 8081B, 6010 - ARSENIC ONLY	SWALE SOUTH OF OX BOW	0	14	INCH	480-68232	480-68232 SILTY CLAY LOAM	DARK BROWN	DRY TRACE FINE SAND
SA-01	9/29/2014	7:30 AM	8151A, 8081B, 6010 - ARSENIC ONLY	STORAGE AREA	0	14	INCH	480-68232	SILTY CLAY LOAM	DARK BROWN	TRACE SILT; 10%-20% CLAY
SA-02	9/29/2014	8:15 AM	8151A, 8081B, 6010 - ARSENIC ONLY	STORAGE AREA	0	7	INCH	480-68232	480-68232 SILTY CLAY LOAM	DARK BROWN	TRACE SILT; 10%-20% CLAY
15PD-01	10/23/2014	11:45 AM	6010 - ARSENIC ONLY	15 HOLE POND	0	3	INCH	480-69993	480-69993 SILTY CLAY WITH ORGANIC MATERIAL	BLACK/BROWN	
15PD-02	10/23/2014	11:35 AM	6010 - ARSENIC ONLY	15 HOLE POND	0	3	INCH	480-69993	480-69993 SILTY CLAY WITH ORGANIC MATERIAL	BLACK/BROWN	
17PD-01	10/23/2014	12:20 PM	6010 - ARSENIC ONLY	17 HOLE POND	0	3	INCH	480-69993	480-69993 SILTY CLAY WITH ORGANIC MATERIAL	BLACK/BROWN	
17PD-02	10/23/2014	12:18 PM	6010 - ARSENIC ONLY	17 HOLE POND	0	3	INCH	480-69993	480-69993 SILTY CLAY WITH ORGANIC MATERIAL	BLACK/BROWN	
3PD-01	10/23/2014	10:50 AM	6010 - ARSENIC ONLY	3 HOLE POND	0	3	INCH	480-69993	480-69993 SILTY CLAY WITH ORGANIC MATERIAL	BLACK/BROWN	
3PD-02	10/23/2014	11:00 AM	6010 - ARSENIC ONLY	3 HOLE POND	0	3	INCH	480-69993 SILT	SILTY CLAY WITH ORGANIC MATERIAL	BLACK/BROWN	
4PD-01	10/23/2014	11:10 AM	6010 - ARSENIC ONLY	4 HOLE POND	0	3	INCH	480-69993	480-69993 SILTY CLAY WITH ORGANIC MATERIAL	BLACK/BROWN	
4PD-02	10/23/2014	11:15 AM	6010 - ARSENIC ONLY	4 HOLE POND	0	3	INCH	480-69993	480-69993 SILTY CLAY WITH ORGANIC MATERIAL	BLACK/BROWN	
DO-01	10/23/2014	12:10 PM	6010 - ARSENIC ONLY	DRAINAGE OUTFALL	0	3	INCH	480-69993	CORASE SAND AND SILTY CLAY	BROWN	
DO-02	10/23/2014	12:00 PM	6010 - ARSENIC ONLY	DRAINAGE OUTFALL	0	3	INCH	480-69993	CORASE SAND AND SILTY CLAY	BROWN	
EC-01	10/23/2014	12:38 PM	6010 - ARSENIC ONLY	ELLICOTT CREEK	0	3	INCH	480-69993	CORASE SAND AND SILTY CLAY	BROWN	
EC-02	10/23/2014	12:40 PM	6010 - ARSENIC ONLY	ELLICOTT CREEK	0	3	INCH	480-69993	CORASE SAND AND SILTY CLAY	BROWN	

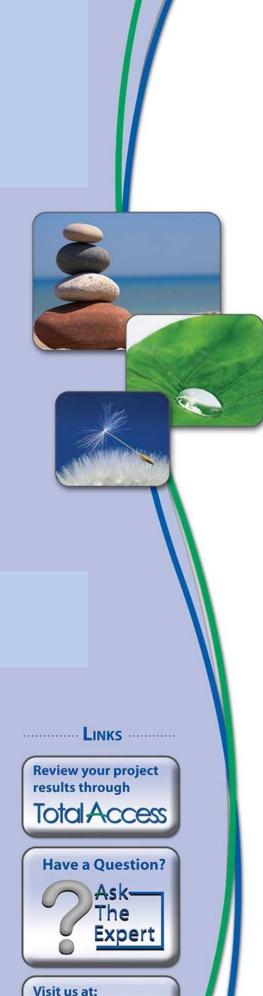
TABLE 2: SOIL & SEDIMENT SAMPLING RESULTS WESTWOOD COUNTRY CLUB AMHERST, NEW YORK

Sample ID	Date	Matrix	Unrestricted*	Residential / Restricted-Residential /   Commercial & Industrial*	Arsenic (mg/kg)	Location
12F-06	9/29/2014	SO	13	16	9.1	Hole 12 Fairway
12G-02	9/29/2014	SO	13	16	66.3	Hole 12 Green
15G-01	9/29/2014	SO	13	16	23.6	Hole 15 Green
16F-05	9/29/2014	SO	13	16	7.4	Hole 16 Fairway
2F-02	9/29/2014	SO	13	16	7.4	Hole 2 Fairway
3F-03	9/29/2014	SO	13	16	18.2	Hole 3 Fairway
4F-04	9/29/2014	SO	13	16	9.9	Hole 4 Fairway
6G-04	9/29/2014	SO	13	16	26.8	Hole 6 Green
9F-01	9/29/2014	SO	13	16	2.4	Hole 9 Fairway
DF-01	9/29/2014	SO	13	16	3.3	Swale West Of 9 Hole
DF-02	9/29/2014	SO	13	16	6.7	Ajacent To 3 Hole Pond
DF-03	9/29/2014	SO	13	16	4.6	Adjacent To 15 Hole Pond
DF-04	9/29/2014	SO	13	16	3.1	Swale South Of Ox Bow
SA-01	9/29/2014	SO	13	16	16.4	Storage Area
SA-02	9/29/2014	SO	13	16	2.2	Storage Area
15PD-01	10/23/2014	SD	13	16	11.3	Hole 15 Pond
15PD-02	10/23/2014	SD	13	16	5.0	Hole 15 Pond
17PD-01	10/23/2014	SD	13	16	2.3	Hole 17 Pond
17PD-02	10/23/2014	SD	13	16	2.1	Hole 17 Pond
3PD-01	10/23/2014	SD	13	16	3.5	Hole 3 Pond
3PD-02	10/23/2014	SD	13	16	5.3	Hole 3 Pond
4PD-01	10/23/2014	SD	13	16	4.4	Hole 4 Pond
4PD-02	10/23/2014	SD	13	16	8.3	Hole 4 Pond
DO-01	10/23/2014	SD	13	16	3.1	Drainage Outfall
DO-02	10/23/2014	SD	13	16	3.2	Drainage Outfall
EC-01	10/23/2014	SD	13	16	1.5	Ellicott Creek
	10/23/2014	SD	13	16	1.3	Ellicott Creek

SO = Soil

SD = Sediment

<sup>\*</sup> Unrestricted Use SCO and Protection of Ecological Resources SCO are both 13 mg/kg. Residential, Restricted Residential, Commercial and Industrial Use SCOs are all 16 mg/kg.



www.testamericainc.com

# <u>TestAmerica</u>

THE LEADER IN ENVIRONMENTAL TESTING

# **ANALYTICAL REPORT**

TestAmerica Laboratories, Inc.

TestAmerica Buffalo 10 Hazelwood Drive Amherst, NY 14228-2298 Tel: (716)691-2600

TestAmerica Job ID: 480-68232-1

Client Project/Site: Westwood Country Club Amherst NY

For:

C&S Engineers, Inc. 141 Elm Street Suite 100 Buffalo, New York 14203

Attn: Cody Martin

Joseph V. Giacomagger

Authorized for release by: 10/7/2014 11:20:56 AM

Joe Giacomazza, Project Management Assistant II joe.giacomazza@testamericainc.com

Designee for

Judy Stone, Senior Project Manager (484)685-0868

judy.stone@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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TestAmerica Job ID: 480-68232-1

Project/Site: Westwood Country Club Amherst NY

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# **Definitions/Glossary**

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

TestAmerica Job ID: 480-68232-1

#### **Qualifiers**

#### Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### **Glossary**

TEF

TEQ

Glossary	
Abbreviation	These commonly used abbreviations may or may not be present in this report.
п	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points

#### **Case Narrative**

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

Job ID: 480-68232-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative 480-68232-1

#### Receipt

The samples were received on 9/29/2014 2:28 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 19.5° C.

#### Except:

COC lists 6G-04, bottles list 6G-03. Logged according to COC

#### GC Semi VOA

Method(s) 8151A: The continuing calibration verification (CCV) associated with batch 205868 recovered above the upper control limit for 2,4-D and Silvex(2,4,5-TP). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: (CCV 480-205868/2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### **Organic Prep**

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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# **Detection Summary**

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

Dil Fac D Metl	
1 🌣 6010	C Total/NA
	- Iount
Lab Sar	mple ID: 480-68232-2
Dil Fac D Metl	hod Prep Type
1 🌣 6010	0C Total/NA
Lab Sar	mple ID: 480-68232-3
Dil Fac D Met	hod Prep Type
1 👨 6010	0C Total/NA
Lab Sar	mple ID: 480-68232-4
Dil Fac D Met	hod Prep Type
1 🛱 6010	0C Total/NA
Lab Sar	mple ID: 480-68232-5
Dil Fac D Metl	hod Prep Type
1 🕏 6010	OC Total/NA
Lab Sar	mple ID: 480-68232-6
Dil Fac D Metl	hod Prep Type
1 👨 6010	0C Total/NA
Lab Sar	mple ID: 480-68232-7
Dil Fac D Met	hod Prep Type
1 🛱 6010	0C Total/NA
Lab Sar	mple ID: 480-68232-8
	hod Prep Type
1 🕏 6010	0C Total/NA
Lab Sar	mple ID: 480-68232-9
Dil Fac D Metl	hod Prep Type
1 🌣 6010	0C Total/NA
Lab Sam	ple ID: 480-68232-10
Dil Fac D Metl	hod Prep Type
1 🌣 6010	0C Total/NA
Lab Sam	ple ID: 480-68232-11
	Dil Fac   D   Mett

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

#### **Detection Summary**

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

Client Sample ID: 16F-05 (Continued) Lab Sample ID: 480-68232-11 Result Qualifier Dil Fac D Method RL MDL Unit Analyte Prep Type 1 🌣 6010C 2.7 Arsenic 7.4 0.55 mg/Kg Total/NA Lab Sample ID: 480-68232-12 Client Sample ID: 12F-06 Dil Fac D Method Analyte Result Qualifier RLMDL Unit 1 ≅ 6010C Arsenic 9.1 2.5 0.50 mg/Kg Total/NA Client Sample ID: 12G-02 Lab Sample ID: 480-68232-13 Analyte Result Qualifier RL MDL Unit Dil Fac D Method Prep Type Arsenic 66.3 2.3 0.46 mg/Kg 1 ≅ 6010C Total/NA Client Sample ID: DF-04 Lab Sample ID: 480-68232-14 RL MDL Unit Dil Fac D Method Analyte Result Qualifier Prep Type 1 🌣 6010C Arsenic 3.1 2.8 0.57 mg/Kg Total/NA Client Sample ID: 6G-04 Lab Sample ID: 480-68232-15 Result Qualifier RLMDL Unit Dil Fac D Method Analyte Prep Type 1 🌣 Arsenic 26.8 3.1 0.62 mg/Kg 6010C Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

Lab Sample ID: 480-68232-1

Client Sample ID: SA-01 Date Collected: 09/29/14 07:30 **Matrix: Solid** Date Received: 09/29/14 14:28 Percent Solids: 83.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		8.1	1.6	ug/Kg	<u> </u>	10/06/14 01:56	10/06/14 09:06	1
4,4'-DDE	ND		8.1	1.6	ug/Kg	≎	10/06/14 01:56	10/06/14 09:06	1
4,4'-DDT	ND		8.1	1.9	ug/Kg	≎	10/06/14 01:56	10/06/14 09:06	1
Aldrin	ND		8.1	1.7	ug/Kg	\$	10/06/14 01:56	10/06/14 09:06	1
alpha-BHC	ND		8.1	1.8	ug/Kg	≎	10/06/14 01:56	10/06/14 09:06	1
alpha-Chlordane	ND		8.1	1.6	ug/Kg	≎	10/06/14 01:56	10/06/14 09:06	1
beta-BHC	ND		8.1	1.9	ug/Kg	\$	10/06/14 01:56	10/06/14 09:06	1
delta-BHC	ND		8.1	1.4	ug/Kg	≎	10/06/14 01:56	10/06/14 09:06	1
Dieldrin	ND		8.1	1.4	ug/Kg	≎	10/06/14 01:56	10/06/14 09:06	1
Endosulfan I	ND		8.1	1.8	ug/Kg		10/06/14 01:56	10/06/14 09:06	1
Endosulfan II	ND		8.1	1.6	ug/Kg	≎	10/06/14 01:56	10/06/14 09:06	1
Endosulfan sulfate	ND		8.1	1.6	ug/Kg	≎	10/06/14 01:56	10/06/14 09:06	1
Endrin	ND		8.1	1.9	ug/Kg	\$	10/06/14 01:56	10/06/14 09:06	1
Endrin aldehyde	ND		8.1	1.2	ug/Kg	≎	10/06/14 01:56	10/06/14 09:06	1
Endrin ketone	ND		8.1	1.6	ug/Kg	≎	10/06/14 01:56	10/06/14 09:06	1
gamma-BHC (Lindane)	ND		8.1	1.4	ug/Kg	\$	10/06/14 01:56	10/06/14 09:06	1
gamma-Chlordane	ND		8.1	1.6	ug/Kg	≎	10/06/14 01:56	10/06/14 09:06	1
Heptachlor	ND		8.1	1.9	ug/Kg	≎	10/06/14 01:56	10/06/14 09:06	1
Heptachlor epoxide	ND		8.1	1.8	ug/Kg	*	10/06/14 01:56	10/06/14 09:06	1
Methoxychlor	ND		8.1	1.9	ug/Kg	≎	10/06/14 01:56	10/06/14 09:06	1
Toxaphene	ND		81	22	ug/Kg	☼	10/06/14 01:56	10/06/14 09:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	96		76 - 149				10/06/14 01:56	10/06/14 09:06	1
DCB Decachlorobiphenyl	101		76 - 149				10/06/14 01:56	10/06/14 09:06	1
Tetrachloro-m-xylene	93		72 - 136				10/06/14 01:56	10/06/14 09:06	1
Tetrachloro-m-vylene	87		72 136				10/06/14 01:56	10/06/14 09:06	1

Tetrachloro-m-xylene	87		72 - 136				10/06/14 01:56	10/06/14 09:06	1
Method: 8151A - Herbicides (GC)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-T	ND			6.3	ug/Kg	<u> </u>	10/01/14 07:44	10/03/14 14:42	1
Silvex (2,4,5-TP)	ND		20	7.0	ug/Kg	≎	10/01/14 07:44	10/03/14 14:42	1
2,4-D	ND		20	12	ug/Kg	≎	10/01/14 07:44	10/03/14 14:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	75		39 - 120				10/01/14 07:44	10/03/14 14:42	1
Method: 6010C - Metals (ICP)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	16.4		2.4	0.49	mg/Kg	<u></u>	09/30/14 14:17	10/02/14 00:19	1

Client Sample ID: SA-02 Lab Sample ID: 480-68232-2

Date Collected: 09/29/14 08:15 Matrix: Solid Date Received: 09/29/14 14:28 Percent Solids: 76.0

Method: 8081B - Organochlorine Pesticides (GC)									
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
4,4'-DDD	ND ND	8.8	1.7	ug/Kg	<u> </u>	10/06/14 01:56	10/06/14 09:17	1	
4,4'-DDE	ND	8.8	1.7	ug/Kg	≎	10/06/14 01:56	10/06/14 09:17	1	
4,4'-DDT	ND	8.8	2.1	ug/Kg	₽	10/06/14 01:56	10/06/14 09:17	1	

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Client: C&S Engineers, Inc.

**Client Sample ID: SA-02** 

Date Collected: 09/29/14 08:15

Date Received: 09/29/14 14:28

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

Lab Sample ID: 480-68232-2

Matrix: Solid

Percent Solids: 76.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		8.8	1.8	ug/Kg	<u> </u>	10/06/14 01:56	10/06/14 09:17	1
alpha-BHC	ND		8.8	2.0	ug/Kg	\$	10/06/14 01:56	10/06/14 09:17	1
alpha-Chlordane	ND		8.8	1.7	ug/Kg	≎	10/06/14 01:56	10/06/14 09:17	1
beta-BHC	ND		8.8	2.1	ug/Kg	*	10/06/14 01:56	10/06/14 09:17	1
delta-BHC	ND		8.8	1.6	ug/Kg	≎	10/06/14 01:56	10/06/14 09:17	1
Dieldrin	ND		8.8	1.6	ug/Kg	≎	10/06/14 01:56	10/06/14 09:17	1
Endosulfan I	ND		8.8	2.0	ug/Kg	፨	10/06/14 01:56	10/06/14 09:17	1
Endosulfan II	ND		8.8	1.7	ug/Kg	≎	10/06/14 01:56	10/06/14 09:17	1
Endosulfan sulfate	ND		8.8	1.7	ug/Kg	≎	10/06/14 01:56	10/06/14 09:17	1
Endrin	ND		8.8	2.1	ug/Kg	❖	10/06/14 01:56	10/06/14 09:17	1
Endrin aldehyde	ND		8.8	1.3	ug/Kg	≎	10/06/14 01:56	10/06/14 09:17	1
Endrin ketone	ND		8.8	1.7	ug/Kg	≎	10/06/14 01:56	10/06/14 09:17	1
gamma-BHC (Lindane)	ND		8.8	1.6	ug/Kg	❖	10/06/14 01:56	10/06/14 09:17	1
gamma-Chlordane	ND		8.8	1.7	ug/Kg	≎	10/06/14 01:56	10/06/14 09:17	1
Heptachlor	ND		8.8	2.1	ug/Kg	≎	10/06/14 01:56	10/06/14 09:17	1
Heptachlor epoxide	ND		8.8	2.0	ug/Kg	☼	10/06/14 01:56	10/06/14 09:17	1
Methoxychlor	ND		8.8	2.1	ug/Kg	☼	10/06/14 01:56	10/06/14 09:17	1
Toxaphene	ND		88	24	ug/Kg	≎	10/06/14 01:56	10/06/14 09:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	100		76 - 149				10/06/14 01:56	10/06/14 09:17	1
DCB Decachlorobiphenyl	107		76 - 149				10/06/14 01:56	10/06/14 09:17	1
Tetrachloro-m-xylene	98		72 - 136				10/06/14 01:56	10/06/14 09:17	1
Tetrachloro-m-xylene	90		72 - 136				10/06/14 01:56	10/06/14 09:17	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-T	ND		21	6.8	ug/Kg	<u></u> ∓	10/01/14 07:44	10/03/14 15:11	1
Silvex (2,4,5-TP)	ND		21	7.7	ug/Kg	≎	10/01/14 07:44	10/03/14 15:11	1
2,4-D	ND		21	13	ug/Kg	≎	10/01/14 07:44	10/03/14 15:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	78		39 - 120				10/01/14 07:44	10/03/14 15:11	1
Method: 6010C - Metals (ICP)									
Analyte	Posult	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.2 J	2.8	0.55 mg/Kg	♡	09/30/14 14:17	10/02/14 00:22	1
Client Sample ID: 9F-01					Lab Sam	ple ID: 480-6	8232-3

Date Collected: 09/29/14 08:30 **Matrix: Solid** Date Received: 09/29/14 14:28 Percent Solids: 86.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		7.7	1.5	ug/Kg	<del></del>	10/06/14 01:56	10/06/14 09:28	1
4,4'-DDE	ND		7.7	1.5	ug/Kg	≎	10/06/14 01:56	10/06/14 09:28	1
4,4'-DDT	ND		7.7	1.8	ug/Kg	≎	10/06/14 01:56	10/06/14 09:28	1
Aldrin	ND		7.7	1.6	ug/Kg	\$	10/06/14 01:56	10/06/14 09:28	1
alpha-BHC	ND		7.7	1.7	ug/Kg	≎	10/06/14 01:56	10/06/14 09:28	1
alpha-Chlordane	ND		7.7	1.5	ug/Kg	≎	10/06/14 01:56	10/06/14 09:28	1
beta-BHC	ND		7.7	1.8	ug/Kg	\$	10/06/14 01:56	10/06/14 09:28	1

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Client: C&S Engineers, Inc.

Client Sample ID: 9F-01

Date Collected: 09/29/14 08:30

Date Received: 09/29/14 14:28

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

Lab Sample ID: 480-68232-3

Matrix: Solid

Percent Solids: 86.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
delta-BHC	ND		7.7	1.4	ug/Kg	<del></del>	10/06/14 01:56	10/06/14 09:28	1
Dieldrin	ND		7.7	1.4	ug/Kg	≎	10/06/14 01:56	10/06/14 09:28	1
Endosulfan I	ND		7.7	1.7	ug/Kg	\$	10/06/14 01:56	10/06/14 09:28	1
Endosulfan II	ND		7.7	1.5	ug/Kg	≎	10/06/14 01:56	10/06/14 09:28	1
Endosulfan sulfate	ND		7.7	1.5	ug/Kg	≎	10/06/14 01:56	10/06/14 09:28	1
Endrin	ND		7.7	1.8	ug/Kg	≎	10/06/14 01:56	10/06/14 09:28	1
Endrin aldehyde	ND		7.7	1.2	ug/Kg	☆	10/06/14 01:56	10/06/14 09:28	1
Endrin ketone	ND		7.7	1.5	ug/Kg	≎	10/06/14 01:56	10/06/14 09:28	1
gamma-BHC (Lindane)	ND		7.7	1.4	ug/Kg		10/06/14 01:56	10/06/14 09:28	1
gamma-Chlordane	ND		7.7	1.5	ug/Kg	≎	10/06/14 01:56	10/06/14 09:28	1
Heptachlor	ND		7.7	1.8	ug/Kg	≎	10/06/14 01:56	10/06/14 09:28	1
Heptachlor epoxide	ND		7.7	1.7	ug/Kg		10/06/14 01:56	10/06/14 09:28	1
Methoxychlor	ND		7.7	1.8	ug/Kg	≎	10/06/14 01:56	10/06/14 09:28	1
Toxaphene	ND		77	21	ug/Kg	≎	10/06/14 01:56	10/06/14 09:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	98		76 - 149				10/06/14 01:56	10/06/14 09:28	1
DCB Decachlorobiphenyl	103		76 - 149				10/06/14 01:56	10/06/14 09:28	1
Tetrachloro-m-xylene	95		72 - 136				10/06/14 01:56	10/06/14 09:28	1
Tetrachloro-m-xylene	89		72 - 136				10/06/14 01:56	10/06/14 09:28	1

Method: 8151A - Herbicides (GC) Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-T	ND		19	6.1	ug/Kg	<u></u>	10/01/14 07:44	10/03/14 15:41	1
Silvex (2,4,5-TP)	ND		19	6.8	ug/Kg	≎	10/01/14 07:44	10/03/14 15:41	1
2,4-D	ND		19	12	ug/Kg	₩	10/01/14 07:44	10/03/14 15:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
- and guite	,	-,	Liiiito				i repareu	Allalyzeu	DII Fac
2,4-Dichlorophenylacetic acid	69	4	39 - 120				10/01/14 07:44	10/03/14 15:41	1
2,4-Dichlorophenylacetic acid	- <u> </u>								1
	69	Qualifier		MDL	Unit	D			Dil Fac

 Client Sample ID: DF-01
 Lab Sample ID: 480-68232-4

 Date Collected: 09/29/14 09:00
 Matrix: Solid

 Date Received: 09/29/14 14:28
 Percent Solids: 78.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		8.6	1.7	ug/Kg	₩	10/06/14 01:56	10/06/14 09:40	1
4,4'-DDE	ND		8.6	1.7	ug/Kg	≎	10/06/14 01:56	10/06/14 09:40	1
4,4'-DDT	ND		8.6	2.0	ug/Kg	≎	10/06/14 01:56	10/06/14 09:40	1
Aldrin	ND		8.6	1.8	ug/Kg	\$	10/06/14 01:56	10/06/14 09:40	1
alpha-BHC	ND		8.6	1.9	ug/Kg	≎	10/06/14 01:56	10/06/14 09:40	1
alpha-Chlordane	ND		8.6	1.7	ug/Kg	≎	10/06/14 01:56	10/06/14 09:40	1
beta-BHC	ND		8.6	2.0	ug/Kg	≎	10/06/14 01:56	10/06/14 09:40	1
delta-BHC	ND		8.6	1.5	ug/Kg	≎	10/06/14 01:56	10/06/14 09:40	1
Dieldrin	ND		8.6	1.5	ug/Kg	≎	10/06/14 01:56	10/06/14 09:40	1
Endosulfan I	ND		8.6	1.9	ug/Kg	≎	10/06/14 01:56	10/06/14 09:40	1
Endosulfan II	ND		8.6	1.7	ug/Kg	≎	10/06/14 01:56	10/06/14 09:40	1

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Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

**Client Sample ID: DF-01** Lab Sample ID: 480-68232-4

Date Collected: 09/29/14 09:00 Matrix: Solid Date Received: 09/29/14 14:28 Percent Solids: 78.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endosulfan sulfate	ND		8.6	1.7	ug/Kg	<del></del>	10/06/14 01:56	10/06/14 09:40	1
Endrin	ND		8.6	2.0	ug/Kg	≎	10/06/14 01:56	10/06/14 09:40	1
Endrin aldehyde	ND		8.6	1.3	ug/Kg	≎	10/06/14 01:56	10/06/14 09:40	1
Endrin ketone	ND		8.6	1.7	ug/Kg	≎	10/06/14 01:56	10/06/14 09:40	1
gamma-BHC (Lindane)	ND		8.6	1.5	ug/Kg	≎	10/06/14 01:56	10/06/14 09:40	1
gamma-Chlordane	ND		8.6	1.7	ug/Kg	≎	10/06/14 01:56	10/06/14 09:40	1
Heptachlor	ND		8.6	2.0	ug/Kg	≎	10/06/14 01:56	10/06/14 09:40	1
Heptachlor epoxide	ND		8.6	1.9	ug/Kg	\$	10/06/14 01:56	10/06/14 09:40	1
Methoxychlor	ND		8.6	2.0	ug/Kg	≎	10/06/14 01:56	10/06/14 09:40	1
Toxaphene	ND		86	23	ug/Kg	≎	10/06/14 01:56	10/06/14 09:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	102		76 - 149				10/06/14 01:56	10/06/14 09:40	1
DCB Decachlorobiphenyl	109		76 - 149				10/06/14 01:56	10/06/14 09:40	1
Tetrachloro-m-xylene	99		72 - 136				10/06/14 01:56	10/06/14 09:40	1
Tetrachloro-m-xylene	94		72 - 136				10/06/14 01:56	10/06/14 09:40	1
Method: 8151A - Herbicides (GC)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2 4 5-T	ND		21	6.7	ua/Ka	— <del>⊽</del>	10/01/14 07:44	10/03/14 16:11	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-T	ND		21	6.7	ug/Kg	☆	10/01/14 07:44	10/03/14 16:11	1
Silvex (2,4,5-TP)	ND		21	7.6	ug/Kg	≎	10/01/14 07:44	10/03/14 16:11	1
2,4-D	ND		21	13	ug/Kg	≎	10/01/14 07:44	10/03/14 16:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	77		39 - 120				10/01/14 07:44	10/03/14 16:11	1

Method: 6010C - Metals (ICP)							
Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	33	27	0.54 mg/Kg	<u></u>	09/30/14 14:17	10/02/14 00:27	1

Client Sample ID: 2F-02 Lab Sample ID: 480-68232-5 Date Collected: 09/29/14 09:30 Matrix: Solid Date Received: 09/29/14 14:28 Percent Solids: 74.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		9.0	1.7	ug/Kg	<u> </u>	10/06/14 01:56	10/06/14 09:51	1
4,4'-DDE	ND		9.0	1.7	ug/Kg	≎	10/06/14 01:56	10/06/14 09:51	1
4,4'-DDT	ND		9.0	2.1	ug/Kg	≎	10/06/14 01:56	10/06/14 09:51	1
Aldrin	ND		9.0	1.9	ug/Kg	\$	10/06/14 01:56	10/06/14 09:51	1
alpha-BHC	ND		9.0	2.0	ug/Kg	≎	10/06/14 01:56	10/06/14 09:51	1
alpha-Chlordane	ND		9.0	1.7	ug/Kg	≎	10/06/14 01:56	10/06/14 09:51	1
beta-BHC	ND		9.0	2.1	ug/Kg	\$	10/06/14 01:56	10/06/14 09:51	1
delta-BHC	ND		9.0	1.6	ug/Kg	≎	10/06/14 01:56	10/06/14 09:51	1
Dieldrin	ND		9.0	1.6	ug/Kg	≎	10/06/14 01:56	10/06/14 09:51	1
Endosulfan I	ND		9.0	2.0	ug/Kg	\$	10/06/14 01:56	10/06/14 09:51	1
Endosulfan II	ND		9.0	1.7	ug/Kg	≎	10/06/14 01:56	10/06/14 09:51	1
Endosulfan sulfate	ND		9.0	1.7	ug/Kg	≎	10/06/14 01:56	10/06/14 09:51	1
Endrin	ND		9.0	2.1	ug/Kg	\$	10/06/14 01:56	10/06/14 09:51	1
Endrin aldehyde	ND		9.0	1.3	ug/Kg	≎	10/06/14 01:56	10/06/14 09:51	1
Endrin ketone	ND		9.0	1.7	ug/Kg	≎	10/06/14 01:56	10/06/14 09:51	1

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Client: C&S Engineers, Inc.

**Arsenic** 

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

Client Sample ID: 2F-02 Lab Sample ID: 480-68232-5 Date Collected: 09/29/14 09:30 Matrix: Solid

Date Received: 09/29/14 14:28 Percent Solids: 74.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
gamma-BHC (Lindane)	ND		9.0	1.6	ug/Kg	<u> </u>	10/06/14 01:56	10/06/14 09:51	1
gamma-Chlordane	ND		9.0	1.7	ug/Kg	≎	10/06/14 01:56	10/06/14 09:51	1
Heptachlor	ND		9.0	2.1	ug/Kg	≎	10/06/14 01:56	10/06/14 09:51	1
Heptachlor epoxide	ND		9.0	2.0	ug/Kg		10/06/14 01:56	10/06/14 09:51	1
Methoxychlor	ND		9.0	2.1	ug/Kg	≎	10/06/14 01:56	10/06/14 09:51	1
Toxaphene	ND		90	24	ug/Kg	₽	10/06/14 01:56	10/06/14 09:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	104		76 - 149				10/06/14 01:56	10/06/14 09:51	1
DCB Decachlorobiphenyl	112		76 - 149				10/06/14 01:56	10/06/14 09:51	1
Tetrachloro-m-xylene	102		72 - 136				10/06/14 01:56	10/06/14 09:51	1
Tetrachloro-m-xylene	95		72 - 136				10/06/14 01:56	10/06/14 09:51	1
Method: 8151A - Herbicides (GC)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-T	ND			7.1	ug/Kg	₩	10/01/14 07:44	10/03/14 16:40	1
Silvex (2,4,5-TP)	ND		22	8.0	ug/Kg	≎	10/01/14 07:44	10/03/14 16:40	1
2,4-D	ND		22	14	ug/Kg	\$	10/01/14 07:44	10/03/14 16:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	82		39 - 120				10/01/14 07:44	10/03/14 16:40	1
Method: 6010C - Metals (ICP)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

Client Sample ID: 3F-03 Lab Sample ID: 480-68232-6

0.54 mg/Kg

Date Collected: 09/29/14 09:50 **Matrix: Solid** Date Received: 09/29/14 14:28 Percent Solids: 79.5

7.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		8.4	1.6	ug/Kg	<del></del>	10/06/14 01:56	10/06/14 10:03	1
4,4'-DDE	ND		8.4	1.6	ug/Kg	≎	10/06/14 01:56	10/06/14 10:03	1
4,4'-DDT	ND		8.4	2.0	ug/Kg	≎	10/06/14 01:56	10/06/14 10:03	1
Aldrin	ND		8.4	1.8	ug/Kg	≎	10/06/14 01:56	10/06/14 10:03	1
alpha-BHC	ND		8.4	1.9	ug/Kg	≎	10/06/14 01:56	10/06/14 10:03	1
alpha-Chlordane	ND		8.4	1.6	ug/Kg	☆	10/06/14 01:56	10/06/14 10:03	1
beta-BHC	ND		8.4	2.0	ug/Kg	♦	10/06/14 01:56	10/06/14 10:03	1
delta-BHC	ND		8.4	1.5	ug/Kg	≎	10/06/14 01:56	10/06/14 10:03	1
Dieldrin	ND		8.4	1.5	ug/Kg	≎	10/06/14 01:56	10/06/14 10:03	1
Endosulfan I	ND		8.4	1.9	ug/Kg	☆	10/06/14 01:56	10/06/14 10:03	1
Endosulfan II	ND		8.4	1.6	ug/Kg	≎	10/06/14 01:56	10/06/14 10:03	1
Endosulfan sulfate	ND		8.4	1.6	ug/Kg	≎	10/06/14 01:56	10/06/14 10:03	1
Endrin	ND		8.4	2.0	ug/Kg	☆	10/06/14 01:56	10/06/14 10:03	1
Endrin aldehyde	ND		8.4	1.3	ug/Kg	☆	10/06/14 01:56	10/06/14 10:03	1
Endrin ketone	ND		8.4	1.6	ug/Kg	≎	10/06/14 01:56	10/06/14 10:03	1
gamma-BHC (Lindane)	ND		8.4	1.5	ug/Kg		10/06/14 01:56	10/06/14 10:03	1
gamma-Chlordane	ND		8.4	1.6	ug/Kg	≎	10/06/14 01:56	10/06/14 10:03	1
Heptachlor	ND		8.4	2.0	ug/Kg	₩	10/06/14 01:56	10/06/14 10:03	1
Heptachlor epoxide	ND		8.4	1.9	ug/Kg		10/06/14 01:56	10/06/14 10:03	1

TestAmerica Buffalo

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10/02/14 00:30

09/30/14 14:17

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

**Client Sample ID: 3F-03** 

Lab Sample ID: 480-68232-6 Date Collected: 09/29/14 09:50 Matrix: Solid Date Received: 09/29/14 14:28

Percent Solids: 79.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methoxychlor	ND		8.4	2.0	ug/Kg	₩	10/06/14 01:56	10/06/14 10:03	1
Toxaphene	ND		84	23	ug/Kg	*	10/06/14 01:56	10/06/14 10:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	108		76 - 149				10/06/14 01:56	10/06/14 10:03	1
DCB Decachlorobiphenyl	113		76 - 149				10/06/14 01:56	10/06/14 10:03	1
Tetrachloro-m-xylene	102		72 - 136				10/06/14 01:56	10/06/14 10:03	1
Tetrachloro-m-xylene	97		72 - 136				10/06/14 01:56	10/06/14 10:03	1
Method: 8151A - Herbicides (GC)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-T	ND ND	21	6.6	ug/Kg	<u></u>	10/01/14 07:44	10/03/14 17:10	1
Silvex (2,4,5-TP)	ND	21	7.4	ug/Kg	≎	10/01/14 07:44	10/03/14 17:10	1
2,4-D	ND	21	13	ug/Kg	≎	10/01/14 07:44	10/03/14 17:10	1
Surrogate	%Recovery Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	84	39 - 120				10/01/14 07:44	10/03/14 17:10	1

Method: 6010C - Metals (ICP)								
Analyte	Result Qualif	ier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	18.2	2.7	0.54	ma/Ka	☼	09/30/14 14:17	10/02/14 00:33	

Client Sample ID: DF-02 Lab Sample ID: 480-68232-7

Date Collected: 09/29/14 10:10 Date Received: 09/29/14 14:28

**Matrix: Solid** Percent Solids: 69.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		9.7	1.9	ug/Kg	₩	10/06/14 01:56	10/06/14 10:14	1
4,4'-DDE	ND		9.7	1.9	ug/Kg	≎	10/06/14 01:56	10/06/14 10:14	1
4,4'-DDT	ND		9.7	2.3	ug/Kg	₩	10/06/14 01:56	10/06/14 10:14	1
Aldrin	ND		9.7	2.0	ug/Kg	≎	10/06/14 01:56	10/06/14 10:14	1
alpha-BHC	ND		9.7	2.2	ug/Kg	≎	10/06/14 01:56	10/06/14 10:14	1
alpha-Chlordane	ND		9.7	1.9	ug/Kg	≎	10/06/14 01:56	10/06/14 10:14	1
beta-BHC	ND		9.7	2.3	ug/Kg	*	10/06/14 01:56	10/06/14 10:14	1
delta-BHC	ND		9.7	1.7	ug/Kg	≎	10/06/14 01:56	10/06/14 10:14	1
Dieldrin	ND		9.7	1.7	ug/Kg	≎	10/06/14 01:56	10/06/14 10:14	1
Endosulfan I	ND		9.7	2.2	ug/Kg	*	10/06/14 01:56	10/06/14 10:14	1
Endosulfan II	ND		9.7	1.9	ug/Kg	≎	10/06/14 01:56	10/06/14 10:14	1
Endosulfan sulfate	ND		9.7	1.9	ug/Kg	≎	10/06/14 01:56	10/06/14 10:14	1
Endrin	ND		9.7	2.3	ug/Kg	≎	10/06/14 01:56	10/06/14 10:14	1
Endrin aldehyde	ND		9.7	1.4	ug/Kg	≎	10/06/14 01:56	10/06/14 10:14	1
Endrin ketone	ND		9.7	1.9	ug/Kg	≎	10/06/14 01:56	10/06/14 10:14	1
gamma-BHC (Lindane)	ND		9.7	1.7	ug/Kg	\$	10/06/14 01:56	10/06/14 10:14	1
gamma-Chlordane	ND		9.7	1.9	ug/Kg	≎	10/06/14 01:56	10/06/14 10:14	1
Heptachlor	ND		9.7	2.3	ug/Kg	≎	10/06/14 01:56	10/06/14 10:14	1
Heptachlor epoxide	ND		9.7	2.2	ug/Kg	≎	10/06/14 01:56	10/06/14 10:14	1
Methoxychlor	ND		9.7	2.3	ug/Kg	≎	10/06/14 01:56	10/06/14 10:14	1
Toxaphene	ND		97	26	ug/Kg	≎	10/06/14 01:56	10/06/14 10:14	1

TestAmerica Buffalo

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

**Client Sample ID: DF-02** 

Date Collected: 09/29/14 10:10

Analyte

Arsenic

Lab Sample ID: 480-68232-7

Analyzed

10/02/14 00:36

Matrix: Solid

Date Received: 09/29/14 14:28 Percent Solids: 69.0

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	105		76 - 149				10/06/14 01:56	10/06/14 10:14	1
DCB Decachlorobiphenyl	112		76 - 149				10/06/14 01:56	10/06/14 10:14	1
Tetrachloro-m-xylene	102		72 - 136				10/06/14 01:56	10/06/14 10:14	1
Tetrachloro-m-xylene	96		72 - 136				10/06/14 01:56	10/06/14 10:14	1
Method: 8151A - Herbicides (GC)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-T	ND		24	7.5	ug/Kg	<del></del>	10/01/14 07:44	10/03/14 18:09	1
Silvex (2,4,5-TP)	ND		24	8.5	ug/Kg	≎	10/01/14 07:44	10/03/14 18:09	1
2,4-D	ND		24	15	ug/Kg	₽	10/01/14 07:44	10/03/14 18:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	81		39 - 120				10/01/14 07:44	10/03/14 18:09	

Client Sample ID: 4F-04 Lab Sample ID: 480-68232-8

RL

2.8

MDL Unit

0.57 mg/Kg

Prepared

09/30/14 14:17

☼

Result Qualifier

6.7

Date Collected: 09/29/14 10:30 **Matrix: Solid** Date Received: 09/29/14 14:28 Percent Solids: 76.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		8.8	1.7	ug/Kg	<u> </u>	10/06/14 01:56	10/06/14 10:26	1
4,4'-DDE	ND		8.8	1.7	ug/Kg	≎	10/06/14 01:56	10/06/14 10:26	1
4,4'-DDT	ND		8.8	2.1	ug/Kg	≎	10/06/14 01:56	10/06/14 10:26	1
Aldrin	ND		8.8	1.8	ug/Kg	≎	10/06/14 01:56	10/06/14 10:26	1
alpha-BHC	ND		8.8	2.0	ug/Kg	≎	10/06/14 01:56	10/06/14 10:26	1
alpha-Chlordane	ND		8.8	1.7	ug/Kg	≎	10/06/14 01:56	10/06/14 10:26	1
beta-BHC	ND		8.8	2.1	ug/Kg	₽	10/06/14 01:56	10/06/14 10:26	1
delta-BHC	ND		8.8	1.6	ug/Kg	≎	10/06/14 01:56	10/06/14 10:26	1
Dieldrin	ND		8.8	1.6	ug/Kg	≎	10/06/14 01:56	10/06/14 10:26	1
Endosulfan I	ND		8.8	2.0	ug/Kg	፨	10/06/14 01:56	10/06/14 10:26	1
Endosulfan II	ND		8.8	1.7	ug/Kg	≎	10/06/14 01:56	10/06/14 10:26	1
Endosulfan sulfate	ND		8.8	1.7	ug/Kg	₽	10/06/14 01:56	10/06/14 10:26	1
Endrin	ND		8.8	2.1	ug/Kg		10/06/14 01:56	10/06/14 10:26	1
Endrin aldehyde	ND		8.8	1.3	ug/Kg	≎	10/06/14 01:56	10/06/14 10:26	1
Endrin ketone	ND		8.8	1.7	ug/Kg	≎	10/06/14 01:56	10/06/14 10:26	1
gamma-BHC (Lindane)	ND		8.8	1.6	ug/Kg	\$	10/06/14 01:56	10/06/14 10:26	1
gamma-Chlordane	ND		8.8	1.7	ug/Kg	≎	10/06/14 01:56	10/06/14 10:26	1
Heptachlor	ND		8.8	2.1	ug/Kg	₽	10/06/14 01:56	10/06/14 10:26	1
Heptachlor epoxide	ND		8.8	2.0	ug/Kg	₽	10/06/14 01:56	10/06/14 10:26	1
Methoxychlor	ND		8.8	2.1	ug/Kg	₽	10/06/14 01:56	10/06/14 10:26	1
Toxaphene	ND		88	24	ug/Kg	≎	10/06/14 01:56	10/06/14 10:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	99		76 - 149				10/06/14 01:56	10/06/14 10:26	1
DCB Decachlorobiphenyl	107		76 - 149				10/06/14 01:56	10/06/14 10:26	1
Tetrachloro-m-xylene	95		72 - 136				10/06/14 01:56	10/06/14 10:26	1
Tetrachloro-m-xylene	108		72 - 136				10/06/14 01:56	10/06/14 10:26	1

TestAmerica Buffalo

Dil Fac

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

Client Sample ID: 4F-04

2,4,5-T

2,4-D

Silvex (2,4,5-TP)

Date Collected: 09/29/14 10:30 Date Received: 09/29/14 14:28 Lab Sample ID: 480-68232-8

Matrix: Solid

Matrix: Solid

Percent Solids: 82.8

Percent Solids: 76.0

Method: 8151A - Herbicides (GC)	)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-T	ND			7.0	ug/Kg	<u> </u>	10/01/14 07:44	10/03/14 18:39	1
Silvex (2,4,5-TP)	ND		22	7.8	ug/Kg	≎	10/01/14 07:44	10/03/14 18:39	1
2,4-D	ND		22	14	ug/Kg	☼	10/01/14 07:44	10/03/14 18:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	89		39 - 120				10/01/14 07:44	10/03/14 18:39	1
- Mathadi CO40C - Matala (ICD)									
Method: 6010C - Metals (ICP)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

Client Sample ID: 15G-01 Lab Sample ID: 480-68232-9

Date Collected: 09/29/14 11:00
Date Received: 09/29/14 14:28

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		8.1	1.6	ug/Kg	<del></del>	10/06/14 01:56	10/06/14 10:37	1
4,4'-DDE	ND		8.1	1.6	ug/Kg	☆	10/06/14 01:56	10/06/14 10:37	1
4,4'-DDT	ND		8.1	1.9	ug/Kg	≎	10/06/14 01:56	10/06/14 10:37	1
Aldrin	ND		8.1	1.7	ug/Kg		10/06/14 01:56	10/06/14 10:37	1
alpha-BHC	ND		8.1	1.8	ug/Kg	≎	10/06/14 01:56	10/06/14 10:37	1
alpha-Chlordane	ND		8.1	1.6	ug/Kg	☼	10/06/14 01:56	10/06/14 10:37	1
beta-BHC	ND		8.1	1.9	ug/Kg		10/06/14 01:56	10/06/14 10:37	1
delta-BHC	ND		8.1	1.4	ug/Kg	≎	10/06/14 01:56	10/06/14 10:37	1
Dieldrin	ND		8.1	1.4	ug/Kg	≎	10/06/14 01:56	10/06/14 10:37	1
Endosulfan I	ND		8.1	1.8	ug/Kg		10/06/14 01:56	10/06/14 10:37	1
Endosulfan II	ND		8.1	1.6	ug/Kg	≎	10/06/14 01:56	10/06/14 10:37	1
Endosulfan sulfate	ND		8.1	1.6	ug/Kg	≎	10/06/14 01:56	10/06/14 10:37	1
Endrin	ND		8.1	1.9	ug/Kg		10/06/14 01:56	10/06/14 10:37	1
Endrin aldehyde	ND		8.1	1.2	ug/Kg	≎	10/06/14 01:56	10/06/14 10:37	1
Endrin ketone	ND		8.1	1.6	ug/Kg	≎	10/06/14 01:56	10/06/14 10:37	1
gamma-BHC (Lindane)	ND		8.1	1.4	ug/Kg		10/06/14 01:56	10/06/14 10:37	1
gamma-Chlordane	ND		8.1	1.6	ug/Kg	☆	10/06/14 01:56	10/06/14 10:37	1
Heptachlor	ND		8.1	1.9	ug/Kg	≎	10/06/14 01:56	10/06/14 10:37	1
Heptachlor epoxide	ND		8.1	1.8	ug/Kg		10/06/14 01:56	10/06/14 10:37	1
Methoxychlor	ND		8.1	1.9	ug/Kg	≎	10/06/14 01:56	10/06/14 10:37	1
Toxaphene	ND		81	22	ug/Kg	≎	10/06/14 01:56	10/06/14 10:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	104		76 - 149				10/06/14 01:56	10/06/14 10:37	1
DCB Decachlorobiphenyl	111		76 - 149				10/06/14 01:56	10/06/14 10:37	1
Tetrachloro-m-xylene	100		72 - 136				10/06/14 01:56	10/06/14 10:37	1
Tetrachloro-m-xylene	93		72 - 136				10/06/14 01:56	10/06/14 10:37	1
Method: 8151A - Herbicides (GC)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

TestAmerica Buffalo

10/03/14 19:09

10/03/14 19:09

10/03/14 19:09

20

20

20

6.3 ug/Kg

7.1 ug/Kg

12 ug/Kg

10/01/14 07:44

10/01/14 07:44

10/01/14 07:44

✡

ND

ND

ND

3

4

6

<u>'</u>

9

11

40

14

15

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

Client Sample ID: 15G-01

Date Collected: 09/29/14 11:00 Date Received: 09/29/14 14:28

Surrogate

2,4-Dichlorophenylacetic acid

Lab Sample ID: 480-68232-9

Matrix: Solid

Percent Solids: 82.8

Surrogate 2,4-Dichlorophenylacetic acid	%Recovery	Qualifier	<b>Limits</b> 39 - 120				Prepared 10/01/14 07:44	Analyzed 10/03/14 19:09	Dil Fac
Method: 6010C - Metals (ICP) Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	23.6		2.4	0.48	ma/Ka	<u></u>	09/30/14 14:17	10/02/14 00:49	

Client Sample ID: DF-03 Lab Sample ID: 480-68232-10

Date Collected: 09/29/14 11:20 Matrix: Solid
Date Received: 09/29/14 14:28 Percent Solids: 83.4

Method: 8081B - Organochlorine Pesticides (GC) Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac ☆ 4,4'-DDD ND 8.0 10/06/14 01:56 10/06/14 10:49 1.6 ug/Kg 4,4'-DDE ND 8.0 1.6 ug/Kg 10/06/14 01:56 10/06/14 10:49 4,4'-DDT ND 8.0 1.9 ug/Kg 10/06/14 01:56 10/06/14 10:49 Aldrin ND 8.0 10/06/14 01:56 1.7 ug/Kg 10/06/14 10:49 alpha-BHC ND 8.0 10/06/14 01:56 10/06/14 10:49 ug/Kg alpha-Chlordane ND 8.0 1.6 ug/Kg 10/06/14 01:56 10/06/14 10:49 ₫ beta-BHC ND 8.0 10/06/14 01:56 10/06/14 10:49 ug/Kg delta-BHC ND 8.0 ug/Kg 10/06/14 01:56 10/06/14 10:49 1.4 ☆ Dieldrin ND 8.0 ug/Kg 10/06/14 01:56 10/06/14 10:49 ₩ Endosulfan I ND 8.0 1.8 ug/Kg 10/06/14 01:56 10/06/14 10:49 ND Endosulfan II 8.0 1.6 ug/Kg 10/06/14 01:56 10/06/14 10:49 Endosulfan sulfate ND 8.0 1.6 ug/Kg 10/06/14 01:56 10/06/14 10:49 Endrin ND 8.0 1.9 ug/Kg 10/06/14 01:56 10/06/14 10:49 Endrin aldehyde ND 8.0 ug/Kg 10/06/14 01:56 10/06/14 10:49 Endrin ketone ND 8.0 10/06/14 01:56 10/06/14 10:49 1.6 ug/Kg à gamma-BHC (Lindane) ND 8.0 10/06/14 01:56 10/06/14 10:49 ug/Kg 10/06/14 01:56 gamma-Chlordane NΠ 8.0 1.6 ug/Kg 10/06/14 10:49 ₩ Heptachlor ND 8.0 ug/Kg 10/06/14 01:56 10/06/14 10:49 10/06/14 01:56 ND 8.0 ug/Kg Heptachlor epoxide 10/06/14 10:49 1.8 Methoxychlor ND 8.0 1.9 ug/Kg 10/06/14 01:56 10/06/14 10:49 Toxaphene ND 80 22 ug/Kg 10/06/14 01:56 10/06/14 10:49 Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 76 - 149 102 DCB Decachlorobiphenyl 10/06/14 01:56 10/06/14 10:49 DCB Decachlorobiphenyl 109 10/06/14 01:56 10/06/14 10:49 76 - 149 Tetrachloro-m-xylene 99 72 - 13610/06/14 01:56 10/06/14 10:49 Tetrachloro-m-xylene 91 72 - 136 10/06/14 01:56 10/06/14 10:49 Method: 8151A - Herbicides (GC) Analyte Result Qualifier RL MDL Unit D Dil Fac Prepared Analyzed ☆ 2,4,5-T ND 20 6.3 ug/Kg 10/01/14 07:44 10/03/14 19:38 Silvex (2,4,5-TP) ND 20 7.1 ug/Kg ☼ 10/01/14 07:44 10/03/14 19:38 2,4-D ND 20 10/01/14 07:44 10/03/14 19:38 12 ug/Kg

Analyzed

10/03/14 19:38

Prepared

10/01/14 07:44

I imits

39 - 120

%Recovery

83

Qualifier

Dil Fac

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

**Client Sample ID: DF-03** 

Lab Sample ID: 480-68232-10

10/06/14 01:56

10/06/14 01:56

10/06/14 01:56

10/06/14 01:56

10/06/14 11:00

10/06/14 11:00

10/06/14 11:00

10/06/14 11:00

Date Collected: 09/29/14 11:20 Date Received: 09/29/14 14:28 Matrix: Solid Percent Solids: 83.4

Method: 6010C - Metals (ICP)

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.6	2.2	0.44 mg/Kg	<u> </u>	09/30/14 14:17	10/02/14 00:52	1

Client Sample ID: 16F-05 Lab Sample ID: 480-68232-11

Date Collected: 09/29/14 11:40 Date Received: 09/29/14 14:28 Matrix: Solid Percent Solids: 73.6

Mathada 9004B. Owner ablavina Basticidas (CC

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND ND	9.1	1.8	ug/Kg	₩	10/06/14 01:56	10/06/14 11:00	1
4,4'-DDE	ND	9.1	1.8	ug/Kg	≎	10/06/14 01:56	10/06/14 11:00	1
4,4'-DDT	ND	9.1	2.2	ug/Kg	≎	10/06/14 01:56	10/06/14 11:00	1
Aldrin	ND	9.1	1.9	ug/Kg	≎	10/06/14 01:56	10/06/14 11:00	1
alpha-BHC	ND	9.1	2.0	ug/Kg	≎	10/06/14 01:56	10/06/14 11:00	1
alpha-Chlordane	ND	9.1	1.8	ug/Kg	≎	10/06/14 01:56	10/06/14 11:00	1
beta-BHC	ND	9.1	2.2	ug/Kg	\$	10/06/14 01:56	10/06/14 11:00	1
delta-BHC	ND	9.1	1.6	ug/Kg	≎	10/06/14 01:56	10/06/14 11:00	1
Dieldrin	ND	9.1	1.6	ug/Kg	≎	10/06/14 01:56	10/06/14 11:00	1
Endosulfan I	ND	9.1	2.0	ug/Kg	≎	10/06/14 01:56	10/06/14 11:00	1
Endosulfan II	ND	9.1	1.8	ug/Kg	≎	10/06/14 01:56	10/06/14 11:00	1
Endosulfan sulfate	ND	9.1	1.8	ug/Kg	≎	10/06/14 01:56	10/06/14 11:00	1
Endrin	ND	9.1	2.2	ug/Kg	≎	10/06/14 01:56	10/06/14 11:00	1
Endrin aldehyde	ND	9.1	1.4	ug/Kg	≎	10/06/14 01:56	10/06/14 11:00	1
Endrin ketone	ND	9.1	1.8	ug/Kg	≎	10/06/14 01:56	10/06/14 11:00	1
gamma-BHC (Lindane)	ND	9.1	1.6	ug/Kg	≎	10/06/14 01:56	10/06/14 11:00	1
gamma-Chlordane	ND	9.1	1.8	ug/Kg	≎	10/06/14 01:56	10/06/14 11:00	1

Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	103		76 - 149	10/	06/14 01:56	10/06/14 11:00	1
DCB Decachlorobiphenyl	111		76 - 149	10/	06/14 01:56	10/06/14 11:00	1
Tetrachloro-m-xylene	100		72 - 136	10/	06/14 01:56	10/06/14 11:00	1
Tetrachloro-m-xylene	101		72 - 136	10/	06/14 01:56	10/06/14 11:00	1

9.1

9.1

9.1

91

2.2 ug/Kg

2.0 ug/Kg

2.2 ug/Kg

24 ug/Kg

ND

ND

ND

ND

Method:	8151A -	Herbicides	(GC)
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Heptachlor

Methoxychlor

Toxaphene

Heptachlor epoxide

Analyte	, Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-T	ND	23	7.2	ug/Kg	<u> </u>	10/01/14 07:44	10/03/14 20:08	1
Silvex (2,4,5-TP)	ND	23	8.1	ug/Kg	≎	10/01/14 07:44	10/03/14 20:08	1
2,4-D	ND	23	14	ug/Kg	≎	10/01/14 07:44	10/03/14 20:08	1
Surrogate	%Recovery Qualifier	Limits				Prepared	Analyzed	Dil Fac
2.4-Dichlorophenylacetic acid		39 - 120				10/01/14 07:44	10/03/14 20:08	

Method: 6010C - Metals (ICP)							
Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	7.4	2.7	0.55 mg/Kg	₩	09/30/14 14:17	10/02/14 00:55	1

TestAmerica Buffalo

4

6

0

9

11

13

15

Client: C&S Engineers, Inc.

Client Sample ID: 12F-06

Date Collected: 09/29/14 12:00

Date Received: 09/29/14 14:28

Project/Site: Westwood Country Club Amherst NY

Lab Sample ID: 480-68232-12

TestAmerica Job ID: 480-68232-1

Matrix: Solid

Percent Solids: 73.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		9.1	1.8	ug/Kg	<del></del>	10/06/14 01:56	10/06/14 11:12	1
4,4'-DDE	ND		9.1	1.8	ug/Kg	≎	10/06/14 01:56	10/06/14 11:12	1
4,4'-DDT	ND		9.1	2.2	ug/Kg	≎	10/06/14 01:56	10/06/14 11:12	1
Aldrin	ND		9.1	1.9	ug/Kg	\$	10/06/14 01:56	10/06/14 11:12	1
alpha-BHC	ND		9.1	2.0	ug/Kg	≎	10/06/14 01:56	10/06/14 11:12	1
alpha-Chlordane	ND		9.1	1.8	ug/Kg	≎	10/06/14 01:56	10/06/14 11:12	1
beta-BHC	ND		9.1	2.2	ug/Kg	≎	10/06/14 01:56	10/06/14 11:12	1
delta-BHC	ND		9.1	1.6	ug/Kg	≎	10/06/14 01:56	10/06/14 11:12	1
Dieldrin	ND		9.1	1.6	ug/Kg	≎	10/06/14 01:56	10/06/14 11:12	1
Endosulfan I	ND		9.1	2.0	ug/Kg	≎	10/06/14 01:56	10/06/14 11:12	1
Endosulfan II	ND		9.1	1.8	ug/Kg	≎	10/06/14 01:56	10/06/14 11:12	1
Endosulfan sulfate	ND		9.1	1.8	ug/Kg	≎	10/06/14 01:56	10/06/14 11:12	1
Endrin	ND		9.1	2.2	ug/Kg	☆	10/06/14 01:56	10/06/14 11:12	1
Endrin aldehyde	ND		9.1	1.4	ug/Kg	≎	10/06/14 01:56	10/06/14 11:12	1
Endrin ketone	ND		9.1	1.8	ug/Kg	≎	10/06/14 01:56	10/06/14 11:12	1
gamma-BHC (Lindane)	ND		9.1	1.6	ug/Kg	<b>*</b>	10/06/14 01:56	10/06/14 11:12	1
gamma-Chlordane	ND		9.1	1.8	ug/Kg	≎	10/06/14 01:56	10/06/14 11:12	1
Heptachlor	ND		9.1	2.2	ug/Kg	≎	10/06/14 01:56	10/06/14 11:12	1
Heptachlor epoxide	ND		9.1	2.0	ug/Kg		10/06/14 01:56	10/06/14 11:12	1
Methoxychlor	ND		9.1	2.2	ug/Kg	≎	10/06/14 01:56	10/06/14 11:12	1
Toxaphene	ND		91	24	ug/Kg	₽	10/06/14 01:56	10/06/14 11:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	108		76 - 149				10/06/14 01:56	10/06/14 11:12	1
DCB Decachlorobiphenyl	110		76 - 149				10/06/14 01:56	10/06/14 11:12	1
Tetrachloro-m-xylene	98		72 - 136				10/06/14 01:56	10/06/14 11:12	1
Tetrachloro-m-xylene	96		72 - 136				10/06/14 01:56	10/06/14 11:12	1

Method: 8151A - Herbicides (GC) Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-T	ND		23	7.2	ug/Kg	<del></del> <del>☆</del>	10/01/14 07:44	10/03/14 20:38	1
Silvex (2,4,5-TP)	ND		23	8.1	ug/Kg	≎	10/01/14 07:44	10/03/14 20:38	1
2,4-D	ND		23	14	ug/Kg	<b>\$</b>	10/01/14 07:44	10/03/14 20:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	98		39 - 120				10/01/14 07:44	10/03/14 20:38	1
2,4-Dichlorophenylacetic acid  Method: 6010C - Metals (ICP)	98		39 - 120				10/01/14 07:44	10/03/14 20:38	1
		Qualifier	39 <sub>-</sub> 120	MDL	Unit	D	10/01/14 07:44  Prepared	10/03/14 20:38 Analyzed	1 Dil Fac

Client Sample ID: 12G-02 Lab Sample ID: 480-68232-13 Date Collected: 09/29/14 12:20 Matrix: Solid Date Received: 09/29/14 14:28 Percent Solids: 79.8

Method: 8081B - Organochlorine Pesticides (GC)									
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
4,4'-DDD	ND ND	8.4	1.6	ug/Kg	<del></del>	10/06/14 01:56	10/06/14 11:23	1	
4,4'-DDE	ND	8.4	1.6	ug/Kg	≎	10/06/14 01:56	10/06/14 11:23	1	
4,4'-DDT	ND	8.4	2.0	ug/Kg	₩	10/06/14 01:56	10/06/14 11:23	1	
Aldrin	ND	8.4	1.7	ug/Kg	❖	10/06/14 01:56	10/06/14 11:23	1	

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Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

Lab Sample ID: 480-68232-13

TestAmerica Job ID: 480-68232-1

Percent Solids: 79.8

Client Sample ID: 12G-02 Date Collected: 09/29/14 12:20 Matrix: Solid Date Received: 09/29/14 14:28

Method: 8081B - Organochlorine Pesticides (GC) (Continued) Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac  $\overline{\alpha}$ alpha-BHC ND 8.4 1.9 ug/Kg 10/06/14 01:56 10/06/14 11:23 alpha-Chlordane ☼ ND 8.4 10/06/14 01:56 10/06/14 11:23 1.6 ug/Kg à beta-BHC ND 8.4 ug/Kg 10/06/14 01:56 10/06/14 11:23 delta-BHC ND 8.4 10/06/14 01:56 10/06/14 11:23 1.5 ug/Kg ₩ Dieldrin ND 8.4 ug/Kg 10/06/14 01:56 10/06/14 11:23 Endosulfan I ND 8.4 10/06/14 01:56 10/06/14 11:23 1.9 ug/Kg Endosulfan II ND 8.4 ug/Kg 10/06/14 01:56 10/06/14 11:23 Endosulfan sulfate ND 8.4 ug/Kg 10/06/14 01:56 10/06/14 11:23 1.6 ND Endrin 8.4 2.0 ug/Kg 10/06/14 01:56 10/06/14 11:23 Endrin aldehyde ND 8.4 1.2 ug/Kg 10/06/14 01:56 10/06/14 11:23 ✡ Endrin ketone ND 10/06/14 01:56 10/06/14 11:23 8.4 1.6 ug/Kg gamma-BHC (Lindane) ND ₩ 10/06/14 01:56 8.4 1.5 ug/Kg 10/06/14 11:23 gamma-Chlordane ND 8.4 1.6 ug/Kg 10/06/14 01:56 10/06/14 11:23 Heptachlor ND 8.4 2.0 ug/Kg 10/06/14 01:56 10/06/14 11:23 ND 8 4 Heptachlor epoxide 1.9 ug/Kg 10/06/14 01:56 10/06/14 11:23 ä Methoxychlor ND 8.4 ug/Kg 10/06/14 01:56 10/06/14 11:23 ND 84 10/06/14 01:56 Toxaphene ug/Kg 10/06/14 11:23 Surrogate %Recovery Qualifier Limits Prepared Dil Fac Analyzed 10/06/14 01:56 DCB Decachlorobiphenyl 104 76 - 149 10/06/14 11:23 DCB Decachlorobiphenyl 111 10/06/14 01:56 76 - 149 10/06/14 11:23 99 10/06/14 01:56 10/06/14 11:23 Tetrachloro-m-xylene 72 - 136 Tetrachloro-m-xylene 91 72 - 136 10/06/14 01:56 10/06/14 11:23

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-T	MD		21	6.7	ug/Kg	₩	10/01/14 07:44	10/03/14 21:07	1
Silvex (2,4,5-TP)	ND		21	7.5	ug/Kg	≎	10/01/14 07:44	10/03/14 21:07	1
2,4-D	ND		21	13	ug/Kg	≎	10/01/14 07:44	10/03/14 21:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	84	· <del></del>	39 - 120				10/01/14 07:44	10/03/14 21:07	1

Analyte Result Qualifier RL **MDL** Unit D Dil Fac Prepared Analyzed 2.3 09/30/14 14:17 10/02/14 01:00 **Arsenic** 66.3 0.46 mg/Kg

Client Sample ID: DF-04 Lab Sample ID: 480-68232-14 Date Collected: 09/29/14 12:30 Matrix: Solid Date Received: 09/29/14 14:28 Percent Solids: 71.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		9.4	1.8	ug/Kg	₩	10/06/14 01:56	10/06/14 11:35	1
4,4'-DDE	ND		9.4	1.8	ug/Kg	≎	10/06/14 01:56	10/06/14 11:35	1
4,4'-DDT	ND		9.4	2.2	ug/Kg	≎	10/06/14 01:56	10/06/14 11:35	1
Aldrin	ND		9.4	2.0	ug/Kg	\$	10/06/14 01:56	10/06/14 11:35	1
alpha-BHC	ND		9.4	2.1	ug/Kg	≎	10/06/14 01:56	10/06/14 11:35	1
alpha-Chlordane	ND		9.4	1.8	ug/Kg	≎	10/06/14 01:56	10/06/14 11:35	1
beta-BHC	ND		9.4	2.2	ug/Kg	\$	10/06/14 01:56	10/06/14 11:35	1
delta-BHC	ND		9.4	1.7	ug/Kg	≎	10/06/14 01:56	10/06/14 11:35	1

TestAmerica Buffalo

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Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

Lab Sample ID: 480-68232-14

TestAmerica Job ID: 480-68232-1

Matrix: Solid

Percent Solids: 71.2

Client Sample ID: DF-04

Arsenic

Date Collected: 09/29/14 12:30 Date Received: 09/29/14 14:28

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	ND		9.4	1.7	ug/Kg	<del></del>	10/06/14 01:56	10/06/14 11:35	
Endosulfan I	ND		9.4	2.1	ug/Kg	\$	10/06/14 01:56	10/06/14 11:35	1
Endosulfan II	ND		9.4	1.8	ug/Kg	⇔	10/06/14 01:56	10/06/14 11:35	•
Endosulfan sulfate	ND		9.4	1.8	ug/Kg	≎	10/06/14 01:56	10/06/14 11:35	•
Endrin	ND		9.4	2.2	ug/Kg	≎	10/06/14 01:56	10/06/14 11:35	
Endrin aldehyde	ND		9.4	1.4	ug/Kg	≎	10/06/14 01:56	10/06/14 11:35	•
Endrin ketone	ND		9.4	1.8	ug/Kg	≎	10/06/14 01:56	10/06/14 11:35	•
gamma-BHC (Lindane)	ND		9.4	1.7	ug/Kg	<b>\$</b>	10/06/14 01:56	10/06/14 11:35	1
gamma-Chlordane	ND		9.4	1.8	ug/Kg	≎	10/06/14 01:56	10/06/14 11:35	
Heptachlor	ND		9.4	2.2	ug/Kg	≎	10/06/14 01:56	10/06/14 11:35	1
Heptachlor epoxide	ND		9.4	2.1	ug/Kg		10/06/14 01:56	10/06/14 11:35	1
Methoxychlor	ND		9.4	2.2	ug/Kg	≎	10/06/14 01:56	10/06/14 11:35	•
Toxaphene	ND		94	25	ug/Kg	☼	10/06/14 01:56	10/06/14 11:35	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
DCB Decachlorobiphenyl	113		76 - 149				10/06/14 01:56	10/06/14 11:35	
DCB Decachlorobiphenyl	115		76 - 149				10/06/14 01:56	10/06/14 11:35	
Tetrachloro-m-xylene	103		72 - 136				10/06/14 01:56	10/06/14 11:35	
Tetrachloro-m-xylene	96		72 - 136				10/06/14 01:56	10/06/14 11:35	
Method: 8151A - Herbicides (GC)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-T	ND		23	7.4	ug/Kg	₩	10/01/14 07:44	10/03/14 21:37	1
Silvex (2,4,5-TP)	ND		23	8.3	ug/Kg	≎	10/01/14 07:44	10/03/14 21:37	
2,4-D	ND		23	15	ug/Kg	≎	10/01/14 07:44	10/03/14 21:37	•
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
2,4-Dichlorophenylacetic acid	83		39 - 120				10/01/14 07:44	10/03/14 21:37	
Method: 6010C - Metals (ICP)									
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa

Client Sample ID: 6G-04 Lab Sample ID: 480-68232-15

2.8

3.1

☼

0.57 mg/Kg

09/30/14 14:17

10/02/14 01:03

Date Collected: 09/29/14 12:50 Matrix: Solid
Date Received: 09/29/14 14:28 Percent Solids: 71.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		9.4	1.8	ug/Kg	<del></del>	10/06/14 01:56	10/06/14 11:46	1
4,4'-DDE	ND		9.4	1.8	ug/Kg	≎	10/06/14 01:56	10/06/14 11:46	1
4,4'-DDT	ND		9.4	2.2	ug/Kg	≎	10/06/14 01:56	10/06/14 11:46	1
Aldrin	ND		9.4	2.0	ug/Kg	\$	10/06/14 01:56	10/06/14 11:46	1
alpha-BHC	ND		9.4	2.1	ug/Kg	≎	10/06/14 01:56	10/06/14 11:46	1
alpha-Chlordane	ND		9.4	1.8	ug/Kg	≎	10/06/14 01:56	10/06/14 11:46	1
beta-BHC	ND		9.4	2.2	ug/Kg	≎	10/06/14 01:56	10/06/14 11:46	1
delta-BHC	ND		9.4	1.7	ug/Kg	≎	10/06/14 01:56	10/06/14 11:46	1
Dieldrin	ND		9.4	1.7	ug/Kg	≎	10/06/14 01:56	10/06/14 11:46	1
Endosulfan I	ND		9.4	2.1	ug/Kg	≎	10/06/14 01:56	10/06/14 11:46	1
Endosulfan II	ND		9.4	1.8	ug/Kg	≎	10/06/14 01:56	10/06/14 11:46	1
Endosulfan sulfate	ND		9.4	1.8	ug/Kg	☼	10/06/14 01:56	10/06/14 11:46	1

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11

13

14

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

Lab Sample ID: 480-68232-15

Matrix: Solid

Percent Solids: 71.2

Client Sample ID: 6G-0	4
Date Collected: 09/29/14 12	:5

Date Received: 09/29/14 14:28

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endrin	ND		9.4	2.2	ug/Kg	<u> </u>	10/06/14 01:56	10/06/14 11:46	1
Endrin aldehyde	ND		9.4	1.4	ug/Kg		10/06/14 01:56	10/06/14 11:46	1
Endrin ketone	ND		9.4	1.8	ug/Kg	≎	10/06/14 01:56	10/06/14 11:46	1
gamma-BHC (Lindane)	ND		9.4	1.7	ug/Kg		10/06/14 01:56	10/06/14 11:46	1
gamma-Chlordane	ND		9.4	1.8	ug/Kg	≎	10/06/14 01:56	10/06/14 11:46	1
Heptachlor	ND		9.4	2.2	ug/Kg	₽	10/06/14 01:56	10/06/14 11:46	1
Heptachlor epoxide	ND		9.4	2.1	ug/Kg	♦	10/06/14 01:56	10/06/14 11:46	1
Methoxychlor	ND		9.4	2.2	ug/Kg	₽	10/06/14 01:56	10/06/14 11:46	1
Toxaphene	ND		94	25	ug/Kg	≎	10/06/14 01:56	10/06/14 11:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	109		76 - 149				10/06/14 01:56	10/06/14 11:46	1
DCB Decachlorobiphenyl	114		76 - 149				10/06/14 01:56	10/06/14 11:46	1
Tetrachloro-m-xylene	103		72 - 136				10/06/14 01:56	10/06/14 11:46	1
Tetrachloro-m-xylene	97		72 - 136				10/06/14 01:56	10/06/14 11:46	1
Method: 8151A - Herbicides (GC)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-T	ND		23	7.3	ug/Kg	<del></del>	10/01/14 07:44	10/03/14 22:07	1
Silvex (2,4,5-TP)	ND		23	8.2	ug/Kg	≎	10/01/14 07:44	10/03/14 22:07	1
2,4-D	ND		23	14	ug/Kg	≎	10/01/14 07:44	10/03/14 22:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	89		39 - 120				10/01/14 07:44	10/03/14 22:07	1
Method: 6010C - Metals (ICP)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	26.8		3.1	0.62	mg/Kg	<u></u>	09/30/14 14:17	10/02/14 01:05	

### **Surrogate Summary**

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid Prep Type: Total/NA

				Percent Sur	rrogate Reco
		DCB1	DCB2	TCX1	TCX2
Lab Sample ID	Client Sample ID	(76-149)	(76-149)	(72-136)	(72-136)
480-68232-1	SA-01	96	101	93	87
480-68232-1 MS	SA-01	101	96	87	79
480-68232-1 MSD	SA-01	98	108	93	87
480-68232-2	SA-02	100	107	98	90
480-68232-3	9F-01	98	103	95	89
480-68232-4	DF-01	102	109	99	94
480-68232-5	2F-02	104	112	102	95
480-68232-6	3F-03	108	113	102	97
480-68232-7	DF-02	105	112	102	96
480-68232-8	4F-04	99	107	95	108
480-68232-9	15G-01	104	111	100	93
480-68232-10	DF-03	102	109	99	91
480-68232-11	16F-05	103	111	100	101
480-68232-12	12F-06	108	110	98	96
480-68232-13	12G-02	104	111	99	91
480-68232-14	DF-04	113	115	103	96
480-68232-15	6G-04	109	114	103	97
LCS 460-253877/2-A	Lab Control Sample	91	98	88	82
MB 460-253877/1-A	Method Blank	110	113	102	96

DCB = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Method: 8151A - Herbicides (GC)

**Matrix: Solid** Prep Type: Total/NA

			Percent Surrogate Recovery (Acceptance Limits)
		DCPA1	
Lab Sample ID	Client Sample ID	(39-120)	
480-68232-1	SA-01	75	
480-68232-2	SA-02	78	
480-68232-3	9F-01	69	
480-68232 <b>-</b> 3 MS	9F-01	75	
480-68232-3 MSD	9F-01	83	
480-68232-4	DF-01	77	
480-68232-5	2F-02	82	
480-68232-6	3F-03	84	
480-68232-7	DF-02	81	
480-68232-8	4F-04	89	
480-68232-9	15G-01	80	
480-68232-10	DF-03	83	
480-68232-11	16F-05	79	
480-68232-12	12F-06	98	
480-68232-13	12G-02	84	
480-68232-14	DF-04	83	
480-68232-15	6G-04	89	
LCS 480-205347/2-A	Lab Control Sample	78	
MB 480-205347/1-A	Method Blank	79	

TestAmerica Buffalo

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10/7/2014

### **Surrogate Summary**

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

### Surrogate Legend

DCPA = 2,4-Dichlorophenylacetic acid

3

А

5

7

8

11

12

11-5

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 460-253877/1-A

Matrix: Solid

Analysis Batch: 253983

Client Sample ID: Method Blank

Prep Batch: 253877

Prep Type: Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
4,4'-DDD	ND		6.7	1.3	ug/Kg		10/06/14 01:56	10/06/14 08:20	
4,4'-DDE	ND		6.7	1.3	ug/Kg		10/06/14 01:56	10/06/14 08:20	
4,4'-DDT	ND		6.7	1.6	ug/Kg		10/06/14 01:56	10/06/14 08:20	
Aldrin	ND		6.7	1.4	ug/Kg		10/06/14 01:56	10/06/14 08:20	
alpha-BHC	ND		6.7	1.5	ug/Kg		10/06/14 01:56	10/06/14 08:20	
alpha-Chlordane	ND		6.7	1.3	ug/Kg		10/06/14 01:56	10/06/14 08:20	
beta-BHC	ND		6.7	1.6	ug/Kg		10/06/14 01:56	10/06/14 08:20	
delta-BHC	ND		6.7	1.2	ug/Kg		10/06/14 01:56	10/06/14 08:20	
Dieldrin	ND		6.7	1.2	ug/Kg		10/06/14 01:56	10/06/14 08:20	
Endosulfan I	ND		6.7	1.5	ug/Kg		10/06/14 01:56	10/06/14 08:20	
Endosulfan II	ND		6.7	1.3	ug/Kg		10/06/14 01:56	10/06/14 08:20	
Endosulfan sulfate	ND		6.7	1.3	ug/Kg		10/06/14 01:56	10/06/14 08:20	
Endrin	ND		6.7	1.6	ug/Kg		10/06/14 01:56	10/06/14 08:20	
Endrin aldehyde	ND		6.7	1.0	ug/Kg		10/06/14 01:56	10/06/14 08:20	
Endrin ketone	ND		6.7	1.3	ug/Kg		10/06/14 01:56	10/06/14 08:20	
gamma-BHC (Lindane)	ND		6.7	1.2	ug/Kg		10/06/14 01:56	10/06/14 08:20	
gamma-Chlordane	ND		6.7	1.3	ug/Kg		10/06/14 01:56	10/06/14 08:20	
Heptachlor	ND		6.7	1.6	ug/Kg		10/06/14 01:56	10/06/14 08:20	
Heptachlor epoxide	ND		6.7	1.5	ug/Kg		10/06/14 01:56	10/06/14 08:20	
Methoxychlor	ND		6.7	1.6	ug/Kg		10/06/14 01:56	10/06/14 08:20	
Toxaphene	ND		67	18	ug/Kg		10/06/14 01:56	10/06/14 08:20	

MB MB

MB MB

Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	110		76 - 149	10	0/06/14 01:56	10/06/14 08:20	1
DCB Decachlorobiphenyl	113		76 - 149	10	0/06/14 01:56	10/06/14 08:20	1
Tetrachloro-m-xylene	102		72 - 136	10	0/06/14 01:56	10/06/14 08:20	1
Tetrachloro-m-xvlene	96		72 - 136	10	0/06/14 01:56	10/06/14 08:20	1

Lab Sample ID: LCS 460-253877/2-A

**Matrix: Solid** 

Analysis Batch: 253983

**Client Sample ID: Lab Control Sample** Prep Type: Total/NA Prep Batch: 253877

	0.11						0/ 🗖	
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
4,4'-DDD	133	121		ug/Kg		91	50 _ 131	
4,4'-DDD	133	122		ug/Kg		91	50 _ 131	
4,4'-DDE	133	119		ug/Kg		89	49 - 130	
4,4'-DDE	133	118		ug/Kg		89	49 _ 130	
4,4'-DDT	133	117		ug/Kg		88	48 - 132	
4,4'-DDT	133	118		ug/Kg		88	48 _ 132	
Aldrin	133	114		ug/Kg		85	53 _ 126	
Aldrin	133	111		ug/Kg		83	53 - 126	
alpha-BHC	133	118		ug/Kg		88	50 _ 129	
alpha-BHC	133	120		ug/Kg		90	50 _ 129	
alpha-Chlordane	133	110		ug/Kg		83	51 _ 129	
alpha-Chlordane	133	106		ug/Kg		80	51 _ 129	
beta-BHC	133	111		ug/Kg		83	51 - 131	
beta-BHC	133	112		ug/Kg		84	51 _ 131	
delta-BHC	133	119		ug/Kg		90	40 _ 130	

TestAmerica Buffalo

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Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 460-253877/2-A

**Matrix: Solid** 

Analysis Batch: 253983

Client Sample ID: Lab Control Sample Prep Type: Total/NA **Prep Batch: 253877** 

							0/ Dag
A 1.	Spike		LCS		_	0/ 5	%Rec.
Analyte	Added		Qualifier	Unit	D	%Rec	Limits
delta-BHC	133	115		ug/Kg		86	40 - 130
Dieldrin	133	113		ug/Kg		85	48 - 126
Dieldrin	133	114		ug/Kg		86	48 - 126
Endosulfan I	133	112		ug/Kg		84	53 _ 127
Endosulfan I	133	112		ug/Kg		84	53 - 127
Endosulfan II	133	108		ug/Kg		81	52 _ 127
Endosulfan II	133	111		ug/Kg		83	52 - 127
Endosulfan sulfate	133	111		ug/Kg		83	52 - 124
Endosulfan sulfate	133	110		ug/Kg		83	52 _ 124
Endrin	133	116		ug/Kg		87	48 - 126
Endrin	133	113		ug/Kg		85	48 _ 126
Endrin aldehyde	133	117		ug/Kg		88	57 _ 124
Endrin aldehyde	133	116		ug/Kg		87	57 - 124
Endrin ketone	133	115		ug/Kg		86	55 - 124
Endrin ketone	133	117		ug/Kg		88	55 - 124
gamma-BHC (Lindane)	133	122		ug/Kg		91	52 _ 129
gamma-BHC (Lindane)	133	115		ug/Kg		86	52 - 129
gamma-Chlordane	133	109		ug/Kg		82	50 - 129
gamma-Chlordane	133	108		ug/Kg		81	50 - 129
Heptachlor	133	108		ug/Kg		81	52 - 128
Heptachlor	133	108		ug/Kg		81	52 _ 128
Heptachlor epoxide	133	108		ug/Kg		81	53 - 122
Heptachlor epoxide	133	107		ug/Kg		80	53 - 122
Methoxychlor	133	111		ug/Kg		84	47 - 126
Methoxychlor	133	109		ug/Kg		82	47 - 126

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
DCB Decachlorobiphenyl	91		76 - 149
DCB Decachlorobiphenyl	98		76 - 149
Tetrachloro-m-xylene	88		72 - 136
Tetrachloro-m-xylene	82		72 - 136

Lab Sample ID: 480-68232-1 MS

**Matrix: Solid** 

Analysis Batch: 253983

Client Sample ID: SA-01 Prep Type: Total/NA **Prep Batch: 253877** 

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
4,4'-DDD	ND		160	152		ug/Kg	<del>-</del>	94	69 - 150	
4,4'-DDD	ND		160	153		ug/Kg	≎	95	69 - 150	
4,4'-DDE	ND		160	149		ug/Kg	≎	93	70 _ 147	
4,4'-DDE	ND		160	155		ug/Kg	*	97	70 _ 147	
4,4'-DDT	ND		160	147		ug/Kg	≎	91	63 - 146	
4,4'-DDT	ND		160	147		ug/Kg	≎	92	63 _ 146	
Aldrin	ND		160	142		ug/Kg	≎	89	69 - 138	
Aldrin	ND		160	145		ug/Kg	≎	90	69 _ 138	
alpha-BHC	ND		160	148		ug/Kg	≎	92	68 _ 133	
alpha-BHC	ND		160	148		ug/Kg	\$	92	68 - 133	
alpha-Chlordane	ND		160	138		ug/Kg	≎	86	66 _ 138	

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Spike

MS MS

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

### Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Sample Sample

Lab Sample ID: 480-68232-1 MS

**Matrix: Solid** 

Analysis Batch: 253983

Client Sample ID: SA-01 Prep Type: Total/NA

Prep Batch: 253877

Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
alpha-Chlordane	ND	· ·	160	138		ug/Kg	<del></del>	86	66 - 138	
beta-BHC	ND		160	139		ug/Kg		86	67 _ 137	
beta-BHC	ND		160	137		ug/Kg	≎	85	67 - 137	
delta-BHC	ND		160	149		ug/Kg	≎	93	65 _ 141	
delta-BHC	ND		160	145		ug/Kg		90	65 - 141	
Dieldrin	ND		160	142		ug/Kg	≎	89	63 _ 129	
Dieldrin	ND		160	147		ug/Kg	≎	92	63 - 129	
Endosulfan I	ND		160	140		ug/Kg		87	69 - 140	
Endosulfan I	ND		160	144		ug/Kg	≎	90	69 _ 140	
Endosulfan II	ND		160	136		ug/Kg	₩	85	66 - 136	
Endosulfan II	ND		160	139		ug/Kg	☼	87	66 _ 136	
Endosulfan sulfate	ND		160	138		ug/Kg	≎	86	65 - 137	
Endosulfan sulfate	ND		160	139		ug/Kg	≎	87	65 - 137	
Endrin	ND		160	145		ug/Kg		90	67 _ 142	
Endrin	ND		160	142		ug/Kg	≎	89	67 - 142	
Endrin aldehyde	ND		160	146		ug/Kg	≎	91	67 - 134	
Endrin aldehyde	ND		160	145		ug/Kg	\$	90	67 _ 134	
Endrin ketone	ND		160	144		ug/Kg	≎	90	68 - 146	
Endrin ketone	ND		160	147		ug/Kg	≎	92	68 _ 146	
gamma-BHC (Lindane)	ND		160	153		ug/Kg	\$	95	68 - 134	
gamma-BHC (Lindane)	ND		160	145		ug/Kg	≎	90	68 _ 134	
gamma-Chlordane	ND		160	137		ug/Kg	≎	85	67 _ 140	
gamma-Chlordane	ND		160	141		ug/Kg	≎	88	67 - 140	
Heptachlor	ND		160	136		ug/Kg	≎	85	67 _ 136	
Heptachlor	ND		160	138		ug/Kg	≎	86	67 - 136	
Heptachlor epoxide	ND		160	136		ug/Kg	\$	85	68 _ 136	
Heptachlor epoxide	ND		160	139		ug/Kg	₩	87	68 - 136	
Methoxychlor	ND		160	140		ug/Kg	≎	87	52 - 150	
Methoxychlor	ND		160	137		ug/Kg	☼	85	52 - 150	

MS MS

Surrogate	%Recovery	Qualifier	Limits
DCB Decachlorobiphenyl	101		76 - 149
DCB Decachlorobiphenyl	96		76 - 149
Tetrachloro-m-xylene	87		72 - 136
Tetrachloro-m-xylene	79		72 - 136

Lab Sample ID: 480-68232-1 MSD

**Matrix: Solid** 

Analysis Batch: 253983

Client Sample ID: SA-01 Prep Type: Total/NA

**Prep Batch: 253877** 

	Sample	Sample Spi	ce MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier Add	ed Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
4,4'-DDD	ND		156		ug/Kg	☆	98	69 - 150	3	30
4,4'-DDD	ND	1	30 156	;	ug/Kg	≎	97	69 _ 150	3	30
4,4'-DDE	ND	1	50 154		ug/Kg	≎	96	70 _ 147	3	30
4,4'-DDE	ND	1	60 154		ug/Kg	≎	96	70 _ 147	0	30
4,4'-DDT	ND	1	50 151		ug/Kg	≎	94	63 - 146	2	30
4,4'-DDT	ND	1	50 149	)	ug/Kg	≎	93	63 - 146	2	30
Aldrin	ND	1	50 147		ug/Kg	\$	92	69 _ 138	2	30

TestAmerica Buffalo

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TestAmerica Job ID: 480-68232-1

Project/Site: Westwood Country Club Amherst NY

### Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: 480-68232-1 MSD **Matrix: Solid** 

Analysis Batch: 253983

Client: C&S Engineers, Inc.

Client Sample ID: SA-01 Prep Type: Total/NA

**Prep Batch: 253877** 

	Sample		Spike	Spike MSD M	MSD				%Rec.		RPD
Analyte	Result		Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Aldrin	ND		160	146		ug/Kg	⇒	91	69 - 138	3	30
alpha-BHC	ND		160	152		ug/Kg	☼	95	68 _ 133	3	30
alpha-BHC	ND		160	154		ug/Kg	፨	96	68 - 133	4	30
alpha-Chlordane	ND		160	142		ug/Kg	≎	89	66 - 138	3	30
alpha-Chlordane	ND		160	137		ug/Kg	☆	86	66 - 138	0	30
beta-BHC	ND		160	141		ug/Kg	≎	88	67 _ 137	3	30
beta-BHC	ND		160	141		ug/Kg	≎	88	67 _ 137	2	30
delta-BHC	ND		160	154		ug/Kg	☼	97	65 - 141	4	30
delta-BHC	ND		160	146		ug/Kg	*	92	65 _ 141	1	30
Dieldrin	ND		160	147		ug/Kg	≎	92	63 _ 129	3	30
Dieldrin	ND		160	148		ug/Kg	☼	92	63 - 129	0	30
Endosulfan I	ND		160	145		ug/Kg	*	91	69 - 140	1	30
Endosulfan I	ND		160	144		ug/Kg	≎	90	69 - 140	3	30
Endosulfan II	ND		160	140		ug/Kg	≎	88	66 _ 136	3	30
Endosulfan II	ND		160	142		ug/Kg	₩	89	66 - 136	2	30
Endosulfan sulfate	ND		160	143		ug/Kg	≎	89	65 - 137	3	30
Endosulfan sulfate	ND		160	144		ug/Kg	≎	90	65 _ 137	3	30
Endrin	ND		160	149		ug/Kg	≎	93	67 - 142	3	30
Endrin	ND		160	143		ug/Kg	≎	90	67 _ 142	1	30
Endrin aldehyde	ND		160	150		ug/Kg	☼	94	67 _ 134	3	30
Endrin aldehyde	ND		160	147		ug/Kg	☼	92	67 _ 134	2	30
Endrin ketone	ND		160	148		ug/Kg	☼	93	68 - 146	3	30
Endrin ketone	ND		160	156		ug/Kg	₩	98	68 - 146	6	30
gamma-BHC (Lindane)	ND		160	158		ug/Kg	₩	99	68 _ 134	3	30
gamma-BHC (Lindane)	ND		160	148		ug/Kg	≎	93	68 - 134	2	30
gamma-Chlordane	ND		160	141		ug/Kg	☼	88	67 _ 140	0	30
gamma-Chlordane	ND		160	139		ug/Kg	₩	87	67 _ 140	2	30
Heptachlor	ND		160	139		ug/Kg	≎	87	67 - 136	1	30
Heptachlor	ND		160	138		ug/Kg	≎	86	67 _ 136	2	30
Heptachlor epoxide	ND		160	140		ug/Kg	≎	87	68 - 136	0	30
Heptachlor epoxide	ND		160	139		ug/Kg	☼	87	68 _ 136	2	30
Methoxychlor	ND		160	143		ug/Kg	☼	89	52 - 150	2	30
Methoxychlor	ND		160	140		ug/Kg	≎	87	52 - 150	2	30

	INISD	MSD	
Surrogate	%Recovery	Qualifier	Limits
DCB Decachlorobiphenyl	98		76 - 149
DCB Decachlorobiphenyl	108		76 <sub>-</sub> 149
Tetrachloro-m-xylene	93		72 - 136
Tetrachloro-m-xylene	87		72 - 136

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 480-205347/1-A

**Matrix: Solid** 

Analysis Batch: 205868

Client Sample ID: Method Blank	
Prep Type: Total/NA	
Prep Batch: 205347	

MB MB Dil Fac Analyte Result Qualifier RLMDL Unit Prepared Analyzed 2,4,5-T 16 ND 5.2 ug/Kg 10/01/14 07:44 10/03/14 12:43

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Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: MB 480-205347/1-A

Lab Sample ID: LCS 480-205347/2-A

**Matrix: Solid** 

**Matrix: Solid** 

Analysis Batch: 205868

**Analysis Batch: 205868** 

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 205347

Analyte Result Qualifier RL MDL Unit D Analyzed Dil Fac Prepared 10/03/14 12:43 Silvex (2,4,5-TP) 16 ND 5.9 ug/Kg 10/01/14 07:44 2,4-D ND 16 10 ug/Kg 10/01/14 07:44 10/03/14 12:43

MB MB

мв мв

Qualifier Surrogate %Recovery Limits Prepared Analyzed Dil Fac 2,4-Dichlorophenylacetic acid 39 - 120 10/01/14 07:44 10/03/14 12:43 79

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 205347

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit D %Rec Limits 2,4,5-T 65.5 61.3 ug/Kg 94 42 - 127 Silvex (2,4,5-TP) 65.5 62.9 ug/Kg 96 42 \_ 149 2,4-D 65.5 50.9 ug/Kg 78 47 \_ 130

LCS LCS

Qualifier Limits Surrogate %Recovery 2,4-Dichlorophenylacetic acid 39 - 120 78

Lab Sample ID: 480-68232-3 MS

**Matrix: Solid** 

Analysis Batch: 205868

Client Sample ID: 9F-01 Prep Type: Total/NA

Prep Batch: 205347

Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits ☆ ND 76.0 81 2,4,5-T 61.3 ug/Kg 16 - 135 Ö ND 76.0 61.5 ug/Kg 81 32 \_ 125 Silvex (2,4,5-TP) ND 76.0 46 - 120 2,4-D 51.0 ug/Kg 67

MS MS

Surrogate %Recovery Qualifier Limits 2,4-Dichlorophenylacetic acid 75 39 - 120

Lab Sample ID: 480-68232-3 MSD

**Matrix: Solid** 

Analysis Batch: 205868

Client Sample ID: 9F-01 Prep Type: Total/NA

Prep Batch: 205347

MSD MSD Spike RPD Sample Sample %Rec. Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit 2,4,5-T ☆ ND 76.3 64.1 ug/Kg 84 16 - 135 4 50 ND 76.3 ♦ Silvex (2,4,5-TP) 63.3 ug/Kg 83 32 - 1253 50 ₩ 2,4-D ND 76.3 52.5 ug/Kg 46 \_ 120 50

MSD MSD

%Recovery Qualifier Limits Surrogate 2,4-Dichlorophenylacetic acid 83 39 - 120

TestAmerica Buffalo

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 480-205208/1-A

Lab Sample ID: LCSSRM 480-205208/2-A

**Matrix: Solid** 

**Matrix: Solid** 

Analyte

Arsenic

Analysis Batch: 205658

Analysis Batch: 205658

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 205208

мв мв

Result Qualifier RL MDL Unit Dil Fac Analyte D Prepared Analyzed ND 1.9 0.38 mg/Kg 09/30/14 14:17 10/01/14 23:42 Arsenic

LCSSRM LCSSRM

111.8

Result Qualifier

Unit

mg/Kg

Spike

Added

122

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 205208

Limits

%Rec

91.7

70.0 - 145.

## **QC Association Summary**

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

### GC Semi VOA

### Prep Batch: 205347

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
480-68232-1	SA-01	Total/NA	Solid	8151A	
480-68232-2	SA-02	Total/NA	Solid	8151A	
480-68232-3	9F-01	Total/NA	Solid	8151A	
480-68232-3 MS	9F-01	Total/NA	Solid	8151A	
480-68232-3 MSD	9F-01	Total/NA	Solid	8151A	
480-68232-4	DF-01	Total/NA	Solid	8151A	
480-68232-5	2F-02	Total/NA	Solid	8151A	
480-68232-6	3F-03	Total/NA	Solid	8151A	
480-68232-7	DF-02	Total/NA	Solid	8151A	
480-68232-8	4F-04	Total/NA	Solid	8151A	
480-68232-9	15G-01	Total/NA	Solid	8151A	
480-68232-10	DF-03	Total/NA	Solid	8151A	
480-68232-11	16F-05	Total/NA	Solid	8151A	
480-68232-12	12F-06	Total/NA	Solid	8151A	
480-68232-13	12G-02	Total/NA	Solid	8151A	
480-68232-14	DF-04	Total/NA	Solid	8151A	
480-68232-15	6G-04	Total/NA	Solid	8151A	
LCS 480-205347/2-A	Lab Control Sample	Total/NA	Solid	8151A	
MB 480-205347/1-A	Method Blank	Total/NA	Solid	8151A	

### Analysis Batch: 205868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-68232-1	SA-01	Total/NA	Solid	8151A	205347
480-68232-2	SA-02	Total/NA	Solid	8151A	205347
480-68232-3	9F-01	Total/NA	Solid	8151A	205347
480-68232-3 MS	9F-01	Total/NA	Solid	8151A	205347
480-68232-3 MSD	9F-01	Total/NA	Solid	8151A	205347
480-68232-4	DF-01	Total/NA	Solid	8151A	205347
480-68232-5	2F-02	Total/NA	Solid	8151A	205347
480-68232-6	3F-03	Total/NA	Solid	8151A	205347
480-68232-7	DF-02	Total/NA	Solid	8151A	205347
480-68232-8	4F-04	Total/NA	Solid	8151A	205347
480-68232-9	15G-01	Total/NA	Solid	8151A	205347
480-68232-10	DF-03	Total/NA	Solid	8151A	205347
480-68232-11	16F-05	Total/NA	Solid	8151A	205347
480-68232-12	12F-06	Total/NA	Solid	8151A	205347
480-68232-13	12G-02	Total/NA	Solid	8151A	205347
480-68232-14	DF-04	Total/NA	Solid	8151A	205347
480-68232-15	6G-04	Total/NA	Solid	8151A	205347
LCS 480-205347/2-A	Lab Control Sample	Total/NA	Solid	8151A	205347
MB 480-205347/1-A	Method Blank	Total/NA	Solid	8151A	205347

### **Prep Batch: 253877**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-68232-1	SA-01	Total/NA	Solid	3546	
480-68232-1 MS	SA-01	Total/NA	Solid	3546	
480-68232-1 MSD	SA-01	Total/NA	Solid	3546	
480-68232-2	SA-02	Total/NA	Solid	3546	
480-68232-3	9F-01	Total/NA	Solid	3546	
480-68232-4	DF-01	Total/NA	Solid	3546	
480-68232-5	2F-02	Total/NA	Solid	3546	

TestAmerica Buffalo

### **QC Association Summary**

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

### GC Semi VOA (Continued)

### Prep Batch: 253877 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-68232-6	3F-03	Total/NA	Solid	3546	_
480-68232-7	DF-02	Total/NA	Solid	3546	
480-68232-8	4F-04	Total/NA	Solid	3546	
480-68232-9	15G-01	Total/NA	Solid	3546	
480-68232-10	DF-03	Total/NA	Solid	3546	
480-68232-11	16F-05	Total/NA	Solid	3546	
480-68232-12	12F-06	Total/NA	Solid	3546	
480-68232-13	12G-02	Total/NA	Solid	3546	
480-68232-14	DF-04	Total/NA	Solid	3546	
480-68232-15	6G-04	Total/NA	Solid	3546	
LCS 460-253877/2-A	Lab Control Sample	Total/NA	Solid	3546	
MB 460-253877/1-A	Method Blank	Total/NA	Solid	3546	

### Analysis Batch: 253983

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-68232-1	SA-01	Total/NA	Solid	8081B	253877
480-68232-1 MS	SA-01	Total/NA	Solid	8081B	253877
480-68232-1 MSD	SA-01	Total/NA	Solid	8081B	253877
480-68232-2	SA-02	Total/NA	Solid	8081B	253877
480-68232-3	9F-01	Total/NA	Solid	8081B	253877
480-68232-4	DF-01	Total/NA	Solid	8081B	253877
480-68232-5	2F-02	Total/NA	Solid	8081B	253877
480-68232-6	3F-03	Total/NA	Solid	8081B	253877
480-68232-7	DF-02	Total/NA	Solid	8081B	253877
480-68232-8	4F-04	Total/NA	Solid	8081B	253877
480-68232-9	15G-01	Total/NA	Solid	8081B	253877
480-68232-10	DF-03	Total/NA	Solid	8081B	253877
480-68232-11	16F-05	Total/NA	Solid	8081B	253877
480-68232-12	12F-06	Total/NA	Solid	8081B	253877
480-68232-13	12G-02	Total/NA	Solid	8081B	253877
480-68232-14	DF-04	Total/NA	Solid	8081B	253877
480-68232-15	6G-04	Total/NA	Solid	8081B	253877
LCS 460-253877/2-A	Lab Control Sample	Total/NA	Solid	8081B	253877
MB 460-253877/1-A	Method Blank	Total/NA	Solid	8081B	253877

### Metals

### Prep Batch: 205208

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
480-68232-1	SA-01	Total/NA	Solid	3050B	<u> </u>
480-68232-2	SA-02	Total/NA	Solid	3050B	
480-68232-3	9F-01	Total/NA	Solid	3050B	
480-68232-4	DF-01	Total/NA	Solid	3050B	
480-68232-5	2F-02	Total/NA	Solid	3050B	
480-68232-6	3F-03	Total/NA	Solid	3050B	
480-68232-7	DF-02	Total/NA	Solid	3050B	
480-68232-8	4F-04	Total/NA	Solid	3050B	
480-68232-9	15G-01	Total/NA	Solid	3050B	
480-68232-10	DF-03	Total/NA	Solid	3050B	
480-68232-11	16F-05	Total/NA	Solid	3050B	

TestAmerica Buffalo

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### **QC Association Summary**

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

### **Metals (Continued)**

### Prep Batch: 205208 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-68232-12	12F-06	Total/NA	Solid	3050B	
480-68232-13	12G-02	Total/NA	Solid	3050B	
480-68232-14	DF-04	Total/NA	Solid	3050B	
480-68232-15	6G-04	Total/NA	Solid	3050B	
LCSSRM 480-205208/2-A	Lab Control Sample	Total/NA	Solid	3050B	
MB 480-205208/1-A	Method Blank	Total/NA	Solid	3050B	

### Analysis Batch: 205658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-68232-1	SA-01	Total/NA	Solid	6010C	205208
480-68232-2	SA-02	Total/NA	Solid	6010C	205208
480-68232-3	9F-01	Total/NA	Solid	6010C	205208
480-68232-4	DF-01	Total/NA	Solid	6010C	205208
480-68232-5	2F-02	Total/NA	Solid	6010C	205208
480-68232-6	3F-03	Total/NA	Solid	6010C	205208
480-68232-7	DF-02	Total/NA	Solid	6010C	205208
480-68232-8	4F-04	Total/NA	Solid	6010C	205208
480-68232-9	15G-01	Total/NA	Solid	6010C	205208
480-68232-10	DF-03	Total/NA	Solid	6010C	205208
480-68232-11	16F-05	Total/NA	Solid	6010C	205208
480-68232-12	12F-06	Total/NA	Solid	6010C	205208
480-68232-13	12G-02	Total/NA	Solid	6010C	205208
480-68232-14	DF-04	Total/NA	Solid	6010C	205208
480-68232-15	6G-04	Total/NA	Solid	6010C	205208
LCSSRM 480-205208/2-A	Lab Control Sample	Total/NA	Solid	6010C	205208
MB 480-205208/1-A	Method Blank	Total/NA	Solid	6010C	205208

### **General Chemistry**

### Analysis Batch: 205054

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
480-68232-1	SA-01	Total/NA	Solid	Moisture	_
480-68232-2	SA-02	Total/NA	Solid	Moisture	
480-68232-3	9F-01	Total/NA	Solid	Moisture	
480-68232-4	DF-01	Total/NA	Solid	Moisture	
480-68232-5	2F-02	Total/NA	Solid	Moisture	
480-68232-6	3F-03	Total/NA	Solid	Moisture	
180-68232-7	DF-02	Total/NA	Solid	Moisture	
480-68232-8	4F-04	Total/NA	Solid	Moisture	
480-68232-9	15G-01	Total/NA	Solid	Moisture	
480-68232-10	DF-03	Total/NA	Solid	Moisture	
180-68232-11	16F-05	Total/NA	Solid	Moisture	
480-68232-12	12F-06	Total/NA	Solid	Moisture	
480-68232-13	12G-02	Total/NA	Solid	Moisture	
480-68232-14	DF-04	Total/NA	Solid	Moisture	
480-68232-15	6G-04	Total/NA	Solid	Moisture	

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Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

Lab Sample ID: 480-68232-1

**Matrix: Solid** Percent Solids: 83.1

Client Sample ID: SA-01 Date Collected: 09/29/14 07:30 Date Received: 09/29/14 14:28

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3546			253877	10/06/14 01:56	ARA	TAL EDI
Total/NA	Analysis	8081B		1	253983	10/06/14 09:06	SAK	TAL EDI
Total/NA	Prep	8151A			205347	10/01/14 07:44	CAM	TAL BUF
Total/NA	Analysis	8151A		1	205868	10/03/14 14:42	JRL	TAL BUF
Total/NA	Prep	3050B			205208	09/30/14 14:17	SLB	TAL BUF
Total/NA	Analysis	6010C		1	205658	10/02/14 00:19	AMH	TAL BUF
Total/NA	Analysis	Moisture		1	205054	09/30/14 00:22	CMK	TAL BUF

Client Sample ID: SA-02 Lab Sample ID: 480-68232-2

Date Collected: 09/29/14 08:15 Matrix: Solid Date Received: 09/29/14 14:28 Percent Solids: 76.0

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3546			253877	10/06/14 01:56	ARA	TAL EDI
Total/NA	Analysis	8081B		1	253983	10/06/14 09:17	SAK	TAL EDI
Total/NA	Prep	8151A			205347	10/01/14 07:44	CAM	TAL BUF
Total/NA	Analysis	8151A		1	205868	10/03/14 15:11	JRL	TAL BUF
Total/NA	Prep	3050B			205208	09/30/14 14:17	SLB	TAL BUF
Total/NA	Analysis	6010C		1	205658	10/02/14 00:22	AMH	TAL BUF
Total/NA	Analysis	Moisture		1	205054	09/30/14 00:22	CMK	TAL BUF

Client Sample ID: 9F-01 Lab Sample ID: 480-68232-3

Date Collected: 09/29/14 08:30 **Matrix: Solid** Date Received: 09/29/14 14:28 Percent Solids: 86.9

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3546			253877	10/06/14 01:56	ARA	TAL EDI
Total/NA	Analysis	8081B		1	253983	10/06/14 09:28	SAK	TAL EDI
Total/NA	Prep	8151A			205347	10/01/14 07:44	CAM	TAL BUF
Total/NA	Analysis	8151A		1	205868	10/03/14 15:41	JRL	TAL BUF
Total/NA	Prep	3050B			205208	09/30/14 14:17	SLB	TAL BUF
Total/NA	Analysis	6010C		1	205658	10/02/14 00:25	AMH	TAL BUF
Total/NA	Analysis	Moisture		1	205054	09/30/14 00:22	CMK	TAL BUF

**Client Sample ID: DF-01** Lab Sample ID: 480-68232-4

Date Collected: 09/29/14 09:00 **Matrix: Solid** Date Received: 09/29/14 14:28 Percent Solids: 78.3

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3546	<del></del>		253877	10/06/14 01:56	ARA	TAL EDI
Total/NA	Analysis	8081B		1	253983	10/06/14 09:40	SAK	TAL EDI
Total/NA	Prep	8151A			205347	10/01/14 07:44	CAM	TAL BUF
Total/NA	Analysis	8151A		1	205868	10/03/14 16:11	JRL	TAL BUF

TestAmerica Buffalo

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Client: C&S Engineers, Inc.

Client Sample ID: DF-01

Date Collected: 09/29/14 09:00

Date Received: 09/29/14 14:28

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

Lab Sample ID: 480-68232-4

Matrix: Solid

Percent Solids: 78.3

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3050B	<del></del>		205208	09/30/14 14:17	SLB	TAL BUF
Total/NA	Analysis	6010C		1	205658	10/02/14 00:27	AMH	TAL BUF
Total/NA	Analysis	Moisture		1	205054	09/30/14 00:22	CMK	TAL BUF

Lab Sample ID: 480-68232-5 Client Sample ID: 2F-02

Date Collected: 09/29/14 09:30 Matrix: Solid

Date Received: 09/29/14 14:28 Percent Solids: 74.4

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3546			253877	10/06/14 01:56	ARA	TAL EDI
Total/NA	Analysis	8081B		1	253983	10/06/14 09:51	SAK	TAL EDI
Total/NA	Prep	8151A			205347	10/01/14 07:44	CAM	TAL BUF
Total/NA	Analysis	8151A		1	205868	10/03/14 16:40	JRL	TAL BUF
Total/NA	Prep	3050B			205208	09/30/14 14:17	SLB	TAL BUF
Total/NA	Analysis	6010C		1	205658	10/02/14 00:30	AMH	TAL BUF
Total/NA	Analysis	Moisture		1	205054	09/30/14 00:22	CMK	TAL BUF

Client Sample ID: 3F-03 Lab Sample ID: 480-68232-6

Date Collected: 09/29/14 09:50 **Matrix: Solid** Date Received: 09/29/14 14:28 Percent Solids: 79.5

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3546			253877	10/06/14 01:56	ARA	TAL EDI
Total/NA	Analysis	8081B		1	253983	10/06/14 10:03	SAK	TAL EDI
Total/NA	Prep	8151A			205347	10/01/14 07:44	CAM	TAL BUF
Total/NA	Analysis	8151A		1	205868	10/03/14 17:10	JRL	TAL BUF
Total/NA	Prep	3050B			205208	09/30/14 14:17	SLB	TAL BUF
Total/NA	Analysis	6010C		1	205658	10/02/14 00:33	AMH	TAL BUF
Total/NA	Analysis	Moisture		1	205054	09/30/14 00:22	CMK	TAL BUF

**Client Sample ID: DF-02** Lab Sample ID: 480-68232-7

Date Collected: 09/29/14 10:10 Matrix: Solid Date Received: 09/29/14 14:28 Percent Solids: 69.0

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3546			253877	10/06/14 01:56	ARA	TAL EDI
Total/NA	Analysis	8081B		1	253983	10/06/14 10:14	SAK	TAL EDI
Total/NA	Prep	8151A			205347	10/01/14 07:44	CAM	TAL BUF
Total/NA	Analysis	8151A		1	205868	10/03/14 18:09	JRL	TAL BUF
Total/NA	Prep	3050B			205208	09/30/14 14:17	SLB	TAL BUF
Total/NA	Analysis	6010C		1	205658	10/02/14 00:36	AMH	TAL BUF
Total/NA	Analysis	Moisture		1	205054	09/30/14 00:22	CMK	TAL BUF

TestAmerica Buffalo

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Client: C&S Engineers, Inc.

Client Sample ID: 4F-04

Date Collected: 09/29/14 10:30

Date Received: 09/29/14 14:28

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

Lab Sample ID: 480-68232-8

Matrix: Solid Percent Solids: 76.0

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3546	<del></del>		253877	10/06/14 01:56	ARA	TAL EDI
Total/NA	Analysis	8081B		1	253983	10/06/14 10:26	SAK	TAL EDI
Total/NA	Prep	8151A			205347	10/01/14 07:44	CAM	TAL BUF
Total/NA	Analysis	8151A		1	205868	10/03/14 18:39	JRL	TAL BUF
Total/NA	Prep	3050B			205208	09/30/14 14:17	SLB	TAL BUF
Total/NA	Analysis	6010C		1	205658	10/02/14 00:46	AMH	TAL BUF
Total/NA	Analysis	Moisture		1	205054	09/30/14 00:22	CMK	TAL BUF

Client Sample ID: 15G-01 Lab Sample ID: 480-68232-9

Date Collected: 09/29/14 11:00 Matrix: Solid Date Received: 09/29/14 14:28 Percent Solids: 82.8

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3546			253877	10/06/14 01:56	ARA	TAL EDI
Total/NA	Analysis	8081B		1	253983	10/06/14 10:37	SAK	TAL EDI
Total/NA	Prep	8151A			205347	10/01/14 07:44	CAM	TAL BUF
Total/NA	Analysis	8151A		1	205868	10/03/14 19:09	JRL	TAL BUF
Total/NA	Prep	3050B			205208	09/30/14 14:17	SLB	TAL BUF
Total/NA	Analysis	6010C		1	205658	10/02/14 00:49	AMH	TAL BUF
Total/NA	Analysis	Moisture		1	205054	09/30/14 00:22	CMK	TAL BUF

Client Sample ID: DF-03 Lab Sample ID: 480-68232-10

Date Collected: 09/29/14 11:20 **Matrix: Solid** Date Received: 09/29/14 14:28 Percent Solids: 83.4

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3546			253877	10/06/14 01:56	ARA	TAL EDI
Total/NA	Analysis	8081B		1	253983	10/06/14 10:49	SAK	TAL EDI
Total/NA	Prep	8151A			205347	10/01/14 07:44	CAM	TAL BUF
Total/NA	Analysis	8151A		1	205868	10/03/14 19:38	JRL	TAL BUF
Total/NA	Prep	3050B			205208	09/30/14 14:17	SLB	TAL BUF
Total/NA	Analysis	6010C		1	205658	10/02/14 00:52	AMH	TAL BUF
Total/NA	Analysis	Moisture		1	205054	09/30/14 00:22	CMK	TAL BUF

Client Sample ID: 16F-05 Lab Sample ID: 480-68232-11 Date Collected: 09/29/14 11:40 Matrix: Solid

Date Received: 09/29/14 14:28 Percent Solids: 73.6

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3546			253877	10/06/14 01:56	ARA	TAL EDI
Total/NA	Analysis	8081B		1	253983	10/06/14 11:00	SAK	TAL EDI
Total/NA	Prep	8151A			205347	10/01/14 07:44	CAM	TAL BUF
Total/NA	Analysis	8151A		1	205868	10/03/14 20:08	JRL	TAL BUF

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Client: C&S Engineers, Inc.

Client Sample ID: 16F-05

Date Collected: 09/29/14 11:40

Date Received: 09/29/14 14:28

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

Lab Sample ID: 480-68232-11

Matrix: Solid

Percent Solids: 73.6

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			205208	09/30/14 14:17	SLB	TAL BUF
Total/NA	Analysis	6010C		1	205658	10/02/14 00:55	AMH	TAL BUF
Total/NA	Analysis	Moisture		1	205054	09/30/14 00:22	CMK	TAL BUF

Client Sample ID: 12F-06 Lab Sample ID: 480-68232-12

Date Collected: 09/29/14 12:00 Matrix: Solid

Date Received: 09/29/14 14:28 Percent Solids: 73.5

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3546			253877	10/06/14 01:56	ARA	TAL EDI
Total/NA	Analysis	8081B		1	253983	10/06/14 11:12	SAK	TAL EDI
Total/NA	Prep	8151A			205347	10/01/14 07:44	CAM	TAL BUF
Total/NA	Analysis	8151A		1	205868	10/03/14 20:38	JRL	TAL BUF
Total/NA	Prep	3050B			205208	09/30/14 14:17	SLB	TAL BUF
Total/NA	Analysis	6010C		1	205658	10/02/14 00:57	AMH	TAL BUF
Total/NA	Analysis	Moisture		1	205054	09/30/14 00:22	CMK	TAL BUF

Client Sample ID: 12G-02 Lab Sample ID: 480-68232-13

Date Collected: 09/29/14 12:20

Date Received: 09/29/14 14:28

Matrix: Solid
Percent Solids: 79.8

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3546			253877	10/06/14 01:56	ARA	TAL EDI
Total/NA	Analysis	8081B		1	253983	10/06/14 11:23	SAK	TAL EDI
Total/NA	Prep	8151A			205347	10/01/14 07:44	CAM	TAL BUF
Total/NA	Analysis	8151A		1	205868	10/03/14 21:07	JRL	TAL BUF
Total/NA	Prep	3050B			205208	09/30/14 14:17	SLB	TAL BUF
Total/NA	Analysis	6010C		1	205658	10/02/14 01:00	AMH	TAL BUF
Total/NA	Analysis	Moisture		1	205054	09/30/14 00:22	CMK	TAL BUF

Client Sample ID: DF-04 Lab Sample ID: 480-68232-14

Date Collected: 09/29/14 12:30 Matrix: Solid
Date Received: 09/29/14 14:28 Percent Solids: 71.2

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3546			253877	10/06/14 01:56	ARA	TAL EDI
Total/NA	Analysis	8081B		1	253983	10/06/14 11:35	SAK	TAL EDI
Total/NA	Prep	8151A			205347	10/01/14 07:44	CAM	TAL BUF
Total/NA	Analysis	8151A		1	205868	10/03/14 21:37	JRL	TAL BUF
Total/NA	Prep	3050B			205208	09/30/14 14:17	SLB	TAL BUF
Total/NA	Analysis	6010C		1	205658	10/02/14 01:03	AMH	TAL BUF
Total/NA	Analysis	Moisture		1	205054	09/30/14 00:22	CMK	TAL BUF

TestAmerica Buffalo

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Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

480-68232-15

Matrix: Solid

Percent Solids: 71.2

Client Sample ID: 6G-04	Lab Sample ID: 4
Date Collected: 09/29/14 12:50	

Date Received: 09/29/14 14:28

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3546			253877	10/06/14 01:56	ARA	TAL EDI
Total/NA	Analysis	8081B		1	253983	10/06/14 11:46	SAK	TAL EDI
Total/NA	Prep	8151A			205347	10/01/14 07:44	CAM	TAL BUF
Total/NA	Analysis	8151A		1	205868	10/03/14 22:07	JRL	TAL BUF
Total/NA	Prep	3050B			205208	09/30/14 14:17	SLB	TAL BUF
Total/NA	Analysis	6010C		1	205658	10/02/14 01:05	AMH	TAL BUF
Total/NA	Analysis	Moisture		1	205054	09/30/14 00:22	CMK	TAL BUF

### Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600 TAL EDI = TestAmerica Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

### **Certification Summary**

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

### Laboratory: TestAmerica Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program		EPA Region	Certification ID	Expiration Date
New York	NELAP		2	10026	03-31-15
The following analytes a	re included in this report, bu	t certification is not offere	ed by the governing a	authority:	
Analysis Method	Prep Method	Matrix	Analy	te	
Analysis Method Moisture	Prep Method	Matrix Solid		nt Moisture	

### Laboratory: TestAmerica Edison

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Connecticut	State Program	1	PH-0200	09-30-14 *
DE Haz. Subst. Cleanup Act (HSCA)	State Program	3	N/A	12-31-14
New Jersey	NELAP	2	12028	06-30-15
New York	NELAP	2	11452	03-31-15
Pennsylvania	NELAP	3	68-00522	02-28-15
Rhode Island	State Program	1	LAO00132	12-30-14
USDA	Federal		NJCA-003-08	04-04-17

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<sup>\*</sup> Certification renewal pending - certification considered valid.

TestAmerica Buffalo

### **Method Summary**

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

Method	Method Description	Protocol	Laboratory
8081B	Organochlorine Pesticides (GC)	SW846	TAL EDI
8151A	Herbicides (GC)	SW846	TAL BUF
6010C	Metals (ICP)	SW846	TAL BUF
Moisture	Percent Moisture	EPA	TAL BUF

### **Protocol References:**

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL EDI = TestAmerica Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

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## **Sample Summary**

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-68232-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-68232-1	SA-01	Solid	09/29/14 07:30	09/29/14 14:28
480-68232-2	SA-02	Solid	09/29/14 08:15	09/29/14 14:28
480-68232-3	9F-01	Solid	09/29/14 08:30	09/29/14 14:28
480-68232-4	DF-01	Solid	09/29/14 09:00	09/29/14 14:28
480-68232-5	2F-02	Solid	09/29/14 09:30	09/29/14 14:28
480-68232-6	3F-03	Solid	09/29/14 09:50	09/29/14 14:28
480-68232-7	DF-02	Solid	09/29/14 10:10	09/29/14 14:28
480-68232-8	4F-04	Solid	09/29/14 10:30	09/29/14 14:28
480-68232-9	15G-01	Solid	09/29/14 11:00	09/29/14 14:28
480-68232-10	DF-03	Solid	09/29/14 11:20	09/29/14 14:28
480-68232-11	16F-05	Solid	09/29/14 11:40	09/29/14 14:28
480-68232-12	12F-06	Solid	09/29/14 12:00	09/29/14 14:28
480-68232-13	12G-02	Solid	09/29/14 12:20	09/29/14 14:28
480-68232-14	DF-04	Solid	09/29/14 12:30	09/29/14 14:28
480-68232-15	6G-04	Solid	09/29/14 12:50	09/29/14 14:28

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Special Instructions/ Conditions of Receipt 26 (A fee may be assessed if samples are retained longer than 1 month) Chain of Custody Number 264816 Time Date Sate Sate なられ Analysis (Attach list if more space is needed) 480-68232 Chain of Custody Months Date Date Archive For THE LEAI C Requirements (Specify) \oAnS HOBN Disposal By Lab Containers & Preservatives HOBN 3. Received By 1. Received By ЮH EONH Drinking Water? Yes□ No□ †OSZH элдир Temperature on Receipt — ☐ Return To Client DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy Sample Disposal 110S Time Carrier/Waybill Number Matrix 'pes Project Manages Telephone Num Site Contact 114 12:00 П Ипкпомп Other. 9.50 0):01 1:00 900 S S 6:30 11:20 11:40 a Is 9:30 147:30 Time Date 🗌 21 Days Poison B 1/29 Date 14 Days (Containers for each sample may be combined on one line) Skin Imitant Sample I.D. No. and Description 7 Days | Flammable chase Order/Quote No. e and Location (State) 40004 Custody Record たなれ 48 Hours F-03 <u>1</u>99 Possible Hazard Identification F-02 7-05 104 Turn Around Time Required 0 50 チュウノ 3. Relinquished By Chain of 24 Hours TAL-4124 (1007) Page 40 of 45 10/7/2014

Special Instructions/ Conditions of Receipt (A fee may be assessed if samples are retained longer than 1 month) Time Date 1812#1 THE LEADER IN ENVIRONMENTAL TESTING **TestAmerico** Date of 129 Analysis (Attach list if more space is needed) Lab Number Months Archive For OC Requirements (Specify) Containers & Preservatives Disposal By Lab NgOH 3. Received By ЮH EONH Drinking Water? Yes□ No□ \*OSZH Temperature on Receipt ☐ Retum To Client Sample Disposal JIOS Time Carrier/Waybill Number Matrix pes Site Contact 4/6 Other. ☐ Unknown Time Date 🗌 21 Days ☐ Poison B Date 14 Days Sample I.D. No. and Description (Containers for each sample may be combined on one line) Skin Irritant | Flammable Custody Record 48 Hours Possible Hazard Identification Tom Around Time Required 2. Relinquished By 3. Relinquished By Non-Hazard Chain of 24 Hours TAL-4124 (1007)

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DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

10/7/2014

# **Chain of Custody Record**

Phone (716) 691-2600 Fax (716) 691-7991  Client Information (Sub Contract Lab)  Client Contact: Shipping/Receiving  Company: TestAmerica Laboratones, Inc.	Sampler: Phone:			Stone Stone	Stone, Judy L			Carrier Tracking No(s):	g No(s):	O 4	COC No: 480-20149,1	THE LEADER IN ENVIRONMENTAL TESTING OC NO: 80-20149, 1
122	Sampler: Phone:			Stone E-Mail.	, Judy L			Camer Trackir	ig No(s):	A 0	00 No: 180-20149.1	
12	Phone:			E-Mail.								
Company: TestAmerica Laboratones, Inc.				Judy.	tone@testa	judy.stone@testamericainc.com	ă			יו דו	Page: Page 1 of 2	
						Þ	lysis	Requested		4 A	480-68232-1	
777 New Durham Road,	Due Dato Roquested: 10/6/2014	d:									8	des:
City: Edison	TAT Requested (days):	ıys):			i i i							N - None O - AsNaO2
State, Zip. NJ, 08817	!				<b>美球</b>						D - Nitric Acid E - NaHSO4	P-Na204S Q-Na2SO3
Phone: 732-549-3900(Tel) 732-549-3679(Fax)	*				常概				-		1	R - Na2S2SO3 S - H2SO4
- 1	W0 #				(o)					_		U - Acetone V - MCAA
Project Namo Westwood Country Club Amherst NY	48010508				8 Or							W - pn 4-5 Z - other (specify)
Site:	SSOW#:				D (Y						Othor:	
			Sample		MS/M					mber		
Sample Identification - Client ID (1 ab ID)	Sample Date	Sample (	(C=comp,	S-wolld, O-wastsioil,	erforr 081B/3			-		otal N		Special Instructions/Notes
	$\bigvee$	<u> </u>	OJ I	on Code:	Ž		: <u>;</u>			X	2.30	
SA-01 (480-68232-1)	9/29/14	07:30 Eastern		Solid	×					· _,· .		
SA-02 (480-68232-2)	9/29/14	08:15 Eastern		Solid	×		A CONTRACTOR OF THE PERSON NAMED IN CONT			[يخد:		
9F-01 (480-68232-3)	9/29/14	08:30 Eastern		Solid	×			stod				
DF-01 (480-68232-4)	9/29/14	09:00 Eastern		Solid	×			of Cu		-1		
2F-02 (480-68232-5)	9/29/14	09:30 Eastern		Solid	×			nain d		·		
3F-03 (480-68232-6)	9/29/14	09:50 Eastern		Solid	×			32 C)		_		
DF-02 (480-68232-7)	9/29/14	10:10 Eastern		Solid	×			6823				
4F-04 (490-68232-8)	9/29/14	10:30 Eastern		Solid	×			480-		-1-		
15G-01 (480-68232-9)	9/29/14	11:00 Eastern		Solid	×					-		
DF-03 (480-68232-10)	9/29/14	11:20 Eastern		Solid	×		_	_ _ _		}-÷ :		
16F-05 (480-68232-11)	9/29/14	11:40 Eastern		Solid	×					اجا		
Possible Hazard Identification					Sample	Sample Disposal ( A fee	fee may be	assessed if	ples	retainec	are retained longer than 1	1 month)
Deliverable Requested: I, II, III, IV, Other (specify)					Special I	nstructions/C	Special Instructions/QC Requirements:	ents:				
Empty Kit Relinquished by:		Date:			Time:			Method	Method of Shipment			
Reproduction of the Comment of the C	Date/Time	I hi	S.	日本学	Recen	Received by:			Date/Time;			Company
Relinquished by: Fedel	Pate/Time:		103	Company	Recoived by	W.	B)	10/4	Date/Time:	٨	72	Company
Rolinguished by:	Dato/Time:		- 0	Company	Received by	,,			Dato/Time:			Company
Custody Seals Intact: Custody Seal No.: 3/	1,059	202			Cooler	Temperature(s	Cooler Temperature(s) °C and Other Remarks:	èmarks:	100		1	1

# **Chain of Custody Record**

#S	14.4	24/4		Care Care Annaixa.		Cooler Temperaturets			2	50	316401	32	No No	Δ Yes Δ No
												)		Custodic
Company	1	Date/Time:				Received by		Company			Date/Time:			Rolinguished by:
Company	10/0	Date/Time:	w T	103		Received by		Company	100	Υ.	Date/Time:	X	Fede	Relinquished by:
Company		Date/Time:			7	Received by:		12 THY	1760	7	Date Ome:	E	ran weller	Comprished by MACHINA
		Method of Shipment	Method of				Time:			Date:			quished by:	Empty Kit Relinquished by:
			is:	C Requirements:	ictions/QC F	Special Instructions/Q	Spe						quested: I, II, III, IV, Other (specify)	Deliverable Re
	Archive For		Disposal By Lab		1	Return To Clier	П	E CHECK					Unconfirmed	Unconfirmed
than 1 month)	tained fonder		sessed if sa	may be as	<b>*</b>	note Disp	San		-				Possible Hazard Identification	Possible Haz
				+	-		1							
	1,6					-								
	~-:				-									
	7-13													
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	:				_									
					-									
	; <b>4</b>					×		Solid		12:50 Eastern	9/29/14		232-15)	6G-04 (480-68232-15)
	1					×		Solid		12:30 Eastern	9/29/14		232-14)	DF-04 (480-68232-14)
	نقد					×		Solid		12:20 Eastem	9/29/14		8232-13)	12G-02 (480-68232-13)
	-24°					×		Solid		12:00 Eastern	9/29/14		(232-12)	12F-06 (480-66232-12)
and the second	X	1.00	2.7	1 1		1.	X	Preservation Code:	Preserva	X	$\bigvee$	10.00		
Special Instructions/Note:	Total No					8081B/35	Fletd Fil Perform	Swsolid, Ownasteloil, BT=Tissue, AwAir	Type (C=comp, G=grab)	Sample Time	Sample Date		Sample Identification - Client ID (Lab ID)	Sample Identi
	mber					46 TC		Matrix	Sample					
	of cor					L Pesti			100		SSOW#:			Sitte:
						cides -					Project #: 48010508		Project Name: Westwood Country Club Amherst NY	Project Name: Westwood Cor
	J-Dt Water					OLM0					**OW			Email:
	G - Amchior H - Ascorbio					4.2					PO#		Tel) 732-549-3679(Fax)	Phone: 732-549-3900(Tel)
cd P - Na2C4S 4 Q - Na2SO3 R - Na2S2SO3	E - NaHSO4						N.							NJ, 08817
	B - NaOH									tays):	TAT Roquested (days):			City: Edison
8	Preservati						1			ted:	Due Date Requested: 10/6/2014		am Road, ,	Address: 777 New Durham Road,
2-1	Job #: 480-68232-1		Requested	ıalysis Req	Analy								aboratories, Inc.	TestAmerica Laboratories,
12	Page: Page 2 of 2				E-Mail: judy.stone@testamericainc.com	testameni	all: /.stone@	judy			Phone.			Shipping/Receiving
9.2	COC No: 480-20149.2	No(s).	Camer Tracking No(s).			۲	Stone, Judy L	Stor			Sampler:	•	nation (Sub Contract Lab)	Client Information
THE LEADER IN EARLINGS WESTING	THE LEAD!					3	\eco	tody F	Chain of Custody Record	Chain			Amherst, NY 14228-2238 Phone (716) 691-2600 Fax (716) 691-7991	Amherst, NY 14228-2298 Phone (716) 691-2600 Fax
estAmerica	D								,	2			TestAmerica Buffalo	TestAmer
								1	1	1		9	6	

### **Login Sample Receipt Checklist**

Client: C&S Engineers, Inc. Job Number: 480-68232-1

Login Number: 68232 List Source: TestAmerica Buffalo

List Number: 1

Creator: Janish, Carl M

Creator: Janish, Carl M		
Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	
Cooler Temperature is acceptable.	False	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	False	No analyses checked off on first page.
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	c+s
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

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### **Login Sample Receipt Checklist**

Client: C&S Engineers, Inc.

Job Number: 480-68232-1

Login Number: 68232
List Source: TestAmerica Edison
List Number: 2
List Creation: 10/04/14 02:29 PM

Creator: Hall, Alonzo

Creator. Hall, Alorizo		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	316901,902
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.4,3.0° C IR #5
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

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Visit us at:

www.testamericainc.com



THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo 10 Hazelwood Drive Amherst, NY 14228-2298 Tel: (716)691-2600

TestAmerica Job ID: 480-69993-1

Client Project/Site: Westwood Country Club Amherst NY

For:

C&S Engineers, Inc. 141 Elm Street Suite 100 Buffalo, New York 14203

Attn: Cody Martin

Authorized for release by: 10/29/2014 5:27:03 PM

Joe Giacomazza, Project Management Assistant II joe.giacomazza@testamericainc.com

Designee for

Judy Stone, Senior Project Manager (484)685-0868 judy.stone@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

### TestAmerica Job ID: 480-69993-1

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### **Definitions/Glossary**

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

Reporting Limit or Requested Limit (Radiochemistry)

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Relative Percent Difference, a measure of the relative difference between two points

TestAmerica Job ID: 480-69993-1

### **Qualifiers**

### Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### **Glossary**

RL

RPD

TEF TEQ

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio

TestAmerica Buffalo

### **Case Narrative**

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-69993-1

Job ID: 480-69993-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative 480-69993-1

### Receipt

The samples were received on 10/23/2014 3:20 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.3° C.

### Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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### **Detection Summary**

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-69993-1

Client Sample ID: 3PD-01 Lab Sample ID: 480-69993-1 Result Qualifier MDL Unit Dil Fac D Method Analyte RL Prep Type 1 ☆ 6010C Arsenic 3.5 2.8 0.56 mg/Kg Total/NA Lab Sample ID: 480-69993-2 Client Sample ID: 3PD-02 Analyte Result Qualifier RL MDL Unit Dil Fac D Method 5.3 2.4 0.48 mg/Kg 1 🌣 6010C Total/NA Arsenic Client Sample ID: 4PD-01 Lab Sample ID: 480-69993-3 Analyte Result Qualifier RL MDL Unit Dil Fac D Method Prep Type 1 ≅ 6010C Arsenic 4.4 2.9 0.59 mg/Kg Total/NA Client Sample ID: 4PD-02 Lab Sample ID: 480-69993-4 Result Qualifier Dil Fac D Method Analyte RL MDL Unit Prep Type 1 ▽ Arsenic 8.3 5.0 1.0 mg/Kg 6010C Total/NA Client Sample ID: 15PD-01 Lab Sample ID: 480-69993-5 Dil Fac D Method Analyte Result Qualifier RLMDL Unit Prep Type 1 🌣 11.3 4.3 0.87 mg/Kg 6010C Total/NA Arsenic Client Sample ID: 15PD-02 Lab Sample ID: 480-69993-6 MDL Dil Fac D Method Analyte Result Qualifier RLUnit Prep Type 5.0 3.0 0.60 mg/Kg 1 🙃 6010C Total/NA Arsenic Client Sample ID: DO-01 Lab Sample ID: 480-69993-7 Analyte Result Qualifier RLMDL Unit Dil Fac D Method Prep Type 1 🌣 6010C Arsenic 3.1 2.9 0.59 mg/Kg Total/NA Client Sample ID: DO-02 Lab Sample ID: 480-69993-8 Dil Fac D Method Analyte Result Qualifier RL MDL Unit Prep Type Arsenic 3.2 2.7 0.54 mg/Kg ≎ 6010C Total/NA Lab Sample ID: 480-69993-9 Client Sample ID: 17PD-01 Analyte Result Qualifier RL **MDL** Unit Dil Fac D Method **Prep Type** 1 🛱 6010C Arsenic 2.3 J 3.6 0.72 mg/Kg Total/NA Client Sample ID: 17PD-02 Lab Sample ID: 480-69993-10 Analyte Result Qualifier RL **MDL** Unit Dil Fac D Method Prep Type Arsenic 2.1 J 2.9 0.57 mg/Kg 1 ≅ 6010C Total/NA Client Sample ID: EC-01 Lab Sample ID: 480-69993-11

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

### **Detection Summary**

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-69993-1

Client Sample ID: EC-01 (Continued)

Lab Sample ID: 480-69993-11

 Analyte
 Result
 Qualifier
 RL
 MDL
 Unit
 Dil Fac
 D
 Method
 Prep Type

 Arsenic
 1.5
 J
 3.3
 0.66
 mg/Kg
 1
 0.00
 6010C
 Total/NA

Client Sample ID: EC-02 Lab Sample ID: 480-69993-12

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D Method	Prep Type
Arsenic	1.3 J	3.5	0.71 mg/Kg	1 ≅ 6010C	Total/NA

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Client: C&S Engineers, Inc. Project/Site: Westwood Country Club.	Amherst NY						TestAmeri	ca Job ID: 480-	69993-1	
Client Sample ID: 3PD-01							Lab Sample ID: 480-69993-1			
Date Collected: 10/23/14 10:50 Date Received: 10/23/14 15:20								Matr Percent Soli	ix: Solid ids: 72.7	
Method: 6010C - Metals (ICP) Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Arsenic	3.5		2.8	0.56	mg/Kg	<u> </u>	10/24/14 15:56	10/27/14 21:48	1	
Client Sample ID: 3PD-02							Lab Sam	ple ID: 480-6	9993-2	
Date Collected: 10/23/14 11:00								-	ix: Solid	
Date Received: 10/23/14 15:20								Percent Soli	ds: 76.6	
Method: 6010C - Metals (ICP)										
Analyte		Qualifier	RL	MDL		— <del>D</del>	Prepared	Analyzed	Dil Fac	
Arsenic	5.3		2.4	0.48	mg/Kg	¥	10/24/14 15:56	10/27/14 22:11	1	
Client Sample ID: 4PD-01							Lab Sam	ple ID: 480-6		
Date Collected: 10/23/14 11:10									ix: Solid	
Date Received: 10/23/14 15:20								Percent Soli	ds: 68.6	
Method: 6010C - Metals (ICP)	Posult	Qualifier	RL	MDL	Unit	D	Propared	Analyzod	Dil Fac	
Analyte Arsenic	4.4	Quaimer	2.9		mg/Kg	— <del>¤</del>	Prepared 10/24/14 15:56	Analyzed 10/27/14 22:14	Dil Fac	
Client Sample ID: 4PD-02							Lab Sam	ple ID: 480-6	9993-4	
Date Collected: 10/23/14 11:15									ix: Solic	
Date Received: 10/23/14 15:20								Percent Soli	ids: 37.5	
Method: 6010C - Metals (ICP)	D It	0	DI.	Man	114	_	Daniel	Aveloved	D'1 5-	
Analyte Arsenic	8.3	Qualifier	RL 5.0	MDL 1.0	Unit mg/Kg	— <del>D</del>	Prepared 10/24/14 15:56	Analyzed 10/27/14 22:17	Dil Fac	
-	0.5		0.0	1.0	mg/rtg		10/24/14 10:00	10/21/14 22.11	'	
Client Sample ID: 15PD-01							Lab Sam	ple ID: 480-6	9993-5	
Date Collected: 10/23/14 11:45							Matrix: Solid			
Date Received: 10/23/14 15:20								Percent Soli	ids: 42.3	
Method: 6010C - Metals (ICP)	_									
Analyte Arsenic	11.3	Qualifier	RL 4.3	MDL 0.87	mg/Kg	— <del>D</del>	Prepared 10/24/14 15:56	Analyzed 10/27/14 22:20	Dil Fac	
-	11.5		7.5	0.07	mg/rtg	·	10/24/14 15:50	10/21/14 22:20		
Client Sample ID: 15PD-02							Lab Sam	ple ID: 480-6	9993-6	
Date Collected: 10/23/14 11:35									ix: Solic	
Date Received: 10/23/14 15:20								Percent Soli	ids: 67.2	
Method: 6010C - Metals (ICP)						_				
Analyte	Result	Qualifier	RL 3.0	MDL 0.60	mg/Kg	— <del>D</del>	Prepared 10/24/14 15:56	Analyzed 10/27/14 22:22	Dil Fac	
Arsenic -	5.0		3.0	0.00	mg/Kg		10/24/14 13.30	10/21/14 22.22	'	
Client Sample ID: DO-01							Lab Sam	ple ID: 480-6		
Date Collected: 10/23/14 12:10									ix: Solic	
Date Received: 10/23/14 15:20								Percent Soli	ids: 71.6	
Method: 6010C - Metals (ICP)										
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac	
Arsenic	3.1		2.9	0.59	mg/Kg	₩	10/24/14 15:56	10/27/14 22:25	1	

TestAmerica Buffalo

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10/29/2014

Client: C&S Engineers, Inc. TestAmerica Job ID: 480-69993-1 Project/Site: Westwood Country Club Amherst NY Client Sample ID: DO-02 Lab Sample ID: 480-69993-8 Date Collected: 10/23/14 12:00 Matrix: Solid Date Received: 10/23/14 15:20 Percent Solids: 68.9 Method: 6010C - Metals (ICP) Analyte RL MDL Unit D Prepared Analyzed Result Qualifier Dil Fac æ 2.7 0.54 mg/Kg 10/24/14 15:56 10/27/14 22:28 Arsenic 3.2 Client Sample ID: 17PD-01 Lab Sample ID: 480-69993-9 Date Collected: 10/23/14 12:20 **Matrix: Solid** Date Received: 10/23/14 15:20 Percent Solids: 58.4 Method: 6010C - Metals (ICP) Analyte Result Qualifier RL**MDL** Unit D Prepared Analyzed Dil Fac ☆ 10/24/14 15:56 3.6 2.3 J 0.72 mg/Kg 10/27/14 22:39 **Arsenic** Client Sample ID: 17PD-02 Lab Sample ID: 480-69993-10 Date Collected: 10/23/14 12:18 Matrix: Solid Date Received: 10/23/14 15:20 Percent Solids: 66,7 Method: 6010C - Metals (ICP) Analyte Result Qualifier RL**MDL** Unit D Prepared Analyzed Dil Fac ₩ 2.9 10/24/14 15:56 10/27/14 22:42 Arsenic 2.1 J 0.57 mg/Kg Client Sample ID: EC-01 Lab Sample ID: 480-69993-11 Date Collected: 10/23/14 12:38 Matrix: Solid Date Received: 10/23/14 15:20 Percent Solids: 62.0 Method: 6010C - Metals (ICP) Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac 3.3 Arsenic 1.5 J 0.66 mg/Kg 10/24/14 15:56 10/27/14 22:45

RL

3.5

MDL Unit

mg/Kg

0.71

Client Sample ID: EC-02

Date Collected: 10/23/14 12:40

Date Received: 10/23/14 15:20

Method: 6010C - Metals (ICP)

Analyte

**Arsenic** 

Lab Sample ID: 480-69993-12

Analyzed

10/27/14 22:48

Prepared

10/24/14 15:56

Matrix: Solid

Dil Fac

Percent Solids: 55.0

Result Qualifier

1.3 J

## **QC Sample Results**

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-69993-1

Client Sample ID: Method Blank

1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 480-209876/1-A

**Matrix: Solid** 

Analysis Batch: 210426

Prep Type: Total/NA Prep Batch: 209876

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Result Qualifier RL MDL Unit Analyte D Prepared Analyzed Dil Fac 1.9 10/24/14 15:56 10/27/14 21:43 Arsenic ND 0.37 mg/Kg

Lab Sample ID: LCSSRM 480-209876/2-A Client Sample ID: Lab Control Sample Matrix: Solid Prep Type: Total/NA

Prep Batch: 209876 Analysis Batch: 210426 LCSSRM LCSSRM Spike Analyte Added Result Qualifier Unit %Rec Limits Arsenic 120 116.2 mg/Kg 97.0 70.0 - 145.

Lab Sample ID: 480-69993-1 MS Client Sample ID: 3PD-01 **Matrix: Solid** Prep Type: Total/NA Prep Batch: 209876

Analysis Batch: 210426

Sample Sample Spike MS MS %Rec. Added Analyte Result Qualifier Result Qualifier Unit D %Rec Limits 3.5 50.6 96 75 \_ 125 Arsenic 52.15 mg/Kg

Lab Sample ID: 480-69993-1 MSD Client Sample ID: 3PD-01 Matrix: Solid Prep Type: Total/NA

Analysis Batch: 210426

Prep Batch: 209876 Sample Sample Spike MSD MSD %Rec. RPD Result Qualifier Added RPD Limit Analyte Result Qualifier D Limits Unit %Rec ☆ 98 51.4 75 - 125 3 20 Arsenic 3.5 53.91 mg/Kg

## **QC Association Summary**

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-69993-1

## Metals

## **Prep Batch: 209876**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-69993-1	3PD-01	Total/NA	Solid	3050B	
480-69993-1 MS	3PD-01	Total/NA	Solid	3050B	
480-69993-1 MSD	3PD-01	Total/NA	Solid	3050B	
480-69993-2	3PD-02	Total/NA	Solid	3050B	
480-69993-3	4PD-01	Total/NA	Solid	3050B	
480-69993-4	4PD-02	Total/NA	Solid	3050B	
480-69993-5	15PD-01	Total/NA	Solid	3050B	
480-69993-6	15PD-02	Total/NA	Solid	3050B	
480-69993-7	DO-01	Total/NA	Solid	3050B	
480-69993-8	DO-02	Total/NA	Solid	3050B	
480-69993-9	17PD-01	Total/NA	Solid	3050B	
480-69993-10	17PD-02	Total/NA	Solid	3050B	
480-69993-11	EC-01	Total/NA	Solid	3050B	
480-69993-12	EC-02	Total/NA	Solid	3050B	
LCSSRM 480-209876/2-A	Lab Control Sample	Total/NA	Solid	3050B	
MB 480-209876/1-A	Method Blank	Total/NA	Solid	3050B	

## Analysis Batch: 210426

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-69993-1	3PD-01	Total/NA	Solid	6010C	209876
480-69993-1 MS	3PD-01	Total/NA	Solid	6010C	209876
480-69993-1 MSD	3PD-01	Total/NA	Solid	6010C	209876
480-69993-2	3PD-02	Total/NA	Solid	6010C	209876
480-69993-3	4PD-01	Total/NA	Solid	6010C	209876
480-69993-4	4PD-02	Total/NA	Solid	6010C	209876
480-69993-5	15PD-01	Total/NA	Solid	6010C	209876
480-69993-6	15PD-02	Total/NA	Solid	6010C	209876
480-69993-7	DO-01	Total/NA	Solid	6010C	209876
480-69993-8	DO-02	Total/NA	Solid	6010C	209876
480-69993-9	17PD-01	Total/NA	Solid	6010C	209876
480-69993-10	17PD-02	Total/NA	Solid	6010C	209876
480-69993-11	EC-01	Total/NA	Solid	6010C	209876
480-69993-12	EC-02	Total/NA	Solid	6010C	209876
LCSSRM 480-209876/2-A	Lab Control Sample	Total/NA	Solid	6010C	209876
MB 480-209876/1-A	Method Blank	Total/NA	Solid	6010C	209876

## **General Chemistry**

## Analysis Batch: 209715

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-69993-1	3PD-01	Total/NA	Solid	Moisture	
480-69993-2	3PD-02	Total/NA	Solid	Moisture	
480-69993-3	4PD-01	Total/NA	Solid	Moisture	
480-69993-4	4PD-02	Total/NA	Solid	Moisture	
480-69993-5	15PD-01	Total/NA	Solid	Moisture	
480-69993-6	15PD-02	Total/NA	Solid	Moisture	
480-69993-7	DO-01	Total/NA	Solid	Moisture	
480-69993-8	DO-02	Total/NA	Solid	Moisture	
480-69993-9	17PD-01	Total/NA	Solid	Moisture	
480-69993-10	17PD-02	Total/NA	Solid	Moisture	

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## **QC Association Summary**

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-69993-1

## **General Chemistry (Continued)**

## Analysis Batch: 209715 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-69993-11	EC-01	Total/NA	Solid	Moisture	
480-69993-12	EC-02	Total/NA	Solid	Moisture	

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#### **Lab Chronicle**

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-69993-1

Lab Sample ID: 480-69993-1

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Client Sample ID: 3PD-01	Lab Sample ID: 480-69993-
Date Collected: 10/23/14 10:50	Matrix: Sol
Date Received: 10/23/14 15:20	Percent Solids: 72

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			209876	10/24/14 15:56	TRP	TAL BUF
Total/NA	Analysis	6010C		1	210426	10/27/14 21:48	LMH	TAL BUF
Total/NA	Analysis	Moisture		1	209715	10/23/14 22:03	CW	TAL BUF

Client Sample ID: 3PD-02 Lab Sample ID: 480-69993-2

Date Collected: 10/23/14 11:00 Matrix: Solid Date Received: 10/23/14 15:20 Percent Solids: 76.6

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			209876	10/24/14 15:56	TRP	TAL BUF
Total/NA	Analysis	6010C		1	210426	10/27/14 22:11	LMH	TAL BUF
Total/NA	Analysis	Moisture		1	209715	10/23/14 22:03	CW	TAL BUF

Client Sample ID: 4PD-01 Lab Sample ID: 480-69993-3

Date Collected: 10/23/14 11:10 Matrix: Solid Date Received: 10/23/14 15:20 Percent Solids: 68,6

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			209876	10/24/14 15:56	TRP	TAL BUF
Total/NA	Analysis	6010C		1	210426	10/27/14 22:14	LMH	TAL BUF
Total/NA	Analysis	Moisture		1	209715	10/23/14 22:03	CW	TAL BUF

Client Sample ID: 4PD-02 Lab Sample ID: 480-69993-4

Date Collected: 10/23/14 11:15 **Matrix: Solid** Date Received: 10/23/14 15:20 Percent Solids: 37.5

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			209876	10/24/14 15:56	TRP	TAL BUF
Total/NA	Analysis	6010C		1	210426	10/27/14 22:17	LMH	TAL BUF
Total/NA	Analysis	Moisture		1	209715	10/23/14 22:03	CW	TAL BUF

Client Sample ID: 15PD-01 Lab Sample ID: 480-69993-5

Date Collected: 10/23/14 11:45 **Matrix: Solid** Date Received: 10/23/14 15:20 Percent Solids: 42.3

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			209876	10/24/14 15:56	TRP	TAL BUF
Total/NA	Analysis	6010C		1	210426	10/27/14 22:20	LMH	TAL BUF
Total/NA	Analysis	Moisture		1	209715	10/23/14 22:03	CW	TAL BUF

TestAmerica Buffalo

#### Lab Chronicle

Client: C&S Engineers, Inc.

Client Sample ID: 15PD-02

Date Collected: 10/23/14 11:35

Date Received: 10/23/14 15:20

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-69993-1

Lab Sample ID: 480-69993-6

Matrix: Solid

Percent Solids: 67.2

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3050B	<del></del>		209876	10/24/14 15:56	TRP	TAL BUF
Total/NA	Analysis	6010C		1	210426	10/27/14 22:22	LMH	TAL BUF
Total/NA	Analysis	Moisture		1	209715	10/23/14 22:03	CW	TAL BUF

Client Sample ID: DO-01 Lab Sample ID: 480-69993-7

Date Collected: 10/23/14 12:10

Date Received: 10/23/14 15:20

Matrix: Solid
Percent Solids: 71.6

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			209876	10/24/14 15:56	TRP	TAL BUF
Total/NA	Analysis	6010C		1	210426	10/27/14 22:25	LMH	TAL BUF
Total/NA	Analysis	Moisture		1	209715	10/23/14 22:03	CW	TAL BUF

Client Sample ID: DO-02 Lab Sample ID: 480-69993-8

Date Collected: 10/23/14 12:00 Matrix: Solid

Date Received: 10/23/14 15:20 Percent Solids: 68.9

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			209876	10/24/14 15:56	TRP	TAL BUF
Total/NA	Analysis	6010C		1	210426	10/27/14 22:28	LMH	TAL BUF
Total/NA	Analysis	Moisture		1	209715	10/23/14 22:03	CW	TAL BUF

Client Sample ID: 17PD-01 Lab Sample ID: 480-69993-9

Date Collected: 10/23/14 12:20 Matrix: Solid
Date Received: 10/23/14 15:20 Percent Solids: 58.4

Date Received: 10/23/14 15:20

Batch Batch Dilution Batch Prepared
Prep Type Type Method Run Factor Number or Analyzed Analyst Lab

	Daton	Daton		Dilation	Daton	ricparca		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			209876	10/24/14 15:56	TRP	TAL BUF
Total/NA	Analysis	6010C		1	210426	10/27/14 22:39	LMH	TAL BUF
Total/NA	Analysis	Moisture		1	209715	10/23/14 22:03	CW	TAL BUF

Client Sample ID: 17PD-02 Lab Sample ID: 480-69993-10

 Date Collected: 10/23/14 12:18
 Matrix: Solid

 Date Received: 10/23/14 15:20
 Percent Solids: 66.7

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			209876	10/24/14 15:56	TRP	TAL BUF
Total/NA	Analysis	6010C		1	210426	10/27/14 22:42	LMH	TAL BUF
Total/NA	Analysis	Moisture		1	209715	10/23/14 22:03	CW	TAL BUF

TestAmerica Buffalo

## **Lab Chronicle**

Client: C&S Engineers, Inc.

Date Received: 10/23/14 15:20

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-69993-1

Lab Sample ID: 480-69993-11

Matrix: Solid

Percent Solids: 62.0

**Client Sample ID: EC-01** Date Collected: 10/23/14 12:38

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			209876	10/24/14 15:56	TRP	TAL BUF
Total/NA	Analysis	6010C		1	210426	10/27/14 22:45	LMH	TAL BUF
Total/NA	Analysis	Moisture		1	209715	10/23/14 22:03	CW	TAL BUF

Client Sample ID: EC-02 Lab Sample ID: 480-69993-12

Date Collected: 10/23/14 12:40 **Matrix: Solid** 

Date Received: 10/23/14 15:20 Percent Solids: 55.0

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			209876	10/24/14 15:56	TRP	TAL BUF
Total/NA	Analysis	6010C		1	210426	10/27/14 22:48	LMH	TAL BUF
Total/NA	Analysis	Moisture		1	209715	10/23/14 22:03	CW	TAL BUF

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

## **Certification Summary**

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-69993-1

## Laboratory: TestAmerica Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program		EPA Region	Certification ID	Expiration Date
New York	NELAP		2	10026	03-31-15
The following analytes	are included in this report, bu	it certification is not offe	red by the governing a	authority:	
The following analytes	are included in this report, bu	it certification is not one			
			,	•	
Analysis Method	Prep Method	Matrix	Analyt	e	
Analysis Method Moisture	Prep Method	Matrix Solid	Analyt	re nt Moisture	

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## **Method Summary**

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-69993-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL BUF
Moisture	Percent Moisture	EPA	TAL BUF

#### Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

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## **Sample Summary**

Client: C&S Engineers, Inc.

Project/Site: Westwood Country Club Amherst NY

TestAmerica Job ID: 480-69993-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-69993-1	3PD-01	Solid	10/23/14 10:50	10/23/14 15:20
480-69993-2	3PD-02	Solid	10/23/14 11:00	10/23/14 15:20
480-69993-3	4PD-01	Solid	10/23/14 11:10	10/23/14 15:20
480-69993-4	4PD-02	Solid	10/23/14 11:15	10/23/14 15:20
480-69993-5	15PD-01	Solid	10/23/14 11:45	10/23/14 15:20
480-69993-6	15PD-02	Solid	10/23/14 11:35	10/23/14 15:20
480-69993-7	DO-01	Solid	10/23/14 12:10	10/23/14 15:20
480-69993-8	DO-02	Solid	10/23/14 12:00	10/23/14 15:20
480-69993-9	17PD-01	Solid	10/23/14 12:20	10/23/14 15:20
480-69993-10	17PD-02	Solid	10/23/14 12:18	10/23/14 15:20
480-69993-11	EC-01	Solid	10/23/14 12:38	10/23/14 15:20
480-69993-12	EC-02	Solid	10/23/14 12:40	10/23/14 15:20

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Chain of Custody Record

Temperature on Receipt —

<u>TestAmerica</u> Drinking Water? Yes□ No□

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)		,						
S Engineers.	717	Project Man	a K	0	ream		15/23/14 Chain of Custory Number	
Address / Flow Freet		Telephone	Number (Area C	Sode)/Fax Nu	Week 2	/	Lab Number / Page ( of	1
State	Zip Code 14703	Site Contact	,	Lab Contac	itact ,			
Project Name and Location (State)		Carrier/Wa	Carrier/Waybill Number			boxo	Instru	Instructions/
Contract Purchase Order/Quote No.			Matrix		Containers & Preservatives	Ars	480-69993 Chain of Custody ns of	ns of Receipt
Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	lios sucentry	POSZH	HOBN PARS	Senic.	H 2109	rsent
3PD-01	10/23/4	hish	ス	$\prec$		<b>&gt;</b>	ONLA	
3PD-02	7	1:00:	-	_		-	5	
	//	0/:/						
4PD-02		11:15						
\$ 15Ph-01	//	11:45						
6 15PD-02	<i>"</i>	11.35					J. S/J	A
DO-01	Ż	12:10						
DO-02	.7	12:00						
1770-01	7	12:20						
17PD-02	77	12:10		_				
だしつ		2:38						
EC-07	>	12:40	-	_			>>	
m mable   Skin Imitant	☐ Poison B ☐		Sample Disposal  Return To Client	-	Disposal By Lab	Archive For	(A fee may be assessed if samples are retained	pa
Turn Around Time Required  24 Hours	ays / 21 Days	Other_		-	OC Requirements (Specify)	pecify)		
1. Retinduished By A Bul Met.	A	Date 10/23	My July	12 2	1. Received By	H. H.	Date Time 14	M
Z. Relinquished/By		rofizalia	/ Time		received By L	A roll	TA 34 10/23/14 10	340
n		Date	Тіте	8	preceived By		Date Time	
Comments Comments				)			りこった	

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

## **Login Sample Receipt Checklist**

Client: C&S Engineers, Inc.

Job Number: 480-69993-1

Login Number: 69993 List Source: TestAmerica Buffalo

List Number: 1

Creator: Robison, Zachary J

Croutor. Robison, Zuonary C		
Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	C&S
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

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A Traditional Neighborhood in the heart of Amherst.

# New York State Department of Environmental Conservation Brownfield Cleanup Program

## **Brownfield Cleanup Program Application**

**Location** 

Westwood Country Club 772 North Forest Road (SBL #68.01-1-1) Amherst, Erie County, New York

Please find contained herein the NYSDEC BCP Application applicable to the Westwood Country Club (Site ID #C915291), including the Supplemental and Supporting Information. To access the complete BCP Application to include all attachments, exhibits and appendices please note the following resources:

## **NYSDEC BCP Application Contact:**

Michael Hinton, Project Manager NYS Dept. of Environmental Conservation, Region 9 270 Michigan Avenue Buffalo, NY 14203

Phone: 716.851.7201

Email: Michael.Hinton@dec.ny.gov

## NYSDEC BCP Application Site ID #C915291 Document Repository:

Contact: Roseanne Butler-Smith, Director Buffalo & Erie County Public Library Williamsville Branch 5571 Main Street Williamsville, NY 14221

Phone: 716.632.6176

## Digital Copy of NYSDEC BCP Application Site ID #C915291 Available Online at:

www.westwoodamherst.com

#### **Prepared By:**



Mark Colmerauer, Environmental Service Manager 141 Elm Street, Suite 100

Buffalo, NY 14203

Office Phone: 716.847.1630 Fax: 716.847.1454

www.cscos.com



## **NEW YORK STATE** DEPARTMENT OF ENVIRONMENTAL CONSERVATION BROWNFIELD CLEANUP PROGRAM (BCP) ECL ARTICLE 27 / TITLE 14



DEPARTMENT USE ONLY BCP SITE #:

08/2013			BCP SITE #:				
Section I. Requestor Information	on						
NAME Mensch Capital Partners,	LLC						
ADDRESS 350 Essjay Road, Suite	304						
CITY/TOWN Williamsville		ZIP CODE 142	221				
PHONE 716-631-8000	FAX 716-631-80	034	E-MAIL andrew.shaevel@bobalew.com				
from the database must be submitted to DEC with	r other entity requiring auth bove, in the <u>NYS Departmer</u> a the application, to docume ments, as well as their emplo	nt of State's Corporation & Busin nt that the applicant is authorized overs, meet the requirements of S	ess Entity Database. A print-out of entity information I to do business in NYS. ection 1.5 of DER-10: Technical Guidance for Site				
NAME OF REQUESTOR'S REPRESENTATIV	EAndrew Shaevel						
ADDRESS 350 Essjay Road, Suite	304						
CITY/TOWN Williamsville		ZIP CODE 142	221				
PHONE 716-631-8000	FAX 716-631-803	34	E-MAIL andrew.shaevel@bobalew.com				
NAME OF REQUESTOR'S CONSULTANT <b>C</b>	&S Engineers, Inc	· · · · · · · · · · · · · · · · · · ·					
ADDRESS 141 Elm Street, Suite 100							
city/town Buffalo	T	ZIP CODE 142	203				
PHONE 716-847-1630	FAX 716-847-1454 E-MAIL mcolmerauer@cscos.						
name of requestor's attorney <b>The</b>	Slater Law Firm,	PLLC					
ADDRESS 26 Mississippi Street, S	uite 400						
city/town Buffalo	T	ZIP CODE 142	203				
PHONE <b>716-845-6760</b>	fax 716-845-676	4	E-MAIL CSlater@CSlaterLaw.com				
THE REQUESTOR MUST CERTIFY THAT HI CHECKING ONE OF THE BOXES BELOW:	E/SHE IS EITHER A PART	ICIPANT OR VOLUNTEER IN	ACCORDANCE WITH ECL 27-1405 (1) BY				
PARTICIPANT A requestor who either 1) was the owner of the disposal of hazardous waste or discharge of petroperson responsible for the contamination, unless as a result of ownership, operation of, or in subsequent to the disposal of hazardous waste or	oleum or 2) is otherwise a the liability arises solely avolvement with the site	VOLUNTEER A requestor other than a participant, including a requestor whose liability arises solely as a result of ownership, operation of or involvement with the site subsequent to the disposal of hazardous waste or discharge of petroleum.  NOTE: By checking this box, the requestor certifies that he/she has exercised appropriate care with respect to the hazardous waste found at the facility by taking reasonable steps to: i) stop any continuing discharge; ii) prevent any threatened future release; and iii) prevent or limit human, environmental, or natural resource exposure to any previously released hazardous waste.					
Requestor Relationship to Property (check one):  Previous Owner  Current Owner  If requestor is not the site owner, requestor will h  -Proof of site access must be submitted for non-			Yes No				

Section II. Property Information Check here if this application is to request significant chan Existing BCP site number:	ges to prope	rty set fort	h in an ex	isting BC	A: 🗌
PROPERTY NAME Westwood Country Club					
ADDRESS/LOCATION 772 North Forest Road CITY/TOW	<sub>N</sub> Williamsville		ZIP C	ODE 1422	1
MUNICIPALITY(IF MORE THAN ONE, LIST ALL): Town of Amherst					
COUNTY Erie SITE SIZE	E (ACRES) 170.	542			
LATITUDE (degrees/minutes/seconds) 42 ° 58 ' 55.311 "	LONGITUDE	(degrees/minu	tes/seconds) -	78 ° 46	' 24.3048 ''
HORIZONTAL COLLECTION METHOD: SURVEY GPS MAP	HORIZONTA	L REFERENC	E DATUM:		
COMPLETE TAX MAP INFORMATION FOR ALL TAX PARCELS INCLUDED PER THE APPLICATION INSTRUCTIONS. Parcel Address	WITHIN THE PR	OPERTY BOU Section No.		TTACH REQ	UIRED MAPS Acreage
772 North Forest Road, Williamsville NY 14221	1	68.01	1	1	170.542
If no, please attach a metes and bounds description of the property 2. Is the required property map attached to the application? (applica 3. Is the property part of a designated En-zone pursuant to Tax Law For more information please see Empire State Development's we If yes, identify area (name)  Percentage of property in En-zone (check one):    0-49%  4. Is this application one of multiple applications for a large develop project spans more than 25 acres (see additional criteria in BCP a properties in related BCP applications:	tition will not b § 21(b)(6)? bsite.	☐ 50-99% where the de	□ 1 velopment	□ Υε 100% □ Υε	es 🔽 No
5. Property Description Narrative:					
See attached					+
6. List of Existing Easements (type here or attach information)  Easement Holder  See attached	<u>escription</u>				
7. List of Permits issued by the NYSDEC or USEPA Relating to the					

Section III. Current Property C	Owner/Operator Information			
OWNER'S NAME Mensch Capital F	Partners, LLC			
ADDRESS 350 Essjay Road, Sui	te 304			
city/town Williamsville	ZIP CODE <b>142</b>	221		
PHONE <b>716-631-8000</b>	FAX 716-631-8034	E-MAIL andrew.shae	vel@bob	alew.com
OPERATOR'S NAME Westwood Cou	intry Club			
ADDRESS 772 North Forest Roa	d			
CITY/TOWN Williamsville	ZIP CODE <b>142</b>	221		
PHONE <b>716-632-3040</b>	FAX 716-632-3044	E-MAIL golfstaff@	westwo	odcc.cc
Section IV. Requestor Eligibilit	y Information (Please refer to ECL § 2	27-1407)		
<ol> <li>Are any enforcement actions pending</li> <li>Is the requestor subject to an existing</li> <li>Is the requestor subject to an outstand</li> <li>Has the requestor been determined to</li> <li>Has the requestor previously been de</li> <li>Has the requestor been found in a civact involving contaminants?</li> <li>Has the requestor been convicted of a theft, or offense against public admir.</li> <li>Has the requestor knowingly falsified false statement in a matter before the</li> <li>Is the requestor an individual or entit</li> </ol>	il proceeding to have committed a negligent or in a criminal offense that involves a violent felony, istration?  If or concealed material facts or knowingly subm	ntentionally tortious fraud, bribery, perjury, itted or made use of a committed an act	☐ Yes	☑No ☑No ☑No ☑No ☑No ☑No ☑No ☑No
Section V. Property Eligibility l	Information (Please refer to ECL § 27	-1405)		
If yes, please provide relevant inform  2. Is the property, or was any portion of If yes, please provide: Site #  3. Is the property subject to a permit un If yes, please provide: Permit type:  Date permit i  4. Is the property subject to a cleanup of If yes, please provide: Order #	Cthe property, listed on the NYS Registry of Inac Class #  der ECL Article 27, Title 9, other than an Interin EPA ID Number: Permit expiration da rder under navigation law Article 12 or ECL Article deral enforcement action related to hazardous w	ctive Hazardous Waste  n Status facility?  ate: cticle 17 Title 10?	☐ Yes  Disposal S ☐ Yes ☐ Yes ☐ Yes ☐ Yes ☐ Yes	☑No Sites? ☑No ☑No ☑No ☑No
Section VI. Project Description				
What stage is the project starting at?  Please attach a description of the project  • Purpose and scope of the project  • Estimated project schedule	✓ Investigation Reserve which includes the following components:	emediation		

Section VII. Proper	ty's Environm	ental History			
1. <b>Environmental Rep</b> A Phase I environmental Materials: Standard Pract environmental reports rel	oorts site assessment retice for Environmeated to contaminar	port prepared in accorda ental Site Assessments: Ports on or emanating from	to the requestor, please attained with ASTM E 1527 (A Phase I Environmental Site in the site. The requirements of ECL Arthur	merican Society for Assessment Process)	, and all
			D THE MEDIA WHICH AR ED AND COPIES INCLUD		E BEEN
Contaminant Category	Soil	Groundwater	Surface Water	Sediment	Soil Gas
Petroleum					
Chlorinated Solvents					
Other VOCs					
SVOCs					
Metals	xx				
Pesticides					
PCBs					
Other*					
*Please describe: Arsenic is	present in site soils at eleva	ated concentrations likely related to	the historic application of pesticides on	the golf course	
	MINANTS: INDIC	ATE SUSPECTED CON	TAMINANTS AND THE M		HAVE BEEN
Contaminant Category	Soil	Groundwater	Surface Water	Sediment	Soil Gas
Petroleum					
Chlorinated Solvents					
Other VOCs					
SVOCs					
Metals					
Pesticides					
PCBs					
Other*					
*Please describe:					
	OR SUSPECTED SO	OURCES OF CONTAMI	NANTS (CHECK ALL THA	AT APPLY). PROVII	DE BASIS FOR
□ Above Ground Pipeline □ Routine Industrial Open □ Drums or Storage Cont □ Coal Gas Manufacture Other: Historic application of	e or Tank Lagoorations Dumpainers Seepa	ping or Burial of Wastes age Pit or Dry Well strial Accident	☐ Underground Pipeline o ☐ Septic tank/lateral field ☐ Foundry Sand ☐ Unknown ce	r Tank □Surface Sp □Adjacent P □Electroplat	roperty
5. INDICATE PAST LAN	D USES (CHECK	ALL THAT APPLY):			
☐Coal Gas Manufacturin☐Pipeline Other: Used as golf course s	☐Service Statio			Salvage Yard Electroplating	□Bulk Plant □Unknown
ADDRESSES AND TEL	EPHONE NUMBE	ERS AS AN ATTACHME	PERATORS WITH NAMES  NT. DESCRIBE REQUEST  DPERATOR. IF NO RELAT	ΓOR'S	DNE".

## **Section VIII. Contact List Information**

Please attach, at a minimum, the names and addresses of the following:

- 1. The chief executive officer and planning board chairperson of each county, city, town and village in which the property is located.
- 2. Residents, owners, and occupants of the property and properties adjacent to the property.
- 3. Local news media from which the community typically obtains information.
- 4. The public water supplier which services the area in which the property is located.
- 5. Any person who has requested to be placed on the contact list.
- 6. The administrator of any school or day care facility located on or near the property.
- 7. In cities with a population of one million or more, the local community board if the proposed site is located within such community board's boundaries (\*note: per the 2010 census, New York City is the only city in NY with a population over one million).
- 8. The location of a document repository for the project (e.g., local library). In addition, attach a copy of a letter sent to the repository acknowledging that it agrees to act as the document repository for the property.

Section IX. Land Use Factors (Please refer to ECL § 27-1415(3))	
1. Current Use: ☐Residential ☐Commercial ☐Industrial ☐Vacant ☐Recreational (check all that app Provide summary of business operations as an attachment.	oly)
2. Intended Use Post Remediation: Unrestricted Residential Commercial Industrial (check all the Provide specifics as an attachment.	hat apply)
3. Do current historical and/or recent development patterns support the proposed use? (See #14 below re: discussion of area land uses)	☑Yes □No
4. Is the proposed use consistent with applicable zoning laws/maps?	□Yes ☑No
5. Is the proposed use consistent with applicable comprehensive community master plans, local waterfront revitalization plans, designated Brownfield Opportunity Area plans, other adopted land use plans?	☑Yes □No
6. Are there any Environmental Justice Concerns? (See §27-1415(3)(p)).	□Yes ☑No
7. Are there any federal or state land use designations relating to this site?	□Yes ☑No
8. Do the population growth patterns and projections support the proposed use?	✓Yes □No
9. Is the property accessible to existing infrastructure?	✓Yes □No
10. Are there important cultural resources, including federal or state historic or heritage sites or Native American religious sites within ½ mile?	□Yes ☑No
11. Are there important federal, state or local natural resources, including waterways, wildlife refuges, wetlands, or critical habitats of endangered or threatened species within ½ mile?	✓Yes □No
12. Are there floodplains within ½ mile?	✓Yes □No
13. Are there any institutional controls currently applicable to the property?	□Yes ☑No
14. Describe the proximity to real property currently used for residential use, and to urban, commercial, industri recreational areas in an attachment.	al, agricultural, and
15. Describe the potential vulnerability of groundwater to contamination that might migrate from the property, i to wellhead protection and groundwater recharge areas in an attachment.	ncluding proximity
16. Describe the geography and geology of the site in an attachment.	

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Secti	ion X. Statemen	t of Certification a	nd Signatures
(By re	equestor who is an i	ndividual)	
Clean of DE forth i	up Program Applica C's approval letter. in DER-32 and the the thation provided on the second contraction of the second con	ations and Agreements at I also agree that in the erms contained in a site his form and its attachn	d agree to the general terms and conditions set forth in DER-32 <i>Brownfield</i> and to execute a Brownfield Cleanup Agreement (BCA) within 60 days of the date event of a conflict between the general terms and conditions of participation set specific BCA, the terms in the BCA shall control. I hereby affirm that nents is true and complete to the best of my knowledge and belief. I am aware that a Class A misdemeanor pursuant to section 210.45 of the Penal Law.
Date:	Si	gnature;	Print Name:
(By an	n requestor other tha	ın an individual)	
ackno Agree agree contai attach punish	wledge and agree to ments and to execut that in the event of a ned in a site-specifi ments is true and con able as a Class A n	the general terms and of a Brownfield Cleanup a conflict between the go BCA, the terms in the mplete to the best of maisdemeanor pursuant to	of Mensch Capital Partners, LLC (entity); that I am authorized by that entity to make this me or under my supervision and direction. If this application is approved, I conditions set forth in DER-32 Brownfield Cleanup Program Applications and Agreement (BCA) within 60 days of the date of DEC's approval letter. I also eneral terms and conditions of participation set forth in DER-32 and the terms BCA shall control. I hereby affirm that information provided on this form and its y knowledge and belief. I am aware that any false statement made herein is Section 210.45 of the Penal Law.  Print Name: Andrew J. Shaevel
SUBM	ITTAL INFORMA	ATION:	
Three (	(3) complete copies	are required.	
•	Two (2) copies, or CD, must be sent to	ne paper copy with orig	inal signatures and one electronic copy in Portable Document Format (PDF) on a
	Chief, Site Contro New York State D Division of Enviro 625 Broadway Albany, NY 12233	epartment of Environm onmental Remediation	ental Conservation
•	One (1) paper cop located. Please ch	y must be sent to the Deck our website for the	EC regional contact in the regional office covering the county in which the site is address of our regional offices.
OR DE	PARTMENT USE ON	LY	
on orm	T T A L CODE		Y D. D. ODDYGD

## UNANIMOUS WRITTEN RESOLUTION OF ALL MEMBERS OF MENSCH CAPITAL PARTNERS, LLC

NOVEMBER 13, 2014

The undersigned, being the holders of all of the units of **MENSCH CAPTIAL PARTNERS**, **LLC**, a New York limited liability company (the "Company"), hereby jointly consent to pass, enact, approve, and adopt the following resolutions without a meeting and direct that this Resolution be filed with the minutes of the Company:

**RESOLVED**, that Andrew J. Shaevel, Managing Partner of the Company, (an "Authorized Person") be, and hereby is, authorized, directed, and empowered, acting alone, in the name or on behalf of the Company, to execute the Brownfield Cleanup Program ("BCP") Agreement, or any other documents or agreements necessary to enter and participate in the New York State Department of Environmental Conservation's Brownfield Cleanup Program (Environmental Conservation Law Article 27, Title 14) for property owned by the Company located at 772 North Forest Road, and 381 and 385 Maple Road, Amherst, New York; 14221 and be it further

**RESOLVED**, that the Authorized Person is hereby authorized, empowered and directed to take all such action on behalf of the Company as they may deem necessary, appropriate or advisable to carry out the intent and purposes of the foregoing resolutions; and be it further

**RESOLVED**, that any acts of any officer of the Company and of any persons designated and authorized to act by any such officer of the Company, which acts would have been authorized by the foregoing resolutions except that such acts were taken prior to the adoption of such resolutions, are hereby severally ratified, confirmed, approved and adopted as acts of the Company.

IN WITNESS WHEREOF, the undersigned have executed this Unanimous Written Consent of all Members of the Company as of the date first set forth above.

#### ESSJAY MENSCH PARTNERS, LLC

	*
HAMIST	TER HOSPITALITY HOPEWELL, LLC
Ву:	
M	Лark Hamister,

772 NORTH FOREST ACQUISITION, LLC

By: Doll F. Ciminalli, Mamban

This consent may be executed in various counterpart copies, and by facsimile, each of which shall be deemed an original

This consent may be executed in various counterpart copies, and by facsimile, each of which shall be deemed an original but all of which together shall constitute one and the same instrument.

## UNANIMOUS WRITTEN RESOLUTION OF ALL MEMBERS OF MENSCH CAPITAL PARTNERS, LLC

NOVEMBER 13, 2014

The undersigned, being the holders of all of the units of **MENSCH CAPTIAL PARTNERS**, **LLC**, a New York limited liability company (the "Company"), hereby jointly consent to pass, enact, approve, and adopt the following resolutions without a meeting and direct that this Resolution be filed with the minutes of the Company:

**RESOLVED**, that Andrew J. Shaevel, Managing Partner of the Company, (an "Authorized Person") be, and hereby is, authorized, directed, and empowered, acting alone, in the name or on behalf of the Company, to execute the Brownfield Cleanup Program ("BCP") Agreement, or any other documents or agreements necessary to enter and participate in the New York State Department of Environmental Conservation's Brownfield Cleanup Program (Environmental Conservation Law Article 27, Title 14) for property owned by the Company located at 772 North Forest Road, and 381 and 385 Maple Road, Amherst, New York; 14221 and be it further

**RESOLVED**, that the Authorized Person is hereby authorized, empowered and directed to take all such action on behalf of the Company as they may deem necessary, appropriate or advisable to carry out the intent and purposes of the foregoing resolutions; and be it further

**RESOLVED**, that any acts of any officer of the Company and of any persons designated and authorized to act by any such officer of the Company, which acts would have been authorized by the foregoing resolutions except that such acts were taken prior to the adoption of such resolutions, are hereby severally ratified, confirmed, approved and adopted as acts of the Company.

**IN WITNESS WHEREOF**, the undersigned have executed this Unanimous Written Consent of all Members of the Company as of the date first set forth above.

#### ESSJAY MENSCH PARTNERS, LLC

By:	
Andrew J. Shaevel, Managing Partner	
HAMISTER HOSPITALITY HOPEWELL,	LLC
By:	
Daniel M. Hamister, Manager	
772 NORTH FOREST ACQUISITION, LLC	
By:	
Paul Ciminelli,	

This consent may be executed in various counterpart copies, and by facsimile, each of which shall be deemed an original but all of which together shall constitute one and the same instrument.

State of New York County of Erie	)	ss:	
the said state, personally known name is subscribed to	onally appeared own to me or p to the within in ature on the in	Andrew J. Soroved to me or strument and a	2014, before me, the undersigned, a Notary Public in and for Shaevel, Managing Partner of the Essjay Mensch Partners in the basis of satisfactory evidence to be the individual whose cknowledged to me that he executed the same in his capacity individual, or the person upon behalf of which the individual
		Common of the Co	Hotalon a Jamen Man Notary Public
State of New York County of Erie	)	ss:	KATHLEEN A. GUENTHER #01GU4675162 NOTARY PUBLIC, STATE OF NEW YORK QUALIFIED IN ERIE COUNTY My Commission Expires August 31, 20
the said state, perso personally known to is subscribed to the	nally appeared me or proved within instrum on the instrum	Mark Hamis to me on the beent and acknown	2014, before me, the undersigned, a Notary Public in and fo <b>ter,</b> President of the <b>Hamister Hospitality Hopewell, LLC</b> easis of satisfactory evidence to be the individual whose name wledged to me that he executed the same in his capacity, and dual, or the person upon behalf of which the individual acted
		_	Notary Public
State of New York County of Eric	)	ss:	

On the 13<sup>th</sup> day of November in the year 2014, before me, the undersigned, a Notary Public in and for the said state, personally appeared **Paul F. Ciminelli**, Member of **772 North Forest Acquistion**, **LLC**, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her capacity, and that by her signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

Notary Public

KATHLEEN A. GUENTHER #01GU4675162 NOTARY PUBLIC, STATE OF NEW YORK QUALIFIED IN ERIE COUNTY My Commission Expires August 31, 20

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## **New York State Department of Environmental Conservation**

# **BROWNFIELD CLEANUP PROGRAM**

# BROWNFIELD CLEANUP PROGRAM APPLICATION SUPPLEMENTAL AND SUPPORTING INFORMATION

for

Westwood Country Club 772 North Forest Road (SBL #68.01-1-1) Amherst, Erie County, New York

November 13, 2014

## BCP APPLICATION – SUPPLEMENTAL AND SUPPORTING INFORMATION

# WESTWOOD COUNTRY CLUB 772 NORTH FOREST ROAD, AMHERST, NEW YORK

## BCP APPLICATION – ADDITIONAL INFORMATION

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## ATTACHMENTS

Attachment 1	NYSDOS Database of Entities Printout
Attachment 2	USGS 7.5 Minute Quadrangle Map
Attachment 3	Tax Map Boundaries / Metes and Bounds
Attachment 4	Site Map
Attachment 5	Adjacent Parcels and Land Use
Attachment 6	Permits
Attachment 7	Site Assessment/Investigation Documentation
Attachment 8	Contaminant Summary
Attachment 9	Previous Owner Summary and Title Search
Attachment 10	Document Repository Confirmation
Attachment 11	Conceptual Site Development Plan
Attachment 12	Floodplain Map
Attachment 13	Wetlands Report

## ACRONYM LIST

Acronym	Description
BCP Site	Area that includes 772 North Forest Road
En-zone	Environmental Zone
NYSDEC	New York State Department of Environmental Conservation
USEPA	United States Environmental Protection Agency
Town	Town of Amherst

#### **BCP APPLICATION – SUPPLEMENTAL AND SUPPORTING INFORMATION**

### WESTWOOD COUNTRY CLUB 772 NORTH FOREST ROAD, AMHERST, NEW YORK

Project Westwood Country Club

SCO Soil Cleanup Objective

ESA Environmental Site Assessment

UST Underground Storage Tank

Comprehensive

Plan

Town of Amherst Bicentennial Comprehensive Plan

EJ Environmental Justice

ESD Empire State Development

BOA Brownfield Opportunity Area

LWRP Local Waterfront Revitalization Program

FEMA Federal Emergency Management Agency

This document and its attachments supplement the Brownfield Cleanup Program ("BCP") Application. The information is organized by the BCP Application sections. If no additional information is required, it is noted under its relevant section.

## **Section I - Requestor Information**

The requestor is Mensch Capital Partners, LLC as noted.

Mensch Capital Partners, LLC 5477 Main Street Williamsville, NY 14221 Andrew Shaevel Andrew.shaevel@bobalew.com

New York State Department of State's Corporation & Business Entity Database printouts are located in Attachment 1.

## **Section II - Property Information**

The Brownfield Cleanup Program Site is comprised of one parcel (772 North Forest Road: SBL #68.01-1-1) as noted in the form. Attachment 2 depicts the Brownfield Cleanup Program Site ("BCP Site") on a USGS 7.5 minute quadrangle map.

## 1. Tax Map Boundaries

The final boundaries of the property are shown in Attachment 3.

## 2. Property Base Map

A map showing the proposed BCP Site on a digital aerial ortho-photograph is included in Attachment 4. Attachment 5 contains and depicts parcel lines, tax map parcel numbers and owner information for adjacent parcels, a 1,000-foot radius and land use for the entire area.

#### 3. En-Zone

Designation of En-Zones is limited to Eligible 2000 Census Tracts with a poverty rate of at least 20% according to the 2000 Census and an unemployment rate of at least 125% of the New York State average, or a poverty rate of at least double the rate for the county in which the tract is located. The BCP site is within US Census Tract 91.09. According to the Empire State Development website Erie County Census Tract 91.09 is not a designated Environmental Zone ("En-Zone"), based on 2000 Census data, in which tax credits are enhanced.

## 4. Multiple Applications

The proposed project is a stand-alone project and is not the subject of multiple applications.

## 5. Property Description

Additional property description is provided in Sections VI, VII and IX.

#### 6. Easements

The following easements were noted on the ALTA survey (included as Attachment 3):

- 1. Easement to the Town of Amherst recorded in Liber 200 of Deeds at page 400 does not affect subject premises: the easement lies in Lot 60 North of Ellicott Creek.
- 2. Easement to the Town Board of the Town of Amherst recorded in Liber 8285 of Deeds at page 167 does affect subject premises and is shown on the ALTA survey.
- 3. Easement to The New York Telephone Company recorded in Liber 10274 of Deeds at page 842 does affect subject premises and is shown on the ALTA survey.
- 4. Easement to the National Fuel Gas Distribution Corporation recorded in Liber 10305 of Deeds at page 758 does affect subject premises and is shown on the ALTA survey.
- 5. Easement to the National Fuel Gas Distribution Corporation recorded in Liber 10305 of Deeds at page 759 does affect subject premises and is shown on the ALTA survey.
- 6. Easement to The New York Telephone Company recorded in Liber 7088 of Deeds at page 665 does affect subject premises and is shown on the ALTA survey.
- 7. Temporary easement to the Town of Amherst recorded in Liber 9251 of Deeds at page 101 released no later than the 31 of June, 1984 and does not affect subject premises.
- 8. Easement to The New York Telephone Company recorded in Liber 9843 of Deeds at page 147 does affect subject premises and is shown on the ALTA survey.
- 9. Easement to the Erie County Water Authority recorded in Liber 7759 of Deeds at page 585 does affect subject premises and is shown on the ALTA survey.
- 7. Past or Present Permits from New York State Department of Environmental Conservation ("NYSDEC") or United States Environmental Protection Agency ("USEPA")

The golf course has the necessary NYSDEC certifications for applying pesticides. Attachment 6 contains the permits and the 2013 annual application report.

## **Section III - Current Property Owner/Operator Information**

The BCP Site is comprised of one tax parcel as indicated by Erie County on-line mapping website. The parcel includes 772 North Forest Road (SBL #68.01-1-1).

Parcel owner names and information are provided below:

Mensch Capital Partners, LLC 5477 Main Street Williamsville, NY 14221 Phone: (716) 362-7880

Fax: (716) 580-3137

E-mail: Andrew.shaevel@bobalew.com

## **Section IV - Requestor Eligibility Information (ECL §27-1407)**

No additional information is required.

## **Section V - Property Eligibility Information (ECL §27-1405)**

The BCP Site is not subject to an Order.

## Section VI – Project Description

Mensch Capital Partners, LLC, owners of the Westwood Country Club property on Sheridan Drive at North Forest Road in Amherst, has developed an innovative conceptual master plan to create Westwood, a new traditional neighborhood in the heart of Amherst that will feature great public spaces, a variety of residences and a neighborhood center that are all complementary to the surrounding community and the entire Town of Amherst.

The stated project mission is for Westwood to be a walkable, sustainable, and comfortable traditional neighborhood rooted in the planning goals and objectives of the Town's Comprehensive Plan, compatible with surrounding neighborhoods and an asset to the entire Town of Amherst.

The BCP Site has been subject of a recent investigation which demonstrated that the property has been affected by the past site uses and may be a candidate for inclusion into the BCP. The results of the recent site investigation are discussed Section VII.

## **Project Information**

The 170-acre Site is located at 772 North Forest Road, 385 Maple Road and 391 Maple Road in the south-central portion of the Town of Amherst, Erie County, New York. The Site is bounded by Sheridan Drive (State Route 324) on the south; Maple Road (County Road 192) on the north; North Forest Road (County Road 294), Ellicott Creek, and the Audubon Par 3 Golf Course on the east; and Frankhauser Road and Fairways Boulevard on the west.

The Site is currently an active private golf course, although market forces have severely impacted the course's long-term viability.

The Site was first developed as a golf course in 1921 and has remained in use since that time. Structures on the property include six main buildings, several sheds, a swimming pool and tennis courts associated with the Westwood Country Club golf course.

## Purpose and Scope

The proposed clean-up will include soil remediation activities to allow the construction of a mixed use development that will comprise the entire 170.54 acres of the BCP Site.

The conceptual master plan for Westwood (shown in Attachment 11) includes:

- Patio Homes 108 patio homes adjacent to Audubon Par 3 Golf Course
- Townhouses 90 condo/townhouses with access to public green space and recreation features
- Single Family Homes 46 single family lots with direct access to the park, lake, public green space and recreation features
- Senior Living 200 assisted living and 100 independent senior units with access to open green space, recreation features, in close proximity to the mixed-use urban core
- Parks, Lakes and Ponds 64 acres of public green and open space, pedestrian and bike trails, and Westwood Lake access, representing approximately 38 percent of the site
- Apartments 56 rental apartments and town houses
- Banquet Facility new event green space and banquet facilities utilizing existing club house

shared parking			

8

Neighborhood Center – 280 units of residential living over neighborhood retail and restaurants; 37 lakeside apartments or townhouses; 200,000 square feet of professional office space (six

## Estimated Project Schedule

The schedule for the BCP process anticipated to be followed for the remediation of the BCP Site is outlined below:

<b>Anticipated Date</b>	Milestone
November 13, 2014	Brownfield Credit Program Application Submission
January 30, 2014	Remedial Investigation Work Plan Submittal
January 31, 2015	BCP Acceptance
February 15, 2015	BCA Signed
March 15, 2015	Remedial Investigation Work Plan Approved
March 25, 2015	Remedial Investigation
April 15, 2015	Remedial Measures Work Plan Submittal
May 15, 2015	Remedial Investigation Report and Remedial Work Plan Approval
June 1, 2015	Remedial Work
September 15, 2015	SMP/Final Engineering Report Submittals
October 1, 2015	Decision Document
November 1, 2015	SMP and FER Approvals
December 2015	Certificate of Completion

## Section VII - Property's Environmental History

## 1. Environmental Reports

Preliminary environmental information currently exists for the Site. The following summarizes the 2012 Phase I ESA and a limited soil characterization program completed in 2014. The associated documents are attached in Attachment 7.

## February 27, 2012 – Quality Inspection Services/Applus RTD Phase I ESA Report

The Phase I ESA for the BCP Site did not identify recognized environmental conditions (RECs).

## November 2014 - Surface Soil and Sediment Characterization

C&S conducted a sampling program to characterize surface soil and sediment at the BCP Site. The characterization program consisted of the sampling and analysis of 15 surface soil samples and 12 sediment samples at the Site. The surface soil samples were analyzed for pesticides, herbicides, and arsenic using USEPA Methods 8082, 8151, and 6010, respectively. The sediment samples were analyzed for arsenic using EPA Method 6010.

Analytical sample results from these investigations are summarized in Section 2 Sampling Data.

## 2. Sampling Data

A total of 15 surface soil and 12 sediment samples were collected from the Site in 2014. The soil samples were analyzed for pesticides, herbicides, and arsenic, while the sediment samples were analyzed only for arsenic.

The surface soil samples did not contain detectable concentrations of pesticides and herbicides. However, concentrations of arsenic ranged from 2.2 to 66.3 mg/kg. The detected arsenic concentrations in five of the surface soil samples were above the NYSDEC's least stringent Soil Cleanup Objective (SCO) for Industrial Use, suggesting that some level of cleanup and/or management of impacted soils will be required prior to redevelopment of the Site. The samples with concentrations contravening the SCOs were located in various portions of the Site, rather than in a limited number of discrete locations.

The sediment sampling results ranged from 1.3 to 11.3 mg/kg. These concentrations are below the NYSDEC Unrestricted Use SCO. Using the NYSDEC's June 24, 2014 "Screening and Assessment of Contaminated Sediments Guidance," eleven of the concentrations are characterized as Class A, which is defined as sediments that present little to no potential for risk to aquatic life. One sample, collected from the pond on Hole 15, contained arsenic concentrations falling within the Class B classification, indicating that the additional information is needed to determine the potential risk to aquatic life.

Known contaminants include arsenic associated with pesticide use at the Site during routine golf course maintenance operations across the BCP Site. NYSDEC Industrial Use SCOs were exceeded in 5 of the 15 surface soil sampling locations, and one sediment sample fell within the Class B category.

The location of the soil and sediment samples and relative exceedance level is shown in Attachment 7. In addition, tables of known contamination for soil are located in Attachment 8. The following is a brief summary of the contaminants on-site.

#### Soil Contaminants:

Attachment 8 contains a summary of contaminants at the Site, and a summary of soil analytical results by contaminant class from the 2014 sampling is provided as follows:

## <u>Pesticides – Soils</u>

No pesticides were detected.

## <u>Herbicides – Soils</u>

No herbicides were detected.

## **Metals**

Arsenic: Five (5) detections above Industrial Use SCO.

#### Sediment Contaminants:

A summary of sediment analytical results class from the 2014 sampling is provided as follows:

## **Metals**

Arsenic: No detections above Unrestricted Use SCO and one

detection within the Class B category range.

## 3. Suspected Contaminants and Media

No additional contaminants, beyond the known contaminants discussed in Section 2 Sampling Data are suspected to exist at the Site.

## 4. Known or Suspected Sources of Contamination

It is believed that the sources arsenic contamination in the soil and sediment are related to the application of arsenic-based pesticides at the BCP Site, which has occurred on the Site since 1921.

#### 5. Past Land Uses

The BCP Site was reportedly first developed in 1921, and the use of the Site since that time has included golf course, country club, and associated operations. Prior to 1921, land use was agricultural or residential.

#### Adjacent Usage:

Surrounding properties were historically developed for, and remain, generally residential in nature.

## Summary of Potential Sources of Environmental Impairment

A Phase I Environmental Site Assessment (ESA) completed for the Site in 2012 did not identify environmental concerns associated with spills, petroleum and hazardous material storage facilities, remediation sites, or other such issues.

However, due to the historical usage of the Site as a golf course, concerns associated with pesticides applied during routine golf course maintenance operations at the Site exist.

## 7. List of Previous Owners and Operators

#### **Previous Owners**

A title search and a summary of previous Site owners are provided in Attachment 9. It should be understood that none of the previous owners have a legal relationship with the Requestor.

## **Previous Operators**

Name	Address	Phone	From	To	Relationship
		Number			to Applicant
Willowdale Golf Club	772 North Forest Rd,	Not applicable	1919	Circa	None
	Williamsville, NY 14221			1929	
Wilmont Town and	772 North Forest Rd,	Not applicable	Circa	Early	None
Country Club	Williamsville, NY 14221		1929	1930s	
Blossom Health	772 North Forest Rd,	Not applicable	Early	1945	None
Country Club	Williamsville, NY 14221		1930s		
Westwood Country	772 North Forest Rd,	(716) 632-	1945	Current	None
Club	Williamsville, NY 14221	3040			

Note – List of Previous Operators was obtained from the DGEIS.

#### **Section VIII - Contact List**

## 1. Local Government – Town of Amherst

Erie County Executive:
Mark Poloncarz
Edward A. Rath County Office Building
95 Franklin Street, 6<sup>th</sup> Floor
Buffalo, NY 14202
(716) 858-6000
http://www2.erie.gov/exec/index.php?q=email-mark

Chief Executive Officer – Town of Amherst Supervisor: Dr. Barry A. Weinstein Amherst Municipal Building 5583 Main Street Williamsville, New York 14221 (716) 631-7032 bweinstein@amherst.ny.us

Planning Board Chairman: Jonathan O'Rourke, Chairman Town of Amherst Planning Board Amherst Municipal Building 5583 Main Street Williamsville, New York 14221 (716) 631-7051

Zoning Board of Appeals: J. Matthew Plunkett, Chairman Town of Amherst Zoning Board of Appeals Amherst Municipal Building 5583 Main Street Williamsville, New York 14221 (716) 631-7080

## 2. Residents, Owners and Occupants of Property and Property Adjacent to Site:

Adjacent land owners are presented in the map and summarized in the table in Attachment 4.

#### 3. Local Media:

#### Local Newspaper:

Buffalo News 1 News Plaza Buffalo NY 14240 (716) 849-3434 http://www.buffalonews.com/classifieds/

Amherst Bee 5564 Main Street Williamsville, NY 14221 (716) 632-4700 http://www.amherstbee.com/

### Local Television:

WGRZ – TV Channel 2 259 Delaware Avenue Buffalo, NY 14202 (716) 849-2200 http://www.wgrz.com/news/default.aspx

WIVB – TV Channel 4 2077 Elmwood Avenue Buffalo, NY 14207 (716) 874-4410 http://www.wivb.com/subindex/news

WKBW – TV Channel 7 7 Broadcast Plaza Buffalo, NY 14202 (716) 840-7777 http://www.wkbw.com/

#### Radio:

WBEN 930 AM Radio 500 Corporate Parkway Amherst, NY 14226 (716) 843-0600 http://www.wben.com

WBFO 88.7 FM Radio 3435 Main Street Buffalo, NY 14214 (716) 829-6000 http://www.wbfo.org/

#### Websites:

Town of Amherst website: http://www.amherst.ny.us/default.asp

## 4. Local Water Supplier:

Erie County Water Authority 295 Main Street Room 350 Buffalo, NY 14203 (716) 849-8444

## 5. Persons Requesting to be Placed on Contact List:

To Be Completed as Necessary

## 6. School and Day Care Facilities:

There are no schools or day care facilities located on the Brownfield cleanup site. Schools and daycare facilities in the vicinity of the Brownfield cleanup site include:

#### Schools:

Mrs. Ann Laudisio, Principal Maplemere School 236 E. Maplemere Road (approximately 0.25 miles to the west) Amherst, NY 14221 Phone: (716) 250-1550

Dr. Charles Galluzzo, Principal Maple West Elementary School 851 Maple Road (approximately 0.7 miles to the east) Williamsville, NY 14221 (716) 626-8840

Mr. Keith Wing, Principal Forest Elementary School 250 N. Forest Road (approximately 0.9 miles to the southeast) Williamsville, NY 14221 Phone: (716) 626-9800

Daniel R. Lewis, Principal Smallwood Drive Elementary 300 Smallwood Drive (approximately 0.6 miles to the south) Amherst, NY 14226 Phone: 716-362-2100

Chris Lauricella, Head of School The Park School of Buffalo 4625 Harlem Road (approximately 0.6 miles to the southwest) Buffalo, NY 14226 Phone: 716-839-1242

Satish K. Tripathi, President State University at Buffalo, North Campus Augspurger Road (approximately 0.7 miles to the northwest) (716) 645-2000 Christine Ellington-Rowe, Executive Director SUNY University at Buffalo Child Care Center 100 St Rita's Lane (approximately 0.8 miles to the northwest) Buffalo, NY 14260 (716) 645-6509

#### 7. Document Repositories:

The document repository identified below has been established to provide the public with convenient access to important project documents. Copies of letter proposed to be sent to the document repositories acknowledging they agree to act as a document repository are provided in Attachment 10.

Buffalo & Erie County Public Library Williamsville Branch 5571 Main St. Williamsville, NY 14221 716-632-6176

Attn: Roseanne Butler-Smith, Director

http://buffalolib.org/content/library-locations/area-libraries?lib=Williamsville+Branch

Sunday: Closed

Monday: 10:00 AM - 02:00 PM Tuesday: 04:00 PM - 08:00 PM Wednesday: 10:00 AM - 02:00 PM Thursday: 01:00 PM - 08:00 PM

Friday: Closed

Saturday: 10:00 AM - 02:00 PM

#### **Section IX - Land Use Factors**

### 1. Current Uses: Summary of Business Operations

The BCP Site consists of one parcel currently used as a golf course and country club. Structures on the property include six main buildings, several sheds, a swimming pool and tennis courts associated with the Westwood Country Club golf course.

#### 2. Intended Use – Post Remediation

The Requestors intend to create a mixed use neighborhood during the implementation of the project. The Conceptual Master Plan, included in Attachment 11, shows that components of the mixed use project will be oriented around the new approximately five-acre lake including the original Westwood Country Club ("WCC") clubhouse (which will be preserved) and a traditional neighborhood center. The proposed mixed use project will feature a variety of residential uses as follows: single-family residences, patio homes, townhomes and upscale apartments and will also feature a mix of commercial uses including shops, restaurants, businesses and offices, a four story hotel, and senior living developments (assisted and independent living including rental town homes and independent living senior apartments).

#### 3. Current, Historical and/or Recent Development Patterns

The proposed Project is consistent with current land use patterns. The mixed use development will be located within a primarily residential area of similar density to that proposed for the project. Additionally, the project is planned as a traditional mixed use neighborhood with pedestrian friendly design combined with smart growth initiatives that will provide a walkable, sustainable, comfortable living community, and was specifically designed as such so as to conform to the consistent with the adopted Town of Amherst Bicentennial Comprehensive Plan ("Comprehensive Plan").

#### 4. Consistency with Zoning

The property is currently zoned as "RC," which designates the Site as Recreation Conservation District.

In an effort to ensure that sufficient space will be reserved for open space and recreational opportunities, the Requestor will sustain a buffer area along the boundary of the Site that will remain zoned RC. The buffer area will be integrated into a broader open space and trail network that will be coordinated with site landscaping. However, zoning changes will be necessary to support the planned development. While not consistent with current zoning, the planned development is consistent with the Town of Amherst Comprehensive Plan.

The proposed zoning changes include:

• In order to implement the proposed mixed use project in a manner consistent with the Conceptual Master Plan, amendments to the zoning classification of portions of the Site will be necessary. Accordingly, the Mensch Capital Partners LLC proposes to amend 145.08 acres of the Site that is currently zoned Recreation Conservation District ("RC") to Traditional Neighborhood Development District ("TND"). The TND zoning is being sought to accommodate the proposed residential components, the neighborhood center and office park component of the mixed use project. The TND zoning classification is a Special Purpose District

that provides for new development and redevelopment of fully integrated, mixed use, pedestrianoriented neighborhoods that encourage walkability and minimize traffic congestion, sprawl and infrastructure costs through specific performance standards and design regulations.

- The Project includes a four-story hotel to be located at the core of the Neighborhood Center and the portion of the mixed use project consisting of the hotel and immediately adjacent parking is proposed to be rezoned to General Business District ("GB"). The GB zoning classification is intended to provide community centers, within existing and proposed mixed use activity centers, for the location of commercial uses which serve a larger market area than a neighborhood center.
- The Senior Development components of the mixed use project, featuring both assisted and independent living senior housing, is proposed to be rezoned to Multifamily Residential District Seven ("MFR-7"). The MFR-7 zoning classification is intended to provide areas within the Town for high-density development of adult care facilities, such as senior citizen housing, nursing homes, intermediate care facilities, and single-family detached dwellings not on individual lots.

## 5. Consistency with Plans

The planned project is consistent with the Town of Amherst's current Comprehensive Plan. The Town initiated the preparation of a comprehensive plan in September of 2000 and the plan was adopted by the Town Board in January of 2007 and as was most recently amended in 2011. The Town of Amherst Bicentennial Comprehensive Plan ("Comprehensive Plan") is the official document that serves as a guide to the long-range physical development of the community. The Comprehensive Plan is organized into a series of elements that cover community functions such as Land Use, Transportation and Infrastructure. Each element describes a set of goals, objectives and policies that are designed to achieve that aspect of the Vision Statement. The following is a brief summary of the Project's conformance with the Comprehensive Plan.

- **Vision Statement**: The Vision Statement identifies three fundamental attributes that will sustain the exceptional quality of life for local residents.
  - Livability is identified as one of three fundamental attributes. The Comprehensive Plan identifies a range of lifestyle options within pedestrian friendly mixed use development patterns as a critical component of providing a livable neighborhood. The Project proposal responds to this desire through providing a mixed use development with a traditional neighborhood center featuring single family, rental, condominium and senior housing options.
  - Ocommunity Character is also identified as a fundamental attribute defined by the protection of open space and natural scenic resources, respect for history and heritage and support of visual character through enhanced landscaping measures and the protection of woodlands. The Project responds to this principle by including features for publicly accessible recreational amenities for the Town's residents, preserving and enhancing 64 acres of permanent open space areas and incorporating the original WCC Clubhouse as a historic resource and focal point of the mixed use redevelopment project.
  - O Shared Direction is also identified in the Vision Statement as a fundamental attribute and includes intergovernmental cooperation, diversified economies providing a strong tax base and coordination with the University at Buffalo and other educational institutions. The Project is consistent with this goal by providing a mixed use project that includes a diversified commercial component including neighborhood business and office, medical

and professional office parks, and senior care facilities that will enhance the Town's strong tax base.

- Plan Goals, Objectives and Policies: Section 3-1 of the Comprehensive Plan expresses the need to expand provisions and incentives for mixed use development in designated activity centers. The Plan describes an Activity Center as an area that provides a focus for surrounding neighborhoods while promoting the Town's land use objectives such as compact, pedestrian-friendly development. By definition, such activity centers are higher in density and incorporate a wider range of uses than the lower density, predominantly residential areas surrounding them. The Conceptual Land Use Plan looks to integrate the development of mixed use Activity Centers in two contexts: 1.) within established centers of community activity; and 2.) in appropriate locations where centers of community activity currently do not exist. The Site provides a unique and exciting opportunity to establish an Activity Center that is currently surrounded by predominantly residential areas that will provide a mixed use, compact, and pedestrian friendly traditional neighborhood center for both existing and new residents.
- Redevelopment and Revitalization of Underutilized, Obsolete, and Vacant Properties for Economically Viable Uses: Section 3-9 of the Comprehensive Plan acknowledges that as the Town matures and market conditions evolve, some developed properties may no longer be economically viable as a result of changing economic conditions. The Comprehensive Plan recognizes that existing public and semi-public land uses, such as schools, churches, golf courses and other recreational facilities, may require revitalization in the event that their continued operation becomes difficult due to changing demographic, economic, or social trends. According to Section 3-9 of the Comprehensive Plan, the redevelopment of these areas is identified as requiring careful master planning that maintains the essential character of the site while accommodating significant changes in use and density. The Requestor has engaged in very thorough review of the existing site and potential options for redevelopment given the difficulty of continuing operation of the WCC site as a golf course and country club.
- Open Space Preservation: Figure 4 of the Comprehensive Plan identifies the Site as a "private recreation area" and speaks to encouraging opportunities which provide for the expansion of public open spaces and recreational trail connections. Section 3-14 of the Comprehensive Plan encourages conservation development with incentives for the dedication of open space in private developments. The Requestor has intentionally designed the Project to provide major open space opportunities that will be available to the public for recreational purposes. In addition, the Project provides an opportunity to both connect and expand existing trail networks within the community. The Project directly accommodates the open space preservation intent of the Comprehensive Plan by converting an existing private recreational resource into a mixed use project that includes approximately 64 acres of permanent open space including an approximately 23-acre new park area that will be publicly accessible. The permanent open space area will be protected via the recording a deed restriction at the Erie County Clerk's Office.
- Neighborhood Center Development: Section 3.3 of the Comprehensive Plan provides the Conceptual Land Use Plan and describes in detail the various components and intent of the Conceptual Land Use Plan. Within this section of the Plan, a Neighborhood Center is defined as the smallest scale center, providing convenience shopping for the day-to-day needs of residents in the immediate neighborhood. The Comprehensive Plan suggests developing Neighborhood Centers at the intersections of neighborhood collector streets with arterial streets. These centers should promote good pedestrian and bicycle access to the neighborhood they serve and minimize

traffic impacts on local streets. Where possible, these centers should be located in conjunction with neighborhood-scale civic uses, parks, and public spaces. The Comprehensive Plan suggests placing these centers approximately one mile apart. The Project incorporates all of these design principles per the Comprehensive Plan including limited traffic impacts to local streets (no direct roadways to existing residential neighborhoods are being proposed), incorporating public and civic uses, locating near arterial streets and being sited more than one mile from any existing Neighborhood Center in the community.

- Traffic Congestion Management: Section 6-6 of the Comprehensive Plan acknowledges that the community should "Accept a certain level of traffic congestion as a 'given' and expand investments in alternative transportation modes and compact, mixed use development patterns." The Project provides an opportunity to both better manage existing traffic congestion and expand investment in alternative transportation modes through compact, mixed use development patterns. The Project includes the construction of a new north-south public right of way between Sheridan Drive (State Road 324) and Maple Road (County Road 192) which will help to alleviate existing peak hour traffic congestion along adjacent north-south public right of ways, most notably North Forest Road (County Road 294). Additionally, the Project will manage potential traffic impacts through utilizing a mixed use development pattern that takes advantage of multi-use and pass-by vehicular trips within the neighborhood.
- **Diversity of Housing Types:** Section 8-2 of the Comprehensive Plan promotes the development of a variety of housing types within the Town of Amherst community. The Plan states the following, "The Town should encourage the proportional development of diverse housing types and price levels, including single-family detached (at a variety of lot sizes), townhouse, condominiums, apartments, and housing as part of mixed use developments." The Project provides for every one of the housing types stated within the Comprehensive Plan and additionally offers a purpose built environment for both assisted care and independent living senior housing.
- North Campus Focal Planning Area: The Site is located within the University at Buffalo North Campus Focal Planning Area as per the Comprehensive Plan. The key planning issues considered for this area are focused around the impacts of the ongoing expansion of the UB North Campus student population, need for coordination between the Town and University on campus growth/edge issues, and the potential for research/economic development spin-off from University activities. Section 10.3.2 of the Comprehensive Plan provides a Concept Plan and Strategies for new development and redevelopment of areas within the University Focal Planning Area. Specifically, the Comprehensive Plan includes the following strategy, "Enhance physical connections to the University from surrounding neighborhoods by establishing a linkage or linkages across Ellicott Creek from North Forest Road." The Project provides an opportunity for a linkage in the trail connection for the adjacent neighborhoods through the Site and north toward the UB North Campus.

### 6. Environmental Justice

Criteria for Environmental Justice ("EJ") determination were derived from the USEPA standards for environmental justice areas. These criteria are:

- At least one-half of the study area is of minority status;
- At least one-half of the study area is of low-income status;

- The percentage of minority status is at least 10 percentage points higher than for the entire county in which the population is located; and
- The percentage of low-income status is at least 10 percentage points higher than for the entire county in which the population is located.

The study area defined as US Census Tract 91.09 does not qualify as an EJ area, therefore, there are no EJ concerns.

### 7. Federal or State Designations

The BCP Site is not located within:

- An Empire State Development (ESD) Environmental Zone (En-zone)
- The boundary of an approved Local Waterfront Revitalization Program ("LWRP") or Coastal Zone Management Area
- A Historic District listed on the National or State registers of historic places

#### 8. Population Projections

As described in the Town of Amherst Comprehensive Plan, Town's population was 116,510 and is predicted to grow to a total of 127,264 to 138,839 by 2020. The proposed Project supports this anticipated growth through the creation of additional housing via the creation of a mixed use development that conforms to the Town's vision for future development.

## 9. Accessibility to Infrastructure

Utilities available at the proposed BCP Site include: public water (Erie County Water Authority), public sewage collection and stormwater collection (Town of Amherst Engineering Department Sewer Maintenance Division), electric service (National Grid), and natural gas (National Fuel Gas Company). Electric and gas services may require extensions or upgrades which will be engineered to meet specific facility demands. The BCP Site is located along existing public highways and has direct access to Sheridan Drive, North Forest Road, and Maple Road.

#### 10. Cultural Resources within ½ mile

There are no cultural resources located within one-half mile of the Site.

#### 11. Federal, State or Local Natural Resources

#### **On-Site Natural Resources**

There are no federal or state designated waterways, or wildlife refuges on the BCP Site.

Wetlands on the BCP Site include:

	Wetland/Stream	
Wetland ID	Type	Acreage
Wetland 1	Hardwood Swamp (PFO)	0.309±
Wetland 2	Scrub-Shrub Marsh (PSS)	0.229±
Wetland 3	Open Water (OW)	0.601±
Wetland 4	Open Water (OW)	1.02±
Wetland 5	Hardwood Swamp (PFO)	0.660±
Wetland 6	Open Water (OW)	0.915±
Wetland 7	Emergent Marsh (PEM)	0.052±
Wetland 8	Emergent Marsh (PEM)	0.173±
Wetland 9	Open Water (OW)	0.160±
Wetland 10	Hardwood Swamp (PFO)	0.058±
Wetland 11	Riverine	3.24±
Total	Wetland Area	7.417±

As described in Earth Dimension, Inc.'s September 26, 2014 Wetland Delineation Report (Attachment 13), Wetland 11 (Ellicott Creek) is a traditionally navigable waterway and is regulated by the USACE. In addition, the creek is a NYSDEC Class B stream regulated under Article 15 of the New York State Conservation Law.

#### **Nearby Natural Resources**

Federal or state designated waterways, wetlands, or critical habitats of endangered or threatened species within a ½ mile from the BCP Site include:

#### **State Designated Waterways**

The Site is not located within ½ mile of a State Designated Waterway. However, the Site lies within the Tonawanda Creek Watershed, a major tributary watershed to the Niagara River / Lake Erie Watershed. Tonawanda Creek, a State Designated Waterway, forms the Town's northern boundary with Niagara County and flows to the west and drains large portions of the Town. Portions of Tonawanda Creek have been historically channelized as part of the Erie Canal.

Ellicott Creek, which extends along portions of the eastern boundary of the Site, is the largest tributary of Tonawanda Creek and flows northwest through the Town. Ellicott Creek discharges into a channelized section of Tonawanda Creek, near where Tonawanda Creek flows into the Niagara River.

#### **Wetlands**

Wetlands within a ½ mile from the BCP Site include:

Wetland ID	Wetland/Stream Type	Acreage	Jurisdictional Determination	Comment
PFO1B	Freshwater Forest/Shurb Wetland	23.69	USFWS	Adjacent
PFO1/SS1E	Freshwater Forest/Shurb Wetland	4.40	USFWS	Adjacent
PUBHx	Freshwater Pond	0.85	USFWS	Adjacent
PSS1/EM1B	Freshwater Forest/Shurb Wetland	7.14	USFWS	Adjacent
R2UBH	Riverine	83.04	USFWS	Ellicott Creek
PUBF	Freshwater Pond	1.22	USFWS	Adjacent
PUBHx	Freshwater Pond	0.64	USFWS	On-Site
PUBHx	Freshwater Pond	1.15	USFWS	On-Site
PUBHx	Freshwater Pond	0.98	USFWS	On-Site

#### **Critical Habitat**

Based on a review of the New York Natural Heritage Program database, no fish or wildlife species listed by the NYSDEC or the U.S. Fish and Wildlife Service as threatened, endangered, or special concern are known to occur in the immediate vicinity of the Site. Further, there are no state or locally designated Critical Environmental Areas in the Town of Amherst.

The nearest significant natural area is the 270-acre Great Baehre Swamp Wildlife Management Area ("WMA"), which straddles Hopkins Road (County Route 87) and is located adjacent to the Town park named by the Town in recognition of Army Staff Sgt. William R. "Billy" Wilson III. This WMA is managed by the NYSDEC for day use recreational activities (e.g., biking, hiking and wildlife observation). This area is located approximately 2.4 miles northeast of the Site.

#### 12. Floodplains within ½ mile

Certain areas within the eastern portion of the Project site lie within the 100- and 500-year floodplains of Ellicott Creek, as designated by the Federal Emergency Management Agency ("FEMA"). Portions of the Site, as well as some properties within ½ mile of the Site, are located within Zones AE and Z, as depicted on FEMA's Flood Insurance Rate Map, Community-Panel Numbers 3602660009E and 3602660012E Map, as Revised October 16, 1992. Attachment 12 contains a floodplain map.

The areas of Zone X include areas determined to be outside the 500-year plain as well as those areas of the 500-year flood; areas of 100-year flood with average depths of less than one foot or with drainage areas less than one square mile; and areas protected by levees from 100-year flood.

The Zone AE areas include areas in which the base flood elevation is determined and floodway areas in Zone AE. Zone AE covers high flood risk areas with mandatory flood insurance purchase requirements are necessary.

Prior to the implementation of flood control improvements described below, Ellicott Creek had a history of flooding. According to the USACE, the March 1960 flood, which affected approximately 3,220 acres in Amherst, is considered the flood of record.

According to FEMA, the area most prone to flooding along Ellicott Creek in the Town is the downstream portion of the creek located between Maple Road and Niagara Falls Boulevard. For more than a century, federal, state and local governments have implemented flood control mitigation measures to prevent or minimize flood damage in the Town. For example, in 1932, the Town improved the Ellicott Creek channel upstream of the Village of Williamsville and, in the late 1950s, the USACE cleared a six-mile portion of Ellicott Creek between Sheridan Drive and Sweet Home Road. Further, in 1965, Erie County completed construction of a diversion channel in Ellicott Creek Park in the Town of Tonawanda (from Ellicott Creek to Tonawanda Creek), which was constructed to reduce the potential for flooding within the Town.

#### 13. Institutional Controls

There are no deed restrictions in place that will prohibit the redevelopment or future use of the BCP Site.

#### 14. Adjacent Land Uses

Attachment 4 depicts the land use surrounding the BCP Site within 1,000 feet. Land use in the project area is characterized as primarily residential to the east, south, and west and recreational (Amherst Town Park) to the north. A church and the Town Highway Department garages are located to the east of the Site, and a gasoline filling station is located near the southwest corner of the Site. Land uses were obtained on-line from the Erie County GIS website: http://gisl.erie.gov/GC/ErieCountyNY/default.htm.

#### 15. Groundwater Vulnerability

Based on a review of NYSDEC data, the Site is not underlain by any mapped principal or primary aquifers. Groundwater at and in the vicinity of the Site is not used for public drinking water supply.

Groundwater was investigated as part of a geotechnical evaluation of the Site. As part of its geotechnical analysis, three groundwater observation wells were installed. Results indicate that the water table is present at 17 to 22 feet beneath the surface, although perched water is present in the upper soils, in some instances within a few feet of the surface.

Groundwater will not be used for drinking supply or process supply. Therefore, groundwater vulnerability is low.

## 16. Site Geography and Geology

The Project Site is located within the Erie-Ontario Lake Plain physiographic province of New York. This physiographic region has little relief and is characteristic of an abandoned lakebed. The region includes three plains (Ontario, Huron, and Erie), which are separated by the east-west trending Niagara, Portage and Onondaga escarpments. The Town of Amherst is located in the Salina Lowland of the east-west trending Huron plain and is bounded by the Onondaga and Niagara escarpments, which are comprised of more resistant rock. No unique landforms or geological formations exist on or in the vicinity of the Site.

Topography on the Site averages approximately 600 feet above sea level. In general, the topography gradually drops approximately 10 to 13 feet in elevation from south to north across the Site. Overall, the topography of the Site is relatively level, with the exception of previous modifications resulting from the construction, operation, and maintenance of the existing private golf course, including golf tees, fairways, hazards, greens, ponds and cart paths. In addition, Ellicott Creek meanders along portions of the eastern boundary of the Site. The natural topography in the vicinity of the Site also has been influenced by previous development of sites adjacent to and in the vicinity of the Site, including residential neighborhoods to the east and west of the Site, the UB North Campus, and the Audubon Recreation Center and Golf Courses (Par 3 and 18-hole) to the north and northeast of the Site.

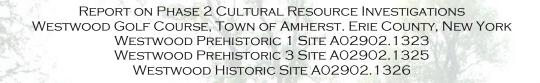
The Soil Survey of Erie County (U.S. Department of Agriculture, Soil Conservation Service <a href="https://www.websoilsurvey.nrcs.usda.gov">www.websoilsurvey.nrcs.usda.gov</a>) identifies soils on the Site as including: Claverack loamy fine sand, Cosad loamy fine sand, Lakemont silt loam, Odessa silt loam, Schoharie silt loam, Teel silt loam, and Urban land-Odessa complex series, with Odessa, Claverack and Cosad being the predominate soil types. Of these types, only Lakemont is considered hydric soil, although hydric inclusions are possible in Cosad, Odessa, and Teel soils series. These soil types on the Project Site are described as follows:

- The Claverack series consists of very deep, moderately well drained soils formed in sandy deposits that overlie clayey lacustrine sediments. They are nearly level to sloping soils in shallow deltas on lake plains.
- The Cosad series consists of very deep somewhat poorly drained soils formed in sandy deposits that overlie clayey lacustrine sediments. They are nearly level soils on lake plains.
- The Lakemont series consists of deep, poorly drained and very poorly drained soils of lake plains. They are nearly level soils formed in very slowly permeable reddish colored clayey lacustrine sediments.
- The Odessa series consists of very deep, somewhat poorly drained soils formed in clayey lacustrine deposits. These soils are in moderately low areas on lake plains.
- The Schoharie series consists of very deep, moderately well drained soils formed in clayey lacustrine sediments. They are on glacial lake plains and uplands mantled with lake sediments.
- The Teel series consists of very deep, moderately well drained soils on floodplains. They formed in nearly level silty alluvial deposits.
- The Urban Land-Odessa complex consists of nearly level areas of urban land and somewhat poorly drained Odessa soils. This complex is on relatively flat landscapes in the City of Buffalo and surrounding metropolitan area, including the Town of Amherst.

The results of the soil borings conducted during the geotechnical evaluation were consistent with the mapped soils information. Specifically, the soil borings encountered native soils consist of glacial till deposited silty clay, clayey silt, silt and silty or clayey sand soils overlying the shale bedrock. In most cases, the soil borings indicated the presence of surface topsoil and man-placed fill or disturbed

indigenous soils above native soils, and this is consistent with topographic modifications associated with golf course construction.

Bedrock in the vicinity of the Site consists generally of gray, medium hard, sound, thinly bedded to bedded shale rock of the Camillus shale formation, with occasional partings, seams and layers of gypsum. The depth to bedrock on the Site ranges from approximately 13.5 to 62.5 feet as evidenced by refusal in 30 soil borings conducted in connection with the geotechnical analysis of the Site.



DECEMBER 2014

PREPARED FOR:
MENSCH CAPITAL PARTNERS, LLC
350 ESSJAY ROAD
WILLIAMSVILLE, NEW YORK 14221

ROBERT L. DEAN & CAMERON R. DEAN

HERITAGE PRESERVATION & INTERPRETATION INC. P.O. BOX 277 STEAMBURG, NEW YORK 14783

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#### Introduction

This report provides summary information on Phase 2 cultural resource investigations conducted for a proposed development at the Westwood Golf Course in the Town of Amherst. Eric County, New York. The investigations were conducted on three sites that were identified by a Phase 1a/b investigation in 2013: two were prehistoric/pre-contact and one was historic. Because of the amount of previous disturbance known to have occurred at the golf course the Phase 1 investigation had tested only areas expected to have been less disturbed as that were located on positions deemed more sensitive for past activities/occupations to have been located. The areas selected for testing were determined after reviews of historic maps, aerial photos and locations of recorded archaeological sites.

The field work for the Phase 2 investigations was conducted by Robert L. Dean and Cameron R. Dean. Field work was carried out over a period of twenty-four days between September 23, 2014 and November 10, 2014.

This report is preliminary in nature and more descriptive than analytic. Processing the artifacts recovered during the investigation required more time than had been expected. The need to quickly report the results of the Phase 2 testing left little room for detailed analyses to be completed. Nevertheless it is believed that the current summary provides sufficient information detailing the work completed and will allow project review personnel to assess the recommendations that have been made.

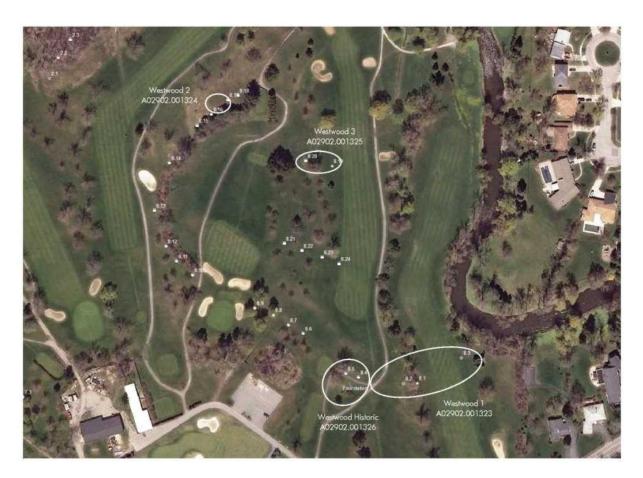


Figure 1: Site Location Map Westwood Prehistoric 1 and 3 Westwood Historic Site

This figure taken from the Phase 1B report

Westwood Prehistoric 1 Site (OPRHP 2902.01323)

This site was located along the south bank of a former channel of Ellicott Creek. It was initially

thought to extend approximately forty-five meters west of a pump house situated on the east side of the

18th Fairway. Phase 1 testing recovered twenty-seven pieces of chert debitage (flakes and shatter) from

three shovel tests (STPs 8.1, 8.2, 8.3).

The initial Phase 2 testing consisted of the excavation of additional shovel tests. The tests were

arrayed on a five meter grid whose zero point was the approximate location of Phase 1 Shovel Test 8.1

which was relocated by use of a handheld GPS device. The shovel tests were intended to provide

information on the site's extent, to identify differences in artifact frequency/density, and to determine the

level of previous disturbance in this locale. Thirty-eight shovel tests were excavated during the Phase 2

testing (Figure 2). These tests did show that a wide disparity in artifact density existed across the site. They

also showed that the area was much more disturbed than had been noted during the Phase 1 investigation.

Soil profiles were, as expected, somewhat more uniform between those tests located within the fairway.

Two 1m x 1m test excavation units were also excavated. These tests were done to obtain a larger

sample of artifacts and to continue in the attempt to identify subsurface features and/or diagnostic artifacts

that could provide information about site function and date(s) of occupation. Test units were placed near

shovel tests where very high artifact frequencies had been recorded. Soil was removed by apparent natural

levels and, as was the case with shovel tests, was sifted through 1/4-inch mesh hardware cloth screens.

None of the shovel tests or test excavation units produced artifacts diagnostic of a specific

archaeologically defined culture. All of the pre-contact artifacts recovered could be attributed to the

manufacture and/or maintenance of stone tools. Almost the entire artifact assemblage consisted of chert

debitage—flakes and core fragments or shatter. One apparent distinction in this assemblage is the seeming

low percentage of core/shatter pieces relative to flakes. The only non-chert artifact recovered was a rough

stone piece identified as a bi-pitted hammers stone. Some historic/modern material was present in both

Test 1 and 2 but was a very minor component.

The distribution of artifacts suggests that the construction of the golf course impacted the original

site area. At least that is the easiest explanation for peak artifact densities on east and west sides of the 18th

Fairway. The position of the material along the bank of an extinct meander of Ellicott Creek seems fitting

as does the apparent pronounced decline in artifacts as one moves south and away from the former creek

bank. The site itself can still only be classified as a lithic scatter since there were no subsurface features

Phase 2 Cultural Resource Investigations: Westwood Golf Course Town of Amherst. Erie County, New York identified to indicate any more than a very ephemeral occupation. It is possible that a closer examination of

the artifact assemblage will identify pieces that may have been subjected to heating. That could indirectly

point to the existence of features that did not survive the agricultural and recreational activities across the

site.

The Westwood Prehistoric Site 1 was an area where lithic reduction/processing—the manufacture

and maintenance of chipped stone tools—occurred. The current level of analysis has only roughly

categorized the items recovered and it is possible that more detailed inspection may discover some items

that could be classified as utilized. That would suggest additional activities in this area and use-wear analysis

might provide information on the types of material being operated on.

While it is not impossible that the observed distribution of artifacts represents the actual locations

of deposition, it does seem rather improbable. Specifically, although the scatter of material extends across

and along the 18th Fairway and follows the edge of the extinct creek meander, it is hard to believe that the

very high frequency tests occur precisely at either edge of that fairway. The probability that this distribution

of material derives from earthmoving activities during the golf course development seems high.

This site is not considered eligible for inclusion on the National or State Registers of Historic

Places. It has been subject to a significant degree of prior disturbance and additional investigation seems

unlikely to contribute to a better understanding of local or regional prehistory. No further work on this site

is recommended.

Phase 2 Cultural Resource Investigations: Westwood Golf Course Town of Amherst. Erie County, New York

20m Westwood Prehistoric Site 01 slope down to former Ellicott Creek channel Town of Amherst, Erie County, NY 15m-Contours based on flake counts in Level 1 of shovel tests 10m 3 2 1 7 5m 3 <u>11</u> 0 6 1 0m-₫ 10 -5m 10 9 -10m 2 10 5  $\Box$ -15m contour interval = 5 flakes -20m -5m 0m 5m 10m 15m 20m 25m 30m 35m 40m 45m 50m 55m

Figure 2: Westwood Prehistoric Site 1
Distribution of shovel tests with chert flake frequency contoured.

Larger squares indicate locations of Test Units 1 and 2.

Test Unit 1 produced 139 pieces of chert debitage.

Test Unit 2 produced 195 pieces of chert debitage.

Table 1: Westwood Prehistoric Site 1, Artifact Inventory

East	North	flakes	shatter	rough stone	all prehistoric	historic	Notes
<u>5</u>	0	3	0	0 3 0			
10	0	11	1	0	12	0	
25	0	3	0	0	3	0	
35	0	3	0	0	3	0	alt 2 flakes, 1 shatter
40	0	3	2	0	5	1	plastic wrap n.c.
45	0	6	1	1	8	0	bi-pitted hammer
50	0	1	2	0	3	0	
55	0	1	0	0	1	0	
0	5	54	1	0	55	0	
5	5	18	0	0	18	1	redware
10	5	7	0	0	7	0	
20	5	3	0	0	3	0	
25	5	2	0	0	2	0	
30	5	1	0	0	1	5	redware
35	5	5	1	0	6	0	or core frag
40	5	12	0	0	12	0	
45	5	10	0	0	10	1	rusted item
45	10	62	0	0	62	0	plus 2 rocks?
40	20	0	1	0	1	0	
10	-5	10	0	0	10	1	redware
15	-5	4	0	0	4	3	2 redware, 1 glass
40	-5	5	0	0	5	0	
0	-10		0	0	0	1	whiteware
10	-10	10	0	0	10	0	
15	-10	9	0	0	9	1	rusted item
40	-10	7	1	0	8	0	core frag really
0	-15	5	0	0	5	1	rusted item
5	-15	2	0	0	2	6	1 whiteware, 3 glass, 2 unidentified
10	-15	2	0	0	2	0	
15	-15	10	1	0	11	0	
0	0	11	0	0	11	0	Phase 1 STP 8.1
-5	0	3	0	0	3	0	Phase 1 STP 8.2
35	15	8	0	0	8	0	Phase 1 STP 8.3
		291	11	1	303	21	

## Table 1 continued

## STPs that follow (shaded) were devoid of artifacts.

East	North	flakes	shatter	rough stone	all prehistoric	historic	Notes
<u>0</u>	-5	0	0	0	0	0	0
0	-20	0	0	0	0	0	0
15	0	0	0	0	0	0	0
40	-15	0	0	0	0	0	0
45	-15	0	0	0	0	0	0
50	-15	0	0	0	0	0	0
55	-15	0	0	0	0	0	0
40	-20	0	0	0	0	0	broken chert pebble
All STPs		291	11	1	303	21	
Test 1		137	2	0	139	16	ceramics & plastic
Test 2		185	10	0	195	0	
		613	43	1	657	37	
Total STP	s						
Positive	30		Phase 2				

Total STP	s		
Positive	30	Phase 2	
Negative	8	Phase 2	
	38		
	3	Phase 1	
	41	Total	

Table 2: Summary of Phase 2 Shovel Test Stratigraphy, Westwood Prehistoric 1 Site Town of Amherst, Erie County, New York

	Town of Amherst, Erie County, New York									
E(+)W(-)	N(+)S(-)	Level	Тор	Base	Soil Description	Artifacts				
О	-5	1	0	29	fine silt loam, grass & tree roots	redware				
						nail				
						flake/shatter (19cm)				
		2	29	50	fine silt clay, very dry; pale OGM	none				
0	-10	1	0	27	fine silt loam, dense tree roots; 10YR 3/3-4/3	whiteware				
			27	41	very compact silt or silt loam; pale OGM	none				
0	-15	1	0	28	fine silt loam, grass roots & small tree roots; 10 YR 3/3-4/3	5 chert flakes				
					10 11 3/3-4/3					
						rusted item				
			28	36	compact silt or silt loam; pale OGM	none				
0	20	1	36+	20	OGM clay, most is orange	none				
0	-20	1	0	26	silt loam, grass & small tree roots; 10YR 3/3	plastic wrap n.c.				
		2	26	38	compact silt loam; 10YR 5/6 w/ oxidation	none				
					stains					
15	0	1	0	27	damp silt, many small roots, heavy & sticky,	none				
					some small sandstones					
		2	27		very stiff clay; OGM	none				
25	0	1	0	23/27	dense gray clay on west, rest is clay silt & some gray clay; 10YR 3/3	3 chert flakes				
		٦	22/27							
25		2	23/27+	24	dense clay, some seepage; OGM	none				
35	0	1	0	24	damp clay silt, heavy	2 chert flakes				
		2	24	39	yellow brown clay w/darker probable	1 chert shatter none				
			24	39	drainage feature on the west	none				
40	0	1	0	28	clay silt, grass & small tree roots; 10YR 3/3	3 chert flakes				
						2 chert shatter				
		١	20.		dense des OCM	plastic wrap n.c.				
45		2	28+	20	dense clay; OGM	none				
45	0	1	0	30	clay silt, dense roots; 10YR 3/3	bi-pitted hammerstone				
						1 chert shatter				
						6 chert flakes				
		2	30	41	stiff, tough clay; OGM	none				
5	0	1	0	28	clay silt, several large tree roots; 10YR 3/3	3 chert flakes				
		,	28	35	donce clays dark OGM	none				
10		2			dense clay; dark OGM	none				
10	0	1	0	30	clay silt, many small roots; 10YR 3/3	11 chert flakes				
						1 chert shatter				
		2	30	37	clay; dark OGM	none				
0	5	1	0	26	silt loam, small roots; 10YR 3/3	4 chert flakes				
						1 chert shatter				
		2	26+		large root on north, dense clay; OGM	none				

				_	I	
E(+)W(-)	N(+)S(-)	Level	Тор	Base	Soil Description	Artifacts
5	5	1	0	27	silt loam, small roots; 10YR 3/3	18 chert flakes
						large redware rim
		2	27+		dense clay, some roots; dark OGM	none
10	5	1	0	28	silt loam, small roots; 10YR 3/3	plastic wrap n.c.
						7 chert flakes to 21cm
		2	28+		clay; light OGM	none
15	5				not dug, buried line	
50	0	1	0	36	wet silt loam, dense roots; 10YR 3/3	2 chert shatter
						1 chert flake
		2	36+		wet gravel & silt clay, seepage; OGM	none
55	0	1	0	30	silt loam, dense roots; 10YR 3/2-3/3	plastic wrap n.c.
						1 chert flake
		2	30	41	dense silty clay, a few stone frags; OGM	none
45	5	1	0	30	sticky, damp silt loam, small roots;	10 chert flakes
					10YR 4/3-4/4	
		2	30+		wet dense clay; OGM	rusted item
45	10	1	0	29	damp, sticky clay silt w/small roots; 10YR 4/3	2 chert flakes
			29+		dense clay; OGM	none
15	5				not dug, buried line	
20	5	1	0	31	clay silt, more clayey w/depth; 10YR 3/3	3 chert flakes
		2	31+		dense clay; OGM	none
25	5	1	0	31	clay silt; 10YR 3/3	2 chert flakes
			31+		dense clay; OGM	none
30	5	1	0	23	silt/clay mix, much clay; 10YR 3/3	1 chert flake
						5 redware
		2	23+		dense clay; OGM	none
35	5	1	0	30	silt clay, more clay w/depth; 10YR 3/3	5 chert flakes
						1 chert shatter
		2	30+		dense clay, a bit wet; gray brown	none
40	5	1	0	30	damp to wet clay silt, small roots; 10YR 3/3	12 chert flakes
		2	30+		dense clay; OGM	none
40	-5	1	0	30	damp to wet clay silt, small roots; 10YR 3/3	5 chert flakes
		2	30+		dense clay; OGM	none
40	-10	1	0	29	damp to wet clay silt, small roots; 10YR 3/3	7 chert flakes
						1 chert core fragment
		2	29+		clay; OGM	none
40	-15	1	0	15	encounter fill for buried line, abandon	
45	-15	1	0	32	clay silt, dense small roots; 10YR 3/3	none
43	-13		32+	32	dense clay; OGM	none
		2	3∠+		uense day, Odivi	none

## Table 2—continued

E(+)W(-)	N(+)S(-)	Level	Тор	Base	Soil Description	Artifacts
50	-15	1	0	30	wet silt clay, small roots; 10YR 3/3	none
		2	30+		dense clay; OGM	none
55	-15	1	0	28	silt clay, some larger roots; 10YR 3/3	none
		2	28+		dense clay; OGM	none
40	20	1	0	28	silt/clay mix; 10YR 3/3-4/3	chert pebble
		2	28+		dense clay; brown	none
5	-15	1	0	27	dry, very rooty, lightly sandy silt, some gravel; 10YR 4/3	2 chert flakes
						3 clear glass
						1 whiteware
		2a	27	57	west side only: brown, loamy, old burrow?	none
					lightly sandy loam, small oxidation stains in	
		2b	27	60	10YR 5/6	none
10	-15	1	0	26	dry, very rooty silt loam 10YR 3/3	2 chert flakes
		2	26	44	fine sandy silt loam pale OGM	none
15	-15	1	0	31	dry to damp silt loam, small roots; 10YR 3/3	10 chert flakes
						1 chert core fragment
		2	31	42	fine sandy silt; light OGM	none
15	-10	1	0	28	damp silt loam; 10YR 3/3-4/3	9 chert flakes
						rusted item
		2	28	36	dense clay; OGM	none
15	-5	1	0	30	clay silt, small roots; 10YR 3/3	4 chert flakes
						2 redware
						1 glass
		2	30+		dense clay; OGM	none
10	-10	1	0	27/30	silt loam, small roots; 10YR 3/3	10 chert flakes
		2	27/30	38	dense silty clay; OGM	none
10	-5	1	0	23	clay silt, dense small roots; 10YR 3/3	10 chert flakes
						redware
		2	23	34	dense clay; OGM	none

OGM = orange/gray mottled n.c. = not collected



Photograph 1: Westwood Prehistoric 1 Site, Test Excavation Unit 1



Photograph 2: Westwood Prehistoric Site 1
Floor of Test Excavation Unit 2
All clay, mixed in spots.



Photograph 3: Westwood Prehistoric Site 1, Test Excavation Unit 2 Note thin layer in east wall which consisted of some recent gravel-like fill. The same type material had been noted as fill around a buried line.

Westwood Pre-Contact Site 3 (A02902.01325)

This site was located through Phase 1 shovel testing along the southern side of an extinct meander

of Ellicott Creek. An initial shovel in this area (STP8.19) produced seven chert flakes and a single piece of

chert shatter. Four supplemental shovel tests we excavated around that find spot and were located 5m

distant in the cardinal directions. Two of the supplemental tests were positive for additional prehistoric

artifacts—15 chert flakes in the test done to the west and a single chert flake/shatter to the south. The

occurrence of multiple items in several tests, which is not all that common a situation in many Phase 1

survey, suggested that this area was worthy of additional examination. The fact that the Phase 1

investigation was conducted in the winter however, presented several problems including assessing details of

the landscape, identifying root masses and observing nearby soil drainage. Also, there was some reluctance

to test to the area to the north, within the 10th fairway, which would be part of an active golf course again in

the spring. The primary reason was the uncertainty of the degree to which the land would, or would not,

recover after being tested.

Phase 2 investigations first used a handheld GPS unit, checked against compass bearings and taped

measurements that had been recorded during Phase 1, to identify test 8.19. That test was designated as the

0/0 point for Phase 2 testing. Shovel tests were then excavated on a 5m grid in an attempt to determine site

limits, the density of artifacts across the site, and attempt to expose any subsurface features that might be

present. Only eleven shovel tests were excavated before it was decided that additional work was not

warranted. Two of the additional shovel tests produced additional prehistoric materials, again chert

debitage, and contributed only an additional four items to the collection. Rather than pursue further closer

interval testing the decision was made to end testing at this site and to put additional effort into examination

of the other two sites.

The site remains classified as a discrete lithic scatter but due to the lack of diagnostic artifacts

cannot be placed within any archaeologically defined culture. If reasonably undisturbed it represents an

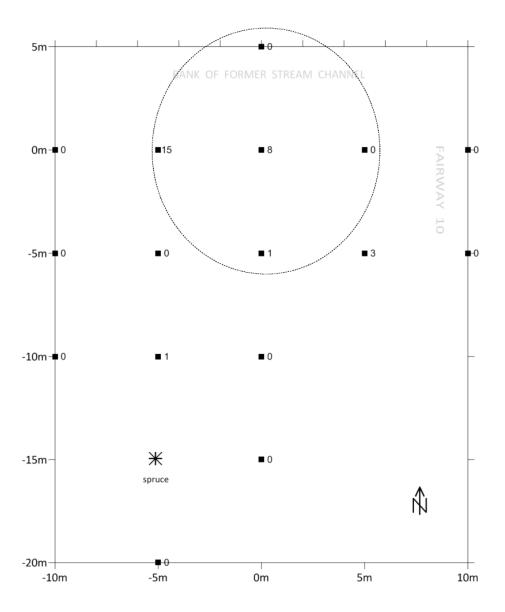
extremely short term activity area. The site is not eligible for inclusion on the National or State Registers of

Historic Places. Not additional investigation is considered necessary or warranted.

Phase 2 Cultural Resource Investigations: Westwood Golf Course Town of Amherst, Erie County, New York

Figure 3: Distribution of Shovel Tests at Westwood Prehistoric Site 3

Town of Amherst, Erie County, New York



Small black squares are shovel test locations and the numbers on the right side are the total pieces of chert debitage recovered from each test. All finds were in Level 1 soils. 0/0 Test was located 14.97m from a mature maple on a magnetic bearing of  $105^{\circ}$ . Dashed circle indicates area of Phase 1 testing.

Table 3: Summary of Phase 1 & 2 Shovel Test Stratigraphy, Westwood Prehistoric 3 Site
Town of Amherst, Erie County, New York

		Town of	Amhei	rst, Eri	e Coun	ty, New York					
	E(+)W(-)	N(+)S(-)	Level	Тор	Base	Soil Description	Artifacts				
0	0	0	1	0	28	Ph1 8:19; lightly sandy silt loam, roots; 10YR 4/3	7 chert flakes 1 chert shatter				
			2	28	42	sandy silt w/some areas of clay; OGM	none				
1	0	5 1 0 27 damp sticky silt, dense grass i		damp sticky silt, dense grass roots; light brown	none						
			2	27	40	clay silt, not compact; dark OGM	none				
2	5	0	1	0	27	silt or clay silt, grass; brown	none				
			2	27	37	compact silt clay; dark OGM w/dark inclusions	none				
3	-5	0	1	0	30	wet, sticky silt or clay silt, dense grass roots; brown; flakes from ca. 25cm to subsoi interface	15 chert flakes				
			2	30	57	silt to silt clay, not compact; OGM	none				
4	0	-5	1	0	27	silt or clay silt, grass roots, a few small tree roots; brown	1 chert flake/shatter				
Phase 1			2	27	40	silt clay, easy to dig; OGM	none				
	Phase 1 above Phase 2 below										
Phase 2	0	-10	1	0	29	stiff clay silt, small roots, 1 large stone; 10YR 4/3-4/4	none				
			2	29	41	sandy silt clay; OGM	none				
6	0	-15	1	0	29	clay silt; 10YR 4/3	none				
			2	29	41	clay silt; OGM	none				
7	10	0	1	0	28	compact, somewhat blocky clay silt; 10YR 3/3-4/3	none				
			2	28	40	very compact silt clay, sandy or gritty in spots; pale OGM	none				
8	10	-5	1	0	24	clay silt; 10YR 4/3	clear glass pane				
			2	24	34	compact silt clay, sandy spots; OGM	none				
9	5	-5	1	0	28	silt or silt clay, small roots, damp; 10YR 3/3	none				
			2	28	41	compact silt clay; OGM, dark inclusions	none				
10	-5	-5	1	0	29	silt, small roots; 10YR 3/3	small chert flake 2 larger flakes				
			2	29	45	clay silt; OGM, darl inclusions	none				
11	-5	-10	1	0	33	silt, damp, sticky; 10YR 4/3	chert flake				
			2	33	47	compact silt clay; OGM	none				
12	-5	-20	1	0	25	silt or sil loam; 10YR 4/3	golf ball core fragment				
			2	25	38	compact silty clay; OGM	none				
13	0	-10	1	0	22	compact silt or silt loam, large roots, too dense to dig through, abandon at 22cm; 10YR 4/3	none				
14	-10	-5	1	0	30	compact silt/silt loam, roots; 10YR 4/3	none				
			2	30	40	compact clay silt; OGM	none				
15	-10	-10	1	0	27	silt loam, many small roots; 10YR 4/3	none				
			2	27	33	silt clay, gritty spots, dark inclusions; OGM	none				

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Westwood Historic Site (A02902.01326)

The Westwood Historic site was first identified by the presence of a remnant field stone foundation

located immediately to the east of the 10th Tee. Shovel tests along the south bank of an extinct meander of

Ellicott Creek, marking the northern edge of this site, produced a variety of historic items during the Phase

1 investigation. Because the Phase 1 investigation was conducted in the winter, and the foundation was an

obvious site, it was recommended for testing in a Phase 2 program.

The site is bounded on the north by the previously noted bank of an extinct meander of Ellicott

Creek and is otherwise circumscribed by asphalt covered golf cart paths. An electronic metal detector was

used in an effort to determine if there was a distinct limit to the scatter of historic materials surrounding the

foundation. The detector produced signals indicating the presence of ferrous metals across the entire area

described by the cart paths and beyond. Some were identifiable as probable nail, wire or other similar items

based on a distinctive tone produced by the detector. However, the signals were often faint and generally

blended in with similar nearby tones. Experience suggested the signals indicated that small pieces of rusted

metal were broadly scattered.

In speaking with several grounds keepers it was determined that the foundation had been more

pronounced in the past and while no extensive filling/grading had been done, some had occurred. The

addition of some fill soils, or possible light grading, was apparently very limited. Any such activity was an

effort to smooth the terrain and permit easier transit for mowers. It was also reported that a burn pile had

been present on or nearby some portion of the foundation. It was not determined precisely how the burn

area was formed or what period(s) of its use was/were represented. There was also some reporting of

possible excavation of portions of the foundation zone but no specific locations or time frames were

established.

**Shovel Testing** 

A series of shovel tests was excavated on a five meter grid to obtain a preliminary view of the

distribution of artifacts across the site. The zero point for the grid was the approximate location of Phase 1

shovel test 8.4 as determined by a handheld GPS. Ultimately, fifteen tests were excavated and these

produced a wide assortment of historic materials as well as a corner- notched chert projectile point. The

shovel test grid alignment was based on the locations of the Phase 1 tests. This resulted in grid north

oriented approximately

The shovel tests did indicate that historic artifacts were scattered across the area. Although material

was well removed from the stone foundation it was decidedly less abundant as the distance away from the

foundation increased. Figures 5 through 19 show how various artifact types were dispersed across the site

as indicated in the shovel tests.

Phase 2 Cultural Resource Investigations: Westwood Golf Course Town of Amherst, Erie County, New York



Photograph 4: View of the foundation at the Westwood Historic site. Looking northeasterly.

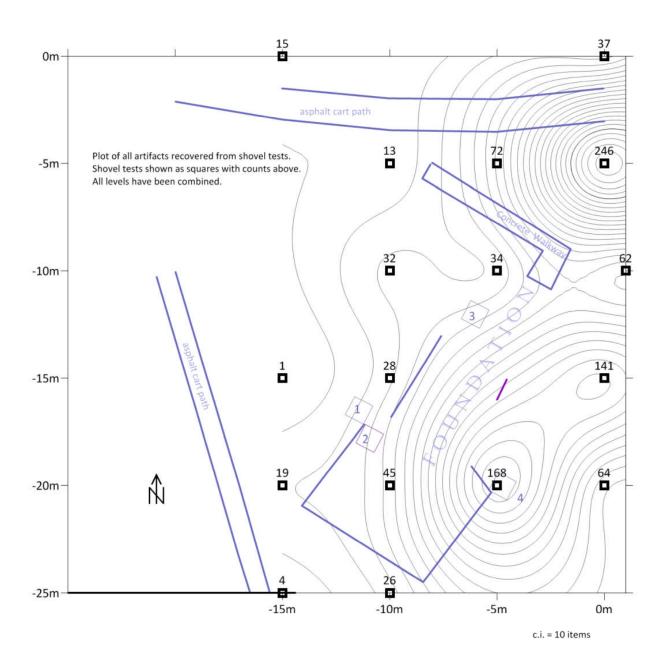


Figure 5: Distribution of All Artifacts Recovered from Shovel Tests Westwood Historic Site

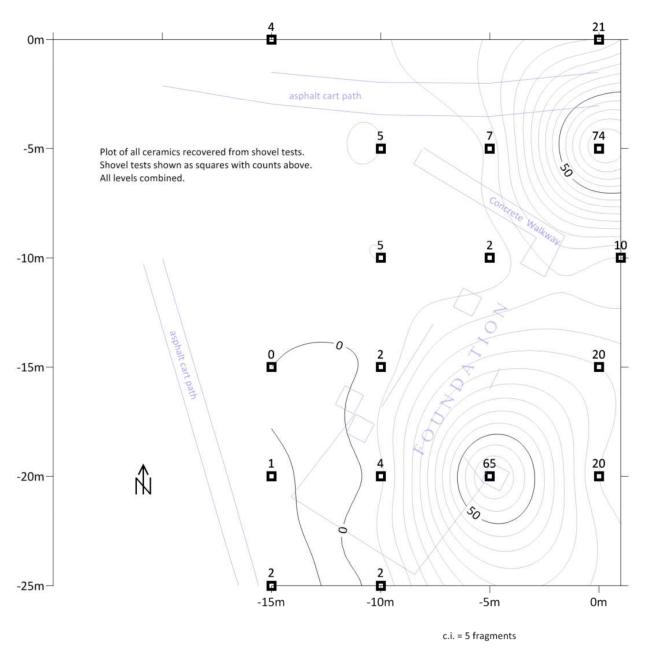
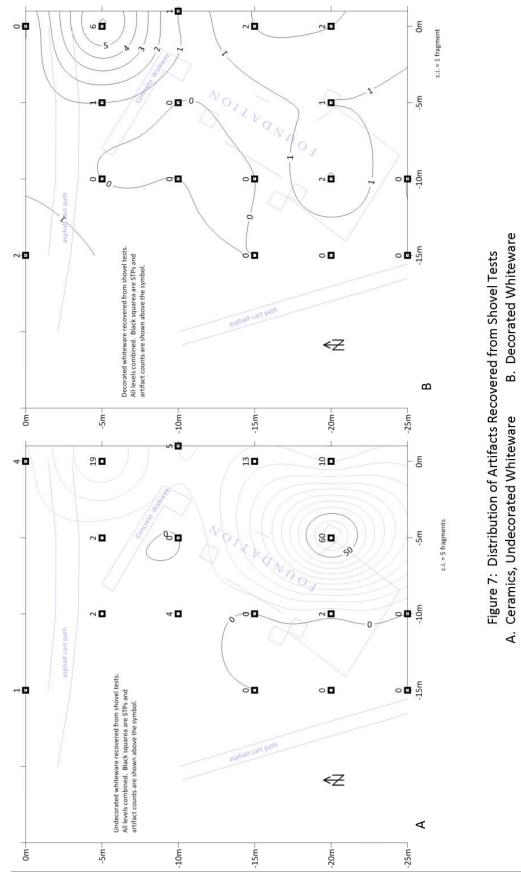
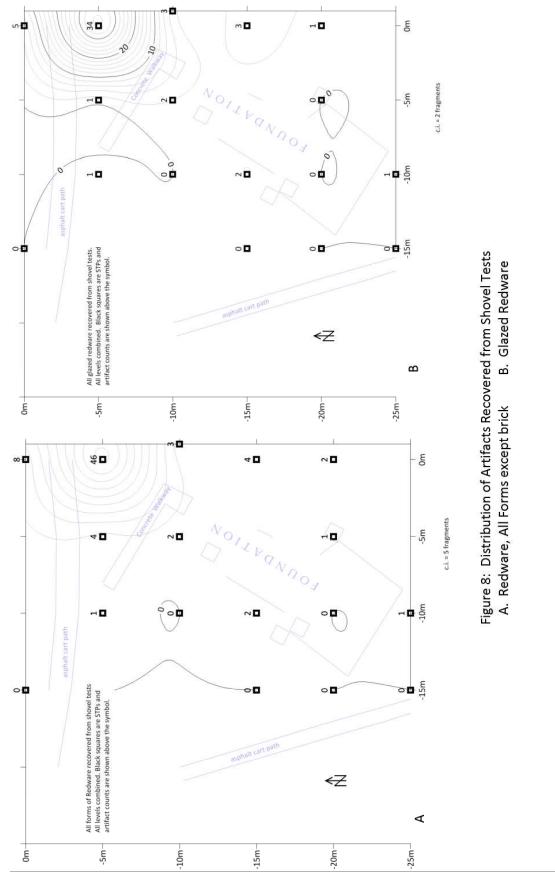


Figure 6: Distribution of All Ceramic Artifacts Recovered from Shovel Tests
Westwood Historic Site



Phase 2 Cultural Resource Investigations: Westwood Golf Course Town of Amherst, Erie County, New York



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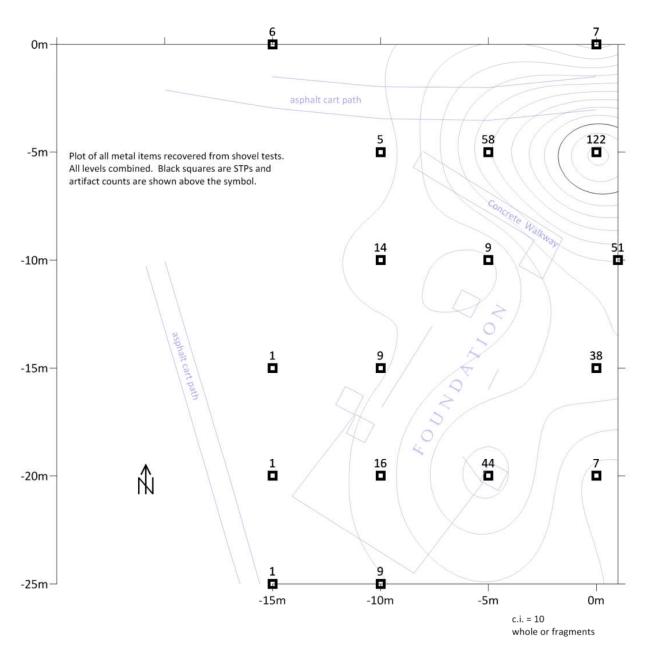
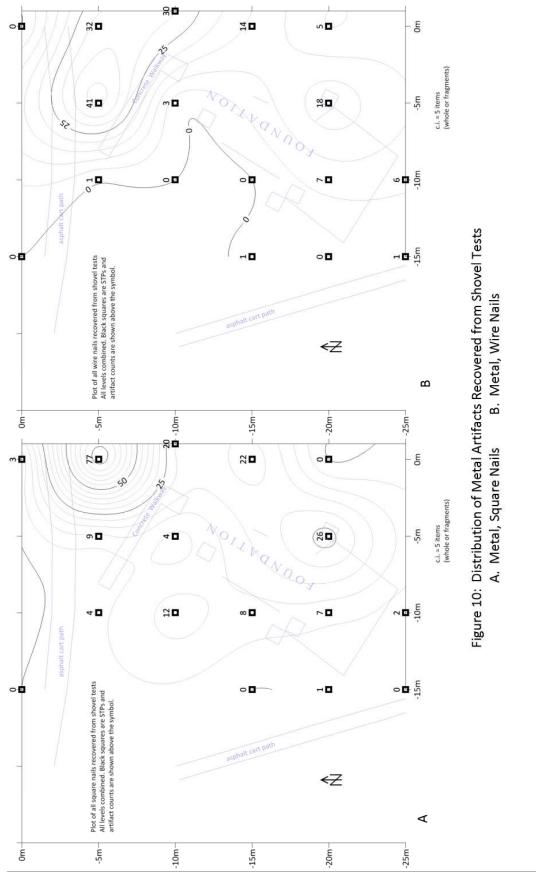
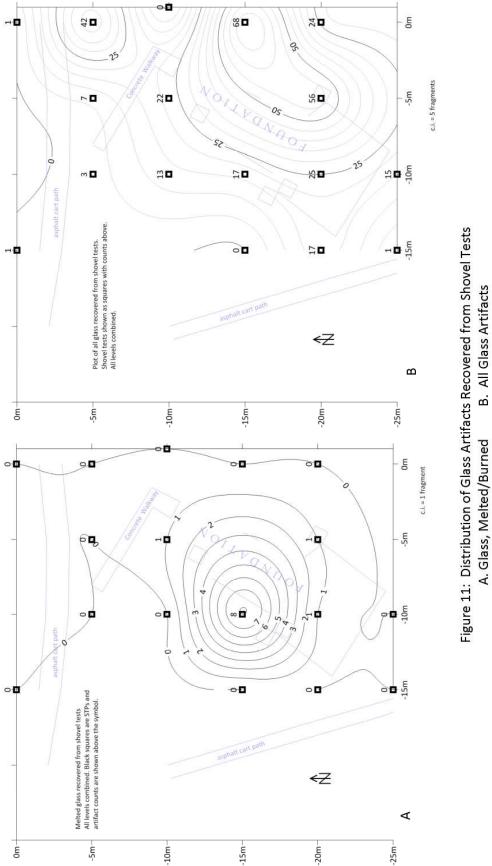


Figure 9: Distribution of All Metal Artifacts Recovered from Shovel Tests
Westwood Historic Site



Phase 2 Cultural Resource Investigations: Westwood Golf Course Town of Amherst, Erie County, New York - 24 -



Phase 2 Cultural Resource Investigations: Westwood Golf Course Town of Amherst, Erie County, New York - 25 -

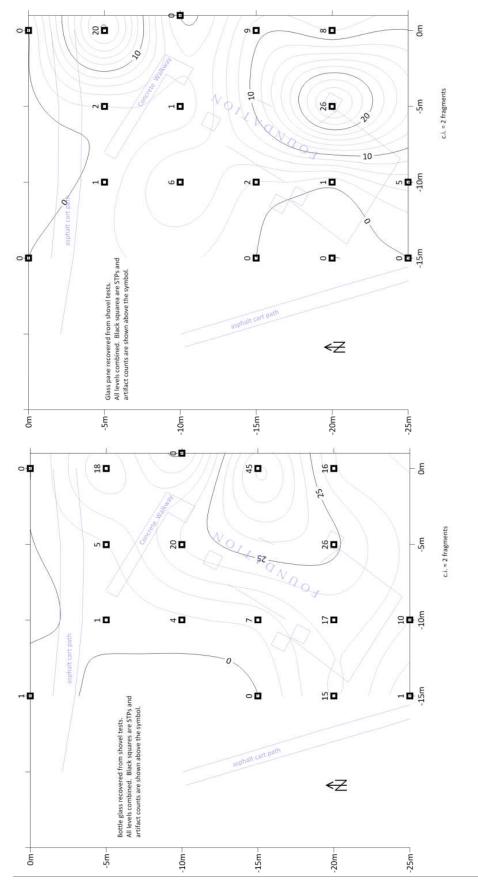


Figure 12: Distribution of Some Glass Artifacts Recovered from Shovel Tests A. Glass, Bottle Fragments B. Glass, "Pane"

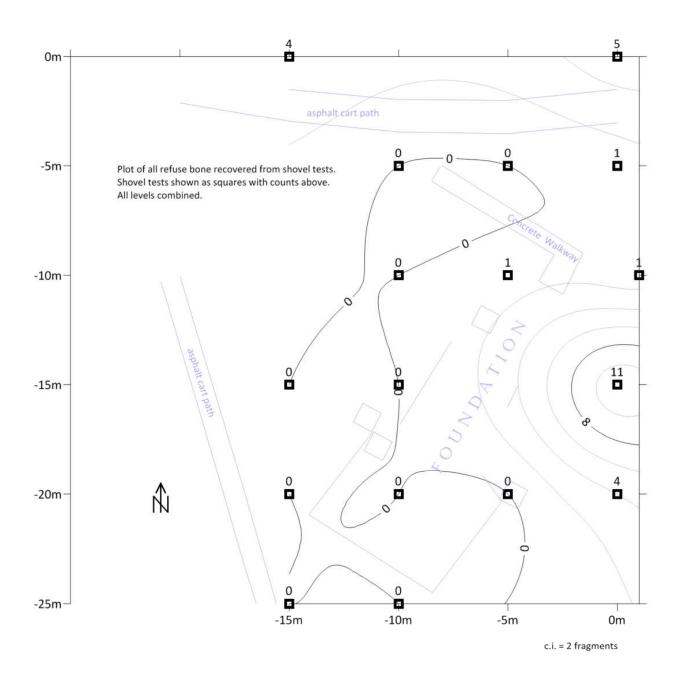
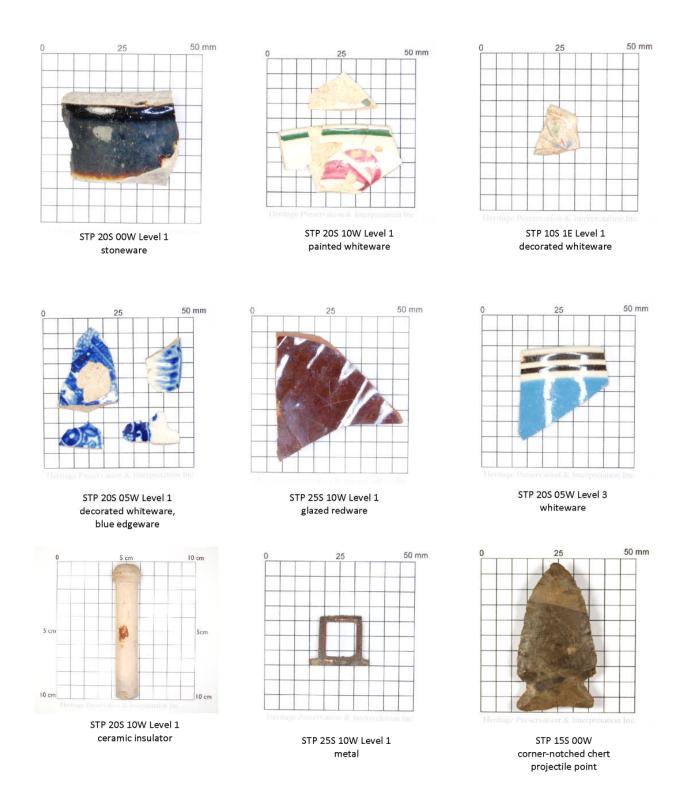


Figure 13: Distribution of Refuse Bone Recovered from Shovel Tests Westwood Historic Site



Photograph 5: Assorted artifacts recovered from shovel tests Westwood Historic Site

Table 4: Summary of Shovel Test Stratigraphy, Westwood Historic Site

	N/ .\c/ \	Larrel	Te:-	De	Sail Desaileties	A
E(+)W(-) -15	N(+)S(-) -15	Level 1	Top 0	Base 19	Soil Description fill, pea gravel & larger with sand/silt;	Artifacts none
-12	-13	1	0	19	10YR 3/2-4/2	none
		2	19	24	coal ash & cinder; grays	none
		3	24	47	compact sand/silt, small roots, large stone at base; 10YR 5/3-5/4	nail/spike
						glazed redware
-15	-20	1	0	48	lightly sandy silt, very little gravel; 10YR 4/2	clear glass
						brick
						nail/spike
		2	48	61	very fine compact silt; 10YR 6/4	none
-15	-25	1	0	23	sandy silt, some asphalt; 10YR 3/3	glass
						redware/brick
						asphalt
		2	23	47	very fine silty sand; pale OGM	none
-10	-25	1	0	26	compact and somewhat blocky silt, small roots; 10YR3/3-3/2	glass
						glazed redware
						brick
						plastic wrap
		2	26	47	very compact silt w/varied sized pieces of mortar	mortar
		3	47	54	compact silt sand mix, some flecks of charcoal; OGM	none
		4	54	64	very compact silty sand; light OGM	none
-10	-20	1	0	34	compact lightly sandy silt; 10YR 3/3	mortar
					large stone in center from 24 to 33cm	whiteware
						glass
		2	34	?		none
-10	-15	1	0	26	compact silt, small roots; 10YR 3/3	large square nail
						brick
						glass (melted)
						nail
		2	26	55	compact fine silt w/some zones of gray clay;	none
					highly mottled yellow brown & brown & gray	
-10	-10	1	0	25	very gravelly silt; 10YR 3/3	glass
						cement/concrete bits
						nails
						.32 S&W cartridge case
						whiteware, brick
		2	25	38	very compact gray clay, blocky	nail

Table 4 - continued

_,			_			
E(+)W(-)	N(+)S(-)	Level	Тор	Base	Soil Description	Artifacts
-10	-5	1	0	22	silt, small roots, crumbly & quite gravelly; 10YR 3/3	whiteware
	J	_			251113/5	nails
						glass
						kaolin pipe stem fragment
						glass (decorative)
						stoneware
						glazed redware
		2	22	44	compact silt/sand mix	large iron bar at interface
-5	-10	1	0	17	silt, small roots; 10YR 3/2	glass
						nails
						redware (handle)
						.22 case (U on base) note *
		2	17+		stone on north and south side of test, below these is a dense gray clay	none
-5	-5	1	0	18	dry silt, some gravel, small roots; 10YR 3/3	nails
						brick
						whiteware
						rivets
						screw
						glass
						mortar
						glazed redware
		2	18	37	note: may be a continuation of L1, made the distinction because of the relative density of brick and ceramics	stoneware
						brick
						yellow earthenware
						nail
						refuse bone
		3	37+		fine somewhat sandy silt; 10YR 7/4	none
0	-5	1	0	28	dry silt, some roots; 10YR 3/2	nails
		_			ar, sin, some roots, 10 ms, 1	whiteware
						redware
						yellow earthenware
						plastic wrap
						stoneware
						glass (some burned)
						coal
						assorted metal
		2	28	52	lightly sandy silt; 10YR 5/4-6/4	porcelain
						nail

Table 4 - continued

E(+)W(-)	N(+)S(-)	Level	Тор	Base	Soil Description	Artifacts
0	-20	1	0	40	lightly sandy silt loam; 10YR 3/3-3/2	metal rod
					a few blobs of red clay, 1 stone	plastic drinking straw
						glass, clear pane
					in NW - iron pipe trending NE/SW @32cm	glass, clear bottle
						glass, green bottle
					is associated with a pipe that crosses	mortar
					the foundation	stoneware
						nail
						coal ash/cinder
						refuse bone
		2	40	52	silt loam; OGM	none
-5	-20	1	0	18	sandy silt loam, 10YR 3/2	nails
					at ca 13cm there are stones and mortar that	glass, clear pane
					appear to be a continuation of the larger foundation	
		2	18	22		nails
		2	18	32	mix of OGM clay and some L1 soil	
						glass mortar
		3	32	50	lightly compacted silt learns on 10VP 2/2	
		3	32	50	lightly compacted silt loam; ca. 10YR 3/3 This level extends lower than, and appears to	glass nails
					be beneath, the mortar bed assumed to be	
					the base of the larger foundation section.	
					abandon test due to stones, need to	whiteware
					open a larger test (TU 4 here)	kaolin pipe stem fragment
0	-15	1	0	28	silt loam, lilac roots; 10YR 3/2	square nail
						redware
						roofing nail
						whiteware
						refuse bone
						Brewerton c.n. projectile point
		2	28	37	silt loam; 10YR 4/6 but may just be a	glass, clear pane
					mottled mix of L1 and L3	refuse bone
		3	37	47	very compact silt; yellow brown	none
1	-10	1	0	24	silt loam & grass roots; 10YR 3/2	glass, clear pane
						nails
						plastic wrap
						stoneware
						whiteware
						refuse bone
		_				metal buckle
		2	24	37	clay & silt clay w/some small stone fragments; 10YR 4/6	none
		3	37	51	compact silt; OGM becomes pale w/depth	none

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unidentified wents grinking straw		-	-	0	0	0	0	0 0	0	0 0	0 0	0 0	0 0	0	0	0	0 0	-	-	0	0	0	-	m 0	+	0	0	0	0	0	0	0	0	0 0	0 0	15 1
lledz	-	-	+	0	0	0	0	0	0	0	0	0	0	0	-	0	0 0	+	-	0	0	0	-	0 0	+	0	0	0	0		0	0	-	0	0	1 1
chert biface	-	+	-	0	0	0	0	0	0	0	0	0	0	0	0	$\rightarrow$	0 0	+	0	0	0	$\rightarrow$	-	0 0	+	0	0	0	0	-	0	0	-	0	0	1
chert flake	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 0	, ,	0	0	0	0	0	0 0	0	0	0	0	0	н	0	0	0	0	0	п
concrete	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 0	, -	0	0	0	0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0
tledqse	c	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0
mortar	c	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0 1	0	٥	0	0	0	0	0	0	۰	0	0	2
coal, coal ash, cinder	-	+	-	0	٥	0	0	0	0	0	0	0	0	0	0	$\rightarrow$	0 0	+	-	0	0	$\rightarrow$	-	- 0	+	-	0	0	0	0	٥	0	0	0	0	1
Bels	-	+	F	0	0	0	0	0	0	0	0	0	0	0	0	٥	0 0	+	0	0	0	٥	0	- 0	+	٥	0	0	٥	0	0	0	0	0	0	1
plastic		-	-	0	0	0	0	0	0	0	0	0	0	0	0	$\rightarrow$	0 0	-	0	0	0	0	0	0 0	-	0	0	0	0	0	0	0	0	0	0	18 0
glass,container, decorative, clear refuse bone		+	-	0	0	0	0	0 0	0	0 0	0 0	0 0	0 0	0	0	0	0 -	1 0	-	0	0	0	0	- 0	+	0	0	0	0	0	0	0	0	0	0 0	2 13
glass, bottle, olive	-	+	-	6	0	0	0	0		0	0	) 0	0	0	<del>.</del>	$\rightarrow$	0 0	+	+	0	0	$\rightarrow$	-		+	l	0	6	0	-	0	3	lä	0	0	7
glass, bottle, blue	-	+	-	0	0	0	0	0	0	0	0	0	0	-	0	-	0 -	+	┿	0	0	-	-	0 0	+	0	0	0	0	0	0	0	0	0	0	-
bottle, dark green	-	-	+	0	0	0	0	0	0	0	0	0	0	0	0	$\rightarrow$	0 0	+-	-	0	0	$\rightarrow$	-	- 0	-	0	0	0	0	0	0	0	-	0	0	3
glass, bottle, aqua	-	0	0	0	0	0	0	2	0	0	0	1	0	2	0	1	0 0	, ,	-	0	0	0	0	c	, -	0	2	7	10	2	0	1	0	0	0	33
glass, bottle, clear	-	-	0	0	0	0	0	ю	0	0	0	0	0	0	0	m	0 0	, -	0	0	2	0	0	6 -	m	0	П	н	10	2	н	0	0	0	0	35
glass, melted	-	0	0	0	0	0	0	0	0	0	0	τ	0	00	0	0	0 0	0	-	0	0	0	0	0 0	0	0	0	П	0	0	0	0	0	0	0	11
glass, smaal fragments, clear	c	0	0	2	0	0	0	0	0	0	0	0	0	0	0	ю	0 0	0	0	0	0	0	0	0 0	0	0	0	0	0	14	0	0	0	0	0	19
glass, purple/pink tint	٥	-	-	0	0	0	0	0	0	0	0	9	0	0	0	0	0	-	0	0	0	0	-	0	-	0	0	0	0	0	0	0	0	0	0	9
glass, pane, aqua	c	0	0	0	0	0	0	9	0	0	0	9	0	0	٥	0	0 0	0	-	0	0	0	+	0 0	13	٥	0	7	0	18	0	0	۰	0	0	45
glass, pane, clear	c	0	0	51	0	н	0	4	0	0	0	11	0	7	0	4	0 7	- ا	20	0	S	0	0	13	m	0	2	0	19	۰	13	14	0	0	0	135
glass, irredescent	c	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	m c	0	0	0	0	м	0	0	0	0	0	0	9
pnckle	c	+	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0 0	+	+	0	0	$\rightarrow$	-	0 0	+	-	0	0	0	0	0	0	1	0	0	1
brass cartridge	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	П	0 0	+	-	0	0	٥	-	0 0	+	0	0	0	0	0	0	0	0	0	0	2
uoods	-	+	-	0	0	0	0	0	0	0	0	0	0	0	0	$\rightarrow$	0 0	+	0	0	0	-	-	0 0	+	0	0	0	0	0	0	0	0	0	0	0
naucey valve manuel	9	+	-	0	0	0	0	0	0	0 (	0 0	0 0	0 (	1 0	0	0	0 0	+	0	0	0	-	-	0 0	+	0	0	0	0	0	0	0	0	0	0 0	Н
metal, rusted faucet/valve handle	9	-	-	0	0	0	0	0 0	0	0 0	0	0 0	0 0	0	0	-	0 0	+	0	0	0	-	+	0 0	+	0	0	0	0	0	0	0	0	0	0 0	3 1
metal, rusted, flat	-	-	-	6	0	0	0	0	0	) 0	0	0	0	0	<u>.</u>	$\rightarrow$	0 0	+	-	0	0	-	-	- 0	+-	+-	0	6	0	0	0	0	-	0	0	-
metal, rusted, triangular		+	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0 0	+	0	0	0	0	0	- 0	+	0	0	0	0	0	0	0	0	0	0	п
osib letəm	-		+	0	0	0	0	0	0	0	0	0	0	0	<u>.</u>	0	0 0	,	0	0	0	0	<u> </u>	٠,	, ,	-	0	0	0	-	0	0	١.	0	0	-
latem	-	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0 0	, ,	0	0	0	0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	1
əriw	c		0	0	0	0	0	0	0	0	0	1	0	0	0	0	0 0	-	0	0	0	0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	1
		_	0	0	0	0	0		_		0	1	0	0	_	0	0 0	, ,	0	0	0	0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	1
ediq letəm	0	0	_	_				0	0	0	٠		)	_	0	_		_																	_	9
rivet eqiq letəm	0	+	-	0	0	0	0	0 0	0	0 0	0	0	0	0	0	$\rightarrow$	0 0	0	0	0	9	0	0	۰۱۰	0	٥	0	0	0	0	0	0	٥	0	0	•
werze	_	0	0	-	0	0	0	-	-	-	-	0	$\overline{}$	0 0	-	0	0 0	, .	0	0 0	5 6	0	0	0 1	0	0	0	0	0	0	0	0	0	0	0	2
rivet	c	0	0	0	⊢	⊢	-	0	0	0	0	$\vdash$	0	0	0	0	0 0	, .	0	Н	0 2 6	0	0	1 0	0	-	0	-	-	0	-	-	0	-	-	4 2
werze	6	0	0 0	0	0	0	0	0 0	0	0 0	0 0	0	0 0	0 0	0	0	0 0	0 0	1 0	0	2	0	0	0 1	0 1	0	0	0	0	0	0	0	0	0	0	2
nail/spike, square screw rivet	0	0 0	0 0 0	0	0	0	0	0 0 0	0 0	0 0 0	0 0 0	0 0	0 0 0	0 0	0 0	11 1 0 0	0 0	0	4 1 0	0 0	0 2	0	0	1 0	0 0	0	0	0	0	0	0	0	0	0 0	0 0	4 2
nail, square nail/spike, square screw rivet	6	0 0	1 0 0 0 0	1 0 0	0 0	0	0 0	2 0 0 0	0 0 0	0 0 0 0	0 0 0	0 0 2	0 0 0 0	8 0 0	0 0 0	0 11 1 0 0	1 0 0	0 0	3 4 1 0	0 0 0	9 0 5	0 0	0	0 7	2 0 1	0	13 0 0	0 0	2 0	22 0 0	0 0	0 0	20 0	0 0 0	0 0 0	183 4 2
nail, wire nail, square screw rivet	0	0 0 0	0 1 0 0 0	0 1 0 0	0 0 0	1 0 0	0 0 0	e 2 0 0 0	0 0 0 0	0 0 0 0 0	0 0 0 0	7 7 0 0	0 0 0 0 0	0 8 0 0	0 0 0 0	0 0 11 1 0 0	0 0		0 3 4 1 0	0 0 0	41 9 0 2	0 0 0 0	0 0 0	32 68 1 0	0 2 0	0 0	5 13 0 0	2 8 0	8 2	10 22 0 0	0 0 0	0 0 0	30 20 0	0 0 0	0 0 0	149 183 4 2
kaolin pipe stem nail, wire nail, square nail/spike, square screw rivet	0	0 0 0 0	0 0 0 0 0	0 0 0	0 0 0 0	0 1 0 0	0 0 0 0	0 6 2 0 0 0	0 0 0 0	0 0 0 0 0 0	0 0 0 0 0	0 2 2 0	0 0 0 0 0 0	0 0 8 0 0	0 0 0 0	0 0 11 1 0 0	0 0 7		0 0 3 4 1 0	0 0 0 0	0 41 9 0 2	0 0 0 0	0 0 0 0	1 32 68 1 0	0 0 0	0 0 0	0 5 13 0 0	0 2 8 0	1 8 5 0 0	0 10 22 0 0	0 4 0 0	0 0 0 0	0 30 20 0	0 0 0 0	0 0 0 0	3 149 183 4 2
insulator kaolin pipe stem nail, wire nail, square screw rivet	0	0 0 0 0 0 0 0	0 0 0 1 0 0 0	0 0 0 0 0	0 0 0 0	0 0 1 0 0	0 0 0 0 0	0 6 2 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0 0	0 0 0 0 0 0	0 0 2 2 0 0	0 0 0 0 0 0 0	0 0 0 8 0 0	0 0 0 0 0	0 0 0 0 11 1 0 0	7 0 0		0 0 0 3 4 1 0	0 0 0 0 0	0 0 41 9 0 2	0 0 0 0 0	0 0 0 0 0 0	0 1 32 68 1 0	0 0 0 0 0 0 0	0 0 0 0 0	0 0 5 13 0 0	0 0 2 8 0 0	0 1 8 5 0 0	0 0 10 22 0 0	0 0 4 0 0	0 0 0 0	0 0 30 20 0	0 0 0 0 0	0 0 0 0 0	0 3 149 183 4 2
stoneware, glazed stoneware, glazed, black stoneware), textured insulator kaolin pipe stem nail, wire nail, square nail, spike, square screw			0 0 0 0 1 0 0 0	0 0 0 0 0 0	0 0 0 0 0	0 0 0 0 1 0 0 0	0 0 0 0 0 0 0 0	1 0 0 6 2 0 0 0	0 0 0 0 0 0 0	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0	0 0 2 2 0 0 0 0 0	0 0 0 0 0 0 0 0	0 0 0 8 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0 11 1 0 0	7 0 0		0 0 0 0 0 3 4 1 0	0 0 0 0 0 0	0 0 0 41 9 0 2	0 0 0 0 0	0 0 0 0 0 0 0 0	1 0 0 0 1 32 68 1 0	2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 2 13 0 0	0 0 0 0 0 0 0	0 0 1 8 5 0 0	0 0 0 10 22 0 0	0 0 0 0 4 0 0 0	0 0 0 0 0 0 0	0 1 0 0 30 20 0	0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0	1 0 3 149 183 4 2
yellow earthenware stoneware, glazed stoneware, glazed, black stoneware, glazed, black insulator kaolin pipe stem nail, wire nail, square nail, splace, square			0 0 0 0 0 1 0 0 0 0	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 1 0 0 0	0 0 0 0 0 0 0 0 0	0 0 0 1 0 0 6 2 0 0 0	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 2 2 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 11 1 0 0	7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0 0 0 0 0 0 3 4 1 0	0 0 0 0 0 0 0 0 0	0 0 0 0 0 41 9 0 2	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0	1 1 0 0 0 1 32 68 1 0	1 2 0 0 0 0 5 0 1 0	0 0 0 0 0 0 0	0 0 0 0 0 0 2 13 0 0	0 0 0 0 0 0 0	1 0 0 0 0 1 8 5 0 0	1 0 0 0 0 0 10 22 0 0	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0	0 0 1 0 0 0 30 20 0 0	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	2 1 0 3 149 183 4 2
whiteware, red print yellow earthenware glazed stoneware, glazed stoneware, glazed, black stoneware, glazed, black stoneware), textured insulator insulator habit pipe stem hall, wire nail, splaze acrew nail, splaze screw rived insulator screw rived r			0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0	0 0 0 0 0 0 1 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0	0 0 2 2 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 8 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 11 1 0 0	7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0 0 0 0 0 0 0 3 4 1 0	0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 41 9 0 2	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0	0 1 1 0 0 0 1 32 68 1 0	0 1 2 0 0 0 0 0 1 0	0 0 0 0 0 0 0	0 0 0 0 0 0 0 2 13 0 0	0 0 0 0 0 0 0	0 1 0 0 0 1 8 5 0 0	1 1 0 0 0 0 0 10 22 0 0	0 0 0 0 0 0 4 0 0 0	0 0 0 0 0 0 0 0	0 0 0 1 0 0 0 30 20 0 0	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0	2 1 0 3 149 183 4 2
whiteware, burned, black print whiteware, red print yellow eartherware sloaded stoneware, glazed black stoneware, glazed, black stoneware, glazed, black stoneware, glazed, black stoneware, glazed, black maulator mail, seture hall, square nail, square nail, square screw screw screw			0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 1 0 0 0	0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 2 2 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 8 0 0 0	0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 11 1 0 0			0 0 0 0 0 0 0 0 3 4 1 0	0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 41 9 0 2	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	1 0 1 1 0 0 0 1 32 68 1 0	0 0 1 2 0 0 0 0 5 0 1 0	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 2 13 0 0	0 0 0 0 0 0 0 0	0 0 1 0 0 0 0 1 8 5 0 0	0 1 1 0 0 0 0 0 10 22 0 0	0 0 0 0 0 0 4 0 0 0	0 0 0 0 0 0 0 0	0 0 0 0 1 0 0 0 30 20 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0	1 1 4 3 2 1 0 3 149 183 4 2
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whiteware, burned, black print whiteware, red print yellow eartherware sloaded stoneware, glazed black stoneware, glazed, black stoneware, glazed, black stoneware, glazed, black stoneware, glazed, black maulator mail, seture hall, square nail, square nail, square screw screw screw			0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 1 0 0 0	0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 2 2 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 8 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 11 1 0 0			0 0 0 0 0 0 0 0 0 3 4 1 0	0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 41 9 0 2	0 0 0 0 0 0 0 0 0 0 0		1 0 1 1 0 0 0 1 32 68 1 0	0 1 0 0 1 2 0 0 0 0 2 0 1 0	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 2 13 0 0	0 0 0 0 0 0 0 0	0 0 1 0 0 0 0 1 8 5 0 0	0 1 1 0 0 0 0 0 10 22 0 0	0 0 0 0 0 0 4 0 0 0	0 0 0 0 0 0 0 0	1 0 0 0 0 0 1 0 0 0 30 20 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0	1 1 4 3 2 1 0 3 149 183 4 2
whiteware, floral print whiteware, floral print whiteware, black print whiteware, burned, black print yellow earthenware, glazed stoneware, glazed stoneware, glazed stoneware, glazed insulator stoneware), textured insulator kaolin pipe stem nail, wire nail, square nail, square			0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 1 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 1 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0		0 0 0 0 0 0 0 0 0 0 0 0 0 0	2 0 0 0 0 0 0 0 0 0 2	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 8 0 0 0 0 0 0 0 0 0 0 0 0		0 0 0 0 0 0 0 0 0 0 0 0 0 0 11 1 0 0	7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0 0 0 0 0 0 0 0 0 0 0 3 4 1 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 1 0 0 0 0 0 0 0 0 41 9 0 2	0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0	3 1 0 1 0 1 1 0 0 0 1 32 68 1 0	1 0 1 0 0 1 2 0 0 0 0 5 0 1 0	0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 2 13 0 0	0 0 0 0 0 0 0 0 0 0	1 0 0 0 0 1 0 0 0 0 1 8 5 0 0	0 0 1 0 1 1 0 0 0 0 0 10 22 0 0	0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 1 0 0 0 0 1 0 0 0 30 20 0 0	0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	5 4 3 1 1 4 3 2 1 0 3 149 183 4 2
whiteware, undecorated whiteware, blue print whiteware, floral print whiteware, floral print whiteware, black print whiteware, black print whiteware, burned, black print stoneware, glazed stoneware, glazed stoneware, glazed stoneware, glazed stoneware, glazed stoneware, glazed black stoneware, glazed black mail, wite mail, square nail, square nail, square nail, square screw screw has a some screw screw floral stoneware, grant stoneware, grant stoneware, grant stoneware, grant stoneware, grant stoneware, grant stoneware, floral s			0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			2 0 2 0 0 0 0 0 0 0 0 0 2 0 Z		0 0 0 8 0 0 0 0 0 0 0 0 0 0 0 0 0 0		4 0 0 0 0 0 0 0 0 0 0 0 0 11 1 0 0			0 0 0 0 0 0 0 0 0 0 0 0 0 3 4 1 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2 0 0 1 0 0 0 0 0 0 0 0 41 9 0 2	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		17 3 1 0 1 0 1 1 1 0 0 0 1 32 68 1 0	10 1 0 1 2 0 0 0 0 5 0 1 0	0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 2 13 0 0	3 0 0 0 0 0 0 0 0 0 2 8 0 0	57 1 0 0 0 1 0 0 0 1 8 5 0 0	13 0 0 1 0 1 1 0 0 0 0 0 0 10 22 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0		5 0 1 0 0 0 0 0 1 0 0 0 30 20 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	115 5 4 3 1 1 4 3 2 1 0 3 149 183 4 2
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redware/brick  ceramic, unclassified  whiteware, blue print whiteware, floral print whiteware, floral print whiteware, black print whiteware, the print whiteware, glazed stoneware, glazed stoneware, glazed stoneware, glazed stoneware, glazed stoneware, grace nail, suire nail, square nail, square nail, square print nail, square screw			0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 2 0 2 0 0 0 0 0 0 0 0 0 2 0 0 0 0 0		0 0 0 0 8 0 0 0 0 0 0 0 0 0 0 0 0 8 0 0 0 0		0 0 1 4 0 0 0 0 0 0 0 0 0 0 0 0 11 1 0 0			0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 2 0 0 1 0 0 0 0 0 0 0 0 0 0 41 9 0 2	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		9 0 17 3 1 0 1 0 1 1 0 0 0 1 32 68 1 0	0 0 3 10 1 0 1 0 0 1 2 0 0 0 0 5 0 1 0		0 1 0 0 0 0 0 0 0 0 0 0 0 0 5 13 0 0	0 0 3 0 0 0 0 0 0 0 0 0 0 2 8 0 0	0 0 57 1 0 0 0 0 1 0 0 0 1 8 5 0 0	0 0 13 0 0 1 0 1 1 0 0 0 0 0 0 10 22 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0 0 5 0 1 0 0 0 0 0 1 0 0 0 30 20 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	9 5 115 5 4 3 1 1 4 3 2 1 0 3 149 183 4 2
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**Test Excavation Units** 

Test units 1 and 2 were located to obtain views of part of the foundation and to determine if there

was a builder's trench associated. Excavation of these tests was also aimed at obtaining a sample of artifacts

which could be compared to determine if a significant difference existed between items recovered inside vs

outside the foundation. The foundation itself was originally thought to be divided into two separate

segments: a larger rectangle on the southwest, and a more narrow rectangle on the northeast. The

northeastern portion also surrounded a depression that was interpreted as a former cellar.

Test Unit 1

This test was placed in an area along the foundation at the point where the apparent two segments

intersected and was located at the northwest corner of the foundation's southwest segment. It was laid out

to cover the foundation and its exterior. One aim of this placement was to expose a face of the foundation

and determine its depth and composition.

Level 1/sod level: Some disturbance was expected to be encountered and that proved to be the

case here where a short segment of PVC pipes was encountered whose base lay at 13cm below surface

(Photograph ??). This level was a a very dry and somewhat crumbly silt with a color of very dark grayish

brown (10YR 3/2) to dark brown (10YR 3/3). The level contained small fragments of rust, some glass

(pane and bottle fragments), ceramics (redware and whiteware), nails and nail fragments (both round and

square forms), refuse bone, some coal cinder, and an item identified as a probable toy brooch. The level

extended to approximately 16cm below surface.

Below that there was little change in soil color or texture ???? or does it just go into L2 which

remains

At ca. 31cm encountered a piece of bone that had been decorated with some rough checkering.

Excavation of the item ultimately expose the item and revealed it to be a bone handled knife

(Photographs ??). The blade was evident was primarily rust and rust fragments. The knife was

photographed and removed leaving a relatively large amount of soil attached underneath in an attempt to

keep the artifact intact. The style is similar to other utilitarian pieces noted in the 18th and 19th centuries but

no specific date has been attributed to this artifact at present. In this same lower level the only other artifact

of note recovered was a large fragment of redware.

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Photograph 6: Westwood Historic Site Test Unit 1, PVC Pipe Segment at 13cm below surface. Looking southwest



Photograph 7: Westwood Historic Site, Test 1 Bone handled knife against the east wall of the test unit.



Photograph 8: Westwood Historic Site, Test 1 Closer view of bone handled knife.

## Test Unit 2

This test was a 1m x 1m unit located south of Test Unit 1.

Level 1A was the designation given to the sod zone and the upper soil zone that extended to ca. 16cm below surface, It was a very dry, silty soil with dense grass roots. As it was being excavated it appeared to be producing a relatively high count of artifacts (primarily glass and iron nails) and most were thought to have been from the base of the level.

Level 1B was the zone immediately below Level 1A and may simply have been a continuation of that level, hence the designation. The principal difference between the two levels was the density of artifacts recovered. Both levels were identified as dark brown (10YR 3/3) and Level 1B differed only in containing a quantity of pea gravel. High counts of glass and nails were evident in this level as a portion of a coil spring was also recovered.

Level 2's surface was an extremely compact zone with some gravel. Some areas, especially in the southwest, were very orange and appeared to be rust stains but also might mark fired earth zones. In the opposite corner to the northeast there was abroad area of apparent old mortar/cement with a few larger stones. In addition to the larger stones there were variably sized stone fragments scattered across the unit. A small cluster of refuse bone was noted in the northeast corner as well as a fragment of red sponge—or spatter-ware ceramics.



Photograph 9: Westwood Historic Site, Test Unit 2 (far unit) Showing relationship between Tests 1 and 2. Looking south.



Photograph 10: Westwood Historic Site, Test Unit 2.
Floor of unit at base of Level 1



Photograph 11: Westwood Historic Site, Test Unit 2. Floor of unit at base of Level 2



Photograph 12: Westwood Historic Site, Test Unit 2. Floor of unit at base of Level 1



Photograph 13: Westwood Historic Site, Test Unit 2. Floor of unit at base of Level 5



Photograph 14: Westwood Historic Site, Test Unit 2. Limit of Excavation



Photograph 15: Westwood Historic Site, Test Unit 2. North wall.



Photograph 16: Westwood Historic Site, Test Unit 2. South Wall.

#### Test Unit 3

This tests was placed to expose a portion of the presumed cellar and a segment of collapsed foundation near a presumed entryway. Level 1 soil was similar to that noted elsewhere and consisted of a silt with dense grass roots. It differed from other locations in that a relatively large quantity of clay was also present. The color was again a dark brown (10YR 3/3). Stones and stone fragments, brick and brick fragments were evident immediately and their presence was known from difficulties in setting the unit corner pins. The quantity of these fragments was considerably greater than in other tests and excavation was somewhat slower than elsewhere due to the need to maintain a level of documentation of progress.

Artifacts recovered included an assortment of artifacts similar to those recovered elsewhere and glass fragments, ceramics, and nails constituted the majority of items. Other artifacts types were noted and included several that were not identified elsewhere. Among these were several spoons, one of which had a purposefully circular shaped handle. A piece of ceramic recovered in Level 3 was marked "Nippon Hand Painted". This is an extremely useful time marker since the dates for that specific label ran from ca. 1891 to 1921. Other ceramics in this test and elsewhere suggested manufacture in the second half of the nineteenth century up to the early twentieth century.

Larger stones from an apparent wall segment (uncertain as to whether these were intact or fallen/pushed in) were exposed in the east and north. This test, unlike others, contained several whole and fragmented bricks. At a depth of ca. 20cm below surface the question of disturbance to that point was answered by the recovery of a modern candy bar wrapper (Baby Ruth XXX). There was still the possibility that there were undisturbed deposits below this level. However, as additional bricks were exposed it was considered somewhat suspect that there were still open spaces between many of them. Bricks were removed in an attempt to reach and expose another soil zone, however, at ca. 73cm below datum a golf ball was encountered. The whole bricks removed measured 7 ½ to 7 3/4 inches long, 3 ½ to 4 inches wide and were consistently 2 1/4 inches thick.

Excavation was continued to a depth of approximately 98cm below surface at which point the quantity and orientation of brick prevented any further progress without significantly expanding the test area. Considering the substantial level of disturbance noted to this point it was not considered feasible to pursue that action and excavation was abandoned.



Photograph 17: Westwood Historic Site, Test Unit 3 Jumble of stone and brick throughout the test.



Photograph 18: Westwood Historic Site, Test Unit 3.
Unit at point when abandoned.
Deepest point ca. 98cm below surface.

### Test Unit 4

This test was opened to investigate a wall segment identified in the shovel test at 5W20S. That test had been located along a low berm that was inline with the southwestern part of the foundation. The test had revealed additional portions of the stone foundation. The shovel test also suggested that the foundation might rest atop a zone of earlier historic material. However, due to the limited space in the shovel test and the depth of the lower deposits, a broader area needed to be opened. Test 4 was placed atop STP 5W20S (Photograph ??) and initially only the northern half was excavated since our interest was in a better look at the deposits along and possibly beneath that feature. Ultimately, It was necessary to excavate the entire unit to have room to examine the wall and soil levels.

As was the case in Test Unit 1 at least the western portion of the wall appeared to have been set into a simple, and not especially thick, bed of mortar. The blocks on the eastern side of the test may have been set on bare soil. This remains unclear. Unlike Test Unit 1 the wall segment exposed was only one course deep.

Level 1 represented the sod and uppermost soil level and was very much the same as noted elsewhere on the site: a dark brown (10YR 3/3) silt to clay silt. Artifacts recovered included primarily ceramics, nails and nail fragments and both pane and bottle glass. One of the pieces of bottle glass appeared to be a fragment of a crown cap bottle. The level extended approximately 12cm to 14cm below surface.

Level 2 was a continuation of some Level 1 soils mixed with some stiff gray clay. The level extended ca. 31cm to 35cm below surface and contained an abundance of nails and only a small quantity of ceramic and glass fragments.

Level 3 should probably have been identified as two separate zones. The surface of the level was identified primarily by the presence of dark brown silt and the lack of any of the gray clay areas noted in Level 2. On the east side of the unit there was a zone of very dark gray brown, almost black, silty soil. It was thought this might represent the original ground surface but that was never adequately determined. The level contained some large pieces of whiteware as well as an assortment of glass pane, nails, brick fragments, and the neck/lip zone of a bottle that would have had a cork stopper. Some refuse bone was also present. Among the whiteware fragments were pieces of several items that had a floral design and which extended to ca. 56cm below surface. This level contained a concentration of crushed material in the northwest corner of the unit (Photograph ??)

Level 4 was defined by dark yellowish brown (10YR 4/4) somewhat lighter textured silt zone beginning ca. 46/47cm below surface. There were some flecks of charcoal noted but the level was generally devoid of artifacts. A single nail was recorded for the level and though some very small fragments of whiteware were noted these were not more than specks. The excavation of this test was terminated at the base of this level at ca. 61cm below surface.



Photograph 19: View of Test Unit 4 in relation to foundation



Photograph 20: View of Test Unit 4 and STP 5W20S



Photograph 21: Westwood Historic Site Test Unit 4, North Wall



Photograph 22: Westwood Historic Site Test Unit 4, South Wall



Photograph 23: Westwood Historic Site Test Unit 4, East Wall



Photograph 24: Westwood Historic Site Test Unit 4, West Wall



Photograph 25: Westwood Historic Site Test Unit 4, Detail Northwest Corner



Photograph 26: Westwood Historic Site Test Unit 4, North Wall

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	+mɔčč £UT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	TU3 L2W clay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WS1 EUT	0	0	1	0	0	0	0	0	0	0	1	2	0	0	0	0	1	1
	2J EUT	0	0	0	0	0	0	1	0	6	0	4	2	0	0	0	0	0	0
	£1 EUT	0	0	0	0	0	0	0	0	5	0	1	0	0	0	0	0	0	1
	ZUZ LS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	FJ SUT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
:	EJ SUT	0	0	1	0	0	0	0	0	0	0	13	1	1	2	0	0	0	0
	2J 2UT	0	0	0	9	0	0	5	0	∞	0	2	0	4	0	0	1	0	0
	TU2 L2 Surface	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TU 2 L1B	0	0	2	0	0	0	0	1	0	0	7	0	0	0	0	1	0	0
	11 SUT	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	1	0
	bos SUT	0	0	0	14	0	0	0	0	3	0	0	0	0	0	0	0	0	0
	mole tUT	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AL1 LUT	0	0	0	1	0	0	1	0	4	0	10	2	0	0	0	0	1	0
	דט נטד	0	0	1	0	0	ю	0	0	0	0	0	0	0	0	0	0	0	0
	bos tut	0	0	0	1	0	0	1	0	0	0	n	0	0	2	0	0	0	0
		brick	ceramic, black glaze	redware, plain	redware, glazed	redware, dark red, glazed	redware, glazed, dark brown	redware, glazed, light brown	redware, glazed, black	redware/brick	ceramic, unclassified	whiteware, undecorated	whiteware, blue print	whiteware, floral print	whiteware, black print	whiteware, burned, black print	whiteware, red print	yellow earthenware	stoneware, glazed

CERRAMICS

		JIMAЯ: I ຊ	L 30	L	_								 ∀	Т 3	M M			4-				pn	g		s s	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
Table 6 - continued	stoneware, glazed, black	stoneware?, textured	insulator	kaolin pipe stem	knife w/checkered bone handle	nail, wire	nail, square	nail/spike, square	screw	rivet	metal pipe	wire	metal	metal disc	metal, rusted, triangular	metal, rusted, flat	metal, rusted	faucet/valve handle	metal rod	noods	brass cartridge	buckle	glass, irredescent	glass, pane, clear	glass, pane, aqua	glass, purple/pink tint	glass, small fragments, clear
bos tut	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 LUT	0	0	0	0	0	6	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	2	0	0
811 LUT	0	0	0	0	0	8	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
mɔ1ɛ tUT	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
bos sut	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 SUT	0	0	0	0	0	14	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	33	0	0
81.1 2 UT	2	0	0	0	0	82	24	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	52	0	0
TU2 L2 Surface	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
\$1 \$UT	1	0	0	0	0	19	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0
81 SUT	0	0	0	0	0	0	4	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	7	0	0
₽J 2UT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
SJ SUT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
11 EUT	0	0	0	0	0	40	19	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	48	0	0	0
ZJ EUT	0	0	0	0	0	23	20	3	0	0	0	0	2	0	0	0	0	0	0	0	1	0		42	0	0	0
WZJ EUT	0	0	0	0	0	27	8	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	14	0	0	0
TU3 L2W clay	0	0	0	H	0	7 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TU3 55cm+	0	0	0	0	0	42 (	14 (	1 (	0	0	0	) 0	1 (	0	0	0	2	0	0	0	0	0	0	0	2 (	0	0
\$1 £UT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1 (	0	0	0	0	0	)   0	1 (	)   0	0	0
m>86-98 EUT	0	0	0	0	0	0	0 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 3	0	0
21 <b>4</b> UT	1 0	0	0	0	0	8 37	24 21	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0	0 0	0 0	1 0	0 0	0 0	0 0	0	0 0	8	35 8	0 0	0
NSJ PUT	0	0	0	0	0	7 16	1 14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0
SZ1 4UT	0	0	0	0	0	5 15	1 28	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	33	0	0	0
£1 4UT	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0
NEJ 4UT	0	0	0	0	0	15	13	1	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	154	48	0	0
ZE1 FUT	1	0	0	1	0	20	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	18	79	0	0
mɔ8+ 4UT	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SJATOT	2	0	0	1	Н	375	273	17	0	0	0	2	9	0	0	0	6	1	0	0	1	0	3	466	269	0	0

CIVIOI	7	ച	_				I	-	_		l				~			_			_	l		Ι	_	1
SJATOT	107	209	79	0	0	2	e e	74	7	0	е	0	0	0	18	3	0	50	0	2	1	1	1	1	1	21
TU4 48cm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28.1 <del>P</del> UT	e	31	9	0	0	4	0	17	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0
NEJ 4UT	0	9	0	0	0	П	m	^	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
£1 <b>+</b> UT	0	4	11	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SZJ <del>I</del> NT	2	17	0	0	0	0	0	П	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
N2J 4UT	14	11	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0
TU4 L2	18	9	10	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	Н
TU4 LT	2	10	5	0	0	0	0	0	0	0	1	0	0	0	9	0	0	21	0	0	0	0	0	0	0	0
mɔ8e-0e EUT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	П
TU3 LS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0
+mɔčč £UT	1	15	3	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Valo WSJ EUT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WSJ EUT	14	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	2
ZJ EUT	16	17	5	0	0	0	0	Э	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0
TUS LT	16	6	8	0	0	0	0	3	0	0	1	0	0	0	4	0	0	9	0	0	0	0	0	0	0	9
TU2 LS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
₽J 2UT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EJ ZUT	0	0	1	0	0	0	0	7	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	1	0
ZJ ZUT	5	1	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
TU2 L2 Surface	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AL1 S UT	2	7	1	0	0	0	0	8	0	0	0	0	0	0	0	0	0	2	0	0	1	1	0	0	0	0
TU2 LI	2	7	7	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
bos SUT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
mof£ fUT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
811 111	1	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
דח דחד	0	13	31	0	0	0	0	4	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
bos tut	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Table 6 - continued	glass, melted/burned	glass, bottle, clear	glass, bottle, aqua	bottle, dark green	glass, bottle, blue	glass, bottle, olive	glass,container, decorative, clear	refuse bone	plastic	slag	coal, coal ash, cinder	mortar	asphalt	concrete	chert flake/shatter	chert biface	shell	unidentified	plastic drinking straw	toy brooch?	metal washer	spring or coil of wire	whiteware, touch of green dec	glass button, white, 4 holes	chain link, broken	whiteware, burned
			S	S∀7	9						(	Э.	ΤЯ	0 9	SSV	√					sd.	TS N I	T O N	b E 2	ΥТ	

SJATOT	2	1	1	1	1	1	н	1	1	1	24	2	∞	н	2	1	1	1
mɔ84 4UT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ZEJ 4UT	0	0	0	0	0	0	0	0	0	0	н	0	oo.	0	0	0	0	0
NEJ 4UT	1	П	1	0	1	0	0	0	Н	0	0	0	0	0	0	0	0	0
£J <b>₽</b> UT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SZJ <del>P</del> UT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NSJ 4UT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2J <del>P</del> UT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 <del>1</del> 0T	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
mɔ8e-0e ɛUT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ZJ EUT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+mɔčč £UT	0	0	0	0	0	0	1	0	0	0	0	2	0	0	1	0	0	0
TU3 L2W clay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WSJEUT	0	0	0	0	0	0	0	0	0	0	4	Э	0	0	0	0	0	1
2J EUT	0	0	0	1	0	1	0	0	0	1	19	0	0	1	1	1	1	0
11 EUT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ZUZ LS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4J 2UT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EJ SUT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SJ SUT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TU2 L2 Surface	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TU 2 L1B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 SUT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
bos SUT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
molf lUT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
811 LUT	0	0	0	0	0	0	0	⊣	0	0	0	0	0	0	0	0	0	0
דט נט	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
bos tut	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Table 6 - continued	whiteware, brown print	whiteware, gray print	whiteware, mug handle	metal spoon, bowl only	glass, bottle neck	metal spoon, handle bent 90	metal spoon, handle formed, circular	metal strip, boot buckle latch?	metal, non-ferrous, handle?	bottle glass, base, rose tint?	bottle glass, brown	bottle glass, brown, melted	bottle glass, irridescent	porcelain? "Nippon Hand Painted"	plastic/Styrofoam	foil	Baby Ruth wrapper	Golf ball

# TYPES NOTIN STPs

					_
SJATOT	1	1	1	1	
mo84 4UT	0	0	0	0	1
SEJ ₽UT	0	0	0	0	474
N£J ₽UT	0	0	0	0	437
£J <del>1</del> UT	0	0	0	0	47
SZJ <del>P</del> UT	0	0	0	0	128
NSJ 4UT	0	0	0	1	77
ZJ <del>Þ</del> UT	0	0	1	0	117
11 <del>1</del> 01	0	0	0	0	136
mɔ8e-0e ɛUT	0	0	0	0	6
ZJ EUT	0	0	0	0	y
TU3 55cm+	0	1	0	0	95
TU3 L2W clay	1	0	0	0	1
WSJ EUT	0	0	0	0	87
2J EUT	0	0	0	0	180
TUS LT	0	0	0	0	167
ZU LS	0	0	0	0	7
4J 2UT	0	0	0	0	٤
EJ 2UT	0	0	0	0	61
ZJ ZUT	0	0	0	0	102
TU2 L2 Surface	0	0	0	0	٤
81.1 2 UT	0	0	0	0	221
11 SUT	0	0	0	0	91
bos SUT	0	0	0	0	17
male tUT	0	0	0	0	6
ALJ LUT	0	0	0	0	30
דט בט	0	0	0	0	13 92
bos tut	0	0	0	0	13
Table 6 - continued	slate shingle fragment	burned, corroded US cent	shotshell base	metal hook, rusted	TOTALS

TYPES NOT IN STPs

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## Summary and Recommendations

Three site located in 2013 during a Phase 1 field survey at the Westwood Golf Course were subject to additional archaeological testing. Two of the sites had been identified as areas of prehistoric/pre-contact activity: Westwood Prehistoric/Pre-Contact 1 (A02902.1323) and Westwood Prehistoric/Pre-Contact 3 (A02902.1325). One site, Westwood Historic, (A02902.1326) was the location of a stone foundation remnant and was estimated to have been occupied in the period between the late-19th century up through the first quarter of the 20th century.

The Westwood Prehistoric 3 site lay on the south side of an extinct meander of Ellicott Creek and Phase 1 tests produced chert waste flakes and shatter. These items are indicative of the processing of raw materials, in this case stone, for the production of chipped stone tools. No artifacts diagnostic of a specific archaeologically defined culture were recovered during Phase 1 tests. Phase 2 testing consisted of the excavation of additional shovel test which continued the five meter grid begun during the Phase 1 program. Only an additional eleven tests were excavated at this site before it became apparent that the site was a very discrete locus of activity. Additionally, it apparently was a simple matter of luck that several of the Phase 1 shovel tests contained multiple artifacts. Only two tests excavated during the Phase 2 program produced additional prehistoric artifacts and these items were waste flakes.

Based on the results of the limited shovel testing it was determined that additional effort in this locale would not be merited. It was considered more useful to focus on the other sites being investigated. It is recommended that any activity proposed in the area of the Westwood Prehistoric 3 site be allowed to proceed. No further archaeological investigation of this site is necessary and none is recommended.

The Westwood Prehistoric 1 site was also located on the bank of an extinct meander of Ellicott Creek. It was, however, site at a much higher elevation and atop a steep bank of the former channel. Initial Phase 2 investigations entailed excavation of additional shovel tests on a five meter grid though the grid was not completely filled out. The results of that testing showed a somewhat broad scatter of cultural material but the frequency of artifacts per test was highly variable. Tests with high the highest artifact counts were located along the edge of the former creek bank and on the east and west side of the 18th Fairway. A few tests with multiple artifacts did trend to the south along the west side of the fairway. Almost all of the material recovered consisted of chert waste flakes and shatter. The single exception was a bi-pitted hammer stone which can also be attributed to the general category of lithic reduction (tool manufacture). Two 1m x 1m test excavation units were placed in areas where very high artifact counts were observed—the top of the former creek bank and on the east and west side of the 18th Fairway. The test on the west produced one hundred thirty-nine pieces of chert debitage from Level 1 soil. No cultural features were identified at the subsoil surface. The test on the east side of the fairway produced one hundred ninety-five artifacts which

were again limited to chert debitage. None of the shovel tests of test excavation units recovered any artifacts diagnostic of a specific archaeologically defined culture.

Level 1 soil in the western test unit was considered rather shallow but there were no indications of fill. The soil in the eastern test was somewhat disturbed, rather loose in spots and did contain some gravel like material which had been noted elsewhere as fill around buried utility lines. The general site area was more disturbed by golf course construction than had originally been thought. Irrigation lines ran along the center of the fairway and some small electrical lines ran across it. The distribution of artifacts also strongly suggested a greater level of landscaping had occurred than originally suspected. It is not impossible that these numbers could represent values from the original deposition of the artifacts but given the nature of the development here it seems unlikely.

Given the lack of diagnostics, buried features, and the level of previous disturbance no additional investigation is recommended for this site. Any development proposed for this portion of the project area should be allowed to proceed.

The Westwood Historic site was situated immediately to the east of the 10th Tee and its limits were roughly described by asphalt golf cart paths that surrounded it. The stone foundation was made of field stones, some of which had probably been lightly dressed. This site also lay atop the south bank of an extinct meander of Ellicott Creek. In addition to the northeast-southwest trending foundation there was an L-shaped walkway on the north constructed of poured concrete slabs. A principal goal of the testing was to identify the range of activities represented by artifacts at the foundation and then be able to determine if the location represented a domestic, farming, commercial or industrial structure.

Initial investigation was conducted though the excavation of shovel tests in an effort to obtain some basic information on artifact distribution and to determine if subsurface features existed outside the foundation. The shovel tests noted that artifacts were spread over a wide area but were concentrated in and nearby the foundation.

The foundation limits had been delineated by clearing the sod from areas where stone was not already exposed. The foundation trended northeast-southwest and appeared to consist of two major sections. On the southwest was a rectangle ca. 5.75 x 7m (18.8 x 22.9ft) and on the northeast was a rectangle ca. 4.5 x 8.75m (14.7 x 28.7 ft). The northeastern segment contained a depression suggestive of a former cellar hole.

Four 1m x 1m test units were excavated to obtain views of the foundation and to gather information about relative artifact frequency and artifact types in areas inside vs. adjacent and outside the foundation. The initial two tests were located kitty-corner to one another and straddled the north wall of the foundation near the southwestern section. These tests showed that there was a difference in soil

stratigraphy and artifact counts between areas interior and exterior to the foundation. One test also showed that the foundation remnant was limited to two courses of stone which had been laid in a bed of mortar. The base of the foundation would not have extended below the frost line.

One test was located along the northern segment of the foundation and had been intended to explore the edge of the presumed cellar hole and confirm that the presumed cellar feature existed. That test proved to be severely disturbed and contained numerous bricks, brick fragments and stones. Some of the stones present were large and appeared to be additional sections of a wall segment. The stones were thought to be possible extensions of the broader southwestern foundation but given the disturbance in that test it was possible that these were upper courses of stone that had been dumped here. The test was abandoned after reaching a depth of nearly one meter below the ground surface where continuation was blocked by the density of brick encountered. Indications of disturbance were evidenced by the recovery of a candy bar wrapper and a golf ball. Many of the artifacts recovered from this test were similar in type and apparent age to those seen in other tests. However, given the level of disturbance and its apparently recent date, it is difficult to state with certainty that the materials recovered actually come form the foundation or its immediate environs.

The final test excavation unit was placed on the south side of the foundation zone along a low berm that extended northeast from the southern segment. The test was basically an expansion of shovel tests 5W20S which had exposed a wall segment and shown that the southwest segment of the foundation was apparently not a standalone feature. Additionally, the shovel test seemed to indicate that the soil level below the foundation contained historic artifacts. This strongly suggested that at least a portion of the existing foundation represented a separate episode of construction. The test unit did not completely clarify the situation. A portion of the wall exposed had a basal level of mortar beneath which there were historic artifacts—severely crushed and fragmented pieces of glass and ceramics as well as some metal items. However, there was a lack of consistency in the location of the mortar bed and the density of artifacts in levels below. Detailed analysis of the artifact assemblage has not yet been completed. This might determine if those items recovered in the lower levels of this test can be identified as of earlier dates of manufacture than artifacts located elsewhere. It is also uncertain whether sufficiently fine detail in time depth can be established from artifacts recovered and the nature of broad time spans for the manufacture of many of the ceramic types located at the site.

While the Westwood Historic site is not considered eligible for the National Register of Historic Places it is worthy of some additional investigation. More detailed mapping of the foundation area is necessary as well as additional test unit excavation. Tests should be directed at determining whether or not the foundation segments represent a single complex structural unit or if multiple periods of construction can be identified. The alternative, given the small area involved, would be to avoid construction in this locale.



A Traditional Neighborhood in the heart of Amherst.

### **Sanitary Sewer Flow Capacity Study Summary Review Report**

### December 1, 2014

#### **Prepared For:**

Brad Packard, AICP, Director of Development & Planning Ciminelli Real Estate Corporation 350 Essjay Road Williamsville, NY 14221

Prepared By:

Marc W. Smith, President, TECsmith

PO Box 383

Elma, NY 14059-0383

Office Phone: 716.687.1418

Fax:

716.655.3369



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#### **S**ection

#### I. Summary Review

Figure A- Node I, Sheridan Drive 36" Sewer Figure B- Node 2, Chestnut Ridge 60" Sewer

### II. Monitoring Flow Summary Table

**III. Field Sheets** 

Prepared By:

Marc W. Smith, President, TECsmith

PO Box 383

Elma, NY 14059-0383

Office Phone: 716.687.1418 Fax: 716.655.3369



### **Sanitary Sewer Flow Capacity Study**

### **SECTION I. Summary Review**

Figure A- Node I, Sheridan Drive 36" Sewer Figure B- Node 2, Chestnut Ridge 60" Sewer



### **TECsmith**

TECSMITH, Inc. PO Box 383 Elma, New York 14059-0383 Tel: 716-687-1418

Fax: 716-655-3369

Date: December 1, 2014

#### SANITARY SEWER FLOW CAPACITY STUDY – Summary Review

#### **Prepared For:**

Brad Packard, AICP
Director of Development &Planning
Ciminelli Real Estate Corporation
350 Essjay Road
Williamsvile, NY 14221

Project Name: Westwood Project- Downstream Sanitary Sewer Flow Monitoring

Flow Monitoring Period: October 9, 2014 to November 6, 2014

Rain Events (> 0.5-inches) Monitored: October 17, 2014 (0.74)

Number of Monitoring Nodes: Five (3) downstream manholes

#### **Node Locations and Descriptions:**

- NODE 1 .... 4180 Sheridan Dr. (36")
- NODE 2 .... Chestnut Ridge (60")

#### **Summary Conclusion:**

Based on the data presented in this report, specifically the flow depth measurements recorded (see graphs below):

- One time did the flow depth exceed pipe diameter at any of the downstream monitoring points during the rain events monitored.
- At no time during the monitoring period did the flow at any point slow or stall which would have caused a backup or flooding at the manhole.

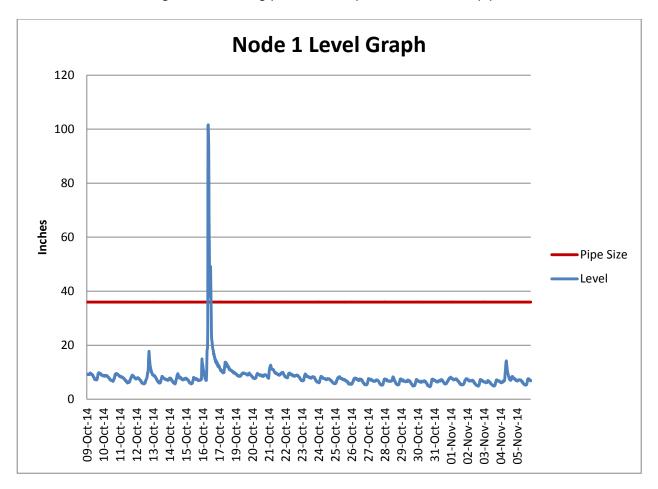
TECSMITH, Inc. PO Box 383 Elma, New York 14059-0383 Tel: 716-687-1418

Fax: 716-655-3369

#### **Depth of Flow Capacity Summary:**

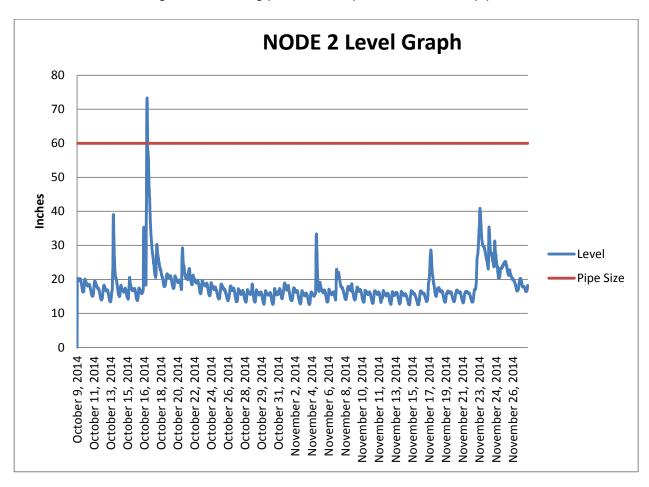
Depth of flow capacity is based on diameter of pipe. See graphs below.

• One time during the monitoring period did depth of flow exceed pipe diameter at NODE 1.



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One time during the monitoring period did depth of flow exceed pipe diameter at NODE 2.



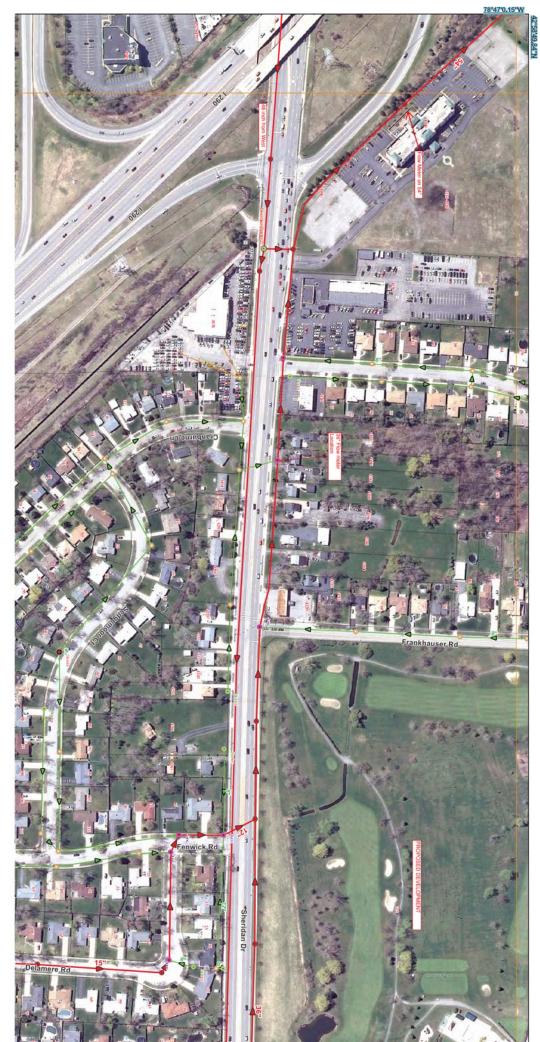
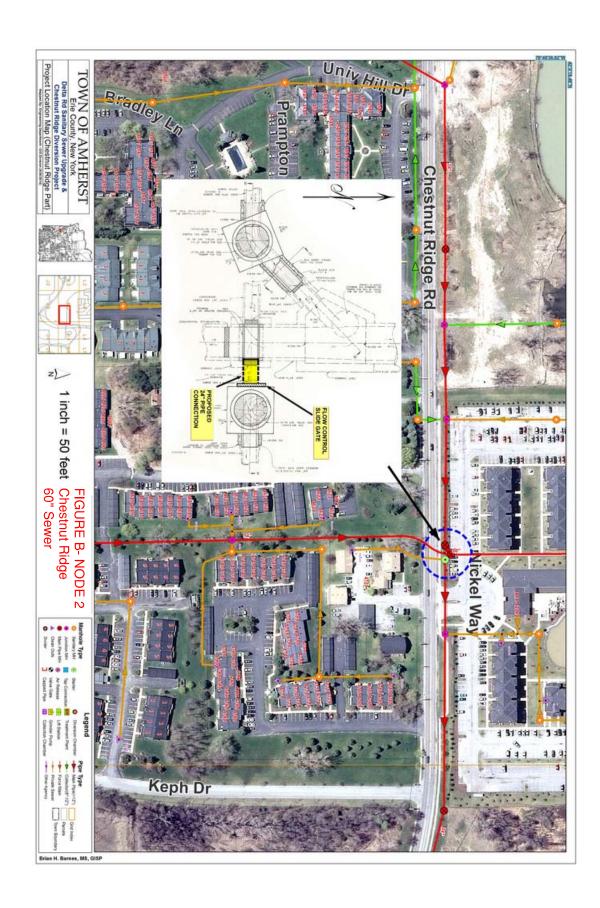


FIGURE A- NODE 1 Sheridan Drive 36" Sewer



### **Sanitary Sewer Flow Capacity Study**

**SECTION II. Monitoring Flow Summary Table** 



Date	NODE 1				NODE 2		Rain₁
	418	0 Sheridan Dr. (	36")	Ch	estnut Ridge (6	0")	
	FLOW	PEAK FLOW	PEAK	FLOW	PEAK FLOW	PEAK	(inches)
	(GAL x 1000)	(MGD)	LEVEL (IN)	(GAL x 1000)	(MDG)	LEVEL (IN)	` '
10/09/14	1131.897	3.406	9.708	4796.819	11.931	20.463	0
10/10/14	2538.978	3.222	9.844	9433.790	11.612	20.138	0
10/11/14	2252.150	3.073	9.555	9069.942	11.668	19.520	0
10/12/14	2025.475	2.812	8.973	8763.148	11.318	18.318	0
10/13/14	2935.461	8.410	17.784	13272.707	38.816	39.069	0.34
10/14/14	2025.917	2.706	8.470	9918.837	12.067	18.351	0
10/15/14	2116.233	3.405	9.474	9658.432	13.262	20.613	0.07
10/16/14	2297.677	6.364	14.937	11049.750	32.334	35.374	0.05
10/17/14	9702.877	23.524	101.616	34942.969	66.600	73.333	0.74
10/18/14	4642.693	6.747	13.747	17360.666	27.292	30.304	0.13
10/19/14	3200.809	3.763	9.752	11328.887	13.425	21.680	0
10/20/14	2807.290	3.433	9.530	10076.116	12.052	21.082	0.04
10/21/14	3505.873	5.266	12.613	13521.714	24.273	29.280	0.14
10/22/14	2785.904	3.371	9.673	11244.236	13.957	23.089	0
10/23/14	2380.840	3.100	9.375	9916.421	11.631	19.667	0
10/24/14	2064.858	2.887	8.509	9401.581	11.232	19.059	0
10/25/14	1933.406	2.731	8.370	9251.297	11.693	18.664	0
10/26/14	1793.092	2.444	7.816	8940.210	10.992	18.068	0
10/27/14	1715.555	2.268	7.657	8893.974	11.215	17.294	0
10/28/14	1731.914	2.645	8.311	9004.178	12.128	18.627	0.1
10/29/14	1640.790	2.214	7.519	9003.400	10.935	17.220	0
10/30/14	1522.911	2.151	7.288	8645.175	10.885	16.714	0
10/31/14	1570.347	2.197	7.432	8769.182	11.636	17.360	0.1
11/01/14	1869.962	2.465	8.210	9905.480	12.320	18.961	0.07
11/02/14	1650.583	2.311	7.620	9327.934	11.526	17.556	0
11/03/14	1481.579	2.153	7.330	8779.735	10.897	16.748	0
11/04/14	1643.617	5.739	13.069	8872.967	22.154	26.810	0.27
11/05/14	2519.637	6.638	14.217	12782.760	32.626	33.392	0
11/06/14	874.855	2.203	7.608	9093.837	11.131	17.176	0.02
							2.07

Note: Rain data from: http://www.nws.noaa.gov/climate/index.php?wfo=buf

### **Sanitary Sewer Flow Capacity Study**

### **SECTION III. Field Sheets**





SITE DATA						
SITE	4180 Sheridan Dr.	I.D.	1	JOB NO.	CIM001	]
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METER MODEL	910	SERIAL NO	UAH			
DATE	11/6/14	TIME	12:55 pm	CREW	KK PG	]
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LEVEL	16.546	INCHES		INCHES	Γ	INCHES
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FLOW	9.97	MGD				MGD
TOTAL	251	GAL X1000		ļ		GAL X1000
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SITE DATA						
SITE	4180 Sheridan Dr	I.D.	1	JOB NO.	CIM001	
-	210	SERIAL NO		- 1		
METER MODEL	910	SERIAL NO	UAH	ı		
DATE	10/17/14	TIME	9:56 am	CREW	KK RS	
II.	NITIAL READINGS		ACTUAL MSMTS		FINAL READINGS	
LEVEL	49.861	INCHES		INCHES	48.406	INCHES
FLOW	19.14	MGD		[	19.31	MGD
TOTAL	-1609394807	GAL X1000		ſ	0	GAL X1000
VEL	4.16	FT/sec.		FT/sec.	4.46	FT/sec.
SIGNAL	100	%		ſ	100	%
BATTERY	5.2	VDC		[	5.3	VDC
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WORK COMP	LETED:					
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EQUIPMENT REM		METER MODEL		METER S/N		
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SITE DATA						
SITE	4180 Sheridan Dr	l.D.	1	JOB NO.	CIM001	ı
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DATE	10/22/14	ТІМЕ	2:16 pm	CREW	KK RS	l
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IN.	NITIAL READING	S	ACTUAL MSMTS		FINAL READINGS	
LEVEL	8.809	INCHES		INCHES	8.993	INCHES
FLOW	2.80	MGD		[	2.70	MGD
TOTAL	20941	GAL X1000		[	20950	GAL X1000
VEL[	3.20	FT/sec.		FT/sec.	3.23	FT/sec.
SIGNAL	100	<b>]</b> %		[	100	%
BATTERY	5.2	VDC		[	5.2	VDC
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SITE	Chestnut Ridge	l.D.	2	JOB NO.	CIM001	
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METER MODEL	910	SERIAL NO	PIZ			
DATE	10/22/14	TIME	1:25 pm	CREW	KK RS	
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II	NITIAL READING	iS	ACTUAL MSMTS		FINAL READINGS	
LEVEL	20.103	INCHES		INCHES [	19.954	INCHES
FLOW[	11.57	MGD		[	11.72	MGD
TOTAL	169	GAL X1000		[	169	GAL X1000
VEL[	3.16	FT/sec.		FT/sec.	3.10	FT/sec.
SIGNAL	35	<b>_</b> %		[	35	%
BATTERY	5.4	VDC		[	5.4	VDC
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SITE DATA						
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SITE	4180 Sheridan Dr	I.D.	1	JOB NO.	CIM001	
METER MODEL	910	SERIAL NO	UAH			
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DATE	10/31/14	TIME	11:39 am	CREW	KK	
//	NITIAL READING	S	ACTUAL MSMTS		FINAL READINGS	
LEVEL	6.966	INCHES	7.25	INCHES	7.208	INCHES
FLOW	4.70	MGD		Γ	4.04	3400
FLOW	1.79	] MIGD		L	1.84	MGD
TOTAL	37503	GAL X1000		[	37503	GAL X1000
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VEL	2.97	FT/sec.		FT/sec.	2.95	FT/sec.
SIGNAL	100	ן%		ſ	100	%
SIGNAL	100	<b>_</b> 170		L	100	76
BATTERY	5.3	VDC		[	5.3	VDC
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SITE DATA						
SITE	Chestnut Ridge	I.D.	2	JOB NO.	CIM001	
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METER MODEL	910	SERIAL NO	PIZ	l		
DATE	10/31/14	TIME	11:52 am	CREW	KK PG	
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- 11	NITIAL READINGS		ACTUAL MSMTS		FINAL READINGS	
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LEVEL	16.546	INCHES	16.25	INCHES	16.448	INCHES
FLOW	9.97	MGD		Ī	9.93	MGD
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TOTAL	251	<b>GAL X1000</b>			251	GAL X1000
VEL	3.46	FT/sec.		FT/sec.	3.47	FT/sec.
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SIGNAL	38	%			39	%
BATTERY	5.4	VDC			5.3	VDC
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## **FLOW METER RECORD Installation / Calibration**



SITE DATA						
SITE[	4180 Sheridan Dr.	] I.D.	001	JOB NO.	CIM001	
METER MODEL	910	METER S/N	UAH	PROBE(S) S/N	TEC 11	· ]
_		<b>-</b>		•		1
DATE	10/9/14	TIME	3:17 am	CREW	PG KK	İ
RIM TO INV	>20	PIPE SIZE	36 Inches	PROBE LOC.	Upstream	
//\	NITIAL READING	S	ACTUAL MSMTS	\$	FINAL READINGS	
LEVEL[	9.284	INCHES	9.25	INCHES	9.211	INCHES
FLOW	3.14	MGD			3.13	MGD
TOTAL	11	GAL X 1000			11	GAL X 1000
VEL[	3.41	FT/sec.		FT/sec.	3.30	FT/sec.
SIGNAL[	100	]%			100	]%
BATTERY[	5.3	VDC			5.1	VDC
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## **FLOW METER RECORD Installation / Calibration**



SITE DATA						
SITE	Chestnut Ridge	] I.D.	002	JOB NO.	. CIM001	
METER MODEL	910	METER S/N	PIZ	PROBE(S) S/N	43	· 
		<u>-</u>		<u>.</u>		!
DATE	10/9/14	TIME	2:22 pm	CREW	PG KK	
RIM TO INV	>20	PIPE SIZE	60 Inches	PROBE LOC.	. Downstream	
			- OT!!!! MONAT!			
	NITIAL READING	S	ACTUAL MSMTS	5	FINAL READINGS	
LEVEL[	20.304	INCHES	20.375	INCHES	20.318	INCHES
FLOW	11.55	MGD			11.87	MGD
TOTAL[	0	GAL X 1000000			0	GAL X 1000000
VEL[	3.13	FT/sec.		FT/sec.	3.07	FT/sec.
SIGNAL	36	]%			34	<b> </b> %
BATTERY[	5.4	VDC			5.4	VDC
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SITE DATA						
SITE	Chestnut Ridge	I.D.	2	JOB NO.	CIM001	1
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METER MODEL	910	SERIAL NO	PIZ			
DATE	11/28/14	TIME	9:33 am	CREW	KK JS	1
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- 1	NITIAL READINGS		ACTUAL MSMTS		FINAL READINGS	
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LEVEL	18.717	INCHES	16.25	INCHES		INCHES
FLOW	11.39	MGD				MGD
						_
TOTAL	566	GAL X1000				GAL X1000
VEL[	3.31	FT/sec.		FT/sec.		FT/sec.
SIGNAL	31	%				<b>]</b> %
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BATTERY	5.2	VDC				VDC
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### **PCE**

# UPDATED PRELIMINARY DRAINAGE ANALYSIS REPORT

**FOR** 

### WESTWOOD MIXED USE NEIGHBORHOOD PROJECT

772 NORTH FOREST ROAD

TOWN OF AMHERST, ERIE COUNTY, NEW YORK

**REVISED JANUARY 24, 2015** 



Prepared By: Timothy M. Lavocat, P.E., CFM
PROFESSIONAL CIVIL ENGINEERING, L.L.C.
8150 SALT ROAD
CLARENCE CENTER, NEW YORK 14032
716-583-6875
profcivilengineering@hotmail.com

PCE PROJECT NO. 1402

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2.0	ANALYSIS METHODO	LOGY
3.0	PRE-DEVELOPMENT 3.1 Pre-Developme 3.2 Drainage Areas 3.3 Analysis Result	S
4.0		ts
5.0	RECOMMENDATIONS	S AND CONCLUSIONS
6.0	Figure 1 Figure 2 Figure 3 Figure 4	LIST OF FIGURES Project Location Map Conceptual Master Plan Existing Conditions Analysis Map Proposed Conditions Analysis Map
	Appendix A Appendix B Appendix C Appendix D EXHIBIT A	LIST OF APPENDICES Pre-Development Calculations Post-Development Calculations Storage Requirement Estimates Drainage Analysis per Town of Amherst Stormwater Policy  LIST OF EXHIBITS C&S Companies Stormwater Management Analysis Dated
	- THOU	December 19, 2014

#### 1.0 INTRODUCTION:

Mensch Capital Partners, LLC ("Project Sponsor") is proposing to develop a 174.94 +/- acre site located at 772 North Forest Road in the Town of Amherst, Erie County, New York (See Figure 1). The 174.94± acre site is the former location of the privately owned and operated Westwood Country Club and Golf Course, which permanently closed on December 31, 2014. The project site is bounded by Maple Road to the north, Frankhauser Road to the west, Sheridan Drive to the south and North Forest Road, Ellicott Creek and the Audubon Par 3 Golf Course to the east. The proposed mixed use neighborhood consists of Westwood Commons (Office, Residential, Hotel, Event Space, Neighborhood Business and the existing Clubhouse) and Westwood Residential (Single Family Residential, Patio Homes, Townhomes and Senior Living) (See Figure 2).

The purpose of this updated Preliminary Drainage Report is to identify and evaluate the preliminary stormwater impacts as part of the environmental review of the proposed project pursuant to the State Environmental Quality Review Act ("SEQRA") including the Draft Generic Environmental Impact Statement ("DGEIS") prepared on behalf of the Project Sponsor. The information and calculations in the Report provides the Town Board and involved agencies with the information to enable a hard look at identified potential drainage impacts.

The analysis in this Report specifically analyzes the pre-development and post-development conditions and associated storm water management storage volume requirements for the proposed redevelopment project under the 1-year, 10-year and 100-year, 24 hour storms. Additionally, this analysis also specifically analyzes the 10-year, 6 hour storm pre-development conditions and the 25-year, 6 hour storm post-development conditions in accordance with Town of Amherst storm drainage policy as requested in the Memorandum issued by Thomas C. Ketchum, P.E., Interim Town Engineer dated August 26, 2014.

This preliminary drainage analysis includes delineation of both pre-development and post-development drainage areas and performing hydrologic calculations for the 1-year, 10-year, 25-year (6 hour, post-development only) and 100-year, 24 hour storm events in accordance with United States Environmental Protection Agency ("EPA") and New York State Department of Environmental Conservation ("NYSDEC") Stormwater Regulatory Requirements as well as the storm drainage policy requirements of the Town of Amherst.

#### 2.0 ANALYSIS METHODOLOGY:

This analysis was performed utilizing HydroCad Stormwater Modeling System Version 10.00-11. HydroCad utilizes hydrology techniques developed by the Soil Conservation Service ("SCS") and specifically techniques and procedures derived from Technical Release 20 ("TR-20") "Computer Program for Project Formulation Hydrology" and Technical Release 55 ("TR-55") "Urban Hydrology for Small Watersheds".

The 174.94± acre total hydrologic area was delineated down into smaller Drainage Areas ("DA's") for modeling and analysis. The DA boundaries, times of concentration paths and

lengths were determined from topographic information with a 2' contour interval. Aerial mapping was utilized to determine land use (to determine runoff curve numbers ("CN's") and the site soils were determined from the USDA Web Soil Survey.

#### 3.0 PRE-DEVELOPMENT DRAINAGE ANALYSIS:

#### 3.1 <u>Pre-Development Conditions:</u>

The Project Site was used until very recently as the Westwood Country Club and Golf Course. The golf course exhibits the characteristics common to golf courses in Western New York with a series of interconnected manmade small ponds and swales. The topography of the project site varies and is generally flat with some isolated areas of moderate slope. The site primarily slopes to the east and northeast towards Ellicott Creek.

The eastern portion of the project site is located within the 100-year floodplain of Ellicott Creek. The 100-year base flood elevation of Ellicott Creek varies from 596' at the south end of the site to 594' at the north end of the site as shown on the Town of Amherst Federal Insurance Rate Map Community-Panel Numbers 360226-0012 and 360226-0009 both dated October 16, 1992.

The majority of the project site is hydrologically contained within the boundaries of the Project Site. The only off-site drainage areas flowing onto the Project Site consist of the rear yards of the adjacent properties on Frankhauser Road and the rear yards of the adjacent properties on Maple Road. No other significant off-site flows are known to impact the project site.

The site soils are all of Hydrologic Soil Group D. The soil types and associated acreages are as follows:

AREA	SOIL TYPE
74.57 Acres	Odessa (Od)
31.98 Acres	Schoharie (SaA) (SaB)
30.05 Acres	Claverack (CrA)
24.71 Acres	Cosad (Cv)
9.46 Acres	Teel (Te)
4.17 Acres	Lakemont (La)
174.94 Acres	TOTAL

#### 3.2 <u>Drainage Areas:</u>

The pre-development Project Site consists of six (6) delineated Drainage Areas (DA's) numbered DA1 through DA6. A brief description of each is as follows:

#### DA-1

Consists of 21.26 acres and is located in the northern portion of the site. DA1 discharges primarily via sheet flow east towards the Audubon Par 3 Golf Course at Outlet 1.

DA-2

Consists of 55.16 acres and is located in the northeastern portion of the site. DA2 discharges primarily via sheet flow east towards the Audubon Par 3 Golf Course at Outlet 2.

#### DA-3

Consists of 22.32 acres and is located in the eastern center portion of the site. DA3 discharges primarily via sheet flow east directly towards Ellicott Creek at Outlet 3.

#### DA-4

Consists of 15.33 acres and is located in the southwestern portion of the site. DA4 discharges primarily via sheet flow west towards Frankhauser Road at Outlet 4.

#### DA-5

Consists of 14.36 acres and is located in southern portion of the site. DA5 discharges west primarily via sheet flow towards Frankhauser Road at Outlet 5.

#### DA-6

Consists of 46.51 acres and is located in the south eastern portion of the site. DA6 discharges east primarily via sheet flow directly towards Ellicott Creek at Outlet 6.

See Figure 3 – Existing Conditions Analysis Map for delineation of pre-development drainage areas.

#### 3.3 Analysis Results (Pre-Development):

Each drainage area as described was analyzed for the 1, 10 and 100-year storm events under pre-development conditions to determine peak discharges. The results of the analyses are listed in the table below.

DRAINAGE AREA	1 YEAR	10 YEAR	*10-YEAR	100 YEAR
	(CFS)	(CFS)	(CFS)	(CFS)
DA1	8.45	24.20	17.33	40.80
DA2	17.72	51.08	37.83	86.29
DA3	9.63	27.56	18.85	46.44
DA4	5.69	16.33	12.02	27.61
DA5	3.97	11.44	8.48	19.35
DA6	20.52	54.44	41.42	89.32

<sup>\*10-</sup>YEAR 6 HOUR STORM (PER TOWN OF AMHERST DRAINAGE POLICY)

Under existing (pre-development) conditions sheet flow runoff from DA1 and DA2 currently provides the Audubon Golf Course with substantial stormwater flow. DA3 and DA6 discharge directly into Ellicott Creek primarily via sheet flow. DA4 and DA5 discharge via sheet flow towards Frankhauser Road. All pre-development flows are ultimately conveyed by various means to Ellicott Creek. There are three primary discharge areas under existing conditions. Stormwater sheet flow discharges to the Audubon Par 3 Golf Course, towards Frankhauser Road and directly to Ellicott Creek. Further modeling was performed to determine the maximum discharge to each of these three (3) areas. The contributing drainage area hydrographs were combined to calculate the pre-development discharges ("CFS") to each of these areas and are summarized as follows:

	Offsite Sheet Flow	1-Year	10-Year	*10-Year	100-Year
	Towards				
DA1 & DA2	Audubon Par 3 Golf Course	25.25	72.63	55.16	122.73
DA3 & DA6	Frankhauser Road	29.68	80.61	60.27	133.46
DA4 & DA5	Ellicott Creek	8.98	25.97	20.5	43.94
TOTAL		63.91	179.21	135.93	300.13

\*10-YEAR 6 HOUR STORM (PER TOWN OF AMHERST DRAINAGE POLICY)

The total 1-year, 10-year and 100-year discharge values represent the maximum discharges allowable from the Project Site under developed conditions for these specific storm events. These maximum values are also used to determine stormwater storage volume requirements under developed conditions. The methodology and determination of maximum discharges for these specific storm events are in compliance with the NYSDEC General Permit for Stormwater Discharges from Construction Activity (GP-0-15-002) and the New York State Stormwater Design Manual. The New York State Stormwater Management Design Manual provides engineers with information on how to size, design, select and locate stormwater management practices at a development site to comply with State stormwater performance standards. This Stormwater Management Design Manual is a key component of the Phase II State Pollution Elimination System ("SPDES") general permit for stormwater runoff from construction activities. A complete copy of the Stormwater Management Design Manual is available on the NYSDEC's website.

The 10-year pre developed condition discharge value also represents the maximum allowable discharge allowable under the 25-year post developed condition event per the Town of Amherst drainage policy as cited in the Memorandum issued by Thomas C. Ketchum, P.E., Interim Town Engineer dated August 26, 2014.

#### 4.0 POST-DEVELOPMENT DRAINAGE ANALYSIS:

#### 4.1 Post-Development Conditions:

The proposed mixed use neighborhood consists of Westwood Commons (Office, Residential, Hotel, Event Space, Neighborhood Business and the existing Clubhouse) and Westwood Residential (Single Family Residential, Patio Homes, Townhomes and Senior Living). The layout of the proposed redevelopment project is depicted on the Conceptual Master Plan provided at Figure 2.

The topography of the Project Site will be altered as a result of the development of the proposed mixed use neighborhood. The placement of earthen fill within the 100-year floodplain of Ellicott Creek along the eastern portion of the project is proposed. There is no fill proposed to be within the regulatory floodway of Ellicott Creek. The placement of earthen fill within the 100-year floodplain of Ellicott Creek will ultimately require a Letter of Map Revision Based on Fill ("LOMR-F") to be obtained from the Federal Emergency Management Agency ("FEMA"). The LOMR-F is a revision and modification to the effective Flood Insurance Rate Map ("FIRM") as the result of fill placement within the floodplain of Ellicott Creek. The LOMR-F process requires that a detailed hydraulic analysis prepared by a licensed engineer be completed and

submitted to FEMA for review and approval. The Town of Amherst Floodplain Administrator will also be required to review the detailed hydraulic analysis to be submitted to FEMA. The detailed hydraulic analysis will determine any base flood elevation impacts associated with filling in the 100-year floodplain areas and will also be used to analyze various fill options and establish limits of fill to mitigate any of these potential impacts.

The incorporation of fill into a portion of the 100-year floodplain will ultimately remove the filled portion(s) of the project site from the 100 year floodplain.

Stormwater flows that currently discharge towards Frankhauser Road will be conveyed to the east during the development of the proposed redevelopment project. The post-development analysis determined that existing DA4 and DA5 will be incorporated into a larger post-development drainage area and then conveyed to the east, ultimately to Ellicott Creek at a controlled rate per the applicable stringent stormwater quantity standards of both the NYSDEC and the Town of Amherst.

Stormwater management ponds and a lake have been incorporated into the Conceptual Master Plan for the mixed use neighborhood project in recognition of the fact that it will be necessary to provide on-site areas to detain stormwater runoff resulting from the alteration of the site topography and new impervious surfaces )e.g., roadway, driveways, parking spaces and roofs of buildings). These hydraulic structures will be designed to ensure compliance with applicable stringent stormwater quantity standards by providing stormwater storage to limit the discharge from the project site in its developed condition to the pre-development discharge rates, or less. The detailed design of the stormwater ponds, lake and associated hydraulic outfall structures will be thoroughly analyzed for the effects of the tailwater (1, 10, 25 and 100 year flood elevations) elevations of Ellicott Creek, although at this time the normal water surface elevations of the proposed stormwater management ponds and the lake are proposed to be higher than the 100 year base flood elevation of Ellicott Creek, and will therefore have no tailwater impact on the hydraulic outfall from the lake or ponds.

Based on the preliminary stormwater pump station analysis performed by C&S Companies a proposed stormwater pump station is required in PDA-1 due to the elevation difference of the three (3) proposed stormwater management ponds within PDA1 and the large proposed stormwater management lake. The proposed stormwater pump station will pump stormwater conveyed through the three (3) proposed stormwater management ponds to the stormwater management lake at a maximum discharge rate of 15 CFS. Therefore 15 CFS is the maximum design discharge used to preliminarily determine stormwater storage volumes required in PDA-1. Further details regarding the preliminary design of the stormwater pump station are included in the C&S Companies Stormwater Management Analysis dated December 19, 2014 which is included as Exhibit A to this Report.

This stormwater analysis is based on utilizing a stormwater pump station for PD1 based on the preliminary assessment of existing site topography, storage capacity

requirements and the flood elevations within Ellicott Creek. As the detailed stormwater management elements of the proposed project evolve and are further evaluated, analyzed and designed the Project Sponsor will evaluate avoidance of utilizing a stormwater pump station in favor of a traditional gravity stormwater management system design.

#### 4.2 Drainage Areas:

The post-development project site consists of four (4) delineated Post-development Drainage Areas (PDA's) numbered PDA-1 through PDA-4. A brief description of each is as follows:

#### PDA-1

Consists of 57.34 acres and is located in the northern portion of the site. There are three (3) stormwater management ponds located within PDA-1 which will provide the required stormwater detention. PDA-1 stormwater discharge will ultimately be conveyed via a stormwater pump station and associated force main to the large stormwater management lake and ultimately to Ellicott Creek.

#### PDA-2

Consists of 86.20 acres and consists of the majority of the southern portion of the project site. PDA-2 discharges east into a large stormwater management lake and ultimately to Ellicott Creek.

#### PDA-3

Consists of 20.54 acres and is located in the extreme southeastern portion of the site. PDA-3 discharges to a stormwater management pond and ultimately to Ellicott Creek.

#### PDA-4

Consists of 10.86 acres and is located immediately adjacent to Ellicott Creek. PDA-4 discharges directly to Ellicott Creek. There is no proposed development within PDA-4.

See Figure 4 – Proposed Conditions Analysis Map for delineation of post-development drainage areas.

#### 4.3 Analysis Results (Post-Development):

Each drainage area was analyzed for the 1, 10, 25 and 100-year storm events under post-development conditions to determine peak discharges. The results of the analyses are listed in the table below.

DRAINAGE AREA	1 YEAR	10 YEAR	*25 YEAR	100 YEAR
	(CFS)	(CFS)	(CFS)	(CFS)
PDA-1	42.30	90.02	92.38	135.46
PDA-2	73.63	148.29	153.23	218.13
PDA-3	15.54	34.93	35.06	53.74
PDA-4	6.62	18.60	15.82	31.13

<sup>\*25-</sup>YEAR 6 HOUR STORM (PER TOWN OF AMHERST DRAINAGE POLICY)

The post-development stormwater discharge from PDA-1 will be conveyed to the large stormwater management lake via a stormwater pumping station and ultimately to

Ellicott Creek. The total discharge rate from the proposed stormwater pump station (by C&S Companies) is 15 CFS. Storage volumes within the three (3) stormwater ponds were calculated based on this discharge rate. No post-development stormwater discharge will be conveyed to the Audubon Par 3 Golf Course. A rear yard drainage system will be installed within the rear yards of the lots adjacent to the Audubon Par 3 Golf Course to further ensure that no post-development discharge is conveyed to the Audubon Par 3 Golf Course.

PDA-2 is proposed to be tributary to a large stormwater management lake. The outfall from this lake will discharge to Ellicott Creek.

PDA-3 will be contained and managed within a small stormwater management pond and ultimately discharge to Ellicott Creek.

PDA-4 will directly discharge to Ellicott Creek as it currently does under predevelopment conditions.

Allowable discharges were determined for each PDA based on the pre-development analysis. The discharges were based on the allowable discharge rates (and pump station discharge rate by C&S Companies) and general outlet locations as determined under the pre-development analysis. Allowable discharges under the post-developed condition for each PDA are as follows:

	1-Year 10-Year *25-Year 100-Year NOTE				
	T-16ar	10-Year	*25-Year	100-Year	NOTE
PDA-1	15	15	15	15	1
PDA-2	41.09	128.41	87.11	222.00	2
PDA-3	1.2	17.2	18.0	32.0	3
PDA-4	6.62	18.60	15.82	31.13	4
TOTAL	63.91	179.21	135.93	300.13	

\*PER TOWN OF AMHERST DRAINAGE POLICY UNDER A 25 YEAR DEVELOPED CONDITIONS, 6 HOUR STORM THE MAXIMUM DISCHARGE IS THAT OF THE 10-YEAR, 6 HOUR EXISTING CONDITIONS STORM.

#### NOTES:

- Based solely on the design discharge rate of the proposed stormwater pump station of 15 CFS. This stormwater discharge will be conveyed to the stormwater management lake via the stormwater pumping station and associated forcemain.
- 2. Remaining allowable balance after subtraction of PDA-1, PDA-3 and PDA-4.
- 3. Based solely on providing 1 acre-feet of storage (max) for each analyzed storm event.
- 4. Based on existing discharge. No change to this drainage area under developed conditions.

The post-development conditions analysis demonstrates that offsite discharge rates will be equal to, or less than, pre-development rates which ensures that the development of the mixed use neighborhood will not have any potentially significant off-site drainage impacts to Ellicott Creek.

#### 4.4 Storage Requirements:

Additional modeling was performed under the post-development condition to estimate the volume of stormwater storage required for each PDA. The results are as follows:

	1-Year	10-Year	*25-Year	100-Year	NOTE
	(acre-feet)	(acre-feet)	(acre-feet)	(acre-feet)	·
PDA-1	1.9	5.9	5.8	10.1	1
PDA-2	2.1	0.8	5.0	0.0	2
PDA-3	1.0	1.0	1.0	1.0	3
PDA-4	N/A	N/A	N/A	N/A	
TOTAL	5.00	6.70	11.8	11.1	

\*PER TOWN OF AMHERST DRAINAGE POLICY UNDER A 25 YEAR, 6 HOUR DEVELOPED CONDITIONS STORM THE MAXIMUM DISCHARGE IS THAT OF THE 10-YEAR, 6 HOUR EXISTING CONDITIONS STORM.

#### NOTES:

- 1. A storage volume of 10.0 acre-feet governs for PDA-1. The largest storage volume of the storm events analyzed governs for each PDA. This analysis is based on three (3) stormwater management ponds in series and stormwater discharge being conveyed to the lake via a stormwater pump station at a total discharge rate of 15 CFS which is less than the predevelopment discharge rate. This controlled rate will then be conveyed through the lake to Ellicott Creek.
- 2. A storage volume of 5.0 acre-feet governs for PDA-2. The proposed lake provides this stormwater management storage volume required for PDA-2. The preliminary normal water elevation has been determined as part of the preliminary stormwater pump station analysis contained in Appendix E of this Report. This elevation is preliminarily determined to be above the 100-year base flood elevation (596) at the location of the lake.
- 3. A storage volume of 1.0 acre-feet governs for PDA-3. Based solely on providing 1 acre-feet of storage (max) for each analyzed storm event.

A minimum total storage volume for the proposed development of approximately 16.0 acre-feet is required. A minimum of 10 acre-feet of storage in PDA-1 upstream of the proposed stormwater pump station is required.

#### 5.0 RECOMMENDATIONS AND CONCLUSIONS:

The purpose of this Preliminary Drainage Analysis was to identify and evaluate the preliminary stormwater management requirements as part of the coordinated environmental review of the proposed mixed use neighborhood pursuant to the State Environmental Quality Review Act ("SEQRA"). The drainage analysis conducted by our firm specifically analyzed the pre-development and post-development conditions and associated storm water management storage volume requirements for the proposed mixed use project under the 1-year, 10-year, 25-year and 100-year storm events.

The results of the analyses reveal that a minimum of approximately 16.0 acre feet (total) of stormwater storage is required for the proposed redevelopment project and allocated as tabulated in Section 4.4 above, based on the storm events analyzed. This project will be able to accommodate the required storage volumes on site based on the preliminary pond and lake design elevations contained within the C&S Companies Memo dated December 19, 2014 and the integrated stormwater management system will be fully designed and installed in accordance with all applicable regulations and stringent standards relative to stormwater management for the development of sites involving one acre or greater of land disturbance.

Detailed investigation and analysis will be required during final design to determine drainage conveyance patterns and capacities in PDA-1. The preliminary design decision is to incorporate a stormwater pump station to the north of the stormwater management lake located in PDA2 to convey stormwater flows. The preliminary design elements for the proposed stormwater pump station are described in the C&S Companies Memo. The stormwater storage requirements for PDA-1 and PDA-2 were calculated based on these preliminary pump station design elements.

Detailed designs of stormwater outfall structures were not included as part of this Preliminary Drainage Analysis. This level of detail will be provided during final detailed stormwater management design of the project and will be based on the 1, 10, 25 and 100 year flood elevations of Ellicott Creek at the various final hydrologic and hydraulic design points for the redevelopment project.

The flood elevation of Ellicott Creek, for the various design storm events will be a thoroughly analyzed design element during the final detailed stormwater management design for this redevelopment project.

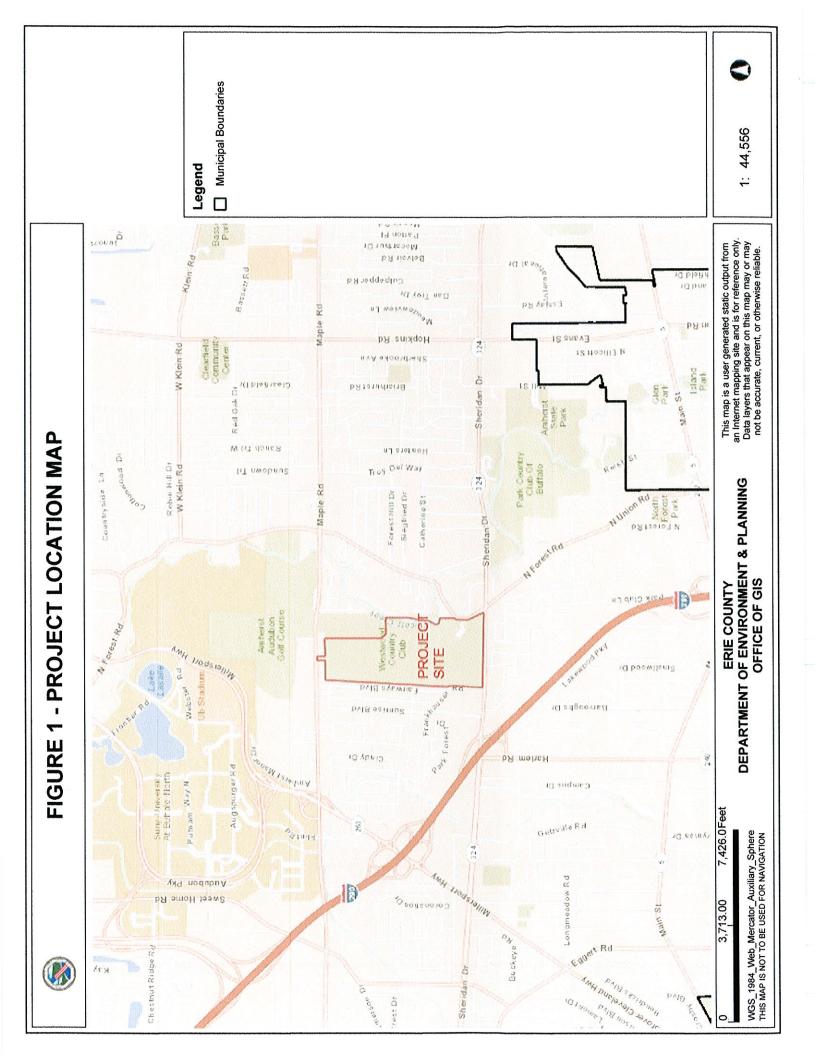
The proposed redevelopment project will be designed and constructed in accordance with all applicable Town of Amherst, NYSDEC, and EPA requirements and in accordance with the New York State Stormwater Management Design Manual.

The Preliminary Drainage Analysis performed determined that adequate stormwater management features can and will be provided on the project site in its developed condition to adequately address the post-development standards relative to all stormwater management requirements and regulations.

#### 6.0 TECHNICAL QUESTIONS

Technical questions concerning data presented herein and/or the methods utilized for this study should be addressed to:

Timothy M. Lavocat, P.E., CFM
Manager
Professional Civil Engineering, LLC
8150 Salt Road
Clarence Center, New York 14032
716-583-6875





#### LEGEND:

WESTWOOD COMMONS:

A. ■ OFFICE:
B. ■ RESIDENTIAL:

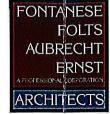
E. LAKE EDGE TOWNHOMES / MULTI-FAMILY:

G. EVENT SPACE
H. EXISTING CLUBHOUSE

#### NOTES:

- TOTAL PARKING COUNT IN THE WESTWOOD COMMONS AREA: 2,180 STALLS.
- WESTWOOD PARKWAY WIDTH: 80 FT. STANDARD ROADWAY WIDTH: 50 FT.

MENSCH GOODY PLANNING PRESERVATION Capital Partners, LLC



CONCEPTUAL MASTER PLAN 02/24/2014 AGREEMENT EXHIBIT "B"



#### WESTWOOD RESIDENTIAL:

I. PATIO HOME LOTS:
J. LARGER LOTS - SINGLE FAMILY

K | TOWNHOMES:

L. SENIOR LIVING FACILITY

52 UNITS 90 UNITS ASSISTED LIVING 200 / INDEPENDENT 96

108 UNITS

200,000 SQFT. 150,000 SQFT

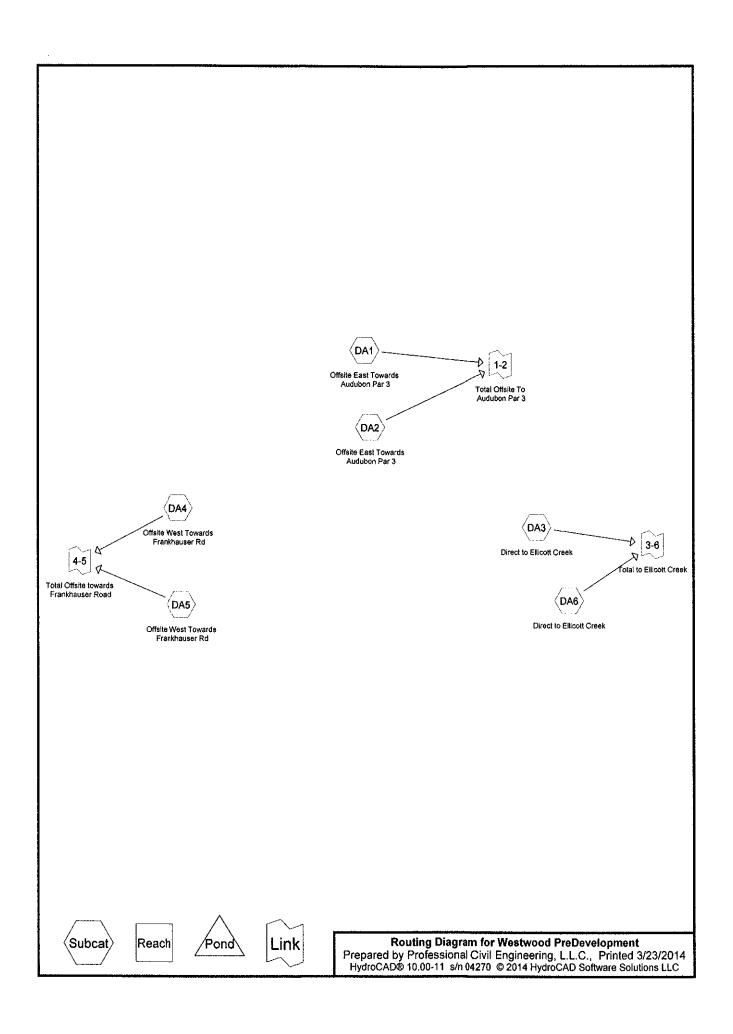
130 KEYS 325 UNITS

37 UNITS





# APPENDIX A PRE-DEVELOPMENT CALCULATIONS



# Area Listing (all nodes)

Area	CN	Description
(acres)		(subcatchment-numbers)
25.400	80	Claverack (CrA) - Open Space - Golf Course and Lawn, Good, HSG D (DA4, DA5, DA6)
4.650	98	Claverack (CrA) - Open Space - Imervious - Pavement and Roof, HSG D (DA6)
24.710	80	Cosad (Cv) - Open Space - Golf Course and Lawn, Good, HSG D (DA2, DA3, DA4, DA6)
4.170	80	Lakemont (La) - Open Space - Golf Course and Lawn, Good, HSG D (DA5)
65.190	80	Odessa (Od) - Open Space - Golf Course and Lawn, Good, HSG D (DA1, DA2, DA3, DA4, DA5, DA6)
4.360	80	Schoharle (SaA) - Open Space - Golf Course and Lawn, Good, HSG D (DA1, DA2, DA5)
27.620	80	Schoharle (SaB) - Open Space - Golf Course and Lawn, Good, HSG D (DA1, DA2, DA3, DA6)
9.460	80	Teel (Te) - Open Space - Golf Course and Lawn, Good, HSG D (DA6)
9.380	80	Urban Odessa (Ut) - Open Space - Golf Course and Lawn, Good, HSG D (DA2)
174.940	80	TOTAL AREA

# Westwood PreDevelopment

Prepared by Professional Civil Engineering, L.L.C.

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# Soll Listing (all nodes)

Area (acres)	Soli Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
174.940	HSG D	DA1, DA2, DA3, DA4, DA5, DA6
0.000	Other	
174.940		TOTAL AREA

# Ground Covers (all nodes)

HSG-A	HSG-B	HSG-C	HSG-D	Other	Total	Ground
 (acres)	(acres)	(acres)	(acres)	(acres)	(acres)	Cover
0.000	0.000	0.000	25.400	0.000	25.400	Claverack (CrA) - Open Space - Golf Course and
						Lawn, Good
0.000	0.000	0.000	4.650	0.000	4.650	Claverack (CrA) - Open Space - Imervious -
						Pavement and Roof
0.000	0.000	0.000	24.710	0.000	24.710	Cosad (Cv) - Open Space - Golf Course and Lawn,
						Good
0.000	0.000	0.000	4.170	0.000	4.170	Lakemont (La) - Open Space - Golf Course and
						Lawn, Good
0.000	0.000	0.000	65.190	0.000	65.190	Odessa (Od) - Open Space - Golf Course and
						Lawn, Good
0.000	0.000	0.000	4.360	0.000	4.360	Schoharle (SaA) - Open Space - Golf Course and
						Lawn, Good
0.000	0.000	0.000	27.620	0.000	27.620	Schoharle (SaB) - Open Space - Golf Course and
						Lawn, Good
0.000	0.000	0.000	9.460	0.000	9.460	Teel (Te) - Open Space - Golf Course and Lawn,
						Good
0.000	0.000	0.000	9.380	0.000	9.380	Urban Odessa (Ut) - Open Space - Golf Course
						and Lawn, Good
0.000	0.000	0.000	174.940	0.000	174.940	TOTAL AREA

Time span=5.00-30.00 hrs, dt=0.05 hrs, 501 points Runoff by SCS TR-20 method, UH=SCS, Weighted-CN Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment DA1: Offsite East Towards Audubon Par 3 Runoff Area=21.260 ac 0.00% Impervious Runoff Depth=0.62" Flow Length=870' Tc=40.6 min CN=80 Runoff=8.45 cfs 1.106 af

Subcatchment DA2: Offsite East Towards Audubon Par 3 Runoff Area=55.160 ac 0.00% Impervious Runoff Depth=0.62" Flow Length=2,475' Tc=54.1 min CN=80 Runoff=17.72 cfs 2.870 af

Subcatchment DA3: Direct to Ellicott Creek Runoff Area=22.320 ac 0.00% Impervious Runoff Depth=0.62" Flow Length=1,755' Tc=36.1 min CN=80 Runoff=9.63 cfs 1.161 af

Subcatchment DA4: Offsite West Towards Frankhauser Rd Runoff Area=15.330 ac 0.00% Impervious Runoff Depth=0.62" Flow Length=1,155' Tc=44.5 min CN=80 Runoff=5.69 cfs 0.798 af

Subcatchment DA5: Offsite West Towards Frankhauser Rd Runoff Area=14.360 ac 0.00% Impervious Runoff Depth=0.62" Flow Length=1,755' Tc=66.2 min CN=80 Runoff=3.97 cfs 0.747 af

Subcatchment DA6: Direct to Ellicott Creek Runoff Area=46.510 ac 10.00% Impervious Runoff Depth=0.72" Flow Length=2,220' Tc=44.6 min CN=82 Runoff=20.52 cfs 2.773 af

Link 1-2: Total Offsite To Audubon Par 3 inflow=25.25 cfs 3.976 af

Primary=25.25 cfs 3.976 af

Link 3-6: Total to Ellicott Creek Inflow=29.68 cfs 3.934 af

Primary=29.68 cfs 3.934 af

Link 4-5: Total Offsite towards Frankhauser Road Inflow=8.98 cfs 1.545 af Primary=8.98 cfs 1.545 af

> Total Runoff Area = 174.940 ac Runoff Volume = 9.455 af Average Runoff Depth = 0.65" 97.34% Pervious = 170.290 ac 2.66% Impervious = 4.650 ac

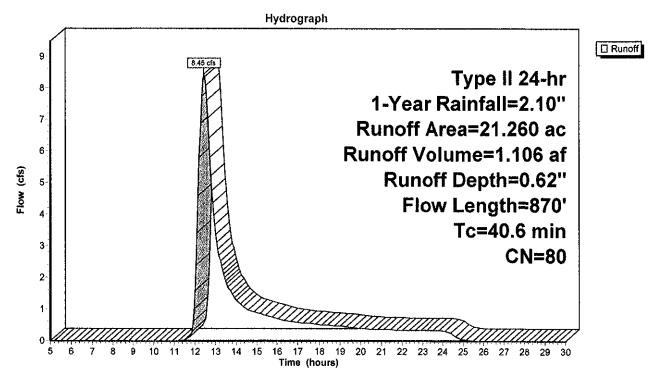
# Summary for Subcatchment DA1: Offsite East Towards Audubon Par 3

Runoff = 8.45 cfs @ 12.41 hrs, Volume= 1.106 af, Depth= 0.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type II 24-hr 1-Year Rainfall=2.10"

	Area	(ac)	ON Desc	ription								
*	15.	930	30 Odes	Odessa (Od) - Open Space - Golf Course and Lawn, Good, HSG D								
*	4.	330	80 Scho	harle (SaB	) - Open Spa	ace - Golf Course and Lawn, Good, HSG D						
*	1.	000	BO Scho	harle (SaA	) - Open Spa	ace - Golf Course and Lawn, Good, HSG D						
		260 260	-	thted Avera 00% Pervio	_							
	Tc (min)	Length (feet)		-	Capacity (cfs)	Description						
	27.4	150	0.0047	0.09		Sheet Flow, A-B						
	13.2	720	0.0032	0.91		Grass: Short n= 0.150 P2= 2.50"  Shallow Concentrated Flow, B-C  Unpaved Kv= 16.1 fps						
_	40.6	870	Total									

## Subcatchment DA1: Offsite East Towards Audubon Par 3



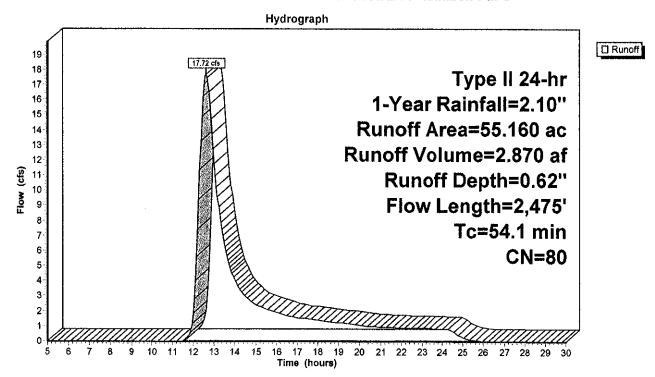
## Summary for Subcatchment DA2: Offsite East Towards Audubon Par 3

Runoff = 17.72 cfs @ 12.60 hrs, Volume= 2.870 af, Depth= 0.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type II 24-hr 1-Year Rainfail=2.10"

Α	rea (	ac) (	N De	scription		
*	27.4	00 1	30 Oc	essa (Od) -	Open Space -	- Golf Course and Lawn, Good, HSG D
*	9.1	.50	30 Sc	hoharle (Sa	B) - Open Spa	ace - Golf Course and Lawn, Good, HSG D
*	2.9	60 (				ace - Goif Course and Lawn, Good, HSG D
*	9.3	80 (	30 Ur	ban Odessa	(Ut) - Open S	Space - Golf Course and Lawn, Good, HSG D
*	6.2	70 8	30 C	sad (Cv) - O	pen Space - (	Golf Course and Lawn, Good, HSG D
	55.1	.60 8	30 W	eighted Ave	rage	
	55.1	60 100		0.00% Perv	ous Area	
į	Tc	Length	Slo	e Velocity	Capacity	Description
(m	ln)	(feet)	(ft/	t) (ft/sec	(cfs)	
16	3.5	150	0.010	7 0.15	,	Sheet Flow, A-B
						Grass: Short n= 0.150 P2= 2.50"
37	7.6	2,325	0.004	1.03	1	Shallow Concentrated Flow, B-C
						Unpaved Kv= 16.1 fps
54	L 1	2.475	Total			

# Subcatchment DA2: Offsite East Towards Audubon Par 3

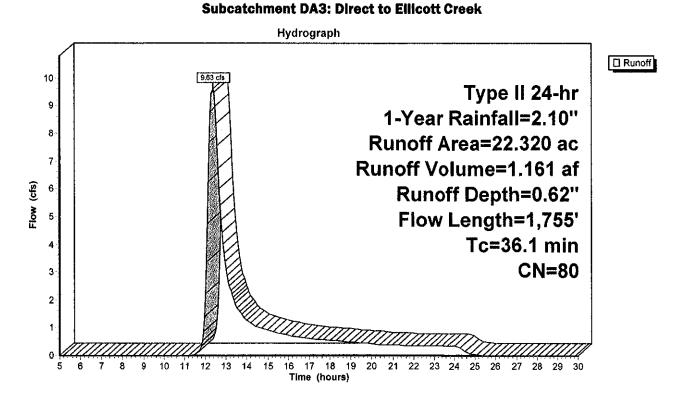


# Summary for Subcatchment DA3: Direct to Ellicott Creek

Runoff = 9.63 cfs @ 12.35 hrs, Volume= 1.161 af, Depth= 0.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type II 24-hr 1-Year Rainfall=2.10"

	Area	(ac)	ON Desc	ription								
*	6.	800	BO Odes	Odessa (Od) - Open Space - Golf Course and Lawn, Good, HSG D								
*	5.	830	80 Scho	harle (SaB	) - Open Spa	ace - Golf Course and Lawn, Good, HSG D						
*	9.	690	BO Cosa	id (Cv) - Ope	en Space - (	Golf Course and Lawn, Good, HSG D						
		320 320	•	shted Avera 00% Pervio	_							
	Tc (mln)	Length (feet)		•	Capacity (cfs)	Description						
	16.5	150	0.0167	0.15		Sheet Flow, A-B						
	19.6	1,605	0.0072	1.37		Grass: Short n= 0.150 P2= 2.50"  Shallow Concentrated Flow, B-C  Unpaved Kv= 16.1 fps						
_	36.1	1,755	Total									



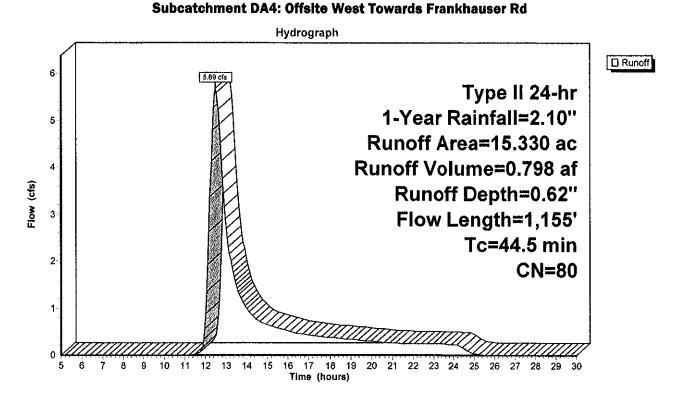
# Summary for Subcatchment DA4: Offsite West Towards Frankhauser Rd

Runoff = 5.69 cfs @ 12.47 hrs, Volume=

0.798 af, Depth= 0.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type II 24-hr 1-Year Rainfall=2.10"

_	Area	(ac)	CN De	scription								
*	8.	.970	80 <b>O</b> d	Odessa (Od) - Open Space - Golf Course and Lawn, Good, HSG D								
*	1.	.530				ice - Golf Course and Lawn, Good, HSG D						
*	4.	.830	80 Cg	sad (Cv) - Op	en Space - (	Golf Course and Lawn, Good, HSG D						
				15.330 80 Weighted Average 15.330 100.00% Pervious A		-						
	Tc (mln)	Length (feet)		-	Capacity (cfs)	Description						
	27.4	150	0.004	7 0.09		Sheet Flow, A-B						
	17.1	1,005	0.003	7 0.98		Grass: Short n= 0.150 P2= 2.50"  Shallow Concentrated Flow, B-C  Unpaved Kv= 16.1 fps						
	44.5	1,155	Total									



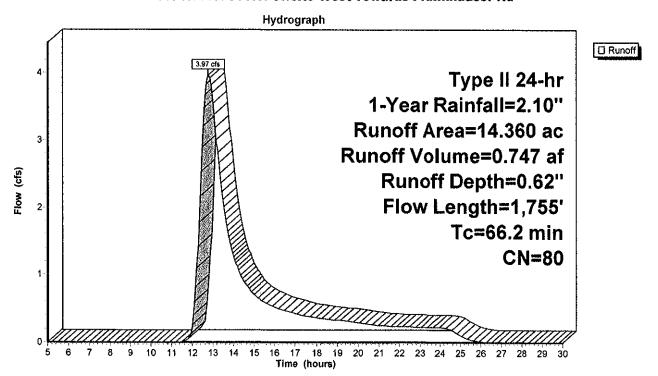
## Summary for Subcatchment DA5: Offsite West Towards Frankhauser Rd

Runoff = 3.97 cfs @ 12.76 hrs, Volume= 0.747 af, Depth= 0.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type II 24-hr 1-Year Rainfall=2.10"

	Area	(ac)	CN	Desc	ription		
*	5.	350	80	Odes	sa (Od) - Op	en Space -	Golf Course and Lawn, Good, HSG D
*	0.	400	80	Schol	harle (SaA)	- Open Spa	ice - Golf Course and Lawn, Good, HSG D
*	4.	440	80			-	ce - Golf Course and Lawn, Good, HSG D
*	4.	170	80	Lake	mont (La) -	Open Spac	e - Golf Course and Lawn, Good, HSG D
	14.	360	80	Welg	hted Avera	ge	
	14.	360		100.00% Pervious Area			
	Tc	Length	1	Slope	Velocity	Capacity	Description
	(mln)	(feet	)	(ft/ft)	(ft/sec)	(cfs)	
	38.5	150	0	.0020	0.06		Sheet Flow, A-B
							Grass: Short n= 0.150 P2= 2.50"
	27.7	1,605	0	.0036	0036 0.97	Shallow Concentrated Flow, B-C	
							Unpayed Kv= 16.1 fps
	66.2	1,758	T	otal			

#### Subcatchment DA5: Offsite West Towards Frankhauser Rd



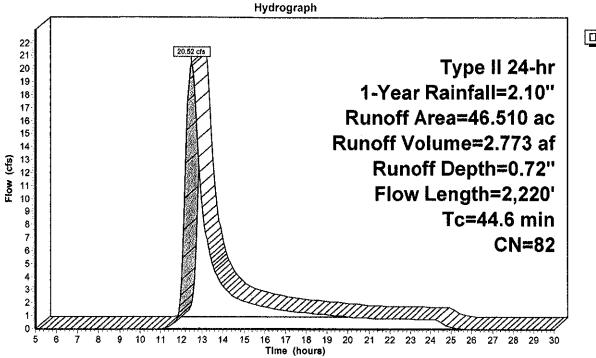
# **Summary for Subcatchment DA6: Direct to Ellicott Creek**

Runoff = 20.52 cfs @ 12.45 hrs, Volume= 2.773 af, Depth= 0.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type ii 24-hr 1-Year Rainfaii=2.10"

	Area	(ac)	CN Des	cription		
*	19.	430	80 Cla	erack (CrA)	- Open Spa	ce - Golf Course and Lawn, Good, HSG D
*	4.	650				ce - Imervious - Pavement and Roof, HSG D
*	0.	740			-	Golf Course and Lawn, Good, HSG D
*	8.	310			<del>-</del>	ace - Golf Course and Lawn, Good, HSG D
*	9.	460		=		If Course and Lawn, Good, HSG D
*	3.	920			-	Golf Course and Lawn, Good, HSG D
	46.	510	82 Wel	ghted Avera	ige	
	41.	860	90.0	00% Perviou	s Area	
	4.	650	10.	00% Imperv	ous Area	
	Tc	Length		•	Capacity	Description
_	(min)	(feet)	(ft/ft	(ft/sec)	(cfs)	
	17.7	150	0.0140	0.14		Sheet Flow, A-B
						Grass: Short n= 0.150 P2= 2.50"
	12.7	885	0.0052	1.16		Shallow Concentrated Flow, B-C
						Unpaved Kv= 16.1 fps
	2.2	375	0.0320	2.88		Shallow Concentrated Flow, C-D
						Unpaved Kv= 16.1 fps
	12.0	810	0.0049	1.13		Shallow Concentrated Flow, D-E
						Unpaved Kv= 16.1 fps
	44.6	2,220	Total			

# **Subcatchment DA6: Direct to Ellicott Creek**



☐ Runoff

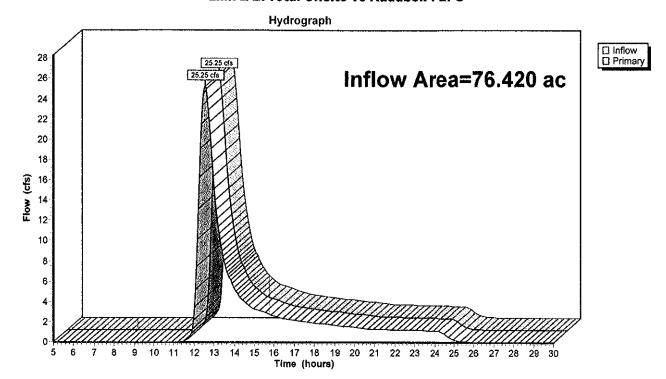
# Summary for Link 1-2: Total Offsite To Audubon Par 3

Inflow Area = 76.420 ac, 0.00% Impervious, Inflow Depth = 0.62" for 1-Year event

Inflow = 25.25 cfs @ 12.53 hrs, Volume= 3.976 af

Primary = 25.25 cfs @ 12.53 hrs, Volume= 3.976 af, Atten= 0%, Lag= 0.0 min

Link 1-2: Total Offsite To Audubon Par 3



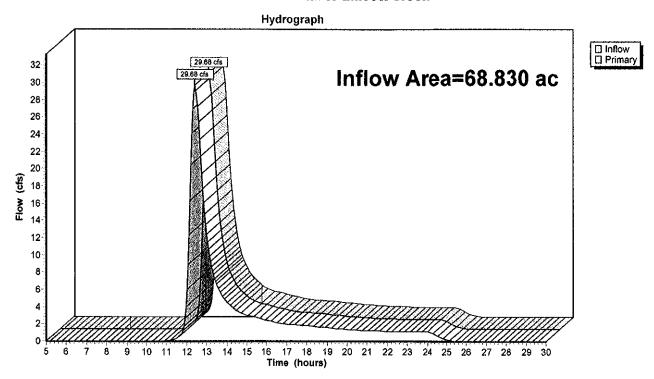
# Summary for Link 3-6: Total to Ellicott Creek

Inflow Area = 68.830 ac, 6.76% Impervious, Inflow Depth = 0.69" for 1-Year event

Inflow = 29.68 cfs @ 12.42 hrs, Volume= 3.934 af

Primary = 29.68 cfs @ 12.42 hrs, Volume= 3.934 af, Atten= 0%, Lag= 0.0 min

Link 3-6: Total to Ellicott Creek



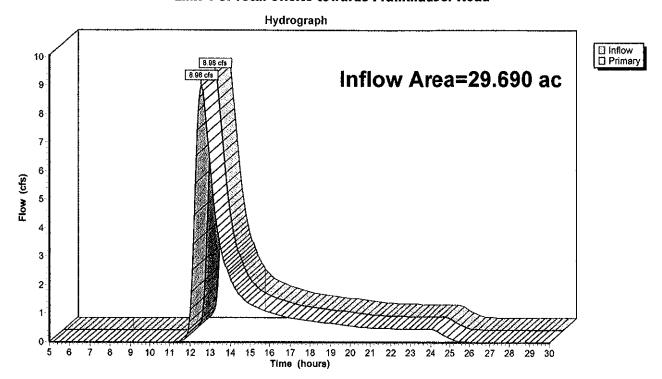
# Summary for Link 4-5: Total Offsite towards Frankhauser Road

Inflow Area = 29.690 ac, 0.00% Impervious, Inflow Depth = 0.62" for 1-Year event

Inflow = 8.98 cfs @ 12.56 hrs, Volume= 1.545 af

Primary = 8.98 cfs @ 12.56 hrs, Volume= 1.545 af, Atten= 0%, Lag= 0.0 min

Link 4-5: Total Offsite towards Frankhauser Road



Time span=5.00-30.00 hrs, dt=0.05 hrs, 501 points Runoff by SCS TR-20 method, UH=SCS, Weighted-CN Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment DA1: Offsite East Towards Audubon Par 3 Runoff Area=21.260 ac 0.00% impervious Runoff Depth=1.64" Flow Length=870' Tc=40.6 min CN=80 Runoff=24.20 cfs 2.899 af

Subcatchment DA2: Offsite East Towards Audubon Par 3 Runoff Area=55.160 ac 0.00% impervious Runoff Depth=1.64" Flow Length=2,475' Tc=54.1 mln CN=80 Runoff=51.08 cfs 7.522 af

Subcatchment DA3: Direct to Ellicott Creek Runoff Area=22.320 ac 0.00% impervious Runoff Depth=1.64" Flow Length=1,755' Tc=36.1 mln CN=80 Runoff=27.56 cfs 3.044 af

Subcatchment DA4: Offsite West Towards Frankhauser Rd Runoff Area=15.330 ac 0.00% impervious Runoff Depth=1.64" Flow Length=1,155' Tc=44.5 min CN=80 Runoff=16.33 cfs 2.090 af

Subcatchment DA5: Offsite West Towards Frankhauser Rd Runoff Area=14.360 ac 0.00% impervious Runoff Depth=1.64" Flow Length=1,755' Tc=66.2 mln CN=80 Runoff=11.44 cfs 1.958 af

Subcatchment DA6: Direct to Ellicott Creek Runoff Area=46.510 ac 10.00% impervious Runoff Depth=1.78" Flow Length=2,220' Tc=44.6 min CN=82 Runoff=54.44 cfs 6.909 af

Link 1-2: Total Offsite To Audubon Par 3 Inflow=72.63 cfs 10.421 af

Primary=72.63 cfs 10.421 af

Link 3-6: Total to Ellicott Creek Inflow=80.61 cfs 9.953 af

Primary=80.61 cfs 9.953 af

Link 4-5: Total Offsite towards Frankhauser Road inflow=25.97 cfs 4.049 af Primary=25.97 cfs 4.049 af

Total Runoff Area = 174.940 ac Runoff Volume = 24.422 af Average Runoff Depth = 1.68" 97.34% Pervious = 170.290 ac 2.66% Impervious = 4.650 ac

# Summary for Subcatchment DA1: Offsite East Towards Audubon Par 3

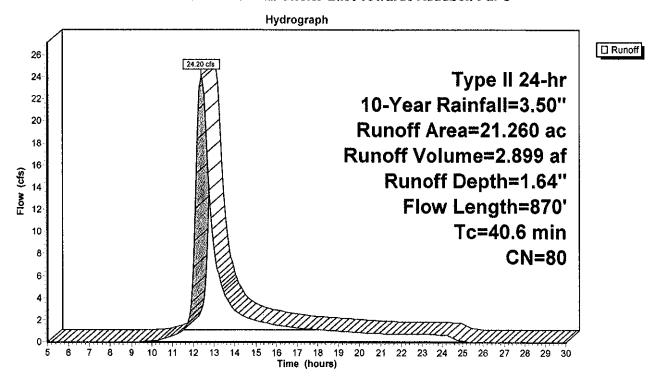
Runoff = 24.20 cfs @ 12.39 hrs, Volume=

2.899 af, Depth= 1.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type II 24-hr 10-Year Rainfail=3.50"

	Area	(ac) (	ON Des	cription								
*	15.	930	30 Ode	Odessa (Od) - Open Space - Golf Course and Lawn, Good, HSG D								
*												
*	1.	000	80 Sch	harle (SaA	) - Open Spa	ace - Golf Course and Lawn, Good, HSG D						
		260 260		ghted Avera .00% Pervio	•							
	Tc (mln)	Length (feet)	Slope (ft/ft)	•	Capacity (cfs)	Description						
	27.4	150	0.0047	0.09		Sheet Flow, A-B Grass: Short n= 0.150 P2= 2.50"						
	13.2	720	0.0032	0.91		Shallow Concentrated Flow, B-C Unpaved Kv= 16.1 fps						
	40.6	870	Total									

#### Subcatchment DA1: Offsite East Towards Audubon Par 3



#### Summary for Subcatchment DA2: Offsite East Towards Audubon Par 3

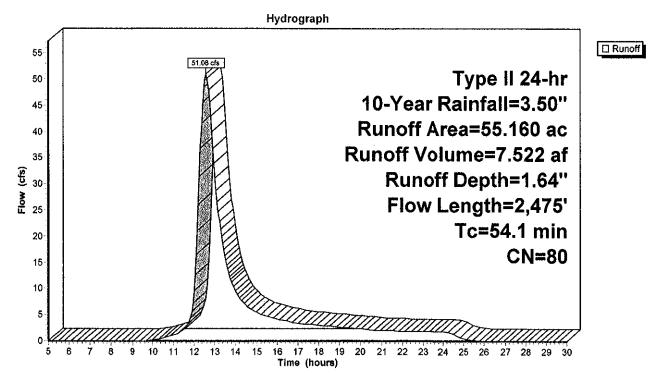
Runoff = 51.08 cfs @ 12.56 hrs, Volume=

7.522 af, Depth= 1.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type II 24-hr 10-Year Rainfall=3.50"

_	Area	(ac)	CN	Desci	ription			
*	27.	400	80	Odes	sa (Od) - O <sub>l</sub>	en Space -	Golf Course and Lawn, Good, HSG D	
*	9.	150	80	Schol	harle (SaB	) - Open Spa	ace - Golf Course and Lawn, Good, HSG D	
*	2.	960	80	Schol	harle (SaA	- Open Spa	ace - Golf Course and Lawn, Good, HSG D	
*	9.	380	80				pace - Golf Course and Lawn, Good, HSG D	
*	6.	270	80	Cosa	d (Cv) - Ope	en Space - C	Golf Course and Lawn, Good, HSG D	
	55.	160	80	Welg	hted Avera	ge		
	55.160		.60		100.00% Pervious Area		us Area	
	Tc	Lengti		Slope	Velocity	Capacity	Description	
	(mln)	(feet	<u>)                                    </u>	(ft/ft)	(ft/sec)	(cfs)		
	16.5	150	) (	0.0167	0.15		Sheet Flow, A-B	
							Grass: Short n= 0.150 P2= 2.50"	
	37.6	2,32	2,325 0.0041 1.03	Shallow Concentrated Flow, B-C				
							Unpaved Kv= 16.1 fps	
	54.1	2,475	5 1	otal				

## Subcatchment DA2: Offsite East Towards Audubon Par 3



## **Summary for Subcatchment DA3: Direct to Ellicott Creek**

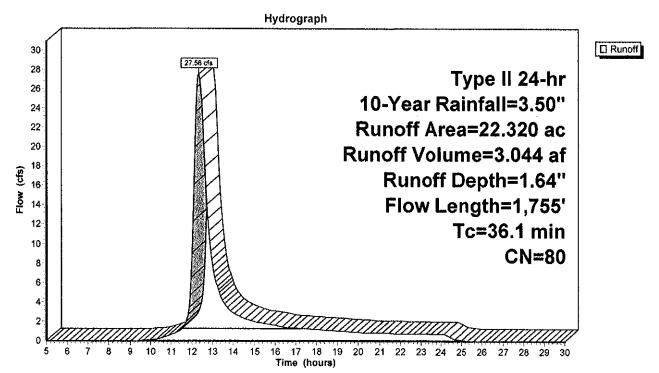
Runoff = 27.56 cfs @ 12.32 hrs, Volume=

3.044 af, Depth= 1.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type II 24-hr 10-Year Rainfali=3.50"

	Area	(ac)	CN D	esci	lption							
*	6.	800	80 C	dessa (Od) - Open Space - Golf Course and Lawn, Good, HSG D								
*	· · ·											
*	9.	690					Golf Course and Lawn, Good, HSG D					
		2.320 80 Weighted Average 2.320 100.00% Pervious Area				-						
	Tc (min)	Length (feet)		ope /ft)	Velocity (ft/sec)	Capacity (cfs)	Description					
	16.5	150	0.01	67	0.15		Sheet Flow, A-B					
	19.6	1,605	0.00	72	1.37		Grass: Short n= 0.150 P2= 2.50"  Shallow Concentrated Flow, B-C  Unpaved Kv= 16.1 fps					
	36.1	1,755	Tota	l								

#### Subcatchment DA3: Direct to Ellicott Creek



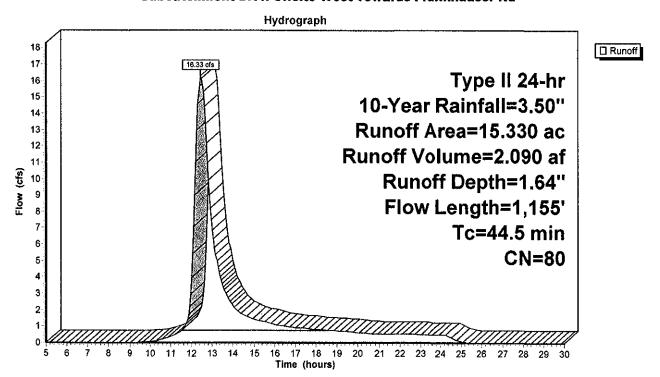
## Summary for Subcatchment DA4: Offsite West Towards Frankhauser Rd

Runoff = 16.33 cfs @ 12.43 hrs, Volume= 2.090 af, Depth= 1.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type II 24-hr 10-Year Rainfall=3.50"

	Area	(ac) (	N Desc	ription						
*	8.970 80 Odessa (Od) - Open Space - Golf Course and Lawn, Good, HSG D									
*	1.	530	30 Clave	Claverack (CrA) - Open Space - Golf Course and Lawn, Good, HSG D						
*	4.	830	30 Cosa	Cosad (Cv) - Open Space - Golf Course and Lawn, Good, HSG D						
		15.330 80 Welghted Average 15.330 100.00% Pervious Area		-						
	Tc (mln)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description				
	27.4	150	0.0047	0.09		Sheet Flow, A-B				
	17.1	1,005	0.0037	0.98		Grass: Short n= 0.150 P2= 2.50"  Shallow Concentrated Flow, B-C  Unpaved Kv= 16.1 fps				
	44.5	1,155	Total							

#### Subcatchment DA4: Offsite West Towards Frankhauser Rd



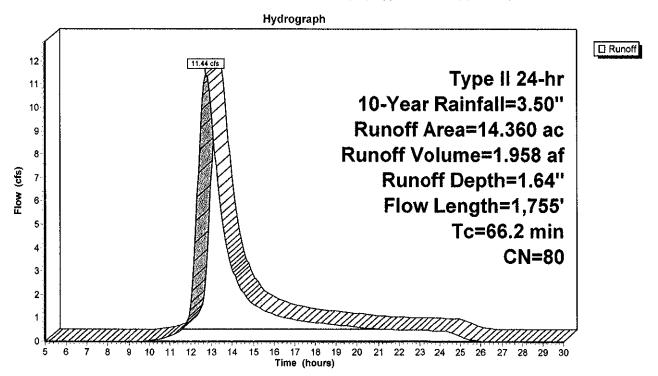
# Summary for Subcatchment DA5: Offsite West Towards Frankhauser Rd

Runoff = 11.44 cfs @ 12.72 hrs, Volume= 1.958 af, Depth= 1.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type II 24-hr 10-Year Rainfall=3.50"

_	Area	(ac)	CN Des	cription							
*	5.	350	80 Ode	O Odessa (Od) - Open Space - Golf Course and Lawn, Good, HSG D							
*	0.	400	80 Sch	oharle (SaA	) - Open Spa	ace - Golf Course and Lawn, Good, HSG D					
*	4.	440	80 Cla	erack (CrA)	- Open Spa	ce - Goif Course and Lawn, Good, HSG D					
*	4.	170	80 Lak	Lakemont (La) - Open Space - Golf Course and Lawn, Good, HSG D							
	14.	360	80 Wel	ghted Avera	nge						
	14.	360	100	.00% Pervio	us Area						
	Tc	Length	Slope	Velocity	Capacity	Description					
	(mln)	(feet)	(ft/ft	(ft/sec)	(cfs)						
	38.5	150	0.0020	0.06		Sheet Flow, A-B					
						Grass: Short n= 0.150 P2= 2.50"					
	27.7	1,605	0.0036	0.97		Shallow Concentrated Flow, B-C					
						Unpaved Kv= 16.1 fps					
	66,2	1,755	Total								

#### Subcatchment DA5: Offsite West Towards Frankhauser Rd



# **Summary for Subcatchment DA6: Direct to Ellicott Creek**

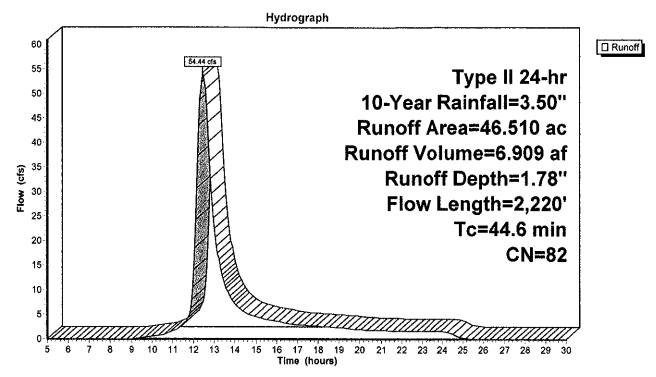
Runoff = 54.44 cfs @ 12.43 hrs, Volume=

6.909 af, Depth= 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type II 24-hr 10-Year Rainfall=3.50"

	Area	(ac) (	N Desc	ription								
*	19.	430	80 Clave	averack (CrA) - Open Space - Golf Course and Lawn, Good, HSG D								
*	4.	650		Claverack (CrA) - Open Space - Imervious - Pavement and Roof, HSG D								
*	0.	740	Golf Course and Lawn, Good, HSG D									
*	8.	310			-	ace - Golf Course and Lawn, Good, HSG D						
*	9.	460			e) - Open Space - Golf Course and Lawn, Good, HSG D							
*	3.	920		Cosad (Cv) - Open Space - Golf Course and Lawn, Good, HSG D								
	46.	510	32 Welg	hted Avera	ge							
	41.	860	90.0	0% Perviou	s Area							
	4.	650	10.0	0% Impervi	ous Area							
	Tc	Length	Slope	Velocity	Capacity	Description						
	(mln)	(feet)	(ft/ft)	(ft/sec)	(cfs)							
	17.7	150	0.0140	0.14	•	Sheet Flow, A-B						
						Grass: Short n= 0.150 P2= 2.50"						
	12.7	885	0.0052	1.16		Shallow Concentrated Flow, B-C						
						Unpaved Kv= 16.1 fps						
	2.2	375	0.0320	2.88		Shallow Concentrated Flow, C-D						
						Unpaved Kv= 16.1 fps						
	12.0	810	0.0049	1.13		Shallow Concentrated Flow, D-E						
						Unpaved Kv= 16.1 fps						
	44.6	2,220	Total									

# **Subcatchment DA6: Direct to Ellicott Creek**



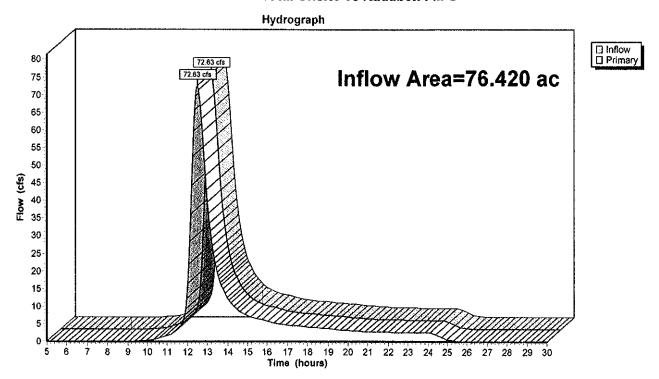
# Summary for Link 1-2: Total Offsite To Audubon Par 3

Inflow Area = 76.420 ac, 0.00% impervious, Inflow Depth = 1.64" for 10-Year event

Inflow = 72.63 cfs @ 12.50 hrs, Volume= 10.421 af

Primary = 72.63 cfs @ 12.50 hrs, Volume= 10.421 af, Atten= 0%, Lag= 0.0 min

Link 1-2: Total Offsite To Audubon Par 3



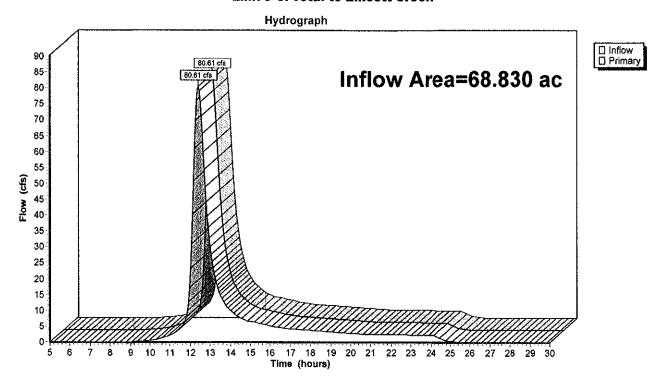
Summary for Link 3-6: Total to Ellicott Creek

Inflow Area = 68.830 ac, 6.76% Impervious, Inflow Depth = 1.74" for 10-Year event

Inflow = 80.61 cfs @ 12.39 hrs, Volume= 9.953 af

Primary = 80.61 cfs @ 12.39 hrs, Volume= 9.953 af, Atten= 0%, Lag= 0.0 min

Link 3-6: Total to Ellicott Creek



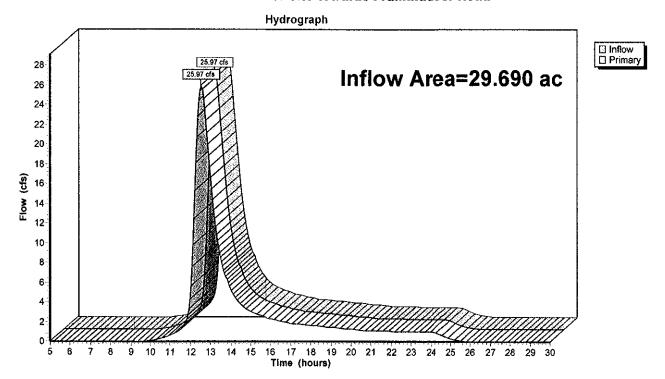
# Summary for Link 4-5: Total Offsite towards Frankhauser Road

Inflow Area = 29.690 ac, 0.00% Impervious, Inflow Depth = 1.64" for 10-Year event

Inflow = 25.97 cfs @ 12.52 hrs, Volume= 4.049 af

Primary = 25.97 cfs @ 12.52 hrs, Volume= 4.049 af, Atten= 0%, Lag= 0.0 mln

Link 4-5: Total Offsite towards Frankhauser Road



Time span=5.00-30.00 hrs, dt=0.05 hrs, 501 points Runoff by SCS TR-20 method, UH=SCS, Weighted-CN Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment DA1: Offsite East Towards Audubon Par 3 Runoff Area=21,260 ac 0.00% Impervious Runoff Depth=2.72" Flow Length=870' Tc=40.6 min CN=80 Runoff=40.80 cfs 4.817 af

Subcatchment DA2: Offsite East Towards Audubon Par 3 Runoff Area=55.160 ac 0.00% Impervious Runoff Depth=2.72" Flow Length=2,475' Tc=54.1 mln CN=80 Runoff=86.29 cfs 12.499 af

Subcatchment DA3: Direct to Ellicott Creek Runoff Area=22.320 ac 0.00% impervious Runoff Depth=2.72" Flow Length=1,755' Tc=36.1 min CN=80 Runoff=46.44 cfs 5.058 af

Subcatchment DA4: Offsite West Towards Frankhauser Rd Runoff Area=15.330 ac 0.00% impervious Runoff Depth=2.72" Flow Length=1,155' Tc=44.5 min CN=80 Runoff=27.61 cfs 3.474 af

Subcatchment DA5: Offsite West Towards Frankhauser Rd Runoff Area=14.360 ac 0.00% impervious Runoff Depth=2.72" Flow Length=1,755' Tc=66.2 min CN=80 Runoff=19.35 cfs 3.254 af

Subcatchment DA6: Direct to Ellicott Creek Runoff Area=46.510 ac 10.00% impervious Runoff Depth=2.90" Flow Length=2,220' Tc=44.6 mln CN=82 Runoff=89.32 cfs 11.243 af

Link 1-2: Total Offsite To Audubon Par 3 Inflow=122.73 cfs 17.316 af Primary=122.73 cfs 17.316 af

Link 3-6: Total to Ellicott Creek Inflow=133.46 cfs 16.301 af Primary=133.46 cfs 16.301 af

Link 4-5: Total Offsite towards Frankhauser Road Inflow=43.94 cfs 6.728 af Primary=43.94 cfs 6.728 af

> Total Runoff Area = 174.940 ac Runoff Volume = 40.344 af Average Runoff Depth = 2.77" 97.34% Pervious = 170.290 ac 2.66% Impervious = 4.650 ac

# Summary for Subcatchment DA1: Offsite East Towards Audubon Par 3

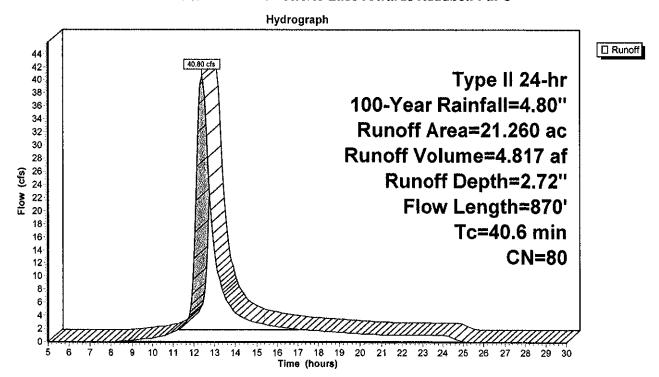
Runoff = 40.80 cfs @ 12.38 hrs, Volume=

4.817 af, Depth= 2.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type II 24-hr 100-Year Rainfall=4.80"

_	Area	(ac) (	N Desc	ription							
*	15.	15.930 80 Odessa (Od) - Open Space - Golf Course and Lawn, Good, HSG D									
*	4.	330 8	30 Scho	Schoharle (SaB) - Open Space - Golf Course and Lawn, Good, HSG D							
*	1.	000 8	30 Scho	Schoharie (SaA) - Open Space - Golf Course and Lawn, Good, HSG D							
	21.	260 8	30 Welg	hted Avera	ge						
	21.	1.260 100.00% Pervious Area									
	Tc	Length	Slope	Velocity	Capacity	Description					
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)						
	27.4	150	0.0047	0.09		Sheet Flow, A-B					
						Grass: Short n= 0.150 P2= 2.50"					
	13.2	720	0.0032	0.91		Shallow Concentrated Flow, B-C					
						Unpaved Kv= 16.1 fps					
	40.6	870	Total								

#### Subcatchment DA1: Offsite East Towards Audubon Par 3



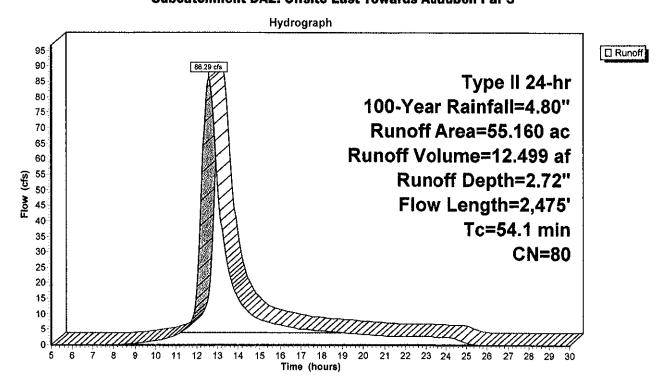
## Summary for Subcatchment DA2: Offsite East Towards Audubon Par 3

Runoff = 86.29 cfs @ 12.55 hrs, Volume= 12.499 af, Depth= 2.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type II 24-hr 100-Year Rainfall=4.80"

	Area	(ac)	CN	Desci	ription						
*	27.	400	80	Odes	sa (Od) - O <sub>l</sub>	en Space -	Golf Course and Lawn, Good, HSG D				
*	9.	150	80	Schol	harle (SaB	) - Open Spa	ace - Golf Course and Lawn, Good, HSG D				
*	2.	960	80	Schol	Schoharle (SaA) - Open Space - Golf Course and Lawn, Good, HSG D						
*	9.	380	80	Urbar	Urban Odessa (Ut) - Open Space - Golf Course and Lawn, Good, HSG D						
*	6.	270	80	Cosa	Cosad (Cv) - Open Space - Golf Course and Lawn, Good, HSG D						
	55.	160	80	Welg	hted Avera	ge					
	55.160		1.00		00% Pervio	us Area					
	Tc (min)	Lengti (feet		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description				
	16.5	150		0.0167	0.15	(618)	Sheet Flow, A-B				
					<b></b>		Grass: Short n= 0.150 P2= 2.50"				
	37.6	2,32	5 C	.0041	1.03		Shallow Concentrated Flow, B-C				
_							Unpaved Kv≖ 16.1 fps				
	54.1	2,47	5 T	otal							

## Subcatchment DA2: Offsite East Towards Audubon Par 3



#### **Summary for Subcatchment DA3: Direct to Ellicott Creek**

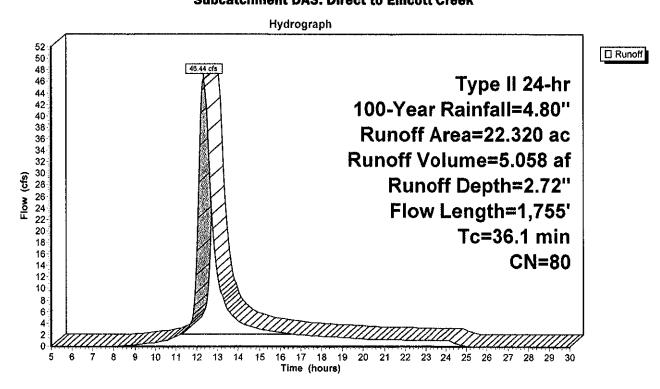
Runoff = 46.44 cfs @ 12.32 hrs, Volume=

5.058 af, Depth= 2.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type II 24-hr 100-Year Rainfall=4.80"

	Area	(ac)	CN	Desci	lption							
*	6.	800	80	Odes	Odessa (Od) - Open Space - Golf Course and Lawn, Good, HSG D							
*	5.	830	80	Schol	Schoharle (SaB) - Open Space - Golf Course and Lawn, Good, HSG D							
*	9.	690	80	Cosa	Cosad (Cv) - Open Space - Golf Course and Lawn, Good, HSG D							
				22.320 22.320		_	hted Avera 00% Pervio	•				
	Tc (min)	Length (feet		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description					
	16.5	150	) 0	.0167	0.15	· =	Sheet Flow, A-B					
	19.6	1,605	5 0	.0072	1.37		Grass: Short n= 0.150 P2= 2.50"  Shallow Concentrated Flow, B-C  Unpaved Kv= 16.1 fps					
	36.1	1,755	T	otal								

# **Subcatchment DA3: Direct to Ellicott Creek**



## Summary for Subcatchment DA4: Offsite West Towards Frankhauser Rd

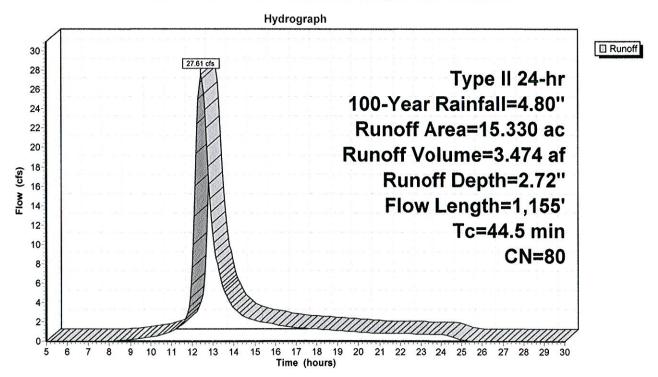
Runoff = 27.61 cfs @ 12.42 hrs, Volume=

3.474 af, Depth= 2.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type II 24-hr 100-Year Rainfail=4.80"

	Area	(ac) (	N Desc	ription						
*	8.970 80 Odessa (Od) - Open Space - Golf Course and Lawn, Good, HSG D									
*	1.	530	30 Clave	Claverack (CrA) - Open Space - Golf Course and Lawn, Good, HSG D						
*	4.	830	30 Cosa	Cosad (Cv) - Open Space - Golf Course and Lawn, Good, HSG D						
			terren services	hted Avera	•					
	15.	330	100.	00% Pervio	us Area					
	Tc	Length	Slope	Velocity	Capacity	Description				
	(mln)	(feet)		(ft/sec)	(cfs)					
	27.4	150	0.0047	0.09		Sheet Flow, A-B				
						Grass: Short n= 0.150 P2= 2.50"				
	17.1	1,005	0.0037	0.98		Shallow Concentrated Flow, B-C				
						Unpaved Kv= 16.1 fps				
	44.5	1,155	Total							

#### **Subcatchment DA4: Offsite West Towards Frankhauser Rd**



# Summary for Subcatchment DA5: Offsite West Towards Frankhauser Rd

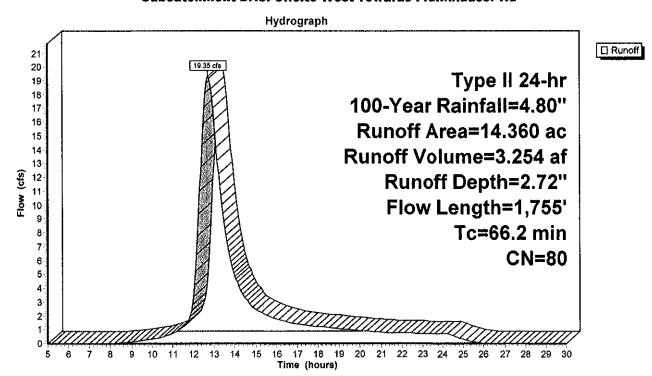
Runoff = 19.35 cfs @ 12.71 hrs, Volume=

3.254 af, Depth= 2.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type II 24-hr 100-Year Rainfall=4.80"

	Area	(ac)	CN	Desci	ription							
*	5.350 80 Odessa (Od) - Open Space - G						Golf Course and Lawn, Good, HSG D					
*	0.	400	80	Schol	Schoharle (SaA) - Open Space - Golf Course and Lawn, Good, HSG D							
*	4.	440	80	Clave	Claverack (CrA) - Open Space - Golf Course and Lawn, Good, HSG D							
*	4.	4.170 80 Lakemont (La) - Open Space - Golf Course and Lawn, Good, HSG D		e - Golf Course and Lawn, Good, HSG D								
	14.	360	80	Welg	hted Avera	ige						
	14.360			100.00% Pervious Area								
	Tc	Length	1	Slope	Velocity	Capacity	Description					
	(mln)	(feet	)	(ft/ft)	(ft/sec)	(cfs)						
	38.5	150	) (	.0020	0.06		Sheet Flow, A-B					
							Grass: Short n= 0.150 P2= 2.50"					
	27.7	1,605	•	.0036	0.97		Shallow Concentrated Flow, B-C					
							Unpaved Kv= 16.1 fps					
_	66.2	1.755	. 1	otal								

#### Subcatchment DA5: Offsite West Towards Frankhauser Rd



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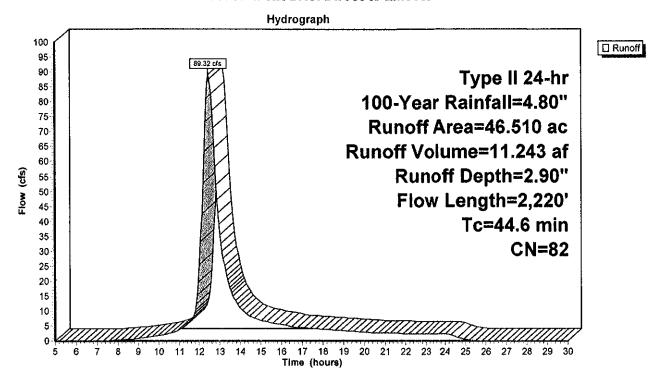
# **Summary for Subcatchment DA6: Direct to Ellicott Creek**

Runoff = 89.32 cfs @ 12.42 hrs, Volume= 11.243 af, Depth= 2.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type II 24-hr 100-Year Rainfail= $4.80^\circ$ 

	Area	(ac) C	N Desc	ription							
*	19.	430 8	O Clave	averack (CrA) - Open Space - Golf Course and Lawn, Good, HSG D							
*	4.	<b>650</b> 9	8 Clave	averack (CrA) - Open Space - Imervious - Pavement and Roof, HSG D							
*	0.	740 8	0 Odes	sa (Od) - O	oen Space -	Golf Course and Lawn, Good, HSG D					
*	8.	310 8			=	nce - Golf Course and Lawn, Good, HSG D					
*	9.	460 8		•		If Course and Lawn, Good, HSG D					
*	3.	920 8			-	Rolf Course and Lawn, Good, HSG D					
	46.	510 8	2 Welg	hted Avera	ge						
	41.	860	90.00	0% Perviou	s Area						
	4.	650	10.00	0% impervi	ous Area						
	T.	Longth	Clana	Voloeltu	Canaaltu	Decembles					
	Tc	Length	Slope	Velocity	Capacity	Description					
_	(mln)	(feet)	(ft/ft)	(ft/sec)	(cfs)						
	17.7	150	0.0140	0.14		Sheet Flow, A-B					
						Grass: Short n= 0.150 P2= 2.50"					
	12.7	885	0.0052	1.16		Shallow Concentrated Flow, B-C					
						Unpaved Kv= 16.1 fps					
	2.2	375	0.0320	2.88		Shallow Concentrated Flow, C-D					
						Unpaved Kv= 16.1 fps					
	12.0	810	0.0049	1.13		Shallow Concentrated Flow, D-E					
						Unpaved Kv= 16.1 fps					
	44.6	2,220	Total								

#### **Subcatchment DA6: Direct to Ellicott Creek**



## Summary for Link 1-2: Total Offsite To Audubon Par 3

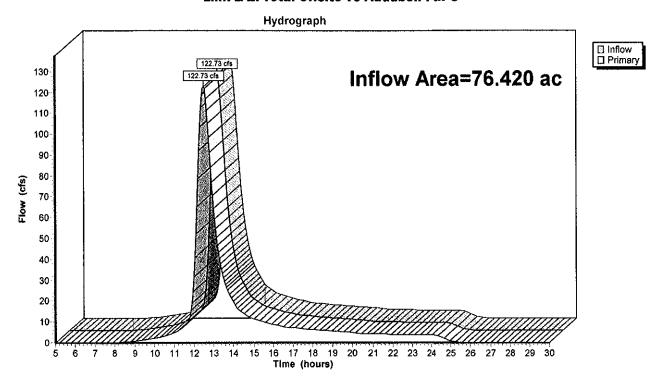
Inflow Area = 76.420 ac, 0.00% Impervious, Inflow Depth = 2.72" for 100-Year event

Inflow = 122.73 cfs @ 12.48 hrs, Volume= 17.316 af

Primary = 122.73 cfs @ 12.48 hrs, Volume= 17.316 af, Atten= 0%, Lag= 0.0 min

Primary outflow = inflow, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Link 1-2: Total Offsite To Audubon Par 3



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## Summary for Link 3-6: Total to Ellicott Creek

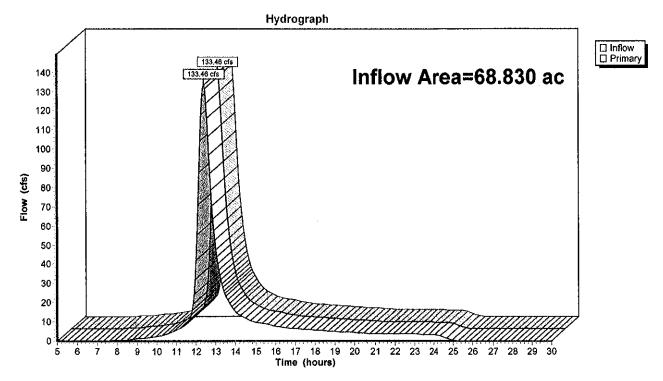
Inflow Area = 68.830 ac, 6.76% Impervious, Inflow Depth = 2.84" for 100-Year event

Inflow = 133.46 cfs @ 12.38 hrs, Volume= 16.301 af

Primary = 133.46 cfs @ 12.38 hrs, Volume= 16.301 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Link 3-6: Total to Ellicott Creek



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## Summary for Link 4-5: Total Offsite towards Frankhauser Road

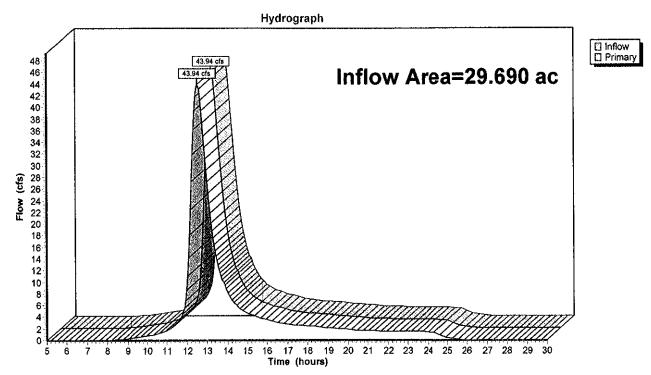
Inflow Area = 29.690 ac, 0.00% Impervious, Inflow Depth = 2.72" for 100-Year event

inflow = 43.94 cfs @ 12.51 hrs, Volume= 6.728 af

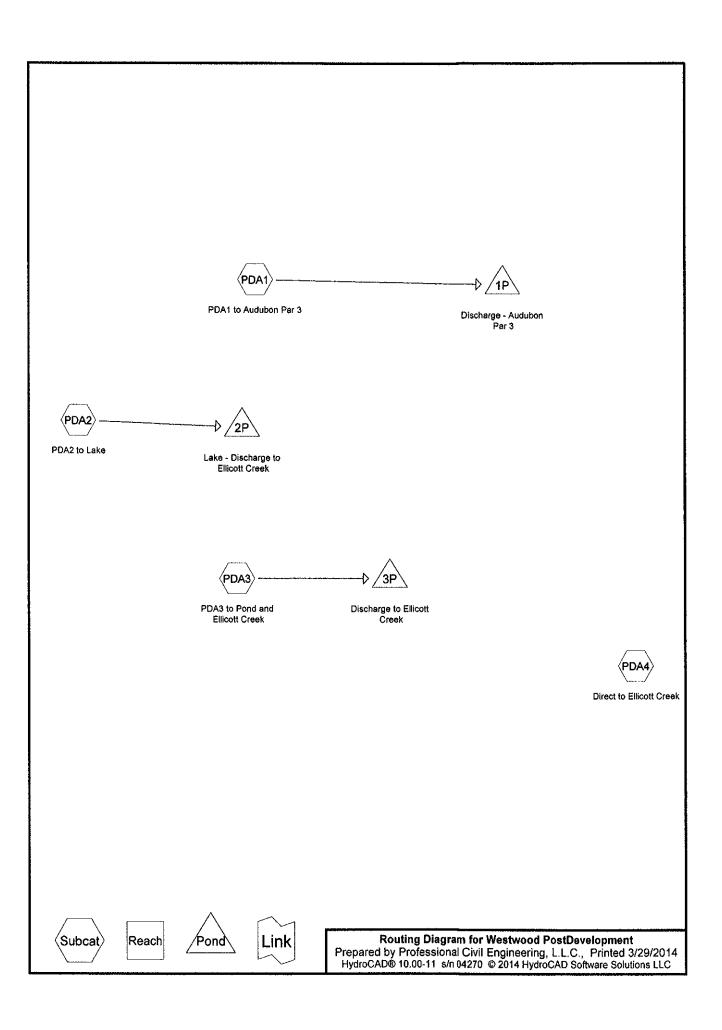
Primary = 43.94 cfs @ 12.51 hrs, Volume= 6.728 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Link 4-5: Total Offsite towards Frankhauser Road



# APPENDIX B POST DEVELOPMENT CALCULATIONS



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# Area Listing (all nodes)

Area	CN	Description
(acres)		(subcatchment-numbers)
29.500	86	1/3 acre lots, 30% Imp, Townhomes, HSG D (PDA1)
25.040	87	1/4 acre lots, 38% imp, Single Family Residential, HSG D (PDA2)
27.840	92	1/8 acre lots, 65% imp, Patio Homes, HSG D (PDA1)
10.860	80	>75% Grass cover, Good, HSG D (PDA4)
20.540	87	Multifamily, Existing Clubhouse, Open Space, 40% imp, HSG D (PDA3)
16.410	87	Senior Housing, 40% imp, HSG D (PDA2)
44.750	95	Urban commercial, 85% imp, Commons, HSG D (PDA2)
174.940	89	TOTAL AREA

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# Soil Listing (all nodes)

Area	Soll	Subcatchment
(acres)	Group	Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
174.940	HSG D	PDA1, PDA2, PDA3, PDA4
0.000	Other	
174.940		TOTAL AREA

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# **Ground Covers (all nodes)**

HSG-A	HSG-B	HSG-C	HSG-D	Other	Total	Ground	Subc
(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	Cover	Numl
0.000	0.000	0.000	29.500	0.000	29.500	1/3 acre lots, 30% imp, Townhomes	
0.000	0.000	0.000	25.040	0.000	25.040	1/4 acre lots, 38% imp, Single Family	
						Residential	
0.000	0.000	0.000	27.840	0.000	27.840	1/8 acre lots, 65% imp, Patio Homes	
0.000	0.000	0.000	10.860	0.000	10.860	>75% Grass cover, Good	
0.000	0.000	0.000	20.540	0.000	20.540	Multifamily, Existing Clubhouse, Open Space,	
						40% Imp	
0.000	0.000	0.000	16.410	0.000	16.410	Senior Housing, 40% imp	
0.000	0.000	0.000	44.750	0.000	44.750	Urban commercial, 85% imp, Commons	
0.000	0.000	0.000	174.940	0.000	174.940	TOTAL AREA	
	0.000 0.000 0.000 0.000 0.000 0.000	(acres)         (acres)           0.000         0.000           0.000         0.000           0.000         0.000           0.000         0.000           0.000         0.000           0.000         0.000           0.000         0.000           0.000         0.000	(acres)         (acres)         (acres)           0.000         0.000         0.000           0.000         0.000         0.000           0.000         0.000         0.000           0.000         0.000         0.000           0.000         0.000         0.000           0.000         0.000         0.000           0.000         0.000         0.000           0.000         0.000         0.000	(acres)         (acres)         (acres)         (acres)           0.000         0.000         0.000         29.500           0.000         0.000         0.000         25.040           0.000         0.000         0.000         27.840           0.000         0.000         0.000         10.860           0.000         0.000         0.000         20.540           0.000         0.000         0.000         16.410           0.000         0.000         0.000         44.750	(acres)         (acres)         (acres)         (acres)         (acres)           0.000         0.000         0.000         29.500         0.000           0.000         0.000         0.000         25.040         0.000           0.000         0.000         0.000         27.840         0.000           0.000         0.000         0.000         10.860         0.000           0.000         0.000         0.000         20.540         0.000           0.000         0.000         16.410         0.000           0.000         0.000         0.000         44.750         0.000	(acres)         (acres)         (acres)         (acres)         (acres)           0.000         0.000         0.000         29.500         0.000         29.500           0.000         0.000         0.000         25.040         0.000         25.040           0.000         0.000         0.000         27.840         0.000         27.840           0.000         0.000         0.000         10.860         0.000         10.860           0.000         0.000         0.000         20.540         0.000         20.540           0.000         0.000         0.000         16.410         0.000         16.410           0.000         0.000         0.000         44.750         0.000         44.750	(acres)         (acres)         (acres)         (acres)         Cover           0.000         0.000         0.000         29.500         0.000         29.500         1/3 acre lots, 30% imp, Townhomes           0.000         0.000         0.000         25.040         0.000         25.040         1/4 acre lots, 38% imp, Single Family           Residential           0.000         0.000         27.840         0.000         27.840         1/8 acre lots, 65% imp, Patio Homes           0.000         0.000         10.860         0.000         10.860         >75% Grass cover, Good           0.000         0.000         20.540         0.000         20.540         Multifamily, Existing Clubhouse, Open Space, 40% imp           0.000         0.000         16.410         0.000         16.410         Senior Housing, 40% imp           0.000         0.000         44.750         0.000         44.750         Urban commercial, 85% imp, Commons

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# Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Dlam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	PDA1	0.00	0.00	600.0	0.0040	0.013	12.0	0.0	0.0
2	PDA1	0.00	0.00	1,200.0	0.0030	0.013	18.0	0.0	0.0
3	PDA2	0.00	0.00	600.0	0.0040	0.013	12.0	0.0	0.0
4	PDA2	0.00	0.00	855.0	0.0020	0.013	24.0	0.0	0.0
5	PDA3	0.00	0.00	555.0	0.0040	0.013	12.0	0.0	0.0

Time span=5.00-36.00 hrs, dt=0.05 hrs, 621 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-ind+Trans method - Pond routing by Stor-ind method

Subcatchment PDA1: PDA1 to Audubon Par 3

Runoff Area=57.340 ac 46.99% impervious Runoff Depth=1.11" Flow Length=2,475' Tc=44.0 min CN=89 Runoff=42.30 cfs 5.311 af

Subcatchment PDA2: PDA2 to Lake

Runoff Area=86.200 ac 62.78% Impervious Runoff Depth=1.25" Flow Length=2,155' Tc=42.7 min CN=91 Runoff=73.63 cfs 8.990 af

Subcatchment PDA3: PDA3 to Pond and Ellicott Creek

Runoff Area=20.540 ac 40.00% Impervious Runoff Depth=0.98"
Flow Length=1,065' Tc=35.2 min CN=87 Runoff=15.54 cfs 1.685 af

Subcatchment PDA4: Direct to Ellicott Creek

Runoff Area=10.860 ac 0.00% Impervious Runoff Depth=0.62" Flow Length=960' Tc=21.8 min CN=80 Runoff=6.62 cfs 0.565 af

Total Runoff Area = 174.940 ac Runoff Volume = 16.551 af Average Runoff Depth = 1.14" 48.97% Pervious = 85.661 ac 51.03% Impervious = 89.279 ac

## Summary for Subcatchment PDA1: PDA1 to Audubon Par 3

Runoff = 42.30 cfs @ 12.42 hrs, Volume=

5.311 af, Depth= 1.11"

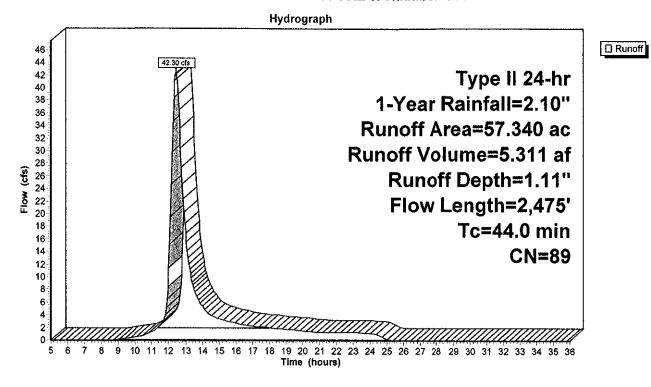
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs Type II 24-hr 1-Year Rainfall=2.10"

	Area	(ac) C	N Desc	ription		
*	29.	500 8	6 <b>1/3</b> a	cre lots, 3	0% lmp, To	wnhomes, HSG D
*	27.	840 9	2 1/8 8	icre lots, 6	5% lmp, Pa	tlo Homes, HSG D
	57.	340 8	9 Weig	hted Avera	ge	
	30.	394	53.03	L% Perviou	s Area	
	26.	946	46.99	3% Impervi	ous Area	
	Tc (mln)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
_	26.7	150	0.0050	0.09	(0.0)	Sheet Flow, A-B
			0.0000	0.00		Grass: Short n= 0.150 P2= 2.50"
	7.7	525	0.0050	1.14		Shallow Concentrated Flow, B-C
						Unpaved Kv= 16.1 fps
	3.5	600	0.0040	2.87	2.25	
						12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
						n= 0.013
	6.1	1,200	0.0030	3.26	5.75	Pipe Channel, Main Trunk to Pond and Outlet
						18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'
_						n= 0.013

44.0 2.475 Total

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#### Subcatchment PDA1: PDA1 to Audubon Par 3



## Summary for Subcatchment PDA2: PDA2 to Lake

Runoff = 73.63 cfs @ 12.40 hrs, Volume=

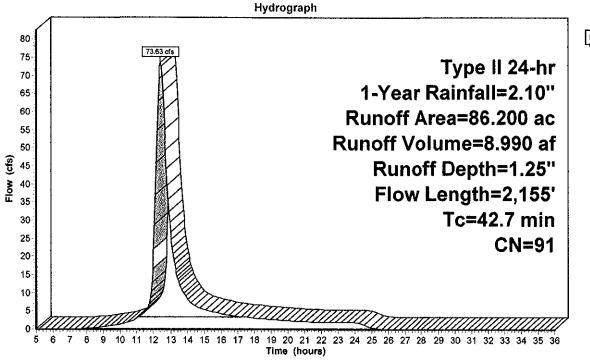
8.990 af, Depth= 1.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs Type II 24-hr 1-Year Rainfall=2.10"

	Area	(ac) C	N Desc	ription		
*	44.	750 9	5 Urbaı	n commerc	lal, 85% lm	p, Commons, HSG D
*	25.	040 8	7 1/4 a	icre lots, 3	8% imp, Sin	ngle Family Residential, HSG D
*	16.	410 8	7 Senic	r Housing,	40% lmp, F	ISG D
	86.	200 9	1 Welg	hted Avera	ge	
	32.	083	37.22	2% Perviou	s Area	
	54.:	117	62.78	3% impervi	ous Area	
	Tc	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	26.7	150	0.0050	0.09		Sheet Flow, A-B
						Grass: Short n= 0.150 P2= 2.50"
	8.1	550	0.0050	1.14		Shallow Concentrated Flow, B-C
						Unpaved Kv= 16.1 fps
	3.5	600	0.0040	2.87	2.25	Pipe Channel, Pipe to Main Storm Trunk
						12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
						n= 0.013
	4.4	855	0.0020	3.22	10.12	Pipe Channel, Main Storm Trunk to Lake
						24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50'
_						n= 0.013

42.7 2,155 Total

#### Subcatchment PDA2: PDA2 to Lake





### Summary for Subcatchment PDA3: PDA3 to Pond and Ellicott Creek

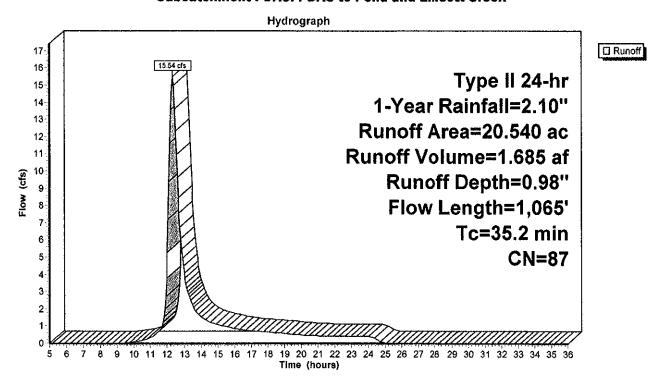
Runoff = 15.54 cfs @ 12.31 hrs, Volume=

1.685 af, Depth= 0.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs Type II 24-hr 1-Year Rainfall=2.10"

Ar	ea (ac)	CN	Desci	lption		
• 2	0.540	87	Multi	family, Exi	sting Clubh	ouse, Open Space, 40% Imp, HSG D
1	2.324 8.216			)% Perviou )% Impervi		
T (mlı	c Lengtl ) (feet		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.	7 150	0.0	0050	0.09	······································	Sheet Flow, A-B Grass: Short n= 0.150 P2= 2.50"
5.	3 360	0.0	0050	1.14		Shallow Concentrated Flow, B-C Unpayed Ky= 16.1 fps
3.	2 55	5 0.0	0040	2.87	2.25	•
35.	2 1.06	5 To	tal			

#### Subcatchment PDA3: PDA3 to Pond and Ellicott Creek



## **Summary for Subcatchment PDA4: Direct to Ellicott Creek**

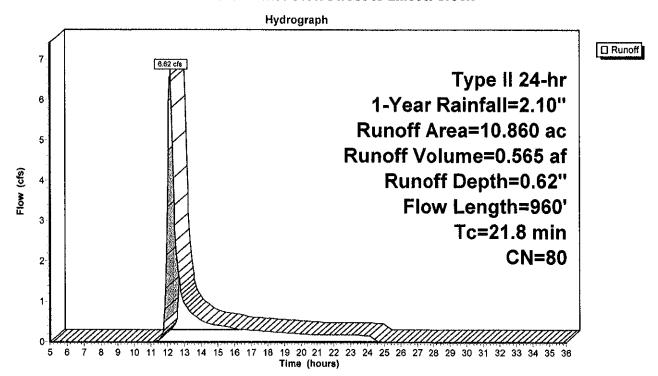
Runoff = 6.62 cfs @ 12.17 hrs, Volume=

0.565 af, Depth= 0.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs Type II 24-hr 1-Year Rainfall=2.10"

Area	(ac) C	N Desc	ription			
10.	.860 8	80 >75%	6 Grass cov	er, Good, H	ISG D	
10.	860	100.0	00% Pervio	us Area		
Tc	Length	Slope	Velocity	Capacity	Description	
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)		
9.9	150	0.0600	0.25		Sheet Flow, A-B	
					Grass: Short n= 0.150 P2= 2.50"	
11.9	810	0.0050	1.14		Shallow Concentrated Flow, B-C	
					Unpaved Kv= 16.1 fps	
21.8	960	Total				

#### **Subcatchment PDA4: Direct to Ellicott Creek**



Time span=5.00-36.00 hrs, dt=0.05 hrs, 621 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PDA1: PDA1 to Audubon Par 3

Runoff Area=57.340 ac 46.99% impervious Runoff Depth=2.36" Flow Length=2,475' Tc=44.0 min CN=89 Runoff=90.02 cfs 11.263 af

Subcatchment PDA2: PDA2 to Lake

Runoff Area=86.200 ac 62.78% Impervious Runoff Depth>2.54" Flow Length=2,155' Tc=42.7 min CN=91 Runoff=148.29 cfs 18.254 af

Subcatchment PDA3: PDA3 to Pond and Ellicott Creek

Runoff Area=20.540 ac 40.00% Impervious Runoff Depth=2.18" Flow Length=1,065' Tc=35.2 min CN=87 Runoff=34.93 cfs 3.736 af

Subcatchment PDA4: Direct to Ellicott Creek

Runoff Area=10.860 ac 0.00% Impervious Runoff Depth=1.64" Flow Length=960' Tc=21.8 min CN=80 Runoff=18.60 cfs 1.481 af

Total Runoff Area = 174.940 ac Runoff Volume = 34.734 af Average Runoff Depth = 2.38" 48.97% Pervious = 85.661 ac 51.03% Impervious = 89.279 ac

## Summary for Subcatchment PDA1: PDA1 to Audubon Par 3

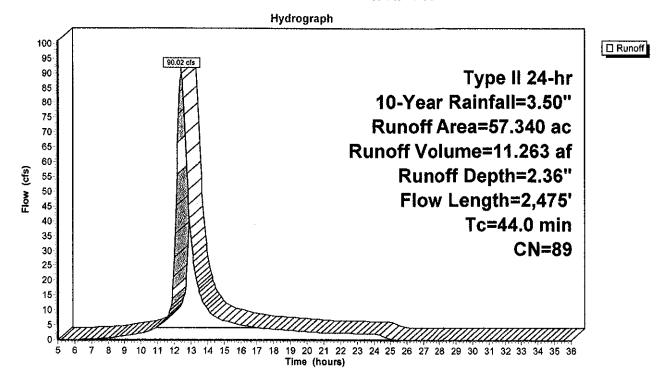
Runoff = 90.02 cfs @ 12.41 hrs, Volume=

11.263 af, Depth= 2.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs Type II 24-hr 10-Year Rainfall=3.50"

Area	(ac) C	N Desc	ription		
29.	500 8	6 <b>1/3</b> a	acre lots, 3	0% lmp, To	wnhomes, HSG D
27.	840 9	<b>2 1/8 ε</b>	acre lots, 6	5% lmp, Pa	tio Homes, HSG D
30.	340 8 394 946	53.02	hted Avera L% Perviou 9% Impervi	s Area	
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.7	150	0.0050	0.09		Sheet Flow, A-B
7.7	525	0.0050	1.14		Grass: Short n= 0.150 P2= 2.50"  Shallow Concentrated Flow, B-C  Unpayed Ky= 16.1 fps
3.5	600	0.0040	2.87	2.25	
6.1	1,200	0.0030	3.26	5.75	
44.0	2,475	Total		-	

# Subcatchment PDA1: PDA1 to Audubon Par 3



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## Summary for Subcatchment PDA2: PDA2 to Lake

Runoff = 148.29 cfs @ 12.39 hrs, Volume=

18.254 af, Depth> 2.54"

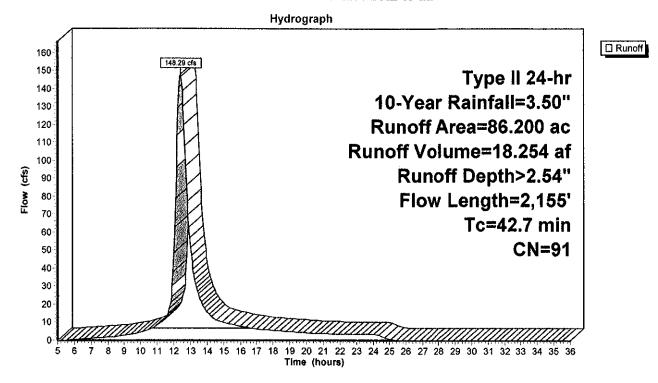
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs Type II 24-hr 10-Year Rainfall=3.50"

Area	(ac) C	N Desc	ription			
44.	750 9	5 Urbai	n commerc	lal, 85% lm	p, Commons, HSG D	
25.	040 8	7 <b>1/4</b> a	icre lots, 3	8% lmp, Sin	gle Family Residential, HSG D	
16.	410 8	7 Senio	r Housing,	40% lmp, F	ISG D	
86.	200 9	1 Welg	hted Avera	ge		
32.	083	37.22	2% Perviou	s Area		
54.	117	62.78	3% Impervi	ous Area		
Tç	Length	Słope	Velocity	Capacity	Description	
min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	·	
26.7	150	0.0050	0.09		Sheet Flow, A-B	~~~~
					Grass: Short n= 0.150 P2= 2.50"	
8.1	550	0.0050	1.14		Shallow Concentrated Flow, B-C	
					Unpaved Kv= 16.1 fps	
3.5	600	0.0040	2.87	2.25	Pipe Channel, Pipe to Main Storm Trunk	
					12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'	
					n= 0.013	
4.4	855	0.0020	3.22	10.12	Pipe Channel, Main Storm Trunk to Lake	
					24.0" Round Area = 3.1 sf Perim = 6.3' r = 0.50'	
					n= 0.013	
٠	44. 25. 16. 86. 32. 54. Tc mln) 26.7 8.1 3.5	44.750 9 25.040 8 16.410 8 86.200 9 32.083 54.117  Tc Length min) (feet) 26.7 150 8.1 550 3.5 600	44.750 95 Urbai 25.040 87 1/4 a 16.410 87 Senic 86.200 91 Weig 32.083 37.22 54.117 62.78 Tc Length Siope min) (feet) (ft/ft) 26.7 150 0.0050 8.1 550 0.0050 3.5 600 0.0040	44.750 95 Urban commerce 25.040 87 1/4 acre lots, 3 16.410 87 Senior Housing, 86.200 91 Weighted Avera 32.083 37.22% Perviou 54.117 62.78% Impervious Tc Length Siope Velocity min) (feet) (ft/ft) (ft/sec) 26.7 150 0.0050 0.09  8.1 550 0.0050 1.14  3.5 600 0.0040 2.87  4.4 855 0.0020 3.22	44.750 95 Urban commercial, 85% im 25.040 87 1/4 acre lots, 38% imp, Sir 16.410 87 Senior Housing, 40% imp, F 86.200 91 Weighted Average 32.083 37.22% Pervious Area 54.117 62.78% Impervious Area  Tc Length Siope Velocity Capacity min) (feet) (ft/ft) (ft/sec) (cfs) 26.7 150 0.0050 0.09  8.1 550 0.0050 1.14  3.5 600 0.0040 2.87 2.25	44.750 95 Urban commercial, 85% imp, Commons, HSG D 25.040 87 1/4 acre lots, 38% imp, Single Family Residential, HSG D 16.410 87 Senior Housing, 40% imp, HSG D  86.200 91 Weighted Average 32.083 37.22% Pervious Area 54.117 62.78% impervious Area  Tc Length Slope Velocity Capacity Description min) (feet) (ft/ft) (ft/sec) (cfs)  26.7 150 0.0050 0.09 Sheet Flow, A-B Grass: Short n= 0.150 P2= 2.50"  8.1 550 0.0050 1.14 Shallow Concentrated Flow, B-C Unpaved Kv= 16.1 fps  3.5 600 0.0040 2.87 2.25 Pipe Channel, Pipe to Main Storm Trunk 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013  4.4 855 0.0020 3.22 10.12 Pipe Channel, Main Storm Trunk to Lake 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013

42.7 2,155 Total

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#### **Subcatchment PDA2: PDA2 to Lake**



## Summary for Subcatchment PDA3: PDA3 to Pond and Ellicott Creek

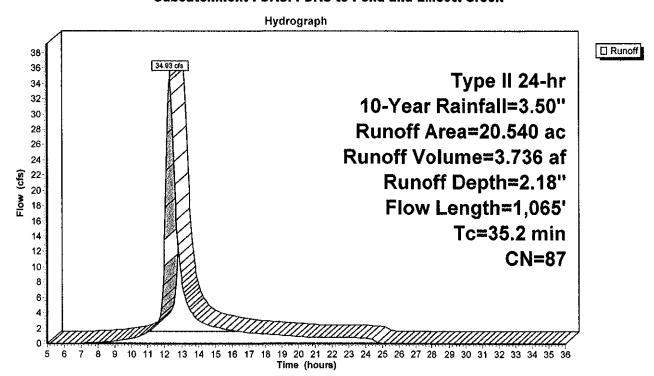
Runoff = 34.93 cfs @ 12.30 hrs, Volume=

3.736 af, Depth= 2.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs Type II 24-hr 10-Year Rainfall=3.50"

	Area	(ac) C	N Desc	ription		
¥	20.	540 8	37 Multi	family, Exi	sting Clubh	ouse, Open Space, 40% Imp, HSG D
		324		0% Perviou		
	8.	216	40.01	0% Impervi	ous Area	
	T¢	Length	Slope	Velocity	Capacity	Description
(n	nin)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
2	6.7	150	0.0050	0.09		Sheet Flow, A-B
						Grass: Short n= 0.150 P2= 2.50"
	5.3	360	0.0050	1.14		Shallow Concentrated Flow, B-C
						Unpaved Kv= 16.1 fps
	3.2	555	0.0040	2.87	2.25	Pipe Channel, Pipe to Pond
						12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
						n= 0.013
3	5.2	1.065	Total			

#### Subcatchment PDA3: PDA3 to Pond and Ellicott Creek



## **Summary for Subcatchment PDA4: Direct to Ellicott Creek**

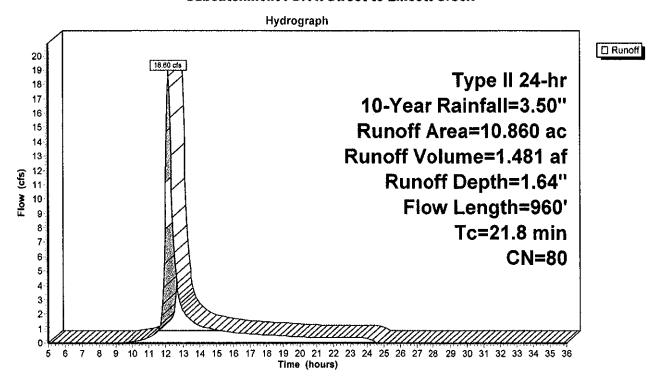
Runoff = 18.60 cfs @ 12.15 hrs, Volume=

1.481 af, Depth= 1.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs Type II 24-hr 10-Year Rainfall=3.50"

Area	(ac) C	N Desc	ription			
10.	860 8	0 >75%	Grass cov	er, Good, H	ISG D	
10.	860	100.	00% Pervio	us Area		•
Tc	Length	Slope	Velocity	Capacity	Description	
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)		
9.9	150	0.0600	0.25		Sheet Flow, A-B	
					Grass: Short n= 0.150 P2= 2.50"	
11.9	810	0.0050	1.14		Shallow Concentrated Flow, B-C	
					Unpaved Kv= 16.1 fps	
21.8	960	Total				

#### **Subcatchment PDA4: Direct to Ellicott Creek**



Time span=5.00-36.00 hrs, dt=0.05 hrs, 621 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PDA1: PDA1 to Audubon Par 3

Runoff Area=57.340 ac 46.99% Impervious Runoff Depth>3.58" Flow Length=2,475' Tc=44.0 min CN=89 Runoff=135.46 cfs 17.109 af

Subcatchment PDA2: PDA2 to Lake

Runoff Area=86.200 ac 62.78% Impervious Runoff Depth>3.78" Flow Length=2,155' Tc=42.7 min CN=91 Runoff=218.13 cfs 27.188 af

Subcatchment PDA3: PDA3 to Pond and Ellicott Creek

Runoff Area=20.540 ac 40.00% Impervious Runoff Depth=3.38" Flow Length=1,065' Tc=35.2 min CN=87 Runoff=53.74 cfs 5.784 af

Subcatchment PDA4: Direct to Ellicott Creek

Runoff Area=10.860 ac 0.00% Impervious Runoff Depth=2.72" Flow Length=960' Tc=21.8 min CN=80 Runoff=31.13 cfs 2.461 af

Total Runoff Area = 174.940 ac Runoff Volume = 52.542 af Average Runoff Depth = 3.60" 48.97% Pervious = 85.661 ac 51.03% Impervious = 89.279 ac

## Summary for Subcatchment PDA1: PDA1 to Audubon Par 3

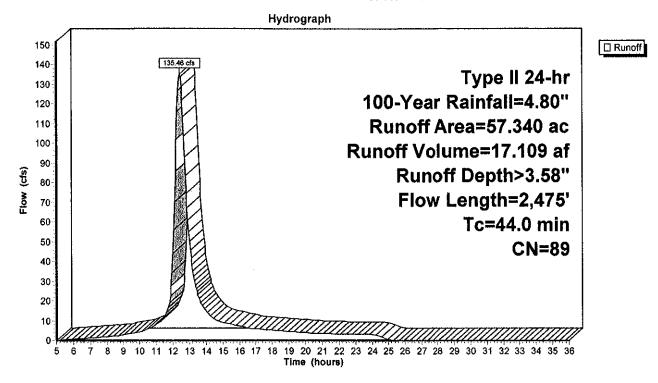
Runoff = 135.46 cfs @ 12.40 hrs, Volume=

17.109 af, Depth> 3.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs Type II 24-hr 100-Year Rainfall=4.80"

	Area	(ac) C	N Desc	ription					
*	29.	500 8	6 1/3 a	/3 acre lots, 30% lmp, Townhomes, HSG D					
*	27.	840 9	2 1/8	icre lots, 6	5% lmp, Pa	tio Homes, HSG D			
	57.	340 8	9 Welg	hted Avera	ge				
	30.394		53.03	53.01% Pervious Area					
	26.	946	46.99	9% Impervi	ous Area				
	Tc	Length	Stope	Velocity	Capacity	Description			
	(mln)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	26.7	150	0.0050	0.09		Sheet Flow, A-B			
						Grass: Short n= 0.150 P2= 2.50"			
	7.7	525	0.0050	1.14		Shallow Concentrated Flow, B-C			
						Unpaved Kv= 16.1 fps			
	3.5	600	0.0040	2.87	2.25	Pipe Channel, Pipe to Pond and Main Storm Trunk			
						12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'			
						n= 0.013			
	6.1	1,200	0.0030	3.26	5.75	Pipe Channel, Main Trunk to Pond and Outlet			
						18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'			
						n= 0.013			
	44.0	2,475	Total						

#### Subcatchment PDA1: PDA1 to Audubon Par 3



42.7

2,155 Total

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### Summary for Subcatchment PDA2: PDA2 to Lake

Runoff = 218.13 cfs @ 12.39 hrs, Volume=

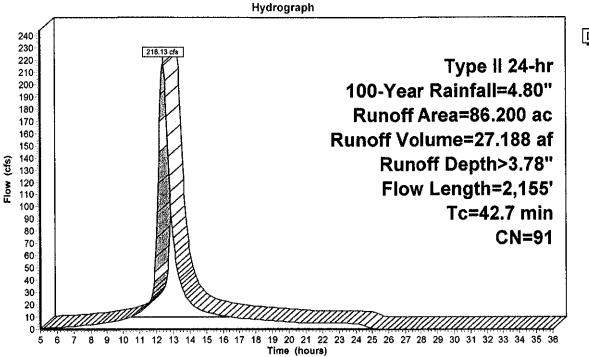
27.188 af, Depth> 3.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs Type II 24-hr 100-Year Rainfall=4.80"

	Area	(ac) C	N Desc	ription							
*	44.	750 9	5 Urbai	an commercial, 85% imp, Commons, HSG D							
*	25.	040 8									
*	16.	410 8	37 Senio	or Housing,	40% lmp, F	ISG D					
	86.	200 9	1 Welg	hted Avera	ge						
	32.083		_	2% Perviou	_						
	54.	117	62.78	62.78% Impervious Area							
	Tc	Length	Slope	Velocity	Capacity	Description					
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)						
_	26.7	150	0.0050	0.09		Sheet Flow, A-B					
						Grass: Short n= 0.150 P2= 2.50"					
	8.1	550	0.0050	1.14		Shallow Concentrated Flow, B-C					
						Unpaved Ky= 16.1 fps					
	3.5	600	0.0040	2.87	2.25	Pipe Channel, Pipe to Main Storm Trunk					
						12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'					
						n= 0.013					
	4.4	855	0.0020	3.22	10.12	Pipe Channel, Main Storm Trunk to Lake					
						24.0" Round Area = 3.1 sf Perim = 6.3' r= 0.50'					
					<u> </u>	n= 0.013					

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#### **Subcatchment PDA2: PDA2 to Lake**





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Prepared by Professional Civil Engineering, L.L.C.

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#### Summary for Subcatchment PDA3: PDA3 to Pond and Ellicott Creek

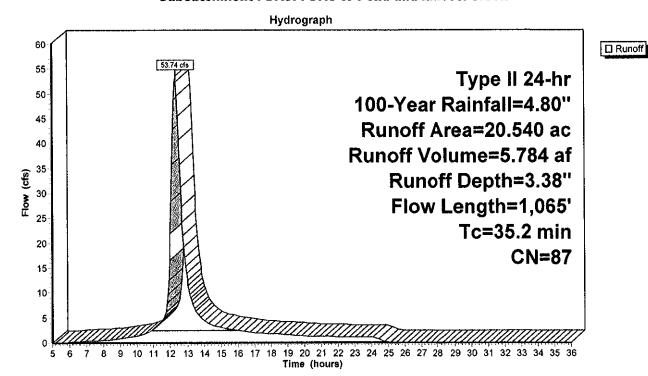
Runoff = 53.74 cfs @ 12.30 hrs, Volume=

5.784 af, Depth= 3.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs Type II 24-hr 100-Year Rainfall=4.80"

	Area	(ac) (	N Desc	ription			
*	20.	540 8	37 Multi	family, Exi	sting Clubh	ouse, Open Space, 40% Imp, HSG D	
		324		0% Perviou	•		
	8.	216	40.00	0% Impervi	ous Area		
	Tc	Length	Slope	Velocity	Capacity	Description	
	(mln)	(feet)	(ft/ft)	(ft/sec)	(cfs)		
	26.7	150	0.0050	0.09		Sheet Flow, A-B	
						Grass: Short n= 0.150 P2= 2.50"	
	5.3	360	0.0050	1.14		Shallow Concentrated Flow, B-C	
						Unpaved Kv= 16.1 fps	
	3.2	555	0.0040	2.87	2.25	Pipe Channel, Pipe to Pond	
						12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'	
						n= 0.013	
-	35.2	1,065	Total				

#### Subcatchment PDA3: PDA3 to Pond and Ellicott Creek



### **Summary for Subcatchment PDA4: Direct to Ellicott Creek**

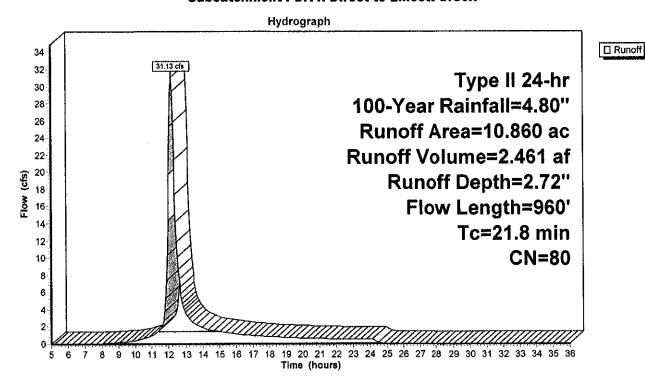
Runoff = 31.13 cfs @ 12.15 hrs, Volume=

2.461 af, Depth= 2.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs Type II 24-hr 100-Year Rainfall=4.80"

Area	(ac) C	N Desc	ription			
10.	860 8	0 >75%	Grass cov	er, Good, H	ISG D	
10.	860	100.0	00% Pervio	us Area		
Tc	Length	Slope	Velocity	Capacity	Description	
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)		
9.9	150	0.0600	0.25		Sheet Flow, A-B	
					Grass: Short n= 0.150 P2= 2.50"	
11.9	810	0.0050	1.14		Shallow Concentrated Flow, B-C	
					Unpaved Kv= 16.1 fps	
21.8	960	Total				

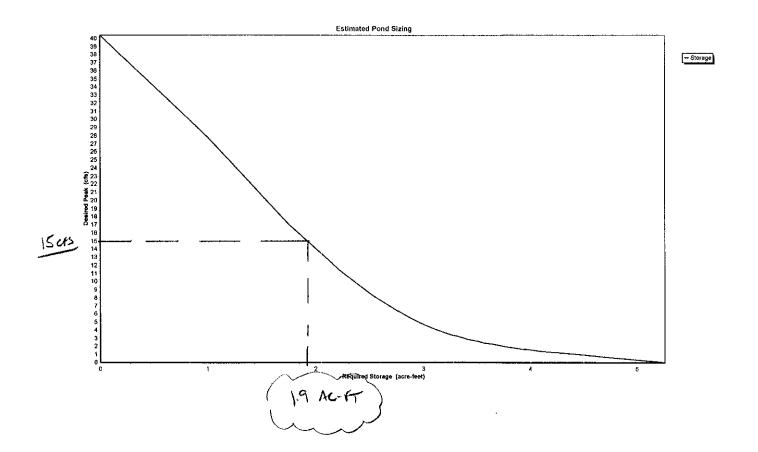
#### **Subcatchment PDA4: Direct to Ellicott Creek**



# APPENDIX C STORAGE REQUIREMENT ESTIMATES

Pond 1P: Discharge - Towards Audubon Par 3 (Pump Station)

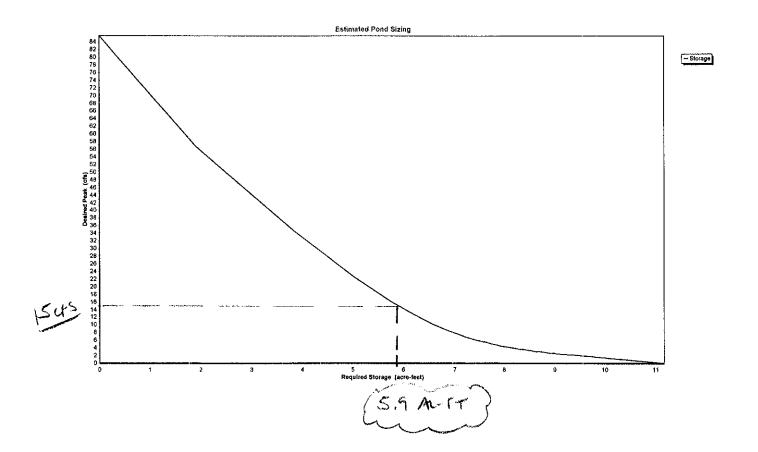
PDA-1 STORAGE REGIREO - 1-4/2 STORM.



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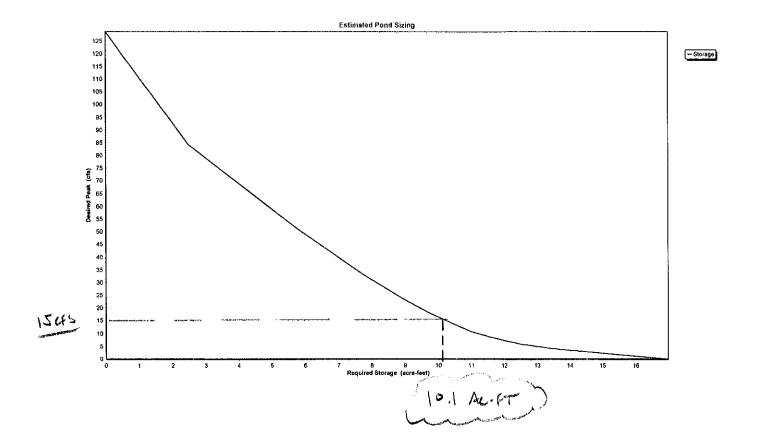
Pond 1P: Discharge - Towards Audubon Par 3 (Pump Station)

PDA-1 STORAGE REGULARO - 10-4/2 STORM



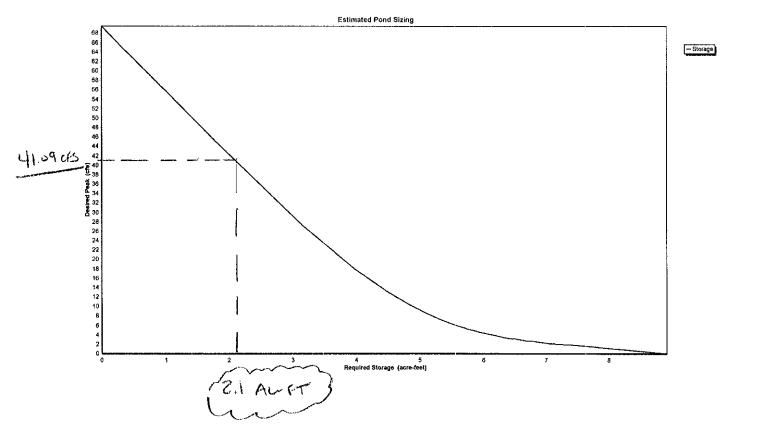
Pond 1P: Discharge - Towards Audubon Par 3 (Pump Station)

POA-1 STORAGE REQUIRED - 100-4R STORA



Pond 2P: Lake - Discharge to Ellicott Creek

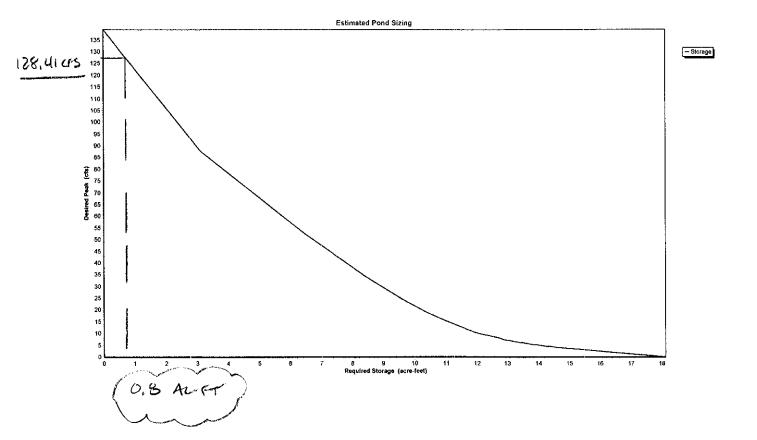
PDAZ - STORAGE REGISTED 1-4R STORM



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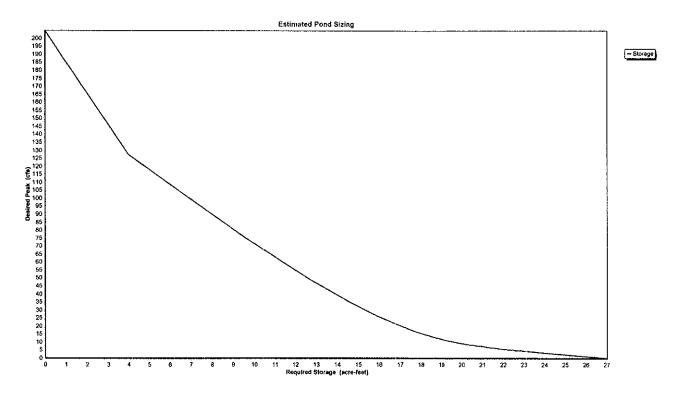
Pond 2P: Lake - Discharge to Ellicott Creek

PDAZ STORAGE REGURED - 104A STORA



Pond 2P: Lake - Discharge to Ellicott Creek

POAZ STORAGE PROVINCED - 100 YR STORM



NONE - ALL STORAGE IN PORI FOR 100-4/2 STORAGE

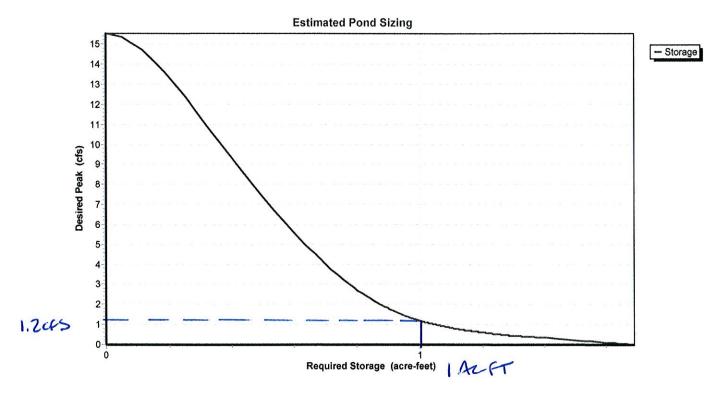
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# **Pond 3P: Discharge to Ellicott Creek**

PDA3 - 1-42 STORM

\*MONTHUM ALCUMOIGE DISCHARGE RATE = 1.2 CFS

\* BASED ON 1.0AL-FT STORAGE



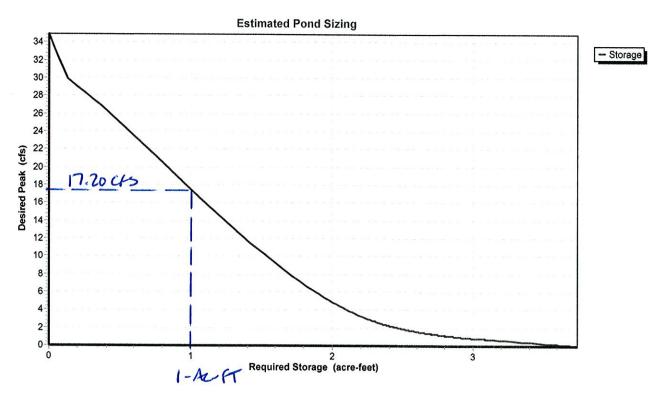
I ALFT OF STONAGE PRONDED.

# Pond 3P: Discharge to Ellicott Creek

PDA3 - LOYR STORM

\* MARINUM ALLOWARDE DISCHARGE ROTE = 17.20 CFS

\* BASSO ON 1.0 ALFT OF STORIGE



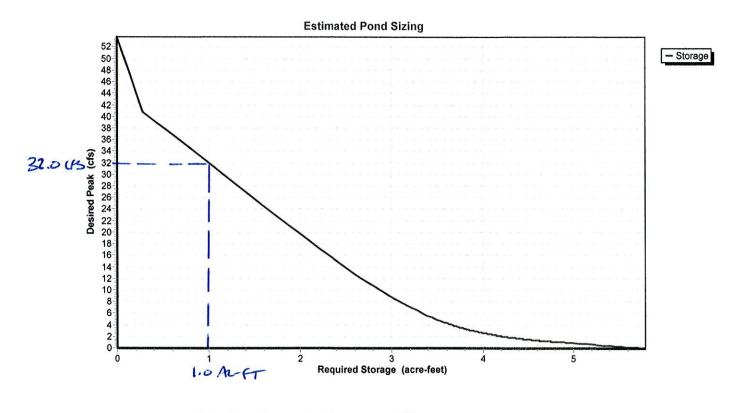
1 AZ-FT OF STORES PROVIDED.

Pond 3P: Discharge to Ellicott Creek

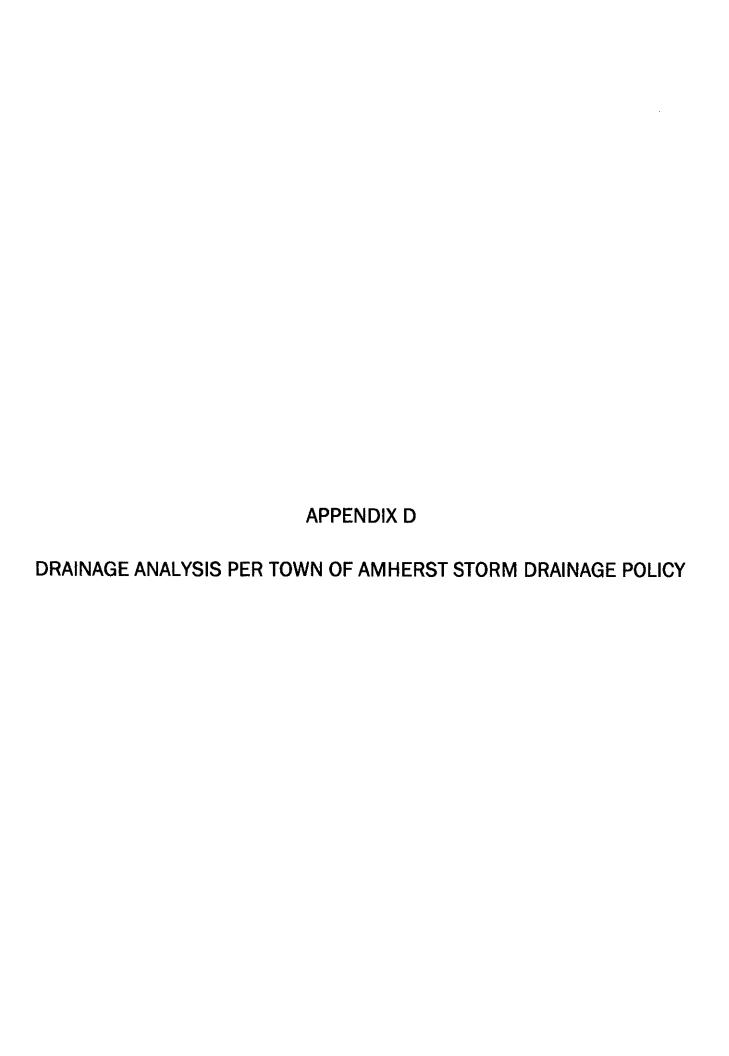
PDA3-100-YR STORM

\* MAXIMUM ALLOWARDE DISCHARGE RATE: 32.0 CFS

\* BASED ON 1.0 AC-FT OF STORAGE



1.0 AZ-FT OF STONESZ PROVIDED.



# **Westwood PreDevelopment**

Prepared by Professional Civil Engineering, L.L.C.

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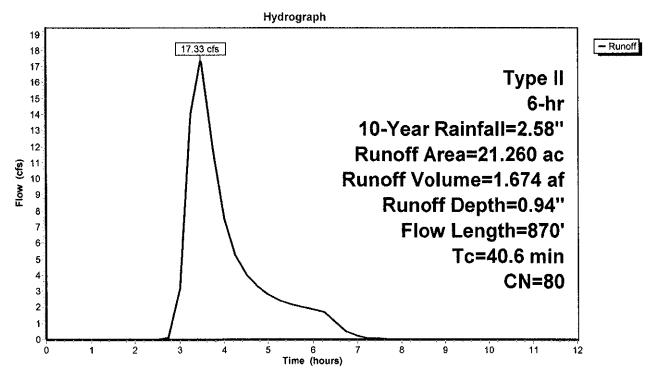
# Summary for Subcatchment DA1: Offsite East Towards Audubon Par 3

Runoff = 17.33 cfs @ 3.47 hrs, Volume= 1.674 af, Depth= 0.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-12.00 hrs, dt= 0.25 hrs Type II 6-hr 10-Year Rainfail=2.58"

	Area	(ac) C	N Desc	ription						
*	15.	930 8	30 Odes	Odessa (Od) - Open Space - Golf Course and Lawn, Good, HSG D						
*	4.	330 8	30 Scho	Schoharle (SaB) - Open Space - Golf Course and Lawn, Good, HSG D						
*	1.	000	30 Scho	harie (SaA	) - Open Spa	ace - Golf Course and Lawn, Good, HSG D				
	21.	260 8	30 Welg	hted Avera	ige					
	21.	260 100.00% Per		00% Pervio	us Area					
	Tc	Length	Siope	Velocity	Capacity	Description				
_	(mln)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
	27.4	150	0.0047	0.09		Sheet Flow, A-B				
						Grass: Short n= 0.150 P2= 2.50"				
	13.2	720	0.0032	0.91		Shallow Concentrated Flow, B-C				
						Unpaved Kv= 16.1 fps				
	40.6	870	Total							

# Subcatchment DA1: Offsite East Towards Audubon Par 3



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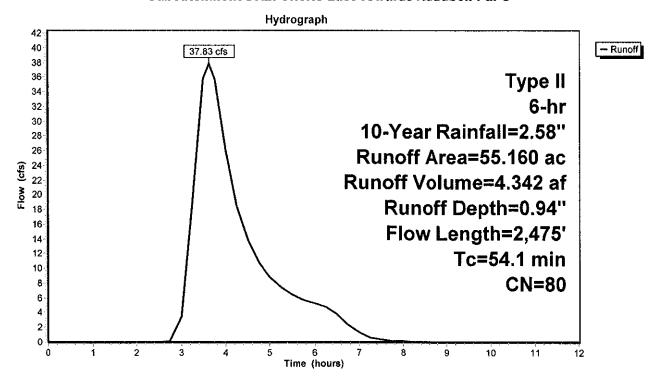
# Summary for Subcatchment DA2: Offsite East Towards Audubon Par 3

3.62 hrs, Volume= 4.342 af, Depth= 0.94" Runoff 37.83 cfs @

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-12.00 hrs, dt= 0.25 hrs Type II 6-hr 10-Year Rainfall=2.58"

	Area	(ac)	CN	Desci	ription							
*	27.	400	80	Odes	Odessa (Od) - Open Space - Golf Course and Lawn, Good, HSG D							
*	9.	150	80	Schol	Schoharle (SaB) - Open Space - Golf Course and Lawn, Good, HSG D							
*	2.	960	80	Schol	Schoharle (SaA) - Open Space - Golf Course and Lawn, Good, HSG D							
*	9.	380	80	Urbai	Urban Odessa (Ut) - Open Space - Golf Course and Lawn, Good, HSG D							
*	6.	270	80	Cosa	d (Cv) - Ope	en Space - G	Golf Course and Lawn, Good, HSG D					
	55.	160 80		Welg	hted Avera	ge						
	55.160		0 100.00% Pervio		us Area							
	Tc	Lengti	1	Slope	Velocity	Capacity	Description					
	(min)	(feet	)	(ft/ft)	(ft/sec)	(cfs)						
	16.5	150	) (	.0167	0.15		Sheet Flow, A-B					
							Grass: Short n= 0.150 P2= 2.50"					
	37.6	2,32	5 (	.0041	1.03		Shallow Concentrated Flow, B-C					
							Unpaved Kv= 16.1 fps					
	54.1	2,47	5 T	otal								

# Subcatchment DA2: Offsite East Towards Audubon Par 3



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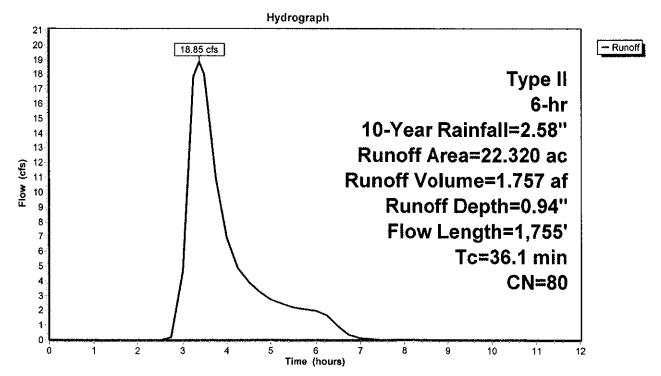
# Summary for Subcatchment DA3: Direct to Ellicott Creek

Runoff = 18.85 cfs @ 3.38 hrs, Volume= 1.757 af, Depth= 0.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-12.00 hrs, dt= 0.25 hrs Type II 6-hr 10-Year Rainfall=2.58"

	Area	(ac) (	ON De	scription						
*	6.	800	80 Od	Odessa (Od) - Open Space - Golf Course and Lawn, Good, HSG D						
*	5.	830	80 Sc	noharie (SaB	) - Open Spa	ace - Golf Course and Lawn, Good, HSG D				
*	9.	690	80 Co	sad (Cv) - Op	en Space - (	Golf Course and Lawn, Good, HSG D				
	22.320 22.320			lghted Avera 0.00% Pervio	_					
	Tc (mln)	Length (feet)	•	•	Capacity (cfs)					
	16.5	150	0.016	7 0.15		Sheet Flow, A-B				
						Grass: Short n= 0.150 P2= 2.50"				
	19.6	1,605	0.007	2 1.37		Shallow Concentrated Flow, B-C				
						Unpaved Kv= 16.1 fps				
	36.1	1,755	Total							

#### **Subcatchment DA3: Direct to Ellicott Creek**



# **Westwood PreDevelopment**

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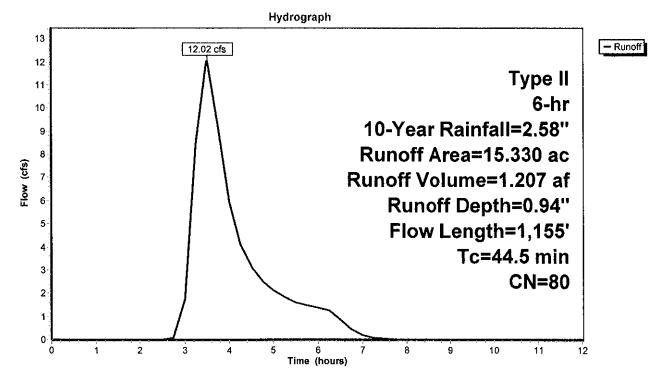
# Summary for Subcatchment DA4: Offsite West Towards Frankhauser Rd

Runoff = 12.02 cfs @ 3.51 hrs, Volume= 1.207 af, Depth= 0.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-12.00 hrs, dt= 0.25 hrs Type II 6-hr 10-Year Rainfali=2.58"

	Area	(ac) (	CN	Desci	ription						
*	8.970 80			Odessa (Od) - Open Space - Golf Course and Lawn, Good, HSG D							
*	1.	530	80	Clave	rack (CrA)	- Open Spa	ce - Golf Course and Lawn, Good, HSG D				
*	4.	830	80	Cosa	d (Cv) - Ope	en Space - G	Golf Course and Lawn, Good, HSG D				
	15.330 15.330		80	•	hted Avera )0% Pervio	-					
	Tc (mln)	Length (feet)		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description				
	27.4	150	0	.0047	0.09		Sheet Flow, A-B Grass: Short n= 0.150 P2= 2.50"				
	17.1	1,005	0	.0037	0.98		Shallow Concentrated Flow, B-C Unpaved Kv= 16.1 fps				
	44.5	1,155	T	otal			· · · · · · · · · · · · · · · · · · ·				

# Subcatchment DA4: Offsite West Towards Frankhauser Rd



# **Westwood PreDevelopment**

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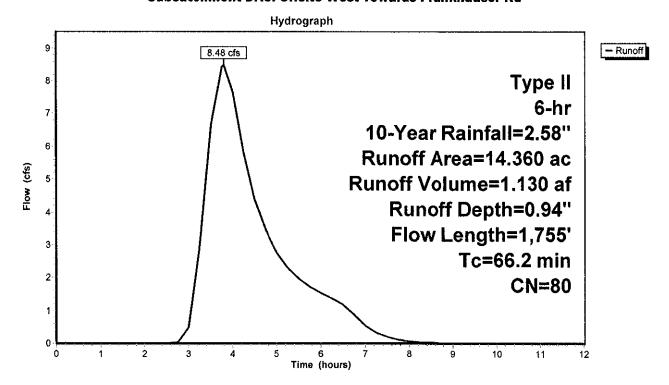
# Summary for Subcatchment DA5: Offsite West Towards Frankhauser Rd

Runoff = 8.48 cfs @ 3.80 hrs, Volume= 1.130 af, Depth= 0.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-12.00 hrs, dt= 0.25 hrs Type II 6-hr 10-Year Rainfall=2.58"

	Area	(ac) (	N Desc	ription							
*	5.	350 8	30 Odes	Odessa (Od) - Open Space - Golf Course and Lawn, Good, HSG D							
*	0.	400 8	30 Scho	Schoharle (SaA) - Open Space - Golf Course and Lawn, Good, HSG D							
*	4.	440 8	30 Clave	Claverack (CrA) - Open Space - Golf Course and Lawn, Good, HSG D							
*	4.	170 8	30 Lake	mont (La) -	Open Spac	e - Golf Course and Lawn, Good, HSG D					
	14.	360 8	30 Welg	hted Avera	ge						
	14.360		100.00% Pervi		us Area						
	T¢	Length	Slope	Velocity	Capacity	Description					
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)						
	38.5	150	0.0020	0.06		Sheet Flow, A-B					
						Grass: Short n= 0.150 P2= 2.50"					
	27.7	1,605	0.0036	0.97		Shallow Concentrated Flow, B-C					
						Unpaved Kv= 16.1 fps					
	66.2	1,755	Total								

#### Subcatchment DA5: Offsite West Towards Frankhauser Rd



# **Westwood PreDevelopment**

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# **Summary for Subcatchment DA6: Direct to Ellicott Creek**

Runoff = 41.42 cfs @ 3.51 hrs, Volume= 4.097 af, Depth= 1.06"

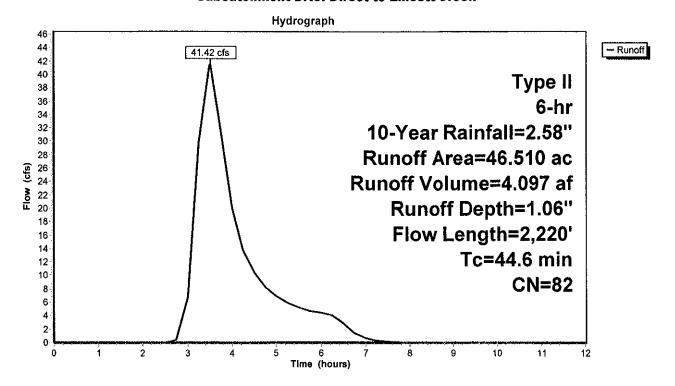
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-12.00 hrs, dt= 0.25 hrs Type II 6-hr 10-Year Rainfail=2.58"

_	Area	(ac) (	N Desc	ription							
*	19.	430 8	30 Clave	erack (CrA)	- Open Spa	ce - Golf Course and Lawn, Good, HSG D					
*	4.	650 9	98 Clave	Claverack (CrA) - Open Space - Imervious - Pavement and Roof, HSG D							
*	0.	740 8	30 Odes	Odessa (Od) - Open Space - Golf Course and Lawn, Good, HSG D							
*	8.	310 (	30 Scho	Schoharle (SaB) - Open Space - Golf Course and Lawn, Good, HSG D							
*	9.	460 8	30 Teel	Teel (Te) - Open Space - Golf Course and Lawn, Good, HSG D							
*	3.	920 8	30 Cosa	d (Cv) - Ope	en Space - G	Golf Course and Lawn, Good, HSG D					
	46.	510 8	32 Weig	hted Avera	ge						
	<b>41</b> .860 4.650		90.00% Pervious Are		s Area						
			10.0	0% Impervi	ous Area						
				-							
	Tc	Length	Slope	Velocity	Capacity	Description					
	(mln)	(feet)	(ft/ft)	(ft/sec)	(cfs)						
	1.7.7	150	0.0140	0.14		Sheet Flow, A-B					
						Grass: Short n= 0.150 P2= 2.50"					
	12.7	885	0.0052	1.16		Shallow Concentrated Flow, B-C					
						Unpaved Kv= 16.1 fps					
	2.2	375	0.0320	2.88		Shallow Concentrated Flow, C-D					
						Unpaved Kv= 16.1 fps					
	12.0	810	0.0049	1.13		Shallow Concentrated Flow, D-E					
						Unpaved Kv= 16.1 fps					
	44.0	0.000	Takal								

44.6 2,220 Total

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# Subcatchment DA6: Direct to Ellicott Creek



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# Summary for Subcatchment PDA1: PDA1 towards Audubon Par 3 (Pump Station)

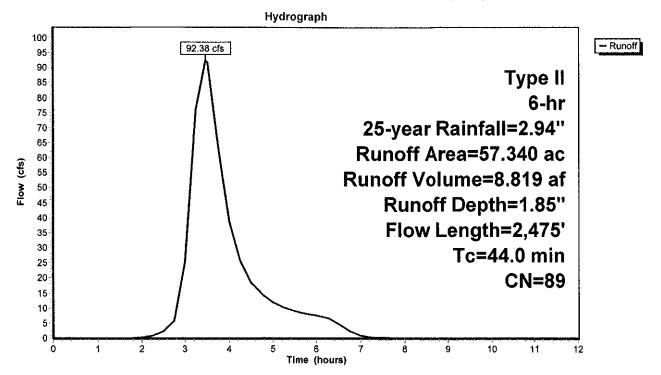
Runoff 92.38 cfs @ 3.46 hrs, Volume= 8.819 af, Depth= 1.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-12.00 hrs, dt= 0.25 hrs Type II 6-hr 25-year Rainfall=2.94"

	Area	(ac) C	N Desc	ription		
*	29.	500 8	6 <b>1/3</b> a	icre lots, 3	0% lmp, To	wnhomes, HSG D
*	27.840 92 1/8 acre lots, 65% imp, Patio					tio Homes, HSG D
	57.	340 8	9 Welg	hted Avera	ge	
	30.394 53.01% Pervious Area				s Area	
	26.	946	46.99	9% Impervi	ous Area	
	Tc	Length	Slope	Velocity	Capacity	Description
	(mln)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	26.7	150	0.0050	0.09		Sheet Flow, A-B
						Grass: Short n= 0.150 P2= 2.50"
	7.7	525	0.0050	1.14		Shallow Concentrated Flow, B-C
						Unpaved Kv= 16.1 fps
	3.5	600	0.0040	2.87	2.25	Pipe Channel, Pipe to Pond and Main Storm Trunk
						12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
						n= 0.013
	6.1	1,200	0.0030	3.26	5.75	Pipe Channel, Main Trunk to Pond and Outlet
						18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'
-						n= 0.013

44.0 2,475 Total AND 20100 22 Of II OF210 @ 2024 Hydrocha Continue Coluctions CLO

# Subcatchment PDA1: PDA1 towards Audubon Par 3 (Pump Station)



# Summary for Subcatchment PDA2: PDA2 to Lake

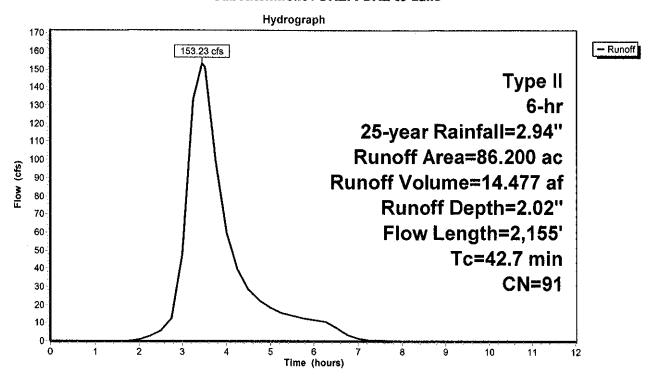
Runoff 153.23 cfs @ 3.44 hrs, Volume= 14.477 af, Depth= 2.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-12.00 hrs, dt= 0.25 hrs Type II 6-hr 25-year Rainfall=2.94"

	Area	(ac) C	N Desc	ription			
k	44.	750 9	5 Urbai	n commerc	lal, 85% lm	p, Commons, HSG D	
*	25.	040 8	37 <b>1</b> /4 a	acre lots, 3	8% imp, Sir	igle Family Residential, HSG D	
*	16.	410 8	37 Senic	or Housing,	40% lmp, I	1SG D	
	86.	200 9	1 Welg	hted Avera	ge		
	32.	083	37.2	37.22% Pervious Area			
	54. <b>11</b> 7		62.78	2.78% Impervious Area			
	Tc	Length	Slope	Velocity	Capacity	Description	
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	·	
	26.7	150	0.0050	0.09	·	Sheet Flow, A-B	_
						Grass: Short n= 0.150 P2= 2.50"	
	8.1	550	0.0050	1.14		Shallow Concentrated Flow, B-C	
						Unpaved Kv= 16.1 fps	
	3.5	600	0.0040	2.87	2.25	Pipe Channel, Pipe to Main Storm Trunk	
						12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'	
						n= 0.013	
	4.4	855	0.0020	3.22	10.12	Pipe Channel, Main Storm Trunk to Lake	
						24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50'	
						n= 0.013	

42.7 2,155 Total

# **Subcatchment PDA2: PDA2 to Lake**



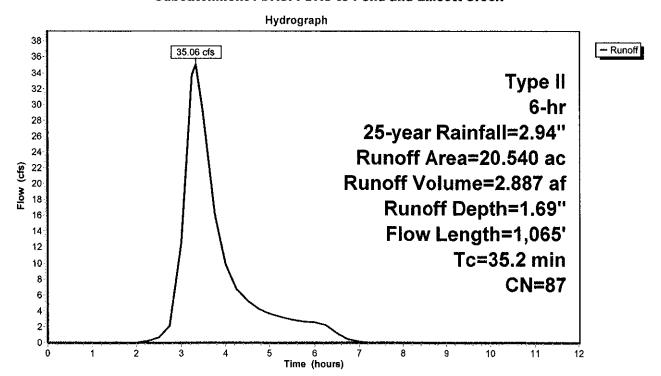
# Summary for Subcatchment PDA3: PDA3 to Pond and Ellicott Creek

Runoff = 35.06 cfs @ 3.33 hrs, Volume= 2.887 af, Depth= 1.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-12.00 hrs, dt= 0.25 hrs Type II 6-hr 25-year Rainfail=2.94"

	Area	(ac) C	N Desc	ription		
k	20.	540 8	7 Multifamily, Existing Clubhouse, Open Space, 40% imp, HSG D			
		324 216		0% Perviou 0% impervi		
(r	Tc mln)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2	26.7	150	0.0050	0.09		Sheet Flow, A-B Grass: Short n= 0.150 P2= 2.50"
	5.3	360	0.0050	1.14		Shallow Concentrated Flow, B-C Unpaved Kv= 16.1 fps
	3.2	555	0.0040	2.87	2.25	Pipe Channel, Pipe to Pond 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
	35.2	1.065	Total			

# Subcatchment PDA3: PDA3 to Pond and Ellicott Creek



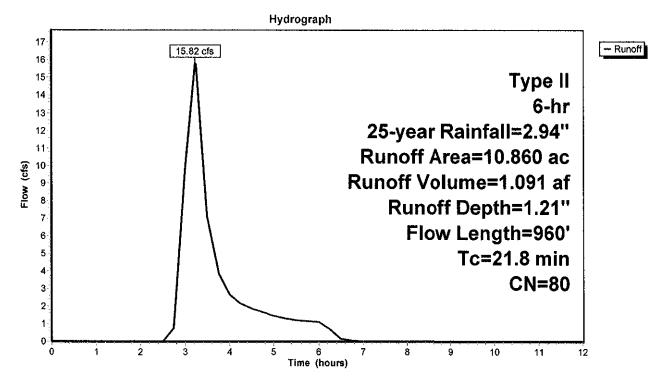
# **Summary for Subcatchment PDA4: Direct to Ellicott Creek**

Runoff = 15.82 cfs @ 3.23 hrs, Volume= 1.091 af, Depth= 1.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-12.00 hrs, dt= 0.25 hrs Type II 6-hr 25-year Rainfall=2.94"

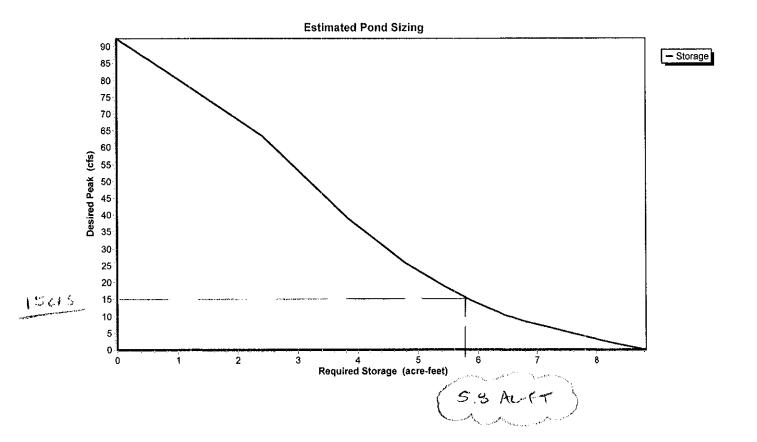
Area	(ac) C	N Desc	ription			
10.	B60 8	0 >75%	Grass cov	er, Good, H	ISG D	
10.	860	100.0	00% Pervio	us Area		
Tc	Length	Slope	•	Capacity	Description	
(mln) 9.9	(feet) 150	(ft/ft) 0.0600	(ft/sec) 0.25	(cfs)	Sheet Flow, A-B	
		2.000	VV		Grass: Short n= 0.150 P2= 2.50"	
11.9	810	0.0050	1.14		Shallow Concentrated Flow, B-C	
21.8	960	Total			Unpaved Kv= 16.1 fps	

# **Subcatchment PDA4: Direct to Ellicott Creek**



Pond 1P: Discharge - Towards Audubon Par 3 (Pump Station)

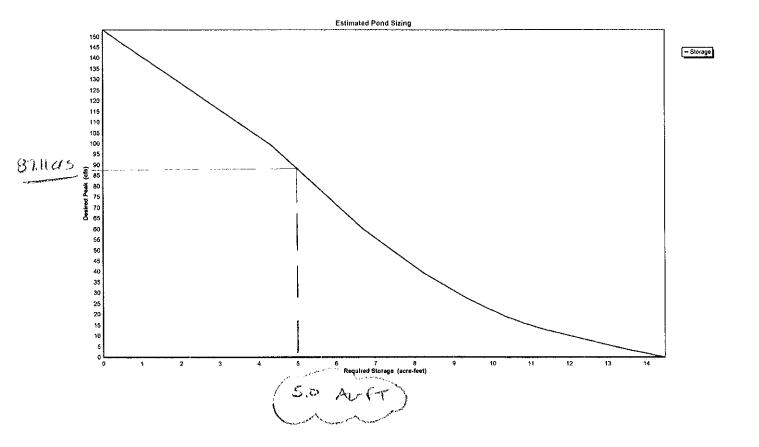
PDAI STORICE REQUIRED - 25 YR STORM



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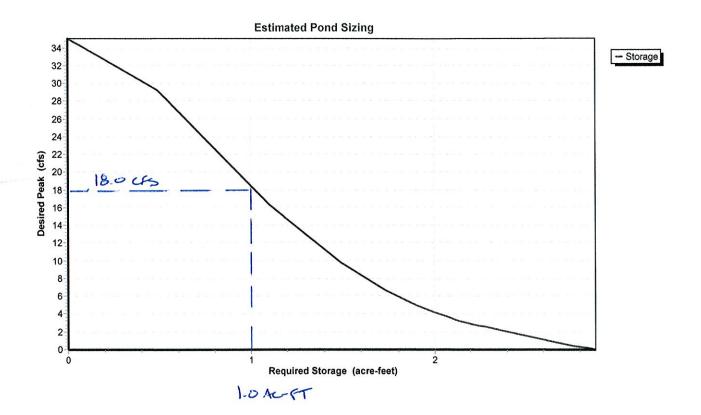
Pond 2P: Lake - Discharge to Ellicott Creek

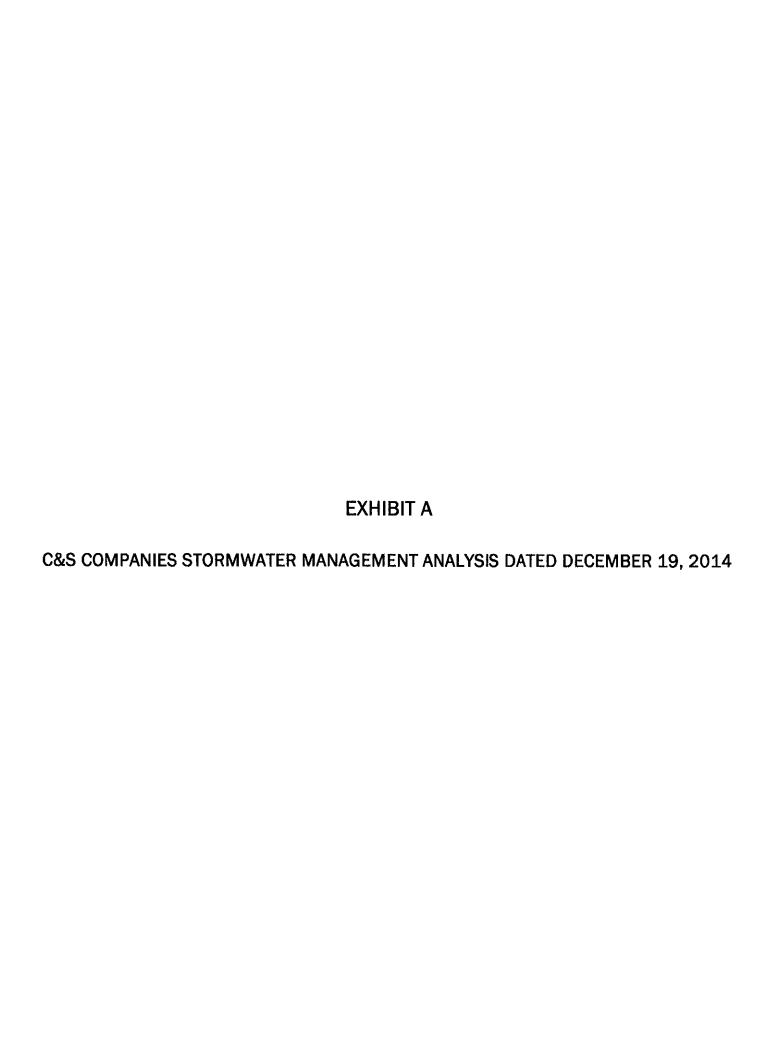
PDA 2 STORICE RECERTOR - 25 TR STORM



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Pond 3P: Discharge to Ellicott Creek







**C&S Companies** 

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# Memo

To:

Brad Packard, AICP

Director of Development & Planning Ciminelli Real Estate Corporation Centerpointe Corporate Park

350 Essjay Road

Williamsville, NY 14221

From:

Jason Utzig, P.E.

Date:

December 19, 2014

Re:

Westwood Project - Preliminary Engineering Design & Site

Planning Services – Task 5 – Stormwater Management Planning

File:

O76.003.001

The following is a supplement to the Preliminary Drainage Analysis Report for the Westwood Mixed Use Neighborhood Project, prepared by Professional Civil Engineering, L.L.C., dated May 19, 2014.

As mentioned in the Preliminary Drainage Analysis Report, post development stormwater discharge from the northernmost drainage area (identified as PDA1 in the Westwood PostDevelopment HydroCad report) will be conveyed to the stormwater management lake via a stormwater pumping station and ultimately to Ellicott Creek.

Due to the preliminary/conceptual nature of this task, detailed grading and utility plans were not prepared. We do however, have a general idea of the proposed elevations needed to be established in order to determine the elevations of the stormwater detention ponds, proposed stormwater discharge locations and/or the need for a stormwater pump station. To accomplish this, the Preliminary Conceptual Master Plan was overlaid with LIDAR topography, which includes 1-foot contour intervals. Additionally, the assumption was made that the proposed grades will generally follow the existing elevations.

The 3 detention ponds at the north end of the site are 7-foot deep (from a permanent water surface elevation of 590 to a top of bank elevation of 597). The proposed water surface elevation of the stormwater lake is 597.25. Due to the elevation difference between the 3 ponds and the stormwater lake, the 3 ponds

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cannot discharge by gravity to the lake. Therefore, a stormwater pump station will be needed.

A preliminary design of the stormwater pump station is included with this letter. The design parameters to start with were 10-feet of static head, 2,000 linear feet of forcemain and a total combined discharge rate of 15 cfs (6,732 gal/min) to discharge from the stormwater ponds to the stormwater lake. Given those parameters, a triplex submersible pump station (with two pumps running and a third pump as a backup) was selected. To obtain the approximately 6,800 gpm of discharge, each pump will be an 8" Fairbanks Morse solids handling submersible pump, 75 horsepower capacity, and capable of handling 3,400 gpm each. The pumps will discharge through a 16-inch diameter forcemain. Each pump will be on a guiderail system and all three pumps will be placed within a 9-foot diameter wet well (manhole) with an external valve vault. Note that as design progresses, the pumping system may be modified to reflect expanded or reconfigured ponds. The above is a preliminary design assessment.

It is intended that pump station ownership and operation will be accomplished through the establishment of a drainage district that will include all residents/owners within the project limits. A contract for the station's maintenance will be awarded to a ca local mechanical contractor.

As the project progresses from conceptual planning to design development, a more detailed design of the stormwater management system will ensue.

# Traffic Impact Study

for the proposed

# Westwood Mixed-Use Neighborhood

Town of Amherst Erie County, New York

Project No. 33042

April 2014 Revised February 2015

Prepared For:

Mensch Capital Partners, LLC

350 Essjay Road Williamsville, New York 14221 Attn: Brad Packard

Prepared By:



3495 Winton Place Building E, Suite IIO Rochester, New York I4623

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FIGURE 8

PEAK HOUR VOLUMES - FULL DEVELOPMENT CONDITIONS

#### LIST OF APPENDICES

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- A8. LEVEL OF SERVICE CALCULATIONS ALTERNATIVE PLAN NO. 7 (ALTERNATIVE ACCESS)

# LIST OF REFERENCES

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- 2. <u>Special Report 209: Highway Capacity Manual</u>. Transportation Research Board. National Research Council, Washington, DC. 2000.
- 3. <u>Manual on Uniform Traffic Control Devices for Street and Highways</u> (MUTCD). Federal Highway Administration. 2009.
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#### **EXECUTIVE SUMMARY**

#### **OVERVIEW**

The purpose of this updated Traffic Impact Study ("TIS") is to identify and evaluate the potential traffic impacts associated with the proposed Westwood mixed-use neighborhood in the Town of Amherst, New York. In an effort to define the potential traffic impacts, this analysis determines the extent of existing traffic conditions, projects background traffic flow and volumes including area growth, and projects changes in traffic flow on the roadway network in the study area associated with the proposed mixed-use neighborhood. This updated TIS also includes our firm's recommendations based on a comprehensive analysis of the potential traffic impacts associated with the proposed mixed-use neighborhood.

This updated TIS has been requested by Mensch Capital Partners, LLC ("Project Sponsor") in association with its submission of a revised Draft Generic Environmental Impact Statement ("DGEIS") which will include a comprehensive analysis of the potential environmental impacts of the proposed mixed-use neighborhood. This updated TIS includes an analysis of the potential traffic generation of the "alternatives" to the proposed mixed-use neighborhood. Additionally, a new Section XII of this updated TIS has also been included based on comments contained in a Memorandum issued by the Town of Amherst Planning Department dated September 3, 2014 based on its review of the originally submitted DGEIS on July 14, 2014. The results of the analysis of the "alternative" concept plans to be included in the revised DGEIS are included in the Appendices.

Until December 31, 2014, the approximately 170 acre project site was occupied by the Westwood Country Club, a private 18-hole golf course. The project site is bounded by: Maple Road to the north; the Audubon Par 3 Golf Course, Ellicott Creek, and North Forest Road to the east; Sheridan Drive to the south; and Frankhauser Road and Fairways Boulevard to the west. The proposed mixed-use neighborhood consists of the following land uses as depicted on the current Preliminary Conceptual Master Plan ("Preferred Plan") prepared by C&S Engineers, Inc.:

- Mixed-use Village Square
  - o 115,000 SF commercial component
  - Apartments 352 units
- Condominium Town Home Development 84 units
- Patio Home Subdivision 113 lots
- Single Family Home Subdivision 47 lots
- Office Park (professional office space) 200,000 SF
- Senior Living
  - Assisted Living 200 beds
  - Independent Living Apartments 96 units
- Rental Town Home Development 93 units
- Hotel I30 rooms
- Synagogue- 25,000 SF

Access to the proposed mixed-use neighborhood will be provided via a new north/south roadway, to be dedicated to the Town, connecting Maple Road and Sheridan Drive. The northerly access point will form a new "T" intersection at Maple Road. The southerly access will intersect Sheridan Drive on the north side directly opposite the existing Fenwick Road intersection on the south side of Sheridan Drive. A right-in/right-out/left-in only driveway was



considered along Sheridan Drive between Fenwick Road and North Forest Road. However, this access point has been removed from the updated Conceptual Master Plan based on input received from the New York State Department of Transportation ("NYSDOT").

Construction of the proposed mixed-use neighborhood is anticipated to reach full build-out in approximately 10 years and the build-out will occur over multiple phases. However, for purposes of this study, our firm's analysis takes into account the full redevelopment of the project site. Town of Amherst officials were contacted to discuss projects within the study area that are under construction and/or approved. There is a proposed 21 lot patio home project proposed by Elite Construction on several parcels located to the west of the project site at 4176-4188 Sheridan Drive. To account for normal increases in background traffic growth, including the aforementioned proposed patio home project, which has not been approved at this time, as well as any unforeseen developments in the project study area, a growth rate of 0.25% per year has been applied to the existing traffic volumes, based upon historical traffic growth derived from New York State Department of Transportation ("NYSDOT") and Greater Buffalo-Niagara GBNRTC traffic volume projections for the area, for the 10-year build-out period.

The operating characteristics of the site access roads and impacts to the adjacent roadway network are identified and mitigating measures, if any, are provided to minimize any capacity or safety concerns.

#### **CONCLUSIONS & RECOMMENDATIONS**

This updated Traffic Impact Study identifies and evaluates the potential traffic impacts resulting from full build-out of the proposed mixed-use neighborhood. This updated Traffic Impact Study provides the Amherst Town Board, in its capacity as the designated lead agency for the coordinated environmental review of the proposed mixed-use redevelopment project pursuant to SEQRA, along with involved and interested agencies including the NYSDOT and Erie County Department of Public Works ("ECDPW"), with information to allow a hard look to be taken at identified potential traffic impacts. Based upon the comprehensive analysis contained in this report, it is our firm's professional opinion that the results indicate that the proposed mixed-use neighborhood can be accommodated by the existing roadway network with the recommendations below being in place. The following sets forth our firm's conclusions and recommendations based upon the results of the comprehensive traffic analyses that have been conducted:

- 1. The proposed mixed-use neighborhood is expected to generate approximately 920 (896) new trips during the AM (PM) peak hours respectively.
- 2. A left-turn lane warrant investigation was conducted along Maple Road and Sheridan Drive at the proposed driveways. However, two-way left-turn facilities already exist at the location of the proposed access roads. The two-way left-turn lanes should be restriped to accommodate dedicated left-turn lanes entering the proposed driveway along Maple Road and the existing Sheridan Drive/Fenwick Road intersection.
- 3. A right-turn lane investigation was conducted along Maple Road and Sheridan Drive at the proposed driveway locations. While the future volumes satisfy the right-turn lane guidelines at the intersection of Maple Road and the proposed driveway under full development during the AM and PM peak hours, no improvement is recommended given the location of adjacent residential properties. Right-turn guidelines were satisfied



- during both peak hours at the intersection of Sheridan Drive/Fenwick Road/Proposed Driveway. The right turn lane should provide 425' of storage space with a 75' taper.
- 4. Install a new traffic signal at the proposed public roadway on Sheridan Drive when the driveway is constructed. The new traffic signal should be coordinated with the existing traffic signal network along Sheridan Drive to the west of the project site.
- 5. Install a new traffic signal at the proposed public roadway connection on Maple Road when the new roadway is constructed.
- 6. The proposed new north south public roadway connecting Sheridan Drive and Maple Road should be designed to provide two lanes of exiting traffic and two lanes of entering traffic to both facilitate traffic movements and to achieve the desired alignment with the existing Fenwick Road. The throat length of the driveway should be designed to accommodate vehicle queues exiting the site and reduce vehicle blockages of internal circulation roadways; therefore a minimum uninterrupted throat length of 200' is recommended.
- 7. Internal sidewalks should form an inter-connected pedestrian network allowing users to actively walk amongst the various land use components to be included in the mixed-use neighborhood. Additionally, internal paved recreational paths should be designed and installed to encourage bicycle use.
- 8. The southern portion of the mixed-use neighborhood as depicted on the Conceptual Master Plan consists of the commercial and office components, higher density residential units, and the hotel component. This portion of the Project Site should incorporate bicycle parking and related facilities into the design. Such facilities should include bicycle racks and consideration should be given to including bicycle lockers, as well as providing shower and changing facilities within the proposed buildings.
- 9. Transportation demand management ("TDM") strategies should be considered and implemented, when practical, to reduce off-site vehicular trips.
- 10. Consideration should be given to reducing the number of parking spaces constructed on-site given the mixed-use nature of the proposed neighborhood, potential for non-vehicular trips, and the potential for shared parking between different categories of land uses with differing peak parking demands. The use of shared parking reduces the amount of impervious surfaces and prevent parking areas from having more parking spaces than needed to service a project with a mixture of land uses with differing peak parking demands.



# I. INTRODUCTION

The purpose of this updated Traffic Impact Study ("TIS") is to identify and evaluate the potential traffic impacts associated with the proposed Westwood Country Club Development in the Town of Amherst, New York. The operating characteristics of the proposed access points and impacts to the adjacent roadway network are identified and evaluated.

This updated Traffic Impact Study has been requested by Mensch Capital Partners, LLC ("Project Sponsor") in association with its preparation of a revised Draft Generic Environmental Impact Statement ("DGEIS") which will include the consideration of alternative concept design plans for the Westwood project site. In an effort to thoroughly consider and properly analyze the potential traffic impacts associated with alternative concept design plans, a trip generation comparison is performed for the alternative design plans. The results of the analysis of the "alternative" concept plans to be included in the revised DGEIS are included in the Appendices.

In an effort to define traffic impacts, this analysis determines the extent of existing traffic conditions, projects background traffic flow including area growth, and projects changes in traffic flow due to the proposed development.

# II. LOCATION

The project site is located between Maple Road and Sheridan Drive, west of North Forest Road and east of Fairways Boulevard in the Town of Amherst, Erie County, New York. The site location and study area are shown in Figure I - Site Location and Study Area (all figures are included at the end of this report).

Until December 31, 2014, the approximately 170 acre project site was occupied by the Westwood Country Club, a private 18-hole golf course. The project site is bounded by: Maple Road to the north; the Audubon Par 3 Golf Course, Ellicott Creek, and North Forest Road to the east; Sheridan Drive to the south; and Frankhauser Road and Fairways Boulevard to the west. In order to ensure a comprehensive analysis of potential traffic impacts, a broad study area was selected consisting of the following 14 existing intersections:

- 1. Maple Road/Millersport Hwy SB
- 2. Maple Road/Millersport Hwy NB
- Maple Road/S. Maplemere Road
   Maple Road/Sandhurst Lane
- 5. Maple Road/Donna Lea Boulevard
- 6. Maple Road/N. Forest Road
- 7. Sheridan Drive/Mill Street
- 8. Sheridan Drive/N. Forest Road

- 9. Sheridan Drive/Fenwick Road
- 10. Sheridan Drive/Frankhauser Road
- II. Sheridan Drive/I-290 WB
- 12. Sheridan Drive/Harlem Road
- 13. Harlem Road/I-290 EB
- 14. N. Forest Road/Existing Country Club Driveway

# III. EXISTING HIGHWAY SYSTEM

# A. Existing Transportation Facilities

The following is a description of the roadway network in the vicinity of the project site that was evaluated by our firm in connection with the preparation of this updated TIS. It is important to mention that the Annual Average Daily Traffic ("AADT") counts referenced below were obtained based upon the most recent traffic counts collected by the New York



State Department of Transportation ("NYSDOT") and Greater Buffalo-Niagara Regional Transportation Council ("GBNRTC"). All AADT data referenced below has been properly adjusted by the background growth rate to account for current conditions as is the standard methodology for professionally prepared traffic impact studies.

Maple Road (CR 192) is functionally classified as an urban principal arterial roadway under the jurisdiction of Erie County Department of Public Works ("ECDPW"). Within the study area, motorists travel east and west using two travel lanes in each direction, a center two-way left-turn lane ("2WLTL") and auxiliary turn lanes at the intersections with Millersport Highway, South Maplemere Road, and North Forest Road. Within the study area, AADT on Maple Road is approximately 21,913 vehicles per day ("vpd") according to the most recent traffic counts collected by the NYSDOT in 2010. The posted speed limit on Maple Road is 45 miles per hour ("MPH").

Sheridan Drive (NY 324) is functionally classified as an urban principal arterial roadway under the jurisdiction of the NYSDOT. Within the study area, motorists travel east and west using two travel lanes in each direction, a 2WLTL, and auxiliary turn lanes at the intersections with Harlem Road, I-290, Frankhauser Road, Fenwick Road, North Forest Road, and Mill Street. The AADT on Sheridan Drive is approximately 39,724 vpd according to the most recent traffic counts collected by NYSDOT in 2011. The posted speed limit is 45 MPH.

North Forest Road (CR 294) is functionally classified as a minor arterial roadway, under the jurisdiction of the ECDPW. Within the study area, motorists travel north and south using one travel lane in each direction with auxiliary turn lanes at the intersections of Maple Road and Sheridan Drive. The AADT on North Forest Road is approximately 13,550 vpd according to the most recent traffic counts collected by the GBNRTC in 2008. The posted speed limit is 30 MPH.

Harlem Road (NY 240) is functionally classified as an urban minor arterial roadway under the jurisdiction of the NYSDOT. Within the study area, motorists travel north and south using two travel lanes in each direction and auxiliary turn lanes at the intersections with Sheridan Drive and the I-290. The AADT on Harlem Road is approximately 11,003 vpd, according to the most recent traffic counts collected by NYSDOT in 2011. The posted speed limit is 35 MPH.

Existing AADT information was obtained from the NYSDOT <u>Traffic Data Viewer</u>, NYSDOT <u>Traffic Data Report</u>, and GBNRTC <u>Highway Database</u>. **Figure 2** illustrates the lane geometry at each of the study intersections and the AADT volumes on the study roadways.

#### B. Planned/Programmed Highway Improvements

The NYSDOT and the ECDPW were contacted to determine if there are any planned/future highway improvements on the roadways within the project study area. There were no ECDPW projects identified within the study area. The NYSDOT has indicated there is an in-development plan for a regional arterial management system along Sheridan Drive. The NYSDOT project involves the coordination of the traffic signals along Sheridan Drive.



#### IV. EXISTING TRAFFIC CONDITIONS

# A. Peak Intervals for Analysis

Given the functional characteristics of the mixture of land uses being proposed for the project site (residential; senior living; commercial/retail; office; and hotel), the peak hours selected for analysis are the weekday commuter AM and PM peaks. The combination of site traffic and adjacent through traffic produces the greatest demand during these time periods.

# B. Existing Traffic Volume Data

Weekday AM (7:00-9:00 AM) and PM (4:00-6:00 PM) peak hour volumes were collected by SRF & Associates ("SRF") at the study area intersections listed in Section II above.

Turning movement count data was collected by SRF at the study intersections on varying dates including Wednesday, November 14th, 2012; Thursday, November 15th, 2012; Wednesday, September 11th, 2013; and Thursday, September 12th, 2013. All turning movement count data were collected on typical weekdays while local schools and colleges were in session. The traffic volumes were reviewed to confirm the accuracy and relative balance of the collective traffic counts. All traffic volumes were found to balance within the network within reasonable and expected variations and adjustments were made where necessary to derive 2013 Existing Conditions. The peak hour traffic periods generally occurred between 7:45-8:45 AM and 4:30-5:30 PM on weekdays at the study intersections.

The 2013 weekday AM and PM peak hour existing traffic volumes are reflected in Figure 3.

#### C. Field Observations

The study intersections were observed during both peak intervals to assess current traffic operations. Signal timing information was collected to determine peak hour phasing plans and phase durations during each interval.

# D. Accident Investigation

An accident investigation was completed to assess the safety history at the fourteen existing study intersections. Accident data was compiled from March 2010 through February 2013. The data was obtained from NYSDOT.

A total of 165 accidents were documented at the 14 intersections during the investigation period (3 years). The severity of the 165 documented accidents is as follows:

- 82 Reportable Injury
- 61 Reportable Non Injury
- 22 Non Reportable/Unknown

Accident rates were computed for the project study intersections and compared with the NYSDOT average accident rates for similar intersections, as summarized in the following table. Intersection rates are listed as accidents per million entering vehicles



("Acc/MEV").

#### TABLE I: INTERSECTION ACCIDENT RATES

Intersection	Number of Accidents	Actual Project Rate Acc/MEV	NYSDOT Average Rate Acc/MEV
Maple Road/Maplemere Road	11	0.43	0.17
Maple Road/Sandhurst Lane	0	0.00	0.12
Maple Road/Donna Lea Boulevard	2	0.08	0.12
Maple Road/North Forest Road	43	1.09	0.17
North Forest Road/Westwood C.C. Driveway	I	0.07	0.13
Harlem Road/I-290 SB Off/on-ramp	5	0.22	0.13
Millersport Highway NB Off/on-ramp/Maple Road	I	0.04	0.13
Millersport Highway SB Off/on-ramp/Maple Road	0	0.00	0.13
Sheridan Drive/North Forest Road	31	0.62	0.17
Sheridan Drive/Fenwick Road	2	0.06	0.13
Sheridan Drive/Frankhauser Road	3	0.08	0.13
Sheridan Drive/Harlem Road	27	0.66	0.13
Sheridan Drive/I-290 Off/on-ramp	16	0.38	0.13
Sheridan Drive/Mill Street	23	0.65	0.13

As shown in **Table I**, seven of the fourteen study intersections have accident rates higher than the state wide average accident rates for similar intersections. The intersection of Maple Road/North Forest Road has an accident rate that is substantially higher than the state average. The majority of accidents at this intersection are rear end and left turn accidents.

Due to the fact that the intersection accidents have rates that exceed state averages, further investigation was performed to identify higher incident areas and possible trends/causes of the accidents. The results of the investigation are discussed in the following section.

# Maple Road/Maplemere Road:

A total of 11 accidents were documented during the investigation period (3 years). Rear end (5) and right angle (5) accidents accounted for the majority of the accidents at this location. Four of the right angle crashes occurred in the westbound direction. Three rear end accidents occurred in the eastbound direction with two occurring in the westbound direction. The remaining accident was categorized as other (1).

#### Maple Road/North Forest Road:

A total of 43 accidents were documented at this intersection. The calculated accident rate is over 6 times higher than the statewide average for other similar intersections. Rear end (14) and left turn (12) accidents accounted for the majority of the accidents at this location. The remaining accidents were categorized as other (5), right angle (4), fixed object (3), bicycle/pedestrian (2), overtaking (2), and right turn (1). Notable accident clusters — locations greater than three (3) identifiable consistent accident



# patterns - at this location include:

- 6 left turn collisions (southbound)
- 4 rear end collisions (northbound)
- 3 rear end collisions (southbound)
- 3 rear end collisions (eastbound)
- 3 right angle collisions (southbound)

# Harlem Road/I-290 SB Off/on-ramp:

A total of five accidents were documented at this intersection. Rear end (2) and left turn (2) accidents accounted for the majority of the accidents at this location. The remaining accident was categorized as right angle (1).

#### Sheridan Drive/North Forest Road:

A total of 31 accidents were documented at this intersection during the 3-year investigation period. The calculated accident rate is over 3.5 times higher than the statewide average for other similar intersections. Rear end (20) accidents accounted for the majority of the accidents. The remaining accidents were categorized as left turn (3), right turn (3), right angle (1), side-swipe (1), fixed object (1), bicycle/pedestrian (1), and other (1). Notable accident clusters at this location include:

- 8 rear end collisions (eastbound)
- 4 rear end collisions (southbound)
- 4 rear end collisions (westbound)
- 3 rear end collisions (unknown)

#### Sheridan Drive/Harlem Road:

A total of 27 accidents were documented at this intersection. The calculated accident rate is approximately 5 times higher than the statewide average for other similar intersections. Rear end (11) and left turn (11) accidents accounted for the majority of the accidents. The remaining accidents were categorized as right angle (3), overtaking (1), and fixed object (1). Notable accident clusters at this location include:

- 6 rear end collisions (eastbound)
- 3 rear end collisions (northbound)
- 6 left turn collisions (northbound)
- 5 left turn collisions (westbound)

# Sheridan Drive/I-290 Off/on-ramp:

A total of 16 accidents were documented at this intersection. Rear end (5) accidents accounted for the majority of the accidents. The remaining accidents were categorized as left turn (3), right angle (3), overtaking (2), head on (1), side-swipe (1), and animal (1). Notable accident clusters at this location include:

- 4 rear end collisions (westbound)
- 3 right angle collisions (northbound)

#### Sheridan Drive/Mill Street:

A total of 16 accidents were documented at this intersection. The calculated accident rate is approximately 5 times higher than the statewide average for other similar intersections. Rear end (10) accidents accounted for the majority of the accidents.



The remaining accidents were categorized as right angle (8), left turn (2), fixed object (1), animal (1), and other (1). Notable accident clusters at this location include:

- 7 rear end collisions (eastbound)
- 4 right angle collisions (westbound)
- 3 right angle collisions (eastbound)

Most accidents were caused by either driver inattention, following too closely, or failure to yield to the right of way. Human error contributing factors were the most prevalent causes of the accidents.

Additional traffic from the proposed mixed-use neighborhood may increase the potential for collisions. Based upon the accident details at each intersection, there are identifiable patterns of rear-end collisions. These types of collisions are more common at traffic signals on high volume roadways. Recommended mitigation countermeasures may include optimizing the change intervals at the traffic signals (to increase the length of time between phase intervals) and/or signal coordination.

### V. FUTURE AREA DEVELOPMENT AND LOCAL GROWTH

Construction of the proposed mixed-use neighborhood is anticipated to reach full build-out in approximately 10 years and the build-out will occur over multiple phases. However, for purposes of this study, our firm's analysis takes into account the full development of the project site. Town of Amherst officials were contacted to discuss projects within the study area that are under construction and/or approved. There is a proposed 21 lot patio home project proposed by Elite Construction on several parcels located to the west of the project site at 4176-4188 Sheridan Drive. To account for normal increases in background traffic growth, including the aforementioned patio home project, which has not been approved at this time, as well as any unforeseen developments in the project study area, a growth rate of 0.25% per year has been applied to the existing traffic volumes, based upon historical traffic growth derived from New York State Department of Transportation ("NYSDOT") and Greater Buffalo-Niagara GBNRTC traffic volume projections for the area, for the 10-year build-out period. The background traffic volumes are depicted in **Figure 4.** 

### **VI. PROPOSED DEVELOPMENT**

### A. Description

Until December 31, 2014, the project site was occupied by the Westwood Country Club with an 18-hole golf course on approximately 170 acres. The proposed development consists of the following land uses as depicted on the current Conceptual Master Plan prepared by C&S Engineers, Inc.:

- Mixed-use Village Square
  - o 115,000 SF commercial component
  - Apartments 352 units
- Condominium Town Home Development 84 units
- Patio Home Subdivision 113 lots
- Single Family Home Subdivision 47 lots



- Office Park (generally professional offices) 200,000 SF
- Senior Living
  - Assisted Living 200 beds
  - Independent Living Apartments 96 units
- Rental Town Home Development 93 units
- Hotel 130 rooms
- Synagogue- 25,000 SF

Access to the proposed Westwood Country Club Development will be provided via a new north/south roadway that will be dedicated to the Town to become a new public roadway connecting Maple Road and Sheridan Drive. The northerly access point will form a new "T" intersection at Maple Road. The southerly access will intersect Sheridan Drive on the north side directly opposite the existing Fenwick Road intersection. A right-in/right-out/left-in only driveway was considered along Sheridan Drive between Fenwick Road and North Forest Road; however, this access point has been removed from the updated Conceptual Master Plan based on input received from the New York State Department of Transportation ("NYSDOT"). Figure 5 illustrates the Preliminary Conceptual Master Plan ("Preferred Plan").

The project site has frontage along Maple Road and Sheridan Drive. Both roadways currently have pedestrian sidewalks on each side of the road. In addition, Route #49 of the Niagara Frontier Transportation Authority ("NFTA") metro-bus system operates along Sheridan Drive.

The proposed mixed-use neighborhood should take advantage of the existing pedestrian infrastructure system in place along Maple Road and Sheridan Drive. Internally, sidewalks should form an inter-connected network allowing users to actively walk amongst the various land uses. Additionally, internal circulation routes designed to encourage bicycle use are an amenity that can promote a more active lifestyle. The southern portion of the mixed-use redevelopment project as depicted on the Conceptual Master Plan consists of the commercial and office components, higher density residential units, and the hotel component should incorporate bicycle parking and related facilities into the design. Such facilities should include bicycle racks and consideration should be given to including bicycle lockers as well as providing shower and changing facilities within the proposed buildings. Bicycle signage along the main north/south internal roadway can be used to increase driver's awareness of bicyclists as well as encourage bicycle ridership. Implementing, to the extent practicable, pedestrian and bicycle design features into the proposed mixed-use neighborhood can encourage a healthy, active lifestyle encouraging reduced vehicle trips generated by the proposed mixed-use neighborhood.

### B. Site Traffic Generation

The next step in the evaluation is to determine the volume of traffic attributable to the mixed-use neighborhood as defined by vehicle trips entering and exiting the project site. Trip generation is an estimate of the number of trips generated by a specific building or land use. These trips represent the volume of traffic entering and exiting the development. The <u>Trip Generation</u>, 9th Edition is used as a reference for this information and is the accepted standard for determining the projected traffic volumes for a project. The trip rate for the peak hour of the generator may or may not coincide in time or volume with the trip rate for the peak hour of adjacent street traffic. Volumes generated during the peak hour of adjacent street traffic, in this case



the weekday AM and PM commuter peaks, represent a more critical volume when analyzing the capacity of the system, and as such those intervals will provide the basis of this analysis.

The volume of traffic generated by a site is dependent on the intended land use and size of the development. The volume of site-generated traffic has been estimated based on ITE rates, as shown in **Table II**. All trip generation calculations are included in the Appendix.

DESCRIPTION	SIZE/	AM F	PEAK	PM PEAK		
DESCRIPTION	UNITS	ENTER	EXIT	ENTER	EXIT	
Single Family Residential	47 Units	H	32	33	20	
Patio Homes	113 Units	22	67	74	43	
Condominium Townhomes	84 Units	8	37	35	17	
Rental Townhomes	93 Units	21	44	34	33	
Apartments	352 Units	35	141	137	74	
Assisted Living	200 Beds	18	10	19	25	
Senior Housing	96 Units	6	13	14	П	
Hotel	130 Rooms <sup>1</sup>	33	24	29	31	
Professional Office	200,000 SF	275	37	51	247	
Commercial/Retail	115,000 SF	105	65	316	342	
Synagogue <sup>2</sup>	25,000 SF	0	0	20	22	
Total Projected Driveway Trips		534	470	762	865	

TABLE II: SITE GENERATED TRIPS

- 1. Average occupancy rate is 65%. Therefore, 85 occupied rooms were used as the variable for trip generation purposes. This is consistent with standard practice for determining vehicular trips projections for a hotel.
- 2. The traffic generation associated with this building is projected to be during off-peak hours. The planned synagogue is associated with Judaism, the primary weekly religious service (the "Shabbat") is held on Saturday mornings. There are a limited number of annual holidays that will generate larger attendance. The facility will be utilized to a lesser extent during other time periods; the primary traffic trip generation is Saturday mornings.

### C. Determination of Multi-use and Pass-by Trips

Inherent in the trip generation estimate for the proposed development, is the "multiuse" traffic component of traffic entering and exiting the site. According to the Institute of Transportation Engineers, <u>Trip Generation Handbook</u>, 2001, "...a multiuse development is typically a single real-estate project that consists of two or more ITE land use classifications between which trips can be made without using the off-site road system. Because of the nature of these land uses, the trip-making characteristics are interrelated, and some trips are made among the on-site uses. This capture of trips internal to the site has the net effect of reducing vehicle trip generation between the overall development site and the external street system (compared to the total number of trips generated by comparable, standalone sites)." "In some multi-use developments, these internal trips can be made by walking or by vehicles entirely on internal pathways or internal roadways without using streets external to the site."



The ITE Trip Generation Handbook indicates internal capture rates for trips within a multi-use development to vary between office, residential, and retail uses during the AM and PM peak hours. Given the area in which the project site is located, the proposed office, residential, and retail components, and interconnection between internal adjacent components, multi-use (or multiple purpose) total volume trips will occur. Therefore it is estimated, based on methods in the ITE Trip Generation Handbook that an approximate 8% and 36% reduction in total trip generation for the site will occur during the AM and PM peak hours of analysis, respectively. This trip adjustment is calculated based upon ITE standards for multi-use trip reductions based on the varying uses and interconnections within the mixed-use neighborhood. This multi-use trip projection adjustment was applied to the total site generated trips and subtracted from the traffic entering and exiting the site for the AM and PM peak period.

In addition, for certain types of developments, the total number of trips generated is different from the amount of new traffic added to the adjacent highway network by the generator. Retail-oriented developments (such as convenience stores, gas stations, shopping centers, discount stores, restaurants, service stations, and supermarkets) often locate adjacent to busy streets in order to attract the motorists already passing the site on the adjacent street. These sites attract a portion of their trips from traffic passing the site. The "pass-by" traffic refers to the amount of existing traffic already on the roadway adjacent to the site that, as it "passes by" the site, will enter the site driveways to patronize the project site.

The combination of "multi-use" and "pass-by" trips has the net result of reducing the volume of new traffic that is added to the site driveways and/or adjacent roadways. In the case of the proposed mixed-use neighborhood, there will be both "multi-use" and "pass-by" trips associated with the new land uses on the site.

ITE data indicates that pass-by rates for shopping centers/retail uses can vary from 10% to as high as 80% during the PM peak hour, e.g. restaurants typically exhibit pass-by rates of 45% during the PM peak hour. Given the composition of the proposed land uses and location of the project site with frontage along both Sheridan Drive and Maple Road, a conservative pass-by rate of 37% was used during the PM peak hour. **Table III** shows the total site generated trips, multi-use trips, pass-by trips, driveway trips, and resulting primary trips that are added to the existing highway system for full development of the project.



# TABLE III: SITE TRAFFIC VOLUMES & ADJUSTMENTS

DESCRIPTION	SIZE	AM F	PEAK	PM PEAK		
DESCRIPTION	SIZE	ENTER	EXIT	ENTER	EXIT	
Single Family Residential	47 Units	11	32	33	20	
Patio Homes	113 Units	22	67	74	43	
Condominium Townhomes	84 Units	8	37	35	17	
Rental Townhomes	93 Units	21	44	34	33	
Apartments	352 Units	35	141	137	74	
Assisted Living	200 Beds	18	10	19	25	
Senior Housing	96 Units	6	13	14	П	
Hotel	130 Rooms <sup>1</sup>	33	24	29	31	
Professional Office	200,000 SF	275	37	51	247	
Commercial/Retail	115,000 SF	105	65	316	342	
Synagogue <sup>2</sup>	25,000 SF	0	0	20	22	
Sub-total		534	470	762	865	
Multi-use Trips		-42	-42	-274	-311	
Pass-by Trips		0	0	-77	-69	
Total New Trips		492	428	411	485	

- 1. Average occupancy rate is 65%. Therefore, 85 occupied rooms were used as the variable for trip generation purposes. This is consistent with standard practice for determining vehicular trips projections for a hotel.
- 2. The traffic generation associated with this building is projected to be during off-peak hours. The planned synagogue is associated with Judaism, the primary weekly religious service (the "Shabbat") is held on Saturday mornings. There are a limited number of annual holidays that will generate larger attendance. The facility will be utilized to a lesser extent during other time periods; the primary traffic trip generation is Saturday mornings.

### D. Site Traffic Distribution

The cumulative effect of site traffic on the transportation network is dependent on the origins and destinations of that traffic and the location of the access drives serving the site.

The proposed arrival/departure distribution of traffic to be generated at this site is considered a function of several parameters, including the following:

- Employment centers;
- Existing highway network;
- Proximity and access to I-290;
- Population centers;
- Location of land uses on proposed site plan; and
- Existing traffic patterns, traffic conditions, and controls



Figures 6A (residential), 6B (hotel), and 6C (commercial/office) show the anticipated trip distribution pattern percentages for full build-out of the proposed mixed-use neighborhood. Figures 7A, 7B, and 7C show the resulting total site generated traffic as assigned to the study area intersections for the weekday AM and PM peak hour periods under full build-out conditions. Figure 7D shows the trips generated for all uses on one graphic.

### VII. FULL DEVELOPMENT VOLUMES

The projected design hour traffic volumes were developed for the weekday AM and PM peak hours by combining the future background traffic conditions (Figure 4), and projected site generated volumes for full build-out of the proposed mixed-use neighborhood (Figures 7A-7C) in order to yield the total traffic conditions expected at full development. **Figure 8** illustrates the total weekday AM and PM peak hour volumes anticipated for the proposed development under full build-out conditions.

### VIII. CAPACITY ANALYSIS

Capacity analysis is a technique used for determining a measure of effectiveness for a section of roadway and/or intersection based on the number of vehicles during a specific time period. The measure of effectiveness used for the capacity analysis is referred to as a Level of Service ("LOS"). Levels of Service are calculated to provide an indication of the amount of delay that a motorist experiences while traveling along a roadway or through an intersection. Since the most amount of delay to motorists usually occurs at intersections, capacity analysis focuses on intersections, as opposed to highway segments.

Six Levels of Service are defined for analysis purposes. They are assigned letter designations, from "A" to "F", with LOS "A" representing the best conditions and LOS "F" the worst. Suggested ranges of service capacity and an explanation of Levels of Service are included in the Appendix.

The standard procedure for capacity analysis of signalized and un-signalized intersections is outlined in the <u>Highway Capacity Manual</u> ("HCM 2010") published by the Transportation Research Board. Traffic analysis software, Synchro 7, which is based on procedures and methodologies contained in the HCM, was used to analyze operating conditions at study area intersections. The procedure yields a Level of Service based on the HCM 2010 as an indicator of how well intersections operate.

Existing and background operating conditions during the peak study periods are evaluated to determine a basis for comparison with the projected future conditions. The projected future traffic volumes generated by the proposed development were analyzed to assess the operations of the intersections in the study area. Capacity results for existing, background, and full development conditions are listed in **Table IV**. The discussion following the table summarizes capacity conditions. All capacity analysis calculations are included in the Appendices.



### TABLE IV: CAPACITY ANALYSIS RESULTS

INTERSECTION	EXIS	TING	BACKG	ROUND	FULL DEVELOPMENT		DEVELOP	ILL MENT W/ ATION
	AM	PM	AM	PM	AM	PM	AM	PM
Maple Road/Millersport Hwy SB (S)								
Eastbound Left – Maple Road	A(2.8)	A(5.1)	A(2.9)	A(5.4)	A(2.9)	A(5.8)		
Eastbound Thru – Maple Road	A(2.9)	A(5.5)	A(3.0)	A(5.8)	A(3.1)	A(6.2)		
Westbound Thru – Maple Road	A(3.2)	A(7.6)	A(5.2)	A(7.1)	A(5.8)	A(8.4)		
Westbound Right – Maple Road	A(0.3)	A(0.2)	A(0.3)	A(0.2)	A(0.3)	A(0.2)	N	/A
Southbound Left – Millersport Hwy SB	C(29.7)	C(26.0)	C(29.7)	C(25.5)	C(30.2)	C(25.2)	1	,,,,
Southbound Right – Millersport Hwy SB	B(11.4)	C(22.5)	B(11.4)	C(23.3)	B(11.3)	C(24.6)		
Overall LOS/Delay (sec/veh)	A(3.5)	A(7.7)	A(4.4)	A(7.7)	A(4.7)	A(8.5)		
Maple Road/Millersport Hwy NB (S)	7.(5.5)	7.(7.7)	7.( 1.1)	7.(717)	7.(117)	7.(0.5)		
Eastbound Left – Maple Road	A(7.8)	C(31.8)	B(13.4)	D(37.4)	B(15.6)	D(52.4)		
Eastbound Thru – Maple Road	A(6.2)	B(11.0)	A(9.5)	B(10.6)	B(10.6)	B(11.2)		
Westbound Thru/Right – Maple Road	A(7.5)	B(14.3)	B(11.3)	B(14.5)	B(12.5)	B(15.2)		
Northbound Left – Millersport Hwy NB	C(27.9)	B(16.0)	B(19.6)	B(16.2)	B(18.7)	B(16.2)	N	/A
Northbound Thru/Right – Millersport Hwy NB	C(27.9)	D(37.4)	C(25.9)	D(41.4)	C(27.4)	D(44.4)		
Overall LOS/Delay (sec/veh)	B(12.7)	B(18.3)	B(14.4)	B(19.2)	B(15.4)	C(20.6)		
Maple Road/Maplemere Road (S)	D(12.7)	D(10.5)	2(1111)	2(17.2)	D(13.1)	C(20.0)		
Eastbound Left – Maple Road	A(6.0)	A(6.5)	A(6.0)	A(6.6)	A(6.1)	A(6.8)		
Eastbound Thru/Right – Maple Road	A(6.4)	A(7.4)	A(6.4)	A(7.5)	A(6.1)	A(7.7)		
Westbound Left – Maple Road	A(5.3)	A(6.9)	A(5.4)	A(7.0)	A(5.4)	A(7.7)		
Westbound Thru/Right – Maple Road	A(6.5)	A(6.4)	A(6.6)	A(6.5)	A(6.7)	A(6.6)	N	/A
Northbound – Maplemere Road	B(15.5)	B(15.3)	B(15.7)	B(15.2)	B(16.6)	B(15.5)	· · ·	/ <b>^</b>
Southbound – Maplemere Road	B(13.7)	C(21.1)	B(14.1)	C(21.9)	B(14.9)	C(22.5)		
Overall LOS/Delay (sec/veh)	A(7.1)	A(7.9)	A(7.2)	A(8.0)	A(7.3)	A(8.1)		
Maple Road/Donna Lea Boulevard (U)	A(7.1)	A(1.7)	A(7.2)	A(0.0)	A(7.5)	A(0.1)		
Westbound Left – Maple Road	B(10.5)	C(15.3)	B(10.6)	C(15.8)	B(10.9)	C(16.6)	B(10.9)	C(16.6)
Northbound – Donna Lea Boulevard	C(14.9)	C(20.4)	C(15.0)	C(13.8)	C(15.3)	C(10.0)	B(10.7) B(14.5)	C(10.0)
Maple Road/Sandhurst Lane (U)	C(14.7)	C(20.7)	C(13.0)	C(21.1)	C(13.3)	C(22.3)	В(14.5)	C(21.7)
	P(10.6)	A (O O)	D(10.7)	A (O O)	D/11.2\	A (O O)		
Eastbound Left – Maple Road	B(10.6)	A(0.0)	B(10.7)	A(0.0)	B(11.3)	A(0.0)		
Westbound Left – Maple Road Northbound – Sandhurst Lane	B(10.4)	B(12.5)	B(10.5)	B(12.7)	B(11.1)	B(13.5)	N	/A
Southbound Audubon Golf Course	C(20.4)	D(27.2)	C(21.0)	D(28.4)	C(23.7)	D(32.5)		
	C(22.0)	A(0.0)	C(22.6)	A(0.0)	D(25.5)	A(0.0)		
Maple Road/North Forest Road (S)	D(10.2)	C(22.2)	D/10 ()	C(22.2)	C(21.0)	C(20.4)		
Eastbound Left – Maple Road Eastbound Thru – Maple Road	B(18.2)	C(22.2)	B(18.6)	C(23.2)	C(21.0)	C(29.6)		
Eastbound Thru – Maple Road  Eastbound Right – Maple Road	D(39.7)	D(44.9)	D(41.0)	D(46.7)	D(44.2)	D(52.1)		
Westbound Left – Maple Road	A(5.3)	A(4.6)	A(5.2)	A(5.1) D(53.0)	A(5.2)	A(5.6)		
Westbound Thru – Maple Road	D(39.7)	D(50.0) C(31.7)	D(43.8)	, ,	D(48.9)	E(55.9)		
Westbound Right – Maple Road	C(27.8)	B(16.4)	C(28.1)	C(32.1)	C(29.0) B(13.9)	C(33.6) B(16.7)		
Northbound Left – North Forest Road	B(13.8) D(39.8)	D(42.6)	B(13.8) D(43.5)	B(16.5) D(46.3)	D(49.8)	D(51.4)	N.	/A
Northbound Thru – North Forest Road	, ,		D(43.3) D(42.7)	` ,			17	/^
Northbound Right – North Forest Road	D(42.1) B(14.1)	E(59.5) B(19.5)	B(14.7)	E(61.2) C(20.1)	D(43.8) B(16.1)	E(63.5) C(21.1)		
Southbound Left – North Forest Road	C(27.8)	D(51.6)	C(28.6)	E(57.6)	C(29.8)	E(64.7)		
Southbound Thru - North Forest Road	D(51.3)	E(60.1)	D(53.2)	E(62.5)	E(56.0)	E(64.7)		
Southbound Right – North Forest Road	B(11.2)	A(9.1)	B(12.5)	B(10.3)	B(16.5)	B(13.1)		
Overall LOS/Delay (sec/veh)	C(33.0)	D(39.9)	C(34.3)	D(41.5)	D(36.4)	D(44.5)		
Overall LOS/Delay (sectively)	C(33.0)	D(37.7)	C(34.3)	(בוד)ט	D(30.4)	D(+4.3)		



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	EXISTING		BACKG	ROUND		ILL	FULL DEVELOPMENT W/	
INTERSECTION	EXIS	IING	BACKG	KOOND	DEVELO	PMENT	MITIGATION	
					444   544			
	AM	PM	AM	PM	AM	PM	AM	PM
Sheridan Drive/Mill Street (S)	C(27.2)	D(44.3)	C(27.4)	D(44.1)	C(20.7)	D/F1 F)	G(20.0)	C(22.4)
Eastbound Left – Sheridan Drive	C(27.2)	D(46.2)	C(27.4)	D(46.1)	C(28.7)	D(51.5)	C(30.0)	C(22.6)
Eastbound Thru/Right – Sheridan Drive	F(110.5)	F(*)	F(*)	F(*)	F(*)	F(*)	F(*)	D(38.3)
Westbound Left – Sheridan Drive	D(51.4)	D(43.8)	D(52.8)	D(45.9)	D(54.5)	D(45.9)	D(54.7)	E(60.2)
Westbound Thru/Right – Sheridan Drive Northbound Left – Mill Street	B(18.7)	D(50.5)	B(19.1)	D(53.6) C(21.6)	C(20.8)	E(63.0)	B(19.9)	C(20.9)
Northbound Thru/Right – Mill Street	C(34.0) C(31.4)	C(21.4) C(22.5)	C(34.1) C(31.6)	C(21.6) C(22.7)	C(34.5)	C(21.7) C(22.7)	D(39.0)	D(41.4) D(40.6)
Southbound Left – Mill Street	D(43.2)	D(36.4)	D(43.4)	D(36.4)	D(43.3)	D(36.4)	C(34.4) D(47.1)	D(40.6) D(45.4)
Southbound Thru/Right – Mill Street	E(59.5)	C(34.2)	E(59.6)	C(34.3)	E(59.6)	C(34.1)	E(67.0)	D(42.5)
Overall LOS/Delay (sec/veh)	E(65.7)	F(98.4)	E(72.4)	F(104.0)	F(86.4)	F(*)	E(77.8)	C(32.5)
Sheridan Drive/North Forest Road (S)	L(03.7)	1 (70.4)	L(12.4)	1(104.0)	1 (00.4)	'()	L(77.0)	C(32.3)
Eastbound Left – Sheridan Drive	C(20.1)	D(35.2)	C(21.0)	D(42.3)	C(25.3)	D(45.1)		D(47.7)
Eastbound Thru – Sheridan Drive	D(44.6)	D(47.5)	D(47.8)	D(50.8)	E(58.3)	E(63.5)	•	E(63.5)
Eastbound Right – Sheridan Drive	B(15.2)	B(16.1)	B(15.7)	B(16.7)	B(16.9)	B(18.3)		B(18.3)
Westbound Left – Sheridan Drive	D(54.6)	F(*)	E(57.2)	F(*)	E(58.5)	F(*)	ł	F(*)
Westbound Thru/Right – Sheridan Drive	C(31.9)	D(38.6)	C(33.0)	D(40.4)	D(36.3)	D(45.0)	ł	D(44.2)
Northbound Left – North Forest Road	D(39.9)	E(57.2)	D(40.8)	E(60.3)	D(45.8)	E(70.9)	ł	E(70.9)
Northbound Thru – North Forest Road	D(42.5)	E(60.3)	D(42.7)	E(61.5)	D(42.3)	E(61.1)	N/A	E(61.1)
Northbound Right – North Forest Road	B(12.1)	B(12.3)	B(11.7)	B(12.6)	B(11.7)	B(12.8)		B(12.8)
Southbound Left – North Forest Road	C(27.5)	C(29.7)	C(27.5)	C(29.9)	C(27.4)	C(29.8)		C(29.8)
Southbound Thru - North Forest Road	E(58.3)	E(60.6)	E(58.6)	E(61.0)	E(59.5)	E(61.3)		E(61.3)
Southbound Right - North Forest Road	À(9.1)	A(9.0)	A(9.1)	A(8.9)	B(11.8)	A(8.9)	•	A(8.9)
Overall LOS/Delay (sec/veh)	D(38.2)	D(51.6)	D(39.7)	D(54.5)	D(44.3)	E(59.6)	1	E(59.4)
North Forest Road/								
Country Club Driveway (U)								
Eastbound Left – Country Club Driveway	C(21.4)	E(37.8)	C(22.3)	E(41.5)	REMO	VED UNDER	FULL DEVELOP	MENT
Northbound – North Forest Road	A(0.3)	A(1.0)	A(0.3)	A(1.0)				
Sheridan Drive/Fenwick Road/					Unsig	nalized	Signa	lized
Proposed Driveway (U)					_			
Eastbound Left – Sheridan Drive	N	/A	N	l/A	E(35.8)	D(30.7)	D(49.2)	D(54.1)
Eastbound Thru/Right – Sheridan Drive	D(140)	C(14.0)				/A	A(5.5)	B(11.9)
Westbound Left – Sheridan Drive	B(14.8)	C(16.0)	C(15.3)	C(16.6)	C(15.1)	C(16.0)	B(13.8)	B(17.4)
Westbound Thru – Sheridan Drive	N	/A	N	l/A	N	/A	C(24.3)	C(31.3)
Westbound Right – Sheridan Drive Northbound – Fenwick Road	D(30.7)	D(28.0)	D(32.3)	D(29.3)	E/*\	E/*\	A(2.6) C(33.1)	A(2.9)
Southbound Left – Proposed Driveway	D(30.7)	D(20.0)	D(32.3)	D(27.3)	F(*) F(*)	F(*) F(*)	` ,	C(21.3) /A
Southbound Left/Thru – Proposed Driveway						/A	E(55.1)	D(49.7)
Southbound Right – Proposed Driveway	N	/A	N	l/A	E(39.2)	F(69.9)	C(28.9)	C(27.6)
Overall LOS/Delay (sec/veh)					, ,	/A	B(17.9)	C(23.6)
Sheridan Drive/Frankhauser Road (S)						// \	D(11.7)	C(13.0)
Eastbound Left – Sheridan Drive	A(2.3)	A(3.3)	A(2.3)	A(3.6)	A(3.0)	A(6.0)	A(3.0)	A(6.0)
Eastbound Thru – Sheridan Drive	A(5.6)	A(3.2)	A(5.9)	A(3.3)	A(7.5)	A(3.9)	A(7.5)	A(3.9)
Westbound Thru/Right – Sheridan Drive	A(3.2)	A(3.9)	A(3.3)	A(4.0)	A(3.8)	A(4.8)	A(1.5)	A(2.4)
Southbound Left – Frankhauser Road	E(60.9)	E(61.5)	E(60.9)	E(61.5)	E(60.9)	E(61.5)	E(60.9)	E(61.5)
Southbound Right – Frankhauser Road	B(19.2)	C(26.2)	B(19.2)	C(28.2)	C(26.6)	D(39.3)	C(26.6)	D(39.3)
Overall LOS/Delay (sec/veh)	A(5.5)	A(4.8)	A(5.6)	A(5.0)	A(6.7)	A(5.7)	A(5.6)	A(4.5)
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INTERSECTION	EXISTING		BACKGROUND		FULL DEVELOPMENT		FULL DEVELOPMENT W MITIGATION	
	AM	PM	AM	PM	AM	PM	AM	PM
Sheridan Drive/I-290 WB (S)				•				
Eastbound Left – Sheridan Drive	C(32.2)	F(87.5)	C(34.2)	F(107.2)	D(41.6)	F(*)	D(41.6)	F(88.9)
Eastbound Thru – Sheridan Drive	A(7.7)	A(7.7)	A(7.9)	A(7.9)	A(8.7)	A(8.6)	A(8.7)	A(8.6)
Westbound Thru/Right – Sheridan Drive	B(13.4)	B(16.9)	B(14.3)	B(17.3)	B(17.0)	B(19.2)	B(15.7)	B(10.8)
Northbound Left – I-290 WB	E(64.4)	E(78.5)	E(64.3)	F(81.3)	E(63.3)	F(86.3)	E(63.3)	F(86.3)
Northbound Left/Thru/Right – I-290 WB	E(55.5)	D(46.7)	E(55.7)	D(48.5)	D(51.1)	E(56.5)	D(51.1)	E(56.5)
Northbound Right – I-290 WB	D(38.4)	D(40.1)	D(40.7)	D(43.3)	D(48.5)	D(52.7)	D(48.5)	D(52.7)
Overall LOS/Delay (sec/veh	B(18.3)	C(28.0)	B(19.0)	C(30.4)	C(20.8)	C(33.1)	C(20.2)	C(27.0)
Sheridan Drive/Harlem Road (S)								
Eastbound Thru – Sheridan Drive	C(21.0)	B(18.6)	C(21.3)	B(19.1)	C(22.7)	C(20.7)	C(22.7)	C(20.7)
Eastbound Right – Sheridan Drive	C(21.0)	A(10.0)	C(21.3)	B(10.2)	C(21.7)	B(11.0)	C(21.7)	B(11.0)
Westbound Left – Sheridan Drive	D(51.7)	D(42.5)	D(51.6)	D(42.4)	D(53.6)	D(40.6)	D(50.5)	D(39.0)
Westbound Thru – Sheridan Drive	A(4.3)	A(3.6)	A(4.4)	A(3.9)	A(4.7)	A(5.3)	A(6.8)	A(5.9)
Northbound Left – Harlem Road	D(50.1)	E(59.3)	D(50.4)	E(58.8)	D(50.4)	E(58.8)	D(50.4)	E(58.8)
Northbound Right – Harlem Road	C(27.3)	C(27.4)	C(28.4)	C(28.2)	C(33.0)	C(30.2)	C(33.0)	C(30.2)
Overall LOS/Delay (sec/veh)	C(25.0)	C(20.7)	C(25.4)	C(21.0)	C(27.2)	C(22.2)	C(27.3)	C(22.2)
Harlem Road/I-290 EB (S)								
Westbound Left – I-290 EB	C(34.2)	D(40.9)	D(35.1)	D(42.5)	D(41.1)	D(46.9)		
Westbound Right – I-290 EB	B(14.3)	B(10.8)	B(15.8)	B(11.4)	B(19.1)	B(12.9)		
Northbound Thru/Right – Harlem Road	C(30.2)	C(32.2)	C(31.1)	C(33.4)	D(35.1)	D(36.3)	N/	/A
Southbound Left – Harlem Road	B(15.5)	C(30.1)	B(17.1)	C(33.2)	B(19.2)	D(38.5)	19/	^
Southbound Thru – Harlem Road	A(8.5)	A(8.0)	A(8.8)	A(8.2)	A(8.5)	A(8.0)		
Overall LOS/Delay (sec/veh)	B(19.7)	C(23.9)	C(20.8)	C(25.2)	C(23.7)	C(27.7)		
Maple Road/Proposed Driveway (U)					Unsignalized		Signa	
Eastbound Right – Maple Road						/A	B(11.9)	B(12.3)
Westbound Left – Maple Road					B(12.0)	B(14.8)	A(4.6)	A(5.4)
Westbound Thru – Maple Road	N/A		NI	/A	N	/A	A(4.8)	A(4.3)
Northbound Left – Proposed Driveway			IN IN		C(20.1)	D(26.8)	C(20.7)	C(21.6)
Northbound Right – Proposed Driveway					NI	/A	A(8.7)	B(12.8)
Overall LOS/Delay (sec/veh)					IN	<i>i</i>	A(8.6)	A(9.3)

### NOTES:

- I. A(2.8) = Level of Service (Delay in seconds per vehicle)
- 2. (S) = Signalized; (U) = Unsignalized
- 3. N/A = Approach does not exist and/or was not analyzed during this condition
- 4. F(\*) = Delay exceeds two minutes

### Maple Road / Millersport Hwy SB

All approaches operate at level of service "C" or better during the AM and PM peak hours between existing, background, and full development conditions. No changes in level of service are expected as a result of the proposed development. The overall LOS remains at "A" during both peak hours under all conditions. No mitigation is warranted or recommended at this intersection.

### Maple Road / Millersport Hwy NB

All approaches operate at LOS "D" or better during the AM and PM peak hours between existing and background conditions. The overall level of service during the PM peak hour is expected to decrease from "B" to "C" between background and full development conditions. No mitigation is warranted or recommended.



### Maple Road / Maplemere Road

All approaches are expected to operate at LOS "C" or better between existing, background, and full development conditions. The overall level of service is projected to be "A" during all conditions under both peak hours. Therefore, no mitigation is warranted or recommended.

### Maple Road / Donna Lea Boulevard

All approaches are expected to operate at level of service "C" or better between existing, background, and full development conditions. No mitigation is warranted or recommended at this intersection. Levels of service shown in the "Full Development with Mitigation" column of the table are a result of the recommended traffic signal at the proposed driveway along Maple Road.

### Maple Road / Sandhurst Lane

All approaches operate at LOS "D" or better during both peak hours under all conditions. The southbound approach decreases from LOS "C" to "D" during the AM peak hour. The actual increases in delay associated with these changes in levels of service are small (less than 2.9 seconds per vehicle) and are characteristic of unsignalized side roads intersecting high volume arterials such as Maple Road. No mitigation is warranted or recommended.

### Maple Road / North Forest Road

All approaches are expected to operate at LOS "E" or better during both peak hours. During the AM peak hour between background and full development conditions, the overall LOS is expected to decrease from "C" to "D"; however, the increase in delay is projected to be 2.1 seconds per vehicle. No mitigation is warranted or recommended.

### Sheridan Drive / Mill Street

The eastbound through/right approach operates at level of service "F" during the AM and PM peak hours under existing, background, and full development conditions. Between background and full development conditions, the overall level of service during the AM peak hour is expected to decrease from "E" to "F". During the PM peak hour, the LOS is expected to remain "F". Signal timing adjustments to increase the green time given to the eastbound and westbound phases while decreasing the green time for the northbound and southbound phases improves the overall level of service during the AM peak hour from "F" to "E". Likewise, during the PM peak hour, the overall LOS will increase from "F" to "C". It should be noted that during the existing conditions, the intersection experiences eastbound queues extending to Park Country Club during both peak hours. Changes in signal timing will improve the queuing conditions and reduce delay for eastbound/westbound through vehicles.

### Sheridan Drive / North Forest Road

The eastbound through movement LOS is projected to change from "D" to "E" during the AM and PM peak hours between background and full development conditions. The westbound left turn movement operates at LOS "F" during the PM peak hour under all conditions. Observations of existing conditions noted southbound queues extending beyond the existing Westwood Country Club driveway on North Forest Road (which will be closed in connection the mixed use neighborhood). Additionally, during the PM peak hour, westbound queues extend beyond Fleetwood Terrace. It is important to note that the proposed north/south roadway through the neighborhood may relieve traffic volumes along North Forest Road and at the intersections with Maple Road and Sheridan Drive by providing motorists with an alternate connection between Maple Road and Sheridan Drive. Minor signal timing adjustments to reduce the green time given to the eastbound left approach can offer a minor improvement in intersection delay during the PM peak hour. Projected traffic increases may be accommodated



by the existing actuated traffic signal. The southbound right-turn lane should be extended to create additional capacity for southbound right-turning traffic.

### North Forest Road / Country Club Driveway

The eastbound exiting approach from Westwood Country Club currently operates at LOS "C" and "E" during the AM peak hours between existing and background conditions. This driveway is expected to be removed upon full development of the site.

### Sheridan Drive / Fenwick Road / Proposed Driveway

Between existing and background conditions, all approaches operate at level of service "D" or better. Under full development conditions, the southbound approach exiting the proposed site is expected to operate at LOS "F" with delays greater than two minutes; with the exception of the southbound right during the AM peak hour operating at LOS "E". The eastbound left turn movement into the new site will operate at LOS "E" during both peak hours.

### Recommended Mitigation

Based on the expected delays under full development conditions and a traffic signal warrant analysis, a three-colored traffic signal is recommended for this intersection. The traffic signal should be designed to provide a permitted/protected eastbound left-turn phase as well as a southbound right-turn overlap phase. Southbound left and through traffic should be phased as permitted/protected. In addition, a westbound right-turn only lane should be constructed on Sheridan Drive to provide storage space for vehicles entering the site. The lane should provide 425' of storage space with a 75' taper. The existing two-way left-turn lane should be restriped to provide a westbound left-turn only lane entering the site. 350' of storage space should be provided. In addition, this signal should be coordinated with other traffic signals to the west on Sheridan Drive.

### Sheridan Drive / Frankhauser Road

All approaches operate at level of service "E" or better during both peak hours under existing, background, and full development conditions. The southbound right approach decreases from LOS "B" to "C" during the AM peak hour and "C" to "D" during the PM peak hour as a result of the development. As a result of the recommended signal at the proposed driveway along Sheridan Drive, the westbound through/right approach is projected to reduce in delay by less than 2.5 seconds.

### Sheridan Drive / I-290 WB

The eastbound left turn movement is projected to decrease in LOS from "C" to "D" during the AM peak hour between background and full development conditions. During the PM peak hour between background and full development conditions for the northbound left/through/right approach, the LOS decreases from "D" to "E". Minor signal timing adjustments during the PM peak hour to increase green time given to the eastbound left turn movement decreases the projected delay for the eastbound left turn movement and westbound through/right approach. The 95<sup>th</sup> percentile vehicle queues (those that occur 95% of the time) for westbound I-290 traffic as a result of the proposed mixed-use redevelopment are projected to be no longer than 370 feet. The available storage length for the westbound ramp is 800 feet. Based on the available storage length, traffic on the ramp is not projected to impact mainline traffic on the I-290.

### Sheridan Drive / Harlem Road

The overall level of service remains "C" during both peak hours between all conditions. All approaches operate at LOS "E" or better during both peak hours under full development conditions. Levels of service shown in the "Full Development with Mitigation" column of the



table are a result of signal timing changes at the adjacent ramp intersection and coordination of the two signals.

### Harlem Road / I-290 EB

All approaches operate at level of service "D" or better during both peak hours between existing, background, and full development conditions. The southbound left approach is projected to decrease in level of service from "C" to "D" during the PM peak hour between background and full development conditions. No mitigation is warranted or recommended.

### Maple Road / Proposed Driveway

The northbound driveway approach to Maple Road is expected to operate at level of service "C" during the AM peak hour and "D" during the PM peak hour under full development conditions. Meanwhile, the westbound left turn movement operates at LOS "B" during the AM and PM peak hours.

### Recommended Mitigation

Based on the expected delays under full development conditions and a traffic signal warrant analysis, a three-colored traffic signal is recommended for this intersection. The traffic signal should be designed to provide a permitted/protected westbound left-turn phase as well as a northbound right-turn overlap phase. The existing two-way left-turn lane should be restriped to provide a westbound left-turn only lane entering the site.

It is important to mention that our firm's capacity analysis and the resulting LOS information as provided above was based on an analysis during AM and PM weekday travel periods. This is the appropriate methodology for preparing a capacity analysis for inclusion in a TIS. However, the resulting Levels of Service during peak travel periods are not reflective of conditions during the non-peak travel periods, which comprise a large portion of each day and also include weekends. It is always advisable to evaluate mitigation measures for peak travel periods but lower Levels of Service during weekday peak travel period do not mean that intersections of roadways are not properly designed or are not functioning properly. It would not be feasible for all intersections in a community, such as the Town of Amherst, to function at high rated Levels of Service during peak travel periods since this would result in excessive roadway infrastructure and would not be economically feasible for governmental agencies responsible for the expenditure of funds for roadways and their maintenance and repair.

### IX. AUXILIARY TURN LANE WARRANT INVESTIGATION

Volume warrants for left-turn treatments on Maple Road and Sheridan Drive at the proposed access roads were evaluated using the Transportation Research Board's NCHRP Report 279, Intersection Channelization Design Guide, 1985. According to this Design Guide, provisions for left-turn lane facilities should be established where traffic volumes are high enough and safety considerations are sufficient to warrant the additional lane. This investigation analyzes warrants during the AM and PM peak hours. However, two-way left-turn facilities already exist at the location of the proposed access roads. Therefore, this study includes the existing lane geometry in the analysis.

Right-turn lane volume guidelines were also examined at the proposed intersections along Maple Road and Sheridan Drive. While the future volumes satisfy the right-turn lane guidelines at the intersection of Maple Road and the proposed driveway under full development during the AM and PM peak hours, no improvement is recommended given the location of adjacent residential



properties. Right-turn guidelines are satisfied during both peak hours at the intersection of Sheridan Drive/Fenwick Road/Proposed Driveway.

All supporting calculations are included in the Appendix of this report.

### X. TRAFFIC SIGNAL WARRANT INVESTIGATION

A traffic signal warrant analysis was conducted at the proposed driveway on Maple Road and the intersection of Sheridan Drive/Fenwick Road/Proposed Driveway. The need for a traffic signal is determined by comprehensive investigation of existing and projected traffic conditions and physical characteristics at the location. The Standard Specifications Update for the adoption of the National MUTCD ("FHWA") and the New York State Supplement were reviewed to investigate the need for a traffic control signal at this location. There are nine (9) warrants and they are as follows:

Warrant I Eight-Hour vehicular volume
Warrant 2 Four-Hour vehicular volume

Warrant 3 Peak Hour

Warrant 4 Pedestrian Volume
Warrant 5 School Crossing

Warrant 6 Coordinated Signal System

Warrant 7 Crash Experience
Warrant 8 Roadway Network

Warrant 9 Intersection Near a Grade Crossing

Detailed signal warrant calculations are included in Appendix A2 of the Report. Prior to applying warrants, the MUTCD suggests consideration of the effects of right turn volumes on the minor street approach, and a reduction taken in the number of right turning vehicles, where appropriate. A certain number of right turn vehicles will execute a right turn on the red indication without actuating a traffic signal (if one were in place). For purposes of this analysis, it is projected that 25% of the right turning vehicles exiting the proposed driveways along Maple Road and Sheridan Drive would execute a right turn on red maneuver and should therefore be subtracted for the purposes of the warrant analysis. The posted speed limit on Maple Road and Sheridan Drive is 45 miles per hour and therefore, 70 percent thresholds in Table 4C-1, Figure 4C-2 and Figure 4C-4 is used as a basis for analysis.

Warrant I is subdivided into Condition A and Condition B. The Minimum Vehicular Volume, Condition A, is intended for application at locations where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal. The Interruption of Continuous Traffic, Condition B, is intended for application at locations where Condition A is not satisfied and where the traffic volume on a major street is so heavy that traffic on a minor intersecting street suffers excessive delay or conflict in entering or crossing the major street. These conditions are satisfied when, for each of any eight hours of an average day, anticipated volumes on the artery and side road are in excess of the minimum values presented in Tables 4C-I in the MUTCD. Hourly traffic volumes along Maple Road and Sheridan Drive at the proposed access driveways were projected based on the hourly traffic distribution measured by NYSDOT along Maple Road in 2010 and Sheridan Drive in 2011. Hourly traffic volumes expected to exit the proposed driveways were projected based on the hourly distribution for a typical office facility (using local office park data) given the majority of estimated trips generated by the site are office-related. Based upon these calculations, Condition A is not met for all eight hours at the proposed driveway along Maple Road. Condition A is met for six of the eight hours



at the proposed driveway along Sheridan Drive. Condition B for Warrant I is satisfied for five of the eight hours at the proposed driveway along Maple Road, while it is satisfied for all eight hours at the proposed driveway along Sheridan Drive under full development conditions.

Warrant 2, the Four-Hour Vehicular Volume signal warrant conditions, are intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal. This warrant stipulates that for any four hours of a day, minimum threshold volumes are met on the artery and side road. Based on the projected hourly traffic volumes on the proposed driveways, this warrant is met under full development conditions for both proposed driveways.

Warrant 3 is intended for application where minor street traffic suffers undue delay in entering or crossing the major street for one hour of the day. It stipulates that the warrant shall be applied in unusual cases (high-occupancy vehicle facilities) where a large number of vehicles discharge over a short period of time. Based on the current uses (office, retail, residential, hotel) at the proposed driveways along Maple Road and Sheridan Drive, this warrant is met in Figure 4C-4 under full development conditions.

Warrant 4 is met when pedestrians experience excessive delay in crossing the major street (Maple Road and Sheridan Drive) because the traffic volumes are so heavy. The intersections have infrequent pedestrian activity. This warrant is not met.

Warrant 5 is met when a sufficient number of gaps in traffic do not exist for certain size and frequency of school children to cross the major roadway. Based on the current conditions and low pedestrian activity, this warrant is not applicable at this location.

Warrant 6 is met when a traffic signal is needed to maintain progressive movement and vehicle platooning in a coordinated signal system. Based on the current signal system along Maple Road, this warrant is not met; however, it is met for Sheridan Drive.

Warrant 7 is met when the severity, frequency, and types of crashes are such that it is a condition susceptible to correction by a traffic signal. Accident data at the proposed Maple Road location and exiting Sheridan Drive/Fenwick Road resulted in two accidents during the three-year study period. Therefore, this warrant is not currently met.

Warrant 8 is met when a traffic signal might encourage concentration and organization of traffic flow on a roadway network. This warrant primarily focuses on two major intersecting roadways, which is not the case at the proposed driveways. Therefore, this warrant is not met.

Warrant 9 is applicable when an intersection is located near an at-grade rail crossing. This warrant is not applicable to the proposed driveway locations and therefore is not met.

Based on the traffic signal warrant investigation, the traffic signal warrants dealing solely with traffic volumes (Warrants 1-3) are met under full development conditions at the proposed driveway along Sheridan Drive. Warrants 2-3 are met for the proposed driveway along Maple Road. **Table VI** describes each warrant and the result of our firm's signal warrant investigation. Based upon the capacity analysis results and traffic signal warrant analysis, installation of a traffic signal is recommended at the proposed driveway along Maple Road and proposed driveway on Sheridan Drive.



### TABLE V: TRAFFIC SIGNAL WARRANT SUMMARY

		FULL BUILD CONDITONS			
WARRANT#	DESCRIPTION	Maple Road/Proposed North Driveway	Sheridan Drive/Proposed South Driveway		
I	Eight-Hour vehicular volume	NOT MET	MET		
2	Four-Hour vehicular volume	MET	MET		
3	Peak Hour	MET	MET		
4	Pedestrian Volume	NOT MET	NOT MET		
5	School Crossing	NOT MET	NOT MET		
6	Coordinated Signal System	NOT MET	MET		
7	Crash Experience	NOT MET	NOT MET		
8	Roadway Network	NOT MET	NOT MET		
9	Intersection Near a Grade Crossing	NOT MET	NOT MET		

Discussions with the Project Sponsor indicated that the initial construction phases will include installing the north/south connector public roadway between Maple Road and Sheridan Drive. Additionally, it is anticipated the office and hotel component will be developed at first, followed by the retail component oriented towards the south of the site plan and residential development on the northern portion of the project site. Based on the expected delays under full development conditions and the results of the traffic signal warrant analysis, a three-colored traffic signal is recommended for both intersections. Therefore, it is recommended that the proposed driveway on Sheridan Drive be installed with a three-colored traffic signal. A protected/permitted eastbound left-turn phase is recommended given the volume of left-turns entering the site. The signal should be coordinated with the existing traffic signal network to the west along Sheridan Drive. Meanwhile, the proposed driveway on Maple Road should be installed with a three-color traffic signal. A protected/permitted westbound left-turn phase is recommended given the volume of left-turns entering the site.

Although traffic signal installation is recommended for the proposed access points on Maple Road and Sheridan Drive, a post-construction signal warrant analysis should be performed approximately six to twelve months after the new north/south connector public roadway is completed and dedicated to the Town of Amherst. The purpose of studying the proposed access locations after the roadway is open for public use is to determine at what point in the future of the proposed build-out of the mixed-use neighborhood a traffic signal should be installed. The proposed north/south public roadway at its connection to Sheridan Drive should be designed to provide two lanes of exiting traffic and two lanes of entering traffic to both facilitate traffic movements and to achieve the desired alignment with the existing Fenwick Road on the south side of Sheridan Drive. The throat length of the driveway should be designed to accommodate vehicle queues exiting the site and reduce vehicle blockages of internal circulation roadways. Therefore, a minimum uninterrupted throat length of 200 feet is recommended.

### XI. TRANSPORTATION DEMAND MANAGEMENT RECOMMENDATIONS

Transportation Demand Management ("TDM"), if implemented strategically, can have a noticeable impact on reducing trips from a project. TDM is the application of strategies and policies to reduce Single Occupant Vehicle ("SOV") travel demand, or to redistribute this



demand in space or in time. By definition, TDM includes various strategies that produce a more efficient use of transportation resources and increase the efficiency of a transportation system.

TDM programs have many potential benefits. They can reduce the total number of vehicle miles traveled by promoting alternatives to driving alone. Fewer vehicle miles traveled results in less ozone pollution. TDM programs can be used by employers to reduce overhead costs, enhance productivity and reduce employee turnover. TDM programs can improve the use of public transit services, bikeways, sidewalks and carpool lanes by educating users about their travel options and coordinating trips between users with similar trip patterns. Implementing an effective TDM program can also reduce the required number of parking spaces for a project and/or eliminate the need to consider building costly multi-story parking structures. The following table summarizes some of the benefits that can be realized from an effective TDM program.

TABLE VI: BENEFITS OF TDM PROGRAMS

BENEFIT	DESCRIPTION
Congestion Reduction	Reduces traffic congestion delays and associated costs.
Road & Parking Savings	Reduces road and parking facility costs.
Consumer Savings	Helps consumers save money by reducing their need to own and operate motor vehicles.
Transport Choice	Improved travel options, particularly for non-drivers.
Road Safety	Reduced crash risk
Environmental	Reduced air, noise and water pollution, wildlife crashes and
Protection	other types of environmental damages.
Efficient Land Use	Supports strategic land use planning objectives, such as reduced sprawl, urban redevelopment and reduced habitat fragmentation.
Community Livability	Improved local environmental quality and community cohesion.
Economic development	Supports a community's economic objectives, such as increased productivity, employment, wealth, property values and tax revenues.
Physical Fitness and Health	Improved public fitness and health due to more physical activity, usually through increased daily walking and cycling.

The following TDM strategies are recommended for consideration in connection with the proposed mixed-use neighborhood:

- 1. Transit Coordination Coordinating transit routes and marketing the Sheridan Route 49 bus line will boost ridership through increased awareness coupled with improved service.
- 2. Route Expansion New expanded bus service through the Westwood project site provides an opportunity for greater mode choice resulting in trip and parking reductions.
- 3. Bus Stop Amenities A clean, well-lit, informative bus stop with shelters and seating greatly improves the image of the transit serving an area. Station amenities make taking the bus a comfortable experience, while proper maintenance tells people that transit makes up an important part of the neighborhood. New bus stops should have the following elements:
  - A level concrete pad, unobstructed by street furniture, landscaping, or signage



- Reliable pedestrian access with clear sidewalks providing direct access to the bus loading area
- Clear sight lines allowing travelers to see around the stop and drivers to see around corners to make turns
- Adequate lighting
- Pedestrian amenities such as a bench and trash receptacle
- Route, schedule and information
- Bicycle rack
- 4. **Employer Carpooling** carpooling can be encouraged by providing incentives and other services such as ridematching.
- 5. **Emergency Ride Home** In case of a personal emergency during the day, transportation is provided at no cost to one's vehicle, residence, or other place such as childcare, doctor's office, etc.
- 6. Preferential carpool/vanpool parking
- 7. **Transportation Alternatives Information** bus schedules and bike maps.
- 8. **Telecommuting and compressed work schedules** employee vehicle trips are reduced by the percentage of employees that telecommute, or have a "free" day gained through a compressed schedule, on an average day

These programs must be coupled with improvements in transit service, pedestrian and bicycle accommodations.

# XII. RESPONSES TO TRAFFIC RELATED COMMENTS OF THE TOWN OF AMHERST PLANNING DEPARMENT

As part of the coordinated environmental review of the original version of the DGEIS submitted on July 14, 2014, which included the Traffic Impact Study prepared by our firm dated April of 2014 that was included at Exhibit N of Volume III of the Appendices to the DGEIS, the Town of Amherst Planning Department ("Planning Department") issued a Memorandum on September 3, 2014 that contained comments to be included in the revised DGEIS. The purpose of this section of the updated TIS is to respond to the traffic related comments in the Planning Department's Memorandum. Section 4 of the Memorandum issued by the Planning Department on September 3, 2014 contained four transportation related comments that are each listed below in *italics* followed by our firm's responses.

 Some traffic data is 2-3 years old and should be updated. The lack of current data could be misleading.

Response: The traffic count data that was used in the preparation of the original TIS dated July of 2014 and this updated TIS is valid. Traffic data that is three years old or less is acceptable for the purpose of evaluating the potential traffic impacts of a proposed project, and has always been deemed valid by both the NYSDOT and Erie County Department of Public Works ("ECDPW"); the agencies with jurisdiction over State and Erie County Highways. It should be noted that there is a difference between AADT data and intersection turning movement counts. The AADT data contained in Section III was obtained via NYSDOT and GBNRTC, and was not developed as a result



of turning movement count data collected for the proposed mixed-use neighborhood. The reasons why the traffic data is valid includes the fact that there have not been any new roadways or highways constructed in the study area within the past few years. It is very common for traffic count data for large projects requiring the preparation of an Environmental Impact Statement to not have been obtained from a time period that is contemporaneous with the time period in which such a project is reviewed. Given that such large projects are often reviewed over a lengthy period and require revisions to reports and studies, it would be not practical for updated traffic count information to be obtained on numerous occasions during the review process so that all traffic count information would be one year old or less that time the environmental review pursuant to SEQRA has ended with the issuance of a Findings Statement by the lead agency.

• What assumptions were used to arrive at the multi-use trip reduction (11% and 29%)?

<u>Response:</u> The comment requests a description of our firm's basis for the multi-rip reduction rates used in the TIS. The multi-use trip reduction percentages used in our firm's comprehensive traffic analysis are based on accepted standards for evaluating mixed-use projects involving a mixture of land uses that are located on major roadways such as Sheridan Drive and Maple Road.

Inherent in the trip generation estimate for a proposed mixed-use project involving different categories of land uses, is the "multi-use" traffic component of traffic entering and exiting a project site. The Institute of Transportation Engineers, <u>Trip Generation Handbook</u>, 2001 states,

"...a multi-use development is typically a single real-estate project that consists of two or more ITE land use classifications between which trips can be made without using the off-site road system. Because of the nature of these land uses, the trip-making characteristics are interrelated, and some trips are made among the on-site uses. This capture of trips internal to the site has the net effect of reducing vehicle trip generation between the overall development site and the external street system (compared to the total number of trips generated by comparable, standalone sites)." "In some multi-use developments, these internal trips can be made by walking or by vehicles entirely on internal pathways or internal roadways without using streets external to the site."

The ITE Trip Generation Handbook indicates internal capture rates for trips within a multi-use development vary between office, residential, and retail uses during the AM and PM peak hours. Given the area in which the Project Site is located, the proposed office, residential, and retail components, and internal interconnections between the various land use categories, multi-use (or multiple purpose) total volume trips will occur. Therefore it is estimated, based on methods in the ITE Trip Generation Handbook that an approximate 8% and 36% reduction in total trip generation for the Project Site will occur during the AM and PM peak hours of analysis, respectively. The change in reduction percentages for both peak hours is a result of the mixture of land uses being proposed as depicted on the revised Preliminary Conceptual Master Plan. This trip adjustment is calculated based upon ITE standards for multi-use trip reductions based on the varying uses and interconnections within the mixed-use neighborhood. This multi-use trip projection adjustment was applied to the total site generated trips and subtracted from the traffic entering and exiting the site for the AM and PM peak period.



In addition, for certain types of projects and especially for mixed-use projects, the total number of trips generated is different from the amount of new traffic added to the adjacent highway network by the generator of the trips. Retail-oriented developments (such as convenience stores, gas stations, retail centers, discount stores, restaurants, and grocery stores) often locate adjacent to busy streets in order to attract the motorists already passing the site on the adjacent street. These sites attract a portion of their trips from traffic passing the site. The "pass-by" traffic refers to the amount of existing traffic already on the roadway adjacent to the site that, as it "passes by" the site, will enter the site driveways to patronize the project site.

The new public roadway that will connect Sheridan Drive and Maple Road will provide future users with very convenient internal access to the various on-site land uses. There is a well-recognized growing trend for both residential and commercial users to be highly interested in locating within mixed-use projects that provide a broad range of on-site amenities such as neighborhood businesses, office space, park areas and publicly accessible amenities, a mixture of residential land uses types, etc. and one of the reasons for this trend is that such project allows users to take advantage of on-site amenities without multiple stops and also by traveling on-site without by walking, bicycling, etc.

The combination of "multi-use" and "pass-by" trips has the net result of reducing the volume of new traffic that is added to the site driveways and/or adjacent roadways. In the case of the proposed mixed-use neighborhood, there will be both "multi-use" and "pass-by" trips associated with the various new land uses on the project site.

ITE data indicates that pass-by rates for shopping centers/retail uses can vary from 10% to as high as 80% during the PM peak hour (e.g. restaurants typically exhibit pass-by rates of 45% during the PM peak hour). Given the composition of the proposed land uses and location of the project site with frontage on both Sheridan Drive and Maple Road (both of which will consist of signalized intersections with the new north/south public roadway), a very conservative pass-by rate of 37% was used during the PM peak hour. In summary, it is our firm's professional opinion that the multi-use trip reduction rates of 8% and 36% are both conservative and appropriate.

 Plan will result in 5 traffic signals between Harlem & N. Forest — more discussion needed of interconnecting / synchronizing.

Response: The mixed-use neighborhood as depicted on the Conceptual Master Plan involves the installation of a new traffic signal at the intersection of the new internal north/south roadway connecting Sheridan Drive and Maple Road. The comprehensive traffic analysis completed by our firm indicated that the installation of a traffic signal at this location is an appropriate traffic related mitigation measure. The location of the roadway connection was selected so that it would align with Fenwick Drive. As a result of the proposed traffic signal at this intersection, there will be five traffic signals located on Sheridan Drive between Harlem Road and North Forest Road.

Our firm evaluated the coordination/synchronization of the proposed new traffic signal with the existing signals along Sheridan Drive between Harlem Road to North Forest Road. Currently, NYSDOT is advancing the Buffalo Niagara Regional Arterial Management System ("BNRAMS") traffic signal system coordination project for Sheridan Drive (NYS Rte 324) that includes the traffic signals recommended for coordination. Recent discussions with the Region 5 Traffic & Safety Division Traffic Operations



Engineer in charge of the proposed project indicated that if after review, NYSDOT deems a new signal is warranted and approved for installation, the new traffic signal will be coordinated with the existing Sheridan Drive signals. According to the Traffic Operations Engineer, it is customary procedure for NYSDOT to optimize the timing of a new traffic signal in with the coordination of the existing arterial signals. As part of this BNRAMS project, NYSDOT has scheduled new traffic data collection for the Spring of 2015. It is anticipated that NYSDOT, along with its traffic signal system consultants, will install, refine, and implement the new signal timings and coordination settings in 2015. The signals will be programmed to provide optimum traffic progression along Sheridan Drive. Our firm will work with NYSDOT once it has collected data to be used in connection with the traffic signal system coordination project for Sheridan Drive and the new signal will be designed to be consistent with any modifications to signal timing for the signalized intersections in the relevant segment of Sheridan Drive.

• Discuss how transit can be integrated and accommodated within the development, not just along surrounding arterials

Response: As discussed above in Section XI of this updated TIS, Transportation Demand Management ("TDM") measures, if implemented strategically, can have a noticeable impact on reducing trips from a project. TDM is the application of strategies and policies to reduce Single Occupant Vehicle ("SOV") travel demand, or to redistribute this demand in space or in time. By definition, TDM includes various strategies that produce a more efficient use of transportation resources and increase the efficiency of a transportation system. One such area where TDM strategies can be beneficial is the coordination with the local transit agency - in this case, the Niagara Frontier Transportation Authority ("NFTA"). The Project Sponsor is proposing an integrated transit stop on the first floor of the proposed hotel, and we concur with this location since it will be at the center of more dense part of the mixed-use project with easy access to neighborhood businesses, restaurants, multi-family uses and publicly accessible amenities.

Our firm has recommended the following transit-oriented TDM strategies for consideration in connection with the proposed mixed-use project depicted on the Conceptual Master Plan:

- I. **Transit Coordination** Coordinating transit routes and marketing the Sheridan Route 49 bus line will boost ridership through increased awareness coupled with improved service.
- 2. **Route Expansion** New expanded bus service through the Westwood project site will provide an opportunity for greater mode choice resulting in trip and parking reductions.
- 3. **Bus Stop Amenities** A clean, well-lit, informative bus stop with shelters and seating greatly improves the image of the transit serving an area. Station amenities make taking the bus a comfortable experience, while proper maintenance tells people that transit makes up an important part of the neighborhood. New bus stops should have the following elements:
  - A level concrete pad, unobstructed by street furniture, landscaping, or signage



- Reliable pedestrian access with clear sidewalks providing direct access to the bus loading area
- Clear sight lines allowing travelers to see around the stop and drivers to see around corners to make turns
- Adequate lighting
- Pedestrian amenities such as a bench and trash receptacle
- Route, schedule and information
- Bicycle racks

The Project Sponsor has met with representatives of the NFTA and discussed the opportunity to extend the existing #49 Millard Suburban public bus route into the Project Site. The NFTA has confirmed that they are interested in working with the Town and Project Sponsor to incorporate measures that will promote public transportation, since providing convenient access to the project site and its amenities via public transportation will make the various land use components more successful and reduce traffic impacts and the demand for parking spaces. The previous TDM strategies outline a scope for continued discussions with NFTA on transit inclusion into the mixed-use project. The Project Sponsor will continue to coordinate with the NFTA on programming a transit stop within the neighborhood center portion of the project as the review and design process for the proposed mixed-use neighborhood moves forward.

### XIII. ALTERNATIVE PLAN EVALUATION

Seven alternative concept plans were evaluated, in addition to the preferred Conceptual Master Plan, as part of our firm's analysis of potential traffic impacts. The alternative plans were evaluated to provide information to allow a comparison of the potential traffic impacts associated with the alternative layouts and the preferred Conceptual Master Plan in connection with the review of the revised DGEIS. This report uses the project layout as depicted on the Conceptual Master Plan as the basis for analysis. A comparison of the alternative concept plans and their related trip generation estimates are depicted in **Table VII**.



## TABLE VII: TRIP GENERATION COMPARISON FOR ALTERNATIVE SITE PLANS

DESCRIPTION		PEAK	PM PEAK		
BESCRIP HON	ENTER	EXIT	ENTER	EXIT	
Alternative Plan No. I Recreation Conservation ("RC") Plan	113	93	253	190	
Alternative Plan No. 2 Community Facility ("CF") Plan	95	108	142	150	
Alternative Plan No. 3 Residential Three ("R-3") Plan	60	180	188	111	
Alternative Plan No. 4 Transitional Residential ("TND") Plan	432	488	703	712	
Alternative Plan No. 5 General Business ("GB") Plan	272	297	994	961	
Alternative Plan No. 6 Office Building ("OB") Plan	945	193	157	890	
Alternative Plan No. 7 Alternative Access Plan	499	446	656	745	
Preliminary Conceptual Master Plan	534	470	762	865	

The following is a brief description of the potential traffic impacts and site planning considerations associated with each of the Alternative Concept Plans. Included is an evaluation of the traffic impacts compared against the Preferred Plan:

### • Alternative Plan No. I - Recreation Conservation ("RC") Plan

Within the RC Plan, the Project Sponsor considered incorporating additional RC zoning district uses that would expand upon the previous recreational and civic utilization of the project site. These uses include indoor and outdoor recreational fields, a reformatted 9-hole golf course, and a place of worship. The existing Westwood Country Club clubhouse would remain and be utilized in connection with the 9-hole golf course. In terms of roadway improvements associated with Alternative Plan No. I, a new private roadway would be constructed and connect at an unsignalized intersection at Maple Road, extending approximately 0.5 miles (2,640 feet) into the project site. Given the very low density associated with the RC Plan, this plan provides for reduced traffic impacts in terms of overall vehicle trip generation when compared to the Preferred Plan. Additionally, a greater proportion of the peak vehicle trip generation associated with this concept plan would occur during weekends; off-peak time periods of the surrounding roadway network. However, it is important to note that pursuant to Section 7-6-7(C) of the Town of Amherst Zoning Code, the maximum length of any private or public street cannot exceed 800 feet in length without a secondary means of access to a public roadway. Therefore, this Alternative Plan would require an area variance for a roadway with a length greater than 800 feet without a second means of access to a public roadway. Additionally, the development of the project site pursuant to the RC Plan would not provide for the construction of the proposed new north/south public roadway connecting Sheridan Drive and Maple Road. This public north/south roadway will be constructed in connection with the redevelopment of the project site as a mixed use neighborhood pursuant to the Preferred Plan. As such the RC Plan would not provide the opportunity to potentially reduce traffic volumes on North Forest Road during weekday peak travel periods.



### • Alternative Plan No. 2- Community Facility ("CF") Plan

The CF Alternative Plan includes various types of senior residential living units and a cemetery. In terms of total traffic impacts, since the ITE trip generation rate for senior living units during peak travel periods is low, as compared to most of other ITE land use categories, this development of the project site pursuant to the CF Plan would produce the least amount of traffic impacts when compared to the Preferred Plan and the other alternatives. Additionally, the cemetery would occupy a fairly sizeable area; however, it produces low traffic volumes during peak travel periods. This Alternative Plan would include the construction of a new north/south public roadway connecting Sheridan Drive and Maple Road. However, when considering total vehicle trip generation, it is highly unlikely that signalized intersection warrants would be met at either the intersection of the new roadway with Sheridan Drive or Maple Road. Therefore the CF Plan includes consideration for a connection to Frankhauser Road. This connection would provide the project residents with direct access to the signalized intersection at Sheridan Drive and Frankhauser Road in order to enter and exit the project site.

### • Alternative Plan No. 3- Residential Three ("R-3") Plan

In planning the R-3 Plan, the Project Sponsor considered the surrounding single family housing pattern and developed a plan that would expand upon the existing land uses surrounding a majority of the project site. The R-3 Plan consists of the development of the project site exclusively as a residential subdivision comprised of 320 lots for singlefamily homes. Considering the relatively low density associated with residential subdivision for single family housing, the development of the project site pursuant to the R-3 Plan would result in substantially less total vehicular trips compared to the Preferred Plan. As with the CF Plan, while the R-3 Plan would provide for a new north/south public roadway, it is unlikely that the signalized intersection warrants would be met given the total anticipated vehicle trip generation. Therefore, the R-3 plan also includes consideration for a connection to Frankhauser Road, providing project residents with direct access to the signalized intersection at Sheridan Drive and Frankhauser Road in order to enter and exit the project site. When considering impacts to adjacent intersections, it is preferable to develop sites with balanced entrance and exit trips during peak travel periods. By avoiding unbalanced entering and exiting trip generation, the development of a project site prevents a condition where specific functions, movements and turns at a given intersection are "overloaded" as the majority of total vehicle trips during peak travel periods are focused on either entering or exiting the site. As the R-3 Plan is based on a single land use (residential single family homes), the exit trip generation in the AM peak hour is three times that of the enter trip generation (typically associated with the morning commute to work) while the enter trip generation during the PM peak hour is nearly twice that of the exit trip generation (typically associated with the evening commute to home).

### • Alternative Plan No. 4- Transitional Residential ("TND") Plan

Within their Memorandum regarding the initial Draft Generic Environmental Impact Statement ("DGEIS"), the Town of Amherst Planning Department provided several comments for consideration and inclusion in the revised DGEIS. One request within the Memorandum concerned the creation of an additional Alternative Plan that would be focused around a lower density residential development model with a more transitional neighborhood scale commercial component. In response to this request, the Project Sponsor developed Alternative Plan No. 4, which is modeled off of the Preferred Plan, but expands the lower density single family housing components while reducing the commercial and office space portions. By reducing the concentration of anticipated



entrance vehicle trips in the morning through the reduction of the total office space, there is a decrease in the combined AM peak hour trip generation by approximately 8%, or 84 trips. Conversely, for the PM peak hour, the reduction of total office space lessens exit trips while the reduction of commercial space lowers entrance trips and results in a decrease in the combined PM peak hour trip generation by a factor of approximately 11%, or 170 trips. While this plan provides for less impact in terms of total vehicle trip generation and may lessen the load on capacity of existing intersections when compared to the Preferred Plan, it also results in fewer opportunities for shared parking and maximum efficiency within parking fields as a greater proportion of the overall project site is focused on residential development.

### • Alternative Plan No. 5- General Business ("GB") Plan

Alternative Plan No. 5 represents a mixed-use development approach but provides for a more focused retail and commercial components. Compared to the Preferred Plan with 115,000 square feet of neighborhood business and office space, the GB Plan includes approximately 435,000 square feet of general retail space structured as a typical plaza style shopping center. The retail component is balanced with a mixture of student and general multi-family housing. To support closer proximity to the University at Buffalo, the student housing has been positioned closest to Maple Road and would in all likelihood, result in the consideration of a student shuttle service to and from the UB North Campus. Conversely, to provide access to the highest capacity road network and maintain closest proximity to the I-290, the retail component is positioned along Sheridan Drive. While this GB Plan provides for fairly evenly balanced enter and exit trips during the AM and PM peak hours, given the retail component and multifamily housing, this plan is the highest vehicle trip generator during the PM peak hour, resulting in nearly 2,000 combined trips. This focused trip generation during the PM peak hour would necessitate consideration of roadway connections to North Forest Road and Frankhauser Road in an effort to maximize site access and trip distribution options during the weekday PM peak hour travel period. Additionally, the shopping center development approach leads to large parking fields that would likely be underutilized, except during short peak demand period for retail uses and does not support a shared parking environment to maximize the efficient use of impervious paved surfaces.

### • Alternative Plan No. 6- Office Building ("OB") Plan

Alternative Plan No. 6 consists of the development of the project site as a large office park. As with similar existing office parks, the project site would be oriented around the new north/south public roadway designed as a corporate parkway. In total, approximately 1.25 million square feet of office/research & development space would be provided. Considering the concentration of AM peak hour trips associated with the morning commute to work, this plan generates the largest volume of trips during the AM peak hour. This plan also provides the most disproportionate AM and PM peak hour trip generation in terms of entering and exiting conditions, with the AM peak hour having five times more trips entering the site than exiting and the PM peak hour having five times more trips exiting the site than entering. This condition is similar to the scenario presented in Alternative Plan No. 3, only on a much greater scale. Also similar to other alternative plans, the OB Plan total vehicle trip generation would warrant the need to consider roadway connections to North Forest Road and Frankhauser Road to maximize opportunities for access options and trip distribution during peak travel periods. Finally, the OB Plan provides for the most inefficient utilization of parking areas and impervious surfaces. The parking fields would be utilized heavily throughout the



typical weekday eight hour work day but would be utilized far less during the remaining 16 hours of the day and would be utilized very little during weekends and holidays.

### • Alternative Plan No. 7- Alternative Access Plan

The Alternative Access Plan is modeled exactly as the Preferred Plan except that roadway connections are also provided connecting to North Forest Road and Frankhauser Road. The intent of this effort was to analyze and directly compare both approaches, including connections to adjacent residential roadways and excluding connections to adjacent residential roadways. The capacity analysis results can be found in the Appendix. Based on the capacity analysis results for the Alternative Access Plan, there are improved level of service conditions and delays at the Sheridan Drive/Fenwick Road/Proposed Driveway intersection. Delays increase for the eastbound left and southbound right approaches at the Sheridan Drive/Frankhauser Road intersection during both peak hours. At the intersection of Sheridan Drive/North Forest Road, the southbound left approach is projected to decrease in level of service during the PM peak hour.

Providing ingress and egress points onto Frankhauser Road and North Forest Road would offer the users of the site, and the public travelling through the site utilizing the proposed north/south public roadway, more options for accessibility. The additional access points helps to redistribute traffic volumes, lessening the potential impacts at the Preferred Plan's proposed access points. However, southbound queues along North Forest Road currently extend beyond the proposed connection point, as developed for the Alternative Access Plan, and would likely impact the ability for motorists to enter and exit the site at this point. Additionally, the access point onto Frankhauser Road could result in increased traffic volumes onto the residential-oriented streets adjacent the western side of the project site, which would not be reviewed favorably by existing residents.

### XIV. CONCLUSIONS & RECOMMENDATIONS

This updated Traffic Impact Study identifies and evaluates the potential traffic impacts resulting from full build-out of the proposed mixed-use neighborhood. This updated Traffic Impact Study provides the Amherst Town Board, in its capacity as the designated lead agency for the coordinated environmental review of the proposed mixed-use redevelopment project pursuant to SEQRA, along with involved and interested agencies including the NYSDOT and Erie County Department of Public Works, with information to allow a hard look to be taken at identified potential traffic impacts. Based upon the comprehensive analysis contained in this report, it is our firm's professional opinion that the results indicate that the proposed mixed-use neighborhood can be accommodated by the existing roadway network with the recommendations below being in place. The following sets forth our firm's conclusions and recommendations based upon the results of the comprehensive traffic analyses that have been conducted:

- 1. The proposed mixed-use neighborhood is expected to generate approximately 920 (896) new trips during the AM (PM) peak hours respectively.
- 2. A left-turn lane warrant investigation was conducted along Maple Road and Sheridan Drive at the proposed driveways. However, two-way left-turn facilities already exist at the location of the proposed access roads. The two-way left-turn lanes should be



restriped to accommodate dedicated left-turn lanes entering the proposed driveway along Maple Road and the existing Sheridan Drive/Fenwick Road intersection.

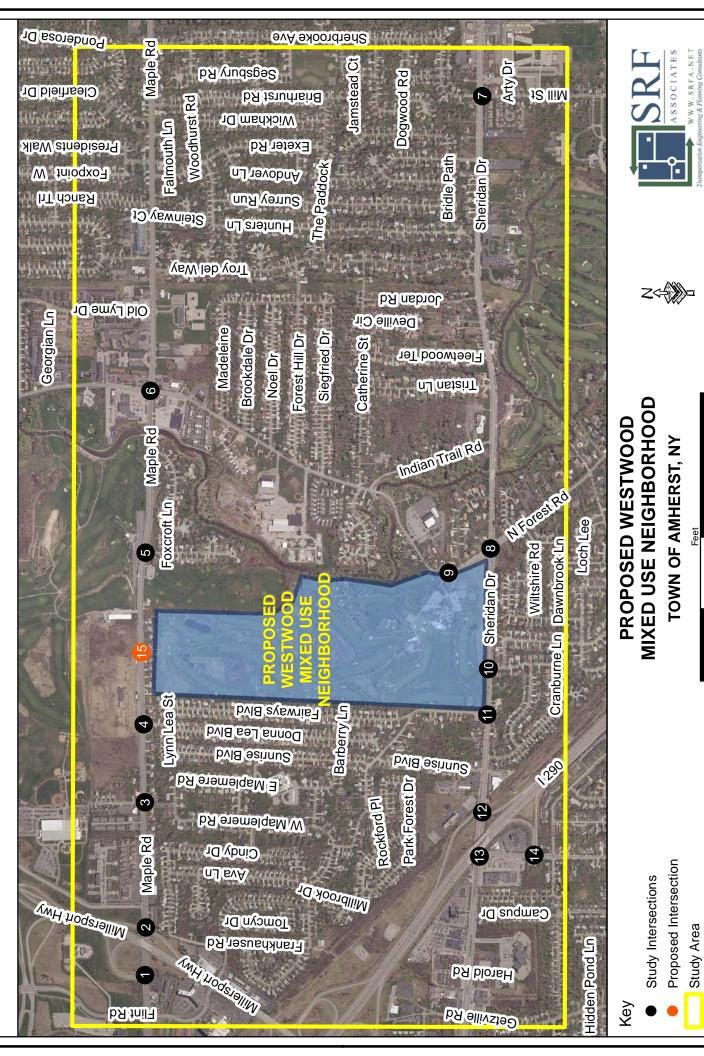
- 3. A right-turn lane investigation was conducted along Maple Road and Sheridan Drive at the proposed driveway locations. While the future volumes satisfy the right-turn lane guidelines at the intersection of Maple Road and the proposed driveway under full development during the AM and PM peak hours, no improvement is recommended given the location of adjacent residential properties. Right-turn guidelines were satisfied during both peak hours at the intersection of Sheridan Drive/Fenwick Road/Proposed Driveway. The right turn lane should provide 425' of storage space with a 75' taper.
- 4. Install a new traffic signal at the proposed public roadway on Sheridan Drive when the driveway is constructed. The new traffic signal should be coordinated with the existing traffic signal network along Sheridan Drive to the west of the project site.
- 5. Install a new traffic signal at the proposed public roadway connection on Maple Road when the new roadway is constructed.
- 6. The proposed new north south public roadway connecting Sheridan Drive and Maple Road should be designed to provide two lanes of exiting traffic and two lanes of entering traffic to both facilitate traffic movements and to achieve the desired alignment with the existing Fenwick Road. The throat length of the driveway should be designed to accommodate vehicle queues exiting the site and reduce vehicle blockages of internal circulation roadways; therefore a minimum uninterrupted throat length of 200' is recommended.
- 7. Internal sidewalks should form an inter-connected pedestrian network allowing users to actively walk amongst the various land use components to be included in the mixed-use neighborhood. Additionally, internal paved recreational paths should be designed and installed to encourage bicycle use.
- 8. The southern portion of the mixed-use neighborhood as depicted on the Conceptual Master Plan consists of the commercial and office components, higher density residential units, and the hotel component. This portion of the Project Site should incorporate bicycle parking and related facilities into the design. Such facilities should include bicycle racks and consideration should be given to including bicycle lockers, as well as providing shower and changing facilities within the proposed buildings.
- 9. Transportation demand management ("TDM") strategies should be considered and implemented, when practical, to reduce off-site vehicular trips.
- 10. Consideration should be given to reducing the number of parking spaces constructed on-site given the mixed-use nature of the proposed neighborhood, potential for non-vehicular trips, and the potential for shared parking between different categories of land uses with differing peak parking demands. The use of shared parking reduces the amount of impervious surfaces and prevent parking areas from having more parking spaces than needed to service a project with a mixture of land uses with differing peak parking demands.

### XV. FIGURES

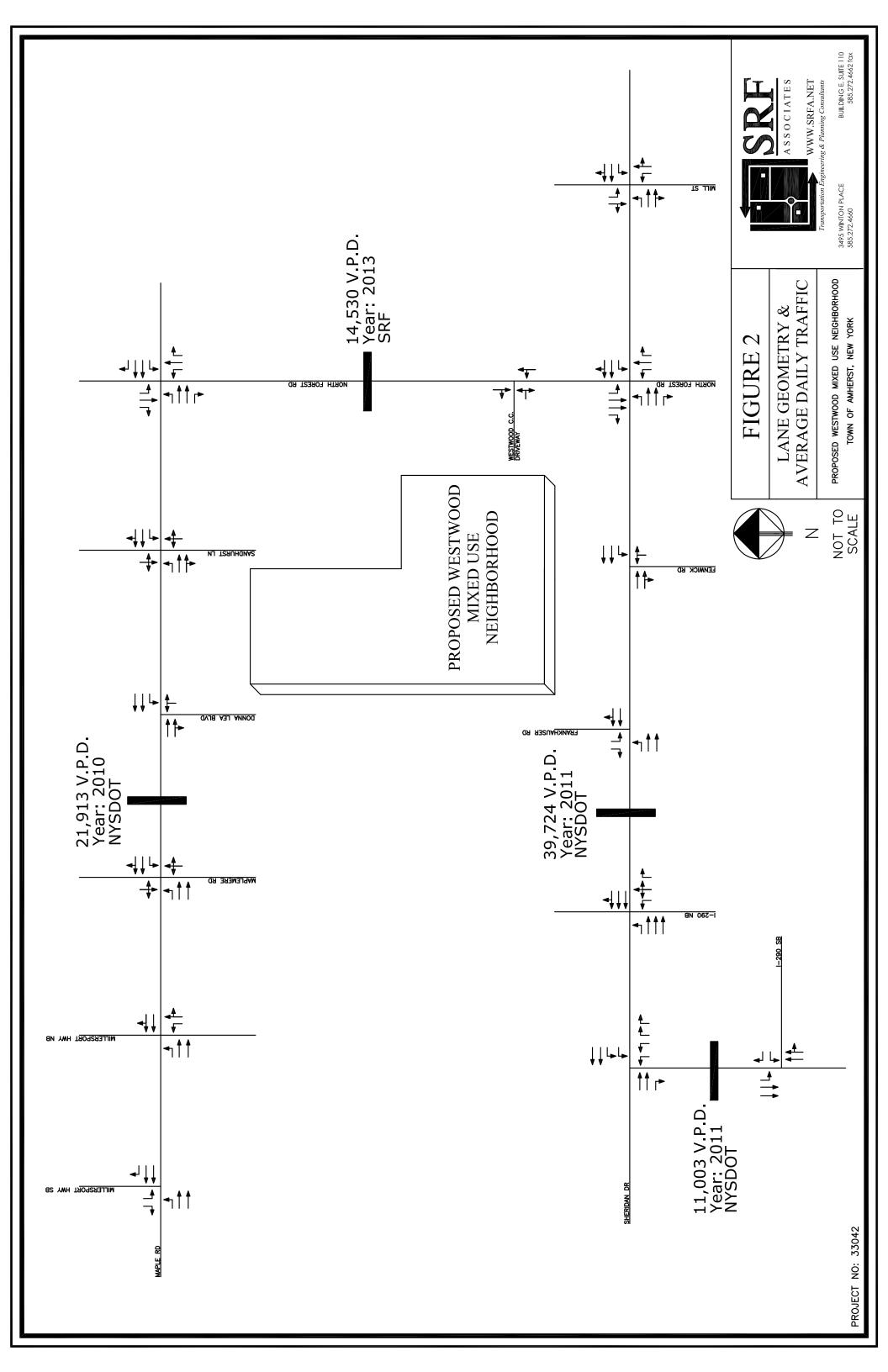
Figures 1 through 8 are included on the following pages.

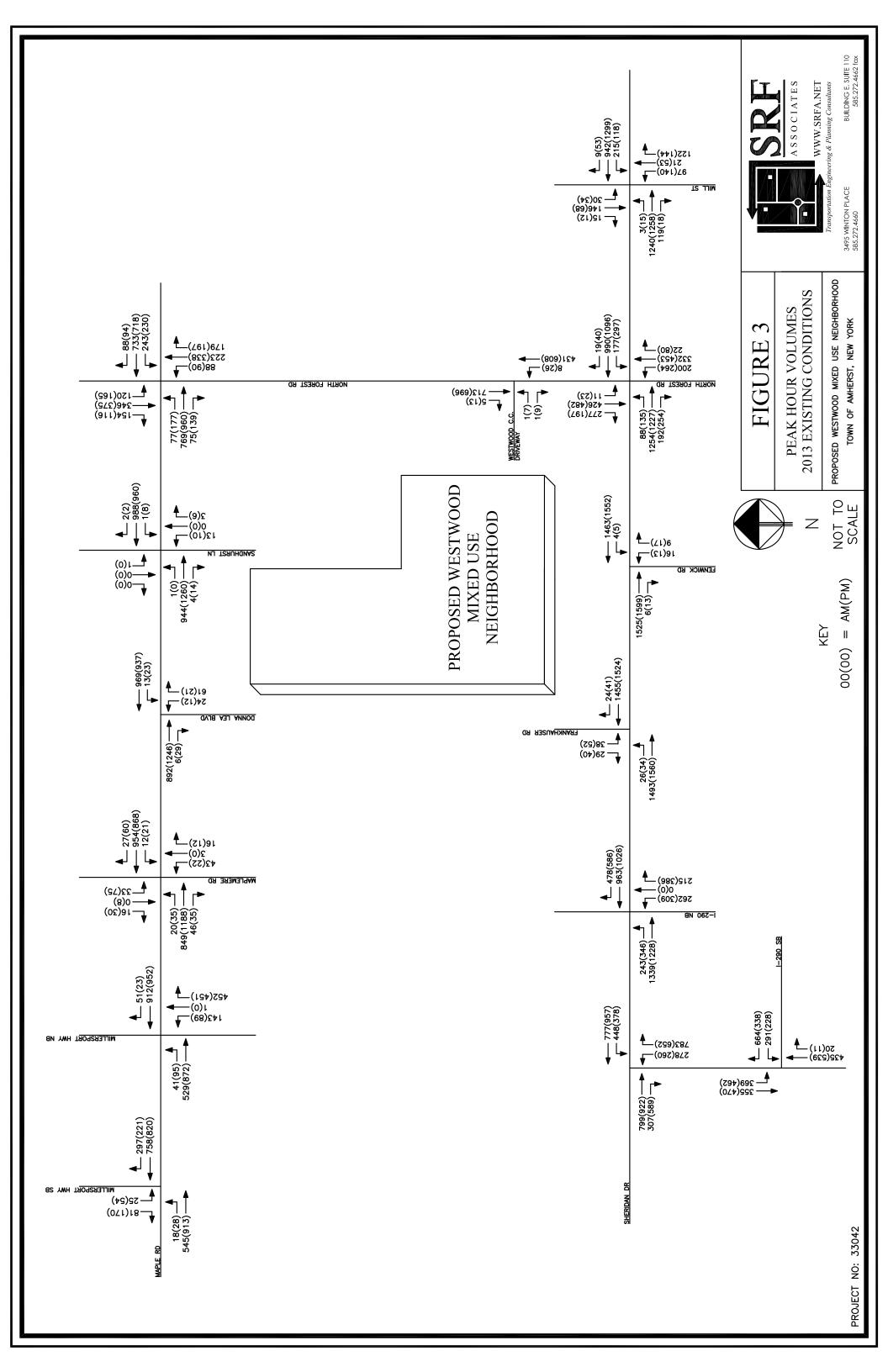


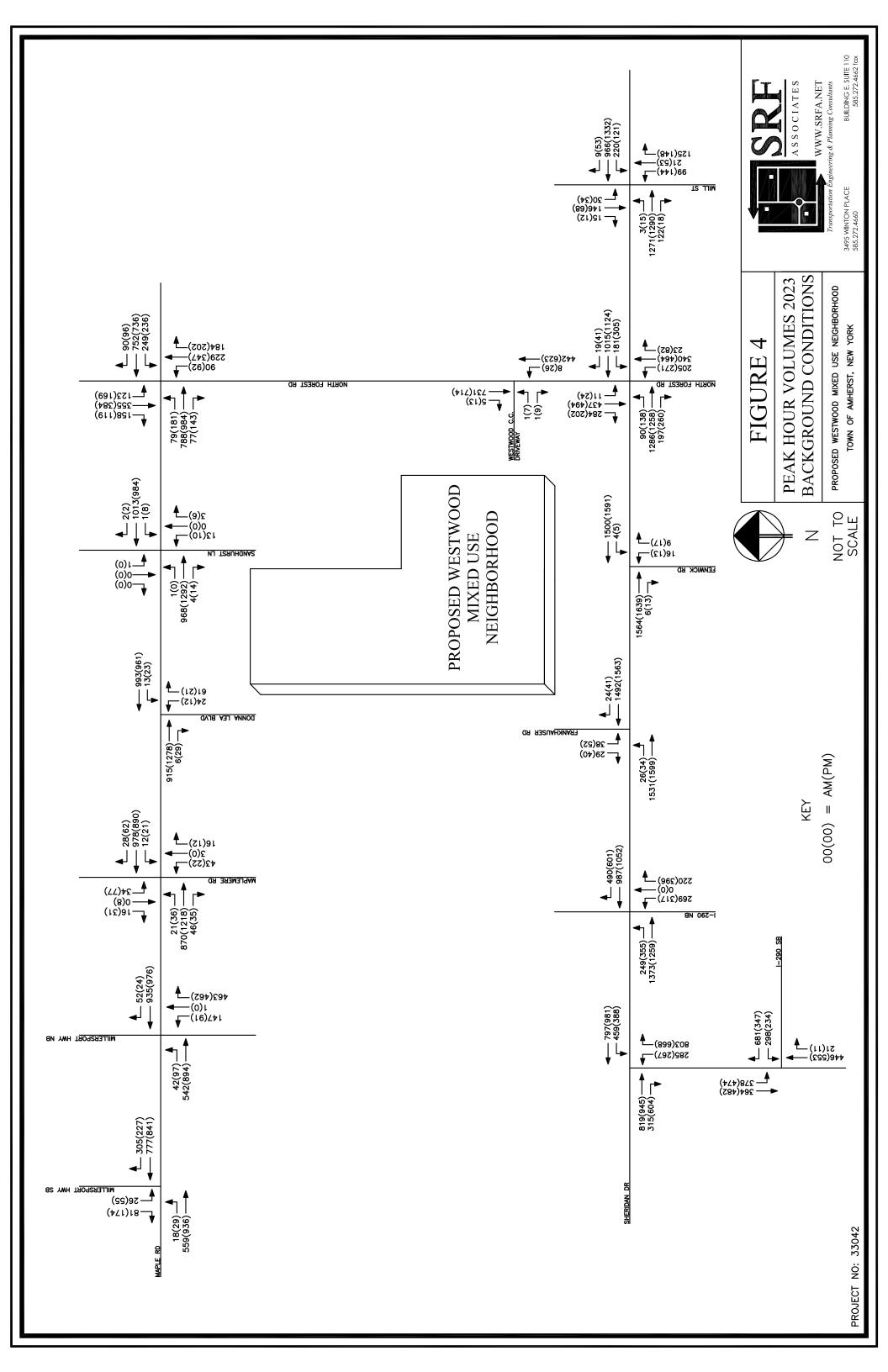
# **FIGURE 1 - SITE LOCATION AND STUDY AREA**



Site Location

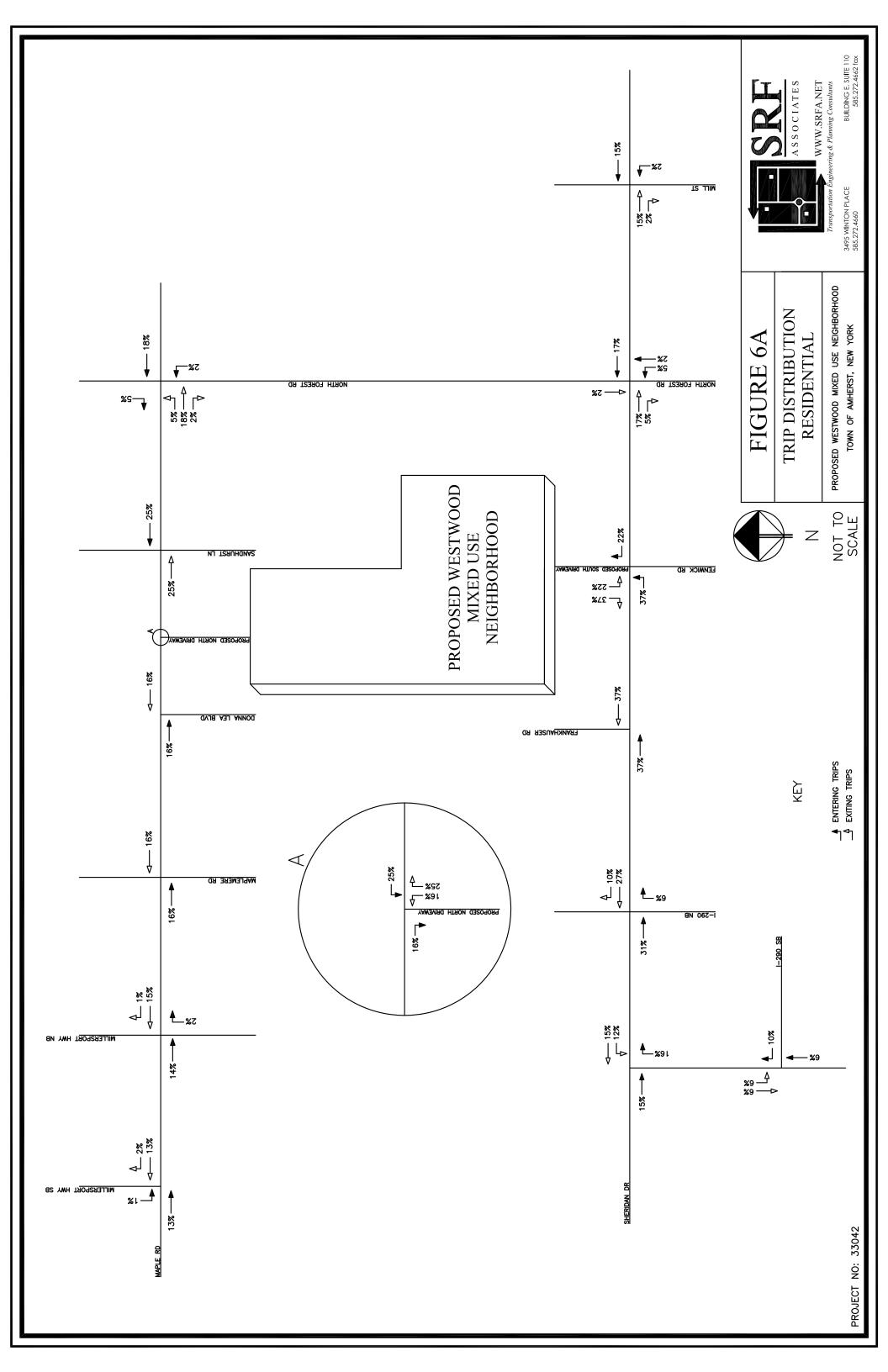


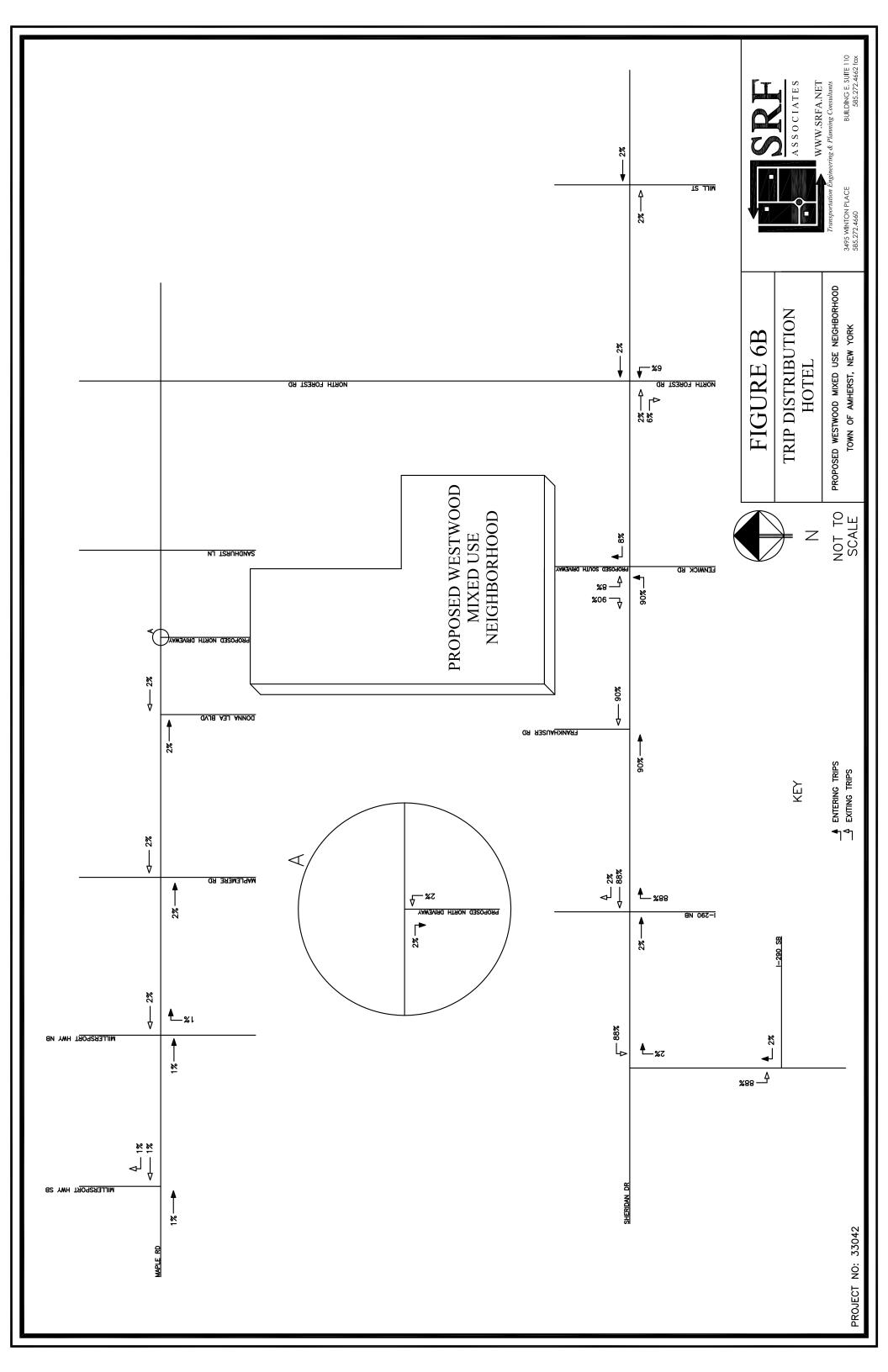


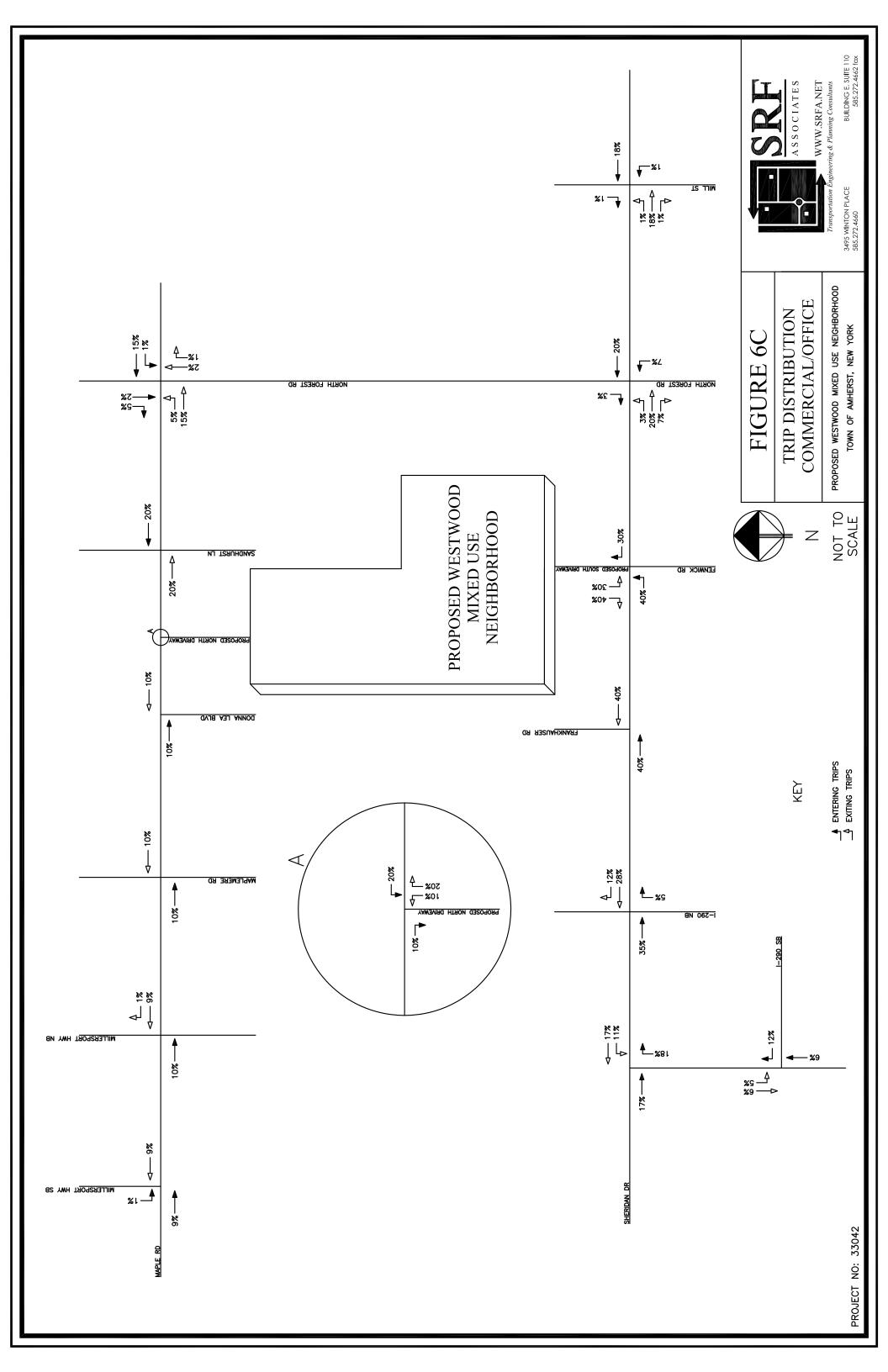


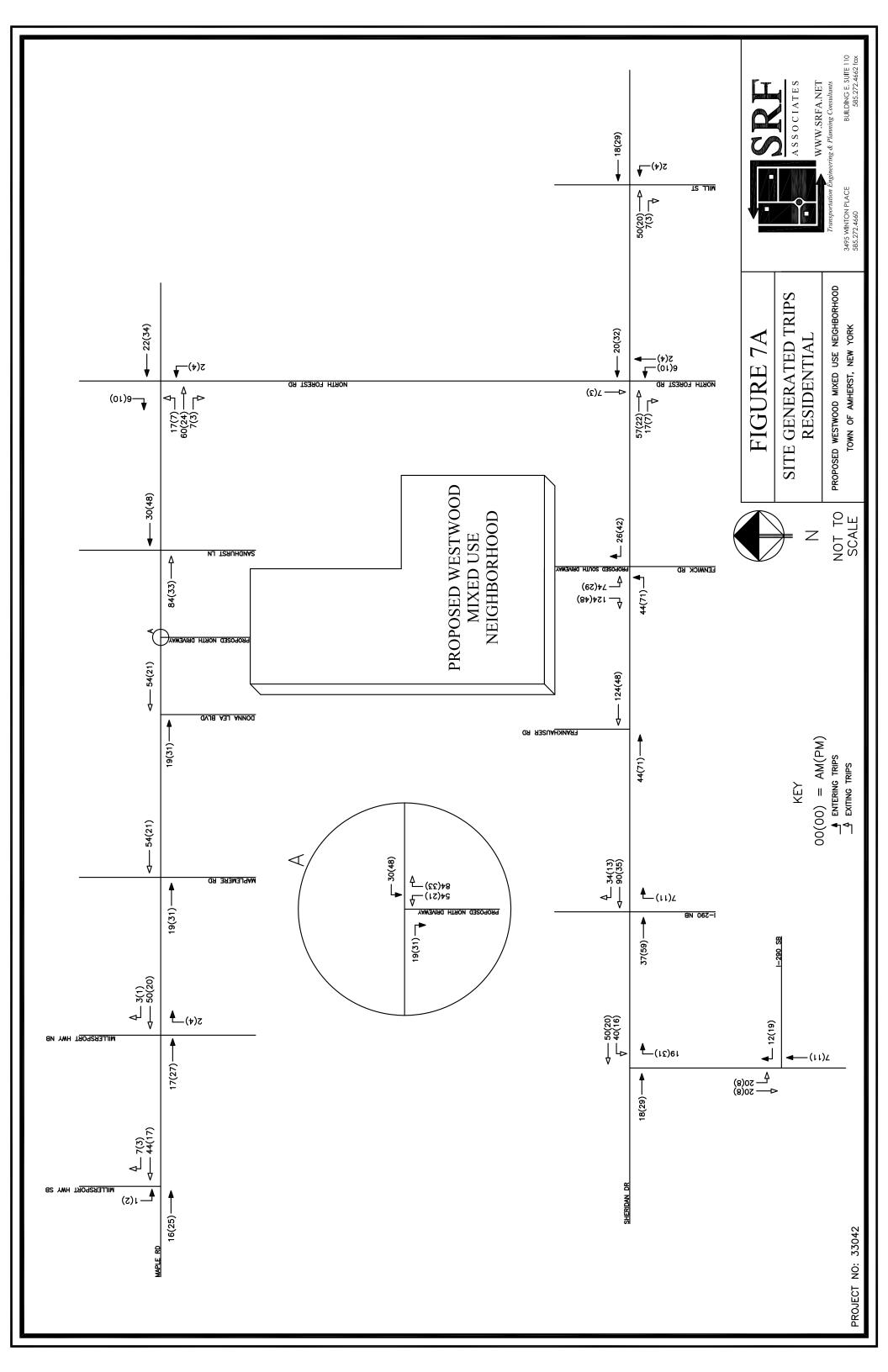
# FIGURE 5 - CONCEPTUAL MASTER PLAN

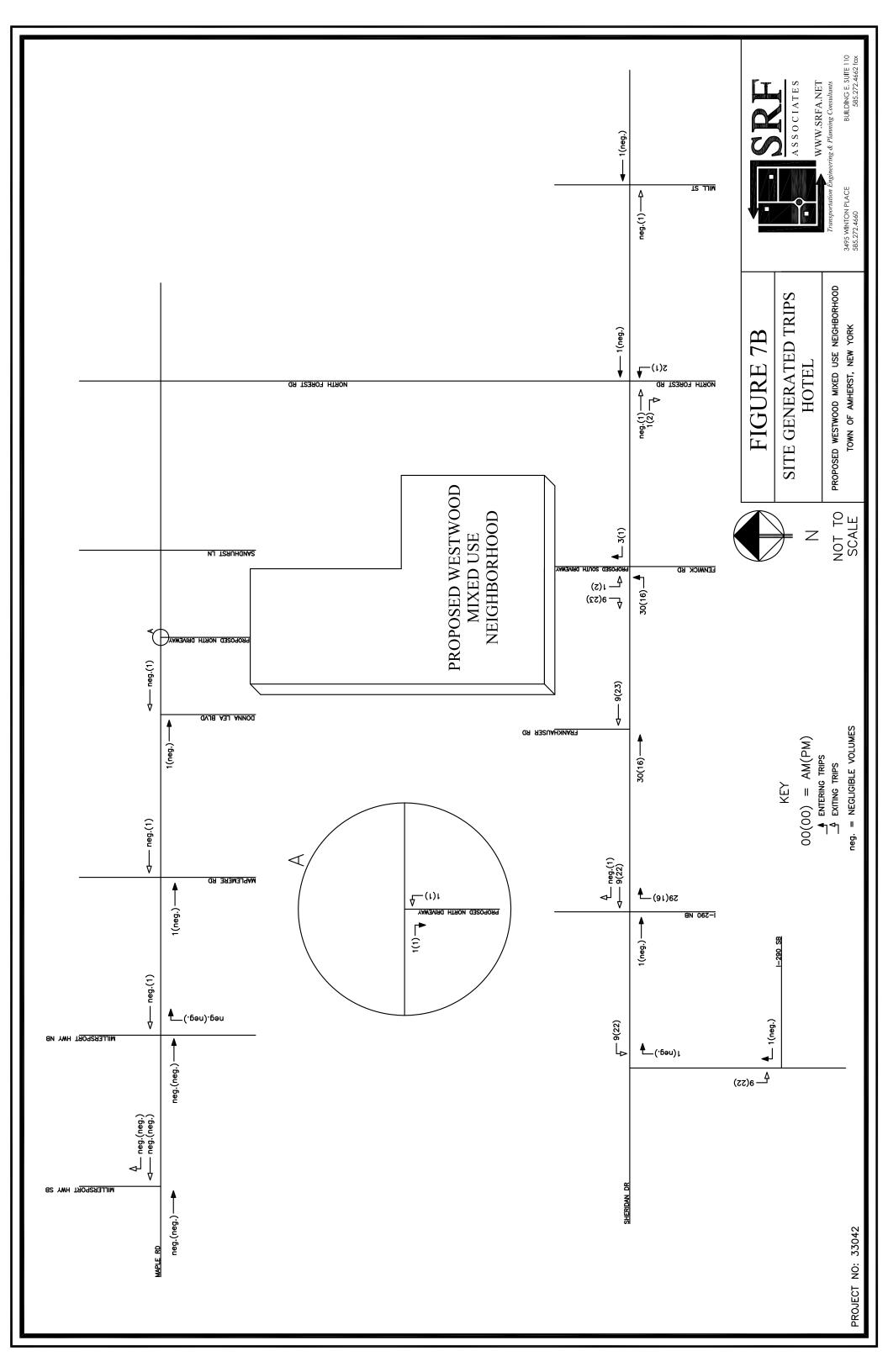


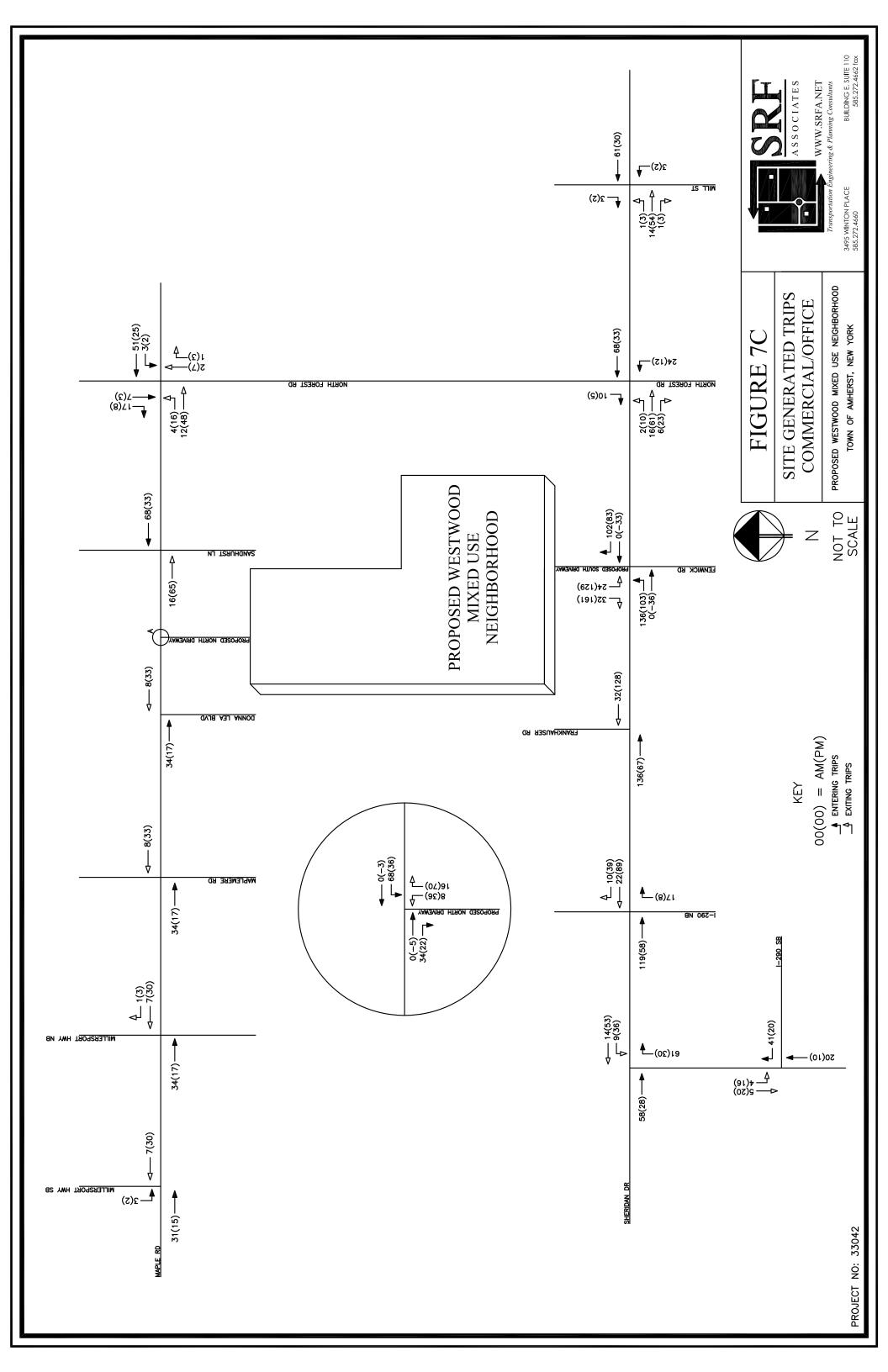


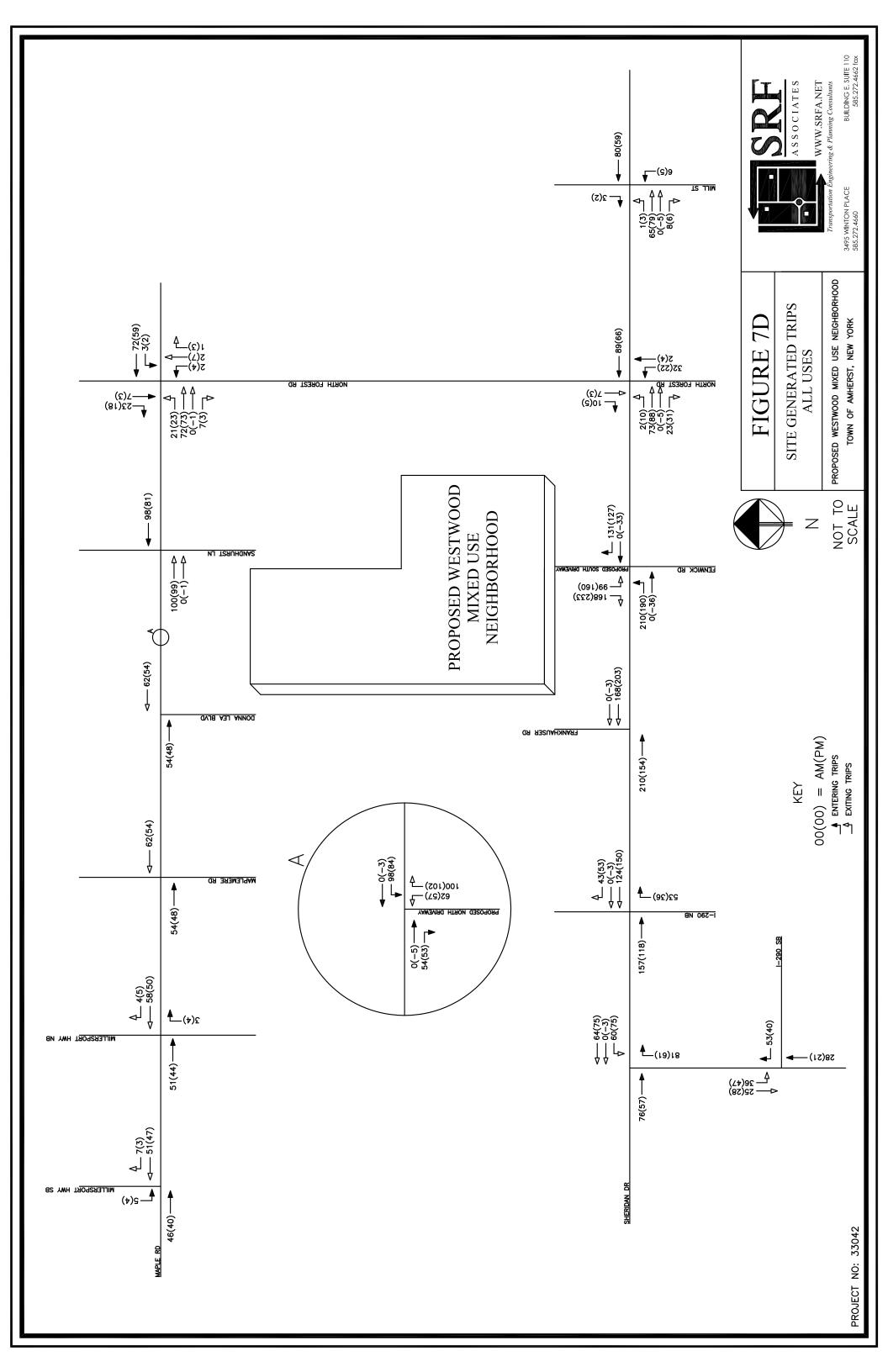


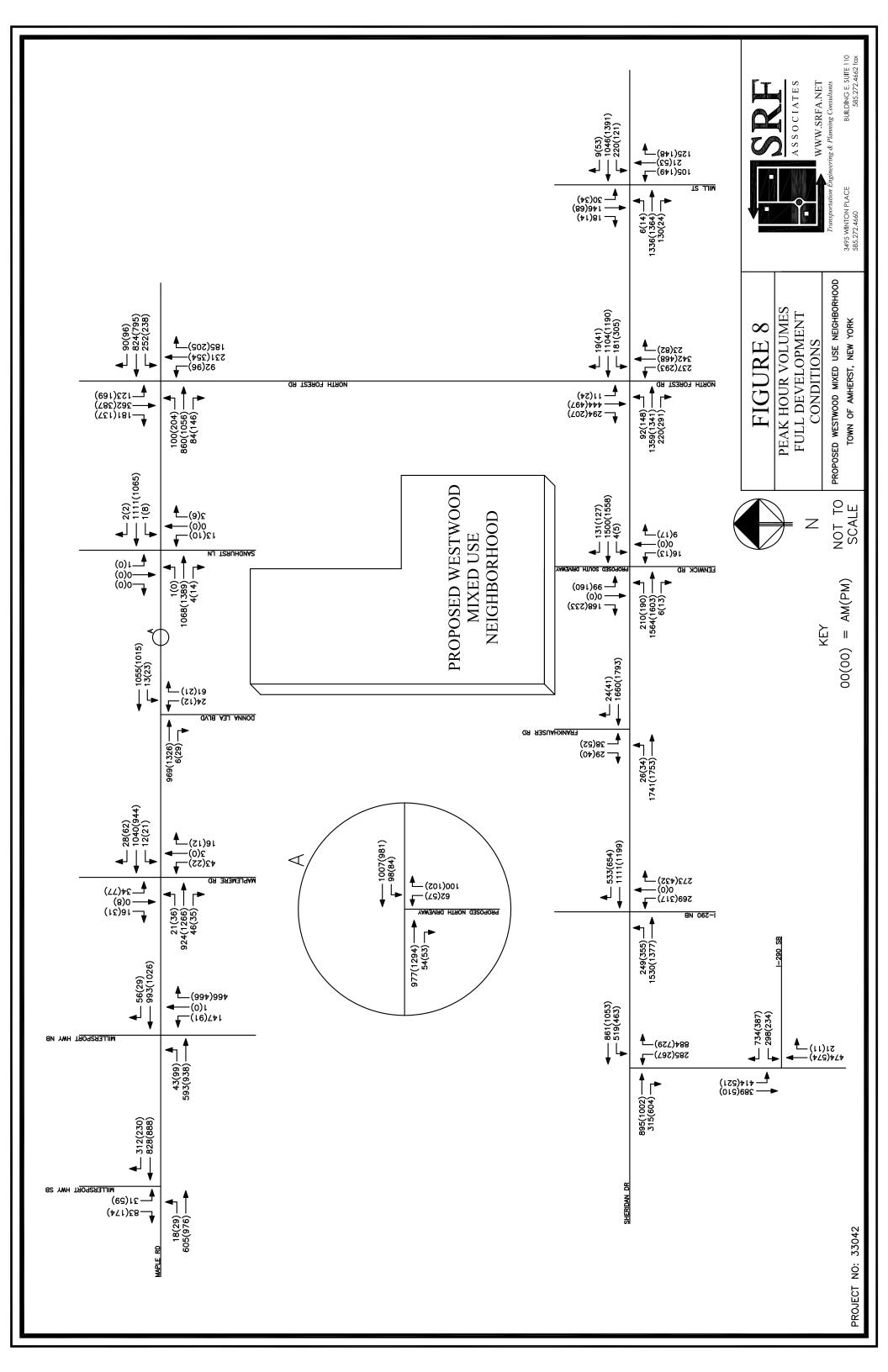












#### **APPENDICES**

#### **A1**

#### **Collected Traffic Volume Data**

3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

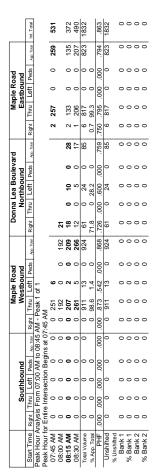


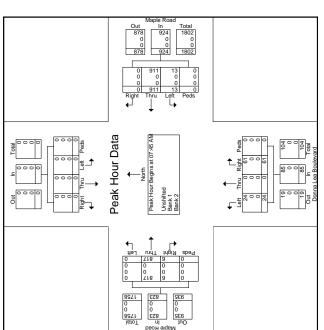
File Name: Maple.DonnaLea.AM.Peak Site Code: 22222222 Start Date: 9/12/2013 Page No: 1

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## SRF & Associates

3495 Winton Place, Building E, Suite 110 Rochester, NY 14623 File Name : Maple DonnaLea. AM. Peak Site Code : 22222222 Start Date : 9/12/2013 Page No : 2





3495 Winton Place, Building E, Suite 110 Rochester, NY 14623



File Name: Maple.DonnaLea.PM.Peak Site Code: 11111111 Start Date: 9/11/2013 Page No: 1

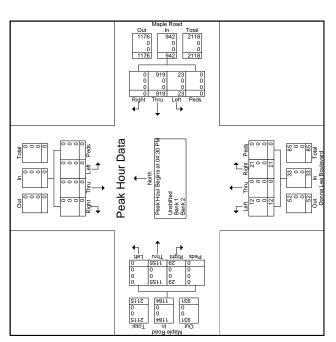
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### SRF & Associates

3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name: Maple.DonnaLea.PM.Peak Site Code: 111111111 Start Date: 9/11/2013 Page No: 2

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3495 Winton Place, Building E, Suite 110 Rochester, NY 14623



File Name: Harlem.I290SB.AM.Peak
Site Code: 11111111
Start Date: 9/12/2013
Page No: 1
Bank 2

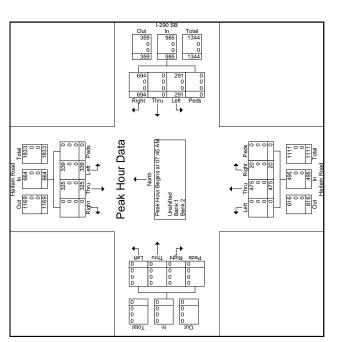
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25			Right	107	157	176	200	640	163	173	158	145	639	1279	69	31.2	1279	100	0	0	0	
			Peds	-	0	0	0	-	0	0	0	0	0	_	0.1	0	-	100	0	0	0	
	Road	puno	Left	26	134	82	72	388	98	75	106	69	336	724	53.9	17.7	724	100	0	0	0	
	Harlem Road	Southbound	Thru	23	8	107	11	321	92	73	83	47	295	616	45.8	15	616	100	0	0	0	
			Right	0	0	က	0	3	0	0	0	0	0	က	0.5	0.1	က	100	0	0	0	
			Start Time	07:00 AM	07:15 AM	07:30 AM	07:45 AM	Total	08:00 AM	08:15 AM	08:30 AM	08:45 AM	Total	Grand Total	Apprch %	Total %	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	

### **SRF & Associates**

3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name: Harlem.1290SB.AM.Peak Site Code: 11111111 Start Date: 9/12/2013 Page No: 2

		_	1			_			١.		i _	١.		_	_	_	_
		Int. Total			226	577	202	504	2144		.929	2144		0	0	0	0
		App. Total			0	0	0	0	0		000	0		0	0	0	0
	힏	Peds			0	0	0	0	0	0	000	0		0	0	0	0
	Eastbound	Left			0	0	0	0	0	0	000	0		0	0	0	0
	Ē	Thru			0	0	0	0	0	0	000	0		0	0	0	0
		Right			0	0	0	0	0	0	000	0		0	0	0	0
		App. Total			103	142	137	113	495		.871	495		0	0	0	0
paq	힏	Peds			0	0	0	0	0	0	000	0		0	0	0	0
Harlem Road	Northbound	Left			0	0	0	0	0	0	000	0		0	0	0	0
Harl	Š	Thru			103	134	132	106	475	96	988	475		0	0	0	0
		Right			0	œ	2	7	20	4	.625	20		0	0	0	0
		App. Total			304	257	222	202	982		.810	982		0	0	0	0
m	덛	Peds				0	0	0	0	0	000	0		0	0	0	0
I-290 SB	Westbound	Left	of 1		104	8	49	4	291	29.5		291		0	0	0	0
÷	We	Thru	eak 1	5		0	0	0	0	0	000.700	0		0	0	0	0
		Right	AM - F	7:45 AP	200	163	173	158	694	70.5	898	694		0	0	0	0
		App. Total	08:30	ns at 07	149	178	148	189	664		878.	664		0	0	0	0
oad	힏	Peds	AM to	n Begir	0	0	0		0	0	000	0		0	0	0	0
Harlem Road	Southbound	Left	07:45	section	72	98	75	106	339	51.1	.800	339		0	0	0	0
Har	S	Thru	From	e Inter	11	92	73	83	325	48.9	.883	325		0	0	0	0
		Right	nalysis	r Entir	0	0	0	0	0	0	000	0		0	0	0	0
		Start Time	Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of	Peak Hour for Entire Intersection Begins at 07:45 AM	07:45 AM	08:00 AM	08:15 AM	08:30 AM	Total Volume	% App. Total	HH	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2



3495 Winton Place, Building E, Suite 110 Rochester, NY 14623



File Name: Harlem.I290SB.PM.Peak Site Code: 11111111 Start Date: 9/11/2013 Page No: 1 Groups Printed- Unshifted - Bank 1 - Bank 2

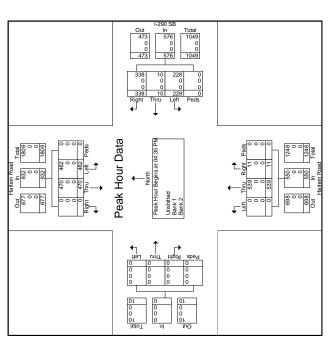
			Int. Total	538	486	453	448	1925	552	909	495	420	2072	3997			3997	100	0	0	0	0
			Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		pun	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Eastbound	Thru	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ınk z	Road	puno	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Groups Printed- Unshirted - Bank 1 - Bank 2	Harlem Road	Northbound	Thru	131	118	128	114	491	118	179	158	124	213	1070	96.7	26.8	1070	100	0	0	0	0
d - Ban			Right	14	7	4	5	22	2	0	9	က	14	36	3.3	6.0	36	100	0	0	0	0
nshifte			Peds	7	0	0	0	7	0	0	0	0	0	7	0.7	0.2	7	100	0	0	0	0
nted- U	SB	punc	Left	28	34	7	38	111	8	86	43	59	251	362	35.9	9.1	362	100	0	0	0	0
ups Pri	I-290 SB	Westbound	Thru	0	0	0	0	0	0	10	0	0	10	10	-	0.3	10	100	0	0	0	0
25			Right	78	20	22	65	270	115	101	88	22	328	629	62.4	15.7	629	100	0	0	0	0
			Peds	-	0	0	0	_	0	0	0	0	0	_	0.1	0	1	100	0	0	0	0
	Road	puno	Left	170	142	145	114	571	110	83	82	91	376	947	50.3	23.7	947	100	0	0	0	0
	Harlem Road	Southbound	Thru	109	120	108	115	452	123	124	118	118	483	932	49.7	23.4	932	100	0	0	0	0
			Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Start Time	04:00 PM	04:15 PM	04:30 PM	04:45 PM	Total	05:00 PM	05:15 PM	05:30 PM	05:45 PM	Total	Grand Total	Apprch %	Total %	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2

### SRF & Associates

3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name: Harlem.1290SB.PM.Peak Site Code: 11111111 Start Date: 9/11/2013 Page No: 2

		Int. Total			453	448		605	2058		.850	2058		0	0	0	0
		App. Total			0	0		0	0		000	0		0	0	0	0
	힏	Peds			0	0		0	0	0	000	0		0	0	0	0
	Eastbound	Left			0	0		0	0	0	000	0		0	0	0	0
	Ш	Thru			0	0		0	0	0	000	0		0	0	0	0
		Right			0	0	_	0	0	0	000	0		0	0	0	о —
		App. Total			132	116		179	220		.768	220		0	0	0	0
Soad	pun	Peds			0	0		0	0	0	000	0		0	0	0	0
Harlem Road	Northbound	Left			0	0		0	0	0	000	0		0	0	0	0
На	ž	Thru			128	114		179	539	86	.753	539		0	0	0	0
		Right			4	2	2	0	11	7	.550	11		0	0	0	о —
		App. Total			89	103		209	9/9		689	9/9		0	0	0	0
93	pun	Peds			0	0		0	0	0	000	0		0	0	0	0
I-290 SB	Westbound	Left	1 of 1		1	38		86	228	39.6	.582	228		0	0	0	0
	>	Thru	Peak,	≥	0	0		9	10	1.7	.250	10		0	0	0	0
		App. Total Right Thru	PM-	30 F	25	65	115	101	338	58.7	.735			0	0	0	о —
			0 05:1	ins at (	253	229	233	217	932		.921	932		0	0	0	0
Road	punc	Peds	0 PM t	on Beg	,	0	0	0	0	0	000	0		0	0	0	0
Harlem Road	Southbound	Right Thru Left	m 04:3	ersection	145	114	110	93	462	49.6	797.	462		0	0	0	0
무	ഗ്	Thru	is Fron	ire Inte	108	115	123	124	470	50.4	.948	470		0	0	0	0
		Right	Analys	for Ent	0	0	0	•	0	0	000	0	_	0	0	0	0
		Start Time	Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of	Peak Hour for Entire Intersection Begins at 04:30 PM	04:30 PM	04:45 PM	05:00 PM	05:15 PM	Total Volume	% App. Total	표	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2



3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name: Maple.MillersportEastRamp.AM.Peak Site Code: 00032050 Start Date: 11/14/2012 Page No: 1

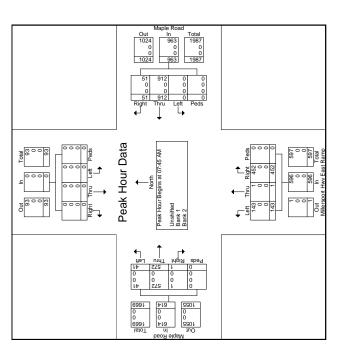
			Int. Total	287	368	425	588	1668	545	496	544	519	2104	3772			3770	6.66	2	0.1	О	0
			Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Road	punc	Left	4	9	9	10	56	10	13	∞	12	43	69	6.9	1.8	69	100	0	0	0	0
	Maple Road	Eastbound	Thru	71	73	106	171	421	152	130	119	109	510	931	92.9	24.7	930	6.66	-	0.1	0	0
			Right	-	0	0	0	-	0	0	-	0	-	2	0.2	0.1	2	100	0	0	0	0
	ışt		Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ank 2	Millersport Hwy East	puno	Left	15	13	24	28	8	47	28	40	40	155	235	22.9	6.2	235	100	0	0	0	0
k 1 - Bį	rsport	Ramp Northbound	Thru	0	-	0	0	-	0	0	-	0	-	7	0.5	0.1	2	100	0	0	0	0
Groups Printed- Unshifted - Bank 1 - Bank 2	Mille		Right	72	22	6	131	368	113	9	117	66	420	788	6.97	20.9	788	100	0	0	0	0
nshifte			Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
nted- U	Road	punc	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ups Pri	Maple Road	Westbound	Thru	121	197	195	238	751	216	218	240	236	910	1661	95.2	4	1660	6.66	-	0.1	0	0
Gro			Right	က	က	4	10	20	7	16	18	23	64	84	4.8	2.2	84	100	0	0	0	0
			Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		puno	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Southbound	Thru	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Start Time	07:00 AM	07:15 AM	07:30 AM	07:45 AM	Total	08:00 AM	08:15 AM	08:30 AM	08:45 AM	Total	Grand Total	Apprch %	Total %	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2



3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name: Maple.MillersportEastRamp.AM.Peak Site Code: 00032050 Start Date: 11/14/2012 Page No: 2

							Mar	Maple Road	ad		Miller	sport	Hwy	Millersport Hwy East Ramp	amp		Mai	Maple Road	ad		
		Sol	Southbound	pur			We	Westbound	ы			Š	Northbound	힏			Ëä	Eastbound	힏		
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	beds v	App. Total	Right	Thru	Feft	Peds	App. Total	Right	Thru	Feft	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of	nalysis	s From	07:00	AM to	08:45 /	AM - P	eak 1	of 1													
Peak Hour for Entire Intersection Begins at 07:45 AN	or Entir	e Inter-	section	n Begin	1s at 07	:45 AN	_														
07:45 AM	0	0	0	0	0	10	238	0	0	248	131						171	10	0	181	288
08:00 AM	0	0	0	0	0	7	216	0	0	223	113	0	47		9	0	152	10	0	162	545
08:15 AM	0	0	0	0	0	16	218	0	0	234	9	0	78	0	119	0	130	13			
08:30 AM	•	0	0	0	0	18	240	0	0	258	117	-	4	0	158	-	119	œ	0	128	544
Total Volume	0	0	0	0	0	21	912	0	0	963	452	-	143	0	969	-	572	41	0	614	2173
% App. Total	0	0	0	0		5.3	94.7	0	0		75.8	0.2	54	0		0.2	93.2	6.7	0		
PFF	000	000	000	000	000	.708	. 950	. 000.	000	.933	. 863	. 250	. 761	000	.931	.250	.836	. 788	000	.848	.924
Unshifted	0	0	0	0	0	51	912	0	0	963	452	-	143	0	969	-	572	41	0	614	2173
% Unshifted																					
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name : Maple.Millersport.EastRamp.PM.Peak Site Code : 00032050 Start Date : 11/14/2012 Page No : 1

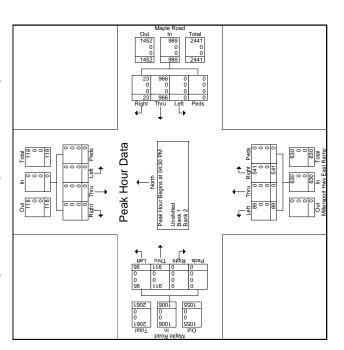
			Int. Total	809	287	615	646	2456	615	749	663	629	2656	5112			5110	100	2	0	0	0
			Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Soad	gun	Left	22	20	19	18	79	20	38	18	30	106	185	8.6	3.6	185	100	0	0	0	0
	Maple Road	Eastbound	Thru	223	165	197	219	804	256	239	212	192	833	1703	90.1	33.3	1701	6.66	2	0.1	0	0
			Right	0	7	0	0	2	0	0	0	0	0	2	0.1	0	2	100	0	0	0	0
	st		Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
nk 2	Hwy Ea	punc	Left	35	20	24	19	98	22	24	59	32	107	205	15.6	4	205	100	0	0	0	0
Groups Printed- Unshifted - Bank 1 - Bank 2	Millersport Hwy East Ramp	Northbound	Thru	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
d - Ban	Mile		Right	132	142	147	134	222	26	163	153	141	224	1109	84.4	21.7	1109	100	0	0	0	0
Inshifte			Peds	-	0	0	0	-	0	0	0	0	0	_	0.1	0	-	100	0	0	0	0
nted- U	Road	punc	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ups Pri	Maple Road	Westbound	Thru	187	231	225	248	891	217	276	246	229	896	1859	97.4	36.4	1859	100	0	0	0	0
Gro			Right	80	7	က	00	26	က	6	2	2	22	48	2.5	6.0	48	100	0	0	0	0
			Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		onuq	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	:	Southbound	Thru	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Start Time	04:00 PM	04:15 PM	04:30 PM	04:45 PM	Total	05:00 PM	05:15 PM	05:30 PM	05:45 PM	Total	Grand Total	Apprch %	Total %	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2

### SRF & Associates

3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name: Maple.Millersport.EastRamp.PM.Peak Site Code: 00032050 Start Date: 11/14/2012 Page No: 2

		App. Total Int. Total			_	237 646	276 615	277 749	1006 2625		908 876	1006 2625		0	0	0	
ad	g	Peds Ap				0	0		0	0	000	0		0	0	0	
Maple Road	Eastbound	Left				8	20	38	92	9.4	.625	92		0	0	0	•
Ma	В	Thru				219	256	239	911	90.6	.890	911		0	0	0	•
		Right			_	•	_	0	0	0	000	0		0	0	0	
Ramp		App. Total				153	119	187	630		.842	630		0	0	0	•
llersport Hwy East Ramp	pund	Peds				0	0		0	0	000	0		0	0	0	•
r Hwy	Northbound	Left			24	19	55		88	14.1	.927	88		0	0	0	•
erspo	ž	Thru			0	0	•		0	0	000	0		0	0	0	•
Σ		Right			147	134	- 97	163	541	85.9	3 .830	9 541		<u> </u>	_	_	_
		App. Total			228	256	220	285	686		898	686		0	0	0	
Soad	pund	Peds			0	0	0	0	0	0	000	0		0	0	0	•
Maple Road	Westbound	Left	1 of 1		0	0	•	0	0	0	000	0		0	0	0	•
2	>	Right Thru	Peak	Σ	225	248	217	276	996	97.7	875	996		-	0	-	
		Righ	5 PM -	04:30	—	-	<u>-</u>	_ 	0 23	2.3	.639	0 23		_	_	_	
		App. Total	0 05:1	ins at		Ū	Ŭ	_			000			_	_	_	•
	punc	Peds	0 PM t	on Bec	0	0	0	0	0	0	000	0		0	0	0	•
	Southbound	Left	m 04:3	ersectiv	0	0	•	0	0	0	000	0		0	0	0	•
	ŭ	Thru	sis Fro	tire Inte	0	•	•	0	0	0	000	0		0	0	0	
		Right	Analys	for Ent	0	-	<u> </u>	0	0	0	000	0	_	0	0	0	
		Start Time	Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of	Peak Hour for Entire Intersection Begins at 04:30 PM	04:30 PM	04:45 PM	05:00 PM	05:15 PM	Total Volume	% App. Total	품	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	0, 1000,0





3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name: Maple.Maplemere.AM.Peak Site Code: 111111111 Start Date: 11/14/2012 Page No: 1



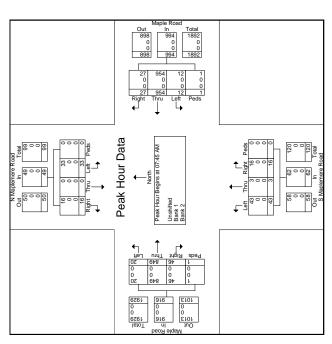
			Int. Total	248	329	473	554	1634	495	482	490	460	1927	3561			3561	100	0	0	0	0
			Peds	0	0	0	0	0	0	0	_	0	_	_	0.1	0	-	100	0	0	0	0
	Soad	pun	Left	_	-	2	1	24	4	0	2	က	12	36	2.3	-	36	100	0	0	0	0
	Maple Road	Eastbound	Thru	91	130	217	246	684	216	193	194	187	230	1474	93.7	41.4	1474	100	0	0	0	0
	Γ		Right	က	က	œ	10	24	17	15	4	7	88	62	3.9	1.7	62	100	0	0	0	0
			Peds	-	0	0	0	1	0	0	0	0	0	_	_	0	-	100	0	0	0	0
ž	re Roac	pun	Left	_	4	က	7	16	21	9	4	œ	49	65	62.5	1.8	65	100	0	0	0	0
1 - Ba	S Maplemere Road	Northbound	Thru	0	0	0	7	2	0	0	-	0	-	ဗ	5.9	0.1	က	100	0	0	0	0
a - Ban	S	_	Right	2	က	က	4	15	2	4	က	ω	20	32	33.7	-	32	100	0	0	0	0
Shirted			Peds	0	0	0	_	1	0	0	0	0	0	_	0.1	0	-	100	0	0	0	0
red- C	oad	pun	Left	0	-	2	2	11	7	က	7	-	80	19	-	0.5	19	100	0	0	0	0
Groups Printed- Unshifted - Bank 1 - Bank 2	Maple Road	Westbound	Thru	132	208	220	260	820	213	235	246	241	935	1755	9.96	49.3	1755	100	0	0	0	0
5			Right	-	2	4	7	17	9	2	6	2	25	42	2.3	1.2	42	100	0	0	0	0
	ъ		Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N Maplemere Road	puno	Left	0	-	7	ო	9	9	17	7	-	31	37	55.2	-	37	100	0	0	0	0
	apleme	Southbound	Thru	0	0	က	0	3	0	0	0	0	0	က	4.5	0.1	က	100	0	0	0	0
	z		Right	-	က	က	က	10	2	4	4	4	17	27	40.3	0.8	27	100	0	0	0	0
			Start Time	07:00 AM	07:15 AM	07:30 AM	07:45 AM	Total	08:00 AM	08:15 AM	08:30 AM	08:45 AM	Total	Grand Total	Apprch %	Total %	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2

### SRF & Associates

3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name: Maple. Maplemere. AM. Peak Site Code: 11111111 Start Date: 11/14/2012 Page No: 2

		Int. Total			554		482		2021		.912	2021		0	0	0	0
		App. Total			267		208		916		.858	916		0	0	0	0
oad	pu	Peds					0	-	-	2.2 0.1	.250	-		0	0	0	0
Maple Road	Eastbound	Left			7		0		50	2.2	.455	20		0	0	0	0
Ma	щ	Thru			246		193		849	92.7	.863	849		0	0	0	0
		Right			10	17	15		46	2	929.	46		0	0	0	0
		App. Total			8	56	10		62		969.	62		0	0	0	0
S Maplemere Road	pur	Peds			0		0		0	0	000	0		0	0	0	0
emer	Northbound	Left			7	7	9		43	69.4	.512	43		0	0	0	0
Map	ž	Thru			7		0		က	4.8	375	3		0	0	0	0
0,		Right			4	2	4		16	25.8	.800	16		0	0	0	0
		App. Total			273		243		994		.910	994		0	0	0	0
paq	pu	Peds			-		0		-	0.1	.250	-		0	0	0	0
Maple Road	Westbound	Left	of 1		2		က		12	1.2 0.1	009	12		0	0	0	0
Ma	š	Right Thru Left	eak 1	5	260		235		954	96	.917	954		0	0	0	0
		Right	AM - F	7:45 AP	7		2	6	27	2.7	.750	27		0	0	0	0
_		App. Total	08:45	is at 07	9		7	7	49		.583	49		0	0	0	0
N Maplemere Road	pur	Peds	AM to	n Begir	0		0	0	0	0	000	0		0	0	0	0
emer	Southbound	Left	07:00	section	3		17	7	33	67.3	.485	33		0	0	0	0
Map	Sol	Thru	From	e Inter	0		0	0	0	0	000	0		0	0	0	0
_		Right Thru Left Peds	nalysis	or Entir	က	2	4	4	16	32.7	800	16		0	0	0	0
		Start Time	Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1	Peak Hour for Entire Intersection Begins at 07:45 AM	07:45 AM	08:00 AM	08:15 AM	08:30 AM	Total Volume	% App. Total	품	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2



3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name: Maple.Maplemere.PM.Peak Site Code: 11111111 Start Date: 11/14/2012 Page No: 1

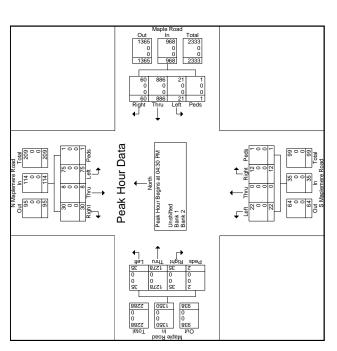
			Int. Total	521	515	632	553	2221	623	629	545	248	2375	4596			4596	100	0	0	0	0
			Peds	0	0	_	_	2	0	0	0	0	0	2	0.1	0	2	100	0	0	0	0
	Soad	pun	Left	7	6	œ	7	31	œ	12	7	က	30	61	2.5	1.3	61	100	0	0	0	0
	Maple Road	Eastbound	Thru	569	251	340	290	1150	340	308	261	267	1176	2326	95.1	50.6	2326	100	0	0	0	0
	_		Right	2	9	6	2	22	œ	13	7	က	31	26	2.3	1.2	26	100	0	0	0	0
	r		Peds	0	0	_	0	-	0	0	0	0	0	_	4.1	0	-	100	0	0	0	0
۲ <u>۲</u>	S Maplemere Road	pun	Left	9	2	4	4	19	9	80	4	7	25	44	60.3	<del>-</del>	44	100	0	0	0	0
r 1 - Bai	apleme	Northbound	Thru	2	0	0	0	2	0	0	-	-	2	4	5.5	0.1	4	100	0	0	0	0
Groups Printed- Unshirted - Bank 1 - Bank 2	S	_	Right	က	2	7	ო	13	-	9	4	0	11	24	32.9	0.5	54	100	0	0	0	0
Shifte			Peds	0	0	0	-	_	0	0	7	_	6	10	0.5	0.2	10	100	0	0	0	0
red- O	oad	pun	Left	10	က	9	2	54	2	2	-	က	14	38	2.1	0.8	38	100	0	0	0	0
ups Prır	Maple Road	Westbound	Thru	185	196	217	202	800	212	255	202	218	887	1687	91.1	36.7	1687	100	0	0	0	0
Gro			Right	10	16	12	16	54	15	17	17	14	63	117	6.3	2.5	117	100	0	0	0	0
			Peds	0	0	0	0	0	_	0	0	_	2	2	6.0	0	2	100	0	0	0	0
	re Roa	punc	Left	13	13	18	14	28	17	56	9	4	87	145	64.2	3.2	145	100	0	0	0	0
	N Maplemere Road	Southbound	Thru	-	_	4	0	9	က	-	0	က	7	13	2.8	0.3	13	100	0	0	0	0
	z	•,	Right	10	10	10	2	35	7	8	6	7	31	99	29.2	1.4	99	100	0	0	0	0
			Start Time	04:00 PM	04:15 PM	04:30 PM	04:45 PM	Total	05:00 PM	05:15 PM	05:30 PM	05:45 PM	Total	Grand Total	Apprch %	Total %	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2

### SRF & Associates

3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name: Maple. Maplemere. PM. Peak Site Code: 11111111 Start Date: 11/14/2012 Page No: 2

		otal	1		632		623	629	29		.936		00	0	0	0	0
		Int. Total			9		<b>9</b>		24		6.	L	_				
		App. Total			358		326	333	1350		.943		100	0	0	0	0
ad	덜	Peds			-		0	0	2	0.1	.500		100	0	0	0	0
Maple Road	Eastbound	Left			00		œ	7	32	5.6	.729		100	0	0	0	0
Ma	В	Thru			340		340	308	1278	94.7	.940	1278	100	0	0	0	0
		Right					œ	13	32	5.6	.673	32	100	0	0	0	0
		App. Total					7	4	32		.625	32	100	0	0	0	0
S Maplemere Road	p	Peds			-		0	0	-	5.9	.250	-	100	0	0	0	0
emere	Northbound	Left					9	œ	22	65.9	.688	22	100	0	0	0	0
Map	Š	Thru					0	0	0	0	000	0	0	0	0	0	0
o,		Right					-	9	12	34.3	.500	12	100	0	0	0	0
		App. Total					232	277	896		874	896	100	0	0	0	0
ad	덜	Peds				-	0	0	-	0.1	.250	-	100	0	0	0	0
Maple Road	Westbound	Left	of 1		9	2	2	2	21	2.2	.875	21	100	0	0	0	0
Ma	×	Thru	eak 1	_	217	202	212	255	988	91.5	698	988	100	0	0	0	0
		Right	PM - P	1:30 PN	12	16	15	17	09	6.2	.882	9	100	0	0	0	0
		App. Total	05:45	is at 04	32	19	88	32	114		.814	114	100	0	0	0	0
N Maplemere Road	pur	Peds	PM to	Begir.	0	0	-	0	-	6.0	.250	-	100	0	0	0	0
emer	Southbound	Left	04:00	section	18	4	1	56	75	65.8	.721	75	100	0	0	0	0
Map	So	Thru	From:	e Inter	4	0	က	-	80	7	.500	80	100	0	0	0	0
_		Right	nalysis	or Entir	9	2	7	8	30	26.3	.750	30	100	0	0	0	0
		Start Time	Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1	Peak Hour for Entire Intersection Begins at 04:30 PM	04:30 PM	04:45 PM	05:00 PM	05:15 PM	Total Volume	% App. Total	품	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2



3495 Winton Place, Building E, Suite 110 Rochester, NY 14623



File Name: Maple. NorthForest. AM. Peak Site Code: 000000000 Start Date: 11/14/2012

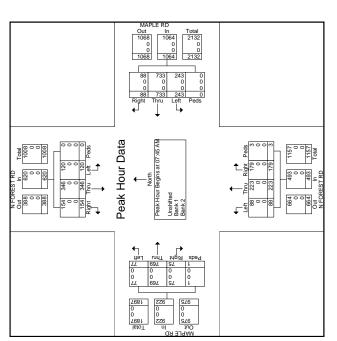
			Int. Total	444	601	707	847	2599	722	757	773	711	2963	5562			5562	100	0	0	0	0
			Peds	0	0	0	0	0	0	0	_	0	_	_	0.1	0	-	100	0	0	0	0
		pun	Left	8	7	17	22	54	19	18	18	17	72	126	8.1	2.3	126	100	0	0	0	0
	MAPLE RD	Eastbound	Thru	26	122	155	227	601	180	178	184	146	889	1289	83.1	23.2	1289	100	0	0	0	0
	MAF		Right	10	17	17	00	25	21	54	22	16	83	135	8.7	2.4	135	100	0	0	0	0
			Peds	0	0	0	0	0	က	0	0	0	က	е	0.4	0.1	က	100	0	0	0	0
ırk 2	RD	puno	Left	13	12	16	23	64	16	23	56	20	82	149	17.5	2.7	149	100	0	0	0	0
ted - Bank 1 - Bank 2	N FOREST RD	Northbound	Thru	56	4	43	61	174	48	42	69	22	217	391	45.9	7	391	100	0	0	0	0
d - Ban	NFO		Right	56	9	35	33	137	47	21	45	31	171	308	36.2	5.5	308	100	0	0	0	0
			Peds	0	_	0	0	-	0	0	0	0	0	_	0	0	-	100	0	0	0	0
nted- C		puno	Left	25	2	8	9	270	9	29	09	63	242	512	24.8	9.5	512	100	0	0	0	0
Groups Printed- Unshi	MAPLERD	Westbound	Thru	117	166	171	187	641	175	192	179	196	742	1383	67.1	24.9	1383	100	0	0	0	0
9	MAI		Right	17	6	50	23	69	16	59	20	32	26	166	8.1	က	166	100	0	0	0	0
			Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	RD	puno	Left	16	20	56	38	100	24	52	33	37	119	219	19.9	3.9	219	100	0	0	0	0
	N FOREST RD	Southbound	Thru	43	29	88	105	304	8	11	8	89	309	613	22.8	=	613	100	0	0	0	0
	N		Right	19	56	37	20	132	33	36	35	30	134	266	24.2	4.8	566	100	0	0	0	0
			Start Time	07:00 AM	07:15 AM	07:30 AM	07:45 AM	Total	08:00 AM	08:15 AM	08:30 AM	08:45 AM	Total	Grand Total	Apprch %	Total %	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2



3495 Winton Place, Building E, Suite 110 Rochester, NY 14623 File Name: Maple.NorthForest.AM.Peak Site Code: 000000000 Start Date: 11/14/2012 Page No: 2

757 773 3099 .915 847 0000 257 220 225 922 897 Northbound

Right Thru Left Peds Rop Right Thru Left Peds 0000 MAPLE RD 178 184 769 83.4 769 0000 900 0000 1119 137 493 0000 N FOREST RD 0000 0000 | Start Time | Southbound | Westlound | Start Time | Southbound | Start Time | Southbound | Start Time | Start Time | Southbound | Start Time | Star 0000 MAPLERD N FOREST RD





3495 Winton Place, Building E, Suite 110 Rochester, NY 14623



File Name: Maple.NorthForest.PM.Peak Site Code: 000000000 Start Date: 11/14/2012 Page No: 1

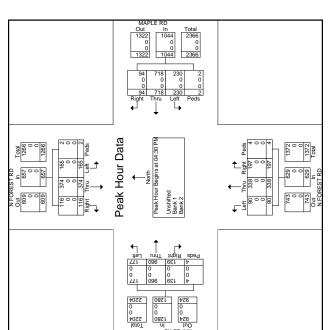
				1																		
			Int. Total	870	823	835	915	3443	903	957	968	821	3577	7020			7020	100	0	0	0	0
			Peds	0	0	_	7	က	0	_	0	0	_	4	0.2	0.1	4	100	0	0	0	0
		pun	Left	41	37	40	48	166	4	48	37	39	165	331	13.7	4.7	331	100	0	0	0	0
	MAPLE RD	Eastbound	Thru	238	176	219	256	889	219	266	243	210	938	1827	75.6	56	1827	100	0	0	0	0
	MAF		Right	28	32	48	27	135	33	33	35	23	119	254	10.5	3.6	254	100	0	0	0	0
			Peds	0	0	0	_	F	3	0	0	0	က	4	0.3	0.1	4	100	0	0	0	0
ık 2	3D	puno	Left	31	59	24	22	106	22	22	23	29	96	202	15.9	5.9	202	100	0	0	0	0
4. - Ba	N FOREST RD	Northbound	Thru	87	84	83	92	343	83	8	06	64	317	099	52.1	9.4	099	100	0	0	0	0
ted - Bank 1 - Bank 2	NFC		Right	24	22	26	46	211	22	40	48	48	191	402	31.7	2.7	402	100	0	0	0	0
nshifte			Peds	0	0	0	0	0	2	0	0	0	2	2	0.1	0	2	100	0	0	0	0
nted- U		punc	Left	21	69	25	26	230	26	99	25	23	225	455	22.1	6.5	455	100	0	0	0	0
Groups Printed-	MAPLERD	Westbound	Thru	188	157	159	180	684	168	211	171	174	724	1408	68.5	20.1	1408	100	0	0	0	0
5	MA		Right	17	19	28	16	80	34	16	32	25	110	190	9.5	2.7	190	100	0	0	0	0
			Peds	2	0	0	7	4	0	0	0	0	0	4	0.3	0.1	4	100	0	0	0	0
	ZD	puno	Left	33	32	27	4	135	55	4	48	47	193	328	25.6	4.7	328	100	0	0	0	0
	N FOREST RD	Southbound	Thru	6/	105	7	101	356	102	100	84	79	362	718	26	10.2	718	100	0	0	0	0
	N F		Right	21	28	25	56	100	33	32	36	30	131	231	18	3.3	231	100	0	0	0	0
			Start Time	04:00 PM	04:15 PM	04:30 PM	04:45 PM	Total	05:00 PM	05:15 PM	05:30 PM	05:45 PM	Total	Grand Total	Apprch %	Total %	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2

### SRF & Associates

3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name : Maple.NorthForest.PM.Peak Site Code : 00000000 Start Date : 11/14/2012 Page No : 2

		Int. Total				915	903	957	3610		.943	3610		0	0	0	0
		App. Total			_	333	591	348	1280	_	.920	1280	_	0	0	0	0
	멀	Sped				7	0	-	4	0.3	.500	4		0	0	0	0
S.	Eastbound	Left				48	4	48	177	13.8	.922	177		0	0	0	0
MAPLE RD	Ë	Thru				256	219	266	096	75	.902	096		0	0	0	0
		Right			48	27	ક	33	139	10.9	.724	139		0	0	0	°
		App. Total			163	161	163	142	629		.965	629		0	0	0	0
۵	pun	Peds				~	က	0	4	9.0	.333	4		0	0	0	0
EST R	Northbound	Left			24	52	52	22	6	14.3	.938	06		0	0	0	0
N FOREST RD	ž	Thru				92	83	8	338	53.7	.918	338		0	0	0	0
_		Right			26	46	22	9	197	31.3	879	197		0	_	0	° —
		App. Total			241	252	260	291	1044		768.	1044		0	0	0	0
	pun	Peds			0	0	7	0	2	0.2	.250	2		0	0	0	0
MAPLE RD	Westbound	Left	1 of 1		54	26	26	64	230	22	868.	230		0	0	0	0
MAPL	3	Right Thru	Peak,	∑	159	180	168	211	718	68.8	.851	718		0	0	0	0
			5 PM -	34:30 F	- 28	16	-8	19	98	6	169.	94		_	<u> </u>	_	<u> </u>
		App. Total	0 05:1	ins at (	123	169	189	176	657		869	657		0	0	0	0
۵	punc	Left Peds	0 PM t	on Beg	0	7	0	0	2	0.3	.250	2		0	0	0	0
N FOREST RD	Southbound	Left	m 04:3	ersection	27	4	5	4	165	25.1	764	165		0	0	0	0
N FOR	ŭ	Thru	sis Froi	tire Inte	7	5	102	100	374	56.9	.917	374		0	0	0	0
		Right	Analys	for En	- 25	- 56	33	35	116	17.7	879	116	-	0	0	0	0
		Start Time	Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of	Peak Hour for Entire Intersection Begins at 04:30 PM	04:30 PM	04:45 PM	05:00 PM	05:15 PM	Total Volume	% App. Total	뷢	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2



3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name: Maple.MillersportWestRamp.AM.Peak Site Code: 33333333 Start Date: 11/14/2012 Page No: 1

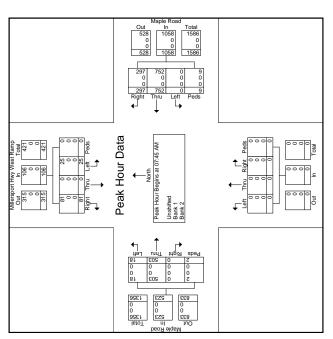
			Int. Total	220	314	403	443	1380	417	417	410	414	1658	3038			3038	100	0	0	0	0
			Peds	0	0	0	_	-	0	0	_	0	-	2	0.2	0.1	2	100	0	0	0	0
	Soad	pun	Left	-	7	3	4	10	4	4	9	5	16	26	5.9	6.0	26	100	0	0	0	0
	Maple Road	Eastbound	Thru	62	73	127	131	393	140	124	108	110	482	875	6.96	28.8	875	100	0	0	0	0
			Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
nk 2		puno	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Groups Printed- Unshifted - Bank 1 - Bank 2		Northbound	Thru	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
d - Ban			Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
nshifte			Peds	-	0	0	က	4	_	0	2	-	7	11	9.0	4.0	1	100	0	0	0	0
nted- U	Soad	puno	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ups Pri	Maple Road	Westbound	Thru	9/	143	159	189	292	171	188	204	203	992	1333	68.3	43.9	1333	100	0	0	0	0
Gro			Right	29	84	92	81	324	74	9/	99	29	283	209	31.1	20	209	100	0	0	0	0
	est		Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	W W	buno	Left	က	-	2	9	12	7	80	4	4	23	32	19	1.2	32	100	0	0	0	0
	Millersport Hwy West	Ramp Southbound	Thru	-	0	0	0	-	0	0	0	0	0	~	0.5	0	-	100	0	0	0	0
	Mille		Right	6	_	20	28	89	20	17	16	27	80	148	80.4	4.9	148	100	0	0	0	0
			Start Time	07:00 AM	07:15 AM	07:30 AM	07:45 AM	Total	08:00 AM	08:15 AM	08:30 AM	08:45 AM	Total	Grand Total	Apprch %	Total %	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2

### SRF & Associates

3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name: Maple.MillersportWestRamp.AM.Peak Site Code: 33333333 Start Date: 11/14/2012 Page No: 2

	Σ	llersp Sou	ersport Hwy V Ramp Southbound	Millersport Hwy West Ramp Southbound	#		Maj	Maple Road Westbound	ng ag			N	Northbound	핕			Map	Maple Road Eastbound	ad pd		
Start Time	Right	⊥hru	Left		App. Total	Right Thru	Thru	Left	Peds ,	App. Total	Right	Thru	Left	Peds 4	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of	Analysis	From	00:20	AM to	08:45 /	AM - P	eak 1	of 1													
Peak Hour for Entire Intersection Begins at 07:45 AM	or Entire	e Inter	section	n Begin	s at 07	:45 AN	_														
07:45 AM	78			,	34	2				_					_				-	_	443
08:00 AM	20	0	7	0	27	74	171	0	-	246	0	0	0	0	0	0	140	4	0	44	417
08:15 AM	17	0	8																	_	
08:30 AM	16	0	4	0	8	99	204	0	2	275	0	0	0	0	0	0	108	9	-	115	410
Total Volume	81	0	52	0	106	297	752	0	6	1058	0	0	0	0	0	0	503	18	2	523	1687
% App. Total	76.4	0	23.6	0		28.1	71.1	0	6.0		0	0	0	0		0	96.2	3.4	0.4		
PHF	.723	000	.781	000.	622.	.917	.922	.000	.450	.962	000	. 000	000	000	000	000	. 898.	. 750	.500	806	.952
Unshifted	81	0	25	0	106	297	752	0	6	1058	0	0	0	0	0	0	203	18	2	523	1687
% Unshifted																					
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0





3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name: Maple.MillersportWestRamp.PM.Peak Site Code: 44444444 Start Date: 11/14/2012 Page No: 1

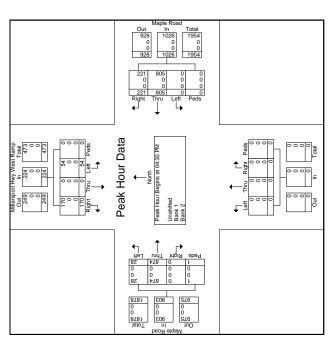
			Int. Total	455	469	497	528	1949	222	571	483	478	2089	4038			4038	100	0	0	0	0
			Peds	0	0	0	0	0	_	0	0	-	2	2	0.1	0	2	100	0	0	0	0
	Road	punc	Left	10	0	7	4	21	2	12	က	က	23	44	2.7	1.	44	100	0	0	0	0
	Maple Road	Eastbound	Thru	174	178	208	209	269	246	211	175	180	812	1581	97.2	39.2	1581	100	0	0	0	0
			Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
nk 2		punc	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
k 1 - Ba		Northbound	Thru	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Groups Printed- Unshifted - Bank 1 - Bank 2			Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
nshifte			Peds	0	0	0	0	0	0	0	0	10	10	10	0.5	0.2	10	100	0	0	0	0
nted- U	Road	punc	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ups Pri	Maple Road	Westbound	Thru	175	181	186	208	750	192	219	203	202	816	1566	77.3	38.8	1566	100	0	0	0	0
Gro			Right	09	65	49	29	241	44	61	54	20	509	450	22.2	1.1	450	100	0	0	0	0
	est		Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	wy W	onuq	Left	80	10	10	12	40	18	14	80	9	46	88	22.3	2.1	98	100	0	0	0	0
	Millersport Hwy West	Southbound	Thru	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Mille		Right	28	35	37	28	128	51	24	40	56	171	299	7.7.7	7.4	599	100	0	0	0	0
			Start Time	04:00 PM	04:15 PM	04:30 PM	04:45 PM	Total	05:00 PM	05:15 PM	05:30 PM	05:45 PM	Total	Grand Total	Apprch %	Total %	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2

### SRF & Associates

3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name: Maple MillersportWestRamp.PM.Peak Site Code: 4444444 Start Date: 11/14/2012 Page No: 2

	Ξ	lersp _ Sou	rsport Hwy V Ramp Southbound	lersport Hwy West Ramp Southbound	ಹ		Ma <sub>l</sub>	Maple Road Westbound	nd			No	Northbound	ē			Map	Maple Road Eastbound	ad pt		
Start Time	Right	Thru	Left Peds	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds ,	App. Total	Right	Thru	Left	Peds ,	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of	Analysis	From	04:00	PM to	05:45	PM - F	eak 1	of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM	or Entire	e Inter	section	n Begir	ns at 04	1:30 PN	5														
04:30 PM	37	0	10	0	47	49	186	0	0	235	0	0	0	0	0	0	208	7	0	215	497
04:45 PM	78	0	12	0	4	29									_					_	
05:00 PM	5	0	8	0	69	4	192	0	0	236	0	0	0	0	0	0	246	2	-	252	222
05:15 PM	25						219	0	0	280	0	0	0	0	0	0	211	7			57.1
Total Volume	170	0	54	0	224	221	805	0	0	1026	0	0	0	0	0	0	874	28	-	903	2153
% App. Total	75.9	0	24.1	0		21.5	78.5	0	0		0	0	0	0	_	0	8.96	3.1	0.1	_	
H	787.	000	.750	000	.812	.825	919	000	000	916.	.000	. 000	000	000	000	000	. 888	. 583	.250	968.	.943
Unshifted	170	0	54	0	224	221	802	0	0	1026	0	0	0	0	0	0	874	28	-	903	2153
% Unshifted																					
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name: NorthForest.CCDriveway.AM.Peak Site Code: 22222222 Start Date: 9/12/2013 Page No: 1

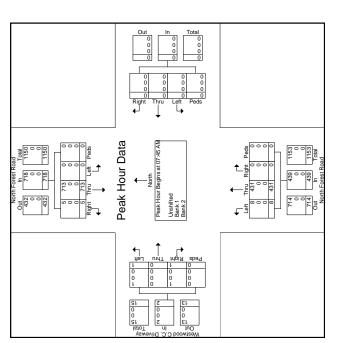
			Int. Total	209	282	315	285	1091	288	316	270	273	1147	2238			2238	100	0	0	0	0
	way		Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S. Drive	pun	Left	0	0	0	0	0	-	0	0	0	1	-	16.7	0	-	100	0	0	0	0
	Westwood C.C. Driveway	Eastbound	Thru	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Westw		Right	0	<del>-</del>	<del>-</del>	0	2	0	0	-	7	3	2	83.3	0.2	2	100	0	0	0	0
	-		Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ırk 2	st Roa	puno	Left	-	-	7	-	2	2	7	က	7	6	4	1.7	9.0	14	100	0	0	0	0
k 1 - Ba	North Forest Road	Northbound	Thru	61	8	110	92	347	109	130	100	11	450	797	98.3	35.6	797	100	0	0	0	0
Groups Printed- Unshifted - Bank 1 - Bank 2	Ñ		Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
nshifte			Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
nted- U		punc	Left	-	0	0	0	-	0	0	0	0	0	-	100	0	-	100	0	0	0	0
ups Pri		Westbound	Thru	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9			Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Р		Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	st Roa	puno	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	North Forest Road	Southbound	Thru	145	195	200	190	730	175	184	164	157	089	1410	99.3	83	1410	100	0	0	0	0
	Ñ		Right	-	<del>-</del>	2	2	9	-	0	2	~	4	10	0.7	0.4	10	100	0	0	0	0
			Start Time	07:00 AM	07:15 AM	07:30 AM	07:45 AM	Total	08:00 AM	08:15 AM	08:30 AM	08:45 AM	Total	Grand Total	Apprch %	Total %	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2

### SRF & Associates

3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name: NorthForest.CCDriveway.AM.Peak Site Code: 22222222 Start Date: 9/12/2013 Page No: 2

			1														
		Int. Total			285	288	316		1159		.917	1159		0	0	0	0
way		App. Total			0	_	0		2		.500	2		0	0	0	0
Westwood C.C. Driveway	멀	Peds			0		0		0	0	000	0		0	0	0	0
C.C.	Eastbound	Left			0	-	0		-	20	.250	1		0	0	0	0
twood	Ē	Thru			0	0	0		0	0	000	0		0	0	0	0
Wes		Right			0	0	0	-	-	20	.250	1		0	0	0	0
		App. Total			93	1	132		439		.831	439		0	0	0	0
North Forest Road	pur	Peds			0	0	0		0	0	000	0		0	0	0	0
Fores	Northbound	Left			_	7	7	က	80	6.	299.	8		0	0	0	0
North	ž	Thru			85	109	130	100	431	98.2	.829	431		0	0	0	0
		Right			0	0	0	0	0	0	000	0		0	0	0	0
		App. Total			0	0	0	0	0		000	0		0	0	0	0
	pu	Peds			0	0	0	0	0	0	000	0		0	0	0	0
	Westbound	Left	of 1		0	0	0	0	0	0	000	0		0	0	0	0
	š	Thru	Peak 1	Σ	0	0	0	0	0	0	000	0		0	0	0	0
		Right	AM-	7:45 A	0	0	0	0	0	0	000	0		0	0	0	°
_		App. Total	08:30	ns at 0	192	176	184	166	718		.935	718		0	0	0	0
t Road	pun	Peds	AM to	n Begi	0	0	0	0	0	0	000	0		0	0	0	0
Fores	Southbound	Left	1 07:45	rsectio	0	0	0	0	0	0	000	0		0	0	0	0
North Forest Road	S	Thru	s Fron	re Inter	190	175	184	164	713	99.3	.938	713		0	0	0	0
		Right	Analysi	or Enti	8	_	0	7	2	0.7	.625	2		0	0	0	0
		Start Time	Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of	Peak Hour for Entire Intersection Begins at 07:45 AM	07:45 AM	08:00 AM	08:15 AM	08:30 AM	Total Volume	% App. Total	붚	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2



3495 Winton Place, Building E, Suite 110 Rochester, NY 14623



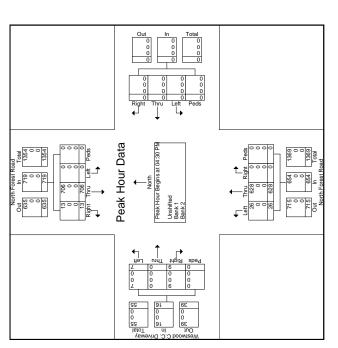
File Name: NorthForest.CCDriveway.PM.Peak Site Code: 11111111 Start Date: 9/11/2013 Page No: 1

			Int. Total	335	363	326	334	1358	341	388	399	383	1511	2869			2869	100	0	0	0	0
	way		Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S. Drive	pun	Left	-	-	7	-	2	-	ო	4	-	6	4	29.2	0.5	14	100	0	0	0	0
	Westwood C.C. Driveway	Eastbound	Thru	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Westw		Right	4	4	9	2	16	0	<del>-</del>	12	ω	18	35	8.07	1.2	34	100	0	0	0	0
	-		Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ırk 2	st Roa	puno	Left	က	က	က	00	17	9	6	1	14	40	24	4.1	7	22	100	0	0	0	0
k 1 - Ba	North Forest Road	Northbound	Thru	156	184	153	153	646	134	188	171	191	684	1330	92.8	46.4	1330	100	0	0	0	0
Groups Printed- Unshifted - Bank 1 - Bank 2	Ñ		Right	0	-	0	0	-	0	0	0	0	0	~	0.1	0	-	100	0	0	0	0
nshifte			Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
nted- U		pund	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ups Pri		Westbound	Thru	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9			Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9		Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	st Roa	puno	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	North Forest Road	Southbound	Thru	166	168	162	168	664	194	182	198	166	740	1404	86	48.9	1404	100	0	0	0	0
	Ñ		Right	2	7	0	2	စ	9	2	က	9	20	29	2	<del>-</del>	59	100	0	0	0	0
			Start Time	04:00 PM	04:15 PM	04:30 PM	04:45 PM	Total	05:00 PM	05:15 PM	05:30 PM	05:45 PM	Total	Grand Total	Apprch %	Total %	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2

### SRF & Associates

3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

		Int. Total			326	334	341	388	1389		.895	1389		0	0	0	0
way		App. Total			8	က	_		16		.500	16		0	0	0	0
Westwood C.C. Driveway	pu	Peds				0	0		0	0	000	0		0	0	0	0
J.C.C	Eastbound	Left				-	~	က	_	43.8	.583	_		0	0	0	0
twood	В	Thru				0	0	0	0	0	000	0		0	0	0	0
Wes		Right			9	7	0	~	6	56.2	.375	6		0	0	0	0
		App. Total			156	161	140	197	654		.830	654		0	0	0	0
North Forest Road	pur	Peds			0	0	0		0	0	000	0		0	0	0	0
Fores	Northbound	Left			က	∞	9	6	56	4	.722	56		0	0	0	0
North	ž	Thru			153	153	134	188	628	96	.835	628		0	0	0	0
		Right			0	0	0	0	0	0	000	0		0	0	0	0
		App. Total			0	0	0	0	0		000	0		0	0	0	0
	힏	Peds			0	0	0	0	0	0	000	0		0	0	0	0
	Westbound	Left	of 1		0	0	0	0	0	0	000	0		0	0	0	0
	š	Right Thru	Peak 1	>	0	0	0	0	0	0	000	0		0	0	0	0
		Right	PM - F	1:30 PI	0	0	0	0	0	0	000	0		0	0	0	0
F		App. Total	05:15	Begins at 04:30 PM	162	170	200	187	719		839	719		0	0	0	0
North Forest Road	pun	Peds	PM to	n Begi	0	0	0	0	0	0	000	0		0	0	0	0
Fores	Southbound	Left	04:30	sectio	0	0	0	0	0	0	000	0		0	0	0	0
North	So	Thru	s Fron	e Inter	162	168	194	182	902	98.2	.910	902		0	0	0	0
Ī		Right	nalysis	or Entir	0	7	9	2	13	1.8	.542	13		0	0	0	0
		Start Time	Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1	Peak Hour for Entire Intersection	04:30 PM	04:45 PM	05:00 PM	05:15 PM	Total Volume	% App. Total	PHF	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2



3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name: Maple.Sandhurst.AM.Peak Site Code: 11111111 Start Date: 11/14/2012 Page No: 1

Г		s Int. Total	0 262	_	0 453	_	0 1618	1 446		0 483	0 462	1 1878	1 3496	_	0	1 3496	0 100	0		0	
	_	t Peds		0	0	_		0	0	0	0	0	_	1.0	0	L	001		0	0	
	Maple Road Eastbound	ı Left			_	`	Ì	_						0.1		ľ	100				
	Map	Thru	107	145	210		734	220	237	218	211	883				1617	100		0		
		Right	0	°	0	2	2	_	_	°	_	3	2	0.3	0.1	2	100	0	0	0	
	ø	Peds	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	
	andhurst Lan Northbound	цец	3	6	2	9	20	က	2	2	က	10	30	71.4	0.9	30	100	0	0	0	
	Sandhurst Lane Northbound	Thru	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5	0,	Right	2	3	2	0	7	0	7	_	2	သ	12	28.6	0.3	12	100	0	0	0	
		Peds	0	0	0	0	0	0	_	0	0	-	_	0.1	0	-	100	0	0	0	
5	Maple Road Westbound	Left	0	0	0	0	0	0	0	_	_	2	2	0.1	0.1	2	100	0	0	0	
	Maple Road Westbound	Thru	150	203	239	261	853	221	246	260	244	971	1824	266	52.2	1824	100	0	0	0	
		Right	0	0	0	0	0	0	_	_	0	2	2	0.1	0.1	2	100	0	0	0	
I	rse	Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Audubon Golf Course Driveway Southbound	Left	0	0	0	-	-	0	0	0	0	0	-	100	0	-	100	0	0	0	
	ubon Golf Co Driveway Southbound	Thru	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ľ	Aud	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		Start Time	07:00 AM	07:15 AM	07:30 AM	07:45 AM	Total	08:00 AM	08:15 AM	08:30 AM	08:45 AM	Total	Grand Total	Apprch %	Total %	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	

### SRF & Associates

3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name: Maple.Sandhurst.AM.Peak Site Code: 111111111 Start Date: 11/14/2012 Page No: 2

	Int. Total			543		487	483	1959		.902	1959		0	0	0	0
	App. Total			275		235	218	920		.864	920		0	0	0	0
oad	Peds				-	0	0	-	0.1	.250	-		0	0	0	0
Maple Road Eastbound	Left			-	0	0	0	1	0.1	.250	-		0	0	0	0
∑ B B	Thru			272	220	234	218	944	99.4	.868	944		0	0	0	0
	Right			7	-	-	0	4	0.4	.500	4		0	0	0	0
	App. Total			9	ო	4	က	16		299.	16		0	0	0	0
Lane	Peds				0	0	0	0	0	000	0		0	0	0	0
Sandhurst Lane Northbound	Left			9	ო	7	7	13	81.2	.542	13		0	0	0	0
Sand	Thru			0	0	0	0	0	0	000	0		0	0	0	0
	Right			0	0	7	~	3	18.8	.375	ო		0	0	0	0
	App. Total			261	221	248	262	992		.947	992		0	0	0	0
ad	Peds			0	0	-	0	-	0.1	.250	-		0	0	0	0
Maple Road Westbound	Left	of 1		0	0	0	-	1	0.1	.250	-		0	0	0	0
Ma	Thru	Peak 1	Σ	261	221	246	260	988	9.66	.946	988		0	0	0	0
	Right	AM - F	7:45 AI	0	0	-	-	7	0.2	.500	2		0	0	0	0
e se	App. Total	08:45	ns at 0	-	0	0	0	-		.250	-		0	0	0	0
Audubon Golf Course Driveway Southbound		AM to	n Begir	)	0	0	0	0	0	000	0		0	0	0	0
John Golf Co Driveway Southbound	Right Thru Left Peds	00:20	section	-	0	0	0	1	100	.250	-		0	0	0	0
idubo D So I	Thru	From	e Inter	0	0	0	0	0	0	000	0		0	0	0	0
¥		nalysis	or Entir	0	0	0	0	0	0	000	0		0	0	0	0
	Start Time	Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1	Peak Hour for Entire Intersection Begins at 07:45 AM	07:45 AM	08:00 AM	08:15 AM	08:30 AM	Total Volume	% App. Total	품	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2

	Maple Road In Total 948 992 1940 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
Audubon Golf Course Driveway your old of the course of the	Peak Hour Data  North Peak Hour Begins at 07.45 AM Bank 2 Bank 2	Left Thur Right Peds  13 0 0 0 0  13 0 0 0 0  13 0 0 0 0  14 0 0 0 0 0  15 0 0 0 0 0  16 0 0 0 0 0  17 0 0 0 0 0  18 0 0 0 0  18 0 0 0 0  18 0 0
	197   null   146   190   100	

#### 3495 Winton Place, Building E, Suite 110 Rochester, NY 14623 SRF & Associates

File Name: Maple.Sandhurst.PM.Peak Site Code: 22222222 Start Date: 11/14/2012 Page No: 1

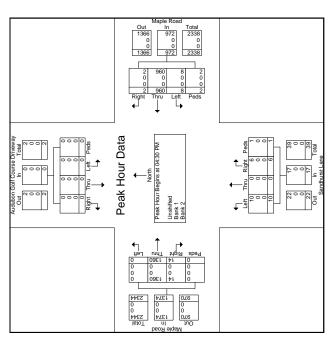
			Int. Total	565	472	620	524	2181	601	618	547	530	2296	4477			4477	100	0	0	0	0
			Peds	-	0	0	0	=	0	0	0	0	0	_	0	0	-	100	0	0	0	0
	oad	pun	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Maple Road	Eastbound	Thru	318	259	368	288	1233	358	346	300	285	1289	2522	98.9	56.3	2522	100	0	0	0	0
			Right	4	-	4	4	13	-	S)	7	2	13	26	-	9.0	56	100	0	0	0	0
			Peds	0	0	0	_	F	0	0	0	0	0	_	3.1	0	-	100	0	0	0	0
ınk 2	Sandhurst Lane	puno	Left	0	4	က	4	11	~	7	-	7	9	17	53.1	0.4	17	100	0	0	0	0
k 1 - Ba	ndhur	Northbound	Thru	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Groups Printed- Unshifted - Bank 1 - Bank 2	Š		Right	က	7	-	7	80	0	ო	က	0	9	4	43.8	0.3	14	100	0	0	0	0
nshifte			Peds	-	0	0	0	-	0	7	00	-	11	12	9.0	0.3	12	100	0	0	0	0
nted- U	Soad	puno	Left	4	4	4	~	13	-	7	က	က	6	22	1.2	0.5	22	100	0	0	0	0
ups Pri	Maple Road	Westbound	Thru	234	202	239	224	839	239	258	230	234	961	1860	98.1	41.5	1860	100	0	0	0	0
Gro			Right	0	0	-	0	-	~	0	0	0	-	2	0.1	0	2	100	0	0	0	0
	se		Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	If Cour	ound	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Audubon Golf Course	Southbound	Thru	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Andu	•	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Start Time	04:00 PM	04:15 PM	04:30 PM	04:45 PM	Total	05:00 PM	05:15 PM	05:30 PM	05:45 PM	Total	Grand Total	Apprch %	Total %	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2

### SRF & Associates

3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name: Maple.Sandhurst.PM.Peak Site Code: 22222222 Start Date: 11/14/2012 Page No: 2

	Int. Total			_	524	_		1 2363		3 .953		100	0	0	0	0
	App. Total			372	292	329		1374		.923		100	U	0	0	0
oad	Peds			0	0	0		0	0	000		0	0	0	0	0
Maple Road Eastbound	Left			0	0	0		0	0	000		0	0	0	0	0
ВЩ	Thru			368	288	358		1360	66	.924	1360	100	0	0	0	0
	Right			_	4	_	2	14	-	.700	14	100	0	0	0	0
	App. Total				7	_		17		209	17	100	0	0	0	0
Lane	Peds				-	0		1	5.9	.250	-	100	0	0	0	0
Sandhurst Lane Northbound	Left				4	_		10	58.8	.625	9	100	0	0	0	0
Sand	Thru				0	0		0	0	000	0	0	0	0	0	0
	Right			_	7	0	٣	9	35.3	.500	9	100	0	0	0	0
	App. Total				225	241	262	972		.927	972	100	0	0	0	0
oad	Peds				0	0	7	2	0.2	.250	7	100	0	0	0	0
Maple Road Westbound	Left	of 1		4	_	_	7	8	0.8	.500	ω	100	0	0	0	0
Σ×	Thru	Peak 1	Σ		224	239	258	096	98.8	930	096	100	0	0	0	0
	Right	PM-	4:30 P	_	0	_	0	2	0.2	.500	7	100	0	0	0	0
es.	App. Total Right Thru	05:45	ns at 0	0	0	0	0	0		000	0	0	0	0	0	0
Audubon Golf Course Driveway Southbound	Peds	PM to	n Begi	0	0	0	0	0	0	000	0	0	0	0	0	0
ibon Golf Co Driveway Southbound	Left	04:0C	rsectio	0	0	0	0	0	0	000	0	0	0	0	0	0
odubi O S	Thru	s From	re Inter	0	0	0	0	0	0	000	0	0	0	0	0	0
₹	Right	nalysi	or Entir	0	0	0	0	0	0	000	0	0	0	0	0	0
	Start Time	Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1	Peak Hour for Entire Intersection Begins at 04:30 PM	04:30 PM	04:45 PM	05:00 PM	05:15 PM	Total Volume	% App. Total	PHF	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2



3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

eak

Start Date: 9/12/2013 Page No:1 Bank 1-Bank 2

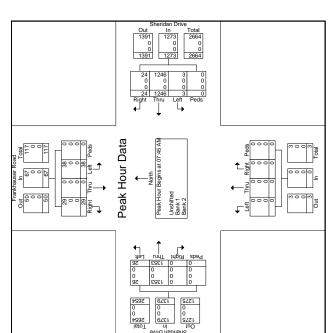
			Int. Total	482	734	758	741	2715	989	642	650	588	2566	5281			5281	100	0	0	0	0
			Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Drive	pun	Left	1	-	2	0	16	œ	7	7	2	22	38	4.	0.7	38	100	0	0	0	0
	Sheridan Drive	Eastbound	Thru	229	354	374	379	1336	368	308	298	280	1254	2590	98.6	49	2590	100	0	0	0	0
	S		Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
노 소		punc	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(1 - Ba		Northbound	Thru	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
d - Banl		_	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
nshifte(			Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ted- C	Drive	pun	Left	0	0	0	0	0	က	0	0	0	3	က	0.1	0.1	3	100	0	0	0	0
Groups Printed- Unshifted - Bank 1 - Bank 2	Sheridan Drive	Westbound	Thru	237	320	351	331	1269	290	303	322	286	1201	2470	98.2	46.8	2470	100	0	0	0	0
9	S		Right	7	2	4	9	22	4	6	2	က	21	43	1.7	8.0	43	100	0	0	0	0
	-		Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Frankhauser Road	puno	Left	2	16	19	7	47	7	00	16	9	37	8	61.3	1.6	84	100	0	0	0	0
	nkhaus	Southbound	Thru	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Fra	•	Right	3	œ	2	တ	25	9	7	7	ω	28	53	38.7	-	23	100	0	0	0	0
			Start Time	07:00 AM	07:15 AM	07:30 AM	07:45 AM	Total	08:00 AM	08:15 AM	08:30 AM	08:45 AM	Total	Grand Total	Apprch %	Total %	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2



3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name: Sheridan. Frankhauser. AM. Peak Site Code: 09122013 Start Date: 9/12/2013 Page No: 2

		-	1		_		~	_	ما		 		_	_	_	_	_
		Int. Total			741		642	650	2719		.917		100	_	_	_	_
		App. Total			388		315	300	1379		.889		100	0	0	0	0
rive	덛	Peds					0	0	0	0	000		0	0	0	0	C
Sheridan Drive	Eastbound	Left			6		7	7	56	6.1	.722		100	0	0	0	C
Sher	В	Thru			379		308	298	1353	98.1	.892	1353	100	0	0	0	C
		Right			0		0	0	0	0	000		0	0	0	0	_
		App. Total			0		0	0	0		000		0	0	0	0	_
	pu	Peds			0		0	0	0	0	000		0	0	0	0	_
	Northbound	Left			0		0	0	0	0	000		0	0	0	0	_
	Ž	Thru			0		0	0	0	0	000		0	0	0	0	_
		Right			0		0	0	0	0	000		0	0	0	0	_
		App. Total			337		312	327	1273		.944		100	0	0	0	_
Orive	pu	Peds			0		0	0	0	0	000		0	0	0	0	_
Sheridan Drive	Westbound	Left	of 1		0	က	0	0	က	0.2	.250		100	0	0	0	_
She	š	Thru	Peak 1	>	331	290	303	322	1246	97.9	.941	1246	100	0	0	0	_
		Right	AM - F	7:45 AI		4	6	2	54	1.9	299.	54	100	0	0	0	_
_		App. Total	08:30	ns at 0		13	15	23	29		.728	29	100	0	0	0	_
Frankhauser Road	pun		AM to	n Begii	)	0	0	0	0	0	000	0	0	0	0	0	_
hause	Southbound	Left Peds	707:45 ח	rsection		7	œ	16	38	26.7	.594	38	100	0	0	0	_
Frank	S	Right Thru	s Fron	re Inter		0	0	0	0	0	000	0	0	0	0	0	_
		Right	Analysi	or Enti	6	9	7	^	59	43.3	908	59	100	0	0	0	_
		Start Time	Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1	Peak Hour for Entire Intersection Begins at 07:45 AM	07:45 AM	08:00 AM	08:15 AM	08:30 AM	Total Volume	% App. Total	PHF	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2



3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name: Sheridan.Frankhauser.PM.Peak
Site Code: 09112013
Start Date: 9/11/2013
Page No: 1
Groups Printed- Unshifted - Bank 1 - Bank 2

			Int. Total	789	669	714	712	2914	849	793	831	723	3196	6110			6110	100	0	0	0	0
			Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Drive	pur	Left	7	2	12	o	33	6	4	က	6	25	28	7	6.0	28	100	0	0	0	0
	Sheridan Drive	Eastbound	Thru	347	333	303	315	1298	383	376	401	328	1488	27.86	86	45.6	2786	100	0	0	0	0
	Ŗ	_	Right	0	0	0	0	0	0	0	0	0	. 0	0	0	0		0	0	0	0	0
			Peds R	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
X Z		pur	Left P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 - Ban		Northbound	Thru	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Groups Printed- Unsnirted - Bank 1 - Bank 2		Ż	Right 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
nirted			Peds R	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ed- Ons	rive	힏	Left P	0	92	0	0	65	0	0	12	0	12	11	2.5	1.3		100	0	0	0	0
SPrint	Sheridan Drive	Westbound	Thru L	406	272	364	363	1405	421	929	376	361	1534	2939	92	48.1	2939	100	0	0	0	0
dnoیو	She	≷		8	2	2	80	36 14	9	6	9	7	41 15	7 26		1.3	77 29		0	0	0	0
			Right			_		L					_	_	2	<u>-</u>		100				_
	ō		Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	er Roa	puno	Left	14	10	=	9	41	16	19	13	6	25	86	9.99	1.6	86	100	0	0	0	0
	Frankhauser Road	Southbound	Thru	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Frai		Right	7	6	6	7	36	1	6	10	6	39	75	43.4	1.2	22	100	0	0	0	0
			Start Time	04:00 PM	04:15 PM	04:30 PM	04:45 PM	Total	05:00 PM	05:15 PM	05:30 PM	05:45 PM	Total	Grand Total	Apprch %	Total %	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2

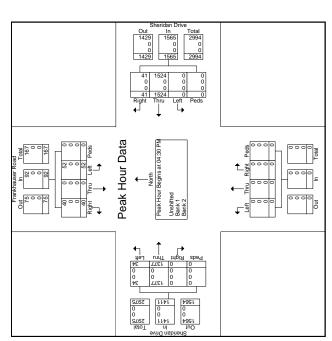
### **SRF & Associates**

3495 Winton Place, Building E, Suite 110 Rochester, NY 14623



File Name: Sheridan. Frankhauser. PM. Peak Site Code: 09112013 Start Date: 9/11/2013 Page No: 2

			i								ı						
		Int. Total				712	849	793	3068		.903		100	0	0	0	0
		App. Total				324	392	380	1411		900		100	0	0	0	0
Orive	덛	Peds				0	0	0	0	0	000		0	0	0	0	0
Sheridan Drive	Eastbound	Left Peds			12	6	6	4	34	2.4	.708		100	0	0	0	0
She	ш	Thru				315	383	376	1377	97.6	668.	1377	100	0	0	0	0
		Right				0	0	0	0	0	000		0	0	0	0	0
		App. Total				0	0	0	0		000		0	0	0	0	0
	pu	Peds				0	0	0	0	0	000		0	0	0	0	0
	Northbound	Left				0	0	0	0	0	000		0	0	0	0	0
	Š	Thru				0	0	0	0	0	000		0	0	0	0	0
		Right				0	0	0	0	0	000		0	0	0	0	0
		App. Total				371	430	382	1565		.910		100	0	0	0	0
Orive	pu	Peds				0	0	0	0	0	000		0	0	0	0	0
Sheridan Drive	Westbound	Left	of 1			0	0	0	0	0	000		0	0	0	0	0
She	š	Thru	Peak 1	>		363	421	376	1524	97.4	306	1524	100	0	0	0	0
		Right	PM-F	4:30 PI	15	ω	6	6	41	5.6	.683	41	100	0	0	0	0
_		App. Total	05:15	o at 0	20	17	27	8	92		.821	92	100	0	0	0	0
r Roac	pur	Peds	PM to	n Begir	0	0	0		0	0	000	0	0	0	0	0	0
ause	Southbound	Left	04:30	section	7	9	16	19	25	56.5	.684	25	100	0	0	0	0
Frankhauser Road	Sol	Thru	s From	e Inter	0	0	0	0	0	0	000	0	0	0	0	0	0
		Right	Analysi	or Entir	6	Ξ	7	6	40	43.5	606:	40	100	0	0	0	0
		Start Time	Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of	Peak Hour for Entire Intersection Begins at 04:30 PM	04:30 PM	04:45 PM	05:00 PM	05:15 PM	Total Volume	% App. Total	PHF	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2



3495 Winton Place, Building E, Suite 110 Rochester, NY 14623



File Name: Sheridan.Fenwick.AM.Peak Site Code: 12121212 Start Date: 9/12/2013 Page No: 1

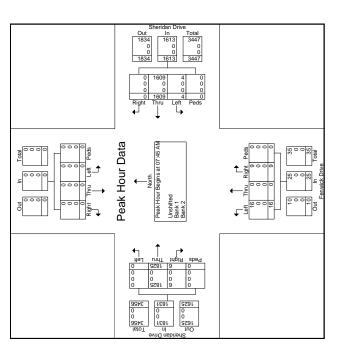
					ฐ	oups Pr	inted- L	Jnshift	Groups Printed- Unshifted - Bank 1 - Bank 2	차 1- B	ank 2						
						Sheridan Drive	n Drive			Fenwick Drive	Drive		,	Sherida	Sheridan Drive		
		South	Southbound			Westbound	puno			Northbound	puno			Eastbound	puno		
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
07:00 AM	0	0	0	0	0	290	0	0	-	0	2	0	3	289	0	0	588
07:15 AM	0	0	0	0	0	371	0	0	e	0	9	0	-	412	0	0	793
07:30 AM	0	0	0	0	0	380	-	0	2	0	6	0	0	494	0	0	886
07:45 AM	0	0	0	0	0	447	0	0	0	0	2	0	-	480	0	0	930
Total	0	0	0	0	0	1488	-	0	9	0	22	0	2	1675	0	0	3197
08:00 AM	0	0	0	0	0	437	0	0	4	0	2	0	2	518	0	0	996
08:15 AM	0	0	0	0	0	346	4	0	-	0	9	0	7	480	0	0	839
08:30 AM	0	0	0	0	0	379	0	0	4	0	က	0	-	347	0	0	734
08:45 AM	0	0	0	0	0	385	-	0	က	0	-	0	2	375	0	0	767
Total	0	0	0	0	0	1547	ည	0	12	0	12	0	7	1720	0	0	3306
Grand Total	0	0	0	0	0	3035	9	0	18	0	37	0	12	3395	0	0	6503
Apprch %	0	0	0	0	0	8.66	0.2	0	32.7	0	67.3	0	0.4	966	0	0	
Total %	0	0	0	0	0	46.7	0.1	0	0.3	0	9.0	0	0.2	52.2	0	0	
Unshifted	0	0	0	0	0	3035	9	0	18	0	37	0	12	3395	0	0	6503
% Unshifted	0	0	0	0	0	100	100	0	100	0	100	0	100	100	0	0	100
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 2	C	C	С	C	c	С	C	0	_	C	C	C	C	C	C	_	0

### **SRF & Associates**

3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name: Sheridan.Fenwick.AM.Peak Site Code: 12121212 Start Date: 9/12/2013 Page No: 2

	_	1								ı						
	Int. Total			930	996		734	3469		868.		100	0	0	0	0
	Am. Total			481	520		348	1831		.880		100	0	0	0	0
rive Pd	Peds			0	0		0	0	0	000		0	0	0	0	0
Sheridan Drive Fastbound				0	0		0	0	0	000		0	0	0	0	0
Sher	Thru   Left			480	518		347	1825	99.7	.881	1825	100	0	0	0	0
	Right			-	7		-	9	0.3 99.7	.750		100	0	0	0	0
	Acc. Total			2	6		_	52		.694		100	0	0	0	0
rive	Peds			0			0	0	0	000		0	0	0	0	0
Fenwick Drive	Left			7		9	က	16	64	299.		100	0	0	0	0
Fen	Thru			0			0	0	0	000		0	0	0	0	0
	Right			0	4		4	စ	36	.563		100	0	0	0	0
	App. Total			447	437		379	1613		.902		100	0	0	0	0
Orive	S			0	0		0	0	0	000		0	0	0	0	0
Sheridan Drive Westbound	Left Peds	of 1		0	0	4	0	4	0.2	.250		100	0	0	0	0
Sher	Right Thru	eak 1	5	447	437	346	379	1609	8.66	900	1609	100	0	0	0	0
	Right	AM - F	:45 AI	0	0	0	0	0	0	000	0	0	0	0	0	0
	Acc. Total	08:30	ns at 07	0	0	0	•	0		000	0	0	0	0	0	0
2	$\vdash$	AM to	n Begir	0	0	0	0	0	0	000	0	0	0	0	0	0
Southbound	Left	07:45	section	0	0	0	0	0	0	000	0	0	0	0	0	0
S	Thru	From	e Inter	0	0	0	0	0	0	000	0	0	0	0	0	0
	Right	nalysis	r Entir	0	0	0	0	0	0	000	0	0	0	0	0	0
	Start Time	Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1	Peak Hour for Entire Intersection Begins at 07:45 AM	07:45 AM	08:00 AM	08:15 AM	08:30 AM	Total Volume	% App. Total	HH.	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2



3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name: Sheridan.Fenwick.PM.Peak Site Code: 00000000 Start Date: 9/11/2013 Page No: 1

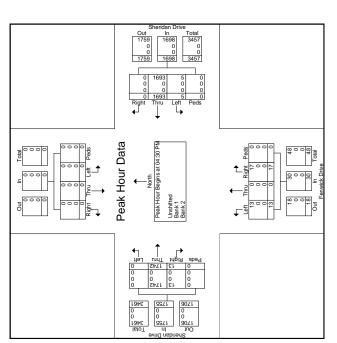
					5	- sdm	- ball		Groups Printeg- Unsnitted - Dank 1 - Dank 2		7 11						
						Sheridan Drive	n Drive		_	Fenwick Drive	Drive		,	Sheridan Drive	n Drive		
		Southbound	punoq			Westbound	puno			Northbound	puno			Eastbound	puno		
Start Time	Right	Thru	Left	Sped	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
04:00 PM	က	0	0	0	0	389	-	0	-	0	2	0	2	420	0	0	84
04:15 PM	4	0	0	0	0	426	-	0	7	0	-	0	s	449	0	0	88
04:30 PM	0	0	0	0	0	408	-	0	2	0	4	0	10	397	0	0	82
04:45 PM	0	0	0	0	0	436	-	0	2	0	2	0	0	417	0	0	864
Total	7	0	0	0	0	1659	4	0	13	0	12	0	17	1683	0	0	339
05:00 PM	0	0	0	0	0	449	-	0	4	0	-	0	-	425	0	0	-88
05:15 PM	0	0	0	0	0	400	7	0	က	0	က	0	2	503	0	0	9
05:30 PM	0	0	0	0	0	416	က	0	က	0	2	0	80	417	0	0	82
05:45 PM	0	0	0	0	0	392	2	0	4	0	က	0	2	426	0	0	832
Total	0	0	0	0	0	1657	11	0	14	0	12	0	13	1771	0	0	347
Grand Total	7	0	0	0	0	3316	15	0	27	0	24	0	30	3454	0	0	6873
Apprch %	•	0	0	0	0	99.5	0.5	0	52.9	0	47.1	0	6.0	99.1	0	0	
Total %	0.1	0	0	0	0	48.2	0.2	0	0.4	0	0.3	0	0.4	50.3	0	0	
Unshifted	7	0	0	0	0	3316	15	0	27	0	24	0	30	3454	0	0	6873
% Unshifted	100	0	0	0	0	100	100	0	100	0	100	0	100	100	0	0	100
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% Bank 2	C	C	C	C	0	C	C	c	c	c	c	c	C	C	C	C	

### SRF & Associates

3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name: Sheridan.Fenwick.PM.Peak Site Code: 000000000 Start Date: 9/11/2013 Page No: 2

			1														
		Int. Total				864	881	913	3483		.954		100	0	0	0	0
		App. Total				417	426	202	1755		.869		100	0	0	0	0
rive	덛	Peds				0	0	0	0	0	000		0	0	0	0	0
Sheridan Drive	Eastbound	Left				0	0	0	0	0	000		0	0	0	0	0
Sher	Ëa	Thru				417	425	503	1742	99.3	998.	1742	100	0	0	0	0
		Right			9	0	-		13	0.7	.325		100	0	0	0	0
		App. Total			_	9	2		30		.750		100	0	0	0	0
rive	þ	Peds				0	0		0	0	000		0	0	0	0	0
Fenwick Drive	Northbound	Left				2	-		13	43.3	.650		100	0	0	0	0
Fenv	Š	Thru				0	0		0	0	000		0	0	0	0	0
		Right			2	2	4		17	26.7	.850		100	0	0	0	0
		App. Total			409	437	420		1698		.943		100	0	0	0	0
rive	p	Peds			0	0	0		0	0	000		0	0	0	0	0
Sheridan Drive	Westbound	Left	of 1		-	-	-	7	2	0.3	.625		100	0	0	0	0
Sher	We	Thru	eak 1	_	408	436	449	400	1693	2.66	.943	1693	100	0	0	0	0
		Right	PM - P	1:30 PN	0	0	0	0	0	0	000	0	0	0	0	0	0
		App. Total	05:15	is at 04	0	0	0	0	0		000	0	0	0	0	0	0
	pu		PM to	Begir	0	0	0	0	0	0	000	0	0	0	0	0	0
	Southbound	Left Peds	04:30	section	0	0	0	0	0	0	000.	0	0	0	0	0	0
	Sou	Thru	From	e Inters	0	0	0	0	0	0	000.	0	0	0	0	0	0
		Right Thru	nalysis	r Entire	0	0	0	0	0	0	000	0	0	0	0	0	0
		Start Time	Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1	Peak Hour for Entire Intersection Begins at 04:30 PM	04:30 PM	04:45 PM	05:00 PM	05:15 PM	Total Volume	% App. Total	표	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2



3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name: Sheridan.I290NB.AM.Peak Site Code: 22222222 Start Date: 9/12/2013 Page No: 1

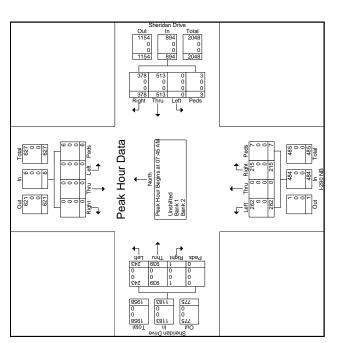
			Int. Total	549	594	229	1820	209	648	635	643	2533	620	4973			4973	100	0	0	0	0
			Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Drive	pun	Left	24	38	29	129	22	22	64	22	233	42	404	18.9	8.1	404	100	0	0	0	0
	Sheridan Drive	Eastbound	Thru	207	202	247	929	210	243	239	186	878	200	1734	81.1	34.9	1734	100	0	0	0	0
	ᅘ		Right	0	0	0	0	0	0	-	0	-	0	<del>-</del>	0	0	-	100	0	0	0	0
			Peds	2	_	_	4	0	0	9	0	9	_	-		0.2	11	100	0	0	0	0
7 7	9	pun	Left	39	29	29	165	54	69	80	29	282	87	534	54.5	10.7	534	100	0	0	0	0
1 - Bar	I-290 NB	Northbound	Thru	0	0	0	0	0	0	0	-	-	0	-	0.1	0	-	100	0	0	0	0
i - Bank		_	Right	26	20	92	171	26	43	21	22	205	22	433	44.2	8.7	433	100	0	0	0	0
snirtec			Peds	0	0	7	2	0	_	0	0	-	0	e	0.2	0.1	က	100	0	0	0	0
red- Or	Drive	pur	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Groups Printed- Unshifted - Bank 1 - Bank 2	Sheridan Drive	Westbound	Thru	153	157	143	453	126	130	114	178	548	160	1161	62.8	23.3	1161	100	0	0	0	0
5	S		Right	89	28	93	239	86	107	80	87	372	73	684	37	13.8	684	100	0	0	0	0
			Peds	0	-	0	-	9	0	0	0	9	0	7	100	0.1	7	100	0	0	0	0
		punc	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Southbound	Thru	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		٠,	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Start Time	07:15 AM	07:30 AM	07:45 AM	Total	08:00 AM	08:15 AM	08:30 AM	08:45 AM	Total	09:00 AM	Grand Total	Apprch %	Total %	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2

### SRF & Associates

3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name: Sheridan.I290NB.AM.Peak Site Code: 22222222 Start Date: 9/12/2013 Page No: 2

	Int. Total			229	209		635	2567		.948	2567		0	0	0	0
	App. Total			314	267	_	304	1183	_	.942	1183	_	0	0	0	0
rive od	_				0		0	0	0	000	0		0	0	0	0
Sheridan Drive Eastbound	Left Peds			29	22		4	243	20.5	206	243		0	0	0	0
Sher	Thru			247	210		239	626	79.4	.950	939		0	0	0	0
	Right				0		_	-	0.1	.250	-		0	0	0	0
	App. Total				110		137	484		.883	484		0	0	0	0
e Pu	Peds				0		9	7	4.1	.292	7		0	0	0	0
I-290 NB Northbound	Left				\$		8	262	54.1	.819	262		0	0	0	0
Ž	Thru				0		0	0	0	000	0		0	0	0	0
	Right			- 65	26		5	215	44.4	.827	215		0	0	0	_
	App. Total			238	224		194	894		.939	894		0	0	0	0
Drive	Peds			7	0		0	က	0.3	375	8		0	0	0	0
Sheridan Drive Westbound	Right Thru Left Peds	1 of 1		0	0		0	0	0	000	0		0	0	0	0
š	Thru	Peak	Ā	143	126		114	513	57.4	1 897	513		0	0	0	0
	Righ	O AM	07:45	- 6	8	107	8	6 378	42.3	.883	6 378		_	_	_	_
	App. Total	0:60 0	ins at		w	0	٥	۵		.250			Ü	0	0	J
puno	Peds	5 AM 1	on Beg	0	9	0	0	9	100	.250	9		0	0	0	0
Southbound	Left	m 07:1	ersecti	0	0	0	•	0	0	000	0		0	0	0	0
ഗ്	Thru	sis Fro	tire Int	0	0	0	0	0	0	000° C	0		0	0	0	0
	Right	Analy	for En	_	_	_	_	٥	_	000	_	-	J	_	٠.	
	Start Time	Peak Hour Analysis From 07:15 AM to 09:00 AM - Peak 1 of 1	Peak Hour for Entire Intersection Begins at 07:45 AM	07:45 AM	08:00 AM	08:15 AM	08:30 AM	Total Volume	% App. Total	품	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2



3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name : Sheridan.1290NB.PM.Peak
Site Code : 11111111
Start Date : 9/11/2013
Page No : 1
Groups Printed - Bank 1 - Bank 2

		_	,																		
		Int. Total	789	804	804	2397	813	802	804	800	3222	730	6349			6349	100	0	0	0	0
		Peds	0	0	0	0	0	7	2	_	2	0	S	0.2	0.1	2	100	0	0	0	0
n Drive	puno	Left	94	92	98	275	81	84	90	82	340	73	688	24.9	10.8	688	100	0	0	0	0
Sheridan Drive	Eastbound	Thru	257	250	257	764	268	264	279	273	1084	227	2075	22	32.7	2075	100	0	0	0	0
υ,		Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Peds	0	0	0	0	0	15	_	_	17	7	24	1.7	0.4	24	100	0	0	0	0
쒿	puno	Left	78	93	9	236	72	79	83	75	309	63	809	43.9	9.6	809	100	0	0	0	0
I-290 NB	Northbound	Thru	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Right	104	128	91	323	06	1	88	96	349	8	753	54.4	11.9	753	100	0	0	0	0
		Peds	0	0	0	0	0	0	_	2	9	_	7	0.3	0.1	7	100	0	0	0	0
n Drive	puno	Left	0	0	7	7	0	00	2	-	11	0	18	0.8	0.3	18	100	0	0	0	0
Sheridan Drive	Westbound	Thru	160	132	151	443	185	157	143	150	635	176	1254	57.3	19.8	1254	100	0	0	0	0
υ,		Right	92	103	147	345	117	119	117	113	466	100	911	41.6	14.3	911	100	0	0	0	0
		Peds	-	က	0	4	0	0	0	0	0	2	9	100	0.1	9	100	0	0	0	0
	puno	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0000

05:00 PM 05:15 PM 05:30 PM 05:45 PM Total

06:00 PM
Grand Total
Apprich %
Total %
Unshifted
% Unshifted
% Bank 1
% Bank 2
% Bank 2

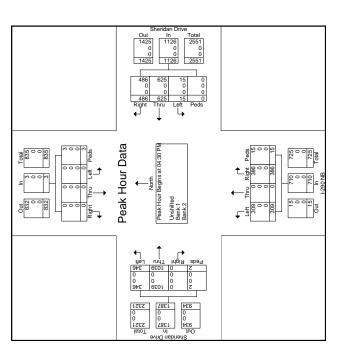
Start Time 04:15 PM 04:30 PM 04:45 PM Total



### **SRF & Associates**

3495 Winton Place, Building E, Suite 110 Rochester, NY 14623 File Name: Sheridan.I290NB.PM.Peak Site Code: 111111111 Start Date: 9/11/2013 Page No: 2

		_	1			_	_		ما		اما	ı	_	_	_	_	_
		Int. Total				804	813	806	3226		.992		100	J	J	J	J
		App. Total				343	349	320	1387		.991		100	0	0	0	0
Orive	힏	Peds				0	0	7	2	0.1	.250		100	0	0	0	0
Sheridan Drive	Eastbound	Left			92	88	81		346	24.9	.911		100	0	0	0	0
Sher	В	Thru			250	257	268		1039	0 74.9	696.	1039	100	0	0	0	0
		Right			0	0	0		0	0	000	0	0	0	0	0	0
		App. Total			221	156	162		710		.803	710	100	0	0	0	0
<b>a</b>	ը	Peds				0	0	15	15	2.1	.250	15	100	0	0	0	0
I-290 NB	Northbound	Left			8	92	72		309	43.5	.831	309	100	0	0	0	0
Ė	ž	Thru				0	0		0	0	000	0	0	0	0	0	0
		Right			138	91	6		386	54.4	.754	386	100	0	0	0	0
		App. Total			235	305	302		1126		.923	1126	100	0	0	0	0
Orive	힏	Peds			0	0	0		0	0	000	0	0	0	0	0	0
Sheridan Drive	Westbound	Left	of 1		0	7	0	œ	15	6.	.469	15	100	0	0	0	0
She	š	Thru	Peak 1	Σ	132	151	185	157	625	55.5	.845	625	100	0	0	0	0
		Right	PM -	4:30 P	103	147	117	119	486	43.2	.827	486	100	0	0	0	0
	Ī	App. Total Right   Thru   Left	00:90	ns at 0	e	0	0	0	3		.250	3	100	0	0	0	0
	pun	Peds	PM to	n Begin	က	0	0	0	က	100	.250	3	100	0	0	0	0
	Southbound	Left	1 04:15	rsectio,	0	0	0	0	0	0	000	0	0	0	0	0	0
	Š	Right Thru	s Fron	re Inter	0	0	0	0	0	0	000	0	0	0	0	0	0
			nalysi	or Entir	0	•	0	0	0	0	000	0	0	0	0	0	0
		Start Time	Peak Hour Analysis From 04:15 PM to 06:00 PM - Peak 1 of	Peak Hour for Entire Intersection Begins at 04:30 PM	04:30 PM	04:45 PM	05:00 PM	05:15 PM	Total Volume	% App. Total	표	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2





3495 Winton Place, Building E, Suite 110 Rochester, NY 14623



File Name: Sheridan.Harlem.AM.Peak Site Code: 00000000 Start Date: 9/12/2013 Page No: 1

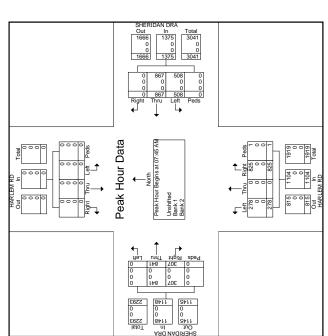
					5	Groups Printed- Unsnitted - Bank 1 - Bank 2	nred- C	JUSUITE	ed - Ban	Y	ank z						
	Ħ	HARLEM RD	۵		뿘	SHERIDAN DRA	ORA		HAR	HARLEM RD	٥		SE	SHERIDAN DRA	ORA		
		Southbound	punoc			Westbound	puno			Northbound	puno			Eastbound	punc		
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
07:00 AM	0	0	0	0	0	107	103	0	86	0	28	-	30	129	0	0	49
07:15 AM	0	0	0	0	0	187	126	0	172	0	40	_	09	153	0	0	73
07:30 AM	0	0	0	0	0	221	138	0	217	0	64	_	28	202	0	0	6
07:45 AM	0	0	0	0	0	214	109	0	242	0	62	0	9/	260	0	0	996
Total	0	0	0	0	0	729	476	0	732	0	194	က	224	744	0	0	310
08:00 AM	0	0	0	0	0	235	140	0	223	0	29	_	74	219	0	0	95
08:15 AM	0	0	0	0	0	190	116	0	193	0	29	0	92	230	0	0	6
08:30 AM	0	0	0	0	0	228	143	0	164	0	78	0	92	132	0	0	810
08:45 AM	0	0	0	0	0	246	102	0	109	0	63	0	92	160	0	0	74
Total	0	0	0	0	0	833	201	0	689	0	279	_	296	741	0	0	3406
Grand Total	0	0	0	0	0	1628	276	0	1421	0	473	4	520	1485	0	0	6208
Apprch %	0	0	0	0	0	62.5	37.5	0	74.9	0	24.9	0.2	25.9	74.1	0	0	
Total %	0	0	0	0	0	52	15	0	21.8	0	7.3	0.1	80	22.8	0	0	
Unshifted	0	0	0	0	0	1628	226	0	1421	0	473	4	520	1485	0	0	6508
% Unshifted	0	0	0	0	0	100	100	0	100	0	100	100	100	100	0	0	100
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% Bank 2	0	0	0	0	0	0	C	0	C	C	C	0	0	C	0	C	

## SRF & Associates

3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name: Sheridan.Harlem.AM.Peak Site Code: 000000000 Start Date: 9/12/2013 Page No: 2

		otal	1		996		006	810	27		.939	27		0	0	0	0
		Int. Total			<u>Б</u>		<u>Б</u>	<u>∞</u>	3627		6	3627					
		App. Total			336		322	197	1148		.854	1148		0	0	0	0
۷.	nd	Peds			0		0	0	0	0	000	0		0	0	0	0
N.	Eastbound	Left			0		0	0	0	0	000	0		0	0	0	0
SHERIDAN DRA	Ea	Thru			260		230	132	841	73.3	608	841		0	0	0	0
Ŗ		Right			9/		92	65	307	26.7	.834	307		0	0	0	0
		App. Total			307		272	242	1104		668.	1104		0	0	0	0
	nd	Peds				-	0	0	-	0.1	.250	-		0	0	0	0
ARD:	Northbound	Left				26	62	28	278	25.2	.880	278		0	0	0	0
HARLEM RD	Š	Thru				0	0	0	0	0	000	0		0	0	0	0
ì		Right			245	223	193	164	825	74.7	.842	825		0	0	0	0
		App. Total			323	375	306	371	1375		.917	1375		0	0	0	0
۷.	nd	Peds			0	0	0	0	0	0	000	0		0	0	0	0
SHERIDAN DRA	Westbound	Left	of 1		109	140	116	143	208	36.9	888	208		0	0	0	0
ERE S	We	Thru	eak 1	_	214	235	190	228	298	63.1	.922	298		0	0	0	0
Ϋ́		Right	AM - F	:45 AP	0	0	0	0	0	0	000	0		0	0	0	0
		App. Total	08:30	ns at 07	0	0	0	0	0		000	0		0	0	0	0
	pur	Peds	AM to	n Begir	0	0	0	0	0	0	000	0		0	0	0	0
M RD	Southbound	Left	07:45	section	0	0	0	0	0	0	000	0		0	0	0	0
HARLEM RD	So	Thru	From:	e Inter	0	0	0	0	0	0	000	0		0	0	0	0
Í		Right	nalysis	or Entir	0	0	0	0	0	0	000	0		0	0	0	0
		Start Time	Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1	Peak Hour for Entire Intersection Begins at 07:45 AM	07:45 AM	08:00 AM	08:15 AM	08:30 AM	Total Volume	% App. Total	품	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2



3495 Winton Place, Building E, Suite 110 Rochester, NY 14623



			Int. Total	982	1054	920	927	3883	626	926	873	941	3729	7612			7612	100	0	0	0	0
			Peds	7	0	0	0	_	0	0	_	0	1	8	0.3	0.1	∞	100	0	0	0	0
	œ	pur	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SHERIDAN DR	Eastbound	Thru	192	227	229	235	883	225	233	185	256	899	1782	59.9	23.4	1782	100	0	0	0	0
	SHER		Right	185	173	145	133	989	160	151	107	129	547	1183	39.8	15.5	1183	100	0	0	0	0
			Peds	2	-	0	0	9	က	_	0	0	4	10	0.5	0.1	10	100	0	0	0	0
ı X	_	puno	Left	99	72	29	24	259	72	29	62	72	273	532	27.8	7	532	100	0	0	0	0
K 1 - 158	HARLEM RD	Northbound	Thru	0	0	0	0	0	0	0	-	0	-	-	0.1	0	-	100	0	0	0	0
a - Ban	HAR		Right	179	203	146	153	681	153	200	198	136	289	1368	71.6	18	1368	100	0	0	0	0
nsnirte			Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ted- O	Ä.	pun	Left	113	126	100	108	447	85	88	92	92	330	777	28.5	10.2	111	100	0	0	0	0
Groups Printed- Unshifted - Bank 1 - Bank 2	SHERIDAN DR	Westbound	Thru	234	252	233	244	963	244	236	252	253	982	1948	71.4	25.6	1948	100	0	0	0	0
2	思		Right	-	0	0	0	-	0	0	7	0	2	က	0.1	0	က	100	0	0	0	0
			Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		puno	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	HARLEM RD	Southbound	Thru	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	HAR	•	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Start Time	04:00 PM	04:15 PM	04:30 PM	04:45 PM	Total	05:00 PM	05:15 PM	05:30 PM	05:45 PM	Total	Grand Total	Apprch %	Total %	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2

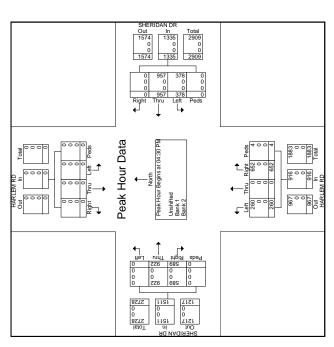
### SRF & Associates

3495 Winton Place, Building E, Suite 110 Rochester, NY 14623



File Name: Sheridan.Harlem.PM.Peak Site Code: 000000000 Start Date: 9/11/2013 Page No: 2

SHERIDAN DR
App. Total Right Thru
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of
Begins at 04:30 PM
0 0 233
0 0 244
0 0 244
0 236
0 957
0 71.7
.000 .000
0 957
0 0
0 0
0 0
0 0 0



3495 Winton Place, Building E, Suite 110 Rochester, NY 14623



File Name : Sheridan.Mill.AM.Peak Site Code : 22222222 Start Date : 9/12/2013 Page No : 1

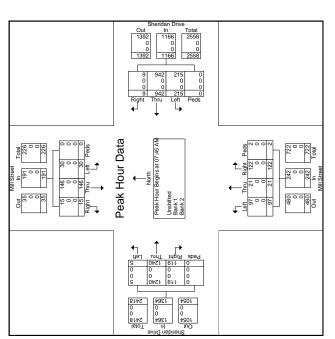
			tal	52	56	01	722	စ္က	34	17	30	775	91	96			96	00	0	0	0	_
			Int. Total	27	-	<u>ش</u>		278	_	-		_	30.	9629			96/5	<u>~</u>				
			Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	С
	Drive π	punc	Left	2	0	0	0	2	2	_	2	7	7	თ	0.3	0.2	6	100	0	0	0	C
	Sheridan Drive	Eastbound	Thru	223	305	348	302	1178	323	357	258	324	1262	2440	91.9	42.1	2440	100	0	0	0	C
	S		Right	17	52	22	27	91	34	36	22	22	114	205	7.7	3.5	205	100	0	0	0	C
			Peds	0	0	0	0	0	0	0	7	0	2	2	4.0	0	2	100	0	0	0	C
J Y	reet	puno	Left	15	12	24	21	72	18	22	36	43	119	191	39.7	3.3	191	100	0	0	0	C
	Mill Street	Northbound	Thru	4	4	00	က	19	2	4	6	7	53	48	10	0.8	48	100	0	0	0	C
Groups Printed- Unsnirted - Bank 1 - Bank 2			Right	18	56	56	17	87	19	56	09	48	153	240	49.9	4.1	240	100	0	0	0	C
nsnite			Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	C
nted- C	Drive .	puno	Left	22	9/	21	23	237	71	4	51	31	193	430	18.6	7.4	430	100	0	0	0	C
nds du	Sheridan Drive	Westbound	Thru	163	241	281	248	933	255	228	211	244	938	1871	80.8	32.3	1871	100	0	0	0	C
2	S		Right	2	0	က	4	စ	е	<del>-</del>	-	7	7	16	0.7	0.3	16	100	0	0	0	C
			Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	C
	reet	punc	Left	2	6	7	1	32	2	4	10	7	30	62	18	1.	62	100	0	0	0	c
	Mill Street	Southbound	Thru	14	54	8	9	102	56	52	92	33	149	251	73	4.3	251	100	0	0	0	C
			Right	2	4	9	9	18	က	က	က	4	13	31	<b>о</b>	0.5	31	100	0	0	0	C
			Start Time	07:00 AM	07:15 AM	07:30 AM	07:45 AM	Total	08:00 AM	08:15 AM	08:30 AM	08:45 AM	Total	Grand Total	Apprch %	Total %	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2

### **SRF & Associates**

3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name : Sheridan.Mill.AM.Peak Site Code : 22222222 Start Date : 9/12/2013 Page No : 2

	Int. Total				764	747	730	2963		970		100	0	0	0	0
	App. Total				329	394	282	1364		.865		100	0	0	0	0
Orive nd	Peds				0	0	0	0	0	000		0	0	0	0	0
Sheridan Drive Eastbound	Left				7	-	7	2	0.4	.625		100	0	0	0	0
She	Thru				323	357	258	1240	90.9	.868	1240	100	0	0	0	0
	Right				38	36	22	119	8.7	.826	119	100	0	0	0	0
	App. Total				42	25	107	242		.565	242	100	0	0	0	0
aet	Peds				0	0	7	2	8.0	.250	2	100	0	0	0	0
Mill Street Northbound	Left				18	22	36	97	40.1	.674	26	100	0	0	0	0
≥ ≥	Thru				2	4	6	21	8.7	.583	21	100	0	0	0	0
	Right				19	56	8	122	50.4	.508	122	100	0	0	0	°
	App. Total				329	269	263	1166		.886	1166	100	0	0	0	0
Drive	Peds				0	0	0	0	0	000	0	0	0	0	0	0
Sheridan Drive Westbound	Left	of 1			7	4	5	215	18.4	.924 .757	215	100	0	0	0	0
She	Thru	Peak 1	Σ		255	228	211	942	80.8		942	100	0	0	0	0
	App. Total Right Thru	- MM	7:45 A	4	e	_	_	6	0.8	.563	6	100	0	0	0	° —
	App. Total	o 08:30	ns at 0		8	32	78	191		.612	191	100	0	0	0	0
eet	Peds	5 AM to	n Begi	)	0	0	0	0	0	000	0	0	0	0	0	0
Mill Street Southbound	Left	n 07:4	rsectic	Ξ	2	4	10	30	15.7	.682	30	100	0	0	0	0
≥ S	Right Thru	is Fron	ire Inte		56	52	65	146	7.9 76.4	.562	146	100	0	0	0	0
		Analys.	for Enti	9	က	က	က	15		.625	15	100	0	0	0	<u> </u>
	Start Time	Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1	Peak Hour for Entire Intersection Begins at 07:45 AM	07:45 AM	08:00 AM	08:15 AM	08:30 AM	Total Volume	% App. Total	불	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2



3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name : Sheridan.Mill.PM.Peak Site Code : 11111111 Start Date : 9/11/2013 Page No : 1

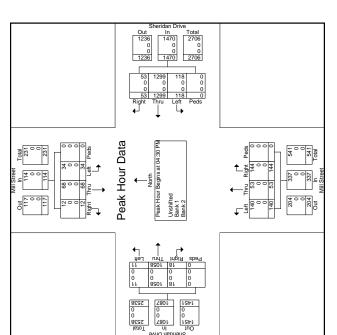
			Int. Total	692	721	778	810	3001	747	673	663	750	2833	5834			5834	100	0	0	0	0
			Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Drive	pun	Left	2	4	6	7	17	0	0	2	ω	13	30	1.5	0.5	30	100	0	0	0	0
	Sheridan Drive	Eastbound	Thru	262	287	287	319	1155	228	224	181	185	818	1973	6.96	33.8	1973	100	0	0	0	0
	s		Right	2	က	-	_	7	1	2	4	9	26	33	1.6	9.0	33	100	0	0	0	0
			Spad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 2 2	reet	punc	Left	31	54	40	36	131	42	22	4	38	143	274	42.5	4.7	274	100	0	0	0	0
k 1 - Ba	Mill Street	Northbound	Thru	14	4	6	4	21	18	12	7	4	22	106	16.5	1.8	106	100	0	0	0	0
Groups Printed- Unshifted - Bank 1 - Bank 2			Right	54	78	43	17	112	4	43	27	4	152	264	4	4.5	264	100	0	0	0	0
nshifte			Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
nted- U	Drive	punc	Left	30	37	4	31	138	33	4	4	20	81	219	7.9	3.8	219	100	0	0	0	0
ups Pri	Sheridan Drive	Westbound	Thru	305	588	317	356	1277	330	296	259	254	1139	2416	87.4	4.14	2416	100	0	0	0	0
9	65		Right	4	9	2	7	56	17	20	28	37	102	128	4.6	2.2	128	100	0	0	0	0
			Peds	-	0	0	0	-	0	0	0	0	0	_	0.3	0	1	100	0	0	0	0
	reet	puno	Left	2	2	6	9	52	7	12	49	69	137	162	41.4	2.8	162	100	0	0	0	0
	Mill Street	Southbound	Thru	11	13	4	17	22	17	20	35	29	128	183	46.8	3.1	183	100	0	0	0	0
			Right	-	<del>-</del>	4	0	9	က	2	12	19	39	45	11.5	0.8	45	100	0	0	0	0
			Start Time	04:00 PM	04:15 PM	04:30 PM	04:45 PM	Total	05:00 PM	05:15 PM	05:30 PM	05:45 PM	Total	Grand Total	Apprch %	Total %	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2

### SRF & Associates

3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name : Sheridan.Mill.PM.Peak Site Code : 11111111 Start Date : 9/11/2013 Page No : 2

	1	_	1			_		_	اسا		اسا		_	_	_	_	_
		Int. Total				810		673	3008		.928		100			_	_
		App. Total				322		229	1087		.844		100	0	0	0	0
i.	pq	Peds				0		0	0	0	000		0	0	0	0	0
Sheridan Drive	Eastbound	Left			6	7		0	1	-	306		100	0	0	0	0
Sheri	Eas	Thru				319		224	1058	97.3	.829	1058	100	0	0	0	0
		Right				<del>-</del>	7	2	18	1.7	.409		100	0	0	0	0
	_	App. Total			_	29	- 5	1	337	_	.834		100	0	0	0	0
١	p	Peds Apr				0		0	0	0	.000		0	0	0	0	0
treet	onnoc					36	~	~		2			0	0	0	0	0
Mill Street	Northbound	Left				e	4	55	140	41.5	.833		10				
_ :	Z	Thru				4	8	7	53	15.7	.736		100	0	0	0	0
		Right			43	17	4	43	44	42.7	.837		100	0	0	0	0
		App. Total				398	380	330	1470		.923		100	0	0	0	0
Orive .	pu	Peds				0	0	0	0	0	000		0	0	0	0	0
Sheridan Drive	Westbound	Left	of 1		4	31	33	4	118	00	.738		100	0	0	0	0
Sher	We	Thru	eak 1	5	317	356	330	296	1299	88.4	.912	1299	100	0	0	0	0
		Right	M- M	:30 PI	2	7	17	20	23	3.6	.663	23	100	0	0	0	0
		App. Total Right	05:15	ns at 04	27	ន	27	37	114		.770	114	100	0	0	0	0
Ę.	pur	Peds	PM to	n Begir	0	0	0	0	0	0	000	0	0	0	0	0	0
Mill Street	Southbound	Left Peds	04:30	section	6	9	7	12	34	29.8	.708	34	100	0	0	0	0
Ξ	Sol	Thru	From	e Inter	4	17	17	20	89	9.69	.850	99	100	0	0	0	0
		Right	nalysis	r Entire	4	0	က	2	12	10.5	909	12	100	0	0	0	0
		Start Time	Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of	Peak Hour for Entire Intersection Begins at 04:30 PM	04:30 PM	04:45 PM	05:00 PM	05:15 PM	Total Volume	% App. Total	Ή	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2



3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name: Sheridan\_Nforest\_AM Site Code: 01111111 Start Date: 9/12/2013 Page No: 1

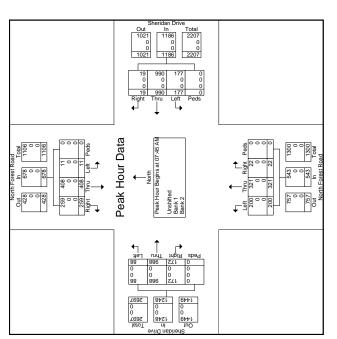
			Int. Total	295	807	830	918	3117	921	952	864	838	3575	6692			6692	100	0	0	0	0
			Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Orive	nd	Left	28	23	23	17	91	27	20	24	33	104	195	8.3	5.9	195	100	0	0	0	0
	Sheridan Drive	Eastbound	Thru	72	24	229	20	902	22	45	238	526	964	6981	79.1	6.7	1869	100	0	0	0	0
	She	Ĕ				40		34			37 2		168				299 18	100	0	0	0	0
			Right	-	.,	4		Ĺ	_	_			_	76	12	4	26					_
	ᅙ		Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ırk 2	st Roa	puno	Left	10	56	35	20	121	22	46	47	34	184	305	35.6	4.6	305	100	0	0	0	0
k 1 - Ba	North Forest Road	Northbound	Thru	16	25	29	73	210	29	87	8	22	303	513	59.9	7.7	513	100	0	0	0	0
Groups Printed- Unshifted - Bank 1 - Bank 2	Š		Right	4	0	က	က	10	က	9	10	6	28	38	4.4	9.0	38	100	0	0	0	0
nshifte			Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
nted-U	Drive	pund	Left	56	37	37	46	146	54	45	32	23	184	330	15.3	4.9	330	100	0	0	0	0
ups Prii	Sheridan Drive	Westbound	Thru	131	228	237	270	998	242	256	222	198	918	1784	82.8	26.7	1784	100	0	0	0	0
<u>o</u>	S		Right	4	7	က	9	20	က	2	2	7	20	40	1.9	9.0	40	100	0	0	0	0
	_		Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	st Road	punc	Left	9	7	0	-	6	2	2	0	10	20	59	2.2	0.4	53	100	0	0	0	0
	North Forest Road	Southbound	Thru	102	110	8	104	410	100	11	63	103	407	817	61.9	12.2	817	100	0	0	0	0
	No	•,	Right	38	44	62	54	198	61	82	29	20	275	473	35.9	7.1	473	100	0	0	0	0
			Start Time	07:00 AM	07:15 AM	07:30 AM	07:45 AM	Total	08:00 AM	08:15 AM	08:30 AM	08:45 AM	Total	Grand Total	Apprch %	% Lotal %	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2

### SRF & Associates

3495 Winton Place, Building E, Suite 110 Rochester, NY 14623

File Name: Sheridan\_Nforest\_AM Site Code: 01111111 Start Date: 9/12/2013 Page No: 2

		Int. Total			918	921	952	864	3655		960	3655		0	0	0	0
		App. Total			311	329	309	539	1248	_	.948	1248		0	0	0	0
orive	DI	Peds			0		0	0	0	0	000	0		0	0	0	0
Sheridan Drive	Stoon	Left			17	27	20	54	88	7.1	.815	88		0	0	0	0
She	Ľ	Thr.			250	255	242	238	886	79.2	696	886		0	0	0	0
		Right			4	47	4	37	172	13.8	.915	172		0	0	0	_
-		App. Total			126		139	151	543		839	543		0	0	0	С
North Forest Road	nua	Peds			0		0	0	0	0	000	0		0	0	0	С
rth Forest Ro	CILIDO	Left			20	24	46	47	200	36.8	718.	200		0	0	0	С
Š F	ž	Thru			73		87	94	321	59.1	.854	321		0	0	0	С
		Right			3	_	9	9	22	4.1	.550	22		0	_	0	_
		App. Total			322		303	262	1186		.921	1186		0	0	0	0
Sheridan Drive	nua	Peds			0		0	0	0	0	000	0		0	0	0	0
heridan Driv Wostbound	estno	Left	1 of 1		46	25	42	32	177	14.9	819	177		0	0	0	0
S	•	Thru	Peak	₹	270		256	222	066	83.5	.917	990		0	0	0	0
		Right	- MY C	7:45	9		2	2	19	1.6	.792	19		0	0	0	_
ᡓ		App. Total	0 08:30	ins at (	159		201	152	678		.843	678		0	0	0	С
North Forest Road	nuna	Peds	5 AM t	on Bec	0		0	0	0	0	000	0		0	0	0	_
rth Forest Ro	outubo	Left	m 07:4	ersectiv	_	2	2	0	1	1.6	.550	=		0	0	0	С
Nort	Ó	Right Thru Left	sis Fro	tire Int	104	100	1	93	408	2 60.2	919	3 408		0	0	0	0
			Analys	for En	1 54	19	- 88	1 29	e 259	38.2	762	d 259	70	0	0	0	0
		Start Time	Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of	Peak Hour for Entire Intersection Begins at 07:45 AM	07:45 AM	08:00 AM	08:15 AM	08:30 AM	Total Volume	% App. Total	HH	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2





Rochester, NY 14623

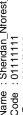
3495 Winton Place, Building E, Suite 110

File Name: Sheridan\_Nforest\_AM Site Code: 01111111 Start Date: 9/11/2013 Page No: 1

			Int. Total	295	807	830	918	3117	921	952	864	838	3275	6692			6692	100	0	0	0	0
			Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Drive	pun	Left	28	23	23	17	91	27	20	24	33	104	195	8.3	5.9	195	100	0	0	0	0
	Sheridan Drive	Eastbound	Thru	172	254	229	250	902	255	245	238	226	964	1869	79.1	27.9	1869	100	0	0	0	0
	Ö		Right	22	23	40	4	131	47	4	37	40	168	299	12.7	4.5	599	100	0	0	0	0
			Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JK Z	st Road	pun	Left	10	56	32	20	121	22	46	47	34	184	305	35.6	4.6	302	100	0	0	0	0
(1 - Ba	North Forest Road	Northbound	Thru	16	25	29	73	210	29	87	8	22	303	513	59.9	7.7	513	100	0	0	0	0
Jusnitted - Bank 1 - Bank 2	Nor	_	Right	4	0	က	က	10	က	9	10	စ	28	38	4.4	9.0	38	100	0	0	0	0
Shirtec			Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
rea- O	Drive	pun	Left	56	37	37	46	146	54	45	32	23	184	330	15.3	6.4	330	100	0	0	0	0
aroups Printed- U	Sheridan Drive	Westbound	Thru	131	228	237	270	998	242	256	222	198	918	1784	82.8	26.7	1784	100	0	0	0	0
Gro	ळ	_	Right	4	7	က	9	20	က	2	2	7	20	40	1.9	9.0	40	100	0	0	0	0
			Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	st Roac	punc	Left	9	7	0	-	6	S	2	0	10	20	53	2.2	0.4	53	100	0	0	0	0
	North Forest Road	Southbound	Thru	102	110	8	104	410	100	11	83	103	407	817	61.9	12.2	817	100	0	0	0	0
	Š	٠,	Right	38	44	62	24	198	61	82	29	20	275	473	35.9	7.1	473	100	0	0	0	0
			Start Time	07:00 AM	07:15 AM	07:30 AM	07:45 AM	Total	08:00 AM	08:15 AM	08:30 AM	08:45 AM	Total	Grand Total	Apprch %	Total %	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2

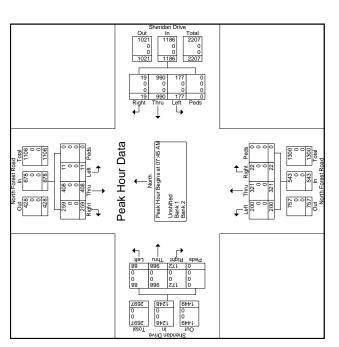
### SRF & Associates

3495 Winton Place, Building E, Suite 110 Rochester, NY 14623



File Name: Sheridan\_Nforest\_AM Site Code: 01111111 Start Date: 9/11/2013 Page No: 2

		Int. Total			918	921	952	864	3655		096	3655		0	0	0	0
	_	App. Total In			311	329	309	589	248	_	.948	1248	_	0	0	0	0
rive	פ	Peds Ap			0		0	0	0	0	000	0		0	0	0	0
Sheridan Drive	Eastbound	Left			17	27	20	54	88	7.1	. 815	88		0	0	0	0
Sher	п	Thru			250	255	245	238	886	79.2	696	988		0	0	0	0
		Right			4	47	4	37	172	13.8	.915	172		0	0	0	0
_		App. Total			126		139	151	543		839	543		0	0	0	0
North Forest Road		Peds			0		0	0	0	0	000	0		0	0	0	0
Fores	Northbound	Left			20	24	46	47	200	36.8	718.	200		0	0	0	0
North	ž	Thru			73		87	94	321	59.1	.854	321		0	0	0	0
		Right			3	_	9	9	22	4.1	.550	22		0	0	0	0
		App. Total			322		303	262	1186		.921	1186		0	0	0	0
Drive	2	Peds			0		0	0	0	0	000	0		0	0	0	0
Sheridan Drive	Westbound	Left	of 1		46	54	45	32	177	14.9	819	177		0	0	0	0
She	Š	Thru	Peak 1	Σ	270		256	222	066	83.5	.917	066		0	0	0	0
		Right	- WH	7:45 A	9		2	2	19	1.6	.792	19		0	0	0	0
ъ		App. Total	o8:30	ins at 0	159		201	152	678		.843	678		0	0	0	0
North Forest Road	g G	sped	5 AM tc	in Begi	0		0	0	0	0	000	0		0	0	0	0
Fores	Southbound	Left	n 07:4	rsectic	<b>←</b>	2	2	0	=	1.6	.550	=		0	0	0	0
North	ຶກ	Thru	is Fror	ire Inte	4	100	=	93	408	60.2	919	408		0	0	0	0
		Right	Analys.	for Enti	54	61	82	29	259	38.2	.762	259		0	0	0	0
		Start Time	Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1	Peak Hour for Entire Intersection Begins at 07:45 AM	07:45 AM	08:00 AM	08:15 AM	08:30 AM	Total Volume	% App. Total	H	Unshifted	% Unshifted	Bank 1	% Bank 1	Bank 2	% Bank 2



#### **A2**

#### Miscellaneous Traffic Data and Calculations

Project Information	
Project Name:	Westwood Mixed Use Neighborhood
No:	33042.1
Date:	2/5/2015
City:	Amherst
State/Province:	NY
Client Name:	Ciminelli Real Estate
Analyst's Name:	DLK
Edition:	ITE-TGM 9th Edition

		Weekday, Peak Hou	ır of Adjacent Street	Weekday, Peak Hou	ır of Adjacent Street
and Use	Size		etween 7 and 9 a.m.		etween 4 and 6 p.m.
		Entry	Exit	Entry	Exit
320 - Shopping Center	115 1000 Sq. Feet Gross Leasable Area	105	65	316	342
Reduction		0	0	0	0
nternal		15	12	108	156
Pass-by		0	0	77	69
lon-pass-by		90	53	131	117
220 - Apartment	352 Dwelling Units	35	141	137	74
Reduction		0	0	0	0
nternal		1	4	68	36
Pass-by		0	0	0	0
lon-pass-by		34	137	69	38
224 - Rental Townhouse	93 Dwelling Units	21	44	34	33
Reduction		0	0	0	0
nternal		0	1	17	16
Pass-by		0	0	0	0
lon-pass-by		21	43	17	17
10 - General Office Building	200 1000 Sq. Feet Gross Floor Area	275	37	51	247
Reduction		0	0	0	0
nternal		26	10	15	36
Pass-by		0	0	0	0
Non-pass-by		249	27	36	211
310 - Hotel	85 Occupied Rooms	33	24	29	31
Reduction	·	0	0	0	0
nternal		0	11	11	5
Pass-by		0	0	0	0
lon-pass-by		33	13	18	26
·					
230 - Residential Condominium/Townhouse	e 84 Dwelling Units	8	37	35	17
Reduction		0	0	0	0
nternal		0	1	17	9
Pass-by		0	0	0	0
Non-pass-by		8	36	18	8
210 - Single-Family Detached Housing	113 Dwelling Units	22	67	74	43
Reduction		0	0	0	0
nternal		0	2	37	21
Pass-by		0	0	0	0
Non-pass-by		22	65	37	22
10.1 pass 2,			05	3,	
210 - Single-Family Detached Housing - 1	47 Dwelling Units	11	32	33	20
Reduction	The street of th	0	0	0	0
nternal		0	1	16	10
Pass-by		0	0	0	0
Non-pass-by		11	31	17	10
252 - Senior Adult Housing - Attached	96 Dwelling Units	6	13	14	11
Reduction		0	0	0	0
nternal		0	0	0	0
Pass-by		0	0	0	0
Non-pass-by		6	13	14	11
254 - Assisted Living	200 Beds	18	10	19	25
Reduction		0	0	0	0
nternal		0	0	0	0
Pass-by		0	0	0	0
lon-pass-by		18	10	19	25
Total		534	470	742	843
otal Reduction		0	0	0	0
Total Internal		42	42	289	289
Total Internal  Fotal Pass-by		0	0	77	69
otal 1 433-by		492	428	376	485

**Project Information** 

Project Name: Westwood Mixed-use Neighborhood

 No:
 33042

 Date:
 2/15/2015

 City:
 Amherst

State/Province: NY
Analyst's Name: DLK

Edition: ITE-TGM 9th Edition

Land Use	Size	AM	Peak	PM I	Peak
		Entry	Exit	Entry	Exit
561 - Synagogue	25 1000 Sq. Feet Gross Floor Area	0	0	20	22
Reduction		0	0	0	0
Internal		0	0	0	0
Pass-by		0	0	0	0
Non-pass-by		0	0	20	22
Total		0	0	20	22
<b>Total Reduction</b>		0	0	0	0
Total Internal		0	0	0	0
Total Pass-by		0	0	0	0
Total Non-pass-by		0	0	20	22



# Proposed Westwood Mixed Use Neighborhood, Town of Amherst, Erie County Documentation of Ambient Traffic Volume Growth

from counts from counts Estimated Estimated

											Annual
Roadway	Segment starts at Segment end at	Segment end at	2002	2002	2007	2008	2010	2011	2012	2013	Growth
Sheridan Drive	Route 290	North Forest Road	36,260 36,890	36,890		36,580		39,724		34,830	1.02%
Maple Road	Millersport Hwy	North Forest Road			25,600		21,913		23,532		-1.67%
North Forest	Maple Road	Sheridan Drive				13,550		11,960	13,680		0.24%

Average -0.14%

## PROPOSED WESTWOOD MIXED USE NEIGHBORHOOD TOWN OF AMHERST, ERIE COUNTY, NY AM PEAK

Num of yrs

			10 Bkgd		Н	otel			Resid	ential			Comn	nercial		Total	Full
LOCATION NUMBER	INTERSECTION DESCRIPTION	Existing Volume	Volume 0.25%	Enter Dist. %	Exit Dist. %		Trips OUT 13	Enter Dist. %	Exit Dist. %	Trips IN 120	Trips OUT 335	Enter Dist. %	Exit Dist. %	Trips IN 339	Trips OUT 80	Site Trips	Build Volumes
1	Maple Road/ Millersport Hwy SB		0.2070	Biot. 70	Diot. 70	00	10	2101.70	Diot. 70	120	555	Diot. 70	Diot. 70	000	00	mpo	Volumoo
	SR ST	81	83														83
	SL	25	26					1%		1		1%		3		5	31
	WR WT	297 758	305 777		1% 1%		0		2% 13%		7 44		9%		7	7 51	312 828
	WL NR																
	NT NL																
	ER	545	550	40/				400/		40		001		0.4		40	005
	ET EL	545 18	559 18	1%		0		13%		16		9%		31		46	605 18
2	Maple Road/ Millersport Hwy NB																
	SR ST																
	SL WR	51	52						1%		3		1%		1	4	56
	WT WL	912	935		2%		0		15%		50		9%		7	58	993
	NR	452	463	1%		0		2%		2						3	466
	NT NL	1 143	1 147														1 147
	ER ET	529	542	1%		0		14%		17		10%		34		51	593
3	EL Maple Road/	41	42														42
	Maplemere Road SR	16	16														16
	ST SL	0 33	0 34														34
	WR WT	27 954	28 978		2%		0		16%		54		10%		8	62	28 1040
	WL NR	12	12 16		2,0		Ů		1070		0.		1070				12
	NT	3	3														3
	NL ER	43 46	43 46														43 46
	ET EL	849 20	870 21	2%		1		16%		19		10%		34		54	924 21
4	Maple Road/ Donna Lea Boulevard																
	SR ST																
	SL WR																
	WT WL	969	993		2%		0		16%		54		10%		8	62	1055
	NR	13 61	13 61														13 61
	NT NL	24	24														24
	ER ET	6 892	6 915	2%		1		16%		19		10%		34		54	6 969
5	EL Maple Road/																
	Sandhurst Lane SR	0	0														
	ST SL	0	0														1
	WR WT	2 988	2 1013					25%		30		20%		60		98	2 1111
	WL	1	1					۷۵%		30		20%		68		98	1
	NR NT	3	3														3
	NL ER	13 4	13 4														13 4
	ET EL	944 1	968 1						25%		84		20%		16	100	1068 1
6	Maple Road/ North Forest Road																
	SR ST	154 346	158 355					5%		6		5% 2%		17 7		23 7	181 362
	SL WR	120	123 90									-/-					123
	WT WL	733 243	752 249					18%		22		15% 1%		51 3		72 3	824 252
	NR	179	184									170	1%	3	1	1	185
	NT NL	223 88	229 90					2%		2			2%		2	2 2	231 92
	ER ET	75 769	77 788						2% 18%		7 60		15%		12	7 72	84 860
	EL	77	79						5%		17		5%		4	21	100

7							1	1			1	1					
	Sheridan Drive/ Mill Street																
1	SR	15	15									1%		3		3	18
	ST SL	146 30	146 30														146 30
	WR	9	9														9
	WT WL	942 215	966 220	2%		1		15%		18		18%		61		80	1046 220
	NR NR	122	125														125
	NT	21	21							_				_			21
	NL ER	97 119	99 122					2%	2%	2	7	1%	1%	3	1	6 8	105 130
	ET	1240	1271		2%		0		15%		50		18%		14	65	1336
_	EL Charidas Drive/	5	5										1%		1	1	6
8	Sheridan Drive/ North Forest Road																
	SR	277	284									3%		10		10	294
	ST SL	426 11	437 11						2%		7					7	444 11
	WR	19	19														19
	WT	990	1015	2%		1		17%		20		20%		68		89	1104
	WL NR	177 22	181 23														181 23
	NT	332	340					2%		2						2	342
	NL ER	200 192	205 197	6%	6%	2	1	5%	5%	6	17	7%	7%	24	6	32 23	237 220
	ET	1254	1286		2%		0		17%		57		20%		16	73	1359
	EL	88	90				1				1		3%		2	2	92
9	North Forest Road/ Country Club Driveway																
	SR	5	5														5
	ST SL	713	731						2%		7	3%		10		17	748
	WR																
	WT																
	WL NR																
	NT	431	442					2%		2			3%		2	5	447
	NL ER	8	8														8
	ET	'	· '														' '
	EL	1	1														1
10	Sheridan Drive/ Fenwick Road																
	SR				90%		12		37%		124		400/				400
	ST				0070								40%		32	168	168
1																	
	SL WR			8%	8%	3	1	22%	22%	26	74	30%	30%	102	24	99 131	99 131
	SL WR WT	1463	1500	8%		3		22%		26		30%		102		99	99 131 1500
	SL WR	1463 4 9	1500 4 9	8%		3		22%		26		30%		102		99	99 131
	SL WR WT WL NR NT	9	9	8%		3		22%		26		30%		102		99	99 131 1500 4 9
	SL WR WT WL NR NT NT	9 16	9 16	8%		3		22%		26		30%		102		99	99 131 1500 4 9
	SL WR WT WL NR NT NL ER	9	9													99 131	99 131 1500 4 9 16 6 1564
11	SL WR WT WL NR NT NL ER ET	4 9 16 6	4 9 16 6	90%		3 30		22%		26		30%		102		99	99 131 1500 4 9
11	SL WR WT WL NR NT NL ER	4 9 16 6 1525	4 9 16 6 1564													99 131	99 131 1500 4 9 16 6 1564
11	SL WR WT WL NR NT NL ER ET EL Sheridan Drive/ Frankhauser Road	4 9 16 6	4 9 16 6													99 131	99 131 1500 4 9 16 6 1564
11	SL WR WT WL NR NT NL ER ET EL Sheridan Drive/ Frankhauser Road	4 9 16 6 1525	4 9 16 6 1564													99 131	99 131 1500 4 9 16 6 1564 210
11	SL WR WT WL NR NT NL ER ET EL Sheridan Drive/ Frankhauser Road SR ST SL WR	4 9 16 6 1525 29 38 24	4 9 16 6 1564 29 38 24		8%		1		22%		74		30%		24	99 131	99 131 1500 4 9 16 6 1564 210
11	SL WR WT WL NR NT NL ER ET EL Sheridan Drive/ Frankhauser Road SR ST SL WR	4 9 16 6 1525	4 9 16 6 1564													99 131	99 131 1500 4 9 16 6 1564 210
11	SL WR WT WL NR NT NL ER ET EL Sheridan Drive/ Frankhauser Road SR ST SL WR WT WL NR	4 9 16 6 1525 29 38 24	4 9 16 6 1564 29 38 24		8%		1		22%		74		30%		24	99 131	99 131 1500 4 9 16 6 1564 210
11	SL WR WT WL NR NT NL ER ET EL Sheridan Drive/ Frankhauser Road SR ST SL WR WT WL NR NT	4 9 16 6 1525 29 38 24	4 9 16 6 1564 29 38 24		8%		1		22%		74		30%		24	99 131	99 131 1500 4 9 16 6 1564 210
11	SL WR WT WL NR NT NL ER ET EL Sheridan Drive/ Frankhauser Road SR SR ST SL WR WT WL NR NT NL	4 9 16 6 1525 29 38 24	4 9 16 6 1564 29 38 24		8%		1		22%		74		30%		24	99 131	99 131 1500 4 9 16 6 1564 210
11	SL WR WT WL NR NT NL ER ET EL Sheridan Drive/ Frankhauser Road SS SS SS SS WR WT WL NR NT NL ER ET EL ET ET EL ET ET EL ET	4 9 16 6 1525 29 38 24 1455	4 9 16 6 1564 29 38 24 1492		8%		1		22%		74		30%		24	99 131	99 131 1500 4 9 16 6 1564 210 29 38 24 1660
	SL WR WT WL NR NT NL ER ET EL Sheridan Drive/ Frankhauser Road SR ST SL WR WT WL NR NT NL ER ET EL	4 9 16 6 1525 29 38 24 1455	4 9 16 6 1564 29 38 24 1492	90%	8%	30	1	37%	22%	44	74	40%	30%	136	24	99 131 210	99 131 1500 4 9 16 6 1564 210 29 38 24 1660
11	SL	4 9 16 6 1525 29 38 24 1455	4 9 16 6 1564 29 38 24 1492	90%	8%	30	1	37%	22%	44	74	40%	30%	136	24	99 131 210	99 131 1500 4 9 16 6 1564 210 29 38 24 1660
	SL WR WT WL NR NT NL ER ET EL Sheridan Drive/ Frankhauser Road SR ST SL WR WT WL NR NT NL ER ET EL Sheridan Drive/ 1290 NB SR	4 9 16 6 1525 29 38 24 1455	4 9 16 6 1564 29 38 24 1492	90%	8%	30	1	37%	22%	44	74	40%	30%	136	24	99 131 210	99 131 1500 4 9 16 6 1564 210 29 38 24 1660
	SL	4 9 16 6 1525 29 38 24 1455	4 9 16 6 1564 29 38 24 1492	90%	8%	30	1	37%	22%	44	74	40%	30%	136	24	99 131 210	99 131 1500 4 9 16 6 1564 210 29 38 24 1660
	SL  WR  WT  WL  NR  NT  NL  ER  ET  EL  Sheridan Drive/ Frankhauser Road  SR  ST  SL  WR  WT  WL  NR  NT  NL  ER  ET  EL  Sheridan Drive/ 1290 NB  SR  ST  SL  WR	4 9 9 16 6 1525 29 29 38 24 1455 1493 26 478	4 9 9 16 6 1564 29 38 24 1492 1531 26 490	90%	90%	30	12	37%	37%	44	124	40%	40%	136	32	99 131 210 168 210	99 131 1500 4 9 16 6 1564 210 29 38 24 1660
	SL	4 9 9 16 6 1525 29 38 24 1455 1493 26	4 9 16 6 1564 29 38 24 1492 1531 26	90%	90%	30	12	37%	37%	44	124	40%	40%	136	32	99 131 210	99 131 1500 4 9 16 6 1564 210 29 38 24 1660
	SL WR WT WL NR NT NL ER ET EL Sheridan Drive/ Frankhauser Road SR ST SL WR WT WL NR NT NL ER ET EL Sheridan Drive/ Frankhauser Road	4 9 9 16 16 1525 29 38 24 1455 1493 26 478 963 215	4 9 9 16 1564 29 38 24 1492 1531 26 490 987 220	90%	90%	30	12	37%	37%	44	124	40%	40%	136	32	99 131 210 168 210	99 131 1500 4 9 16 6 1564 210 29 38 24 1660
	SL  WR  WT  WL  NR  NT  NL  ER  ET  EL  Sheridan Drive/ Frankhauser Road  SR  ST  SL  WR  WT  WL  NR  NT  NL  ER  ET  SL  WR  WT  WL  NR  NT  NL  ER  ET  EL  Sheridan Drive/ 1290 NB  SR  ST  SL  WR  WT  WL  NR  NT  NL  NR  NT  NR  NT  NT  NR  NT  NR  NT	4 9 9 16 6 1525 29 38 24 1455 1493 26 478 963 215 0	4 9 9 16 1564 29 38 24 1492 1531 26 490 987 220 0	90%	90%	30	12	37%	37%	44	124	40%	40%	136	32	99 131 210 168 210	99 131 1500 4 9 16 6 1564 210 29 38 24 1660
	SL WR WT WL NR NT NL ER ET EL Sheridan Drive/ Frankhauser Road SR ST SL WR WT WL NR NT NL ER ET EL Sheridan Drive/ Frankhauser Road	4 9 9 16 16 1525 29 38 24 1455 1493 26 478 963 215	4 9 9 16 1564 29 38 24 1492 1531 26 490 987 220	90%	90%	30	12	37%	37%	44	124	40%	40%	136	32	99 131 210 168 210	99 131 1500 4 9 16 6 1564 210 29 38 24 1660
	SL WR WT WL NR NT NL ER ET EL Sheridan Drive/ Frankhauser Road SR ST SL WR WT WL NR NT NL ER ET EL Sheridan Drive/ 1 290 NB ST SL WR WT WL NL RR ST SL WR WT NL RR ST SL WR WT NL RR RT LS SHERIDAN SR ST SL WR WT WL NL	4 9 9 16 6 1525 29 38 24 1455 1493 26 478 963 215 0	4 9 9 16 1564 29 38 24 1492 1531 26 490 987 220 0	90%	90%	30	12	37%	37%	44	124	40%	40%	136	32	99 131 210 168 210	99 131 1500 4 9 16 6 1564 210 29 38 24 1660

13	Sheridan Drive/			1				1									
	Harlem Road																
	SR																
	ST																
	SL																
	WR																
	WT	777	797						15%		50		17%		14	64	861
	WL	448	459		88%		11		12%		40		11%		9	60	519
	NR	783	803	2%		1		16%		19		18%		61		81	884
	NT																
	NL	278	285														285
	ER	307	315														315
	ET	799	819					15%		18		17%		58		76	895
	EL																
14	Harlem Road/																
	I 290 SB																
	SR																
	ST	355	364						6%		20		6%		5	25	389
	SL	369	378		88%		11		6%		20		5%		4	36	414
	WR	664	681	2%		1		10%		12		12%		41		53	734
	WT																
	WL	291	298														298
	NR	20	21														21
	NT	435	446					6%		7		6%		20		28	474
	NL																
	ER																
	ET																
	EL																
15	Maple Road/																
	Proposed Driveway																
	SR																
	ST																
	SL																
	WR	200	4007														4007
	WT	982	1007														1007
	WL							25%	050/	30	84	20%	200/	68	16	98	98
	NR NT								25%		84		20%		16	100	100
1				l	20/		_		400/		54		10%			00	00
1	NL ER			20/	2%	-	0	400/	16%	40	54	400/	10%	24	8	62 54	62 54
		050	977	2%		1		16%		19		10%		34		54	
	ET EL	953	9//														977
	EL					1	l	1	l		1			l	1		

## PROPOSED WESTWOOD MIXED USE NEIGHBORHOOD TOWN OF AMHERST, ERIE COUNTY, NY PM PEAK

Num of yrs

			10															
LOCATION NUMBER	INTERSECTION DESCRIPTION	Existing Volume	Bkgd Volume 0.25%	Enter Dist. %	Exit Dist. %	Trips IN	Trips OUT	Enter Dist. %	Resid Exit Dist. %	Trips IN 191	Trips OUT	Enter Dist. %	Exit Dist. %	Trips IN 167	Trips OUT 328	Pass-by Trips	Total Site Trips	Full Build Volumes
1	Maple Road/ Millersport Hwy SB									-								
	SR ST	170	174														0	174
	SL WR	54 221	55 227		1%		0	1%	2%	2	3	1%		2			4 3	59 230
	WT	820	841		1%		0		13%		17		9%		30		47	888
	WL NR																0	
	NT NL																0	
	ER ET EL	913 28	936 29	1%		0		13%		25		9%		15			0 40 0	976 29
2	Maple Road/ Millersport Hwy NB																	
	SR ST																0	
	SL WR	23	24						1%		1		1%		3		5	29
	WT WL	952	976		2%		1		15%		20		9%		30		50 0	1026
	NR NT NL	451 0 89	462 0 91	1%		0		2%		4							4 0 0	466 91
	ER ET EL	872 95	894 97	1%		0		14%		27		10%		17			0 44 0	938 97
3	Maple Road/ Maplemere Road																	
	SR ST	30 8	31 8														0	31 8
	SL WR	75 60	77 62														0	77 62
	WT WL	868 21	890 21		2%		1		16%		21		10%		33		54 0	944 21
	NR NT	12 0	12 0														0	12
	NL ER	22 35	22 35														0	22 35
	ET EL	1188 35	1218 36	2%		0		16%		31		10%		17			48 0	1266 36
4	Maple Road/ Donna Lea Boulevard SR																0	
	ST SL																0	
	WR WT WL	937 23	961 23		2%		1		16%		21		10%		33		0 54 0	1015 23
	NR NT	21	21														0	21
	NL ER	12 29	12 29														0	12 29
	ET EL	1246	1278	2%		0		16%		31		10%		17			48 0	1326
5	Maple Road/ Sandhurst Lane																	
	SR ST SL	0 0 0	0 0 0														0 0 0	
	WR WT	2 960	2 984					25%		48		20%		33			0 81	2 1065
	WL NR NT	8 6 0	8 6 0														0 0 0	6
	NL ER	10	10 14														0	10 14
	ET EL	1260 0	1292 0						25%		33		20%		66	-1	97 0	1389
6	Maple Road/ North Forest Road																	
	SR ST SL	116 375 165	119 384 169					5%		10		5% 2%		8			18 3 0	137 387 169
	WR WT	94 718	96 736					18%		34		15%		25			0 59	96 795
	WL NR NT	230 197 338	236 202 347									1%	1% 2%	2	3 7		2 3 7	238 205 354
	NL ER	90 139	92 143					2%	2%	4	3						3	96 146
	ET EL	960 177	984 181						18% 5%		24 7		15% 5%		49 16	-1	72 23	1056 204

7	Sheridan Drive/		_	7			ı					Ì						
l '	Mill Street																	
	SR ST	12 68	12 68									1%		2			2	14 68
	SL	34	34														0	34
	WR WT	53 1299	53 1332	2%		0		15%		29		18%		30			0 59	53 1391
	WL	118	121	276		U		13%		29		10%		30			0	121
	NR	144	148														0	148
	NT NL	53 140	53 144					2%		4		1%		2			0 5	53 149
	ER	18	18						2%		3	.,,	1%		3		6	24
	ET EL	1258 11	1290 11		2%		1		15%		20		18% 1%		59 3	-5	74 3	1364 14
8	Sheridan Drive/												170		J			1-7
	North Forest Road SR	197	202									3%		5			5	207
	ST	482	494						2%		3	3%		5			3	497
	SL WR	23	24														0	24
	WT	40 1096	41 1124	2%		0		17%		32		20%		33			0 66	41 1190
	WL	297	305														0	305
	NR NT	80 453	82 464					2%		4							0 4	82 468
	NL	264	271	6%		1		5%		10		7%		12			22	293
	ER ET	254 1227	260 1258		6% 2%		2		5% 17%		7 22		7% 20%		23 66	-5	31 83	291 1341
	EL	135	138		2 /0		<u> </u>		17.70				3%		10		10	148
9	North Forest Road/ Country Club Driveway																	
	SR	13	13	1													0	13
	ST	696	714						2%		3	3%		5			8	722
	SL WR																0	
	WT																0	
	WL NR																0	
	NT	608	623					2%		4			3%		10		14	637
	NL ER	26 9	26 9														0	26 9
	ET																0	
10	EL Sheridan Drive/	7	7														0	7
10	Fenwick Road																	
	SR ST				90%		23		37%		48		40%		131	30	233	233
	SL				8%		2		22%		29		30%		98	31	0 160	160
	WR WT	1552	4504	8%		1		22%		42		30%		50		33	127	127
	WL	5	1591 5													-33	-33 0	1558 5
	NR	17	17														0	17
	NT NL	13	13														0	13
	ER	13	13															
	ET EL	1599	1639														0	13
11	Sheridan Drive/			90%		16		37%		71		40%		67		-36 36	-36	1603
				90%		16		37%		71		40%		67		-36 36		
1	Frankhauser Road	40		90%		16		37%		71		40%		67			-36 190	1603 190
	Frankhauser Road SR ST	40	40	90%		16		37%		71		40%		67			-36 190 0 0	1603 190 40
	Frankhauser Road SR ST SL	52	40	90%		16		37%		71		40%		67			-36 190 0 0	1603 190 40 52
	Frankhauser Road SR ST SL WR WT		40	90%	90%	16	23	37%	37%	71	48	40%	40%	67	131		-36 190 0 0 0 0 200	1603 190 40
	Frankhauser Road SR ST SL WR WT WL	52 41	40 52 41	90%	90%	16	23	37%	37%	71	48	40%	40%	67	131	36	-36 190 0 0 0 0 200 0	1603 190 40 52 41
	Frankhauser Road SR ST SL WR WT NL NR NT	52 41	40 52 41	90%	90%	16	23	37%	37%	71	48	40%	40%	67	131	36	-36 190 0 0 0 0 200 0	1603 190 40 52 41
	Frankhauser Road SR ST SL WR WT NT NL	52 41	40 52 41	90%	90%	16	23	37%	37%	71	48	40%	40%	67	131	36	-36 190 0 0 0 0 200 0 0	1603 190 40 52 41
	Frankhauser Road SR ST SL WR WT NL NR NT NL ER	52 41 1524	40 52 41 1563	90%	90%	16	23	37%	37%	71	48	40%	40%	67	131	36	-36 190 0 0 0 0 200 0 0 0 0	1603 190 40 52 41 1763
12	Frankhauser Road SR ST SL WR WT WL NR NT NL ER ET EL	52 41 1524	40 52 41 1563		90%		23		37%		48		40%		131	36	-36 190 0 0 0 0 200 0 0 0	1603 190 40 52 41 1763
12	Frankhauser Road SR ST SL WR WT NL NR NT NL ER	52 41 1524	40 52 41 1563		90%		23		37%		48		40%		131	36	-36 190 0 0 0 0 200 0 0 0 0	1603 190 40 52 41 1763
12	Frankhauser Road SR ST SL WR WT WL NR NT NL ER ET EL Sheridan Drive/ 1 290 NB SR	52 41 1524	40 52 41 1563		90%		23		37%		48		40%		131	36	-36 190 0 0 0 0 200 0 0 0 0 0 0 0 0 0	1603 190 40 52 41 1763
12	Frankhauser Road SR ST SL WR WT WL NR NT NL ER ET EL Sheridan Drive/ 1 290 NB	52 41 1524 1560 34	40 52 41 1563				23		37%		48		40%		131	36	-36 190 0 0 0 0 200 0 0 0 0 0 0 0 0	1603 190 40 52 41 1763
12	Frankhauser Road SR ST SL WR WT WL NR NT NL ER ET EL Sheridan Drive/ 1290 NB SR ST SL WR	52 41 1524 1560 34	40 52 41 1563 1599 34		2%		1		10%		13		12%		39	-3	-36 190 0 0 0 0 200 0 0 0 0 0 0 0 0 0 0 0 0 0	1603 190 40 52 41 1763 1753 34
12	Frankhauser Road SR ST SL WR WT WL NR NT NL ER ET EL Sheridan Drive/ 1 290 NB SR ST SL	52 41 1524 1560 34	40 52 41 1563 1599 34													36	-36 190	1603 190 40 52 41 1763
12	Frankhauser Road SR ST SL WR WT WL NR NT NL ER ET EL Sheridan Drive/ 1 290 NB SR ST SL WR WT WL NR NT NL NB	52 41 1524 1560 34 586 1026	40 52 41 1563 1599 34 601 1052		2%		1		10%		13		12%		39	-3	-36 190 0 0 0 0 0 200 0 0 0 0 0 0 0 0 0 0 0 0	1603 190 40 52 41 1763 1753 34
12	Frankhauser Road SR ST SL WR WT WL NR NT NL ER ET EL Sheridan Drive/ 1290 NB SR ST SL WR WT WL WT WL	52 41 1524 1560 34 586 1026 386 0	1599 34	90%	2%	16	1	37%	10%	71	13	40%	12%	67	39	-3	-36 190 0 0 0 0 0 200 0 0 0 0 0 0 0 0 0 0 0 0	1603 190 40 52 41 1763 1753 34
12	Frankhauser Road  SR ST SL WR WT WL NR NT NL ER ET EL Sheridan Drive/ 1 290 NB SR ST SL WR WT WL NR NT NL ER ET EL Sheridan Drive/ 1 290 NB SR ST SL NR NT NL ER ET EL ER ER ET EL ER ER ET EL ER	52 41 1524 1560 34 586 1026 386 0 309	1599 34 1052 1599 34 601 1052 396 0 317	90%	2%	16	1	37%	10%	71	13	40%	12%	67	39	-3	-36 190 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1603 190 40 52 41 1763 1753 34 654 1199 432 317
12	Frankhauser Road SR ST SL WR WT WL NR NT NL ER ET EL Sheridan Drive/ 1 290 NB SR ST SL WR WT WL NR NT NL	52 41 1524 1560 34 586 1026 386 0	40 52 41 1563 1599 34 601 1052 396 0	90%	2%	16	1	37%	10%	71	13	40%	12%	67	39	-3	-36 190 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1603 190 40 52 41 1763 1753 34 1199 432

								1				i						
13	Sheridan Drive/																	1
	Harlem Road																	
	SR																0	1
	ST																0	1
	SL																0	
	WR																0	
	WT	957	981						15%		20		17%		56	-3	72	1053
	WL	378	388		88%		23		12%		16		11%		36		75	463
	NR	652	668	2%		0		16%		31		18%		30			61	729
	NT																0	
	NL	260	267														0	267
	ER	589	604														0	604
	ET	922	945					15%		29		17%		28			57	1002
	EL																0	
14	Harlem Road/																	
	I 290 SB																	
	SR																0	
	ST	470	482						6%		8		6%		20		28	510
	SL	462	474		88%		23		6%		8		5%		16		47	521
	WR	338	347	2%		0		10%		19		12%		20			40	387
	WT																0	
	WL	228	234														0	234
	NR	11	11														0	11
	NT	539	553					6%		11		6%		10			21	574
	NL																0	
	ER																0	
	ET																0	
	EL																0	1
15	Maple Road/																	
	Proposed Driveway																	1
	SR																0	
	ST																0	1
	SL																0	1
1 1	WR																0	
	WT	960	984													-3	-3	981
	WL							25%		48		20%		33		3	84	84
1 1	NR								25%		33		20%		66	4	102	102
	NT												_370				0	
	NL				2%		1		16%		21		10%		33	3	57	57
H	ER			2%	2,0	0	•	16%	.070	31		10%	.0,0	17		5	53	53
	ET	1267	1299	-/-		Ĭ		.0,0		٠.		1070				-5	-5	1294
	EL	.20,	.200													Ĭ	0	
	LL																U	

## INTERSECTION ACCIDENT RATE CALCULATIONS



Rate per MEV =  $\frac{\text{\# of Accidents x 1,000,000}}{\text{Total No. of Entering Vehicles}}$  =

Rate = 
$$\frac{\text{\# of Accidents } x = 1,000,000}{\text{Veh./Day } x = 0}$$
 =

Accidents per million entering vehicles (Acc / MEV)

## 1 Maple Road/Maplemere Road

Rate = 
$$\frac{11 \text{ Acc.}}{23540 \text{ VPD}} \frac{\text{x}}{\text{x}} \frac{1,000,000}{365 \text{ Days x}} = 0.43 \text{ Acc/MEV}$$

## 2 Maple Road/Sandhurst Lane

Rate = 
$$\frac{0 \text{ Acc. } x \text{ 1,000,000}}{22600 \text{ VPD} \text{ } x \text{ 365 Days } x \text{ 3.000 Yrs.}} = 0.00 \text{ Acc / MEV}$$

## 3 Maple Road/Donna Lea Blvd

ADT = Peak hour entering volume / k factor ADT = 
$$2268 \text{ VPH} / 0.10 = 22680 \text{ VPD}$$

## 4 Maple Road/North Forest Road

## 5 North Forest Road/Westwood C.C. Driveway

## 6 Harlem Road/I-290 SB Off-/on-ramp

## 7 Millersport Hwy NB/Maple Road

Rate = 
$$\frac{1 \text{ Acc. } x \text{ 1,000,000}}{24820 \text{ VPD } x \text{ 365 Days } x \text{ 3.000 Yrs.}} = 0.04 \text{ Acc / MEV}$$

## INTERSECTION ACCIDENT RATE CALCULATIONS



## 8 Millersport Hwy SB/Maple Road

ADT = Peak hour entering volume / k factor

ADT = 2206 VPH / 0.10 = 22060 VPD

Rate = 0 Acc. x 1,000,000 = 0.00 Acc / MEV 22060 VPD x 365 Days x 3.000 Yrs.

## 9 Sheridan Drive/N. Forest Road

ADT = Peak hour entering volume / k factor

ADT = 4584 VPH / 0.10 = 45840 VPD

Rate = 31 Acc. x 1,000,000 = 0.62 Acc / MEV 45840 VPD x 365 Days x 3.000 Yrs.

## 10 Sheridan Drive/Fenwick Road

ADT = Peak hour entering volume / k factor

ADT = 3199 VPH / 0.10 = 31990 VPD

Rate = 2 Acc. x 1,000,000 = 0.06 Acc / MEV 31990 VPD x 365 Days x 3.000 Yrs.

## 11 Sheridan Drive/Frankhauser Road

ADT = Peak hour entering volume / k factor

ADT = 3251 VPH / 0.10 = 32510 VPD

Rate = 3 Acc. x 1,000,000 = 0.08 Acc / MEV 32510 VPD x 365 Days x 3.000 Yrs.

## 12 Sheridan Drive/Harlem Road

ADT = Peak hour entering volume / k factor

ADT = 3758 VPH / 0.10 = 37580 VPD

Rate = 27 Acc. x 1,000,000 = 0.66 Acc / MEV 37580 VPD x 365 Days x 3.000 Yrs.

## 13 Sheridan Drive/I-290 Off-/on-ramp

ADT = Peak hour entering volume / k factor

ADT = 3881 VPH / 0.10 = 38810 VPD

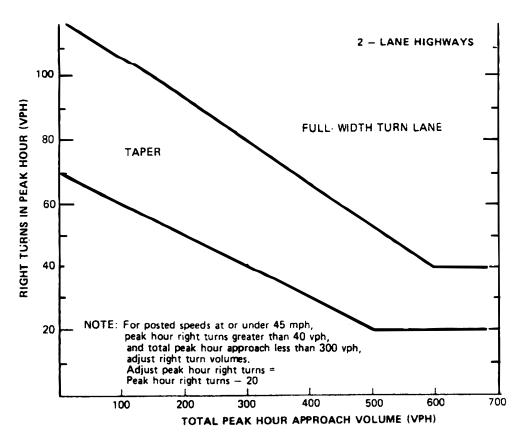
Rate = 16 Acc. x 1,000,000 = 0.38 Acc / MEV 38810 VPD x 365 Days x 3.000 Yrs.

## 14 Sheridan Drive/Mill Street

ADT = Peak hour entering volume / k factor

ADT = 3208 VPH / 0.10 = 32080 VPD

Rate = 23 Acc. x 1,000,000 = 0.65 Acc / MEV 32080 VPD x 365 Days x 3.000 Yrs.



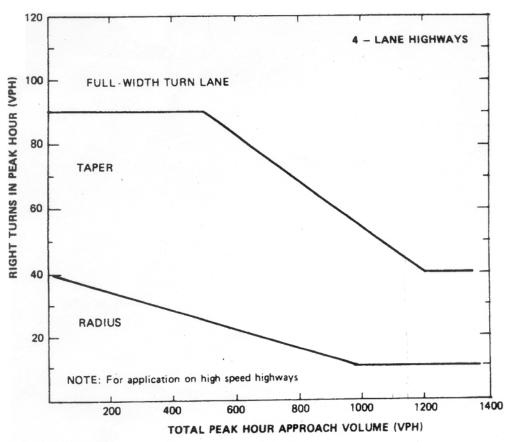


Figure 4-23. Traffic volume guidelines for design of right-turn lanes. (Source: Ref. 4-11)

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# New York State Department of Transportation

STATION: **536168** 

Traffic Count Hourly Report

Erie HGH HOUR **AMHERST** 3326390 18 DAILY HIGH DAILY 933 HPMS SAMPLE: RR CROSSING: DAILY TOTAL **171 173** 11935 COUNTY: TOWN: LION#: BIN: 122 250 269 555 358 330 CC Stn: BATCH ID: DOT-Week 17 e 5 5 546 467 FUNC. CLASS: 14 ∞ဥ၈ JURIS: County 567 610 TO: N FOREST RD NHS: no 765 933 92, 830 855 50 9 803 844 PROCESSED BY: ORG CODE: DOT INITIALS: TMK 462 842 823 е Q 4 REC. SERIAL #: 1564 PLACEMENT: 80 YDS W OF DONNA LEA 754 767 395 760 771 -64 763 796 FROM: MILLERSPORT HY COUNT TYPE: VEHICLES 127 751 698 750 127 @ REF MARKER: 715 739 ADDL DATA: 555 736 655 e 5 5 858 869 ∞ဥ၈ FACTOR GROUP: 30 WK OF YR: 36 765 665 ~ <u>2</u> ∞ 269 231 ROAD NAME: MAPLE RD 927 COUNT TAKEN BY: ORG CODE: HMM INITIALS: TCV 82 76 20 9 32 4 6 7 4 5 NOTES LANE 0: EB 2 Lanes - 45 MPH е <u>С</u> 4 2 2 Eastbound DATE OF COUNT: 08/30/2010 395 CR 1920 33 -64 STATE DIR CODE: 1 77 12 DIRECTION: ROAD #:

ADT	344 260 172 11757	ESTIMATED (one wav)		AADT	10698
	849 588 506	0)	Adjustment Factor	-	
M to Fri Noon	832 824	Axle Adi.	Factor	1.000	
EEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)	733 780 766 760	AVERAGE WEEKDAY	ur % of day		
/EEKDAY HOUI	64 696 727	AVE	High Hour	864	
<b>AVERAGE W</b>	250 715 864	S WEEKDAY	Counted Hours	49	
	23 79	WEEKDAY	Counted	2	
	32 20 14	HOURS	Counted	49	
	81	DAYS	Counted	2	

ROAD #: 1920 ROAD NAME: MAPLE RD STATION: 536168 STATE DIR CODE: 1

FROM: **MILLERSPORT HY** PLACEMENT: **80 YDS W OF DONNA LEA** 

TO: N FOREST RD

COUNTY: Erie DATE OF COUNT: 08/30/2010

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# New York State Department of Transportation Traffic Count Hourly Report

STATION: **536168** 

Erie AMHERST	3326390						HOUR			17
AM		щ			Y II Y	E E E	COUNT			1067
COUNTY: TOWN: LION#:	BIN: RR CROSSING:	HPMS SAMPLE:		11	2	DAILY	TOTAL		174	<b>192</b> 12494
0, _		_			ဥ				301	
		(17			으				503	618
4		r-Week			으				631	646
RD LASS:	county	D: DO			으				673	655
TO: N FOREST RD FUNC. CLASS: 14 NHS: no	JURIS: County CC Stn:	BATCH ID: DOT-Week 17			으				825	749
 5. € 5	3 2	B/8			Ը		PM		1103	1067
0		i	¥		ဥ				1050	, 9901
		:	IIALS:		ဥ				882	006
IA LEA		:	E E						816	797
NOO O		1	)E: DC	_	TO TO	2			789	800
<b>T H Y</b> W OF		LES	00 00 00 00 00 00 00 00 00 00 00 00 00	12	ဥ	1			791	802
(SPOR 1: 1564 30 YDS	ä	VEHIC	  		ဥ	12			742	756 770
FROM: MILLERSPORT HY REC. SERIAL #: 1564 PLACEMENT: 80 YDS W O	© REF MARKER: ADDL DATA:	COUNT TYPE: VEHICLES	PROCESSED BY: ORG CODE: DOT INITIALS: TMK	10	_	11				574 677
SOM: N EC. SE ACEN	REF I	TNUC	3OCE	6	٠ و	10				590 535
	@ <del>Z</del>	Öi	础	8	٠ و	6				659 617
JP: 30				7	2	8				543 476
E: MAPLE RD FACTOR GROUP: 30 WK OF YR: 36		;	>	9	2	7				268 239
E: MAPLE F FACTOR G WK OF YR:		İ	LS: TC	2	2	9	AM			107 110
ROAD NAME: MAPLE RD FACTOR GRO WK OF YR:		į	₹ E	4	٠ و	2				36 24
OAD N	MPH		∑ ⊠ I	က	٠ و	4				34
þ	110 3s - 45	! !	ODE	7	٠ و	3				30 30
<b>CR 1920</b> Westbound E: 2	3/30/20 2 Lane		ORG (	_	ဥ	2				40 46
<b>CR</b> V ODE: 2	JNT: 08		N BY:	12	ဥ	1				69
ROAD #: CR DIRECTION: W STATE DIR CODE: 2	DATE OF COUNT: 08/30/2010 NOTES LANE 0: WB 2 Lanes - 45 MPH		COUNT TAKEN BY: ORG CODE: HMM INITIALS: TCV		-			30 M	. >	3 1

ADT	560 402 183 12325	ESTIMATED (one way)		AADT	11215
	638 5	dav	, ot		
	664	al/Week	Adjustment Factor	1.099	
	787	eason	Adjustr	_	
<u>n</u>	638 562 626 756 796 794 806 891 1058 1085 787	0,			
Fri Noo	1058	xle Adi.	Factor	1.000	
AM to F	891	⋖			
Mon 6	908 1		λı		
tored,	9 79	<b>CDAY</b>	% of day	%6	
xle Fac	9 79	: WEE			
JRS (A	6 75	AVERAGE WEEKDAY	onr	10	
VY HOL	29 29	AV	High Hour	1085	
EEKD/	38 26				
AGE W	254 510 6	<b>KDAY</b>	urs	49	
AVEF	254	S WEE	Counted	4	
	108	KDAY	unted	8	
	30	WEE	ŏ		
	32				
	78	JOURS	Counted	49	
	43		O		
	74	DAYS	Counted	7	

COUNTY: Erie DATE OF COUNT: 08/30/2010

TO: N FOREST RD

FROM: MILLERSPORT HY PLACEMENT: 80 YDS W OF DONNA LEA

ROAD NAME: MAPLE RD STATE DIR CODE: 2

ROAD #: **1920** STATION: **536168** 

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# New York State Department of Transportation Traffic Count Hourly Report

STATION: **530438** 

Erie AMHERST	DAILY		ω		
	DAILY		2244	e way)	
COUNTY: TOWN: LION#: BIN: RR CROSSING: HPMS SAMPLE:	11 TO 12		267 22872 ADT 214 22460	ESTIMATED (one way)	AADT 21030
	149	34 434 434	404	Ш	
SW 40	e	585 600	676	L	
<b>277 N FOREST RD</b> FUNC. CLASS: 14 NHS: no JURIS: NYSDOT CC Stn: BATCH ID: DOT-R05CW 40	& C စ	737 737 793	811	kday	
TO: RT 277 N FOREST RD FUNC. CLASS: 14 NHS: no JURIS: NYSDOT CC Stn: BATCH ID: DOT-R05	<sup>6</sup> کا 8	1096	1030	Seasonal/Weekday	1.068
277 N F FUNC. C NHS: no JURIS: N CC Stn: BATCH!	6 70 7		1517 1030 1509 1036	eason	7
 RT 2 J 2 2 9	5 6 6	2065	1970 1517 (1)	S	<b>S</b> I
TC	4 0 3	1843	1785 ri Noon 1769 ri	Axle Adj.	0.975
FROM: ACC RT 2901 YOUNGMANN EXPY REC. SERIAL #: 0023 PLACEMENT: 600' E of Fenwick Rd @ REF MARKER: ADDL DATA: COUNT TYPE: AXLE PAIRS PROCESSED BY: ORG CODE: R05 INITIALS: RPJ	е <u>С</u> 4	1687		Ϋ́	] 0
FROM: ACC RT 2901 YOUNGMANN EXPY REC. SERIAL #: 0023 PLACEMENT: 600' E of Fenwick Rd ® REF MARKER: ADDL DATA: COUNT TYPE: AXLE PAIRS PROCESSED BY: ORG CODE: R05 INITI	3 Q 8	1561 1483	1521 on 6AF 1484		
GMANI wick Ro DE: RO	- 2 2	1393 1388	1554 red, M 1409	KDAY of day	10%
YOUNG of Fenr PAIRS	4 1 1 1	1388 1414	1388 Facto 1362	/EEKD	`
FROM: ACC RT 2901 YOUNGMANN REC. SERIAL #: 0023 PLACEMENT: 600' E of Fenwick Rd @ REF MARKER: ADDL DATA: COUNT TYPE: AXLE PAIRS PROCESSED BY: ORG CODE: R0	12 2	1194 1335	1239 S (Axle 1225	AVERAGE WEEKDAY	
OM: ACC RT 28 C. SERIAL #: 0 ACEMENT: 600 REF MARKER: DL DATA: UNT TYPE: AX OCESSED BY:	129	1293 1214	1195 HOUR( 1203	AVERA	2191
FROM: A REC. SE PLACEN @ REF! ADDL D COUNT	e 5 6	1461 1634	1313 (DAY 1	Ë	-
	8 C 6	2300 2196	2244 : WEE! 2191		
JP: 30 39	~ <sup>6</sup> 8	1458 1514	475 1489 2244 AVERAGE WEE 441 1450 2191	EEKDA)	02
E: FACTOR GROUP: WK OF YR: ALS: GNL	9 7 7	427 454	475 AVE 441	/S W	
E: FACTOR G WK OF YR: ALS: GNL	5 0 6	123	125	EEKDAY Compted	4
AME: FA WI	4 0 5	32	14 27	W	Ol .
ROAD NAME: F. W 40 MPH :: TST INITIA	е <u>Б</u> 4	28 42	32 50 37		
Re 111 1 EB - 4 20DE:	358	21 46	38 38	HOURS	20
NY 324  Eastbound E: 1 F: 09/27/2011 Two Lanes EE	-52	09	62 62 63	ΞĊ	5
DDE: 1 JNT: 09 O: Two	2 <sub>5</sub> -	401	125	DAYS	4
#: FION: DIR CC JF COL LANE	-	-	<b>⊢</b>	ے ۵	\$
ROUTE #: NY 324 ROAD NAME: DIRECTION: Eastbound FACTOR STATE DIR CODE: 1 DATE OF COUNT: 09/27/2011 NOTES LANE 0: Two Lanes EB - 40 MPH COUNT TAKEN BY: ORG CODE: TST INITIALS: GNI		- 0 6 4 6 6 6 6 6 7 6 7 6 7 6 7 6 7 6 7 6 7	30 30		

COUNTY: Erie DATE OF COUNT: 09/27/2011

TO: RT 277 N FOREST RD

FROM: ACC RT 2901 YOUNGMANN EXPY PLACEMENT: 600' E of Fenwick Rd

ROAD NAME: STATE DIR CODE: 1

ROUTE #:NY 324 STATION: 530438

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# New York State Department of Transportation Traffic Count Hourly Report

STATION: **530438** 

COUNTY: Erie TOWN: AMHERST LION#: BIN: RR CROSSING: HPMS SAMPLE:	11 TO DAILY DAILY 12 PAILY UNCH UNCH	TOTAL COUNT	340	273 20506 1803 17	ADT ) 248 19965	ESTIMATED (one way)	AADT	10034
04	555			4 451	5 429			
SCW.	e 5 t			716	675			
<b>ST RI</b> S: 14 OT OT-R0	8 <u>۲</u> ه			826 826	780	ekday	g G	
FUNC. CLASS: 14 NHS: no JURIS: NYSDOT CC Stn: BATCH ID: DOT-R05CW 40	~ C 8			1091	1068	Seasonal/Weekday	1.068	
FUNC. CI NHS: no JURIS: N CC Stn: BATCH II	92 /		6. 0.	1417	1371	eason	) In the second second second second second second second second second second second second second second second	
TO: RT 277 N FOREST RD FUNC. CLASS: 14 NHS: no JURIS: NYSDOT CC Stn: BATCH ID: DOT-R05	ە 20 ە	~	7	803	731	ω`	VI	
TO TO	4 5 ro		459.4.747.4.906.4.4000	1676 1803 1417 1091	Noon 614	Axle Adj.	0.975	
ALS: F	%54 Γ			1450 1431 1	to Fri 442 1	Axk	<u>o</u>	
EXPY	25 10 10			1305 1314 1314	n 6AM 341 1			
MANN ick Rd E: R0	- 5 s			1243 1 1225 1	ed, Mo 200 1	KDAY	9% 9%	
FROM: ACC RT 2901 YOUNGMANN EXPY REC. SERIAL #: 0023 PLACEMENT: 600' E of Fenwick Rd @ REF MARKER: ADDL DATA: COUNT TYPE: AXLE PAIRS PROCESSED BY: ORG CODE: R05 INITIALS: RPJ	15 15			1326 1314 1314	AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon) 365 1101 1457 1232 1132 1145 1254 1200 1341 1442 1614 1731 1371 1068	AVERAGE WEEKDAY	o	
FROM: ACC RT 2901 YOUNC REC. SERIAL #: 0023 PLACEMENT: 600 E of Fenv ® REF MARKER: ADDL DATA: COUNT TYPE: AXLE PAIRS PROCESSED BY: ORG COI	11 10 11			1311 1	(Axle I	GE WE		
CRT HAL #: NT: 6( NRKEF ARKEF A: A: CA: CA: CA: CA: CA: CA: CA: CA: C				1176 11	32 1	VERA	<u>7</u>	
FROM: ACC RT 2901 Y REC. SERIAL #: 0023 PLACEMENT: 600' E c @ REF MARKER: ADDL DATA: COUNT TYPE: AXLE F PROCESSED BY: OR	199			1257 11 1257 11	AY HC 32 11	AVER.	1731	
FRO REC PLA @ R ADD COU	e 5 t				EEKD 57 12			
30	∞ဥ၈			0 1379 0 1379	GE W	ک A۲	ol	
OUP:	7 D 8			1150 1110 1110	VERA 5 110	/EEKD/	02	
₹ GR ≺R:	6 70 7	AM		365 365 363		AYS V	SI.	
E: FACTOR GROUP: WK OF YR: ALS: GNL	500			106	96	WEEKDAYS WEEKDAY	4	
NAME V PH INITIA	4 0 3		ξ	3 4 6 8 8	4	>		
ROAD NAME: F W - 40 MPH :: TST INITIA	∞ <b>5</b> 4		6	30 30 30	26	40.7	<b>3</b> 1	
rund 211 s WB -	3 Q 8		40	3 8 8 8	36	HOURS	02	
NY 324  Westbound E: 2 E: 09/27/2011 Two Lanes WE	- 2 2			64 55 57	28	Τ (	)I	
	2 2 7			107 121 149	123	DAYS	4	
E #: TION: DIR C OF CO ; LANE		DAY	  -	- ≥ ⊢ ╙		ے ۵	3	
ROUTE #: DIRECTION: STATE DIR CODE: DATE OF COUNT: NOTES LANE 0: TW		DATE	- 2 c 4 c o c 8 o 0 1 1 2 1 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2	30 8 3				

COUNTY: Erie DATE OF COUNT: 09/27/2011

TO: RT 277 N FOREST RD

FROM: ACC RT 2901 YOUNGMANN EXPY PLACEMENT: 600' E of Fenwick Rd

ROAD NAME: STATE DIR CODE: 2

ROUTE #:NY 324 STATION: 530438

## Traffic Signal Warrant Analysis

Maple Road - Proposed North Site Driveway Town of Amherst, Erie County

	Total Hourly Volumes	Exiting Proposed	Driveway		9	137	32	43	76	86	49	55	99	113	133	50	21	15	6	4	795
		Hourly Fluctuation of	office driveway traffic	Total	0.80%	1.94%	4.00%	5.36%	%19.6	12.27%	%61'9	%68'9	8.27%	14.25%	16.73%	6.26%	2.65%	1.94%	1.15%	0.54%	
		Full Development Artery Volume on Hourly Fluctuation of	Maple Rd. at North Site Driveway	Total	1533	1880	1575	1694	1864	1973	1953	0961	2157	2356	2412	2048	1567	1432	1132	829	27,428
Volumes		Hourly	Fluctuation	Two-Way	2.59%	6.85%	5.74%	6.17%	%08.9	7.19%	7.12%	7.15%	7.86%	8.59%	8.79%	7.47%	5.71%	5.22%	4.13%	3.02%	
	per NYSDOT	count on	Maple Rd.	Two-Way	1225	1502	1258	1353	1489	1576	1560	1566	1723	1882	1927	1636	1252	1144	904	662	21,913
Existing Fluctuation in Artery	per NYSDOT	count on	Maple Rd.	WB	510	638	562	626	756	962	794	908	168	1058	1085	787	664	638	260	402	
Existing	per NYSDOT	count on	Maple Rd.	EB	715	864	969	727	733	780	992	260	832	824	842	849	588	905	344	260	
				ır	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	MG 00:9	7:00 PM	8:00 PM	9:00 PM	10:00 PM	N 11:00 PM	
				Hour	AM to	AM to	AM to	AM to	AM to	PM to	PM to	PM to	PM to	PM to	PM to	PM to	PM to	PM to	PM to	PM to	
					7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	I:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	



## Traffic Signal Warrant Analysis

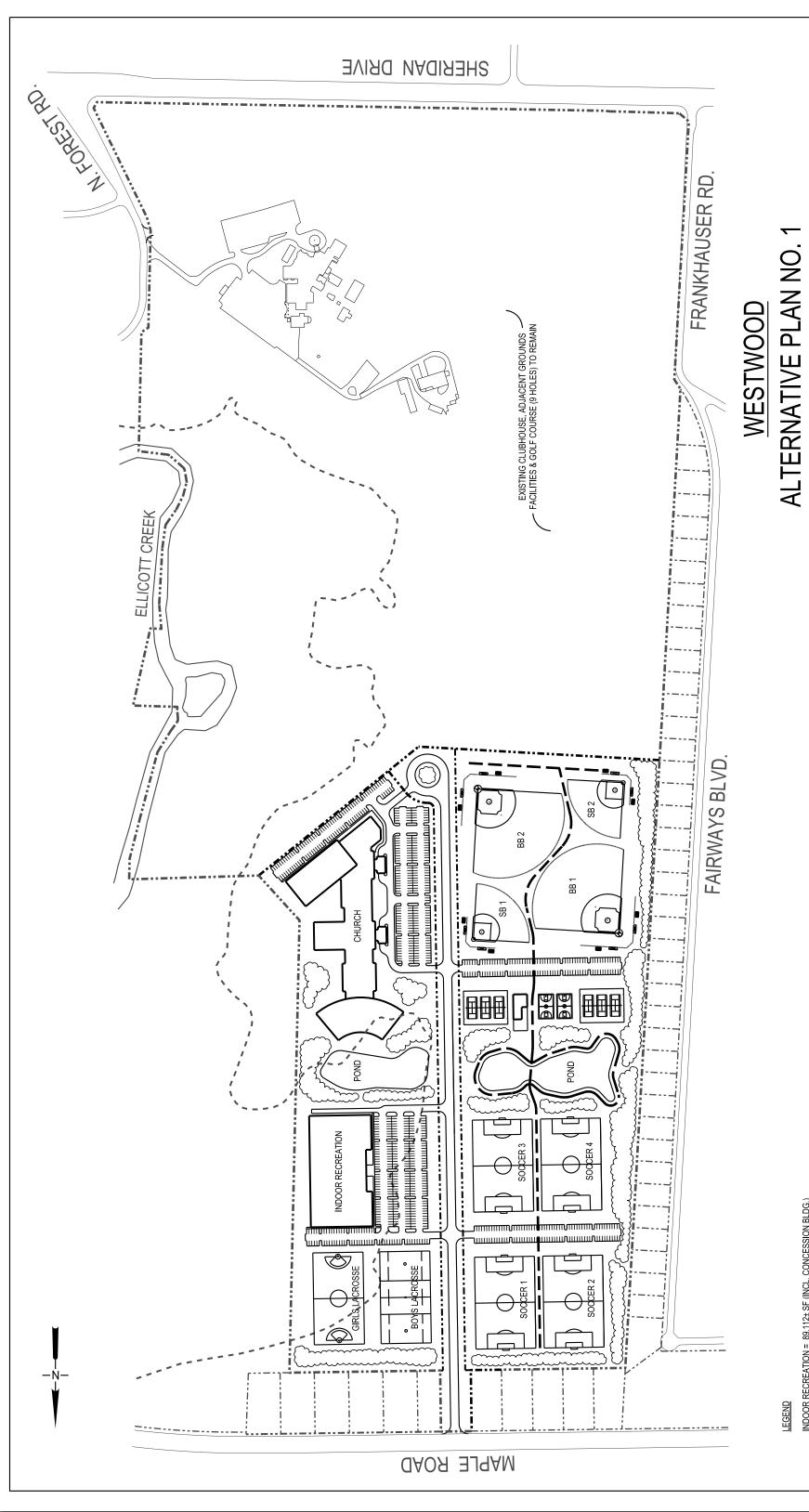
Sheridan Drive - Proposed South Site Full Access Driveway Town of Amherst, Erie County

	Total Hourly Volumes	Exiting Proposed	Driveway		91	225	80	107	192	246	124	138	991	285	335	125	53	39	23	=	2,002
		Hourly Fluctuation of	office driveway traffic	Total	%08'0	1.94%	4.00%	2.36%	%19'6	12.27%	%61.9	%68'9	8.27%	14.25%	16.73%	6.26%	2.65%	1.94%	1.15%	0.54%	
	Full Development Artery Volume on	Sheridan Dr. at South Site Full	Access Driveway	Total	2411	3448	2518	2207	2240	2472	2466	2670	2890	3197	3496	2722	6861	1455	1209	768	37,544
Volumes		Hourly	Fluctuation	Two-Way	6.42%	81.6	%1/.9	2.88%	2.97%	%65'9	6.57%	7.11%	7.70%	8.52%	9.31%	7.25%	2.30%	3.88%	3.22%	2.05%	
n Artery Voli	per NYSDOT	count on	Sheridan Dr.	Two-Way	2551	3648	2664	2335	2370	2616	2609	2825	3058	3383	3699	2880	2104	1540	1279	813	39,724
Existing Fluctuation in Artery	per NYSDOT	count on	Sheridan Dr.	WB	1011	1457	1232	1132	1145	1254	1200	1341	1442	1614	1731	1371	8901	780	675	429	
Existing	per NYSDOT	count on	Sheridan Dr.	EB	1450	2191	1432	1203	1225	1362	1409	1484	9191	6921	8961	1509	1036	092	604	384	
				ır	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	I:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	MG 00:9	7:00 PM	8:00 PM	9:00 PM	10:00 PM	II:00 PM	
				Hour	7:00 AM to	8:00 AM to	9:00 AM to	10:00 AM to	II:00 AM to	12:00 PM to	I:00 PM to	2:00 PM to	3:00 PM to	4:00 PM to	5:00 PM to	6:00 PM to	7:00 PM to	8:00 PM to	9:00 PM to	10:00 PM to	



Project Information	
Project Name:	Westwood Alts
No:	33042.1
Date:	2/5/2015
Analyst's Name:	DLK
Edition:	ITE-TGM 9th Edition

Alternative	Land Use	Size	AM Pea	ak Hour	PM Pea	ak Hour
Plan No.			Entry	Exit	Entry	Exit
	560 - Church	136.77 1000 Sq. Feet Gross Floor Area	48	29	36	39
1	492 - Health/Fitness Club	89 1000 Sq. Feet Gross Floor Area	63	62	169	128
1	488 - Soccer Complex	4 Fields	2	2	48	23
	Sub-total		113	93	253	190
	252 - Senior Adult Housing - Attached	112 Dwelling Units	7	15	16	13
	252 - Senior Adult Housing - Attached - 1	262 Dwelling Units	18	34	35	30
2	254 - Assisted Living	575 Beds	53	28	56	71
2	566 - Cemetery	17.5 Acres	2	1	5	10
	252 - Senior Adult Housing - Attached - 2	228 Dwelling Units	15	30	30	26
	Sub-total		95	108	142	150
3	210 - Single-Family Detached Housing	320 Dwelling Units	60	180	188	111
	Sub-total		60	180	188	111
	561 - Synagogue	25 1000 Sq. Feet Gross Floor Area	0	0	20	22
	230 - Residential Condominium/Townhouse - 1	114 Dwelling Units	9	41	40	19
	210 - Single-Family Detached Housing - 3	47 Dwelling Units	9	26	30	17
	210 - Single-Family Detached Housing - 2	150 Dwelling Units	28	85	95	55
	224 - Rental Townhouse	56 Dwelling Units	13	26	20	20
4	230 - Residential Condominium/Townhouse	51 Dwelling Units	4	18	18	9
	820 - Shopping Center	97.9 1000 Sq. Feet Gross Leasable Area	58	36	174	189
	220 - Apartment	220 Dwelling Units	22	90	88	48
	310 - Hotel	85 Occupied Rooms	33	24	29	31
	210 - Single-Family Detached Housing - 1	146 Dwelling Units	28	82	92	54
	720 - Medical-Dental Office Building	120.7 1000 Sq. Feet Gross Floor Area	228	60	97	248
	Sub-total		432	488	703	712
	220 - Apartment	252 Dwelling Units	25	102	101	55
5	820 - Shopping Center	433.51 1000 Sq. Feet Gross Leasable Area	236	145	768	833
	9299 - Student Housing	440 Dwelling Units	11	50	125	73
	Sub-total	1010 7 1000 6 7 10 7	272	297	994	961
6	760 - Research and Development Center Sub-total	1212.5 1000 Sq. Feet Gross Floor Area	945 <b>945</b>	193 <b>193</b>	157 <b>157</b>	890 <b>890</b>
		200 Decelling Heite				
	220 - Apartment - 1 310 - Hotel - 1	280 Dwelling Units	29 33	114 24	113 29	61 31
	210 - Single-Family Detached Housing - 4	85 Occupied Rooms	14	40	45	27
	710 - General Office Building	72 Dwelling Units 200 1000 Sq. Feet Gross Floor Area	275	37	51	247
	820 - Shopping Center - 1	111 1000 Sq. Feet Gross Leasable Area	66	41	198	214
	230 - Residential Condominium/Townhouse - 2	93 Dwelling Units	7	34	32	16
7	210 - Single-Family Detached Housing - 5	117 Dwelling Units	22	66	74	43
,	210 - Single-Family Detached Housing - 6	47 Dwelling Units	9	26	30	43 17
	224 - Rental Townhouse - 1	87 Dwelling Units	20	41	32	31
	254 - Assisted Living	200 Beds	18	10	19	25
				TO	1 I	23
	1			12	12	11
	252 - Senior Adult Housing - Attached 561 - Synagogue	96 Dwelling Units 25 1000 Sq. Feet Gross Floor Area	6	13 0	13 20	11 22



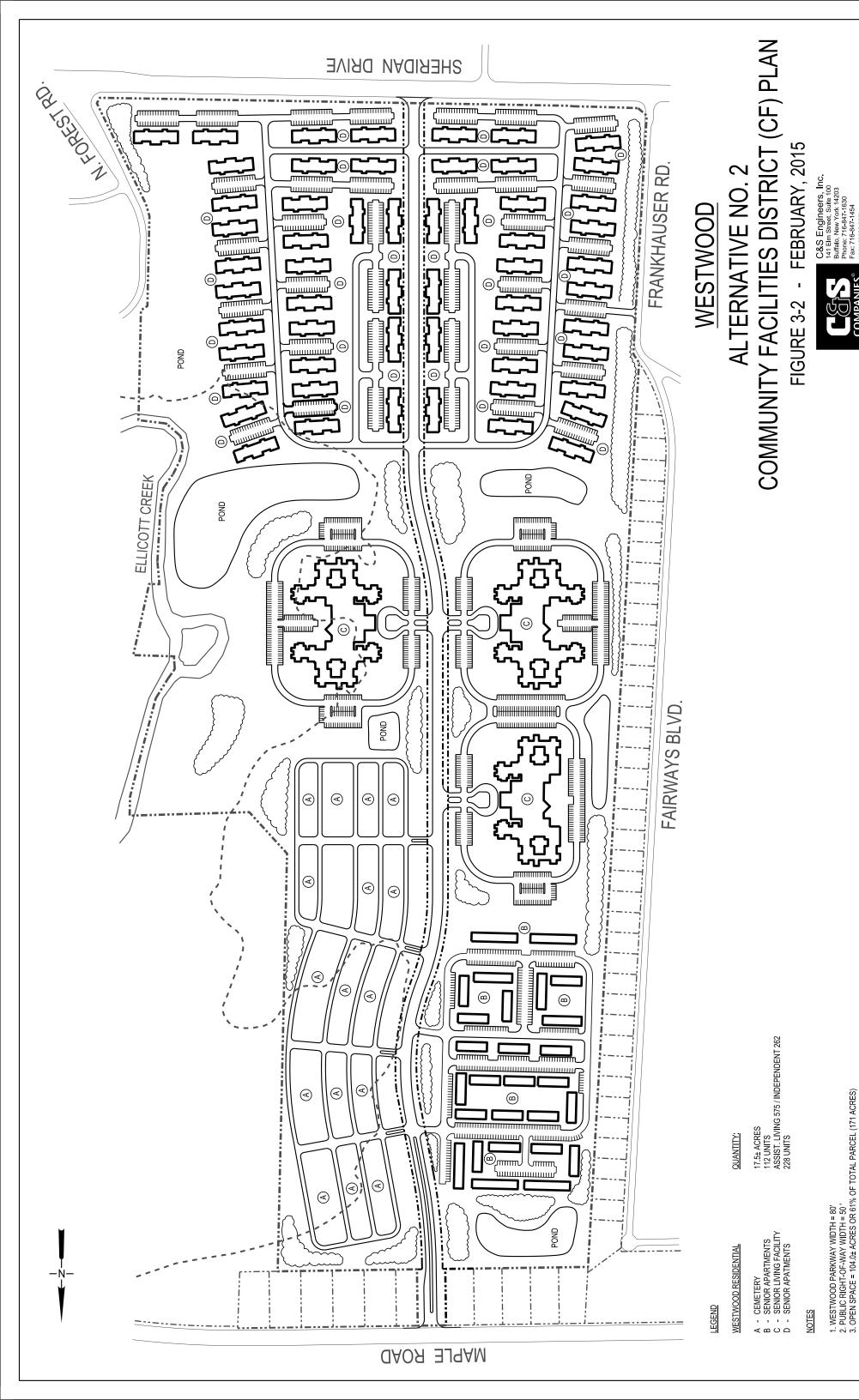
INDOOR RECREATION = 89,112± SF (INCL. CONCESSION BLDG.) CHURCH = 136,772± SF

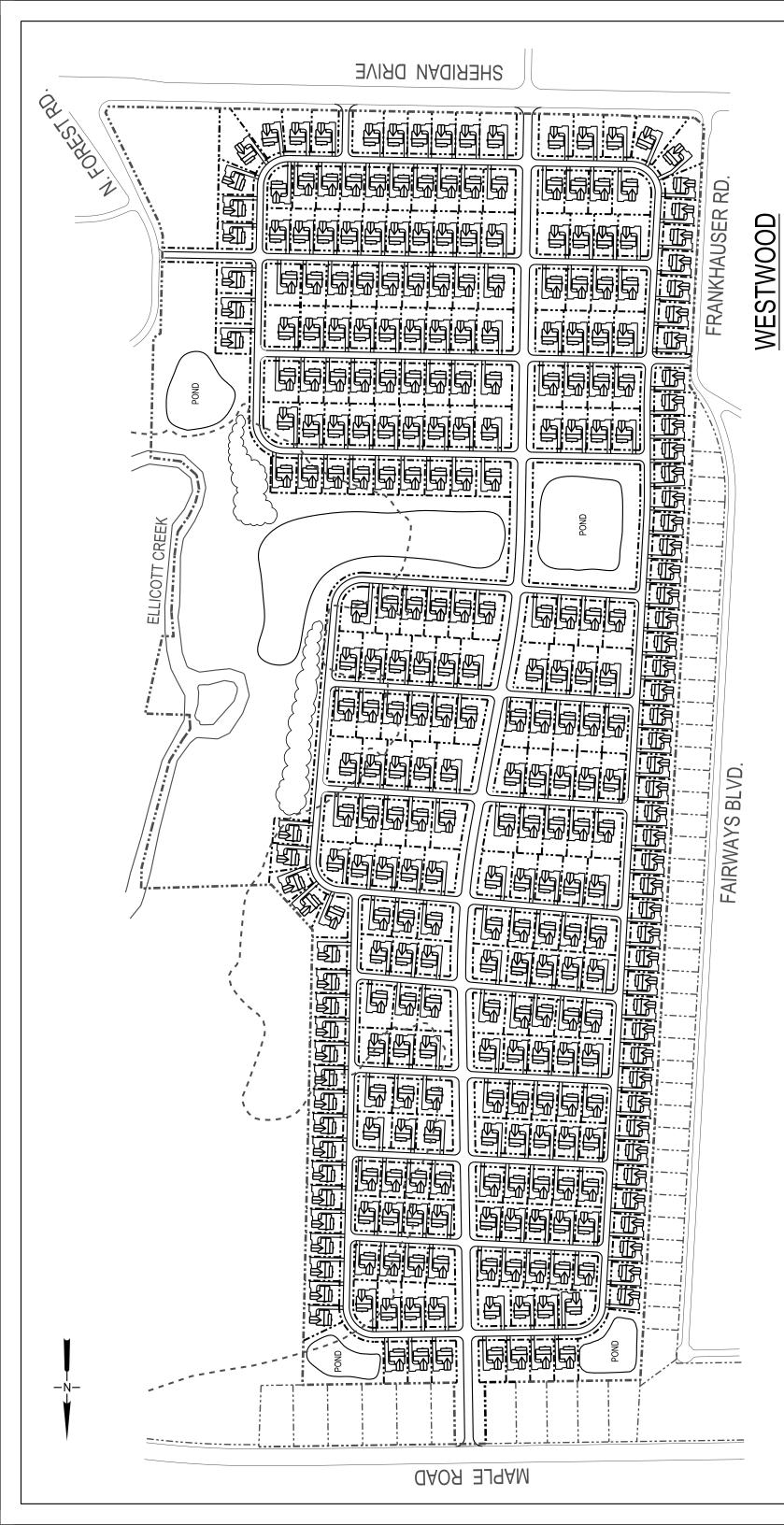
WESTWOOD RECREATIONAL = 513 PARKING SPACES CHURCH PARKING = 302 SPACES

1. STANDARD RIGHT-OF-WAY WIDTH = 80'
2. OPEN SPACE = 149 ACRES OR 87% OF TOTAL PARCEL (171 ACRES)

FIGURE 3-1 - FEBRUARY, 2015

CURRENT RECREATION CONSERVATION DISTICT (RC) PLAN





WESTWOOD RESIDENTIAL - 320 SINGLE FAMILY LOTS

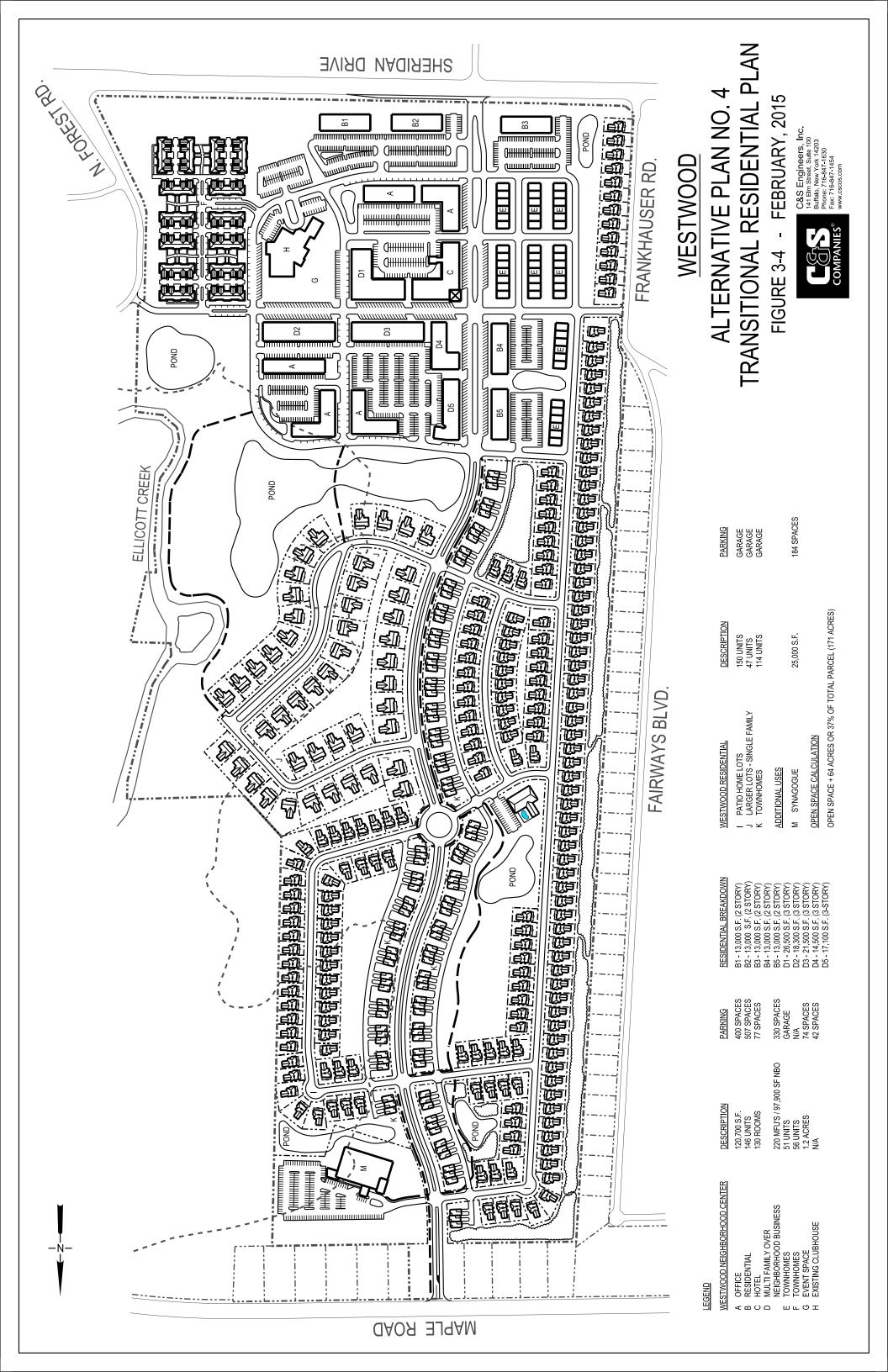
NOTES

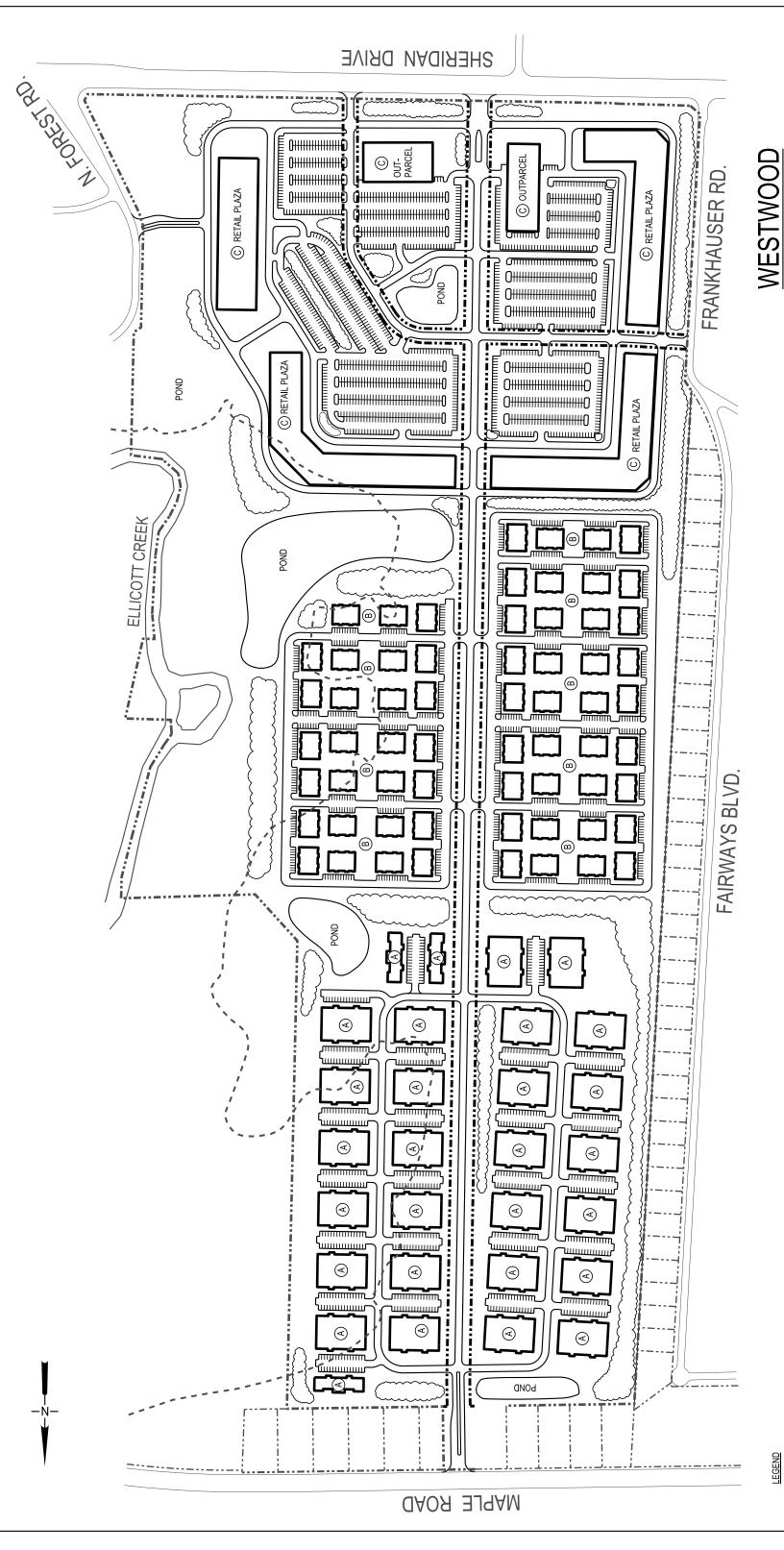
1. STANDARD ROADWAY WIDTH = 50' 2. OPEN SPACE = 33.9 ACRES OR 20% OF TOTAL PARCEL (171 ACRES)

## FEBRUARY, 2015 C&S Engineers, Inc. 141 Elm Street, Suite 100 Buffalo, New York 14203 Phone: 716-847-1630 Fax: 716-847-1454 www.cscos.com FIGURE 3-3

RESIDENTIAL DESTRICT THREE (R-3) PLAN

ALTERNATIVE NO. 3





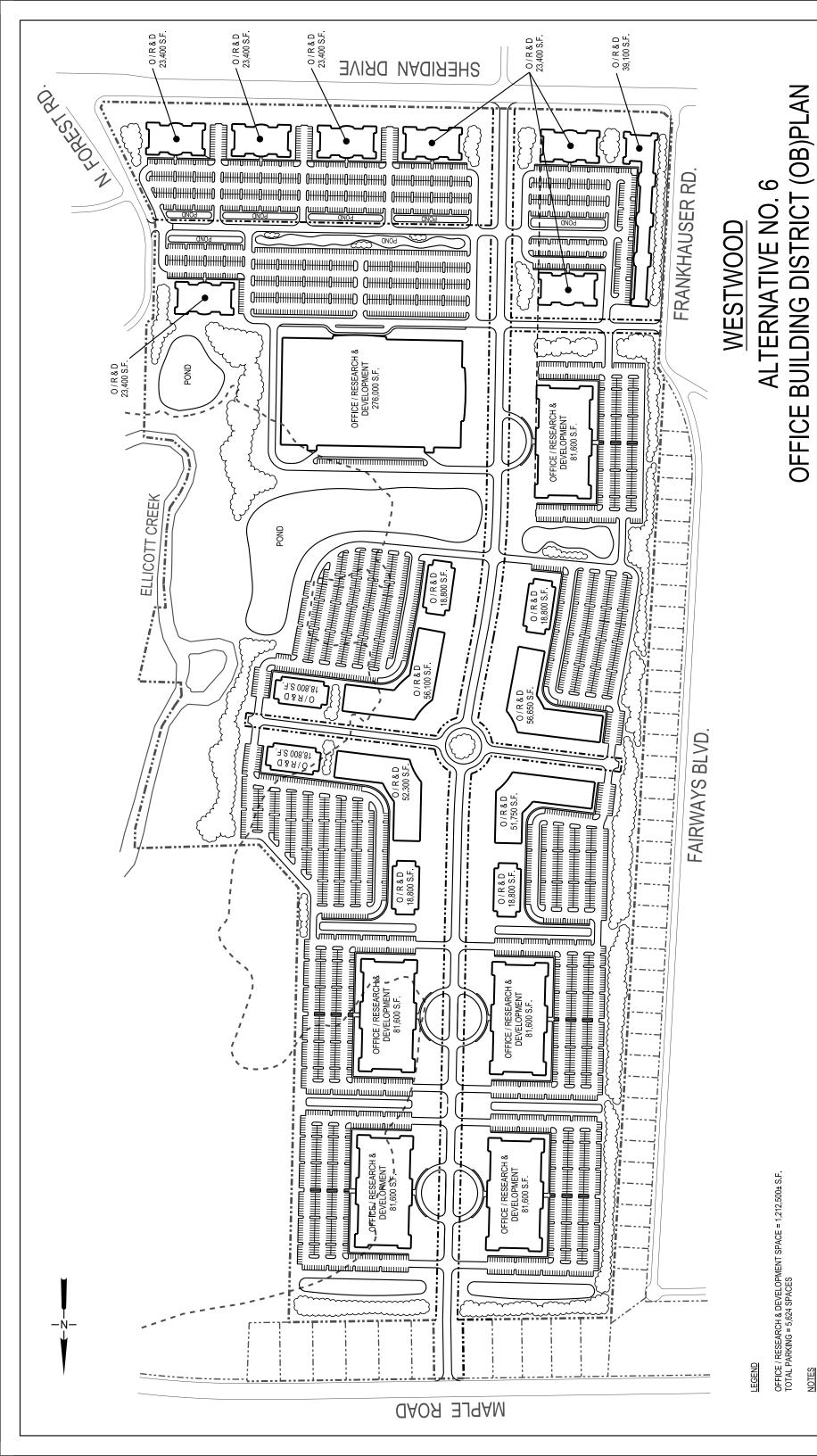
QUANTITY

- 440 UNITS 252 UNITS 433,507 S.F. A - STUDENT HOUSING
  B - MULTI FAMILY HOUSING
  C - RETAIL PLAZA / OUT PARCELS

- 1. TOTAL PARKING SPACES WITHIN RETAIL PLAZA = 1,812
  2. PUBLIC RIGHT-OF-WAY WIDTH = 80' NORTH TO SOUTH
  3. PUBLIC RIGHT-OF-WAY WIDTH = 50' EAST TO WEST
  4. OPEN SPACE = 49 ACRES OR 29% OF TOTAL PARCEL (171 ACRES)

ALTERNATIVE NO. 5 GENERAL BUSINESS (GB) PLAN

FIGURE 3-5 - FEBRUARY, 2015

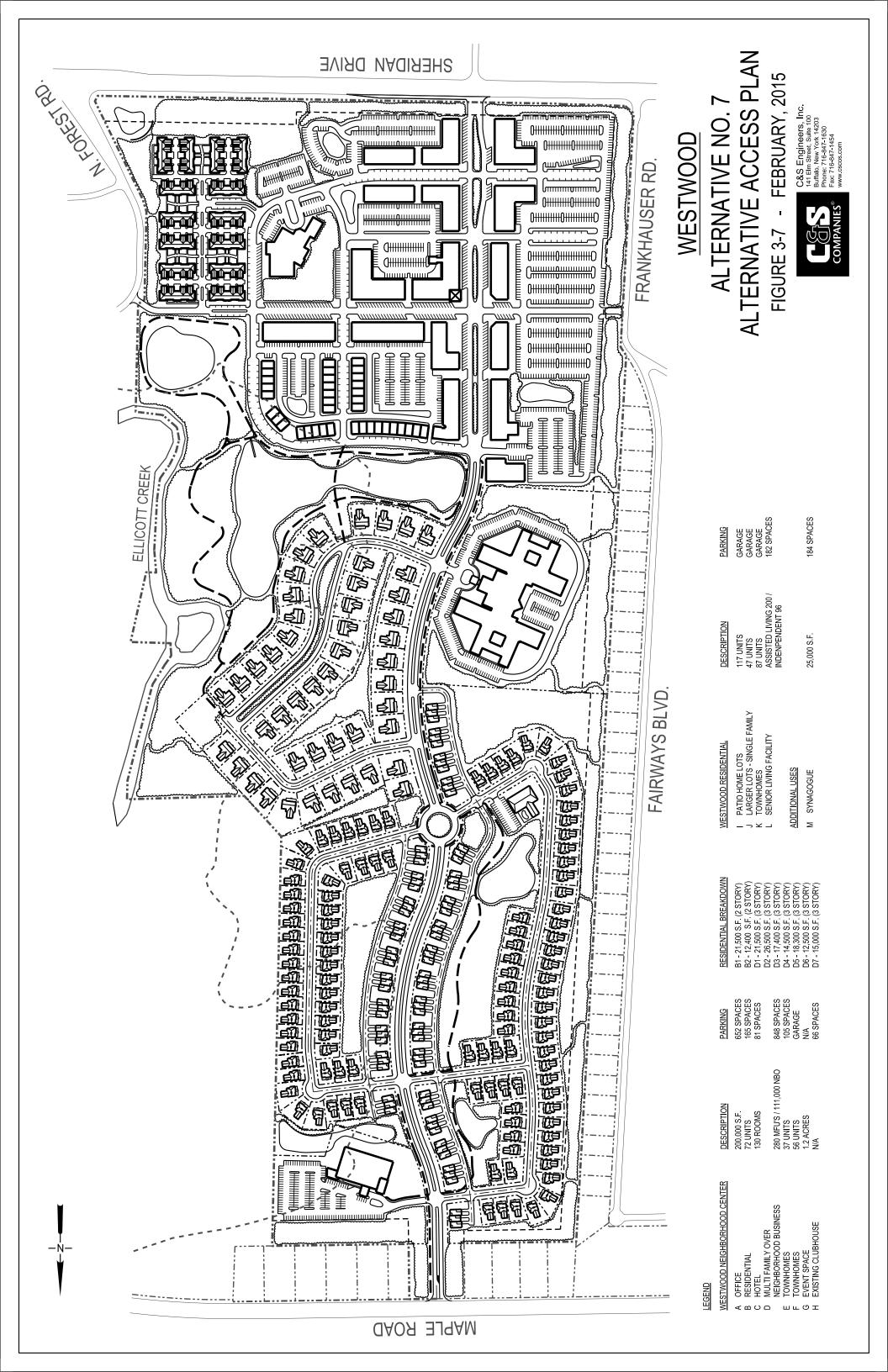


FEBRUARY, 2015

FIGURE 3-6

1. STANDARD ROADWAY WIDTH (PARKWAY) = 80'
2. STANDARD ROADWAY WIDTH (OTHER) = 50'
3. OPEN SPACE = 54.5 ACRES OR 32% OF TOTAL PARCEL (171 ACRES)

C&S Engineers, Inc. 141 Elm Street, Suite 100 Buffalo, New York 14203 Phone: 716-847-1630 Fax: 716-847-1454



## **A3**

## Level of Service: Criteria and Definitions

## Level of Service Criteria

## Highway Capacity Manual 2010

## SIGNALIZED INTERSECTIONS

Level of Service is a qualitative measure describing operational conditions within a traffic stream, based on service measures such as speed and travel time, freedom to maneuver, traffic interruptions, comfort, and convenience. Level of Service for signalized intersections is defined in terms of delay specifically, average total delay per vehicle for a 15 minute analysis period. The ranges are as follows:

Level	Control Delay
of	per vehicle
Service	(seconds)
Α	< 10
В	10 – 20
С	20 – 35
D	35 – 55
Е	55 – 80
F	>80

## **UNSIGNALIZED INTERSECTIONS**

Level of Service for unsignalized intersections is also defined in terms of delay. However, the delay criteria are different from a signalized intersection. The primary reason for this is driver expectation that a signalized intersection is designed to carry higher volumes than an unsignalized intersection. The total delay threshold for any given Level of Service is less for an unsignalized intersection than for a signalized intersection. The ranges are as follows:

Level	Control Delay
of	per vehicle
Service	(seconds)
Α	< 10
В	10 – 15
С	15 – 25
D	25 – 35
E	35 - 50
F	>50

## **A4**

## Level of Service Calculations: Existing Conditions

2013 Existing Conditions - AM Peak Hour Proposed Westwood Mixed Use Neighborhood 1: Maple Road & Millersport Hwy SB

Activity   Activity		1	†	ţ	4	٠	•	
18	ane Group	EBL	EBT	WBT	WBR	SBL	SBR	
198	ane Configurations	*	**	**	æ	K	×	
1900 1900 1900 1900 1900 1900 1900 1900	(nlime (vnh)	200	545	758	797	25	- 6	
150 150 150 150 150 150 150 150 150 150	Heal Flow (vohnl)	1900	1900	1900	1900	1900	1900	
0.950 0.970 0.970	torade Length (ft)	150	-	2	150	0	0	
35 100 25 100 25 1100 100 1100 1100 1100	storage Lanes	- 5			-	· -	- c	
1.00 0.95 0.95 1.00 1.00 1.00 0.95 0.055 0	aper Length (ft)	32			100	25	25	
0.950 1770 0.950 1770 0.353 0.950 0.353 0.950 0.353 0.950 0.353 0.950 0.353 0.950 0.	ane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	
0.950 0.050 0.770 0.353 0.859 0.859 0.859 0.859 0.859 0.950	T				0.850		0.850	
1770 3539 3539 1583 1770 11 0.353 658 3539 3539 1583 1770 11 658 3539 3539 1583 1770 11 15 45 45 281 8.4 9.9 6.4 281 8.4 9.9 6.4 281 8.4 9.9 790 309 32 20 599 790 309 32 1.00 1.00 1.00 1.00 1.00 1.00 1 0	It Protected	0.950				0.950		
0.333 0.950 0.333 0.950 0.951 0.91 0.91 0.91 0.91 0.91 0.91 0.91 0.9	atd. Flow (prot)	1770	3539	3539	1583	1770	1583	
658 3539 3539 1583 1770 11 45 45 45 30 555 654 281 8.4 9,9 6.96 0.78 0 20 599 790 309 32 7 No No No No No No No No 12 12 12 12 12 12 12 12 12 12 12 12 12	It Permitted	0.353				0.950		
Yes  45	atd. Flow (perm)	929	3539	3539	1583	1770	1583	
45 45 45 30 555 654 281 8.4 9.9 0.96 0.78 6.4 20 599 790 309 32 20 599 790 309 32 No No No No No No No No 12 12 12 12 12 14 16 16 16 16 15 17 12 12 16 16 16 16 16 20 100 1.00 1.00 1.00 1.00 0	ight Turn on Red				Yes		Yes	
45 45 30 555 654 281 8.4 0.91 0.91 0.94 0.95 0.96 0.96 0.78 0.20 20 599 790 309 32 7 100 No No No No No No No 12 110 1.00 1.00 1.00 1.00 1.00 1.00 1.00	atd. Flow (RTOR)						104	
555 654 281  8.4 9.9 64  20 0.91 0.94 0.94 0.94 0.94  20 599 790 309 32  No No No No No No No Left Left Left Left Right Left R 10  1.00 1.00 1.00 1.00 1.00 1.00 1.00	ink Speed (mph)		45	42		30		
8.4 9.9 6.4 20 10.91 0.95 0.96 0.78 0.78 20 5.99 7790 30.9 32 7 100 1.00 1.00 1.00 1.00 1.00 1.00 1.00	ink Distance (ft)		222	654		281		
20 599 790 309 32 70 10.9   20 599 790 309 32 70   20 599 790 309 32 70   20 599 790 309 32 70   20 599 790 309 32 70   20 100 1.00 1.00 1.00 1.00 1.00 1.00 1.0	ravel Time (s)		8.4	6.6		6.4		
20 599 790 309 32 No No No No No No No No No No No No No	eak Hour Factor	0.91	0.91	96:0	96.0	0.78	0.78	
20 599 790 309 32 No No No No No No No No No No No No No	dj. Flow (vph)	20	266	790	309	32	104	
20 599 790 309 32 No No No No No No No No No No No No No	hared Lane Traffic (%)							
No No No No No No No No No No No No No	ane Group Flow (vph)	20	266	790	309	32	104	
Left Left Right Left R Right Left R Right Left R Right Left R Right Left R Right Left R Right Left R R R R R R R R R R R R R R R R R R R	nter Blocked Intersection	No No	2	2	No	N <sub>o</sub>	No No	
ne	ane Alignment	Left	Left	Left	Right	Left	Right	
16   16   16   16   16   16   16   16	ledian Width(ft)		12	12		12		
16   16   16   16   16   16   16   16	nk Offset(ft)		0	0		0		
Nes	rosswalk Width(ft)		16	16		16		
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	wo way Left Turn Lane			Yes				
15 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	eadway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
1	urning Speed (mph)	15			6	12	6	
Left Thru Thru Right Left R 20 100 100 20 20 0	umber of Detectors	-	2	2	_	_	-	
20 100 100 20 20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	etector Template	Left	Thru	Thru	Right	Left	Right	
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	eading Detector (ft)	20	100	100	70	70	20	
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	railing Detector (ft)	0	0	0	0	0	0	
CI+Ex CI-Ex	etector 1 Position(ft)	0	0	0	0	0	0	
CHEX CHEX CHEX CHEX CHEX CHEX CI- 00 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	etector 1 Size(ft)	70	9	9	70	70	20	
00 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	etector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	etector 1 Channel							
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	etector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 94 94 94 94 94 94 94 94 94 94 94 94 94	etector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	
94 94 6 6 6 6 6 6 0.0 0.0 Perm pm+ov 2 2 6 4 4	etector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	
CHEX CLEX 0.0 0.0 pm+ov 2 6 4 4	etector 2 Position(ft)		94	94				
ChEx ChEx  0.0 0.0  Perm 2 6 4 4  2 2 6 4 4	etector 2 Size(ft)		9	9				
0.0 0.0  Perm pm+ov 4 4 4 4 4 4 4 4 4 4	etector 2 Type		CI+Ex	CI+Ex				
0.0 0.0 Perm pm+ov 4 2 6 4 4 2 2 6 4 4	etector 2 Channel							
Perm pm+ov 2 6 4 4 2 2 2 6 4 4	etector 2 Extend (s)		0.0	0:0				
2 6 4 4 2 2 6 4 4 2 2 6 4 4	urn Type	Perm			vo+mq		Perm	
2 2 6 4 4	rotected Phases		2	9	4	4		
2 2 6 4 4	ermitted Phases	2			9		4	
	etector Phase	2	2	9	4	4	4	

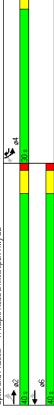
Synchro 7 - Report Page 1

Proposed Westwood Mixed Use Neighborhood 1: Maple Road & Millersport Hwy SB

Proposed Westwood Mixed Use Neighborhood	2013 Existing Conditions - AM Peak Hour
: Maple Road & Millersport Hwy SB	1/27/2015
	•

Lane Group	## FBI ## FBI WBI WBR  4.0 40. 1.0  9.1 9.1 9.1 6.2  40.0 40.0 30.0  57.1% 57.1% 57.1% 42.9%  3.49 34.9 34.9 35.9 32.0  1.2 1.2 1.2 1.4 4.0  5.1 5.1 5.1 5.1 4.0  5.2 3.0 3.0 3.0  5.2 9 52.9 52.9 70.0  5.2 9 52.9 52.9 70.0  5.2 9 52.9 0.30 0.20  5.3 8 2.9 3.2 0.3  2.8 2.9 3.2 0.3  2.8 2.9 3.2 0.3  2.8 2.9 3.2 0.3  2.8 2.9 3.2 0.3  2.8 2.9 3.2 0.3  2.9 2.4 A A A A A A A A A A A A A A A A A A A		١	†	ţ	/	۶	<b>*</b>	
40 40 40 10 9.1 9.1 6.2 9.1 9.1 6.2 40.0 40.0 30.0 40.0 40.0 40.0 30.0 57.1% 57.1% 57.1% 42.9% 1.2 1.4 9.3 9.3 9.3 9.3 3.3 3.9 3.9 3.9 3.9 3.9 5.1 5.1 5.1 4.6 5.1 5.1 5.1 5.1 4.6 5.2 5.2 5.2 5.2 70.0 0.0 0.0 0.0 0.0 0.0 0.76 0.76 0.76 1.00 0.76 0.76 0.76 1.00 0.76 0.76 0.76 1.00 0.76 0.76 0.76 1.00 0.76 0.76 0.76 1.00 0.76 0.76 0.76 1.00 0.76 0.76 0.76 1.00 0.76 0.76 0.76 1.00 0.76 0.76 0.76 1.00 0.76 0.76 0.76 1.00 0.76 0.76 0.76 1.00 0	40 40 40 10  41 40 40 10  41 40 40 10  41 40 40 40 10  400 400 300  57.1% 57.1% 57.1% 42.9%  34.9 34.9 34.9 35.1%  12 1.2 1.4 4.5  5.1 5.1 5.1 5.1 4.6  5.1 5.1 5.1 5.1 4.6  5.2 3.2 0.3 0.20  0.0 0.0 0.0 0.0 0.0  0.0 0.0 0.0 0.0  0.0 0.0	Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	
9.1 9.1 9.1 6.2 9.1 9.1 9.1 9.1 9.1 9.1 9.1 9.1 9.1 9.1	9.1 0.10 9.1 0.1 0.2 9.1 0.1 0.2 9.1 0.1 0.2 9.1 0.1 0.2 9.0 0.0 0.0 9.2 0.3 0.3 0.3 0.3 9.3 0.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Switch Phase							
91 91 91 62  400 40.0 300  57.1% 57.1% 57.1% 42.9% 34.9 34.9 34.9 25.4 39 3.9 3.9 3.9 3.9 39 3.9 3.9 3.9 3.9 30 0.0 0.0 0.0 0.0 5.1 5.1 5.1 4.6 5.3 3.0 3.0 3.0 3.0 5.4 5.9 52.9 52.9 700 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	91 91 91 62  400 400 300  571% 571% 571% 429%  34.9 34.9 34.9 25.4  34.9 34.9 34.9 25.4  34.9 34.9 34.9 25.4  5.1 5.1 5.1 4.6  5.1 5.1 5.1 4.6  5.2 3.0 3.0 3.0  5.3 3.0 3.0 3.0  5.4 5.9 5.9 700  5.9 5.9 5.9 700  5.9 5.9 5.9 700  5.9 5.9 5.9 700  5.9 5.9 5.9 700  5.9 5.9 5.9 700  5.9 5.9 5.9 700  5.9 5.9 5.9 700  5.9 5.9 3.2 0.3  5.9 5.9 5.9 3.2  5.9 5.9 5.9 5.9	Minimum Initial (s)	4.0	4.0	4.0	1.0	1.0	1.0	
900 400 400 300 300 300 300 300 300 300 3	400 400 300 300 300 300 300 300 300 300	Minimum Split (s)	9.1	9.1	9.1	6.2	6.2	6.2	
57.1% 57.1% 57.1% 42.9% 34.9 34.9 34.9 25.4 34.9 34.9 34.9 25.4 34.9 34.9 34.9 25.4 1.2 1.2 1.2 1.4 5.1 5.1 5.1 4.6 5.1 3.0 3.0 3.0 5.2 3.2 52.9 70.0 0.76 0.76 0.76 1.00 0.76 0.76 0.76 1.00 0.76 0.76 0.76 1.00 0.8 2.9 3.2 0.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	57.1% 57.1% 57.1% 42.9% 34.9 34.9 34.9 25.4 1.2 1.2 1.2 1.4 1.2 1.4 1.2 1.4 1.2 1.4 1.2 1.4 1.2 1.4 1.2 1.4 1.2 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4	Total Split (s)	40.0	40.0		30.0	30.0	30.0	
34.9 34.9 34.9 254 39 34.9 34.9 254 39 34.9 34.9 32.9 32.9 32.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	34.9 34.9 34.9 254 39 34.9 34.9 254 39 34.9 34.9 35.9 32.9 30 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Total Split (%)	57.1%	57.1%		42.9%	45.9%	42.9%	
3.9 3.9 3.9 3.9 3.2 1.2 1.2 1.2 1.4 1.2 1.2 1.2 1.4 1.2 1.2 1.2 1.4 1.2 1.2 1.4 1.2 1.2 1.4 1.2 1.2 1.4 1.4 1.2 1.2 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4	3.9 3.9 3.9 3.9 3.2 1.2 1.2 1.2 1.2 1.4 1.2 1.2 1.2 1.4 1.4 1.5 1.5 1.1 4.6 1.5 1.5 1.1 4.6 1.5 1.5 1.1 4.6 1.5 1.5 1.1 4.6 1.5 1.5 1.1 4.6 1.5 1.5 1.1 4.6 1.5 1.5 1.1 4.6 1.5 1.5 1.1 4.6 1.5 1.5 1.1 4.6 1.5 1.5 1.1 4.6 1.5 1.5 1.1 4.6 1.5 1.5 1.1 4.6 1.5 1.5 1.1 4.6 1.5 1.5 1.1 4.6 1.5 1.5 1.1 4.6 1.5 1.5 1.1 4.6 1.5 1.5 1.1 4.6 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5	Maximum Green (s)	34.9	34.9		25.4	25.4	25.4	
12 1.2 1.4 1.4 1.5 1.4 1.6 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	12 1.2 1.4 1.4 1.5 1.4 1.4 1.5 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4	Yellow Time (s)	3.9	3.9		3.2	3.2	3.2	
) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	All-Red Time (s)	1.2	1.2		1.4	1.4	1.4	
5.1 5.1 4.6  5.3 3.0 3.0 3.0 3.0  6.4 3.0 3.0 3.0 3.0  6.4 0.2 0.3 0.2 0.2  7.5 0.0 0.0 0.0  7.6 0.7 0.0 0.0  7.7 0.0 0.0 0.0  7.8 2.9 3.2 0.3  7.9 2.4 A A A  7.9 2.9 2.4  8.9 2.9 2.4  9.9 2.4  A A A A A A A A A A A A A A A A A A A	5.1 5.1 5.1 4.6  5.3 3.0 3.0 3.0 3.0  5.4 5.9 52.9 52.9 700  0.0 0.0 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	
(s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	s) 30 30 30 30 30 30 50 40 40 40 40 40 40 40 40 40 40 40 40 40	Total Lost Time (s)	5.1		5.1	4.6	4.6	4.6	
s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	Lead/Lag							
(s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	(s) 3.0 3.0 3.0 3.0 3.0 (c.Min C.Min More 52.9 52.9 52.9 70.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Lead-Lag Optimize?							
C-Min C-Min C-Min None	C-Min C-Min C-Min None 52.9 52.9 700 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	
52.9 52.9 70.0  0.76 0.76 1.00  0.70 0.70 0.70 0.20  2.8 2.9 3.2 0.31  0.0 0.0 0.0 0.0 0.0  2.8 2.9 3.2 0.3  A A A A A A  Other  Other  sted-Coordinated 10.40  Use 2.50  Itel-Coordinated 10.40  Use 3.50  Us	529 52.9 52.9 700 0.76 0.76 1.00 0.04 0.20 0.30 0.20 2.8 2.9 3.2 0.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Recall Mode	C-Min	C-Min	C-Min	None	None	None	
076 076 076 100 004 022 030 020 28 2.9 3.2 03 00 0.0 0.0 0.0 28 2.9 3.2 0.3 A A A A A A A A A A A Other  Srenced to phase 2:EBTL and 6:WBT, Start of to 140 pelay. 3.5 bits of 140 pelay.	076 076 076 1.00 094 022 039 0.20 094 0.22 0.30 0.20 0 0.0 0.0 0.0 2 8 2.9 3.2 0.3 2 8 2.9 3.2 0.3 A A A A A A A A A A A A A A A A A A A	Act Effct Green (s)	52.9	52.9	52.9	70.0	7.4	7.4	
9004 022 030 020 28 2.9 3.2 03 0 0.0 0.0 00 0 28 2.9 3.2 03 28 2.9 3.2 03 0 28 2.9 2.4 A	004 0.22 0.30 0.20 2.8 2.9 3.2 0.3 0.0 0.0 0.0 0.0 2.8 2.9 3.2 0.3 2.8 2.9 2.4 A Bugh: 70  renced to phase 2.EBTL and 6:WBT, Start of control of the control o	Actuated g/C Ratio	0.76	0.76	0.76	1.00	0.11	0.11	
Control Delay 28 2.9 3.2 0.3 29.7 11.4  Queue Delay 0.0 0.0 0.0 0.0  LOS 0.0 0.0 0.0 0.0  A A A C B  Approach Delay 2.9 2.4 15.7  Approach LoS  A A B C B  Approach LoS  A A B C B  Approach LoS  A A A C B  A C B  A A C B  A A C B  A C B  A C B  A C B  A C B  A C B  A C B  A C B  A C B  A A C B  A C C B  A C C C B  A C C C B  A C C C B  A C C C C B  A C C C C B  A C C C C C C B  A C C C C C C C B  A C C C C C C C B  A C C C C C C C C B  A C C C C C C C C C C B  A C C C C C C	Control Delay 28 2.9 3.2 03 29.7 11.4  Couleue leay 0.0 0.0 0.0 0.0  Total Delay 2.8 2.9 3.2 0.3 29.7 11.4  LOS A A A C B  Approach Delay 2.9 2.4 15.7  A P A A A B B  Approach LOS A A A B B  Indersection Summary Area Type:  Cycle Length: 70  Actualed Cycle Length:	v/c Ratio	0.04	0.22	0.30	0.20	0.17	0.40	
Queue Delay         0.0         0.0         0.0         0.0           Total Delay         2.8         2.9         3.2         7.11.4           A A A A A A C B A         A A B B A C B B         A A B B A C B B           Approach LOS         A A B B B A B B A B B A B B B B A B	Queue Delay         0.0         0.0         0.0         0.0           Total Delay         2.8         2.9         3.2         7.11.4           LOS         A         A         A         C         B           Approach LOS         A         A         B         C         B           Approach LOS         A         A         B         B         B           Intersection Summary         A         B         B         B         B           Intersection Summary         A         B         B         B         B           Intersection Summary         A         B         B         B         B           Intersection Summary         B         B         B         B         B           Actual experienced Login Translatory         Cycle Length: 70         Cycle Length: 70         Actual experienced to phase 2: EBTL and 6:WBT, Start of Green           Natural Cycles. C/W.). Referenced to phase 2: EBTL and 6:WBT, Start of Green         Actual experienced and Cycles and Cyc	Control Delay	2.8	2.9	3.2	0.3	29.7	11.4	
Total Delay   2.8   2.9   3.2   0.3   29.7   11.4	Total Delay         2.8         2.9         3.2         0.3         29.7         11.4           Approach Delay         A         A         A         C         B           Approach LOS         A         A         B         B           Intersection Summary         A         A         B           Area Type:         Cycle Length: 70         Cycle Length: 70           Area Type:         Cycle Length: 70         Cycle Length: 70           Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green         Natural Cycle: 40           Control Type: Actualed-Coordinated         Natural Cycle: 40           Control Type: Actualed Cycle: 40         Intersection Condinated           Maximum Vc Ratio Delay: 3.5         Intersection LOS: A           Intersection Logical Unitization 34-1%         ICU Level of Service A           Analysis Period (min) 15         Control Type: Actual Control Capacity Utilization 34-1%	Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
LOS	LOS A A A C B A P C B A A A C B A A A C B A A A B C B A A A B A B A A B IS.7 A P A B A B A B A A B B B A B A B A B B C B B A B B C B B A B B A B B B C B B A B B A B B A B B A B B A B B A B B A B B A B B A B B A B B B A B B B A B B B B	Total Delay	2.8	2.9	3.2	0.3	29.7	11.4	
Approach Delay 2.9 2.4 15.7  Approach LOS  A A B  Intersection Summary  Area Type: Cycle Length: 70  Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green  Natural Cycle: 40  Control Type: Actualed-Coordinated Maximum Vic Ratio: 0.40  Intersection Signal Delay: 3.5  Intersection Signal Delay: 3.5  Intersection Removed All 10 Intersection Courted  Intersection Signal Delay: 3.5  Intersection Capacity Utilization 34.1%  Intersection Capacity Utilization 34.1%  Intersection Capacity Utilization 34.1%	Approach Delay 2.9 2.4 15.7  A A B B  Intersection Summary  A rea Type:  Offset Ength: 70  Actualed Cycle Length: 70  Actualed Cycle Length: 70  Control Type: Actualed-Coordinated  Maximum Ve Ratio 0.40  Intersection Capacity Ultivation 34.1%  Intersection Capacity Ultivation 34.1%  Intersection Capacity Ultivation 34.1%  ICU Level of Service A  Analysis Period (min) 15  A Reproach 15.7  A Representation 2.9  A Rep	SOT	⋖	⋖	⋖	⋖	O	В	
Approach LOS A A B Intersection Summary Area Type: Cycle Length: 70 Actualed Cycle Length: 70 Actualed Cycle Length: 70 Actualed Cycle Length: 70 Actualed Cycle Length: 70 Intersection Type: Actualed-Coordinated Maximum Vic Ratio: 0.40 Intersection Signal Delay: 3.5 Intersection LOS: A Intersection Capacity Utilization 34.1% Intersection Capacity Utilization 34.1% Intersection Capacity Utilization 34.1% Intersection Capacity Utilization 34.1% Intersection Capacity Utilization 34.1% Intersection Capacity Utilization 34.1%	Approach LOS A A B B  Intersection Summary  Area Type:  Cycle Length: 70  Actualed Cycle Length: 70  Confrol Type: Actualed-Coordinated  Maximum Vic Ratio 0.40  Intersection Capacity Ultiration 34-1%  Intersection Capacity Ultiration 34-1%  Analysis Period (min) 15  Analysis Period (min) 15	Approach Delay		2.9	2.4		15.7		
Intersection Summary Area Type: Cycle Length: 70 Actuated Cycle Length: 70 Actuated Cycle Length: 70 Confor Type: Actuated-Coordinated Maximum Vic Ratio: 0.40 Intersection Signal Delay: 3.5 Intersection Appacity Utilization 34.1% Intersection Capacity Utilization 34.1%	Area Type:  Other  Area Type:  Cycle Length: 70  Actualed Cycle: 40  Confroi Type: Actualed-Coordinated  Maximum Vic Ratio 0.40  Intersection Signal Delay: 3.5  Intersection Capacity Ultization 34.1%  Intersection Capacity Ultization 34.1%  India Service A  Analysis Period (min) 15	Approach LOS		A	∢		В		
Area Type: Other Cycle Length: 70 Actuated Cycle Length: 70 Actuated Cycle Length: 70 Actuated Cycle Length: 70 Confror Type: Actuated-Coordinated Maximum VR Ratio: 0.40 Intersection Signal Delay: 3.5 Intersection Capacity Utilization 34.1% Intersection Capacity Utilization 34.1% Intersection Capacity Utilization 34.1% Intersection Capacity Utilization 34.1% Intersection Capacity Utilization 34.1% Intersection Capacity Utilization 34.1% Intersection Capacity Utilization 34.1%	Area Type: Other  Cycle Length: 70  Actuated Cycle Length: 70  Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green  Natural Cycle: 40  Confroi Type: Actuated-Coordinated  Maximum vC Ratio: 0.40  Intersection Signal Delay: 3.5  Intersection Capacity Utilization 34.1%  Industry Develor Service A  Analysis Period (nin) 15	Intersection Summary							
Cycle Length: 70 Actuated Cycle Length: 70 Actuated Cycle Length: 70 Natural Cycles 40 Control Type: Actuated-Coordinated Maximum Wc Ratio 0.40 Intersection Signal Delay: 3.5 Intersection Capacity Utilization 34.1% Intersection Capacity Utilization 34.1% Intersection Capacity Utilization 34.1% Intersection Capacity Utilization 34.1% Intersection Capacity Utilization 34.1% Intersection Capacity Utilization 34.1%	Cycle Length: 70  Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green Natural Cycle: 40  Confroi Type: Actualed-Coordinated Maximum Wc Ratio: 0.40  Intersection Start Delay: 3.5  Intersection Capacity Utilization 34.1%  ICU Level of Service A Analysis Period (nin) 15	Area Type:	Other						
Actualed Cycle Length: 70 Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green Natural Cycles: 40 Control Type: Actualed-Coordinated Maximum Wc Ratio: 0.40 Intersection Signal Delay: 3.5 Intersection Capacity Utilization 34.1% Intersection Capacity Utilization 34.1% ICU Level of Service A	Actualed Cycle Length: 70 Offset 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green Natural Cycle: 40 Control Type: Actualed-Coordinated Maximum Wc Ratio: 0.40 Intersection Signal Delay: 3.5 Intersection Capacity Utilization 34.1% Analysis Period (min) 18	Cycle Length: 70							
Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green Natural Cycle: 40 Control Type: Actuated-Coordinated Maximum vic Ratio: 0.40 Intersection Signal Delay: 3.5 Intersection Capacity Utilization 34.1% Intersection Capacity Utilization 34.1% ICU Level of Service A	Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green Natural Cycle: 40 Control Type: Autoited-Coordinated Maximum vic Ratio: 0.40 Intersection Signal Delay: 3.5 Intersection Capacity Ultization 34.1% Analysis Period (min) 15	Actuated Cycle Length: 70							
ated-Coordinated or 0.40 Delay: 3.5	oordinated : 3.5 Ization 34.1%	Offset: 5 (7%), Referenced	to phase 2:	EBTL an	d 6:WBT,	Start of G	reen		
<u> </u>	: 3.5 ization 34.1%	Natural Cycle: 40							
~	: 3.5 Ization 34.1%	Control Type: Actuated-Coc	ordinated						
nn 34.1%	: 3.5 ization 34.1%	Maximum v/c Ratio: 0.40							
	ization 34.1%	Intersection Signal Delay: 3.	.5			=	ersection	LOS: A	
	Analysis Period (min) 15	Intersection Capacity Utiliza	ation 34.1%			೨	U Level o	f Service A	

Splits and Phases: 1: Maple Road & Millersport Hwy SB



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2013 Existing Conditions - AM Peak Hour 2: Maple Road & Millersport Hwy NB

		t	•	•			-	-			•	
ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	‡			₩.		<b>,</b>	2				
Volume (vph)	41	529	0	0	912	21	143		452	0	0	0
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	-		0	0		0	_		0	0		0
Faper Length (ft)	20		22	25		22	25		25	22		25
-ane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1:00	1.00	1.00	1.00	1.00	1.8
					0.992			0.850				
Fit Protected	0.950		•	•		•	0.950		•	•	•	•
Satd. Flow (prot)	1770	3539	0	0	3511	0	1770	1583	0	0	0	0
It Permitted	0.243						0.950					
Satd. Flow (perm)	453	3539	0	0	3511	0	1770	1583	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					14			291				
ink Speed (mph)		45			45			8			30	
ink Distance (ft)		654			1770			319			263	
ravel Time (s)		6.6			26.8			7.3			0.9	
Peak Hour Factor	0.85	0.85	0.85	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	48	622	0	0	981	22	154	<del>-</del>	486	0	0	0
Shared Lane Traffic (%)												
ane Group Flow (vph)	48	622	0	0	1036	0	154	487	0	0	0	0
Inter Blocked Intersection	9	%	8	8	8	8	8	8	8	8	8	8
ane Alignment.	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
wo way Left Tum Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
'urning Speed (mph)	15		6	12		6	12		6	15		6
Number of Detectors	-	2			2		_	2				
Detector Template	Left	Thru			Thru		Left	Thru				
eading Detector (ft)	20	100			100		20	100				
railing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0	0				
Detector 1 Size(ft)	8	9			9		70	9				
Detector 1 Type	CI+EX	CI+Ex			CI+Ex		CI+Ex	CI+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		9			9			9				
Detector 2 Type		CI+Ex			CI+Ex			CI+EX				
Detector 2 Channel Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Perm						Perm					
Protected Phases		2			9			∞				
Permitted Phases	2						0					
							0					

Synchro 7 - Report Page 3

Proposed Westwood Mixed Use Neighborhood 2013 Existing Conditions - AM Peak Hour 2: Maple Road & Millersport Hwy NB

Lane Group         EBI         EBI         EBI         WBI         WBI         NBI         NBI         SBI	FBI   FBI   FBR   WBL   WBT   WBR   NBL   NBT   NBR   SBL   SBT		•	†	<i>&gt;</i>	<b>&gt;</b>	ţ	✓	•	•	•	۶	<b>→</b>	•
200 200 200 60 60 60 60 60 60 60 60 60 60 60 60 6	200 200 200 60 60 60 60 60 60 60 60 60 60 60 60 6	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
20.0 20.0 20.0 20.0 20.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0	20.0 20.0 20.0 20.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0	Switch Phase												
25.1 25.1 1 10.6 10.6 10.6 10.6 10.6 10.6 10.6	25.1 25.1 1 106 106 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	Minimum Initial (s)	20.0	20.0			20.0		0.9	0.9				
510 510 000 00 510 00 240 240 00 00 00 00 680% 680% 680% 00% 680% 00% 32.0% 32.0% 00% 00% 00% 00% 00% 32.0% 32.0% 00% 00% 00% 00% 00% 00% 00% 00% 00%	510 510 000 00 510 00 240 240 00 00 00 00 00 00 00 000 6459 680% 680% 00% 320% 320% 00% 00% 00% 00% 00% 00% 00% 00% 00%	Minimum Split (s)	25.1	25.1			25.1		10.6	10.6				
68.0% 68.0% 0.0% 68.0% 0.0% 32.0% 32.0% 0.0% 0.0% 0.0% 69.0% 32.0% 32.0% 0.0% 0.0% 0.0% 69.0% 32.0% 32.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0%	68.0% 68.0% 0.0% 68.0% 0.0% 32.0% 32.0% 0.0% 0.0% 0.0% 45.9 17.4 17.4 17.4 17.2 1.2 1.2 1.4 17.4 17.4 17.4 17.5 1.2 1.2 1.4 17.4 17.4 17.4 17.5 1.5 1.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	Total Split (s)	51.0	51.0	0.0	0.0	51.0	0.0	24.0	24.0	0.0	0.0	0:0	0.0
45.9 45.9 45.9 45.9 19.4 19.4  12 12 1.2 1.2 1.3 3.2  13 3.9 3.9 3.2 3.2  13 1.2 1.2 1.4 1.0 0.0 0.0 0.0 0.0 0.0  5.1 5.1 4.0 4.0 5.1 4.0 4.6 4.6 4.0 4.0  5.1 5.1 4.0 4.0 5.1 4.0 4.6 4.6 4.0 4.0  C-Max C-Max None None None None O.46 0.66 0.66 0.66 0.66 0.66 0.66 0.67  T.B 6.2 0.6 0.6 0.0 0.0  T.B 6.2 7.5 27.9 27.9  A A A A A A A A A A A A A A A A A A A	45.9 45.9 45.9 45.9 19.4 19.4  12 12 12 1.2 1.2 1.2  13 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0  51 5.1 4.0 4.0 5.1 4.0 4.6 4.6 4.0 4.0  C-Max C-Max None None None O.16 0.0 0.0  C-Max C-Max None None O.16 0.0 0.0  C-Max C-Max None None O.16 0.0 0.0  C-Max C-Max None None O.16 0.0 0.0  C-Max C-Max None None O.16 0.0 0.0  C-Max C-Max None None O.16 0.0 0.0  C-Max C-Max None None O.16 0.0 0.0  C-Max None None O.16 0.0 0.0  C-Max None None O.16 0.0 0.0  C-Max None None O.16 0.0 0.0  C-Max None None O.16 0.0 0.0  C-Max None None O.16 0.0 0.0  C-Max None O.16 0.0  C-Max None O.	Total Split (%)	%0.89	%0.89	%0.0	%0:0	%0.89	%0:0	32.0%	32.0%	%0:0	%0.0	%0:0	%0.0
39 39 39 39 39 32 32 32 32 32 32 32 32 32 32 32 32 32	39 3.9 3.9 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2	Maximum Green (s)	45.9	45.9			45.9		19.4	19.4				
12 1.2 1.2 1.2 1.2 1.2 1.3 1.4 1.4 1.4 1.4 1.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	12 12 12 14 14 14 14 16 16 16 16 16 16 16 16 16 16 16 16 16	Yellow Time (s)	3.9	3.9			3.9		3.2	3.2				
Signature   Sign	Signature   Sign	All-Red Time (s)	1.2	1.2			1.2		1.4	1.4				
30 3.0 3.0 3.0 3.0 3.0 3.0 3.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30 30 30 30 30 30 30 30 30 30 C-Max C-Max C-Max None 49.6 49.6 0.66 0.66 0.65 0.65 0.21 0.21 0.02 0.00 0.0 0.00 0.00 0.00	30 30 30 30 30 30  C-Max C-Max None 496 49.6 49.6 49.6 15.7 0.66 0.66 0.66 0.65 0.65 0.21 0.78 6.2 7.5 27.9 0.0 0.0 0.0 0.0 0.0 7.8 6.2 7.5 27.9 A A A A A A A C 6.3 7.5 act to phase 2:EBTL and 6:WBT, Start of Yellow coordinated :12.7 Intersection LOS: B ization 70.2% Intersection LOS: B	Total Lost Time (s)	5.1	2.1	4.0	4.0	2.1	4.0	4.6	4.6	4.0	4.0	4.0	4.0
3.0 3.0 3.0 3.0 3.0 3.0  C-Max C-Max C-Max None 49.6 49.6 49.6 49.6 15.7  0.66 0.66 0.66 0.65 0.42  7.8 6.2 7.5 27.9  A A A A A  Other  Condinated  Council and 6.WBT, Start of Yellow	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	Lead/Lag												
3.0 3.0 3.0 3.0 3.0 3.0 3.0 C-Max C-Max None 4.96 4.96 4.96 4.96 0.06 0.02 1.5.7 0.045 0.21 0.04 0.27 0.045 0.21 0.04 0.27 0.045 0.27 0.00 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	3.0 3.0 3.0 3.0 3.0 3.0 3.0 C-Max C-Max None 49.6 49.6 49.6 0.66 0.66 0.21 0.66 0.21 0.65 0.021 0.05 0.00 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	Lead-Lag Optimize?												
C-Max C-Max None 49,6 49,6 49,6 15,7 0.66 0.66 0.66 0.64 0.16 0.27 0.45 0.42 7.8 6.2 7.5 27,9 0.0 0.0 0.0 0.0 0.0 0.0 7.8 6.2 7.5 27,9 A A A A A C A A A A C Other   Condinated  Condinate	C-Max C-Max None 49,6 49,6 49,6 15,7 046 0,60 0,60 0,60 0,61 016 0,27 0,45 0,42 018 6,2 7,5 27,9 00 0,0 0,0 0,0 0,0 0,0 00 0,0 0,0 0,0 00 0,0 0,	Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
99.6 49.6 49.6 15.7 0.66 0.66 0.066 0.021 0.06 0.02 0.045 0.09 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	99.6 49.6 49.6 15.7 0.66 0.21 0.21 0.21 0.45 0.46 0.46 0.46 0.22 0.21 0.45 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42	Recall Mode	C-Max	C-Max			С-Мах		None	None				
0.66 0.66 0.69 0.21 0.42 0.45 0.42 0.45 0.44 0.45 0.45 0.44 0.45 0.45 0.44 0.45 0.60 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.66 0.66 0.66 0.42  0.16 0.27 0.45 0.42  7.8 6.2 7.5 7.9  7.9 0.0 0.0 0.0 0.0  7.8 6.2 7.5 27.9  A A A A A  A A A  Other  Sat to phase 2:EBTL and 6:WBT, Slart of Yellow  12.7 Intersection LOS: B ization 70.2% ICU Level of Service C	Act Effct Green (s)	49.6	49.6			49.6		15.7	15.7				
0.16 0.27 0.45 0.42 7.8 6.2 7.5 27.9 0.0 0.0 0.0 7.8 6.2 7.5 27.9 A A A A C A A A C A A A C C Other  S at to phase 2:EBTL and 6:WBT, Start of Yellow Coordinated 112.7 Inhersection LOS: B ization 70.2% ICU Level of Service C	0.16 0.27 0.45 0.42 7.8 6.2 7.5 27.9 7.8 6.2 7.5 27.9 7.8 6.3 7.5 27.9 7.5 27.9 7.6 0.0 7.8 6.3 7.5 7.5 6.3 A A  Other  coordinated 12.7 Intersection LOS: B ization 70.2% ICU Level of Service C	Actuated g/C Ratio	99.0	99.0			99.0		0.21	0.21				
7.8 6.2 7.5 27.9 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	7.8 6.2 7.5 27.9 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	v/c Ratio	0.16	0.27			0.45		0.42	0.87				
00 0.0 0.0 0.0 0.0 0.0 0.0 1.8 6.2 7.5 27.9 27.9 27.9 27.9 27.9 27.9 27.9 27.9	00 00 00 00 00 00 00 00 00 00 00 00 00	Control Delay	7.8	6.2			7.5		27.9	27.9				
7.8 6.2 7.5 27.9  A A A A A A C 6.3 7.5 A Other  Side to phase 2:EBTL and 6:WBT, Start of Yellow Tight and Coordinated Tight and Coo	7.8 6.2 7.5 27.9  A A A A A C C A C A C C C C C C C C C	Queue Delay	0.0	0.0			0.0		0.0	0.0				
A A A A C C 6.3 7.5 C Other State of Yellow 1.12.7 Intersection LOS: B calon 70.2% IC Level of Service C CU Level of Service C CU Level of Service C	A A A A C C 6.3 7.5 A  Other  Social and 6.WBT, Start of Yellow icordinated Intersection LOS: B ization 70.2% ICU Level of Service C	Total Delay	7.8	6.2			7.5		27.9	27.9				
6.3 7.5 A A A Other  Sol to phase 2:EBTL and 6:WBT, Start of Yellow coordinated :12.7 Intersection LOS: B Intersection 1.0.5: B Inte	6.3 7.5  A A  Other  5 act to phase 2:EBTL and 6:WBT, Start of Yellow coordinated :12.7 Intersection LOS: B ization 70.2% ICU Level of Service C	SOT	∢	⋖			V		ပ	ပ				
A Other 5 sol to phase 2:EBTL and 6:WBT, Start of coordinated :coordinated :12.7	A Other  5 at 10 phase 2:EBTL and 6:WBT, Start of coordinated :12.7 taiton 70.2%	Approach Delay		6.3			7.5			27.9				
Other 5 sold to phase 2:EBTL and 6:WBT, Start of coordinated coordinated 112.7 table 10.2%	Other 5 Evilon phase 2:EBTL and 6:WBT, Start of coordinated 12.7 Ization 70.2%	Approach LOS		A			A			O				
Other 5 5 40 to phase 2:EBTL and 6:WBT, Start of coordinated coordinated 112.7 tallon 22%	Other 5 5 cut to phase 2:EBTL and 6:WBT, Start of coordinated 12.7 ization 70.2%	Intersection Summary												
5 xd to phase 2:EBTL and 6:WBT, Start of coordinated 112.7 tailon 70.2%	5 cot ophase 2:EBTL and 6:WBT, Start of cordinated :12.7 ization 70.2%	Area Type:	Other											
5 ad to phase 2:EBTL and 6:WBT, Start of coordinated :12.7 training 5	5 ad to phase 2:EBTL and 6:WBT, Start of coordinated :12.7 ization 70.2%	Cycle Length: 75												
or I o phase 2:EBTL and 6:WBT, Start of cordinated :12.7 ization 70.2%	ad to phase 2:EBTL and 6:WBT, Start of condinated condinated 13.7 ization 70.2%	Actuated Cycle Length: 7.	Q.											
coordinated: 12.7 ization 70.2%	cordinated 112.7 Ization 70.2%	Offset: 5 (7%), Reference	ed to phase 2:	EBTL and	16:WBT,	Start of Y	ellow							
oordinated : 12.7 ization 70.2%	oordinated : 12.7 Ization 70.2%	Natural Cycle: 40												
: 12.7 ization 70.2%	: 12.7 ization 70.2%	Control Type: Actuated-C	coordinated											
: 12.7 ization 70.2%	: 12.7 ization 70.2%	Maximum v/c Ratio: 0.87												
ization 70.2%	ization 70.2%	Intersection Signal Delay:	: 12.7			드	tersection	LOS: B						
	Analysis Period (min) 15	Intersection Capacity Utili	ization 70.2%			೨	:U Levelo	f Service	ပ					

Splits and Phases: 2: Maple Road & Millersport Hwy NB



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2013 Existing Conditions - AM Peak Hour 3: Maple Road & Maplemere Road

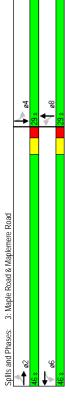
	١	†	<u> </u>	-	,	/		_	L	•	+	•
ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
ane Configurations	۳	4₽		F	4₽			4			4	
Volume (vph)	70	849	46	12	954	27	43	33	16	33	0	16
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	9 ,		0	70		0	0		0	0		0
Storage Lanes	-		0	-		0	0		0	0		0
Faper Length (ft)	20 20	0.95	0 32	100	0.95	25	100	100	100	1 25	100	1 00
- T-	2	0.992			0.996		2	0.965	2	3	0.956	3
-It Protected	0.950			0.950				0.967			896.0	
Satd. Flow (prot)	1770	3511	0	1770	3525	0	0	1738	0	0	1724	0
-It Permitted	0.235			0.249				0.741			0.735	
Satd. Flow (perm)	438	3511	0	464	3525	0	0	1332	0	0	1309	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		=			9			22			28	
ink Speed (mph)		45			45			30			30	
ink Distance (ft)		1770			1106			378			402	
ravel Time (s)		26.8			16.8			9.8			9.1	
Peak Hour Factor	0.86	0.86	0.86	0.91	0.91	0.91	09.0	09:0	09.0	0.58	0.58	0.58
4dj. Flow (vph)	23	787	23	13	1048	30	72	2	27	22	0	28
Shared Lane Traffic (%)												
-ane Group Flow (vph)	23	1040	0	13	1078	0	0	104	0	0	82	0
Enter Blocked Intersection	2	2	8	8	9 8	8	8	8	8	8	2	S
ane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
wo way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
urning Speed (mph)	15		6	15		6	12		6	12		6
Number of Detectors	<del>-</del>	2		_	2		_	2		<del>-</del>	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
<ul> <li>eading Detector (ft)</li> </ul>	20	100		20	100		20	100		70	100	
railing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	8	9		20	9		70	9		8	9	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+Ex			CI+EX			CI+EX			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
urn Type	Perm			Perm			Perm			Perm		
Protected Phases	c	2			9		c	∞			4	
Permitted Phases	2			9			∞ •			4		
Delegation Phone		c		7								

Synchro 7 - Report Page 5

Proposed Westwood Mixed Use Neighborhood 2013 Existing Conditions - AM Peak Hour 3: Maple Road & Maplemere Road

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	^	<b>†</b>	<u>/</u>	<b>/</b>	ţ	4	•	<b>←</b>	•	٠	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	0.6	0.6		0.6	0.6		27.0	27.0		27.0	27.0	
Total Split (s)	46.0	46.0	0.0	46.0	46.0	0.0	29.0	29.0	0.0	29.0	29.0	0.0
Total Split (%)	61.3%	61.3%	%0.0	61.3%	61.3%	%0.0	38.7%	38.7%	%0:0	38.7%	38.7%	0.0%
Maximum Green (s)	41.0	41.0		41.0	41.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	2.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)							7.0	7.0		7.0	7.0	
Flash Dont Walk (s)							15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)							0	0		0	0	
Act Effct Green (s)	25.6	25.6		25.6	25.6			8.2			8.1	
Actuated g/C Ratio	0.64	0.64		0.64	0.64			0.20			0.20	
v/c Ratio	0.08	0.46		0.04	0.48			0.35			0.30	
Control Delay	0.9	6.4		5.3	6.5			15.5			13.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	0.9	6.4		5.3	6.5			15.5			13.7	
SOT	A	⋖		⋖	⋖			В			В	
Approach Delay		6.4			6.5			15.5			13.7	
Approach LOS		⋖			¥			В			В	
Intersection Summary												
Area Tvne	Other											

Area Type:
Other
Cycle Length: 75
Actualed Cycle Length: 40
Natural Cycle: 50
Control Type: Actuated Uncoordinated
Maximum wic Ratio: 0.48
Intersection Signal Delay: 7.1
Intersection Capacity Utilization 39.7%
Intersection (min) 15



Lanes, Volumes, Timings SRF & Associates

2013 Existing Conditions - AM Peak Hour Proposed Westwood Mixed Use Neighborhood 4: Maple Road & Donna Lea Blvd

rations	NBR 61 1900 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
tions	61 1900 0 0 25 1.00 0 0 0 0 No Right
(ii) 892 6 13 969 24 (iii) 1900 1900 1900 1900 1900 1900 1900 190	1900 0 0 25 25 1.00 0 0 0 0 No Right
(f) 1900 1900 1900 1900 1900 1900 1900 190	1900 0 0 25 1.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
(ff) 0 50 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0 1.00 0 0 0 0 0 0 0 0 No Right
1) 0 0.95 25 25 25 25 25 25 25 25 25 25 25 25 25	25 1.00 0 0 0.76 80 0 No No Right
tr 0.95 0.95 1.00 0.95 1.00 0.90 1.00 0.999 0.950 0.950 0.999 0.950 0.999 0.950 0.950 0.999 0.950 0.95	25 1.00 0 0 0.76 80 80 No No Right
nr 0.95 0.95 1.00 0.95 1.00 0.96 1.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0 0 0 0 0 No Right
(1) (1) (2) (2) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	0 0 0 0 80 80 0 0 No Right
(a) 3536 (b) 1770 3539 1660 (c) 956 (c) 957 (c) 958 (c	0 0.76 80 0 No Nght
(m) 3536 0 1770 3539 1660 (m) 3536 0 1770 3539 1660 (m) 45 0 1770 3539 1660 (m) 45 0 1770 3539 1660 (m) 45 0 1770 3539 1660 (m) 45 0 1700 3539 1660 (m) 45 0 1700 (m) 45 0	0 0 0.76 80 No No Right
m) 3536 0 1770 0 986  h) 45 1060  l) 1106 1928 355  row (vph) 1137 0 15 1114 112  w (vph) 1137 0 15 1114 112  l) 0 No No No No No No No No No No No No No	0.76 80 0 No Nght
m) 3536 0 1770 3539 1660 n) 45 45 30 1770 3539 1660 n) 1106 1928 355 or 168 29.2 8.1 or 0.79 0.87 0.87 0.87 0.76 w (xph) 1137 0 15 1114 112 w (xph) 1137 0 15 1114 112 n) 0 No No No No No No No No No No No No No	0 0.76 80 0 0 No No Right
(h) 45 45 45 30 1) 1106 1928 355 10c 0.79 0.79 0.87 0.87 0.76 (m) (vph) 1129 8 15 1114 32 m (vph) 1137 0 15 1114 32 m (vph) 1137 0 15 1114 112 10 12 12 12 (h(t) 16 16 16 m (m) 1.00 1.00 1.00 1.00 (mph) 1.00 1.00 1.00 1.00	0.76 80 0 No Right
(y) 1106 1928 355 168 168 168 169 169 169 169 169 169 169 169 169 169	0.76 80 0 No Right
or 16.8 29.2 8.1  or 0.79 0.79 0.87 0.87 0.75  arific (%) 1129 8 15 1114 32  w (vph) 1137 0 15 1114 112  w (vph) 1137 0 No No No No No No No No No No No No No	0.76 80 80 0 No Right
or 0.79 0.79 0.87 0.87 0.76  saffic (%) 1129 8 15 1114 32  w (vph) 1137 0 15 1114 112  netrsection No No No No No No No No No No No No No	0.76 80 0 0 No Right
artific (%)  w (ych) 1137 0 15 1114 32  w (ych) 1137 0 15 1114 112  li 12 12 12  l) 12 12 12 12  lo 0 0  ht(t) 16 16 16  um Lane Yes Yes Yes (mpt)  r 1.00 1.00 1.00 1.00  f 1.00 1.00 1.00  f 1.00 1.00 1.00  f 1.00 1.00 1.00  f 1.00 1.00 1.00	80 0 No Right
on No No No No No No No No No No No No No	0 No Right
ion 1137 0 15 1114 112  No No No No No No No No No No No No No N	No Right
lersection No No No No No No No No No No No No No	No Right
Left Right Left Left Left Left (1) 12 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Right
(ft) 12 12 12 12 12 12 12 12 12 12 12 12 12	
(inp) 0 0 0 0 0 0 0 15 15 15 15 15 15 15 15 15 15 15 15 15	
idth(ff) 16 16 16 16 16 17 16 16 16 17 16 17 16 17 17 17 17 17 17 17 17 17 17 17 17 17	
Tum Lane Yes Yes Yes Stor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	
ctor 1.00 1.00 1.00 1.00 1.00 1.00 ctor ctor ctor ctor ctor ctor ctor ctor	
ed (mph) 9 15 15	1.00
000	6
organ contribution rice study	
ntersection Summary	
Area Type: Other	
Intersection Capacity Utilization 38.5%	I Service A

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Proposed Westwood Mixed Use Neighborhood 4: Maple Road & Donna Lea Blvd

2013 Existing Conditions - AM Peak Hour

																																							٨	c	
•	NBR		61			0.76	80									0.88	268			250	6.9		3.3	88	663	NB 1	112	32	80	475	0.24	23	14.9	В	14.9	В			Service		
•	NBL	>	24	Stop	%0	0.76	32									0.88	1720	1133	287	1552	8.9	2.8	3.5	86	276	WB 3	222	0	0	1700	0.33	0	0.0						ICLL Level of Service		
ļ	WBT	‡	696	Free	%0	0.87	1114						TWLTL	2												WB 2	222	0	0	1700	0.33	0	0.0						<u></u>	2	
<b>/</b>	WBL	<u>,-</u>	13			0.87	15									0.88	1137			893	4.1		2.2	86	899	WB 1	15	12	0	899	0.02	2	10.5	В	0.1			α C	38.5%	15	
<u> </u>	EBR		9			0.79	∞																			EB2	384	0	∞	1700	0.23	0	0.0								
†	EBT	<b>₩</b>	892	Free	%0	0.79	1129						TWLTL	2	1106											EB 1	753	0	0	1700	0.44	0	0.0		0.0				zation		
	Movement	Lane Configurations	Volume (veh/h)	Sign Control	Grade	Peak Hour Factor	Hourly flow rate (vph)	Pedestrians	Lane Width (ft)	Walking Speed (ft/s)	Percent Blockage	Right turn flare (veh)	Median type	Median storage veh)	Upstream signal (ft)	pX, platoon unblocked	vC, conflicting volume	vC1, stage 1 conf vol	vC2, stage 2 conf vol	vCu, unblocked vol	tC, single (s)	tC, 2 stage (s)	tF (s)	p0 queue free %	cM capacity (veh/h)	Direction, Lane #	Volume Total	Volume Left	Volume Right	SSH	Volume to Capacity	Onene Length 95th (ft)	Control Delay (s)	Lane LOS	Approach Delay (s)	Approach LOS	Intersection Summary	Average Delay	Intersection Capacity Hillization	Analysis Period (min)	

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2013 Existing Conditions - AM Peak Hour 5: Maple Road & Audubon Golf Club

Control   Feb.   Feb.   Wel		1	<b>†</b>	<u>/</u>	<b>&gt;</b>	ţ	4	•	<b>←</b>	•	٠	<b>→</b>	•
titons	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
1   944   4   1   988   2   13   0   3   1   0   1   0   1   0   1   1   0   1   0   1   0   1   0   1   0   1   0   1   0   1   0   1   0   1   0   1   0   1   0   1   0   1   0   1   0   0	Lane Configurations	<b>y</b> -	44		je-	4₽			4			4	
(if) 1900 1900 1900 1900 1900 1900 1900 190	Volume (vph)	-	944	4	_	886	7	13	0	m	<del>-</del>	0	0
(ii) 100 0 50 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
(a) 1	Storage Length (ft)	19		0	20		0	0		0	0		0
th the section of the	Storage Lanes	-		0	-		0	0		0	0		0
10.0 0.95 0.95 1.00 0.95 0.97 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Taper Length (ft)	22		22	25		25	25		25	22		25
(b) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c	Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
1770   0.950   0.950   0.950   0.960   0.950	E		0.999						926.0				
(h) 1770 3836 0 1770 3839 0 0 1745 0 0 1770 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Fit Protected	0.950			0.950				0.960			0.950	
mm) 1770 3536 0 1770 3539 0 0 1745 0 0 1770 0 0 177	Satd. Flow (prot)	1770	3536	0	1770	3539	0	0	1745	0	0	1770	0
m) 1770 3536 0 1770 3539 0 0 1745 0 0 1770 1770 1770 1770 1770 1770 1770	Fit Permitted	0.950			0.950				096.0			0.950	
h) 45 46 30 30 30 30 30 30 30 30 30 30 30 30 30	Satd. Flow (perm)	1770	3536	0	1770	3539	0	0	1745	0	0	1770	0
(h) 446 556 469 111  1 0.8 8.4 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92	Link Speed (mph)		45			45			30			30	
tor 0,92 0,92 0,92 0,92 0,92 0,92 0,92 0,92	Link Distance (ft)		446			929			469			111	
tor 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92	Travel Time (s)		8.9			8.4			10.7			2.5	
1   1026	Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
1   1030   0   1   1076   0   0   17   0   0   1	Adj. Flow (vph)	-	1026	4	-	1074	2	14	0	3	-	0	0
1   1030	Shared Lane Traffic (%)												
No No No No No No No No No No No No No	Lane Group Flow (vph)	-	1030	0	-	1076	0	0	17	0	0	_	0
Left Left Right Left Left Right Left Right Left Left Left Right  Enter Blocked Intersection	8	8	%	%	9	N <sub>o</sub>	8	8	N <sub>o</sub>	8	8	8	
12 12 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
100 100 100 100 100 100 100 100 100 100	Median Width(ft)		12			12			0			0	
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Link Offset(ft)		0			0			0			0	
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Crosswalk Width(ft)		16			16			16			16	
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Two way Left Turn Lane		Yes			Yes							
15	Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Free Free Stop Other ed ization 37.4% ICU Level of Service A	Turning Speed (mph)	15		6	15		6	15		6	15		6
Other ed ization 37.4%	Sign Control		Free			Free			Stop			Stop	
Other ed ization 37.4%	Intersection Summary												
ed ization 37.4%		Other											
	Control Type: Unsignalized Intersection Canacity Iltilizati	ion 37 4%			<u> </u>	III evel II	Service	4					
	Analysis Period (min) 15				2								

Proposed Westwood Mixed Use Neighborhood 2013 Ey 5: Maple Road & Audubon Golf Club

Use Neighborhood 2013 Existing Conditions - AM Peak Hour Solf Club

	4	†	>	<b>&gt;</b>	ţ	4	•	•	•	۶	<b>→</b>	•
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u>,                                    </u>	₩		*	₩			4			4	
Volume (veh/h)	-	944	4	<b>—</b>	886	2	13	0	က	-	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		%0			%0			%0			%0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	-	1026	4	_	1074	2	14	0	3	_	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	_	TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1076			1030			1570	2109	515	1596	2110	538
vC1, stage 1 conf vol							1030	1030		1077	1077	
vC2, stage 2 conf vol							539	1078		218	1033	
vCu, unblocked vol	1076			1030			1570	2109	515	1596	2110	238
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	2.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
b0 dnene tree %	90			9			94	100	66	66	9	100
cM capacity (veh/h)	644			029			225	211	202	213	211	488
Direction, Lane #	EB 1	EB2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	-	684	346	<del>-</del>	716	360	17	-				
Volume Left	-	0	0	-	0	0	14	-				
Volume Right	0	0	4	0	0	2	3	0				
cSH	644	1700	1700	670	1700	1700	251	213				
Volume to Capacity	0.00	0.40	0.20	0.00	0.42	0.21	0.07	0.01				
Queue Length 95th (ft)	0	0	0	0	0	0	9	0				
Control Delay (s)	10.6	0.0	0.0	10.4	0.0	0.0	20.4	22.0				
Lane LOS	В			В			O	O				
Approach Delay (s)	0.0			0.0			20.4	22.0				
Approach LOS							S	O				
Intersection Summary												
Average Delay			0.2									
Intersection Capacity Utilization	_		37.4%	೨	U Level o	ICU Level of Service			A			
Analysis Period (min)			15									
•												

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

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2013 Existing Conditions - AM Peak Hour 1/27/2015 Proposed Westwood Mixed Use Neighborhood 6: Maple Road & North Forest Road

WBR         NBL         NBT         NBT         SBL         SBT           1900 <th></th> <th>`</th> <th>Ť</th> <th>•</th> <th>۰</th> <th></th> <th></th> <th>-</th> <th>-</th> <th>~</th> <th></th> <th>۰</th> <th></th>		`	Ť	•	۰			-	-	~		۰	
1	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
170   769   75   243   733   88   88   223   179   120   346     415   220   1900   1900   1900   1900   1900   1900   1900     415   220   230   230   230   230     100   0.95   1.00   1.00   1.00   1.00   1.00   1.00   1.00     100   0.95   1.00   1.00   0.95   1.00   1.00   1.00   1.00     170   0.95   1.00   1.00   0.95   1.00   1.00   1.00     170   0.95   1.00   1.00   1.00   1.00   1.00   1.00     170   0.90   0.90   0.95   0.95   0.90   0.90   0.90     180   0.90   0.90   0.95   0.95   0.90   0.90   0.90     190   0.90   0.90   0.95   0.95   0.90   0.90   0.90     190   0.90   0.90   0.95   0.95   0.90   0.90   0.90     100   0.90   0.90   0.90   0.90   0.90     100   0.90   0.90   0.90   0.90   0.90     100   0.90   0.90   0.	ane Configurations	*	ŧ	R.	F	*	*	r	*	*	F	*	¥.
1900   1900	/olume (vph)	11	169	75	243	733	88	88	223	179	120	346	154
110   110	deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
1	Storage Length (ft)	415		220	315		150	125		220	250		250
90 115 600 255 128 148 148 148 148 148 148 148 148 148 14	Storage Lanes	-		-	-		-	-		-	-		_
1,00   0,95   1,00   1,00   0,95   1,00	Taper Length (ft)	8		115	09		25	95		25	8		25
0.950 0.050	-ane Util. Factor	1:00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
0.950 0.950 0.950 0.950 0.950 0.250	<u></u>			0.850			0.850			0.850			0.850
1770   3539   1583   1770   3539   1583   1770   1863   1770   1863   1770   1863   1770   1863   1770   1863   1863   1770   1863   1863   1770   1863   1863   1770   1863   1863   1770   1863   1863   1770   1863   1863   1863   1770   1863	It Protected	0.950			0.950			0.950			0.950		
0.299 0.122 0.1299 0.122 0.129 0.243 0.122 0.100 0.100 0.00 0.00 0.00 0.00 0	Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
100   100	It Permitted	0.299			0.122			0.243			0.365		
Ves	Satd. Flow (perm)	222	3539	1583	227	3539	1583	453	1863	1583	089	1863	1583
1705   83	Right Turn on Red			Yes			8			Yes			Yes
105   105	Satd. Flow (RTOR)			83						99			107
1705   1705   1820   529   103   108   108   108   108   109   109   108   12.4   103   109   108   10.2	ink Speed (mph)		45			45			32			32	
25.8   12.4   10.3   10.3   11.8   11	ink Distance (ft)		1705			820			529			809	
96 884 83 256 772 93 98 248 199 150 432  7) 86 884 83 256 772 93 98 248 199 150 432  7) 1 86 884 83 256 772 93 98 248 199 150 432  7) 2 1	ravel Time (s)		25.8			12.4			10.3			11.8	
96 854 83 256 772 93 98 248 199 150 432 Cilon No No No No No No No No No No No No No	Peak Hour Factor	06:0	06:0	0.90	0.95	0.95	0.95	06:0	0.90	0.90	0.80	0.80	0.80
9,9 86 854 83 256 772 93 98 248 199 150 432   Cidon No No No No No No No No No No No No No	dj. Flow (vph)	%	854	83	256	772	93	86	248	199	120	432	192
10   86   854   83   256   772   93   98   248   199   150   432	shared Lane Traffic (%)												
ction No No No No No No No No No No No No No	ane Group Flow (vph)	98	854	83	256	772	93	86	248	199	120	432	192
Left Left Right Left Right Left Right Left Right Left Left The Total Left Left Thru Right Left	inter Blocked Intersection	2	8	2	2	8	8	8	2	8	2	8	S
12	ane Alignment.	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
1.00	Aedian Width(ft)		12			12			12			12	
16	ink Offset(ft)		0			0			0			0	
1.00   Yes   1.00   1	Crosswalk Width(ft)		16			16			16			16	
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	wo way Left Turn Lane		Yes										
15	leadway Factor	1:00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1	urning Speed (mph)	15		6	15		6	12		6	15		6
Left Thru Right Left Thru Right Left Thru Right Left Thru Right Left Thru Right Left Thru Right Left Thru Sight  Jumber of Detectors	-	2	-	<del>-</del>	2	_	_	2	_	_	2	_	
20 100 20 20 100 20 20 100 20 20 20 20 20 20 20 20 20 20 20 20 2	Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thr	Right	Left	Thr	Right
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	eading Detector (ft)	70	100	20	20	100	70	70	100	20	20	100	20
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	railing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
CI+EX CI+EX	Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
CHEX CI-EX C	Detector 1 Size(ft)	8	9	8	70	9	70	70	9	70	8	9	20
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Detector 1 Channel												
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
00 00 00 00 00 00 00 00 00 00 00 00 00	Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0 pm+pt pm+ov pm+pt pm+ov pm+pt pm pm pm pm pm pm pm pm pm pm pm pm pm	Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C +Ex   C +E	Detector 2 Position(ft)		94			94			94			94	
CI+Ex CI+Ex	Detector 2 Size(ft)		9			9			9			9	
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Detector 2 Type		CI+Ex			CI+EX			CI+EX			CI+Ex	
pm+pt pm+ov pm+pt by pm+ov pm+pt pm+ov pm+ov pm+pt pm+ov pm+pt pm+ov pm+pt pm+ov pm+pt pm+ov pm+pt pm+ov pm+pt pm+ov pm+pt pm+ov pm+pt pm+ov pm+pt pm+ov pm+pt pm+ov pm+pt pm+ov pm+pt pm+ov pm+pt pm+ov pm+pt pm+ov pm+ov pm+pt pm+ov pm+pt pm+ov pm+ov pm+pt pm-ov pm+ov pm+pt pm-ov pm+ov pm+pt pm-ov pm+ov pm+pt pm-ov pm+ov pm+	Detector 2 Channel		c			ć			c			c	
pm+pt pm+pt pm+pt pm+pt pm+pt pm+pt pm+pt 2 2 6 6 6 8 8 8 4	Jeleciol z Exterio (s)	1	0:0		1	0.0		1	0.0		1	0.0	
2 2 5 6 6 8 8 8 4 4 4	urn Type	ID+IDI	c	bm+ov	pm+pt	7	pm+ov	pm+pt	o	pm+ov	pm+pt		vo+mq
0 7 7	Totected Priases	റ	7	າ ເ	- 、	0		n 0	ιο O	- 0		4	0 *
	Permitted Phases	7											

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Proposed Westwood Mixed Use Neighborhood 6: Maple Road & North Forest Road

od Mixed Use Neighborhood	2013 Existing Conditions - AM Peak Hour	- AM Peak Hour
North Forest Road		1/27/2015
1		•

	1	†	<u> </u>	<b>\</b>	ţ	4	•	<b>←</b>	•	۶	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	1.0	4.0	1.0	1.0	4.0	1.0	1.0	4.0	1.0	1.0	4.0	1.0
Minimum Split (s)	7.0	35.0	7.0	7.0	32.0	7.0	7.0	35.0	7.0	7.0	35.0	7.0
Total Split (s)	13.0	45.0	10.0	23.0	22.0	15.0	10.0	37.0	23.0	15.0	42.0	13.0
Total Split (%)	10.8%	37.5%	8.3%	19.2%	45.8%	12.5%	8.3%	30.8%	19.2%	12.5%	35.0%	10.8%
Maximum Green (s)	7.0	39.0	4.0	17.0	49.0	0.6	4.0	31.0	17.0	0.6	36.0	7.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Lead∕Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		22.0			22.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	38.2	31.3	41.6	50.9	38.5	53.6	27.8	23.7	44.1	37.4	28.5	41.6
Actuated g/C Ratio	0.37	0.30	0.40	0.50	0.37	0.52	0.27	0.23	0.43	0.36	0.28	0.40
v/c Ratio	0.30	0.79	0.12	0.79	0.58	0.11	0.56	0.58	0.28	0.44	0.84	0.27
Control Delay	18.2	39.7	5.3	39.7	27.8	13.8	39.8	42.1	14.1	27.8	51.3	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.2	39.7	5.3	39.7	27.8	13.8	39.8	42.1	14.1	27.8	51.3	11.2
SO7	В	۵	A	Ω	U	В	۵	Ω	В	U	Ω	В
Approach Delay		35.1			29.3			31.4			36.8	
Approach LOS					O			ပ			۵	
Intersection Summary												

Area Type: Other Cycle Length: 120
Actualed Cycle Length: 102.8
Naturaled Cycle: 85
Control Type: Actualed-Uncoordinated Maximum wic Ratio: 0.84
Intersection Signal Delay: 33.07
Intersection Capacity Ullization 17.8%
Analysis Period (min) 15

Intersection LOS: C ICU Level of Service D

108 42 8 108 42 8 108 07 Splits and Phases: 6: Maple Road & North Forest Road 45 s **1**6

Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2013 Existing Conditions - AM Peak Hour 7: Sheridan Drive & Mill Street

EBL 5 1900 1000 1000 1.00 0.950 1,770 0.268 499 499 0.86 6 6	<b>←№</b> 1240 1920 1900 1900 1900 1900 1900 1900 190	119 119 1900 0 0 0 0 0 0 0 0 0 0 0 0 0 0	WBL 215 1900 150 60 1.00 0.950 1770 0.89 242 242 242	44 942 1900 1900 0.999 3536 3536 11.8 977 11.8	WBR 1900 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	NBL 1900 40 40 1700 0.950 1770 0.234 436	1900 1.00 0.872 1624 1624	122 1900 0 0 0 25 1.00	30 1900 75	SBT 146 1900 1	15 1900 0 0 0 25
1900 1000 1000 1000 1.000 1,770 1,770 1,770 1,770 1,986 6 6 6 (%) 6 6 6 1,000	45 1240 1900 0.95 0.987 3493 3493 3493 142.2 42.2 42.2 42.2 11580 No	119 1900 0 0 25 0.95 0.95 0 0 0 0 0 0 0 0 0 0 0 0 0 0	215 1900 150 1000 1.00 0.950 0.080 149 242 242 242	445 942 1900 0.95 0.999 3536 3536 1 1 45 977 14.8 0.89	1900 0 0 25 0.95 0.95 0.89 10	97 1900 40 40 100 1,00 0,950 1,70 0,234 436	1900 1.00 0.872 1624 30	122 1900 0 0 0 25 1.00	30 1900	146 1900 100	1900
pl) 1900 (ft) 1000 100 1000 or 1.00 1000	1240 1900 0.95 0.987 3493 3493 3493 42.2 0.86 1142 1580 No	1119 0 0 0 0 0 0 0 0 0 0 0.95 0 0.86 138 0 0 0 0	215 1900 150 1000 1.00 1,000 149 242 242 242 242	942 1900 0.95 0.999 3536 3536 1 1 45 977 14.8 0.89	1900 0 0 0 25 0.95 0.95 0.89	97 1900 40 100 1.00 0.950 0.234 436 436	1,000 0.872 1.624 1.624 30	122 1900 0 0 25 1.00	1900	1900	1900
(f) 1900 (f) 100 100 1100 1700 100 100 1770 100 1770 100 10	1900 0.95 0.987 3493 3493 45.2 0.86 1442 1580 No	1900 0 0 25 0.95 0.95 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1900 150 1 60 1.00 1,00 1,00 149 149 242 242 242	1900 0.95 0.999 3536 3536 1 1 14.8 0.89 1058	1900 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1900 40 12 25 1.00 0.950 0.234 436 436	1900 1.00 0.872 1624 1624	1900 0 0 25 1.00	1900	1900	1900
(ff) 100  1 65  or 1.00  or 1.	0.95 0.987 3493 3493 42.2 0.86 1142 1580 No	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	150 1 60 1.00 0.950 1770 0.080 149 242 242 242	0.95 0.999 3536 3536 17 14.8 0.89	0 25 0.95 0.95 0 Yes 10	1 25 25 1.00 0.950 0.234 436 436 0.56	1.00 0.872 1624 1624	0 0 25 1.00	72	60	725
1) 65 or 1.00	0.95 0.987 3493 3493 3493 45 2782 42.2 0.86 11442 No No	0 0 0.95 0.95 0.95 0.96 0.86 0.86 0.86 0.86 0.86 0.86 0.86 0.8	0.950 1.00 0.950 1770 0.080 149 242 242 No	0.95 0.999 3536 3536 1 1 1 45 977 14.8 0.89	25 0.95 0.95 0 Yes 0.89 10	1.00 1.00 1.70 0.234 436 0.26	1.00 0.872 1624 1624	25 1.00		100	0 23 0
1.00 0.950 1.770 0.268 499 499 1.00 0.86 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	0.95 0.987 3493 3493 3493 42.2 0.86 11442 11580 No	25 0.95 0.86 0.86 0.86 0.86 0.86 0.86	0.950 0.950 0.080 149 0.89 242 242 242	0.95 0.999 3536 3536 1 1 1 45 977 14.8 0.89	25 0.95 0.89 0.89	25 1.00 0.950 1770 0.234 436	1.00 0.872 1.624 1.624 30	1.00	-	100	3 23
1.00 1.00 0.950 1.770 0.268 499 (ph) 6 6 (section No Left 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	0.987 3493 3493 42.2 0.86 1442 1580 No	0.95 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.950 1770 0.080 149 242 242 No	0.999 0.999 3536 3536 1 1 14.8 0.89 1058	0 0 Ves 10 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.00 0.950 1770 0.234 436 173	1.00 0.872 1624 1624	1.00	22	0	2
0.950 1770 0.268 499 910 186 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	3493 3493 3493 42.2 0.86 1442 1580 No	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.950 1770 0.080 149 242 242 No	3536 3536 3536 1 45 977 14.8 0.89	0 0 Yes 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.950 1770 0.234 436 0.56	1624		1.00	20.1	1.00
) ) ) ((%) (vph) rsection (1) (1)	3493 3493 45.2 0.86 11442 1580 No	0 0 0.86 No No No No No No No No No No No No No	0.950 1770 0.080 149 242 242 No	3536 3536 1 45 977 14.8 0.89	0 0 Ves 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.950 1770 0.234 436 0.56	1624			986.0	
) ) ) (6 (8) (4b) Hasection (1) (1)	3493 3493 3493 45.2 782 42.2 0.86 1442 1580 No	0 0 0 No 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.080 149 0.89 242 No	3536 3536 1 45 977 14.8 0.89	0 0 Yes 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.234 436 436 0.56	1624		0.950		
C C (c) (c) (c) (c) (c) (c) (c) (c) (c) (c)	3493 45 2782 42.2 0.86 1442 1580 No	0.88 No O No O O O O O O O O O O O O O O O O	0.080 149 0.89 242 242 No	3536 1 45 977 14.8 0.89	Yes 7 0 0.89 0.89	436 436 0.56	1624	0	1770	1837	0
re (%) (vph) rection	3493 45 2782 42.2 0.86 1442 1580 No	0.86 No 0.86 No 138 High	0.89 242 242 000 000	3536 1 45 977 14.8 0.89	Yes 10 0.89	436	1624		0.601		
Red OR) Jh) It) Incomplete (%) Incomplete (%) Incomplete (%) Intersection It It) It(f)	45 2782 42.2 0.86 1442 1580 No	0.86 138 No No	0.89 242 242 No No	1 45 977 14.8 0.89	Yes 0.89	0.56	30	0	1120	1837	0
OR)  f)  f)  for  rarfic (%)  w (vph)  ntersection  t  t)	45.2 42.2 0.86 1442 No No Left	0.86 0 No	0.89 242 242 No No	1 45 977 14.8 0.89	0.89 0 0 0 N	0.56	30	9			Yes
oh)  flor  for  w (vph)  nlersection  t  t)	45.2 42.2 0.86 1442 No No	0.86 0 0 No	0.89 242 242 No	45 977 14.8 0.89 1058	0.89 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.56	8			4	
ft)  for raffic (%)  w (vph)  nlersection  t  t)	2782 42.2 0.86 11442 1580 No Left	0.86 138 0 No	0.89 242 242 No	977 14.8 0.89 1058	0.89	0.56	i			30	
tor araffic (%) ow (vph) ntersection t t t)	42.2 0.86 1442 1580 No Left	0.86 138 0 No No	0.89 242 242 No	14.8 0.89 1058	0.89 01 0N	0.56	838			362	
tor arific (%) w (vph) ntersection t t t)	0.86 1442 1580 No Left	0.86 138 No No Pight	0.89 242 242 No	0.89	0.89 01 0N	0.56	19.0			8.2	
raffic (%) w (vph) ntersection N t t th	1442 1580 No Left	138 No No	242 242 No	1058	6 o 8	172	0.56	0.56	19.0	0.61	0.61
on Le	1580 No Left	O O o	242 No		0 2	27	88	218	46	239	22
LE N	1580 No Left	O No third	242 No		0 8						
	No Left	ON third	No -	1068	S	173	256	0	46	264	0
	Left	Pinht	40	N	202	N	9N	No No	N <sub>o</sub>	8	8
Median Width(ft) Link Offset(ft) Crosswalk Width(ft)		: 5	Len	Left	Right	Left	Left	Right	Left	Left	Right
Link Offset(ft) Crosswalk Width(ft)	15	,		12	,		12	,		12	,
Crosswalk Width(ft)	0			0			0			0	
	16			16			16			16	
Two way Left Turn Lane	Yes			Yes							
Headway Factor 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph) 15		6	15		6	15		6	15		6
Number of Detectors 1	7		_	7		_	2		_	2	
_	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft) 20	100		70	100		20	100		70	100	
	0		0	0		0	0		0	0	
Œ,	0		0	0		0	0		0	0	
() 20	9			9		20	9		70	9	
CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s) 0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	94			94			94			94	
t)	9			9			9			9	
	CI+Ex			CI+EX			CI+EX			CI+EX	
Detector 2 Channel Detector 2 Extend (s)	0			00			0			00	
Turn Type Perm	5		pm+pt	5		pm+pt	2		Perm	5	
hases	7		-	9		m	00			4	
Permitted Phases 2			9			00			4		
Detector Phase 2	2			9		~	œ		4	4	

Synchro 7 - Report Page 13

Proposed Westwood Mixed Use Neighborhood 2013 Existin 7: Sheridan Drive & Mill Street

ZUI 3 EXISTING CONDITIONS - AIM PEAK HOUR	1/27/2015	
gupornogu		

	1	<b>†</b>	<i>&gt;</i>	<b>&gt;</b>	ţ	4	•	•	•	۶	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		1.0	4.0		1.0	4.0		4.0	4.0	
Minimum Split (s)	28.3	28.3		6.2	28.3		6.2	34.2		34.2	34.2	
Total Split (s)	20.0	20.0	0.0	20.0	70.0	0.0	25.0	65.0		40.0	40.0	0.0
Total Split (%)	37.0%	37.0%	%0.0	14.8%	21.9%	%0.0	18.5%	48.1%	%0:0	29.6%	29.6%	%0.0
Maximum Green (s)	44.5	44.5		15.7	64.5		19.8	59.8		34.8	34.8	
Yellow Time (s)	4.3	4.3		3.2	4.3		3.2	3.2		3.2	3.2	
All-Red Time (s)	1.2	1.2		1:1	1.2		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	2.5	4.0	4.3	5.5	4.0	5.2	5.2	4.0	5.2	5.2	4.0
Lead/Lag	Lag	Lag		Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		None	Max		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0			15.0			22.0		22.0	22.0	
Pedestrian Calls (#/hr)	0	0			0			0		0	0	
Act Effct Green (s)	45.6	45.6		1.99	64.9		40.3	40.3		21.5	21.5	
Actuated g/C Ratio	0.39	0.39		0.57	0.56		0.35	0.35		0.19	0.19	
v/c Ratio	0.03	1.15		0.82	0.54		0.56	0.45		0.24	0.77	
Control Delay	27.2	110.5		51.4	18.7		34.0	31.4		43.2	59.5	
Oueue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	27.2	110.5		51.4	18.7		34.0	31.4		43.2	265	
FOS	U	ш		٥	В		ပ	ပ		۵	ш	
Approach Delay		110.2			24.7			32.5			26.9	
Approach LOS		ш			O			O			ш	
Intersection Summary												
Area Type:	Other											
Cycle Length: 135												
Actuated Cycle Length: 116	9											
Natural Cycle: 120												
Control Type: Semi Act-Uncoord	coord											
Maximum v/c Ratio: 1.15												
Intersection Signal Delay: 65.7	65.7			⊆ !	Intersection LOS: E	LOS: E						
Intersection Capacity Utilization 80.8%	zation 80.8%			2	CU Level of Service D	f Service	۵					
Analysis Period (min) 15												

Splits and Phases: 7: Sheridan Drive & Mill Street



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2013 Existing Conditions - AM Peak Hour 8: Sheridan Drive & North Forest Road

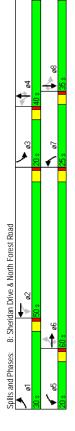
(f) (f) (g) (g) (g) (g) (g) (g) (g) (g) (g) (g		•	<b>†</b>	<i>&gt;</i>	<b>/</b>	ţ	✓	•	•	•	ၨ	<b>→</b>	•
No.   No.	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
1900   1900	Lane Configurations	*	ŧ	*	*	₩.		<u>,                                    </u>	*	*-	r	‡	*
1900   1900	Volume (vph)	88	1254	192	177	066	19	200	332	22	Έ	426	277
100 0.95 1.00 1.00 0.95 0.95 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
10 0 0.95 1.00 1.00 0.95 0.95 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Storage Length (ft)	405		170	260		0	180		265	180		200
1,00	Storage Lanes	<del>-</del>		<del>-</del>	<del></del>		0	-		Ψ-	-		_
1.00 0.95 1.00 1.00 0.95 0.95 1.00 1.00 1.00 0.95 0.950 0.95 0.95	Taper Length (ft)	200		22	200		25	25		25	22		25
0.950 0.950 1770 1770 1750 1770 1750 1770 1750 1770 1750 1770 1750 1770 1750 175	Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00
0.950 0.950	Ŧ.			0.850		0.997				0.850			0.850
1170 3539 1583 1770 3529 0 1770 1863 1883 1 2 2 6 3539 1583 1770 3529 0 387 1863 1883 1 2 2 6 3539 1583 1770 3529 0 387 1863 1883 1 2 2 6 2 8 2 4 6 2 8 7 8 6 2 4 7 8 2 2 1 2 2 2 2 3 6 9 2 4 7 8 2 2 1 2 2 2 2 3 6 9 2 4 2 4 8 2 2 1 2 2 2 2 3 6 9 2 4 2 4 1 2 2 1 2 2 2 3 6 9 2 4 2 4 1 2 2 1 2 2 2 3 6 9 2 4 2 4 1 2 2 1 2 2 2 3 6 9 2 4 2 4 1 2 2 1 2 2 2 3 6 9 2 4 2 4 1 2 2 1 2 2 2 3 6 9 2 4 2 4 1 2 2 1 2 2 2 3 6 9 2 4 2 4 1 2 2 1 2 2 2 3 6 9 2 4 2 4 1 2 2 1 2 2 2 3 6 9 2 4 2 4 1 2 2 1 2 2 2 3 6 9 2 4 1 2 2 1 2 2 2 3 6 9 2 4 1 2 2 1 2 2 2 3 6 9 2 4 1 2 2 1 2 2 2 3 6 9 2 4 1 2 2 1 2 2 2 3 6 9 2 4 1 2 2 1 2 2 2 3 6 9 2 4 1 2 2 1 2 2 2 3 6 9 2 4 1 2 2 1 2 2 2 3 6 9 2 4 1 2 2 1 2 2 3 6 9 2 4 1 2 2 1 2 2 2 3 6 9 2 4 1 2 2 1 2 2 3 6 9 2 4 1 2 2 1 2 2 3 6 9 2 4 1 2 2 1 2 2 3 6 9 2 4 1 2 2 1 2 2 3 6 9 2 4 1 2 2 1 1 1 2 1 1 1 1 2 1	Flt Protected	0.950			0.950			0.950			0.950		
0.143     266 3539 1583 125 3529 0 387 1863 1883 0.067     45	Satd. Flow (prot)	1770	3539	1583	1770	3529	0	1770	1863	1583	1770	3539	1583
266 3559 1583 125 3529 0 387 1863 1883    45	Fit Permitted	0.143			0.067			0.208			0.490		
Ves	Satd. Flow (perm)	266	3539	1583	125	3529	0	387	1863	1583	913	3539	1583
96 1 1 2 1 45 40 24 1668 2219 2219 547 251 40 251 4	Right Turn on Red			Yes			Yes			Yes			Yes
1668 2219 547 46 46 46 46 46 47 46 46 46 46 46 47 47 48 46 244 25.3 3.4 6 9.	Satd. Flow (RTOR)			%		_				24			330
1668   2219   547	Link Speed (mph)		45			42			40			32	
25.3 3.8 6 9.9 9.9 9.9 9.9 9.9 9.9 9.9 9.9 9.9 9	-ink Distance (fl)		1668			2219			547			354	
0.95 0.95 0.95 0.95 0.92 0.92 0.90 0.90 0.90 0.90 0.90 0.90	Fravel Time (s)		25.3			33.6			9.3			6.9	
93 1320 202 192 1076 21 222 369 24  1100 No No No No No No No No No No No No No	Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	06:0	06:0	0.90	0.84	0.84	0.84
(b) 93 1320 202 192 1097 0 222 369 24 Cition No No No No No No No No No No No No No	Adj. Flow (vph)	93	1320	202	192	1076	21	222	369	24	13	207	330
93   1320   202   192   1097   0   222   369   24	Shared Lane Traffic (%)												
Protection No No No No No No No No No No No No No	-ane Group Flow (vph)	93	1320	202	192	1097	0	222	369	24	13	207	330
Left Left Right Left Right Left Left Right   Left Right	Inter Blocked Intersection	8	8	8	N <sub>o</sub>	8	No No	No No	8	8	8	8	S
12 12 12 12 12 12 12 12 12 12 12 12 12 1	ane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
10	Median Width(ft)		12	,		12	,		12	,		12	,
16	ink Offset(ft)		0			0			0			0	
Ves	Crosswalk Width(ft)		16			16			16			16	
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Two way Left Turn Lane		Yes			Yes							
15   9   1	Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Left Thru Right Left Thru Left Thru Right Left Thru Left Thru Right Left Thru Left Thru Right Left Thru Left Thru Right Left Co. 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Furning Speed (mph)	15		6	15		6	15		6	15		6
Left Thru Right Left Thru Left Thru Right Left Thru Right Left Thru Right Left Thru Right Left Thru Right Left Thru Right Left Thru Right Left Thru Right Left Che Che Che Che Che Che Che Che Che Che	Number of Detectors	_	2	_	-	2		-	2	-	_	2	_
20 100 20 20 100 20 20 100 20 0 0 0 0 0	Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	<ul> <li>eading Detector (ft)</li> </ul>	20	100	20	20	100		70	100	20	8	100	20
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	railing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
20 6 20 20 6 20 6 20 CHEX CI-EX  Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0	
CHEX CI-EX C	Detector 1 Size(ft)	20	9	20	20	9		50	9	20	20	9	20
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
00 00 00 00 00 00 00 00 00 00 00 00 00	Detector 1 Channel												
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
94 94 94 94 94 94 94 94 94 94 94 94 94 9	Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
ChEx   ChEx   ChEx   ChEx	Detector 2 Position(ft)		94			94			94			94	
(s) c)	Detector 2 Size(ft)		9			9			9			9	
(s) 0.0 0.0 0.0 0.0 0.0 1.0 0.0 0.0 0.0 0.0	Detector 2 Type		CI+EX			CI+EX			CI+EX			CI+EX	
(s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Detector 2 Channel												
pm+pt Perm pm+pt pm+pt Perm 1 6 5 2 7 4 4 4 4	Detector 2 Extend (s)		0.0		•	0.0			0:0	4	•	0.0	
6 6 2 4 4	Turn Type	bm+pt	4	Fem	pm+pt	c		pm+pt	-	Herm	bm+pt	٥	Fem
	Jormitted Dhacec	- 4	0	4		7			-	_	o o	0	α
	- ellillited Filases	, c	,	> <	7 1	c		<b>†</b> r	•		0 0	c	0 0
													ı

Synchro 7 - Report Page 15

Proposed Westwood Mixed Use Neighborhood 2013 Existing Conditions - AM Peak Hour 8: Sheridan Drive & North Forest Road

8: Sheridan Drive & North Forest Road	& North	Forest	Road								1/,	1/27/2015
	1	†	<i>&gt;</i>	<b>&gt;</b>	ţ	✓	•	•	•	۶	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	0.9	0.9	0.9	0.9	0.9		0.9	0.9	0.9	0.9	0.9	0.9
Minimum Split (s)	10.3	27.9	27.9	10.3	27.9		21.0	27.2	27.2	10.3	27.2	27.2
Total Split (s)	30.0	0.09	0.09	20.0	50.0	0.0	25.0	40.0	40.0	20.0	35.0	35.0
Total Split (%)	21.4%	42.9%	45.9%	14.3%	35.7%	%0.0	17.9%	28.6%	28.6%	14.3%	25.0%	25.0%
Maximum Green (s)	25.7	54.9	54.9	15.7	44.9		20.7	34.9	34.9	15.7	29.9	29.9
Yellow Time (s)	3.2	3.9	3.9	3.2	3.9		3.2	3.2	3.2	3.2	3.2	3.2
All-Red Time (s)	11	1.2	1.2	1:1	1.2		1.1	1.9	1.9	1.	1.9	1.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.3	2.1	5.1	4.3	5.1	4.0	4.3	2.1	2.1	4.3	2.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max		None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		15.0	15.0		15.0			15.0	15.0		15.0	15.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	65.0	55.3	55.3	73.6	60.1		48.2	43.2	43.2	32.1	24.9	24.9
Actuated g/C Ratio	0.50	0.42	0.42	0.56	0.46		0.37	0.33	0.33	0.25	0.19	0.19
v/c Ratio	0.40	0.88	0.28	0.79	0.68		99.0	09.0	0.04	0.05	0.75	0.58
Control Delay	20.1	44.6	15.2	54.6	31.9		39.9	42.5	12.1	27.5	58.3	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.1	44.6	15.2	54.6	31.9		39.9	42.5	12.1	27.5	58.3	9.1
FOS	O	٥	В	Ω	O		۵	Ω	В	S	ш	V
Approach Delay		39.5			35.3			40.4			38.7	
Approach LOS		۵			O						Ω	

Area Type:
Acycle Length: 140
Actual Cycle Length: 131
Natural Cycle Length: 131
Natural Cycle Length: 131
Natural Cycle Length: 131
Natural Cycle Length: 132
Natural Cycle Length: 132
Intersection Signal Delay: 38.2
Intersection Capacity Utilization 83.0%
Intersection Capacity Utilization 83.0%
Intersection Capacity Utilization 83.0%
Intersection Capacity Utilization 83.0%



Lanes, Volumes, Timings SRF & Associates

## 2013 Existing Conditions - AM Peak Hour Proposed Westwood Mixed Use Neighborhood 9: Country Club Driveway & North Forest Road

	4	<u>/</u>	€	<b>—</b>	<b>→</b>	•	
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	×			₩	æ		
Volume (vph)	_	<del></del>	∞	431	713	വ	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	0.932				0.999		
Fit Protected	926.0			666.0			
Satd. Flow (prot)	1694	0	0	1861	1861	0	
Flt Permitted	0.976			0.999			
Satd. Flow (perm)	1694	0	0	1861	1861	0	
Link Speed (mph)	30			35	32		
Link Distance (ft)	508			310	192		
Travel Time (s)	4.7			0.9	3.7		
Peak Hour Factor	0.50	0.50	0.83	0.83	0.94	0.94	
Adj. Flow (vph)	2	2	10	519	759	S	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	4	0	0	529	764	0	
Enter Blocked Intersection	8	%	9	8	8	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	15			0	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15	6	15			6	
Sign Control	Stop			Free	Free		
Intersection Summary							
Area Type: 0	Other						
Control Type: Unsignalized							
Intersection Capacity Utilization 47.8%	on 47.8%			ಠ	J Level of	ICU Level of Service A	
Analysis Period (min) 15							

Synchro 7 - Report Page 17 Lanes, Volumes, Timings SRF & Associates

2013 Existing Conc	
Proposed Westwood Mixed Use Neighborhood	9: Country Club Driveway & North Forest Road

Movement   EBL   EBR   NBL   NBT   SBT   SBR     Lane Configurations   Movement   EBL   EBR   NBL   NBT   SBT   SBR     Lane Configurations   Movement   EBL   EBR   NBL   NBT   SBT   SBR     Lane Configurations   Movement   Carade   Ca	Proposed Westwood Mixed Use Neighborhood 9: Country Club Driveway & North Forest Road	Mixec eway 8	J Use I North	Neighb Fores	orhood t Road		2013 Existing Conditions - AM Peak Hour
Mainth of the configurations		4	<i>&gt;</i>	•	-	<b>→</b>	*
Configurations	Movement	EBL	EBR	NBL	NBT	SBT	SBR
December (Neth March 1) 1 1 8 431 713 5 5 6 6 6 6 7 6 6 6 7 6 6 7 6 8 7 6 8 7 6 8 7 6 8 8 7 6 8 8 7 6 9 8 8 7 6 9 8 8 7 6 9 8 8 7 6 9 8 8 7 6 9 8 9 8 9 8 9 9 100 9 9 9 100 128 6 9 100 100 100 100 100 100 100 100 100 1	Lane Configurations	¥			₩	4	
Control Stop Free Free Control Stop O'% O'% O'% O'% O'% O'% O'% O'% O'% O'%	Volume (veh/h)	_	<del>-</del>	∞	431	713	N.
Here from the first of the firs	Sign Control	Stop			Free	Free	
Hour Factor 0.50 0.59 0.83 0.94 0.94  y flow rate (pth) 2 2 10 519 759 5  strians Width (ft)	Grade	%0			%0	%0	
y flow rate (vph) 2 2 10 519 759 5  Starians  Width (tit)  Ing Speed (ft's)  In Blockage  Lun flare (veh)  an storage veh)  sean signal (tit)  and storage veh)  sean signal (tit)  and storage veh)  stage 2 control  stage 2 control  stage 2 control  stage 2 control  unblocked vol 6.2 4.1  stage 2 control  stage 5 control  stage 5 control  stage 6 control  stage 6 control  stage 7 6.1 76.4  4 6.2 4.1  stage 8 control  stage 8 control  stage 8 control  stage 9 100 99  spacity (veh/h) 154 405 849  spacity (veh/h) 154 405 849  spacity (veh/h) 2 10 0  ne Left 2 0 5  ne Left 2 0 5  ne Left 2 0 5  ne Left 0.3 0.0  LOS  and Deby (s) 2.1.4 0.3 0.0  col Deby (s) 2.1.4 0.3 0.0  section Capacity Utilization  47.8% ICU Level of Service	Peak Hour Factor	0.50	0.50	0.83	0.83	0.94	0.94
strians.  wideth (fr)  wideth (fr)  with file (veh)  and Blockage  turn flare (veh)  and stored with one  and stored with one  and stored with one  stage 1 conf vol  stage 2 conf vol  unblocked vol  stage 2 conf vol  stage 2 conf vol  stage 2 conf vol  stage 2 conf vol  stage 2 conf vol  stage 3 3 2 2  turn flare % 99 764  he Left 2 41  stage (s) 3.5 3.3 2.2  be ue free % 99 764  he Lotal  to 0 99  spacify (vehh) 154 405 849  spacify (vehh) 154 405 849  spacify (vehh) 1 1 0 0  he Right 2 10 0  he Right 2 10 0  con be to Capacity 0.02 0.01 0.45  con con belay (s) 2.14 0.3 0.0  LOS  act Doelay (s) 2.14 0.3 0.0  con con capacity utilization 47.8% ICU Level of Service  still Period (min)  15 Period (min)	Hourly flow rate (vph)	2	2	10	519	759	വ
Width (ft)         Width (ft)           ring Speed (ft/s)         Fig. 12           ring Speed (ft/s)         None         None           an type         None         None           eam signal (ft)         664         664           lation unblocked volidition of the control of con	Pedestrians						
ing Speed (It's)  an Israe (veh)  an Israe (veh)  an Israe (veh)  an Israe (veh)  stage (s)  stage (s)  an Israe (s)  an Israe (veh)  an Israe (s)  an Israe	Lane Width (ft)						
an Blockage  Lum flare (veh)  Itum flare (veh)	Walking Speed (ft/s)						
turn flare (veh) an storage veh) ean storage (s) stage 2 conf vol unblocked vol indicting volume stage 2 conf vol unblocked vol indicting volume stage 2 conf vol unblocked vol indicting volume stage 2 conf vol indicting volume stage 2 conf vol indicting veh Mile is a	Percent Blockage						
an storage veh) an storage veh) an storage veh) an storage veh) an storage veh) an storage veh) an storage veh) an storage veh) an storage veh) attributed (1) 0.83 and the following order of the following order	Right turn flare (veh)						
ans iorage veh) aean signal (ff) altonomic de de de de de de de de de de de de de	Median type					None	
eam signal (ft)  ladicon unblocked  ladicon unblocked  stage 1 conf vol  stage 2 conf vol  unblocked vol  stage 2 conf vol  stage 2 conf vol  stage 2 conf vol  stage 2 conf vol  stage 2 conf vol  stage 2 conf vol  ladicon unblocked vol  ladicon unblock	Median storage veh)						
lation unblocked 0.83  normificing yolume 1300 761 764  stage 2 conf vol 1258 761 764  stage 2 conf vol 1258 761 764  unblocked vol 1258 761 764  stage 2 conf vol 1258 761 764  stage 2 conf vol 1258 761 764  stage 2 conf vol 1258 761 764  stage (s) 3.5 3.3 2.2  stage (s) 3.3 0.0	Upstream signal (ft)				664		
onflicting volume 1300 761 764 stage 1 conf vol stage 2 conf vol 1258 761 764 unblocked vol 6.4 6.2 4.1 stage (s) 3.5 3.3 2.2 stage (s) 3.5 3.3 2.2 stage (c) 100 99 spacity (vehh) 154 405 849 spacity (vehh) 224 849 1700 set long 2002 0.01 0.45 set long 2003 0.01 0.45 section Sammary 0.2 c A sach Delay (s) 2.1.4 0.3 0.0 section Capacity Utilization 47.8% ICU Level of Service	pX, platoon unblocked	0.83					
stage 1 conf vol stage 2 conf vol unblocked vol 1258 761 764 unblocked vol 6.4 6.2 4.1 stage (s) 3.5 3.3 2.2 serior (sehr) 154 405 849 spacity (vehr) 1 1 0 0 serior 2 10 5 spacity (vehr) 1 1 0 spacity (vehr) 1 1 0 spacity (vehr) 1 1 0 spacity (vehr) 1 1 0 spacity (vehr) 1 1 0 spacity (vehr) 1 1 0 spacity (vehr) 1 1 0 spacity (vehr) 1 1 0 spacity (vehr) 1 1 0 spacity (vehr) 1 1 0 spacity (vehr) 1 1 0 spacity (vehr) 1 1 1 0 spacity (vehr) 1 1 1 0 spacity (vehr) 1 1 1 0 spacity (vehr) 1 1 1 0 spacity (vehr) 1 1 1 1 0 spacity (vehr) 1 1 1 1 0 spacity (vehr) 1 1 1 1 1 0 spacity (vehr) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	vC, conflicting volume	1300	761	764			
stage 2 conf vol     1258     761     764       unblocked vol     1258     761     764       unblocked vol     6.4     6.2     4.1       stage (s)     3.5     3.3     2.2       stage (k)     3.6     3.3     2.2       steue free %     99     100     99       specific %     99     100     99       specific %     99     100     99       specific %     99     100     99       specific %     10     0     0       specific %     10     0     0       ne Right     2     0     5       ne to Capacity     0.02     0.01     0.45       ne to Capacity     0.02     0.01     0.45       ne to Capacity     0.0     0     0       of Delay (s)     2.1.4     0.3     0.0       acetion Summay     0.2     0     0       section Capacity Utilization     47.8%     ICU Level of Service       section Capacity Utilization     47.8%     ICU Level of Service	vC1, stage 1 conf vol						
langle (s) 64 6.2 4.1 764 stage (s) 8.5 8.3 2.2 4.1 stage (s) 8.6 4 6.2 4.1 stage (s) 8.5 8.3 2.2 leue free % 99 100 99 spacity (vehh) 154 405 849 lition, Lane # EB1 NB 1 SB 1 lition, Lane # 529 764 lition Capacity 0.02 0.01 0.0 lition Capacity 0.02 0.01 0.45 lition Capacity 0.02 0.01 0.45 lition Capacity 0.03 0.0 lition Capacity 0.03 0.0 lition Capacity 0.03 0.0 lition Capacity 0.03 0.0 lition Capacity 0.03 0.0 lition Capacity 0.03 0.0 lition Capacity 0.03 0.0 lition Capacity 0.03 0.0 lition Capacity 0.01 0.48 lition Capacity 0.03 0.0 lition Capacity 0.03 0.0 lition Capacity 0.03 0.0 lition Capacity 0.03 0.0 lition Capacity 0.03 0.0 lition Capacity 0.03 0.0 lition Capacity 0.03 0.0 lition Capacity 0.03 0.0	vC2, stage 2 conf vol						
stage (s) 6.4 6.2 4.1 stage (s) 3.5 3.2 2.2 seue free % 99 100 99 spacity (veh/h) 154 405 849 from Lane # EB 1 NB 1 SB 1	vCu, unblocked vol	1258	761	764			
stage (s) 3.5 3.3 2.2 reue free % 99 100 99 pacity (vehM) 154 405 849 pacity (vehM) 154 405 849 pacity (vehM) 154 405 849 ne Total 4 529 764 ne Left 2 10 0 ne Right 2 10 0 5 ne Le capacity 0.02 0.01 0.45 ne Le capacity 0.02 0.01 0.45 ne Le capacity 0.02 0.01 0.45 cach Delay (s) 2.14 0.3 0.0 coach LOS c A act Delay (s) 2.14 0.3 0.0 act Delay (s) 2.14 0.3 0.0 coach LOS c A act Delay (s) 2.14 0.3 0.0 coach Coach Capacity Utilization 47.8% ICU Level of Service	tC, single (s)	6.4	6.2	4.1			
3.5 3.3 2.2  spacify (veh/h) 154 405 849  spacify (veh/h) 154 105 849  spacify (veh/h) 154 1 581  ne Total 4 529 764  ne Right 2 10 0  ne Right 2 0 5  ne Le capacity 0.02 0.01 0.45  ne to Capacity 0.02 0.01 0.45  ne to Capacity 0.02 0.01 0.45  cost Delay (s) 21.4 0.3 0.0  ach LOS C A  action Summary 0.2  section Capacity utilization 47.8% ICU Level of Service	tC, 2 stage (s)						
teue free % 99 100 99 spacify (vehM) 154 405 849 764	tF (s)	3.5	3.3	2.2			
spacity (veh/h)         154         405         849           ition. Lane #         EB 1         NB 1         SB 1           ne Total         4         529         764           ne Left         2         10         0           ne Right         224         849         1700           ne Lorgacity         0.02         0.01         0.45           ne Lerogith 95th (th)         1         1         0           LOS asch Delay (s)         2.1.4         0.3         0.0           LOS asch LOS         C         A         A           acetion Summary         0.2         0.0         A           acetion Capacity Utilization         47.8%         ICU Level of Service           riss Period (min)         15	p0 queue free %	66	100	66			
ition, Lane #         EB 1         NB 1         SB 1           ne Total         4         529         764           ne Left         2         70         0           ne Right         224         849         1700           ne lo Capacity         0.02         0.01         0.45           ne Length 95th (ft)         1         1         0           LOS         0.01         0.45         0           LOS         A         A         0           LOS         C         A         A           acet Delay (s)         21.4         0.3         0.0           acet Delay (s)         C         A           acet Lon Summany         0.2         C           acet Lon Summany         0.2         C           acet Lon Capacity Utilization         47.8%         ICU Level of Service           IS         Ferrico (min)         15	cM capacity (veh/h)	154	405	849			
ne Total 4 529 764  ne Left 2 10 0  ne Right 2 0 5  ne Right 224 849 1700  ne to Capacity 0.02 0.01 0.45  ne Length 95th (tt) 1 1 0  ord Delay (s) 214 0.3 0.0  ach Delay (s) 214 0.3 0.0  ach Delay (s) 214 0.3 0.0  ach Delay (s) 21,4 0.3 0.0  ach Delay 10.2  ach Delay 10	Direction, Lane #	EB 1	NB 1	SB 1			
ne Left 2 10 0  ne Right 2 0 5  2 0 5  2 1 0 5  2 1 0 5  2 2 1 0 5  2 2 2 849  1 700  ne to Capacity 0.022  1 1 0 0  1 1 0  1 1 0  1 0 0  1 0 0 Delay (s) 21.4 0.3 0.0  2 A  2 A  3 0.0  3 cach Delay (s) 2.14 0.3 0.0  3 cach Delay (s) 2.14 0.3 0.0  3 cach Delay (s) 2.14 0.3 0.0  3 cach Delay 0.2  47.8% ICU Level of Service  Fisheriod (min) 15	Volume Total	4	529	764			
ne Right 2 0 5 5 2 4 849 1700 2 2.4 849 1700 0.2 0.01 0.45 0.02 0.01 0.45 0.02 0.02 0.01 0.45 0.02 0.01 0.45 0.02 0.01 0.45 0.0 0.01 0.04 0.03 0.0 0.01 0.05 0.0 0.01 0.05 0.0 0.00 0.0	Volume Left	7	10	0			
224 849 1700 te Lengthy Sth (tt) 0.2 0.01 0.45 te Length 95th (tt) 1 0.0 LOS 0.3 0.0 LOS A anch Delay (s) 21.4 0.3 0.0 C A action Summary cection Capacity Utilization 15 Ferriod (min) 15	Volume Right	2	0	2			
beith 002 0.01 0.45 5th (f) 1 1 0 5) 2.14 0.3 0.0 7(s) 2.14 0.3 0.0 7	CSH	224	849	1700			
95th (ft) 1 1 0 5) 21.4 0.3 0.0 C A C C A C Immary 0.2 pacity Utilization 47.8% ICU Level of Service (min) 15	Volume to Capacity	0.02	0.01	0.45			
s) 214 0.3 0.0 C A Innary  (s) 21,4 0.3 0.0 C A Innary  0.2 pacity Utilization 47.8% ICU Level of Service (min)	Queue Length 95th (ft)	-	-	0			
(s) 21.4 0.3 0.0  minary  0.2  pacity Utilization  15  C  A 0.0  15	Control Delay (s)	21.4	0.3	0.0			
/ (s) 21.4 0.3 0.0 C C C C Tunnary 0.2 Dacity Utilization 47.8% ICU Level of Service (min)	Lane LOS	ပ	A				
C 0.2 pacity Utilization 47.8% ICU Level of Service (min) 15	Approach Delay (s)	21.4	0.3	0.0			
0.2 0.2 0.1 Devel of Service (min) 15	Approach LOS	O					
0.2 pacity Utilization 47.8% ICU Level of Service (min)	Intersection Summary						
pacity Utilization 47.8% ICU Level of Service (min) 15	Average Delay			0.2			
15	Intersection Capacity Utilization	_		47.8%	nol	Levelot	
	Analysis Period (min)			15			
	filmily policy of clocking			2			

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

Proposed Westwo 10: Sheridan Drive

Proposed Westwood Mixed Use Neighborhood 10: Sheridan Drive & Fenwick Road	d Mixed & Fenw	J Use ick Ro	Neight ad	orhoo	р	2013 Existing Conditions - AM Peak Hour
	†	<i>&gt;</i>	•	ţ	•	*
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	₩.		*	‡	>	
Volume (vph)	1525	9	4	1463	16	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	75		0	0
Storage Lanes		0	-		<del>-</del>	0
Taper Length (ft)		25	22		25	25
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.999				0.951	
Fit Protected			0.950		696.0	
Satd. Flow (prot)	3536	0	1770	3539	1717	0
Fit Permitted			0.950		696.0	
Satd. Flow (perm)	3536	0	1770	3539	1717	0
Link Speed (mph)	42			45	30	
Link Distance (fl)	635			1668	278	
Travel Time (s)	9.6			25.3	6.3	
Peak Hour Factor	0.88	0.88	0.00	06.0	69.0	69:0
Adj. Flow (vph)	1733	7	4	1626	23	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1740	0	4	1626	36	0
Enter Blocked Intersection	8	8	8	8	8	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Hooding Poster	5	00,	5	00 1	00,	00 7

			ICU Level of Service A	
Intersection Summary	Area Type: Other	Control Type: Unsignalized	Intersection Capacity Utilization 52.3%	Analysis Period (min) 15

Synchro 7 - Report Page 19 Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 10: Sheridan Drive & Fenwick Road

2013 Existing Conditions - AM Peak Hour 1/27/2015

																																						V	
ų,	NBR		6			69.0	13									0.84	870			478	6.9		3.3	76	451	NB 1	36	23	13	9/1	0.21	7.0%	20.7	7.00	. O			ICU Level of Service	
•	NBL	>	16	Stop	%0	69.0	23									0.84	2558	1736	822	2477	8.9	2.8	3.5	82	131	WB 3	813	0	0	00/L	0.48	0 0	0.0					J Level o	
ļ	WBT	‡	1463	Free	%0	0.90	1626						TWLTL	2												WB 2	813	0	0	00/1	0.48	0 0	0.0					Ŭ	
<b>\</b>	WBL	je-	4			0.00	4						_			0.84	1740			1508	4.1		2.2	66	371	WB 1	4	4	0	3/1	0.01	- 011	0. 0	2 0	9		0.3	52.3%	12
~	EBR		9			0.88	7																			EB 2	584	0	7	00/1	0.34	0 0	0.0						
†	EBT	₩	1525	Free	%0	0.88	1733						TWLTL	2	635											EB 1	1155	0	0	00/1	0.68	0 6	0.0	c	20			ation	
	Movement	Lane Configurations	Volume (veh/h)	Sign Control	Grade	Peak Hour Factor	Hourly flow rate (vph)	Pedestrians	Lane Width (ft)	Walking Speed (ft/s)	Percent Blockage	Right turn flare (veh)	Median type	Median storage veh)	Upstream signal (ft)	pX, platoon unblocked	vC, conflicting volume	vC1, stage 1 conf vol	vC2, stage 2 conf vol	vCu, unblocked vol	tC, single (s)	tC, 2 stage (s)	tF (s)	p0 queue free %	cM capacity (veh/h)	Direction, Lane #	Volume Total	Volume Left	Volume Right	ESS:	Volume to Capacity	Coetrol Delay (c)	Control Delay (s)	Approach Dolor (c)	Approach LOS	Intersection Summary	Average Delay	Intersection Capacity Utilization	Analysis Period (min)

No No 1740 12 12 16 16 16 16 16 16 1700

1.00

1.00 15 Stop

1.00

1.00

1.00

Headway Factor Turning Speed (mph) Sign Control

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

2013 Existing Conditions - AM Peak Hour Proposed Westwood Mixed Use Neighborhood 11: Sheridan Drive & Frankhauser Road

		٠					
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	*	<b>‡</b>	<b>₩</b>		r	*	
Volume (vph)	79	1493	1455	24	38	29	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	105			0	0	20	
Storage Lanes	-			0	-	-	
Taper Length (ft)	99			25	25	25	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
£			0.998			0.850	
Fit Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3532	0	1770	1583	
Flt Permitted	0.145				0.950		
Satd. Flow (perm)	270	3539	3532	0	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			က			40	
Link Speed (mph)		45	42		30		
Link Distance (ft)		1014	635		614		
Travel Time (s)		15.4	9.6		14.0		
Peak Hour Factor	0.89	0.89	0.94	0.94	0.73	0.73	
Adj. Flow (vph)	53	1678	1548	26	25	40	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	53	1678	1574	0	25	40	
Enter Blocked Intersection	8	2	8	2	8	8	
Lane Alignment	Left	Left	Left	Right	Fet	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane		Yes	Yes				
Headway Factor	1:00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			6	12	6	
Number of Detectors	-	2	2		<del></del>	<del></del>	
Detector Template	Left	Thru	Thru		Left	Right	
Leading Detector (ft)	20	100	100		70	70	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	8	9	9		70	70	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		9	9				
Detector 2 Type		CI+Ex	CI+Ex				
Detector 2 Channel Detector 2 Extend (s)		0.0	0.0				
Turn Type	Perm					Perm	
Protected Phases		2	9		4		
Permitted Phases	2					4	
0	c	C	4				

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Proposed Westwood Mixed Use Neighborhoo 11: Sheridan Drive & Frankhauser Road

2013 Existing Conditions - AM Peak Hour	1/27/2015
ighborhood	toad

Early Switch Phase Switch Phase Minimum Initial (s) 4.0 Minimum Split (s) 85.0 Total Split (s) 70.9% Total Split (s) 80.2 Yellow Time (s) 3.9 All Red Time (s) 0.9 Lost Time Adjust (s) 0.0 Total Lost Time (s) 4.8 Lead/Lag	40.0 40.0 85.0 80.2 3.9 0.0 0.0 0.0 7.0 7.0 15.0 0.0	WBT 4.0 40.0 85.0 70.8% 80.2 3.9 0.9 0.0 4.8 4.8 7.0 15.0 0.0	0.0 0.0% 0.0 4.0	SBL 1.0 31.1 35.0 29.2% 29.9 3.2 1.9 0.0 5.1	38R 1.0 31.1 35.0 29.2% 3.2 1.9 3.0 5.1 3.0 None 7.0	
sse initial (s) popil (s) (s) (%) 70 Green (s) ne (s) ne (s) Tithe (s)		4.0 40.0 85.0 70.8% 80.2 3.9 0.0 0.0 4.8 3.0 7.0 15.0 10.4	0.000.000000000000000000000000000000000	1.0 31.1 35.0 29.2% 29.9 3.2 1.9 0.0 5.1	1.0 31.1 35.0 29.2% 29.9 3.2 1.9 1.0 5.1 7.0 19.0	
vital (s) pplit (s) (s) (s) (s) (r) Green (s) e (s) e (s) Trine (s)		4.0 40.0 85.0 70.8% 80.2 3.9 0.9 0.0 4.8 3.0 C-Max 7.0 15.0 0.0	0.0000.00000000000000000000000000000000	35.0 35.0 29.2% 29.3 3.2 1.9 0.0 5.1	1.0 31.1 35.0 29.9 3.2 3.2 1.9 0.0 5.1 None 7.0	
pplit (s) (s) (s) (%) 70 Green (s) nn (s) Adjust (s) Time (s)		40.0 85.0 70.8% 80.2 80.2 3.9 0.9 0.0 4.8 3.0 C-Max 7.0 15.0	0.0%	35.0 35.0 29.2% 29.9 3.2 1.9 0.0 5.1	31.1 29.2% 29.2% 3.2 3.2 0.0 0.0 5.1 3.0 None 7.0	
(s) 77 (%) 77 (%) 78 (%) 79 (%		85.0 70.8% 80.2 3.9 0.0 0.0 4.8 3.0 C-Max 7.0 15.0 0	0.0 %0.0 0.0 4.0	35.0 29.2% 29.9 3.2 1.9 0.0 5.1	35.0 29.2% 29.9 3.2 1.9 0.0 5.1 3.0 None 7.0	
(%) 70. Green (s) 8 e (s) 8 ne (s) ne (s) Time (s)		70.8% 80.2 3.9 0.0 0.0 4.8 3.0 C-Max 7.0 15.0 0	0.0 0.0 4.0	29.2% 29.9 3.2 1.9 0.0 5.1	29.2% 29.9 33.2 11.9 5.1 5.1 7.0 19.0	
Green (s) 8 (e. (s) 8 (s) 9 (s) 9 (s) 9 (s) 9 (s) 1 (ime. (s) 1 (i		80.2 3.9 0.0 0.0 4.8 3.0 C-Max 7.0 15.0	0.0	29.9 3.2 1.9 0.0 5.1	29.9 3.2 1.9 0.0 0.0 5.1 7.0 19.0 19.0	
ee (s) ne (s) Adjust (s) Time (s)		3.0 0.0 0.0 0.0 4.8 3.0 7.0 15.0	0.0	3.2 0.0 0.0 5.1	3.2 0.0 0.0 5.1 3.0 None 7.0 19.0	
ne (s) Adjust (s) Time (s)		0.0 0.0 4.8 3.0 C-Max 7.0 15.0 0	0.0	1.9 0.0 5.1	1.9 0.0 5.1 3.0 None 7.0 19.0	
Adjust (s) Time (s)		0.0 4.8 3.0 7.0 7.0 15.0 0	0.0	5.1	0.0 5.1 3.0 None 7.0 19.0	
Time (s)		3.0 3.0 7.0 15.0 0	4.0	3.0	5.1 3.0 None 7.0 19.0	
ad/Lag		3.0 C-Max 7.0 15.0 0		3.0	3.0 None 7.0 19.0	
		3.0 C-Max 7.0 15.0 0		3.0	3.0 None 7.0 19.0	
-ead-Lag Optimize (		3.0 C-Max 7.0 15.0 0		3.0	3.0 None 7.0 19.0	
/ehide Extension (s) 3.0		C-Max 7.0 15.0 0			None 7.0 19.0	
Recall Mode C-Max	7.0 15.0 0 104.3	7.0		None	7.0	
Walk Time (s) 7.0	15.0 0 104.3	15.0		7.0	19.0	
Flash Dont Walk (s) 15.0	104.3	104.3		19.0	c	
Pedestrian Calls (#/hr) 0	104.3	104.3		0	٥	
		;		8.9	8.9	
g/C Ratio	0.87	0.87		0.07	0.07	
U	0.55	0.51		0.40	0.26	
Control Delay 2.3	9.6	3.2		6.09	19.2	
Α	0.0	0.0		0.0	0.0	
Fotal Delay 2.3	9.6	3.2		6.09	19.2	
A A	¥	۷		ш	В	
Approach Delay	9.6	3.3		45.8		
Approach LOS	A	A		Ω		
ntersection Summary						
Area Type: Other						
Cycle Length: 120						
Actuated Cycle Length: 120						
Offset: 76 (63%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow	2:EBTL a	nd 6:WBT	, Start of	Yellow		
Natural Cycle: 75						
Control Type: Actuated-Coordinated						
Maximum v/c Ratio: 0.55						
ntersection Signal Delay: 5.5			Inte	Intersection LOS: A	LOS: A	
ntersection Capacity Utilization 52.9%			⊇	J Level o	ICU Level of Service A	
Analysis Period (min) 15						

Spilts and Phases: 11: Sheridan Drive & Frankhauser Road



Lanes, Volumes, Timings SRF & Associates

2013 Existing Conditions - AM Peak Hour Proposed Westwood Mixed Use Neighborhood 12: Sheridan Drive & I-290 NB

	١	Ť	~	•		/		_	L	•	+	,
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u>r</u>	₩₩			441		<u>,-</u>	4	¥C.			
Volume (vph)	243	1339	0	0	696	478	262	0	215	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	230		120	0		0
Storage Lanes	-		0	0		0	,-		-	0		0
Taper Length (ft)	5 5	5	52	7 00	5	25	25	5	25	7 22	9	7 25
Lane Uni. Facioi	3	0.91	3.	00.1	0.91	0.9	0.93	0.90	0.90	3.	00.1	3
FIL Dintected	0.050				0.430		0.050	0.940	0.000			
Satd Flow (nmt)	1770	5085	C	0	4831	C	1681	1547	1504	<b>C</b>	C	0
Fit Permitted	0.113		•	•	2		0.950	0.971	3	•	>	
Satd. Flow (perm)	210	5085	0	0	4831	0	1681	1547	1504	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					164			79	61			
Link Speed (mph)		45			45			9			30	
Link Distance (ft)		197			193			830			423	
Travel Time (s)		3.0			5.9			18.9			9.6	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.88	0.88	0.88	0.92	0.92	0.92
Adj. Flow (vph)	259	1424	0	0	1024	200	298	0	244	0	0	0
Shared Lane Traffic (%)							37%		30%			
Lane Group Flow (vph)	259	1424	0	0	1533	0	188	183	171	0	0	0
Enter Blocked Intersection	2	8	8	2	2	8	8	2	2	9 8	9	2
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		6	12		6	15		6	12		6
Number of Detectors	_	2			2		-	2	_			
Detector Template	Left	Thru			Thru		Left	Thr	Right			
Leading Detector (ft)	20	100			100		20	100	70			
Trailing Detector (ft)	0	0			0		0	0	0			
Detector 1 Position(ft)	0	0			0		0	0	0			
Detector 1 Size(ft)	8	9			9		50	9	50			
Detector 1 Type	CI+Ex	CI+Ex			CI+Ex		CI+Ex	CI+Ex	CI+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		9			9			9				
Detector 2 Type		CI+EX			CI+EX			CI+EX				
Detector 2 Channel		0			0			d				
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	pm+pt	,			•	-	custom	c	Ferm			
Protected Phases	- 4	٥			7		n c	n	c			
Permitted Pridses	۰ ,	,					~		r			
					c		•		c			

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2013 Existing Conditions - AM Peak Hour Proposed Westwood Mixed Use Neighborhood

12: Sheridan Drive & I-290 NB	& I-290	NB	8		5	2		8	1/27/2015	,	1/2	1/27/2015
	•	†	>	•	ţ	4	•	<b>+</b>	4	٠	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	1.0	4.0			4.0		4.0	4.0	4.0			
Minimum Split (s)	6.2	33.9			27.8		29.0	29.0	29.0			
Total Split (s)	14.0	85.0	0.0	0.0	71.0	0:0	35.0	35.0	35.0	0.0	0.0	0.0
Total Split (%)	11.7%	%8.07	%0.0	%0:0	59.2%	%0.0	29.2%	29.2%	29.5%	%0.0	%0.0	0.0%
Maximum Green (s)	6.7	79.1			65.2		29.8	29.8	29.8			
Yellow Time (s)	3.2	3.9			3.9		3.2	3.2	3.2			
All-Red Time (s)	1.	2.0			1.9		2.0	2.0	2.0			
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.3	5.9	4.0	4.0	2.8	4.0	5.2	5.2	5.2	4.0	4.0	4.0
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	2.0	3.0			3.0		2.0	2.0	2.0			
Recall Mode	None	C-Max			С-Мах		None	None	None			
Walk Time (s)		7.0			7.0							
Flash Dont Walk (s)		21.0			15.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)	92.2	9.06			70.8		18.3	18.3	18.3			
Actuated g/C Ratio	77.0	97.0			0.59		0.15	0.15	0.15			
v/c Ratio	0.71	0.37			0.53		0.73	0.71	0.61			
Control Delay	32.2	7.7			13.4		64.4	52.5	38.4			
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0			
Total Delay	32.2	7.7			13.4		64.4	52.5	38.4			
SOT	S	⋖			В		ш	ш	۵			
Approach Delay		11.5			13.4			53.2				
Approach LOS		В			В			Ω				

				6:EBTL, Start of Yellow				Intersection LOS: B	ICU Level of Service C	
ntersection Summary	Area Type: Other	Cycle Length: 120	Actuated Cycle Length: 120	Offset: 37 (31%), Referenced to phase 2:WBT and 6:EBTL, Start of Yellow	Natural Cycle: 75	Control Type: Actuated-Coordinated	Maximum v/c Ratio: 0.73	ntersection Signal Delay: 18.3	ntersection Capacity Utilization 65.0%	Analysis Period (min) 15

°° Spilts and Phases: 12: Sheridan Drive & 1290 NB **↓** 9g **\*†** 

Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2013 Existing Conditions - AM Peak Hour 13: Sheridan Drive & Harlem Road

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	*	*	K.	*	F	N. N.	
Volume (vph)	799	307	448	777	278	783	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0	215		140	0	
Storage Lanes		-	-		2	7	
Taper Length (ft)		230	100		100	22	
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.88	
Frt		0.850				0.850	
Fit Protected			0.950		0.950		
Satd. Flow (prot)	3539	1583	3433	3539	3433	2787	
Fit Permitted			0.950		0.950		
Satd. Flow (perm)	3539	1583	3433	3539	3433	2787	
Right Turn on Red		8				Yes	
Satd. Flow (RTOR)						161	
Link Speed (mph)	45			42	35		
Link Distance (ft)	314			413	338		
Travel Time (s)	4.8			6.3	9.9		
Peak Hour Factor	0.85	0.85	0.92	0.92	06:0	0.00	
Adj. Flow (vph)	940	361	487	842	306	870	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	940	361	487	842	306	870	
Enter Blocked Intersection	8	2	2	8	2	8	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	12			24	24		
Link Offset(ft)	0 ;			0	0 ;		
Crosswalk Width(tt)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		6	15		15	6	
Number of Detectors	2	_	-	2	-	-	
Detector Template	Thru	Right	Left	Thro	Left	Right	
Leading Detector (ft)	100	20	20	100	20	70	
Trailing Detector (ft)	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	
Detector 1 Size(ft)	9	70	20	9	20	70	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)	94			94			
Detector 2 Size(ft)	9			9			
Detector 2 Type	CI+EX			CI+Ex			
Detector 2 Channel Detector 2 Extend (s)	00			0			
Turn Tyne	2	custom	Prot	5		custom	
Protected Phases	2	2	-	12	m	13	
Permitted Phases		2				က	
Dotoctor Dhase	2	2	-	12	cc	13	

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Proposed Westwood Mixed Use Neighborhood 13: Sheridan Drive & Harlem Road

2013 Existing Conditions - AM Peak Hour

I ane Groun	FRT	FRR	WBI	WRT	NRI	NRR	
canc clods	בה	בה	NO.	2	INDL	NO.	
Switch Phase							
Minimum Initial (s)	20.0	20.0	3.0		0.9		
Minimum Split (s)	30.5	30.5	7.3		11.2		
Total Split (s)	0.99	0.99	29.0	95.0	25.0	54.0	
Total Split (%)	22.0%	22.0%	24.2%	79.2%	20.8%	45.0%	
Maximum Green (s)	9.09	60.5	24.7		19.8		
Yellow Time (s)	3.9	3.9	3.2		3.2		
All-Red Time (s)	1.6	1.6	1.		2.0		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	2.5	4.3	4.3	5.2	4.3	
Lead∕Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Vehide Extension (s)	2.0	2.0	2.0		2.0		
Recall Mode	C-Max	С-Мах	None		None		
Walk Time (s)	7.0	7.0					
Flash Dont Walk (s)	18.0	18.0					
Pedestrian Calls (#/hr)	0	0					
Act Effct Green (s)	61.4	61.4	23.8	7.06	19.8	48.8	
Actuated g/C Ratio	0.51	0.51	0.20	0.76	0.16	0.41	
v/c Ratio	0.52	0.45	0.71	0.32	0.55	0.71	
Control Delay	21.0	21.0	51.7	4.3	50.1	27.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	21.0	21.0	21.7	4.3	20.1	27.3	
SO	O	O	٥	⋖	۵	U	
Approach Delay	21.0			21.6	33.2		
Approach LOS	O			O	O		
Intersection Summary							
Area Type:	Other						
Cycle Length: 120							
Actuated Cycle Length: 120	0						
Offset: 24 (20%), Referenced to phase 2:EBWB, Start of Yellow	ed to phase	2:EBWB	, Start of	Yellow			
Natural Cycle: 60							
Control Type: Actuated-Coordinated	ordinated						
Maximum v/c Ratio: 0.71							
Intersection Signal Delay: 25.0	25.0			≟	Intersection LOS: C	1LOS: C	
Intersection Capacity Utilization 57.6% Analysis Period (min) 15	ation 57.6%			೨	U Level o	ICU Level of Service B	
Splits and Phases: 13: S	13: Sheridan Drive & Harlem Road	/e & Harle	em Road				
7	↓ħ	ç					~ <b>~</b>

Lanes, Volumes, Timings SRF & Associates

2013 Existing Conditions - AM Peak Hour Proposed Westwood Mixed Use Neighborhood 14: I-290 SB & Harlem Road

	•		-	_		•	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations	*	*	<b>₩</b>		r	**	
Volume (vph)	291	664	435	20	369	355	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	0		0	330		
Storage Lanes	_	<del></del>		0	_		
Taper Length (ft)	22	25		25	75		
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95	
Fit		0.850	0.993				
Fit Protected	0.950				0.950		
Satd. Flow (prot)	1770	1583	3514	0	1770	3539	
Fit Permitted	0.950				0.272		
Satd. Flow (perm)	1770	1583	3514	0	207	3539	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		176	4				
Link Speed (mph)	8		32			35	
Link Distance (ft)	333		250			456	
Travel Time (s)	7.6		4.9			8.9	
Peak Hour Factor	0.81	0.81	0.87	0.87	0.88	0.88	
Adj. Flow (vph)	326	820	200	23	419	403	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	326	820	523	0	419	403	
Enter Blocked Intersection	No	9	9 N	8	No No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	12		12			12	
Link Offset(ft)	0		0			0	
Crosswalk Width(ft)	16		91			16	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15	6		6	12		
Number of Detectors	_	<del>-</del>	2		_	2	
Detector Template	Left	Right	Thru		Left	Thru	
Leading Detector (ft)	70	20	100		20	100	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	8	20	9		20	9	
Detector 1 Type	CI+EX	CI+Ex	CI+EX		CI+Ex	CI+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0:0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)			94			94	
Detector 2 Size(ft)			9			9	
Detector 2 Type			CI+EX			CI+Ex	
Detector 2 Channel Detector 2 Extend (s)			0.0			0.0	
Turn Type		vo+mq			pm+pt		
Protected Phases	e	<b>-</b>	2		-	9	
Permitted Phases		3			9		
	c	-	c		-	7	

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Proposed Westwood Mixed Use Neighbo 14: I-290 SB & Harlem Road

2013 Existing Conditions - AM Peak Hour	1/27/2015	
Neighborhood		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Switch Phase							
Minimum Initial (s)	0.9	3.0	10.0		3.0	10.0	
Minimum Split (s)	22.0	9.2	30.6		9.2	21.0	
Total Split (s)	40.0	35.0	20.0	0.0	35.0	85.0	
Total Split (%)	32.0%	28.0%	40.0%	%0:0	28.0%	%0.89	
Maximum Green (s)	35.2	30.7	45.0		30.7	80.0	
Yellow Time (s)	3.2	3.2	3.6		3.2	3.6	
All-Red Time (s)	1.6	1.	1.4		1.	1.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.8	4.3	2.0	4.0	4.3	2.0	
Lead/Lag		Lead	Lag		Lead		
Lead-Lag Optimize?		Yes	Yes		Yes		
Vehide Extension (s)	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	Min		None	None	
Walk Time (s)			10.0				
Flash Dont Walk (s)			15.0				
Pedestrian Calls (#/hr)			0				
Act Effct Green (s)	21.6	47.0	18.5		44.0	43.3	
Actuated g/C Ratio	0.29	0.62	0.25		0.58	0.57	
v/c Ratio	0.71	0.78	0.61		99.0	0.20	
Control Delay	34.2	14.3	30.2		15.5	8.5	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay	34.2	14.3	30.2		15.5	8.5	
TOS	ပ	Ф	O		В	A	
Approach Delay	20.4		30.2			12.1	
Approach LOS	O		S			В	
Intersection Summary							
Area Type:	Other						
Cycle Length: 125							
Actuated Cycle Length: 75.4	5.4						
Natural Cycle: 70							
Control Type: Actuated-Uncoordinated	ncoordinated						
Maximum v/c Ratio: 0.78							
Intersection Signal Delay: 19.7	19.7			드	tersection	Intersection LOS: B	
Intersection Capacity Utilization 61.5%	zation 61.5%			2	U Level	ICU Level of Service B	В
Anotheric Derived (min) 15							

Splits and Phases: 14:1-290 SB & Harlem Road

Lanes, Volumes, Timings SRF & Associates

2013 Existing Conditions - PM Peak Hour Proposed Westwood Mixed Use Neighborhood 1: Maple Road & Millersport Hwy SB

	\	Ť		,			
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	*	‡	‡	*-	*	R.	
Volume (vph)	78	913	820	221	54	170	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	150			150	0	0	
Storage Lanes	-			-	<del>-</del>	_	
Taper Length (ft)	32			100	25	25	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	
Ŧ				0.850		0.850	
Fit Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583	
Fit Permitted	0.305				0.950		
Satd. Flow (perm)	268	3539	3539	1583	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)						102	
Link Speed (mph)		45	45		30		
Link Distance (fl)		222	654		781		
Travel Time (s)		8.4	6.6		6.4		
Peak Hour Factor	0.90	06.0	0.92	0.92	0.81	0.81	
Adj. Flow (vph)	31	1014	891	240	19	210	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	31	1014	891	240	19	210	
Enter Blocked Intersection	2	2	8	8	8	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Wedian Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane			Yes				
Headway Factor	1:00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			6	15	6	
Number of Detectors		2	2	_	_	-	
Detector Template	Left	Thru	Thr	Right	Left	Right	
Leading Detector (ft)	20	100	100	20	70	20	
Trailing Detector (ft)	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	
Detector 1 Size(ft)	8	9	9	50	50	20	
Detector 1 Type	CI+EX	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		9	9				
Detector 2 Type		CI+Ex	CI+EX				
Detector 2 Channel Detector 2 Extend (s)		0.0	0.0				
Turn Type	Perm			vo+mq		Perm	
Protected Phases		2	9	4	4		
Permitted Phases	2			9		4	
	c	c	,				

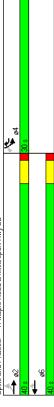
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Proposed Westwood Mixed Use Neighborhood 1: Maple Road & Millersport Hwy SB

Proposed Westwood Mixed Use Neighborhood 1: Maple Road & Millersport Hwy SB	2013 Existing Conditions - PM Peak Hour 1/27/2015
<b>≯ ↓ ↓ ↑ ↑</b>	*

	SBR		1.0	6.2	30.0	42.9%	25.4	3.2	1.4	0.0	4.6			3.0	None	10.9	0.16	0.63	22.5	0.0	22.5	ပ											LOS: A	ICU Level of Service A	
	SBL		1.0	6.2	30.0	45.9%	25.4	3.2	1.4	0.0	4.6			3.0	None	10.9	0.16	0.24	26.0	0.0	26.0	ပ	23.3	O					reen				Intersection LOS: A	U Level o	
	WBR		1.0	6.2	30.0	42.9%	25.4	3.2	1.4	0.0	4.6			3.0	None	70.0	1.00	0.15	0.2	0.0	0.2	⋖							Start of G				III.	೨	
	WBT		4.0	9.1	40.0	57.1%	34.9	3.9	1.2	0.0	5.1			3.0	C-Min	49.4	0.71	0.36	7.6	0.0	7.6	⋖	0.9	A					16:WBT,						
1	EBT		4.0	9.1	40.0	57.1%	34.9	3.9	1.2	0.0	5.1			3.0	C-Min	49.4	0.71	0.41	5.5	0.0	5.5	⋖	5.5	∢					EBTL and						
	EBL		4.0	9.1	40.0	57.1%	34.9	3.9	1.2	0.0	5.1			3.0	C-Min	49.4	0.71	0.08	5.1	0.0	5.1	⋖				Other			phase 2:		dinated			on 41.3%	
	Lane Group	Switch Phase	Minimum Initial (s)	Minimum Split (s)	Total Split (s)	Total Split (%)	Maximum Green (s)	Yellow Time (s)	All-Red Time (s)	Lost Time Adjust (s)	Total Lost Time (s)	Lead/Lag	Lead-Lag Optimize?	Vehicle Extension (s)	Recall Mode	Act Effct Green (s)	Actuated g/C Ratio	v/c Ratio	Control Delay	Queue Delay	Total Delay	ros	Approach Delay	Approach LOS	Intersection Summary	Area Type: 0	Cycle Length: 70	Actuated Cycle Length: 70	Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	Natural Cycle: 40	Control Type: Actuated-Coordinated	Maximum v/c Ratio: 0.63	Intersection Signal Delay: 7.7	Intersection Capacity Utilization 41.3%	Analysis Period (min) 15

Splits and Phases: 1: Maple Road & Millersport Hwy SB



Lanes, Volumes, Timings SRF & Associates

2013 Existing Conditions - PM Peak Hour Proposed Westwood Mixed Use Neighborhood 2: Maple Road & Millersport Hwy NB

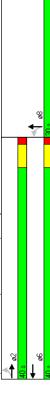
	^	†	<u> </u>	<b>/</b>	ļ	1	•	-	•	۶	<b>→</b>	*
-ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	ŧ			₩		۴	2				
Volume (vph)	95	872	0	0	952	23	89	0	451	0	0	0
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	-		0	0		0	-		0	0		0
Taper Length (ft)	20		22	25		25	25		25	22		25
ane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ŧ.					0.997			0.850				
Fit Protected	0.950						0.950					
Satd. Flow (prot)	1770	3539	0	0	3529	0	1770	1583	0	0	0	0
-It Permitted	0.174						0.950					
Satd. Flow (perm)	324	3539	0	0	3529	0	1770	1583	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					2			82				
Link Speed (mph)		45			45			9			30	
Link Distance (ft)		654			1770			319			263	
ravel Time (s)		6.6			26.8			7.3			0.9	
Peak Hour Factor	0.91	0.91	0.91	0.87	0.87	0.87	0.84	0.84	0.84	0.92	0.92	0.92
Adj. Flow (vph)	104	958	0	0	1094	56	106	0	537	0	0	0
Shared Lane Traffic (%)												
-ane Group Flow (vph)	104	928	0	0	1120	0	106	537	0	0	0	0
Enter Blocked Intersection	9N	2	No No	N <sub>0</sub>	N N	N	9	2	8	No	N N	8
-ane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Wedian Width(ft)		12	,		12	,		12	,		12	,
-ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Furning Speed (mph)	15		6	15		6	15		6	15		6
Number of Detectors	_	2			7		_	2				
Detector Template	Left	Thru			Thru		Left	Thru				
<ul> <li>eading Detector (ft)</li> </ul>	70	100			100		20	100				
railing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0	0				
Detector 1 Size(ft)	8	9			9		70	9				
Detector 1 Type	CI+Ex	CI+Ex			CI+Ex		CI+Ex	CI+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		9			9			9				
Detector 2 Type		CI+EX			CI+EX			CI+EX				
Detector 2 Channel Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Perm						Perm					
Protected Phases		2			9			∞				
Permitted Phases	2						∞					
		•										

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2013 Existing Conditions - PM Peak Hour Proposed Westwood Mixed Use Neighborhood

2: Maple Road & Millersport Hwy NB	Millerspo	rt Hwy	NB NB		3	207	LAISI	5		1/2/10 Existing Conditions - 1 M 1 can 1 con 1 1/2/12/15	1/2	1/27/2015
	•	†	<i>&gt;</i>	<b>&gt;</b>	ţ	4	•	<b>←</b>	•	٠	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	1.0	1.0			4.0		1.0	1.0				
Minimum Split (s)	6.1	6.1			9.1		6.2	6.2				
Total Split (s)	40.0	40.0	0.0	0.0	40.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0
Total Split (%)	57.1%	57.1%	%0.0	%0.0	57.1%	%0.0	45.9%	42.9%	%0.0	%0.0	%0.0	%0.0
Maximum Green (s)	34.9	34.9			34.9		25.4	25.4				
Yellow Time (s)	3.9	3.9			3.9		3.2	3.2				
All-Red Time (s)	1.2	1.2			1.2		1.4	1.4				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	2.1	4.0	4.0	5.1	4.0	4.6	4.6	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Recall Mode	C-Min	C-Min			C-Min		None	None				
Act Effct Green (s)	36.1	36.1			36.1		24.2	24.2				
Actuated g/C Ratio	0.52	0.52			0.52		0.35	0.35				
v/c Ratio	0.62	0.52			0.61		0.17	0.89				
Control Delay	31.8	11.0			14.3		16.0	37.4				
Queue Delay	0.0	0.0			0.0		0.0	0.0				
Total Delay	31.8	11.0			14.3		16.0	37.4				
TOS	ပ	В			В		В	۵				
Approach Delay		13.1			14.3			33.9				
Approach LOS		В			В			ပ				
Intersection Summary												
Area Type:	Other											
Cycle Length: 70												
Actuated Cycle Length: 70	0											
Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	d to phase 2:	EBTL and	16:WBT,	Start of G	reen							
Natural Cycle: 60												
Control Type: Actuated-Coordinated	oordinated											
Maximum v/c Ratio: 0.89												
Intersection Signal Delay: 18.3	18.3			III.	Intersection LOS: B	LOS: B						
Intersection Capacity Utili:	zation 72.6%			೨	CU Level of Service C	f Service	ပ					
Analysis Period (min) 15												

Splits and Phases: 2: Maple Road & Millersport Hwy NB



Lanes, Volumes, Timings SRF & Associates

2013 Existing Conditions - PM Peak Hour 1/27/2015 Proposed Westwood Mixed Use Neighborhood 3: Maple Road & Maplemere Road

Feb.   Feb.   Feb.   Wildle	FBI   FBI   FBR   WBI   WBR   WBR   NBL   NBT	Lane Group Lane Configurations Volume (vph) Ideal Flow (vphp) Storage Length (fl)												
100   100	100   100	Lane Configurations Volume (vph) Ideal Flow (vphpl) Storage Length (ft)	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
35 1188 35 21 868 60 22 0 12 1900 1900 1900 1900 1900 1900 1900 1900	135   138   35   21   868   60   22   0   12   75     100   1900   1900   1900   1900   1900   1900   1900   1900     100   0.95   0.95   1.00   0.95   0.95   1.00   1.00   1.00     100   0.95   0.95   1.00   0.95   0.95   1.00   1.00   1.00     100   0.95   0.95   1.00   0.95   0.95   1.00   1.00   1.00     1700   3825   0   1770   3504   0   0   1772     1700   229   22   24   24   24     1700   24   24   24   24   24   24     1700   24   24   24   24   24     1700   24   24   24   24   24     1700   24   24   24   24     1700   24   24   24   24     1700   24   24   24   24     1700   24   24   24     1700   24   24   24     1700   24   24   24     1700   24   24   24     1700   24   24   24     1700   24   24   24     1700   25   26   26     1700   26   26   26     1700   27   27     1700   27   27     1700   27   27     1700   27   27     1700   27   27     1700   27   27     1700   27   27     1700   27   27     1700   27   27     1700   27   27     1700   27   27     1700   27   27     1700   27   27     1700   27   27     27   27   27     28   27   27     29   27   27     20   20   20     20   20   20     20   20	Volume (vph) Ideal Flow (vphpl) Storage Length (ft)	r	<b>₽</b> ₽		r	₩₽			4			4	
1900   1900	1900   1900	ideal Flow (vphpl) Storage Length (ft)	32	1188	32	21	898	09	22	0	12	75	∞	8
100	100 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.	Storage Length (ft)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1	,	100		0	70		0	0		0	0		0
100   0.95   0.95   0.95   1.00   1.00   0.950   0.9	100   0.95   0.95   0.95   0.95   1.00   1	Storage Lanes	-		0	-		0	0		0	0		0
1,00 0,95 0,95 1,00 0,95 0,95 1,00 1,00 1,00 0,95 0,95 0,95 0,95 0,95 0,95 0,95 0	1.00 0.95 0.95 1.00 0.95 0.95 1.00 1.00 1.00 1.00 0.95	Taper Length (ft)	20		22	20		25	25		25	22		25
0.956 0.996 0.990 0.955 0.990 0.955 0.990 0.990 0.995	0.996 0.996 0.990 0.992 0.997 0.994 0.994 0.994 0.994 0.994 0.994 0.997 0.997 0.997 0.994 0.994 0.994 0.997 0.997 0.997 0.997 0.997 0.994 0.994 0.997	Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1:00	1.00	1.00	1.00	1:00
0.950 0.950 0.950 0.1770 0.252 0.1770 0.252 0.1780 0.264 0.2	0.950 0.950 0.950 0.1770 0.1770 0.1770 0.1855 0.1169 0.1850 0.1869 0.1718 0.0 0.169 0.169 0.1718 0.0 0.169 0.169 0.1718 0.0 0.169 0.178 0.169 0.169 0.178 0.178 0.188 0.188 0.188 0.188 0.188 0.188 0.189 0.189 0.189 0.189 0.189 0.189 0.199 0.	Fr		966.0			0.660			0.952			0.964	
1770 3525 0 1770 3504 0 0 1778 0 0 1239	1770 3525	Fit Protected	0.950			0.950				0.969			896.0	
0.239 445 3525 0 0169 446 3528 0 0169  6	0239	Satd. Flow (prot)	1770	3525	0	1770	3504	0	0	1718	0	0	1738	0
145 3525 0 315 3504 0 0 1404 0   465   455   4	March   Marc	Fit Permitted	0.239			0.169				0.792			0.767	
Ves         Yes         Yes <td>Ves         Yes         Yes<td>Satd. Flow (perm)</td><td>445</td><td>3525</td><td>0</td><td>315</td><td>3504</td><td>0</td><td>0</td><td>1404</td><td>0</td><td>0</td><td>1377</td><td>0</td></td>	Ves         Yes         Yes <td>Satd. Flow (perm)</td> <td>445</td> <td>3525</td> <td>0</td> <td>315</td> <td>3504</td> <td>0</td> <td>0</td> <td>1404</td> <td>0</td> <td>0</td> <td>1377</td> <td>0</td>	Satd. Flow (perm)	445	3525	0	315	3504	0	0	1404	0	0	1377	0
6 15 45 19 19 19 19 170 170 170 170 170 170 170 170 170 170	6 15 15 19 19 10 10 10 10 10 10 10 10 10 10 10 10 10	Right Turn on Red			Yes			Yes			Yes			Yes
1770	1770	Satd. Flow (RTOR)		9			15			19			25	
1770	7770 1106 378 8.6 8.6 8.6 8.7 8.7 8.6 8.6 8.7 8.7 8.6 8.6 8.7 8.7 8.7 8.7 8.7 8.7 8.7 8.7 8.7 8.7	Link Speed (mph)		45			45			30			30	
26.8	26.8   16.8   8.6   0.94   0.94   0.94   0.94   0.94   0.94   0.94   0.94   0.94   0.95   0.62   0.62   0.62   0.81   0.93    27   1264   37   24   9.98   6.9   35   0   19   93    28   13   1301   0   24   1067   0   0   54   0   0   0    10   10   100   100   100   100   100   100   100    10   10	Link Distance (ft)		1770			1106			378			402	
9,9 1264 9.94 0.87 0.87 0.87 0.62 0.62 0.62 0.62 0.62 0.62 0.63 0.94 0.94 0.94 0.87 0.87 0.87 0.87 0.62 0.62 0.62 0.62 0.62 0.62 0.63 0.94 0.94 0.94 0.94 0.84 0.87 0.87 0.87 0.85 0.0 0.94 0.87 0.84 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.9	9,9 1264 9,94 0,87 0,87 0,87 0,62 0,62 0,62 0,81 0,81 0,81 0,82 0,83 0,93 0,93 0,93 0,93 0,93 0,93 0,93 0,9	Travel Time (s)		26.8			16.8			9.8			9.1	
8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8	8, 37 1264 37 24 998 69 35 0 19 93 85 0 19 93 85 0 19 93 85 0 19 93 85 0 19 93 85 0 19 93 85 0 19 93 85 0 19 93 85 0 19 93 85 0 19 93 85 0 19 93 85 0 19 93 85 0 19 93 95 0 19 10 10 10 10 10 10 10 10 10 10 10 10 10	Peak Hour Factor	0.94	0.94	0.94	0.87	0.87	0.87	0.62	0.62	0.62	0.81	0.81	0.81
%) 37 1301 0 24 1067 0 0 54 0 0 54 0 0 54 0 0 0 54 0 0 0 0 0	%) 37 1301 0 24 1067 0 0 54 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Adj. Flow (vph)	37	1264	37	24	866	69	35	0	19	93	10	37
b) 37 1301 0 24 1067 0 0 54 0 0 54 0 0 0 0 0 0 0 0 0 0 0 0 0	by 37 1301 0 24 1067 0 0 54 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Shared Lane Traffic (%)												
No No No No No No No No No No No No No	Edition No No No No No No No No No No No No No	-ane Group Flow (vph)	37	1301	0	24	1067	0	0	24	0	0	140	0
Left Left Right Left Right Left Left Right Left Rhuu Left Thru Left Rhuu Left Thru Left Rhuu Lhuu Left Rhuu Left Rhuu Left Rhuu Left Rhuu Left Rhuu Left Rhuu Lhuu Left Rhuu Le	Left Left Right Left Left Right Left Left Right Left 12	Enter Blocked Intersection	2	2	8	%	8	8	2	2	2	8	8	8
nne Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye	12	ane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
ne	ne	Median Width(ft)		12			12			0			0	
16	16	_ink Offset(ft)		0			0			0			0	
Yes   Yes	Ves	Crosswalk Width(ft)		16			16			16			16	
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Two way Left Turn Lane		Yes			Yes							
15   9   15   9   15   9   15   9   15   9   15   9   15   9   15   9   15   9   15   9   15   9   15   10   10   10   10   10   10   10	15   9   15   9   15   9   15   15   1	Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1	1	Turning Speed (mph)	15		6	12		6	15		6	15		6
Left Thru Left Thru Left Thru 20 100 20 100 20 100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Left Thru Left T	Number of Detectors	-	2		_	2		_	2		_	2	
20 100 20 20 20 20 20 20 20 20 20 20 20 20 2	20 100 20 100 20 0 0 0 0 0 0 0 0 0 0 0 0	Detector Template	Left	Thru		Left	Thr		Left	Thr		Left	Thru	
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	<ul> <li>eading Detector (ft)</li> </ul>	20	100		70	100		70	100		20	100	
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Trailing Detector (ft)	0	0		0	0		0	0		0	0	
20 6 20 6 20 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 20 6 6 20 6 20 6 20 6 20 6 20 6 20 6 20 6 20 6 20 6 20 6 20 6 6 6 6	Cl+Ex Cl+Ex	Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
CI+EX CI+EX	Ci+Ex Ci+Ex	Detector 1 Size(ft)	8	9		20	9		70	9		20	9	
00 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Detector 1 Type	CI+EX	CI+Ex		CI+Ex	CI+Ex		CI+EX	CI+EX		CI+Ex	CI+Ex	
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Detector 1 Channel												
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
(1) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	(1) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
(f) 94 94 94 94 94 94 94 94 94 94 94 94 94	(f) 94 94 94 94 94 94 94 94 94 94 94 94 94	Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
S) CI+EX CI+	S) CI+Ex CI+	Detector 2 Position(ft)		94			94			94			94	
S) C1+EX C1+	s) Perm 00 Perm 00 Perm 00 Perm 2 6 6 8 8 8 4	Detector 2 Size(ft)		9 .			9 :			9 .			9 -	
S) 0.0 0.0 0.0 0.0 0.0 2 6 8 8	S) 00 00 00 00 Perm Perm Perm 8 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Jetector 2 Type		CI+EX			CI+EX			CI+EX			CI+EX	
(s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	(s) 0.0 0.0 0.0 0.0 0.0 2 6 6 8 8 4 4	Detector 2 Channel		0			0			0			0	
Perm Perm Perm 6 8 8 8	Perm         Perm         Perm         Perm           2         6         8         4           2         2         6         6         8         4           2         2         6         6         8         4	Detector 2 Extend (s)		0.0			0.0			0:0			0:0	
2 6 0 8	2 2 6 6 8 8 4 2 2 6 6 8 8 4	Turn Type	Perm	c		Perm	,		Perm	c		Perm		
0	2 2 6 6 8 8	Protected Phases	c	7		7	٥		o	x			4	
	8 0 0 7 7	Pelifilled Priases	7 (	c		0 \	,		0	c		4 -	,	

0.18 0.20 0.0 115.3 B B 115.3

0.67 6.4 0.0 6.4 A A A A

0.67 7.4 0.0 7.4 A 7.4 A

Lanes, Volumes, Timings SRF & Associates

Synchro 7 - Report Page 5

2013 Existing Conditions - PM Peak Hour Proposed Westwood Mixed Use Neighborhood 3: Maple Road & Maplemere Road

o: maple road a maplement road	2		į									
	1	†	<i>&gt;</i>	<b>&gt;</b>	ţ	4	•	•	•	۶	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	0.6	0.6		0.6	0.6		27.0	27.0		27.0	27.0	
Total Split (s)	47.0	47.0	0.0	47.0	47.0	0.0	28.0	28.0	0.0	28.0	28.0	0.0
Total Split (%)	62.7%	62.7%	%0:0	62.7%	62.7%	%0.0	37.3%	37.3%	%0.0	37.3%	37.3%	%0.0
Maximum Green (s)	42.0	45.0		42.0	45.0		23.0	23.0		23.0	23.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	5.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	2.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Μin		None	None		None	None	
Walk Time (s)							7.0	7.0		7.0	7.0	
Flash Dont Walk (s)							15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)							0	0		0	0	
Act Effct Green (s)	32.1	32.1		32.1	32.1			8.7			10.0	
Actuated g/C Ratio	19:0	19.0		0.67	0.67			0.18			0.21	
v/c Ratio	0.12	0.55		0.11	0.45			0.20			0.46	
Control Delay	6.5	7.4		6.9	6.4			15.3			21.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	6.5	7.4		6.9	6.4			15.3			21.1	
SO7	A	⋖		⋖	V			В			ပ	
A The Contract of the Contract		,			١,			L				

Intersection LOS: A ICU Level of Service A Control Type: Actualed-Uncoordinated Marhum WC Ratio 0.55 Intersection Signal Delay: 7.9 Intersection Capacity Utilization 49.9% Analysis Period (min) 15 Intersection Summary
Area Type:
Cycle Length: 75
Actuated Cycle Length: 47.9
Natural Cycle: 60

Other

Approach Delay Approach LOS

Splits and Phases: 3: Maple Road & Maplemere Road



Lanes, Volumes, Timings SRF & Associates

2013 Existing Conditions - PM Peak Hour Proposed Westwood Mixed Use Neighborhood 4: Maple Road & Donna Lea Blvd

Lane Group         EBT         EBR         WBI         NBI         NBR           Lane Conjugurations         446         29         23         347         124         29         21         20         10         100		†	<u> </u>	<b>\</b>	Ļ	•	•	
s	uon	EBT	EBR	WBL	WBT	NBL	NBR	
1246 29 23 937 1900 1900 1900 1900 1900 1900 1900 1900	onfigurations	₩.		*	‡	>		
1900 1900 1900 1900 1900 1900 1900 1900	(hdv)	1246	56	23	937	12	21	
0 50 0 50 2 5 2 5 0 95 0 1217 0 9 0 1217 0 9 15 100 100 100 100 100 100 100 1	deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
0.95 0.95 1.00 0.95 0.95 1.00 0.95 0.997 0.997 0.990 0	Storage Length (ft)		0	20		0	0	
25 25 26 26 26 26 26 26 26 26 26 26 26 26 26	e Lanes		0	-		<del>-</del>	0	
0.95 0.95 1.00 0.95 0.95 1.00 0.95 0.95 1.00 0.950 0.9	Length (ft)		25	22		25	25	
0,997  3529  0,950  1770  3529  1,050  1928  1106  1033  1077  107	Jtill. Factor	0.95	0.95	1.00	0.95	1.00	1.00	
9529 0 7770 3539 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.730 0.730 0.730 0.730 0.730 0.730 0.740 0		0.997				0.914		
3529 0 1770 3539 45 45 45 45 45 45 45 45 45 45 45 45 45 4	tected			0.950		0.982		
m) 3529 0 170 3539 n) 45 45 45 46 n) 1106 1928 n) 1106 1928 nor 0.73 0.73 0.77 0.79 affic (%) 1707 40 30 1217 affic (%) 1747 0 30 1217 nersection No No No No No No No No No No No No No	Satd. Flow (prot)	3529	0	1770	3539	1672	0	
35.29 0 1770 35.39 45 1106 1106 1106 10.73 0.73 0.77 0.77 17.07 40 30 12.17 (c%) 17.47 0	It Permitted			0.950		0.982		
45 45 45 106 1928 1928 1928 1928 1928 1928 1928 1928	-low (perm)	3529	0	1770	3539	1672	0	
1106 1928 16.8 29.2 16.8 0.73 0.77 0.77 1707 40 30 1217 1707 40 30 1217 1707 0 30 1217 2 0 1217 1 0 10 10 10 100 1 0 100 1.00 1 0 100 1.00 1 0 100 1.00 1 0 100 1.00 1 0 1.00 1 0 0 1.00 1 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0	peed (mph)	45			45	30		
16.8 0.73 0.73 0.73 0.73 0.73 0.73 0.73 0.77 0.70 0.70	istance (ft)	1106			1928	322		
or 0.73 0.73 0.77 0.77  affic (%) 70 40 30 12.17  w (yph) 1747 0 30 12.17  ntersection No No No No No No No No No No No No No	Time (s)	16.8			29.5	8.1		
artific(%)  (%) (%) (%) (%) (%) (%) (%) (%) (%)	Hour Factor	0.73	0.73	0.77	0.77	0.82	0.82	
1747 0 30 1217 No No No No Left Right Left Left 12 12 0 0 0 16 6 16 Yes Yes 1.00 1.00 1.00 Free Gother	(hdv) wc	1707	40	30	1217	12	26	
1747 0 30 1217 No No No No No 1217 12 12 12 0 0 0 0 16 16 Yes Yes Yes Yes Other	d Lane Traffic (%)							
No No No No No 10  Left Right Left Left 12 0 0 16 0 0 16 Xes 1:00 1:00 1:00 1.00	Group Flow (vph)	1747	0	30	1217	41	0	
Left Right Left Left 12 0 0 0 16 Yes Yes 1.00 1.00 1.00 1.00 Free Free	Slocked Intersection	8	8	8	8	8	No	
12 12 12 12 12 16 16 16 16 16 16 16 16 16 16 16 16 16	Vlignment	Left	Right	Left	Left	Left	Right	
16 10 10 10 10 10 100 100 100 100 100 10	n Width(ft)	12			12	12		
16 16 16 Yes Yes Yes 1.00 1.00 1.00 Free 9 15 Free Other	(fset(ft)	0			0	0		
Yes Yes Yes 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	valk Width(ft)	16			16	16		
1.00 1.00 1.00 1.00 1.00 1.00 Free Pree Other	ay Left Turn Lane	Yes			Yes			
9 15 Free Other cal	vay Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Free Free Other alton 45.4%	g Speed (mph)		6	15		12	6	
Other ation 45.4%	control	Free			Free	Stop		
Other ation 45.4%	ction Summary							
ation 45.4%		ther						
128110N 45.4%	Type: Unsignalized	45 40,			2	-	-	
	ntersection Capacity Utilizati Analysis Period (min) 15	UN 45.4%			<u>⊇</u>	J Level O	Service A	

Proposed Westwood Mixed Use Neighborhood 4: Maple Road & Donna Lea Blvd

2013 Existing Conditions - PM Peak Hour

NBR		21			0.82	26									0.78	873			274	6.9		3.3	95	265	NB 1	40	15	26	274	0.15	13	20.4	C 20.4
NBL	Þ	15	Stop	%0	0.82	15									0.78	2395	1727	899	2224	8.9	5.8	3.5	06	144	WB 3	809	0	0	1700	0.36	0	0.0	
WBT	‡	937	Free	%0	0.77	1217						TWLTL	2												WB 2	809	0	0	1700	0.36	0	0.0	
WBL	×	23			0.77	30									0.78	1747			1393	4.1		2.2	92	380	WB 1	30	30	0	380	0.08	9	15.3	O 4
EBR		53			0.73	40																			EB2	609	0	40	1700	0.36	0	0.0	
EBT	<b>₩</b>	1246	Free	%0	0.73	1707						TWLTL	2	1106											EB 1	1138	0	0	1700	19:0	0	0.0	00
Movement	Lane Configurations	Volume (veh/h)	Sign Control	Grade	Peak Hour Factor	Hourly flow rate (vph)	Pedestrians	Lane Width (ft)	Walking Speed (ft/s)	Percent Blockage	Right turn flare (veh)	Median type	Median storage veh)	Upstream signal (ft)	pX, platoon unblocked	vC, conflicting volume	vC1, stage 1 conf vol	vC2, stage 2 conf vol	vCu, unblocked vol	tC, single (s)	tC, 2 stage (s)	tF (s)	p0 queue free %	cM capacity (veh/h)	Direction, Lane #	Volume Total	Volume Left	Volume Right	cSH	Volume to Capacity	Queue Length 95th (ft)	Control Delay (s)	Lane LOS Annmach Delay (s)

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

ICU Level of Service

0.4 45.4% 15

Intersection Summary
Average Delay
Intersection Capacity Utilization
Analysis Period (min)

Synchro 7 - Report Page 7

2013 Existing Conditions - PM Peak Hour 1/27/2015 Proposed Westwood Mixed Use Neighborhood 5: Maple Road & Audubon Golf Club

	1	†	<i>&gt;</i>	<b>&gt;</b>	ţ	4	•	<b>←</b>	•	۶	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<b>y</b> -	4₽		je-	44			4			4	
Volume (vph)	0	1260	7	∞	096	2	10	0	9	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	20		0	0		0	0		0
Storage Lanes	-		0	-		0	0		0	0		0
Taper Length (ft)	22		22	25		25	25		25	22		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ŧ.		0.998						0.948				
Fit Protected				0.950				0.970				
Satd. Flow (prot)	1863	3532	0	1770	3539	0	0	1713	0	0	1863	0
Flt Permitted				0.950				0.970				
Satd. Flow (perm)	1863	3532	0	1770	3539	0	0	1713	0	0	1863	0
-ink Speed (mph)		45			45			30			30	
Link Distance (ft)		446			929			469			111	
Travel Time (s)		8.9			8.4			10.7			2.5	
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.61	0.61	0.61	0.92	0.92	0.92
Adj. Flow (vph)	0	1370	15	6	1032	2	16	0	10	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1385	0	6	1034	0	0	79	0	0	0	0
Enter Blocked Intersection	No No	8	8	%	%	8	8	8	%	8	%	S
-ane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Tum Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	13		6	15		6	12		6	15		6
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type: (	Other											
Control Type: Unsignalized Intersection Capacity Utilization 45.3%	ion 45.3%			2	U Level o	ICU Level of Service A	×					
Analysis Period (min) 15												

Proposed Westwood Mixed Use Neighborhood 5: Maple Road & Audubon Golf Club

2013 Existing Conditions - PM Peak Hour

Movement         EBI         EBI         EBI         EBI         FR         MEI		4	†	<u> </u>	<b>&gt;</b>	ţ	4	•	<b>←</b>	•	٠	<b>→</b>	•
Originations         ↑	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
(ye/h/t)         0         1260         14         8         960         2         10         6         0         0           own rate (yeh)         0         1260         1260         1260         0         1260         0	Lane Configurations	*	₩		¥	₩			4			4	
Prece   Free   Free   Stop   Stop   O%   O%   O%   O%   O%   O%   O%   O	Volume (veh/h)	0	1260	14	' ∞	096	2	10	0	9	0	0	0
our Factor         0.9%	Sign Control		Free			Free			Stop			Stop	
Hour Factor 092 092 092 093 093 093 061 061 061 092 092 over Middle (1)  Wilder (1)  Wilder (2)  Wilder (3)  Wilder (3)  Wilder (3)  Wilder (4)  Wilde	Grade		%0			%0			%0			%0	
Sytians (lph) 0 1370 15 9 1032 2 16 0 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.61	0.61	0.61	0.92	0.92	0.92
Striptins: Width (III)  Width (	Hourly flow rate (vph)	0	1370	15	6	1032	2	16	0	10	0	0	0
Width (ft) (ing Speed (ft)s)         TWLTL         TWLTL <th< td=""><td>Pedestrians</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	Pedestrians												
Ing Speed (It/s)  TWLTL  TWLTL  TWLTL  TWLTL  TWLTL  TWLTL  TWLTL  TWLTL  TRUTL   Lane Width (ft)													
an Blockage  Intum lare (vch)	Walking Speed (ft/s)												
turn flare (veth)         TWLTL         TWLTL           an stype         2         2           an stroage veth)         2         1385         1911         2429         692         1745         2435           earn signal (ft)         1034         1385         1911         2429         692         1745         2435           antition unblocked on onliticing volume         1034         1385         1911         2429         692         1745         2435           stage 2 conf vol         1034         1385         1911         2429         692         1745         2435           stage 2 conf vol         1034         4.1         7.16         6.5         6.5         6.9         7.5         6.5         5.5	Percent Blockage												
an storage with 2 1211 1911 2429 692 1745 2435 and storage with 2 1385 1911 2429 692 1745 2435 and storage with 2 1385 1911 2429 692 1745 2435 and storage unblocked on milicing volume 1034 1385 1911 2429 692 1745 2435 at 369 1031 1911 2429 692 1745 2435 at 369 1031 1911 2429 692 1745 2435 at 369 1031 1911 2429 692 1745 2435 at 369 1031 1911 2429 692 1745 2435 at 369 1031 1911 2429 692 1745 2435 at 369 1031 1911 2429 692 1745 2435 at 369 1031 1911 2429 692 1745 2435 at 369 1031 1911 2429 692 1745 2435 at 369 1031 1911 2429 692 1745 2435 at 369 1031 1911 2429 692 1745 2435 at 369 1031 1911 2429 692 1745 2435 at 369 1031 1911 2429 692 1745 2435 at 369 1031 1911 2429 692 1745 2435 at 369 1031 1911 2429 692 1745 2435 at 369 1031 1911 2429 692 1745 2435 at 369 1031 1911 2429 692 1745 2435 at 369 1031 1911 2429 692 1745 243 at 369 1031 1911 2429 692 1745 243 at 369 1031 1911 2429 692 1745 243 at 369 1031 1911 2429 692 1745 243 at 369 1031 1911 2429 692 1745 243 at 369 1031 1911 2429 692 1745 243 at 369 1031 1911 2429 692 1745 243 at 369 1031 1911 2429 692 1745 243 at 369 1031 1911 2429 692 1745 243 at 369 1031 1911 2429 692 1745 243 at 369 1031 1911 2429 692 1745 243 at 369 1031 1911 2429 692 1745 243 at 369 1031 1911 2429 692 1745 243 at 369 1031 1911 2429 692 1745 243 at 369 1031 1911 2429 692 1745 243 at 369 1031 1911 2429 at 369 1031 1911 1911 1911 1911 1911 1911 191	Right turn flare (veh)												
an storage veh) 2 2 2  each signal (ft) little litt	Median type		TWLTL			LWLTL							
eam signal (ft)  label count blocked  ontificing volume  1034  label count blocked  ontificing volume  1034  1385  1377  1377  1377  1377  1051	Median storage veh)		2			2							
Matton unblocked online indexed doubles (Although online)         1034         1385         1911         2429         692         1745         2435           stage 2 control on online (Although online)         1034         1385         1911         2429         692         1745         2435           stage 2 control online (Although online)         4.1         4.1         4.2         692         1745         2435           nublocked vol         1034         4.1         4.1         2429         692         1745         2435           nublocked vol         1034         4.1         4.1         2429         692         1745         2435           stage (S)         2.2         2.2         3.5         4.0         3.3         3.5         4.0           name (S)         2.2         2.2         3.5         4.0         3.3         3.5         4.0           stage (S)         2.2         3.5         4.0         3.3         3.5         4.0         1.0           name (S)         6.8         MB1         MB2         MB3         MB         1.0         9.0         1.6         9.0         1.6         9.0         1.6         9.0         1.6         9.0         1.6         <	Upstream signal (ft)												
onflicting volume 1034 1385 1911 2429 692 1745 2435 stage Lonf vol stage Lonf vol stage Lonf vol stage Lonf vol stage Lonf vol stage Lonf vol stage Lonf vol stage Lonf vol stage Lonf vol stage Lonf vol stage Lonf vol stage Lonf vol stage Lonf vol stage Lonf vol stage Lonf vol stage Lonf vol stage Lonf vol stage Lonf vol vol stage Long Long Long Long Long Long Long Long	pX, platoon unblocked												
stage Lonf vol stage I conf vol stage I	vC, conflicting volume	1034			1385			1911	2429	692	1745	2435	517
stage 2 conf vol         1385         1082         695         1385           unblocked vol         4.1         4.1         4.2         695         1745         2435           ggle (s)         4.1         4.1         4.1         4.1         4.1         4.1         4.1         5.5         6.5         6.5         6.5         6.5         6.5         6.5         6.5         6.5         5.5         6.5         5.5         6.5         5.5         6.5         5.5         6.5         5.5         6.5         5.5         6.5         5.5         5.5         6.5         5.5         5.5         6.5         5.5         5.5         5.5         5.5         6.5         5.5 <td< td=""><td>vC1, stage 1 conf vol</td><td></td><td></td><td></td><td></td><td></td><td></td><td>1377</td><td>1377</td><td></td><td>1051</td><td>1051</td><td></td></td<>	vC1, stage 1 conf vol							1377	1377		1051	1051	
unblocked vol         1034         1385         1911         2429         692         1745         2435           stage (s)         4.1         4.1         4.1         4.1         7.5         6.5         6.5         1.5         6.5         5.5	vC2, stage 2 conf vol							533	1052		969	1385	
righe (s) 4.1 4.1 4.1 7.5 6.5 6.9 7.5 6.5 5 stage (s) 2.2 2.2 2.2 3.5 4.0 3.3 3.5 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	vCu, unblocked vol	1034			1385			1911	2429	692	1745	2435	517
stage (\$)  22  22  23  35  40  24  100  28  40  100  98  98  90  100  98  90  100  98  90  100  98  90  100  98  90  100  98  90  100  98  90  100  98  90  100  90  90  90  90  90  90  90  9	tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
Leue (ree %         100         98         35         40         3.3         3.5         40           apacity (verlht)         668         491         144         168         385         40           apacity (verlht)         668         491         MB1         MB1         MB1         SB1           ition, Lane #         EB I         EB 2         EB 3         WB1         WB2         WB3         MB1         SB1           me lotal         0         913         472         9         688         346         26         0         163         0           ne Left         0         0         0         0         0         0         0         0         16         0           ne Right         1700         1700         491         1700         188         1700         n           ne Length 95h (rif)         0	tC, 2 stage (s)							6.5	2.5		6.5	2.5	
Agaberich (venhr) (668 491 491 4168 386 202 163 100 100 100 100 100 100 100 100 100 10	tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
apacity (vehh) 668 491 144 168 386 202 163 sition Lane # EB 1 EB 2 EB 3 WB1 WB2 WB 3 NB1 SB 1	p0 queue free %	100			8			86	100	4	100	100	100
Hon Lame #         EB 1         EB 2         EB 3         WB 1         WB 2         WB 3         NB 1         SB 1           ne Total         0         913         472         9         688         346         26         0           ne Left         0         0         9         0         16         0         16         0           ne Legth         0         15         0         0         2         10         0         16         0           ne Locapacity         1700         1700         1700         1700         1700         188         1700           ne Locapacity         0.00         0.54         0.28         0.02         0.40         0.20         0.14         0.00           LOS         0.0         0.0         12.5         0.0         0.0         12         0         0         A           LOS         0.0         0.0         12.5         0.0         0.0         0         A         A         A         A           acetion Capacity (s)         0.0         0.0         12.5         0.0         0.0         0.0         A         A         A           acetion Capacity (will acetion Capacity (wi	cM capacity (veh/h)	899			491			144	168	386	202	163	503
ne Total 0 913 472 9 688 346 26 0  ne Left 0 0 0 9 0 0 16 0  ne Right 1700 1700 1700 1700 1700 1700 1700 170	Direction, Lane #	EB 1	EB2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
ne Left 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Volume Total	0	913	472	6	889	346	26	0				
ne Right 0 0 15 0 0 2 10 0 0 10 ne Right 1 0 0 12 10 0 0 10 10 0 10 10 10 10 10 10 10 10	Volume Left	0	0	0	6	0	0	16	0				
ne to Capacity 1700 1700 1700 1700 1700 1700 1700 170	Volume Right	0	0	12	0	0	2	10	0				
000 054 028 002 040 0.20 0.14 0.00 0 0 0 1 0 0 12 0 0 12 0 0 0 0 0 12.5 0.0 0.0 27.2 0.0 B	CSH	1700	1700	1700	491	1700	1700	188	1700				
0 0 0 0 12 0 0 12 0 0 0 12 0 0 0 0 0 0 0	Volume to Capacity	0.00	0.54	0.28	0.02	0.40	0.20	0.14	0.00				
(s) 0.0 0.0 12.5 0.0 27.2 0.0 B B D A P D A P D D A P D D D D D D D D D D	Queue Length 95th (ft)	0	0	0	-	0	0	12	0				
B	Control Delay (s)	0.0	0.0	0.0	12.5	0.0	0.0	27.2	0.0				
0.0 0.1 27.2 0.0  V Dilization 45.3% ICU Level of Service	Lane LOS				В			Ω	A				
V 0.3 0.3 Utilization 45.3% ICU Level of Service 15.3	Approach Delay (s)	0.0			0.1			27.2	0:0				
0.3 Uilization 45.3% ICU Level of Service 15	Approach LOS							Ω	⋖				
0.3 Utilization 45.3% ICU Level of Service 15	Intersection Summary												
Utilization 45.3% ICU Level of Service	Average Delay			0.3									
	Intersection Capacity Utilization	⊑		45.3%	2	U Level o	f Service			∢			
	Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

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Proposed Westwood Mixed Use Neighborhood 2013 Existing Conditions - PM Peak Hour 6: Maple Road & North Forest Road

		Ì	<b>•</b>	-								
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u></u>	‡	¥	<u>,-</u>	‡	*-	<b>,</b> -	*	¥	<u>r</u>	*	*-
Volume (vph)	177	096	139	230	718	94	06	338	197	165	375	116
ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	415		220	315		150	125		220	250		250
Storage Lanes	-		-	-		-	-		-	-		
Taper Length (ft)	8		115	09		25	95		25	8		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1:00
- L	0		0.850	0		0.850	C		0.850	0		0.850
Fit Protected	0.950	0	1	0.950	0	7	0.950		1	0.950	0	1
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Fit Permitted	0.238	0	1	0.098	0	0	0.194		1	0.197	0	1
Satd. Flow (perm)	443	3539	1583	183	3539	1583	361	1863	1583	367	1863	1583
Right Turn on Red			Yes			2			Yes			Yes
Satd. Flow (RTOR)			143						33			84
Link Speed (mph)		42			42			32			32	
Link Distance (ft)		1705			820			529			809	
Travel Time (s)		25.8			12.4			10.3			11.8	
Peak Hour Factor	0.92	0.92	0.92	0.00	06:0	0.00	96:0	0.96	96.0	0.87	0.87	0.87
Adj. Flow (vph)	192	1043	151	256	798	104	94	352	202	130	431	133
Shared Lane Traffic (%)												
-ane Group Flow (vph)	192	1043	151	256	798	104	94	352	202	130	431	133
Enter Blocked Intersection	No	8	No No	8	8	8	8	8	%	8	No	No
-ane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
_ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1:00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		6	12		6	15		6	15		6
Number of Detectors	-	2	_	_	2	_	_	2	_	_	2	_
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	70	100	70	20	100	20	70	100	20	70	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	70	9	70	20	9	20	20	9	20	70	9	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	bm+pt		hm+ov	pm+pt		vo+mq	pm+pt		vo+mq	pm+pt		pm+ov
Protected Phases	വ	2	m	-	9	7	c	∞	-	7	4	2
Permitted Phases	2		2	9		9	∞		∞	4		4
Detector Phase	Ľ.	2	c	_	9	7	c	∞	<del>-</del>	7	4	2

Synchro 7 - Report Page 11

Proposed Westwood Mixed Use Neighborhood 2013 Existing Conditions - PM Peak Hour 6: Maple Road & North Forest Road

4	<b>†</b>	<u>/</u>	<b>&gt;</b>	ţ	4	•	<b>←</b>	•	٠	<b>→</b>	•
EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
1.0	4.0	1.0	1.0	4.0	1.0	1.0	4.0	1.0	1.0	4.0	1.0
7.0	35.0	7.0	7.0	35.0	7.0	7.0	35.0	7.0	7.0	35.0	7.0
20.0	47.0	11.0	23.0	20.0	15.0	11.0	35.0	23.0	15.0	39.0	20.0
16.7%	39.5%	9.5%	19.2%	41.7%	12.5%	9.5%	29.5%	19.2%	12.5%	32.5%	16.7%
14.0	41.0	2.0	17.0	44.0	0.6	2.0	29.0	17.0	0.6	33.0	14.0
3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	9.0
Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
None	None	None	None	None	None	None	None	None	None	None	None
	7.0			7.0			7.0			7.0	
	22.0			22.0			22.0			22.0	
	0			0			0			0	
49.3	37.5	48.7	56.2	41.0	56.2	30.4	25.4	46.7	38.5	29.4	47.3
0.44	0.34	0.44	0.50	0.37	0.50	0.27	0.23	0.42	0.34	0.26	0.42
0.57	0.88	0.20	0.83	0.61	0.13	0.58	0.83	0.30	0.79	0.88	0.18
22.2	44.9	4.6	20.0	31.7	16.4	42.6	59.5	19.5	51.6	60.1	9.1
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22.2	44.9	4.6	20.0	31.7	16.4	42.6	59.5	19.5	51.6	60.1	9.1
U	۵	⋖	۵	ပ	В	Ω	ш	В	Ω	ш	⋖
	37.4			34.4			44.4			49.0	
	۵			O			۵			۵	
	EBL 10.0 10.7% 10.7% 13.5 2.5 2.5 2.5 0.0 6.00 6.00 6.00 6.00 6.00 6.00 6.0	× × × × × × × × × × × × × × × × × × ×	EBT 4.0 35.0 47.0 35.0 47.0 35.0 47.0 35.0 6.0 6.0 6.0 6.0 6.0 8.3 7.5 7.0 7.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6	40 1.0 35.0 7.0 47.0 11.0 35.0 7.0 47.0 11.0 35.2 5.2 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5	## FBR WBL   10   10   35.0   7.0	## Company	## FBR WBL WBT WBR  40 1.0 1.0 4.0 1.0 35.0 7.0 7.0 35.0 7.0 47.0 11.0 23.0 50.0 15.0 39.2% 9.2% 19.2% 41.7% 12.5% 5.0 3.5 3.5 3.5 3.5 3.5 3.5 2.5 2.5 2.5 2.5 2.5 2.5 2.0 0.0 0.0 0.0 0.0 14g Lead Lead 14g Lead 1.4 22.0 1.0 4.0 0.0 0.0 37.5 48.7 56.2 41.0 56.2 0.34 0.44 0.50 0.31.7 16.4 0.0 0.0 0.0 0.0 0.0 44.9 4.6 50.0 31.7 16.4 0.0 0.0 0.0 0.0 0.0 43.74 3.44 3.44 0.0 0.0 0.0 0.0 0.0 37.4 3.44 3.44 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	## FBR WBL WBT WBR NBL WBT AB NBL WBT WBR NBL WBT WBR WBL WBT WB WBT WBT WBT WBT WBT WBT WBT WBT	EBT         EBR         WBL         WBT         WBR         NBL         NBT           40         1.0         1.0         4.0         1.0         4.0	EBT         EBR         WBL         WBT         WBR         NBI         NBI         NBR           40         1.0         1.0         4.0         1.0         1.0         4.0         1.0           35.0         7.0         7.0         35.0         7.0         7.0         35.0         7.0           47.0         11.0         23.0         50.0         15.0         11.0         35.0         23.0           39.2%         92.%         17.2         44.0         90.         5.0         29.0         17.0           31.5	EBT         FBR         WBL         WBT         WBR         NBI         NBT         NBR         SBL           40         1.0         1.0         4.0         1.0         4.0         1.0

Area Type:
Cycle Length: 20
Actualed Cycle Length: 11.6
Natural Cycle: 85
Control Type: Actualed-Uncoordinated
Maximum vic Ratio: 0.88
Intersection Signal Delay: 39.9
Intersection Capacity Utilization 86.2%
Analysis Period (min) 15

Lanes, Volumes, Timings SRF & Associates

2013 Existing Conditions - PM Peak Hour 1/27/2015 Proposed Westwood Mixed Use Neighborhood 7: Sheridan Drive & Mill Street

	^	†	<b>/</b>	<b>\</b>	Ļ	/	•	-	•	٠	+	*
ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
ane Configurations	*	₩		*	₩		*	æ,		*	æ	
Volume (vph)	Ξ	1258	9	118	1299	23	140	23	144	34	89	12
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	150		0	40		0	75		0
Storage Lanes	-		0	-		0	-		0	-		0
aper Length (ft)	65	i c	25	09	i c	25	25	,	25	25	,	25
ane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.8
	0	0.998		0	0.994		C C	0.891		C C	0.977	
-It Protected	0.950		•	0.950	1	•	0.950		•	0.950	9	•
Satd. Flow (prot)	1770	3532	0	1770	3518	0	1770	1660	0	1770	1820	0
-It Permitted	0.089			0.082			0.601			0.611		
Satd. Flow (perm)	166	3532	0	153	3518	0	1120	1660	0	1138	1820	0
Right Turn on Red			2			Yes			8			Yes
Satd. Flow (RTOR)					4						7	
ink Speed (mph)		45			42			30			30	
ink Distance (ft)		2782			776			838			362	
ravel Time (s)		42.2			14.8			19.0			8.2	
Peak Hour Factor	0.84	0.84	0.84	0.92	0.92	0.92	0.83	0.83	0.83	0.77	0.77	0.77
4dj. Flow (vph)	13	1498	21	128	1412	28	169	64	173	44	88	16
Shared Lane Traffic (%)												
<ul><li>-ane Group Flow (vph)</li></ul>	13	1519	0	128	1470	0	169	237	0	44	104	0
Enter Blocked Intersection	9	S	9	%	8	%	9	S	%	%	8	Š
ane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
wo way Left Tum Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
urning Speed (mph)	15		6	12		6	15		6	15		6
Number of Detectors	_	2		-	2		_	2		-	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
<ul> <li>eading Detector (ft)</li> </ul>	20	100		70	100		20	100		20	100	
railing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	8	9		70	9		70	9		8	9	
Detector 1 Type	CI+EX	CI+Ex		CI+Ex	CI+Ex		CI+EX	CI+EX		CI+Ex	CI+Ex	
Detector 1 Channel	c	ć		ć	d		c	ć		ć	ć	
Defector   Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Defector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector I Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			46			94	
Detector 2 Size(ft)		9 .			9 ,			9 ;			9 ,	
Detector 2 Type		CI+EX			CI+EX			CI+EX			CI+EX	
Detector 2 Channel		0			0			d			0	
Detector 2 Extend (s)		0.0		ŀ	0.0			0.0			0.0	
urn lype	Perm	•		pm+pt	,		pm+pt	•		Perm		
Protected Phases	c	7			٥		v) c	00		-	4	
Permitted Phases	7			۰ م			φ (	٠		4		
		c		_								

Synchro 7 - Report Page 13

2013 Evictin Neighbo 1 1 10 Proposed West 7: Sheridan Driv

1 Westwood Mixed Use Neighborhood 2013 Existing Conditions - PM Peak Hour	1/27/2015	
Westwood Mixed I	an Drive & Mill Street	

Lane Group         EBI         EBI         EBI         WBL         WBL         NBL		•	†	<u> </u>	<b>/</b>	Ļ	4	•	<b>-</b>	•	۶	<b>→</b>	•
40 40 10 40 110 40 40 40 40 40 40 40 40 83 383 83 383 83 83 83 84 85 80 80 80 80 80 80 80 80 80 80 80 80 80	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
1883 2883 6 10 4.0 1.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5	Switch Phase												
583 283 62 28.3 65 342 342 342 50 500 550 00 450 450 450 450 500 550 00 0.550 00 450 450 450 450 450 450 450 450 4	Minimum Initial (s)	4.0	4.0		1.0	4.0		1.0	4.0		4.0	4.0	
Sign   Sign	Minimum Split (s)	28.3	28.3		6.2	28.3		6.2	34.2		34.2	34.2	
37.0% 37.0% 0.0% 11.1% 48.1% 0.0% 18.5% 51.9% 0.0% 33.3% 33.3% 0.145 44.5 10.7 59.5 19.8 64.8 39.8 39.8 39.8 43.4 43.4 43.5 10.7 59.5 19.8 64.8 39.8 39.8 39.8 11.2 1.2 1.1 1.2 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2	Total Split (s)	20.0	20.0	0.0	15.0	65.0	0.0	25.0	70.0	0.0	42.0	45.0	0.0
445 445	Total Split (%)	37.0%	37.0%	%0.0	11.1%	48.1%	%0:0	18.5%	21.9%	%0.0	33.3%	33.3%	0.0%
(s) 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2	Maximum Green (s)	44.5	44.5		10.7	26.5		19.8	64.8		39.8	39.8	
(s) 12 1.2 1.1 1.1 1.2 2.0 2.0 2.0 2.0 2.0 (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Yellow Time (s)	4.3	4.3		3.2	4.3		3.2	3.2		3.2	3.2	
st(s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	All-Red Time (s)	1.2	1.2		1.1	1.2		2.0	2.0		2.0	2.0	
(s) 5.5 5.5 4.0 4.3 5.5 4.0 5.2 5.2 4.0 5.2 5.2 4.0 6.2 5.2 4.0 6.2 5.2 6.2 6.0 6.2 5.2 6.0 6.2 5.2 6.0 6.2 5.2 6.0 6.2 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0	Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lead   Res   Yes   Yes   Yes   Yes   Yes   Yes   Yes   Xes   Yes   Xes   Yes   Xes   Total Lost Time (s)	5.5	2.5	4.0	4.3	5.5	4.0	5.2	5.2	4.0	5.2	5.2	4.0	
hize? Yes Yes Yes Yes Yes Yes Yes   Yes	Lead/Lag	Lag	Lag		Lead			Lead			Lag	Lag	
Fig. 10   3.0	Lead-Lag Optimize?	Yes	Yes		Yes			Yes			Yes	Yes	
None   None   None   None   Max   Max   Max     10	Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
1,0   1,0	Recall Mode	None	None		None	None		Max	Max		Max	Max	
K (\$)   15.0   15.0   15.0   22.0	Walk Time (s)	7.0	7.0			7.0			7.0		7.0	7.0	
(s)   (4)   (b)   (c)   Flash Dont Walk (s)	15.0	15.0			15.0			22.0		22.0	22.0		
(\$) 446 446 601 589 648 648 398 818 818 818 818 818 818 818 818 818 8	Pedestrian Calls (#/hr)	0	0			0			0		0	0	
ratio 0.33 0.33 0.44 0.48 0.48 0.30 0.40 0.32 0.33 0.33 0.45 0.44 0.48 0.48 0.30 0.24 1.29 0.68 0.95 0.27 0.30 0.13 0.45 0.48 0.48 0.48 0.48 0.30 0.13 0.27 0.30 0.13 0.20 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Act Effct Green (s)	44.6	44.6		60.1	58.9		64.8	64.8		39.8	39.8	
024 1.29 0.68 0.95 0.27 0.30 0.13 462 1764 438 95.5 21.4 225 364 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Actuated g/C Ratio	0.33	0.33		0.45	0.44		0.48	0.48		0.30	0.30	
46.2 176.4 43.8 50.5 21.4 22.5 36.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	v/c Ratio	0.24	1.29		99.0	0.95		0.27	0.30		0.13	0.19	
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Control Delay	46.2	176.4		43.8	50.5		21.4	22.5		36.4	34.2	
46.2 176.4 43.8 50.5 21.4 22.5 36.4  D F D D C C D  Y 175.3 50.0 22.0  mmany  Other	Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
y D F D D C C D y 175.3 \$0.0 22.0  mmany Cher	Total Delay	46.2	176.4		43.8	50.5		21.4	22.5		36.4	34.2	
y 175.3 50.0 22.0	S07	О	ш		۵	۵		ပ	U		۵	ပ	
mmary C C C C C C C C C C C C C C C C C C C	Approach Delay		175.3			20.0			22.0			34.9	
Summary Th: 135	Approach LOS		ш			۵			U			U	
th: 135	Intersection Summary												
Cycle Length: 135	Area Type:	Other											
	Cycle Length: 135												

Actualed Cycle Length: 134.4
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum w Ratio: 129
Inler section Signal Delay: 98.4
Intersection Capacity Ullization 73.7%
Analysis Period (min) 15

Intersection LOS: FICU Level of Service D

Splits and Phases: 7: Sheridan Drive & Mill Street

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Lanes, Volumes, Timings SRF & Associates

2013 Existing Conditions - PM Peak Hour Proposed Westwood Mixed Use Neighborhood 8: Sheridan Drive & North Forest Road

	\	t	*	•			-	-	-	•	٠	
ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
-ane Configurations	*	‡	*	-	<b>₽</b> ₽		r	*	*	*	ŧ	*-
Volume (vph)	135	1227	254	297	1096	40	264	453	80	23	482	197
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	405		170	260		0	180		265	180		200
Storage Lanes	-		-	-		0	-		-	-		_
raper Length (ft)	200		25	200		25	25		25	22		25
ane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1:00	1:00	1.00	1.00	0.95	1.00
±.			0.850		0.995				0.850			0.850
Fit Protected	0.950			0.950		•	0.950	4		0.950	9	
Satd. Flow (prot)	1770	3539	1583	1770	3522	0	1770	1863	1583	1770	3539	1583
-It Permitted	0.087			0.068			0.192	:		0.186		1
Satd. Flow (perm)	162	3539	1583	127	3522	0	358	1863	1583	346	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			130		က				70			207
_ink Speed (mph)		42			42			40			32	
ink Distance (ft)		1668			2219			547			354	
ravel Time (s)		25.3			33.6			9.3			6.9	
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.89	0.89	0.89	0.95	0.95	0.95
Adj. Flow (vph)	144	1305	270	319	1178	43	297	206	90	24	201	207
Shared Lane Traffic (%)												
-ane Group Flow (vph)	144	1305	270	319	1221	0	297	200	90	24	201	207
Enter Blocked Intersection	8	8	8	8	8	8	8	8	8	8	8	2
ane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Iwo way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Furning Speed (mph)	5		6	15		6	15		6	72		6
Number of Detectors	_	2	_	<del>-</del>	2		<del></del>	2	_	<del>-</del>	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	밀	Right	Left	Thr.	Right
eading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
railing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	8	9	8	70	9		70	9	20	8	9	2
Detector 1 Type	CI+EX	CI+Ex	CI+Ex	CI+Ex	CI+EX		CI+EX	CI+Ex	CI+Ex	CI+EX	CI+Ex	CI+EX
Detector 1 Channel	d	d	d	d	d		d	0	d	d	d	d
Detector I Extend (S)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0:0	0.0	0.0	0.0	0.0		0.0	0:0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+EX			CI+EX			CI+EX			CI+EX	
Detector 2 Channel Detector 2 Extend (s)		0.0			0:0			0:0			0.0	
Furn Type	pm+pt		Perm	pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases	-	9		2	2		7	4		က	∞	
Permitted Phases	9		9	0					•	c		
				7			4		4	o		œ

Synchro 7 - Report Page 15

Proposed Westwood Mixed Use Neighborhood 8: Sheridan Drive & North Forest Road

Amene Group         EBI         EBI         WBI         WBI         NBI         NBI         NBI         NBI         NBI         NBI         SBI         SBI <th< th=""><th></th><th></th><th>ì</th><th>-</th><th>•</th><th></th><th>,</th><th>_</th><th>-</th><th></th><th>k.</th><th>•</th><th>,</th></th<>			ì	-	•		,	_	-		k.	•	,
40 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
8.3 27.9 27.9 8.3 27.9 0.0 25.0 40.0 40.0 20.0 35.0 20.0 20.0 20.0 25.0 40.0 40.0 20.0 35.0 20.0 25.0 40.0 40.0 20.0 35.0 20.0 25.0 40.0 40.0 20.0 35.0 35.0 20.0 20.0 20.0 25.0 40.0 40.0 20.0 35.0 35.0 20.0 20.0 20.0 25.0 40.0 40.0 20.0 35.0 35.0 35.0 32.0 34.0 34.9 34.9 34.9 34.9 34.9 34.9 34.9 34.9	Switch Phase												
83 27.9 77.9 83 27.9 21.0 27.2 77.2 83 27.2 23.0 60.0 60.0 50.0 20.0 20.0 20.0 20.0 20.0 20.0 2	Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
300 600 800 200 500 00 250 400 400 250 350 21,4% 42.9% 42.9% 13.7% 0.0% 17.9% 28.6% 14.3% 25.0% 3.2 3.9 3.9 3.2 3.9 3.2 3.2 3.2 3.2 3.2 1.1 1.2 1.2 1.1 1.2 1.1 1.9 1.9 1.1 1.9 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Minimum Split (s)	8.3	27.9	27.9	8.3	27.9		21.0	27.2	27.2	8.3	27.2	27.2
214% 42.9% 42.9% 14.3% 35.7% 00% 17.9% 28.6% 28.6% 14.3% 25.0% 32.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.	Total Split (s)	30.0	0.09	0.09	20.0	20.0	0.0	25.0	40.0	40.0	20.0	35.0	35.0
25.7 54.9 54.9 15.7 44.9 20.7 34.9 34.9 15.7 29.9 31.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3	Total Split (%)	21.4%	42.9%	45.9%	14.3%	35.7%	%0.0	17.9%	28.6%	28.6%	14.3%	25.0%	25.0%
32 3.9 3.9 3.2 3.9 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2	Maximum Green (s)	25.7	54.9	54.9	15.7	44.9		20.7	34.9	34.9	15.7	29.9	29.9
1.1 1.2 1.2 1.1 1.2 1.1 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Yellow Time (s)	3.2	3.9	3.9	3.2	3.9		3.2	3.2	3.2	3.2	3.2	3.2
00 00 00 00 00 00 00 00 00 00 00 00 00	All-Red Time (s)	1.1	1.2	1.2	1.1	1.2		1.	1.9	1.9	1.1	1.9	1.9
1.5   1.5   1.4   1.5   1.4   1.5   1.4   1.5   1.4   1.5   1.4   1.5   1.4   1.5   1.4   1.5   1.4   1.5   1.4   1.5   1.4   1.5   1.4   1.5   1.4   1.5   1.4   1.5	Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lead   Lag   Lag   Lead   Lag   Res   Yes   Y	Total Lost Time (s)	4.3	2.1	2.1	4.3	5.1	4.0	4.3	2.1	2.1	4.3	2.1	5.1
Yes         Yes <td>Lead/Lag</td> <td>Lead</td> <td>Lag</td> <td>Lag</td> <td>Lead</td> <td>Lag</td> <td></td> <td>Lead</td> <td>Lag</td> <td>Lag</td> <td>Lead</td> <td>Lag</td> <td>Lag</td>	Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
3.0   3.0	Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
None   Max   Max   None   Max   None   Non	Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
K(s)   7.0	Recall Mode	None	Мах	Max	None	Max		None	None	None	None	None	None
K(\$)   15.0	Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
15   15   15   15   15   15   15   15	Flash Dont Walk (s)		15.0	15.0		15.0			15.0	15.0		15.0	15.0
(s) 678 55.0 55.0 74.0 58.8 49.9 42.4 42.4 24.9 24.9 (24.9 day) (24.9 42.4 24.9 42.4 42.4 42.4 42.4 42.4	Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Ratio 050 041 041 055 044 037 032 032 024 019 064 090 037 1.22 0.79 087 087 016 0.16 0.17 052 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Act Effct Green (s)	8.79	55.0	55.0	74.0	28.8		49.9	42.4	42.4	32.4	24.9	24.9
0.64 0.90 0.37 1.22 0.79 0.87 0.87 0.16 0.17 0.2 0.79 0.87 0.87 0.16 0.17 0.2 0.70 0.80 0.87 0.18 0.16 0.17 0.17 0.18 0.16 0.17 0.18 0.18 0.18 0.18 0.18 0.18 0.18 0.18	Actuated g/C Ratio	0.50	0.41	0.41	0.55	0.44		0.37	0.32	0.32	0.24	0.19	0.19
35.2 47.5 16.1 162.3 38.6 57.2 60.3 12.3 29.7 60.6 60.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	v/c Ratio	0.64	0.00	0.37	1.22	0.79		0.87	0.87	0.16	0.16	0.77	0.45
00 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Control Delay	35.2	47.5	16.1	162.3	38.6		57.2	60.3	12.3	29.7	9.09	9.0
35.2 47.5 16.1 162.3 38.6 57.2 60.3 12.3 29.7 60.6 by P B F D E E B C E E B C E D E E B C E D D E E E B C E E D D E E E B C E D D E E E B C E E D D D E E E B C E E D D D E E E B C E E D D D E E D D D D D D D D D D D D	Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
y D D B F D E E B C  41.5 64.2 54.5 45  Immany  Other  11.11.11.11.11.12.  Actuated-Uncoordinated Actuated Actu	Total Delay	35.2	47.5	16.1	162.3	38.6		57.2	60.3	12.3	29.7	9.09	9.0
y 41.5 64.2 54.5 45  D E D  E D  Other  Other  140  Charlet-Uncoordinated aloie, 51.5  Salto 1.22  Intersection LOS: D  Intersection 94.09: Intersection HOS: D  Intersection Review of Service F	TOS	O	۵	В	ш	۵		ш	ш	В	ပ	ш	A
D E D  mmany Other 140 Length: 134.4 15 Actuated-Uncoordinated Aatio 12, 25 Jaia Delay: 21, 6 Intersection LOS: D Intersection 40% ICU Level of Service F	Approach Delay		41.5			64.2			54.5			45.1	
	Approach LOS		Ω			ш			Ω			Ω	
	Intersection Summary												
		Other											
	Cycle Length: 140												
	Actuated Cycle Length: 134.	4.											
	Natural Cycle: 115												
94.0%	Control Type: Actuated-Unco	oordinated											
	Maximum v/c Ratio: 1.22												
	Intersection Signal Delay: 51	1.6			프	ersection	LOS: D						
	Intersection Capacity Utilizat	tion 94.0%			೨	U Level o	f Service	ш					

Splits and Phases: 8: Sheridan Drive & North Forest Road

9g **◆**‡

Lanes, Volumes, Timings SRF & Associates

## 2013 Existing Conditions - PM Peak Hour Proposed Westwood Mixed Use Neighborhood 9: Country Club Driveway & North Forest Road

•	SBR		13	1900	1.00			0		0				06.0	14		0	No	Right					1.00	6				ICU Level of Service B
<b>→</b>	SBT	\$	969	1900	1.00	0.998		1859		1859	32	192	3.7	06:0	773		787	8	Left	0	0	16		1.00		Free			U Level o
<b>←</b>	NBT	₩	809	1900	1.00		866.0	1859	866.0	1859	32	310	0.9	0.83	733		764	8	Left	0	0	16		1.00		Free			S
•	NBL		56	1900	1.00			0		0				0.83	31		0	8	Left					1.00	15				
>	EBR		6	1900	1.00			0		0				0.50	18		0	9	Right					1.00	6				
•	EBL	×	7	1900	1.00	0.924	0.979	1685	0.979	1685	30	217	4.9	0.50	14		32	9	Left	12	0	16		1.00	15	Stop		Other	ın 63.1%
	Lane Group	Lane Configurations	Volume (vph)	Ideal Flow (vphpl)	Lane Util. Factor	Frt	Fit Protected	Satd. Flow (prot)	Fit Permitted	Satd. Flow (perm)	Link Speed (mph)	Link Distance (ft)	Travel Time (s)	Peak Hour Factor	Adj. Flow (vph)	Shared Lane Traffic (%)	Lane Group Flow (vph)	Enter Blocked Intersection	Lane Alignment	Median Width(ft)	Link Offset(ft)	Crosswalk Width(ft)	Two way Left Turn Lane	Headway Factor	Turning Speed (mph)	Sign Control	Intersection Summary	Area Type: Ot	Control Type: Unsignalized Intersection Capacity Utilization 63.1% Analysis Period (min) 15

Synchro 7 - Report Page 17 Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 9: Country Club Driveway & North Forest Road

2013 Existing Conditions - PM Peak Hour

Movement   EBI   EBR   NBI   SBT   SBR	EBL EBR NBI NBT SBT SBR  1		•	<i>&gt;</i>	•	<b>←</b>	<b>→</b>	•	
Sip Free Free Free Free Free Free Free Fre	Sup Free Free Free Free Free Free Free Fre	Movement	FBI	FBR	NBI	NBT	SBT	SBR	
1	1	Lane Configurations	Þ			43	43		
Slop Free Free Free 60% 00% 00% 00% 00% 00% 00% 00% 00% 00%	Slop Free Free Free 60% 00% 00% 00% 00% 00% 00% 00% 00% 00%	Volume (veh/h)	7	6	26	809	969	13	
0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0	0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0	Sign Control	Stop			Free	Free		
0 50 050 083 083 0.90 0.90     14 18 31 733 773 14     15 1 18 31 733 773 14     16 0 70	050 050 083 083 090 090	Grade	%0			%0	%0		
14 18 31 733 773 14     16	14 18 31 733 773 14     16	Peak Hour Factor	0.50	0.50	0.83	0.83	06.0	0.90	
ed 0.70 664 ed 0.70 664 lol 1576 781 788 lol 1609 781 788 64 6.2 4.1 85 3.3 2.2 82 95 96 77 88 832 EB1 NB1 SB1 14 31 0 14 141 31 0 14 141 32 1700 0.23 0.04 0.46 (tt) 21 3 0.0 E A 37.8 1.0 0.0 E A 37.8 1.0 0.0 E B A 37.8 1.0 0.0 I S 1.2 1.0 0.0 I S 1.2 1.2 1.0 0.0 I S 1.2 1.2 1.2 1.2 INJ	ed 0.70 664 ed 0.70 781 788 ed 0.70 781 788 1 1609 781 788 7 395 96 7 7 395 96 7 7 395 96 7 1 30 0 14 141 832 1700 0.23 0.046 (f) 21 3 0 0 37.8 1.0 0.0 E A 1.1 1.2 1.2 1.2 1.2 1.3 1.0 1.1 1.0 1.1 1.0 1.1 1.0 1.1 1.0 1.1 1.0 1.1 1.1	Hourly flow rate (vph)	14	18	31	733	773	14	
ed 0.70   None None   None   None   None   Office   Offic	ed 0.70   664   664   664   664   664   664   664   664   664   664   664   664   664   664   664   664   664   665   664   665   664   665   664   665   664   665   664   665   66	Pedestrians							
None None   No	None   None	Lane Width (ft)							
None None   No	None None   No	Walking Speed (ft/s)							
None   None	ed 0.70	Percent Blockage							
None None   No	None   None	Right turn flare (veh)							
ed 0.70 ed 0.70 ld 1609 781 788 6.4 6.2 4.1 3.5 3.3 2.2 82 96 77 395 822 82 96 77 395 822 82 100 14 31 0 14 31 0 14 82 1700 0.23 0.04 0.46 (ft) 2.1 3 0 1 5.1 0 0.0 E A 37.8 1.0 0.0 F B C 3.3 1.2 Injuration 63.1% ICU Level of Service	ed 0.70 ne 1576 781 788 ne 1576 781 788 1 1609 781 788 82 95 96 77 395 832 82 95 96 14 82 77 395 82 77 395 82 76 46 14 82 1700 0.23 0.04 0.46 (f) 37,8 1.0 0.0 8	Median type				None	None		
ed 0.70 664  ne 1576 781 788  l 1669 781 788  6.4 6.2 4.1  8.5 3.3 2.2  8.9 96 96  77 395 96  77 395 96  14 31 0  14 31 0  14 31 0  14 31 0  15 30 0.4 0.46  (tt) 21 3 0  8.5 1.0 0.0  F A A B A B B B B B B B B B B B B B B B	ed 0.70 664  ne 1576 781 788  1609 781 788  6.4 6.2 4.1  6.4 6.2 4.1  8.3 3.3 2.2  8.2 95 96  77 395 832  EB1 NB1 SB1  14 31 0  14 31 0  18 0 14  14 31 0  0.23 0.04 0.46  (ft) 21 3 0  37.8 1.0 0.0  F A  IN O.0  IN O.0  1.2  IN O.0  1.2  IN O.0  1.2  IN O.0  1.3  IN O.0  1.1  IN O.0  1.2  IN O.0  1.2  IN O.0  1.2  IN O.0  1.3  IN O.0  1.1  IN O.0  1.2  IN O.0  1.3  IN O.0  1.1  IN O.0	Median storage veh)							
ed 0.70  ne 1576 781 788  1 1609 781 788  3.5 3.3 2.2  8 2 95 96  7 7 395 832  7 7 395 832  14 0 14  11 832 1700  0.23 0.04 0.46  (ft) 21 3 0  7 37 8 1.0 0.0  E A  17	ed 0,70 ne 1576 781 788 01 1609 781 788 6.4 6.2 4.1 8.2 22 8.2 95 96 77 395 832 77 395 832 14 82 1700 023 0,04 64 (1) 21 3 0 18 37.8 1.0 0.0 E A 1.2 1.2 1.2 1.3 1.0 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1	Upstream signal (ft)				664			
ne 1576 781 788  1 1609 781 788  6 4 6.2 4.1  3.5 3.3 2.2  8 2 95 96  77 395 832  EB1 NB1 SB1  14 31 0  18 30 14  141 832 1700  023 0.04 0.46  (f) 21 3 0  (f) 21 3 0  E	ne 1576 781 788  ol 1669 781 788  6.4 6.2 4.1  3.5 3.3 2.2  8.2 95 96  77 395 832  EBJ NBJ SBJ  14 0 14  18 0 14  18 0 14  18 0 14  18 32 1700  0.3 78 1.0 0.0  E A  37.8 1.0 0.0  F A  17.2 0.0  18 0.0  19 0.0  10 0.0  10 0.0  10 0.0  10 0.0  10 0.0  10 0.0  11 0 0.0  11 0 0.0  11 0 0.0  11 0 0.0  11 0 0.0  11 0 0.0  12 1 0 0.0  13 7.8 1.0 0.0  14 1 0 0.0  15 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	pX, platoon unblocked	0.70						
1609 781 788   6.4 6.2 4.1   788   82	1609 781 788   6.4 6.2 4.1   788   82 2.2   82 96 96   77 395 832   82 77 395 832   82 77 395 832   82 14 14 18 10 0.0   14 14 18 10 0.0   14 14 18 10 0.0   14 14 18 10 0.0   14 14 18 10 0.0   14 14 18 10 0.0   14 14 18 10 0.0   14 14 18 10 0.0   15 14 18 10 0.0   15 14 10	vC, conflicting volume	1576	781	788				
1609 781 788   6.4 6.2 4.1   88   8.2 2   8.2 2   8.2 2   8.2 2   8.2 3.3 2.2   8.2 3.5 3.3 2.2   8.2 3.5 3.3 2.2   8.3 3.2 2   8.3 3.2 2   8.3 3.2   8.3 3.2   8.3 3.2   8.3 3.2   1.4 3.1 0 0.1 4   1.4 1 8 1 0 0.1 4   1.4 1 8 1 0 0.0   1.4 1 8 0.0 4 6   1.4 1 8 0.0 4   1.4 1 8 0.0 4 6   1.4 1 8 0.0 4   1.4 1 8 0.0	1609 781 788 6.4 6.2 4.1 6.4 6.2 4.1 3.5 3.3 2.2 8.83 2.2 8.83 2.2 8.83 2.2 8.83 2.2 8.83 2.2 8.83 2.2 8.83 2.2 8.83 2.2 8.83 2.2 8.83 2.2 8.83 2.2 8.83 2.2 8.84 3.8 1.0 0.0 8.78 1.0 0.0 8.78 1.0 0.0 8.78 1.0 0.0 8.78 1.0 0.0 8.78 1.0 0.0 8.78 1.0 1.0 9. Utilization 63.1% ICU Level of Service 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5	vC1, stage 1 conf vol							
1609 781 788 64 6.2 4.1 3.5 3.3 2.2 82 95 96 77 395 832 77 88 14 81 00 14 141 832 1700 0.23 0.04 0.46 (ft) 21 3 0 37.8 1.0 0.0 E A  Iny Iny It is a contained to a containe	1609 781 788 6.4 6.2 4.1 3.5 3.3 2.2 82 95 96 77 395 832  EB1 NB1 SB1 14 182 1700 023 0.04 64 (ft) 21 3 0 37.8 1.0 0.0 E A 37.8 1.0 0.0 F A 37.8 1.0 0.0 F A 37.8 1.0 1.0	vC2, stage 2 conf vol							
(1) 2.1 (1) (2) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	## 6.4 6.2 4.1  ## 6.2 4.1  ## 6.2 4.1  ## 6.2 96  ## 95 96  ## 95 96  ## 1.3 32  ## 1.4 78  ## 1.4 78  ## 1.4 78  ## 1.4 0  ## 1.4 8.2 1700  ## 0.4 6  ## 1.0 0.0  ## 1.0 0.0  ## 1.0 0.0  ## 1.0 0.0  ## 1.0 0.0  ## 1.0 0.0  ## 1.0 0.0  ## 1.0 0.0  ## 1.0 0.0  ## 1.1  ## 1.1  ## 1.2  ## 1.2  ## 1.3  ##	vCu, unblocked vol	1609	781	788				
3.5 3.3 2.2 82 95 96 77 395 832  EB1 NB1 SB1 32 764 788 141 31 0 18 0 14 141 832 1700 023 0.04 0.46 (1) 2,1 3 0 E A 37,8 1.0 0.0 E B A 37,8 1.0 0.0 E B A 37,8 1.0 0.0 F C A 37,8 1.0 0.0 F C A 37,8 1.0 0.0 F C A 37,8 1.0 0.0 F C A 37,8 1.0 0.0 F C A 37,8 1.0 0.0 F C A 37,8 1.0 0.0 F C A 37,8 1.0 0.0 F C A 37,8 1.0 0.0	3.5 3.3 2.2 82 95 96 77 395 832 77 395 832 77 395 832 764 788 764 788 764 788 764 788 764 788 764 788 764 788 770 0.23 0.04 0.46 760 778 778 7.0 0.0 E A 7.0 0.0 E	tC, single (s)	6.4	6.2	4.1				
3.5 3.3 2.2 8.7 395 996 77 395 832  EB1 NB1 SB1 3.2 764 788 1.4 31 0 14 141 8.2 1700 0.23 0.04 0.46 (tt) 2.1 3 0 8.7 8 1.0 0.0 E A 37.8 1.0 0.0 E A 37.8 1.0 0.0 F A 37.8 1.0 0.0 F A 37.8 1.0 1.0  3.5 3.3 2.2 8.7 3.9 5.96 77 3.95 9.6 82.2 9.6 83.2 764 788 14 31 0 0 14 141 83.2 1700 0.23 0.04 0.46 (f) 21 3 0 37.8 1.0 0.0 E A  17.2 1.2 1.2 1.3 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1	tC, 2 stage (s)								
(t) 21 3 00 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	R2 95 96   96   96   97   97   97   97   97	tF (s)	3.5	3.3	2.2				
(f) 21 395 832  EB1 NB1 SB1 32 764 788 32 764 788 14 31 0 18 0 14 141 832 1700 023 0.04 0.46 (f) 21 3 0 E A 37.8 1.0 0.0 E B A 37.8 1.0 0.0 E C C C C C C C C C C C C C C C C C C C	(f) 37.8 83.2 83.2 83.2 83.2 83.2 83.2 83.2 83	b0 dueue free %	82	92	96				
ane # EB1 NB1 SB1  121 32 764 788  141 31 0  341 41 31 0  351 764 788  141 31 0  141 832 1700  Capacity (23 0.04 0.46  141 832 1700  141 832 1700  141 832 1700  141 832 1700  141 832 1700  151 3 0  151 3 0  152 1 3 0  153 1 3 0  153 1 3 0  154 1 0 0.0  155 1 0 0.0	rate # EB1 NB1 SB1  12 764 788  It 1 31 0  ght 18 1 0  14 31 0  14 31 0  14 31 0  14 31 0  14 82 1700  Capacity 023 0.04 0.46  gh 95th (th) 21 3 0  ay (s) 87.8 1.0 0.0  Cospacity Utilization 63.1% ICU Level of Service	cM capacity (veh/h)	11	395	832				
tal 32 764 788  If 14 31 0  3pt 14 31 0  Capacity 023 0.04 0.46  gith 5th (t) 21 3 0  Gy(s) 87.8 1.0 0.0  Cost of the tensor of	tal 32 764 788  If 14 31 0  3th 14 31 0  14 31 0  14 31 0  14 31 0  14 31 0  14 82 1700  Capacity 0.23 0.04 0.46  Gly (s) 37.8 1.0 0.0  Cospacity Utilization 63.1% ICU Level of Service	Direction, Lane #	EB 1	NB 1	SB 1				
tit 14 31 0  July 14 31 0  18 0 14  18 0 14  19 0 14  19 0 0.3  2apacity (0.23 0.04 0.46  gth 95th (1) 21 3 0  ay (s) 37.8 1.0 0.0  Cos E  Summary  1.2  1.2  1.2  1.2  1.2  1.2  1.2  1.	tit 14 31 0  jht 14 31 0  14 32 1700  Capacity 0.23 0.04 0.46  gth 95th (ft) 21 3 0.0  lay (s) 27.8 1.0 0.0  Cospacity Utilization 63.1% ICU Level of Service	Volume Total	32	764	788				
apht 18 0 14 Capacity 0.23 0.04 0.46 Gly Sth 21 3 0 By (s) 21 3 0 By (s) 37.8 1.0 0.0 CS E A E A E E E A E E E A E E E A E	apht 18 0 14  Capacity 0.23 0.04 0.46  Glay (s) 2.1 0 0.06  Iay (s) 2.1 0 0.0  E A A  Pelay (s) 2.8 1.0 0.0  C.O.S E  1.2  C.O.S E  1.3  1.4  1.5  C.O.S E  1.5  C.O.S E  1.5  C.O.S E  1.7  C.O.S E  1.8  C.O.S E  1.9  C.O.S E  1.0  C.O.S E  1.1  C.O.S E  1.2  C.O.S E  1.3  C.O.S E  1.4  C.O.S E  1.5  C.O.S E  1.7  C.O.S E  1.7  C.O.S E  1.7  C.O.S E  1.7  C.O.S E  1.8  C.O.S E  1.9  C.O.S E	Volume Left	14	31	0				
141   832   1700	Capacity 0.3 0.04 0.46  0.3 0.04 0.46  0.3 0.05 0.04  0.46  0.46  0.5 E A  1.0 0.0  0.0	Volume Right	9	0	14				
Capacity         0.23         0.04         0.46           gift 95th (ft)         2.1         3         0           lay (s)         3.78         1.0         0.0           Los (s)         3.78         1.0         0.0           Los (s)         E         1.0         0.0           Los (s)         E         1.2         1.2           Los (s)         1.2         1.2         1.2           Los (min)         1.5         1.2         1.2           Local (min)         1.5         1.2         1.2	Capacity 0.23 0.04 0.46 gih 5th (t) 21 3 0 lay (s) 27.8 1.0 0.0 COS E 1.0 0.0 LOS E 1.0 0.0 A Summary 1.2 Bay	cSH	141	832	1700				
gth 95th (th) 21 3 0 ay (s) 37.8 1.0 0.0 Delay (s) 37.8 1.0 0.0 COS E 1.0 0.0 I Summary  1.2  1.2  1.2  1.2  1.3  1.3  1.3  1.3	gth 95th (ft) 21 3 0 lay (s) 37.8 1.0 0.0 Los E 1.0 0.0 Los E 1.0 0.0 Los E 1.1 0.0 Los S E 1.1 0.0 Los S E 1.1 0.0 Los I Service  School Compactly Utilization 63.1% ICU Level of Service	Volume to Capacity	0.23	0.04	0.46				
lay (s) 37.8 1.0 0.0  Pelay (s) 37.8 1.0 0.0  LOS E A  1.2	lay (s) 37.8 1.0 0.0  E A E A  COS E E A  1.0 0.0  1.0 0.0  1.2	Queue Length 95th (ft)	21	3	0				
Delay (s) 37.8 1.0 0.0  Summary 1.2  All Against 1.2  The control Utilization 63.1% ICU Level of Service 15 or 15	E A   A	Control Delay (s)	37.8	1.0	0.0				
37.8 1.0 0.0  E  1.2  I.2  I.2  ICU Level of Service 15	37.8 1.0 0.0  E  1.2  Utilization 63.1% ICU Level of Service	Lane LOS	ш	A					
r 1.2 1.2 ICU Level of Service 15.1% ICU Level o	r 1.2 Uilization 63.1% ICU Level of Service 15	Approach Delay (s)	37.8	1.0	0.0				
1.2 Utilization 63.1% ICU Level of Service 15	n 1.2 Uilization 63.1% ICU Level of Service 15	Approach LOS	ш						
1.2 Utilization 63.1% ICU Level of Service 15	1.2 Utilization 63.1% ICU Level of Service 15	Intersection Summary							
Utilization 63.1% ICU Level of Service 15	Utilization 63.1% ICU Level of Service 15	Average Delay			1.2				
15	15	Intersection Capacity Utilization	_		63.1%	⊇	J Level of	Service	В
		Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

2013 Existing Conditions - PM Peak Hour Proposed Westwood Mixed Use Neighborhood 10: Sheridan Drive & Fenwick Road

##		<b>†</b>	<u> </u>	<b>&gt;</b>	ţ	•	•	
tions	e Group	EBT	EBR	WBL	WBT	NBL	NBR	
(f) 1599 13 5 1552 (f) 1900 1900 1900 1900 (f) 0 175 0 1900 1900 1900 1900 1900 (f) 0 25 25 25 25 25 25 25 25 25 25 25 25 25	e Configurations	<b>₽</b> ₽		r	ŧ	>		
(f) 1900 1900 1900 1900 1900 1900 1900 190	nme (vph)	1599	13	22	1552	13	17	
(ff) 0 75 1 25 25 1 0 75 1 0 0.95 1 0.959 1 0.950 1 0.	al Flow (vphpl)	1900	1900	1900	1900	1900	1900	
1) 0 0 1 1) 0,95 0,95 1,00 0,95 1) 3536 0,97 0,900 1) 3536 0 1770 3539 1) 45 0 1770 3539 1) 635 0 1770 3539 10 0,900 10	rage Length (ft)		0	75		0	0	
t) 0.95 0.95 1.00 0.95  or 0.950 0.95 1.00 0.950  or 0.950 0.950 0.950  or 0.9	rage Lanes		0	-		-	0	
nr 0.95 0.95 1.00 0.95  1) 3536 0 1770 3539  m) 3536 0 1770 3539  m) 45 7 7 8339  in 635 0 1770 3539  in 645 0 1770 3539  in 645 0 1770 3539  in 645 0 1770 3539  in 647 0 1770 1770 3539  in 647 0 1770 1770 3739  in 7 12 0 1770 1770  in 16 16 16 16 16 16 16 16 16 16 16 16 16	er Length (ft)		25	22		22	25	
(1) 3836 0 0,950 (1) 3836 (1) 2839 (1) 3836 (1) 2839 (1)	e Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00	
(mph) 3536 0,950 (3539 (		0.999				0.922		
(m) 3536 0 1770 3539 (m) 3536 0 1770 3539 (m) 455 0 1770 3539 (m) 455 0 1770 3539 (m) 455 0 1770 3539 (m) 635 0 170 170 170 170 170 170 170 170 170 1	Protected			0.950		0.979		
m) 3536 0 0,950 h) 45 45 46 10 635 16688 loor 0,87 0,87 0,94 0,94 loor 0,87 0,87 0,94 0,94 loor 1838 15 5 1651 w (vph) 1853 0 5 1651 h(th) 16 16 0 0 h(th) 16 170 1,00 h(th) 16 170 1,00 loor 1,00 1,00 1,00 loor 1,00 1,00 1,00 loor 1,00 loor 1,00 1,00 1,00 loor 1,00 loor 1,00 1,00 1,00 loor 1,00 l	d. Flow (prot)	3536	0	1770	3539	1681	0	
m) 3536 0 1770 3539 (h) 45 168 (or 0.87) 0.87 0.94 0.94 (or 0.87) 0.87 0.94 0.94 (or 0.87) 0.87 0.94 0.94 (or 0.87) 0.87 0.94 0.94 (or 0.87) 0.87 0.94 0.94 (or 0.87) 0.87 0.94 0.94 (or 0.87) 0.87 0.94 0.94 (or 0.87) 0.87 0.94 (or 0.87) 0.87 0.94 (or 0.87) 0.87 0.94 (or 0.87) 0.87 0.94 (or 0.87) 0.87 0.97 (or 0.87) 0.87 (or 0.87) 0.97	Permitted			0.950		0.979		
(mph) 45 45 468    (not 0.87 0.87 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94	d. Flow (perm)	3536	0	1770	3539	1681	0	
1) 635 1668 for 0,87 0,94 0,94 for 0,87 0,94 0,94 for 0,87 0,94 0,94 for 1838 15 5 1651 w (vph) 1853 0 5 1651 hiersection No No No No No No No No No No No No No	(Speed (mph)	42			45	30		
or 996 25.3  or 0,87 0,87 0,94 0,94  or 0,87 0,87 0,94  or 0,87 0,87 0,94  or 0,87 0,87 0,94  or 0,87 0,87 0,94  or 0,97 0,97 0,97  or 0,97  or 0,97	Distance (ft)	635			1668	278		
or 087 087 094 094  affic (%) 1838 15 5 1651  w (ph) 1853 0 5 1651  nlersection No No No No No No No No No No No No No	vel Time (s)	9.6			25.3	6.3		
1838   15   1651	k Hour Factor	0.87	0.87	0.94	0.94	0.75	0.75	
1853 0 5 1651 No No No No No Left Right Left Left 12 12 0 0 16 16 16 Yes Yes Yes 1.00 1.00 1.00 1.00 Free Tree	Flow (vph)	1838	12	2	1651	17	23	
1853 0 5 1651 No No No No No Left Left Left 12 12 0 0 0 0 16 14 15 765 15 765 16 765 17 16 16 17 16 18 16 18 16 19 15 19 15 10 100 100 100 100 100 100 100 100 100 100	red Lane Traffic (%)							
Left Right Left Left 12	e Group Flow (vph)	1853	0	2	1651	40	0	
Left Right Left Left 12 0 0 16 16 16 Yes Yes Yes 1.00 1.00 1.00 1.00 Free Free	er Blocked Intersection	N <sub>o</sub>	N <sub>o</sub>	9 N	9 N	8	9	
12 12 12 12 12 12 14 15 15 15 15 15 15 15 15 15 15 15 15 15	e Alignment	Left	Right	Left	Left	Left	Right	
16 16 16 16 16 16 16 16 16 16 16 16 16 1	lian Width(ft)	12			12	12		
16 16 16 Yes Yes Yes 1.00 1.00 1.00 1.00 Free 9 15 Free Other	c Offset(ft)	0			0	0		
Yes Yes Yes 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	sswalk Width(ft)	16			16	16		
1.00 1.00 1.00 1.00 1.00 Free 75 Free Other 100 54.6%	way Left Turn Lane	Yes			Yes			
9 15 Free Other Idea S4.6%	Idway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Free Free Other Itee	ning Speed (mph)		6	15		15	6	
Other Ition 54.6%	Control	Free			Free	Stop		
Other Ition 54.6%	rsection Summary							
ition 54.6%		her						
	ntrol Type: Unsignalized rsection Capacity Utilization	94.6% ר			⊇	ICU Level of Service A	Service	A
Analysis Period (min) 15	ılysis Period (min) 15							

Proposed Westwood Mixed Use Neighborhood 10: Sheridan Drive & Fenwick Road

2013 Existing Conditions - PM Peak Hour

Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	₩		-	‡	>		
Volume (veh/h)	1599	13	2	1552	13	17	
Sign Control	Free			Free	Stop		
Grade	%0			%0	%0		
Peak Hour Factor	0.87	0.87	0.94	0.94	0.75	0.75	
Hourly flow rate (vph)	1838	15	2	1651	17	23	
Pedestrians							
-ane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	TWLTL			TWLTL			
Median storage veh)	2			2			
Upstream signal (ft)	635						
oX, platoon unblocked			0.83		0.83	0.83	
vC, conflicting volume			1853		2682	976	
vC1, stage 1 conf vol					1845		
vC2, stage 2 conf vol					836		
vCu, unblocked vol			1612		2615	491	
C, single (s)			4.1		8.9	6.9	
.C, 2 stage (s)					5.8		
F (s)			2.2		3.5	3.3	
p0 queue free %			86		82	95	
cM capacity (veh/h)			331		115	433	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	
Volume Total	1225	628	2	826	826	40	
Volume Left	0	0	2	0	0	17	
Volume Right	0	15	0	0	0	23	
SST	1700	1700	331	1700	1700	1%	
Volume to Capacity	0.72	0.37	0.02	0.49	0.49	0.20	
Queue Length 95th (ft)	0	0	-	0	0	20	
Control Delay (s)	0.0	0.0	16.0	0.0	0.0	28.0	
Lane LOS			U			Q	
Approach Delay (s)	0.0		0.1			28.0	
Approach LOS						Q	
ntersection Summary							
Average Delay			0.3				
ntersection Capacity Utilization	tion		54.6%	⊇	ICU Level of Service	f Service	A

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

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2013 Existing Conditions - PM Peak Hour Proposed Westwood Mixed Use Neighborhood 11: Sheridan Drive & Frankhauser Road

	1	1	Į.	✓	٠	•	
ane Group	EBL	EBT	WBT	WBR	SBL	SBR	
ane Configurations	*	*	<b>₩</b>		K	*	
Volume (vph)	34	1560	1524	41	52	4	
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	105			0	0	20	
Storage Lanes	_			0	-	<del>-</del>	
aper Length (ft)	92			25	25	25	
ane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Ŧ.			966.0			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3525	0	1770	1583	
Flt Permitted	0.120				0.950		
Satd. Flow (perm)	224	3539	3525	0	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			2			37	
Link Speed (mph)		45	45		30		
Link Distance (ft)		1014	635		614		
ravel Time (s)		15.4	9.6		14.0		
Peak Hour Factor	06:0	06:0	0.91	0.91	0.82	0.82	
Adj. Flow (vph)	89	1733	1675	45	63	46	
Shared Lane Traffic (%)							
-ane Group Flow (vph)	88	1733	1720	0	63	46	
Enter Blocked Intersection	8	S	8	8	8	8	
ane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
ink Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
wo way Left Turn Lane		Yes	Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Furning Speed (mph)	15			6	12	6	
Number of Detectors	-	2	2		_	_	
Detector Template	Left	Thru	Thru		Left	Right	
<ul> <li>eading Detector (ft)</li> </ul>	20	100	100		70	20	
railing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	70	9	9		20	20	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		9	9				
Detector 2 Type		CI+EX	CI+EX				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Furn Type	Perm					Perm	
Protected Phases		2	9		4		
Permitted Phases	2					4	
Detector Phase	2	2	9		4	4	

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## Proposed Westwood Mixed Use Neighbo 11: Sheridan Drive & Frankhauser Road

I 2013 Existing Conditions - PM Peak Hour	1/27/2015
ghborhood	pad

•	SBR		1.0	31.1	35.0	29.2%	29.9	3.2	1.9	0.0	5.1			3.0	None	7.0	19.0	0	9.6	90:0	0.30	26.2	0.0	26.2	ပ											LOS: A	ICU Level of Service B
٠	SBL		1.0	31.1	32.0	29.5%	29.9	3.2	1.9	0.0	5.1			3.0	None	7.0	19.0	0	9.6	80.0	0.44	61.5	0.0	61.5	ш	46.0	D					f Yellow				Intersection LOS: A	U Level o
4	WBR				0.0	%0:0				0.0	4.0																					T, Start o				<u>=</u>	೨
ţ	WBT		4.0	40.0	82.0	%8.0/	80.2	3.9	6.0	0.0	4.8			3.0	C-Max	7.0	15.0	0	103.6	98.0	0.56	3.9	0.0	3.9	A	3.9	A					Ind 6:WB					
†	EBT		4.0	40.0	85.0	%8:0/	80.2	3.9	6.0	0.0	4.8			3.0	C-Max	7.0	15.0	0	103.6	98.0	0.57	3.2	0.0	3.2	A	3.2	A					2:EBTL a					
1	EBL		4.0	40.0	82.0	70.8%	80.2	3.9	6.0	0.0	4.8			3.0	C-Max	7.0	15.0	0	103.6	0.86	0.20	3.3	0.0	3.3	A				Other		0	ed to phase		ordinated		4.8	ation 55.0%
	Lane Group	Switch Phase	Minimum Initial (s)	Minimum Split (s)	Total Split (s)	Total Split (%)	Maximum Green (s)	Yellow Time (s)	All-Red Time (s)	Lost Time Adjust (s)	Total Lost Time (s)	Lead/Lag	Lead-Lag Optimize?	Vehicle Extension (s)	Recall Mode	Walk Time (s)	Flash Dont Walk (s)	Pedestrian Calls (#/hr)	Act Effct Green (s)	Actuated g/C Ratio	v/c Ratio	Control Delay	Queue Delay	Total Delay	SOT	Approach Delay	Approach LOS	Intersection Summary	Area Type:	Cycle Length: 120	Actuated Cycle Length: 120	Offset: 55 (46%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow	Natural Cycle: 75	Control Type: Actuated-Coordinated	Maximum v/c Ratio: 0.57	Intersection Signal Delay: 4.8	Intersection Capacity Utilization 55.0%

Spilts and Phases: 11: Sheridan Drive & Frankhauser Road

<mark>4 %</mark> †

Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2013 Existing Conditions - PM Peak Hour 12: Sheridan Drive & I-290 NB

	١	Ť	•	•		,	_	-	_	k.	•	,
ane Groun	FR	FRT	FRR	WBI	WRT	WRR	NBI	NRT	NRR	SB	SRT	SRR
ane Configurations	-	WWW	Š	7	AAT		*	4	*	700	5	5
Calling (mp)	- 770	1000	c	c	1007	701	- 000	•	- 700	c	c	C
doal Flow (what)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
car i row (vpripi)	2 5	2	3	200	2	2	000	3	200	2	200	3
Storage Lengin (ii)	9 -		o c	0 0		0 0	7		120	0 0		0
aner I enoth (#)	105		75.	75		25	25		75	75.		25
ane Util. Factor	1.00	0.91	100	1.00	0.91	0.91	0.95	0.91	0.95	1.00	1.00	1.00
t					0.945			0.894	0.850			
Flt Protected	0.950						0.950	0.985				
Satd. Flow (prot)	1770	5085	0	0	4806	0	1681	1493	1504	0	0	0
-It Permitted	690.0						0.950	0.985				
Satd. Flow (perm)	129	5085	0	0	4806	0	1681	1493	1504	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					181			8	105			
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		610			193			830			423	
ravel Time (s)		9.2			2.9			18.9			9.6	
Peak Hour Factor	0.99	0.99	0.99	0.92	0.92	0.92	0.80	0.80	0.80	0.92	0.92	0.92
Adj. Flow (vph)	349	1240	0	0	1115	637	386	0	482	0	0	0
Shared Lane Traffic (%)							22%		45%			
-ane Group Flow (vph)	349	1240	0	0	1752	0	301	287	280	0	0	0
Enter Blocked Intersection	8	9	8	9	N <sub>o</sub>	N <sub>o</sub>	9	9 N	No	8	N <sub>o</sub>	8
ane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12	,		12	,		12	,		12	,
ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
wo way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
urning Speed (mph)	15		6	15		6	15		6	15		6
Number of Detectors	_	2			2		-	2	-			
Detector Template	Left	Thru			Thru		Left	Thru	Right			
<ul> <li>eading Detector (ft)</li> </ul>	20	100			100		20	100	20			
railing Detector (ft)	0	0			0		0	0	0			
Detector 1 Position(ft)	0	0			0		0	0	0			
Detector 1 Size(ft)	20	9			9		20	9	20			
Detector 1 Type	CI+Ex	CI+Ex			CI+Ex		CI+Ex	CI+Ex	CI+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		9			9			9				
Detector 2 Type		CI+Ex			CI+EX			CI+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
urn Type	pm+pt					J	custom		Perm			
Protected Phases	-	9			2		3	3				
Permitted Phases	9						~		c			
							,		2			

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Proposed Westwood Mixed Use Neighborhood 2013 Existing Conditions - PM Peak Hour 12: Sheridan Drive & I-290 NB

12. Grendan Dilve & 1-230 NB	5			l				l	l	l		ı
	1	†	<i>&gt;</i>	<b>/</b>	ţ	4	•	<b>←</b>	•	۶	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	3.0	4.0			4.0		0.9	0.9	0.9			
Minimum Split (s)	7.3	33.9			27.8		29.0	29.0	29.0			
Total Split (s)	21.0	0.06	0.0	0.0	0.69	0.0	30.0	30.0	30.0	0.0	0.0	0.0
Total Split (%)	17.5%	75.0%	%0.0	%0.0	27.5%	%0:0	25.0%	25.0%	25.0%	%0.0	%0:0	0.0%
Maximum Green (s)	16.7	84.1			63.2		24.8	24.8	24.8			
Yellow Time (s)	3.2	3.9			3.9		3.2	3.2	3.2			
All-Red Time (s)	1.1	2.0			1.9		2.0	2.0	2.0			
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.3	2.9	4.0	4.0	2.8	4.0	5.2	5.2	5.2	4.0	4.0	4.0
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehide Extension (s)	2.0	3.0			3.0		2.0	2.0	2.0			
Recall Mode	None	С-Мах			С-Мах		None	None	None			
Walk Time (s)		7.0			7.0							
Flash Dont Walk (s)		21.0			15.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)	86.9	85.3			63.2		23.6	23.6	23.6			
Actuated g/C Ratio	0.72	0.71			0.53		0.20	0.20	0.20			
v/c Ratio	1.03	0.34			0.67		0.91	0.78	0.73			
Control Delay	87.5	7.7			16.9		78.5	46.7	40.1			
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0			
Total Delay	87.5	7.7			16.9		78.5	46.7	40.1			
FOS	ш.	⋖			В		ш	۵	۵			
Approach Delay		25.2			16.9			55.6				
Approach LOS		U			В			ш				
Intersection Summary												
Area Type:	Other											
Cycle Length: 120												
Actualed Cycle Length: 120 Offset: 59 (49%), Referenced to phase 2:WBT and 6:EBTL, Start of Yellow	20 ced to phase	2:WBT a	nd 6:EBTI	-, Start o	f Yellow							
Natural Cycle: 90												
Control Type: Actuated-Coordinated	oordinated											
Maximum v/c Ratio: 1.03												
Intersection Signal Delay: 28 0	28.0			2	Intercection I OS: C	0.001						

Intersection LOS: C	ICU Level of Service D		
Intersection Signal Delay: 28.0	Intersection Capacity Utilization 77.4%	Analysis Period (min) 15	

°3

20 s → e<sub>0</sub> 80 s

Lanes, Volumes, Timings SRF & Associates

2013 Existing Conditions - PM Peak Hour Proposed Westwood Mixed Use Neighborhood 13: Sheridan Drive & Harlem Road

	Ì	•	•		-	-	
ane Group	EBT	EBR	WBL	WBT	NBL	NBR	
ane Configurations	*	R.	*	*	*	K K	
Volume (vph)	922	589	378	957	260	652	
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0	215		140	0	
Storage Lanes		-	-		2	2	
aper Length (ft)		230	100		100	25	
ane Util. Factor	0.95	1:00	0.97	0.95	0.97	0.88	
		0.850	0			0.850	
Fit Protected	CCL	1	0.950	00.10	0.950	FOEC	
Satd. Flow (prot)	3539	1583	3433	3539	3433	1817	
Satd Flow (nerm)	3539	1583	3433	3530	3433	787	
Sight Turn on Red		8	8		3	Yes	
Satd. Flow (RTOR)		2				161	
Link Speed (mph)	45			45	35		
-ink Distance (ft)	314			610	338		
ravel Time (s)	4.8			9.2	9.9		
Peak Hour Factor	0.98	0.98	0.95	0.95	0.85	0.85	
Adj. Flow (vph)	941	601	398	1007	306	167	
Shared Lane Traffic (%)							
ane Group Flow (vph)	941	601	388	1007	306	767	
Inter Blocked Intersection	و ا	S :	و ا	و ا	<u>و</u>	. No	
_ane Alignment	Left	Kight	<del>E</del>	Lett	Fe#	Right	
ink Offset(ft)	<u>v</u> 0			t 0	t 0		
Crosswalk Width(ft)	16			16	16		
wo way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
urning Speed (mph)		6	15		12	6	
Number of Detectors	2	_	<del></del>	2	<del></del>	<b>-</b> -	
Detector Template		Right	Left	Thr.	left:	Right	
eading Detector (ft)	100	70	20	100	20	20	
Frailing Detector (ft)	0	0	0	0	0	0 (	
Defector   Position(it)	0 4	0 6	O 6	0 4	0 2	0 0	
Defector 1 Size(ii)	0 1	CI+Fv	CI+F	O TE	CI+Fv	OL-FV	
Detector 1 Channel	5	5	5	5	5	5	
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)	94			94			
Detector 2 Size(ft)	9			9			
Detector 2 Type	CI+EX			CI+EX			
Detector 2 Channel	c			d			
Jetector 2 Extend (s)	0:0		+0.0	0.0			
Furn Type	C	bm+ov	Fig.	1.0	c	bm+ov 1	
Permitted Phases	7	° C	-	7 -	n	- c	
Committee in the committee of the commit		4					

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Proposed Westwood Mixed Use Neighborhood 13: Sheridan Drive & Harlem Road

2013 Existing Conditions - PM Peak Hour

(s)   200   60   3.0     (s)   30.5   11.2   7.3     66.0   25.0   29.0     65.0%   20.8%   24.2%     73   3.0   20.8     84   3.2   3.2     95   3.3   3.2     10   2.0   1.1     11   2.0   1.1     12   3.3   3.2     14   2.0   1.1     2.0   1.1     2.0   1.1     2.0   2.0     2.0   2.0     2.0   2.0     3.0   3.0     4.3   3.0     4.5   2.0     4.5   2.0     4.5   2.0     4.5   2.0     4.5   2.0     4.5   2.0     4.5   2.0     4.5   2.0     4.5   2.0     4.5   2.0     4.5   2.0     4.5   3.0     4.5   3.0     4.5   4.5     4.5   4.5     4.5   4.5     5.5   5.5     5.5   5.2     6.5   6.5     6.5   6.5     7.5   7.5     8.6   7.0     8.6   7.0     8.6   7.0     8.6   7.0     9.0     9.0   0.0     18.6   10.	6.0 11.2 95.0 25.0 792% 20.8% 19.8 3.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	3.0 24.2% 24.7 3.2 3.2 1.1 0.0 4.3 1.4 7 8.5 2.0 None 44.3 0.37 0.68	
(\$) 200 60 3.0     (\$) 30.5 11.2 7.3     (\$) 30.5 11.2 7.3     (\$) 66.0 25.0 29.0     (\$) 1.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3		3.0 24.2% 24.2% 24.7 24.7 1.1 0.0 4.3 2.0 None 44.3 0.37 0.68	
(s) 80.5 11.2 7.3 een (s) 60.0 25.0 29.0 29.0 25.0 8.2 24.2% 7 25.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0		24.2% 24.2% 24.7 3.2 1.1 0.0 4.3 Lead Yes 2.0 None 0.37 0.068	
sen (s) 55.0% 20.8% 24.2% 7 3.9 (s) 60.5 19.8 24.2% 7 3.9 (s) 60.5 19.8 24.7 (s) 60.5 19.8 24.7 (s) 60.5 10.8 (s) 60.5 10.0 (s) 60.0 (s) 6		24.2% 24.2% 3.2 1.1 0.0 4.3 Lead Yes 2.0 None 44.3 0.37 0.68	
een (s) 6.05% 20.8% 24.2% 77 (s) 3.9 3.2 3.2 (s) 3.9 3.2 3.2 3.2 (s) 3.9 3.2 3.2 3.2 (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0		242% 24.7 34.7 3.2 1.1 0.0 4.3 1.0 None 44.3 0.37 0.68	
sen (s) 601.5 19.8 24.7 19.8 (s) 3.9 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2		24.7 1.1 0.0 0.0 0.0 1.4 2.0 None 44.3 0.37 0.68	
s) 39 3.2 3.2 (s) 1.6 2.0 1.1 (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.		3.2 1.1 0.0 4.3 Yes 2.0 None 0.37 0.37	
(\$) 1.6 2.0 1.1 ust (\$) 1.6 2.0 1.1 ust (\$) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	2 , 00	1.1 0.0 4.3 Lead Yes 2.0 None 44.3 0.37 0.68	
net (s) 0.0 0.0 0.0  ne (s) 5.5 5.2 4.3  lag 1.2ad 1.2	2 700	0.0 4.3 Lead Yes 2.0 None 44.3 0.37 0.68	
he (s) 5.5 5.2 4.3 he (s) Lag Lag Lag Lag Lag Lag Lag Lag Lag Lag		43 Lead Ves 20 None None 443 037 0.68	
Lag   Lead     Sinnize?   Yes   Yes     Sion (s)   2.0   2.0     C-Max   None   None     7.0   None     7.0   None     18.0   None     19.2   None     19.3   None     19.3   None     19.3   None     19.4   None     19.4   None     19.5   None     19.6   None     19.7   None     19.8		Lead Yes 20 None 44.3 0.37 0.68	
sion (s) 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0		Yes 2.0 None 44.3 0.37 0.68	
sion (s) 2.0 2.0 2.0 2.0 2.0 4.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2		2.0 None 44.3 0.37 0.68	
C-Max   None   None		None 44.3 0.37 0.68	
alk (s) 180 alk (s) 180 n (s) 65.9 86.5 24.0 Ratio 0.55 0.72 0.20 Ratio 0.55 0.72 0.20 0.48 0.53 0.58 0.0 0.0 0.0 18.6 10.0 42.5 0.0 0.0 0.0 18.6 10.0 42.5 B A D S B A D S B A D S B A D S B A D S B A D S B A D S B B A D S B B A D S B B A D S B B A D S B B A D S B B A D S B B A D S B B A D S B B A D S B B A D S B B A D S B B A D S B B A D S B B A D S B B A D S B B B B D S B B B B D S B B B B D S B B B B D S B B B B D S B B B B D S B B B B D S B B B B D S B B B B D S B B B B B D S B B B B B B B B B B B B B B B B B B B		44.3 0.37 0.68 27.4	
alk (s) 18.0  alls (#hr) 0  an (s) 6.59 86.5 24.0  Ratio 0.55 0.72 0.20  Ratio 0.48 0.53 0.58  186 10.0 42.5  0.0 0.0 0.0  18 A D  Ay 15.2  B A D  ay 15.2  Ay 15.2  B A D  by Chert 1.20  et ength: 120		44.3 0.37 0.68 27.4	
0 5.9 86.5 24.0 148 0.53 0.28 8.6 10.0 42.5 0.0 0.0 0.0 8.6 10.0 42.5 B A D 5.2 B A D 6.2 8.3 8.4 8.5 8.5 8.6 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0		44.3 0.37 0.68 27.4	
Ratio 65.9 86.5 24.0 Ratio 0.55 0.72 0.20 0.48 0.53 0.58 0.0 0.0 0.0 0.0 0.0 0.0 18.6 10.0 42.5 0.0 0.0 0.0 18.6 10.0 42.5 B A D ay 15.2 S B A D S B A D AS D AS D AS D AS D AS D AS D AS D		44.3 0.37 0.68 27.4	
Ratio 0.55 0.72 0.20 0.48 0.53 0.58 0.0 0.0 0.42.5 0.0 0.0 0.0 0.0 18.6 10.0 42.5 18.6 10.0 42.5 3 0.58 3 H A D 3 H S A 15.2 B A D 3 H S A 15.2 A 15.2 A 15.2 A 3 B 4 Collher 1.20 1.20 1.20 1.20 8.3, Referenced to phase 2:EBWB, Start of Yeles		0.37 0.68 27.4	
0.48 0.53 0.58 186 10.0 42.5 0.0 0.0 0.0 186 10.0 42.5 18 A D 3		0.68 27.4	
Auto Delay 18.6 10.0 42.5 all Delay 0.0 0.0 0.0 all Delay 18.6 10.0 42.5 S		27.4	
Eve Delay         0.0         0.0           Sel Delay         186         10.0         42.5           Sel Delay         18         A         D           Norach Delay         15.2         B         A         D           Frection Summary         B         B         A         D         A         A         J         A         J         A	3.4 59.3	00	
18.6   10.0   42.5     2		0.0	
B A D	3.6 59.3	27.4	
roach Delay 15.2 roach Delay 15.2 B B Type: Other Iel Length: 120 Lated Cycle Length: 120 Lated Cycle Length: 120 Lated Cycle Conduction of the Cycle Conduction of the Cycle Conduction of the Cycle Conduction of the Cycle Conduction of the Cycle Conduction of the Cycle Cycle Conduction of the Cycle		U	
roach LOS B rsection Summary a Type: De Length: 120 rade Cycle length: 120 rade Cycle length: 120 rade Cycle sergers Referenced to phase 2:EBWB, Start of Yel	36		
rsection Summary a Type: Je Length: 120 Lated Cycle Length: 120 Letted Cycle Referenced to phase 2:EBWB, Start of Yel	B D		
a Type:  Other  Le Length: 120  Laded Cycle Length: 120  Lette (30%), Referenced to phase 2:EBWB, Start of Yel			
le Length: 120 Jated Cycle Length: 120 Bet 36 (G9X) Referenced to phase 2:EBWB, Start of Yel Irral Cycle: 60			
uated Cycle Length: 120 set: 36 (30%), Referenced to phase 2:EBWB, Start of Yel ural Cycle: 60			
set: 36 (30%), Referenced to phase 2:EBWB, Start of Yel ural Cycle: 60			
ural Cycle: 60	low		
22.22.62			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
ntersection Signal Delay: 20.7	Intersection LOS: C	n LOS: C	
ntersection Capacity Utilization 56.5%	ICU Level	ICU Level of Service B	
Analysis Period (min) 15			
Shilts and Phases: 13: Sheridan Drive & Harlem Road			
્ર •ેય			୍ଷ •⁄∕

Lanes, Volumes, Timings SRF & Associates

2013 Existing Conditions - PM Peak Hour Proposed Westwood Mixed Use Neighborhood 14: I-290 SB & Harlem Road

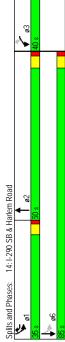
	•	/	-	_	k	•	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations	r	*	<b>₩</b>		r	*	
Volume (vph)	228	338	539	1	462	470	
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	0		0	330		
Storage Lanes	-	-		0	-		
Taper Length (ft)	22	25		25	75		
Lane Util. Factor	1:00	1.00	0.95	0.95	1.00	0.95	
ii.		0.850	0.997				
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1770	1583	3529	0	1770	3539	
-It Permitted	0.950				0.188		
Satd. Flow (perm)	1770	1583	3529	0	320	3539	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		82	2				
Link Speed (mph)	30		32			32	
ink Distance (ft)	333		250			456	
ravel Time (s)	7.6		4.9			8.9	
Peak Hour Factor	0.69	0.69	0.77	0.77	0.92	0.92	
Adi. Flow (vph)	330	490	700	14	205	511	
Shared Lane Traffic (%)							
ane Group Flow (vph)	330	490	714	0	205	511	
Enter Blocked Intersection	2	2	8	N <sub>o</sub>	8	No	
-ane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	12	,	12	,		12	
ink Offset(ft)	0		0			0	
Crosswalk Width(ft)	16		16			16	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Furning Speed (mph)	15	6		6	15		
Number of Detectors	_	_	2		_	2	
Detector Template	Left	Right	Thru		Left	Thru	
<ul> <li>eading Detector (ft)</li> </ul>	20	70	100		70	100	
railing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	70	50	9		50	9	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)			94			94	
Detector 2 Size(ft)			9			9	
Detector 2 Type			CI+Ex			CI+Ex	
Detector 2 Channel Detector 2 Extend (s)			0.0			0.0	
Furn Type		vo+ma			pm+pt		
Protected Phases	c	-	2		-	9	
Permitted Phases		က			9		

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Neighborho d Mixed Use Proposed Westwoo 14: I-290 SB & Har

wood Mixed Use Neighborhood	2013 Existing Conditions - PM Peak Hour
Harlem Road	1/2//2015

	<b>&gt;</b>	1	-	•	۶	<b>→</b>	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Switch Phase							
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	22.0	9.2	30.6		9.5	21.0	
Total Split (s)	40.0	35.0	20.0	0.0	32.0	85.0	
Total Split (%)	32.0%	28.0%	40.0%	%0:0	28.0%	%0.89	
Maximum Green (s)	35.2	30.7	45.0		30.7	80.0	
Yellow Time (s)	3.2	3.2	3.6		3.2	3.6	
All-Red Time (s)	1.6	<del>[</del>	1.4		<u></u>	1.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.8	4.3	2.0	4.0	4.3	5.0	
Lead/Lag		Lead	Lag		Lead		
Lead-Lag Optimize?		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	Min		None	None	
Walk Time (s)			10.0				
Flash Dont Walk (s)			15.0				
Pedestrian Calls (#/hr)			0				
Act Effct Green (s)	22.4	51.0	25.4		54.2	53.4	
Actuated g/C Ratio	0.26	0.59	0.29		0.63	0.62	
v/c Ratio	0.72	0.51	69.0		0.83	0.23	
Control Delay	40.9	10.8	32.2		30.1	8.0	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay	40.9	10.8	32.2		30.1	8.0	
SOT	D	В	ပ		ပ	A	
Approach Delay	22.9		32.2			18.9	
Approach LOS	S		S			В	
Intersection Summary							
Area Type:	Other						
Cycle Length: 125							
Actuated Cycle Length: 86.3							
Natural Cycle: 75							
Control Type: Actuated-Uncoordinated	oordinated						
Maximum v/c Ratio: 0.83							
Intersection Signal Delay: 23.9	3.9			드	Intersection LOS: C	LOS: C	
Intersection Capacity Utilization 65.2%	tion 65.2%			2	:U Level o	ICU Level of Service C	
Alialysis reliou (illili) 13							



Lanes, Volumes, Timings SRF & Associates

## **A5**

## Level of Service Calculations: Background Conditions

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - AM Peak Hour 1: Maple Road & Millersport Hwy SB

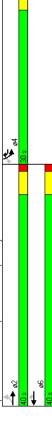
	^	†	ļ	1	٠	*	
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	*	<b>‡</b>	‡	*-	*	*	
Volume (vph)	18	559	111	302	26	83	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	120			150	0	0	
Storage Lanes	-			-	<del>-</del>	-	
Taper Length (ft)	32			100	25	25	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	
표				0.850		0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583	
Flt Permitted	0.345				0.950		
Satd. Flow (perm)	643	3539	3539	1583	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)						106	
Link Speed (mph)		45	45		30		
Link Distance (fl)		222	654		281		
Travel Time (s)		8.4	6.6		6.4		
Peak Hour Factor	0.91	0.91	96:0	96.0	0.78	0.78	
Adj. Flow (vph)	70	614	800	318	33	106	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	20	614	809	318	33	106	
Enter Blocked Intersection	S N	8	8	8	S	% 8	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane			Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			6	15	6	
Number of Detectors	-	2	2	-	-	-	
Detector Template	Left	Thru	Thru	Right	Left	Right	
Leading Detector (ft)	70	100	100	20	70	70	
Trailing Detector (ft)	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	
Detector 1 Size(ft)	8	9	9	70	70	70	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0:0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		9	9				
Detector 2 Type		CI+Ex	CI+EX				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Perm			vo+mq		Perm	
Protected Phases	c	2	9	4 ,	4		
Permitted Phases	7	4		9		4	
	•	•	7		•		

Synchro 7 - Report Page 1

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - AM Peak Hour 1: Maple Road & Millersport Hwy SB

Land Group         EBI         WBT         WBR         SBL         SBR           Swildt Phase         Mrinmun Intials (s)         4.0         4.0         1.0         1.0           Minmun Intials (s)         4.0         4.0         4.0         1.0         1.0           Minmun Intials (s)         9.1         9.1         9.1         6.2         6.2         6.2           Total Spill (%)         57.1%         57.1%         47.9%         42.9%         42.9%         42.9%           Maximun Green (s)         3.4         3.4         3.4         2.5         42.9%         42.9%           All Red Time (s)         3.4         3.4         2.9         5.2         2.2         2.2           All Red Time (s)         1.2         1.2         1.4         1.4         1.4           All Red Time (s)         1.0         0.0 <th></th> <th>^</th> <th>†</th> <th>Ļ</th> <th>1</th> <th>٠</th> <th>•</th> <th></th>		^	†	Ļ	1	٠	•	
sse hills (s) 40 40 40 10 10 10 10 10 10 10 10 10 10 10 10 10	Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	
hilal (\$) 4.0 4.0 4.0 1.0 5plit (\$) 9,1 9,1 9,1 6,2 5plit (\$) 9,1 9,1 9,1 6,2 5plit (\$) 9,1 9,1 9,1 6,2 5plit (\$) 4.0 40.0 40.0 30.0 30.0 34.9 34.9 34.9 34.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32	Switch Phase							
5plit (s)   9,1   9,1   9,1   6,2     (c)   (c)   400   400   300     (c)   57,1%   57,1%   57,1%   42,9%     (c)   62   34,9   34,9   34,9   35,9     (c)   12   12   12   14     (c)   12   12   12   14     (c)   12   12   14     (c)   12   12   14     (c)   13   30   30   30     (c)   14   5.1   5.1   4.6     (c)   15   5.1   5.1   4.6     (c)   16   5.2   5.2   5.2     (c)   17   5.2   5.3     (c)   18   5.2   5.3     (c)   18   5.3   5.2     (c)   18   5.3   5.3     (c)   18   5.3   5.3     (c)   18   5.3   5.3     (c)   18   5.3   5.3     (c)   18   5.	Minimum Initial (s)	4.0	4.0	4.0	1.0	1.0	1.0	
(\$) 40.0 40.0 30.0 (\$) (\$) (\$) 40.0 40.0 30.0 (\$) (\$) 57.1% 57.1% 57.1% 429% (\$) 8.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3	Minimum Split (s)	9.1	9.1	9.1	6.2	6.2	6.2	
(%) 57.1% 57.1% 57.1% 42.9% Green (\$) 34.9 34.9 34.9 34.9 35.9 25.4 me (\$) 1.2 1.2 1.2 1.4 ships (\$) 5.1 5.1 5.1 5.1 5.1 5.1 5.1 5.1 5.1 5.1	Total Split (s)	40.0	40.0		30.0	30.0	30.0	
Green (s) 34.9 34.9 25.4 ne (s) 1.2 1.4 ne (s) 1.2 1.4 ne (s) 1.2 1.2 1.4 ne (s) 1.2 1.2 1.4 ne (s) 1.2 1.2 1.2 1.4 ne (s) 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2	Total Split (%)	57.1%	57.1%		45.9%	45.9%	42.9%	
re (s) 3.9 3.9 3.9 3.9 3.2 ne (s) 1.2 1.2 1.2 1.4 dedgrist(s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Maximum Green (s)	34.9	34.9		25.4	25.4	25.4	
Adjust (s) 1.2 1.2 1.4 1.4 1.1 1.4 1.4 1.4 1.4 1.4 1.4 1.4	Yellow Time (s)	3.9	3.9		3.2	3.2	3.2	
Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 Time (s) 5.1 5.1 5.1 4.6 Dplimize? 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	All-Red Time (s)	1.2	1.2		1.4	1.4	1.4	
Time (s) 5.1 5.1 4.6  polimize?  tension (s) 3.0 3.0 3.0 3.0 3.0 4.0  tension (s) 6.28 6.28 52.8 52.8 70.0  I/C Ratio 0.04 0.23 0.30 0.20  lay 0.0 0.0 0.0 0.0 0.0  I/C Ratio 0.04 0.23 0.30 0.20  lay 0.0 0.0 0.0 0.0 0.0  I/C Ratio 0.04 0.23 0.30 8.2 0.30  I/C Ratio 0.04 0.23 0.30 8.2 0.30  I/C Ratio 0.04 0.23 0.30 8.2 0.30  I/C Ratio 0.06 0.0 0.0 0.0  I/C Ratio 0.06 0.0 0.0  I/C Ratio 0.06 0.0 0.0 0.0  I/C Ratio 0.00 0.0 0.0 0.0  I/C Ratio 0.00 0.0 0.0 0.0  I/C Ratio 0.00 0.0 0.0 0.0  I/C Ratio 0.00 0.0 0.0 0.0  I/C Ratio 0.00 0.0 0.0 0.0  I/C Ratio 0.00 0.0 0.0 0.0  I/C Ratio 0.00 0.0 0.0 0.0  I/C Ratio 0.00 0.0 0.0 0.0 0.0  I/C Ratio 0.00 0.0 0.0 0.0 0.0 0.0  I/C Ratio 0.00 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	
Polimize?  Spiral State (C-Min C-Min C-Min None Irens (S) 52.8 52.8 52.8 700.0 7.00 7.00 7.00 7.00 7.00 7.00 7	Total Lost Time (s)	5.1	2.1		4.6	4.6	4.6	
Delimize?  Service (s) 3.0 3.0 3.0 3.0 3.0 stores (s) 2.8 3.0 3.0 3.0 3.0 stores (s) 2.8 5.2 8 5.2 8 5.2 8 70.0 stores (s) 5.2 8 5.2 8 5.2 8 70.0 5.0 3.0 5.2 8 5.2 8 5.2 8 70.0 5.0 3.0 5.2 8 5.2 8 70.0 5.0 3.0 5.2 8 70.0 5.0 3.0 5.2 8 70.0 5.0 3.0 5.2 8 70.0 5.0 3.0 5.2 8 70.0 5.0 3.0 5.2 8 70.0 5.0 3.0 5.2 8 70.0 5.0 3.0 5.0 5.0 3.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5	Lead/Lag							
Vehicle Extension (s)         3.0         3.0         3.0         3.0         3.0         3.0         3.0         Nehicle Extension (s)         3.0         3.0         3.0         3.0         None         None <t< td=""><td>Lead-Lag Optimize?</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	Lead-Lag Optimize?							
Recall Mode         C-Min	Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	
Act Effct Green (s) 5.28 5.28 5.28 7.00 7.5 7.5 Actualed G/C Ratio 0.75 0.75 0.75 1.00 0.11 Actualed G/C Ratio 0.75 0.75 0.75 0.75 1.00 Control Delay 0.00 0.00 0.00 0.00 0.00 Control Delay 0.00 0.00 0.00 0.00 0.00 Total Delay 0.00 0.00 0.00 0.00 0.00 Total Delay 0.00 0.00 0.00 0.00 0.00 Approach Delay 0.00 0.00 0.00 0.00 Approach Delay 0.00 0.00 0.00 0.00 Approach Delay 0.00 0.00 0.00 0.00 Actualed Cycle: 40 0.00 Actualed Cycle: 40 0.00 Actualed Cycle: 50 0.	Recall Mode	C-Min	C-Min	C-Min	None	None	None	
Actuated g/C Ratio 0.75 0.75 0.75 1.00 0.11 0.11 0.11 0.12 0.04 0.23 0.20 0.18 0.40 0.00 0.04 0.23 0.20 0.18 0.40 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Act Effct Green (s)	52.8	52.8	52.8	70.0	7.5	7.5	
vic Ratio         0.04         0.23         0.30         0.20         0.18         0.40           Control Delay         29         3.0         5.2         0.3         29.7         11.4           Courto Delay         29         3.0         0.0         0.0         0.0         0.0           Total Delay         29         3.0         5.2         0.3         29.7         11.4           LOS         A         A         A         A         C         B           Approach LOS         A         A         A         B         B           Approach LOS         A call and Cycle Length: 70         Actualed Cycle Length: 70         Actualed Cycle Length: 70         Actualed Cycle Length: 70           Actualed Cycle Length: 70         Actualed Cycle Length: 70         Actualed Cycle Length: 70         Actualed Cycle Length: 70         Actualed Cycle Length: 70           Actualed Cycle Length: 70         Actualed Cycle Length: 70         Actualed Cycle Length: 70         Act	Actuated g/C Ratio	0.75	0.75	0.75	1.00	0.11	0.11	
Control Delay 2.9 3.0 5.2 0.3 29.7 11.4  Queue Delay 0.0 0.0 0.0 0.0  Queue Delay 0.0 0.0 0.0 0.0  A A A C B B  Approach LOS  Ap	v/c Ratio	0.04	0.23	0.30	0.20	0.18	0.40	
Queue Delay         0.0         0.0         0.0         0.0           Total Delay         29         3.0         5.2         0.3         29.7         11.4           A A A A A A A C B         A A A B         C B         A C B         A B         B           Approach LOS         A A B B         B         B         B         B           Approach LOS         A B B B         B         B         B           Area Type:         Cycle Length: 70         Cycle Length: 70         Cycle Length: 70         Cycle Length: 70           Actualed Cycle Length: 70         Actualed Cycle Length: 70         Control Lose: A Cycle Length: 70         Con	Control Delay	2.9	3.0	5.2	0.3	29.7	11.4	
Total Delay   2.9 3.0 5.2 0.3 29.7 11.4     LOS	Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
LOS	Total Delay	2.9	3.0	5.2	0.3	29.7	11.4	
Approach Delay 3.0 3.8 15.8  Approach LOS  A A A B B  Intersection Summary  Area Type:  Area Type:  Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green  Maximum Wc Ratio: 0.40  Intersection Signal Delay: 4.4  Analysis Period (min) 15  Intersection 2 (min) 15  Intersection 2 (min) 15  Intersection 2 (min) 15  Intersection 2 (min) 15  Intersection 2 (min) 15  Intersection 2 (min) 15  Intersection 2 (min) 15  Intersection 2 (min) 15	SOT	A	⋖	⋖	V	ပ	В	
Approach LOS A A B B  Intersection Summary Area Type: Cycle Length: 70 Actualed Cycle Length: 70 Actualed Cycle Length: 70 Control Type: Actualed-Coordinated Maximum vic Ratico 0.40 Intersection Signal Delay: 4.4 Analysis Period (min) 15 Intersection LOS: A Analysis Period (min) 15	Approach Delay		3.0	3.8		15.8		
Area Type:  Other  Cycle Length: 70  Actualed Cycle Length: 70  Actualed Cycle Length: 70  Control Type: Actualed Coordinated Maximum vic Ratic 0.40  Intersection Signal Delay: 4.4  Analysis Period (min) 15  Area Type:  Area Type:  Actualed Cycle Length: 70  Actualed Cycle Length: 70  Intersection LOS: A  Intersection LOS: A  Analysis Period (min) 15	Approach LOS		∢	⋖		В		
Area Type: Cycle Length: 70 Actualed Cycle Length: 70 Actualed Cycle Length: 70 Actualed Cycle Length: 70 Control Type: Actualed-Coordinated Maximum We Ratio 0.40 Intersection Signal Delay: 4.4 Analysis Period (min) 15 Actualed Cycle Length: 4.4 Analysis Period (min) 15	Intersection Summary							
Cycle Length: 70 Actuated Cycle Length: 70 Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green Offset: 40 Control Type: Actuated-Coordinated Maximum vic Ratic 0.40 Intersection Signal Delay: 4.4 Intersection Capacity Utilization 34.7% Analysis Period (min) 15		ther						
Actualed Cycle Length: 70 Offset S (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green Natural Cycle; 40 Control Type: Actualed-Coordinated Maximum We Ratio 0.40 Intersection Signal Delay: 4.4 Intersection Capacity Utilization 34.7% Analysis Period (min) 15	Cycle Length: 70							
Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green Natural Cycle: 40 Control Type: Actuated-Coordinated Maximum vic Ratio: 0.40 Intersection Signal Delay: 4.4 Intersection Capacity Utilization 34.7% ICU Level of Service A Analysis Period (min) 15	Actuated Cycle Length: 70							
Natural Cycle: 4D Control Type: Actuated-Coordinated Maximum vic Ratio: 0.40 Intersection Signal Delay: 4.4 Intersection Capacity Utilization 34.7% Intersection Capacity Utilization 34.7% ICU Level of Service A Analysis Period (min) 15	Offset: 5 (7%), Referenced to	phase 2:	EBTL an	16:WBT,	Start of G	ireen		
oordinated : 4.4 Ization 34.7%	Natural Cycle: 40							
: 4.4 Ization 34.7%	Control Type: Actuated-Coor	dinated						
: 4.4 ization 34.7%	Maximum v/c Ratio: 0.40							
ization 34.7%	Intersection Signal Delay: 4.4	_			드	tersection	LOS: A	
Analysis Period (min) 15	Intersection Capacity Utilizati	on 34.7%			೨	U Level o	Service A	
	Analysis Period (min) 15							

Splits and Phases: 1: Maple Road & Millersport Hwy SB



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - AM Peak Hour 2: Maple Road & Millersport Hwy NB

Lane Group Lane Configurations Volume (vph)	EBI	FBT	EBR	WBL	WRT	000	ā	Tan	NBR	SBI	SRT	CRD
Lane Configurations Volume (vph)					-0.	WBR	INDL	IDNI		1	5	ากก
Volume (vph)	*	‡			₩.		F	2,				
/	42	542	0	0	935	52	147	. ~	463	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0,		0	0		0
Storage Lanes	- :		0	>		0	- :		0	0		0
Taper Length (ft) Lane Util. Factor	0 0 0	0.95	1.00	1.00	0.95	25	1.00	1.00	1.00	1.00	1.00	1.05
Ft					0.992			0.850				
Fit Protected	0.950						0.950					
Satd. Flow (prot)	1770	3539	0	0	3511	0	1770	1583	0	0	0	0
Flt Permitted	0.214						0.950					
Satd. Flow (perm)	399	3539	0	0	3511	0	1770	1583	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					=			204				
Link Speed (mph)		45			45			9			30	
Link Distance (ft)		654			1770			319			263	
Travel Time (s)		6.6			26.8			7.3			0.9	
Peak Hour Factor	0.85	0.85	0.85	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	49	638	0	0	1005	26	158	-	498	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	638	0	0	1061	0	158	499	0	0	0	0
Enter Blocked Intersection	8	8	8	%	8	8	8	9	%	8	8	8
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		6	15		6	12		6	15		6
Number of Detectors	_	2			2		-	2				
Detector Template	Left	Thru			Thru		Left	Thr.				
Leading Detector (ft)	20	100			100		20	100				
Trailing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0 8	0 .				
Detector 1 Size(ft)	R .	ب ا ا			ا م		20 20	ه د				
Detector 1 Type	CI+EX	CI+EX			CI+EX		CI+EX	CI+EX				
Detector 1 Channel	ć	c			c		ć	c				
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Detay (s)	0.0	0.0			0.0		0.0	S 5				
Detector 2 Position(it)		7,			44			*				
Detector 2 Stelly		5			2 5			2				
Detector 2 Channel		Ž E			¥ E			Y				
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Perm						Perm					
Protected Phases		7			9			∞				
Permitted Phases	2						∞					
Detector Phase	2	2			9		∞	∞				

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Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - AM Peak Hour 2: Maple Road & Millersport Hwy NB

	4	†	<u> </u>	<b>&gt;</b>	ţ	4	•	<b>—</b>	•	۶	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	1.0	1.0			4.0		1.0	1.0				
Minimum Split (s)	6.1	6.1			9.1		6.2	6.2				
Total Split (s)	40.0	40.0	0.0	0.0	40.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0
Total Split (%)	57.1%	57.1%	%0:0	%0:0	57.1%	%0.0	45.9%	45.9%	%0:0	%0.0	%0:0	%0.0
Maximum Green (s)	34.9	34.9			34.9		25.4	25.4				
Yellow Time (s)	3.9	3.9			3.9		3.2	3.2				
All-Red Time (s)	1.2	1.2			1.2		1.4	1.4				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	2.1	2.1	4.0	4.0	5.1	4.0	4.6	4.6	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Recall Mode	C-Min	C-Min			C-Min		None	None				
Act Effct Green (s)	40.3	40.3			40.3		20.0	20.0				
Actuated g/C Ratio	0.58	0.58			0.58		0.29	0.29				
v/c Ratio	0.21	0.31			0.52		0.31	0.84				
Control Delay	13.4	9.5			11.3		19.6	25.9				
Queue Delay	0.0	0.0			0.0		0.0	0.0				
Total Delay	13.4	9.5			11.3		19.6	25.9				
SOT	В	⋖			В		В	S				
Approach Delay		8.6			11.3			24.4				
Approach LOS		A			В			ပ				
Intersection Summary												
	Other											
Cycle Length: 70												
Actuated Cycle Length: 70												
Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	phase 2:	EBTL and	6:WBT, 3	Start of G	ireen							
Natural Cycle: 45												
Control Type: Actuated-Coordinated	linated											
Maximum v/c Ratio: 0.84												
Intersection Signal Delay: 14.4	4			드	Intersection LOS: B	LOS: B						
Intersection Capacity Utilization 71.7%	on 71.7%			2	ICU Level of Service C	f Service	ပ					
Analysis Period (min) 15												

Splits and Phases: 2: Maple Road & Millersport Hwy NB



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - AM Peak Hour 3: Maple Road & Maplemere Road

	^	<b>†</b>	<u>/</u>	<b>/</b>	ļ	/	•	<b>—</b>	•	۶	<b>→</b>	*
ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
ane Configurations	*	<b>₽</b>		r	<b>₽</b>			4			4	
/olume (vph)	21	870	46	12	876	28	43	. 8	16	34	0	16
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	70		0	0		0	0		0
Storage Lanes	-		0	-		0	0		0	0		0
raper Length (ft)	20		22	20		25	25		25	22		25
ane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1:00	1.00	1.00	1.00	1.00
Ţ.		0.993			966.0			0.965			0.957	
It Protected	0.950			0.950				0.967			196.0	
Satd. Flow (prot)	1770	3514	0	1770	3525	0	0	1738	0	0	1724	0
It Permitted	0.226			0.240				0.739			0.733	
Satd. Flow (perm)	421	3514	0	447	3525	0	0	1328	0	0	1307	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		=			9			22			28	
ink Speed (mph)		45			45			9			30	
ink Distance (ft)		1770			1106			378			402	
ravel Time (s)		26.8			16.8			9.8			9.1	
Peak Hour Factor	0.86	0.86	0.86	0.91	0.91	0.91	09:0	09:0	09.0	0.58	0.58	0.58
Adj. Flow (vph)	24	1012	23	13	1075	31	72	2	27	26	0	78
Shared Lane Traffic (%)												
-ane Group Flow (vph)	24	1065	0	13	1106	0	0	104	0	0	87	0
Inter Blocked Intersection	No No	No No	%	%	%	%	%	8	No No	9	No No	2
ane Alignment	Left	Left	Right	Left	Left	Right	Left	Fet	Right	Fet	Left	Right
Median Width(ft)		12			12			0			0	
ink Offset(ft)		0 ;			0 ;			0 ;			0 ;	
Crosswalk Width(#)		J6			J.			J6			16	
I wo way Left I um Lane	00	Yes	6		Yes	0	6	6		9		
readway Factor	9:	00.1	8.9	00.1	00.1	00.1	00.1	9.1	00.1	9:	00.1	3.
urning Speed (mph)	<u>ر</u>	•	6	J2	•	6	72	•	5	72	•	5
Number of Detectors		7			7			7			7	
Detector Lemplate	Eet Cet	Ihru		Lett	nu Pun		E E	Ihru		E E	Ihru	
-eading Detector (ft)	<b>∂</b>	90		07	90		07	3		۹۹	90	
railing Detector (rt)	0	0		0 0	0 0		0	0		0	0	
Detector 1 Position(it)	) (	0 4		0 0	0 4		2 0	0 4		2 0	0 4	
Detector 1 Size(ii)	CI+Fx	CI+F		CI+Fx	C +E		CI+Fx	CI+Fx o		CI+Fx	O HE	
Detector 1 Channel	5			5	5		Š	5		5	5	
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+Ex			CI+EX			CI+EX			CI+Ex	
Detector 2 Channel Detector 2 Extend (s)		0.0			0.0			0:0			0.0	
run Type	Perm			Perm			Perm			Perm		
Protected Phases		2			9			∞			4	
Permitted Phases	2			9			∞			4		
				,			٠	•				

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Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - AM Peak Hour 3: Maple Road & Maplemere Road

	1	†	<u>/</u>	<b>&gt;</b>	ţ	4	•	<b>←</b>	•	۶	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	0.6	0.6		0.6	0.6		27.0	27.0		27.0	27.0	
Total Split (s)	46.0	46.0	0.0	46.0	46.0	0.0	29.0	29.0	0.0	29.0	29.0	0.0
Total Split (%)	61.3%	61.3%	%0.0	61.3%	61.3%	%0.0	38.7%	38.7%	%0.0	38.7%	38.7%	%0.0
Maximum Green (s)	41.0	41.0		41.0	41.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	5.0		2.0	5.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	2.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Μij	Μin		None	None		None	None	
Walk Time (s)							7.0	7.0		7.0	7.0	
Flash Dont Walk (s)							15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)							0	0		0	0	
Act Effct Green (s)	25.9	25.9		25.9	25.9			8.3			8.2	
Actuated g/C Ratio	0.64	0.64		0.64	0.64			0.21			0.20	
v/c Ratio	0.09	0.47		0.05	0.49			0.35			0.30	
Control Delay	0.9	6.4		5.4	9.9			15.7			14.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	0.9	6.4		5.4	9.9			15.7			14.1	
SOT	A	⋖		A	A			В			В	
Approach Delay		6.4			9.9			15.7			14.1	
Approach LOS		A			∢			В			В	
Intersection Summary												
Area Type:	Other											
Cycle Length: 75												
Actuated Cycle Length: 40.3	ε.											
Natural Cycle: 55												
Control Type: Actuated-Uncoordinated	coordinated											
Maximum v/c Ratio: 0.49												
Intersection Signal Delay: 7.2	7.2			드	Intersection LOS: A	LOS: A						
Intersection Capacity Utilization 40.4%	ation 40.4%:			2	CU Level of Service A	f Service	⋖					
Analysis Period (min) 15												

Splits and Phases: 3: Maple Road & Maplemere Road



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - AM Peak Hour 4: Maple Road & Donna Lea Blvd

FBT FBR WBL WBT NBL   NBL	ane Group  The Configurations  Volume (Aph)  Storage Length (ft)  Storage Length (ft)  Taper Length (ft)  Tane Util. Factor  Configurations  Taper Length (ft)  Tane Util. Factor  Configurations  The Protected  Storage Length (ft)  The Configurations  The Configurati			WBI			
100   1900   1	2			70.0	WBT	NBL	NBR
915 6 13 993 1900 1900 1900 1900 0 50 10 0 10 0 10 0 10 0 10 0 10 0 10				r	ŧ	>	
1900 1900 1900 1900 1900 1900 1900 1900	0.09			13	666	24	61
0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95				0061	1900	1900	1900
0.95 0.95 1.00 0.95 0.999 0.999 0.999 0.990 0.99	0.9			20		0	0
25 25 25 0.95 0.95 0.950 0.959 0.959 0.950 0.950 3534 0.950 3539 45 1106 1106 1106 1108 0.97 0.87 0.87 0.87 0.87 0.87 0.87 0.87 0.8	0.9			_		<del>-</del>	0
0.95 0.95 1.00 0.95 0.950 0.95	0.9			22		25	25
0.999 3836 0.950 3838 0.950 3838 1.0950 3838 1.08 1.08 1.08 1.08 1.08 1.00 1.00 1.0	0.9			1.00	0.95	1.00	1.00
3536 0 950 3536 0 1770 3539 3536 0 1770 3539 1108 170 3539 1118 8 15 1141 116 0 15 1141 11 0 10 10 10 10 0 0 0 10 0 0 0 0 10 0 0 0 0 0 10 0 0 0 0 0 10 0 0 0 0 0 0 10 0 0 0 0 0 0 10 0 0 0 0 0 0 0 10 0 0 0 0 0 0 0 10 0 0 0 0 0 0 0 0 10 0 0 0 0 0 0 0 0 0 0 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	35	66				0.904	
3536 0 1770 3539 3536 0 1770 3539 45 45 45 1106 1708 3539 0.79 0.79 0.87 0.87 1158 8 15 1141 1166 0 15 1141 12 0 15 116 12 0 0 15 1141 12 0 15 1141 12 0 0 15 1141 14	35		0	.950		986.0	
3536 0 1770 3539 45 45 1928 1106 1928 16.8 29.2 0.79 0.79 0.87 0.87 1116 0 15 1141 116 0 15 1141 12 0 0 0 16 16 16 12 170 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	3	36		07.1		1660	0
3536 0 1770 3539 45 1106 16.8 29.2 16.8 29.2 17.9 0.79 0.87 0.87 17.8 1141 17.6 0 15 1141 18.0 No No No No No No No No No No No No No			0	.950		986.0	
45 45 45 1106 1008 1008 1008 1008 1008 1008 1008	35	36		07.1		1660	0
1106 1108 1168 0.79 0.79 0.79 0.79 0.79 0.79 0.87 0.87 1116 0 0 0 116 12 0 0 0 16 16 17 18 18 18 18 18 18 19 18 19 18 18 18 18 18 18 18 18 18 18 18 18 18		45			45	30	
16.8 29.2 1158 8 15 1141 1166 0 15 1141 116 10 10 10 10 1.00 1 6 765 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	11	90			1928	322	
0.79 0.79 0.87 0.87 1141 1158 8 15 1141 1166 0 15 1141 12 0 No No No No No No No No No No No No No	=				29.2	8.1	
1158 8 15 1141 1166 0 15 1141 No No No No No Left Right Left Left 12 0 0 16 16 16 Yes Yes Yes 1.00 1.00 1.00 Free Gither	0			0.87	0.87	97.0	0.76
1166 0 15 1141 No No No No Left Right Left Left 12 0 0 16 7 68 1.00 1.00 1.00 1.00 Free Free Gibbs 228				12	1141	32	80
1166 0 15 1141 No No No No No No No No No No No No No N							
No No No No No No No No No No No No No N	-		0	15	1141	112	0
Left Right Left Left 12 0 0 16 16 76s 76s 1.00 1.00 1.00 1.00 Free Free Free			9	2	2	8	No
12 12 12 12 12 16 16 16 16 16 100 1.00 1.00 1.00 1.00	_		ht	Left	Left	Left	Right
0 0 0 16 Yes Yes Yes 1.00 1.00 1.00 1.00 1.00 Other Item 1.00 1.00 Item Item Item Item Item 39.2%					12	12	
16 Yes Yes 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0		0			0	0	
Yes Yes Yes 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0		16			16	16	
1.00 1.00 1.00 1.00 Free 75 Free Other Itom 39.2%		es			Yes		
9 15 Free Other Itom 39.2%				1.00	1.00	1.00	1.00
Free Free Other Into 39.2%	oh)		6	15		15	6
Other Ition 39.2%		ee			Free	Stop	
Other Ition 39.2%	iary						
ition 39.2%							
ization 39.2%	ignalized						
	city Utilization 39	.2%				Level of	Service A

Lanes, Volumes, Timings Synchro 7 - Report SRF & Associates Page 7

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - AM Peak Hour 4: Maple Road & Donna Lea Blvd

																																							A	
•	NBR		61			9.76	8									0.87	583			237	6.9		3.3	88	699	NB 1	112	32	08	471	0.24	23	15.0	U	15.0	ပ			Service	
•	NBL	>	24	Stop	%0	0.76	32									0.87	1763	1162	601	1585	8.9	2.8	3.5	88	269	WB 3	571	0	0	1700	0.34	0	0.0						ICU Level of Service	
ţ	WBT	ŧ	993	Free	%0	0.87	1141						TWLTL	2												WB 2	571	0	0	1700	0.34	0	0.0						<u></u>	
<b>&gt;</b>	WBL	r	13			0.87	15									0.87	1166			903	4.1		2.2	86	929	WB 1	15	12	0	655	0.02	2	10.6	В	0.1			0.8	39.2%	12
<u>/</u>	EBR		9			0.79	∞																			EB2	394	0	∞	1700	0.23	0	0.0							
†	EBT	₩	915	Free	%0	0.79	1158						TWLTL	2	1106											EB 1	772	0	0	1700	0.45	0	0.0		0:0				zation	
	Movement	Lane Configurations	Volume (veh/h)	Sign Control	Grade	Peak Hour Factor	Hourly flow rate (vph)	Pedestrians	Lane Width (ft)	Walking Speed (ft/s)	Percent Blockage	Right turn flare (veh)	Median type	Median storage veh)	Upstream signal (ft)	pX, platoon unblocked	vC, conflicting volume	vC1, stage 1 conf vol	vC2, stage 2 conf vol	vCu, unblocked vol	tC, single (s)	tC, 2 stage (s)	tF (s)	p0 queue free %	cM capacity (veh/h)	Direction, Lane #	Volume Total	Volume Left	Volume Right	cSH	Volume to Capacity	Queue Length 95th (ft)	Control Delay (s)	Lane LOS	Approach Delay (s)	Approach LOS	Intersection Summary	Average Delay	Intersection Capacity Utilization	Analysis Period (min)

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - AM Peak Hour 5: Maple Road & Audubon Golf Club

	4	t	>	<b>&gt;</b>	ţ	<b>√</b>	•	<b>←</b>	•	۶	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	y-	₩		<u>,                                    </u>	₽₽			4			4	
Volume (vph)	-	896	4	-	1013	7	13	0	က	<del>-</del>	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	20		0	0		0	0		0
Storage Lanes	-		0	-		0	0		0	0		0
Taper Length (ft)	22		22	25		25	25		25	22		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999						976.0				
Fit Protected	0.950			0.950				096.0			0.950	
Satd. Flow (prot)	1770	3536	0	1770	3539	0	0	1745	0	0	1770	0
Flt Permitted	0.950			0.950				096.0			0.950	
Satd. Flow (perm)	1770	3536	0	1770	3539	0	0	1745	0	0	1770	0
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		446			929			469			111	
Travel Time (s)		8.9			8.4			10.7			2.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92
Adj. Flow (vph)	-	1052	4	-	1101	2	14	0	3	-	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	-	1056	0	_	1103	0	0	11	0	0	-	0
Enter Blocked Intersection	8	8	8	8	8	8	8	8	8	8	8	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1:00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		6	15		6	15		6	15		6
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type: Ot	Other											
Control Type: Unsignalized												
Intersection Capacity Utilization 38.1%	on 38.1%			೨	U Level o	ICU Level of Service A	⋖					
Analysis Period (min) 15												

Lanes, Volumes, Timings Synchro 7 - Report SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - AM Peak Hour 5: Maple Road & Audubon Golf Club

,	4	†	۶	<b>\</b>	ļ	4	•	<b>—</b>	•	٠	<b>→</b>	•
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	-	₩		×	₩			4			4	
Volume (veh/h)	<del>-</del>	896	4	-	1013	2	13	0	က	-	0	0
Sign Control		Free			Free			Stop			Stop	
		%0			%0			%0			%0	
	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	<del>-</del>	1052	4	<del>-</del>	1101	2	14	0	3	-	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	_	TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
	1103			1057			1609	2162	528	1636	2163	552
vC1, stage 1 conf vol							1057	1057		1104	1104	
0							553	1105		532	1059	
ed vol	1103			1057			1609	2162	528	1636	2163	552
tC, single (s)	4.1			4.1			7.5	9.9	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			93	100	66	66	100	100
cM capacity (veh/h)	679			929			217	204	495	202	204	478
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	٦	701	355	1	734	369	17	-				
Volume Left	-	0	0	-	0	0	14	<del>-</del>				
Volume Right	0	0	4	0	0	2	m	0				
	679	1700	1700	655	1700	1700	242	202				
	0.00	0.41	0.21	0.00	0.43	0.22	0.07	0.01				
(#)	0	0	0	0	0	0	9	0				
lay (s)	10.7	0.0	0.0	10.5	0.0	0.0	21.0	22.6				
Lane LOS	В			В			ပ	ပ				
Approach Delay (s)	0.0			0.0			21.0	22.6				
Approach LOS							O	O				
Intersection Summary												
Average Delay			0.2									
Intersection Capacity Utilization			38.1%	2	U Level o	ICU Level of Service			⋖			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - AM Peak Hour 6: Maple Road & North Forest Road

	١	Ť	•	•			-	-	_		٠	
ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
-ane Configurations	*	\$	¥L.	*	‡	*-	*	*	*-	r	*	*-
Volume (vph)	6/	788	11	249	752	06	06	229	184	123	355	158
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	415		220	315		150	125		220	250		250
Storage Lanes	-		-	-		-	-		-	-		_
Faper Length (ft)	8		115	09		25	95		25	8		25
-ane Util. Factor	1:00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ŧ.			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
It Permitted	0.292			0.112			0.223			0.358		
Satd. Flow (perm)	544	3539	1583	209	3539	1583	415	1863	1583	199	1863	1583
Right Turn on Red			Yes			9			Yes			Yes
Satd. Flow (RTOR)			88						61			66
-ink Speed (mph)		45			45			32			32	
ink Distance (ft)		1705			820			529			809	
ravel Time (s)		25.8			12.4			10.3			11.8	
Peak Hour Factor	06:0	0.90	0.90	0.95	0.95	0.95	0.00	0.90	0.00	0.80	0.80	0.80
Adj. Flow (vph)	88	876	8	262	792	95	100	254	204	154	444	198
Shared Lane Traffic (%)												
-ane Group Flow (vph)	88	876	8	262	792	95	100	254	204	154	444	198
Enter Blocked Intersection	8	8	8	8	8	8	8	2	2	8	8	8
ane Alignment	Left	Left	Right	Left	Left	Right	Left	Fet	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
ink Offset(ft)		0			0			0			0	
Crosswalk Width(tt)		16			16			16			16	
wo way Left I um Lane		Yes	,	,				,	,	,		,
Headway Factor	1:00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Furning Speed (mph)	5		6	15		6	15		6	15		6
Number of Detectors	-	2	_	-	2	-	-	2	-	-	2	_
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thr	Right	Left	Thru	Right
eading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
railing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	2	9	8	50	9	50	50	9	50	8	9	2
Detector 1 Type	CI+EX	CI+Ex	CI+EX	CI+Ex	CI+Ex	CI+EX	CI+Ex	CI+Ex	CI+Ex	CI+EX	CI+Ex	CI+Ex
Detector 1 Channel	0	9	d	d	d	0	d	d	0	d	0	0
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+EX			CI+EX			CI+EX			CI+Ex	
Detector 2 Channel Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Furn Type	pm+pt		vo+mq	pm+pt		vo+mq	pm+pt		vo+mq	pm+pt		pm+ov
Protected Phases	2	2	m	-	9	7	m	∞	-	7	4	2
Permitted Phases	2		0	4		4	c		c	•		•
				5		2	0		o	4		4

Synchro 7 - Report Page 11

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - AM Peak Hour 6: Maple Road & North Forest Road

	^	†	<u>/</u>	<b>&gt;</b>	ţ	✓	•	<b>←</b>	•	۶	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	1.0	4.0	1.0	1.0	4.0	1.0	1.0	4.0	1.0	1.0	4.0	1.0
Minimum Split (s)	7.0	35.0	7.0	7.0	35.0	7.0	7.0	35.0	7.0	7.0	35.0	7.0
Total Split (s)	13.0	45.0		23.0	22.0	15.0		37.0	23.0		42.0	13.0
Total Split (%)	10.8%	37.5%	w	19.2%	45.8%	12.5%	w	30.8%	19.2%	$\overline{}$	35.0%	10.8%
Maximum Green (s)	7.0	39.0		17.0	49.0	0.6		31.0	17.0		36.0	7.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	2.5	2.5		2.5	2.5	2.5		2.5	2.5		2.5	2.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	0.9	0.9		0.9	0.9	9.0	0.9	0.9	0.9		0.9	0.9
Lead/Lag	Lead	Lag	_	Lead	Lag	Lead	Lead	Lag	Lead	_	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		22.0			22.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	39.0	32.1	42.3	52.5	39.9	54.9	28.6	24.5	45.5	38.3	29.4	42.5
Actuated g/C Ratio	0.37	0.31	0.40	0.50	0.38	0.52	0.27	0.23	0.43	0.37	0.28	0.41
v/c Ratio	0.31	0.81	0.12	0.81	0.59	0.11	0.60	0.58	0.28	0.46	0.85	0.28
Control Delay	18.6	41.0	5.2	43.8	28.1	13.8	43.5	42.7	14.7	28.6	53.2	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.6	41.0	5.2	43.8	28.1	13.8	43.5	42.7	14.7	28.6	53.2	12.5
FOS	В	٥	V	٥	O	В	Ω	٥	В	S	۵	В
Approach Delay		36.2			30.5			32.6			38.3	
Approach LOS		۵			O			O			D	
Intersection Summary												
Area Type:	Other											
Cycle Length: 120												
Actuated Cycle Length: 104.9	4.9											
Natural Cycle: 85												
Control Type: Actuated-Uncoordinated	coordinatec											
Maximum v/c Ratio: 0.85												
Intersection Signal Delay: 34.3	34.3			드	Intersection LOS: C	LOS: C						
Intersection Capacity Utilization 79.2%	ation 79.2%			2	:U Level	CU Level of Service D	٥					
Analysis Period (min) 15												
	o Pood olac	o droin	000									
Spills and Phases: o: IVIC	6: Maple Road & North Forest Road	NOITH LO	rest roat			_	-					ſ

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Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - AM Peak Hour 7: Sheridan Drive & Mill Street

FBL   FBT   FBR   WBL   WBT   WBR   NB   NB   NB   NB   NB   NB   NB	FBL   FBI   FBR   WBL   WBT   WBR   WBL   WBT   WBR   WBL   WBT   WBL   WBT   WBL   WBT   WBL   WBT   WBT   WBL   WBT		1	†	<u> </u>	<b>\</b>	Ļ	4	•	<b>←</b>	•	۶	<b>→</b>	•
100   100	100   100	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
177   172   220   966   9   99   21   125     1900   1900   1900   1900   1900   1900   1900     100	5   1271   122   220   966   9   99   99   1900	Lane Configurations	*	<b>₽</b> ₽		r	₩.		*	2,		<u>,                                    </u>	2	
1900   1900	1900   1900	Volume (vph)	2	1271	122	220	996	6	66	71	125	30	146	15
100	100 0.95 0.95 0.97 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95	deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
1	1	Storage Length (ft)	100		0	150		0	40		0	75		0
100   0.95   0	100   0.95   0	Storage Lanes	-		0	-		0	-		0	-		0
1.00   0.95   0.95   1.00	1.00	Taper Length (ft)	99	L	25	09	L	25	25	,	25	52		5 22
0.950 0.950 0.950 1.770 0.950 1.770 0.950 0.950 0.251 0.080 0.281 0.086 0.087 0.086 0.086 0.086 0.087 0.097	0.950 0.950 0.950 0.950 0.251 0.261 0.285 0.285 0.285 0.285 0.285 0.285 0.285 0.285 0.285 0.886 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89	-ane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1:00	00.1	1.00	1:00	1.00	1.00
1770 3493 0 1770 3536 0 1770 1624 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.256 0.261 0.261 0.261 0.261 0.261 0.263 0.263 0.264 0.268 0.268 0.268 0.268 0.268 0.268 0.268 0.268 0.269 0.279 0.270 0.290	-II	010	0.487		010	0.999		0	0.872			0.986	
0.267	1270 3493 0 1770 3336 0 1770 3	-It Protected	0.950	2402	c	0.750	7636	c	0.950	14.04	c	0.750	1007	
1486   3493   0   149   3536   0   438   1624   0   1     45	486 3493 0 149 3536 0 438 1	Satu. Flow (prot)	0.741	2442	0	0//10	2220	>	0.235	1024	0	0.508	1007	>
No	No	Satd. Flow (perm)	486	3493	0	149	3536	0	438	1624	С	1114	1837	С
1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1	1	Right Turn on Red			N 9			Yes			8			Yes
2.782	2782 45 45 45 472 2782 477 478 45 478 45 478 45 478 478 478 478 478 478 478 478 478 478	Satd. Flow (RTOR)					-						4	
2782 977 838 838 838 838 838 838 838 838 838 8	2782  977  978  42.2  978  6 1478  142  247  198  6 148  142  148  142  177  189  180  180  180  180  180  180  180	ink Speed (mph)		45			45			9			30	
19,0   14,8   19,0	14.2   14.8   0.89   0.89   0.85   0.86	ink Distance (ft)		2782			7.16			838			362	
0.86 0.86 0.89 0.89 0.89 0.56 0.56 0.56 0.56 0.56 0.56 0.56 0.56	0.086 0.086 0.089 0.089 0.089 0.56 6 1478 142 247 1095 10 177 No No No No No No No No No No No No No N	ravel Time (s)		42.2			14.8			19.0			8.2	
6 1478 142 247 1085 10 177 38 223  6 1620 0 247 1095 0 177 261 0  No No No No No No No No No No No No No N	6 1478 142 247 1085 10 177  6 1620 0 247 1095 0 177  No No No No No No No No No No No No No N	Peak Hour Factor	0.86	98.0	98.0	0.89	0.89	0.89	0.56	0.56	0.56	0.61	0.61	0.61
No	No	ldj. Flow (vph)	9	1478	142	247	1085	10	17.1	88	223	49	239	22
6 1620 0 247 1095 0 177 261 0 1 1 1 2 1 1 1 2 1 1 2 1 1 2 1 1 2 1 1 1 2 1 1 1 2 1 1 2 1 1 1 2 1 1 1 2 1	6 1620 0 247 1095 0 177  100	shared Lane Traffic (%)												
No No No No No No No No No No No No No N	No No No No No No No No No No No No No N	ane Group Flow (vph)	9	1620	0	247	1095	0	17.1	261	0	46	264	0
Left Left Right Left Right Left Right   Left	Left Left Right Left Left Right Left 12	Inter Blocked Intersection	8	2	8	8	8	2	8	8	8	2	8	2
Nes	12   12   12   15   16   16   16   16   16   16   16	ane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
16	16	Aedian Width(ft)		12			12			12			12	
16	16	ink Offset(ft)		0			0			0			0	
1.00	1.00   Yes   Yes   Yes	Crosswalk Width(ft)		16			16			16			16	
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	wo way Left Turn Lane		Yes			Yes							
15 9 15 9 15 9 15 9 15 9 15 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1 1 2 1	15 9 15 9 15 15 16 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	leadway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Left Thru Left Thru Left Thru 20 100 20 100 20 100 20 6 20 6 20 6 20 6 20 6 20 6 CI+EX CI+	Left Thru Left Thru Left Thru Left Thru Left Thru Left Thru Left Thru Left Thru Left Thru Left Thru Left Thru Left Thru Left Che Che Che Che Che Che Che Che Che Che	urning Speed (mph)	13		6	12		6	15		6	12		6
Left Innu Left I	Left Intu Left Intu Left 20 100 20 100 20 0 0 0 0 0 0 0 20 6 20 6 20 Cl+Ex Cl+Ex Cl+Ex Cl+Ex Cl+Ex Cl+Ex 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Number of Detectors	- :	2		<del>-</del> -	2		- :	2		<del>-</del> -	2	
20 100 20 100 20 100 20 100 20 100 20 100 20 100 20 100 20 100 20 100 20 100 20 100 20 100 20 100 20 100 20 100 20 100 20 20 20 6 6 6 6 6 6 6 6 6 6 6 6 6 6	20 100 20 100 20 20 20 20 20 20 20 20 20 20 20 20 2	Detector Lemplate	E E	Ihru		Lett	nu.		lett	nu ;		E E	Ihru	
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Cl-Ex Cl-Ex	eading Detector (ft)	8	8		70	00		70	90		2 0	<u>8</u>	
20 6 20 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 20 6 20 6 20 6 20 6 20 6 20 20 20 20 20 20 20 20 20 20 20 20 20	CHEX CI+EX CI-EX CI-EX CI+EX CI+EX CI+EX CI+EX CI+EX CI-EX C	railing Detector (It)	0	0		0	0		0	0		0	0	
CI+EX CI-EX CI+EX	CI-EX CI-EX	Detector 1 Size(ft)	9 0	0 4		0 0	0 4		200	0 4		2 0	0 4	
00 00 00 00 00 00 00 00 00 00 00 00 00	00 00 00 00 00 00 00 00 00 00 00 00 00	Detector 1 Steeling	CI+Fx	CI+Fx		CI+Fx	CI+Fx		CI+Fx	CI+Fx		CI+Fx	CI+Fx	
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	00 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Detector 1 Channel	5				5		5	5		5	5	
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
94 94 94 94 94 94 66 66 CI+Ex	94 94 94 94 94 94 94 94 94 94 94 94 94 9	Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
(s) Perm (c)	6 C+Ex C+Ex  9	Detector 2 Position(ft)		94			94			94			94	
CI+EX CI+EX	(s) C+Ex C+Ex (s) 0.0 (o) 0.0	Detector 2 Size(ft)		9			9			9			9	
(s) 0.0 0.0 0.0 0.0 (s) Perm 2 pm+pt pm+pt 2 6 8	(s) 0.0 0.0 (s) Perm pm+pt pm+pt 3 3 2 6 8 8	Detector 2 Type		CI+EX			CI+EX			CI+EX			CI+EX	
(s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	(s) 0.0 0.0 0.0 Perm pm+pt pm+pt 2 6 8 8	Detector 2 Channel												
Perm pm+pt pm+pt 2 1 6 3 8 3 8 5 6 8 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	Perm pm+pt pm+pt pm+pt 2 1 6 8 3 2 6 8 8	Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
2 6 6 8	2 2 6 8	furn Type	Perm			pm+pt			pm+pt			Perm		
~	9	Protected Phases	c	7		- <	٥		~ c	00		-	4	
, , , , , , , , , , , , , , , , , , , ,		Permitted Phases	7			۰ م			Σ (			4 .		
														ı

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Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - AM Peak Hour 7: Sheridan Drive & Mill Street

Lane Group         EBL         EBT         EBR         WBL         WBT         NBR         NBL         NBT         NBR         SBL		1	†	<u> </u>	<b>/</b>	ţ	1	•	<b>—</b>	•	۶	<b>→</b>	*
4.0 4.0 1.0 4.0 1.0 4.0 4.0 4.0 4.0 4.0 4.0 28.3 28.3 28.3 6.2 38.4 34.2 34.2 34.2 34.2 34.2 34.2 34.2 34	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
4.0         4.0 <td>Switch Phase</td> <td></td>	Switch Phase												
28.3 28.3 6.2 28.3 6.2 34.2 34.2 34.2 34.2 34.2 34.2 34.2 34	Minimum Initial (s)	4.0	4.0		1.0	4.0		1.0	4.0		4.0	4.0	
500         500         00         700         00         550         650         00         400         400           445         445         148%         519%         00%         183%         4818         00%         296%         296%         296%         400           445         445         157         445         157         445         183         4818         40%         296%         296%         296%         296%         296%         296%         20         418         4	Minimum Split (s)	28.3	28.3		6.2	28.3		6.2	34.2		34.2	34.2	
37.0% 37.0% 14.8% 51.9% 0.0% 18.5% 48.1% 0.0% 29.6% 29.6% 0.44.5 44.5 44.5 15.7 64.5 19.8 59.8 13.8 34.8 34.8 4.3 4.3 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3	Total Split (s)	20.0	20.0	0.0	20.0	70.0	0.0	25.0	65.0	0.0	40.0	40.0	0.0
H45 44.5 44.5 15.7 64.5 19.8 59.8 34.8 34.8 14.3 12. 4.3 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3	Total Split (%)	37.0%	37.0%	%0.0	14.8%	21.9%	%0.0	18.5%	48.1%	%0.0	29.6%	29.6%	0.0%
H.3 4.3 4.3 3.2 4.3 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3	Maximum Green (s)	44.5	44.5		15.7	64.5		19.8	29.8		34.8	34.8	
1.2 1.2 1.2 1.1 1.1 1.2 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2	Yellow Time (s)	4.3	4.3		3.2	4.3		3.2	3.2		3.2	3.2	
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	All-Red Time (s)	1.2	1.2		Έ.	1.2		2.0	2.0		5.0	2.0	
Lag   Lag   Lead   Le	Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lag Lag Lead Lead Lag Lead Lag Ses Yes Yes Yes Yes Yes Yes Yes Yes Yes Y	Total Lost Time (s)	5.5	2.5	4.0	4.3	5.5	4.0	5.2	5.2	4.0	5.2	5.2	4.0
Ves Yes Yes Yes Yes Yes Yes Yes A Max None Max None None None None None None None None	Lead/Lag	Lag	Lag		Lead			Lead			Lag	Lag	
3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	Lead-Lag Optimize?	Yes	Yes		Yes			Yes			Yes	Yes	
Max   Max   Max   None   Max   None	Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
(#hr) 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0	Recall Mode	Max	Max		None	Max		None	None		None	None	
(\$) 15.0 15.0 15.0 15.0 15.0 22.0 22.0 22.0 (\$) 15.0 15.0 15.0 10.0 10.0 10.0 10.0 10.0	Walk Time (s)	7.0	7.0			7.0			7.0		7.0	7.0	
(#fht) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Flash Dont Walk (s)	15.0	15.0			15.0			22.0		22.0	22.0	
s) 45.4 45.4 66.1 64.9 40.5 40.5 21.6 (10.0 0.39 0.39 0.39 0.39 0.50 0.56 0.35 0.35 0.19 0.19 0.03 0.03 0.03 0.03 0.03 0.03 0.00 0.	Pedestrian Calls (#/hr)	0	0			0			0		0	0	
io 0.39 0.39 0.57 0.56 0.35 0.35 0.19 0.03 1.19 0.83 0.55 0.55 0.46 0.24 0.00 0.0 0.0 0.0 0.0 0.0 0.0 0.00 0.0 0.	Act Effct Green (s)	45.4	45.4		1.99	64.9		40.5	40.5		21.6	21.6	
0.03 1.19 0.83 0.55 0.57 0.46 0.24  27.4 125.3 5.28 19.1 34.1 31.6 43.4  C F D B C C D  125.0 25.3 32.6  F C C D  mary  Other  0.00 3.00 0.00 0.00 0.00 0.00 0.00  1.55 0.00 0.00 0.00 0.00 0.00  1.55 0.00 0.00 0.00 0.00 0.00  1.55 0.00 0.00 0.00 0.00  2.53 32.6  C D  5.50 0.00 0.00  1.50 0.00 0.00  1.50 0.00 0.00  1.50	Actuated g/C Ratio	0.39	0.39		0.57	0.56		0.35	0.35		0.19	0.19	
27.4 125.3 52.8 19.1 34.1 31.6 43.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	v/c Ratio	0.03	1.19		0.83	0.55		0.57	0.46		0.24	0.77	
00 00 00 00 00 00 00 00 00 00 00 00 00	Control Delay	27.4	125.3		52.8	19.1		34.1	31.6		43.4	9.69	
27.4 125.3 52.8 19.1 34.1 31.6 43.4  C F D B C C D 125.0 25.3 32.6  maxy  Other  F C C D 5  C D 5  C D 6  D 7  C F D 7  C	Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
C F D B C C D T25.0 25-3 32-6 C C C mary Other 5	Total Delay	27.4	125.3		52.8	19.1		34.1	31.6		43.4	9.69	
125.0 25.3 F C mary Other 5 enoth: 116.2	SOT	O	ட		۵	В		ပ	ပ		۵	ш	
F many Other 5 order 116.2	Approach Delay		125.0			25.3			32.6			57.1	
Intersection Summary Area Type: Cycle Length: 135 Cycle Length: 116	Approach LOS		ш			U			U			ш	
Area Type: Other Cycle Length: 135 Actualed Cycle Lendth: 116.2	Intersection Summary												
Cycle Length: 135 Actuated Ovcie Length: 1162	Area Type:	Other											
Actuated Cycle Length: 116.2	Cycle Length: 135												
	Actuated Cycle Length: 11	16.2											

Natural Cycle: 130
Control Type: Sem Act-Uncord
Maximum wc Ratior 110
Intersection Signal Delay; 72.4
Intersection Capacity Utilization 82.1%
Independent of Service E
Analysis Period (min) 15
Spills and Phases. 7: Sheridan Drive & Mill Street

20s | 50s | 40s |

Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - AM Peak Hour 8: Sheridan Drive & North Forest Road

	١	t	<b>&gt;</b>	•		,	_	-	_	ļ.	•	,
Croun	ī	LDT	CDD	IMDI	TOW	MDD	IQN	TOIN	ODN	GD	CDT	CDD
alle Gloup	CDL	EDI	EDK	WDL	WDI	WDK	NDL	- QN	NDK	SDL	Igc	SDK
<ul><li>ane Configurations</li></ul>	-	‡	R_	<b>-</b>	<u>+</u>		<b>F</b>	•	<b>K</b> _	<b>-</b>	‡	k_
Volume (vph)	8	1286	197	181	1015	19	202	340	23	Ξ	437	284
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	405		170	260		0	180		265	180		200
Storage Lanes	-		_	-		0	-		-	-		_
aper Length (ft)	200		22	200		22	25		25	22		25
-ane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00
¥			0.850		0.997				0.850			0.850
-It Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3529	0	1770	1863	1583	1770	3539	1583
-It Permitted	0.132			0.067			0.201			0.477		
Satd. Flow (perm)	246	3539	1583	125	3529	0	374	1863	1583	889	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			%		_				26			337
Link Speed (mph)		42			42			40			32	
Link Distance (ft)		1668			2219			547			354	
ravel Time (s)		25.3			33.6			9.3			6.9	
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	06:0	0.90	06:0	0.84	0.84	0.84
Adj. Flow (vph)	95	1354	207	197	1103	21	228	378	26	13	520	338
Shared Lane Traffic (%)												
-ane Group Flow (vph)	92	1354	207	197	1124	0	228	378	26	13	520	338
Enter Blocked Intersection	8	9N	8	No No	N N	N N	9	No No	N <sub>o</sub>	9	N <sub>o</sub>	8
ane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12	,		12	,		12	,		12	,
ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
rwo way Left Tum Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
urning Speed (mph)	15		6	15		6	15		6	15		6
Number of Detectors	_	2	_	_	2		<del>-</del>	2	-	-	2	_
Detector Template	Left	킾	Right	Left	Thr		Left	뒫	Right	Fet	Thr	Right
eading Detector (ft)	20	100	20	20	100		70	100	70	20	100	20
railing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	8	9	8	50	9		70	9	70	8	9	2
Detector 1 Type	CI+Ex	CI+Ex	CI+EX	CI+Ex	CI+EX		CI+EX	CI+EX	CI+EX	CI+EX	CI+Ex	CI+EX
Detector 1 Channel	d	d	d	d	d		d	d	d	d	d	d
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0:0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+Ex			CI+EX			CI+EX			CI+Ex	
Detector 2 Channel		c			c			d			c	
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	0
urn lype	pm+pt	,	Pem	pm+pt	٠		pm+pt		Perm	pm+pt	•	Perm
Protected Phases	- \	9	,	ഹ	7			4	•	c	00	•
Permitted Phases	9		9	`			٧			α		
	,				١		- 1	ľ		0 (	•	0

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Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - AM Peak Hour 8: Sheridan Drive & North Forest Road

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.3	27.9	27.9	8.3	27.9		21.0	27.2	27.2	8.3	27.2	27.2
Total Split (s)	30.0	0.09	0.09	20.0	20.0	0.0	25.0	40.0	40.0	20.0	35.0	35.0
Total Split (%)	21.4%	42.9%	45.9%	14.3%	35.7%	%0.0	17.9%	28.6%	28.6%	14.3%	25.0%	25.0%
Maximum Green (s)	25.7	54.9	54.9	15.7	44.9		20.7	34.9	34.9	15.7	29.9	29.9
Yellow Time (s)	3.2	3.9	3.9	3.2	3.9		3.2	3.2	3.2	3.2	3.2	3.2
All-Red Time (s)	11	1.2	1.2	Ξ	1.2		<del>[</del> -	1.9	1.9	<del>[</del>	1.9	1.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.3	2.1	2.1	4.3	5.1	4.0	4.3	5.1	2.1	4.3	2.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max		None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		15.0	15.0		15.0			15.0	15.0		15.0	15.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	65.1	55.2	55.2	73.9	60.1		49.0	44.0	44.0	32.5	25.5	25.5
Actuated g/C Ratio	0.49	0.42	0.42	0.56	0.46		0.37	0.33	0.33	0.25	0.19	0.19
v/c Ratio	0.42	0.91	0.29	0.81	0.70		0.68	0.61	0.02	0.02	0.76	0.58
Control Delay	21.0	47.8	15.7	57.2	33.0		40.8	42.7	11.7	27.5	28.6	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.0	47.8	15.7	57.2	33.0		40.8	42.7	11.7	27.5	28.6	9.1
SOT	O	۵	Ф	ш	ပ		۵	۵	В	O	ш	Þ
Approach Delay		42.3			36.6			40.8			38.9	
Approach LOS					۵						۵	
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 132	2											
Natural Cycle: 105												
Control Type: Actuated-Uncoordinated	coordinated											
Maximum v/c Ratio: 0.91												
Intersection Signal Delay: 39.7	39.7			드	Intersection LOS: D	LOS: D						
Intersection Capacity Utilization 84.7%	ation 84.7%			$\subseteq$	CU Level of Service E	f Service	ш					
Analysis Period (min) 15												

Splits and Phases: 8: Sheridan Drive & North Forest Road

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Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - AM Peak Hour 9: Country Club Driveway & North Forest Road

	•	<i>&gt;</i>	•	•	<b>→</b>	•	
ane Group	EBL	EBR	NBL	NBT	SBT	SBR	
ane Configurations	>			₩	<b>\$</b>		
/olume (vph)	<b>.</b>	-	∞	442	731	2	
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
ane Util. Factor	1.00	1.00	1.00		1.00	1.00	
	0.932				0.999		
-It Protected	926.0			666.0			
Satd. Flow (prot)	1694	0	0	1861	1861	0	
It Permitted	926.0			666.0			
Satd. Flow (perm)	1694	0	0	1861	1861	0	
ink Speed (mph)	9			35	35		
ink Distance (ft)	217			310	192		
ravel Time (s)	4.9			0.9	3.7		
Peak Hour Factor	0.50	0.50	0.83	0.83	0.94	0.94	
4dj. Flow (vph)	2	2	10	533	778	2	
Shared Lane Traffic (%)							
ane Group Flow (vph)	4	0	0	543	783	0	
Enter Blocked Intersection	8	8	8	8	8	No	
ane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	12			0	0		
ink Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
wo way Left Turn Lane							
Headway Factor	1:00	1.00	1.00	1.00	1.00	1.00	
"urning Speed (mph)	15	6	15			6	
Sign Control	Stop			Free	Free		
ntersection Summary							
Area Type: 0	Other						
Control Type: Unsignalized							
ntersection Capacity Utilization 48.8%	on 48.8%			ರ	) Level of	ICU Level of Service A	
Analysis Period (min) 15							

Synchro 7 - Report Page 17 Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - AM Peak Hour 9: Country Club Driveway & North Forest Road

Movement         EBL         EBR         NBL           Lane Configurations         Y         1         8           Volume (verhit)         1         1         8           Volume (verhit)         5hp         6         6           Grade         0%         6         6         83           Peak Hour Factor         0,50         0,50         0,83         10           Pedestrians         Lane Width (II)         2         2         10           Percent Biockage         Right turn fare (veh)         8         8         83           Median type         6         1332         780         783           Median rype         1332         780         783           V.C., stage (s)         6,4         6,2         4,11           M.C., stage 2 confivol         1296         780         781           M.C., stage (s)         6,4         6,2         4,11           IC, stage (s)         6,4         6,2         4,11           IC, stage (s)         8         99           Og queue free %         99         99           Og queue free %         99         99           Off Queue free %         99	NBT 442 442 Free 0% 0.83 533 664	SBT 731 731 733	5 2 0.94 5 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Vehrh   Veh			5 0.94 5
(ve/hh)         1         1           Introl         Stop         0           Ow rate (vph)         2         2           lans         2         2           lans         3         2           lans         4         2           lans         5         2           lans         5         2           lans         5         2           lans         5         2           lans         6         3           lans         6         3           lans         3         3           lans         3         3           lans         6         4         6           lans         6         6         6           lans         6         6         3         8           lans         6         6         3         8           lans         6         6         6         6           lans         6         6         6         6         6           lans         6         6         6         6         6         6           lans         6         6         6<			5 46.0
Author Stop    Ow rate (vph)			5 S
uur Factor 0 % 0 % 0 % 0 % 0 % 0 % 0 % 0 % 0 % 0			5 5
0.50 0.50 0.50 0.82 0.82 1332 780 780 780 780 780 780 780 780 780 780			5
0.82 0.82 1332 780 7 1296 780 7 6.4 6.2 3 3.5 3.3 999 99 99 99 99 999 991 145 395 8		778 None	ي
0.82 1332 780 1296 780 6.4 6.2 3.5 3.3 99 99 145 395		None	
0.82 1332 780 1296 780 6.4 6.2 3.5 3.3 99 99 148 99		None	
0.82 1332 780 1296 780 6.4 6.2 3.5 3.3 99 99 145 395		None	
0.82 1332 780 1296 780 6.4 6.2 3.5 3.3 99 99 145 395		None	
0.82 1332 780 1296 780 6.4 6.2 3.5 3.3 99 99 145 395		None	
0.82 1332 780 1296 780 6.4 6.2 3.5 3.3 99 99 145 395		None	
0.82 1332 780 1296 780 6.4 6.2 3.5 3.3 99 99 145 395	664		
0.82 1332 780 1296 780 6.4 6.2 3.5 3.3 99 99 145 395	664		
0.82 1332 780 1296 780 6.4 6.2 3.5 3.3 9.9 9.9 145 395			
1332 780 1296 780 6.4 6.2 3.5 3.3 99 99 145 395			
1296 780 6.4 6.2 3.5 3.3 9.9 145 395			
1296 780 64 6.2 35 3.3 99 99 145 395			
1296 780 6.4 6.2 3.5 3.3 99 99 145 395			
6.4 6.2 3.5 3.3 9.9 99 145 395			
3.5 3.3 99 99 145 395			
3.5 3.3 99 99 145 395			
99 99 145 395 EB1 NB1 S			
145 395			
FB 1 NB 1			
Volume Total 4 542 783			
2 10			
ne Right 2 0			
213 835			
0.02 0.01 0.			
ith (ft) 1			
lay (s) 22			
C			
Approach Delay (s) 22.3 0.3 0.0			
Approach LOS C			
Intersection Summary			
Average Delay 0.2			
Intersection Capacity Utilization 48.8%	NOI	ICU Level of Service	ervice A
Analysis Period (min) 15			

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - AM Peak Hour 10: Sheridan Drive & Ferwick Road

•	NBR		6	1900	0	0	25	1.00			0		0				69.0	13		0	N	Right					1.00	6					ICU Level of Service A
•	NBL	>	16	1900	0	<del>-</del>	25	1.00	0.951	696.0	1717	696.0	1717	30	278	6.3	69:0	23		36	8	Left	12	0	16		1.00	15	Stop				U Level o
ţ	WBT	‡	1500	1900				0.95			3539		3539	45	1668	25.3	06:0	1667		1667	8	Left	12	0	16	Yes	1.00		Free				<u> </u>
<b>\</b>	WBL	*	4	1900	75	-	22	1.00		0.950	1770	0.950	1770				0.00	4		4	8	Left					1.00	15					
<u>/</u>	EBR		9	1900	0	0	25	0.95			0		0				0.88	7		0	8	Right					1.00	6					
†	EBT	₩.	1564	1900				0.95	0.999		3536		3536	45	635	9.6	0.88	1777		1784	8	Left	12	0	16	Yes	1.00		Free		Other		n 53.4%
	Lane Group	Lane Configurations	Volume (vph)	Ideal Flow (vphpl)	Storage Length (ft)	Storage Lanes	Taper Length (ft)	Lane Util. Factor	£	Fit Protected	Satd. Flow (prot)	Fit Permitted	Satd. Flow (perm)	Link Speed (mph)	Link Distance (ft)	Travel Time (s)	Peak Hour Factor	Adj. Flow (vph)	Shared Lane Traffic (%)	Lane Group Flow (vph)	Enter Blocked Intersection	Lane Alignment	Median Width(ft)	Link Offset(ft)	Crosswalk Width(ft)	Two way Left Turn Lane	Headway Factor	Turning Speed (mph)	Sign Control	Intersection Summary	Area Type: Oth	Control Type: Unsignalized	Intersection Capacity Utilization 53.4% Analysis Period (min) 15

Synchro 7 - Report Page 19 Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - AM Peak Hour 10: Sheridan Drive & Fenwick Road

																																						ď	
•	NBR		6			69.0	13									0.84	892			476	6.9		3.3	47	447	NB 1	36	73	13	168	0.77	20	32.3	۵	32.3	D		Service	
•	NBL	>	16	Stop	%0	69.0	23									0.84	2623	1781	842	2548	8.9	2.8	3.5	81	124	WB 3	833	0	0	1700	0.49	0	0.0					ICU Level of Service	
ţ	WBT	‡	1500	Free	%0	0.90	1667						TWLTL	2												WB 2	833	0	0	1700	0.49	0	0.0					೨	
<b>&gt;</b>	WBL	r	4			06:0	4									0.84	1784			1544	4.1		2.2	66	326	WB 1	4	4	0	326	0.01	- !	15.3	ပ	0.0			0.4	12
<i>&gt;</i>	EBR		9			0.88	7																			EB2	266	0	7	1700	0.35	0	0.0						
†	EBT	₩	1564	Free	%0	0.88	1771						TWLTL	2	635											EB 1	1185	0	0	1700	0.70	0	0.0		0.0			ization	
	Movement	Lane Configurations	Volume (veh/h)	Sign Control	Grade	Peak Hour Factor	Hourly flow rate (vph)	Pedestrians	Lane Width (ft)	Walking Speed (ft/s)	Percent Blockage	Right turn flare (veh)	Median type	Median storage veh)	Upstream signal (ft)	pX, platoon unblocked	vC, conflicting volume	vC1, stage 1 conf vol	vC2, stage 2 conf vol	vCu, unblocked vol	tC, single (s)	tC, 2 stage (s)	tF (s)	p0 queue free %	cM capacity (veh/h)	Direction, Lane #	Volume Total	Volume Left	Volume Right	CSH	Volume to Capacity	Onene Length 95th (ft)	Control Delay (s)	Lane LOS	Approach Delay (s)	Approach LOS	Intersection Summary	Average Delay Intersection Capacity Utilization	Analysis Period (min)

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - AM Peak Hour 11: Sheridan Drive & Frankhauser Road

				,			
	`	t				,	
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	*	‡	₩.		r	R.	
Volume (vph)	79	1531	1492	24	38	29	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	105			0	0	20	
Storage Lanes	-			0	-	_	
Taper Length (ft)	92			25	25	25	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Ft			0.998			0.850	
Fit Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3532	0	1770	1583	
FIt Permitted	0.138				0.950		
Satd. Flow (perm)	257	3539	3532	0	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			m			40	
Link Speed (mph)		45	45		30		
Link Distance (fl)		1014	635		614		
Travel Time (s)		15.4	9.6		14.0		
Peak Hour Factor	0.89	0.89	0.94	0.94	0.73	0.73	
Adj. Flow (vph)	59	1720	1587	26	25	40	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	53	1720	1613	0	25	40	
Enter Blocked Intersection	2	2	2	8	8	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	91 ;		16		
Two way Left Turn Lane		Yes	Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	5			6	15	6	
Number of Detectors	-	2	2		_	_	
Detector Template	Left	Thru	Thru		Left	Right	
Leading Detector (ft)	20	100	9		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	8	9	9		20	20	
Detector 1 Type	CI+EX	CI+Ex	CI+EX		CI+Ex	CI+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0:0		0:0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		9	9				
Detector 2 Type		CI+Ex	CI+EX				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Perm					Perm	
Protected Phases		2	9		4		
Permitted Phases	2					4	
Detector Phase	2	2	9		4	4	

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Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - AM Peak Hour 11: Sheridan Drive & Frankhauser Road

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Un Initials (s)         40         40         10         10           un Spit (s)         80         40         40         10         10           un Spit (s)         80         80         80         31         31         31           spit (s)         80         80         80         80         29         299           spit (s)         80         80         80         29         299           v Time (s)         39         39         39         39         39         39           at Time (s)         80         80         80         80         80         80         80           at Time (s)         48         48         48         40         5.1         5.1         5.1           Lost Time (s)         10         00         00         00         00         00         00           Lost Time (s)         4.8         4.8         4.8         4.0         5.1         5.1         5.1           Lost Time (s)         7.0         7.0         7.0         7.0         7.0         7.0         7.0           Information (s)         1.0         3.0         3.0         3.0         3.0	4.0 4.0 4.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6		
(s)   (s)	Inter(s)   4.0 4.0 4.0 6.0 6.0 6.9 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0	0 7	
Principal Color   Principal Color     Princi	(%) 85.0 85.0 0.0 (%) 70.8% 70.8% 0.0% (%) 70.8% 70.8% 0.0% (%) 70.8% 70.8% 0.0% (%) 39 39 39 ne (\$) 39 39 39 ne (\$) 39 39 39 ne (\$) 39 39 39 Time (\$) 4.8 4.8 4.0 Time (\$) 4.8 4.8 4.0 Time (\$) 1.0 0.0 0.0 Time (\$) 3.0 3.0 Time (\$) 3.0 3.0 Time (\$) 1.0 1.0 Time (\$) 1.0 0.0 Time (\$) 1.0 1.0 Time (\$) 1.0 1.0 Time (\$) 1	4.0 4.0 31.1	
(%) 70.8% 70.8% 70.8% 00.% Green (\$) 80.2 80.2 80.2 80.2 80.2 80.2 80.2 80.2	(%) 70.8% 70.8% 70.8% 00.% Green (\$) 80.2 80.2 80.2 80.2 80.2 80.2 80.2 80.2	85.0 85.0 0.0 35.0	
Green (s) 80.2 80.2 80.2 e (s) 39 39 39 39 39 39 39 39 39 39 39 39 39	Green (s) 80.2 80.2 80.2 e (s) 39 39 39 39 6 e (s) 39 39 39 39 39 39 39 39 39 39 39 39 39	70.8% 70.8% 0.0% 29.2%	
e (s) 3.9 3.9 3.9 3.9 ne (s) ne (s) 0.9 0.9 0.9 0.9 0.9 0.9 0.9 0.9 0.9 0.9	e (s) 3.9 3.9 3.9 3.9 ne (s) 10.9 0.9 0.9 0.9 0.9 0.9 0.9 0.9 0.9 0.9	80.2 80.2 29.9	
re (s) 0.9 0.9 0.9 0.0 0.0 0.0 0.0 0.0 0.0 0.0	lime (s) 0.9 0.9 0.9 0.0 0.0 0.0 0.0 0.0 0.0 0.0	3.9 3.9 3.2	
hdjust (s) 0.0 0.0 0.0 0.0 0.0 1	Time (s)	0.9 0.9 1.9	
Time (s)	Time (s)	0.0 0.0 0.0 0.0	
pelintize?  9. 3.0 3.0 3.0  10. C-Max C-Max C-Max  (s) 7.0 7.0 7.0  Walk (s) 15.0 15.0 15.0  Veral (shr) 0 0 0  10.0 13 104.3 104.3 104.3  CRatio 0.87 0.87 0.87  CRatio 0.13 0.56 0.53  ay 0.0 0.0 0.0  7. 2.3 5.9 3.3  ay 0.0 0.0 0.0  7. 2.3 5.9 3.3  A A A  Summary  Capacity Length: 120  Capacity Utilization 53.9%  Itili: 120  Capacity Utilization 53.9%	tension (s) 3.0 3.0 3.0 tension (s) 3.0 3.0 3.0 tension (s) 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0	4.8 4.0 5.1	
pptimize? 30 3.0 3.0 4.4  tension (s) 3.0 3.0  (s) 7.0 7.0 7.0  Calls (#h1) 0 0 0  Calls (#h1) 104.3 104.3 104.3  CRatio 0.87 0.87 0.87 0.87  CRatio 0.87 0.87 0.87  A A A A A A A A A A A A A A A A A A A	pplimize?  10 30 30 30  tension (s) 3.0  tension (s) 3.0  (s) 7.0 7.0 7.0  Calls (#m) 0 0  Calls (#m) 0 0  Calls (#m) 104.3 104.3 104.3  (C Ratio 0.87 0.87 0.87 0.87  (C Ratio 0.87 0.87 0.87  (C Ratio 0.87 0.87 0.87  (C Ratio 0.87 0.87 0.87  (C Ratio 0.87 0.87 0.87  (C Ratio 0.87 0.87 0.87  (C Ratio 0.87 0.87 0.87  (C Ratio 0.87 0.87  (C Ratio 0.98 0.00 0.00 0.00  (C Ratio 0.98 0.00 0.00 0.00  (C Ratio 0.00 0.00 0.00 0.00  (C Ratio 0.00 0.00 0.00 0.00  (C Ratio 0.00 0.00 0.00 0.00  (C Ratio 0.00 0.00 0.00 0.00  (C Ratio 0.00 0.00 0.00 0.00  (C Ratio 0.00 0.00 0.00 0.00 0.00 0.00  (C Ratio 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.		
nn (s) 3.0 3.0 3.0 (Abax C-Max	al al te la la la la la la la la la la la la la		
C-Max C-Max C-Nax	att = -	3.0 3.0 3.0	
(#hr.) 7.0 7.0 7.0 (#hr.) (#hr.) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	te = = = = = = = = = = = = = = = = = = =	C-Max C-Max None	
(\$) 15.0 15.0 15.0 (\$) (\$) (\$) (\$) 15.0 15.0 15.0 (\$) (\$) (\$) 0.0 0.0 0.0 0.0 0.13 0.56 0.53 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.		7.0	
(#hr) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	at at	15.0 15.0 19.0	
(s) 104.3 104.3 104.3 [ito 0.87 0.87 0.87 0.87 0.87 0.87 0.87 0.87	art art	0 0 0	
Itio 0.87 0.87 0.87 0.87 0.87 0.87 0.87 0.87	at a state of the	104.3 104.3 8.9	
13 0.56 0.53 2.3 5.9 3.3 0.0 0.0 0.0 2.3 5.9 3.3 A A A A A A A A A A A A A A A A A A A	at at	0.87 0.87 0.07	
2.3 5.9 3.3 0.0 0.0 0.0 0.0 2.3 5.9 3.3 A A A A A A A A A A A A A A B A A B A A A A A A A A B A B	art art	0.56 0.53 0.40	
0.0 0.0 0.0 2.3 5.9 3.3 A A 5.8 3.3 A A A E.8 3.3 A A A Other  0.0 Clother  1.0 Clother  2.0 Clother  2.0 Clother  3.3 A A A A A A A A A A A A A A A A A A A	te – –	5.9 3.3 60.9	
A A A A A A A A A A A A A A A A A A A	art art	0.0 0.0 0.0	
A A A A A A A A A B A B A B A A A A A A	te = =	5.9 3.3 60.9	
5.8 3.3 A A A Imany Other 20 Length: 120 I. Referenced to phase 2:EBTL and 6:WBT, Start and 6:WBT, Start and 6:WBT, WBT, Start and 6:WBT, WBT, WBT, WBT, WBT, WBT, WBT, WBT,	art art	A	
mary Other 00 Length: 120 Statest-Coordinated in 0.55 and 160 0.55 and 160 0.55 and 161 0.55 and	art — —	3.3	
Other d to phase 2:EBTL and 6:WBT, Start rdinated 6 Iton 53.9%	te – –	A	
Other d to phase 2:EBTL and 6:WBT, Start rdinated 6 I to 53.9%	art		
d to phase 2:EBTL and 6:WBT, Start rdinated 6	art — —	Other	
d to phase 2:EBTL and 6:WBT, Start rdinated 6	art		
i: 76 (63%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow al Cycle: 75 of Type: Actualed-Coordinated num vic Ratic. 0.56 ection Signal Delay: 5.6 ICU Level of Service A sis Period (min) 15	tt – –		
 %		ed to phase 2:EBTL and 6:WBT, Start of Yellow	
 %			
<b>-</b> - %		ordinated	
i 5.6 ization 53.9%			
ization 53.9%	_		
sis Period (min) 15	sis Period (min) 15 and Phases. 11: Sheridan Drive & Frankhauser Road	_	
	and Phases. 11: Sheridan Drive & Frankhauser Road		
	4		Y



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - AM Peak Hour 12: Sheridan Drive & I-290 NB

Lane Group												
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
-ane Configurations	<u>_</u>	444			441		<u>r</u>	4	¥C_			
Volume (vph)	249	1373	0	0	786	490	569	0	220	0	0	0
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	230		120	0		0
Storage Lanes	-		0	0		0	-		-	0		0
aper Length (ft)	105		72	25		25	25		25	72		52
ane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	0.95	0.91	0.95	1.00	1.00	9.1
-II	010				0.950		0	0.940	0.850			
- It Protected	0.430	1001	c	c	4004	c	0.950	15.47	1504	c	c	-
oditi. Flow (prot)	0.104	2002	0	0	4031	>	0 050	0.971	1304	>	>	0
Satd Flow (nerm)	194	5085	C	C	4831	0	1681	1547	1504	0	C	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					163			26	29			
ink Speed (mph)		45			45			30			30	
ink Distance (ft)		197			193			830			423	
ravel Time (s)		3.0			2.9			18.9			9.6	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.88	0.88	0.88	0.92	0.92	0.92
Adj. Flow (vph)	265	1461	0	0	1050	521	306	0	250	0	0	0
Shared Lane Traffic (%)							37%		30%			
ane Group Flow (vph)	565	1461	0	0	1571	0	193	8 28	175	0	0	0
Inter Blocked Intersection	9 .	2	2	<u>و</u>	و ا	2	2	8	2	ο	و ا	2
ane Alignment	Fet	E E	Right	Let	Ee#	Right	E	Eet S	Right	Le <del>ll</del>	Lett	Kight
Wedian Width(ft)		15			75			72			12	
Link Oilset(it)		1,0			7,			0 71			0 7	
Crosswalk Width(II)		<u>0</u>			9			9			9	
wo way Left I um Lane			00	9				6		00		5
Headway Factor	8:	1.00	00.1	00.1	1.00	00.1	00:1	9.1	00.	9:1	1.00	00.1
urning Speed (mph)	J2	•	6	15	•	6	15	•	5	5		6
Number of Detectors		7			7			. 7	- :			
Detector Lemplate	Let	nu.			nun s		E E		Right			
eading Detector (ft)	9	100			000		20	90 6	20			
railing Detector (ft)	0	0			0		0 0	0 0	0			
Detector 1 Position(ii)	2 0	0 4			0 4		2 0	0 4	0 0			
Detector 1 Size(ii)	Cl+Fv	O A			O A		Cl+Fv	CI+FV o	CI+Fv			
Detector 1 Channel	5	2			5		5	5	5			
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			96				
Detector 2 Size(ft)		9			9			9				
Detector 2 Type		CI+Ex			CI+EX			CI+EX				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Furn Type	pm+pt						custom	4	Perm			
Protected Phases	<del>-</del> -	9			7		m c	m	c			
Permitted Phases	0						~		~			

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Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - AM Peak Hour 12: Sheridan Drive & I-290 NB

	1	†	<u> </u>	<b>&gt;</b>	ţ	4	•	<b>←</b>	•	۶	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	1.0	4.0			4.0		4.0	4.0	4.0			
Minimum Split (s)	6.2	33.9			27.8		29.0	29.0	29.0			
Total Split (s)	14.0	85.0	0.0	0.0	71.0	0.0	32.0	35.0	35.0	0.0	0:0	0.0
Total Split (%)	11.7%	70.8%	%0.0	%0.0	59.2%	%0.0	29.2%	29.2%	29.2%	%0.0	%0:0	%0.0
Maximum Green (s)	9.7	79.1			65.2		29.8	29.8	29.8			
Yellow I me (s)	3.2	3.9			3.9		3.2	3.7	3.7			
All-Red Time (s)	_ 6	7.0	c	ć	<u>6.</u>	ć	7.0	7.0	7.0	c	c	c
Lost Illife Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	t.3	6.0	t. O	5.	0.0	. <del>,</del>	2.5	7.0	3.5	t. O	D;	
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	2.0	3.0			3.0		2.0	2.0	2.0			
Recall Mode	None	C-Max			С-Мах		None	None	None			
Walk Time (s)		7.0			7.0							
Flash Dont Walk (s)		21.0			15.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)	91.8	90.2			68.9		18.7	18.7	18.7			
Actuated g/C Ratio	0.76	0.75			0.57		0.16	0.16	0.16			
v/c Ratio	0.71	0.38			0.55		0.74	0.71	0.62			
Control Delay	34.2	7.9			14.3		64.3	22.7	40.7			
Oueue Delay	0.0	0.0			0.0		0.0	0.0	0.0			
Total Delay	34.2	7.9			14.3		64.3	55.7	40.7			
SOT	ပ	⋖			æ		ш	ш	۵			
Approach Delay		11.9			14.3			54.0				
Approach LOS		В			B			Ω				
Intersection Summary												
	Other											
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 37 (31%), Referenced to phase 2:WBT and 6:EBTL, Start of Yellow	to phase	2:WBT ar	nd 6:EBTI	-, Start o	t Yellow							
Control Type: Actuated-Coordinated	dinated											
Maximum v/c Ratio: 0.74												
Intersection Signal Delay: 19.0	0			=	Intersection LOS: B	I OS: B						
Intersection Capacity Utilization 66.3%	on 66.3%			2	ICU Level of Service C	f Service	U					
Analysis Period (min) 15												
Splits and Phases: 12-She	12. Sheridan Drive & L290 NB	06C-1 % d	NB R									
11		2 2	2					*				
<b>o</b> 1 02								>	63			
14s 71s								32°				
° γ												
85s												

Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - AM Peak Hour 13: Sheridan Drive & Harlem Road

	•	<b>&gt;</b>	•		_	,	
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	‡	*-	ķ.	‡	ķ.	44	
Volume (vph)	819	315	459	797	285	803	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0 -	215		140	0 6	
Julaye Lalles Taner I ength (#)		230	- 01		100	25	
l apo I till Factor	0.05	100	0 0 0	0.05	007	67	
Fri	3	0.850	3.0	2	200	0.850	
Fit Protected			0.950		0.950		
Satd. Flow (prot)	3539	1583	3433	3539	3433	2787	
Fit Permitted			0.950		0.950		
Satd. Flow (perm)	3539	1583	3433	3539	3433	2787	
Right Turn on Red Satd Flow (RTOR)		2				Yes 151	
Link Speed (mph)	45			45	32		
Link Distance (ft)	314			413	338		
Travel Time (s)	4.8			6.3	9.9		
Peak Hour Factor	0.85	0.85	0.92	0.92	0.00	0.90	
Adj. Flow (vph)	964	3/1	499	998	31/	268	
Silared Larre Harric (%)	064	371	490	866	317	807	
Enter Blocked Intersection	2	2	2	8 8	<u> </u> 8	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	12			24	24		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
I wo way Left I um Lane	5	5	5	00	00	00	
readway raciol	3.	3.	3. 5	9.1	9.1	00.1	
Furning Speed (mpn)  Number of Detectors	2	٦ -	ი ←	2	ი ←	ъ г-	
Detector Template	Thru	Right	Left	Thru	Left	Right	
Leading Detector (ft)	100	50	70	100	70	20	
Trailing Detector (ft)	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	
Detector 1 Size(ft)	9	50	8	9	50	20	
Detector 1 Type Detector 1 Channel	CI+EX	CI+Ex	CI+EX	CI+Ex	CI+EX	CI+Ex	
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Fosition (i)	ţ ~			‡ 4			
Detector 2 Type	CI+EX			CI+Ex			
Detector 2 Channel							
Detector 2 Extend (s)	0.0			0.0			
Turn Type		custom	Prot			custom	
Protected Phases	2	2	-	12	m	13	
Permitted Phases	•	2	,	,		က	
Detector Phase		`			~		

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Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - AM Peak Hour 13: Sheridan Drive & Harlem Road

Same Group   EBT   EBR   WBT   NBR   NB		EBT	נים					
200 200 3.0 6.0 3.0 6.0 5.0 3.0 6.0 5.0 3.0 6.0 5.0 3.0 6.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5			EBK	WBL	WBT	NBL	NBR	
200 200 3.0 6.0 30.5 7.3 16.0 56.06 66.0 25.0 540 66.0 66.0 24.2% 79.2% 20.8% 45.0% 60.5 60.5 24.7 79.2% 20.8% 45.0% 60.5 60.5 24.7 79.2% 20.8% 45.0% 60.5 60.5 24.7 79.2% 20.8% 45.0% 60.0 0.0 0.0 0.0 0.0 0.0 5.5 5.5 4.3 4.3 5.2 4.3 Lag Lag Lag Lag Lag Lag Lag Lag Lag Lag								
305 305 7.3 112  560 660 29.0 95.0 25.0 540  560 660 29.0 95.0 25.0 540  605 60.5 24.7 79.2% 20.8% 450%  605 60.5 24.7 79.2% 20.8% 450%  60 0 0 0 0 0 0 0 0 0 0  5.5 5.5 4.3 4.3 5.2 4.3  1ag Lag Lag Lead Ves Yes Yes Yes Yes Yes Yes Yes Yes Yes Y		20.0	20.0	3.0		0.9		
660 28.0 95.0 25.0 54.0 55.0% 25.0% 24.2% 79.2% 20.8% 45.0% 60.5 60.5 24.2% 79.2% 20.8% 45.0% 60.5 60.5 3.2 3.2 1.6 1.6 1.1 2.0 0.0 0.0 0.0 0.0 0.0 61.3 61.3 23.9 90.7 19.8 48.9 65.1 67.0 0.0 0.0 0.0 61.3 61.3 23.9 90.7 19.8 48.9 65.1 0.5 1 0.5 1 0.0 0.0 61.3 61.3 23.9 90.7 19.8 48.9 65.3 0.46 0.73 21.3 21.3 51.6 4.4 50.4 28.4 0.0 0.0 0.0 0.0 0.0 0.0 21.3 21.3 51.6 4.4 50.4 28.4 21.3 21.3 51.6 4.4 50.4 28.4 21.3 21.3 51.6 4.4 50.4 28.4 21.3 21.3 51.6 4.4 50.4 28.4 22.5 C C D A D C C C D A D C C C D A D C C C D A SOW C C C C C C C C C C C C C C C C C C C		30.5	30.5	7.3		11.2		
55.0% 55.0% 24.2% 79.2% 20.8% 45.0% 60.5 60.5 24.7 19.8 3.9 3.9 3.9 3.9 3.2 1.6 1.1 2.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0		0.99	0.99	29.0	95.0	25.0	54.0	
60.5 60.5 24.7 19.8  1.6 1.6 1.1 2.0  1.6 1.6 1.1 2.0  2.0 0.0 0.0 0.0 0.0  5.5 4.3 4.3 5.2 4.3  1.4 1.4 1.4 5.2  2.0 2.0 2.0  2.0 2.0 2.0  2.0 2.0 2.0  18.0 18.0  18.0 18.0  61.1 6.1 2.3  19.8 48.9  651 0.51 0.20 0.76 0.16 0.41  0.0 0.0 0.0 0.0 0.0  21.3 21.3 51.6 4.4 50.4 28.4  0.0 0.0 0.0 0.0 0.0  21.3 21.3 51.6 4.4 50.4 28.4  C C D A D C  C C D A D C  C C D A INDERSECTION LOS. C  Iton bhase 2:EBWB, Start of Yellow  Indinated  Indin	Maximum Green (s)	22.0%	22.0%	24.2%	79.2%	20.8%	45.0%	
39 39 3.2 3.2  10 0.0 0.0 0.0 0.0  5.5 5.5 4.3 4.3 5.2 4.3  Lag Lag Lead Ves Yes Yes 2.0  C-Max C-Max None None  7.0 7.0 7.0  6.1.3 6.1.3 23.9 90.7 19.8 48.9  0.5 10.51 0.20 0.76 0.16 0.71  C C D A BO C C C C  21.3 21.3 51.6 4.4 50.4 28.4  C C D A D C  21.3 21.3 51.6 4.4 50.4 28.4  C C D A D C  21.3 21.3 51.6 4.4 50.4 28.4  C C D A D C  21.3 21.3 51.6 4.4 50.4 28.4  C C D A D C  21.3 21.3 51.6 4.4 50.4 28.4  C C D A D C  21.3 21.3 51.6 4.4 50.4 28.4  C C D A D C  21.3 21.3 51.6 4.4 50.4 28.4  C C D A D C  21.3 21.3 51.6 4.4 50.4 28.4  C C D A D C  21.3 21.3 51.6 4.4 50.4 28.4  C C D A D C  21.3 51.6 4.4 50.4 28.4  C C D A D C  21.3 51.6 4.4 50.4 28.4  C C D A D C  21.3 51.6 4.4 50.4 28.4  C C D A D C  21.5 50.50 50.50 50.50  C C D A D C  C C D A D C  C C D A D C  C C C C C C  C C C C C C C  C C C C C C C C  C C C C C C C C C  C	i	90.2	60.5	24.7		19.8		
1.6 1.6 1.1 2.0 0.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5	Yellow I me (s)	3.9	3.9	3.2		3.2		
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	All-Red Time (s)	1.6	1.6	7		2.0		
Lag Lead Lead Ves Yes Yes Yes Yes Yes Yes Yes Yes Yes Y	Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Lag         Lag         Lead	Total Lost Time (s)	5.5	5.5	4.3	4.3	5.2	4.3	
Yes Yes Yes Yes 2.0 2.0 2.0 2.0 2.0 2.0 2.0 3.0 2.0 2.0 3.0 2.0 2.0 3.0 7.0 18.0 18.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Lead/Lag	Lag	Lag	Lead				
2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	Lead-Lag Optimize?	Yes	Yes	Yes				
C-Max C-Max None None  7.0 7.0  18.0 10  6.1 3 23.9 90.7 19.8 48.9  6.13 61.3 23.9 90.7 19.8 48.9  6.15 10.20 0.76 0.16 0.41  6.05 0.41 0.73 0.25 0.56 0.73  21.3 21.3 51.6 4.4 50.4 28.4  0.0 0.0 0.0 0.0 0.0  C C D A D C  21.3 21.3 51.6 4.4 50.4 28.4  C C C D A D C  21.4 34.2 C  C C D A D C  C C D A D C  21.5 3.2 C  C C C D A D C  C C D A D C  S A Intersection LOS: C  S A Intersection LOS: C  Iton 58.9% Intersection LOS: C	Vehicle Extension (s)	2.0	2.0	2.0		2.0		
7.0 7.0  18.0 18.0  6.1.3 6.1.3 23.9 90.7 19.8 48.9  6.5.1 0.51 0.20 0.76 0.16 0.41  0.53 0.46 0.73 0.32 0.56 0.73  2.13 21.3 51.6 4.4 50.4 28.4  0.0 0.0 0.0 0.0 0.0 0.0 0.0  2.13 21.3 51.6 4.4 50.4 28.4  C C D A D C  2.13 21.3 51.6 4.4 50.4 28.4  C C C D C C C  C D A D C  C C D A D C  C C D A D C  C C D A D C  C C D A D C  C C D A D C  C C D A D C  C C C C C C C C C C C C C C C C C		C-Max	C-Max	None		None		
18.0 18.0 6.13 61.3 23.9 90.7 19.8 48.9 0.51 0.51 0.20 0.76 0.16 0.41 0.53 0.46 0.73 0.32 0.56 0.73 21.3 21.3 51.6 4.4 50.4 28.4 0 0 0 0 0 0 0 0 0 21.3 21.3 51.6 4.4 50.4 28.4 C C D A D C 21.3 21.4 51.6 34.2 C C D A D C C D A D C C D A D C C D A D C C C D A D C C C D A D C C C D A D C C C D A D C C C D A D C C C C D A D C C C C C C C C C C C C C C C C C C C	Walk Time (s)	7.0	7.0					
0 61.3 61.0 0 61.3 61.3 23.9 90.7 19.8 48.9 651 0.51 0.52 0.8 0.16 0.41 653 0.46 0.73 0.32 0.56 0.73 21.3 21.3 51.6 4.4 50.4 28.4 60 0.0 0.0 0.0 0.0 60 0.0 0.0 0.0 0.0 60 0.0 0.0 0.0 60 0.0 0.0 0.0 60 0.0 0.0 0.0 60 0.0 0.0 0.0 61.3 21.3 51.6 4.4 50.4 28.4 62 C C D A D C 63 C C C C C C 64 C C C C C 65 C C C C C 66 C C C C C C 67 C C C C C C 68 C C C C C C C C C C C C C C C C C C C	Flash Dont Walk (s)	18.0	18.0					
61.3 61.3 23.9 90.7 19.8 48.9 0.51 0.55 0.70 0.76 0.41 0.63 0.46 0.73 21.3 21.3 51.6 4.4 50.4 28.4 0.0 0.0 0.0 0.0 0.0 21.3 21.3 51.6 4.4 50.4 28.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Pedestrian Calls (#/hr)	0	0					
051 0.51 0.05 0.76 0.16 0.41 053 0.46 0.73 0.32 0.56 0.73 213 21.3 51.6 4.4 50.4 28.4 0.0 0.0 0.0 0.0 0.0 0.0 213 21.3 51.6 4.4 50.4 28.4  C C D A D C C C D A D C C C D A D C C C D A SWA  DIher  dio phase 2:EBWB, Start of Yellow  retidan Drive & Harlem Road  ectidan Drive & Harlem Road	Act Effct Green (s)	61.3	61.3	23.9	7.06	19.8	48.9	
0.53 0.46 0.73 0.32 0.56 0.73 21.3 21.3 51.6 4.4 50.4 28.4 0 0 0 0 0 0 0 0 0 0 21.3 21.3 51.6 4.4 50.4 28.4 C C D A D C C C D A D C C C C C C C C C C C C C C C C C C C	Actuated g/C Ratio	0.51	0.51	0.20	0.76	0.16	0.41	
213 213 516 44 504 284 00 0.0 0.0 0.0 0.0 213 213 516 4.4 50.4 28.4 C C D A D C 21.6 34.2 C	v/c Ratio	0.53	0.46	0.73	0.32	0.56	0.73	
0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.1.3 21.3 51.6 4.4 50.4 28.4 28.4 2.1.3 21.3 51.6 4.4 50.4 28.4 C C C D A D C C C C D A D C C C C C C C	Control Delay	21.3	21.3	9.12	4.4	50.4	28.4	
213 21.3 51.6 44 50.4 28.4 C C D A D C	Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
21.3 21.6 34.2 C C C C C C C C C C C C C C C C C C C	Total Delay	21.3	21.3	21.6	4.4	20.4	28.4	
21.3 21.6 34.2 C C C C C Other  d to phase 2:EBWB, Start of Yellow ridnated 5.4 Intersection LOS: C Ion 58.9% ICU Level of Service B Icu tevel of Service B	FOS	ပ	ပ	۵	⋖	۵	O	
C C C C C C C C C C C Dither  Intersection LOS: C Ion 58.9% ICU Level of Service B Intersection Drive & Harlem Road	Approach Delay	21.3			21.6	34.2		
other d to phase 2:EBWB, Start of Yellow rdinated 3.4 Intersection LOS: C Iou Level of Service B Incridan Drive & Harlem Road Intersection LOS: C Iou Level of Service B Iou Level of Service B Iou Level of Service B	Approach LOS	U			O	O		
other d to phase 2:EBWB, Start of Yellow rdinated 5.4 Intersection LOS: C flon 58.9% ICU Level of Service B seridan Drive & Harlem Road	Intersection Summary							
d to phase 2:EBWB, Start of Yellow richated  3.4 Intersection LOS: C  Ion 58.9% ICU Level of Service B  Intersection Drive & Hartem Road		her						
d to phase 2:EBWB, Start of Yellow rdnated  intersection LOS: C  iton 58.9%  ICU Level of Service B  icridan Drive & Harlem Road	Cycle Length: 120							
eferenced to phase 2:EBWB, Start of Yellow sted-Coordinated : 0.73 Delay: 25.4 Intersection LOS: C I U Level of Service B in) 15 13: Sheridan Drive & Harlem Road	Actuated Cycle Length: 120							
13: Sheridan Diive & Harlem Road	Offset: 24 (20%), Referenced to	o phase	2:EBWB,	Start of	Yellow			
sted-Coordinated : 0.73 Delay: 25.4 Intersection LOS: C y Utilizalion 58.9% ICU Level of Service B in) 15. 13: Sheridan Drive & Harlem Road	Natural Cycle: 60							
1.0.73  Delay: 25.4 Intersection LOS: C  Delay: 25.4 Intersection LOS: C  I Ut Level of Service B  13: Sheridan Drive & Harlem Road	Control Type: Actuated-Coordir	nated						
Delay: 25.4 Intersection LOS: C  by Ullization 58.9% ICU Level of Service B  n) 15  13: Sheridan Drive & Harlem Road	Maximum v/c Ratio: 0.73							
13: Sheridan Drive & Harlem Road	Intersection Signal Delay: 25.4 Intersection Capacity Utilization Analysis Period (min) 15	783.9%			드인	tersection U Level o	n LOS: C of Service B	
13: Sheridan Dive & Harlein Rodu		2	9	-				
<i>₹</i>		dan Driv	/e & Harre	em Koad				
	- •	<b>∤</b> †						ু <b>≯</b>

Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - AM Peak Hour 14: I-290 SB & Harlem Road

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations	×	æ	<b>*</b>		K	*	
Volume (vph)	298	681	446	21	378	364	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	0		0	330		
Storage Lanes	-	_		0	-		
Taper Length (ft)	5 22	7 25	2	25	75	100	
Lane UIII. Factor	3.	00.1	0.70	0.93	36.	0.95	
TH. D	0	0.850	0.993		0		
Fit Protected	0.950	1502	2514	c	0.950	2520	
Salu: 1 low (prot)	0.050	200	<u>+</u>	>	0771	6000	
Satd Flow (norm)	1770	1583	3514	0	488	3530	
Right Turn on Red	2	Yes		Yes	2		
Satd. Flow (RTOR)		168	4				
Link Speed (mph)	9		32			32	
Link Distance (ft)	333		250			456	
ravel Time (s)	7.6		4.9			8.9	
Peak Hour Factor	0.81	0.81	0.87	0.87	0.88	0.88	
Adj. Flow (vph)	368	841	513	24	430	414	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	368	841	537	0	430	414	
Enter Blocked Intersection	S N	8	9	8	8	8	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	12		12			12	
Link Offset(ft)	0		0			0	
Crosswalk Width(ft)	92		16			16	
rwo way Left Tum Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
urning Speed (mph)	15	6		6	12		
Number of Detectors	-	_	2		-	2	
Detector Template	Left	Right	Thr		Fet	Thr.	
eading Detector (ft)	20	20	100		20	100	
railing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	8	20	9		70	9	
Detector 1 Type	CI+EX	CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)			94			94	
Detector 2 Size(ft)			9			9	
Detector 2 Type			CI+Ex			CI+Ex	
Detector 2 Channel							
Detector 2 Extend (s)			0.0			0.0	
Furn Type		hm+ov			pm+pt		
Protected Phases	3	-	2		<del>-</del>	9	
Permitted Phases		e			9		
Detector Phase	e	_	7		_	9	

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Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - AM Peak Hour 14: I-290 SB & Harlem Road

	<b>&gt;</b>	4	<b>←</b>	4	٠	<b>→</b>	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Switch Phase							
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	22.0	9.5	30.6		9.5	21.0	
Total Split (s)	40.0	35.0	20.0	0.0	35.0	85.0	
Total Split (%)	32.0%	28.0%	40.0%	%0.0	28.0%	%0:89	
Maximum Green (s)	35.2	30.7	45.0		30.7	80.0	
Yellow Time (s)	3.2	3.2	3.6		3.2	3.6	
All-Red Time (s)	1.6	1.	1.4		<del>[</del>	1.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.8	4.3	2.0	4.0	4.3	5.0	
Lead/Lag		Lead	Lag		Lead		
Lead-Lag Optimize?		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	Min		None	None	
Walk Time (s)			10.0				
Flash Dont Walk (s)			15.0				
Pedestrian Calls (#/hr)			0				
Act Effct Green (s)	22.7	48.7	19.3		45.6	44.8	
Actuated g/C Ratio	0.29	0.62	0.25		0.58	0.57	
v/c Ratio	0.72	0.80	0.62		0.68	0.20	
Control Delay	35.1	15.8	31.1		17.1	8.8	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay	35.1	15.8	31.1		17.1	8.8	
ros	۵	В	ပ		В	Ф	
Approach Delay	21.7		31.1			13.0	
Approach LOS	ပ		ပ			B	
Intersection Summary							
	Other						
Cycle Length: 125							
Actuated Cycle Length: 78							
Natural Cycle: 90							
Control Type: Actuated-Uncoordinated	ordinated						
Maximum v/c Ratio: 0.80							
Intersection Signal Delay: 20.8	8			프	Intersection LOS: C	LOS: C	
Intersection Capacity Utilization 62.9%	on 62.9%			೨	U Level o	ICU Level of Service B	
Analysis Period (min) 15							

Splits and Phases: 14:1-290 SB & Harlem Road



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - PM Peak Hour 1: Maple Road & Millersport Hwy SB

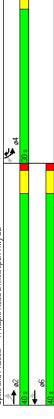
	^	†	ļ	1	٠	*	
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	*	*	*	×	*	¥L.	
Volume (vph)	59	936	841	227	22	174	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	120			150	0	0	
Storage Lanes	-			-	<del>-</del>	-	
Taper Length (ft)	32			100	25	25	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	
표				0.850		0.850	
Fit Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583	
Flt Permitted	0.296				0.950		
Satd. Flow (perm)	551	3539	3539	1583	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)						96	
Link Speed (mph)		45	45		30		
Link Distance (ft)		555	654		281		
Travel Time (s)		8.4	6.6		6.4		
Peak Hour Factor	06:0	06:0	0.92	0.92	0.81	0.81	
Adj. Flow (vph)	32	1040	914	247	89	215	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	32	1040	914	247	89	215	
Enter Blocked Intersection	N <sub>o</sub>	8	8	8	S	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane			Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			6	15	6	
Number of Detectors	_	2	2	-	_	_	
Detector Template	Left	Thru	Thru	Right	Left	Right	
Leading Detector (ft)	70	100	100	20	20	70	
Trailing Detector (ft)	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	
Detector 1 Size(ft)	8	9	9	20	70	20	
Detector 1 Type	CI+Ex	CI+Ex	CI+EX	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		9	9				
Detector 2 Type		CI+Ex	CI+EX				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Perm			vo+mq		Perm	
Protected Phases	d	2	9	4 ,	4		
Permitted Phases	7	4		9		4	
Dototor Dhoo	c	C	4	_			

Synchro 7 - Report Page 1

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - PM Peak Hour 1: Maple Road & Millersport Hwy SB

Lane Group         EBI         WBT         WBR         SBL         SBR           Swildt Phase         Minimum Initial (s)         4.0         4.0         1.0         1.0           Minimum Initial (s)         4.0         4.0         4.0         1.0         1.0           Total Split (s)         5.1         5.1.%         57.1%         57.1%         57.1%         57.1%           All Red Time (s)         5.1.%         57.1         4.0         4.0         4.0         6.0         6.0         6.0         6.0         6.0         6.0         6.0         6.0         6.0 <th>els</th> <th></th> <th>^</th> <th>†</th> <th>Ļ</th> <th>1</th> <th>٠</th> <th>•</th> <th></th>	els		^	†	Ļ	1	٠	•	
al (s) 4.0 4.0 1.0  (s) 9.1 9.1 9.1 6.2  en (s) 8.7.1% 57.1% 57.1% 42.9%  en (s) 8.4.9 34.9 34.9 25.4  (s) 1.2 1.2 1.2 1.2 1.4  lust (s) 0.0 0.0 0.0 0.0  en (s) 5.1 5.1 5.1 6.1 0.0  frinize?  sion (s) 9.0 0.0 0.0 0.0  Ratio 0.70 0.70 0.70 1.00  A A A A A A A A A A A A A A A A A A	al (s) 4.0 4.0 1.0  (s) 4.0 4.0 4.0 1.0  (s) 9.1 9.1 6.2  een (s) 3.4 9.4 9.1 8.29%  een (s) 3.4 9.3 9.3 3.9 3.9  (s) 1.2 1.2 1.2 1.4  lust (s) 0.0 0.0 0.0 0.0  ee (s) 5.1 5.1 5.1 6.1 0.0  ee (s) 5.1 5.1 5.1 0.0  en (s) 9.0 0.0 0.0 0.0  Ratio 0.70 0.70 0.70 0.70 1.00  Each 5.4 5.8 7.1 0.2  A A A A A A A A A A A A A A A A A A A	Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	
It(s) 4.0 4.0 4.0 1.0 1.0 1(s) 9.1 9.1 9.1 6.2 40.0 30.0 30.0 30.0 3.4 9.3 9.3 9.3 9.3 9.3 9.3 9.3 9.3 9.3 9.3	It(s) 4.0 4.0 4.0 1.0 1.0 1(s) 9.1 9.1 9.1 6.2 40.0 30.0 30.0 30.0 3.4 9.3 9.3 9.3 9.3 9.3 9.3 9.3 9.3 9.3 9.3	Switch Phase							
(s) 91 9.1 9.1 62 400 400 300 ) 57,1% 57,1% 57,1% 27,9% ) 84.9 34.9 34.9 25.4 (s) 34.9 34.9 34.9 25.4 (s) 34.9 34.9 34.9 25.4 (s) 3.9 3.9 3.9 3.9 3.9 3.9 (s) 1.2 1.2 1.2 1.4 (s) 0.0 0.0 0.0 0.0 0.0 (e. (s) 5.1 5.1 5.1 5.1 4.6 (mixe? 3.0 3.0 3.0 3.0 3.0 (mixe? 3.0 3.0 3.0 3.0 3.0 (mixe? 3.0 3.0 3.0 3.0 3.0 (mixe? 3.0 3.0 3.0 3.0 3.0 (mixe? 3.0 3.0 3.0 3.0 3.0 (mixe? 3.0 3.0 3.0 3.0 3.0 (mixe? 3.0 3.0 3.0 3.0 3.0 (mixe? 3.0 3.0 3.0 3.0 3.0 (mixe? 3.0 3.0 3.0 3.0 (mixe? 3.0 3.0 3.0 3.0 (mixe? 3.0 3.0 3.0 3.0 (mixe? 3.0 3.0 3.0 3.0 (mixe? 3.0 3.0 3.0 3.0 (mixe? 3.0 3.0 3.0 3.0 (mixe? 3.0 3.0 3.0 3.0 (mixe? 3.0 3.0 3.0 3.0 (mixe? 3.0 3.0 3.0 3.0 (mixe? 3.0 3.0 3.0 3.0 (mixe? 3.0 3.0 3.0 3.0 (mixe? 3.0 3.0 3.0 3.0 (mixe? 3.0 3.0 3.0 3.0 (mixe? 3.0 3.0 3.0 3.0 (mixe? 3.0 3.0 3.0 3.0 (mixe? 3.0 3.0 3.0 3.0 (mixe? 3.0 3.0 3.0 3.0 (mixe? 3.0 3.0 3.0 3.0 (mixe? 3.0 3.0 (mixe? 3.0 3.0 (mixe. 3.0 (mixe. 3.0 3.0 (mixe. 3.0 3.0 (mixe. 3.0 3.0 (mixe. 3.0 3.0 (mix	(s) 91 9.1 9.1 62 400 40.0 30.0 57.1% 57.1% 57.1% 57.1% 22.9% een (s) 34.9 34.9 34.9 25.4 32.9 (s) 34.9 34.9 34.9 25.4 32.9 (s) 34.9 34.9 34.9 25.4 32.9 (s) 1.2 1.2 1.2 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4	Minimum Initial (s)	4.0	4.0	4.0	1.0	1.0	1.0	
400 400 400 300 een (s) 57.1% 57.1% 57.1% 42.9% een (s) 3.49 34.9 34.9 35.1 34.9 34.9 35.1 34.9 34.9 35.1 36.1 36.1 36.1 36.1 36.1 36.1 36.1 36	een (s)	Minimum Split (s)	9.1	9.1	9.1	6.2	6.2	6.2	
en (s) 57.1% 57.1% 57.1% 42.9% 58.1% 57.1% 57.1% 42.9% 58.4% 57.1% 57.1% 42.9% 58.4% 57.1%	en (s) 57.1% 57.1% 57.1% 42.9% 58.1% 57.1% 57.1% 42.9% 58.1% 57.1% 57.1% 57.1% 42.9% 58.1% 57.1%	Total Split (s)	40.0	40.0	40.0	30.0	30.0	30.0	
sen (s) 34.9 34.9 34.9 254 35, 34.9 34.9 34.9 34.9 34.9 34.9 34.9 34.9	sen (s) 34.9 34.9 34.9 254 35, 34.9 34.9 34.9 34.9 34.9 34.9 34.9 34.9	Total Split (%)	57.1%	57.1%	57.1%	45.9%	45.9%	42.9%	
(s) 3.9 3.9 3.9 3.2 (s) (s) 3.9 3.9 3.2 (s) 3.2 (s) 3.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	(s) 3.9 3.9 3.9 3.9 3.2 (s) (s) 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2	Maximum Green (s)	34.9	34.9	34.9	25.4	25.4	25.4	
(\$) 1.2 1.2 1.4 1.4 1.4 1.2 1.5 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4	(\$) 1.2 1.2 1.4 1.4 1.4 1.2 1.5 1.4 5.1 4.6 1.4 5.1 5.1 5.1 5.1 4.6 1.4 5.1 5.1 5.1 5.1 4.6 1.4 5.1 5.1 5.1 5.1 5.1 5.1 5.1 5.1 5.1 5.1	Yellow Time (s)	3.9	3.9	3.9	3.2	3.2	3.2	
lust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	lust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	All-Red Time (s)	1.2	1.2	1.2	1.4	1.4	1.4	
Innize?  sion (s)  condition (c./Min C./Min None  an (s)  49.0 49.0 70.0 70.0  70.0 0.70 0.70 0.70 0.70  5.4 5.8 7.1 0.2  5.4 5.8 7.1 0.2  5.4 5.8 7.1 0.2  5.4 5.8 7.1 0.2  5.4 5.8 7.1 0.2  6. Le Length. 70  A A A A A  A A  A A A  A	Imize?  sion (s)  colubia  sion (s)  colubia  sion (s)  colubia  sion (s)  s	Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Imize?  sion (s) 3.0 3.0 3.0 3.0  sion (s) C-Min C-Min C-Min None  sn (s) 49.0 49.0 49.0 70.0  Ratio 0.00 0.07 0.70 0.70 0.70  0.00 0.00 0.0	Imize?  sion (s)  sion (s)  C-Min C-Min C-Min None  and (s)  A90 490 490 700  Ratio 0.70 0.70 1.00  6.00 0.00 0.0 0.0  6.4 5.4 5.8 7.1 0.2  6.4 5.8 7.1 0.2  7.4 5.8 5.6  A A A A A A  available  Company  Other  Actuated-Coordinated  Ratio 0.64  Ratio 0.64  Ratio 0.64  Ratio 0.64  Actuated-Coordinated  Ratio 0.64  Ratio 0.64  Actuated-Coordinated  Actu	Total Lost Time (s)	2.1	2.1	5.1	4.6	4.6	4.6	
Imize? 3.0 3.0 3.0 3.0 sion (s) C-Min C-Min C-Min None nn (s) 49.0 49.0 49.0 70.0 70 0.70 0.70 0.70 0.70 0.70 0.7	Imize? 3.0 3.0 3.0 3.0 sion (s) c./min c./min CMin CMin None c./min CMin	Lead/Lag							
sion (s) 3.0 3.0 3.0 3.0 3.0 3.0 sion (s) C-Min C-Min None C-Min C-Min None C-Min C-Min None C-Min C-Min None	sion (s) 3.0 3.0 3.0 3.0 3.0 sion (s) C-Min C-Min None C-Min C-Min None C-Min C-Min None C-Min C-Min None C-Min C-Min None C-Min Non	Lead-Lag Optimize?							
C-Min C-Min C-Min None Ratio   C-Min C-Min C-Min None Ratio   0.70   0	C-Min C-Min C-Min None Ratio	Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	
Ratio (s) 49.0 49.0 700  Ratio (0.70 0.70 0.70 0.70  Ratio (0.70 0.70 0.70 0.70  S.4 5.8 7.1 0.2  S.4 5.8 7.1 0.2  S.4 5.8 7.1 0.2  A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.	Ratio (s) 49.0 49.0 700 Ratio (0.70 0.70 0.70 1.00 Ratio (0.70 0.70 0.70 0.70 0.70 Ratio (0.70 0.70 0.70 Ratio (0.70 0.70 Ratio (	Recall Mode	C-Min	C-Min	C-Min	None	None	None	
Ratio 0.70 0.70 0.70 1.00 0.08 0.42 0.37 0.16 0.08 0.42 0.37 0.16 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Ratio 0.70 0.70 0.70 1.00 0.00 0.00 0.00 0.00	Act Effct Green (s)	49.0	49.0	49.0	70.0	11.3	11.3	
0.08 0.42 0.37 0.16 7 5.4 5.8 7.1 0.2 0.0 0.0 0.0 0.0 5.4 5.8 7.1 0.2 A A A A A A S S S S S S S A A A A S S S S	0.08 0.42 0.37 0.16 7 5.4 5.8 7.1 0.2 0.0 0.0 0.0 0.0 5.4 5.8 7.1 0.2 5.4 5.8 7.1 0.2 A A A A A A S S S S S S S A A A A S S S S	Actuated g/C Ratio	0.70	0.70	0.70	1.00	0.16	0.16	
S	S	v/c Ratio	0.08	0.42	0.37	0.16	0.24	0.64	
84 58 7.1 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	8	Control Delay	5.4	2.8	7.1	0.2	25.5	23.3	
134 54 57 7.1 0.2  149	134 58 7.1 0.2  A A A A A  S A A A A  S A A A  Outher  Other  170  Retreenced to phase 2:EBTL and 6:WBT, Start of 4.0  Actualed-Coordinated Ratio 0.7  Ratio 0.7  Ratio 0.7  Ignal Delay: 7.7  Ignal Delay: 7.7  Ignable 158  Actual 158  Ignal Delay: 7.7  Ignal Delay:	Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
LOS	LOS	Total Delay	5.4	2.8	7.1	0.5	25.5	23.3	
Approach Delay 5.8 5.6 23.9 Approach LOS A A A C Intersection Summary Area Type: Cycle Length: 70 Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green Natural Cycle: 40 Control Type: Actuated-Coordinated Maximum vic Ratio: 0.64 Maximum vic Ratio: 0.64 Intersection Signal Delay: 7.7 Intersection Capacity Utilization 42.1% Intersection Capacity Utilization 42.1% Intersection Capacity Utilization 42.1% Intersection Capacity Utilization 42.1% Intersection Capacity Utilization 42.1% Intersection Capacity Utilization 42.1% Intersection Capacity Utilization 42.1% Intersection Capacity Utilization 42.1% Intersection Capacity Utilization 42.1% Intersection Capacity Utilization 42.1%	Approach Delay         5.8         5.6         23.9           Approach LOS         A         C           Intersection Summary         Color of the co	SOT	⋖	⋖	⋖	V	ပ	S	
Approach LOS A A A C Intersection Summary Area Type: Cycle Length: 70 Actualed Cycle Length: 70 Actualed Cycle: 40 Actual Cycle: 40 Asimum vic Ratio: 0.64 Intersection Signal Delay: 7.7 Intersection Capacity Utilization 42.1% Intersection Capacity Utilization 42.1% Intersection Signal Delay: 7.7 Intersection Capacity Utilization 42.1% Intersection Signal Delay: 7.7 Intersection Capacity Utilization 42.1% Intersection Capacity Utilization 42.1%	Approach LOS A A C C Intersection Summary Area Type: Cycle Length: 70 Actualed Cycle Length: 70 Actualed Cycle: 40 Actualed Coordinated Maximum Vic Ratio: 0.64 Intersection Signal Delay: 7.7 Intersection Signal Delay: 7.7 Actualed Coordinated Maximum Vic Ratio: 0.64 Analysis Period (min) 15	Approach Delay		2.8	9.6		23.9		
Area Type:  Cycle Length: 70 Actualed Cycle Length: 70 Actualed Cycle Length: 70 Actualed Cycle Length: 70 Actualed Cycle: 40 Actualed Cycle: 40 Ashirum vic Ratio: 0.64 Intersection Signal Delay: 7.7 Intersection Spara Delay: 7.7 Intersection Capacity Utilization 42.1% Intersection Capacity Utilization 42.1% Intersection Sparal Delay: 7.7 Intersection Capacity Utilization 42.1% Intersection Capacity Utilization 42.1%	Area Type:  Cycle Length: 70 Actualed Cycle Length: 70 Actualed Cycle Length: 70 Control Type: Actualed-Coordinated Maximum vic Ratio: 0.64 Intersection Signal Delay: 7.7 Analysis Period (min) 15  Intersection Space Service A	Approach LOS		⋖	∢		ပ		
Area Type: Cycle Length: 70 Actualed Cycle Length: 70 Actualed Cycle Length: 70 Actualed Cycle Length: 70 Actualed Cycle Length: 70 Actualed Cycle Length: 70 Actualed Cycle: 40 Askinum vic Ratio: 0.64 Maximum vic Ratio: 0.64 Maximum vic Ratio: 0.64 Intersection Signal Delay: 7.7 Intersection Capacity Utilization 42.1% Intersection Capacity Utilization 42.1% Intersection Capacity Utilization 42.1%	Area Type: Cycle Length: 70 Actualed Cycle Length: 70 Actualed Cycle Length: 70 Actualed Cycle Length: 70 Actualed Cycle Length: 70 Actualed Cycle Length: 70 Actualed Cycle Length: 70 Actualed Cycle: 40 Askinum vic Ratio: 0.6.4 Intersection Signal Delay: 7.7 Intersection Signal Delay: 7.7 Analysis Period (min) 15	Intersection Summary							
Cycle Length: 70 Actuated Cycle Length: 70 Actuated Cycle Length: 70 Notice: 5 (7)-87. Referenced to phase 2:EBTL and 6:WBT, Start of Green Natural Cycle: 40 Control Type: Actuated-Coordinated Maximum vic Ratio: 6.64 Intersection Signal Delay: 7.7 Intersection Signal Delay: 7.7 Intersection Capacity Utilization 42.1% Intersection Capacity Utilization 42.1% Intersection Capacity Utilization 42.1%	Cycle Length: 70 Actuated Cycle Length: 70 Actuated Cycle Length: 70 Natural Cycle: 40 Control Type: Actuated-Coordinated Maximum vic Ratio: 0.64 Intersection Signal Delay: 7.7 Intersection Again Utilization 42.1% Intersection Cycle: 40 Analysis Period (min) 15		Other						
Actuated Cycle Length: 70  Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green  Natural Cycle: 40  Control Type: Actualed-Coordinated  Maximum vic Ratio: 0.64  Intersection Signal Delay: 7.7  Intersection Agoral Delay: 7.7  Intersection Capacity Utilization 42.1%  Intersection Capacity Utilization 42.1%	Actuated Cycle Length: 70 Offset 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green Maximum Vices. Actuated-Coordinated Maximum Vices Ratio 0.64 Intersection Signal Delay: 7.7 Intersection Again Delay: 7.7 Intersection Capacity Utilization 42.1% Analysis Period (min) 15	Cycle Length: 70							
Offset: 5 (7%), Referenced to phase 2:EB1L and 6:WBT, Start of Green Natural Cycle: 40 Control Type: Actualca-Coordinated Maximum vic Ratio: 0.64 Intersection Signal Delay: 7.7 Intersection Capacity Utilization 42,1% ICU Level of Service A	Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green Natural Cycle: 40 Control Type: Activated-Coordinated Maximum w/C reatio: 0.64 Intersection Signal Delay: 7.7 Intersection Capacity Utilization 42.7% Intersection Capacity Utilization 42.7% Intersection Capacity Utilization 42.7% Intersection Capacity Utilization 42.7%	Actuated Cycle Length: 70							
Natural Cycle: 40 Control Type: Artuated-Coordinated Maximum vic Ratio: 0.64 Intersection Signal Delay: 7.7 Intersection Capacity Utilization 42.1% ICU Level of Service A	Natural Cycle: 40 Control Type: Artuated-Coordinated Maximum vic Ratio: 0.64 Intersection Signal Delay: 7.7 Intersection Capacity Ullization 42.1% ICU Level of Service A Analysis Period (min) 15	Offset: 5 (7%), Referenced to	phase 2:	EBTL an	16:WBT,	Start of G	ireen		
linated n 42.1%	linated n n 42.1%	Natural Cycle: 40							
on 42.1%	on 42.1%	Control Type: Actuated-Coor	dinated						
on 42.1%	n 42.1%	Maximum v/c Ratio: 0.64							
ization 42.1%	ization 42.1%	Intersection Signal Delay: 7.7	7			드	tersection	LOS: A	
	Analysis Period (min) 15	Intersection Capacity Utilizati	ion 42.1%			೨	U Level o	Service A	

Splits and Phases: 1: Maple Road & Millersport Hwy SB



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - PM Peak Hour 2: Maple Road & Millersport Hwy NB

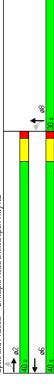
	\	Ť	~	•	Ļ	/		<b>—</b>	L	۶	<b>→</b>	*
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	r	‡			<b>₩</b>		F	æ,				
Volume (vph)	46	894	0	0	976	24	91	.0	462	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	-		0	0		0	-		0	0		0
Taper Length (ft)	22		22	25		25	25		25	22		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					966.0			0.850				
Fit Protected	0.950						0.950					
Satd. Flow (prot)	1770	3539	0	0	3525	0	1770	1583	0	0	0	0
Fit Permitted	0.164						0.950					
Satd. Flow (perm)	302	3539	0	0	3525	0	1770	1583	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					2			79				
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		654			1770			319			263	
Travel Time (s)		6.6			26.8			7.3			0.9	
Peak Hour Factor	0.91	0.91	0.91	0.87	0.87	0.87	0.84	0.84	0.84	0.92	0.92	0.92
Adj. Flow (vph)	107	882	0	0	1122	28	108	0	220	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	107	982	0	0	1150	0	108	220	0	0	0	0
Enter Blocked Intersection	No No	%	8	No	8	9	8	8	9	8	8	8
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		6	15		6	12		6	15		6
Number of Detectors	_	2			2		<del></del>	2				
Detector Template	Left	모			Thru		Fet	맫				
Leading Detector (ft)	20	100			100		70	100				
Trailing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0	0				
_	2	9			9		50	9				
Detector 1 Type	CI+EX	CI+Ex			CI+Ex		CI+EX	CI+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		9 .			9 .			9 1				
Detector 2 Type		CI+EX			CI+EX			CI+EX				
Detector 2 Channel		c			ć			c				
Detector 2 Extend (s)	- Corne	0.0			0.0		Dorm	0:0				
Fortected Phases		0			9			α				
Permitted Phases	0	1			>		0	>				

Synchro 7 - Report Page 3

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - PM Peak Hour 2: Maple Road & Millersport Hwy NB

	4	†	<u> </u>	<b>&gt;</b>	ţ	4	•	<b>—</b>	•	۶	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	1.0	1.0			4.0		1.0	1.0				
Minimum Split (s)	6.1	6.1			9.1		6.2	6.2				
Total Split (s)	40.0	40.0	0.0	0.0	40.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0
Total Split (%)	57.1%	57.1%	%0.0	%0:0	57.1%	%0.0	45.9%	45.9%	%0:0	%0.0	%0:0	%0.0
Maximum Green (s)	34.9	34.9			34.9		25.4	25.4				
Yellow Time (s)	3.9	3.9			3.9		3.2	3.2				
All-Red Time (s)	1.2	1.2			1.2		1.4	1.4				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	2.1	2.1	4.0	4.0	5.1	4.0	4.6	4.6	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Recall Mode	C-Min	C-Min			C-Min		None	None				
Act Effct Green (s)	36.0	36.0			36.0		24.3	24.3				
Actuated g/C Ratio	0.51	0.51			0.51		0.35	0.35				
v/c Ratio	89.0	0.54			0.63		0.18	0.92				
Control Delay	37.4	10.6			14.5		16.2	41.4				
Queue Delay	0.0	0.0			0.0		0.0	0.0				
Total Delay	37.4	10.6			14.5		16.2	41.4				
SOT	۵	В			В		В	۵				
Approach Delay		13.2			14.5			37.3				
Approach LOS		В			В			۵				
Intersection Summary												
	Other											
Cycle Length: 70												
Actuated Cycle Length: 70												
Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	phase 2:	EBTL and	6:WBT, 3	Start of G	ireen							
Natural Cycle: 65												
Control Type: Actuated-Coordinated	linated											
Maximum v/c Ratio: 0.92												
Intersection Signal Delay: 19.2	2			드	Intersection LOS: B	LOS: B						
Intersection Capacity Utilization 74.1%	on 74.1%			2	CU Level of Service D	f Service	۵					
Analysis Period (min) 15												

Splits and Phases: 2: Maple Road & Millersport Hwy NB



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - PM Peak Hour 3: Maple Road & Maplemere Road

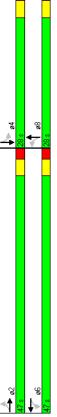
	١	Ť	~	•	,	/		—	•	٠	<b>→</b>	*
ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
-ane Configurations	*	₩		*	₩			4			4	
/olume (vph)	36	1218	32	21	890	62	22	0	12	11	∞	33
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	70		0	0		0	0		0
Storage Lanes	-		0	<b>,</b>		0	0		0	0		0
Faper Length (ft)	20		25	20		25	25		25	25		25
ane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1:00	1.00	1.00	1.00	1.00	1.8
-II	0	0.996		0	0.990			0.952			0.964	
-It Protected	0.950	יביבי	c	0.950	2504	c	c	1710	c	c	1730	
Satu. Flow (prot)	0.221	2252	0	0.141	2204	0	>	0 7 88	0	>	02/1	0
Satd Flow (nerm)	430	3525	C	300	3504	C	0	1397	0	C	1377	0
Sight Turn on Red	3		Yes		-	Yes	•		Yes	•	5	Yes
Satd. Flow (RTOR)		9			15			19			25	
ink Speed (mph)		45			45			9			30	
ink Distance (ft)		1770			1106			378			402	
ravel Time (s)		26.8			16.8			9.8			9.1	
Peak Hour Factor	0.94	0.94	0.94	0.87	0.87	0.87	0.62	0.62	0.62	0.81	0.81	0.81
Adj. Flow (vph)	88	1296	37	24	1023	71	35	0	19	95	10	88
Shared Lane Traffic (%)												
-ane Group Flow (vph)	89	1333	0	24	1094	0	0	24	0	0	143	0
Enter Blocked Intersection	No No	No	No	No	%	No	8	8	9	No No	No No	8
ane Alignment	Left	Left	Right	Left	Left	Right	Left	Fet	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
ink Offset(ft)		0 ;			0 ;			0 ;			0 ;	
Crosswalk Width(ft)		16			16			16			16	
rwo way Left Tum Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Furning Speed (mph)	12		6	15		6	15		6	15		6
Number of Detectors	<del>-</del> -	2			2		<del>-</del> .	2		<del>-</del> -	2	
Detector Template	E E	Thru		Leff	Thru		Left	Thru		E E	Thru	
eading Detector (ft)	2	90.		70	99		70	<u>8</u>		2	901	
Trailing Detector (ft)	0 0	0		0	0		0 0	0		0 0	0 0	
Detector 1 Position(r)	2 0	0 4		2 0	0 4		2 0	0 4		2 0	0 4	
Defector 1 June	CI+FX	CI+Fx		CI+Fx	CI+Fx		CI+Fx	CI+Ex o		CI+Fx	C +E	
	5				5		5	5		5		
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+Ex			CI+EX			CI+EX			CI+EX	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Felm	c		Fell	4		FeIII	٥		Ferm		
Permitted Phases	0	7		9	>		α	0		-	-	
										7		

Synchro 7 - Report Page 5

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - PM Peak Hour 3: Maple Road & Maplemere Road

Lane Group Switch Phase Minimum Initial (s)	EBL	FBT	נים									
Switch Phase Minimum Initial (s)			EBK	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Viinimum Initial (s)												
	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	0.6	0.6		0.6	0.6		27.0	27.0		27.0	27.0	
Total Split (s)	47.0	47.0	0.0	47.0	47.0	0.0	28.0	28.0	0.0	28.0	28.0	0.0
Total Split (%)	62.7%	62.7%	%0.0	62.7%	62.7%	%0.0	37.3%	37.3%	%0.0	37.3%	37.3%	0.0%
Maximum Green (s)	42.0	42.0		42.0	45.0		23.0	23.0		23.0	23.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	5.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	2.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Μij	Μin		None	None		None	None	
Walk Time (s)							7.0	7.0		7.0	7.0	
Flash Dont Walk (s)							15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)							0	0		0	0	
Act Effct Green (s)	33.2	33.2		33.2	33.2			9.6			10.2	
Actuated g/C Ratio	89.0	89.0		89.0	89.0			0.20			0.21	
//c Ratio	0.13	0.56		0.12	0.46			0.19			0.47	
Control Delay	9.9	7.5		7.0	6.9			15.2			21.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	9.9	7.5		7.0	6.9			15.2			21.9	
TOS	A	⋖		A	A			В			U	
Approach Delay		7.5			6.5			15.2			21.9	
Approach LOS		A			¥			В			O	
Intersection Summary												
Area Type: Other	her											
Cycle Length: 75												
Actuated Cycle Length: 49.1												
Natural Cycle: 60												
Control Type: Actuated-Uncoordinated	rdinated											
Maximum v/c Ratio: 0.56												
Intersection Signal Delay: 8.0				드	Intersection LOS: A	LOS: A						
Intersection Capacity Utilization 50.9%	n 50.9%			2	ICU Level of Service A	f Service	A					
Analysis Period (min) 15												

Splits and Phases: 3: Maple Road & Maplemere Road



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - PM Peak Hour 4: Maple Road & Donna Lea Blvd

<b>₹</b>	NBL NBR	<b>*</b>	12 21		0 0		25 25		0.914	0.982	1672 0	0.982	1672 0	30	355		0.82 0.82					Left Right		0	16		1.00 1.00	15 9		Stop	Stop	Stop	Stop	Stop	Stop SU Level of Service A	Stop ICU Level of Service A	Stop U Level of Service A
ţ	WBT							0.95			3539		3539		1928	29.2	0.77	1248				Left	12	0	16	Yes	1.00			Free	Free	Free	Free	Free	Free	Free	Free
-	WBL	*	23	1900	20	_	25	1.00		0.950	1770	0.950	1770				0.77	30			2						1.00	15				Ш					
<b>/</b>	EBR		29	1900	0	0	25	0.95			0		0				0.73	40		0	8	Right					1.00	6				Ш					
†	EBT	₩	1278	1900				0.95	0.997		3529		3529	45	1106	16.8	0.73	1751		1791	2	Left	12	0	16	Yes	1.00		200	₩.	₩	Other	Other	Other	Other Iton 46.2%	Other Ition 46.2%	Other
	ane Group	ane Configurations	/olume (vph)	deal Flow (vphpl)	Storage Length (ft)	Storage Lanes	aper Length (ft)	ane Util. Factor	==	It Protected	Satd. Flow (prot)	It Permitted	Satd. Flow (perm)	ink Speed (mph)	ink Distance (ft)	ravel Time (s)	eak Hour Factor	4dj. Flow (vph)	Shared Lane Traffic (%)	ane Group Flow (vph)	Inter Blocked Intersection	ane Alignment	Median Width(ft)	ink Offset(ft)	Crosswalk Width(ft)	wo way Left Turn Lane	Headway Factor	urning Speed (mph)	Sign Control		tersection Summary	Summary			ersection Summary ersection Summary at Type: Unsignalized ersection Capacity Utiliza	ersection Summary ea Type: enrich Type: Unsignalized enrich Type: Unsignalized	Summary  E. Unsignalized Capacity Utiliza ind (min) 15

Synchro 7 - Report Page 7 Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - PM Peak Hour 4: Maple Road & Donna Lea Blvd

																																							A		
•	NBR		21			0.82	26									0.77	895			269	6.9		3.3	95	295	NB 1	40	15	26	263	0.15	13	21.1	ပ	21.1	O			ICU Level of Service		
•	NBL	>	12	Stop	%	0.82	12									0.77	2454	1771	684	2292	8.9	5.8	3.5	86	137	WB 3	624	0	0	1700	0.37	0	0.0						J Level o		
ļ	WBT	ŧ	196	Free	%0	0.77	1248						TWLTL	2												WB 2	624	0	0	1700	0.37	0	0.0						D D		
<b>\</b>	WBL	r	23			0.77	30						_			0.77	1790			1430	4.1		2.2	92	363	WB 1	30	30	0	363	0.08	_	15.8	ပ	0.4			0.4	46.2%	12	
>	EBR		53			0.73	40																			EB 2	623	0	40	1700	0.37	0	0.0						,		
†	EBT	₩	1278	Free	%0	0.73	1751						TWLTL	2	1106											EB 1	1167	0	0	1700	69.0	0	0:0		0:0				ation		
	Movement	Lane Configurations	Volume (veh/h)	Sign Control	Grade	Peak Hour Factor	Hourly flow rate (vph)	Pedestrians	Lane Width (ft)	Walking Speed (ft/s)	Percent Blockage	Right turn flare (veh)	Median type	Median storage veh)	Upstream signal (ft)	pX, platoon unblocked	vC, conflicting volume	vC1, stage 1 conf vol	vC2, stage 2 conf vol	vCu, unblocked vol	tC, single (s)	tC, 2 stage (s)	tF (s)	p0 queue free %	cM capacity (veh/h)	Direction, Lane #	Volume Total	Volume Left	Volume Right	LS3	Volume to Capacity	Onene Length 95th (ft)	Control Delay (s)	Lane LOS	Approach Delay (s)	Approach LOS	Intersection Summary	Average Delay	Intersection Capacity Utilization	Analysis Period (min)	

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - PM Peak Hour 5: Maple Road & Audubon Golf Club

	^	†	<u> </u>	<b>/</b>	ļ	1	•	<b>—</b>	•	۶	<b>→</b>	*
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u>,                                    </u>	<b>₩</b>		je-	₩			4			4	
Volume (vph)	0	1292	14	∞	984	2	10	0	9	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	20		0	0		0	0		0
Storage Lanes	-		0	<del>-</del>		0	0		0	0		0
Taper Length (ft)	22		22	25		25	25		25	22		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
T.		0.998						0.948				
Fit Protected				0.950				0.970				
Satd. Flow (prot)	1863	3532	0	1770	3539	0	0	1713	0	0	1863	0
Fit Permitted				0.950				0.970				
Satd. Flow (perm)	1863	3532	0	1770	3539	0	0	1713	0	0	1863	0
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		446			929			469			11	
Travel Time (s)		8.9			8.4			10.7			2.5	
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.61	0.61	0.61	0.92	0.92	0.92
Adj. Flow (vph)	0	1404	12	6	1058	2	16	0	10	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1419	0	6	1060	0	0	79	0	0	0	0
Enter Blocked Intersection	8	8	8	%	8	%	2	8	8	N <sub>o</sub>	8	8
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		6	15		6	15		6	15		6
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
	Other											
Control Type: Unsignalized												
Intersection Capacity Utilization 46.2%	ion 46.2%			೨	U Level (	ICU Level of Service A	×					
AIAVS PEIOCHIIII IS												

Lanes, Volumes, Timings Synchro 7 - Report SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - PM Peak Hour 5: Maple Road & Audubon Golf Club

Movement         EBI         EBI         EBI         WBI         WBI         WBI         NBI         NBI         NBI         NBI         SBI         SBI         SBI         Apple         Apple <th< th=""><th>`</th><th>•</th><th>†</th><th>&gt;</th><th><b>\</b></th><th>ļ</th><th>1</th><th>€</th><th><b>—</b></th><th>•</th><th>۶</th><th><b>→</b></th><th>•</th></th<>	`	•	†	>	<b>\</b>	ļ	1	€	<b>—</b>	•	۶	<b>→</b>	•
Ontigurations         ↑		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
(ve/nh)         0         1292         14         8         984         2         10         0         0         0           ounfactor         0%         0%         0%         0%         0%         0%         0%           ounfactor         0%2         092         093         093         061         061         061         061         0%         0%           stans         0% <td< td=""><td>Lane Configurations</td><td>-</td><td><b>₩</b></td><td></td><td>r</td><td><b>₩</b></td><td></td><td></td><td>4</td><td></td><td></td><td>4</td><td></td></td<>	Lane Configurations	-	<b>₩</b>		r	<b>₩</b>			4			4	
Property   Property	Volume (veh/h)	0	1292	14	- ∞	984	2	10	0	9	0	0	0
our Factor         0.9%         0.0%	Sign Control		Free			Free			Stop			Stop	
Hour Factor 092 092 092 093 093 093 061 061 061 092 092 over Width (filt)  Width (filt			%0			%0			%0			%0	
Sylinov rate (whi) 0 1404 15 9 1058 2 16 0 10 0 0 0 2 strians 15 0 1404 15 9 1058 2 16 0 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0.92	0.92	0.92	0.93	0.93	0.93	0.61	0.61	0.61	0.92	0.92	0.92
Stridens With (11)  With (11)  With (11)  With (11)  With (11)  With (11)  With (11)  With (12)  With (12)  With (12)  With (13)  With (12)  With (13)  Wi	Hourly flow rate (vph)	0	1404	12	6	1058	2	16	0	10	0	0	0
width (fft)         TWUTIL         TWLTIL         TW	Pedestrians												
Ing Speed (It(s)  an Israeye eth)  an Israeye eth)  2  an Israeye eth)  3  an Israeye eth)  4  an Israeye eth)  4  an Israeye eth)  4  an Israeye eth)  4  an Israeye eth  4  an Isr	Lane Width (ft)												
an Blockage  I turn flare (vet)  I turn Left  I t	Walking Speed (ft/s)												
an type and size (veth) TWLTL TWLTL TWLTL 2  Turn flare (veth) 2  Tan storage veth 2  Tan storage veth 2  Tan storage veth 2  Tan storage veth 3  Tan storage veth 3  Tan storage veth 4	Percent Blockage												
an type an strange wh) 2 12 2 2489 710 1788 2496 and strange wh) 2 1420 1958 2489 710 1788 2496 and strange who multicity volume 1060 1420 1420 1958 2489 710 1788 2496 and stage 1 conf vol stage 2 conf vol 1060 1420 1958 2489 710 1788 2496 and stage 2 conf vol 1060 1420 1958 2489 710 1788 2496 and stage 2 conf vol 1060 1060 1420 1958 2489 710 1788 2496 and stage 2 conf vol 1060 1950 1958 2489 710 1788 2496 and stage 2 conf vol 1060 1950 1958 2489 710 1788 2496 and stage 2 conf vol 1060 1950 1958 2489 710 1788 2496 and stage 2 conf vol 1060 1950 1958 2489 710 1788 2496 and stage 2 conf vol 1060 1950 1958 2489 710 1788 2496 and stage 2 conf vol 1060 1950 1950 1950 1950 1950 1950 1950 195	Right turn flare (veh)												
an storage veh) 2 2 2 2 489 710 1788 2496 Albiton Lane # EB 1 EB 2 EB 3 WB 1 WB 2 WB 1700 1700 1700 1801 1700 1700 1801 1700 1700	Median type	_	WLTL		_	.MLTL							
eam signal (ft)  lation unblocked  onflicting volume  1060  1120  11412  11412  11412  11412  11412  11412  11412  11412  11412  11412  11412  11412  11412  11412  11412  11412  11412  11413  11412  1142  114	Median storage veh)		2			2							
lation unblocked on lubbor and blocked lubbor and blocked lubbor and blocked lubbor and blocked lubbor and blocked will be a lubbor and blocked will l	Upstream signal (ft)												
onflicting volume 1060 1420 1420 1958 2489 710 1788 2496 stage Lornf vol stage Lornf vol stage Lornf vol stage Lornf vol stage Lornf vol stage Lornf vol 1060 14.1 4.1 7.5 6.5 6.9 7.5 6.5 6.9 7.5 6.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5	pX, platoon unblocked												
stage I conf vol stage I conf vol stage I conf vol stage I conf vol stage I conf vol stage I conf vol stage I conf vol unblocked vol 1060 1420 1958 2 646 1077 7 172 1420 unblocked vol 1060 4.1 1.1 1.5 6.5 6.5 6.5 6.5 6.5 6.5 6.5 6.5 6.5 6		0901			1420			1958	2489	710	1788	2496	530
stage 2 conf vol unblocked vol 1 1060 1420 1436 1077 712 1420 1086 5 4.1 4.1 4.1 4.1 4.1 4.1 4.1 4.1 4.1 4.1	vC1, stage 1 conf vol							1412	1412		1076	1076	
unblocked vol 1060 1420 1958 2489 710 1788 2496 stage (s) 4.1 4.1 4.1 7.5 6.5 6.9 7.5 6.5 6.5 stage (s) stage (s) 4.1 4.1 7.5 6.5 6.9 7.5 6.5 6.5 stage (s) 4.1 4.1 7.5 6.5 6.9 7.5 6.5 6.5 stage (s) 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	vC2, stage 2 conf vol							546	1077		712	1420	
righe (s) 4.1 4.1 4.1 7.5 6.5 6.9 7.5 6.5 5.5 stage (s) 2.2 2.2 3.5 100 97 100 98 99 99 99 99 99 99 99 99 99 99 99 99		0901			1420			1958	2489	710	1788	2496	530
stage (s)  Leu Free %  Louin Lane #  Let Copacity (veh/hr)  Los Capacity (veh/hr)  Los Capa	tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
bearen (ref.)         2 2         2 2         3 5         4 0         3 3         3 5         4 0           appacity (vehhr)         653         476         48         100         97         100         100           appacity (vehhr)         653         47         10         97         10	tC, 2 stage (s)							6.5	5.5		6.5	5.5	
between free %         100         98         88         100         97         100         100           appacity (veh/h)         653         476         137         162         376         195         156           tition, Lane #         EB I         EB 2         EB 3         WB 1         WB 2         WB 3         NB 1         SB 1         195         156         1570         156         1570         156         1570         1570         1570         157         157         157         1570 <td></td> <td>2.2</td> <td></td> <td></td> <td>2.2</td> <td></td> <td></td> <td>3.5</td> <td>4.0</td> <td>3.3</td> <td>3.5</td> <td>4.0</td> <td>3.3</td>		2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
appacity (veh/h)         653         476         137         162         376         195         156           appacity (veh/h)         EB1         EB2         EB3         WB1         WB2         WB3         NB1         SB1         195         156         157         156         156         157         156         156         157         156         157<		100			8			88	100	46	100	100	100
Hon Lane #         EB 1         EB 2         EB 3         WB 1         WB 2         WB 3         NB 1         SB 1           ne Total         0         936         483         9         705         355         26         0           ne Left         0         0         0         9         0         16         0           ne Right         1700         1700         170         476         1700         170         1700           ne Lo Capacity         0.00         0.55         0.28         0.02         0.41         0.21         0.0         12         0.0           LOS         0.0         0.0         0.0         12.7         0.0         0.0         12         0         0           LOS         0.0         0.0         12.7         0.0         0.0         28.4         0.0         A           aceth LoS         8         8         0         A         A         A         A           acethor Sapecity Williastion         46.2%         ICU Level of Service         1         0         0         0         0         0         0         0         0         0         0         0         0         0		653			476			137	162	376	195	156	493
ne Total 0 936 483 9 705 355 26 0 ne Lett 0 0 0 0 9 0 0 16 0 0 0 ne Right 0 0 0 15 0 0 0 16 0 0 0 0 16 0 0 16 0 0 0 0 16 0 0 16 0 0 0 16 0 0 16 0 0 16 0 0 16 0 0 16 0 0 16 0 0 16 0 0 16 0 0 16 0 0 1700 170		EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
ne Left 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Volume Total	0	936	483	6	705	322	26	0				
ne Right 0 0 15 0 0 2 10 0 0 10 ne Right 1 0 0 15 0 0 0 2 10 0 0 10 10 10 10 10 10 10 10 10 10 10	Volume Left	0	0	0	6	0	0	16	0				
ne lo Capacity 1700 1700 1700 1700 1700 1700 1700 170	ne Right	0	0	12	0	0	2	10	0				
0.00 0.55 0.28 0.02 0.41 0.21 0.15 0.00 0.0 0.0 0.0 1.2 0.0 0.0 0.0 12.7 0.0 0.0 28.4 0.0 0.0 0.0 0.1 0.0 0.0 0.0 0.0 0.0 0.0		1700	1700	1700	476	1700	1700	180	1700				
0 0 0 1 0 0 12 0 0 0 0 12 0 0 0 0 0 0 0		0.00	0.55	0.28	0.02	0.41	0.21	0.15	0.00				
(s) 0.0 0.0 12.7 0.0 0.0 28.4 0.0 B B D A B D A CO CO CO CO CO CO CO CO CO CO CO CO CO	Queue Length 95th (ft)	0	0	0	<del>,</del>	0	0	12	0				
B	Control Delay (s)	0.0	0.0	0.0	12.7	0.0	0.0	28.4	0.0				
0.0 0.1 28.4 0.0 0.1 28.4 0.0 D A O O O O O O O O O O O O O O O O O O	Lane LOS				В			٥	⋖				
0 A  0.3  Utilization 46.2% ICU Level of Service	Approach Delay (s)	0.0			0.1			28.4	0.0				
0.3 Utilization 46.2% ICU Level of Service	Approach LOS							٥	⋖				
0.3 Utilization 46.2% ICU Level of Service	Intersection Summary												
Utilization 46.2% ICU Level of Service 15	Average Delay			0.3									
	Intersection Capacity Utilization			46.2%	⊡	J Level o	Service			۷			
	Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - PM Peak Hour 6: Maple Road & North Forest Road

		Ì	٠	•			-	-			۰	
ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
ane Configurations	<u>"</u>	‡	*-	<u>_</u>	¥	¥C	F	*	¥C	<u>, , , , , , , , , , , , , , , , , , , </u>	*	*-
Volume (vph)	181	984	143	236	736	96	92	347	202	169	384	119
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	415		220	315		150	125		220	250		250
Storage Lanes	<del>-</del>		-	-		<del></del>	-		<del></del>	-		-
aper Length (ft)	8		115	09		25	95		25	8		25
ane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ï.			0.850			0.850			0.850			0.850
-It Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
It Permitted	0.230			0.095			0.177			0.185		
Satd. Flow (perm)	428	3539	1583	177	3539	1583	330	1863	1583	345	1863	1583
Right Turn on Red			Yes			8			Yes			Yes
Satd. Flow (RTOR)			140						30			77
ink Speed (mph)		45			45			32			32	
ink Distance (ft)		1705			820			529			809	
ravel Time (s)		25.8			12.4			10.3			11.8	
Peak Hour Factor	0.92	0.92	0.92	06:0	06:0	06.0	96:0	96:0	96.0	0.87	0.87	0.87
Adj. Flow (vph)	197	1070	155	262	818	107	96	361	210	194	441	137
Shared Lane Traffic (%)												
ane Group Flow (vph)	197	1070	155	262	818	107	96	361	210	194	441	137
Inter Blocked Intersection	8	%	8	8	8	8	8	8	8	8	8	S
ane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			92			16	
wo way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
urning Speed (mph)	15		6	15		6	15		6	15		6
Number of Detectors	_	2	-	-	2	_	_	2	-	-	2	_
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
eading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
railing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	8	9	8	20	9	70	70	9	70	8	9	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+Ex			CI+EX			CI+EX			CI+Ex	
Detector 2 Channel		0			00			0			0	
urn Type	ta+ma		vo+ma	pm+pt		vo+ma	pm+pt		vo+ma	pm+pt		vo+ma
Protected Phases	വ	2	c.	-	9	7		00	-	7	4	2
Permitted Phases	0		c	,		,	c		•	,		•
	7		7	0		0	×		0	4		4

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Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - PM Peak Hour 6: Maple Road & North Forest Road

	^	<b>†</b>	<b>/</b>	<b>&gt;</b>	ţ	√	•	<b>←</b>	•	۶	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	1.0	4.0	1.0	1.0	4.0	1.0	1.0	4.0	1.0	1.0	4.0	1.0
Minimum Split (s)	7.0	35.0	7.0	7.0	32.0	7.0	7.0	35.0	7.0	7.0	35.0	7.0
Total Split (s)	20.0	47.0	11.0	23.0	20.0	15.0	11.0	35.0	23.0	15.0	39.0	20.0
Total Split (%)	16.7%	39.5%	9.5%	19.2%	41.7%	12.5%	9.5%	29.5%	19.2%	12.5%	32.5%	16.7%
Maximum Green (s)	14.0	41.0	2.0	17.0	44.0	0.6	2.0	29.0	17.0	0.6	33.0	14.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		22.0			22.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	50.1	38.3	49.4	57.5	41.9	57.1	31.0	25.9	47.5	39.1	30.0	47.9
Actuated g/C Ratio	0.44	0.34	0.44	0.51	0.37	0.50	0.27	0.23	0.42	0.35	0.27	0.42
v/c Ratio	09:0	0.89	0.20	0.85	0.62	0.13	0.62	0.85	0.31	0.83	0.89	0.19
Control Delay	23.2	46.7	5.1	53.0	32.1	16.5	46.3	61.2	20.1	97.9	62.5	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.2	46.7	5.1	53.0	32.1	16.5	46.3	61.2	20.1	97.6	62.5	10.3
SOT	O	۵	V	۵	ပ	В	٥	ш	ပ	ш	ш	В
Approach Delay		38.9			35.3			46.1			52.0	
Approach LOS		Ω			Ω			D			Ω	
Intersection Summary												
Area Type:	Other											
Cycle Length: 120												
Actuated Cycle Length: 113.1	13.1											
Natural Cycle: 85												
Control Type: Actuated-Uncoordinated	ncoordinated											
Maximum v/c Ratio: 0.89												
Intersection Signal Delay: 41.5	41.5			= :	Intersection LOS: D	LOS: D						
Intersection Capacity Utilization 87.9%	zation 87.9%			೨	U Level o	CU Level of Service E	ш					
Analysis Period (min) 15												

Splits and Phases: 6: Maple Road & North Forest Road



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - PM Peak Hour 7: Sheridan Drive & Mill Street

		Ì	•	•			-	-			٠	
ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
-ane Configurations	*	₩.		<u>,                                    </u>	₩		۴	2		*	£,	
Volume (vph)	Ξ	1290	92	121	1332	23	144	23	148	34	89	12
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	150		0	40		0	75		0
Storage Lanes	<b>-</b>		0	<b>-</b>		0	-		0	-		0
aper Length (ft)	92		22	09		25	25		25	22		25
-ane Util. Factor	1.0	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1:0
T.		0.998			0.994			0.890			0.977	
-It Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3532	0	1770	3518	0	1770	1658	0	1770	1820	0
-It Permitted	0.089			0.081			0.600			0.608		
Satd. Flow (perm)	166	3532	0	151	3518	0	1118	1658	0	1133	1820	0
Right Turn on Red			2			Yes			2			Yes
Satd. Flow (RTOR)					4						7	
ink Speed (mph)		45			42			9			30	
ink Distance (ft)		2782			776			838			362	
ravel Time (s)		42.2			14.8			19.0			8.2	
Peak Hour Factor	0.84	0.84	0.84	0.92	0.92	0.92	0.83	0.83	0.83	0.77	0.77	0.77
Adj. Flow (vph)	13	1536	21	132	1448	28	173	64	178	44	88	16
Shared Lane Traffic (%)												
ane Group Flow (vph)	13	1557	0	132	1506	0	173	242	0	44	104	0
Enter Blocked Intersection	8	%	2	8	8	8	2	8	2	8	2	8
ane Alignment.	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
wo way Left Tum Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
'urning Speed (mph)	15		6	12		6	15		6	15		6
Number of Detectors	-	2		-	2		<del>-</del>	2		_	2	
Detector Template	Left	Thr		Left	Thru		Left	밀		Left	Thru	
eading Detector (ft)	20	100		20	100		20	100		20	100	
railing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	8	9		50	9		70	9		8	9	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel Detector 2 Extend (s)		0.0			0.0			0.0			0:0	
urn Type	Perm			pm+pt			pm+pt			Perm		
Protected Phases		2		-	9		က	∞			4	
Permitted Phases	2			7			С			,		
				0			0			4		

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Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - PM Peak Hour 7: Sheridan Drive & Mill Street

	1	†	<u>/</u>	<b>&gt;</b>	Ļ	4	•	<b>—</b>	•	٠	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		1.0	4.0		1.0	4.0		4.0	4.0	
Minimum Split (s)	28.3	28.3		6.2	28.3		6.2	34.2		34.2	34.2	
Total Split (s)	20.0	20.0	0.0	15.0	65.0	0.0	25.0	70.0	0.0	45.0	45.0	0.0
Total Split (%)	37.0%	37.0%	%0.0	11.1%	48.1%	%0.0	18.5%	21.9%	%0.0	33.3%	33.3%	0.0%
Maximum Green (s)	44.5	44.5		10.7	59.5		19.8	64.8		39.8	39.8	
Yellow Time (s)	4.3	4.3		3.2	4.3		3.2	3.2		3.2	3.2	
All-Red Time (s)	1.2	1.2		1.1	1.2		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	4.3	5.5	4.0	5.2	5.2	4.0	5.2	5.2	4.0
Lead/Lag	Lag	Lag		Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0			7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0			15.0			22.0		22.0	22.0	
Pedestrian Calls (#/hr)	0	0			0			0		0	0	
Act Effct Green (s)	45.1	45.1		60.7	59.5		64.8	64.8		39.8	39.8	
Actuated g/C Ratio	0.33	0.33		0.45	0.44		0.48	0.48		0.29	0.29	
v/c Ratio	0.23	1.32		0.70	0.97		0.27	0.30		0.13	0.19	
Control Delay	46.1	186.5		45.9	53.6		21.6	22.7		36.4	34.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	46.1	186.5		45.9	53.6		21.6	22.7		36.4	34.3	
SOT	٥	ш		۵	۵		ပ	ပ		۵	ပ	
Approach Delay		185.4			53.0			22.2			34.9	
Approach LOS		ш.			Ω			ပ			ပ	
Intersection Summary												
Area Type:	Other											
Cycle Length: 135												
Actuated Cycle Length: 135	35											
Natural Cycle: 100												
Control Type: Semi Act-Uncoord	ncoord											
Maximum v/c Ratio: 1.32												
Intersection Signal Delay: 104.0	104.0			=	Intersection LOS: F	LOS: F						
Intersection Capacity Utilization 75.0%	zation 75.0%			೨	CU Level of Service D	f Service	٥					
Analysis Period (min) 15												

Intersection Signal Delay: 104.0 Intersection Capacity Utilization 75.0% Analysis Period (min) 15

88 Splits and Phases: 7: Sheridan Drive & Mill Street **∤** ) [9 9e ↓ •

Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - PM Peak Hour 8: Sheridan Drive & North Forest Road

		•	•	•			-	-	-		•	
ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
-ane Configurations	*	‡	*	*	<b>₩</b>		r	*	*	*	‡	*-
Volume (vph)	138	1258	260	305	1124	41	27.1	464	82	24	464	202
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	202		170	260		0	180		265	180		200
Storage Lanes	-		-	-		0	<del>-</del>		-	-		-
aper Length (ft)	300		22	200		25	25		25	22		25
ane Util. Factor	1:00	0.95	1.00	1.00	0.95	0.95	1.00	1:00	1.00	1.00	0.95	1.00
±.			0.850		0.995				0.850			0.820
-It Protected	0.950	0		0.950	9	•	0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3522	0	1770	1863	1583	1770	3539	1583
It Permitted	0.074			890.0			0.185			0.171		
Satd. Flow (perm)	138	3539	1583	127	3522	0	345	1863	1583	319	3539	1583
Right Turn on Red			Yes		١	Yes			Yes			Yes
Satd. Flow (RTOR)			130		က				70			213
ink Speed (mph)		42			42			40			32	
ink Distance (ft)		1668			2219			247			354	
ravel Time (s)		25.3			33.6			9.3			6.9	
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.89	0.89	0.89	0.95	0.95	0.95
4dj. Flow (vph)	147	1338	277	328	1209	44	304	521	92	22	520	213
Shared Lane Traffic (%)												
ane Group Flow (vph)	147	1338	277	328	1253	0	304	521	92	22	520	213
Enter Blocked Intersection	8	S	8	8	2	2	2	2	8	8	8	2
ane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
wo way Left Turn Lane		Yes			Yes							
Headway Factor	1:00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
urning Speed (mph)	15		6	12		6	12		6	15		6
Number of Detectors	_	2	<del>-</del>	<del>-</del>	2		<del></del>	2	_	_	2	
Detector Template	Left	킾	Right	Left	Thru		Left	뮡	Right	Left	Thru	Right
eading Detector (ft)	20	100	20	70	100		20	100	20	20	100	20
railing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	8	9	8	70	9		70	9	70	8	9	8
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel Detector 2 Extend (s)		0.0			00			00			0.0	
urn Type	ta+ma		Perm	ta+ma			ta+ma		Perm	ta+ma		Perm
Protected Phases	,-	9		2	2		7	4		က	00	
Permitted Phases	4		7	c			•		•	•		•
	>		0	7			4		4	x		∞

Synchro 7 - Report Page 15

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - PM Peak Hour 8: Sheridan Drive & North Forest Road

	4	†	<u> </u>	<b>\</b>	Ļ	4	•	<b>←</b>	•	۶	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.3	27.9	27.9	8.3	27.9		21.0	27.2	27.2	8.3	27.2	27.2
Total Split (s)	30.0	0.09	0.09	20.0	20.0	0.0	25.0	40.0	40.0	20.0	35.0	35.0
Total Split (%)	21.4%	42.9%	45.9%	14.3%	35.7%	%0.0	17.9%	28.6%	28.6%	14.3%	25.0%	25.0%
Maximum Green (s)	25.7	54.9	54.9	15.7	44.9		20.7	34.9	34.9	15.7	29.9	29.9
Yellow Time (s)	3.2	3.9	3.9	3.2	3.9		3.2	3.2	3.2	3.2	3.2	3.2
All-Red Time (s)	1.	1.2	1.2	1.	1.2		Ξ:	1.9	1.9	Έ.	1.9	1.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.3	2.1	2.1	4.3	5.1	4.0	4.3	2.1	2.1	4.3	2.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max		None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		15.0	15.0		15.0			15.0	15.0		15.0	15.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	0.89	55.0	22.0	73.8	58.5		20.7	43.0	43.0	33.0	25.4	25.4
Actuated g/C Ratio	0.50	0.41	0.41	0.55	0.43		0.38	0.32	0.32	0.24	0.19	0.19
v/c Ratio	89.0	0.93	0.38	1.26	0.82		0.89	0.88	0.17	0.17	0.78	0.45
Control Delay	42.3	50.8	16.7	177.9	40.4		60.3	61.5	12.6	29.9	61.0	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.3	50.8	16.7	177.9	40.4		60.3	61.5	12.6	29.9	61.0	8.9
SOT	۵	۵	В	ш	۵		ш	ш	В	ပ	ш	A
Approach Delay		44.7			6.89			56.2			45.4	
Approach LOS					ш			ш			۵	
Intersection Summary												
Area Type: Oi	Other											
Cycle Length: 140												
Actuated Cycle Length: 135.1												
Natural Cycle: 125												
Control Type: Actuated-Uncoordinated	ordinated											
Maximum v/c Ratio: 1.26												
Intersection Signal Delay: 54.5	22			Ξ.	Intersection LOS: D	LOS: D						
Intersection Capacity Utilization 96.0%	%0.96 no			೨	CU Level of Service F	f Service	ш.					
Analysis Period (min) 15												

Splits and Phases: 8: Sheridan Drive & North Forest Road



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - PM Peak Hour 9: Country Club Driveway & North Forest Road

	•	<i>&gt;</i>	•	<b>←</b>	<b>→</b>	•	
ane Group	EBL	EBR	NBL	NBT	SBT	SBR	
-ane Configurations	×			₩	4		
Volume (vph)	7	6	56	623	714	13	
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
ane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
<u></u>	0.924				866.0		
It Protected	0.979			866.0			
Satd. Flow (prot)	1685	0	0	1859	1859	0	
It Permitted	0.979			866.0			
Satd. Flow (perm)	1685	0	0	1859	1859	0	
ink Speed (mph)	30			32	32		
ink Distance (ft)	224			310	238		
ravel Time (s)	5.1			0.9	4.6		
Peak Hour Factor	0.50	0.50	0.83	0.83	06:0	06:00	
Adj. Flow (vph)	14	18	31	751	793	14	
Shared Lane Traffic (%)							
ane Group Flow (vph)	32	0	0	782	807	0	
inter Blocked Intersection	No.	8	9	9	9	No	
-ane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	12			0	0		
ink Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
wo way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
urning Speed (mph)	15	6	15			6	
Sign Control	Stop			Free	Free		
ntersection Summary							
Area Type: 0	Other						
Control Type: Unsignalized							
ntersection Capacity Utilization 63.9%	on 63.9%			ಠ	J Level of	ICU Level of Service B	
Analysis Period (min) 15							

Synchro 7 - Report Page 17 Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - PM Peak Hour 9: Country Club Driveway & North Forest Road

EBL EBR N 7 9 5107 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%	FBL   FBR   NBI   SBI   SBR   SBP		4	<i>&gt;</i>	•	<b>←</b>	<b>→</b>	•	
yuralions	hth)	Movement	EBL	EBR	NBL	NBT	SBT	SBR	
hth) 7 9 26 623 714 13  Factor Sbp Free	hth) 7 9 26 623 714 13  Factor Sbp Free Free  Factor 0.50 0.50 0.83 0.83 0.86  Factor 0.50 0.50 0.83 0.83 0.80  ed (fits)  ed (fits)  ckage  are (veh)  ignal (fit)  grounding of the fits	Lane Configurations	Þ			4	ęŝ		
Stop   Free	Stop   Free	Volume (veh/h)		6	26	623	714	13	
Factor 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0.50 0.50	Factor 0% 0% 0% 0% 0% 0% 0% 0% 0% 0.90  (ft)	Sign Control	Stop			Free	Free		
Factor 0.50 0.83 0.83 0.90 0.90  rate (vph) 14 18 31 751 793 14  (ft) (ft) (ft) (ft) (ft) (ft) (ft) (ft)	Factor 0.50 0.83 0.83 0.89 0.90  rate (vph) 14 18 31 751 793 14  (ft) eed (ft/s) eed (ft/s) eed (ft/s) eed (ft/s) eed (ft/s)  age veh) grad (veh) age veh) grad (veh) age veh) for the first set (veh) age veh) eed (veh)	Grade	%0			%0	%0		
rate (vph) 14 18 31 751 793 14  ed (fits) eed (fits) eed (fits) ckage are (veh) ignal (fit)  rate (vph) 14 18 31 751 793 14  set (veh)  eed (fits) eed (fits) eed (fits) eed (fits) eed (fits) eed (veh)  including 1614 801 808  age veh)  fignal (fit) eed (veh)  None None  664  None None  664  Authority 665  Control  2 control  2 control  1 control  2 control  2 control  4 control  5 3 3 3 2.2  ee% 80 96  60 96  ee% 80 96  ee% 80 96  fit 14 31 0  fit 14 31 0  fit 14 31 0  fit 130 817 1700  and 32 782 808  fit 130 817 1700  and 32 782 808  fit 130 817 1700  and 32 782 808  fit 14 31 0  fit 18 0 14  fit 18 0 14  fit 18 0 0.0  oy (s) E 10   in (s) 639%  in (c) 644  in (c	Peak Hour Factor	0.50	0.50	0.83	0.83	06:0	0.90		
e(ff) (kg) ckage are (veh)  ga verb) gap verb) ignal (ti) ignal (t	ed (fil) (fil) (kg) ckage are (veh)  ga verb) gap verb) ignal (fil) (graf (graf (fil) (graf (fil) (graf (graf (fil) (graf (graf (fil) (graf (graf (fil) (graf (gra	Hourly flow rate (vph)	14	18	31	751	793	14	
(ff)  eed (fus)  eed (fus)  are (verb)  age verb)  age verb)  gas verb)  age verb)  furblocked  0.69  grounmary  None  None  None  None  None  6.44  6.24  1.1  (s)  3.5  3.3  2.2  ee%  808  817  (verbuf)  70  385  817  808  furt  14  71  70  385  817  64  64  64  64  64  64  64  64  64  6	(ft) ced (ft/s) ced (ft/s) ced (ft/s) ced (ft/s) are (veh) are (veh) are (veh) are (veh) are (veh) be say veh) are (veh) are (veh) be say veh) be say veh) are (veh) be say veh) be say veh) ce % are (veh) be say veh) be say veh) ce % are (veh) ce % be say veh) ce % are (veh) ce % be say veh) ce % ce % are (veh) ce % be say veh) ce % ce % ce % ce % ce % ce % ce % ce %	Pedestrians							
eed (fits) ckdage are (veh) age veh) bodd anality a	eed (fits) ckdage are (veh) ag veh) by dignal (fit) ag veh) ag veh) by dignal (fit) by dignal (fit) ag veh) by dignal (fit) by dignal (fit) ag veh) by dignal (fit) by dignal	Lane Width (ft)							
ckage are (veh)  age veh) ignal (ft)	ckage are (veh)  are (veh)  ignal (ft)  ig	Walking Speed (ft/s)							
are (veh)  savesh  gavesh  fighal (ft)  inhordered  0.69  in unblocked  0.69  in of the following  2 conf vol  2 conf vol  2 conf vol  4 6.2 4.1  5 3.3 2.2  in of the following  in o	are (veh)  save veh)  say veh)  ignal (ft)	Percent Blockage							
age veh) age veh) beta displayed (f) age veh) age veh) beta displayed (f) ago volume 1614 801 808 1500 volume 1614 801 808 1500 volume 164 62 4.1 (s) 315 313 2.2 ee % 80 95 96 ee % 80 95 96 ht 14 14 31 00 ht 18 00 age (s) 31 32 33 33 33 34 35 33 36 41 30 817 100 38 113 64 64 65 41 66 64 65 41 66 69 80 80 80 80 80 80 80 80 80 80 80 80 80	age veh)	Right turn flare (veh)							
age veh)  unblocked 0.69 unblocked 0.69 unblocked 0.69 1 801 808 1 confivol 2 confivol 2 confivol 3 confivol 4 6.2 4.1 (s) 3 3.5 3 3.2 2 6.8 8 0 95 96 (veh/h) 70 385 817 ane # EB1 NB1 SB1 an	age veh)  grad (ft)  grad (grad (ft)  grad (grad	Median type				None	None		
ignal (ft) 664  unblocked 0.69  unblocked 0.69  unblocked 0.69  1 confound 1614 801 808  2 confound 1645 801 808  kked vol 1665 801 808  ee % 80 95 96  ee % 95 96  ft 14 31 00  if 14 31 0  if 15 0.0  if 17 0.0  if 1 0 0.0  if 1 0 0.0  if 1 0 0.0  if 1 0 0.0  if 1 0 0.0  if 1 0 0.0  if 2 0.39  if 2 0.39  if 2 0.39  if 3 0.39	lighal (ft)         664           unblocked         0.69           unblocked         0.69           unblocked         0.69           unblocked         0.69           sconfival         808           sked vol         808           ked 6.2         4.1           sked vol         33           se 8         96           ee %         80           se %         96           (vehh)         70           nae #         EB 1           nb 32         782           sn 9         96           (vehh)         70           nt 1         31           nt 2         32           nt 3         782           sn 9         96           (vehh)         14           nt 3         17           nt 4         1700           sapcilly (shift)         13           nt 4         1           nt 4         1           nt 4         0.0           nt 4         0.0           nt 4         0.0           nt 4         0.0           nt 5         1.0	Median storage veh)							
unblocked 0.69  groundine 1614 801 808  groundine 1645 801 808  2 corn vol  2 corn vol  3 corn vol  4 corn vol  5)  3.5 3.3 2.2  6 corn vol  6 d 6.2 4.1  (s)  3.5 3.3 2.2  6 corn vol  6 d 6.2 4.1  (s)  3.5 3.3 2.2  6 corn vol  6 d 6.2 4.1  6 d 70 385  6 d 6 d 70  6 d 14  7 d 31  7 d 14  7 d 15  7 d 18  8 d 18	unblocked 0.69  groundlocked 0.69  groundlocked 1614 801 808  1 conf vol	Upstream signal (ft)				664			
ng volume 1614 801 808 1 conf vol 1 control 1	ng volume 1614 801 808 1 conf vol 2 conf vol	pX, platoon unblocked	69.0						
1 confivol 2 confivol 3 confivol 4 confivol 5 (s) 6 d d d d d d d d d d d d d d d d d d d	1 confivol 2 confivol 3 confivol 5 (s) (s) (s) (s) (s) (s) (s) (s) (s) (s)		1614	801	808				
2 confival  2 kked val 1665 801 808  3	2 confival   1665   801   808   808   808   808   808   808   808   808   808   809   808   809	vC1, stage 1 conf vol							
Ked vol         1665         801         808           (s)         6.4         6.2         4.1           (s)         3.5         3.3         2.2           ee %         80         95         96           f (veh/h)         70         385         817           ame #         EB 1         NB 1         SB 1           chill         14         31         0           hit         18         0         44           capacity         1700         44           ay (s)         6         A           E A         A           Summary         1.3         1.0           13         1.2         1.0           13         1.3         1.3           14         1.3         1.3           15         1.0         0.0           18         1.3         1.3           18         1.3         1.3           1.3         1.3         1.3	Section   1665   801   808     Section   1665   801   808     Section   164   6.2   4.1     Section   168   8.2   4.1     Section   1.2   8.2     Section   1.2   8.2     Section   1.2   8.2     Section   1.3   8.1     Section   1.4   9.1     Section   1.4   9.1     Section   1.4   9.1     Section   1.4   9.1     Section   1.3	vC2, stage 2 conf vol							
(\$) 6.4 6.2 4.1 (\$) 3.5 3.3 2.2 ee % 80 95 96 (Vehuh) 70 385 817 ane # EB1 NB 1 SB1 al 32 782 808 tt 18 0 14 int 18 0 14 int 55h (1) 23 3 0 ee(s) 41.5 1.0 0.0 ee(s) E	(\$) 6.4 6.2 4.1 (\$) 3.5 3.3 2.2 ee % 80 95 96 (Vehh) 70 385 817 ane # EB1 NB 1 SB1 an		1665	801	808				
(\$)  8.5  8.7  8.0  9.5  9.6  (Verhiff) 70  885  817  10  887  11  11  12  13  14  13  14  14  17  18  17  17  18  17  17  18  17  17	(\$) 3.5 3.3 2.2 ee % 80 95 96 f(vehuh) 70 385 817 ane # EB 1 NB 1 SB 1 t 1 18 0 14 t 130 817 1700 ay (s) E 3 3 0 oy (s) E 10 0 0 oy (s) E 10 0 0 oy (s) E 11 0 0 oy (s) E 11 0 0 oy (s) E 12 0 oy (s) E 13 0 0 oy (s) E 13 0 0 oy (s) E 14 0 0 oy (s) E 15 0 0 oy (s) E 17 0 0 oy (s) E 18 0 0 oy (s) E 19 0 0	tC, single (s)	6.4	6.2	4.1				
ee % 3.5 3.3 2.2 ee % 80 95 96 fivehh) 70 385 817 aane # EB1 NB1 SB1 t 14 31 0 tht 138 0 14 th 31 0.25 apacity 0.25 0.04 0.48 sty(s) 41.5 1.0 0.0 cos	ee % 3.5 3.3 2.2 ee % 8.6 95 ene # EB 1 NB 1 SB 1 al	tC, 2 stage (s)							
ee % 80 95 96  f (vehuh) 70 385 817  ane # EB1 NB 1 SB 1  al	ee % 80 95 96  f (vehn) 70 385 817  an	tF (s)	3.5	3.3	2.2				
(vehh)         70         385         817           ane #         EB1         NB 1         SB 1           al         32         782         808           t         1         31         0           fit         18         0         14           fit         130         817         1700           capacity         0.25         0.04         0.48           gh (s)         41.5         1,0         0.0           cys         E         1,0         0.0           cost         E         1,0         0.0           cost         E         1,3         1,3           down         1,3         1,3         1,3           down         1,5         1,0         0.0           cost         E         1,3         1,3           down         1,3         1,3         1,3           down         1,3         1,3         1,4           none         1,5         1,0         0.0           none         1,5         1,0         0.0           none         1,5         1,0         0.0           none         1,5         1,0	(vehh)         70         385         817           ane #         EB1         NB1         SB1           al         32         782         808           t         1         31         0           t         18         0         14           firt         18         0         14           napecity         0.25         0.04         0.48           ay (s)         E         A           eleay (s)         41.5         1.0         0.0           OS         E         A         A           slay         1.3         ICU Level of Service           ricd (min)         15         1.3           15         1.3         1.3	p0 queue free %	80	95	96				
ane # EB1 NB 1 SB1  al 32 782 808  t 1 18 0 14  fint 18 0 14  130 817 1700  apacity 0.25 0.04 0.48  class 3 0  ay (s) 41,5 1,0 0.0  Cos E  Summary  13  13  13  Alay  13  13  13  Alay  14  13  13  13  Alay  15  13  13  13  Alay  17  13  13  13  Alay  18  13  13  13  Alay  18  13  13  13  Alay  19  13  13  Alay  19  13  13  Alay  10  13  13  Alay  11  13  14  Alay  11  15  15  Alay  11  15  Alay  12  15  Alay  13  16  Alay  14  15  Alay  15  16  Alay	ane # EB1 NB1 SB1  al 32 782 808  It 18 0 14  It 18 0 14  It 130 817 1700  Apacity 0.25 0.04 0.48  Summary  I.3	cM capacity (veh/h)	70	382	817				
al 32 782 808  It 14 31 0  Int 14 31 0  Int 130 817 1700  Sapacity 0.25 0.04 0.48  It 31 0 0.0  It 41.5 1.0 0.0  It 5 1.3 1.3  It 7 1.3  It 7 1.3  It 7 1.3  It 7 1.3  It 8 1.3  It 8 1.3  It 9	al 32 782 808  It 14 31 0  It 14 31 0  It 14 31 0  It 14 31 0  It 130 817 1700  Augustiy 0.25 0.04 0.48  Augustiy 0.25 0.04 0.48  Augustiy 0.25 0.04 0.00  Augustiy 0.00  A	Direction, Lane #	EB 1	NB 1	SB 1				
t 11 31 0  Int 118 0 14  Sapacity 0.25 0.04 0.48  Sylv (s) 41.5 1.0 0.0  Solv (s) E  Summary 1.3   t t 14 31 0  Int 18 0 14  18 0 14  19 8 0 14  130 817 1700  ay(s) 625 0.04 0.48  ay(s) 615 1.0 0.0  Capacity Utilization 63.9% ICU Level of Service 15  Int 130 83.9% ICU Leve	Volume Total	32	782	808					
hit 18 0 14  -apacity 0.25 0.04 0.48  style) 23 3 0  style) 41.5 1.0 0.0  E A E  Summary 1.3  style 1.3  style 2.3  style 3.3  style 4.15	ht 18 0 14  130 817 1700  2apacity 0.25 0.04 0.48  130 817 1700  34(s) 23 3 0  34(s) E A  Summary 1.3  13  13  13  13  14  15  10  10  15  16  17  18  18  18  18  18  18  18  18  18	Volume Left	14	31	0				
130 817 1700  Sapacity 0.25 0.04 0.48  19th 95th (#) 2.3 0  19th (\$1, 2.3 0  10.0 E A  Summary  1.5 1.0 0.0  S E  Summary  1.3 1.3 1.0 1.0  Summary  1.3 1.3 1.3 1.0 1.0  Summary  1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3	130 817 1700 3µ 95h (ft) 0.25 0.04 0.48 4 (s) E A 0.0 OS E A 0.00 Summary 1.3	Volume Right	18	0	14				
Appacity 0.25 0.04 0.48  July 95h (#) 2.3 3 0  ay (s) 41.5 1.0 0.0  OS E  Summary  Iday  I	Appecity 0.25 0.04 0.48  Jath 95th (#) 2.3 3 0  By (\$) 41.5 1.0 0.0  So	cSH	130	817	1700				
Jh 95th (ft) 23 3 0   A15 1 0 0.0     A15 1 0 0.0     A15 1 0 0.0     Columnary	1	Volume to Capacity	0.25	0.04	0.48				
ay (s) 41.5 1.0 0.0  E A E C A C B C B C Summary  Alay  1.3  1.3  1.3  1.3  1.3  1.3  1.3  1.	ay (s) 41.5 1.0 0.0  E A OS E Summary 1.3 Ind (min) 1.5 Ind (0.0 Ind (min) Ind (0.0	Queue Length 95th (ft)	23	e	0				
belay (s)	E A O.0 OS E 1.0 0.0 Summary 1.3 Liday (min) 63.9% ICU Level of Service	Control Delay (s)	41.5	1.0	0.0				
y (s) 41.5 1.0 0.0    E	y (s) 41.5 1.0 0.0  mmany 1.3  pacity Utilization 63.9% ICU Level of Service 16 (min)	Lane LOS	ш	۷					
E mmary 1.3 1.3 CU Level of Service 63.9% ICU Level of Service 15 (min) 15	E	Approach Delay (s)	41.5	1.0	0.0				
1.3 Utilization 63.9% ICU Level of Service 15	1.3 Utilization 63.9% ICU Level of Service 15	Approach LOS	ш						
1.3 Ulilization 63.9% ICU Level of Service 15	1.3 Utilization 63.9% ICU Level of Service 15	Intersection Summary							
Utilization 63.9% ICU Level of Service 15	Utilization 63.9% ICU Level of Service 15	Average Delay			1.3				
		Intersection Capacity Utilization			63.9%	ਹ	J Level of	Service	В
		Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - PM Peak Hour 10: Sheridan Drive & Ferwick Road

	†	<u> </u>	<b>\</b>	ļ	•	•	
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	4₽		r	₩	¥		
Volume (vph)	1639	13	2	1591	13	17	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0	72		0	0	
Storage Lanes		0	-		-	0	
Taper Length (ft)		25	22		22	25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00	
F	0.999				0.922		
Fit Protected			0.950		0.979		
Satd. Flow (prot)	3536	0	1770	3539	1681	0	
Fit Permitted			0.950		626.0		
Satd. Flow (perm)	3536	0	1770	3539	1681	0	
Link Speed (mph)	42			45	30		
Link Distance (ft)	635			1668	278		
Travel Time (s)	9.6			25.3	6.3		
Peak Hour Factor	0.87	0.87	0.94	0.94	0.75	0.75	
Adj. Flow (vph)	1884	15	2	1693	17	23	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1899	0	2	1693	40	0	
Enter Blocked Intersection	8	8	8	8	8	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	12			12	12		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane	Yes			Yes			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		6	15		15	6	
Sign Control	Free			Free	Stop		
Intersection Summary							
Area Type: C	Other						
Control Type: Unsignalized	1			3			
Intersection Capacity Utilization 55.7% Analysis Dorlod (min) 15	%/'.cc uoi			3	J Level 0	ICU Level of Service B	
Alianysis Fellow (miny 13							

Synchro 7 - Report Page 19 Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - PM Peak Hour 10: Sheridan Drive & Fenwick Road

																																							В	
•	NBR		17			0.75	73									0.82	949			484	6.9		3.3	95	431	NB 1	40	17	23	188	0.21	19	29.3	۵	29.3	D			Service	
<b>√</b>	T NBL	*	1 13			4 0.75								2		0.82	2748	1891	857	2691	8.9	2.8	3.5	84	108	2 WB 3	78				0.0		0.0 0.0						ICU Level of Service	
<i>*</i>	WBL WBT	¥	5 159	Free			5 1693						TWLTL			0.82	1899			1649	4.1		2.2	86	316	WB1 WB2	5 846	2			0.02 0.50			ပ	0.1			0.3	55.7%	15
<i>&gt;</i>	EBR		13			0.87	2																			EB2	643	0	12	1700	0.38	0	0.0							
†	EBT	₩	1639	Free	%0	0.87	1884						TWLTL	2	635											EB 1	1256	0	0	1700	0.74	0	0.0		0.0				ization	
	Movement	Lane Configurations	Volume (veh/h)	Sign Control	Grade	Peak Hour Factor	Hourly flow rate (vph)	Pedestrians	Lane Width (ft)	Walking Speed (ft/s)	Percent Blockage	Right turn flare (veh)	Median type	Median storage veh)	Upstream signal (ft)	pX, platoon unblocked	vC, conflicting volume	vC1, stage 1 conf vol	vC2, stage 2 conf vol	vCu, unblocked vol	tC, single (s)	tC, 2 stage (s)	tF (s)	b0 queue free %	cM capacity (veh/h)	Direction, Lane #	Volume Total	Volume Left	Volume Right	HS:	Volume to Capacity	Queue Length 95th (ft)	Control Delay (s)	Lane LOS	Approach Delay (s)	Approach LOS	Intersection Summary	Average Delay	Intersection Capacity Utilization	Analysis Period (min)

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - PM Peak Hour 11: Sheridan Drive & Frankhauser Road

		1		,	٨	•	
		Ì					
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	*	‡	₩.		r	R.	
Volume (vph)	34	1599	1563	41	52	40	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	105			0	0	20	
Storage Lanes	-			0	-	<b>-</b> -	
Taper Length (ft)	92			25	25	25	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
F			966.0			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3525	0	1770	1583	
Flt Permitted	0.113				0.950		
Satd. Flow (perm)	210	3539	3525	0	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			2			34	
Link Speed (mph)		45	45		30		
Link Distance (ft)		1014	635		614		
Travel Time (s)		15.4	9.6		14.0		
Peak Hour Factor	06:0	06:0	0.91	0.91	0.82	0.82	
Adj. Flow (vph)	88	1777	1718	45	63	49	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	88	1777	1763	0	63	49	
Enter Blocked Intersection	2	2	8	8	8	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(tt)		16	91 ;		16		
I wo way Left I um Lane	,	Yes	Yes			4	
Headway Factor	9:1	1.00	1.00	00.1	00:1	1.00	
Turning Speed (mph)	<u>1</u> 2	•	•	6	12	6	
Number of Detectors			7		- :	- :	
Detector I emplate	E E	Ihru	lhru		Eet	Right	
Leading Detector (ft)	25	<u>8</u>	3		70	70	
Trailing Detector (ft)	0 0	0	0		0	0 0	
Detector I Position(it)	<b>&gt;</b> 8	o ·	Э,		0 8	0 0	
Detector 1 Size(ft)	2 2	<u>.</u> ت	ن و		50 50	20	
Detector I Type	CI+EX	CI+EX	CI+EX		CI+EX	CI+EX	
Detector 1 Channel	ć	c	c		ć		
Detector   Externa (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector I Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94	44				
Detector 2 Size(ft)		9 ,	9 ,				
Detector 2 Type		CI+EX	CI+EX				
Detector 2 Channel		d	0				
Detector 2 Extend (s)	č	0.0	0.0				
Turn Type	Perm				٠	Ferm	
Protected Phases	c	7	9		4	,	
Permitted Phases	7	•				4 .	
Detector Phase	7	7	9		4	4	

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Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - PM Peak Hour 11: Sheridan Drive & Frankhauser Road

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CDD	SDK	1.0	31.1	35.0	29.2%	29.9	3.2	1.9	0.0	5.1			3.0	None	7.0	19.0	0	9.6	80.0	0.31	28.2	0.0	28.2	ပ											LOS: A	ICU Level of Service B		
GD	SDL	1.0	31.1	35.0	29.2%	29.9	3.2	1.9	0.0	5.1			3.0	None	7.0	19.0	0	9.6	0.08	0.44	61.5	0.0	61.5	ш	47.0	۵					f Yellow				Intersection LOS: A	U Level of		
MDD	WDK			0.0	%0:0				0.0	4.0																					T, Start o				드	2		
TOW	MDI	4.0	40.0	85.0	%8.02	80.2	3.9	6.0	0.0	4.8			3.0	C-Max	7.0	15.0	0	103.6	98.0	0.58	4.0	0.0	4.0	A	4.0	⋖					and 6:WB							
LDT	EDI	4.0	40.0	85.0	%8.07	80.2	3.9	6.0	0.0	4.8			3.0	C-Max	7.0	15.0	0	103.6	98.0	0.58	3.3	0.0	3.3	A	3.3	⋖					2:EBTL a							
IGJ	CDL	4.0	40.0	85.0	70.8%	80.2	3.9	6.0	0.0	4.8			3.0	C-Max	7.0	15.0	0	103.6	98.0	0.21	3.6	0.0	3.6	A				Other		0.	ced to phase		oordinated		5.0	zation 56.1%		
l and Craim	Cuitch Dhace	Switch Fliase Minimum Initial (s)	Minimum Split (s)	Total Split (s)	Total Split (%)	Maximum Green (s)	Yellow Time (s)	All-Red Time (s)	Lost Time Adjust (s)	Total Lost Time (s)	Lead/Lag	Lead-Lag Optimize?	Vehicle Extension (s)	Recall Mode	Walk Time (s)	Flash Dont Walk (s)	Pedestrian Calls (#/hr)	Act Effct Green (s)	Actuated g/C Ratio	v/c Ratio	Control Delay	Queue Delay	Total Delay	SOT	Approach Delay	Approach LOS	Intersection Summary	Area Type:	Cycle Length: 120	Actuated Cycle Length: 120	Offset: 55 (46%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow	Natural Cycle: 80	Control Type: Actuated-Coordinated	Maximum v/c Ratio: 0.58	Intersection Signal Delay: 5.0	Intersection Capacity Utilization 56.1%	Analysis Period (min) 15	

Splits and Phases: 11: Sheridan Drive & Frankhauser Road



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - PM Peak Hour 12: Sheridan Drive & I-290 NB

## FBI FBI FBI FBI FBI FBI FBI FBI FBI FBI		WBT 1900 1062 1062 1062 1062 1062 1062 1063 1000 1000 1000 1000 1000 1000 1000	WBR NBL 601 317 602 310 0 230 0 230 0 240 0 255 0.91 0 0.950 0 1681 Ves 0 22% 0 653 396 653 396 0 0.00 No No No Right Left	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 1 1 1 1 2 1 2 1	NO O O O O O O O O O O O O O O O O O O	30 1900 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	25 11000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
355 1259 1900 1900 100 1900 100 0.91 0.950 177 5085 0.053 117 5085 117 5085 0.053 117 5085 0.053 117 5085 0.053 117 5085 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.0						10 0	1900 1,000 1,000 1,000 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
355 1259 1900 1900 1000 1000 1000 1000 1000 100						6	1,000 1,000 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1900 0 0 25 25 0 0 0 7 Yes 0 0 0
1900 1900 1900 1900 1900 1900 1900 1900						2	1900 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1900 0 0 0 1.00 Ves 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
100 100 105 1.00 0.91 1.00 0.91 1770 5085 1065 1177 5085 1177 5085 1172 359 1272 359 1272 359 1272 12 12 12 12 12 12 12 12 12 12 12 12 12				88.8.		6	1.00 30 423 9.6 0.92 0 0 0 No Left	25 25 1.00 0 0 0 0 0 0 0 0 0 No No
105 100 100 177				88.8.		<del>-</del>	1.00 30 423 9.6 0.92 0 0 0 No Leff	25 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
100 0.91 0.950 0.053 117 5.085 0.063 117 5.085 117 5.085 0.09 0.99 359 1272 0.99 0.99 359 1272 0.90 0.90 1.00 1.00 1.00 1.00 0.0							1.00 0 0 30 423 9.6 0.92 0 0	1.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0.950 0.055 0.065 117 5085 117 5085 117 5085 117 5085 117 5085 0.09 0.09 0.09 0.00 0.00 0.00 0.00 0.00 0.00						6	30 30 423 9.6 0.92 0 0 0 0 0 Left	0 0 0 0 0 0 0 Night
0,950 1770 1770 0,065 177 45 45 46 47 47 47 47 47 47 47 47 47 47						O O	0 0 30 423 9.6 0.92 0 0 0 0 No No Left	0 0 0.92 0 No No No No No No No No No No No No No
11770 5085 0.063 117 5085 117 5085 117 5085 117 5085 117 5085 117 6 11 77 6 11 77 6 11 77 6 11 77 7 11 7 7 12 1 7 10 1.00 1.00 0 10 0 0						O	0 0 30 423 9.6 0.92 0 0 0 0 No Left	Ves 0.92 0 0 No Right
0.063 117 5085 117 5085 117 5085 1172 0.09 0.99 359 1272 359 1272 12 12 12 12 16 16 16 17 16 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0						O O	30 30 423 9.6 0.92 0 0 0 No No	Yes 0.92 0 0 No Right
117 5085 45 610 610 610 9.2 0.99 0.99 359 1272 172 172 172 173 174 175 176 176 176 176 176 176 176 176 176 176			- 0 "			O	30 423 9.6 0.92 0 0 No Left	Yes 0.92 0 0 0 No Right
45 610 610 9.2 0.99 359 1272 on No 1272 0 100 100 100 100 0 0 0 0 0 0 0 0 0 0						O O	30 423 9.6 0.92 0 0 No Left	Yes 0.92 0 0 0 No Right
45 610 9.99 0.99 0.99 0.99 0.99 0.99 0.99 0.			9 (1			0	30 423 9.6 0.92 0 0 No Left	0.92 0 0 No Right
45 610 9.2 0.99 359 1272 359 1272 12 12 12 12 14 15 16 17 18 100 100 0 0 0 0 0 0 0 0 0 0 0 0			0 (1			Ö	30 423 9.6 0.92 0 0 No Left	0.92 0 0 No Right
610 0.99 0.99 359 1272 359 1272 36 1272 0 100 15 1 2 1.00 1.00 15 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 0						0	423 9.6 0.92 0 0 No No	0.92 0 0 No Right
9.2 9.2 9.9 9.9 9.9 9.9 9.9 9.9			0 (1			0	9.6 0.92 0 0 0 No Left	0.92 0 0 No Right
0.99 0.99 0.99 0.99 0.99 0.99 0.99 0.99						0	0.92 0 0 No Left	0.92 0 0 No Right
359 1272  359 1272  on No No Left Left Ri 12 0 16 16 16 17 18 11.00 1.00 1 15 1 2 16 17 18 00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0							No O Left	0 0 No Right
359 1272 No No 1272 Left Left Ri 10 1.00 1.00 1 15 2 1.00 0							No Left	No No Right
ction No No No No No No No No No No No No No							No Left	No Right
ne 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0							No Left	Right
Left Left 1 12 0 16 1.00 1.00 1.5 1 2 1 2 2 100 0 0 0 0 0 0 0 0 0 0 0 0 0					0 0		Left	Right
nne 1.00 1.00 1.01 1.00 1.00 1.00 0.00 0.0		1,			off Right	Left		
16 1.00 1.00 15 1.0 15 1.0 16 1.00 10 0 0 10 0 10 0 0 0 10 0 0 0		71		_	12		12	
16 1.00 1.00 15 1 2 1 4 20 100 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0			0		0	
1.00 1.00 15 1 2 1 1 2 20 100 0 0 0 0 0 0 C+EX CI+EX		16			16		16	
100 1.00 15 1 2 16 20 100 0 0 0 0 0 0 0 0 0 CHEX CI+EX								
15 Left	1.00 1.00	1.00	1.00 1.00	00 1.00	00 1.00	1.00	1.00	1.00
Left 20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	9 15		9 1	15	6	15		6
Left 7 20 20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		7		_	2 1			
20 0 0 20 CI+EX CI		Thru	Left		ž			
0 20 CI+Ex 0.0		100	2	20 100	2			
0.0 CI+Ex		0						
20 CI+Ex 0.0		0			0 0			
CI+Ex		9	2					
0.0		CI+Ex	CI+Ex	X CI+Ex	X CI+EX			
0:0								
		0.0	0					
0:0		0.0	Ö					
0.0		0.0	0	0.0	0.0 0.0			
( <del>(</del> ))		94		6	94			
(t)		9 .			9 .			
Detector 2 Type CI+Ex		CI+EX		CI+EX	×			
		d		ć				
Extend (s)		0.0		0.0				
Turn Type pm+pt 7		c	custom		Lerm			
Plotected Priases 6		7			2			
		C			,			

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Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - PM Peak Hour 12: Sheridan Drive & I-290 NB

Lame Group         EB1         EB1         EB1         EB1         WB1         WB1         NB1         NB1         NB1         NB1         SB1	FBI   FBI   FBR   WBI   WBI   WBR   NBI   NBI   NBI   SBI		1	<b>†</b>	<i>&gt;</i>	<b>\</b>	ţ	1	•	-	•	۶	<b>→</b>	•
3.0 4.0 4.0 4.0 6.0 6.0 6.0 6.0 7.3 3.3 9 2.7 8 29.0 29.0 29.0 29.0 29.0 29.0 29.0 29.0	3.0 4.0 4.0 4.0 6.0 6.0 6.0 6.0 7.3 3.3 9 2.7 8 29.0 29.0 29.0 29.0 29.0 29.0 29.0 29.0	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
3.0 4.0 4.0 6.0 6.0 6.0 6.0 6.0 6.0 1.0 6.0 1.0 6.0 1.0 6.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1	3.0   4.0   4.0   6.0	Switch Phase												
7.3 33.9	7.3 33.9 27.8 29.0 29.0 29.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Minimum Initial (s)	3.0	4.0			4.0		0.9	0.9	0.9			
17.5%   75.0%   0.0   69.0   0.0   30.0   30.0   0.0	17.5% 15.0% 0.0% 69.0 0.0 30.0 30.0 0.0 0.0 0.0 0.0 0.0 0.0	Minimum Split (s)	7.3	33.9			27.8		29.0	29.0	29.0			
175% 75 % 0.0% 0.0% 57.5% 0.0% 25.0% 25.0% 0.0% 0.0% 0.0% 0.0% 0.0% 24.8 24.8 24.8 24.8 24.8 24.8 24.8 24.8	175% 75,0% 0,0% 57,5% 0,0% 25,0% 0,0% 0,0% 0,0% 0,0% 0,0% 0,0% 0,0%	Total Split (s)	21.0	0.06	0.0	0.0	0.69	0.0	30.0	30.0	30.0	0.0	0.0	0.0
16.7   84.1   63.2   24.8   24.0   20.0	16.7 84.1 63.2 24.8 24.8 24.8     3.2 3.9 3.9 3.2 3.2 3.2 3.2     1.1 2.0 9	Total Split (%)	17.5%	75.0%	%0.0	%0.0	27.5%	%0:0	25.0%	25.0%	25.0%	%0:0	%0:0	0.0%
32 39 32 37 32 32 32 32 32 32 32 32 32 32 32 32 32	3.2 3.9 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2	Maximum Green (s)	16.7	84.1			63.2		24.8	24.8	24.8			
1.1 2.0 1.9 2.0 2.0 2.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	1.1 2.0 1.9 2.0 2.0 2.0 0.0 4.3 2.0 2.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Yellow Time (s)	3.2	3.9			3.9		3.2	3.2	3.2			
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	0.00 0.00 0.0 0.0 0.0 0.0 0.0 0.0 0.0	All-Red Time (s)	1.1	2.0			1.9		2.0	2.0	2.0			
Head	Head	Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lead   Lag     S	Lead   Lag     Ves	Total Lost Time (s)	4.3	5.9	4.0	4.0	2.8	4.0	5.2	5.2	5.2	4.0	4.0	4.0
7         Yes         Yes           8)         2.0         3.0         2.0	Yes   Yes   Yes     So   2.0   2.0     None C-Max   C-Max   None None   None	Lead/Lag	Lead				Lag							
s) 20 3.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2	s) 20 3.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2	Lead-Lag Optimize?	Yes				Yes							
None C-Max	None C-Max   C-Max   None	Vehicle Extension (s)	2.0	3.0			3.0		2.0	2.0	2.0			
1.00	h) 7.0 7.0 7.0 h) 7.0 h) 2.10 15.0 h) 86.7 85.1 63.2 23.8 23.8 23.8 (7.2 1.0 1.0 1.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Recall Mode	None	C-Max			C-Max		None	None	None			
hr) 21.0 15.0 15.0 16.0 17.0 17.0 17.0 17.0 17.0 17.0 17.0 17	hr) 21.0 15.0 hr) 86.7 85.1 6.3.2 23.8 23.8 0.72 0.71 0.53 0.20 0.20 1.09 0.35 0.69 0.93 0.80 1.07 7.9 17.3 81.3 48.5 0.0 0.0 0.0 0.0 0.0 1.07 7.9 17.3 81.3 48.5 F A B B F B F D C A B T T T T T T T T T T T T T T T T T T	Walk Time (s)		7.0			7.0							
hr) 86.7 8.0 6.0 2.3.8 2.3.8 (2.3.8 2.3.8 2.3.8 2.3.8 2.3.8 (2.3.8 2.3.8 2.3.8 2.3.8 2.3.8 2.3.8 (2.3.8 2.3.8 2.3.8 2.3.8 2.3.8 (2.3.8 2.3.8 2.3.8 2.3.8 2.3.8 (2.3.8 2.	hr) 86.7 8.0 63.2 23.8 23.8 63.2 63.2 63.8 63.2 63.8 63.2 63.8 63.2 63.8 63.8 63.2 63.8 63.8 63.2 63.8 63.8 63.8 63.8 63.8 63.8 63.8 63.8	Flash Dont Walk (s)		21.0			15.0							
86.7 85.1 63.2 23.8 23.8 (20.2) (20.2	86.7 85.1 63.2 23.8 23.8 (23.8	Pedestrian Calls (#/hr)		0			0							
0.72 0.71 0.53 0.20 0.20 0.20 0.20 0.35 0.69 0.20 0.20 0.35 0.69 0.69 0.38 0.80 0.00 0.00 0.0 0.0 0.0 0.0 0.0 0.0	1072 071 053 020 020 020 035 050 035 050 045 035 080 035 065 035 080 035 065 035 080 035 000 00 00 00 00 00 00 00 00 00 00 00 0	Act Effct Green (s)	86.7	85.1			63.2		23.8	23.8	23.8			
109 0.35 0.69 0.93 0.80 1072 7.9 17.3 81.3 48.5 0 0.0 0.0 0.0 0.0 107.2 7.9 17.3 81.3 48.5 F A B B F D E 29.8 17.3 82.2 C B E  any  Other  Oth	109 0.35 0.69 0.93 0.80 1072 7.9 17.3 81.3 48.5 0 0.0 0.0 0.0 0.0 1072 7.9 17.3 81.3 48.5 F A B F B F D 29.8 17.3 81.3 48.2  Total Dilest Coordinated  Itea-Coordinated  Itea-	Actuated g/C Ratio	0.72	0.71			0.53		0.20	0.20	0.20			
107.2 7.9 17.3 81.3 48.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	107.2 7.9 17.3 81.3 48.5 10.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	v/c Ratio	1.09	0.35			69.0		0.93	0.80	97.0			
107.2 7.9 17.3 81.3 48.5 P	107.2 7.9 10.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Control Delay	107.2	7.9			17.3		81.3	48.5	43.3			
y 2 48 17.3 81.3 48.5 P 2 A B B F D D 2 7.9 17.3 81.3 48.5 P D D 2 8 17.3 81.3 48.5 D D 2 8 17.3 B 17.3 E S 2 D D 2 8 17.3 B 2 8.2 D D 2 8 17.3 B 2 8.2 D D 2 8 17.3 B 2 17.3 B 2 8 17.3 B 2 8 17.3 B 2 8 17.3 B 2 8 17.3 B 2 8 17.3 B 2 17.3 B 2 8 17.3 B 2 8 17.3 B 2 8 17.3 B 2 8 17.3 B 2 8 17.3 B 2 17.3 B 2 8 17.3 B 2 8 17.3 B 2 8 17.3 B 2 8 17.3 B 2 8 17.3 B 2	107.2 7.9 17.3 81.3 48.5 E A B F D 29.8 17.3 81.3 48.5 S 29.8 17.3 E S 20.2 E E S 20.2 E E S 20.2 E E S 20.2 E E E S 20.2 E E E E E E S 20.2 E E E E E E E E E E E E E E E E E E E	Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0			
y 29.8 H 7 D  mmary Cliher  1.1 Cliher  1.2 Control of the Service D  1.2 Control of the Service D  1.3 F D  58.2  F D  68.2  68.2  68.2  68.2  68.2  68.2  68.2  68.2  68.2  68.2  68.2  68.2  68.2  68.2  68.2  68.2  68.2  68.2  69.2  69.2  60.2	F A B F D  29.8 17.3 58.2  TO liber  Other	Total Delay	107.2	7.9			17.3		81.3	48.5	43.3			
9 29.8 17.3  C B  mmany  Other  120  C B  Salaba  Length: 120  S, Referenced to phase 2:WBT and 6.EBTL, Start of Yellow  Actualed-Coordinated  Ratio: 109  Intersection LOS: C  praid Delay; 30.4  Intersection LOS: C  Intersection LOS: C	17.3  C B  Dither  Other  Other  Other  Garage 2:WBT and 6:EBTL, Start of Yellow eferenced to phase 2:WBT and 6:EBTL, Start of Yellow  Inter-Coordinated 1.09  Intersection LOS: C  Delay: 30.4  Intersection LOS: C  Intersection Cost of Service D  Intersection 179.0%  Intersection Cost of Service D  Intersection 179.0%	SOT	ш	×			В		ш	۵	۵			
C B  mmany Other 120 -Length: 120 Actualed-Coordinated 20 Actualed-Coordinated	Other Other Gerenced to phase 2:WBT and 6:EBTL, Start of Yellow eferenced to phase 2:WBT and 6:EBTL, Start of Yellow eferenced to phase 2:WBT and 6:EBTL, Start of Yellow flats-Coordinated 1.09 Intersection LOS: C Delay: 30.4 Intersection LOS: C Delay: 30.4 Intersection LOS: C Delay: 30.4 Intersection LOS: C Delay: 30.4 Intersection LOS: C Delay: 30.4 Intersection LOS: C	Approach Delay		29.8			17.3			58.2				
Summary  Other  th: 120  yiel Length: 120  yiel, Referenced to phase 2:WBT and 6-EBTL, Start le: 90 e: Actualed-Coordinated for Ration 1.09 Signal Delay: 30.4 I Capacity Utilization 79.0%	Other Other gth: 120 eferenced to phase 2:WBT and 6:EBTL, Start sted-Coordinated 1:09 Delay: 30.4 It grillization 79.0%	Approach LOS		ပ			В			ш				
Other  Web Length: 120  You's Referenced to phase 2:WBT and 6:EBTL, Start le: 90 e: Actualed-Coordinated for Referenced to phase 1:00 for Rail and 1:00 Signal folia 1:00 Signal folia 1:00 Signal folia 1:00 Indication 79.0%	Other  Girl: 120 eferenced to phase 2:WBT and 6:EBTL, Start ated-Coordinated 1.09 blay: 30.4 b) Ullization 79.0% 1)	Intersection Summary												
th: 120 r/cle Longth: 120 49%, Referenced to phase 2:WBT and 6:EBTL, Start 49%, Referenced to phase 2:WBT and 6:EBTL, Start 49%, Referenced to phase 2:WBT and 6:EBTL, Start 49%, Referenced to phase 2:WBT and 6:EBTL, Start 50% Referenced to phase 2:WBT and 6:EBTL, Start 69% Referenced to phase 2:WBT and 6:EBTL, Start	igh: 120 eferenced to phase 2:WBT and 6:EBTL, Start sted-Coordinated 1.09 Delay: 30.4 I) Utilization 79.0%	Area Type:	Other											
Actualed Cycle Length: 120 Offset, 59 (4%), Referenced to phase 2:WBT and 6:EBTL, Start of Yellow Natural Cycle; 90 (4%), Referenced to phase 2:WBT and 6:EBTL, Start of Yellow Natural Cycle; 90 (90 (40 (40 (40 (40 (40 (40 (40 (40 (40 (4	gth: 120 eferenced to phase 2:WBT and 6:EBTL, Start sted-Coordinated 1.09 Delay: 30.4 by Utilization 79.0%	Cycle Length: 120												
Offset: 59 (49%), Referenced to phase 2:WBT and 6:EBTL, Start of Yellow Natural Cycle: 90 Control Type: Actuated-Coordinated Maximum vic Ratio: 1.09 Intersection Signal Delay: 30.4 Intersection Capacity Utilization 79.0% Intersection Capacity Utilization 79.0% Intersection Type: Analysis Period (min) 15	eferenced to phase 2:WBT and 6:EBTL, Start lated.Coordinated 1:09 Delay: 30.4 I) Ullization 79.0%	Actuated Cycle Length: 120	0											
	ited-Coordinated : 1.09 Delay: 30.4 Il by Ulitzation 79.0%	Offset: 59 (49%), Reference	ed to phase	2:WBT ar	nd 6:EBTI	-, Start of	Yellow							
	ited-Coordinated 1.109 Delay: 30.4 I by Ullization 79.0%	Natural Cycle: 90												
	.1.09 Delay; 30.4 Iy Ulization 79.0% ()	Control Type: Actuated-Coc	ordinated											
	Delay: 30.4 ly Utilization 79.0% n) 15	Maximum v/c Ratio: 1.09												
	ly Utilization 79.0% n) 15	Intersection Signal Delay: 3	30.4			Ξ	ersection	LOS: C						
Analysis Period (min) 15	Analysis Period (min) 15	Intersection Capacity Utiliza	ation 79.0%			೨	U Level o	f Service	۵					
		Analysis Period (min) 15												

Splits and Phases: 12: Sheridan Drive & L290 NB

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Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - PM Peak Hour 13: Sheridan Drive & Harlem Road

Lane Group	i d	FRD	10,41	FO.	NRI		
Caciton Caption	EBT	רטו	WBL	WBI	ייטר	NBR	
	**	æ	K	‡	¥	RR	
Volume (vph)	945	604	388	981	267	899	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0	215		140	0	
Storage Lanes		-	-		2	2	
Taper Length (ft)		230	100		100	25	
Lane Util. Factor	0.95	1:00	0.97	0.95	0.97	0.88	
		0.850	0		0	0.850	
Fit Protected	0	1	0.950	000	0.950	100	
Satd. Flow (prot)	3539	1583	3433	3539	3433	2/8/	
Fit Permitted	0030	1500	0.950	25.30	0.950	7070	
Satd. Flow (perm)	3539	1383	3433	3539	3433	7817	
Kigni Turn on Ked		202				res	
Jaid. Flow (RTOR)	Ą			ĄŁ	25	101	
Link Distance (#)	314			610	338		
Travel Time (s)	4 8			9.0	999		
Peak Hour Factor	0.98	0.98	0.95	0.95	0.85	0.85	
Adj. Flow (vph)	964	919	408	1033	314	786	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	964	616	408	1033	314	786	
Enter Blocked Intersection	8	8	8	8	8	No	
Lane Alignment	Eet ;	Right	E	Le <del>ll</del>	E E	Right	
Median Width(ft)	15			24	24		
Link Offset(ff)	o ;			0 /	0 ;		
Crosswalk Widin(ii) Two way Left Turn Lane	<u>o</u>			<u>o</u>	<u>o</u>		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		6	15		15	6	
Number of Detectors	2	<del>-</del>	-	2	-	<b>-</b>	
Detector Template	Thru	Right	Left	Thru	Left	Right	
Leading Detector (ft)	100	20	20	100	20	20	
Trailing Detector (ft)	0	0	0	0	0	0 (	
Detector 1 Position(it)	۰ د	0 8	<b>&gt;</b> 8	o ,	0 8	0 0	
Detector 1 Size(II)	0 2	707	8 2	0 2	70 70	70 - [.,	
Detector 1 Channel	<u> </u>	Z-1-1-1	<u> </u>	<u>-</u>	<u>1</u>	¥ 10 10	
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)	94			94			
Detector 2 Size(ft)	9			9			
Detector 2 Type	CI+EX			CI+Ex			
Detector 2 Channel							
Detector 2 Extend (s)	0.0		į	0.0			
Turn Type Protected Phases	C	bm+ov	Fig.	1 2	c	pm+ov 1	
Printed Phases	7	o c	-	7 -	2	- ~	
Detector Phase	0	٧ %	-	1.2	~	) t-	

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Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - PM Peak Hour 13: Sheridan Drive & Harlem Road

Lane Group         EBT           Switch Phase         200           Minnum Initial (s)         200           Minnum Initial (s)         305           Total Split (s)         660           Total Split (s)         660           Maximum Green (s)         605           Maximum Green (s)         605           All-Red Time (s)         16           Lost Time (s)         16           Lead Lag Optimize?         Ves           Veloal Lag Chine (s)         20           Walk Time (s)         70           Flash Dort Walk (s)         70           Pedestrain Calls (#hr)         0           Pedestrain Calls (#hr)         0           Pedestrain Calls (#hr)         6           Art Fifth Green (s)         65	60 11.2 25.0 20.8% 19.8 3.2 2.0 0.0 5.2 None 86.4 0.72	3.0 3.0 7.3 29.0 24.2% 24.7 3.2 3.4 1.1 1.1 0.0 4.3 Lead Yes 2.0 None	95.0 79.2% 0.0 4.3	6.0 11.2 25.0 20.8% 19.8 3.2 2.0 2.0 0.0	NBR 3.0 7.3 29.0 24.2% 24.7 3.2 1.1 0.0 4.3 Lead	
sse popul (s) (s) (s) (%) (%) (%) (%) (%) (%) (%) (%) (%) (%	6.0 11.2 25.0 20.8% 19.8 3.2 2.0 0.0 5.2 None 86.4	3.0 7.3 29.0 24.2% 24.7 3.2 1.1 0.0 4.3 Yes 2.0 None	95.0 79.2% 0.0 4.3	6.0 11.2 25.0 20.8% 19.8 3.2 2.0 0.0	30 7.3 29.0 24.2% 24.7 3.2 1.1 0.0 4.3 Ves	
nitial (s) ppili (s) (s) (s) (s) (s) (s) (s) (s) (d) (d) (d) (e) (s) (e) (e) (f) (e) (f) (f) (f) (f) (f) (f) (f) (f) (f) (f	6.0 11.2 20.8% 19.8 3.2 2.0 0.0 5.2 None 86.4	3.0 7.3 29.0 24.2% 24.7 3.2 1.1 0.0 4.3 Lead Yes 2.0 None	95.0 79.2% 0.0 0.0 4.3	6.0 11.2 25.0 25.0 20.8% 3.2 2.0 0.0 6.0	3.0 7.3 29.0 24.7 3.2 1.1 0.0 4.3 Vesad	
split (s) (s) (s) (s) (s) (s) (s) (s) (s) (s)	20.8% 19.88 19.8 3.2 2.0 0.0 0.0 10.0 86.4 86.4	7.3 29.0 24.2% 24.7 3.2 1.1 0.0 4.3 Lead Yes 2.0 None	95.0 0.0 4.3 4.3	11.2 25.0 20.8% 19.8 3.2 2.0 0.0 5.2	7.3 24.2% 24.7 24.7 1.1 0.0 4.3 Lead	
(\$) (\$(%) (\$(%) (\$(%) (\$(%) (\$(%) (\$) (\$) (\$) (\$) (\$) (\$) (\$) (\$) (\$) (\$	25.0 20.8% 19.8 3.2 2.0 0.0 5.2 2.0 None 86.4	29.0 24.2% 24.7 3.2 1.1 0.0 4.3 Lead Yes 2.0 None	95.0 0.0 4.3 4.3	25.0 20.8% 19.8 3.2 2.0 0.0 5.2	29.0 24.2% 24.7 3.2 3.2 1.1 0.0 4.3 Vec	
(%) Careen (s) ne (s) ne (s) Adjust (s) Time (s) ppimize? tension (s) eas (s) (s) (s) Walk (s) rens (f, s)	20.8% 19.8 3.2 2.0 0.0 5.2 None 86.4	24.2% 24.7 3.2 1.1 0.0 4.3 Lead Yes 2.0 None	0.0 4.3	20.8% 19.8 3.2 2.0 0.0 5.2	24.2% 24.7 3.2 1.1 0.0 4.3 Lead	
Green (s) ne (s) ne (s) ne (s) Adjust (s) Time (s) pplimize? tension (s) te (s) (s) te (s)	19.8 3.2 2.0 0.0 5.2 None 86.4	24.7 3.2 1.1 0.0 4.3 Lead Yes 2.0 None	0.0	19.8 3.2 2.0 0.0 5.2	24.7 3.2 1.1 0.0 4.3 Ves	
ne (s) nne (s) Adjust (s) Time (s) Pplimize? pplimize? tension (s) te (s) (s) Malk (s) Calls (#fm) ren (s)	3.2 2.0 0.0 0.0 5.2 2.0 None 86.4	3.2 1.1 0.0 4.3 Lead Yes 2.0 None	0.0	3.2 2.0 0.0 5.2	3.2 1.1 0.0 4.3 Lead Ves	
ne (s) Adjust (s) Time (s) ppimize? tension (s) te (s) (s) (s) (s) manual (s) manual (s) manual (s) manual (s) manual (s)	2.0 0.0 5.2 2.0 None 86.4 0.72	1.1 0.0 4.3 Lead Yes 2.0 None	0.0 4.3 95.0	2.0	1.1 0.0 4.3 Lead Ves	
Adjust (s) Time (s) Dplimize? persion (s) tension (s) te (s) (s) (s) real (#hr) real (s)	0.0 5.2 2.0 None 86.4 0.72	0.0 4.3 Lead Yes 2.0 None	4.3	5.2	0.0 4.3 Lead ∨As	
Time (s)  Dptimize? tension (s) te to to to to to to to to to to to to to	2.0 2.0 None 86.4 0.72	Lead Yes 2.0 None	4.3	5.2	4.3 Lead Ves	
Dptimize? tension (s) te (s) (walk (s) (alls #hr)	2.0 None 86.4 0.72	Yes 2.0 None	95.0		Lead	
Optimize? tension (s) te (s) (s) (walk (s) Calls (#hr)	2.0 None 86.4 0.72	Yes 2.0 None	95.0		Λρς	
- C	2.0 None 86.4 0.72	2.0 None	95.0		23	
(hr)	None 86.4 0.72	None	95.0	2.0	2.0	
i) (hr)	86.4		95.0	None	None	
;) /hr)	86.4		95.0			
/hr)	86.4		95.0			
	86.4		95.0			
	0.72	24.1	5	15.5	44.8	
Actuated g/C Ratio 0.54		0.20	0.79	0.13	0.37	
	0.54	0.59	0.37	0.71	69:0	
_	10.2	45.4	3.6	28.8	28.2	
×	0.0	0.0	0.3	0.0	0.0	
Delay 19.	10.2	45.4	3.9	28.8	28.2	
	В	۵	⋖	ш	U	
y 15.			14.8	36.9		
Approach LOS B			В	۵		
Intersection Summary						
Area Type: Other						
Cycle Length: 120						
Actuated Cycle Length: 120						
Offset: 36 (30%), Referenced to phase 2:EBWB, Start of Yellow	2:EBWB,	Start of \	/ellow			
Natural Cycle: 60						
Control Type: Actuated-Coordinated						
Maximum v/c Ratio: 0./1						
Intersection Signal Delay: 21.0			Ē	Intersection LOS: C	LOS: C	
Intersection Capacity Utilization 57.7% Analysis Period (min) 15			<u></u>	J Levelo	ICU Level of Service B	
Splits and Phases: 13: Sheridan Drive & Harlem Road	ve & Harle	m Road				
<b>1</b>						, 41
	20					<b>₩</b> 83

<b>₩</b>	<b>↓</b>	
29 s	888	25 s

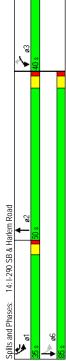
Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - PM Peak Hour 14: I-290 SB & Harlem Road

	•	,	-			•	
lane Group	WBL	WBR	NBT	NBR	SBI	SBT	
ane Configurations	k	R	4		k	**	
Volume (vph)	234	347	553	=	474	482	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	0		0	330		
Storage Lanes	-	-		0	-		
Taper Length (ft)	22	25		25	75		
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95	
Į.		0.850	0.997				
FIt Protected	0.950				0.950		
Satd. Flow (prot)	1770	1583	3529	0	1770	3539	
FIt Permitted	0.950				0.177		
Satd. Flow (perm)	1770	1583	3529	0	330	3539	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		77	2				
Link Speed (mph)	99		32			35	
Link Distance (ft)	333		250			456	
Travel Time (s)	7.6		4.9			8.9	
Peak Hour Factor	69.0	69.0	0.77	0.77	0.92	0.92	
Adj. Flow (vph)	339	503	718	14	515	524	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	336	503	732	0	515	524	
Enter Blocked Intersection	2	2	8	8	8	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	12		12			12	
_ink Offset(ft)	0		0			0	
Crosswalk Width(ft)	16		16			16	
rwo way Left Tum Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Furning Speed (mph)	15	6		6	15		
Number of Detectors	-	<del></del>	2		<del></del>	2	
Detector Template	Lef	Right	Thr		Left	Thru	
Leading Detector (ft)	20	20	100		70	100	
railing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	70	9		20	9	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0:0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)			94			94	
Detector 2 Size(ft)			9			9	
Detector 2 Type			CI+Ex			CI+Ex	
Detector 2 Channel							
Detector 2 Extend (s)			0.0			0.0	
Furn Type		vo+mq			pm+pt		
Protected Phases	3	<del>-</del>	2		-	9	
Permitted Phases		3			9		
Detector Dhace	c	,	7		,	4	

Synchro 7 - Report Page 27

Proposed Westwood Mixed Use Neighborhood 2023 Background Conditions - PM Peak Hour 14: I-290 SB & Harlem Road



Lanes, Volumes, Timings SRF & Associates

## **A6**

## Level of Service Calculations: Full Development Conditions

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 1: Maple Road & Millersport Hwy SB

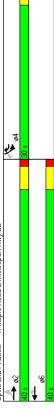
	^	†	ţ	1	۶	*	
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	*	<b>‡</b>	‡	*-	r	*	
Volume (vph)	18	909	828	312	31	83	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	150			150	0	0	
Storage Lanes	-			_	-	-	
Taper Length (ft)	32			100	25	25	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	
퍞				0.850		0.850	
Fit Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583	
Flt Permitted	0.324				0.950		
Satd. Flow (perm)	604	3539	3539	1583	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)						106	
Link Speed (mph)		45	42		30		
Link Distance (ft)		222	654		281		
Travel Time (s)		8.4	6.6		6.4		
Peak Hour Factor	0.91	0.91	96:0	96.0	0.78	0.78	
Adj. Flow (vph)	70	999	862	325	40	106	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	70	999	862	325	40	106	
Enter Blocked Intersection	%	2	8	8	8	2	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane			Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			6	15	6	
Number of Detectors	-	2	2	_	_	<del>-</del>	
Detector Template	Left	Thru	Thru	Right	Left	Right	
Leading Detector (ft)	20	100	100	70	20	70	
Trailing Detector (ft)	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	
Detector 1 Size(ft)	8	9	9	20	20	70	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		9	9				
Detector 2 Type		CI+Ex	CI+EX				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Perm			vo+mq		Perm	
Protected Phases	•	2	9	4	4		
Permitted Phases	2			9	٠	4	
	•	_	7				

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 1: Maple Road & Millersport Hwy SB

	١	Ť	Ļ	/	٠	*	
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	
Switch Phase							
Minimum Initial (s)	4.0	4.0	4.0	1.0	1.0	1.0	
Minimum Split (s)	9.1	9.1	9.1	6.2	6.2	6.2	
Total Split (s)	40.0	40.0	40.0	30.0	30.0	30.0	
Total Split (%)	57.1%	57.1%	57.1%	45.9%	45.9%	42.9%	
Maximum Green (s)	34.9	34.9	34.9	25.4	25.4	25.4	
Yellow Time (s)	3.9	3.9	3.9	3.2	3.2	3.2	
All-Red Time (s)	1.2	1.2	1.2	1.4	1.4	1.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	2.1	2.1	2.1	4.6	4.6	4.6	
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Min	C-Min	C-Min	None	None	None	
Act Effct Green (s)	52.7	52.7	52.7	70.0	7.6	7.6	
Actuated g/C Ratio	0.75	0.75	0.75	1.00	0.11	0.11	
v/c Ratio	0.04	0.25	0.32	0.21	0.21	0.40	
Control Delay	5.9	3.1	2.8	0.3	30.2	11.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	2.9	3.1	5.8	0.3	30.2	11.3	
LOS	A	A	⋖	⋖	ပ	В	
Approach Delay		3.1	4.3		16.4		
Approach LOS		A	∢		В		
Intersection Summary							
	Other						
Cycle Length: 70							
Actuated Cycle Length: 70							
Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	phase 2:	EBTL an	16:WBT,	Start of G	reen		
Natural Cycle: 40							
Control Type: Actuated-Coordinated	linated						
Maximum v/c Ratio: 0.40							
Intersection Signal Delay: 4.7				<u>u</u>	Intersection LOS: A	LOS: A	
Intersection Capacity Utilization 36.1%	nn 36.1%			೦	U Level o	ICU Level of Service A	
Analysis Period (min) 15							

Splits and Phases: 1: Maple Road & Millersport Hwy SB



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 2: Maple Road & Millersport Hwy NB

	^	†	<u> </u>	<b>\</b>	,	/		_	L	٠	<b>→</b>	*
ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
-ane Configurations	*	‡			₩		r	2,				
Volume (vph)	42	593	0	0	993	29	147	<b>.</b>	466	0	0	0
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	-		0	0		0	-		0	0		0
aper Length (ft)	20 20	i.	52	25	i c	25	25	6	25	52	,	72
-ane Util. Factor	8.1	0.95	00.1	00.1	0.95	0.95	00.	00.1	00.1	00.1	00.1	8.
III	0.050				0.992		0 050	0.830				
Satd Flow (prot)	1770	3539	C	C	3511	C	1770	1583	C	C	C	0
-It Permitted	0.187		•	•		•	0.950		,	•	•	•
Satd. Flow (perm)	348	3539	0	0	3511	0	1770	1583	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					12			174				
-ink Speed (mph)		45			45			9			30	
ink Distance (ft)		654			1770			319			263	
ravel Time (s)		6.6			26.8			7.3			0.9	
Peak Hour Factor	0.85	0.85	0.85	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	46	869	0	0	1068	9	158	-	201	0	0	0
Shared Lane Traffic (%)												
ane Group Flow (vph)	46	869	0	0	1128	0	128	205	0	0	0	0
Inter Blocked Intersection	2	8	2	8	8	2	2	2	2	2	2	2
ane Alignment	Leff	Left	Right	Left	Left	Right	Left	E :	Right	Leff	Left	Right
Median Width(ft)		12			12			12			12	
Ink Offset(ft)		o ;			o ;			o ;			0 ;	
Crosswalk Width(ft)		9. ;			9] ;			91			91	
wo way Left Turn Lane		Yes			Yes			,			9	,
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
urning Speed (mph)	5		6	12		6	15		6	5		6
Number of Detectors		2			- 2			- 2				
Detector Template	Left	Thru			Thru		Left	Thru				
eading Detector (ft)	22	001			001		70	8				
railing Detector (ft)	0	0			0		0 (	0 (				
Detector 1 Position(II)	<b>&gt;</b> &	o <b>、</b>			ο 、		<b>-</b> 2	o <b>、</b>				
Detector 1 Size(it)	2 5	0 2			0 2		07	0 2				
Jetecioi I Type	<u>Y</u>	Z+EX			Z+E2		ž Š	Ž+L				
Defector I Channel	c	c			c		ć	ć				
Defector 1 Externa (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Detay (3)	9	0.0			0.0		0.0	0.0				
Detector 2 Size(ft)		, 9			, 9			, 9				
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Furn Type	Perm						Perm					
Protected Phases		2			9			∞				
Permitted Phases	2						∞					

Synchro 7 - Report Page 3

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 2: Maple Road & Millersport Hwy NB

and Group         EBI         EBI         WBI         WBI         NBI         NBI         SBI         S		١	Ť	~	•	,	/		_	L	٠	+	*
(s) 1.0 1.0 4.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
(\$) 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Switch Phase												
(s) 6.1 6.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	Minimum Initial (s)	1.0	1.0			4.0		1.0	1.0				
12   12   12   13   14   14   14   14   14   14   14	Minimum Split (s)	6.1	6.1			9.1		6.2	6.2				
S7.1%   S7.1%   O.0%   O.0%   S7.1%   O.0%   Total Split (s)	40.0	40.0	0.0	0.0	40.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0	
nn (s) 3.4.9 34.9 34.9 25.4 25.4 25.4 25.4 34.9 34.9 34.9 34.9 34.9 34.9 34.9 34	Total Split (%)	57.1%	57.1%	%0.0	%0:0	57.1%	%0.0	45.9%	45.9%	%0.0	%0.0	%0.0	0.0%
9 3.2 3.2 2 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4	Maximum Green (s)	34.9	34.9			34.9		25.4	25.4				
2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Yellow Time (s)	3.9	3.9			3.9		3.2	3.2				
.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	All-Red Time (s)	1.2	1.2			1.2		1.4	1.4				
.1 4.0 4.6 4.6 4.0 4.0 4.0 10 10 10 10 10 10 10 10 10 10 10 10 10	Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.1 3.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1	Total Lost Time (s)	5.1	2.1	4.0	4.0	2.1	4.0	4.6	4.6	4.0	4.0	4.0	4.0
.0 3.0 .1 None P .1 21.2 .6 0.30 .7 0.30 .5 18.7 .5 18.7 .5 18.7 .5 18.7 .5 well of Service C	Lead/Lag												
in None III 21.2 21.2 2.3 0.30 0.30 0.30 0.30 0.30 0.30 0.3	Lead-Lag Optimize?												
in None II 21.2 21.2 21.2 21.2 21.2 21.2 21.2 2	Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
21.2 56 0.30 0.30 0.30 0.0 0.0 0.0 0.0 18.7 8 B B B 8 B R 18.7 18.7 18.7 19.7 19.7 19.7 19.7 19.7 19.7 19.7 19	Recall Mode	C-Min	C-Min			C-Min		None	None				
56 0.30 57 0.30 5. 18.7 5. 18.7 8 B B 8 Action LOS: B	Act Effct Green (s)	39.1	39.1			39.1		21.2	21.2				
5.7 0.30 5.5 18.7 6.0 0.0 6.5 18.7 8 B B B 8 A B B B B B B B B B B B B B B B B B B	Actuated g/C Ratio	0.56	0.56			0.56		0.30	0.30				
.5 18.7 .0 0.0 .5 18.7 .5 18.7 .5 18.7 .5 18.7 .1ton LOS, B	v/c Ratio	0.25	0.35			0.57		0.30	0.84				
.5 18.7 .5 18.7 .5 18.7 .5 B Button LOS, Burdee C	Control Delay	15.6	10.6			12.5		18.7	27.4				
5. 18.7 B B B B Attion LOS: B	Queue Delay	0.0	0.0			0.0		0.0	0.0				
B B B B B List of LOS: B relof Service C	Total Delay	15.6	10.6			12.5		18.7	27.4				
B State LOS. B related Service C	FOS	В	В			В		В	ပ				
Approach LOS B B C C Intersection Summary Area Type: Cycle Length: 70 Actualed Cycle Length: 70 Actualed Cycle Length: 70 Confroil Type: Actualed-Coordinated Maximum vic Ratio: 0.84 Intersection Signal Delay: 15.4 Intersection LOS: B Intersection Capacity Utilization 71.9% ICU Level of Service C Analysis Period (min) 15	Approach Delay		10.9			12.5			25.3				
Area Type:  Cycle Length: 70  Actualed Cycle Length: 70  Actualed Cycle Length: 70  Control Type: Actualed-Coordinated Maximum Vic Ratio: 0.84 Intersection Signal Delay: 15.4  Intersection Signal Delay: 15.4  Intersection Signal Delay: 15.4  Intersection Coordination 71:9%	Approach LOS		В			В			ပ				
Area Type:  Cycle Length: 70  Actuated Cycle Length: 70  Actuated Cycle Length: 70  Control Type: Actuated Coordinated Maximum Vic Ratio: 0.84  Intersection Signal Delay: 15.4  Intersection Signal Delay: 15.4  Intersection Cycle Signal Delay: 15.4  Analysis Period (min): 15	Intersection Summary												
Cycle Length: 70 Actualed Cycle Length: 70 Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green Maximum We Ratice 30 Control Type: Actualed-Coordinated Maximum We Ratice 0.84 Intersection Signal Delay: 15.4 Intersection LOS: B Analysis Period (rint) 15 Analysis Period (rint) 15		Other											
Actualed Cycle Length: 70 Offset: 5 (7%), Referenced to phase 2:EB1L and 6:WBT, Start of Green Natural Cycle: 50 Control Type: Actualed-Coordinated Maximum vic Ratio: 0.84 Intersection Signal Delay: 15.4 Intersection Cycle Signal Delay: 15.4 Intersection Cycle Signal Delay: 15.4 Intersection Cycle Signal Delay: 15.4 Analysis Period (rint): 15	Cycle Length: 70												
Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green Natural Cycle: 50 Control Type: Actuated-Coordinated Maximum vic Ratio: 084 Intersection Siparal Delay: 15.4 Intersection Sapacity Utilization 71.9% Intersection Capacity Utilization 71.9% Analysis Period (min) 15	Actuated Cycle Length: 70												
Natural Cycle: 50 Control Type: Actuated-Coordinated Maximum vic Ratio: 084 Intersection Signal Delay: 15.4 Intersection Capacity Utilization 71.9% Analysis Period (min) 15	Offset: 5 (7%), Referenced to	to phase 2	EBTL and	6:WBT, 3	Start of G	ireen							
	Natural Cycle: 50												
: 15.4 Ization 71.9%	Control Type: Actuated-Coor	ordinated											
: 15.4 ization 71.9%	Maximum v/c Ratio: 0.84												
ization 71.9%	Intersection Signal Delay: 15	5.4			드	tersection	LOS: B						
Analysis Period (min) 15	Intersection Capacity Utilizat	ition 71.9%			2	:U Level o	f Service	ပ					
	Analysis Period (min) 15												

Splits and Phases: 2: Maple Road & Millersport Hwy NB



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 3: Maple Road & Maplemere Road 2/52015

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ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
ane Configurations	*	₩		*	₩			4			4	
/olume (vph)	71	924	46	12	1040	28	43	က	16	34	0	16
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	70		0	0		0	0		0
Storage Lanes	-		0	<b>,</b>		0	0		0	0		0
aper Length (ft)	20		25	20		25	25		25	25		25
ane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.8
T	0	0.993		0	0.996			0.965			0.957	
-It Protected	0.950	2514	c	0.950	25.25	c	c	1730	c	c	1704	
Satu. Flow (piot)	0.205	2014	>	0220	2252	>	>	0 730	>	0	0.733	0
Satd Flow (nerm)	387	3514	C	410	3525	0	C	1328	0	C	1307	0
Sight Turn on Red	3	-	Yes	-		Yes	•	2	Yes	,	2	Yes
satd. Flow (RTOR)		10			9			25			28	
ink Speed (mph)		45			45			8			30	
ink Distance (ft)		1770			1106			378			402	
ravel Time (s)		26.8			16.8			9.8			9.1	
Peak Hour Factor	98.0	98.0	98.0	0.91	0.91	0.91	09:0	09:0	09:0	0.58	0.58	0.58
4dj. Flow (vph)	24	1074	23	13	1143	31	72	2	27	26	0	78
Shared Lane Traffic (%)												
ane Group Flow (vph)	54	1127	0 :	3	1174	° :	o :	104	o :	0 :	84	° :
Inter Blocked Intersection	9 S	0 S	S :	9 S	0 S	2	9 -	2	2	9 ·	9 S	2
ane Alignment	Lett	Leff	Kight	Leff	LeH	Kight	Lett	Lett	Kight	Lett	Leff	Kight
Median Width(ft)		75			75			0 0			0	
LINK OIISE(II)		0 1			0 1			0 71			1, 0	
Two word of Turn long		2 50			2 50			2			2	
wo way tell Tulli Lalle	0	201	8	0	201	100	100	2	100	5	100	5
Turning Speed (mph)	8. 5	8.	3 0	21.00	90.	9.0	5 1	3	9 0	S F	8	3 0
Number of Detectors	2 -	0	•	2 -	0	•	<u> -</u>	2	•	<u> </u>	0	
Detector Template	- <del>J</del> d	Thrii		- <del>J</del> d	Thrii		- <del>Д</del>	Thri		<del>-</del>	Thri	
eading Detector (ft)	8	100		20	100		70	100		20	100	
railing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
_	70	9		70	9		20	9		70	9	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			74			94	
Detector 2 Size(it)		0 2			2			٥ ک			2	
Detector 2 Channel		Y E			ž Š			5			E L	
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
urn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			9			∞			4	
Permitted Phases	2			9			∞			4		

Synchro 7 - Report Page 5

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 3: Maple Road & Maplemere Road

	1	<b>†</b>	<u>/</u>	<b>&gt;</b>	ţ	4	•	<b>←</b>	•	۶	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	0.6	0.6		0.6	0.6		27.0	27.0		27.0	27.0	
Total Split (s)	46.0	46.0	0.0	46.0	46.0	0.0	29.0	29.0	0.0	29.0	29.0	0.0
Total Split (%)	61.3%	61.3%	%0.0	61.3%	61.3%	%0.0	38.7%	38.7%	%0:0	38.7%	38.7%	%0.0
Maximum Green (s)	41.0	41.0		41.0	41.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	2.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Μin		Min	Min		None	None		None	None	
Walk Time (s)							7.0	7.0		7.0	7.0	
Flash Dont Walk (s)							15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)							0	0		0	0	
Act Effct Green (s)	27.3	27.3		27.3	27.3			8.4			8.3	
Actuated g/C Ratio	0.65	0.65		0.65	0.65			0.20			0.20	
v/c Ratio	0.10	0.49		0.05	0.51			0.36			0.31	
Control Delay	6.1	6.5		5.4	6.7			16.6			14.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	6.1	6.5		5.4	6.7			16.6			14.9	
FOS	٧	A		⋖	A			В			В	
Approach Delay		6.9			6.7			16.6			14.9	
Approach LOS		∢			⋖			В			В	
Intersection Summary												
Area Type:	Other											
Cycle Length: 75												
Actuated Cycle Length: 41.8	1.8											
Natural Cycle: 55												
Control Type: Actuated-Uncoordinated	ncoordinated											
Maximum v/c Ratio: 0.51												
Intersection Signal Delay: 7.3	7.3			드	Intersection LOS: A	LOS: A						
Intersection Capacity Utilization 42.1%	zation 42.1%			2	CU Level of Service A	f Service	A					
Analysis Period (min) 15												

Splits and Phases: 3: Maple Road & Maplemere Road



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 4: Maple Road & Donna Lea Blvd

Annual	3R WBL 5 13 6 13 00 1900 0 50 50		T NBL	NBR	
008 469 (1) 1900 (1) (1) 0.959 (0.999 (0.999)		ا	7		
969 (I) 1900 (I) 0.95 0.999			<u>-</u>		
(f) 1900 (f) 0.95 0.999		3 1055	5 24	61	
0				1900	
0.95 0		0	0	0	
0.95 0.999		_	_	0	
0.95		Z.	25	25	
		0.95		1.00	
			0.904		
	0.950				
	0 1770	0 3539		0	
It Permitted	0.950		0.986		
3	0 1770	0 3539	_	0	
		45			
		1002	2 355		
ravel Time (s) 16.8		15.			
Peak Hour Factor 0.79 0.79	0	78.0 78	_	0.76	
1227	8	15 121		80	
_					
-ane Group Flow (vph) 1235				0	
Enter Blocked Intersection No No		No No	0 No	No	
Left				Right	
(ft) 12		_			
Crosswalk Width(ft) 16		16	91 9		
Iwo way Left Turn Lane Yes		Ye	Si		
1.00	1.00 1.00	00.1 00	_	1.00	
Turning Speed (mph)	9	15	15	6	
Sign Control Free		Free	e Stop		
ntersection Summary					
Area Type: Other					
Control Type: Unsignalized					
Intersection Capacity Utilization 40.9%			ICU Level	ICU Level of Service A	

Synchro 7 - Report Page 7 Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 4: Maple Road & Donna Lea Blvd

																																							Α		
•	NBR		61			0.76	œ									0.85	617			204	6.9		3.3	88	684	NB 1	112	32	8	462	0.24	52 7	15.3	ပ	15.3	O			Service		
•	NBL	>	24	Stop	%0	0.76	32									0.85	1867	1230	989	1670	8.9	5.8	3.5	88	253	WB 3	909	0	0	1700	0.36	0 0	0.0						ICU Level of Service		
ţ	WBT	ŧ	1055	Free	%0	0.87	1213						TWLTL	2												WB 2	909	0	0	1700	0.36	0 0	0.0						⊇		
<b>&gt;</b>	WBL	*	13			0.87	15									0.85	1234			928	4.1		2.2	86	624	WB 1	15	15	0	624	0.02	7 0	6.0	മ	0.1			0.7	40.9%	12	
/	EBR		9			0.79	∞																			EB2	416	0	∞	1700	0.24	0 6	0.0								
†	EBT	₩	696	Free	%0	0.79	1227						TWLTL	2	1106											EB 1	818	0	0	1700	0.48	0 6	0.0		0.0				ation		
	Movement	Lane Configurations	Volume (veh/h)	Sign Control	Grade	Peak Hour Factor	Hourly flow rate (vph)	Pedestrians	Lane Width (ft)	Walking Speed (ft/s)	Percent Blockage	Right turn flare (veh)	Median type	Median storage veh)	Upstream signal (ft)	pX, platoon unblocked	vC, conflicting volume	vC1, stage 1 conf vol	vC2, stage 2 conf vol	vCu, unblocked vol	tC, single (s)	tC, 2 stage (s)	tF (s)	b0 dueue free %	cM capacity (veh/h)	Direction, Lane #	Volume Total	Volume Left	Volume Right	: CSH	Volume to Capacity	Cueue Lengin 95in (ii)	Control Delay (s)	Lane LOS	Approach Delay (s)	Approach LOS	Intersection Summary	Average Delay	Intersection Capacity Utilization	Analysis Period (min)	

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 5: Maple Road & Audubon Golf Club

	1	†	~	<b>&gt;</b>	ţ	4	•	<b>←</b>	•	۶	<b>→</b>	*
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<b>y</b> -	<b>₽</b>		je-	<b>₩</b>			4			÷	
Volume (vph)	-	1068	4	<del></del>	1111	2	13	0	က	-	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	20		0	0		0	0		0
Storage Lanes	τ-		0	<del>-</del>		0	0		0	0		0
Taper Length (ft)	22		22	25		25	25		25	22		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
F		0.999						926.0				
Fit Protected	0.950			0.950				0.960			0.950	
Satd. Flow (prot)	1770	3536	0	1770	3539	0	0	1745	0	0	1770	0
Fit Permitted	0.950			0.950				0.960			0.950	
Satd. Flow (perm)	1770	3536	0	1770	3539	0	0	1745	0	0	1770	0
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		446			226			469			111	
Travel Time (s)		8.9			8.4			10.7			2.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	<del>-</del>	1161	4	-	1208	2	14	0	3	-	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	-	1165	0	-	1210	0	0	17	0	0	-	0
Enter Blocked Intersection	8	8	8	8	8	8	8	8	8	8	8	8
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		6	15		6	15		6	15		6
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type: 0	Other											
Control Type: Unsignalized												
Intersection Capacity Utilization 40.8%	on 40.8%			೨	U Level o	ICU Level of Service A	⋖					
Analysis Period (min) 15												

Synchro 7 - Report Page 9 Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 5: Maple Road & Audubon Golf Club

Movement   EBI   EBI   EBI   WB1	Fig.   Fig.		\	†	>	<b>\</b>	Ļ	/	•	<b>—</b>	•	٠	•	*
Applications         ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑	Vicinity and the control of vicinity (vicinity)         I 1068         4         I 1111         2         1         4.4         1         1068         4         1 1111         2         1         0         3         1         0           Intuin         1         1068         4         1 1111         2         1         0         3         1         0           Intuit         0.92 <th>Movement</th> <th>EBL</th> <th>EBT</th> <th>EBR</th> <th>WBL</th> <th>WBT</th> <th>WBR</th> <th>NBL</th> <th>NBT</th> <th>NBR</th> <th>SBL</th> <th>SBT</th> <th>SBR</th>	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
(ye/h)         1 1068         4         1 1111         2         13         0         3         1         0           ntrol         7         7         7         7         7         7         1         1         0         3         1         0           ow rate (wph)         1         1 1161         4         1         1208         0	(ye/hh)         1 1068         4         1 1111         2         13         0         3         1         0           ow rate (yeh)         1 1068         4         1 1111         2         13         0         3         1         0           ow rate (yeh)         1         1161         4         1         1208         2         0.92 </td <td>Lane Configurations</td> <td>*</td> <td><b>₩</b></td> <td></td> <td>r</td> <td>₩.</td> <td></td> <td></td> <td>4</td> <td></td> <td></td> <td>4</td> <td></td>	Lane Configurations	*	<b>₩</b>		r	₩.			4			4	
Free   Free   Free   Stop   Stop   O%     Ow   Ow   Ow   Ow   Ow   Ow   Ow	Free   Free   Free   Stop	Volume (veh/h)		1068	4	· ←	1111	2	13	0	3	<b>—</b>	0	0
Own rate (vph)         0%	Owr Factor         0%	Sign Control		Free			Free			Stop			Stop	
Hour Factor 092 092 092 092 092 092 092 092 o92 o92 o92 o92 o92 o92 o92 o92 o92 o	Hour Factor 092 092 092 092 092 092 092 092 o92 o92 o92 o92 o92 o92 o92 o92 o92 o			%0			%			%0			%0	
Sylinov rate (vph) 1 1161 4 1 1208 2 14 0 3 1 0  Strians  Wind (tt)  Iny Speed (tt's)  In Speed (tt's)  In Speed (tt's)  In Speed (tt's)  In Speed (tt's)  In Speed (tt's)  In Speed (tt's)  In Speed (tt's)  In Speed (tt's)  In Speed (tt's)  In Speed (tt's)  In Speed (tt's)  In Speed (tt's)  In Speed (tt's)  In In Speed (tt's)  In In In In In In In In In In In In In I	Sytimate (wph) 1 1161 4 1 1208 2 14 0 3 1 0 0 Strings Strings Strings Strings Strings String Speed (It's)		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Striftens With (1)  With (1)  With (1)  With (1)  With (1)  With (1)  With (1)  Strip Speed (11/5)  Thu (11/2)  Thu (11/2)  Thu (11/2)  Thu (11/2)  Strip St	Stridins (1)  With (1)  With (1)  With (1)  With (1)  With (1)  With (1)  Ind School (It's)  an storage veh)  TMLT   Hourly flow rate (vph)	-	1161	4	<del>-</del>	1208	2	14	0	3	_	0	0	
Width (ft) Width (ft) Width (ft) Width (ft) Width (ft) Width (ft) Width (ft)  Int Speed (ft)  an storage veh)  an storage veh  an storage v	Width (ft)         Ing Speed (fts)         TWLTL         TWLTL </td <td>Pedestrians</td> <td></td>	Pedestrians												
Ing Speed (It/s)  TWLTL  TWLTL  TWLTL  TWLTL  TWLTL  TWLTL  TWLTL  TWLTL  TWLTL  TRLTL	Ing Speed (It's)  an isotrage very  an storage very  and storage very	Lane Width (ft)												
ant Blockage  Intum flare (vch)  Intum flare (vch)  an storage vch)  eam signal (ff)  eam s	ant Blockage  Intum flare (veh)  Intem signal (ft)  Inter signal (ft)	Walking Speed (ft/s)												
tum flare (veh)         TWLTL         TWLTL           an stope evh)         2         2           eam signal (ft)         1210         1165         1771         2377         583         1797         2378           eam signal (ft)         an storage evh)         1210         1165         1771         2377         583         1797         2378           and storon unblocked on onliftcing volume         1210         1165         1771         2377         583         1797         2378           stage 2 conf vol         4.1         1.65         1771         2377         586         1167           stage 2 conf vol         1210         1165         1771         2377         586         1167           stage 2 conf vol         4.1         1.65         1.771         2377         586         1167           unblocked vol         1.210         1.165         1.771         2377         586         1167           stage 2 conf vol         4.1         4.1         7.5         6.5         5.5         5.5         5.5         5.5         5.5         5.5         5.5         5.5         5.5         5.5         5.5         5.5         5.5         5.5         5.5	TWLTL	Percent Blockage												
an type anyee by 2 1771 2377 583 1797 2378 anyee by 120 1166 1210 1166 1211 2377 583 1797 2378 anyee by 120 1210 1166 1212 2378 2389 1167 1211 1211 2318 2499 (s) 22 2 22 3.5 4.0 3.3 3.5 4.0 apacity (veh.h) 572 881 1881 1881 1881 1881 1881 1881 188	an type an type an strange wh) 2 TWLTL TYMLTL TYMLTL 2377 Seg 1797 2378 stage (s) 4.1 16.5 116.5	Right turn flare (veh)												
an storage veh) 2 2 2 2 583 1797 2378 Feat staged (t) altonomized ordincting violume a 1210 1165 1771 2377 583 1797 2378 1399 1 1165 1165 1167 1771 2377 583 1797 2378 1399 1 1771 2377 583 1797 2378 1399 1 1771 2377 583 1797 2378 1399 1 1771 2377 583 1797 2378 1399 1 1771 2377 583 1797 2378 1399 1 1771 2377 583 1797 2378 1399 1 1771 2377 583 1797 2378 1399 1 1771 1771 1771 1771 1771 1771 17	an storage veth)  an storage veth)  an storage veth)  an storage veth)  an storage veth)  an storage veth)  an storage veth)  an an storage veth)  and storage veth)  and storage veth)  and storage veth)  and storage veth)  and storage veth)  and storage veth)  and storage veth)  and storage veth)  and storage	Median type	_	WLTL		_	-WLTL							
ream signal (ft)  lation unblocked  onlicing volume  1210  1165  1171  1237  1283  1171  1217  1	ream signal (ft)  lation unblocked  lation unblocked  lation unblocked  lation unblocked  lation lation vol  stage 2 conf vol  stage 2 conf vol  lation lation stage 1 conf vol  lation lation stage 2 conf vol  lation lation stage 2 conf vol  lation lation stage 2 conf vol  lation lation stage 2 conf vol  lation latio	Median storage veh)		2			2							
March   Marc	March   Marc	Upstream signal (ft)												
onflicting volume 1210 1165 1771 2377 583 1797 2378 stage 1 conflorid stage 2 conf vol 1210 1165 1771 2377 583 1797 2378 stage 2 conf vol 1210 1165 1771 2377 583 1797 2378 ngle (s) 22 22 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5	onflicting volume 1210 1165 1771 2377 583 1797 2378 1369 1369 1711 2377 583 1797 2378 1369 1711 2377 583 1797 2378 1369 1711 2377 584 1167 1711 2377 585 1167 1211 2378 22 22 3.5 4.0 3.5 4.0 3.5 4.0 3.3 3.5 4.0 3.5	pX, platoon unblocked												
stage I conf vol stage I conf vol stage I conf vol stage I conf vol stage I conf vol stage I conf vol stage I conf vol I	stage I conf vol stage I conf vol stage I conf vol stage I conf vol stage I conf vol stage I conf vol stage I conf vol stage I conf vol stage I conf vol stage I conf vol stage I conf vol stage I conf vol vol vol vol vol vol vol vol vol vol		1210			1165			1771	2377	583	1797	2378	902
stage 2 conf vol         1165         1771         277         586         1167           unblocked vol         1210         4.1         4.1         7.5         6.5	stage 2 conf vol unblocked vol   1210	vC1, stage 1 conf vol							1165	1165		1211	1211	
unblocked vol         1210         1165         1771         2377         583         1797         2378           stage (s)         4.1         4.1         7.5         6.5         6.5         6.5         6.5         5.5         6.5         5.5         6.5         5.5         6.5         5.5         6.5         5.5         6.5         5.5         6.5         5.5         6.5         5.5         6.5         5.5         6.5         5.5         6.5         5.5         6.5         5.5         6.5         5.5         6.5         5.5         6.5         5.5         6.5         5.5         6.5         6.5         5.5         6.5         5.5         6.5         5.5         6.5         6.5         5.5         6.5         6.5         5.5         6.5         6.5         5.5         6.5	unblocked vol   1210	vC2, stage 2 conf vol							909	1212		286	1167	
righe (s) 4.1 4.1 4.1 7.5 6.5 6.9 7.5 6.5 8.5 8.9 8.5 8.5 8.9 8.5 8.9 8.5 8.9 8.5 8.9 8.5 8.9 8.9 8.9 8.9 9.9 9.0 9.0 9.0 9.0 9.0 9.9 9.9 9.0 9.0	righe (s) 4.1 4.1 4.1 4.1 7.5 6.5 6.9 7.5 6.5 5 stage (s) 2.2 2.2 3.5 4.0 3.3 3.5 4.0 4.0 4.0 4.0 4.2 100 99 99 100 99 99 100 99 99 100 99 99 100 99 99 100 99 99 99 99 99 99 99 99 99 99 99 99 9		1210			1165			1771	2377	583	1797	2378	909
stage (s)  2.2  2.2  2.2  3.5  4.0  2.2  3.5  4.0  2.2  3.5  4.0  2.2  3.5  4.0  2.2  3.5  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4	stage (s)  Leu Free %  Leu Fre	tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
Leue (ree %         100         22         3.5         4.0         3.3         3.5         4.0           apacity (verhh)         572         100         100         99         99         100           apacity (verhh)         572         186         179         456         177         179           ition, Lane #         EB 1         EB 2         EB 3         WB 1         MB 2         WB 3         NB 1         SB 1         177         179           ition, Lane #         EB 1         T74         391         1         805         405         17         177         179           me lotal         1         0         0         1         0         0         14         1         me         177         179           me left         0         0         0         0         1         0         0         14         1         1         177         179           me left         0         0         0         0         0         170         177         179         171         179         171         171         171         171         171         171         171         171         171         171 <t< td=""><td>  100   2.2   3.5   4.0   3.3   3.5   4.0    </td><td>tC, 2 stage (s)</td><td></td><td></td><td></td><td></td><td></td><td></td><td>6.5</td><td>5.5</td><td></td><td>6.5</td><td>5.5</td><td></td></t<>	100   2.2   3.5   4.0   3.3   3.5   4.0	tC, 2 stage (s)							6.5	5.5		6.5	5.5	
apacity (vehh) 572 100 99 99 100  apacity (vehh) 572 895 100 99 99 100  apacity (vehh) 572 891 100 99 99 100  apacity (vehh) 572 174 391 1 805 405 17 17  The Total 1 774 391 1 805 405 17 1  The Eight 0 0 0 4 0 0 14 1 17  The Leight 0 0 0 4 0 0 0 0 17  The Leight 951 (17) 0 0 0 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	apacity (vehh) 572 595 100 99 99 100 apacity (vehh) 572 595 100 99 99 100 99 99 100 99 99 100 99 99 91 90 90 99 91 90 99 91 90 99 91 90 99 91 90 99 91 90 99 91 90 99 91 90 99 91 90 99 91 90 99 91 90 99 91 90 99 91 90 99 91 90 99 91 90 90 99 91 90 99 91 90 99 91 90 99 91 90 99 91 90 99 91 90 99 91 90 99 91 90 99 99 91 90 99 99 91 90 99 99 91 90 99 99 99 99 90 99 99 99 99 99 99 99	tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
apacity (vehh) 572 595 186 179 456 177 179 410n. Lane # EB 1 EB 2 EB 3 WB 1 WB 2 WB 3 NB 1 SB 1	apacity (veh/h)         572         595         186         179         456         177         179           sition Lane #         EB I         EB 2         EB 3         WB 1         MB 2         WB 3         NB 1         SB 1         77         179         179         179         179         179         177         179         1	p0 queue free %	100			100			92	100	66	66	100	100
Ition, Lane #         EB 1         EB 2         EB 3         WB 1         WB 2         WB 3         NB 1         SB 1           ne Total         1         774         391         1         805         405         17         1           ne Left         0         0         1         0         0         14         1           ne Legth         572         1700         1700         595         1700         170         210         177           ne Length 95h (ft)         0         0         0         0         0         0         0         177         0           LOS         B         B         B         B         C         D         D         0 <t< td=""><td>High. Lane #         EB 1         EB 2         EB 3         WB 1         WB 2         WB 3         NB 1         SB 1           ne Total         1         774         391         1         805         405         17         1           ne Left         0         0         1         0         0         14         1           ne Right         0.0         0         4         0         2         3         0           ne Length 95h (ft)         0.00         0.46         0.23         0.00         0.47         0.24         0.08         0.01           Los Coach Delay (s)         0.0         0</td><td>cM capacity (veh/h)</td><td>572</td><td></td><td></td><td>295</td><td></td><td></td><td>186</td><td>179</td><td>456</td><td>177</td><td>179</td><td>441</td></t<>	High. Lane #         EB 1         EB 2         EB 3         WB 1         WB 2         WB 3         NB 1         SB 1           ne Total         1         774         391         1         805         405         17         1           ne Left         0         0         1         0         0         14         1           ne Right         0.0         0         4         0         2         3         0           ne Length 95h (ft)         0.00         0.46         0.23         0.00         0.47         0.24         0.08         0.01           Los Coach Delay (s)         0.0         0	cM capacity (veh/h)	572			295			186	179	456	177	179	441
ne Total 1 774 391 1 805 405 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ne Total 1 774 391 1 805 405 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
ne Left 1 0 0 1 1 0 0 14 1 1 1 1 1 1 1 1 1 1 1	ne Left 1 0 0 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1	Volume Total		774	391	-	802	405	17	-				
ne Right	ne Right	Volume Left	-	0	0	-	0	0	14	-				
572   1700   1700   595   1700   1700   1770   1700   17	572   1700   1700   595   1700   1701   17	Volume Right	0	0	4	0	0	2	3	0				
000 046 023 000 047 024 008 001 0 0 0 0 0 0 7 0.0 11.3 0.0 0.0 11.1 0.0 0.0 23.7 25.5 B B C D 0.0 0.0 23.7 25.5  0.0 0.0 1.1 0.0 0.0 23.7 25.5  Illitzation 40.8% ICU Level of Service	0.00 0.46 0.23 0.00 0.47 0.24 0.08 0.01 0.0 0.0 0.0 0.0 0.0 0.0 0.0 7 0.0 0.0 11.1 0.0 0.0 23.7 25.5 0.0 0.0 0.0 23.7 25.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	CSH	212	1700	1700	295	1700	1700	210	177				
11.3 0.0 0.0 11.1 0.0 0.0 23.7 25.5 B B B C D D C D C D C D C D D D C D D D C D D D C D D D C D	11.3 0.0 0.0 11.1 0.0 0.0 23.7 25.5 B B C D D C D D C D D D D D D D D D D D	Volume to Capacity	0.00	0.46	0.23	0.00	0.47	0.24	0.08	0.01				
11.3 0.0 0.0 11.1 0.0 0.0 23.7 25.5 B B C D 0.0 0.0 23.7 25.5 C D  // 0.2 0.2 CU Level of Service 15.5	11.3 0.0 0.0 11.1 0.0 0.0 23.7 25.5 B B C C D C C C D C C C D C C C D C C C D C C C D C C C D C C C D C C C C D C C C C D C C C C D C	Queue Length 95th (ft)	0	0	0	0	0	0	7	0				
B B C D 0.0 23.7 25.5 C D C D (1) 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	B B C D 0.0 0.0 23.7 25.5 C D  // C D  Utilization 40.8% ICU Level of Service	Control Delay (s)	11.3	0.0	0.0	11.1	0.0	0.0	23.7	25.5				
0.0 0.0 23.7 25.5 C D C D C D D Utilization 40.8% ICU Level of Service 15.5 C D 15.5 C D C D T D T D T D T D T D T D T D T D	0.0 0.0 23.7 25.5 C D C D D D D D D D D D D D D D D D D	Lane LOS	В			В			ပ	۵				
C D Utilization 0.2 Utilization 40.8% ICU Level of Service 15	C D 0.2 Utilization 40.8% ICU Level of Service 15	Approach Delay (s)	0.0			0.0			23.7	25.5				
0.2 Utilization 40.8% ICU Level of Service 15	0.2 Utilization 40.8% ICU Level of Service	Approach LOS							ပ	Ω				
0.2 Utilization 40.8% ICU Level of Service 15	0.2 Utilization 40.8% ICU Level of Service 15	Intersection Summary												
Utilization 40.8% ICU Level of Service 15	Utilization 40.8% ICU Level of Service 15	Average Delay			0.2									
		Intersection Capacity Utilization			40.8%	⊴	U Level o	f Service			⋖			
		Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 6: Maple Road & North Forest Road

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Lane Groun	표	FRT	FRP	WBI	WRT	WRR	NBI	NRT	NRR	S	SRT	SRR
ane Configurations	1	*	*	1	*	K	k	*	*	<b>K</b>	*	Š
Johnne (unh)	100	098	<b>-</b> 8	252	827	<b>-</b> 6	- 60	731	185	133	343	181
deal Flow (vohnl)	1900	1900	1900	1900	1900	1900	1900	1600	1900	1900	1900	1900
Storage Length (#)	415	2	220	315	2	150	175	2	220	250	2	250
Storage Length (iv)	t -		1	<u>.</u>		2	1		1	1		7
Taner I enrith (ft)	6		11.	. 09		25	95		75	6		75
ane IIII Factor	100	0.95	9 2	100	0.95	1 00	100	100	100	100	100	100
Fr	3	S	0.850	2	2	0.850	201	3	0.850	8	2	0.850
Fit Protected	0.950			0.950			0.950			0.950		3
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
-It Permitted	0.253			0.099			0.202			0.353		
Satd. Flow (perm)	471	3539	1583	184	3539	1583	376	1863	1583	658	1863	1583
Right Turn on Red			Yes			8			Yes			Yes
Satd. Flow (RTOR)			92						53			79
ink Speed (mph)		45			45			32			32	
-ink Distance (ft)		1705			820			529			809	
Fravel Time (s)		25.8			12.4			10.3			11.8	
Peak Hour Factor	0.90	0.90	0.90	0.95	0.95	0.95	06:0	0.90	0.90	0.80	0.80	0.80
Adj. Flow (vph)	111	926	93	265	867	95	102	257	206	154	452	226
Shared Lane Traffic (%)												
-ane Group Flow (vph)	111	926	93	265	867	95	102	257	206	154	452	226
Enter Blocked Intersection	No	8	2	9	No No	8	8	8	8	2	N	8
ane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12	,		12	,		12	,		12	,
ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
wo way Left Turn Lane		Yes										
Headway Factor	1:00	1.00	1.00	1.00	1.00	1.00	1.00	1:00	1.00	1:00	1.00	1.00
Furning Speed (mph)	15		6	15		6	12		6	15		6
Number of Detectors	<del>-</del>	2	<del></del>	<del>-</del>	2	<del></del>	<del></del>	2	_	<del>-</del>	2	_
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	ᄪ	Right	Left	Thru	Right
eading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
railing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	9	20	20	9	70	70	9	20	20	9	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+EX
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
urn Type	bm+pt		vo+mq	pm+pt	,	pm+ov	pm+pt	•	bm+ov	pm+pt	•	pm+ov
Protected Phases	ഹ	7	γ (		٥		~ c	x	- 0		4	Ω,
Permitted Phases	7	•	7	۰ م	•	0 1	000		∞ ,	4 1	1	4 1
Detector Phase	ე	7	ς,	_	9	,	'n	∞	-	,	4	Ω
		I		I	I							I

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 6: Maple Road & North Forest Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	1.0	4.0	1.0	1.0	4.0	1.0	1.0	4.0	1.0	1.0	4.0	1.0
Minimum Split (s)	7.0	35.0	7.0	7.0	32.0	7.0	7.0	35.0	7.0	7.0	35.0	7.0
Total Split (s)	13.0		10.0	23.0	55.0	15.0	10.0	37.0		15.0	42.0	13.0
Total Split (%)	10.8%	3	8.3%	19.2%	45.8%	12.5%	8.3%	30.8%	<del>-</del>	12.5%	35.0%	10.8%
Maximum Green (s)	7.0	39.0	4.0	17.0	49.0	0.6	4.0	31.0		0.6	36.0	7.0
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	2.5		2.5	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	0.9		0.9	0.9	9.0	9.0	0.9	0.9		0.9	0.9	0.9
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	_	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		22.0			22.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	41.5	34.5	44.7	55.8	43.1	58.1	29.8	25.8	47.4	39.5	30.6	43.7
Actuated g/C Ratio	0.38	0.32	0.41	0.51	0.39	0.53	0.27	0.24	0.43	0.36	0.28	0.40
v/c Ratio	0.42	0.85	0.13	0.83	0.62	0.11	99.0	0.59	0.29	0.47	0.87	0.33
Control Delay	21.0	44.2	2.5	48.9	29.0	13.9	49.8	43.8	16.1	29.8	26.0	16.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.0	44.2	5.2	48.9	29.0	13.9	49.8	43.8	16.1	29.8	26.0	16.5
SOT	U	۵	A	۵	U	В	۵	D	В	ပ	ш	В
Approach Delay		38.9			32.1			34.8			40.4	
Approach LOS		۵			S			O			D	
Intersection Summary												
Area Type:	Other											
Cycle Length: 120												
Actuated Cycle Length: 109.2	19.2											
Natural Cycle: 85												
Control Type: Actuated-Uncoordinated	ncoordinated											
Maximum v/c Ratio: 0.87												
Intersection Signal Delay: 36.4	36.4			드	tersection	Intersection LOS: D						
Intersection Capacity Utilization 81.9%	zation 81.9%			_	:U Level	CU Level of Service D	٥					
Analysis Period (min) 15												

Splits and Phases: 6: Maple Road & North Forest Road



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 7: Sheridan Drive & Mill Street

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ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
-ane Configurations	*	₩		<u>,                                    </u>	₩		r	æ,		۳	\$	
Volume (vph)	9	1336	130	220	1046	6	105	71	125	8	146	18
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	150		0	40		0	75		0
Storage Lanes	-		0	-		0	-		0	-		0
aper Length (ft)	65	L	25	09	L	25	25	1	25	52	,	72
ane Util. Factor	9.1	0.95	0.95	1.00	0.95	0.95	1:00	0.1.00	1.00	1.00	00.1	1.00
TI-	010	0.98/		0	0.999		0	0.872		010	0.983	
-It Protected	0.750	2000	c	0.950	7636	c	0.750	14.04	c	0.750	1001	C
Satu. Flow (prot)	0.223	2442	>	0.080	2230	>	0.733	1024	>	0.508	1001	0
Satd. Flow (perm)	415	3493	0	149	3536	0	434	1624	0	1114	1831	0
Right Turn on Red			8			Yes			2			Yes
Satd. Flow (RTOR)					_						2	
Link Speed (mph)		42			42			99			30	
Link Distance (ft)		2782			7.16			838			362	
ravel Time (s)		42.2			14.8			19.0			8.2	
Peak Hour Factor	0.86	0.86	0.86	0.89	0.89	0.89	0.56	0.56	0.56	0.61	0.61	0.61
4dj. Flow (vph)	7	1553	151	247	1175	10	188	88	223	46	239	9
Shared Lane Traffic (%)												
ane Group Flow (vph)		1704	0 :	247	1182	° :	. 28	261	o :	46	269	0 :
Enter Blocked Intersection	2	و ا	2	§ :	و ا	2	2	2	2	2	۶	2 :
ane Alignment	Fet	re#	Kight	Let	E E	Right	E	E F	Right	Fet	Le <del>t</del>	Kight
Median Width(ft)		75			75			22 9			75	
LINK Offset(rt)		o ;			o ;			° ,			0 ;	
CIOSSWAIK WIGHT(II)		0 0			0 0			0			0	
wo way Lert Turn Lane	5	Yes	5	5	Yes	5	5	5	5	5	5	5
reduway racioi	3. 1	00:1	3.0	00.1	00.1	9.0	3. 1	3.	9.0	3 4	00.1	3.0
luming speed (mpn)	5 -	C		5 -	C	•	<u> </u>	C	-	5 -	C	
Milliper of Defectors	- <del> </del>	Thrii		- <del> </del>	Thrii		- <del> </del>	Thri		- <del> </del>	Thrii	
eading Detector (ft)	8	100		20	100		20	100		8	100	
railing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
	70	9		20	9		20	9		70	9	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel	:											
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		, 44			, 44			₹ `			74	
Detector 2 Size(iii)		OFF.			OFF.			0 1			OFF.	
Detector 2 Channel		5			5			5				
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
urn Type	Perm			pm+pt			pm+pt			Perm		
Protected Phases		2		-	9		33	∞			4	
Permitted Phases	2			9			∞			4		
				,								

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 7: Sheridan Drive & Mill Street

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		1.0	4.0		1.0	4.0		4.0	4.0	
Minimum Split (s)	28.3	28.3		6.2	28.3		6.2	34.2		34.2	34.2	
Total Split (s)	20.0	20.0	0.0	20.0	70.0	0.0	25.0	65.0	0.0	40.0	40.0	0.0
Total Split (%)	37.0%	37.0%	%0.0	14.8%	21.9%	%0:0	18.5%	48.1%	%0.0	29.6%	29.6%	%0.0
Maximum Green (s)	44.5	44.5		15.7	64.5		19.8	29.8		34.8	34.8	
Yellow Time (s)	4.3	4.3		3.2	4.3		3.2	3.2		3.2	3.2	
All-Red Time (s)	1.2	1.2		1.	1.2		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	4.3	5.5	4.0	5.2	5.2	4.0	5.2	5.2	4.0
Lead/Lag	Lag	Lag		Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Мах		None	Max		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0			15.0			22.0		22.0	22.0	
Pedestrian Calls (#/hr)	0	0			0			0		0	0	
Act Effct Green (s)	45.4	45.4		66.2	65.0		41.8	41.8		22.2	22.2	
Actuated g/C Ratio	0.39	0.39		0.56	0.55		0.36	0.36		0.19	0.19	
v/c Ratio	0.04	1.26		0.84	0.61		0.59	0.45		0.23	0.77	
Control Delay	28.7	156.4		54.5	20.8		34.5	31.1		43.3	9.69	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	28.7	156.4		54.5	20.8		34.5	31.1		43.3	9.69	
SOT	O	ш		۵	ပ		U	ပ		۵	ш	
Approach Delay		155.9			56.6			32.5			57.1	
Approach LOS		ш			ပ			ပ			ш	
Intersection Summary												
Area Type:	Other											
Cycle Length: 135												
Actuated Cycle Length: 117.5	2											
Natural Cycle: 140												

waturan Jylee: 149
Control Types: Seni Act-Uncoord
Maximum Wc Ratio 126
Intersection Signal Delay: 86.4
Intersection Capacity Utilization 84.7%
Analysis Period (min) 15

Intersection LOS: FICU Level of Service E

Analysis Period (min) 15
Splits and Phases: 7: Sheridan Drive & Mill Street



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 8: Sheridan Drive & North Forest Road

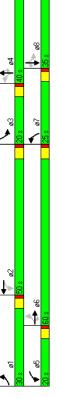
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	^	†	<b>/</b>	<b>/</b>	ļ	4	•	<b>—</b>	•	۶	<b>→</b>	*
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	‡	*-	*	₩		۴	*	*	*	*	*
Volume (vph)	92	1359	220	181	1104	19	237	342	23	Ξ	444	294
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	405		170	260		0	180		265	180		200
Storage Lanes	-		-	<del></del>		0	-		<del>-</del>	-		-
Taper Length (ft)	200		22	200		25	25		25	22		25
-ane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1:00	1.00	1.00	0.95	1.00
-tr			0.850		0.997				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3529	0	1770	1863	1583	1770	3539	1583
FIt Permitted	0.094			0.067			0.194			0.494		
Satd. Flow (perm)	175	3539	1583	125	3529	0	361	1863	1583	920	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			102		_				26			324
-ink Speed (mph)		45			45			40			32	
ink Distance (ft)		1668			2219			547			354	
ravel Time (s)		25.3			33.6			9.3			6.9	
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	06:0	0.00	06.0	0.84	0.84	0.84
Adj. Flow (vph)	4	1431	232	197	1200	21	263	380	26	13	529	320
Shared Lane Traffic (%)												
-ane Group Flow (vph)	4	1431	232	197	1221	0	263	380	26	13	529	320
Enter Blocked Intersection	8	9	9	8	8	8	8	8	8	8	8	8
ane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12	>		12	>		12	>		12	•
ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
wo way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Furning Speed (mph)	15		6	15		6	15		6	15		6
Number of Detectors	_	2	-	_	2		_	2	_	_	2	_
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
eading Detector (ft)	20	100	70	20	100		20	100	70	70	100	20
railing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	70	9	20	20	9		20	9	20	70	9	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+EX
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+Ex			CI+EX			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	bm+pt	٠	Perm	pm+pt	d		pm+pt	•	Perm	bm+pt	c	Perm
Protected Phases		٥	•	ഹ	7			4	۰	n c	00	•
Permitted Phases	φ,	•	۰ م	7	•		4 1	ŀ	4 .	∞ α		000
Detector Phase	-	9	9	S	7		_	4	4	'n	∞	تد
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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 8: Sheridan Drive & North Forest Road

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.3	27.9	27.9	8.3	27.9		21.0	27.2	27.2	8.3	27.2	27.2
Total Split (s)	30.0	0.09	0.09	20.0	20.0	0.0	25.0	40.0	40.0	20.0	35.0	35.0
Total Split (%)	21.4%	42.9%	45.9%	14.3%	35.7%	%0:0	17.9%	28.6%	28.6%	14.3%	25.0%	25.0%
Maximum Green (s)	25.7	54.9	54.9	15.7	44.9		20.7	34.9	34.9	15.7	29.9	29.9
Yellow Time (s)	3.2	3.9	3.9	3.2	3.9		3.2	3.2	3.2	3.2	3.2	3.2
All-Red Time (s)	1.	1.2	1.2	Ξ	1.2		1.	1.9	1.9	<del>[</del> -	1.9	1.9
Lost Time Adjust (s)	0:0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.3	2.1	5.1	4.3	2.1	4.0	4.3	2.1	2.1	4.3	2.1	5.1
Lead/Lag	read	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehide Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max		None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		15.0	15.0		15.0			15.0	15.0		15.0	15.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	65.2	55.2	55.2	73.8	59.9		9.09	45.5	45.5	32.9	25.9	25.9
Actuated g/C Ratio	0.49	0.41	0.41	0.55	0.45		0.38	0.34	0.34	0.25	0.19	0.19
v/c Ratio	0.49	0.98	0.32	0.81	0.77		0.77	09.0	0.05	0.05	0.77	0.62
Control Delay	25.3	58.3	16.9	58.5	36.3		45.8	42.3	11.7	27.4	59.5	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.3	58.3	16.9	58.5	36.3		45.8	42.3	11.7	27.4	59.5	11.8
ros	O	ш	В	ш	۵		۵	۵	В	ပ	ш	В
Approach Delay		51.0			39.4			42.5			40.3	
Approach LOS		Ω			Ω						Ω	
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 133.5	33.5											
Natural Cycle: 105												
Control Type: Actuated-Uncoordinated	ncoordinated											
Maximum v/c Ratio: 0.98												
Intersection Signal Delay: 44.3	44.3 zation 88 7%			= ⊆	Intersection LOS: D	LOS: D	ш					
Analysis Period (min) 15	zation oo. i vo			2			J					
5. () 55 cas(												

Splits and Phases: 8: Sheridan Drive & North Forest Road



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 10: Sheridan Drive & Proposed South Driveway

Lane Group EBL Lane Configurations   100   Volume (uph)   1900 Storage Length (it)   350 Storage Length (it)   350 Taper Length (it)   25 Taper Length (it)   25 Taper Length (it)   25 Sald Flow (por)   1,00 Fit Permitted 0,950 Sald. Flow (por)   1770 Link Speed (mph)   1770 Link Speed (mph)   1170	<b>EBT</b> ↑  11564  11900  0.95  0.99  3536  3536	6 6 1900 0 0 0 25 0.95 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	WBL 4 4 4 4 4 4 1900 75 1.00 0.950 0.950 0.950	↑↑ 1500 1900 1900 0.95 0.988 3497	131 131 1900 0 0 25 0.95 0 0	16 1900 0 0 25 25 1.00	1.00 1.00 1.00 0.951 0.959	9 1900 0	SBL 99	SBT 40	SBR
81	454 1564 1900 0.999 3536 3536	6 1900 0 0 25 0.95	1900 75 1 25 1.00 0.950 1770 0.950	41500 1900 1900 0.95 0.988 3497	131 1900 0 0 25 0.95	16 1900 0 0 25 1.00	1900 1900 1.00 0.951 0.969	1900	66	<b>₩</b> 0	<b>k-</b> 168
	1564 1900 0.995 0.999 3536 3536	6 1900 0 0 25 0.95 0 0	1900 75 1 25 1.00 0.950 0.950 1770	1500 1900 0.95 0.988 3497	131 1900 0 0 25 0.95	16 1900 0 0 25 1.00	1900 1.00 0.951 0.969	1900	66	0	168
	1900 0.95 0.999 3536 3536	1900 0 0 25 0.95 0	1900 75 1 25 1.00 0.950 1770 0.950	0.95 0.98 3497 3497	1900 0 0 25 0.95 0	1900 0 0 1.00 0	1.00 0.951 0.969	1900		0000	
	0.95 0.999 3536 3536	0 25 0.95 0	75 1.25 1.00 0.950 1770 1770	0.95 0.988 3497 3497	0 25 0.95 0	0 25 1.00 0	1.00 0.951 0.969	0	1900	1900	1900
	0.95 0.999 3536 3536	0 25 0.95 0	25 1.00 0.950 1770 0.950	0.95 0.988 3497	0.95	1.00	1.00 0.951 0.969		0		0
	0.95 0.999 3536 3536	0.95	25 1.00 0.950 1770 0.950 1770	0.95 0.988 3497 3497	0.95	1.00	1.00 0.951 0.969	0	0		_
	0.95 0.999 3536 3536	0.95	1.00 0.950 1770 0.950 1770	0.95 0.988 3497 3497	0.95	0 0	1.00 0.951 0.969	25	22		25
	3536	0 0	0.950 1770 0.950 1770	3497	0 0	0	0.951	1.00	1.00	1.00	1.00
	3536	0 0	0.950 1770 0.950 1770	3497	0 0	0	0.969				0.850
	3536	0 0	1770 0.950 1770	3497	0 0	0 0				0.950	
	3536	0	0.950	3497	0	0	1717	0	0	1770	1583
	3536	0	1770	3497	0	0	696.0			0.950	
Link Speed (mph) Link Distance (ft)							1717	0	0	1770	1583
Link Distance (ft)	42			45			30			30	
	635			1668			278			569	
Travel Time (s)	9.6			25.3			6.3			6.1	
lor	0.88	0.88	06:0	06:0	0.92	69.0	0.92	69.0	0.92	0.92	0.92
Adj. Flow (vph) 228	1777	7	4	1667	142	23	0	13	108	0	183
Shared Lane Traffic (%)											
Lane Group Flow (vph) 228	1784	0	4	1809	0	0	36	0	0	108	183
Enter Blocked Intersection No	9	%	8	8	8	8	8	N <sub>o</sub>	2	8	S
Lane Alignment Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	12			12			0			0	
Link Offset(ft)	0			0			0			0	
Crosswalk Width(ft)	16			16			16			16	
Two way Left Turn Lane	Yes			Yes							
Headway Factor 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph) 15		6	15		6	15		6	15		6
Sign Control	Free			Free			Stop			Stop	
Intersection Summary											
Area Type: Other											
Control Type: Unsignalized Intersection Capacity Utilization 75.4%			2	I Level of	ICU Level of Service D	D					
Analysis Period (min) 15											

Lanes, Volumes, Timings Synchro 7 - Report SRF & Associates Page 17

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 10: Sheridan Drive & Proposed South Driveway

Movement         EBL         EBT         EBR         WBI         WBT         WBR         NBI           Lane Configurations         7         46         4         150         13         16           Sign Control         10         1564         6         4         150         13         15           Grade         0%         0%         0%         0%         0%         0%         0%           Peak Hour Factor         092         0.88         0.88         0.90         0.92         0.69           Peak Hour Factor         0.92         0.88         0.88         0.90         0.92         0.69           Peak Hour Factor         0.92         0.88         0.80         0.90         0.92         0.69           Peack Hour Factor         0.92         0.88         0.80         0.90         0.92         0.69           Peack Hour Factor         0.92         0.88         0.80         0.90         0.92         0.69           Walking Speed (Its)         1.70         1.70         1.70         1.70         1.70         1.70         1.70         1.70         1.70         1.70         1.70         1.70         1.70         1.70         1.70	NBL NBT	NBR	SBL SBT	CBD
1809   1180   1180   131				SDIN
210 1564 6 4 1500 131  Free Free Free Free 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0			4	*
Free Free Free 7	Cton	6	0 66	168
1809   1777   7 4 1667   142     TWLTL	3000		Stop	
1809 0.88 0.88 0.90 0.90 0.92 228 1777 7 4 1667 142 2 635 0.80 1809 14.1 4.1 4.1 4.1 4.1 6.80 2.2 2.2 2.2 3.36 3.60 2.28 1185 5.99 4 1111 6.98 2.28 0.0 0 4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0			%0	
228 1777 7 4 1667 142  2 635 0.80 1809 1784 3 1809 1784 3 1809 1784 3 1809 1784 3 1809 1883 0.80 22 22 32 32 32 36 360 228 0 0 4 0 0 228 0 0 4 0 0 228 0 0 4 0 0 228 0 0 0 4 0 0 228 0 0 0 170 170 170 228 0 0 0 1 0 05 0.41 5 118 0 0 15.1 0.0 0.0 25 0.0 0.0 15.1 0.0 0.0 26 0.0 0.0 15.1 0.0 0.0 27 0.0 0 1 0 05 0.41 5 28 0.0 0.0 15.1 0.0 0.0 28 0.0 0.0 15.1 0.0 0.0	0.69 0.92	_		0.92
1809 1784 2 635 0.80 0 1809 1784 3 1809 1784 3 141 4.1 4.1 1809 1784 3 32 32 89 34 228 0 0 4 0 0 228 0 0 4 0 0 228 0 0 0 142 228 0 0 0 142 228 0 0 0 142 228 0 0 0 142 228 0 0 0 0 142 228 0 0 0 0 142 228 0 0 0 0 142 228 0 0 0 0 0 142 228 0 0 0 0 0 142 228 0 0 0 0 0 142 228 0 0 0 0 0 142 228 0 0 0 0 0 142 228 0 0 0 0 0 142 228 0 0 0 0 0 142 228 0 0 0 0 1 0 0 0 356 0.0 0 0 15.1 0.0 0 356 0.0 0 15.1 0.0 0 68 0.0 0 0 15.1 0.0 0 68 0.0 0 0 15.1 0.0 0 68 0.0 0 0 15.1 0.0 0 68 0.0 0 0 15.1 0.0 0 68 0.0 0 0 15.1 0.0 0 68 0.0 0 0 15.1 0.0 0 68 0.0 0 0 15.1 0.0 0 68 0.0 0 0 15.1 0.0 0 68 0.0 0 0 15.1 0.0 0 68 0.0 0 0 15.1 0.0 0 68 0.0 0 0 15.1 0.0 0 68 0.0 0 0 15.1 0.0 0 68 0.0 0 0 15.1 0.0 0 68 0.0 0 15.1 0	23 0	13	108 0	183
1809 1784 2  1809 1784 2  1809 1784 2  1809 1784 2  22 22 22  32 36 360  228 1185 599 4 1111 698  228 0 0 4 0 0  0 0 7 0 0 142  228 0 0 0 4 0 0  0 0 0 1 0 0  118 0 0 0 1 0 0  356 0.0 0.0 15.1 0.0 0  356 0.0 0.0 15.1 0.0 0  4.0 0 0 1  118 0 0 1 0 0  356 0.0 0 15.1 0.0 0  4.0 0 0 1  4.0 0 0 1  4.0 0 0 1  4.0 0 0 1  4.0 0 0 1  356 0.0 0.0 15.1 0.0 0  356 0.0 0.0 15.1 0.0 0  356 0.0 0 15.1 0.0 0  356 0.0 0 15.1 0.0 0  356 0.0 0 15.1 0.0 0				
1809 1784 2 2 2 2 2 2 3 3 6 3 6 6 2 7 7 7 0 1 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7				
TWLTL  2 635 635 635 636 638  1809 1809 1784 3 1809 1784 3 1809 1784 3 14.1 1809 1784 3 2 2 2 2 2 2 2 2 2 3 2 2 3 3 4.1 4.1 4.1 698 228 0 0 4 0 0 0 4 0 0 0 1 0 0 1 18 0 0 0 1 0 0 1 18 0 0 0 1 18 0 0 1 0 0 1 18 0 0 1 0 0 1 18 0 0 1 0 0 1 18 0 0 1 0 0 1 0 1				
1809 1784 2 635 0.80 0 1809 1784 3 1809 1784 3 4.1 4.1 4.1 4.1 4.1  2.2 2.2 2.2 3.2 3.6 99 4 1111 6.98 228 0 0 4 0 0 228 0 0 4 0 0 228 0 0 0 142 228 0 0 0 142 228 0 0 0 142 228 0 0 0 142 228 0 0 0 142 228 0 0 0 142 228 0 0 0 142 228 0 0 0 142 228 0 0 0 142 228 0 0 0 142 228 0 0 0 142 228 0 0 0 142 228 0 0 0 142 228 0 0 0 142 228 0 0 0 142 228 0 0 0 142 228 0 0 0 142 228 0 0 0 15.1 0.0 0 35.6 0.0 0.0 15.1 0.0 0 35.6 0.0 0 15.1 0.0 0 4.0 0 0 1				
1809 1784 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2				
635 0.80 0 1809 1784 3 1809 1784 3 4.1 4.1 4.1 4.1 784 3 4.1 4.1 4.1 4.1 784 3 2.2 2.2 2.2 9 3.4 3.6 3.60 4 1111 6.98 0.0 0 2.2 0 0 4 0 0 0 2.2 0 0 1700 1700 1700 1700 0 0.68 0.70 0.35 0.01 0.65 0.41 5.1 18 0 0 0 118 0 0 15.1 0.0 0.0 0 8.5 0.0 0.0 15.1 0.0 0.0 0 4.0 0 0 15.1 0.0 0.0 0				
635 635 638 638 638 638 641 1809 1784 3 1809 1784 3 1809 1784 4.1 4.1 4.1 4.1 4.1 6.80 6.80 6.80 6.80 6.80 6.80 6.80 6.80				
1809 1784 2  1809 1784 3  1809 1784 3  1809 1784 3  1800 1483 7  22 22 22  32 36 99 4 1111 698 7  228 185 599 4 1111 698 69  228 0 0 0 4 0 0  0 0 7 0 0 142  336 1700 1700 360 1700 1700 1700 1700 1700 1700 1700 17				
1809 1784 2  1809 1483 1  1809 1483 3  4,1 4,1 4,1 4,1 4,1 4,1 4,1 4,1 4,1 4,1				
1809 1483 3 4.1 4.1 4.1 4.1 4.1 4.1 4.1 4.1 4.1 4.1		892 3		905
1809 1483 3 4.1 4.1 4.1 2.2 2.2 3.2 3.6 99 3.6 89 4 1111 698 228 0 0 4 0 0 228 0 0 7 0 0 142 0 0 7 0 0 142 0.68 0.70 0.35 0.01 0.65 0.41 5: 118 0 0 15:1 0.0 0.0 3.5.6 0.0 0.0 15:1 0.0 0.0 4.0 0 0 15:1 0.0 0.0		_		
1809 1483 3 4,1 4,1 4,1 4,1 4,1 4,1 4,1 4,1 4,1 4,1		_	1358 2241	
22 22 32 36 336 <b>EB1 EB2 EB3 WB1 WB2 WB3 N</b> 228 1185 599 4 1111 698 228 0 7 0 0 4 0 0 0 7 0 0 4 0 0 0 8 0.70 0.35 0.01 0.65 0.41 57 118 0 0 15.1 0.0 0.0 E C C	3327 4316	371 3	4	905
22 22 32 336 360 336 360 336 360 360 360 360 360	7.5 6.5	6.9	7.5 6.5	6.9
22 22 32 36 32 99 336 48 185 599 4 1111 698 228 0 0 4 0 0 228 0 0 7 0 0 142 0 0 7 0 0 142 0 08 0.70 0.35 0.01 0.65 0.41 57 118 0 0 15.1 0.0 0.0 35.6 0.0 0.0 15.1 0.0 0.0 4.0 0 15.1 0.0 0.0				
32 99 336 336 340 EB I EB 2 EB 3 WB 1 WB 2 WB 3 N 228 1185 599 4 1111 698 228 0 0 4 0 0 0 0 0 7 0 0 142 336 1700 1700 350 01700 1700 118 0 0 1 0 0 356 0.0 0.0 151 0.0 0 4.0 0 154 0.0 0.0 4.0 0 0 1 0 0 0 356 0.0 0.0 151 0.0 0.0 4.0 0 0 0 0 0 0 0 356 0.0 0.0 151 0.0 0.0				3.3
336  EB1 EB2 EB3 WB1 WB2 WB3 N  228 1185 599 4 1111 698  228 0 0 4 0 0  0 0 7 0 0 142  336 1700 1700 360 1700 1700  0.68 0.70 0.35 0.01 0.65 0.41 57  118 0 0 15.1 0.0 0.0  4.0 0.0 15.1 0.0 0.0	_		_	35
EB1         EB2         EB3         WB1         WB2         WB3         NN           228         1185         599         4         1111         698           228         0         0         4         0         0           0         0         7         0         0         0           336         1700         1700         360         1700         1700           0.68         0.70         0.35         0.01         0.65         0.41         57           118         0         0         15.1         0.0         0         0         0           E         0         0         15.1         0.0         0.0         0         0           4.0         0         0         0         0         0         0         0         0	0 0	205	49 20	280
228 1185 599 4 1111 698 228 0 0 4 0 0 0 0 7 0 0 142 336 1700 1700 360 1700 1700 0.68 0.70 0.35 0.01 0.65 0.41 57 118 0 0 15.1 0.0 0.0 25 0.0 0.0 15.1 0.0 0.0 4.0 0.0 0.0 15.1 0.0 0.0	NB1 SB1	SB2		
228 0 0 4 0 0 0 0 1 142 336 1700 1700 360 1700 1700 0.68 0.70 0.35 0.01 0.65 0.41 57 118 0 0 1 0 0 5.6 0.0 0.0 15.1 0.0 0.0 E C C		183		
0 0 7 0 142 336 1700 1700 360 1700 1700 0.68 0.70 0.35 0.01 0.65 0.41 57 118 0 0 15.1 0.0 0.0 E C C 4.0 0.0 15.1 0.0 0.0	_	0		
336 1700 1700 360 1700 1700 1700 1700 1700 1700 1700 17		183		
068 0.70 0.35 0.01 0.65 0.41 118 0 0 1 0 0 356 0.0 0.0 15.1 0.0 0.0 E E C C 4.0 0.0		280		
118 0 0 1 0 0 0 1 1 0 0 0 E 1 0 0 0 1 1 0 0 0 0		0.65		
35.6 0.0 0.0 15.1 0.0 0.0 E E C C C E S) 4.0 0.0 E		105		
4.0 0.0 E	Err 728.2	39.2		
4.0 0.0 ary		ш		
Approach LOS Intersection Summary	Err 294.7			
Intersection Summary	L.			
Average Delay 109.8				
pacity Utilization 75.4		O		
Analysis Period (min)				

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 11: Sheridan Drive & Frankhauser Road

				,	•	,	
	`	t				•	
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	*	‡	₩.		r	R.	
Volume (vph)	78	1741	1660	24	38	29	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	105			0	0	20	
Storage Lanes	-			0	-	_	
Taper Length (ft)	92			25	25	25	
Lane Util. Factor	1:00	0.95	0.95	0.95	1.00	1.00	
Frt			0.998			0.850	
Fit Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3532	0	1770	1583	
Fit Permitted	0.110				0.950		
Satd. Flow (perm)	205	3539	3532	0	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			m			31	
Link Speed (mph)		45	45		30		
Link Distance (fl)		1014	635		614		
Travel Time (s)		15.4	9.6		14.0		
Peak Hour Factor	0.89	0.89	0.94	0.94	0.73	0.73	
Adj. Flow (vph)	56	1956	1766	26	52	40	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	53	1956	1792	0	25	40	
Enter Blocked Intersection	9	8	No No	No No	9	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(tt)		16	91 ;		16		
Two way Left Turn Lane		Yes	Yes				
Headway Factor	1:00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	5			6	15	6	
Number of Detectors	<del>-</del>	2	2		<del>-</del>	_	
Detector Template	Left	Thr.	Thru		Left	Right	
Leading Detector (ft)	20	100	9		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	8	9	9		20	20	
Detector 1 Type	CI+EX	CI+Ex	CI+EX		CI+Ex	CI+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0:0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		9	9				
Detector 2 Type		CI+Ex	CI+EX				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Perm					Perm	
Protected Phases		2	9		4		
Permitted Phases	2					4	
Dotoctor Dhaco	0	7	9		δ	V	

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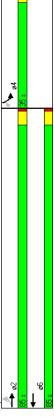
Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 11: Sheridan Drive & Frankhauser Road

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SBR		1.0	31.1	35.0	29.2%	29.9	3.2	1.9	0.0	5.1			3.0	None	7.0	19.0	0	8.9	0.07	0.27	26.6	0.0	26.6	ပ											LOS: A	ICU Level of Service B	
SBL		1.0			29.2%	59.9	3.2		0.0	5.1			3.0	None	7.0	19.0	0	8.9	0.07	0.40	6.09	0.0	6.09	ш	46.0	۵					Yellow				Intersection LOS: A	J Level of	
WBR				0.0	%0.0				0.0	4.0																					r, Start of				ī	₫	
WBT		4.0	40.0	82.0	%8.0/	80.2	3.9	6.0	0.0	4.8			3.0	C-Max	7.0	15.0	0	104.3	0.87	0.58	3.8	0.0	3.8	A	3.8	⋖					nd 6:WBT						
EBT		4.0	40.0	85.0	%8.07	80.2	3.9	6.0	0.0	4.8			3.0	C-Max	7.0	15.0	0	104.3	0.87	0.64	7.5	0.0	7.5	A	7.4	A					2:EBTL a						
EBL		4.0	40.0	85.0	70.8%	80.2	3.9	0.9	0.0	4.8			3.0	C-Max	7.0	15.0	0	104.3	0.87	0.16	3.0	0.0	3.0	A				Other			to phase		linated			on 59.7%	
Lane Group	Switch Phase	Minimum Initial (s)	Minimum Split (s)	Total Split (s)	Total Split (%)	Maximum Green (s)	Yellow Time (s)	All-Red Time (s)	Lost Time Adjust (s)	Total Lost Time (s)	Lead/Lag	Lead-Lag Optimize?	Vehicle Extension (s)	Recall Mode	Walk Time (s)	Flash Dont Walk (s)	Pedestrian Calls (#/hr)	Act Effct Green (s)	Actuated g/C Ratio	v/c Ratio	Control Delay	Oueue Delay	Total Delay	ros	Approach Delay	Approach LOS	Intersection Summary		Cycle Length: 120	Actuated Cycle Length: 120	Offset: 76 (63%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow	Natural Cycle: 90	Control Type: Actuated-Coordinated	Maximum v/c Ratio: 0.64	Intersection Signal Delay: 6.7	Intersection Capacity Utilization 59.7%	Analysis Period (min) 15

Spilts and Phases: 11: Sheridan Drive & Frankhauser Road



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 12: Sheridan Drive & I-290 NB

		Ť	~	•		,		-	L	į.	+	*
ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
-ane Configurations	-	444			4413		<u>,                                    </u>	4	¥L.			
Volume (vph)	249	1530	0	0	1111	533	569	0	273	0	0	0
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	9 7		0	0		0	230		120	0		0
Storage Lanes	- 10		0 1	0 1		0 6	- [		- i	0 8		0 10
l aper Length (ft)	105	Č	5 22	25	Č	25	25	Š	25	5 25	0	3 23
-ane utili. Factor	90.	0.91	8.	00.1	0.91	0.91	0.95	16.0	0.95	9.	00.1	3.
FIT	0.950				0.931		0.950	0.917	0.000			
Satd. Flow (prot)	1770	5085	0	0	4836	0	1681	1520	1504	0	0	0
-It Permitted	0.073		,	,		•	0.950	0.978		•	•	,
Satd. Flow (perm)	136	5085	0	0	4836	0	1681	1520	1504	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					128			36	39			
ink Speed (mph)		42			42			೫			30	
ink Distance (ft)		197			193			830			423	
ravel Time (s)		3.0			2.9			18.9			9.6	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.88	0.88	0.88	0.92	0.92	0.92
Adj. Flow (vph)	265	1628	0	0	1182	267	306	0	310	0	0	0
Shared Lane Traffic (%)							30%		37%			
ane Group Flow (vph)	265	1628	0	0	1749	0	214	207	195	0	0	0
Inter Blocked Intersection	2	2	8	8	8	8	8	2	2	9 8	8	2
ane Alignment	EFF	Left	Right	Leff	Left	Right	Leff	Fet Fet	Right	듄	Left	Right
Wedian Width(ft)		2 9			2 9			2 0			7.	
Link Offset(rt)		o ;			o ;			o ;			o ;	
Crosswalk Width(ft)		91			9].			91			91	
I wo way Lert Turn Lane	5	5	5	00	00	00	00	5	00	5	00	5
reauway racioi	3. 5	1.00	3.9	9.1	9.	3.0	0.1	3.	9.0	9. 1	99.	3.0
Turning Speed (mpn)	<u>0</u> -	c	ъ	<u>0</u>	c	δ.	<u>0</u> -	c	۰ ۲	<u>0</u>		5
Value of Defectors	- æ	7 LP 7			7 Pr.:		- <del>4</del>	7 L	- <del>†</del>			
Jetector Lemplate	E E	Du Co			DIL.		Lell S		Right			
-eading Detector (II)	8 ∘	3 9			3 9		8 0	3 9	02			
Detector 1 Position(ft)	0	0 0			0		0 0	0 0	0 0			
Detector 1 Size(ft)	2 5	9 40			9 4		200	o «	200			
Detector 1 Type	CI+EX	CI+Ex			CI+Ex		CI+EX	CI+EX	CI+EX			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		9			9			9				
Detector 2 Type		CI+EX			CI+EX			CI+EX				
Defector 2 Channel		c			c			c				
Jetector z Extend (s)	ta . aaa	0.0			0.0		motoria	0.0	Dorm			
Turit Type Protected Phases	μ+ -	4			0		cusionii 3	~	<u> </u>			
Permitted Phases	- 9	0			1		o cr	0	c			

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 12: Sheridan Drive & I-290 NB

Samuch Planes   EBI   EBI   EBI   WBL   WBR   SBI   SBI   SBR	^	†	<i>&gt;</i>	<b>\</b>	ţ	1	•	•	•	٠	<b>→</b>	•	
1.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
1.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4	Switch Phase												
14.0 88.6 0.00 0.07 35.0 29.0 29.0 0.0 0.0 11.7% 708% 0.00% 99.2% 0.00% 29.2% 29.2% 29.2% 0.00% 0.00 0.0 35.0 35.0 35.0 0.0 0.0 0.0 0.0 35.0 35	Minimum Initial (s)	1.0	4.0			4.0		4.0	4.0	4.0			
11.7% 70.8% 0.0% 0.0 71.0 0.0 35.0 35.0 35.0 0.0 0.0 0.0 0.0 0.0 0.0 71.0 0.0 35.0 35.0 35.0 35.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Minimum Split (s)	6.2	33.9			27.8		29.0	29.0	29.0			
11.7% 70.8% 0.0% 59.2% 0.0% 29.2% 29.2% 29.2% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0	Total Split (s)	14.0	82.0	0.0	0.0	71.0	0.0	32.0	32.0	35.0	0.0	0.0	0.0
9.7 79.1 65.2 29.8 29.8 29.8 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2	Total Split (%)	11.7%	%8.02	%0.0	%0.0	59.2%	%0.0	29.2%	29.2%	29.5%	%0.0	%0:0	0.0%
3.2 3.9 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2	Maximum Green (s)	9.7	79.1			65.2		29.8	29.8	29.8			
1.1 2.0 1.9 2.0 2.0 2.0 0.0 0.0 4.3 5.9 4.0 6.8 4.0 6.2 5.2 4.0 4.0 4.0 6.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	Yellow Time (s)	3.2	3.9			3.9		3.2	3.2	3.2			
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	All-Red Time (s)	<del></del>	2.0			1.9		2.0	5.0	5.0			
Head Lead Lead Lead A 40 5.8 4.0 5.2 5.2 4.0 4.0 4.0 Lead Lead Lead Lead Lead Lead A 4.0 5.2 5.2 5.2 4.0 4.0 4.0 Lead Lead Lead Lead A 4.0 5.2 5.2 5.2 4.0 4.0 4.0 5.2 3.0 2.0 2.0 2.0 2.0 2.0 7.0 7.0 7.0 17.0 17.0 17.0 17.0 17.0	Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lead	Total Lost Time (s)	4.3	5.9	4.0	4.0	5.8	4.0	5.2	5.2	5.2	4.0	4.0	4.0
Yes Yes Yes 2.0 2.0  None CMax C-Max None None No	Lead/Lag	Lead				Lag							
20 3.0 2.0 2.0 2.0 None CMax  None CMax  1.0 7.0 1.0 None None None None CMax  21.0 15.0	Lead-Lag Optimize?	Yes				Yes							
None C-Max C-Max None None P 7.0 7.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0 15	Vehicle Extension (s)	2.0	3.0			3.0		2.0	2.0	2.0			
7.0 7.0 7.0 7.0 7.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1	Recall Mode	None	C-Max			C-Max		None	None	None			
21.0 15.0 90.2 88.6 65.2 20.3 20.3 0.75 0.74 0.54 0.17 0.17 0.73 0.43 0.65 0.75 0.72 41.6 8.6 17.0 63.3 51.1 0.0 0.1 0.0 0.0 0.0 41.6 8.7 17.0 63.3 51.1 D A B E D B B E D Clither  dt p phase 2:WBT and 6:EBTL, Start of Yellow eridan Drive & L290 NB	Walk Time (s)		7.0			7.0							
0 90.2 88.6 65.2 20.3 20.3 20.3 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7	Flash Dont Walk (s)		21.0			15.0							
90.2 88.6 65.2 20.3 20.3 20.3 20.7 0.75 0.74 0.54 0.17 0.17 0.17 0.17 0.17 0.17 0.17 0.17	Pedestrian Calls (#/hr)		0			0							
0.75 0.74 0.54 0.17 0.17 0.17 0.17 0.17 0.17 0.17 0.17	Act Effct Green (s)	90.2	9.88			65.2		20.3	20.3	20.3			
0.73 0.43 0.65 0.75 0.72 4.1.6 8.6 17.0 6.33 51.1 0.0 0.0 0.0 0.0 4.1.6 8.7 17.0 6.33 51.1 D A B E D B B E D Dither  d to phase 2:WBT and 6:EBTL, Start of Yellow  ridinated  Intersection LOS: C IOU Level of Service C IOU Level of Service C	Actuated g/C Ratio	0.75	0.74			0.54		0.17	0.17	0.17			
41.6 8.6 17.0 63.3 51.1  41.6 8.7 17.0 63.3 51.1  41.6 0.1 0.0 0.0  A B E D  B F 54.5  Cither  Alto phase 2:WBT and 6:EBTL, Start of Yellow  ridinated  Intersection LOS: C  Icu Level of Service C  Icu Level of Service C	v/c Ratio	0.73	0.43			0.65		0.75	0.72	89.0			
0.0 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Control Delay	41.6	9.8			17.0		63.3	51.1	48.5			
41.6 8.7 17.0 63.3 51.1  D A B E D  13.3 17.0 54.5  13.3 17.0 54.5  D S B B D  Other  d to phase 2:WBT and 6:EBTL, Start of Yellow  ridinated  Intersection LOS: C  tion 70.2% ICU Level of Service C  Friedan Drive & L290 NB	Queue Delay	0.0	0.1			0.0		0.0	0.0	0.0			
D A B E D  13.3 17.0 54.5 B B B  Other  d to phase 2:WBT and 6:EBTL, Start of Yellow  rdinated  Innersection LOS: C  Iou To.2% ICU Level of Service C  reridan Drive & L290 NB  reridan Drive & L290 NB	Fotal Delay	41.6	8.7			17.0		63.3	51.1	48.5			
13.3 17.0 54.5  B B D  Other  d to phase 2:WBT and 6:EBTL, Start of Yellow ridnated  Intersection LOS: C  Icou Level of Service C  Icou Level of Service C  Icou Level of Service C	-0S	۵	⋖			В		ш	٥	۵			
Dither  Other  d to phase 2:WBT and 6:EBTL, Start of Yellow rdinated  100 Level of Service C  100 Level of Service C  100 Level of Service C	Approach Delay		13.3			17.0			54.5				
d to phase 2:WBT and 6:EBTL, Start of Yellow rdinated  Intersection LOS: C  IOU Level of Service C  ICU Level of Service C  ICU Level of Service C	Approach LOS		В			В			Ω				
other d to phase 2:WBT and 6:EBTL, Start of Yellow ridinated 1.0.2% ICU Level of Service C 1.0.1 Level of Service C 1.0.1 Level of Service C 1.0.1 Level of Service C 1.0.1 Level of Service C 1.0.1 Level of Service C 1.0.1 Level of Service C 1.0.1 Level of Service C 1.0.1 Level of Service C 1.0.1 Level of Service C 1.0.1 Level of Service C 1.0.1 Level of Service C	Intersection Summany												
d to phase 2:WBT and 6:EBTL, Start of Yellow rdinated  Inhersection LOS: C  Iou To.2%  Icu Level of Service C  eridan Drive & I.290 NB		Other											
d to phase 2:WBT and 6:EBTL, Start of Yellow rdinated 108 108 100	Cycle Length: 120												
n LOS: C of Service C	Actuated Cycle Length: 120												
Intersection LOS: C ICU Level of Service C Onive & L290 NB	Offset: 37 (31%), Reference	d to phase	2:WBT a	nd 6:EBTi	L, Start o	of Yellow							
Intersection LOS: C ICU Level of Service C Drive & L290 NB	Natural Cycle: 80												
208 Intersection LOS: C zation 70.2% ICU Level of Service C Sheridan Drive & L290 NB	Control Type: Actuated-Cool	rdinated											
Delay: 20.8 Intersection LOS: C I'U Level of Service C In) 15 12: Sheridan Drive & L290 NB	Maximum v/c Ratio: 0.75												
In) 15 12: Sheridan Drive & L290 NB	Intersection Signal Delay: 20 Intersection Capacity Utilizat	).8 tion 70.2%			= 0	ntersection SU Level o	LOS: C of Service	O					
12: Sheridan Drive & L290 NB	Analysis Period (min) 15												
4 ← 62 ← 62 ← 63 € 8 € 6 € 6 € 6 € 6 € 6 € 6 € 6 € 6 € 6		eridan Driv	re & I-290	NB									
718	ţ								*	Ç			
· •	718								35.8	2			
	• <b>1</b>												

Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 13: Sheridan Drive & Harlem Road

		•				•	
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	*	*	K.	*	K	N. N.	
Volume (vph)	895	315	519	861	285	884	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0	215		140	0	
Storage Lanes		-	-		2	2	
Taper Length (ft)		230	100		100	25	
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.88	
FA		0.850				0:850	
Fit Protected			0.950		0.950		
Satd. Flow (prot)	3539	1583	3433	3539	3433	2787	
FIt Permitted			0.950		0.950		
Satd. Flow (perm)	3539	1583	3433	3539	3433	2787	
Right Turn on Red		2				Yes	
Satd. Flow (RTOR)	Ų			Ļ	Ļ	118	
Link Speed (mpn)	24.5			42	33		
Link Distance (it)	3 4			413	338		
Iravel Time (s)	x. 7	L	0	5.0	0.0	000	
Peak Hour Factor	0.85	0.85	0.92	0.92	0.90	0.90	
Auj. FIOW (vpii)	200	2/ -	÷000	430	200	707	
Silaled Laile Hallic (28)	1052	271	773	700	7.17	000	
Enter Blocked Intersection	8	2	ġ <b>2</b>	00 S	<u> 8</u>	707 No	
l ane Alignment	<del>J</del> e	Right	Ha H	- He	- E	Right	
Median Width(ft)	12	i i	i	24	24	16.	
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Tum Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		6	12		15	6	
Number of Detectors	2	-	_	2	-	<b>-</b>	
Detector Template	重	Right	Left	Thr	Left	Right	
Leading Detector (ff)	100	20	20	100	20	20	
Trailing Detector (ft)	0 (	0	0	0	0 (	0 (	
Detector 1 Position(ft)	ο ,	0 8	0 8	Э,	0 8	0 8	
Detector 1 Size(ft)	ے م	7 20	8 2	ا م	7 20	07 50	
Detector 1 Type	CI+EX	CI+EX	X H C	CI+EX	CI+EX	CI+EX	
Detector 1 Extend (s)	00	0	00	0	00	0.0	
Detector 1 Onerie (s)	00	0.0	00	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0:0	
Detector 2 Position(ft)	94	;	;	94	,	;	
Detector 2 Size(ft)	9			9			
Detector 2 Type	CI+Ex			CI+EX			
Detector 2 Channel	c			c			
Detector 2 Extend (s)	0.0	and of other	100	0:0		Ser of Co.	
Fortested Dhases	C	cusiom	Fig.	1,2	c	custom 1.3	
Permitted Phases	7	7 (	-		י	- -	
CILITICAL HOSES		7				,	

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 235/2015

	1	٠	•		•	•	
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	
Switch Phase							
Minimum Initial (s)	20.0	20.0	3.0		0.9		
Minimum Split (s)	30.5	30.5	7.3		11.2		
Total Split (s)	0.99	0.99	29.0	95.0	25.0	54.0	
Total Split (%)	22.0%	22.0%	24.2%	79.2%	20.8%	45.0%	
Maximum Green (s)	9.09	9.09	24.7		19.8		
Yellow Time (s)	3.9	3.9	3.2		3.2		
All-Red Time (s)	1.6	1.6	1.1		2.0		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0:0	
Total Lost Time (s)	5.5	5.5	4.3	4.3	5.2	4.3	
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Vehide Extension (s)	2.0	2.0	2.0		2.0		
Recall Mode	C-Max	C-Max	None		None		
Walk Time (s)	7.0	7.0					
Flash Dont Walk (s)	18.0	18.0					
Pedestrian Calls (#/hr)	0	0					
Act Effct Green (s)	90.5	60.5	24.7	7.06	19.8	49.7	
Actuated g/C Ratio	0.50	0.50	0.21	0.76	0.16	0.41	
v/c Ratio	0.59	0.46	0.80	0.35	0.56	0.80	
Control Delay	22.7	21.7	53.6	4.7	50.4	33.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	22.7	21.7	53.6	4.7	50.4	33.0	
FOS	ပ	ပ	٥	⋖	٥	U	
Approach Delay	22.4			23.1	37.3		
Approach LOS	O			O	Ω		
Intersection Summary							
Area Type:	Other						
Cycle Length: 120							
Actuated Cycle Length: 120	50						
Offset: 24 (20%), Referenced to phase 2:EBWB, Start of Yellow	ced to phase	2:EBWB	, Start of	Yellow			
Natural Cycle: 60							
Control Type: Actuated-Coordinated	oordinated						
Maximum wc Ratio: 0.80	0					0	
Intersection Signal Delay: 27.2	27.2			= :	Intersection LOS: C	1.0S:C	
Intersection Capacity Unitzation 63.6% Analysis Period (min) 15	Zallon 03.8%			2	n Level o	ICU Levelui Service B	
Splits and Phases: 13:	13: Sheridan Drive & Harlem Road	ve & Harl	em Road				
	ļ	5					•
[0 ]	<b>,†</b> ,	Ce					္ဗ <u>န</u>

Lanes, Volumes, Timings SRF & Associates

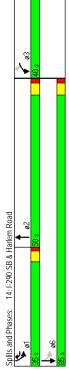
Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 14: I-290 SB & Harlem Road

	<b>\</b>	4	<b>—</b>	•	٠	<b>→</b>	
-ane Group	WBL	WBR	NBT	NBR	SBL	SBT	
ane Configurations	*	*	<b>₩</b>		r	**	
Volume (vph)	298	734	474	21	414	389	
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	0		0	330		
Storage Lanes	-	-		0	-		
Faper Length (ft)	25	25		25	75		
ane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95	
Ŧ		0.850	0.994				
Fit Protected	0.950				0.950		
Satd. Flow (prot)	1770	1583	3518	0	1770	3539	
-It Permitted	0.950				0.225		
Satd. Flow (perm)	1770	1583	3518	0	419	3539	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		149	4				
ink Speed (mph)	99		32			35	
ink Distance (ft)	333		250			456	
ravel Time (s)	7.6		4.9			8.9	
Peak Hour Factor	0.81	0.81	0.87	0.87	0.88	0.88	
Adj. Flow (vph)	368	906	545	24	470	442	
Shared Lane Traffic (%)							
-ane Group Flow (vph)	368	906	269	0	470	442	
Enter Blocked Intersection	8	8	8	8	8	No No	
ane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	12		12			12	
ink Offset(ft)	0		0			0	
Crosswalk Width(ft)	16		16			16	
rwo way Left Tum Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Furning Speed (mph)	15	6		6	15		
Number of Detectors	_	<del></del>	2		<del></del>	2	
Detector Template	Left	Right	Thr		Left	Thru	
eading Detector (ft)	20	20	100		20	100	
railing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	8	20	9		20	9	
Detector 1 Type	CI+EX	CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0:0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)			94			94	
Detector 2 Size(ft)			9			9	
Detector 2 Type			CI+EX			CI+Ex	
Detector 2 Channel							
Detector 2 Extend (s)			0.0			0.0	
Furn Type		vo+mq			pm+pt		
Protected Phases	m		2			9	
Permitted Phases		m ·			9		
Dolooko Dhooo	~		2			•	

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 25/2015

	-	4	•	•	٠	<b>→</b>	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Switch Phase							
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	22.0	9.2	30.6		9.5	21.0	
Total Split (s)	40.0	35.0	20.0	0.0	35.0	85.0	
Total Split (%)	32.0%	28.0%	40.0%	%0:0	28.0%	%0.89	
Maximum Green (s)	35.2	30.7	45.0		30.7	80.0	
Yellow Time (s)	3.2	3.2	3.6		3.2	3.6	
All-Red Time (s)	1.6	<del>[</del> -	1.4		Έ.	1.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.8	4.3	2.0	4.0	4.3	5.0	
Lead/Lag		Lead	Lag		Lead		
Lead-Lag Optimize?		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	Min		None	None	
Walk Time (s)			10.0				
Flash Dont Walk (s)			15.0				
Pedestrian Calls (#/hr)			0				
Act Effct Green (s)	23.5	55.9	20.6		53.2	52.4	
Actuated g/C Ratio	0.27	0.65	0.24		0.62	0.61	
v/c Ratio	0.76	0.84	0.67		89.0	0.21	
Control Delay	41.1	19.1	35.1		19.2	8.5	
Queue Delay	0:0	0.0	0.0		0.0	0.0	
Total Delay	41.1	19.1	35.1		19.2	8.5	
SOT	Ω	В	۵		В	Α	
Approach Delay	25.4		35.1			14.0	
Approach LOS	O		О			В	
Intersection Summary							
	Other						
Cycle Length: 125							
Actuated Cycle Length: 86.2	2						
Natural Cycle: 90							
Control Type: Actuated-Uncoordinated	coordinated						
Maximum v/c Ratio: 0.84							
Intersection Signal Delay: 23.7	3.7			=	Intersection LOS: C	LOS: C	
Intersection Capacity Utilization 67.0%	tion 67.0%			೨	U Level o	ICU Level of Service C	
Analysis Period (min) 15							



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 15: Maple Road & Proposed North Driveway

<b>₹</b>	T NBL NBR	<u>,-</u>	7 62 100	1900	0 150		25 25	1.00	0.850	0.950		0.950			926 372	8.5		. 67		<i>L</i> 9	No No	Left	12	0 0			1.0	15 9	Free Stop
<b>,</b>	WBL WBT		98 1007	`	225	-		1.00 0.95			1770 3539		20		6		0.92 0.92				ر 8							15	윤
<i>&gt;</i>	EBR		24	1900	0	0	25	0.95			0		0				0.92	26		0	No No	Right					1.00	6	
†	EBT	<b>₽</b>	77.6	1900				0.95	0.992		3511		3511	45	1002	15.2	0.92	1062		1121	No No	Left	12	0	16	Yes	1.00		Free
	ane Group	ane Configurations	Volume (vph)	deal Flow (vphpl)	Storage Length (ft)	Storage Lanes	aper Length (ft)	ane Util. Factor	Œ	It Protected	Satd. Flow (prot)	It Permitted	Satd. Flow (perm)	ink Speed (mph)	ink Distance (ft)	ravel Time (s)	Peak Hour Factor	Adj. Flow (vph)	Shared Lane Traffic (%)	ane Group Flow (vph)	Inter Blocked Intersection	ane Alignment	Median Width(ft)	ink Offset(ft)	Crosswalk Width(ft)	wo way Left Turn Lane	Headway Factor	'urning Speed (mph)	Sign Control

Lanes, Volumes, Timings Synchro 7 - Report SRF & Associates Page 27

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 15: Maple Road & Proposed North Driveway

																																							A
•	NBR	¥L.	100			0.92	109					9					290			290	6.9		3.3	11	471	NB 1	176	29	109	575	0.31	32	20.1	ပ	20.1	ပ			Service
•	NBL	r	62	Stop	%0	0.92	29										1852	1091	160	1852	8.9	2.8	3.5	69	220	WB 3	547	0	0	1700	0.32	0	0.0						ICU Level of Service
Ļ	WBT	‡	1007	Free	%0	0.92	1095						TWLTL	2												WB 2	547	0	0	1700	0.32	0	0.0						0
<b>&gt;</b>	WBL	<u>,-</u>	86			0.92	107										1121			1121	4.1		2.2	83	619	WB 1	107	107	0	619	0.17	5	12.0	В	<del></del>			10	47.6%
<b>/</b>	EBR		24			0.92	26																			EB 2	413	0	26	1700	0.24	0	0.0						
†	EBT	₩.	LL 6	Free	%0	0.92	1062						TWLTL	2												EB 1	708	0	0	1700	0.42	0	0.0		0.0				zation
	Movement	Lane Configurations	Volume (veh/h)	Sign Control	Grade	Peak Hour Factor	Hourly flow rate (vph)	Pedestrians	Lane Width (ft)	Walking Speed (ft/s)	Percent Blockage	Right turn flare (veh)	Median type	Median storage veh)	Upstream signal (ft)	pX, platoon unblocked	vC, conflicting volume	vC1, stage 1 conf vol	vC2, stage 2 conf vol	vCu, unblocked vol	tC, single (s)	tC, 2 stage (s)	tF (s)	po dueue free %	cM capacity (veh/h)	Direction, Lane #	Volume Total	Volume Left	Volume Right	CSH	Volume to Capacity	Queue Length 95th (ft)	Control Delay (s)	Lane LOS	Approach Delay (s)	Approach LOS	Intersection Summary	Average Delay	Intersection Capacity Utilization Analysis Period (min)

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 1: Maple Road & Millersport Hwy SB

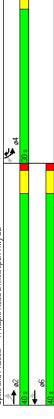
	١						
ane Group	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	۳	‡	‡	*_	F	*_	
Volume (vph)	53	916	888	230	26	174	
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	120			150	0	0	
Storage Lanes	-			<del>,</del>	<del>-</del>	-	
Faper Length (ft)	32			100	25	25	
-ane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	
Į.				0.850		0.850	
Fit Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583	
FIt Permitted	0.276				0.950		
Satd. Flow (perm)	514	3539	3539	1583	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)						83	
Link Speed (mph)		45	42		30		
Link Distance (ft)		222	654		781		
Fravel Time (s)		8.4	6.6		6.4		
Peak Hour Factor	0.00	06.0	0.92	0.92	0.81	0.81	
Adj. Flow (vph)	32	1084	965	250	73	215	
Shared Lane Traffic (%)							
-ane Group Flow (vph)	32	1084	965	250	73	215	
Enter Blocked Intersection	8	S	8	2	2	No	
ane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0 ;	0 ;		0 ;		
Crosswalk Width(ft)		9]	9 ;		91		
I wo way Left I um Lane	,	,	Yes				
Headway Factor	1.00	1.00	1.00	1.00	1:00	1.00	
urning Speed (mph)	<u>ر</u> 2	•	•	5	72	6	
Number of Detectors	- :	7	7	- :		- :	
Detector Lemplate	E E	Ihru	Pro 193	Right	E E	Right	
-eading Detector (II)	₹ °	3	3 9	07	07	70	
railing Detector (II)	0	0	0	0	0	0 0	
Detector 1 Position(II)	2 ح	0 4	0 4	2	2	0 %	
Defector 1 Type	OF EV	ال ال	טויב ס	CI.F.v	OF EV	20 Cl+Ev	
Detector 1 Channel	<u> </u>	Y 1	<u> </u>	Y E O	1	OH-LY	
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Oueue (s)	0.0	0.0	0.0	0.0	0.0	0:0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		9	9				
Detector 2 Type		CI+Ex	CI+EX				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
rurn Type	Perm			hm+ov		Perm	
Protected Phases	4	7	9	4	4		
Permitted Phases	2	,	•	9 .		4	
Detector Phase	2	2	9	4	4	4	

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 1: Maple Road & Millersport Hwy SB

	\	Ť	,	/	•	<b>*</b>	
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	
Switch Phase							
Minimum Initial (s)	4.0	4.0	4.0	1.0	1.0	1.0	
Minimum Split (s)	9.1	9.1	9.1	6.2	6.2	6.2	
Total Split (s)	40.0	40.0	40.0	30.0	30.0	30.0	
Total Split (%)	57.1%	57.1%	57.1%	45.9%	45.9%	42.9%	
Maximum Green (s)	34.9	34.9	34.9	25.4	25.4	25.4	
Yellow Time (s)	3.9	3.9	3.9	3.2	3.2	3.2	
All-Red Time (s)	1.2	1.2	1.2	1.4	1.4	1.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.1	5.1	5.1	4.6	4.6	4.6	
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Min	C-Min	C-Min	None	None	None	
Act Effct Green (s)	48.5	48.5	48.5	70.0	11.8	11.8	
Actuated g/C Ratio	69.0	69.0	69.0	1.00	0.17	0.17	
v/c Ratio	0.09	0.44	0.39	0.16	0.25	0.64	
Control Delay	2.8	6.2	8.4	0.2	25.2	24.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	2.8	6.2	8.4	0.2	25.2	24.6	
FOS	A	⋖	⋖	⋖	ပ	S	
Approach Delay		6.2	6.7		24.7		
Approach LOS		⋖	4		O		
Intersection Summary							
Area Type: Of	Other						
th: 70							
Actuated Cycle Length: 70							
Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	phase 2:	EBTL and	i 6:WBT,	Start of G	reen		
Natural Cycle: 40							
Control Type: Actuated-Coordinated	linated						
Maximum v/c Ratio: 0.64							
Intersection Signal Delay: 8.5				드	Intersection LOS: A	-0S: A	
Intersection Capacity Utilization 43.4%	n 43.4%			2	U Level o	ICU Level of Service A	
Analysis Period (min) 15							

Splits and Phases: 1: Maple Road & Millersport Hwy SB



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 2: Maple Road & Millersport Hwy NB

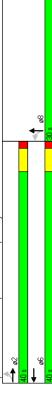
	^	†	<u> </u>	<b>/</b>	ţ	1	•	<b>—</b>	•	٠	<b>→</b>	*
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<b>y</b> -	₩			4₽		۳	4				
Volume (vph)	16	938	0	0	1026	29	16	0	466	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	90,		0	0		0	0 ,		0	0		0
Storage Lanes	- :		0 1	0 6		0 6	- i		0 1	0 8		0 10
Taper Length (#)	3 2	0.95	100	100	0.95	25	100	100	100	1 25	100	1 00
듄					966.0			0.850				
Fit Protected	0.950						0.950					
Satd. Flow (prot)	1770	3539	0	0	3525	0	1770	1583	0	0	0	0
Fit Permitted	0.144						0.950					
Satd. Flow (perm)	268	3539	0	0	3525	0	1770	1583	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					9			69				
Link Speed (mph)		42			42			8			30	
Link Distance (fl)		654			1770			319			263	
Travel Time (s)		6.6			26.8			7.3			0.9	
Peak Hour Factor	0.91	0.91	0.91	0.87	0.87	0.87	0.84	0.84	0.84	0.92	0.92	0.92
Adj. Flow (vph)	107	1031	0	0	1179	33	108	0	222	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	107	1031	0	0	1212	0	108	222	0	0	0	0
Enter Blocked Intersection	%	No No	No	8	8	No	9	8	8	8	9	8
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		6	12		6	15		6	15		6
Number of Detectors	-	2			2		<del>-</del>	2				
Detector Template	Left	Thr			Thru		Left	Thr				
Leading Detector (ft)	20	100			100		20	100				
Trailing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0	0				
Detector 1 Size(ft)	20	9			9		20	9				
Detector 1 Type	CI+Ex	CI+Ex			CI+Ex		CI+Ex	CI+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(ft)		94			94			8				
Detector 2 Size(ft)		9			9			9				
Detector 2 Type		CI+EX			CI+EX			CI+EX				
Detector 2 Channel					0			0				
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Perm	•					Perm	c				
Protected Phases	c	7			9		c	∞				
Permitted Phases	7	•					∞ α	•				
								0				

Synchro 7 - Report Page 3

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 2: Maple Road & Millersport Hwy NB

Ame Group         EBI         EBI         EBI         WBI         WBI         WBI         NBI         NBI         SBI         S		^	†	<u> </u>	<b>/</b>	ļ	4	€	<b>←</b>	•	٠	<b>→</b>	•
(s) 1.0 1.0 4.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
(\$) 6.1 0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Switch Phase												
(s) 61 61 01 00 00 00 00 00 00 00 00 00 00 00 00	Minimum Initial (s)	1.0	1.0			4.0		1.0	1.0				
1,000   0.	Minimum Split (s)	6.1	6.1			9.1		6.2	6.2				
S71%   S71%   O0%   O0%   S71%   O0%   42.9%   42.9%   O0%	Total Split (s)	40.0	40.0		0.0	40.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0
9 25.4 25.4 9 3.2 3.2 1 1 4.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1 4.6 4.6 4.0 4.0 4.0 1 1 4.0 4.6 4.6 4.0 4.0 1 0.0 3.0 3.0 1 0.18 0.93 2 16.2 44.4 2 16.2 44.4 B D D B D B D B B D B B D B B D B B D B B D B B D B B D B B D B B D B B D B B D B B D B B D B B D B B D B B B B D B B B D B B B B D B B B B D B B B B D B B B B D B B B B D B B B B D B B B B D B B B B D B B B B D B B B B D B B B B D B B B B D B B B B B D B B B B B B B B B B B B D B	Total Split (%)	57.1%	57.1%		%0:0	57.1%	%0.0	45.9%	42.9%	%0:0	%0.0	%0:0	%0.0
9 3.2 3.2 2 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4	Maximum Green (s)	34.9	34.9			34.9		25.4	25.4				
2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Yellow Time (s)	3.9	3.9			3.9		3.2	3.2				
.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	All-Red Time (s)	1.2	1.2			1.2		1.4	1.4				
.1 4.0 4.6 4.0 4.0 4.0 .0 3.0 3.0 .0 None None .9 24.4 24.4 .9 24.4 24.4 .2 16.2 44.4 .2 16.2 44.4 .3 9.8 .5 9 39.8 .5 9 39.8 .5 9 90.0 .5 16.2 44.4	Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 3.0 10 8.4 1.9 2.4 1.4 1.0 1.8 1.0 1.8 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Total Lost Time (s)	2.1	2.1		4.0	2.1	4.0	4.6	4.6	4.0	4.0	4.0	4.0
.0 3.0 None P 19 24.4 0.35 27 0.18 0.18 0.18 0.19 2.2 16.2 0.0 0.0 0.2 2 16.2 2 16.2 2 16.2 2 16.2 2 16.2 2 2 16.2 2 2 16.2 2 2 16.2 2 2 2 16.2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Lead/Lag												
in None None None None None None None Non	Lead-Lag Optimize?												
lin None N 1.9 244 2.4 244 2.1 0.18 2.2 16.2 2.2 16.2 B B B B.2.2 B B C.2 Citon LOS: C	Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
9 24.4 51 0.35 57 0.18 .0 0.0 .2 16.2 B B B B B B B Cation LOS: C	Recall Mode	C-Min	C-Min			C-Min		None	None				
57 0.35 57 0.18 6.2 16.2 6.0 0.0 7.2 16.2 8 B B 8 B 8 Cation LOS: C	Act Effct Green (s)	35.9	35.9			35.9		24.4	24.4				
57 0.18 2 16.2 0.0 0.0 2.2 16.2 B B B 2.2 B B Control Cost Control Cost Cost Cost Cost Cost Cost Cost Cost	Actuated g/C Ratio	0.51	0.51			0.51		0.35	0.35				
2 16.2 .0 0.0 .0 0.0 .2 16.2 .2 B .2 B .2 Citon LOS: C	v/c Ratio	0.78	0.57			19.0		0.18	0.93				
.0 0.0 .2 16.2 .8 B B .8 B .9 Cition LOS: C	Control Delay	52.4	11.2			15.2		16.2	44.4				
2 16.2 B B B B Carlon LOS: C	Queue Delay	0.0	0.0			0.0		0.0	0.0				
B B B B B C Cilon LOS: C Velof Service D	Total Delay	52.4	11.2			15.2		16.2	44.4				
B B Ifon LOS: C vel of Service D	FOS	۵	В			В		В	Ω				
Approach LOS B B B D  Intersection Summany Area Type: Cycle tength: 70 Actualed Cycle: 50 Control Type: Actualed-Coordinated Maximum vic Ratio 49.3 Intersection Signal Delay: 20.6 Intersection Capacity Utilization 75.8% ICU Level of Service D Analysis Period (min) 15.	Approach Delay		15.1			15.2			39.8				
Area Type: Cycle Length: 70 Actualed Cycle Length: 70 Cloric Lype: Control Type: Actualed Coordinated Maximum vic Ratio 0.93 Intersection Signal Delay: 20.6 Intersection Capacity Utilization 75.8% ICU Level of Service D Analysis Period (min) 15.	Approach LOS		В			В			D				
Area Type: Cycle Length: 70 Actualed Cycle Length: 70 Actualed Cycle Length: 70 Control Type: Actualed-Coordinated Maximum VR Raidor 0.93 Intersection Signal Delay: 206 Intersection Capacity Utilization 75.8% Inchese Control Type: Actualed Coordinated Maximum VR Raidor 0.93 Intersection Capacity Utilization 75.8% Intersection Capacity Utilization 75.8% Intersection Capacity Utilization 75.8% Intersection Capacity Utilization 75.8%	Intersection Summary												
Cycle Length: 70 Actuated Cycle Length: 70 Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green Offset: 50 Control Type: Actuated-Coordinated Maximum with Railor 0.93 Intersection Signal Delay: 20.6 Intersection Capacity Utilization 75.8% Intersection Capacity Utilization 75.8% Intersection Capacity Utilization 75.8% Intersection Capacity Utilization 75.8%		Other											
Actualed Cycle Length: 70  Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green  Natural Cycle: 50  Control Type: Actualed-Coordinated  Maximum vic Ratio 0.93  Intersection Signal Delay: 20.6  Intersection Capacity Utilization 75.8%  Inclu Level of Service D  Analysis Period (min) 15	Cycle Length: 70												
Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green Natural Cycles: 50 Control Type: Actuated-Coordinated Maximum wic Ratio: 0,93 Intersection Signal Delay: 20,6 Intersection Capacity Utilization 75.8% Intersection Capacity Utilization 75.8% Intersection Capacity Utilization 75.8% Intersection Capacity Utilization 75.8%	Actuated Cycle Length: 70												
Natural Cycle: 50 Control Type: Actualed-Coordinated Maximum vic Ratio: 0.93 Intersection Signal Delay: 20.6 Intersection Capacity Utilization 75.8% Inchese of Service D Analysis Period (min) 15	Offset: 5 (7%), Referenced t	to phase 2:	EBTL and	6:WBT, !	Start of C	reen							
cordinated : 20.6 Ization 75.8%	Natural Cycle: 50												
: 20.6 Ization 75.8%	Control Type: Actuated-Coo	ordinated											
: 20.6 ization 75.8%	Maximum v/c Ratio: 0.93												
ization 75.8%	Intersection Signal Delay: 20	9.0			드	tersection	LOS: C						
Analysis Period (min) 15	Intersection Capacity Utiliza	Ition 75.8%			$\subseteq$	:U Level o	f Service	Q					
	Analysis Period (min) 15												

Splits and Phases: 2: Maple Road & Millersport Hwy NB



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 3: Maple Road & Maplemere Road

	\	Ť	~	-	,	/	•	_	•	٠	<b>→</b>	*
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	-	<b>₩</b>		۳	₩			4			4	
Volume (vph)	36	1266	32	21	944	62	22	.0	12	11	. ∞	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	70		0	0		0	0		0
Storage Lanes	-		0	-		0	0		0	0		0
Taper Length (ft)	20		22	20		25	25		25	22		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
£		966.0			0.991			0.952			0.964	
It Protected	0.950			0.950				0.969			896.0	
Satd. Flow (prot)	1770	3525	0	1770	3507	0	0	1718	0	0	1738	0
-It Permitted	0.212			0.150				0.786			0.767	
Satd. Flow (perm)	395	3525	0	279	3507	0	0	1394	0	0	1377	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			14			19			25	
-ink Speed (mph)		45			45			93			30	
-ink Distance (fl)		1770			1106			378			402	
Fravel Time (s)		26.8			16.8			9.8			9.1	
Peak Hour Factor	0.94	0.94	0.94	0.87	0.87	0.87	0.62	0.62	0.62	0.81	0.81	0.81
Adj. Flow (vph)	89	1347	37	24	1085	71	32	0	19	95	10	88
Shared Lane Traffic (%)												
-ane Group Flow (vph)	88	1384	0	24	1156	0	0	24	0	0	143	0
Inter Blocked Intersection	8	8	8	S N	%	8	9	9	%	8	9	8
-ane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Furning Speed (mph)	15		6	15		6	15		6	12		6
Number of Detectors	_	2		-	2		<del>-</del>	2		_	2	
Detector Template	Left	Thru		Left	Thru		Left	Thr		Left	Thru	
eading Detector (ft)	70	100		20	100		20	100		20	100	
railing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	8	9		20	9		70	9		8	9	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0:0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+Ex			CI+EX			CI+Ex			CI+Ex	
Detector 2 Channel Detector 2 Extend (s)		0.0			0.0			00			0.0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			9			∞			4	
Permitted Phases	0			4			o			,		
	,			0			0			4		

Synchro 7 - Report Page 5

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 3: Maple Road & Maplemere Road

	^	†	/	<b>&gt;</b>	ţ	4	•	<b>←</b>	•	۶	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	0.6	0.6		0.6	0.6		27.0	27.0		27.0	27.0	
Total Split (s)	47.0	47.0		47.0	47.0	0.0	28.0	28.0	0.0	28.0	28.0	0.0
Total Split (%)	62.7%	62.7%	%0.0	62.7%	62.7%	%0.0	37.3%	37.3%	%0:0	37.3%	37.3%	%0.0
Maximum Green (s)	42.0	42.0		42.0	45.0		23.0	23.0		23.0	23.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	2.0	2.0		2.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)							7.0	7.0		7.0	7.0	
Flash Dont Walk (s)							15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)							0	0		0	0	
Act Effct Green (s)	34.3	34.3		34.3	34.3			6.7			10.3	
Actuated g/C Ratio	0.68	89.0		99.0	99.0			0.19			0.20	
v/c Ratio	0.14	0.58		0.13	0.48			0.19			0.47	
Control Delay	9.9	7.7		7.2	9.9			15.5			22.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	9.9	7.7		7.2	9.9			15.5			22.5	
SOT	A	⋖		V	A			В			ပ	
Approach Delay		7.6			6.7			15.5			22.5	
Approach LOS		∢			٧			В			O	
Intersection Summary												
Area Type:	Other											
Cycle Length: 75												
Actuated Cycle Length: 50.	<i>د</i> ن											
Natural Cycle: 60												
Control Type: Actuated-Uncoordinated	coordinated											
Maximum v/c Ratio: 0.58												
Intersection Signal Delay: 8.1	3.1			드	Intersection LOS: A	LOS: A						
Intersection Capacity Utilization 52.2%	ation 52.2%			⊇	CU Level of Service A	f Service	⋖					
Analysis Period (min) 15												

Splits and Phases: 3: Maple Road & Maplemere Road



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 4: Maple Road & Donna Lea Blvd

•	NBR		21	1900	0	0	25	1.00			0		0				0.82	26		0	No No	Right					1.00	6				(	A activida of cond
•	NBL	>	12	1900	0	<del>-</del>	25	1.00	0.914	0.982	1672	0.982	1672	30	322	8.1	0.82	12		41	2	Left	12	0	16		1.00	12	Stop				0/0
ţ	WBT	‡	1015	1900				0.95			3539		3539	45	1000	15.2	0.77	1318		1318	8	Left	12	0	16	Yes	1.00		Free			9	
<b>&gt;</b>	WBL	je-	73	1900	20	-	22	1.00		0.950	1770	0.950	1770				0.77	30		30	%	Left					1.00	15					
<i>&gt;</i>	EBR		59	1900	0	0	25	0.95			0		0				0.73	40		0	8	Right					1.00	6					
†	EBT	₩	1326	1900				0.95	0.997		3529		3529	45	1106	16.8	0.73	1816		1856	N <sub>o</sub>	Left	12	0	16	Yes	1.00		Free		Other	i,	70 V V V
	Lane Group	Lane Configurations	Volume (vph)	Ideal Flow (vphpl)	Storage Length (ft)	Storage Lanes	Taper Length (ft)	Lane Util. Factor	Frt	Flt Protected	Satd. Flow (prot)	Flt Permitted	Satd. Flow (perm)	Link Speed (mph)	Link Distance (fl)	Travel Time (s)	Peak Hour Factor	Adj. Flow (vph)	Shared Lane Traffic (%)	Lane Group Flow (vph)	Enter Blocked Intersection	Lane Alignment	Median Width(ft)	Link Offset(ft)	Crosswalk Width(ft)	Two way Left Turn Lane	Headway Factor	Turning Speed (mph)	Sign Control	Intersection Summary		Control Type: Unsignalized	Inforcection Capacity   Hilization // 4%

Synchro 7 - Report Page 7 Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 4: Maple Road & Donna Lea Blvd

																																							V		
•	NBR		21			0.82	76									0.75	978			252	6.9		3.3	95	264	NB 1	40	15	56	248	0.16	14	22.3	ပ	22.3	O			Service		
•	NBL	>	12	Stop	%0	0.82	15									0.75	2555	1836	719	2410	8.9	2.8	3.5	88	125	WB 3	629	0	0	1700	0.39	0	0.0						ICU Level of Service		
ţ	WBT	ŧ	1015	Free	%0	0.77	1318						TWLTL	2												WB 2	629	0	0	1700	0.39	0	0.0						0	!	
<b>&gt;</b>	WBL	<u>,                                    </u>	23			0.77	30									0.75	1856			1483	4.1		2.2	91	339	WB 1	30	30	0	336	0.00	_	9.91	ပ	0.4			0.4	47.6%	15	
<u>/</u>	EBR		53			0.73	40																			EB2	645	0	40	1700	0.38	0	0.0								
†	EBT	₩.	1326	Free	%0	0.73	1816						TWLTL	2	1106											EB 1	1211	0	0	1700	0.71	0	0.0		0.0				tion		
	Movement	Lane Configurations	Volume (veh/h)	Sign Control	Grade	Peak Hour Factor	Hourly flow rate (vph)	Pedestrians	Lane Width (ft)	Walking Speed (ft/s)	Percent Blockage	Right turn flare (veh)	Median type	Median storage veh)	Upstream signal (ft)	pX, platoon unblocked	vC, conflicting volume	vC1, stage 1 conf vol	vC2, stage 2 conf vol	vCu, unblocked vol	tC, single (s)	tC, 2 stage (s)	tF (s)	b0 dueue free %	cM capacity (veh/h)	Direction, Lane #	Volume Total	Volume Left	Volume Right	SSH	Volume to Capacity	Queue Length 95th (ft)	Control Delay (s)	Lane LOS	Approach Delay (s)	Approach LOS	Intersection Summary	Average Delay	Intersection Capacity Utilization	Analysis Period (min)	

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 5: Maple Road & Audubon Golf Club

Part													
1	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
1900   1389   14   8   1066   2   10   0   6   0   0     1900	Lane Configurations	<u>,                                    </u>	₩.		<u>,                                    </u>	₩.			4			4	
1900 1900 1900 1900 1900 1900 1900 1900	Volume (vph)	0	1389	14	∞	1065	2	10	0	9	0	0	0
100   0   50   0   0   0   0   0   0   0	Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Storage Length (ft)	100		0	20		0	0		0	0		0
25 25 25 25 25 25 25 25 25 25 25 25 25 2	Storage Lanes	-		0	-		0	0		0	0		0
1.00 0.95 0.95 1.00 0.95 0.95 1.00 1.00 1.00 1.00 1.00 0.909 0.950 0.950 0.970	Taper Length (ft)	22		22	25		25	25		25	22		25
1863   3536   0,950   0,950   0,970	Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
1863   3536   0   1770   3539   0   0   1713   0   0   1863     1863   3536   0   1770   3539   0   0   1713   0   0   1863     1863   3536   0   1770   3539   0   0   1713   0   0   1863     45	Frt		0.999						0.948				
1863   3536   0   1770   3539   0   0   1713   0   0   1863     1863   3536   0   1770   3539   0   0   1713   0   0   1863     45	Fit Protected				0.950				0.970				
1863   3536   0   1770   3539   0   0   1713   0   0   1863     45	Satd. Flow (prot)	1863	3536	0	1770	3539	0	0	1713	0	0	1863	0
1863 3536 0 1770 3539 0 0 1713 0 0 1863 30 45 469 30 464 469 30 464 469 469 469 469 469 469 469 469 469	Fit Permitted				0.950				0.970				
446   556   30   30   30   30   30   30   30   3	Satd. Flow (perm)	1863	3536	0	1770	3539	0	0	1713	0	0	1863	0
146   556   469   111	Link Speed (mph)		45			45			30			30	
0.92 0.92 0.92 0.93 0.93 0.61 0.61 0.62 0.92 0.92 0.93 0.93 0.61 0.61 0.61 0.62 0.92 0.92 0.93 0.93 0.61 0.61 0.61 0.62 0.92 0.92 0.93 0.93 0.94 0.94 0.94 0.92 0.93 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94	Link Distance (ft)		446			929			469			11	
0.92 0.92 0.93 0.93 0.93 0.61 0.61 0.61 0.92 0.92 0.92 0.92 0.92 0.93 0.93 0.93 0.61 0.61 0.61 0.92 0.92 0.92 0.93 0.93 0.93 0.93 0.61 0.61 0.61 0.92 0.92 0.92 0.93 0.93 0.93 0.93 0.63 0.61 0.61 0.61 0.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Travel Time (s)		8.9			8.4			10.7			2.5	
0 1510 15 9 1145 2 16 0 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.61	0.61	0.61	0.92	0.92	0.92
on No No No No No No No No No No No No No	Adj. Flow (vph)	0	1510	15	6	1145	2	16	0	10	0	0	0
0 1525 0 9 1147 0 0 26 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Shared Lane Traffic (%)												
No	Lane Group Flow (vph)	0	1525	0	6	1147	0	0	26	0	0	0	0
Left   Left   Right   Left   Right   Left	Enter Blocked Intersection	2	2	2	8	2	8	2	8	8	2	8	8
12 12 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
16 16 16 16 16 16 16 16 16 16 16 16 16 1	Median Width(ft)		12			12			0			0	
16 16 16 16 16 16 16 16 16 16 16 16 16 1	Link Offset(ft)		0			0			0			0	
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Crosswalk Width(ft)		16			16			16			16	
1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00	Two way Left Turn Lane		Yes			Yes							
15 9 15 9 15 0 15 Other Stone A IS ICU Level of Service A ICU Level of Service A	Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Free         Stop           Other         ICU Level of Service A	Turning Speed (mph)	15		6	15		6	15		6	15		6
Other ation 48.8%	Sign Control		Free			Free			Stop			Stop	
Other stion 48.8%	Intersection Summary												
ution 48.8%		Other											
ızatıon 48.8%	Control Type: Unsignalized	3			3		-						
	Intersection Capacity Utilizat	ion 48.8%			<u> </u>	) Level o	r Service	<					

Lanes, Volumes, Timings Synchro 7 - Report SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 5: Maple Road & Audubon Golf Club

,	4	†	<i>&gt;</i>	<b>&gt;</b>	ţ	4	•	•	•	۶	<b>→</b>	•
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<b>,</b> -	4₽		F	44			4			4	
Volume (veh/h)	0	1389	14	' ω	1065	2	10	0	9	0	0	0
Sign Control		Free			Free			Stop			Stop	
		%0			%			%0			%0	
	0.92	0.92	0.92	0.93	0.93	0.93	0.61	0.61	0.61	0.92	0.92	0.92
Hourly flow rate (vph)	0	1510	15	6	1145	2	16	0	10	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	_	TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
	1147			1525			2107	2682	762	1928	2688	574
vC1, stage 1 conf vol							1517	1517		1163	1163	
vC2, stage 2 conf vol							280	1165		292	1525	
od vol	1147			1525			2107	2682	762	1928	2688	574
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
	100			86			98	100	4	100	100	100
cM capacity (veh/h)	902			433			118	143	347	172	138	462
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	0	1007	518	6	763	384	26	0				
Volume Left	0	0	0	6	0	0	16	0				
ne Right	0	0	15	0	0	2	10	0				
	1700	1700	1700	433	1700	1700	157	1700				
	0.00	0.59	0.30	0.05	0.45	0.23	0.17	0.00				
Queue Length 95th (ft)	0	0	0	2	0	0	15	0				
Control Delay (s)	0.0	0.0	0.0	13.5	0.0	0:0	32.5	0.0				
Lane LOS				В			Ω	⋖				
Approach Delay (s)	0.0			0.1			32.5	0.0				
Approach LOS							Ω	⋖				
Intersection Summary												
Average Delay			0.4									
Intersection Capacity Utilization			48.8%	೨	U Level o	ICU Level of Service			∢			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 6: Maple Road & North Forest Road

					FO.	00/4/						
ane Group	FB	FBT	FBR	WBI	MW.	WBR	NBI	NBT	NBR	SBI	SBT	SBR
ane Configurations	4	¥¥	*		¥¥	*	K	*	*	<b>*</b>	4	5
Johnso (mb)	100	1056	146	220	705	- 0	90	254	<b>-</b> 100	140	207	127
doal Flow (mbb)	1000	1000	1000	1000	1000	1000	1000	1001	1000	1000	1000	1001
dear row (vprpl)	415	2	200	215	2	150	125	3	220	250	200	250
Storage Length (ii)	+ -		220	0 -		50	123		77	230		7
Caner I enrith (ft)	6		- 11	- 09		- 25	95		25	6		25
ape Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ţ.			0.850			0.850			0.850			0.850
-It Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
-It Permitted	0.194			0.093			0.168			0.170		
Satd. Flow (perm)	361	3539	1583	173	3539	1583	313	1863	1583	317	1863	1583
Right Turn on Red			Yes			S S			Yes			Yes
Satd. Flow (RTOR)			137						25			63
ink Speed (mph)		45			45			32			32	
ink Distance (ft)		1705			820			529			809	
ravel Time (s)		25.8			12.4			10.3			11.8	
Peak Hour Factor	0.92	0.92	0.92	0.00	06:0	06:0	96:0	96:0	96.0	0.87	0.87	0.87
4dj. Flow (vph)	222	1148	159	264	883	107	100	369	214	194	445	157
Shared Lane Traffic (%)												
-ane Group Flow (vph)	222	1148	159	264	883	107	100	369	214	194	445	157
Enter Blocked Intersection	S	8	8	8	2	2	2	8	8	8	8	2
ane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
wo way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
'urning Speed (mph)	15		6	15		6	15		6	15		6
Number of Detectors	-	2	-	-	2	-	_	2	_	<b>—</b>	2	_
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
eading Detector (ft)	70	100	70	20	100	20	70	100	20	70	100	20
railing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	70	9	20	20	9	20	20	9	20	20	9	8
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+EX
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
urn Type	pm+pt	•	vo+mq	pm+pt	,	vo+mq	pm+pt	•	vo+mq	pm+pt		pm+ov
Protected Phases	2	2	m i		9	_	m	∞	-	_	4	2
Permitted Phases	2		2	9		9	∞ •		∞ ·	4		4
Detector Phase	വ	2	c	<del>-</del>	9	7	3	∞	_	7	4	2

Synchro 7 - Report Page 11

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 6: Maple Road & North Forest Road

	١	<b>†</b>	<b>/</b>	<b>/</b>	ļ	1	•	<b>—</b>	•	۶	<b>→</b>	*
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Winimum Initial (s)	1.0	4.0	1.0	1.0	4.0	1.0	1.0	4.0	1.0	1.0	4.0	1.0
Minimum Split (s)	7.0	35.0	7.0	7.0	32.0	7.0	7.0	35.0	7.0	7.0	35.0	7.0
Total Split (s)	20.0	47.0	11.0	23.0	20.0	15.0	11.0	35.0	23.0	15.0	39.0	20.0
Total Split (%)	16.7%	39.2%	9.5%	19.2%	41.7%	12.5%	9.2%	29.2%	19.2%	12.5%	32.5%	16.7%
Maximum Green (s)	14.0	41.0	2.0	17.0	44.0	0.6	2.0	29.0	17.0	0.6	33.0	14.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
_ead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehide Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		22.0			22.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	52.1	39.7	20.8	58.7	43.0	58.1	31.4	26.4	48.1	39.5	30.4	48.9
Actuated g/C Ratio	0.45	0.35	0.44	0.51	0.37	0.51	0.27	0.23	0.42	0.34	0.26	0.43
v/c Ratio	0.70	0.94	0.20	0.86	0.67	0.13	0.67	98.0	0.32	0.87	0.00	0.22
Control Delay	29.6	52.1	9.9	55.9	33.6	16.7	51.4	63.5	21.1	64.7	64.3	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.6	52.1	9.9	55.9	33.6	16.7	51.4	63.5	21.1	64.7	64.3	13.1
TOS	U	۵	A	ш	ပ	В	Ω	ш	O	ш	ш	В
Approach Delay		44.0			36.8			48.4			54.3	
Approach LOS		Ω			Ω			Ω			Ω	
ntersection Summary												
Area Tyne:	Other											

Area Type:
Cycle Length: 120
Cycle Length: 115
Natural Cycle: 95
Control Type: Actuated Uncoordinated
Maximum wic Ratio: 0.94
Intersection Signal Delay: 44.5
Intersection Capacity Utilization 90.4%
Analysis Period (min) 15

Intersection LOS: DICU Level of Service E

 Image: 10 molecular control of the control of th

Splits and Phases: 6: Maple Road & North Forest Road

Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 7: Sheridan Drive & Mill Street

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-ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
-ane Configurations	*	₩		<u>,                                    </u>	₩		۴	2		r	\$	
Volume (vph)	14	1364	24	121	1391	53	149	23	148	34	89	14
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	150		0	40		0	75		0
Storage Lanes	-		0	-		0	-		0	-		0
Taper Length (ft)	92		22	09		25	25		25	22		25
-ane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1:00	1.00	1.00
-t		0.997			0.994			0.890			0.975	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3529	0	1770	3518	0	1770	1658	0	1770	1816	0
It Permitted	0.089			0.081			0.597			0.608		
Satd. Flow (perm)	166	3529	0	151	3518	0	1112	1658	0	1133	1816	0
Right Turn on Red			No No			Yes			9			Yes
Satd. Flow (RTOR)					4						00	
-ink Speed (mph)		45			45			9			30	
-ink Distance (ft)		2782			776			838			362	
Fravel Time (s)		42.2			14.8			19.0			8.2	
Peak Hour Factor	0.84	0.84	0.84	0.92	0.92	0.92	0.83	0.83	0.83	0.77	0.77	0.77
Adj. Flow (vph)	11	1624	53	132	1512	28	180	99	178	4	88	9
Shared Lane Traffic (%)												
-ane Group Flow (vph)	11	1653	0	132	1570	0	180	242	0	44	106	0
Enter Blocked Intersection	8	8	8	8	8	8	2	2	2	8	8	2
ane Alignment	Left	Left	Right	Left	Left	Right	Left	Fet	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
ink Offset(ft)		0			0			0			0	
Crosswalk Width(tt)		16			16			16			16	
Iwo way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	5		6	12		6	15		6	<u>5</u>		6
Number of Detectors		2		<del>-</del> .	2		<del>-</del> -	2			2	
Detector Template	Left	Thr.		Left	Thru		E E			lett	Thru	
eading Detector (ft)	20	100		20	100		20	100		20	100	
railing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	2	9		50	9		50	9		2	9	
Detector 1 Type	CI+EX	CI+Ex		CI+Ex	CI+EX		CI+EX	CI+EX		CI+EX	CI+Ex	
Detector 1 Channel	d	d		0	0		0	0		d		
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0:0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+EX			CH-EX			CI+EX			CI+Ex	
Detector 2 Channel Detector 2 Extend (s)		0.0			0.0			0:0			0.0	
Turn Type	Perm			pm+pt			pm+pt			Perm		
Protected Phases		2		-	9		3	∞			4	
Permitted Phases	2			9			00			_		
							,			+		

Synchro 7 - Report Page 13

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 7: Sheridan Drive & Mill Street

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		1.0	4.0		1.0	4.0		4.0	4.0	
Minimum Split (s)	28.3	28.3		6.2	28.3		6.2	34.2		34.2	34.2	
Total Split (s)	20.0	20.0	0.0	15.0	65.0	0:0	25.0	70.0	0.0	42.0	45.0	0.0
Total Split (%)	37.0%	37.0%	%0.0	11.1%	48.1%	%0.0	18.5%	21.9%	%0.0	33.3%	33.3%	%0.0
Maximum Green (s)	44.5	44.5		10.7	59.5		19.8	64.8		39.8	39.8	
Yellow Time (s)	4.3	4.3		3.2	4.3		3.2	3.2		3.2	3.2	
All-Red Time (s)	1.2	1.2		1.	1.2		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	2.5	5.5	4.0	4.3	5.5	4.0	5.2	5.2	4.0	5.2	5.2	4.0
Lead/Lag	Lag	Lag		Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0			7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0			15.0			22.0		22.0	22.0	
Pedestrian Calls (#/hr)	0	0			0			0		0	0	
Act Effct Green (s)	45.1	45.1		2.09	59.5		64.8	64.8		39.8	39.8	
Actuated g/C Ratio	0.33	0.33		0.45	0.44		0.48	0.48		0.29	0.29	
v/c Ratio	0.30	1.40		0.70	1.01		0.29	0.30		0.13	0.20	
Control Delay	51.5	221.1		45.9	63.0		21.7	22.7		36.4	34.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	51.5	221.1		45.9	63.0		21.7	22.7		36.4	34.1	
FOS	۵	ш		۵	ш		U	ပ		۵	ပ	
Approach Delay		219.4			61.7			22.3			34.8	
Approach LOS		ш			ш			ပ			O	
Intersection Summary												
Area Type:	Other											
Cycle Length: 135												
Actuated Cycle Length: 135												
Natural Cycle: 100												
Control Type: Semi Act-Uncoord	coord											
Maximum v/c Ratio: 1.40												
Intersection Signal Delay: 123.2	23.2			프	Intersection LOS: F	LOS: F						
Intersection Capacity Utilization 77.2%	ation 77.2%			2	ICU Level of Service D	f Service	D					
Analysis Period (min) 15												

Splits and Phases: 7: Sheridan Drive & Mill Street

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Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 8: Sheridan Drive & North Forest Road

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	^	†	<u> </u>	<b>/</b>	ţ	1	•	<b>—</b>	•	۶	<b>→</b>	*
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	‡	*	<i>y</i> -	₩		*	*	*-	*	‡	*-
Volume (vph)	148	1341	291	305	1190	41	293	468	82	24	497	207
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	405		170	260		0	180		265	180		200
Storage Lanes	-		<del>-</del>	<del></del>		0	-		Ψ-	Ψ-		,
Taper Length (ft)	200		22	200		25	25		25	22		25
ane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00
Ŧ.			0.850		0.995				0.850			0.850
It Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3522	0	1770	1863	1583	1770	3539	1583
-It Permitted	0.073			690.0			0.183			0.173		
Satd. Flow (perm)	136	3539	1583	129	3522	0	341	1863	1583	322	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			136		3				69			218
Link Speed (mph)		42			45			4			32	
Link Distance (ft)		1668			2219			547			354	
ravel Time (s)		25.3			33.6			9.3			6.9	
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.89	0.89	0.89	0.95	0.95	0.95
Adj. Flow (vph)	157	1427	310	328	1280	44	329	526	92	22	523	218
Shared Lane Traffic (%)												
-ane Group Flow (vph)	157	1427	310	328	1324	0	329	526	92	22	523	218
Enter Blocked Intersection	No No	8	2	8	8	9	N <sub>o</sub>	N <sub>o</sub>	8	9	No No	8
-ane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12	,		12	,		12	,		12	,
ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
wo way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1:00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
urning Speed (mph)	15		6	15		6	15		6	15		6
Number of Detectors	_	2	-	_	2		_	2	_	-	2	_
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
eading Detector (ft)	20	100	20	70	100		70	100	20	20	100	20
railing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	70	9	20	20	9		70	9	20	20	9	8
Detector 1 Type	CI+EX	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+EX
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Furn Type	pm+pt		Perm	pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases	-	9		2	2		7	4		c	∞	
Permitted Phases	9		9	2			4		4	∞		∞
Detector Phase	-	9	9	2	2		7	4	4	3	00	∞
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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 8: Sheridan Drive & North Forest Road

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.3	27.9	27.9	8.3	27.9		21.0	27.2	27.2	8.3	27.2	27.2
Total Split (s)	30.0	0.09	0.09	20.0	20.0	0.0	25.0	40.0	40.0	20.0	35.0	35.0
Total Split (%)	21.4%	42.9%	45.9%	14.3%	35.7%	%0.0	17.9%	28.6%	28.6%	14.3%	25.0%	25.0%
Maximum Green (s)	25.7	54.9	54.9	15.7	44.9		20.7	34.9	34.9	15.7	29.9	29.9
Yellow Time (s)	3.2	3.9	3.9	3.2	3.9		3.2	3.2	3.2	3.2	3.2	3.2
All-Red Time (s)	<u>[</u>	1.2	1.2	<del>[</del>	1.2		<del>[</del> -	1.9	1.9	<del>[</del> -	1.9	1.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.3	2.1	2.1	4.3	5.1	4.0	4.3	2.1	2.1	4.3	2.1	2.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max		None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		15.0	15.0		15.0			15.0	15.0		15.0	15.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	68.7	55.0	55.0	73.2	27.8		51.5	43.8	43.8	33.2	25.7	25.7
Actuated g/C Ratio	0.51	0.40	0.40	0.54	0.43		0.38	0.32	0.32	0.24	0.19	0.19
v/c Ratio	0.70	1.00	0.43	1.27	0.88		0.95	0.88	0.17	0.17	0.78	0.46
Control Delay	45.1	63.5	18.3	180.7	45.0		70.9	61.1	12.8	29.8	61.3	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.1	63.5	18.3	180.7	45.0		70.9	61.1	12.8	29.8	61.3	8.9
TOS	٥	ш	В	ш	۵		ш	ш	В	ပ	ш	۷
Approach Delay		54.6			71.9			59.8			45.4	
Approach LOS		Ω			ш			ш			Ω	
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 135.9	5.9											
Natural Cycle: 125												
Control Type: Actuated-Uncoordinated	coordinated											

Maximum vic Ratio. 12.7 filtersection Signal Delay: 59.6 Intersection Signal Delay: 59.6 Intersection Capacity Utilization 99.6% Analysis Period (min) 15

Intersection LOS: E ICU Level of Service F

Splits and Phases: 8: Sheridan Drive & North Forest Road

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Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 10: Sheridan Drive & Proposed South Driveway

ane Group ane Configurations												
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
	<u>,-</u>	44		r	4₽			4			4	*-
	190	1603	13	2	1558	127	13	0	17	160	0	233
deal Flow (vphpl)	006	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		0	75		0	0		0	0		0
Storage Lanes	<del>-</del>		0	-		0	0		0	0		_
Faper Length (ft)	25		22	25		25	25		25	22		25
ane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
<u>_</u>		0.999			0.988			0.922				0.850
It Protected 0.	0.950			0.950				0.979			0.950	
rot)	1770	3536	0	1770	3497	0	0	1681	0	0	1770	1583
It Permitted 0.	0.950			0.950				0.979			0.950	
Satd. Flow (perm) 1	1770	3536	0	1770	3497	0	0	1681	0	0	1770	1583
ink Speed (mph)		45			45			30			30	
ink Distance (ft)		635			1668			278			241	
Fravel Time (s)		9.6			25.3			6.3			5.5	
ior	0.92	0.87	0.87	0.94	0.94	0.92	0.75	0.92	0.75	0.92	0.92	0.92
Adj. Flow (vph)	207	1843	12	2	1657	138	17	0	23	174	0	253
Shared Lane Traffic (%)												
-ane Group Flow (vph)	207	1858	0	2	1795	0	0	40	0	0	174	253
Enter Blocked Intersection	8	%	9	N <sub>o</sub>	8	2	8	9	8	8	9	S
ane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Furning Speed (mph)	15		6	15		6	12		6	15		6
Sign Control		Free			Free			Stop			Stop	
ntersection Summary												
Area Type: Other	L											
Control Type: Unsignalized												
ntersection Capacity Utilization 83.2%	33.2%			⊡	J Level o	ICU Level of Service E	ш					

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 10: Sheridan Drive & Proposed South Driveway

							-	-				
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u>,                                    </u>	₩.		r	₩			4			÷	*-
Volume (veh/h)	190	1603	13	2	1558	127	13	0	17	160	0	233
Sign Control		Free			Free			Stop			Stop	
Grade		%0			%0			%0			%0	
	0.92	0.87	0.87	0.94	0.94	0.92	0.75	0.92	0.75	0.92	0.92	0.92
ate (vph)	207	1843	15	2	1657	138	17	0	23	174	0	253
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	_	TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)		635										
pX, platoon unblocked				0.79			0.79	0.79	0.79	0.79	0.79	
	1795			1857			3326	4069	676	3094	4008	868
vC1, stage 1 conf vol							2263	2263		1737	1737	
vC2, stage 2 conf vol							1093	1806		1357	2271	
ed vol	1795			1560			3448	4348	389	3119	4270	868
	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
	36			8			0	100	95	0	100	10
cM capacity (veh/h)	340			333			0	0	483	22	23	282
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1	SB2			
Volume Total	207	1228	679	2	1105	169	40	174	253			
	207	0	0	2	0	0	17	174	0			
ne Right	0	0	15	0	0	138	23	0	253			
	340	1700	1700	333	1700	1700	0	22	282			
	0.61	0.72	0.37	0.05	0.65	0.41	158.80	3.13	0.90			
(H)	2	0 6	0 0	- ;	0 0	0 0	<u>.</u>	ב ו	707			
lay (s)	30.7	0.0	0.0	16.0	0.0	0.0	E	Επ	6.69			
Lane LOS	۵			ပ			ш	ш	ш			
Approach Delay (s)	3.1			0.0			E	4112.3				
Approach LOS							ட	ш				
Intersection Summary												
Average Delay			499.3									
Intersection Capacity Utilization Analysis Period (min)			83.2%	೦	ICU Level of Service	f Service			ш			

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 11: Sheridan Drive & Frankhauser Road

		Ì					
-ane Group	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	*	ŧ	<b>₩</b>		r	*	
Volume (vph)	34	1753	1763	41	52	40	
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	105			0	0	20	
Storage Lanes	-			0	-	-	
aper Length (ft)	9			25	25	25	
-ane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
-	C C		0.997		0	0.850	
-It Protected	0.950	000	00.10	c	0.950	200	
Satd. Flow (prot)	0//1	3539	3529	0	0//1	1583	
-It Permitted	0.084	2530	0030	c	0.750	1500	
Satu: Flow (perin) Diabt Turn on Dod	000	2224	2254	0 %	0/1	202	
Right Full Off Red				T GS		£ 5	
alu. Flow (RTOR)		47	4 4		S	17	
ink Speed (lipil)		24.0	64		200		
IIIN Distalice (ii)		15.4	000		140		
Peak Hour Factor	06.0	060	0.91	0.91	0.87	0.82	
Adi. Flow (vph)	88	1948	1937	45	63	49	
Shared Lane Traffic (%)	:			:	;		
ane Group Flow (vph)	88	1948	1982	0	63	46	
Inter Blocked Intersection	9 N	No No	9 8	9	No	No	
-ane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
-ink Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
wo way Left Turn Lane		Yes	Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
urning Speed (mph)	15			6	15	6	
Number of Detectors	<del>-</del>	2	2		<del>-</del>	_	
Detector Template	Left	Thru	Thru		Left	Right	
<ul> <li>eading Detector (ft)</li> </ul>	20	100	100		70	70	
railing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0 .	0		0 8	0 8	
Detector 1 Size(ft)	2 5	9 .	9 .		20	20	
Detector 1 Type	CI+Ex	CI+Ex	CI+EX		CI+EX	CI+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0:0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		9 :	9 :				
Detector 2 Type		X L L	Ž E				
Detector 2 Criainnel			0				
Jefeciul 2 Externa (s)	Porm	9	9			Parm	
Protected Phases	5	2	9		4	3	
Permitted Phases	2		,			4	
2000							

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 11: Sheridan Drive & Frankhauser Road

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CDD	VIOC	1:0	31.1	35.0	29.2%	29.9	3.2	1.9	0.0	5.1			3.0	None	7.0	19.0	0	9.6	80:0	0.34	39.3	0.0	39.3	۵											LOS: A	ICU Level of Service B	
CDI	JUL	1.0	31.1		29.2%			1.9	0.0	5.1			3.0	None	7.0	19.0	0	9.6	0.08	0.44	61.5	0.0	61.5	ш	51.8	D					Yellow				Intersection LOS: A	U Level of	
MDD	NO.			0.0	%0:0				0.0	4.0																					r, Start of				₹	೨	
TOW	200	4.0	40.0	85.0	%8.0/	80.2	3.9	6.0	0.0	4.8			3.0	C-Max	7.0	15.0	0	103.6	98.0	0.65	4.8	0.0	4.8	A	4.8	⋖					nd 6:WB7						
LDT	בח	4.0	40.0	85.0	%8.07	80.2	3.9	6.0	0.0	4.8			3.0	C-Max	7.0	15.0	0	103.6	98.0	0.64	3.9	0.0	3.9	⋖	3.9	⋖					2:EBTL a						
IDI	LDL	4.0	40.0	85.0	70.8%	80.2	3.9	0.9	0.0	4.8			3.0	C-Max	7.0	15.0	0	103.6	98.0	0.28	0.9	0.0	0.9	A				Other			to phase.		inated			n 61.6%	
Crous	Switch Phase	Minimum Initial (s)	Minimum Split (s)	Total Split (s)	Total Split (%)	Maximum Green (s)	Yellow Time (s)	All-Red Time (s)	Lost Time Adjust (s)	Total Lost Time (s)	Lead/Lag	Lead-Lag Optimize?	Vehicle Extension (s)	Recall Mode	Walk Time (s)	Flash Dont Walk (s)	Pedestrian Calls (#/hr)	Act Effct Green (s)	Actuated g/C Ratio	v/c Ratio	Control Delay	Queue Delay	Total Delay	SOT	Approach Delay	Approach LOS	Intersection Summary		Cycle Length: 120	Actuated Cycle Length: 120	Offset: 55 (46%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow	Natural Cycle: 90	Control Type: Actuated-Coordinated	Maximum v/c Ratio: 0.65	Intersection Signal Delay: 5.7	Intersection Capacity Utilization 61.6%	Annual Design Art

Spilts and Phases: 11: Sheridan Drive & Frankhauser Road

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Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 12: Sheridan Drive & I-290 NB

	^	†	>	-	,	/	•	<b>—</b>	L	۶	•	*
ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
ane Configurations	*	444			4413		r	4	*-			
Volume (vph)	322	1377	0	0	1199	654	317	0	432	0	0	0
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	230		120	0		0
Storage Lanes	Ψ-		0	0		0	Ψ-		-	0		0
aper Length (ft)	105		22	25		25	25		25	22		25
ane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	0.95	0.91	0.95	1.00	1.00	1.00
Ĭ.					0.947			0.884	0.850			
It Protected	0.950						0.950	0.989				
Satd. Flow (prot)	1770	5085	0	0	4816	0	1681	1482	1504	0	0	0
It Permitted	0.059						0.950	0.989				
Satd. Flow (perm)	110	5085	0	0	4816	0	1681	1482	1504	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					173			78	78			
ink Speed (mph)		45			45			9			30	
ink Distance (ft)		610			193			830			423	
ravel Time (s)		9.5			5.9			18.9			9.6	
Peak Hour Factor	0.99	0.99	0.99	0.92	0.92	0.92	0.80	0.80	0.80	0.92	0.92	0.92
Adj. Flow (vph)	326	1391	0	0	1303	711	396	0	240	0	0	0
Shared Lane Traffic (%)							18%		44%			
ane Group Flow (vph)	326	1391	0	0	2014	0	325	309	302	0	0	0
Enter Blocked Intersection	8	9	8	S N	8	8	8	8	8	8	8	8
ane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
wo way Left Tum Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
urning Speed (mph)	15		6	15		6	15		6	15		6
Number of Detectors	<del></del>	2			2		<del></del>	2	_			
Detector Template	Left	Thru			Thr		Left	Thr	Right			
eading Detector (ft)	20	100			100		20	100	20			
railing Detector (ft)	0	0			0		0	0	0			
Detector 1 Position(ft)	0	0			0		0	0	0			
Detector 1 Size(ft)	20	9			9		20	9	20			
Detector 1 Type	CI+Ex	CI+Ex			CI+Ex		CI+EX	CI+EX	CI+EX			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		9			9			9				
Detector 2 Type		CI+Ex			CI+EX			CI+EX				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0:0			0.0				
rurn Type	pm+pt						custom		Perm			
Protected Phases		9			7		en e	m	4			
Permitted Phases	9						'n		~			
	,	,						•				

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 12: Sheridan Drive & I-290 NB

Lame Group         EBI         EBI         EBI         WBI         WBI         NBI         NBI         NBI         NBI         SBI		1	†	<i>&gt;</i>	<b>&gt;</b>	ţ	4	•	<b>←</b>	•	۶	<b>→</b>	•
3.0 4.0 4.0 4.0 6.0 6.0 6.0 6.0 1.0 1.3 3.3 4.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
3.0 4.0 4.0 4.0 6.0 6.0 6.0 5.3 5.3 3.3 9 4.0 6.0 6.0 6.0 5.3 5.3 3.3 9 2.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6	Switch Phase												
7.3 33.9	Minimum Initial (s)	3.0	4.0			4.0		0.9	9.0	0.9			
17.15% 75.0 90.0 0.0 69.0 0.0 30.0 30.0 0.0 0.0 0.0 1.75% 75.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Minimum Split (s)	7.3	33.9			27.8		29.0	29.0	29.0			
175% 75.0% 0.0% 57.5% 0.0% 25.0% 25.0% 25.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0%	Total Split (s)	21.0	0.06	0.0	0.0	0.69	0.0	30.0	30.0	30.0	0.0	0.0	0.0
16.7   84.1   63.2   24.8   24.8   24.8   24.8   31.2	Total Split (%)	17.5%	75.0%	%0.0	%0:0	27.5%	%0.0	25.0%	25.0%	25.0%	%0.0	%0:0	0.0%
32 39 39 32 32 32 32 32 32 32 32 32 32 32 32 32	Maximum Green (s)	16.7	84.1			63.2		24.8	24.8	24.8			
1.1 2.0 1.9 2.0 2.0 2.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Yellow Time (s)	3.2	3.9			3.9		3.2	3.2	3.2			
00 00 00 00 00 00 00 00 00 00 00 00 00	All-Red Time (s)	1.	2.0			1.9		2.0	2.0	2.0			
Lead	Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lead	Total Lost Time (s)	4.3	5.9	4.0	4.0	2.8	4.0	5.2	5.2	5.2	4.0	4.0	4.0
Ves         Yes         2.0 <td>Lead/Lag</td> <td>Lead</td> <td></td> <td></td> <td></td> <td>Lag</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Lead/Lag	Lead				Lag							
None CMax   None	Lead-Lag Optimize?	Yes				Yes							
None C-Max	Vehicle Extension (s)	2.0	3.0			3.0		2.0	2.0	2.0			
1.00   1.00	Recall Mode	None	C-Max			C-Max		None	None	None			
hr) 21.0 15.0 hr) 86.2 84.6 63.2 24.3 24.3 24.3 24.3 24.3 24.3 24.3 2	Walk Time (s)		7.0			7.0							
hr) 86.2 8.0 6.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	Flash Dont Walk (s)		21.0			15.0							
86.2 84.6 63.2 24.3 24.3 24.3 (2.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1	Pedestrian Calls (#/hr)		0			0							
0.72 0.70 0.53 0.20 0.20 1.13 0.39 0.77 0.96 0.85 1.11.3 8.6 19.2 86.3 56.5 0.0 0.0 0.0 0.0 0.0 0.121.3 8.6 19.2 86.3 56.5 E A B F E C B B F E C B B F E B H H H H H H H H H H H H H H H H H H H	Act Effct Green (s)	86.2	84.6			63.2		24.3	24.3	24.3			
1.13 0.39 0.77 0.96 0.85 12.13 8.6 19.2 86.3 56.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Actuated g/C Ratio	0.72	0.70			0.53		0.20	0.20	0.20			
1213 8.6 192 86.3 56.5 10.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	v/c Ratio	1.13	0.39			0.77		96.0	0.85	0.82			
12.13 8.6 19.2 86.3 56.5 19.2 86.3 56.5 19.2 86.3 56.5 19.2 86.3 56.5 19.2 86.3 56.5 19.2 86.5 19.2 8.	Control Delay	121.3	9.8			19.2		86.3	29.5	52.7			
121.3 8.6 19.2 86.3 56.5 F A B F E 31.7 19.2 86.3 56.5 C B F E  Mary  Other  Ot	Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0			
F A B F E E     31.7	Total Delay	121.3	9.8			19.2		86.3	299	52.7			
19.2  C B C B Other  Other  ngth: 120  Referenced to phase 2:WBT and 6:EBTL, Start of Yellow 2: 1.13  Delay: 33.1  Intersection LOS: C ity Utilization 83.4%  ICU Level of Service E into 115	SOT	ш	A			В		ш	ш	۵			
C B  Other Other Other Other Other Other Other Seferenced to phase 2:WBT and 6:EBTL, Start of Yellow or 1.13 Delay: 33.1 Intersection LOS: C Delay: 33.4 Intersection LOS: C	Approach Delay		31.7			19.2			9.59				
Other Other Other Other 120 Referenced to phase 2:WBT and 6:EBTL, Start select-Coordinated Delay: 33.1 It lization 83.4%	Approach LOS		S			Ω			ш				
Other  Other  Referenced to phase 2:WBT and 6:EBTL, Start ated-Coordinated Delay: 33.1 It Ulization 83.4%	Intersection Summary												
ngth: 120 referenced to phase 2:WBT and 6:EBTL, Start sated-Coordinated 2: 1.13 Delay: 33.1 It Ulifization 83.4%	Area Type:	Other											
Actualed Cycle Length: 120 Offsets 56 (49%), Referenced to phase 2:WBT and 6:EBTL, Start of Yellow Maximum vic Ratio: 1.13 Intersection Signal Delay; 3.3.1 Intersection Type: Analysis Period (min): 15 Analysis Period (min): 15	Cycle Length: 120												
Offset: 59 (49%), Referenced to phase 2:WBT and 6:EBTL, Start of Yellow Natural Cycle: 90 Control Type: Actuated-Coordinated Maximum vic Ratio: 1.13 Intersection Signal Delay: 33.1 Intersection Cypial Delay: 33.1 Intersection Cypial Delay: 33.4 Analysis Period (min) 15	Actuated Cycle Length: 120	0											
oordinated : 33.1 Ization 83.4%	Offset: 59 (49%), Reference	ed to phase	2:WBT a	nd 6:EBTI	L, Start of	f Yellow							
Sordinated : 33.1 Ization 83.4%	Natural Cycle: 90												
: 33.1 Ization 83.4%	Control Type: Actuated-Coo	ordinated											
: 33.1 Ization 83.4%	Maximum v/c Ratio: 1.13												
ization 83.4%	Intersection Signal Delay: 3	33.1			Ξ	tersection	LOS: C						
Analysis Period (min) 15	Intersection Capacity Utiliza	ation 83.4%			೧	U Level o	f Service	ш					
	Analysis Period (min) 15												
		-											

°° **♦** Splits and Phases: 12: Sheridan Drive & 1290 NB 

Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 13: Sheridan Drive & Harlem Road

	†	<i>&gt;</i>	<b>&gt;</b>	ţ	•	•	
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	*	æ	K.	*	K.	RR	
Volume (vph)	1002	604	463	1053	267	729	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0	215		140	0	
Storage Lanes		-	-		2	2	
Taper Length (ft)		230	100		100	22	
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.88	
Ξ		0.850				0.850	
Fit Protected			0.950		0.950		
Satd. Flow (prot)	3539	1583	3433	3539	3433	2787	
Fit Permitted			0.950		0.950		
Satd. Flow (perm)	3539	1583	3433	3539	3433	2787	
Right Turn on Red		8				Yes	
Satd. Flow (RTOR)						129	
Link Speed (mph)	42			45	32		
Link Distance (ft)	314			610	338		
Travel Time (s)	4.8			9.5	9.9		
Peak Hour Factor	0.98	0.98	0.95	0.95	0.85	0.85	
Adj. Flow (vph)	1022	919	487	1108	314	828	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1022	919	487	1108	314	828	
Enter Blocked Intersection	8	8	8	8	8	S	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	12			24	24		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		6	15		12	6	
Number of Detectors	2	<del></del>	<del>-</del>	2	<del>-</del>	<del>-</del>	
Detector Template	Thr	Right	Left	Thru	Left	Right	
Leading Detector (ft)	100	70	70	100	20	70	
Trailing Detector (ft)	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	
Detector 1 Size(ft)	9	20	20	9	20	20	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Criannel		c	ć	c	ć	c	
Detector 1 Externa (s)	9 6	9 6	9 0	9 0	9 0	9 6	
Detector 1 Delay (c)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Deray (3)	8 6	0.0	20	2.0	20	0.0	
Detector 2 Fize(#)	Į 4			Ţ ~			
Detector 2 Times	2			2			
Detector 2 Type	5			Y E			
Detector 2 Extend (s)	0.0			0.0			
Turn Type		vo+mq	Prot			vo+mq	
Protected Phases	2	m	<b>-</b> -	12	3	-	
Permitted Phases		2				က	
Detector Phase	2	3	_	12	3	-	

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 13: Sheridan Drive & Harlem Road

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	
Switch Phase							
Minimum Initial (s)	20.0	0.9	3.0		0.9	3.0	
Minimum Split (s)	30.5	11.2	7.3		11.2	7.3	
Total Split (s)	0.99	25.0	29.0	95.0	25.0	29.0	
Total Split (%)	22.0%	20.8%	24.2%	79.2%	20.8%	24.2%	
Maximum Green (s)	90.2	19.8	24.7		19.8	24.7	
Yellow Time (s)	3.9	3.2	3.2		3.2	3.2	
All-Red Time (s)	1.6	2.0			2.0	1.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0:0	
Total Lost Time (s)	5.5	5.2	4.3	4.3	5.2	4.3	
Lead/Lag	Lag		Lead			Lead	
Lead-Lag Optimize?	Yes		Yes			Yes	
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0	
Recall Mode	C-Max	None	None		None	None	
Walk Time (s)	7.0						
Flash Dont Walk (s)	18.0						
Pedestrian Calls (#/hr)	0						
Act Effct Green (s)	63.4	84.4	26.1	95.0	15.5	46.8	
Actuated g/C Ratio	0.53	0.70	0.22	0.79	0.13	0.39	
v/c Ratio	0.55	0.55	0.65	0.40	0.71	0.74	
Control Delay	20.7	11.0	40.6	2.0	58.8	30.2	
Queue Delay	0.0	0.0	0.0	0.3	0.0	0:0	
Total Delay	20.7	11.0	40.6	5.3	28.8	30.2	
FOS	U	æ	۵	⋖	ш	U	
Approach Delay	17.1			16.1	37.9		
Approach LOS	В			В	О		
Intersection Summary							
Area Type:	Other						
Cycle Length: 120							
Actuated Cycle Length: 120	0						
Offset: 36 (30%), Referenced to phase 2:EBWB, Start of Yellow	sed to phase	2:EBWB	, Start of	Yellow			
Natural Cycle: 60							
Control Type: Actuated-Coordinated	ordinated						
Maximum v/c Ratio: 0.74							
Intersection Signal Delay: 22.2	22.2			드	Intersection LOS: C	1LOS: C	
Intersection Capacity Utilization 61.4% Analysis Period (min) 15	ation 61.4%			೦	U Level o	ICU Level of Service B	
Splits and Phases: 13: S	13: Sheridan Drive & Harlem Road	ve & Harl	em Road				
1	<b>↓</b> 1	,					· * ¥

Lanes, Volumes, Timings SRF & Associates

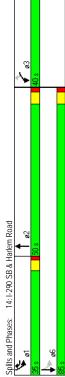
Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 14: 1-290 SB & Harlem Road

	•		-			•	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations	*	*	<b>₩</b>		×	*	
Volume (vph)	234	387	574	=	521	510	
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	0		0	330		
Storage Lanes	<del>-</del>	-		0	-		
Taper Length (ft)	22	25		25	75		
Lane Util. Factor	1:00	1.00	0.95	0.95	1.00	0.95	
き		0.850	0.997				
Fit Protected	0.950				0.950		
Satd. Flow (prot)	1770	1583	3529	0	1770	3539	
FIt Permitted	0.950				0.153		
Satd. Flow (perm)	1770	1583	3529	0	285	3539	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		69	2				
Link Speed (mph)	8		32			35	
Link Distance (ft)	333		250			456	
Fravel Time (s)	7.6		4.9			8.9	
Peak Hour Factor	69.0	69.0	0.77	0.77	0.92	0.92	
Adi. Flow (vph)	339	261	745	14	266	554	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	339	561	759	0	266	554	
Enter Blocked Intersection	N N	8	8	8	8	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	12		12			12	
ink Offset(ft)	0		0			0	
Crosswalk Width(ft)	16		16			16	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Furning Speed (mph)	12	6		6	15		
Number of Detectors	-	_	2		-	2	
Detector Template	Left	Right	Thru		Left	Thru	
Leading Detector (ft)	20	70	100		70	100	
railing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	20	9		50	9	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)			94			94	
Detector 2 Size(ft)			9			9	
Detector 2 Type			CI+Ex			CI+Ex	
Detector 2 Channel Detector 2 Extend (s)			0.0			0.0	
Type		vo+ma			pm+pt		
Protected Phases	m	-	2		-	9	
Permitted Phases		3			9		

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 25/2015

	•	1	<b>—</b>	•	٠	<b>→</b>	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Switch Phase							
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	22.0	9.2	30.6		9.2	21.0	
Total Split (s)	40.0	35.0	20.0	0.0	35.0	85.0	
Total Split (%)	32.0%	28.0%	40.0%	%0.0	28.0%	%0.89	
Maximum Green (s)	35.2	30.7	45.0		30.7	80.0	
Yellow Time (s)	3.2	3.2	3.6		3.2	3.6	
All-Red Time (s)	1.6	1.	1.4		1.	1.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.8	4.3	2.0	4.0	4.3	2.0	
Lead/Lag		Lead	Lag		Lead		
Lead-Lag Optimize?		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	Μi		None	None	
Walk Time (s)			10.0				
Flash Dont Walk (s)			15.0				
Pedestrian Calls (#/hr)			0				
Act Effct Green (s)	23.8	58.4	27.7		62.5	61.8	
Actuated g/C Ratio	0.25	0.61	0.29		0.65	0.65	
v/c Ratio	0.77	0.56	0.74		0.87	0.24	
Control Delay	46.9	12.9	36.3		38.5	8.0	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay	46.9	12.9	36.3		38.5	8.0	
SOT	O	В	٥		۵	A	
Approach Delay	25.7		36.3			23.4	
Approach LOS	O		Ω			O	
Intersection Summary							
Area Type:	Other						
Cycle Length: 125							
Actuated Cycle Length: 95.7	5.7						
Natural Cycle: 80							
Control Type: Actuated-Uncoordinated	ncoordinated						
Maximum v/c Ratio: 0.87							
Intersection Signal Delay: 27.7	27.7			드	Intersection LOS: C	LOS: C	
Intersection Capacity Utilization 69.8%	zation 69.8%			⊆	:U Level	CU Level of Service C	C
Analysis Period (min) 15							



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 56: Maple Road & Proposed North Driveway

	<b>†</b>	<i>&gt;</i>	<b>/</b>	ţ	•	•	
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	4₽		<u>_</u>	₩	۳	×	
Volume (vph)	1294	23	84	981	22	102	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0	225		0	150	
Storage Lanes		0	<del>-</del>		<del>-</del>	<del>-</del>	
Taper Length (ft)		25	22		25	25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00	
Œ	0.994					0.850	
Fit Protected			0.950		0.950		
Satd. Flow (prot)	3518	0	1770	3539	1770	1583	
Fit Permitted			0.950		0.950		
Satd. Flow (perm)	3518	0	1770	3539	1770	1583	
Link Speed (mph)	42			45	30		
Link Distance (ft)	1000			928	337		
Travel Time (s)	15.2			14.1	7.7		
Peak Hour Factor	0.95	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	1407	28	91	1066	62	111	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1465	0	91	1066	62	111	
Enter Blocked Intersection	8	8	8	8	8	8	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	12			12	12		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane	Yes			Yes			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		6	15		15	6	
Sign Control	Free			Free	Stop		
Intersection Summary							
	Other						
Control Type: Unsignalized							
Intersection Capacity Utilization 55.4%	on 55.4%			ಠ	J Level of	ICU Level of Service B	
Analysis Period (min) 15							

Lanes, Volumes, Timings Synchro 7 - Report SRF & Associates Page 27

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 56: Maple Road & Proposed North Driveway

																																							В
•	NBR	*-	102			0.92	11					9					732			732	6.9		3.3	20	364	NB 1	173	62	=	420	0.38	44	26.8	۵	26.8	۵			Service
✓	NBL	r	22	Stop	%0	0.92	62										2151	1435	716	2151	8.9	2.8	3.5	62	161	WB 3	533	0	0	1700	0.31	0	0.0						ICU Level of Service
ļ	WBT	‡	981	Free	%0	0.92	1066						TWLTL	2												WB 2	533	0	0	1700	0.31	0	0.0						⊇
<b>&gt;</b>	WBL	<u>,-</u>	84			0.92	91										1464			1464	4.1		2.2	80	457	WB 1	91	91	0	457	0.20	92	14.8	В	1.2			2 1	55.4%
<u> </u>	EBR		23			0.92	28																			EB 2	526	0	28	1700	0.31	0	0.0						
†	EBT	<b>₩</b>	1294	Free	%0	0.92	1407						TWLTL	2												EB 1	938	0	0	1700	0.55	0	0.0		0.0				zation
	Movement	Lane Configurations	Volume (veh/h)	Sign Control	Grade	Peak Hour Factor	Hourly flow rate (vph)	Pedestrians	Lane Width (ft)	Walking Speed (ft/s)	Percent Blockage	Right turn flare (veh)	Median type	Median storage veh)	Upstream signal (ft)	pX, platoon unblocked	vC, conflicting volume	vC1, stage 1 conf vol	vC2, stage 2 conf vol	vCu, unblocked vol	tC, single (s)	tC, 2 stage (s)	tF (s)	p0 queue free %	cM capacity (veh/h)	Direction, Lane #	Volume Total	Volume Left	Volume Right	cSH	Volume to Capacity	Queue Length 95th (ft)	Control Delay (s)	Lane LOS	Approach Delay (s)	Approach LOS	Intersection Summary	Average Delay	Intersection Capacity Utilization

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

## **A7**

## Level of Service Calculations: Full Development Conditions with Mitigation

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 1: Maple Road & Millersport Hwy SB

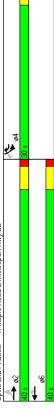
	1						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	<u></u>	<b>‡</b>	‡	*	<u>,                                    </u>	<b>*</b> _	
Volume (vph)	18	909	828	312	31	83	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	120			150	0	0	
Storage Lanes	-			-	-	_	
Taper Length (ft)	32			100	25	25	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	
Fit				0.850		0.850	
Fit Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583	
Fit Permitted	0.324				0.950		
Satd. Flow (perm)	604	3539	3539	1583	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)						106	
Link Speed (mph)		45	45		30		
Link Distance (ft)		222	654		281		
Travel Time (s)		8.4	6.6		6.4		
Peak Hour Factor	0.91	0.91	96:0	96.0	0.78	0.78	
Adj. Flow (vph)	70	999	862	325	40	106	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	70	999	862	325	40	106	
Enter Blocked Intersection	2	2	8	8	8	No	
Lane Alignment	reft	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	92		16		
Two way Left Turn Lane			Yes				
Headway Factor	1:00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	5			6	15	6	
Number of Detectors	<b>—</b>	2	2	<del>-</del>	-	,-	
Detector Template	Left	Thru	Thru	Right	left:	Right	
Leading Detector (ft)	20	100	100	20	20	20	
Trailing Detector (ft)	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	
Detector 1 Size(ft)	8	9	9	20	50	20	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		9	9				
Detector 2 Type		CI+Ex	CI+Ex				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Perm			vo+mq		Perm	
Protected Phases		2	9	4	4		
Permitted Phases	2			9		4	
Detector Phase	2	7	9	4	4	4	

Synchro 7 - Report (Mitigation) Page 1

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 1: Maple Road & Millersport Hwy SB

	١	†	ļ	1	٠	*	
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	
Switch Phase							
Minimum Initial (s)	4.0	4.0	4.0	1.0	1.0	1.0	
Minimum Split (s)	9.1	9.1	9.1	6.2	6.2	6.2	
Total Split (s)	40.0	40.0	40.0	30.0	30.0	30.0	
Total Split (%)	57.1%	57.1%	57.1%	42.9%	42.9%	42.9%	
Maximum Green (s)	34.9	34.9	34.9	25.4	25.4	25.4	
Yellow Time (s)	3.9	3.9	3.9	3.2	3.2	3.2	
All-Red Time (s)	1.2	1.2	1.2	1.4	1.4	1.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	2.1	2.1	2.1	4.6	4.6	4.6	
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Min	C-Min	C-Min	None	None	None	
Act Effct Green (s)	52.7	52.7	52.7	70.0	7.6	7.6	
Actuated g/C Ratio	0.75	0.75	0.75	1.00	0.11	0.11	
v/c Ratio	0.04	0.25	0.32	0.21	0.21	0.40	
Control Delay	2.9	3.1	2.8	0.3	30.2	11.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	2.9	3.1	2.8	0.3	30.2	11.3	
TOS	¥	⋖	⋖	A	O	В	
Approach Delay		3.1	4.3		16.4		
Approach LOS		A	∢		В		
Intersection Summary							
	Other						
Cycle Length: 70							
Actuated Cycle Length: 70							
Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	phase 2:	EBTL and	16:WBT,	Start of G	reen		
Natural Cycle: 40							
Control Type: Actuated-Coordinated	inated						
Maximum v/c Ratio: 0.40							
Intersection Signal Delay: 4.7				=	Intersection LOS: A	LOS: A	
Intersection Capacity Utilization 36.1%	ın 36.1%			೨	U Level o	ICU Level of Service A	
Analysis Period (min) 15							

Splits and Phases: 1: Maple Road & Millersport Hwy SB



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 2: Maple Road & Millersport Hwy NB

			•				-	-	-		٠	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	‡			<b>₩</b>		r	æ,				
Volume (vph)	45	593	0	0	993	26	147	. —	466	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	-		0	0		0	-		0	0		0
Taper Length (ft)	20		22	22		25	25		22	22		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ē					0.992			0.850				
Fit Protected	0.950	9	•	•		•	0.950		•	•	•	•
Satd. Flow (prot)	1770	3539	0	0	3511	0	1770	1583	0	0	0	0
Fit Permitted	0.187				1		0.950					
Satd. Flow (perm)	348	3539	0	0	3511	0	1770	1583	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					12			174				
Link Speed (mph)		45			45			8			30	
Link Distance (ft)		654			1770			319			263	
Travel Time (s)		6.6			26.8			7.3			0.9	
Peak Hour Factor	0.85	0.85	0.85	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	46	869	0	0	1068	09	158	<del>,</del>	201	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	869	0	0	1128	0	158	205	0	0	0	0
Enter Blocked Intersection	8	%	8	9	No	9	9	8	9	8	9 N	2
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	13		6	15		6	12		6	15		6
Number of Detectors	-	2			2		<del>-</del>	2				
Detector Template	Lef	모			Thru		Fet	맫				
Leading Detector (ft)	70	100			100		70	100				
Trailing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0	0				
Detector 1 Size(ft)	2	9			9		50	9				
Detector 1 Type	CI+EX	CI+Ex			CI+EX		CI+EX	CI+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0:0	0.0			0:0		0.0	0:0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		9			9			9				
Detector 2 Type		CI+EX			CI+EX			CI+EX				
Detector z channel		0			0			0				
Detector 2 Extend (s)	0	0.0			0:0		0	0:0				
Turn Type  Protocted Diagon	Ferm	c			4		FeIII	٥				
Protected Phases	c	7			0		o	0				
CLC CLC												

Synchro 7 - Report (Mitigation) Page 3

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 2: Maple Road & Millersport Hwy NB

ane Group EBL  Switch Phase Minimum Initial (s) 1.0  fotal Split (s) 6.1  fotal Split (%) 57.1%  Adminimum Green (s) 34.9  colony Time (e) 3	EBL	FRT	ממב	10/41	1							
		רחו	EBK	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
	1.0	1.0			4.0		1.0	1.0				
		6.1			9.1		6.2	6.2				
		40.0	0.0	0.0	40.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0
		57.1%	%0.0	%0.0	57.1%	%0.0	45.9%	45.9%	%0.0	%0.0	%0:0	0.0%
		34.9			34.9		25.4	25.4				
		3.9			3.9		3.2	3.2				
		1.2			1.2		1.4	1.4				
t (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time (s)		5.1	4.0	4.0	5.1	4.0	4.6	4.6	4.0	4.0	4.0	4.0
Lead/Lag												
_ead-Lag Optimize?												
	3.0	3.0			3.0		3.0	3.0				
Recall Mode C-N	C-Min	C-Min			C-Min		None	None				
Act Effet Green (s) 3 <sup>o</sup>	39.1	39.1			39.1		21.2	21.2				
Actuated g/C Ratio 0.	95.0	0.56			0.56		0.30	0.30				
	0.25	0.35			0.57		0.30	0.84				
	15.6	10.6			12.5		18.7	27.4				
λ	0.0	0.0			0.0		0.0	0.0				
Delay	15.6	10.6			12.5		18.7	27.4				
SO:	В	В			В		В	S				
Approach Delay		10.9			12.5			25.3				
Approach LOS		В			В			S				
ntersection Summary												
Area Type: Other												
Sycle Length: 70												
Actuated Cycle Length: 70												
Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	se 2:E	BTL and	6:WBT, §	Start of G	reen							
Natural Cycle: 50												
Control Type: Actuated-Coordinated	pa eq											
Maximum v/c Ratio: 0.84												
ntersection Signal Delay: 15.4				프	Intersection LOS: B	LOS: B						
ntersection Capacity Utilization 71.9%	1.9%			2	CU Level of Service C	f Service	ပ					
Analysis Period (min) 15												

Splits and Phases: 2: Maple Road & Millersport Hwy NB



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 3: Maple Road & Maplemere Road

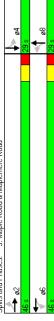
	١	Ť	~	•	,	/	1	-	•	٠	<b>→</b>	*
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	r	<b>₩</b>		*	<b>₽</b>			4			4	
Volume (vph)	71	924	46	12	1040	28	43	m	16	34	0	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	70		0	0		0	0		0
Storage Lanes	<del>-</del>		0	-		0	0		0	0		0
Taper Length (ft)	20		22	20		25	25		25	22		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
표		0.993			966.0			0.965			0.957	
Fit Protected	0.950			0.950				0.967			0.967	
Satd. Flow (prot)	1770	3514	0	1770	3525	0	0	1738	0	0	1724	0
Fit Permitted	0.205			0.220				0.739			0.733	
Satd. Flow (perm)	382	3514	0	410	3525	0	0	1328	0	0	1307	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			9			22			78	
Link Speed (mph)		45			45			8			30	
Link Distance (ft)		1770			1106			378			402	
Travel Time (s)		26.8			16.8			9.8			9.1	
Peak Hour Factor	98.0	98.0	98.0	0.91	0.91	0.91	09.0	09.0	09:0	0.58	0.58	0.58
Adj. Flow (vph)	24	1074	23	13	1143	31	72	2	27	26	0	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	1127	0	13	1174	0	0	104	0	0	87	0
Enter Blocked Intersection	8	8	8	8	8	8	8	8	8	8	8	2
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	5		6	15		6	72		6	<u>5</u>		6
Number of Detectors	-	2		-	2		-	2		-	2	
Detector Template	Left	Thr.		Left	Thru		Left	Thr.		Left	맫	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0 8	0 .		0 8	ο ,		0 8	0 ,		0 8	ο ,	
_	2 2	ه د		20 20	ب ة		20 50	ب ة		ج ا ج	ب د د	
Detector 1 Type	CI+EX	CI+EX		CI+EX	CI+EX		CI+EX	CI+EX		CI+EX	CI+EX	
Detector 1 Channel	ć	ć		c	c		c	c		c	d	
Detector   Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Defector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Deray (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(it)		44			74			¥ ,			44	
Detector 2 Size(ft)		ے م			ے م			ا م			ے م	
Detector 2 Obannel		Y = 1			<u>+</u>			<u>+</u>			Z E Z	
Detector 2 Criainnel		0			0			0			0	
Detector 2 Exterior (5)	Dorm	0.0		Dorm	0.0		Dorm	0.0		Dorm	0.0	
Profected Phases	3	2		3	9		5	00		5	4	
Permitted Phases	0	,		4			α	>		-	-	
										7		

Synchro 7 - Report (Mitigation) Page 5

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 3: Maple Road & Maplemere Road

	1	†	<i>&gt;</i>	<b>&gt;</b>	ţ	1	•	<b>←</b>	•	٠	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	0.6	0.6		0.6	0.6		27.0	27.0		27.0	27.0	
Total Split (s)	46.0	46.0	0.0	46.0	46.0	0.0	29.0	29.0	0.0	29.0	29.0	0.0
Total Split (%)	61.3%	61.3%	%0:0	61.3%	61.3%	%0.0	38.7%	38.7%	%0.0	38.7%	38.7%	%0.0
Maximum Green (s)	41.0	41.0		41.0	41.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	2.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)							7.0	7.0		7.0	7.0	
Flash Dont Walk (s)							15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)							0	0		0	0	
Act Effct Green (s)	27.3	27.3		27.3	27.3			8.4			8.3	
Actuated g/C Ratio	0.65	0.65		0.65	0.65			0.20			0.20	
v/c Ratio	0.10	0.49		0.05	0.51			0.36			0.31	
Control Delay	6.1	6.5		5.4	6.7			16.6			14.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	6.1	6.5		5.4	6.7			16.6			14.9	
SOT	A	A		A	A			В			В	
Approach Delay		6.5			6.7			16.6			14.9	
Approach LOS		⋖			A			В			В	
Intersection Summary												
Area Type:	Other											
Cycle Length: 75												
Actuated Cycle Length: 41.8	00											
Natural Cycle: 55												
Control Type: Actuated-Uncoordinated	coordinated											
Maximum v/c Ratio: 0.51												
Intersection Signal Delay: 7.3	7.3			드	Intersection LOS: A	LOS: A						
Intersection Capacity Utilization 42.1%	ation 42.1%			2	CU Level of Service A	f Service	A					
Analysis Period (min) 15												

Splits and Phases: 3: Maple Road & Maplemere Road



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 4: Maple Road & Donna Lea Blvd

•	NBR		61	1900	0	0	25	1.00			0		0				0.76	80		0	No	Right					1.00	6					ICU Level of Service A	
•	NBL	>	24	1900	0	<del>-</del>	25	1.00	0.904	0.986	1660	986.0	1660	30	322	8.1	97.0	32		112	8	Left	12	0	16		1.00	12	Stop				U Level o	
ţ	WBT	‡	1055	1900				0.95			3539		3539	45	1002	15.2	0.87	1213		1213	8	Left	12	0	16	Yes	1.00		Free				೨	
<b>&gt;</b>	WBL	je-	13	1900	20	-	22	1.00		0.950	1770	0.950	1770				0.87	15		15	8	Left					1.00	15						
<b>/</b>	EBR		9	1900	0	0	25	0.95			0		0				0.79	∞		0	8	Right					1.00	6						
<b>†</b>	EBT	₩.	696	1900				0.95	0.999		3536		3536	45	1106	16.8	0.79	1227		1235	8	Left	12	0	16	Yes	1.00		Free		Other		n 40.9%	
	Lane Group	Lane Configurations	Volume (vph)	Ideal Flow (vphpl)	Storage Length (ft)	Storage Lanes	Taper Length (ft)	Lane Util. Factor	Ft	Fit Protected	Satd. Flow (prot)	Fit Permitted	Satd. Flow (perm)	Link Speed (mph)	Link Distance (ft)	Travel Time (s)	Peak Hour Factor	Adj. Flow (vph)	Shared Lane Traffic (%)	Lane Group Flow (vph)	Enter Blocked Intersection	Lane Alignment	Median Width(ft)	Link Offset(ft)	Crosswalk Width(ft)	Two way Left Turn Lane	Headway Factor	Turning Speed (mph)	Sign Control	Intersection Summary		Control Type: Unsignalized	Intersection Capacity Utilization 40.9%	Analysis Period (min) 15

Synchro 7 - Report (Mitigation) Page 7

Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 4: Maple Road & Donna Lea Blvd

	<b>FBT</b> 969 969 0.79	6 6 0.79	WBL 13	WBT 1055 1055 Free 0% 0.87	NBL 24 24 Stop 0% 0.76	NBR 61 0.76
Hourly flow rate (vph) Pedestrians Lane Width (ft) Avalking Speed (ft/s) Percent Blockage Right turn flare (veh) Redian styrage veh) Thy Median styrage veh) Thy Distream signal (ft)	1227 TWLTL 2 1106	ω		1213 TWLTL 2 1002	32	08
90			0.85 1234 928 4.1 2.2 98 624		0.92 1867 1230 636 1117 6.8 5.8 3.5 89	0.85 617 204 6.9 88 684
Volume Total Volume Total Volume Right SSH 1 Coulume to Capacity Cueue Length 95th (ft) Control Delay (s)	818 818 0 0 1700 0.48 0	416 0 8 1700 0.24 0	15 15 15 0 624 0.02 2 10.9	0 0 1700 0.36 0.36	MB 3 606 0 0 1700 0.36 0.0	NB 1 112 32 80 489 0.23 14.5
Lane LOS Approach Delay (s) Approach Delay (s) Intersection Summary Average Delay Intersection Capacity Utilization Analysis Period (finit)	0.0		0.1 0.7 40.9%		B 14.5 B B ICU Level of Service	B 14.5 B Service

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 5: Maple Road & Audubon Golf Club

	4	†	<i>&gt;</i>	<b>&gt;</b>	ţ	4	•	•	•	۶	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u>r</u>	<b>₩</b>		<u>,-</u>	4₽			4			4	
Volume (vph)	_	1068	4	-	1111	7	13	0	က	<del></del>	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	20		0	0		0	0		0
Storage Lanes	-		0	-		0	0		0	0		0
Taper Length (ft)	22		22	25		25	25		25	22		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999						976.0				
Flt Protected	0.950			0.950				096.0			0.950	
Satd. Flow (prot)	1770	3536	0	1770	3539	0	0	1745	0	0	1770	0
Flt Permitted	0.950			0.950				096.0			0.950	
Satd. Flow (perm)	1770	3536	0	1770	3539	0	0	1745	0	0	1770	0
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		446			929			469			11	
Travel Time (s)		8.9			8.4			10.7			2.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92
Adj. Flow (vph)	-	1161	4	-	1208	2	14	0	3	-	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	-	1165	0	-	1210	0	0	11	0	0	-	0
Enter Blocked Intersection	8	8	8	8	8	8	8	8	8	8	8	8
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		6	15		6	15		6	15		6
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type: Ot	Other											
Control Type: Unsignalized												
Intersection Capacity Utilization 40.8%	on 40.8%			<u>⊡</u>	J Level o	ICU Level of Service A	⋖					
Analysis Period (min) 15												

Synchro 7 - Report (Mitigation) Page 9

Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 5: Maple Road & Audubon Golf Club

Movement         EBI         EBI         WBI         WBI         NBI         NBI         NBI         NBI         NBI         SBI         SBI         SBI         SBI         Applications         Table         Application	•	•	†	>	<b>\</b>	ļ	1	•	<b>—</b>	•	٠	<b>→</b>	*
Originations         ↑		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
(ye/hh)         1         1068         4         1         1111         2         13         0         3         1         0           own rate (yeh)         1         1 168         4         1         1116         4         1         1208         2         14         0         3         1         0           own rate (yeh)         1         1161         4         1         1208         2         14         0         3         1         0         0%	Lane Configurations	-	₩.		,-	4₽			4			4	
Free   Free   Stop   Stop   O%	Volume (veh/h)	-	1068	4	-	1111	2	13	0	33	-	0	0
Own rate (wh)         OW	Sign Control		Free			Free			Stop			Stop	
TWLTL			%0			%0			%0			%0	
TWLTL  TWLTL  TWLTL  TWLTL  TWLTL  TWLTL  TWLTL  TWLTL  TWLTL  TO 0 1106 1106 11771 2377 583 1797 2378 1167 1165 1165 1165 1167 1166 1167 1166 1167 1166 1167 1166 1167 1166 1167 1166 1167 1167 1166 1167 116		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
TWLTL TWLTL  TWLTL  TWLTL  TWLTL  TWLTL  TWLTL  TWLTL  TWLTL  TO THE STATE SHIPPY 237R  TITLE THE STATE SHIPPY 237R  TITLE THE SHIPPY 237R  TITLE THE SHIPPY 237R  TO	Hourly flow rate (vph)	_	1161	4	<del>-</del>	1208	2	14	0	3	<del>-</del>	0	0
TWLTL  TW	Pedestrians												
TWLTL TWLTL TWLTL 2377 583 1797 2378 1210 1165 11771 2377 583 1797 2378 1211 1211 606 11771 2377 583 1797 2378 617 1211 617 1165 1165 1165 1171 1211 617 617 1211 617 617 1211 617 617 617 617 617 617 617 617 617 6	Lane Width (ft)												
HALTL  2 1210 11165 11771 2377 583 1797 2378 4.1 1210 1165 11771 2377 583 1797 2378 1167 1171 2377 583 1797 2378 1167 1171 2377 583 1797 2378 1167 1171 2377 583 1797 2378 1167 1171 1174 391 1180 00 04 04 07 07 07 07 07 07 07 07 07 07 07 07 07	Walking Speed (ft/s)												
HVLTL TWLTL  TWLTL  TWLTL  TWLTL  TWLTL  TWLTL  TTLS	Percent Blockage												
TWLTL	Right turn flare (veh)												
1210	Median type	_	WLTL			_WLTL							
1210	Median storage veh)		2			2							
1210	Upstream signal (ft)												
1210	pX, platoon unblocked												
11/10		210			1165			1771	2377	583	1797	2378	902
1210	vC1, stage 1 conf vol							1165	1165		1211	1211	
1210	vC2, stage 2 conf vol							909	1212		286	1167	
4.1   4.1   4.1   6.5		210			1165			1771	2377	583	1797	2378	909
22 2.2 3.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5	tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
22 32 40 33 35 40 100 100 100 100 100 100 100 100 100	tC, 2 stage (s)							6.5	5.5		6.5	5.5	
100	tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
F872   F895   186   179   456   177   179     E81	po queue free %	90			100			92	100	66	66	100	100
EB 1         EB 2         EB 3         WB 1         WB 2         WB 3         NB 1         SB 1           1         774         391         1         805         405         17         1           0         0         0         1         0         0         14         1           0         0         4         0         0         2         3         0           572         1700         1700         595         1700         170         210         177           0         0         0         0         0         0         7         0         0           11.3         0.0         0         11.1         0.0         0         7         0         D           B         B         B         C         D         C         D         D           0.0         0         0         0         0         0         C         D         C         D           0.0         0         0         0         0         0         0         C         D         C         D           0.0         0         0         0         0         0         <	cM capacity (veh/h)	572			262			186	179	426	177	179	441
1 774 391 1 805 405 17 1 1 1 0 0 0 0 14 0 1 1 1 0 0 0 0 0 14 0 0 0 0		EB 1	EB2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
1 0 0 1 0 0 14 1 0 0 0 4 0 0 2 3 0 572 1700 1700 595 1700 1700 210 177 0 0 0 0 0 0 0 0 0 0 0 1 11.3 0 0 0 11.1 0 0 0 0 23.7 25.5 B B B C C D 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Volume Total	-	774	391	-	802	405	17	-				
10	Volume Left	-	0	0	-	0	0	14	-				
572 1700 1700 595 1700 1700 210 177  0.00 0.46 0.23 0.00 0.47 0.24 0.08 0.01  11.13 0.0 0.0 11.1 0.0 0.0 23.7 25.5  B	ne Right	0	0	4	0	0	2	3	0				
000 046 023 000 047 024 008 001 0 0 0 0 0 7 0 0 11.3 0.0 0.0 11.1 0.0 0.0 23.7 25.5 0.0 0 0.0 23.7 25.5 0.0 0.0 0.0 11.1 0.0 0.0 23.7 25.5 0.0 0.0 0.0 0.0 0.0 1.0 0.0 1.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0		572	1700	1700	295	1700	1700	210	177				
11.3 0.0 0.0 11.1 0.0 0.0 23.7 25.5 B B C D D C D D C D D C D D C D D C D D C D D C D D C D D C D D C D D C D D C D D C D D C D D C D D D C D D C D		0.00	0.46	0.23	0.00	0.47	0.24	0.08	0.01				
11.3 0.0 0.0 11.1 0.0 0.0 23.7 25.5 B B C C D C D C D C D C D C D C D C D C		0	0	0	0	0	0	_	0				
B B C D  3.7 25.5  any  0.2  y Utilization 40.8% ICU Level of Service		11.3	0.0	0.0		0.0	0.0	23.7	25.5				
any 0.0 23.7 25.5 any 0.2 C D C D C D C D C D C D D C D D C D D C D D C D D C D	Lane LOS	മ			ш			ပ	۵				
C D 0.2 pacity Utilization 40.8% ICU Level of Service (min) 15	Approach Delay (s)	0.0			0.0			23.7	25.5				
nmary 0.2 pacity Utilization 40.8% ICU Level of Service (min) 15	Approach LOS							O					
0.2 pacity Utilization 40.8% ICU Level of Service (min) 15	Intersection Summary												
pacity Utilization 40.8% ICU Level of Service (min) 15	Average Delay			0.2									
	Intersection Capacity Utilization Analysis Period (min)			40.8%	⊇	U Level o	f Service			⋖			
	Alialysis Fellou (IIIII)			2									

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 6: Maple Road & North Forest Road 2/5/2015

	`	t	۰	•		1	-	-		L	•	
ane Group	FBI	FBT	FBR	WBI	WBT	WBR	NBI	NBT	NBR	SBI	SBT	SBR
ane Configurations	*	‡	æ	r	*	æ	*	*	×	*	*	*
Volume (vph)	100	860	84	252	824	06	92	231	185	123	362	181
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	415		220	315		150	125		220	250		250
Storage Lanes	-		-	-		-	-		-	_		
raper Length (ft)	8	1	115	09	1	25	95		25	8		52
ane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.0	1.00	1.00
-	0		0.850	0		0.850	C		0.850	i c		0.850
-It Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
-It Permitted	0.253			0.099			0.202	:		0.353	:	
Satd. Flow (perm)	471	3539	1583	184	3539	1583	376	1863	1583	929	1863	1583
Right Turn on Red			Yes			2			Yes			Yes
Satd. Flow (RTOR)			92						23			79
ink Speed (mph)		45			45			32			32	
ink Distance (ft)		1705			820			529			809	
ravel Time (s)		25.8			12.4			10.3			11.8	
Peak Hour Factor	06:0	06.0	0.90	0.95	0.95	0.95	06:0	0.90	0.90	0.80	0.80	0.80
Adj. Flow (vph)	111	926	93	265	867	95	102	257	206	154	452	226
Shared Lane Traffic (%)												
-ane Group Flow (vph)	11	926	93	265	867	95	102	257	206	154	452	226
Enter Blocked Intersection	S	8	8	8	8	8	8	8	8	8	8	2
ane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12	י		12	י		12	,		12	,
ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
wo way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
urning Speed (mph)	12		6	15		6	15		6	15		6
Number of Detectors	_	2	<del>-</del>	_	2	_	_	7	<del>-</del>	_	2	_
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
eading Detector (ft)	20	100	20	70	100	70	70	100	20	20	100	20
railing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	9	20	70	9	70	70	9	20	20	9	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+EX	CI+EX	CI+EX	CI+EX	CI+Ex	CI+Ex	CI+EX
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+Ex			CI+Ex			CI+EX			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
urn Type	pm+pt	•	hm+ov	pm+pt	,	vo+mq	pm+pt	•	vo+mq	pm+pt		vo+mq
Protected Phases	c ·	7		-	9			∞	-		4	c ·
Permitted Phases	2		2	9		9	∞		00	4		4
Detector Diego	u	c	c	,	,	1	c	c	•			

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 6: Maple Road & North Forest Road

	•	†	<u>/</u>	<b>/</b>	ţ	4	•	<b>—</b>	•	٠	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	1.0	4.0	1.0	1.0	4.0	1.0	1.0	4.0	1.0	1.0	4.0	1.0
Minimum Split (s)	7.0	35.0	7.0	7.0	35.0	7.0	7.0	35.0	7.0	7.0	35.0	7.0
Total Split (s)	13.0	45.0	10.0	23.0	22.0	15.0	10.0	37.0	23.0	15.0	45.0	13.0
Total Split (%)	10.8%	37.5%	8.3%	19.2%	45.8%	12.5%	8.3%	30.8%	19.2%	12.5%	35.0%	10.8%
Maximum Green (s)	7.0	39.0	4.0	17.0	49.0	0.6	4.0	31.0	17.0	0.6	36.0	7.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		22.0			22.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	41.5	34.5	44.7	55.8	43.1	58.1	29.8	25.8	47.4	39.5	30.6	43.7
Actuated g/C Ratio	0.38	0.32	0.41	0.51	0.39	0.53	0.27	0.24	0.43	0.36	0.28	0.40
v/c Ratio	0.42	0.85	0.13	0.83	0.62	0.11	99.0	0.59	0.29	0.47	0.87	0.33
Control Delay	21.0	44.2	5.2	48.9	29.0	13.9	49.8	43.8	16.1	29.8	26.0	16.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.0	44.2	5.2	48.9	29.0	13.9	49.8	43.8	16.1	29.8	26.0	16.5
SOT	S	۵	A	٥	ပ	В	۵	Ω	В	S	ш	В
Approach Delay		38.9			32.1			34.8			40.4	
Approach LOS		۵			S			S			Ω	
Intersection Summary												
Area Type:	Other											
Cycle Length: 120												
Actuated Cycle Length: 10	39.2											
Natural Cycle: 85												

Splits and Phases: 6: Maple Road & North Forest Road

Natural vyce: 85
Control Type: Actualed-Uncoordinated
Maximum vC Ratio: 0.87
Intersection Signal Delay: 36.4
Intersection Capacity Utilization 81.9%
Analysis Period (min) 15

Intersection LOS: DICU Level of Service D



10s 42s

Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 7: Sheridan Drive & Mill Street

							-	-	-		•	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	₩.		<u>,                                    </u>	₩		<u>,                                    </u>	2		*	2,	
Volume (vph)	9	1336	130	220	1046	6	105	71	125	8	146	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	150		0	40		0	75		0
Storage Lanes	-		0	-		0	-		0	-		0
Taper Length (ft)	92	L	25	09	L	25	25	1	25	52	,	52
_ane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1:00	00.1	1.00	1.00	1.00	1.00
-II	010	0.987		0100	0.999		0	0.872		010	0.983	
- It Protected	0.750	2000	c	0.950	7636	c	0.750	1671	c	0.950	1001	<
Satu. Flow (prot) -It Permitted	0 2 2 9	2442	>	0.074	2230	>	0.710	1024	>	0.598	1001	0
Satd. Flow (perm)	427	3493	0	138	3536	0	391	1624	0	1114	1831	0
Right Turn on Red			8			Yes			2			Yes
Satd. Flow (RTOR)					_						4	
Link Speed (mph)		45			42			8			30	
Link Distance (ft)		2782			7.16			838			362	
Fravel Time (s)		42.2			14.8			19.0			8.2	
Peak Hour Factor	0.86	0.86	0.86	0.89	0.89	0.89	0.56	0.56	0.56	0.61	0.61	0.61
4dj. Flow (vph)	7	1553	151	247	1175	10	188	89	223	46	239	8
Shared Lane Traffic (%)												
ane Group Flow (vph)	7	1704	0	247	1185	0	188	261	0	46	269	0
Enter Blocked Intersection	8	8	8	8	8	2	8	2	2	8	8	2
ane Alignment	Left	Left	Right	Left	Left	Right	Left	Fet	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
wo way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
urning Speed (mph)	5		6	12		6	15		6	15		6
Number of Detectors	-	2		-	2		-	2		-	2	
Detector Template	Left	Thr.		Left	Thru		reft:	맫		Left	Thr.	
eading Detector (ft)	20	100		70	100		50	100		20	100	
railing Detector (#)	0	0		0	0		0	0		0	0	
Detector 1 Position(it)	<b>&gt;</b>	0 4		0 6	0 4		0 6	0 4		<b>-</b> 2	0 4	
Detector 1 Type	Cl+Ev	0 1		OI+E	0 1		CI+Ev	ם ב		CI-Ev	0 7	
	<u>Y</u>	4		Y L	Y E S		5	5		Y E	<u> </u>	
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Ouene (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			96			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+Ex			CH-EX			CI+EX			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Furn Type	Perm	c		pm+pt	7		pm+pt	o		Perm		
Protected Priases	c	7			0		n 0	ю			4	
11/7												

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 7: Sheridan Drive & Mill Street

	1	†	<u>/</u>	<b>&gt;</b>	ţ	4	•	<b>←</b>	•	۶	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		1.0	4.0		1.0	4.0		4.0	4.0	
Minimum Split (s)	28.3	28.3		6.2	28.3		6.2	34.2		34.2	34.2	
Total Split (s)	51.0	51.0	0.0	25.0	76.0	0.0	25.0	26.0		34.0	34.0	0.0
Total Split (%)	37.8%	37.8%	%0.0	18.5%	26.3%	%0.0	18.5%	43.7%	%0.0	25.2%	25.2%	%0.0
Maximum Green (s)	45.5	45.5		20.7	70.5		19.8	53.8		28.8	28.8	
Yellow Time (s)	4.3	4.3		3.2	4.3		3.2	3.2		3.2	3.2	
All-Red Time (s)	1.2	1.2		1:1	1.2		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	2.5	2.5	4.0	4.3	5.5	4.0	5.2	5.2		5.2	2.5	4.0
Lead/Lag	Lag	Lag		Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Мах		None	Max		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0			15.0			22.0		22.0	22.0	
Pedestrian Calls (#/hr)	0	0			0			0		0	0	
Act Effct Green (s)	20.0	20.0		72.0	70.8		42.5	42.5		22.4	22.4	
Actuated g/C Ratio	0.40	0.40		0.58	0.57		0.34	0.34		0.18	0.18	
v/c Ratio	0.04	1.21		0.83	0.59		0.63	0.47		0.24	0.81	
Control Delay	30.0	135.2		54.7	19.9		39.0	34.4		47.1	0.79	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	30.0	135.2		54.7	19.9		39.0	34.4		47.1	0.79	
SOT	ပ	ш		۵	В		۵	ပ		۵	ш	
Approach Delay		134.7			25.9			36.3			64.0	
Approach LOS		ш			O			Ω			Ш	
Intersection Summary												
Area Type:	Other											
Cycle Length: 135												
Actuated Cycle Length: 124.1	4.1											
Natural Cycle: 140												
Control Type: Actuated-Uncoordinated	coordinated											
Maximum v/c Ratio: 1.21												
Intersection Signal Delay: 77.8	77.8			⊆ :	Intersection LOS: E	LOS: E						
Intersection Capacity Utilization 84.7%	ation 84.7%			<u>∪</u>	CU Level of Service E	f Service	ш					
Analysis Period (min) 15												

Splits and Phases: 7: Sheridan Drive & Mill Street



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 8: Sheridan Drive & North Forest Road

			•				-	-			٠	
-ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
-ane Configurations	*	‡	*	*	₩.		۳	*	¥L.	*	ŧ	*
Volume (vph)	92	1359	220	181	1104	19	237	342	23	Ξ	444	294
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	405		170	260		0	180		265	180		200
Storage Lanes	-		-	-		0	-		<del>-</del>	-		<b>—</b>
aper Length (ft)	200		22	200		25	25		25	22		25
-ane Util. Factor	1:00	0.95	1.00	1.00	0.95	0.95	1.00	1:00	1.00	1.00	0.95	1.00
-			0.850		0.997				0.850			0.850
-It Protected	0.950			0.950			0.950			0.950		1
Satd. Flow (prot)	1770	3539	1583	1770	3529	0	1770	1863	1583	1770	3539	1583
It Permitted	0.094			0.067			0.194			0.494		
Satd. Flow (perm)	175	3539	1583	125	3529	0	361	1863	1583	920	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			102		_				26			324
ink Speed (mph)		42			42			40			32	
ink Distance (ft)		1668			2219			547			354	
ravel Time (s)		25.3			33.6			9.3			6.9	
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	06:0	0.90	0.90	0.84	0.84	0.84
Adj. Flow (vph)	46	1431	232	197	1200	21	263	380	26	13	529	350
Shared Lane Traffic (%)												
ane Group Flow (vph)	76	1431	232	197	1221	0	263	380	26	13	529	320
Enter Blocked Intersection	2	S	8	2	2	8	2	2	8	S	9 8	2
ane Alignment.	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
wo way Left Turn Lane		Yes			Yes							
Headway Factor	1:00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
urning Speed (mph)	15		6	15		6	15		6	15		6
Number of Detectors	_	2	<del>-</del>	-	2		<b>—</b>	2	_	_	2	_
Detector Template	Left	Thr.	Right	Left	Thru		Left	맫	Right	Left	Thru	Right
eading Detector (ft)	70	100	20	20	100		20	100	20	20	100	20
railing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	8	9	8	70	9		70	9	70	8	9	2
Detector 1 Type	CI+EX	CI+Ex	CI+Ex	CI+Ex	CI+EX		CI+EX	CI+EX	CI+EX	CI+EX	CI+Ex	CI+EX
Detector 1 Channel	:											
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0:0	0.0	0.0	0.0	0:0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+Ex			CI+EX			CI+EX			CI+Ex	
Detector 2 Channel		0			00			00			0	
Lirn Tyne	hm+mt	5	Perm	nm+nt	5		pm+nt	2	Perm	hm+mt	5	Perm
Protected Phases		9	5	2 10	2		7	4	5	۳ ۳	00	5
Permitted Phases	,		,						•			•
							7		4	×		~

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 8: Sheridan Drive & North Forest Road

	4	†	<u> </u>	<b>\</b>	ţ	4	•	<b>←</b>	•	٠	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.3	27.9	27.9	8.3	27.9		21.0	27.2	27.2	8.3	27.2	27.2
Total Split (s)	30.0	0.09	0.09	20.0	20.0	0.0	25.0	40.0	40.0	20.0	35.0	35.0
Total Split (%)	21.4%	42.9%	45.9%	14.3%	35.7%	%0.0	17.9%	28.6%	28.6%	14.3%	25.0%	25.0%
Maximum Green (s)	25.7	54.9	54.9	15.7	44.9		20.7	34.9	34.9	15.7	29.9	29.9
Yellow Time (s)	3.2	3.9	3.9	3.2	3.9		3.2	3.2	3.2	3.2	3.2	3.2
All-Red Time (s)	Ξ:	1.2	1.2	1.	1.2		Ξ:	1.9	1.9	Έ.	1.9	1.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.3	2.1	2.1	4.3	5.1	4.0	4.3	2.1	2.1	4.3	2.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max		None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		15.0	15.0		15.0			15.0	15.0		15.0	15.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	65.2	55.2	55.2	73.8	59.9		9.09	45.5	45.5	32.9	25.9	25.9
Actuated g/C Ratio	0.49	0.41	0.41	0.55	0.45		0.38	0.34	0.34	0.25	0.19	0.19
v/c Ratio	0.49	0.98	0.32	0.81	0.77		0.77	09.0	0.02	0.05	0.77	0.62
Control Delay	25.3	58.3	16.9	58.5	36.3		45.8	42.3	11.7	27.4	59.5	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.3	58.3	16.9	58.5	36.3		45.8	42.3	11.7	27.4	59.5	11.8
SOT	ပ	ш	В	ш	۵		٥	۵	В	ပ	ш	В
Approach Delay		51.0			39.4			42.5			40.3	
Approach LOS		۵			Ω			Ω			Ω	
Intersection Summary												
Area Type: Ot	Other											
Cycle Length: 140												
Actuated Cycle Length: 133.5												
Natural Cycle: 105												
Control Type: Actuated-Uncoordinated	ordinated											
Maximum v/c Ratio: 0.98												
Intersection Signal Delay: 44.3	co.			Ξ.	Intersection LOS: D	LOS: D						
Intersection Capacity Utilization 88.7%	on 88.7%			೨	CU Level of Service E	f Service	ш					
Analysis Period (min) 15												

Splits and Phases: 8: Sheridan Drive & North Forest Road



Lanes, Volumes, Timings SRF & Associates

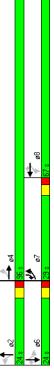
Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 10: Sheridan Drive & Proposed South Driveway

	١	t	<u> </u>	<b>\</b>	,	/	•	_	Ļ	•	+	,
ane Groun	EB	FRT	FRR	WBI	WRT	WRR	NBI	NRT	NRR	S	SRT	SRP
and Configurations	1	4	LDN	N DL	- A	NON P	INDL	- A	NDN	JUL	-00	NOC
-ane comigurations	- 553	<u>*</u>			Ę	<u>.</u> ;	ì	<b>\$</b> °	d	8	₹ '	_ ;
volume (vpn)	710	1564	0	4	0001	131	9	0 0	6	5	0 0	99
deal Flow (vphpl)	0061	0061	0061	0061	0061	0061	0061	1900	0061	0061	1900	1900
Storage Length (ft)	350		0 0	72		425	0 0		0 0	0 0		0 -
Storage Laries	- į		o ا	- i		- 1	) د		) ا	o ا		- 1
aper Length (ft)	22,5	L	C 2	7.50	L	72	7.55	6	7.55	25 25	9	7, 25
-ane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1:00	1.00	1.00	1.00	1.00
Ţ		0.999				0.850		0.951				0.850
It Protected	0.950			0.950				0.969			0.950	
Satd. Flow (prot)	1770	3536	0	1770	3539	1583	0	1717	0	0	1770	1583
Fit Permitted	0.055			0.119				0.799			0.734	
Satd. Flow (perm)	102	3536	0	222	3539	1583	0	1415	0	0	1367	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		_				142		13				13
-ink Speed (mph)		45			45			30			30	
-ink Distance (fl)		635			1668			278			569	
ravel Time (s)		9.6			25.3			6.3			6.1	
Peak Hour Factor	0.92	0.88	0.88	06.0	06:0	0.92	69.0	0.92	69.0	0.92	0.92	0.92
Adj. Flow (vph)	228	1777	7	4	1667	142	23	0	13	108	0	183
Shared Lane Traffic (%)												
-ane Group Flow (vph)	228	1784	0	4	1667	142	0	36	0	0	108	183
Enter Blocked Intersection	No	N N	9	N	N N	9	9	2	2	N	No No	S
ane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12	,		12	,		0	,		0	,
ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
wo way Left Tum Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
urning Speed (mph)	15		6	15		6	15		6	15		6
Number of Detectors	-	2		<del>-</del>	2	<del>-</del>	<del>-</del>	2		<del>-</del>	2	_
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
<ul> <li>eading Detector (ft)</li> </ul>	70	100		20	100	20	20	100		70	100	20
railing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	70	9		20	9	20	20	9		70	9	20
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel	:											
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+Ex			CI+EX			CI+EX			CI+EX	
Detector 2 Channel		d			d			ć			d	
Detector 2 Extend (s)		0.0			0.0			0:0			0.0	
urn Type	bm+pt	,		Perm	c	Perm	Perm	c		Perm	,	pm+ov
Protected Phases		4		c	œ	c	c	7		,	٥	- '
Permitted Phases	4 1			œ		x	7			0		•
1 - 1 - 1 - 1 Thomas				•	•	•	•	•		,	١	

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 10: Sheridan Drive & Proposed South Driveway

	4	†	<i>&gt;</i>	<b>&gt;</b>	ţ	4	•	•	*	٠	<b>→</b>	*
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	0.6	21.0		21.0	21.0	21.0	21.0	21.0		21.0	21.0	0.6
Total Split (s)	29.0	0.96	0.0	0.79	0.79	67.0	24.0	24.0	0.0	24.0	24.0	29.0
Total Split (%)	24.2%	80.0%	%0:0	22.8%	22.8%	25.8%	20.0%	20.0%	%0.0	20.0%	20.0%	24.2%
Maximum Green (s)	24.0	91.0		62.0	62.0	62.0	19.0	19.0		19.0	19.0	24.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	2.0	2.0	4.0	2.0	2.0	2.0	2.0	2.0	4.0	2.0	2.0	2.0
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	С-Мах		C-Max	С-Мах	C-Max	Мах	Max		Max	Max	None
Walk Time (s)		2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Flash Dont Walk (s)		11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0	0	0	0		0	0	
Act Effct Green (s)	91.0	91.0		70.4	70.4	70.4		19.0			19.0	39.6
Actuated g/C Ratio	0.76	0.76		0.59	0.59	0.59		0.16			0.16	0.33
v/c Ratio	0.78	0.67		0.03	0.80	0.14		0.15			0.50	0.34
Control Delay	49.2	5.4		13.8	24.3	5.6		33.1			55.1	28.9
Queue Delay	0:0	0.1		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	49.2	5.5		13.8	24.3	2.6		33.1			55.1	28.9
FOS	Ω	V		В	ပ	A		ပ			ш	O
Approach Delay		10.5			22.6			33.1			38.6	
Approach LOS		В			O			O			D	
Intersection Summary												
Area Type:	Other											
Cycle Length: 120												
Actuated Cycle Length: 120	_											
Offset: 35 (29%), Referenced to phase 4:EBTL and 8:WBTL, Start of Yellow	ed to phase	4:EBTL a	Ind 8:WB	TL, Start	of Yellow							
Natural Cycle: 80												
Control Type: Actuated-Coordinated	ordinated											
Maximum v/c Ratio: 0.80												
Intersection Signal Delay: 17.9	7.9			드	Intersection LOS: B	LOS: B						
Intersection Capacity Utilization 73.7%	tion 73.7%			2	:U Level	ICU Level of Service D	O é					
Analysis Period (min) 15												
Splits and Phases: 10. SF	10: Sheridan Drive & Proposed South Driveway	A. Prop.	S past	th Drivey	\e							
	- Tagain	2	200		, n							
02	<b>†</b>											



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 11: Sheridan Drive & Frankhauser Road

	^	†	ļ	1	۶	*	
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	*	ŧ	<b>₩</b>		r	¥.	
Volume (vph)	79	1741	1660	24	38	59	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	105			0	0	20	
Storage Lanes	-			0	-	-	
Taper Length (ft)	92			25	25	22	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Į.			0.998			0.850	
Fit Protected	0.950	0		•	0.950		
Satd. Flow (prot)	1770	3539	3532	0	1770	1583	
FIt Permitted	0.110				0.950		
Satd. Flow (perm)	202	3539	3532	0	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			3			31	
Link Speed (mph)		45	45		30		
Link Distance (ft)		1014	635		614		
Travel Time (s)		15.4	9.6		14.0		
Peak Hour Factor	0.89	0.89	0.94	0.94	0.73	0.73	
Adj. Flow (vph)	53	1956	1766	26	25	40	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	53	1956	1792	0	25	40	
Enter Blocked Intersection	No No	No	9 N	8	No No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0 ;	0 ;		0 ;		
Crosswalk Width(ft)		16	91		16		
Two way Left Tum Lane		Yes	Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	5			6	12	6	
Number of Detectors	-	2	2		-	_	
Detector Template	Left	Thr	Thr		Left	Right	
Leading Detector (ft)	20	100	100		70	70	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	2	9	9		50	50	
Detector 1 Type	CI+EX	CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		9	9				
Detector 2 Type		CI+Ex	CI+EX				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Perm					Perm	
Protected Phases	c	2	9		4		
Permitted Phases	2					4	
Dototor Dhaco	C	0	9		_	_	

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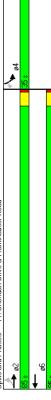
Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 11: Sheridan Drive & Frankhauser Road

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000	SBK	1.0	31.1	35.0	29.2%	29.9	3.2	1.9	0.0	5.1			3.0	None	7.0	19.0	0	8.9	0.07	0.27	26.6	0.0	26.6	ပ											LOS: A	ICU Level of Service B
20	SBL	1.0	31.1	35.0		29.9	3.2	1.9	0.0	5.1			3.0	None	7.0	19.0	0	8.9	0.07	0.40	6.09	0.0	6.09	ш	46.0	О					f Yellow				Intersection LOS: A	U Level or
00///	WBK			0:0	%0:0				0:0	4.0																					T, Start of				<u>=</u> 9	5
TOW	WBI	4.0	40.0	85.0	%8.02	80.2	3.9	6.0	0.0	4.8			3.0	C-Max	7.0	15.0	0	104.3	0.87	0.58	1.	0.5	1.5	A	1.5	A					nd 6:WB					
FOT	EBI	4.0	40.0	85.0	%8.07	80.2	3.9	6.0	0.0	4.8			3.0	C-Max	7.0	15.0	0	104.3	0.87	0.64	7.5	0.0	7.5	A	7.4	A					2:EBTL a					
Ē	EBL	4.0	40.0	85.0	70.8%	80.2	3.9	6.0	0.0	4.8			3.0	C-Max	7.0	15.0	0	104.3	0.87	0.16	3.0	0.0	3.0	A				Other			d to phase		rdinated		9.	tion 59.7%
anos Joan I	Lane Group	Switch Phase Minimum Initial (s)	Minimum Split (s)	Total Split (s)	Total Split (%)	Maximum Green (s)	Yellow Time (s)	All-Red Time (s)	Lost Time Adjust (s)	Total Lost Time (s)	Lead/Lag	Lead-Lag Optimize?	Vehicle Extension (s)	Recall Mode	Walk Time (s)	Flash Dont Walk (s)	Pedestrian Calls (#/hr)	Act Effct Green (s)	Actuated g/C Ratio	v/c Ratio	Control Delay	Queue Delay	Total Delay	SOT	Approach Delay	Approach LOS	Intersection Summary	Area Type:	Cycle Length: 120	Actuated Cycle Length: 120	Offset: 76 (63%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow	Natural Cycle: 90	Control Type: Actuated-Coordinated	Maximum v/c Ratio: 0.64	Intersection Signal Delay: 5.6	Intersection Capacity Utilization 59.7%

Spilts and Phases: 11: Sheridan Drive & Frankhauser Road



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 12: Sheridan Drive & I-290 NB

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	444			4413		r	4	*			
Volume (vph)	249	1530	0	0	1111	533	569	0	273	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	230		120	0		0
Storage Lanes	Ψ-		0	0		0	-		<del>-</del>	0		0
Taper Length (ft)	105		22	25		25	25		25	22		25
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	0.95	0.91	0.95	1.00	1.00	1.00
£					0.951			0.917	0.850			
Flt Protected	0.950						0.950	0.978				
Satd. Flow (prot)	1770	2082	0	0	4836	0	1681	1520	1504	0	0	0
FIt Permitted	0.073						0.950	0.978				
Satd. Flow (perm)	136	5085	0	0	4836	0	1681	1520	1504	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					158			36	39			
Link Speed (mph)		45			45			30			30	
Link Distance (fl)		197			193			830			423	
Travel Time (s)		3.0			5.9			18.9			9.6	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.88	0.88	0.88	0.92	0.92	0.92
Adj. Flow (vph)	265	1628	0	0	1182	267	306	0	310	0	0	0
Shared Lane Traffic (%)							30%		37%			
Lane Group Flow (vph)	265	1628	0	0	1749	0	214	207	195	0	0	0
Enter Blocked Intersection	2	2	2	8	8	S	S	2	2	2	2	8
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Wedian Width(ft)		12			12			12			12	
ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			91			16	
rwo way Left Tum Lane												
Headway Factor	1:00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		6	12		6	15		6	15		6
Number of Detectors	-	2			2		<del>-</del>	2				
Detector Template	Left	Thru			Thru		Left	맫	Right			
eading Detector (ft)	20	100			100		20	100	20			
Trailing Detector (ft)	0	0			0		0	0	0			
Detector 1 Position(ft)	0	0			0		0	0	0			
Detector 1 Size(ft)	8	9			9		50	9	50			
Detector 1 Type	CI+EX	CI+Ex			CI+EX		CI+EX	CI+EX	CI+EX			
Detector 1 Channel	d	0			0		d	0	d			
Detector 1 Extend (s)	0:0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		9			9			9				
Detector 2 Type		CI+Ex			CI+EX			CI+EX				
Detector 2 Channel Detector 2 Extend (s)		0:0			0.0			0:0				
Turn Type	pm+pt					_	custom		Perm			
Protected Phases	-	9			2		e	3				
Permitted Phases	9						e		c,			
	,	,			c		c	c	c			

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 12: Sheridan Drive & I-290 NB

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	1.0	4.0			4.0		4.0	4.0	4.0			
Minimum Split (s)	6.2	33.9			27.8		29.0	29.0	29.0			
Total Split (s)	14.0	85.0	0.0	0.0	71.0	0.0	35.0	35.0	35.0	0.0	0.0	0.0
Total Split (%)	11.7%	70.8%	%0.0	%0:0	59.2%	%0:0	29.2%	29.2%	29.2%	%0:0	%0:0	%0.0
Maximum Green (s)	6.7	79.1			65.2		29.8	29.8	29.8			
Yellow Time (s)	3.2	3.9			3.9		3.2	3.2	3.2			
All-Red Time (s)	11	2.0			1.9		2.0	2.0	2.0			
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.3	5.9	4.0	4.0	2.8	4.0	5.2	5.2	5.2	4.0	4.0	4.0
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	2.0	3.0			3.0		2.0	2.0	2.0			
Recall Mode	None	C-Max			C-Max		None	None	None			
Walk Time (s)		7.0			7.0							
Flash Dont Walk (s)		21.0			15.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)	90.2	9.88			65.2		20.3	20.3	20.3			
Actuated g/C Ratio	0.75	0.74			0.54		0.17	0.17	0.17			
v/c Ratio	0.73	0.43			0.65		0.75	0.72	89.0			
Control Delay	41.6	9.8			15.7		63.3	51.1	48.5			
Queue Delay	0.0	0.1			0.0		0.0	0.0	0.0			
Total Delay	41.6	8.7			15.7		63.3	51.1	48.5			
FOS	O	A			В		ш	۵	۵			
Approach Delay		13.3			15.7			54.5				
Approach LOS		В			Ω			Ω				
Intersection Summary												
	Other											
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 37 (31%), Referenced to phase 2:WBT and 6:EBTL, Start of Yellow	l to phase	2:WBT a	nd 6:EBT	L, Start o	f Yellow							
Natural Cycle: 80												
Control Type: Actuated-Coordinated	dinated											
Maximum v/c Ratio: 0.75												
Intersection Signal Delay: 20.2	2			= 5	Intersection LOS: C	LOS: C	(					
Intersection Capacity Utilization 70.2%	on /0.2%			2	ICU Level of Service C	I Service	د					
Analysis Period (min) 15												
Splits and Phases: 12: She	eridan Driv	12: Sheridan Drive & I-290 NB	R									
11								*				
o 1 02								ځ	93			
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Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 13: Sheridan Drive & Harlem Road

		٠	٠				
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	*	*	K.	*	K.	N/M	
Volume (vph)	895	315	519	861	285	884	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0	215		140	0	
Storage Lanes		-	-		2	2	
Taper Length (ft)		230	100		100	25	
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.88	
Ē		0.850				0.850	
Fit Protected			0.950		0.950		
Satd. Flow (prot)	3539	1583	3433	3539	3433	2787	
Fit Permitted			0.950		0.950		
Satd. Flow (perm)	3539	1583	3433	3539	3433	2787	
Right Turn on Red		2				Yes	
Satd. Flow (RTOR)						118	
Link Speed (mph)	42			45	35		
Link Distance (II)	314			413	338		
Travel Time (s)	8.4			6.3	9.9		
Peak Hour Factor	0.82	0.85	0.92	0.92	0.90	0.90	
Adj. Flow (vph)	1053	3/1	264	936	31/	785	
Silaled Laile Hallic (%)	1053	177	772	700	1,10	000	
Latte Gloup Flow (vpr.) Enter Blocked Intersection	SCO.	3/1 N	200 Po N	930 No	<u> </u>	787 No	
Lane Alianment	g to	Right	eff -	left	left	Right	
Median Width(ft)	1	i D	i	24	24	i i	
Link Offset(ft)	i 0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		6	15		15	6	
Number of Detectors	2	-	-	2	_	<b>-</b>	
Detector Template	Thru	Right	Left	Thru	Left	Right	
Leading Detector (ft)	100	20	20	100	20	70	
Trailing Detector (ft)	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	
Detector 1 Size(ft)	9 .	20	8 ,	9 .	50	20	
Detector 1 Type	CI+EX	CI+EX	CI+EX	CI+EX	CI+EX	CI+EX	
Detector 1 Crialinel	0	00	00	0	0	00	
Detector 1 Dileile (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)	94			94			
Detector 2 Size(ft)	9			9			
Detector 2 Type	CI+EX			CI+Ex			
Detector 2 Channel Detector 2 Extend (s)	0			0			
Turn Type		custom	Prot			custom	
Protected Phases	2	2	-	12	c	13	
Permitted Phases		2				က	
Detector Phase	2	2	<del>-</del>	12	က	13	

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 13: Sheridan Drive & Harlem Road

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	
Switch Phase							
Minimum Initial (s)	20.0	20.0	3.0		0.9		
Minimum Split (s)	30.5	30.5	7.3		11.2		
Total Split (s)	0.99	0.99	29.0	95.0	25.0	54.0	
Total Split (%)	22.0%	22.0%	24.2%	79.2%	20.8%	45.0%	
Maximum Green (s)	60.5	60.5	24.7		19.8		
Yellow Time (s)	3.9	3.9	3.2		3.2		
All-Red Time (s)	1.6	1.6	1.		2.0		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	2.5	4.3	4.3	5.2	4.3	
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Vehicle Extension (s)	2.0	2.0	2.0		2.0		
Recall Mode	C-Max	C-Max	None		None		
Walk Time (s)	7.0	7.0					
Flash Dont Walk (s)	18.0	18.0					
Pedestrian Calls (#/hr)	0	0					
Act Effct Green (s)	9.09	60.5	24.7	7.06	19.8	49.7	
Actuated g/C Ratio	0.50	0.50	0.21	0.76	0.16	0.41	
v/c Ratio	0.59	0.46	0.80	0.35	0.56	0.80	
Control Delay	22.7	21.7	20.2	9.9	50.4	33.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	22.7	21.7	20.2	9.9	50.4	33.0	
SOT	O	ပ	۵	A	۵	O	
Approach Delay	22.4			23.2	37.3		
Approach LOS	S			S	Ω		
Intersection Summary							
	Other						
Cycle Length: 120							
Actuated Cycle Length: 120							
Offset: 24 (20%), Referenced to phase 2:EBWB, Start of Yellow	to phase	2:EBWB	Start of	/ellow			
Natural Cycle: 60							
Control Type: Actuated-Coordinated	linated						
Maximum v/c Ratio: 0.80							
Intersection Signal Delay: 27.3	3			Ξ :	Intersection LOS: C	COS: C	
Intersection Capacity Utilization 63.8% Analysis Period (min) 15	on 63.8%			2	n Level o	ICU Level of Service B	
Solits and Phases: 13: Sher	ridan Dri	13: Sheridan Drive & Harlem Road	m Road				
	1	200	noon in				
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Lanes, Volumes, Timings SRF & Associates

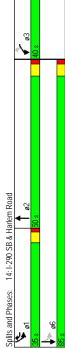
Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 14: 1-290 SB & Harlem Road

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations	*	æ	<b>4</b>		r	**	
Volume (vnh)	298	734	474	21	414	389	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	0		0	330		
Storage Lanes	-	-		0	-		
Taper Length (ft)	25	25		25	75		
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95	
표		0.850	0.994				
Fit Protected	0.950				0.950		
Satd. Flow (prot)	1770	1583	3518	0	1770	3539	
Fit Permitted	0.950				0.225		
Satd. Flow (perm)	1770	1583	3518	0	419	3539	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		149	4				
Link Speed (mph)	30		32			35	
Link Distance (ft)	333		250			456	
Travel Time (s)	7.6		4.9			8.9	
Peak Hour Factor	0.81	0.81	0.87	0.87	0.88	0.88	
Adj. Flow (vph)	368	906	545	24	470	442	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	368	906	269	0	470	442	
Enter Blocked Intersection	8	8	8	8	8	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	12		12			12	
Link Offset(ft)	0		0			0	
Crosswalk Width(ft)	91		91			16	
I wo way Left I um Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	5	6		6	15		
Number of Detectors	-	_	2		_	2	
Detector Template	Left	Right	Thr		Left	Thru	
Leading Detector (ft)	2	20	100		20	100	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	8	50	9		50	9	
Detector 1 Type	CI+EX	CI+Ex	CI+EX		CI+EX	CI+Ex	
Detector 1 Channel	ć	c	c		c	c	
Detector I Extend (S)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0:0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0:0	
Detector 2 Position(ft)			94			94	
Detector 2 Size(ft)			9			9	
Detector 2 Type			CI+EX			CI+EX	
Detector 2 Channel			c			C	
Detector 2 Exterior (5)		10 ma	0.0		tu. ma	0.0	
Turn Type	0	piii+0v	c		prii+pr	7	
Protected Phases	n		7		- <	٥	
Permitted Phases	c	v) +	c		۶ -	7	
Detector Pridse	?	-	7		-	٥	

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 14: I-290 SB & Harlem Road

Earle Group         WBL         WBT         NBT         NBT         SBT           Swiltch Phases         4         4.0         4.0         4.0         4.0           Minimum Spilt (s)         22.0         9.2         30.6         9.2         21.0           Total Spilt (s)         2.0         9.2         30.0         0.0         22.0           Total Spilt (s)         3.0         4.0         0.0         0.0         0.0         2.2           Maximum Green (s)         3.5         3.0         4.0         0.0         0.0         0.0         0.0           Maximum Green (s)         3.5         3.0         4.5         3.0         8.0         8.0           Velade (s)         3.2         3.6         3.0         0.0         0.0         0.0         0.0           Lead Lag Optimize?         Yes         Yes         Yes         Yes         Yes           Vender Extrison (s)         3.0         3.0         3.0         3.0         3.0         8.0           Hack Extrison (s)         3.0         3.0         3.0         3.0         3.0         8.0           Hack Extrison (s)         3.0         3.0         3.0         3.0         3		-	/	_	•	•	<b>→</b>	
4.0 4.0 4.0 4.0 22.0 9.2 30.6 40.0 35.0 50.0 0.0 32.0% 28.0% 40.0% 0.0% 28.2 30.7 45.0 3.2 30.7 45.0 3.2 30.7 45.0 3.2 30.7 45.0 3.2 3.2 30.7 45.0 3.3 3.2 30.7 45.0 3.3 3.3 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3	Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
220 9.2 30.6 0.0 32.0% 28.0% 40.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0%	Switch Phase							
220 92 30.6 320% 280% 40.0% 35.2 30.7 45.0 36.2 30.7 45.0 38.2 32.3 3.6 1.6 1.1 1.4 0.0 0.0 0.0 4.8 4.3 5.0 4.0 1.6 1.1 1.4 0.0 0.0 0.0 23.5 55.9 20.6 0.27 0.65 0.24 0.76 0.84 0.67 0.1 19.1 35.1 0.0 0.0 41.1 19.1 35.1 0.0 0.0 21.0 0.0 22.1 0.0 23.5 55.9 20.6 0.2 0.0 24.1 19.1 35.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0	
40.0 35.0 50.0 0.0 32.0% 28.0% 40.0% 0.0% 35.2 3.2 3.6 1.6 1.1 14 4.4 0.0 0.0 0.0 0.0 4.8 4.3 5.0 4.0 1.6 1.1 1.1 1.4 1.1 1.4 1.1 1.4 1.0 0.0 0.0 23.5 55.9 20.6 0.27 0.65 0.24 0.07 0.65 0.24 0.0 0.0 0.0 41.1 19.1 35.1 0.0 0.0 0.0 41.1 19.1 35.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Minimum Split (s)	22.0	9.2	30.6		9.2	21.0	
320% 280% 400% 00% 35.2 30.7 45.0 35.2 30.7 45.0 40.0 40.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Total Split (s)	40.0	35.0	20.0	0.0	32.0	85.0	
35.2 30.7 45.0 3.2 3.6 1.6 1.1 1.1 1.1 1.2 3.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	Total Split (%)	32.0%	28.0%	40.0%	%0:0	28.0%	%0.89	
3.2 3.2 3.6 1.6 1.1 1.4 0.0 0.0 0.0 4.8 4.3 5.0 4.0 4.8 4.3 5.0 4.0 2.3.5 7.5 7.5 7.0 2.3.5 5.5 7.0 0.0 0.0 4.1 19.1 35.1 0.0 0.0 0.0 4.1 19.1 35.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Maximum Green (s)	35.2	30.7	42.0		30.7	80.0	
1.6 1.1 1.4 0.0 4.8 4.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	Yellow Time (s)	3.2	3.2	3.6		3.2	3.6	
4.8 4.3 5.0 0.0 0.0 4.8 4.3 5.0 4.0 4.0 4.2 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.1 4.1 4.1 4.1 4.1 4.1 4.1 4.1 4.1 4.1	All-Red Time (s)	1.6	<u></u>	1.4		<del>-</del>	1.4	
4.8 4.3 5.0 4.0 Lead Lag Yes Yes 3.0 3.0 3.0 None None Min 10.0 23.5 55.9 20.6 0.27 0.65 0.24 0.76 0.84 0.67 0.11 19.1 35.1 0.0 0.0 41.1 19.1 35.1 0.0 0.0 25.4 35.1 C D 25.4 35.1 C D 26.4 35.1 C D 27.4 35.1 C D 27.4 35.1 C D 28.4 35.1 C D 29.4 35.1 C D 20.4 35.1 C D 2	Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0:0	
Lead Lag 3 Yes Yes 3 0 3.0 3 3.0 None None Min 10.0 12.5 55.9 20.6 0.27 0.65 0.24 0.76 0.84 0.67 41.1 19.1 35.1 0.0 0.0 0.0 41.1 19.1 35.1 C D  25.4 35.1 C D  Oodinated 7	Total Lost Time (s)	4.8	4.3	2.0	4.0	4.3	5.0	
3.0 Yes Yes 3.0 3.0 3.0 None None Min 10.0 23.5 55.9 20.6 0.27 0.65 0.24 0.76 0.84 0.67 41.1 19.1 35.1 0.0 0.0 0.0 41.1 19.1 35.1 C D C D C D Oodinated  7.7 10.65 0.24 0.7 25.4 35.1 0.7 10.67 0.65 0.7 0.67 0.67 0.7 0.7 0.67 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7	Lead/Lag		Lead	Lag		Lead		
3.0 3.0 3.0  Nore None Min 10.0  2.3.5 55.9 20.6  0.27 0.65 0.24  0.70 0.84 0.67  41.1 19.1 35.1  D B D D  25.4 35.1  C D  Ordinated  7 1000 0.00  1000 0.	Lead-Lag Optimize?		Yes	Yes		Yes		
None None Min 10.0 23.5 55.9 20.6 027 0.65 0.24 0.7 0.65 0.24 41.1 19.1 35.1 0.0 0.0 0.0 41.1 19.1 35.1 C D B D C D D C D D Outlingted 3.7 10.67.0%	Vehide Extension (s)	3.0	3.0	3.0		3.0	3.0	
10.0 23.5 55.9 20.6 0.27 0.65 0.24 0.76 0.84 0.67 41.1 19.1 35.1 0.0 0.0 0.0 41.1 19.1 35.1 C D C D D D D C D D D D D D D D D D D D	Recall Mode	None	None	Min		None	None	
15.0 23.5 23.5 23.6 0.27 0.65 0.24 0.76 0.84 0.67 0.00 0.00 0.00 0.00 0.00 0.00 0.00	Walk Time (s)			10.0				
235 55.9 20.6 027 0.65 0.24 0.76 0.84 0.67 41.1 19.1 35.1 0 0.0 0.0 41.1 19.1 35.1 C 0.0 0.0 25.4 35.1 C D 25.4 35.1 C D 26.4 35.1 C D 27.4 35.1 C D 27.4 35.1 C D 27.4 35.1 C D 27.4 35.1 C D 28.4 35.1 C D 29.4 35.1 C D 20.4 35.1	Flash Dont Walk (s)			15.0				
23.5 55.9 20.6 027 0.66 024 0.7 0.66 024 41.1 19.1 35.1 0.0 0.0 0.0 41.1 19.1 35.1 C D 25.4 35.1 C D 20ther	Pedestrian Calls (#/hr)			0				
027 065 024 076 084 067 41.1 19.1 35.1 0.0 0.0 0.0 41.1 19.1 35.1 C D C D C D Oodinated 7.7	Act Effct Green (s)	23.5	55.9	50.6		53.2	52.4	
0.76 0.84 0.67 0.84 0.67 0.0 0.0 0.0 0.1 19:1 35:1 0.0 0.0 0.0 41.1 19:1 35:1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Definition of the control of the co	Actuated g/C Ratio	0.27	0.65	0.24		0.62	19.0	
41.1 19.1 35.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	v/c Ratio	91.0	0.84	0.67		0.68	0.21	
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Control Delay	41.1	19.1	35.1		19.2	8.5	
41,1 19,1 35,1 D B D C D C D Outlier  7 Ion 67,0%	Queue Delay	0.0	0.0	0.0		0.0	0:0	
25.4 35.1 C D Ordinated  7	Total Delay	41.1	19.1	35.1		19.2	8.5	
25.4 35.1 C D Other Ordinaled 7	ros	٥	В	۵		В	Α	
C D  Other  ordinated  7  1  1	Approach Delay	25.4		35.1			14.0	
ondinated of 7.0%	Approach LOS	O		Ω			В	
Other coordinated J. 7 look 67.0%	Intersection Summary							
oodinated .7 Ion 67.0%	Area Type:	Other						
oordinaled .7 Ion 67.0%	Cycle Length: 125							
	Actuated Cycle Length: 86.	.2						
	Natural Cycle: 90							
	Control Type: Actuated-Unc	coordinated						
	Maximum v/c Ratio: 0.84							
	Intersection Signal Delay: 2	23.7			드	tersection	LOS: C	
Analysis Period (min) 15	Intersection Capacity Utiliza	ation 67.0%			2	:U Level	f Service C	
	Analysis Period (min) 15							



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 15: Maple Road & Proposed North Driveway

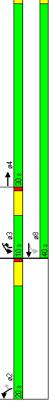
				TOW	2		
Lane Group	EBT	EBR	WBL	MD	NBL	NBR	
Lane Configurations	<b>*</b>		×	‡	r	ĸ	
Volume (vph)	116	54	86	1007	62	100	
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0	225		0	150	
Storage Lanes		0	-		-	-	
Faper Length (ft)		25	22		25	22	
Lane Util. Factor	0.95	0.95	9.	0.95	1.00	1:00	
Ē	0.992					0.850	
Fit Protected			0.950		0.950		
Satd. Flow (prot)	3511	0	1770	3539	1770	1583	
Flt Permitted			0.161		0.950		
Satd. Flow (perm)	3511	0	300	3539	1770	1583	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)	12					40	
Link Speed (mph)	45			45	30		
Link Distance (ft)	1002			976	372		
ravel Time (s)	15.2			14.0	8.5		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	1062	26	107	1095	19	109	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1121	0	107	1095	19	109	
Enter Blocked Intersection	No No	8	N N	N	N	8	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	12			12	12		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane	Yes			Yes			
Headway Factor	1.0	1.00	1.00	1.00	1.00	1.00	
Furning Speed (mph)		6	15		15	6	
Number of Detectors	2		_	2	_	-	
Detector Template	Thru		Left	Thru	Left	Right	
Leading Detector (ft)	100		20	100	70	70	
railing Detector (ft)	0		0	0	0	0	
Detector 1 Position(ft)	0		0	0	0	0	
Detector 1 Size(ft)	9		20	9	20	70	
Detector 1 Type	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+EX	
Detector 1 Channel							
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0	
Detector 2 Position(ft)	94			94			
Detector 2 Size(ft)	9			9			
Detector 2 Type	CI+EX			CI+Ex			
Detector 2 Channel							
Detector 2 Extend (s)	0.0			0.0			
Turn Type			pm+pt			vo+mq	
Protected Phases	4		m	∞	2	3	
Permitted Phases			∞			2	
Detector Phase	4		c	00	2	cc	

Synchro 7 - Report (Mitigation) Page 27

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - AM Peak Hour 15: Maple Road & Proposed North Driveway

Lane Group         EBT         RBR         WBI         NBR           Swiftch Phasse         A         4.0         4.0         4.0           Minimum Initial (s)         4.0         0.0         10.0         8.0         20.0           Total Spift (s)         20.0         0.0         10.0         40.0         8.0         10.0           Total Spift (s)         20.0         0.0         10.0         40.0         20.0         8.0           Yellow Time (s)         2.0         0.0         10.0         10.0         10.0         10.0           Yellow Time (s)         2.0         3.5         3.5         3.5         3.5         3.5         3.5           Ale Red Time (s)         0.5 <t< th=""><th>(\$) 4.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8</th><th>WBL WBT   WBL WBT   40</th><th>NBR 4.0 8.0 10.0 16.7% 6.0 3.5 0.0 4.0 4.0 4.0 4.0 4.0 18.2 0.41 0.41</th></t<>	(\$) 4.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8	WBL WBT   WBL WBT   40	NBR 4.0 8.0 10.0 16.7% 6.0 3.5 0.0 4.0 4.0 4.0 4.0 4.0 18.2 0.41 0.41
(s) (s) 4.0 4.0 4.0 4.0 (s) (s) 2.00 8.0 2.00 8.0 2.00 8.0 2.00 8.0 2.00 8.0 2.00 8.0 2.00 8.0 2.00 8.0 2.00 8.0 2.00 8.0 2.00 8.0 2.00 8.0 2.00 8.0 2.00 8.0 2.00 8.0 2.00 8.0 2.00 8.0 2.00 9.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	(\$) 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	4.0 4.0 8.0 10.0 8.0 10.0 8.0 10.0 10.0 40.0 10.0 10.0 10.0 10.0 10	4.0 8.0 10.0 16.7% 6.0 3.5 0.5 0.0 1.5 0.0 1.5 0.0 1.5 0.0 0.0 1.8 3.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
(\$) 4.0 4.0 4.0 4.0 4.0 (\$) (\$) 4.0 4.0 (\$) 200 8.0 200 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2	(\$) 4.0 4.0 4.0 (\$) (\$) 20.0 0.0 10.0 0.0 10.0 0.0 10.0 0.0 10.0 0.0	4.0 4.0 4.0 10.0 10.0 10.0 10.0 10.0 10.	4.0 8.0 10.0 10.0 6.0 3.5 0.5 0.0 1.5 0.0 1.6 1.8 3.0 None
(\$) 200 80 200 20	(\$) 200 80  nn (\$) 200 80  nn (\$) 260 60  500% 167% 6  0.0 35  st (\$) 0.0 0.0  1.5 0.0 0.0  1.5 0.0 0.0  1.6 0.0 0.0  1.6 0.0 0.0  1.7 0.0 0.0  1.8 0.0 0.0  1.9 0.0  1.1 0.0	16.7% 66.7% 3.7% 66.7% 3.5 3.5 3.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	80 100 16.7% 6.0 6.0 0.5 0.0 1.0 18.2 0.41
100   100	100   100	100 400 16.7% 66.7% 36.0 3.5 36.0 3.5 35.0 0.0 0.0 4.0 4.0 11.0 28.2 28.2 0.64 0.64 0.64 0.64	16.7% 16.7% 3.5 0.5 0.0 4.0 4.0 1.0 18.2 0.41
100	so of the first sector of	16.7% 66.7% 33 6.0 36.0 3.5 3.5 0.5 0.5 0.0 0.0 4.0 4.0 1.0 0.0 None None S.0 2.8.2 28.2 0.64 0.64 0.27 0.49	16.7% 6.0 3.5 0.5 0.0 4.0 Lead 7 ves 3.0 None 18.2
in (\$) 26.0 6.0 36.0 36.0 36.0 36.0 36.0 36.0 36	n (\$) 260 60 3 st (\$) 260 60 3 st (\$) 0.0 0.0 0.0 st (\$) 4.0 4.0 4.0 Lag Lead 1.0 4.0 1.0 lite? Yes Yes Yes Yes On (\$) 3.0 3.0 lite? Yes 3.0 3.0 3.0 Expression (\$) 2.0 28.2 2 (\$) 20.9 28.2 2 (\$) 20.9 28.2 2 (\$) 11.0 7.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	6.0 36.0 3.5 3.5 0.5 0.5 0.0 0.0 4.0 4.0 1.0 0.0 3.0 3.0 None None 5.0 11.0 28.2 28.2 0.64 0.64 0.27 0.49	6.0 3.5 0.5 0.0 0.0 Lead Yes 3.0 None 18.2
st (\$) 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	st (\$) 3.5 3.5 (\$) (\$) (\$) (\$) (\$) (\$) (\$) (\$) (\$) (\$)	3.5 3.5 3.5 0.0 0.0 0.5 0.5 0.5 0.0 0.0 0.0 0.0 0	3.5 0.5 0.0 4.0 4.0 4.0 Yes 3.0 None 18.2
st (\$) 0.5 0.5 0.5 (\$) (\$) (\$) (\$) (\$) (\$) (\$) (\$) (\$) (\$)	st (s) 0.5 0.5 st (s) (s) (s) (s) (s) (s) (s) (s) (s) (s)	0.5 0.5 0.5 0.5 0.0 0.0 0.0 0.0 0.0 0.0	0.5 0.0 4.0 Lead Yes 3.0 None 18.2
st (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	st (s) 0.0 0.0 0.0 o.0 o.0 o.0 o.0 o.0 o.0 o.0	0.0 0.0 4.0 Lead Yes 3.0 3.0 None None S.0 28.2 28.2 0.64 0.64 0.27 0.49 0.27 0.49 0.67	0.0 4.0 Lead Yes 3.0 None 18.2 0.41
(\$) 4.0 4.0 4.0 4.0 4.0 integrated integrate	(\$) 4.0 4.0 4.0 high lines   Lead   L	4.0 4.0 Lead Yes 3.0 None None 5.0 11.0 1 0 28.2 28.2 0.64 0.64 0.027 0.49 0.027 0.40 0.	4.0 Lead Yes 3.0 None 18.2 0.41
lag Lead like? Yes Yes Yes lon (\$) 3.0 3.0 None None None 5.0 5.0 1.1.0 0.0 (\$) 20.9 28.2 28.2 (\$) 11,0 0.0 (\$) 0.07 0.49 (\$) 11,9 4.6 4.8 None None 11,9 4.6 4.8 None 11,9 4.6 4.8 Non	lag Lead nite? Yes Yes for S 30 3.0 None None None None None None None None	3.0 None 5.0 11.0 0.64 0.49	Lead Yes 3.0 None 18.2 0.41
Inter? Yes Yes Yes Inter? Yes Yes Inter? Yes 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	Inter? Yes Yes Yes Inter? Yes Yes Inter? Yes Yes Yes Yes Yes Yes Yes Yes You You You You You You You Yes Inter Yes Yes Inter Yes Yes Inter Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes	3.0 None 5.0 11.0 0 28.2 0.64 0.49	Yes 3.0 None 18.2 0.41
lon (s) 3.0 3.0 3.0 3.0 k(s) None None None None Station 11.0 11.0 11.0 11.0 11.0 11.0 11.0 11.	lon (s) 3.0 3.0 3.0 None None None None None None None None	3.0 None 5.0 11.0 0.64 0.49	3.0 None 18.2 0.41
None   None   None   None   None   None   None   So   50   50   50   50   50   50   50   5	None   None	None 5.0 11.0 28.2 0.64 0.49	None 18.2 0.41
k (s) 1.0 5.0 5.0 (s) (s) (s) 1.1.0 1.0 (s) (s) 2.0.9 2.8.2	k (s) 1.0 1.0 (s) 20.9 28.2 (s) 20.9 28.2 20.9 28.2 20.0 0.0 11.9 4.6 11.9 4.6 11.9 4.6 11.9 4.6 11.9 4.6 11.9 4.6 11.9 8 Mmary  Other  Cutaled-Uncoordinated	5.0 11.0 28.2 0.64 0.49	18.2 0.41
K(s)	K (\$)	11.0 0 28.2 0.64 0.49	18.2 0.41
s (#hr) 0 0 28.2 28.2 28.2 28.2 28.2 28.2 28.2	s (#hr) 0 28.2 (s) 20.9 28.2 (s) 20.9 28.2 (s) 20.9 28.2 (s) 20.0	28.2 0.64 0.49 0.49	18.2 0.41
(\$) 20.9 28.2 28.2 28.2 28.2 28.2 28.2 28.2 28	(s) 20.9 28.2 ratio 0.47 0.64 0.64 0.64 0.67 0.27 11.9 4.6 11.9 4.6 11.9 4.6 8 11.9 A.6 9 11.9 B A y 11.9 Cliter Cuendh: 44.4 55 Cuendh: 44.4 55 Cuendh: 44.4 55 Cuendh: 44.4 55 Cuendh: 44.4 55 Cuendh: 44.4 55 Cuendh: 44.4 55 Cuendh: 44.4 56 Cuendh: 44.4	28.2 0.64 ( 0.49 (	18.2 0.41
atio 0.47 0.64 0.64 0.64 0.64 0.64 0.64 0.67 0.27 0.49 0.45 0.49 0.67 0.70 0.70 0.70 0.70 0.70 0.70 0.70	ratio 0.47 0.64  0.67 0.27  11.9 4.6  0.0 0.0  11.9 4.6  B A A  y 11.9 A  y 11.9 A  Colher  Colher  So  Length: 44.4  55  Size-Uncoordinated side. 0.67	0.64	0.41
0.67 0.27 0.49 11.9 0.6 4.8 0.0 0.0 0.0 11.9 4.6 4.8 B A A A A A B A A B A A B A A B A A B A A A B A A A B A B A A B	0.67 0.27 11.9 4.6 0.0 0.0 11.9 4.6 B A A y 11.9 B mmary Other 00 Length: 44.4 55 Size-Uncoordinated	0.49	0.14
mmary    11.9   46   48     0.0   0.0   0.0     11.9   46   48     B	mmary		0.10
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 11.9 4.6 B B A y 11.9 A.6 B D A y Other Control Contro	4 20	8.6
y 11.9 4.6 4.8 A A B A 11.9 11.9 4.6 4.8 A A A A A A A A A A A A A A A A A A A	11.9 4.6  y 11.9 A.6  mmany Other  Collect Character A.7  Ength: 44.4  Estate Uncoordinated Salic 0.67	0.0	0.0
y 11.9 A A A A Minnary Cliher Colher So Callo Other So Callo Off Callo O 67 A Callo	y 11.9 A 4  mmany Other  0 Length: 44.4 Satasted-Uncoordinated salio: 0.67	4.8 20	8.6
mmany    B	y 11.9	A	٨
B A A mmary Other Other Other Associated At 4 A S S S S S S S S S S S S S S S S S S	B mmary Other S0 Length: 44.4 S5 Stated-Uncoordinated		
nary Other ongh: 44.4 aled-Uncoordinated o: 0.67 City Villization 47.6%	Intersection Summary Area Type: Cycle Length: 60 Actualed Cycle Length: 44.4 Natural Cycle: 50 Control Type: Actualed-Uncoordinaled Maximum vic Ratio: 0.67		
Other singth: 44.4 arted-Uncoordinated or. 0.67 City Unitration 47.6%	Area Type: Cycle Length: 60 Actualed Cycle Length: 44.4 Natural Cycle: Ength: 44.4 Control Type: Actualed-Uncoordinaled Maximum v(C Ratio: 0.67		
ength: 44.4 arled-Uncoordinaled o: 0.67 Delay: 8.6 Ittly lilization 47.6%	Cycle Length: 60 Actualed Cycle Length: 44.4 Natural Cycle: 55 Control Type: Actualed-Uncoordinaled Maxmum v(C Ratio: 0.67		
ength: 44.4 Lated-Uncoordinated o: 0.67 I Delay: 8.6 II Delay: 8.6	Actualed Cycle Length: 44.4 Natural Cycle: 55 Control Type: Actualed-Uncoordinaled Maxmum vic Ratic: 0.67		
Lated-Uncoordinated 0.0.67 1 Detay: 8.6 city Ullization 47.6%	Natural Cycle: 55 Control Type: Actualed-Uncoordinaled Maximum v/c Ratlo: 0.67		
Lated-Uncoordinated o: 0.67 I Delay: 8.6 city Ulilization 47.6%	Control Type: Actuated-Uncoordinated Maximum v/c Ratio: 0.67		
: 8.6 Ization 47.6%	Maximum v/c Ratio: 0.67		
: 8.6 Ization 47.6%			
ization 47.6%		Intersec	in LOS: A
Analysic Dariod (min) 15	ization 47.6%	ICU Lev	of Service A
Aliaysis Fellod (IIIII) 13	Analysis Period (min) 15		

Splits and Phases: 15: Maple Road & Proposed North Driveway



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 1: Maple Road & Millersport Hwy SB

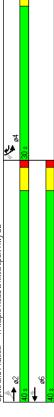
	Č	İ	i.	9	i	000	
Lane Group	EBL	EBI	WBI	WBK	SBL	SBK	
Lane Configurations	<u>_</u>	‡	‡	*_	<u>,-</u>	*-	
Volume (vph)	53	916	888	230	26	174	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	120			150	0	0	
Storage Lanes	-			-	-	_	
Taper Length (ft)	32			100	25	25	
Lane Util. Factor	1:00	0.95	0.95	1.00	1.00	1.00	
Ft				0.850	0	0.850	
Fit Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583	
FIt Permitted	0.276				0.950		
Satd. Flow (perm)	514	3539	3539	1583	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)						83	
Link Speed (mph)		45	45		30		
Link Distance (ft)		222	654		781		
Travel Time (s)		8.4	6.6		6.4		
Peak Hour Factor	0.90	06.0	0.92	0.92	0.81	0.81	
Adj. Flow (vph)	32	1084	965	250	73	215	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	32	1084	965	250	73	215	
Enter Blocked Intersection	2	2	8	8	8	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	91		16		
Two way Left Turn Lane			Yes				
Headway Factor	1:00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	5			6	15	6	
Number of Detectors	-	2	2	_	<del></del>		
Detector Template	Left	Thr.	Thr	Right	Left	Right	
Leading Detector (ft)	20	100	100	20	20	20	
Trailing Detector (ft)	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	
Detector 1 Size(ft)	8	9	9	70	70	20	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		9	9				
Detector 2 Type		CI+Ex	CHEX				
Detector 2 Channel		d	d				
Detector 2 Extend (s)		0.0	0.0			e	
Turn Type	Perm			vo+mq		Perm	
Protected Phases	•	2	9	4	4		
Permitted Phases	2			9		4	
Detector Phase	7	7	9	4	4	4	

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 1: Maple Road & Millersport Hwy SB

	^	Ť	ļ	1	٠	*	
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	
Switch Phase							
Minimum Initial (s)	4.0	4.0	4.0	1.0	1.0	1.0	
Minimum Split (s)	9.1	9.1	9.1	6.2	6.2	6.2	
Total Split (s)	40.0	40.0	40.0	30.0	30.0	30.0	
Total Split (%)	57.1%	57.1%	57.1%	45.9%	45.9%	42.9%	
Maximum Green (s)	34.9	34.9	34.9	25.4	25.4	25.4	
Yellow Time (s)	3.9	3.9	3.9	3.2	3.2	3.2	
All-Red Time (s)	1.2	1.2	1.2	1.4	1.4	1.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	2.1	2.1	2.1	4.6	4.6	4.6	
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Min	C-Min	C-Min	None	None	None	
Act Effct Green (s)	48.5	48.5	48.5	70.0	11.8	11.8	
Actuated g/C Ratio	69:0	69.0	69.0	1.00	0.17	0.17	
v/c Ratio	0.09	0.44	0.39	0.16	0.25	0.64	
Control Delay	2.8	6.2	8.4	0.2	25.2	24.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	5.8	6.2	8.4	0.2	25.2	24.6	
FOS	⋖	⋖	⋖	×	ပ	U	
Approach Delay		6.2	6.7		24.7		
Approach LOS		A	∢		O		
Intersection Summary							
	Other						
Cycle Length: 70							
Actuated Cycle Length: 70							
Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	phase 2:	EBTL and	16:WBT,	Start of G	reen		
Natural Cycle: 40							
Control Type: Actuated-Coordinated	dinated						
Maximum v/c Ratio: 0.64							
Intersection Signal Delay: 8.5	2			Ī	Intersection LOS: A	LOS: A	
Intersection Capacity Utilization 43.4%	ion 43.4%			೦	U Level o	ICU Level of Service A	
Analysis Period (min) 15							

Splits and Phases: 1: Maple Road & Millersport Hwy SB



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 2: Maple Road & Millersport Hwy NB

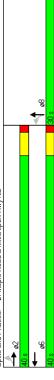
	\	†	<b>/</b>	<b>\</b>	,	1	•	-	L	٠	<b>→</b>	*
ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
-ane Configurations	*	‡			₩		۴	2				
Volume (vph)	46	938	0	0	1026	29	91	0	466	0	0	0
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	-		0	0		0	<del>-</del>		0	0		0
aper Length (ft)	20		22	25		25	25		22	22		25
ane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1:00
Į.					966.0			0.850				
It Protected	0.950						0.950					
Satd. Flow (prot)	1770	3539	0	0	3525	0	1770	1583	0	0	0	0
-It Permitted	0.144						0.950					
Satd. Flow (perm)	268	3539	0	0	3525	0	1770	1583	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					9			69				
ink Speed (mph)		45			45			30			30	
Link Distance (ft)		654			1770			319			263	
Fravel Time (s)		6.6			26.8			7.3			0.9	
Peak Hour Factor	0.91	0.91	0.91	0.87	0.87	0.87	0.84	0.84	0.84	0.92	0.92	0.92
Adi. Flow (vph)	107	1031	0	0	1179	33	108	0	222	0	0	0
Shared Lane Traffic (%)												
-ane Group Flow (vph)	107	1031	0	0	1212	0	108	222	0	0	0	0
Enter Blocked Intersection	8	8	8	8	8	8	8	9	8	8	8	8
ane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12	,		12	,		12	,		12	,
ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
wo way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
urning Speed (mph)	15		6	15		6	15		6	15		6
Number of Detectors	_	2			2		<del>-</del>	2				
Detector Template	Left	Thru			Thru		Left	Thru				
eading Detector (ft)	70	100			100		20	100				
railing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0	0				
_	70	9			9		20	9				
Detector 1 Type	CI+Ex	CI+Ex			CI+Ex		CI+Ex	CI+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		9			9			9				
Detector 2 Type		CI+Ex			CI+EX			CI+EX				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Perm						Perm					
Protected Phases	•	2			9		•	∞				
Permitted Phases	7						∞					

Synchro 7 - Report (Mitigation) Page 3

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 2: Maple Road & Millersport Hwy NB

Lane Group Switch Phase Minimum Initial (s)	i											
Switch Phase Virimum Initial (s)	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)												
	1.0	1.0			4.0		1.0	1.0				
Minimum Split (s)	6.1	6.1			9.1		6.2	6.2				
Total Split (s)	40.0	40.0	0.0	0.0	40.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0
Total Split (%)	57.1%	57.1%	%0.0	%0:0	57.1%	%0.0	42.9%	42.9%	%0:0	%0.0	%0:0	0.0%
Maximum Green (s)	34.9	34.9			34.9		25.4	25.4				
rellow Time (s)	3.9	3.9			3.9		3.2	3.2				
All-Red Time (s)	1.2	1.2			1.2		1.4	1.4				
ost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fotal Lost Time (s)	2.1	2.1	4.0	4.0	5.1	4.0	4.6	4.6	4.0	4.0	4.0	4.0
-ead/Lag												
-ead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Recall Mode	C-Min	C-Min			C-Min		None	None				
Act Effct Green (s)	35.9	35.9			35.9		24.4	24.4				
Actuated g/C Ratio	0.51	0.51			0.51		0.35	0.35				
//c Ratio	0.78	0.57			0.67		0.18	0.93				
Control Delay	52.4	11.2			15.2		16.2	44.4				
Queue Delay	0.0	0.0			0.0		0.0	0.0				
Fotal Delay	52.4	11.2			15.2		16.2	44.4				
SO-	۵	В			В		В	Ω				
Approach Delay		15.1			15.2			39.8				
Approach LOS		В			В			O				
ntersection Summary												
	Other											
Cycle Length: 70												
Actuated Cycle Length: 70												
Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	phase 2:	EBTL and	6:WBT, \$	Start of G	reen							
Natural Cycle: 50												
Control Type: Actuated-Coordinated	linated											
Maximum v/c Ratio: 0.93												
ntersection Signal Delay: 20.6	9			'n	Intersection LOS: C	LOS: C						
ntersection Capacity Utilization 75.8%	on 75.8%			0	CU Level of Service D	f Service	۵					
Analysis Period (min) 15												

Splits and Phases: 2: Maple Road & Millersport Hwy NB



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 3: Maple Road & Maplemere Road

FBL   FBT   FBR   WBL   WBT   WBL   NBL		\	Ť	~	•	,	/		_	•	٠	<b>→</b>	*
1900   1900	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
136   1266   35   1266   12   77   17   17   17   17   17   17	Lane Configurations	<u></u>	<b>₽</b>		<u>,-</u>	<b>₽</b>			4			4	
1900   1900	Volume (vph)	36	1266	32	21	944	62	22	0	12	11	∞	31
100	Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
10 0.95 0.95 1.00 0.95 0.95 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Storage Length (ft)	100		0	70		0	0		0	0		0
1.00 0.95 0.95 1.00 0.95 1.00 1.00 1.00 1.00 1.00 0.95 0.95 1.00 0.950 0	Storage Lanes	-		0	-		0	0		0	0		0
0.956	Taper Length (ft)	2 20	0.05	0 25	100	0.05	25	100	100	100	100	100	1 00
0.950         0.950         0.969         0.969         0.969         0.978         0.078         0.0177         0.0178	Fr	8	966.0	2	2	0.991		2	0.952	2	3	0.964	3
1770   3525   0   1770   3507   0   0   1718   0   0   1718   0   0   1718   0   0   1718   0   0   1718   0   0   1718   0   0   1718   0   0   0   1718   0   0   0   0   0   0   0   0   0	Fit Protected	0.950			0.950				0.969			896.0	
0.212 935 3525 0 2.79 3507 0 0 1394 0 0 0 1 1	Satd. Flow (prot)	1770	3525	0	1770	3507	0	0	1718	0	0	1738	0
170	Fit Permitted	0.212			0.150				0.786			0.767	
Ves	Satd. Flow (perm)	395	3525	0	279	3507	0	0	1394	0	0	1377	0
14	Right Turn on Red			Yes			Yes			Yes			Yes
1770	Satd. Flow (RTOR)		9			14			19			25	
1770	Link Speed (mph)		42			42			೫			30	
1.00	Link Distance (ft)		1770			1106			378			402	
194   0.94   0.87   0.87   0.62   0.62   0.81   0.62   0.81   0.63   0.64   0.81   0.64   0.84   0.84   0.85   0.64   0.81   0.84   0	Travel Time (s)		26.8			16.8			9.8			9.1	
38 1347 37 24 1085 71 35 0 19 95  38 1384 0 24 1156 0 0 54 0 0 0  10 No No No No No No No No No No No No No	Peak Hour Factor	0.94	0.94	0.94	0.87	0.87	0.87	0.62	0.62	0.62	0.81	0.81	0.81
138   1384   0   24   1156   0   0   54   0   0   0     No	Adj. Flow (vph)	æ	1347	37	24	1085	71	32	0	19	32	10	8
38 1384 0 24 1156 0 0 54 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Shared Lane Traffic (%)			٠		, 440	٠	•	i	٠	•		•
No No No No No No No No No No No No No N	Lane Group Flow (vph)	æ :	1384	0 :	24	1156	0 :	0 :	Z :	0 :	0 :	143	° :
Left   Left   Kight   Left   Kight   Left   Kight   Left   Left   Kight   Left   Left   Kight   Left   Left   Kight   Left   Thru   T	Enter Blocked Intersection	8 .	§ :	2	<u>و</u> .	§ :	2	و ا	2 :	2	0	۶	2
12	Lane Alignment	E	Het:	Right	Left	E :	Right	E	EEF	Right	E	Let	Right
10	Median Width(ft)		12			12			0 0			0	
1.00   1.00	LINK Unset(ft)		o ;			o ;			o ;			0 ;	
1.00   1.00	CLUSSWAIK WIGHT(II)		0 0			0 0			0			0	
1	I wo way Left Full Larie	5	res	5	5	s c	0	5	5	5	5	00	5
Left Thru Left T	Headway Factor	9. 1	9.	3.9	9.1	90:	9.9	0.1	3.	3.0	9. =	00.1	3.0
Left Thru Left Thru Left Thru Left Thru 20 100 20 100 20 100 20 100 20 100 20 100 20 100 20 100 20 100 20 100 20 100 20 100 20 100 20 100 10	Turning Speed (riph)	<u>0</u> -	c	^	<u>.</u>	c	^	<u>0</u> -	c	7	<u>0</u> -	c	7
CIPE CIPE CIPE CIPE CIPE CIPE CIPE CIPE	Nambel of Defectors Detector Template	- æ	7 Thri		- # -	7 Thrii		- # -	7 Thri		- æ	7 L	
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Detector Template	) Keil	100		S Lell	100		Lell 20			S Cell	100	
20 6 20 6 20 6 20 6 20 6 20 6 20 6 20 6	Trailing Detector (ft)	8 0	3		07	3 0		07	3 -		8 0	3	
20 6 20 6 20 6 20 6 20 6 20 0 0 0 0 0 0	Detector 1 Position(ff)	0 0	0 0		0 0	0 0		0 0	0 0		0 0	0 0	
Cl+Ex Cl-Ex Cl+Ex	Detector 1 Size(ft)	20 0	9		20	9		20	9		20 0	9	
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
00 00 00 00 00 00 00 00 00 00 00 00 00	Detector 1 Channel												
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
94 94 94 94 94 64 66 66 8 8 4 4	Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
CHEX CHEX CHEX CHEX CH  0.0 0.0 0.0  Perm Perm Perm Perm 8 4	Detector 2 Position(ft)		94			94			94			94	
CI+EX CI+EX CI+EX CI-EX CI- 0.0 0.0 0.0 Perm Perm Perm Perm 4 4	Detector 2 Size(ft)		9			9			9			9	
0.0 0.0 0.0 Perm Perm Perm Perm 2 6 6 8 8 4	Detector 2 Type		CI+Ex			CI+EX			CI+EX			CI+Ex	
Perm 0.0 0.0 0.0 Perm Perm 2 6 8 8 4 4	Detector 2 Channel		d			d			d			0	
Perm Perm Perm Perm 2 6 8 8 4	Detector 2 Extend (s)		0:0			0.0			0:0			0.0	
2 6 6 8 8 4	Turn Type	Perm	c		Perm	,		Ferm	c		Perm	,	
0 0	Protected Phases	c	7		,	٥		c	00		•	4	
	Permitted Phases	`			c			×			_		

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 3: Maple Road & Maplemere Road

	1	†	<i>&gt;</i>	-	ţ	4	•	•	•	•	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	0.6	0.6		0.6	0.6		27.0	27.0		27.0	27.0	
Total Split (s)	47.0	47.0	0.0	47.0	47.0	0.0	28.0	28.0	0.0	28.0	28.0	0.0
Total Split (%)	62.7%	62.7%	%0:0	62.7%	62.7%	%0.0	37.3%	37.3%	%0:0	37.3%	37.3%	%0.0
Maximum Green (s)	45.0	42.0		45.0	45.0		23.0	23.0		23.0	23.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	2.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)							7.0	7.0		7.0	7.0	
Flash Dont Walk (s)							15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)							0	0		0	0	
Act Effct Green (s)	34.3	34.3		34.3	34.3			6.7			10.3	
Actuated g/C Ratio	89.0	99.0		0.68	0.68			0.19			0.20	
v/c Ratio	0.14	0.58		0.13	0.48			0.19			0.47	
Control Delay	9.9	7.7		7.2	9.9			15.5			22.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	9.9	7.7		7.2	9.9			15.5			22.5	
S07	A	V		A	⋖			В			ပ	
Approach Delay		7.6			6.7			15.5			22.5	
Approach LOS		٧			⋖			В			O	
Intersection Summary												
	Other											
Cycle Length: 75												
Actuated Cycle Length: 50.3	~											
Natural Cycle: 60												
Control Type: Actuated-Uncoordinated	oordinated											
Maximum v/c Ratio: 0.58												
Intersection Signal Delay: 8.1	-			드	Intersection LOS: A	LOS: A						
Intersection Capacity Utilization 52.2%	tion 52.2%			⊇	ICU Level of Service A	f Service	٧					
Analysis Period (min) 15												

Splits and Phases: 3: Maple Road & Maplemere Road



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 4: Maple Road & Donna Lea Blvd

•	NBR		21	1900	0	0	25	1.00			0		0				0.82	26		0	No	Right					1.00	6					ICU Level of Service A	
•	NBL	>	12	1900	0	-	25	1.00	0.914	0.982	1672	0.982	1672	30	322	8.1	0.82	15		41	N <sub>o</sub>	Left	12	0	16		1.00	15	Stop				U Level of	
ţ	WBT	ŧ	1015	1900				0.95			3539		3539	45	1000	15.2	0.77	1318		1318	9	Left	12	0	16	Yes	1.00		Free				2	
<b>&gt;</b>	WBL	je-	23	1900	20	-	22	1.00		0.950	1770	0.950	1770				0.77	30		30	9	Left					1.00	15						
<i>&gt;</i>	EBR		29	1900	0	0	25	0.95			0		0				0.73	40		0	N	Right					1.00	6						
<b>†</b>	EBT	<b>₽</b>	1326	1900				0.95	0.997		3529		3529	45	1106	16.8	0.73	1816		1856	9	Left	12	0	16	Yes	1.00		Free		Other		n 47.6%	
	Lane Group	Lane Configurations	Volume (vph)	Ideal Flow (vphpl)	Storage Length (ft)	Storage Lanes	Taper Length (ft)	Lane Util. Factor	Ë	Fit Protected	Satd. Flow (prot)	Flt Permitted	Satd. Flow (perm)	Link Speed (mph)	Link Distance (ft)	Travel Time (s)	Peak Hour Factor	Adj. Flow (vph)	Shared Lane Traffic (%)	Lane Group Flow (vph)	Enter Blocked Intersection	Lane Alignment	Median Width(ft)	Link Offset(ft)	Crosswalk Width(ft)	Two way Left Turn Lane	Headway Factor	Turning Speed (mph)	Sign Control	Intersection Summary		Control Type: Unsignalized	Intersection Capacity Utilization 47.6%	Analysis Period (min) 15

Lanes, Volumes, Timings
Synchro 7 - Report (Mitigation)
SRF & Associates
Page 7

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 4: Maple Road & Donna Lea Blvd

																																							۵
•	NBR		21			0.82	76									0.75	928			252	6.9		3.3	95	564	NB 1	40	15	56	255	0.16	4 1	21.7	ပ	21.7	ပ			ICIT Level of Service
•	NBL	>	12	Stop	%	0.82	12									0.81	2555	1836	719	1854	8.9	2.8	3.5	86	130	WB 3	629	0	0	1700	0.39	0 0	0.0						I I evel of
ţ	WBT	ŧ	1015	Free	%0	0.77	1318						TWLTL	2	1000											WB 2	629	0	0	1700	0.39	0 0	0:0						_
<b>\</b>	WBL	r	23			0.77	30						_			0.75	1856			1483	4.1		2.2	91	339	WB 1	30	30	0	336	0.09	_ ;	9.91	ပ	0.4			٥	709 LV
<i>&gt;</i>	EBR		53		1	0.73	40																			EB 2	645	0	40	1700	0.38	0 0	0.0						
†	EBT	₩.	1326	Free	%0	0.73	1816						TWLTL	2	1106											EB 1	1211	0	0	1700	0.71	0 0	0.0		0.0				doitor
	Movement	Lane Configurations	Volume (veh/h)	Sign Control	Grade	Peak Hour Factor	Hourly flow rate (vph)	Pedestrians	Lane Width (ft)	Walking Speed (ft/s)	Percent Blockage	Right turn flare (veh)	Median type	Median storage veh)	Upstream signal (ft)	pX, platoon unblocked	vC, conflicting volume	vC1, stage 1 conf vol	vC2, stage 2 conf vol	vCu, unblocked vol	tC, single (s)	tC, 2 stage (s)	tF (s)	b0 dueue free %	cM capacity (veh/h)	Direction, Lane #	Volume Total	Volume Left	Volume Right	LS3	Volume to Capacity	Queue Length 95th (ft)	Control Delay (s)	Lane LOS	Approach Delay (s)	Approach LOS	Intersection Summary	Average Delay	Intersection Capacity Hilization

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 5: Maple Road & Audubon Golf Club

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 5: Maple Road & Audubon Golf Club

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0.92

Stop 0.92 0.92

0.92

10.61

0.61

0.93

0.93

0.92

0

Hourly flow rate (vph) Pedestrians

Peak Hour Factor

0.92

4145 1065 1065 0% 0.93

47 1389 1389 Free 0% 0.92 1510

Lane Configurations

Volume (veh/h) Sign Control

<del>4</del> ° Stop 0% 0.61

10

Lame Group		1	†	<i>&gt;</i>	<b>&gt;</b>	ţ	4	•	<b>←</b>	•	۶	<b>→</b>	•
1	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
1900 1389 14 8 1066 2 10 0 6 0 0 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0	Lane Configurations	<u>~</u>	4₽		<u>"</u>	4₽			4			4	
1900 1900 1900 1900 1900 1900 1900 1900	Volume (vph)	0	1389	14	∞	1065	2	10	0	9	0	0	0
100 0 95 0 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
1 0 1 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	Storage Length (ft)	100		0	20		0	0		0	0		0
1,00   0.95   0.95   1.00   0.95   1.00	Storage Lanes	-		0	-		0	0		0	0		0
1.00	Taper Length (ft)	22		22	25		25	25		25	22		25
1863 3536 0 1770 3539 0 0 0948  1863 3536 0 1770 3539 0 0 1773 0 0 1863  45 45 45 363 0 0 1771 0 0 1863  45 45 45 45 30 0 1771 0 0 1863  6.8 84 10.7 2 0.93 0.93 0.93 0.61 0.61 0.61 0.92 0.92  0 1570 150 15 9 1147 0 0 26 0 0 0  1525 0 9 1147 0 0 26 0 0 0 0  152 0 0 100 1.00 1.00 1.00 1.00 1.00 1.00	Lane Util. Factor	1:00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
1863   3536   0   1770   3539   0   0   1713   0   0   1863     1863   3536   0   1770   3539   0   0   1713   0   0   1863     1864   45	走		0.999						0.948				
1863   3536   0   1770   3539   0   0   1713   0   0   1863     1863   3536   0   1770   3539   0   0   0   0   0     446   456   456   469   1713   0   0   1863     45	Fit Protected				0.950				0.970				
1863 3536 0 1770 3539 0 0 1713 0 0 1863 45 45 556 7 1770 3539 0 0 1713 0 0 1863 6.8 84 469 3092 0.92 0.93 0.93 0.93 0.93 0.93 0.92 0.92 0 1510 155 0 9 1145 2 16 0 10 0 0 0 1525 0 9 1147 0 0 26 0 0 0 0 0 0 0 0 0 0 0 0 1.00 1.00 1.00	Satd. Flow (prot)	1863	3536	0	1770	3539	0	0	1713	0	0	1863	0
1863   3536   0   1770   3539   0   0   1713   0   0   1863     45	Fit Permitted				0.950				0.970				
45	Satd. Flow (perm)	1863	3536	0	1770	3539	0	0	1713	0	0	1863	0
6.8 856 469 111  6.8 84 107 10.0 25  6.8 84 10.7 10.0 1.00 1.00 1.00 1.00 1.00 1.00	Link Speed (mph)		45			45			30			30	
6.8 8.4 10.7 10.7 10.7 2.5 10.92 0.92 0.92 0.92 0.92 0.93 0.93 0.93 0.91 0.61 0.61 0.61 0.92 0.92 0.92 0.93 0.93 0.93 0.93 0.61 0.61 0.61 0.62 0.92 0.92 0.93 0.91 0.91 0.91 0.92 0.92 0.92 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93	Link Distance (ft)		446			929			469			11	
0.92 0.92 0.92 0.93 0.93 0.93 0.61 0.61 0.61 0.62 0.92 0.92 0.92 0.93 0.93 0.64 0.65 0.61 0.65 0.92 0.92 0.92 0.93 0.93 0.64 0.65 0.65 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.9	Travel Time (s)		8.9			8.4			10.7			2.5	
0 1510 15 9 1145 2 16 0 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.61	0.61	0.61	0.92	0.92	0.92
0 1525 0 9 1147 0 0 26 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Adj. Flow (vph)	0	1510	15	6	1145	2	16	0	10	0	0	0
0 1525 0 9 1147 0 0 26 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Shared Lane Traffic (%)												
No	Lane Group Flow (vph)	0	1525	0	6	1147	0	0	56	0	0	0	0
Left Left Right Left Right Left Right Left Right Left Left Right Left Left Right Left Left Right Left Left Right Left Left Right Left Left Left Right Left Left Left Right Left Left Left Right Left Left Right Left Left Right Right R	Enter Blocked Intersection	9	8	8	9	8	8	9	N	9	9	N	No
12 12 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
16 16 16 16 16 16 16 16 16 16 16 16 16 1	Median Width(ft)		12			12			0			0	
16 16 16 16 16 16 16 16 16 16 16 16 16 1	Link Offset(ft)		0			0			0			0	
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Crosswalk Width(ft)		16			16			16			16	
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Two way Left Turn Lane		Yes			Yes							
15 9 15 9 15 Other Stop 9 15 15 15 15 15 15 15 15 15 15 15 15 15	Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Free         Free           Other         ICU Level of Service A	Turning Speed (mph)	15		6	12		6	15		6	12		6
Other ation 48.8%	Sign Control		Free			Free			Stop			Stop	
Other stion 48.8%	Intersection Summary												
ition 48.8%		Other											
Analysis Period (min) 15	Control Type: Unsignalized Intersection Capacity Utilizati	tion 48.8%			Ō	U Level o	f Service	<b>⋖</b>					
	Analysis Period (min) 15												

3.3 100 462

3.3

2.2 98 433

2.2 EB 1

cM capacity (veh/h)

1700 0.0

26 16 10 157 0.17 15 32.5

0 2 1700 0.23 0.0

0 1700 0.45 0.0

0 433 0.02

0 1700 0.30 0

0 0 1700 0.59 0

0.00

Queue Length 95th (ft) Control Delay (s)

Volume to Capacity

Direction, Lane #
Volume Total
Volume Left
Volume Right
cSH

0.0

Lane LOS Approach Delay (s) Approach LOS Intersection Summary

384

763

ICU Level of Service

0.4 48.8% 15

Average Delay Intersection Capacity Utilization Analysis Period (min)

574 6.9

2688 11525 2688 6.5 6.5 5.5 4.0 100

1928 765 1928 7.5 6.5 3.5 100

762

2682 11165 2682 2682 6.5 5.5 4.0 100 143

2107 1517 590 2107 7.5 6.5 3.5 86

1525

1147

762

1525

1147

Larae Width (f)
Walking Speed (ft/s)
Percent Blockage
Fercent Blockage
Right tun flare (veh)
Median storage veh)
Ussteam signal (ft)
pt, pation unblocked
vC. conflicting volume
vC1, stage 1 conf vol
vC2, stage 2 conf vol
vC2, stage 2 conf vol
ff. single (s)
ff. single (s)
ff. single (s)

TWLTL

TWLTL

Synchro 7 - Report (Mitigation) Page 9

Lanes, Volumes, Timings SRF & Associates

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 6: Maple Road & North Forest Road 2/5/2015

	4	†	<b>/</b>	-	,	/	•	_	Ł.	•	+	۲
Lane Groun	ER.	FRT	FRD	WRI	WRT	WRD	NR	NRT	NRP	ay.	CRT	CRP
Care Configurations	4	3	į į	4	4	YOU I	NO.	4	NON N	700	4	YOC .
-ane coniigurations	- ;	E	_	- :	E	_ ;	-;	<b>-</b>	_ ;	-	<b>-</b> :	- !
volume (vph)	504	1026	146	238	195	96	96	354	502	691	38/	13/
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	415		220	315		120	125		220	250		250
Storage Lanes	-		_	<b>,</b>		<b>-</b>	<del>,</del>		-			_
Taper Length (ft)	8		115	09		25	95		25	8		22
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ŧ			0.850			0.850			0.850			0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
-It Permitted	0.194			0.093			0.168			0.170		
Satd. Flow (perm)	361	3539	1583	173	3539	1583	313	1863	1583	317	1863	1583
Right Turn on Red			Yes			8			Yes			Yes
Satd. Flow (RTOR)			137						25			63
Link Speed (mph)		45			45			32			32	
Link Distance (ft)		1705			820			529			809	
ravel Time (s)		25.8			12.4			10.3			11.8	
Peak Hour Factor	0.92	0.92	0.92	06.0	06:0	0.00	96.0	0.96	96.0	0.87	0.87	0.87
Adj. Flow (vph)	222	1148	159	264	883	107	100	369	214	194	445	157
Shared Lane Traffic (%)												
-ane Group Flow (vph)	222	1148	159	264	883	107	100	369	214	194	445	157
Enter Blocked Intersection	9	N <sub>o</sub>	2	9	No No	No No	N <sub>o</sub>	8	N <sub>o</sub>	N <sub>0</sub>	9	8
ane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12	,		12	,		12	,		12	,
ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
wo way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Furning Speed (mph)	15		6	15		6	15		6	15		6
Number of Detectors	_	2	_	_	2	_	_	2	_	-	2	_
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
eading Detector (ft)	20	100	20	20	100	70	70	100	20	20	100	8
railing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	70	9	20	20	9	50	50	9	20	20	9	8
Detector 1 Type	CI+EX	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+EX
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
urn Type	pm+pt		vo+mq	pm+pt		vo+mq	pm+pt		bm+ov	pm+pt		pm+ov
Protected Phases	2	7	က	-	9	7	c	∞	-	7	4	2
Permitted Phases	2		2	9		9	∞		∞	4		4
Detector Phase	2	2	3	_	9	7	3	00	_	7	4	2
Delector r nase	)	7	כ	-	د	-	2	د		-	-	

Synchro 7 - Report (Mitigation) Page 11

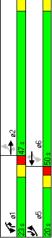
Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 6: Maple Road & North Forest Road

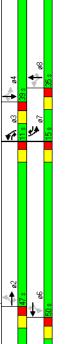
	^	†	<b>/</b>	<b>/</b>	Ļ	1	•	<b>—</b>	•	٠	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	1.0		1.0	1.0	4.0	1.0	1.0	4.0	1.0	1.0	4.0	1.0
Minimum Split (s)	7.0		7.0	7.0	32.0	7.0	7.0	35.0	7.0	7.0	35.0	7.0
Total Split (s)	20.0		11.0	23.0	20.0	15.0	11.0	35.0	23.0	15.0	39.0	20.0
Total Split (%)	16.7%		9.5%	19.2%	41.7%	12.5%	9.5%	29.5%	19.2%	12.5%	32.5%	16.7%
Maximum Green (s)	14.0		2.0	17.0	44.0	0.6	2.0	29.0	17.0	0.6	33.0	14.0
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.5		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	9.9		0.9	0.9	0.9	9.0	0.9	0.9	0.9	0.9	0.9	0.9
Lead/Lag	Lead		Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehide Extension (s)	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None		None	None	None	None	None	None	None	None	None	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		22.0			22.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	52.1	39.7	20.8	58.7	43.0	58.1	31.4	26.4	48.1	39.5	30.4	48.9
Actuated g/C Ratio	0.45	0.35	0.44	0.51	0.37	0.51	0.27	0.23	0.42	0.34	0.26	0.43
v/c Ratio	0.70	0.94	0.20	0.86	0.67	0.13	0.67	98.0	0.32	0.87	0.90	0.22
Control Delay	29.6	52.1	9.6	55.9	33.6	16.7	51.4	63.5	21.1	64.7	64.3	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.6	52.1	9.6	55.9	33.6	16.7	51.4	63.5	21.1	64.7	64.3	13.1
S07	S	۵	⋖	ш	ပ	В	۵	ш	ပ	ш	ш	В
Approach Delay		44.0			36.8			48.4			54.3	
Approach LOS		Ω			Ω			Ω			Ω	
Intersection Summary												
Area Type:	Other											
Cycle Length: 120												
Actuated Cycle Length: 115	LC.											

Actuated Cycle Longth: 115
Natural Cycle: 95
Control Type: Actuated-Uncoordinated
Maximum wc Ratio: 0.94
Intersection Signa Delay: 44.5
Intersection Capacity Utilization 90.4%
Analysis Period (min) 15

Intersection LOS: DICU Level of Service E

Splits and Phases: 6: Maple Road & North Forest Road





Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 7: Sheridan Drive & Mill Street

		t	<b>&gt;</b>	-	,	/	•	-	•	۶	<b>→</b>	*
ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
-ane Configurations	*	₩.		<u>,                                    </u>	₩		r	\$		r	\$	
Volume (vph)	14	1364	24	121	1391	53	149	23	148	34	89	14
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	150		0	40		0	75		0
storage Lanes	-		0	-		0	-		0	-		0
Faper Length (ft)	99	L	25	09	L	25	25	,	25	52		72
ane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1:00	1.00	1.00	1.00	1.00 TF0	1.00
T-1	010	0.997		0	0.994		0	0.830		010	0.975	
-It Protected	0.950	2520	c	0.950	2510	c	0.750	1750	c	0.950	1012	C
Satd. Flow (prot)	0/10	8268	0	0.056	32 18	0	0.561	1028	0	040	0 8 10	0
Satd. Flow (perm)	183	3529	0	104	3518	С	1045	1658	С	1133	1816	0
Right Turn on Red			8			Yes			8			Yes
Satd. Flow (RTOR)					2						7	
Link Speed (mph)		45			42			8			30	
ink Distance (ft)		2782			7.16			838			362	
ravel Time (s)		42.2			14.8			19.0			8.2	
Peak Hour Factor	0.84	0.84	0.84	0.92	0.92	0.92	0.83	0.83	0.83	0.77	0.77	0.77
4dj. Flow (vph)	11	1624	59	132	1512	28	180	99	178	4	88	9
Shared Lane Traffic (%)												
ane Group Flow (vph)	11	1653	0	132	1570	0	180	242	0	44	106	0
Enter Blocked Intersection	8	8	8	8	8	2	2	2	2	2	8	2
ane Alignment	Left	reft	Right	Left	Left	Right	Left	Left	Right	Left	reft	Right
Median Width(ft)		12			12			12			12	
ink Offset(ft)		0 ;			0 ;			0 ;			0 ;	
Crosswalk Width(ft)		16			16			91			16	
wo way Left Turn Lane	6	Yes	9	0	Yes	9		6		6	9	6
Headway Factor	1:00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
urning Speed (mph)	<u>د</u> .	•	6	72	•	5	72	•	6	<u>ر</u> 2	•	6
Number of Detectors	- :	2			- 2		<del>-</del> -	2		<del>.</del>	- 5	
Detector Lemplate	EEF S	lhru		Le <del>ll</del>			E			E E	nu.	
eading Detector (ft)	25	001		0 50	99		70	<u> </u>		2 2	001	
I railing Detector (II)	0	0 0		0	0 0		0	0		0 0	0 0	
Detector 1 Size(ft)	2 8	9 4		20 0	9 4		2 0	o ~c		2 8	9 49	
Detector 1 Type	CI+EX	CI+Ex		CI+Ex	CI+Ex		CI+EX	CI+Ex		CI+EX	CI+Ex	
_												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0:0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+EX			CI+EX			CI+EX			CI+EX	
Detector 2 Channel		d			d			d			d	
Jetector 2 Extend (s)	ć	0.0		1	0.0		1	0.0		č	0.0	
Furn Type	FeIII	c		pm+pt	4		pm+pt	٥		FeIII	-	
Potential Dhases	c	7		- 4	>		o o	>		_	-	

Synchro 7 - Report (Mitigation) Page 13

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 7: Sheridan Drive & Mill Street

Amen Group         EBL         EBT         EBR         WBL         WBL         WBT         NBT         NBT         NBT         SBT		1	†	/	<b>&gt;</b>	ţ	4	•	<b>←</b>	•	۶	<b>→</b>	•
10	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
1, 4, 0, 4, 0, 0, 1, 0, 4, 0, 1, 0, 4, 3, 4, 3, 4, 3, 4, 3, 4, 3, 4, 3, 4, 3, 4, 3, 4, 3, 4, 3, 4, 3, 3, 2, 3, 2, 3, 2, 3, 2, 3, 2, 3, 2, 3, 2, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3,	Switch Phase												
Secondary Seco	Minimum Initial (s)	4.0	4.0		1.0	4.0		1.0	4.0		4.0	4.0	
57.0%   57.0%   60.0   12.0   89.0   0.0   12.0   46.0   0.0   34.0   34.0   34.0   34.0   34.0   34.0   34.0   34.0   34.0   34.0   34.0   34.0   34.3	Minimum Split (s)	28.3	28.3		6.2	28.3		6.2	34.2		34.2	34.2	
(5) 71.5 71.5 71.5 71.5 71.5 71.5 71.5 71.5	Total Split (s)	77.0	77.0	0.0	12.0	89.0	0.0	12.0	46.0	0.0	34.0	34.0	0.0
(\$) 71.5 71.5 71.5 72 83.5 6.8 40.8 28.8 28.8 43.3 4.3 4.3 4.3 3.2 4.3 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3	Total Split (%)	22.0%	27.0%	%0.0	8.9%	%6.39	%0:0	8.9%	34.1%	%0.0	25.2%	25.2%	%0.0
(\$) 4.3 4.3 4.3 3.2 4.3 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3	Maximum Green (s)	71.5	71.5		7.7	83.5		8.9	40.8		28.8	28.8	
(\$) 1.2 1.2 1.2 1.1 1.2 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2	Yellow Time (s)	4.3	4.3		3.2	4.3		3.2	3.2		3.2	3.2	
(\$) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	All-Red Time (s)	1.2	1.2		1.	1.2		2.0	2.0		2.0	2.0	
Lag   Lead   L	Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lag   Lag   Lead   Lead   Lead   Lead   Lag     Yes   Yes   Yes   Yes   Yes   Yes     3.0   3.0   3.0   3.0   3.0   3.0     None   None   None   None   Max   Max   Max     15.0   15.0   15.0   15.0   2.0     15.0   15.0   15.0   0.0   0.0     15.0   15.0   0.0   0.0   0.0     15.0   15.1   0.01   0.04   0.04   0.17     15.0   15.1   0.05   0.01   0.00   0.0     15.0   0.0   0.0   0.0   0.0   0.0     15.0   0.0   0.0   0.0   0.0   0.0     15.0   0.0   0.0   0.0   0.0     15.0   0.0   0.0   0.0   0.0     15.0   0.0   0.0   0.0   0.0     15.0   0.0   0.0   0.0   0.0     15.0   0.0   0.0   0.0   0.0     15.0   0.0   0.0   0.0   0.0     15.0   0.0   0.0   0.0   0.0     15.0   0.0   0.0   0.0   0.0     15.0   0.0   0.0   0.0   0.0     15.0   0.0   0.0   0.0     15.0   0.0   0.0   0.0	Total Lost Time (s)	5.5	5.5	4.0	4.3	5.5	4.0	5.2	5.2	4.0	5.2	2.5	4.0
Yes         Yes <td>Lead/Lag</td> <td>Lag</td> <td>Lag</td> <td></td> <td>Lead</td> <td></td> <td></td> <td>Lead</td> <td></td> <td></td> <td>Lag</td> <td>Lag</td> <td></td>	Lead/Lag	Lag	Lag		Lead			Lead			Lag	Lag	
None   None	Lead-Lag Optimize?	Yes	Yes		Yes			Yes			Yes	Yes	
None         None         None         None         None         Max         Max         Max           70         7.0 </td <td>Vehicle Extension (s)</td> <td>3.0</td> <td>3.0</td> <td></td> <td>3.0</td> <td>3.0</td> <td></td> <td>3.0</td> <td>3.0</td> <td></td> <td>3.0</td> <td>3.0</td> <td></td>	Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0	Recall Mode	None	None		None	None		Max	Max		Max	Max	
150 15.0 15.0 22.0 22.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Walk Time (s)	7.0	7.0			7.0			7.0		7.0	7.0	
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Flash Dont Walk (s)	15.0	15.0			15.0			22.0		22.0	22.0	
66.9 66.9 80.2 79.0 41.1 41.1 29.1 0.15 0.5 0.1 0.5 0.1 0.5 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	Pedestrian Calls (#/hr)	0	0			0			0		0	0	
051 051 051 061 060 031 031 022 018 032 081 074 049 046 017 226 38.3 602 20.9 41.4 40.6 45.4 C D E C D D D D D C 38.1 41.0 D D C B C C D C C C D D D C C D C C C D D D D C D C C D D D D	Act Effct Green (s)	6.99	6.99		80.2	79.0		41.1	41.1		29.1	29.1	
0.18 0.92 0.81 0.74 0.49 0.46 0.17 2.26 38.3 60.2 20.9 41.4 40.6 45.4 C D E C D D D D D 38.1 24.0 41.0 D D D C 38.1	Actuated g/C Ratio	0.51	0.51		0.61	09.0		0.31	0.31		0.22	0.22	
226 38.3 602 20.9 41.4 40.6 45.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	v/c Ratio	0.18	0.92		0.81	0.74		0.49	0.46		0.17	0.26	
226 38.3 60.2 20.9 41.4 40.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Control Delay	22.6	38.3		60.2	20.9		41.4	40.6		45.4	42.5	
22.6 38.3 602 20.9 41.4 40.6 45.4 C D E C D D D D C D C D D O D C D D D O D D D D D O D D D D D D D O D D D D	Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
C D E C D D 38.1 24.0 D C C D C C D C C D C C C C C C C C C C	Total Delay	22.6	38.3		60.2	20.9		41.4	40.6		45.4	42.5	
38.1 24.0 D C ner d Intersection LOS: C IOU Level of Service D	SOT	ပ	D		ш	ပ		۵	Ω		Ω	D	
197 d d 177.2%	Approach Delay		38.1			24.0			41.0			43.4	
197 10 177.2%	Approach LOS		O			O			D			٥	
rd 1 1	Intersection Summary												
b. 1	Area Type:	Other											
b ا	Cycle Length: 135												
'd 	Actuated Cycle Length: 130	9.0											
rd 	Natural Cycle: 100												
l 1	Control Type: Semi Act-Uno	coord											
177.2%	Maximum v/c Ratio: 0.92												
zatoti 77.270	Intersection Signal Delay: 3	12.5 ation 77.2%			= ≥	tersection	LOS: C	_					
	Analysis Period (min) 15	alloll 7 7.2 70			2	חבים כי	DOI NICO	2					

Splits and Phases: 7: Sheridan Drive & Mill Street



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 8: Sheridan Drive & North Forest Road

	\	Ť	•	•			-	-			•	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u>,                                    </u>	‡	*	*	₩		۴	+	*-	r	‡	*-
Volume (vph)	148	1341	291	305	1190	41	293	468	82	24	497	207
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	405		170	260		0	180		265	180		300
Storage Lanes	-		-	-		0	<del>-</del>		<del>-</del>	-		-
Taper Length (ft)	200		22	200		25	25		25	22		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1:00	0.95	1.00
푼			0.850		0.995				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3522	0	1770	1863	1583	1770	3539	1583
Fit Permitted	0.073			690.0			0.183			0.173		
Satd. Flow (perm)	136	3539	1583	129	3522	0	341	1863	1583	322	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			136		3				69			218
Link Speed (mph)		45			45			40			32	
Link Distance (ft)		1668			2219			547			473	
Travel Time (s)		25.3			33.6			9.3			9.5	
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.89	0.89	0.89	0.95	0.95	0.95
Adj. Flow (vph)	157	1427	310	328	1280	44	329	276	92	22	523	218
Shared Lane Traffic (%)												
Lane Group Flow (vph)	157	1427	310	328	1324	0	329	276	92	22	523	218
Enter Blocked Intersection	2	8	8	8	8	8	2	8	2	2	2	2
Lane Alignment	Left	Left	Right	Left	Left:	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0 ;			0 ;			0 ;			0 ;	
Crosswalk Width(ii)		9 5			0 0			<u>o</u>			<u>o</u>	
I wo way Left Turn Lane	5	Yes	5	60	Yes	5	5	5	5	5	5	5
Headway Factor	9. 5	1:00	9.9	9.1	1.00	90.	0.1	3.	9.	3. 5	00.1	3.9
Turning speed (mpn)	<u>.</u>	c	۰ ح	<u>2</u>	c	5	<u>ت</u> ،	c	ъ,	<u>.</u>	c	۰ ح
Number of Detectors		7	- :		7			7	- :		7	- :
Detector Lemplate	Lett	Ihru	Kight S	Lett	nun 1		Left	Inru	Kight	Lett	Inru	Kight
Leading Detector (ft)	<b>₹</b>	90	γ °	07	90		07	3 9	07	<b>₹</b>	90	γ °
Trailing Detector (II)	0	0	0	0	0		0	0	0	0	> 0	0
Detector 1 Position(ii)	ج د	0 4	2	2 0	0 4		2 0	0 4	0 6	2 ح	0 4	2
Detector 1 Size(ii)	CI+Fx	CI+Fx	CI+Fx	CI+Fx	C +E		CI+Fx	OH-E	CI+Fx	CI+Fx	O HE	CI+Fx
Detector 1 Channel	5		5	5	5		5	5	5	5		5
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt		Perm	pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases	-	9		2	2		7	4		3	∞	
Permitted Phases	9		9	0			,		•	c		•
				7			4		4	o		œ

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 8: Sheridan Drive & North Forest Road

	^	†	<u>/-</u>	-	ļ	1	•	<b>—</b>	•	۶	•	*
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.3	27.9	27.9	8.3	27.9		21.0	27.2	27.2	8.3	27.2	27.2
Total Split (s)	20.0	0.09	0.09	20.0	0.09	0.0	25.0	40.0	40.0	20.0	35.0	35.0
Total Split (%)	14.3%	42.9%	45.9%	14.3%	45.9%	%0:0	17.9%	28.6%	28.6%	14.3%	25.0%	25.0%
Maximum Green (s)	15.7	54.9	54.9	15.7	54.9		20.7	34.9	34.9	15.7	29.9	29.9
Yellow Time (s)	3.2	3.9	3.9	3.2	3.9		3.2	3.2	3.2	3.2	3.2	3.2
All-Red Time (s)	<del>[</del> :	1.2	1.2	<del>[</del>	1.2		Ξ:	1.9	1.9	<del>[</del>	1.9	1.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.3	2.1	2.1	4.3	5.1	4.0	4.3	5.1	5.1	4.3	5.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max		None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		15.0	15.0		15.0			15.0	15.0		15.0	15.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	68.2	55.0	55.0	73.8	58.3		51.5	43.8	43.8	33.2	25.7	25.7
Actuated g/C Ratio	0.50	0.40	0.40	0.54	0.43		0.38	0.32	0.32	0.24	0.19	0.19
v/c Ratio	0.72	1.00	0.43	1.26	0.88		0.95	0.88	0.17	0.17	0.78	0.46
Control Delay	47.7	63.5	18.3	179.4	44.2		70.9	61.1	12.8	29.8	61.3	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.7	63.5	18.3	179.4	44.2		70.9	61.1	12.8	29.8	61.3	8.9
FOS	O	ш	В	ш	۵		ш	ш	В	ပ	ш	A
Approach Delay		54.8			71.0			59.8			45.4	
Approach LOS		Ω			ш			ш			۵	
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 135.9	5.9											

Cycle Length: 136.9
Actualed Cycle Length: 135.9
Natural Cycle: 125
Control Type: Actuated-Uncoordinated
Maximum wic Ratio: 128
Intersection Signal Delay: 59.4
Intersection Capacity Utilization 99.6%
Analysis Period (min) 15

Intersection LOS: E ICU Level of Service F 

 Splits and Phases:
 8: Sheridan Drive & North Forest Road
 Peg
 Peg
 Peg

 203
 | 60s
 | 40s
 | 40s

 203
 | 40s
 | 40s

 204
 | 60s
 | 40s

 205
 | 40s
 | 40s

 206
 | 40s
 | 40s

 208
 | 40s
 | 40s

 208
 | 40s
 | 40s

Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 10: Sheridan Drive & Proposed South Driveway

		t	-	•		,	_	_	_	k.	•	,
ane Groun	표	FRT	FBR	WBI	WRT	WBR	NBI	NBT	NBR	SBI	SBT	SBR
ane Configurations	*	₩		*	*	×	1	4		2	4	*
Volume (vph)	190	1603	13	_ LC	1558	127	13	C	17	160	, c	233
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	320		0	75		425	0		0	0		0
Storage Lanes	-		0	-		-	0		0	0		_
aper Length (ft)	22		22	25		75	25		25	22		25
ane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ţ.		0.999				0.850		0.922				0.850
-It Protected	0.950			0.950				0.979			0.950	
Satd. Flow (prot)	1770	3536	0	1770	3539	1583	0	1681	0	0	1770	1583
-It Permitted	0.058		ı	0.082				0.862			0.731	
Satd. Flow (perm)	108	3536	0	153	3539	1583	0	1480	0	0	1362	1583
Right Turn on Red			Yes			Yes		:	Yes			Yes
satd. Flow (RTOR)		2				138		23				13
ink Speed (mph)		45			42			9			30	
ink Distance (ft)		635			1668			278			241	
ravel Time (s)		9.6			25.3			6.3			5.5	
Peak Hour Factor	0.92	0.87	0.87	0.94	0.94	0.92	0.75	0.92	0.75	0.92	0.92	0.92
Adj. Flow (vph)	207	1843	15	2	1657	138	17	0	23	174	0	253
Shared Lane Traffic (%)												
.ane Group Flow (vph)	207	1858	0	2	1657	138	0	40	0	0	174	253
Enter Blocked Intersection	8	8	N	N N	N	8	No No	No No	8	No	No No	8
ane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12	,		12	,		0	,		0	,
ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
wo way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
'urning Speed (mph)	15		6	15		6	15		6	15		6
Number of Detectors	_	7		<del>-</del>	2	_	_	2		_	2	_
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
eading Detector (ft)	70	100		70	100	70	70	100		20	100	20
railing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	70	9		20	9	50	50	9		70	9	20
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+EX
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0:0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
urn Type	bm+pt			Perm		Perm	Perm			pm+pt		pm+ov
Protected Phases	7	4			∞	١		2			9	_
Permitted Phases	4			α		α	,			4		9
	١			0	•	0 (	7	•		,	ľ	0 1

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 10: Sheridan Drive & Proposed South Driveway

	^	<b>†</b>	<u>/</u>	<b>&gt;</b>	ţ	4	•	•	•	۶	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	0.6	21.0		21.0	21.0	21.0	21.0	21.0		0.6	21.0	9.0
Total Split (s)	22.0	88.0	0.0	0.99	0.99	0.99	12.0	12.0	0.0	20.0	32.0	22.0
Total Split (%)	18.3%	73.3%	%0:0	22.0%	22.0%	22.0%	10.0%	10.0%	%0:0	16.7%	26.7%	18.3%
Maximum Green (s)	17.0	83.0		61.0	61.0	61.0	7.0	7.0		15.0	27.0	17.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	2.0	2.0	4.0	2.0	2.0	2.0	2.0	2.0	4.0	2.0	2.0	2.0
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag		Lead		Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes		Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		C-Max	С-Мах	C-Max	None	None		None	Max	None
Walk Time (s)		2.0		2.0	2.0	2.0	2.0	2.0			2.0	
Flash Dont Walk (s)		11.0		11.0	11.0	11.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)		0		0	0	0	0	0			0	
Act Effct Green (s)	83.0	83.0		64.4	64.4	64.4		27.0			27.0	45.6
Actuated g/C Ratio	69.0	69.0		0.54	0.54	0.54		0.22			0.22	0.38
v/c Ratio	0.79	0.76		90:0	0.87	0.15		0.11			0.57	0.41
Control Delay	54.1	11.7		17.4	31.3	2.9		21.3			49.7	27.6
Queue Delay	0.0	0.2		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	54.1	11.9		17.4	31.3	2.9		21.3			49.7	27.6
FOS	٥	В		В	ပ	A		ပ			۵	O
Approach Delay		16.1			29.1			21.3			36.6	
Approach LOS		В			O			O			Ω	
Intersection Summary												
	Other											
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 28 (23%), Referenced to phase 4:EBTL and 8:WBTL, Start of Yellow	to phase	4:EBTL a	Ind 8:WB	TL, Start	of Yellow							
Natural Cycle: 90												
Control Type: Actuated-Coordinated	dinated											
Maximum v/c Ratio: 0.87												
Intersection Signal Delay: 23.6	9			드	Intersection LOS: C	LOS: C						
Intersection Capacity Utilization 81.6%	on 81.6%			2	:U Level	CU Level of Service D	۵					
Analysis Period (min) 15												

10: Sheridan Drive & Proposed South Driveway 4 <u>\*</u> Splits and Phases:

Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 11: Sheridan Drive & Frankhauser Road

	^	†	ļ	1	۶	*	
ane Group	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	*	ŧ	<b>₩</b>		r	*	
Volume (vph)	34	1753	1763	41	52	40	
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	105			0	0	20	
Storage Lanes	-			0	-	-	
Taper Length (ft)	92			25	25	25	
-ane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
퍞			0.997			0.850	
Fit Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3529	0	1770	1583	
FIt Permitted	0.084				0.950		
Satd. Flow (perm)	156	3539	3529	0	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			4			21	
Link Speed (mph)		45	45		30		
Link Distance (ft)		1014	635		614		
Fravel Time (s)		15.4	9.6		14.0		
Peak Hour Factor	06:0	06.0	0.91	0.91	0.82	0.82	
Adj. Flow (vph)	33	1948	1937	45	63	49	
Shared Lane Traffic (%)							
-ane Group Flow (vph)	38	1948	1982	0	63	49	
Enter Blocked Intersection	8	S	8	2	%	8	
-ane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
ink Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane		Yes	Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Furning Speed (mph)	15			6	12	6	
Number of Detectors	_	2	2		_	_	
Detector Template	Left	Thru	Thru		Left	Right	
<ul><li>eading Detector (ft)</li></ul>	20	100	100		70	70	
Frailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	8	9	9		50	70	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0:0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		9	9				
Detector 2 Type		CI+Ex	CI+EX				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Perm					Perm	
Protected Phases	d	2	9		4		
Permitted Phases	7	•				4	
Dototor Dhoo	c	0	9				

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 11: Sheridan Drive & Frankhauser Road

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Lane Group	EBL	EBI	WBT	WBR	SBL	SBR	
Switch Phase							
Minimum Initial (s)	4.0	4.0	4.0		1.0	1.0	
Minimum Split (s)	40.0	40.0	40.0		31.1	31.1	
Total Split (s)	85.0	85.0	85.0	0.0	32.0	35.0	
Total Split (%)	%8.07	%8.07	%8.02	%0:0	29.2%	29.2%	
Maximum Green (s)	80.2	80.2	80.2		29.9	29.9	
Yellow Time (s)	3.9	3.9	3.9		3.2	3.2	
All-Red Time (s)	6.0	6.0	6.0		1.9	1.9	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.8	4.8	4.8	4.0	2.1	5.1	
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max		None	None	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0	15.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0	0		0	0	
Act Effct Green (s)	103.6	103.6	103.6		9.6	9.6	
Actuated g/C Ratio	98.0	98.0	98.0		0.08	0.08	
v/c Ratio	0.28	0.64	0.65		0.44	0.34	
Control Delay	0.9	3.9	2.1		61.5	39.3	
Queue Delay	0.0	0.0	0.3		0.0	0.0	
Total Delay	0.9	3.9	2.4		61.5	39.3	
FOS	⋖	⋖	⋖		ш	D	
Approach Delay		3.9	2.4		51.8		
Approach LOS		٧	A		O		
Intersection Summary							
	Other						
Cycle Length: 120							
Actuated Cycle Length: 120							
Offset: 55 (46%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow	to phase	2:EBTL a	nd 6:WB	r, Start o	f Yellow		
Natural Cycle: 90							
Control Type: Actuated-Coordinated	inated						
Maximum v/c Ratio: 0.65							
Intersection Signal Delay: 4.5				⊆ 9	Intersection LOS: A	LOS: A	
Intersection Capacity Utilization 61.6%	%9.L9 u			2	U Level o	CU Level of Service B	
Analysis Period (min) 15							
		L					

Spilts and Phases: 11: Sheridan Drive & Frankhauser Road

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Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 12: Sheridan Drive & I-290 NB

	١	Ť	<b>/</b>	-	,	/		-	_		-	,
ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	r	444			4413		۳	4	¥L			
Volume (vph)	322	1377	0	0	1199	654	317	0	432	0	0	0
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	230		120	0		0
Storage Lanes	-		0	0		0	-		-	0		0
aper Length (ft)	105		22	25		25	22		22	22		25
Lane Util. Factor	1:00	0.91	1.00	1.00	0.91	0.91	0.95	0.91	0.95	1.00	1.00	1.00
Ŧ.					0.947			0.884	0.850			
Fit Protected	0.950						0.950	0.989				
Satd. Flow (prot)	1770	2082	0	0	4816	0	1681	1482	1504	0	0	0
Fit Permitted	0.061						0.950	0.989				
Satd. Flow (perm)	114	2082	0	0	4816	0	1681	1482	1504	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					167			78	78			
Link Speed (mph)		45			45			30			30	
Link Distance (fl)		610			193			830			423	
Fravel Time (s)		9.5			5.9			18.9			9.6	
Peak Hour Factor	0.99	0.99	0.99	0.92	0.92	0.92	0.80	0.80	0.80	0.92	0.92	0.92
Adj. Flow (vph)	326	1391	0	0	1303	711	396	0	540	0	0	0
Shared Lane Traffic (%)							18%		44%			
Lane Group Flow (vph)	326	1391	0	0	2014	0	325	309	302	0	0	0
Enter Blocked Intersection	N <sub>o</sub>	2	No	9	N <sub>0</sub>	9	2	No No	8	N <sub>0</sub>	9	8
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
wo way Left Tum Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Furning Speed (mph)	15		6	15		6	15		6	15		6
Number of Detectors	_	2			2		-	2	_			
Detector Template	Left	Thru			Thr		Left	Thr	Right			
<ul> <li>eading Detector (ft)</li> </ul>	20	100			100		20	100	20			
railing Detector (ft)	0	0			0		0	0	0			
Detector 1 Position(ft)	0	0			0		0	0	0			
Detector 1 Size(ft)	8	9			9		70	9	70			
Detector 1 Type	CI+Ex	CI+Ex			CI+Ex		CI+Ex	CI+Ex	CI+EX			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		9			9			9				
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Furn Type	pm+pt						custom		Perm			
Protected Phases	-	9			2		co	3				
Permitted Phases	9						m		c			
									,			

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 12: Sheridan Drive & 1-290 NB

Lane Group         EB1         EB1         EB1         EB1         WB1         WB1         NB1         NB1         NB1         NB1         SB1         SB2		•	<b>†</b>	<i>&gt;</i>	<b>/</b>	ţ	4	•	•	4	ၨ	<b>→</b>	•
ase base and a state of the following state o	Lane Group	EBE	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spirit   S	Switch Phase												
Split (s) 7.3 33.9 7.7 8.7 8.7 8.7 8.7 8.7 8.7 8.7 8.7 8.7	Minimum Initial (s)	3.0	4.0			4.0		0.9	0.9	0.9			
(%) 1928 750% 000 670 00 300 300 300 00 00 00 000 000 000 0	Minimum Split (s)	7.3	33.9			27.8		29.0	29.0	29.0			
(%) 192% 75.0% 0.0% 55.8% 0.0% 25.0% 25.0% 0.0% 0.0% ne (§) 3.2 3.9 3.9 3.2 2.4.8 24.8 24.8 24.8 24.8 24.8 24.8 2	Total Split (s)	23.0	0.06	0.0	0.0	0.79	0.0	30.0	30.0	30.0	0.0	0.0	0.0
Green (s)         187         841         6112         248         248         248           me (s)         3.2         3.9         3.9         3.2         3.2         3.2           me (s)         1.1         2.0         3.9         3.9         3.2         3.2         3.2           Time (s)         1.1         2.0         0.0	Total Split (%)	19.2%	75.0%	%0:0	%0:0	22.8%	%0:0	25.0%	25.0%	25.0%	%0.0	%0:0	%0.0
Mark (s)   3.2 3.9 3.9 3.2 3.2 3.2 3.2     me (s)   1.1 2.0 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	Maximum Green (s)	18.7	84.1			61.2		24.8	24.8	24.8			
ree (s)         1.1         2.0         1.9         2.0         2.0         2.0           Adjust (s)         0.0 <t< td=""><td>Yellow Time (s)</td><td>3.2</td><td>3.9</td><td></td><td></td><td>3.9</td><td></td><td>3.2</td><td>3.2</td><td>3.2</td><td></td><td></td><td></td></t<>	Yellow Time (s)	3.2	3.9			3.9		3.2	3.2	3.2			
Adjust (s)         0.0 <th< td=""><td>All-Red Time (s)</td><td>1:1</td><td>2.0</td><td></td><td></td><td>1.9</td><td></td><td>2.0</td><td>2.0</td><td>2.0</td><td></td><td></td><td></td></th<>	All-Red Time (s)	1:1	2.0			1.9		2.0	2.0	2.0			
Time (s) 4.3 5.9 4.0 4.0 5.8 4.0 5.2 5.2 4.0 4.0 4.0 Class (building) 4.3 5.9 4.0 4.0 5.2 5.2 5.2 4.0 4.0 4.0 Class (building) 4.3 5.0 4.0 4.0 5.2 5.2 4.0 4.0 4.0 Class (building) 2.0 3.0 3.0 3.0 2.0 2.0 2.0 2.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3	Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lead	Total Lost Time (s)	4.3	5.9	4.0	4.0	2.8	4.0	5.2	5.2	5.2	4.0	4.0	4.0
Optimize?         Yes         Yes           dering (s)         2.0         3.0         2.0         2.0           dering (s)         2.0         3.0         2.0         2.0           def         None         CAMax         CAMax         None         None           (s)         7.0         7.0         7.0         None         None <td>Lead/Lag</td> <td>Lead</td> <td></td> <td></td> <td></td> <td>Lag</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Lead/Lag	Lead				Lag							
tension (s) 2.0 3.0 2.0 2.0 2.0 de (e) None CMax C-Max None None C-Max None None C-Max None None None None None None None None	Lead-Lag Optimize?	Yes				Yes							
de None C-Max C-Max None None None None None None S (\$)	Vehicle Extension (s)	2.0	3.0			3.0		2.0	2.0	2.0			
t (%) 7.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1	Recall Mode	None	C-Max			C-Max		None	None	None			
It Walk (\$) 21.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0 1	Walk Time (s)		7.0			7.0							
1 Calls (#hr)         0         0         0         1 Calls (#hr)         2 Calls (#hr	Flash Dont Walk (s)		21.0			15.0							
sizen (s)         86.2         84.6         61.2         24.3         24.3         31.3	Pedestrian Calls (#/hr)		0			0							
y/c Ratio 0,72 0,70 0,51 0,20 0,20 1,41 0,20 0,20 1,41 0,20 0,20 0,41 0,39 0,79 0,79 0,96 0,85 0,41 0,41 0,41 0,41 0,41 0,41 0,41 0,41	Act Effct Green (s)	86.2	84.6			61.2		24.3	24.3	24.3			
104 0.39 0.79 0.96 0.85 talkay 88.9 8.6 10.8 86.3 56.5 talkay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Actuated g/C Ratio	0.72	0.70			0.51		0.20	0.20	0.20			
889 86 108 863 565 108 863 565 108 863 565 108 863 565 109 109 863 565 109 109 863 565 109 109 863 565 109 109 863 565 109 109 863 565 109 109 863 565 109 109 863 565 109 109 863 565 109 109 863 565 109 109 109 109 109 109 109 109 109 109	v/c Ratio	1.04	0.39			0.79		96.0	0.85	0.82			
88.9 8.6 10.8 86.3 56.5 18 8.9 8.6 10.8 86.3 56.5 19 8.5 19 8.6 10.8 86.3 56.5 19 10.8 10.8 19.5 19.5 19.5 19.5 19.5 19.5 19.5 19.5	Control Delay	88.9	9.8			10.8		86.3	299	52.7			
88.9 8.6 10.8 86.3 56.5  The state of the st	Oueue Delay	0.0	0.0			0.0		0.0	0.0	0.0			
F A B F F E	Total Delay	88.9	9.8			10.8		86.3	299	52.7			
10.8   10.8   C	FOS	ш	V			В		ш	ш	۵			
Summary   C   B	Approach Delay		25.1			10.8			9:59				
Summary  Other  th: 120  yole Length: 120  yole Seferenced to phase 2:WBT and 6:EBTL, Start le: 90 e: Actualed-Coordinated for Ratio: 1.04 Signal Delay: 27.0 Signal Delay: 27.0 rico (min) 15	Approach LOS		ပ			Ω			ш				
Other  1.120  1.20	Intersection Summary												
Cycle Length: 120 Actualed Cycle Length: 120 Offset: 59 (49%). Referenced to phase 2:WBT and 6:EBTL, Start of Yellow Natural Cycle: 90 Control Type: Actuated-Coordinated Maximum Vr. Ratio: 1.04 Intersection Signal Delay: 27.0 Intersection Capacity Utilization 83.4% Analysis Period (min) 15		her											
Actuated Cycle Length: 120 Offset Sp (49%), Referenced to phase 2:WBT and 6:EBTL, Start of Yellow Offset Sp (49%), Referenced to phase 2:WBT and 6:EBTL, Start of Yellow Natural Cycle: 90 Control Type: Actuated-Coordinated Maximum Vc Ratio: 1.04 Intersection Signal Delay: 27.0 Intersection Capacity Utilization 83.4% ICU Level of Service E Analysis Period (min) 15	Cycle Length: 120												
Offset: 59 (49%), Referenced to phase 2:WBT and 6:EBTL, Start of Yellow Natural Cycle: 90 Control Type: Actuated-Coordinated Maximum wC Ratio: 1.04 Intersection Signal Delay: 27.0 Intersection Capacity Utilization 83.4% Analysis Period (min) 15	Actuated Cycle Length: 120												
oordinated 27.0 Izatlon 83.4%	Offset: 59 (49%), Referenced to	to phase	2:WBT ar	nd 6:EBTI	L, Start o	f Yellow							
oordinated : 27.0 Ization 83.4%	Natural Cycle: 90												
: 27.0 ization 83.4%	Control Type: Actuated-Coordi	inated											
: 27.0 ization 83.4%	Maximum v/c Ratio: 1.04												
ization 83.4%	Intersection Signal Delay: 27.0	_			Ξ	tersection	LOS: C						
Analysis Period (min) 15	Intersection Capacity Utilizatio	n 83.4%			2	U Level o	f Service	ш					
	Analysis Period (min) 15												

Splits and Phases: 12: Sheridan Drive & I-290 NB

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Splits and Phases: 13: Sheridan Drive & I-290

Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 13: Sheridan Drive & Harlem Road

				-			
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	*	¥.	K.	*	K.	N. N.	
Volume (vph)	1002	604	463	1053	267	729	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0	215		140	0	
Storage Lanes		-	-		2	2	
Taper Length (ft)	90.0	230	100	900	100	25	
Laire Util. Fauul	0.93	0.00	0.37	0.43	0.77	0.00	
Fit Protected		0000	0.950		0.950	000	
Satd. Flow (prot)	3539	1583	3433	3539	3433	2787	
Flt Permitted			0.950		0.950		
Satd. Flow (perm)	3539	1583	3433	3539	3433	2787	
Right Turn on Red		2				Yes	
Satd. Flow (RTOR)						129	
Link Speed (mph)	45			45	32		
Travel Time (s)	48			010	999		
Peak Hour Factor	0.98	0.98	0.95	0.95	0.85	0.85	
Adj. Flow (vph)	1022	616	487	1108	314	828	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1022	616	487	1108	314	828	
Enter Blocked Intersection	No	8	No No	No No	No	No No	
Lane Alignment	Left	Right	Left	Left	Fet	Right	
Median Width(ft)	12			24	24		
CINK Offset(ft)	0 %			0 1	0 1		
Two way Left Tirm Lane	2			2	2		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		6	15		15	6	
Number of Detectors	2	-	-	2	_	-	
Detector Template	Thru	Right	Left	Thru	Left	Right	
Leading Detector (ft)	100	20	20	100	20	70	
Trailing Detector (ft)	0	0	0	0	0	0	
Detector 1 Position(ft)	0 \	0 8	0 8	0 \	0 8	0 8	
Detector 1 Size(ii)	O X	CI+Fx	CI+Fx	OH-F	CI+Fx	CI+Fx	
Detector 1 Channel	5	5	5		5	5	
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)	94			94			
Detector 2 Size(ft)	9			9			
Detector 2 Type Detector 2 Channel	CI+EX			CI+Ex			
Detector 2 Extend (s)	0.0			0.0			
Turn Type		vo+mq	Prot			vo+mq	
Protected Phases	2	3	<del>-</del>	12	က	-	
Permitted Phases		2				3	
Detector Phase	2	3	-	12	3	-	

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 13: Sheridan Drive & Harlem Road

						_	
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	
Switch Phase							
Minimum Initial (s)	20.0	0.9	3.0		0.9	3.0	
Minimum Split (s)	30.5	11.2	7.3		11.2	7.3	
Total Split (s)	0.99	25.0	29.0	95.0	25.0	29.0	
Total Split (%)	22.0%	20.8%	24.2%	79.2%	20.8%	24.2%	
Maximum Green (s)	90.2	19.8	24.7		19.8	24.7	
Yellow Time (s)	3.9	3.2	3.2		3.2	3.2	
All-Red Time (s)	1.6	2.0	Ξ:		2.0	1.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	2.5	5.2	4.3	4.3	5.2	4.3	
Lead/Lag	Lag		Lead			Lead	
Lead-Lag Optimize?	Yes		Yes			Yes	
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0	
Recall Mode	C-Max	None	None		None	None	
Walk Time (s)	7.0						
Flash Dont Walk (s)	18.0						
Pedestrian Calls (#/hr)	0						
Act Effct Green (s)	63.4	84.4	26.1	95.0	15.5	46.8	
Actuated g/C Ratio	0.53	0.70	0.22	0.79	0.13	0.39	
v/c Ratio	0.55	0.55	0.65	0.40	0.71	0.74	
Control Delay	20.7	11.0	39.0	5.5	28.8	30.2	
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0	
Total Delay	20.7	11.0	39.0	5.9	28.8	30.2	
SOT	U	æ	۵	⋖	ш	ပ	
Approach Delay	17.1			16.0	37.9		
Approach LOS	В			В	D		
Intersection Summary							
Area Type:	Other						
Cycle Length: 120							
Actuated Cycle Length: 120	0						
Offset: 36 (30%), Referenced to phase 2:EBWB, Start of Yellow	ed to phase	2:EBWB	, Start of	Yellow			
Natural Cycle: 60							
Control Type: Actuated-Coordinated	ordinated						
Maximum WC Rallo: 0.74							
Intersection Signal Delay: 22.2 Intersection Capacity Hilization 61 4%	22.2 ation 61.4%				ntersection LOS: C	Intersection LOS: C ICIT Level of Service B	
Analysis Period (min) 15							
Splits and Phases: 13: S	13: Sheridan Drive & Harlem Road	ve & Harl	em Road				
<b>\$</b>	<b>↓</b> †	c.					°° •∕∕
ia 14							

Lanes, Volumes, Timings SRF & Associates

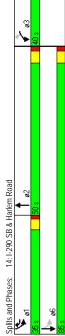
Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 14: I-290 SB & Harlem Road

	<b>-</b>		-				
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations	×	*	<b>₩</b>		K	*	
Volume (vph)	234	387	574	=	521	510	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	0		0	330		
Storage Lanes	-	-		0	-		
Taper Length (ft)	52 52	100	0	25	100	0	
Laire Utili. r autul	3	0.00	0.93	0.45	30.	0.93	
Fit Protected	0.950	0.000			0.950		
Satd. Flow (prot)	1770	1583	3529	0	1770	3539	
Flt Permitted	0.950				0.153		
Satd. Flow (perm)	1770	1583	3529	0	285	3539	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		69	2				
Link Speed (mph)	30		32			32	
Link Distance (ft)	333		250			456	
Travel Time (s)	7.6		4.9			8.9	
Peak Hour Factor	69.0	69.0	0.77	0.77	0.92	0.92	
Adj. Flow (vph)	336	261	745	14	299	224	
Shared Lane Traffic (%)	000		-	•			
Lane Group Flow (vph)	336	561	759	0	296	554	
Enter Blocked Intersection	0N -	9 I	0 de	0N 1	ON -	ON -	
Lane Angimeni Madian Midth (#)	E CE	III M	Leil	RIGILI		Lell 13	
Median Widin(ii)	2 0		2 0			<u> </u>	
Crosswalk Width(ft)	9		9			9 9	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15	6		6	12		
Number of Detectors	-	-	2		<del>-</del>	2	
Detector Template	Left	Right	Thru		Left	Thru	
Leading Detector (ft)	20	20	100		20	100	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0 8	0 8	0 \		0 8	0 \	
Detector 1 Size(ii)	0.5	0 20	0 2		07 - 17	0 2	
Detector 1 Type	Y = Y	CI+LY	Y CHE		Z-E-Y	ZI EX	
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)			94			94	
Detector 2 Size(ft)			9			9	
Detector 2 Type			CI+EX			C+EX	
Detector 2 Extend (s)			0.0			0.0	
Turn Type		vo+mq			pm+pt		
Protected Phases	m	-	2		-	9	
Permitted Phases		3			9		
Detector Phase	3	_	2		_	9	

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 14: I-290 SB & Harlem Road

	<b>\</b>	/	-	•	۶	<b>→</b>	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Switch Phase							
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	22.0	9.2	30.6		9.5	21.0	
Total Split (s)	40.0	35.0	20.0	0.0	35.0	85.0	
Total Split (%)	32.0%	28.0%	40.0%	%0:0	28.0%	%0.89	
Maximum Green (s)	35.2	30.7	45.0		30.7	80.0	
Yellow Time (s)	3.2	3.2	3.6		3.2	3.6	
All-Red Time (s)	1.6	1.	1.4		1.	1.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0:0	
Total Lost Time (s)	4.8	4.3	2.0	4.0	4.3	2.0	
Lead/Lag		Lead	Lag		Lead		
Lead-Lag Optimize?		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	Min		None	None	
Walk Time (s)			10.0				
Flash Dont Walk (s)			15.0				
Pedestrian Calls (#/hr)			0				
Act Effct Green (s)	23.8	58.4	7.72		62.5	61.8	
Actuated g/C Ratio	0.25	0.61	0.29		0.65	0.65	
v/c Ratio	0.77	0.56	0.74		0.87	0.24	
Control Delay	46.9	12.9	36.3		38.5	8.0	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay	46.9	12.9	36.3		38.5	8.0	
FOS	D	В	Ω		D	А	
Approach Delay	25.7		36.3			23.4	
Approach LOS	S		D			U	
Intersection Summary							
	Other						
Cycle Length: 125							
Actuated Cycle Length: 95.7							
Natural Cycle: 80							
Control Type: Actuated-Uncoordinated	ordinated						
Maximum V/c Ratio: 0.87							
Intersection Signal Delay: 27.7	7.			프	Intersection LOS: C	LOS: C	
Intersection Capacity Utilization 69.8%	ion 69.8%			2	U Level o	CU Level of Service C	
Analysis Period (min) 15							



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 56: Maple Road & Proposed North Driveway

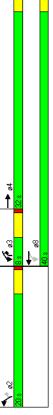
		•	۰				
-ane Group	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	<b>*</b>		K	*	r	æ	
Volume (vph)	1294	53	84	981	57	102	
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0	225		0	150	
Storage Lanes		0	-		-	-	
Taper Length (ft)	0 70	25	1 25	0.05	100	1 00	
Fri	0 994	S	3	S	9	0.850	
Fit Protected			0.950		0.950		
Satd. Flow (prot)	3518	0	1770	3539	1770	1583	
Flt Permitted			0.133		0.950		
Satd. Flow (perm)	3518	0	248	3539	1770	1583	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)	6					9	
Link Speed (mph)	42			45	30		
Link Distance (ft)	1000			928	337		
Fravel Time (s)	15.2			14.1	7.7		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	1407	28	16	1066	62	=	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1465	0	16	1066	62	=======================================	
Enter Blocked Intersection	9 8	No	9	%	9	8	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	12			12	12		
Link Offset(ft)	0 ;			0 ;	0 ;		
Crosswalk Width(tt)	91			16	16		
Two way Left Turn Lane	Yes			Yes			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		6	5		72	6	
Number of Detectors	2		<b>—</b>	2	-		
Detector Template	Thr		Left	Thru	Left	Right	
Leading Detector (ft)	100		20	100	20	70	
railing Detector (ft)	0		0	0	0	0	
Detector 1 Position(ft)	0		0	0	0	0	
Detector 1 Size(ft)	9		8	9	20	20	
Detector 1 Type	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0	
Detector 2 Position(ft)	94			94			
Detector 2 Size(ft)	9			9			
Detector 2 Type	CI+Ex			CI+Ex			
Detector 2 Channel							
Detector 2 Extend (s)	0.0			0.0			
Furn Type			pm+pt			vo+mq	
Protected Phases	4		က	∞	2	က	
Permitted Phases			8			2	
						ı	

Synchro 7 - Report (Mitigation) Page 27

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 56: Maple Road & Proposed North Driveway

Land Group         EBT         WBL         WBL         NBR           Swift Phase         4         4         4         4           Swift Phase         4         4         4         4           Minimum Initial (s)         20         80         200         80           Minimum Spill (s)         20         8         20         80           Minimum Initial (s)         320         0         80         80           Total Spill (s)         30         0         80         80           Total Lost (s)         33         0         80         80           Asharium Green (s)         35         35         35         35           Lead Lost Time (s)         40         40         40         40           Lead Lead and Collinities?         Yes         Yes         Yes           Vehicle Extension (s)         30         30         30         30           Recall Mode         None	September   Sept	4.0 20.0 32.0 53.3% 0 28.0	>		WBT	NBL	NBR	
is (s) 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 8.0 20.0 8.0 20.0 8.0 20.0 8.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4	is (s) 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	4.0 20.0 32.0 53.3% 0		0				
(\$) 4.0 4.0 4.0 4.0 4.0 (16) 20.0 10.0 8.0 20.0 10.0 8.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4	(\$) 4.0 4.0 4.0 4.0 (\$) (\$) (\$) 20.0 8.0 20.0 8.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4	4.0 20.0 32.0 53.3% 0 28.0		0 1				
(\$) 20.0 8.0 20.0 (\$) 20.0 8.0 20.0 (\$) 32.0 0.0 8.0 40.0 (\$) 53.3% 0.0% 13.3% 66.7% (\$) 0.5 0.5 0.5 0.5 0.5 (\$) 0.5 0.0 0.0 (\$) 4.0 4.0 4.0 4.0 (\$) 4.0 4.0 4.0 4.0 (\$) 4.0 4.0 4.0 4.0 (\$) 1.29 4.0 4.0 (\$) 1.20 3.	(\$) 200 80 200 (\$) 200 80 200 (\$) 320 0.0 80 400 (\$) 280 40 400 (\$) 280 40 400 (\$) 280 40 40 40 40 (\$) 0.5 0.5 0.5 0.5 (\$) 0.5 0.5 0.5 (\$) 0.0 0.0 0.0 (\$) 4.0 4.0 4.0 4.0 (\$) 1.10 0 0.0 (\$) 1.10 0.0 (\$) 1.10 0 0.0 (\$	20.0 32.0 53.3% 0 28.0		4.O	4.0	4.0	4.0	
32.0 0.0 8.0 40.0 53.3% 0.0% 13.3% 66.7% 59) 3.5 3.5 3.5 5(5) 0.5 0.0 0.0 0.0 1 1.40 4.0 4.0 4.0 1 1.40 4.0 4.0 4.0 1 1.40 4.0 4.0 4.0 1 1.40 4.0 4.0 4.0 1 1.40 4.0 4.0 4.0 1 1.40 4.0 4.0 4.0 1 1.40 4.0 4.0 4.0 1 1.40 4.0 4.0 4.0 1 1.40 4.0 4.0 4.0 1 1.40 4.0 4.0 4.0 1 1.40 4.0 4.0 4.0 1 1.40 4.0 4.0 4.0 1 1.40 4.0 4.0 4.0 1 1.40 4.0 4.0 1 1.40 4.0 4.0 1 1.40 4.0 4.0 1 1.40 4.0 4.0 1 1.40 4.0	32.0 0.0 8.0 40.0  \$1	32.0 53.3% 0 28.0		8.0	20.0	20.0	8.0	
ear (s) 533% 6.0% 133% 66.7% ear (s) 280 4.0 36.0 36.0 36.0 36.0 36.0 36.0 36.0 36	en (s) 53.3% 60% 13.3% 66.7% (s) 28.0 4.0 36.0 36.0 36.0 36.0 36.0 36.0 36.0 36	53.3%				20.0	8.0	
sen (s) 280 4,0 360 (5) (5) 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5	sen (s) 280 4,0 360 sen (s) 280 4,0 360 set (s) 0.0 0.0 0.0 ust (s) 0.0 0.0 0.0 0.0 ust (s) 0.0 0.0 0.0 0.0 ust (s) 0.0 0.0 0.0 0.0 ust (s) 0.0 0.0 0.0 0.0 ust (s) 1.0 3.0 3.0 sion (s) 3.0 3.0 3.0 sion (s) 1.0 1.0 1.0 unities? Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes		13			33.3%	13.3%	
s) 3.5 3.5 3.5 (5) (5) (5) (5) (5) (5) (5) (5) (5) (5	s) (s) (s) (s) (s) (s) (s) (s) (s) (s) (			4.0	36.0	16.0	4.0	
(\$) 0.5 0.5 0.5 0.5 o.5 o.to state of the control o	(\$) 0.5 0.5 0.5 0.5 o.5 o.5 o.5 o.5 o.5 o.5 o.5 o.5 o.5 o			3.5	3.5	3.5	3.5	
re (s) 0.0 0.0 0.0 0.0 0.0 0.0 o.0 o.0 o.0 o.0	ust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	0.5		0.5	0.5	0.5	0.5	
intize? Yes Yes Yes Yes Sion (s) 8.00 and 12.3 a	he (s) 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	0.0		0.0	0.0	0.0	0.0	
lag Lead sion (s) 3.0 sion (s) 3.0 sion (s) 3.0 sion (s) 3.0 sion (s) 3.0 sion (s) 3.0 sion (s) 6.0 sion (s)	lag Lead linize? Yes Yes 30 sion (\$) 3.0 3.0 sion (\$) 1.0 None None None link(\$) 1.1.0 5.0 link(\$) 26.0 31.9 31.9 link(\$) 26.0 31.9 31.9 link(\$) 26.0 31.9 31.9 link(\$) 26.0 31.9 31.9 link(\$) 26.0 31.9 31.9 link(\$) 26.0 31.9 31.9 link(\$) 26.0 31.9 31.9 link(\$) 26.0 31.9 31.9 link(\$) 26.0 31.9 31.9 link(\$) 12.3 5.4 4.3 link(\$) 26.0 0.0 link(\$) 26	Time (s) 4.0		4.0	4.0	4.0	4.0	
imize? Yes Yes Sign (\$) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	sion (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0		ĭ	ad			Lead	
sion (s) 3.0 3.0 3.0 3.0 3.0 sion (s) None None None None 1.00 5.0 5.0 5.0 11.0 11.0 11.0 11.0 11	sion (s) 3.0 3.0 3.0 3.0 3.0 3.0 None None None None 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.1	Optimize?	-	(es			Yes	
None   None   None   None   None   None   None   So   50   50   50   50   50   50   50   5	None   None   None   None   None   None   So   50   50   50			3.0	3.0	3.0	3.0	
(s)   (s)	at (s) 150 50 100 110 110 110 110 110 110 110	Z	ž		None	Min	None	
alk (s) 11.0 11.0 11.0 11.0 11.0 11.0 11.0 11.	alk (s) 11.0 11.0 11.0 11.0 11.0 11.0 11.0 11.				2.0	2.0		
alls (#hr) 0 31.9 31.9 31.9 31.9 31.9 31.9 31.9 31.9	alls (#hr) 0 0 31.9 31.9 31.9 31.9 31.9 31.9 31.9 31.9				11.0	11.0		
Ratio 0.55 0.67 0.67 0.67 0.67 0.67 0.67 0.67 0.67	Ratio 0.55 0.67 0.67 0.67 0.67 0.67 0.67 0.67 0.67	#hr)			0	0		
Ratio 0.55 0.67 0.67 0.67 0.67 0.67 0.67 0.67 0.67	Ratio 0.55 0.67 0.67 0.67 0.67 0.67 0.67 0.76 0.30 0.45 0.45 0.45 0.45 0.45 0.45 0.45 0.4		3	1.9	31.9	7.3	15.7	
0.76 0.30 0.45 12.3 5.4 4.3 12.3 5.4 4.3 0.0 0.0 0.0 12.3 5.4 4.3 8 A A A  ay 12.3 8 4.4 8 A A  wmnary  Other  col Actualed-Uncoordinated Ratio 0.76 ighan Delay: 9.3 3 1  apacity Utilization 55.4% 1	0.76 0.30 0.45 12.3 5.4 4.3 12.3 5.4 4.3 0.0 0.0 0.0 12.3 5.4 4.3 8 A A A animary Other 6.6 conditions of the condition of th		0	19:	19.0	0.15	0.33	
12.3 5.4 4.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	12.3 5.4 4.3 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2		0	.30	0.45	0.23	0.21	
12.3 5.4 4.3 12.3 5.4 4.3 8 8 A 4.4 8.5 8 8 A 4.4 8.5 8 8 A 4.4 8.5 8 8 A 8.5 8 A 8.	12.3 6.4 4.3 12.3 5.4 4.3 12.3 8.4 4.3 3 4.4 4.3 5 8 8 A A 4.4 5 8 B A A A 4.4 5 B B A A A 4.4 5 B B A A A 4.4 5 Color C			5.4	4.3	21.6	12.8	
12.3 5.4 4.3 B A A A 12.3 6.4 4.3 I 2.3 A 4.4 B A B A A A A A A A A A A A A A A A A A	12.3 5.4 4.3 B A A A A 12.3 B A A A A A A A A A A A A A A A A A A			0.0	0.0	0.0	0.0	
B A A A 12.3 4.4.4 B A A B A A B A B A B A B A A B A B A	B A A A 12.3 4.4.4 B A many Other ength: 47.6 ic. 0.76 il. Olelay. 9.3 Il. Olelay: 9.3 Il. Ole			5.4	4.3	21.6	12.8	
12.3 4.4  B A B A Other  Other  ength: 47.6  atted-Uncoordinated to: 0.76  10 0.76  city Utilization 55.4%	12.3 4.4  B A  B A  Other  ength: 47.6  ic. 0.76  al Delay: 9.3  in. 11.5  i			⋖	⋖	O	В	
B A A many Other Other angle: 47.6 co. 0.76 it io: 0.76 it locks: 9.33 it locks: 9.34 it locks: 9.34	B A A Other				4.4	15.9		
mary Other ength: 47.6 tarted-Uncoordinated ito: 0.76 ito lelay: 9.3 itoly Utilization 55.4%	many Other ength: 47.6 uated-Uncoordinated io: 0.76 al Delay: 9.3 in Polay: 9.3				⋖	В		
Other ength: 47.6 uated-Uncoordinated ico 0.76 id Delay: 9.3	Other ength: 47.6 tuated-Uncoordinated io: 0.76 il Delay: 9.3 in Polision 55.4%	Intersection Summary						
ength: 47.6 Lucted-Uncoordinated io: 07.6 al Delay: 9.3 city Utilization 55.4%	ength: 47.6 uated-Uncoordinated io: 0.76 si Delay: 9.3							
ength: 47.6 uated-Uncoordinated io: 0.76 al Delay: 9.3 city Utilization 55.4%	ength: 47.6 uated-Uncoordinated irc 0.76 al Delay: 9.3	Cycle Length: 60						
		Actuated Cycle Length: 47.6						
		Natural Cycle: 60						
nn 55.4%	nn 55.4%	Control Type: Actuated-Uncoordinated						
n 55.4%	n 55.4%	Maximum v/c Ratio: 0.76						
ization 55.4%	ization 55.4%	Intersection Signal Delay: 9.3			Inte	ersection	LOS: A	
	Analysis Darind (min) 15	Intersection Capacity Utilization 55.4%			ರ	J Level o	f Service B	

Splits and Phases: 56: Maple Road & Proposed North Driveway



Lanes, Volumes, Timings SRF & Associates

## **8A**

## Level of Service Calculations: Alternative Plan No. 7 (Alternative Access)

Proposed Westwood C.C. Development Full Development Conditions - AM Peak Hour 1: Maple Road & Millersport Hwy SB 10/9/2014

2000	2		1				
	1	<b>†</b>	ţ	4	٠	•	
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	*	‡	‡	*	<b>y</b> -	<b>Y</b> C	
Volume (vph)	18	612	831	312	31	83	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	120			150	0	0	
Storage Lanes	-				-	<b>-</b>	
Taper Length (ft)	32	1	1	100	25	25	
Lane Util. Factor	1.00	0.95	0.95	1.00	1:00	1.00	
Fr				0.850	0	0.850	
Fit Protected	0.950				0.950	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583	
Flt Permitted	0.323				0.950		
Satd. Flow (perm)	602	3539	3539	1583	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)						106	
Link Speed (mph)		45	42		30		
Link Distance (ft)		222	654		281		
Travel Time (s)		8.4	6.6		6.4		
Peak Hour Factor	0.91	0.91	96:0	96.0	0.78	0.78	
Adj. Flow (vph)	20	673	998	325	40	106	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	20	673	998	325	40	106	
Enter Blocked Intersection	2	2	8	8	8	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12	,	12	,	
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane			Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			6	15	6	
Number of Detectors	-	2	2	<del>-</del>	<del></del>	-	
Detector Template	Left	Thru	Thru	Right	Left	Right	
Leading Detector (ft)	70	100	100	20	70	20	
Trailing Detector (ft)	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	
Detector 1 Size(ft)	2 2	9 .	9 .	50	20	50	
Detector 1 Type	CI+EX	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel	ć	c	ć	c	d		
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector I Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ii)		44	* 4				
Defector 2 Size(ii)		0 2	0 2				
Detector 2 Type		X L C	X C C C C				
Detector 2 Criannel Detector 2 Extend (s)		0	0				
Turn Tyne	Perm	9	9	nm+ov		Perm	
Protected Phases		2	9	4	4		
Permitted Phases	2			9		4	
Detector Phase	2	2	9	4	4	4	

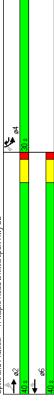
Synchro 7 Report Page 1

Proposed Westwood C.C. Development 1: Maple Road & Millersport Hwy SB

Full Development Conditions - AM Peak Hour	10/9/2014
ent	

マクマレイへ	EBL EBT WBT WBR SBL SBR		4.0	6.2 6.2	40.0 40.0 30.0 30.0	57.1% 57.1% 42.9% 42.9%	34.9 34.9 25.4 25.4	3.9 3.9 3.2 3.2	1.2 1.4	0.0 0.0 0.0 0.0	5.1 5.1 4.6			3.0 3.0 3.0	C-Min C-Min None None	52.7 52.7 52.7 70.0 7.6 7.6	0.75 0.75 1.00 0.11	0.25 0.33 0.21 0.21	3.1 5.9 0.3 30.2	0.0 0.0	3.1 5.9 0.3 30.2	A	3.1 4.3 16.4	A A B		Other			the whose AFDTI and City of Cooper	Oliset: 5 (7%), Kelerieticet to phase 2:Eb il. and 6:Wb1, statt of Green	TO priose Z.Ebil and o.Wbi, Station Greet	i o pirase ZEB it aliu o.wb i, skar oi krekal kordinated	i lo pirase ZEB IL alu o.wb I, skat tol kreen ordinated	r to priase ZEB IL altu o.wb I, satt to talear ordinated Intersection LOS. A
`	Lane Group E	Switch Phase	Minimum Initial (s)	t(s)			en (s)	Yellow Time (s)		Lost Time Adjust (s)	Total Lost Time (s)	Lead/Lag	Lead-Lag Optimize?		0		Actuated g/C Ratio 0.			Α	Delay	FOS	Approach Delay	Approach LOS	Intersection Summary	Area Type: Other	Cycle Length: 70	Actuated Cycle Length: 70	Offset 5 (7%) Referenced to phase	O11301: 0 (170); 10:10:10:10:00	Natural Cycle: 40	Natural Cycle: 40 Control Type: Actuated-Coordinated	Natural Cycle: 40 Control Type: Actuated-Coordinate Maximum v/c Ratio: 0.40	Natural Cycle: 40 Control Type: Actuated-Coordinate Maximum wic Ratio: 0.40 Intersection Signal Delay: 4.8

Splits and Phases: 1: Maple Road & Millersport Hwy SB



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood C.C. Development 2: Maple Road & Millersport Hwy NB

Full Development Conditions - AM Peak Hour

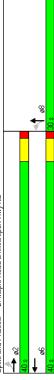
Lane Group													
EBL EBT EBR  DNS		4	†	<u> </u>	<b>\</b>	ţ	4	•	•	•	۶	<b>→</b>	•
nns	e Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
(f) 1900 1900 1900 1900 1900 1900 1900 190	e Configurations	F	‡			<b>₩</b>		<b>,</b> -	æ				
(th) 1900 1900 1900 1900 1900 1900 1900 190	nme (vph)	42	601	0	0	966	22	147	<del>-</del>	466	0	0	0
(f) 100 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	al Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
(m) 20 0.00 0.00 0.00 0.00 0.00 0.00 0.00	rage Length (ft)	9 ,		0	0		0	0 ,		0	0		0
(f) 100 0.95 1.0	age Lanes	- 6		o į	0 6		0 1	- 1		0 6	0 1		0 6
(170 3539 0 0.950	er Length (ft)	S 5	100	7 52	750	100	25	722	5	100	5 25	00	52
(m) 0,950 (1,770 (3539 0 0 0,185 (3539 0 0 0,185 (354 0 0 0,185 (354 0 0 0,185 (354 0 0 0,185 (354 0 0 0,185 (354 0 0 0,185 (354 0 0 0,185 (354 0 0 0,185 (354 0 0 0,185 (354 0 0 0,185 (354 0 0,185 (35	e UIII. Factor	3	0.93	3	99.	0.95	0.75	99.	00.1	99.	3.	00.	3
(1770 3539 0 0 0 185	Smterted	0.950				0.992		0.950	0.850				
(f) 0.185 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.	d. Flow (prot)	1770	3539	0	0	3511	0	1770	1583	0	0	0	0
345 3539 0 0  45 45 654 654 654 654 654 654 654 654 65	Permitted	0.185						0.950					1
Yes 45 654 654 654 654 654 654 654 654 654	d. Flow (perm)	345	3539	0	0	3511	0	1770	1583	0	0	0	0
45 654 654 654 654 654 654 654 654 654 6	nt Turn on Red			Yes			Yes			Yes			Yes
45 45 49 99 99 99 99 100 100 110 110 1	d. Flow (RTOR)					12			170				
654 9,9 9,9 9,9 9,9 9,9 9,9 100 100 100 100 100 100 100 10	(Speed (mph)		45			45			30			30	
9.9 9.9 9.9 9.9 9.9 9.9 9.9 9.9 9.9 9.9	Distance (fl)		654			1770			319			263	
0 085 085 085 086 49 707 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	vel Time (s)		6.6			26.8			7.3			0.9	
49 707 0 49 707 0 10	k Hour Factor	0.85	0.85	0.85	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
00 No No No No No No No No No No No No No	Flow (vph)	46	707	0	0	1071	61	158	-	201	0	0	0
e 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	red Lane Traffic (%)												
ction No No No Left Right 1 12	e Group Flow (vph)	46	707	0	0	1132	0	158	205	0	0	0	0
ne 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.0	er Blocked Intersection	8	2	2	8	8	8	8	8	9 8	8	2	8
12 16 16 17 18 19 17 19 11 20 10 10 10 10 10 10 10 10 10 1	e Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
0 16 Yes 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	lian Width(ft)		12			12			12			12	
16 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.0 0.	c Offset(ft)		0			0			0			0	
Nes Yes 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.0	sswalk Width(ft)		16			16			16			16	
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	way Left Turn Lane		Yes			Yes							
15 9 16 1 1 2 17 2 18 1 1 2 20 100 0 0 0 0 0 0.0	Idway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Left 1 20 20 20 CI+EX CI-	ning Speed (mph)	15		6	12		6	12		6	72		6
CI+Ert T CI+Ert CI-Ert T CI+Ert CI-Ert  nber of Detectors	-	2			2		-	2					
20 0 0 CI+EX CI+	ector Template	Left	Thru			Thru		Left	Thru				
0 0 0 C+Ex C+ 0.0 0 0 0.0 0.0 C-I	ding Detector (ft)	20	100			100		20	100				
CHEX CI-	ling Detector (ft)	0	0 (			0		0	0				
20 CI+EX CI- 00 00 00 CI-	ector 1 Position(ft)	0	0			0		0 8	0				
Ctex Cr	ector 1 Size(ft)	2 2	<u>.</u> ت			ن و		50 20	ن و				
0.0 0.0 0.0 O.0 O.0	ector 1 Type	CI+EX	CI+EX			CI+EX		CI+EX	CI+EX				
0.0 0.0 0.0 O.0	ector 1 Chammel		c						0				
O O O O C C	actor 1 Oneno (s)	0.0	0.0			0.0		9 0	0.0				
C: C:	actor 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Ct+	actor 2 Position(ft)	9	9.0			94		3	0.5				
Perm	actor 2 Size(ft)		, 9			, 9			, 9				
Perm	ector 2 Type		CI+Ex			CI+EX			CI+EX				
Perm	ector 2 Channel												
Perm	ector 2 Extend (s)		0.0			0.0			0.0				
	n Type	Perm						Perm					
	tected Phases		2			9			∞				
as 2	mitted Phases	2						∞					
Detector Phase 2 2	ector Phase	2	2			9		∞	∞				

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Proposed Westwood C.C. Development 2: Maple Road & Millersport Hwy NB

Lane Group							-	-	-		٠	
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	1.0	1.0			4.0		1.0	1.0				
Minimum Split (s)	6.1	6.1			9.1		6.2	6.2				
Total Split (s)	40.0	40.0	0.0	0.0	40.0	0.0	30.0	30.0	0.0	0.0	0.0	0.0
Total Split (%)	57.1%	57.1%	%0.0	%0.0	57.1%	%0.0	45.9%	45.9%	%0.0	%0.0	%0.0	0.0%
Maximum Green (s)	34.9	34.9			34.9		25.4	25.4				
Yellow Time (s)	3.9	3.9			3.9		3.2	3.2				
All-Red Time (s)	1.2	1.2			1.2		1.4	1.4				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	2.1	4.0	4.0	5.1	4.0	4.6	4.6	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Recall Mode	C-Min	C-Min			C-Min		None	None				
Act Effct Green (s)	39.0	39.0			39.0		21.3	21.3				
Actuated g/C Ratio	0.56	0.56			0.56		0.30	0.30				
//c Ratio	0.26	0.36			0.58		0.29	0.84				
Control Delay	15.8	10.7			12.6		18.6	27.6				
Queue Delay	0.0	0.0			0.0		0.0	0.0				
Total Delay	15.8	10.7			12.6		18.6	27.6				
TOS	В	В			В		В	ပ				
Approach Delay		11.0			12.6			25.4				
Approach LOS		В			В			O				
Intersection Summary												
Area Type: C	Other											
Cycle Length: 70												
Actuated Cycle Length: 70												
Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	o phase 2:	EBTL and	6:WBT, §	Start of G	ireen							
Natural Cycle: 50												
Control Type: Actuated-Coordinated	dinated											
Maximum v/c Ratio: 0.84												
Intersection Signal Delay: 15.5	5.5			드	Intersection LOS: B	LOS: B						
ntersection Capacity Utilization 71.9%	ion 71.9%			2	ICU Level of Service C	f Service	ပ					
Analysis Period (min) 15												

Splits and Phases: 2: Maple Road & Millersport Hwy NB



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood C.C. Development 3: Maple Road & Maplemere Road

Volume (vph) Ideal Flow (vphpl) Storage Length (ft)

Storage Lanes

Lane Configurations

Full Development Conditions - AM Peak Hour 0.0 1.00 0.957 0.967 1724 0.733 Thru 100 6 CI+Ex 0.0 28 30 402 9.1 0.58 87 No No 0 0 16 Left 20 0 0 CI+Ex CI+Ex Left No 1.00 0.0 No No Right 1.00 1.00 0.965 0.967 1738 0.739 1.00 Thru 100 0 0 6 CI+Ex 0.0 0.0 0.0 94 6 CI+Ex 25 30 378 8.6 0.60 104 No 0 104 No 0 104 No 0 104 No 0 104 No 1 0.0 1328 0 1.00 Left 20 0 0 CI+Ex CI+Ex 0.60 Left No 0 No No Right 1.00 0 0.91 Yes No No 178 12 0 0 16 Yes Yes 0.0 0.0 0.0 94 6 CI+Ex 45 1106 16.8 0.91 1147 3525 3525 Thru 100 0.0 1 Left 20 0 0 20 20 Cl+Ex 0.950 1770 0.217 Left No 1.00 404 0.91 1.00 0 No Right 0.1 0 0.86 Yes 0.993 3514 10 45 1770 26.8 0.86 1083 No No 1736 12 12 0 16 Yes Yes 2 Thru 100 0.0 0.0 0.0 94 6 6 3514 0.0 0.950 1770 0.204 380 0.86 1.00 100 - 8 9. Left 24 Left 20 0.0 Taper Length (fi)
Lane Util. Factor
Fit Protected
Satd. Flow (prot)
Right Turn on Red
Satd. Flow (perm)
Right Turn on Red
Satd. Flow (RTOR)
Link Speed (mph)
Link Speed (mph)
Link Speed (mph)
Link Distance (ft)
Travel Time (s)
Fack Both Flow (kph)
Fack How (kph)
Shared Lane Taffic (%)
Lane Group Flow (kph)
Shared Lane Taffic (%)
Link Offsed Intersection
Lane Alignment
Median Width (ft)
Link Offsed Intersection
Lane Alignment
Median Width (ft)
Link Offsed Intersection
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Link Offs Detector 1 Type
Detector 1 Channel
Detector 1 Extend (s)
Detector 1 Oueue (s)
Detector 1 Delay (s)
Detector 2 Position(ft) Trailing Detector (ft)
Detector 1 Position(ft)
Detector 1 Size(ft)

Turning Speed (mph) Number of Detectors

.eading Detector (ft)

**Detector Template** 

Lanes, Volumes, Timings SRF & Associates

**Detector Phase** 

Synchro 7 Report Page 5

Perm

Perm

Perm

Perm

Detector 2 Extend (s) Turn Type Protected Phases Permitted Phases

Detector 2 Channel

**Detector 2 Type** 

Detector 2 Size(ft)

Proposed Westwood C.C. Development 3: Maple Road & Maplemere Road

s - AM Peak Hour	10/9/2014
Conditions - AM	
Full Development Conditions -	

Lane Group         EBL         EBT           Swiftch Phase         40         40           Minimum Initial (s)         90         90           Total Spill (s)         46.0         46.0           Monimum Spill (s)         46.0         46.0           Monimum Spill (s)         41.0         41.0           Mosimum Green (s)         3.0         3.0           All-Red Time (s)         2.0         2.0           All-Red Time (s)         5.0         2.0           Load Lag Optimize?         5.0         5.0           Lead-Lag Optimize?         2.0         3.0           Recall Mode         Min         Min           Malk Time (s)         Min         Min	0.0 0.0% 6' 4.0 4.0	WBL 1 40 9.0 46.0 46.0 41.0 3.0 2.0 0.0 5.0 5.0 Min	4.0 9.0 46.0 46.0 41.0 3.0 2.0 5.0 5.0	0.0 0.0% 0.0 4.0	4.0 27.0 29.0 38.7% 24.0 3.0 2.0 0.0 0.0 5.0 3.0 7.0 1.0	4.0 27.0 29.0 38.7% 24.0 3.0 2.0 0.0 5.0 3.0	0.0 0.0%	A.0 27.0 29.0 38.7% 24.0 3.0 2.0 2.0 2.0 2.0 2.0	27.0 27.0 29.0 38.7% 24.0 3.0 2.0 0.0 0.0 5.0 5.0 None	0.0 0.0% 4.0
sse 10 10 10 10 10 10 10 10 10 10 10 10 10			4.0 9.0 446.0 1.3% 41.0 3.0 2.0 5.0	0.0 % 0	4.0 27.0 29.0 38.7% 24.0 3.0 2.0 0.0 5.0 3.0 7.0 1.0	4.0 27.0 29.0 38.7% 24.0 3.0 5.0 5.0 3.0 5.0	0.0	4.0 27.0 29.0 38.7% 24.0 3.0 2.0 0.0 5.0	4.0 27.0 29.0 38.7% 38.7% 3.0 2.0 0.0 5.0 5.0 3.0 5.0	0.0
nitial (s) 4.0 pplit (s) 9.0 (s) 4.0 (s) 4.0 (s) 4.0 (s) 4.0 (s) 4.1.0 (s) 8.1 (s) 8.0 (s) 8.0 (s) 8.0 (s) 8.0 (s) 8.0 (s) 9.0			4.0 9.0 46.0 1.3% 41.0 3.0 2.0 0.0 5.0	0.0 0.0 0.0 4.0	4.0 27.0 29.0 38.7% 24.0 3.0 2.0 0.0 5.0 3.0 7.0 1.0	4.0 27.0 29.0 38.7% 24.0 3.0 5.0 5.0 3.0	0.0	4.0 27.0 29.0 38.7% 24.0 3.0 2.0 0.0 5.0	4.0 27.0 29.0 38.7% 24.0 3.0 2.0 0.0 5.0 3.0 5.0	0.0
split (s) 9.0 (s) 40.0 (s) 40.0 (s) 40.0 (s) 40.0 (s) 41.3% Green (s) 3.0 ne (s) 2.0 Adjust (s) 0.0 Time (s) 5.0 primize? 3.0 primize? 3.0 hersion (s) 6.0 Min (s) (s) 6.0 (s)			9.0 46.0 11.3% 41.0 3.0 2.0 0.0 5.0	0.0 0.0 0.0 4.0	27.0 29.0 38.7% 24.0 3.0 2.0 0.0 5.0 3.0 None 7.0	27.0 29.0 38.7% 24.0 3.0 5.0 3.0 None	0.0	27.0 29.0 38.7% 24.0 3.0 2.0 0.0 5.0	27.0 29.0 38.7% 24.0 3.0 2.0 0.0 5.0 None	0.0%
(\$) 46.0 (\$(**) 46.0 (\$(**) 61.3% 61.3% 61.3% 8.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0			46.0 1.3% 41.0 3.0 2.0 0.0 5.0	0.0 0.0%	29.0 38.7% 24.0 3.0 2.0 0.0 5.0 3.0 None 7.0	29.0 38.7% 24.0 3.0 2.0 0.0 5.0 3.0	0.0	29.0 38.7% 24.0 3.0 2.0 0.0 5.0	29.0 38.7% 24.0 3.0 2.0 0.0 5.0 3.0 None	0.0 0.0%
(%) 61.3% Green (\$) 61.3% a (\$) 2.0 Adjust (\$) 2.0 Adjust (\$) 5.0 Dplimize? 5.0 Irine (\$) 5.0 Adjust (\$) 6.0			1.3% 41.0 3.0 2.0 0.0 5.0	0.0 0.0 4.0	38.7% 24.0 3.0 2.0 0.0 0.0 5.0 3.0 None	38.7% 24.0 3.0 2.0 2.0 0.0 5.0 3.0	%0:0	38.7% 24.0 3.0 2.0 0.0 5.0	38.7% 24.0 3.0 2.0 0.0 5.0 3.0 None	0.0%
Green (s) 41.0 e (s) 3.0 e (s) 2.0 Adjusts(s) 0.0 Time (s) 5.0 Aptimize? 3.0 tension (s) Min (s) (s) (s)	0.0		3.0 3.0 2.0 0.0 5.0	0.0	24.0 3.0 2.0 0.0 0.0 5.0 None	24.0 3.0 2.0 0.0 5.0 3.0		24.0 3.0 2.0 0.0 5.0	24.0 3.0 2.0 0.0 5.0 3.0 None	0.0
ne (s) 3.0 ne (s) 2.0 Adjust (s) 0.0 Time (s) 5.0 Dimize? 3.0 tension (s) 3.0	0.0		3.0 2.0 0.0 5.0	4.0	3.0 2.0 0.0 0.0 5.0 3.0 7.0	3.0 3.0 3.0 3.0 3.0		3.0 2.0 0.0 5.0	3.0 2.0 0.0 5.0 3.0 None	0.0
he (s) 2.0 Adjust (s) 0.0 Time (s) 5.0 Dplimize? 3.0 tension (s) 3.0 (s) (s)	0.0		2.0	0.0	2.0 0.0 0.0 5.0 3.0 None 7.0	2.0 0.0 0.0 5.0 3.0 None		2.0	2.0 0.0 5.0 3.0 None	0.0
Adjust (s) 0.0 Time (s) 5.0 Dytmize? 3.0 tension (s) Min (s) (s)	0.0		0.0	0.0	0.0 5.0 3.0 None 7.0	0.0 5.0 3.0 None		0.0	0.0 5.0 None	0.0
Time (s) 5.0  Optimize? 3.0  tension (s) 3.0  de Min (s)	4.0		2.0	4.0	3.0 None 7.0	3.0 None	0.0	2.0	5.0 3.0 None	4.0
Optimize? 3.0 tension (s) Min (s)		3.0 Min			3.0 None 7.0	3.0 None	4.0		3.0 None	
Optimize? 3.0 tension (s) 3.0 Min (s)		3.0 Min			3.0 None 7.0	3.0 None			3.0 None	
3.0 Min		3.0 Min			3.0 None 7.0	3.0 None			3.0 None	
Min		Min	3.0		None 7.0	None		3.0	None	
Valk Time (s)			Min		7.0	?		None	0	
					10	7.0		7.0	0.7	
Flash Dont Walk (s)					0.01	15.0		15.0	15.0	
Pedestrian Calls (#/hr)					0	0		0	0	
			27.4			8.5			8.3	
Actuated g/C Ratio 0.65 0.65		0.65	0.65			0.20			0.20	
0.10			0.51			0.36			0.31	
6.1		5.4	6.7			16.6			14.9	
		0.0	0.0			0.0			0.0	
		5.4	6.7			16.6			14.9	
Α		A	A			В			В	
Approach Delay 6.5			6.7			16.6			14.9	
			٧			В			В	
ntersection Summary										
Area Type: Other										
Cycle Length: 75										
Actuated Cycle Length: 41.9										
Natural Cycle: 55										
Control Type: Actuated-Uncoordinated										
Maximum v/c Ratio: 0.51										
ntersection Signal Delay: 7.3		Inter	Intersection LOS: A	-0S: A						
ntersection Capacity Utilization 42.2%		ICO	Level of	ICU Level of Service A	⋖					
Analysis Period (min) 15										

Splits and Phases: 3: Maple Road & Maplemere Road



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood C.C. Development 4: Maple Road & Donna Lea Blvd

Full Development Conditions - AM Peak Hour

	†	<u> </u>	<b>&gt;</b>	ţ	•	•	
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	₩₽		r	ŧ	Þ		
Volume (vph)	916	9	13.	1059	24	61	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0	20		0	0	
Storage Lanes		0	-		-	0	
Taper Length (ft)		25	22		25	25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00	
±-	0.999				0.904		
Fit Protected			0.950		986.0		
Satd. Flow (prot)	3536	0	1770	3539	1660	0	
Fit Permitted			0.950		986.0		
Satd. Flow (perm)	3536	0	1770	3539	1660	0	
Link Speed (mph)	45			45	30		
Link Distance (ft)	1106			1002	322		
Travel Time (s)	16.8			15.2	8.1		
Peak Hour Factor	0.79	0.79	0.87	0.87	97.0	97.0	
Adj. Flow (vph)	1235	∞	15	1217	32	80	
Shared Lane Traffic (%)							
-ane Group Flow (vph)	1243	0	15	1217	112	0	
Enter Blocked Intersection	N	N N	N <sub>o</sub>	9	N <sub>o</sub>	8	
-ane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	12			12	12		
-ink Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane	Yes			Yes			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		6	15		15	6	
Sign Control	Free			Free	Stop		
Intersection Summary							
	Other						
Control Type: Unsignalized ntersection Capacity Utilization 41.0% Analysis Period (min) 15	on 41.0%			⊇	J Level o	ICU Level of Service A	
and Joseph Grood (minu) 13							

Lanes, Volumes, Timings SRF & Associates

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Proposed Westwood C.C. Development 4: Maple Road & Donna Lea Blvd

Full Development Conditions - AM Peak Hour

WLTL  2 1002 0.92 0.85 1878 622 1239 639 1119 197 6.8 6.9 88 88 88 88 88 88 88 88 89 88 782 609 112 0 0 32 0 0 32 0 0 489 0.36 0.22 0 0 145 88	0.92 (0.1239 6.39 11119 6.8 8.5 8.9 2.82
0.92 (0.92 (1239 6.39 1119 6.8 5.8 8.9 2.82 89 0.0 1700 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0,92 (0,928) (1878   1878   1239 (639   1119   638   6
0.92 (0.92 (1239 6.89 6.8 5.8 3.5 89 89 89 89 89 89 89 89 89 89 89 89 89	0.92 (
1239 639 11119 6.8 5.8 3.5 89 282 282 283 0 0 1700 0.36 0 0.0	1237 639 1119 639 1119 68 5.8 3.5 89 282 282 00 00 1700 0.0 0.0
639 6.8 6.8 5.8 3.5 89 282 282 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	639 648 6.8 6.8 3.5 89 282 282 283 609 0 0 1700 0.0 0.0 0.0
618 65.8 3.5 89 282 282 283 609 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	618 618 618 618 618 609 609 609 609 600 600 600 600 600 600
5.8 3.5 89 282 <b>WB3 N</b> 00 0 0 0.36 0 0.36	5.8 3.5 89 282 282 0 609 0 1700 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
8.3.9 8.2.9 8.2.9 8.0.0 0.0 0.3.6 0.0 0.0 0.0 0.0	282 282 282 0 009 0 1700 0 3.6 ( 0
282 WB3 N N 609 0 0 1700 0.36 ( 0.0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0	282  WB 3 N 609  0 0 0 1700 0.36 (0.00)
WB3 N 609 609 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	WB3 N 609 00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
609 0 0 1700 0.36 0 0.0	609 0 0 1700 0.36 0 0.0
0.36 (0.36 (0.00)	0.36 (0.00 (0
0.36	0.36 0.00 0.00 0.00 0.00 0.00 0.00 0.00
0.36	0.36
0.0	0.0
14.5 B	14.5 B
В	В

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

Proposed Westwood C.C. Development 5: Maple Road & Audubon Golf Club

Lane Group		1	†	<i>&gt;</i>	<b>&gt;</b>	ţ	✓	•	<b>←</b>	•	ၨ	-	•
1   1065   4   1   1123   2   3   4   4   4   4   4   1   1123   2   3   4   4   4   4   4   4   1   1123   2   3   3   4   4   5   1   3   3   4   4   5   1   3   3   3   4   5   3   3   3   3   3   3   3   3   3	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
1   1066	Lane Configurations	<u>~</u>	4₽		je-	44			4			4	
1900   1900	Volume (vph)	_	1065	4	-	1123	7	13	0	3	_	0	0
100	Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
1 0 1 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	Storage Length (ft)	100		0	20		0	0		0	0		0
25 25 25 25 26 26 27 26 27 27 27 27 27 27 27 27 27 27 27 27 27	Storage Lanes	-		0	-		0	0		0	0		0
1.00 0.95 0.95 1.00 0.95 0.95 1.00 1.00 1.00 1.00 0.95	Taper Length (ft)	22		22	25		25	25		22	22		25
0.950 1770 3836 0.950 1770 0.950 0.9	Lane Util. Factor	1:00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
0956 1770 3536 0 0750 0950 0950 1770 3536 0 1770 3539 0 0 1745 0 0 1770 45 0 1770 3539 0 0 1745 0 0 1770 45 0 1770 3539 0 0 1745 0 0 1770 45 0 1770 3539 0 0 1745 0 0 1770 46 0 1770 3539 0 0 1745 0 0 1770 47 0 1770 3539 0 0 1745 0 0 1770 48 0 1770 3539 0 0 1745 0 0 1770 48 0 1770 3539 0 0 1746 0 0 1770 48 0 1 1111 48 0 1 1 1221 2 14 0 3 1 0 0 40 0 0 0 0 0 40 0 0 0 0 40 0 0 0 0 40 0 0 0	FT		0.999						976.0				
1770   3836   0   1770   3839   0   0   1745   0   0   1770     1770   3836   0   1770   3839   0   0   1745   0   0   0   1770     45	Fit Protected	0.950			0.950				096.0			0.950	
1770   3536   0 0550   0 096	Satd. Flow (prot)	1770	3536	0	1770	3539	0	0	1745	0	0	1770	0
1770   3536   0   1770   3539   0   0   1745   0   0   1770     45	Flt Permitted	0.950			0.950				096.0			0.950	
45	Satd. Flow (perm)	1770	3536	0	1770	3539	0	0	1745	0	0	1770	0
1446   556   469   111   115	Link Speed (mph)		45			45			9			30	
0.92   0.92	Link Distance (ft)		446			226			469			111	
0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92	Travel Time (s)		8.9			8.4			10.7			2.5	
1 1158 4 1 1221 2 14 0 3 1 0 0 1 0 1 0 1 0 1 0 1 1 1 1 1 1 1	Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
1   1162   0   1   1223   0   0   17   0   0   1	Adj. Flow (vph)	-	1158	4	Ψ-	1221	7	14	0	m	<del>-</del>	0	0
1   1162	Shared Lane Traffic (%)												
No No No No No No No No No No No No No	Lane Group Flow (vph)	<del>-</del>	1162	0	<del>-</del>	1223	0	0	17	0	0	-	0
Left Left Right Left Right Right Righ	Enter Blocked Intersection	8	8	8	8	8	8	8	8	S	8	8	8
12 12 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
100 100 100 100 100 100 100 100 100 100	Median Width(ft)		12			12			0			0	
16 16 16 16 16 16 16 16 16 16 16 16 16 1	Link Offset(ft)		0			0			0			0	
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Crosswalk Width(ft)		16			16			16			16	
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Two way Left Turn Lane		Yes			Yes							
15 9 15 9 15 9 15 9 15 Other Colher Ication 41.1% ICU Level of Service A	Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Free Free Stop Other ed Izalion 41.1% ICU Level of Service A	Turning Speed (mph)	15		6	12		6	12		6	12		6
Other ed Ilzation 41.1%	Sign Control		Free			Free			Stop			Stop	
Other ed lization 41.1%	Intersection Summary												
ed lization 41.1%		Other											
	Control Type: Unsignalized	ion 41 1%			<u> </u>	I I evel C	Service	4					
•	Analysis Period (min) 15				2								

Proposed Westwood C.C. Development 5: Maple Road & Audubon Golf Club

Full Development Conditions - AM Peak Hour 109/2014

Movement Lane Configurations	Ē											
Lane Configurations	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
	*	<b>₩</b>		r	<b>₩</b>			4			4	
Volume (veh/h)	. —	1065	4	· <del>-</del>	1123	2	13	0	က	<b>—</b>	0	J
Sign Control		Free			Free			Stop			Stop	
Grade		%0			%0			%0			%0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	-	1158	4	<del>-</del>	1221	2	14	0	3	_	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1223			1162			1774	2387	581	1808	2388	611
vC1, stage 1 conf vol							1162	1162		1224	1224	
vC2, stage 2 conf vol							612	1225		284	1164	
vCu, unblocked vol	1223			1162			1774	2387	581	1808	2388	611
tC, single (s)	4.1			4.1			7.5	9.9	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			92	100	66	66	100	9
cM capacity (veh/h)	266			265			187	178	457	174	178	436
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	1	772	390	-	814	409	17	-				
Volume Left	-	0	0	<b>-</b>	0	0	14	-				
Volume Right	0	0	4	0	0	2	က	0				
cSH	200	1700	1700	262	1700	1700	210	174				
Volume to Capacity	0.00	0.45	0.23	0.00	0.48	0.24	0.08	0.01				
Queue Length 95th (ft)	0	0	0	0	0	0	7	0				
Control Delay (s)	11.4	0.0	0.0	11.0	0.0	0.0	23.7	25.8				
Lane LOS	В			В			ပ	Ω				
Approach Delay (s)	0.0			0.0			23.7	25.8				
Approach LOS							ပ	O				
Intersection Summary												
Average Delay			0.2									
Intersection Capacity Utilization	tion		41.1%	2	U Level o	ICU Level of Service			∢			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

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Proposed Westwood C.C. Development 6: Maple Road & North Forest Road

()	<ul> <li>- ull Development Conditions - AIM Peak Hour</li> </ul>	10/9/2014
ı		

				WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	١					١		١	
Lane Configurations	r	‡	*	<i>y</i> -	*	*	F	*	_	*	*	×
Volume (vph)	102	863	84	254	835	06	06	231	189	123	363	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	415		220	315		150	125		220	250		250
Storage Lanes	<del></del>		-	-		-	-		-	-		·
Taper Length (ft)	8		115	09		25	95		25	8		25
Lane Util. Factor	1:00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1:00
Frt Elt Dintected	0.050		0.850	0.050		0.850	0.050		0.850	0.050		0.850
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Fit Permitted	0.248			0.099			0.198			0.353		
Satd. Flow (perm)	462	3539	1583	184	3539	1583	369	1863	1583	929	1863	1583
Right Turn on Red			Yes			9			Yes			Yes
Satd. Flow (RTOR)			92						53			77
Link Speed (mph)		45			45			32			32	
Link Distance (ft)		1705			820			529			809	
Travel Time (s)		25.8			12.4			10.3			11.8	
Peak Hour Factor	06:0	06:0	0.90	0.95	0.95	0.95	06:0	06:0	06:0	0.80	0.80	0.80
Adj. Flow (vph)	113	626	93	267	879	95	100	257	210	154	454	231
Shared Lane Traffic (%)												
Lane Group Flow (vph)	113	626	93	267	879	95	100	257	210	154	454	231
Enter Blocked Intersection	N	8	8	2	2	No No	2	N <sub>0</sub>	S	2	8	8
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12	>		12	,		12			12	•
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		6	12		6	12		6	15		6
Number of Detectors	_	2	_	_	2	_	_	2	_	_	2	_
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thr	Right	Left	Thru	Right
Leading Detector (ft)	70	100	20	20	100	20	20	100	20	70	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	8	9	8	70	9	70	70	9	70	8	9	8
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0:0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+Ex			CI+EX			CI+EX			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	•	vo+mq	pm+pt	•	vo+mq	pm+pt	•	vo+mq	pm+pt		pm+ov
Protected Phases	വ വ	7	<i>x</i> (	- \	٥		n	œ	- c		4	۲ ،
Permitted Phases	7	•	7	۰ م	•	9 1	00	•	φ,	4 1		4 1
Detector Phase	2	2	33	_	9	/	33	8	-	1	4	ς

Synchro 7 Report Page 11

Proposed Westwood C.C. Development 6: Maple Road & North Forest Road

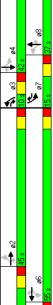
## Full Development Conditions - AM Peak Hour

Each Coup         EBL         EBT         WBL         WBL         WBL         NBT         NBT         NBT         NBT         SBL         TO		1	†	<u>/-</u>	<b>&gt;</b>	Ļ	1	•	<b>←</b>	•	۶	<b>→</b>	•
1.0 40 1.0 1.0 4.0 1.0 1.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
110 40 110 110 4.0 110	Switch Phase												
130 350 70 70 350 70 70 350 70 350 70 350 70 350 70 350 108% 37.5% 83% 37.5% 83% 37.5% 83% 37.5% 83% 37.5% 83% 37.5% 83% 37.5% 83% 37.5% 83% 37.5% 83% 37.5% 83% 37.5% 83% 37.5% 83% 37.5% 83.5% 35.0% 70 230 15.0 42.0 108% 37.5% 83% 37.5% 83.5% 35.0% 35.0% 36.0% 90 00 00 00 00 00 00 00 00 00 00 00 00	Minimum Initial (s)	1.0	4.0	1.0	1.0	4.0	1.0	1.0	4.0	1.0	1.0	4.0	1.0
130 450 100 230 550 150 100 370 230 150 420 1008% 37.5% 8.3% 19.2% 45.8% 12.5% 8.3% 30.8% 19.2% 19.2% 15.5% 35.0% 35.0% 19.0% 20.0%	Minimum Split (s)	7.0	35.0	7.0	7.0	32.0	7.0	7.0	35.0	7.0	7.0	35.0	7.0
108% 37.5% 83% 19.2% 45.8% 12.5% 83% 30.8% 19.2% 12.5% 35.0% 36.0 3.0 4.0 17.0 49.0 9.0 4.0 31.0 17.0 9.0 36.0 36.0 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5	Total Split (s)	13.0	45.0	10.0	23.0	22.0	15.0	10.0	37.0	23.0	15.0	42.0	13.0
7.0 39.0 4.0 17.0 49.0 9.0 4.0 31.0 17.0 9.0 36.0 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5	Total Split (%)	10.8%	37.5%	8.3%	19.2%	45.8%	12.5%	8.3%	30.8%	19.2%	12.5%	35.0%	10.8%
35 35 35 35 35 35 35 35 35 35 35 35 35 3	Maximum Green (s)	7.0	39.0	4.0	17.0	49.0	0.6	4.0	31.0	17.0	0.6	36.0	7.0
25 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2	Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
00 00 00 00 00 00 00 00 00 00 00 00 00	All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
6.0   6.0	Lost Time Adjust (s)	0.0	0:0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0:0	0.0
Lead   Lag   Lead   L	Total Lost Time (s)	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Ves         Ves <td>Lead/Lag</td> <td>Lead</td> <td>Lag</td> <td>Lead</td> <td>Lead</td> <td>Lag</td> <td>Lead</td> <td>Lead</td> <td>Lag</td> <td>Lead</td> <td>Lead</td> <td>Lag</td> <td>Lead</td>	Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
30 30 30 30 30 30 30 30 30 30 30 30 30 3	Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
None   None	Vehide Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
7.0   7.0	Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
12.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	Walk Time (s)		7.0			7.0			7.0			7.0	
11, 10,05 12, 2, 44,8 56,1 43,2 58,2 30,0 25,9 47,7 39,6 0 13,2,4 44,8 56,1 43,2 58,2 30,0 25,9 47,7 39,6 0,28 13,2,4 44,5 5,2 49,4 29,2 13,9 49,5 43,7 16,2 29,8 56,3 14,4 44,5 5,2 49,4 29,2 13,9 49,5 43,7 16,2 29,8 56,3 15,4 44,5 5,2 49,4 29,2 13,9 49,5 43,7 16,2 29,8 56,3 16,5 0,0 0,0 0,0 0,0 0,0 0,0 0,0 0,0 0,0 17,4 44,5 5,2 49,4 29,2 13,9 49,5 43,7 16,2 29,8 56,3 18,5 0,0 0,0 0,0 0,0 0,0 0,0 0,0 0,0 18,5 0,0 0,0 0,0 0,0 0,0 0,0 0,0 0,0 0,0 0	Flash Dont Walk (s)		22.0			22.0			22.0			22.0	
416 34.6 44.8 56.1 43.2 58.2 30.0 25.9 47.7 39.6 30.7 0.38 0.32 0.41 0.51 0.39 0.53 0.27 0.24 0.44 0.44 0.36 0.28 0.44 0.86 0.13 0.88 0.63 0.11 0.65 0.58 0.29 0.47 0.87 0.28 0.00 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	Pedestrian Calls (#/hr)		0			0			0			0	
038 032 041 0.51 039 0.53 027 024 044 036 028 044 0.86 0.13 0.88 0.63 0.11 0.65 058 0.29 0.47 0.87 0.00 0.00 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Act Effct Green (s)	41.6	34.6	44.8	56.1	43.2	58.2	30.0	25.9	47.7	39.6	30.7	43.8
0.44 0.86 0.13 0.83 0.63 0.11 0.65 0.58 0.29 0.47 0.87 21.4 44.5 5.2 49.4 29.2 13.9 49.5 43.7 16.2 29.8 56.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	Actuated g/C Ratio	0.38	0.32	0.41	0.51	0.39	0.53	0.27	0.24	0.44	0.36	0.28	0.40
21.4 44.5 5.2 49.4 29.2 13.9 49.5 43.7 16.2 29.8 56.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	v/c Ratio	0.44	98.0	0.13	0.83	0.63	0.11	0.65	0.58	0.29	0.47	0.87	0.34
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Control Delay	21.4	44.5	5.2	49.4	29.5	13.9	49.5	43.7	16.2	29.8	56.3	17.0
21.4 44.5 5.2 49.4 29.2 13.9 49.5 43.7 16.2 29.8 56.3 C D A D C B D D B C E 39.1 32.4 34.6 40.6 D C D D C C D D C C D D C C C D C C C D C C C C D C C C D C C C C D D C C C D D C C C D D C C C D D C C C D D C C C D D C C C D D C C C D D C C C D D C C C D D C C C D D C C C D D C C C C D D C C C C D D C C C C D D C C C C D D C C C C C D D C C C C C C D D C C C C C C C C C C C C C C D D C	Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C D A D C B D D B C 39,1 32,4 34,6 C C	Total Delay	21.4	44.5	5.2	49.4	29.5	13.9	49.5	43.7	16.2	29.8	56.3	17.0
39.1 32.4 34.6 D C C	S07	O	۵	⋖	۵	ပ	В	۵	۵	В	ပ	ш	Ω
Approach LOS         D         C         C         D           Intersection Summary         Area Type:         Other         Cycle Length: 120           Cycle Length: 120         Actualed Cycle Length: 109.5         Actualed Cycle Length: 109.5	Approach Delay		39.1			32.4			34.6			40.6	
Intersection Summary Area Type: Other Cycle Length: 120 Actuated Cycle Length: 109.5	Approach LOS		Ω			U			S			Ω	
Area Type: Other Cycle Length: 120 Actuated Cycle Length: 109.5	Intersection Summary												
Cycle Length: 120 Actuated Cycle Length: 109.5	Area Type:	Other											
Actuated Cycle Length: 109.5	Cycle Length: 120												
	Actuated Cycle Length: 10	39.5											

Natural Cycle: 85
Control Types Actuated-Uncoordinated
Maximum wc Ratio: 087
Intersection Signal Delay: 36.6
Intersection Capacity Utilization 82.0%
Analysis Period (min) 15

Intersection LOS: D ICU Level of Service E

Splits and Phases: 6: Maple Road & North Forest Road **₽ 1**6



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood C.C. Development 7: Sheridan Drive & Mill Street

Full Development Conditions - AM Peak Hour

	4	<b>†</b>	<i>&gt;</i>	-	ţ	4	•	•	•	٠	-	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	je-	<b>₩</b>		<u>,-</u>	<b>₽</b>		<b>,</b> -	æ		je-	æ	
Volume (vph)	9	1343	130	220	1060	6	106	71	125	8	146	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	150		0	40		0	75		0
Storage Lanes	-		0	-		0	-		0	-		0
Taper Length (ft)	9 62	L	25	90	L	25	25	6	25	52	6	72
Lane Util. Factor	90.1	0.95	0.95	00.	0.95	0.95	00.1	00.1	00.1	8.6	00.1	8.
F.T.		0.987		0	0.999		010	0.872			0.983	
Fit Protected	0.750	0070	c	0.950	76.30	c	0.950	1071	c	0.950	1001	C
Satd. Flow (prot)	0//1	3493	0	0//1	3536	0	0//1	1024	0	0//0	1831	0
Catd Flow (norm)	0.223 41E	2402	<	134	2526	<	207	1624	c	1114	1021	
Sard: Flow (politi) Right Turn on Red	2		S	2	0000	ν V	9	1021	S	<u>-</u>	200	γ
Satd Flow (RTOR)			2			3			2		4	3
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		2782			776			838			362	
Travel Time (s)		42.2			14.8			19.0			8.2	
Peak Hour Factor	0.86	98.0	98.0	0.89	0.89	0.89	0.56	0.56	0.56	0.61	0.61	0.61
Adj. Flow (vph)	7	1562	151	247	1191	10	189	88	223	46	239	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	1713	0	247	1201	0	189	261	0	46	270	0
Enter Blocked Intersection	8	8	S	8	9	8	8	8	%	8	8	8
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane	,	Yes			Yes		,	,			9	,
Headway Factor	1:00	1.00	1:00	1.00	1.00	1.00	1.00	1.00	1.00	1:00	1.00	1.00
Turning Speed (mph)	15	•	6	13	•	6	15	•	6	<u>1</u>	•	6
Number of Detectors		2			- 2			2		<del>.</del> .	2	
Detector Template	Left	Thru		Left	Thru		Left	맫		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0 (		0 (	0		0	0 (		0	0 (	
Detector 1 Position(ft)	0 8	0 .		0 8	0 \		0 8	0 .		0 8	0 .	
Detector 1 Size(ft)	2 5	ا ٥		20	ا ٥		20 5	ا ٥		2 5	ا ٥	
Detector 1 Type	CI+EX	CI+EX		CI+EX	CI+EX		CI+EX	CI+EX		CI+EX	CI+EX	
Detector I Channel	c	c		c	c		c	c		c	c	
Detector 1 Exterior (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0:0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0:0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+EX			CI+EX			CI+EX			CI+Ex	
Detector 2 Channel		0			0			0			0	
Detector 2 Extend (s)	200	0.0		ta . ma	0.0		40.00	0:0		S. C.	0.0	
Protected Phases	3	0		<u>,</u>	9		بر بر	00		3	4	
Permitted Phases	0	,		٠,٠	>		α			4		
Detector Disease	4 C	c		- c	7		۰ د	0			-	
Detector Phase	7	7		-	О		n	0		4	4	

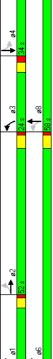
Synchro 7 Report Page 13

Proposed Westwood C.C. Development 7: Sheridan Drive & Mill Street

## Full Development Conditions - AM Peak Hour

		Ť	٠	•		,	_	-	_		•	,
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		1.0	4.0		1.0	4.0		4.0	4.0	
Minimum Split (s)	28.3	28.3		6.2	28.3		6.2	34.2		34.2	34.2	
Total Split (s)	52.0	52.0	0.0	25.0	0.77	0.0	24.0	58.0	0.0	34.0	34.0	0.0
Total Split (%)	38.5%	38.5%	%0.0	18.5%	27.0%	%0:0	17.8%	43.0%	%0.0	25.2%	25.2%	0.0%
Maximum Green (s)	46.5	46.5		20.7	71.5		18.8	52.8		28.8	28.8	
Yellow Time (s)	4.3	4.3		3.2	4.3		3.2	3.2		3.2	3.2	
All-Red Time (s)	1.2	1.2		1.1	1.2		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0:0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	4.3	5.5	4.0	5.2	5.2	4.0	5.2	5.2	4.0
Lead/Lag	Lag	Lag		Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Мах		None	Max		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0			15.0			22.0		22.0	22.0	
Pedestrian Calls (#/hr)	0	0			0			0		0	0	
Act Effct Green (s)	51.0	51.0		73.0	71.8		42.7	42.7		22.6	22.6	
Actuated g/C Ratio	0.41	0.41		0.58	0.57		0.34	0.34		0.18	0.18	
v/c Ratio	0.04	1.21		0.84	0.59		0.64	0.47		0.24	0.81	
Control Delay	29.7	133.3		56.3	19.9		40.1	35.0		47.4	8.79	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	29.7	133.3		56.3	19.9		40.1	35.0		47.4	8.79	
SOT	ပ	ш		ш	В		۵	ပ		۵	ш	
Approach Delay		132.9			26.1			37.1			64.7	
Approach LOS		ш			S						Ш	
Intersection Summary												
Area Type:	Other											
Cycle Length: 135												
Actuated Cycle Length: 125.3	c,											
Natural Cycle: 140												
Control Type: Actuated-Uncoordinated	oordinated											
Maximum v/c Ratio: 1.21												
Intersection Signal Delay: 77.2	7.2			교	Intersection LOS: E	10S: E						
Intersection Capacity Utilization 85.0%	tion 85.0%			೨	U Level o	ICU Level of Service E	ш					

Splits and Phases: 7: Sheridan Drive & Mill Street



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood C.C. Development 8: Sheridan Drive & North Forest Road

Full Development Conditions - AM Peak Hour

	1	†	~	<b>&gt;</b>	ţ	✓	<	-	*	٠	-	*
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	ŧ	¥.	*	₩		۳	+	*	×	ŧ	*-
Volume (vph)	8	1327	217	181	1113	26	239	345	23	51	450	284
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	405		170	260		0	180		265	180		200
Storage Lanes	- 6		- į	- 00		ى د	- į		- į	- į		_ 5
Taper Length (#)	700	100	22	700	L	25	25	5	25	52 52	100	5 23
Lane UIII. rador	3.	0.93	0.850	00.1	0.95	0.95	00.	3.	0.00	99.	0.93	0.100
Fit Protected	0.950		2000	0.950	0.0		0.950		2000	0.950		5
Satd. Flow (prot)	1770	3539	1583	1770	3529	0	1770	1863	1583	1770	3539	1583
Fit Permitted	0.105			0.062			0.172			0.312		
Satd. Flow (perm)	1%	3539	1583	115	3529	0	320	1863	1583	281	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			92		2				26			310
Link Speed (mph)		45			45			40			32	
Link Distance (ft)		696			2219			547			354	
Travel Time (s)		14.7			33.6			9.3			6.9	
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	06:0	0.90	0.00	0.84	0.84	0.84
Adj. Flow (vph)	92	1397	228	197	1210	78	566	383	56	61	536	338
Shared Lane Traffic (%)												
Lane Group Flow (vph)	92	1397	228	197	1238	0	566	383	26	61	236	338
Enter Blocked Intersection	8	8	8	8	8	2	8	2	8	8	8	2
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		6	12		6	15		6	15		6
Number of Detectors	_	2	<del>-</del>	_	2		-	2	-	_	2	_
Detector Template	Left	Thr	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	70	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	8	9	8	70	9		70	9	70	8	9	8
Detector 1 Type	CI+EX	CI+Ex	CI+Ex	CI+Ex	CI+EX		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+EX			CI+EX			CI+EX			CI+EX	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	bm+pt		vo+mq	pm+pt			pm+pt		Perm	pm+pt	•	Perm
Protected Phases		٥	_ 、	ഹ	7			4	•	m (	00	•
Permitted Phases	۰ م	•	9 1	7			4 1	•	4 .	∞ α		∞ α
Detector Phase	_	9	1	2	7		/	4	4		∞	20

Lanes, Volumes, Timings SRF & Associates

Synchro 7 Report Page 15

Proposed Westwood C.C. Development 8: Sheridan Drive & North Forest Road

Full Development Conditions - AM Peak Hour

Control Property   EBE   EBF   WBE   WBE   WBF   NBE   NBF   NBF   NBF   NBF   SBE   SBF		•	<b>†</b>	<i>&gt;</i>	<b>&gt;</b>	ţ	4	•	•	•	٠	<b>→</b>	•
(s) 40 40 40 40 40 40 40 40 40 40 40 40 40	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
(\$) 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	Switch Phase												
(\$) 8.3 27.9 21.0 8.3 27.9 21.0 27.2 27.2 8.3 27.2 27.2 8.3 27.2 27.2 8.3 27.2 27.2 8.3 27.2 27.2 8.3 27.2 27.2 8.3 27.2 27.2 8.3 27.2 27.3 8.3 27.3 27.3 27.3 27.3 27.3 27.3 27.3 27	Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
State	Minimum Split (s)	8.3	27.9	21.0	8.3	27.9		21.0	27.2	27.2	8.3	27.2	27.2
114% 46.4% 15.7% 12.9% 37.9% 0.0% 15.7% 28.6% 12.1% 25.0% 3.1	Total Split (s)	30.0	65.0	22.0	18.0	53.0	0.0	22.0	40.0	40.0	17.0	35.0	35.0
an (s) 25.7 59.9 17.7 13.7 47.9 17.7 34.9 34.9 34.9 12.7 29.9 (s) 3.2 3.9 3.0 3.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Total Split (%)	21.4%	46.4%	15.7%	12.9%	37.9%	%0.0	15.7%	28.6%	28.6%	12.1%	25.0%	25.0%
\$\frac{5}{5}\$\frac	Maximum Green (s)	25.7	6.69	17.7	13.7	47.9		17.7	34.9	34.9	12.7	29.9	29.9
(\$) 1.1 1.2 1.1 1.1 1.2 1.1 1.1 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.0 set (\$) 6.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Yellow Time (s)	3.2	3.9	3.2	3.2	3.9		3.2	3.2	3.2	3.2	3.2	3.2
lunics) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	All-Red Time (s)	1.1	1.2	Έ.	;;	1.2		<del>[</del> -	1.9	1.9	<del>[</del>	1.9	1.9
Pe (s)   4.3   5.1   4.3   4.3   5.1   4.4   4.3   5.1   5.1   4.3   4.3   4	Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lead   Res Yes Yes Yes Yes Yes Yes Yes Yes Yes Y	Total Lost Time (s)	4.3	2.1	4.3	4.3	2.1	4.0	4.3	5.1	5.1	4.3	2.1	5.1
Mail Control   Mail	Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
sion (s)         3.0         3.	Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
None   Max   None   None   Max   None   No	Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
1,000   1,00	Recall Mode	None	Мах	None	None	Max		None	None	None	None	None	None
latic (#hh)	Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
alls (#hr) 69,9 60,0 82,8 77,6 64,2 49,2 73,7 37,7 37,7 36,5 56,5 Ratio 0,51 0,44 0,51 0,54 0,47 0,54 0,28 0,28 0,28 0,29 0,19 0,19 0,14 0,40 0,23 0,87 0,74 0,88 0,74 0,08 0,29 0,29 0,19 0,19 0,10 0,0 0,0 0,0 0,0 0,0 0,0 0,0 0,0 0,	Flash Dont Walk (s)		15.0			15.0			15.0	15.0		15.0	15.0
Ratio 0699 600 82.8 77.6 64.2 49.2 37.7 37.3 35.8 26.5 Ratio 06.51 04.4 06.1 05.57 04.7 03.6 02.8 0.28 0.28 0.26 0.19 0.19 0.51 0.44 0.92 0.37 0.34 0.28 0.28 0.28 0.29 0.19 0.19 0.21 0.44 0.92 0.37 0.34 0.28 0.28 0.28 0.29 0.19 0.19 0.21 0.00 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	Pedestrian Calls (#/hr)		0			0			0	0		0	0
Ratio 0.51 0.44 0.61 0.57 0.47 0.36 0.28 0.28 0.26 0.19 0.46 0.90 0.23 0.87 0.74 0.88 0.74 0.06 0.27 0.78 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Act Effct Green (s)	6.69	0.09	87.8	77.6	64.2		49.2	37.7	37.7	35.8	26.5	26.5
146   0.90   0.23   0.87   0.74   0.88   0.74   0.06   0.27   0.78     216   446   9.7   68.6   33.6   61.9   55.8   13.5   32.3   60.7     216   446   9.7   68.6   33.6   61.9   55.8   13.5   32.3   60.7     216   446   9.7   68.6   33.6   61.9   55.8   13.5   32.3   60.7     38.7   8.6   3.6   5.6   E   E   E   E   C   E     38.7   38.4   56.6   E   E   D     41.2   5.6   41.2   D     5	Actuated g/C Ratio	0.51	0.44	0.61	0.57	0.47		0.36	0.28	0.28	0.26	0.19	0.19
The second control of the second control of	v/c Ratio	0.46	0.00	0.23	0.87	0.74		0.88	0.74	90.0	0.27	0.78	0.61
00 00 00 00 00 00 00 00 00 00 00 00 00	Control Delay	21.6	44.6	6.7	9.89	33.6		61.9	55.8	13.5	32.3	60.7	12.0
216 446 9.7 686 336 61.9 558 13.5 32.3 60.7  C D A E C E E B C E S D D D E  Nummany  Other  1-10  Actual ted-Uncoordinated Actual ted-Uncoordinated Grand Clark Grand Delay: 41.6  Grand Delay: 41.6  Intersection LOS: D  Intersection LOS: D  Intersection LOS: D  Intersection LOS: D  Intersection LOS: D  Intersection LOS: D  Intersection LOS: D	Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
18.7 E C E E B C 38.7 38.4 56.6 D D E E C C Level of Service E	Total Delay	21.6	44.6	6.7	9.89	33.6		61.9	55.8	13.5	32.3	60.7	12.0
38.7 38.4 D D Intersection LOS: D ICU Level of Service E	SOT	O	Ω	⋖	ш	O		ш	ш	В	U	ш	В
٥	Approach Delay		38.7			38.4			9.99			41.2	
	Approach LOS		Ω			Ω			ш			Ω	
	Intersection Summary												
	Area Type:	Other											
	Cycle Length: 140												
	Actuated Cycle Length: 1	136.2											
	Natural Cycle: 105												
	Control Type: Actuated-L	Incoordinated											
	Maximum v/c Ratio: 0.90												
_	Intersection Signal Delay	1: 41.6			드	tersection	LOS: D						
	Intersection Capacity Util	lization 88.1%			2	:U Level o	f Service	ш					

Splits and Phases: 8: Sheridan Drive & North Forest Road

intersection Signal Delay: 41.6 Intersection Capacity Utilization 88.1% Analysis Period (min) 15

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Lanes, Volumes, Timings SRF & Associates

Full Development Conditions - AM Peak Hour Proposed Westwood C.C. Development 10: Sheridan Drive & Proposed South Driveway

Lane Group Lane Configurations Volume (wph) Mideal Flow (vphp) Storage Length (ft) Storage Length (ft) Taper Length (ft) Lane Util. Factor Fit Fit Protected Sard. Flow (pem) Right Turn on Red Sard. Flow (pem) Right Turn on Red Sard. Flow (pem) Right Turn on Red Sard. Flow (pem) Fit Protected Fit P	172 172 172 173 1.00 1.00 1.00 1.00 1.00	↑ E ← E	₩ BB	₩ MBL	WBT	WBR	NBL ~	- MBT	NBR	SBL	◆ SBT	SBR
Lane Group Lane Configurations Volume (with) Volume (with) Volume (with) Volume (with) Storage Length (ft) Storage Lanes Taper Length (ft) Lane Util. Factor Fri Fri Protected Satd. Flow (pem) Right Turn on Red Satd. Flow (pem) Fri Protected Satd. Flow (pem) Fri Protected Satd. Flow (pem) Right Turn on Red Satd. Flow (pem) Right Turn on Red Satd. Flow (pem) Fri Protected Satd. Flow (Fri Chop) Fri Protected Satd. Flow (Fri Chop) Fri Protected Fri Protected Satd. Flow (Fri Chop) Fri Protected Fri Protected Satd. Flow (Fri Chop) Fri Protected Fri	EBL 172 170 350 350 350 100 1.00 0.950 1770 0.058	EBT ↑↑	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations Volume (wh) Ideal Flow (vphpl) Ideal Flow (vphpl) Slorage Length (ft) Slorage Length (ft) Slorage Length (ft) Lane Util. Factor Fri Fri Pernited Sald Flow (prol) Right Turn on Red Sald Flow (pem) Right Turn on Red Sald Flow (pem) Right Turn on Red Sald Flow (pem) Till Knistance (ft) Travel Time (s)	172 1900 350 350 1.00 0.950 1770 0.058	<b>♣₽</b>		K	WW			+			4	<b>*</b> _ ;
Volume (vph)  (deal Flow (vphp))  Storage Length (ft)  Storage Length (ft)  Taper Length (ft)  Taper Length (ft)  The Triff  Fir Protected  Sald. Flow (prot)  Fir Permitted  Sald. Flow (prot)  Link Speed (nph)  Link Speed (nph)  Link Stance (ft)  Travel Time (s)	172 1900 350 350 1.00 1.00 1770 0.058 108	1597		-		*		\$			•	
deal Flow (vphp)) Storage Lanes Storage Lanes Taper Lanes Taper Langh (ft) Tane Uill. Factor FI Protected Sald. Flow (prot) FI Permitted Sald. Flow (prom) FI Permitted Sald. Flow (RTOR) Link Speed (mph) Link Speed (mph) Link Speed (mph) Link Speed (mph) Firavel Time (s)	1900 350 1 25 1.00 0.950 1770 0.058	1221	9	4	1523	99	16	0	6	22	0	129
Storage Length (ft) Storage Lanes Taper Length (ft) Taper Length (ft) Taper Length (ft) The Tength (ft) Travel Time (s) Travel Time (s)	350 1 25 1.00 1.00 0.950 1770 0.058 108	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Slorage Lanes Taper Length (f) Taper Length (f) Tane Util. Fador Fri Fri Perotected Sald. Flow (prot) Sald. Flow (prem) Right Turn on Red Sald. Flow (RTOR) Link Speed (mph) Link Distance (f) Travel Time (s)	25 1.00 0.950 1770 0.058		0	75		425	0		0	0		0
Taper Length (f) Lane Util. Fador Frt Frt Frt Perotected Sald Flow (prot) Sald Flow (prem) Sald Flow (prem) Right Turn on Red Sald Flow (RTOR) Link Speed (riph) Link Speed (riph) Link Speed (riph) Fred Frtor Fred Factor	25 1.00 0.950 1770 0.058		0	-		-	0		0	0		_
Lane Utill. Fador Fri Fri Fri Fri Fri Fri Fri Fri Fri Fr	1.00 0.950 1770 0.058 108		22	25		75	22		22	22		25
First Protected Sadd. Flow (prot) Sadd. Flow (prot) First Protected Sadd. Flow (perm) Right Turn on Red Sadd. Flow (RTOR) Link Speed (mph) Travel Time (s) Factor Factor	0.950 1770 0.058 108	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fil Protected Sald Flow (prot) Sald Flow (pem) Sald Flow (pem) Right Turn on Red Sald Flow (RTOR) LLIK Speed (mph) Link Distance (ii) Travel Time (s)	0.950 1770 0.058 108	0.999				0.850		0.951				0.850
Said. Flow (prot) Filt Permitted Said. Flow (perm) Said. Flow (perm) Right Lun on Red Said. Flow (RTOR) Link Speed (mph) Link Speed (mph) Favel Time (s)	1770 0.058 108			0.950				696.0			0.950	
Fil Permitted Sald Flow (perm) Right Turn on Red Sadus Lewo (RTOR) Link Speed (mph) Link Distance (ft) Travel Time (s)	0.058	3536	0	1770	3539	1583	0	1717	0	0	1770	1583
Satd. Flow (perm) Right Turn on Red Satd. Flow (RTOR) Link Speed (mph) Travel Time (s) Fresh Hour Factor	108			0.103				0.825			0.734	
Right Turn on Red Satd. Flow (RTOR) Link Speed (mph) Link Distance (ft) Travel Time (s)		3536	0	192	3539	1583	0	1461	0	0	1367	1583
Sadd. Flow (RTOR) Link Speed (mph) Link Distance (ft) Travel Time (s) Peak Hour Factor			Yes			Yes			Yes			Yes
Link Speed (mph) Link Distance (ft) Travel Time (s) Peak Hour Factor		_				72		13				8
Link Distance (ft) Travel Time (s) Peak Hour Factor		45			45			93			30	
Travel Time (s) Peak Hour Factor		635			669			278			269	
Peak Hour Factor		9.6			10.6			6.3			6.1	
A 47 CT A 4. LT	0.92	0.88	0.88	0.90	06:0	0.92	69.0	0.92	69.0	0.92	0.92	0.92
Adj. Flow (vpn)	187	1815	7	4	1692	72	23	0	13	09	0	140
Shared Lane Traffic (%)												
-ane Group Flow (vph)	187	1822	0	4	1692	72	0	39	0	0	9	140
Inter Blocked Intersection	8	N <sub>o</sub>	8	N <sub>0</sub>	N N	9	2	2	No No	8	2	S
_ane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12	,		12	,		0	,		0	,
ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		6	15		6	15		6	15		6
Number of Detectors	_	2		-	7	_	_	2		_	2	_
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
<ul> <li>eading Detector (ft)</li> </ul>	20	100		70	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	9		70	9	20	70	9		20	9	20
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt			Perm	c	Perm	Perm	c		Perm	,	pm+ov
Protected Phases		4		•	œ	d	•	7		,	٥	,
Permitted Phases	4 1	•		∞ (	•	∞ (	7			9 .		9 1
Detector Phase	_	4		xo	00	œ	7	7		9	9	,

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Proposed Work 10: Sheridan

Full Development Conditions - AM Peak Hour	10/9/2014	
Westwood C.C. Development	an Drive & Proposed South Driveway	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	21.0	21.0		21.0	21.0	21.0	21.0	21.0		21.0	21.0	21.0
Total Split (s)	29.0	86.0	0.0	57.0	57.0	57.0	24.0	24.0	0.0	24.0	24.0	29.0
Total Split (%)	26.4%	78.2%	%0.0	51.8%	51.8%	51.8%	21.8%	21.8%	%0:0	21.8%	21.8%	26.4%
Maximum Green (s)	24.0	81.0		52.0	52.0	52.0	19.0	19.0		19.0	19.0	24.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	5.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	2.0	2.0	4.0	2.0	2.0	2.0	2.0	2.0	4.0	2.0	2.0	2.0
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	С-Мах		C-Max	С-Мах	C-Max	Max	Max		None	None	None
Walk Time (s)		2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Flash Dont Walk (s)		11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0	0	0	0		0	0	
Act Effct Green (s)	81.0	81.0		64.1	64.1	64.1		19.0			19.0	35.9
Actuated g/C Ratio	0.74	0.74		0.58	0.58	0.58		0.17			0.17	0.33
v/c Ratio	0.72	0.70		0.04	0.82	0.08		0.14			0.25	0.27
Control Delay	35.5	9.4		13.0	23.6	3.1		29.3			42.7	26.2
Queue Delay	0.0	0.1		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	35.5	9.5		13.0	23.6	3.1		29.3			42.7	26.2
TOS	٥	A		В	ပ	A		U			٥	S
Approach Delay		11.9			22.7			29.3			31.1	
Approach LOS		В			O			S			O	
Intersection Summary												
Area Type:	Other											
Cycle Length: 110												
Actuated Cycle Length: 110												
Offset: 90 (82%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	ed to phase	4:EBTL a	and 8:WE	TL, Start	of Green							
Natural Cycle: 90												
Control Type: Actuated-Coordinated	rdinated											
Maximum v/c Ratio: 0.82												
Intersection Signal Delay: 17.8	7.8			드	Intersection LOS: B	LOS: B						
Intersection Capacity Utilization 72.2%	tion 72.2%			2	:U Level	ICU Level of Service C	ပ					
Analysis Period (min) 15												

% **↓**► 4 <u>.</u>

Lanes, Volumes, Timings SRF & Associates

Proposed Westwood C.C. Development 11: Sheridan Drive & Frankhauser Road

# Full Development Conditions - AM Peak Hour

	4	1	ţ	4	٠	•	
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	r	ŧ	4₽		r	¥L.	
Volume (vph)	89	1730	1644	24	44	28	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	105			0	0	20	
Storage Lanes	← į			ا ٥	<del>-</del> -	<del>-</del> -	
l aper Length (rt)	£ 5	90.0	100	57	7 70	1 00	
Laire Ulli. rautui Fri	3	0.43	0.998	0.43	9	0.850	
Fit Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3532	0	1770	1583	
Fit Permitted	0.110				0.950		
Satd. Flow (perm)	205	3539	3532	0	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			3			33	
Link Speed (mph)		45	42		30		
Link Distance (ft)		1014	635		825		
Iravel I ime (s)	9	15.4	9.6		18.8		
Peak Hour Factor	0.89	0.89	0.94	0.94	0.73	0.73	
Adj. Flow (vph)	9/	1944	1749	26	9	79	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	9/	1944	1775	0	09	79	
Enter Blocked Intersection	8	8	8	8	8	8	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane		Yes	Yes				
Headway Factor	1:00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	<u>1</u>	•	•	6	12	6	
Number of Detectors	_	2	2		_	-	
Detector Template	Left	Thr.	Thr.		left:	Right	
Leading Detector (ff)	20	100	100		20	20	
Trailing Detector (ft)	0 (	0	0 (		0 (	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ff)	2 2	9 .	9 .		50 20	50	
Detector 1 Type	CI+EX	CI+Ex	CI+EX		CI+EX	CI+EX	
Detector 1 Channel	d	d	d		d	d	
Detector I Extend (S)	0:0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		9	9				
Detector 2 Type		CI+Ex	CI+Ex				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Perm					Perm	
Protected Phases		2	9		4		
Permitted Phases	2					4	
Detector Phase	2	2	9		4	4	

Lanes, Volumes, Timings SRF & Associates

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Proposed Westwood C.C. Development 11: Sheridan Drive & Frankhauser Road

Full Development Conditions - AM Peak Hour

Lane Group         EBL         EBI         WBI         WBR         SBL         SBR           Switch Phase         Minimum Initial (s)         4.0         4.0         4.0         1.0         1.0           Minimum Initial (s)         4.0         4.0         4.0         4.0         31.1         31.1           Jotal Split (s)         7.0         4.0         4.0         31.1         31.1         31.1           Total Split (s)         7.0         71.7%         71.7%         71.7%         26.0         26.0           Maximum Green (s)         7.1         71.7%         71.7%         71.7%         26.0         26.0           All-Red Time (s)         7.1         71.7%         71.7%         70.0         26.0         26.0           All-Red Time (s)         7.0         0.0 <th></th> <th>4</th> <th>†</th> <th>ţ</th> <th>4</th> <th>۶</th> <th>•</th> <th></th>		4	†	ţ	4	۶	•	
40 4.0 4.0 1.0 40.0 40.0 41.1 71.7% 71.7% 71.7% 0.0% 28.3% 74.1 74.1 74.1 26.0 3.9 3.9 3.9 3.9 1.3 0.0 0.0 0.0 0.0 0.0 4.8 4.8 4.8 4.0 5.1 7.0 7.0 15.0 15.0 19.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	
40 40 40 10 400 400 400 31.1 78.9 78.9 78.9 31.1 71.7% 71.7% 10.0% 28.3% 74.1 74.1 74.1 26.0 39 3.9 3.9 3.9 3.2 0.0 0.0 0.0 0.0 0.0 4.8 4.8 4.8 4.0 5.1 2.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.0 0.0 0.0 1.0 0.0 0.0 0.0 0.0 0.0 1.0 0.0 0.0 1.0 0.0 0.0 1.0 0.0 0.0 1.0 0.0 0.0 1.0 0.0 0.0 1.0 0 0 0.0 1.0 0 0 0.0 1.0 0 0 0 0.0 1.0 0 0 0 0 0 0 0.0 1.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Switch Phase							
717.7% 71	Minimum Initial (s)	4.0	4.0	4.0		1.0	1.0	
789 789 789 00 31.1 71.7% 71.7% 71.7% 00% 283% 74.1 74.1 74.1 26.0 3.9 3.9 3.9 3.9 3.5 0.0 0.0 0.0 0.0 0.0 4.8 4.8 4.8 4.0 5.1 3.0 3.0 3.0 3.0 3.0 C-Max C-Max C-Max None 7.0 7.0 7.0 7.0 7.0 150 150 150 19.0 0 940 940 940 940 972 085 085 085 085 0.43 3.6 12 54.9 0 0 0 0 0 0 0 0 0 0 9.8 3.6 1.2 54.9 A A A A A D D Other	Minimum Split (s)	40.0	40.0	40.0		31.1	31.1	
71,7% 71,7% 71,7% 00% 283% 74,1 74,1 74,1 74,1 74,1 74,1 74,1 74,1	Total Split (s)	78.9	78.9	78.9	0.0	31.1	31.1	
741 741 74.1 26.0 39 3.9 3.9 3.9 0.0 0.0 0.0 0.0 148 4.8 4.8 4.0 5.1 30 3.0 3.0 3.0 150 15.0 15.0 19.0 0 0 0 0 0 0 0 940 940 940 970 0 0 0 0 0 940 940 940 940 0 0 0 0 0 940 040 040 0 0 0 0 0 940 040 040 0 0 0 0 0 940 040 040 0 0 0 0 0 940 040 040 0 0 0 0 0 940 040 040 0 0 0 0 0 0 940 040 040 0 0 0 0 0 0 940 040 040 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Total Split (%)	71.7%	71.7%	71.7%	%0:0	28.3%	28.3%	
39 3.9 3.9 3.2 09 0.9 0.9 1.9 00 0.0 0.0 0.0 0.0 1.9 30 3.0 3.0 C-Max C-Max C-Max None 7.0 7.0 7.0 7.0 7.0 15.0 15.0 15.0 19.0 0.0 0.0 0.0 0.0 9.8 3.6 0.85 0.85 0.8 3.6 1.2 54.9 0.0 0.0 0.3 0.0 9.8 3.6 1.2 54.9 D.A. A A A A D D.A. Other	Maximum Green (s)	74.1	74.1	74.1		26.0	26.0	
0.9 0.9 0.9 1.9 0.0 4.8 4.8 4.0 5.1 3.0 3.0 3.0 3.0 3.0 C-Max C-Max C-Max None 7.0 7.0 7.0 7.0 7.0 15.0 15.0 15.0 19.0 0.40 94.0 94.0 94.0 0.43 0.64 0.59 0.08 0.85 0.85 0.85 0.85 0.89 3.6 1.2 54.9 0.0 0.0 0.3 0.41 9.8 3.6 1.2 54.9 A A A A A D A A A A D A A A A D COTher	Yellow Time (s)	3.9	3.9	3.9		3.2	3.2	
0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.8 4.8 4.8 4.0 5.1 3.0 3.0 3.0 3.0 3.0 3.0 7.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0 15	All-Red Time (s)	6:0	6.0	6.0		1.9	1.9	
3.0 3.0 3.0 3.0 3.0 3.0 C-Max C-Max C-Max C-Max C-Max None 7.0 7.0 7.0 7.0 7.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0 15	Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
3.0 3.0 3.0 3.0 3.0 C-Max C-Max C-Max Mone 7.0 7.0 7.0 7.0 7.0 7.0 15.0 19.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Total Lost Time (s)	4.8	4.8	4.8	4.0	5.1	5.1	
3.0 3.0 3.0 3.0 3.0 3.0 3.0 C-Max C-Max C-Max Mone 7.0 7.0 7.0 7.0 7.0 7.0 15.0 15.0 15.0 15.0 19.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Lead/Lag							
3.0 3.0 3.0 3.0 3.0 C-Max C-Max C-Max None 7.0 7.0 7.0 7.0 7.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0 15	Lead-Lag Optimize?							
C-Max C-Max C-Max None 7.0 0.0 94.0 94.0 94.0 92.0 0.85 0.85 0.08 0.43 0.64 0.59 0.83 0.64 0.59 0.83 3.6 0.8 54.9 0.0 0.0 0.3 0.0 9.8 3.6 1.2 54.9 A A A A D A A A A D Other	Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	
(s) 7.0 7.0 7.0 7.0 7.0 7.0 (s) 7.0 (s) 7.0 15.0 15.0 19.0 (s) 7.0 (s) 7.0 15.0 19.0 (s) 7.0 (	Recall Mode	C-Max	C-Max	C-Max		None	None	
(\$) 15.0 15.0 15.0 19.0 (\$) (\$) (\$) 15.0 15.0 19.0 (\$) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Walk Time (s)	7.0	7.0	7.0		7.0	7.0	
#hr) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Flash Dont Walk (s)	15.0	15.0	15.0		19.0	19.0	
) 94.0 94.0 9.2 0 0.85 0.85 0.08 0.43 0.64 0.59 0.08 0.00 0.0 0.3 0.41 9.8 3.6 0.8 54.9 0.0 0.0 0.3 0.0 9.8 3.6 1.2 54.9 A A A D A A A D	Pedestrian Calls (#/hr)	0	0	0		0	0	
0 085 085 085 008 043 0.64 0.59 0.41 9,8 3.6 0.8 54.9 0 0.0 0.3 0.0 9,8 3.6 1.2 54.9 A A A A D A A A A D A A A D A A A D D A A A D D A A A D D A A A D D A A A D D A A A D D A A A D D A A A D D A A A D D A A A D D A A A D D A A A D D A A D D A A A D D A B	Act Effct Green (s)	94.0	94.0	94.0		9.5	9.5	
0.43 0.64 0.59 0.41 9.8 3.6 0.8 54.9 0.0 0.0 0.3 0.9 9.8 3.6 1.2 54.9 A A A A D 3.9 1.2 46.1 A A A D	Actuated g/C Ratio	0.85	0.85	0.85		0.08	80:0	
98 36 0.8 54.9 0.0 0.0 0.3 0.0 98 36 1.2 54.9 A A A A D 3.9 1.2 46.1 A A A D	v/c Ratio	0.43	0.64	0.59		0.41	0.48	
0.0 0.0 0.3 0.0 0.0 9.8 3.6 1.2 54.9 D A A D D A A D D A A D D A A D D A A D D A A D D A A D D A A D D D A A D D D A A D D D A A D	Control Delay	8.6	3.6	8.0		54.9	39.4	
9.8 3.6 1.2 54.9 A A A D 3.9 1.2 46.1 A A D nary	Queue Delay	0.0	0.0	0.3		0.0	0.0	
A A A D 3.9 1.2 46.1 A A D nary Other	Total Delay	8.6	3.6	1.2		54.9	39.4	
3.9 1.2 A A Nary Other	SOT	A	A	⋖		۵	۵	
nary A A Other	Approach Delay		3.9	1.2		46.1		
Summary th: 110	Approach LOS		A	⋖		Ω		
th: 110	Intersection Summary							
Cycle Length: 110	Area Type:	Other						
	Cycle Length: 110							

Splits and Phases: 11: Sheridan Drive & Frankhauser Road

Actuated Cycle Length: 110
Offset: 99 (90%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum wic Ratio: 0.64
Intersection Signal Delay, 4.1
Intersection Capacity Utilization 65.6%
Analysis Period (min) 15

Intersection LOS: A ICU Level of Service C

**∳ 1** 

Lanes, Volumes, Timings SRF & Associates

Proposed Westwood C.C. Development 12: Sheridan Drive & I-290 NB

Full Development Conditions - AM Peak Hour

PR   WB   WB   WB   NB   NB   NB   SB   SB		^	†	<b>/</b>	-	,	1		_	L	۶	•	•
100   100	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
100	Lane Configurations	F	444			444		<u>,                                     </u>	÷	*			
1900   1900	Volume (vph)	249	1557	0	0	1120	538	569	0	277	0	0	0
100	Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
105	Storage Length (ft)	<u>9</u>		0	0		0	230		120	0		0
100   0.91   1.00   0.95   0.91   0.95   0.91   0.95   0.91   0.95   0.91   0.95   0.91   0.95   0.91   0.95   0.91   0.95   0.95   0.91   0.95   0.92   0	Storage Lanes	_ 5		0 12	0 20		0 10	_ 1		- 1	0 1		0 1
(c) 6950	Tape Hill Eactor	8 6	0.01	1 00	100	0.01	0.01	0.05	0 01	0.05	1 23	100	1 00
0950 1770 1786 1887 1888 1888 1889 1889 1889 1889 1889	Ert	3	0.9	3	8	0.951	0.3	0.73	0.71	0.50	3	8	3
1770   5085   0   0   4836   0   1681   1519   1504   0   0     138   5085   0   0   4836   0   1681   1519   1504   0   0     138   5085   0   0   4836   0   1681   1519   1504   0   0     145   45   42   42   42   42   42     147   142   42   42   42   42     148   149   142   42   42   42   42     149   140   104   104   104   104   108   188   0.92   0.92     140   140   140   140   140   140   140   140   140   140     15   16   16   16   16   16   16   16	Fit Protected	0.950				5		0.950	0.978				
138   5085   0   4836   0   1681   1519   1504   0   0	Satd. Flow (prot)	1770	2082	0	0	4836	0	1681	1519	1504	0	0	0
138 5085	Fit Permitted	0.074						0.950	0.978				
Yes   Yes	Satd. Flow (perm)	138	2082	0	0	4836	0	1681	1519	1504	0	0	0
142   42   42   42   42   43   45   45   45   45   45   45   45	Right Turn on Red			Yes			Yes			Yes			Yes
15   15   15   15   15   15   15   15	Satd. Flow (RTOR)					142			45	42			
197   193	Link Speed (mph)		42			42			೫			30	
189   3.0	Link Distance (ft)		197			193			830			423	
194   0.94   0.94   0.94   0.94   0.98   0.88   0.88   0.92   0.92   0.92   0.95   0	Travel Time (s)		3.0			2.9			18.9			9.6	
(c) (%) 265 1656 0 0 1191 572 306 0 315 0 0 0 1	Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.88	0.88	0.88	0.92	0.92	0.92
Color   Colo	Adj. Flow (vph)	265	1656	0	0	1191	572	306	0	315	0	0	0
(vph)         265         1656         0         0         1763         0         214         209         198         0         0           Irsection         No	Shared Lane Traffic (%)							30%		37%			
No	Lane Group Flow (vph)	265	1656	0	0	1763	0	214	509	198	0	0	0
Left Left Right Left Right Left Right Left Left Right Left Left Right Left Left Right Left Left Right Left Left Right Left Left Right Left Left Left Lane  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Enter Blocked Intersection	9 8	%	8	8	9 8	8	2	8	8	2	2	2
12   12   12   12   12   12   12   12	Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
10	Median Width(ft)		12			12			12			12	
16	Link Offset(ft)		0			0			0			0	
Lane	Crosswalk Width(ft)		16			16			16			16	
1.00   1.00	Two way Left Turn Lane												
ph) 15 9 15 9 15 9 15 9 15 9 15 1 1 1 1 1 1	Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Color   Colo	Turning Speed (mph)	15		6	15		6	15		6	15		6
Thru	Number of Detectors	-	7			7		<del></del>	2	_			
(f) 20 100 100 20 100 20 100 20 100 20 100 20 100 20 100 20 100 20 100 20 100 20 100 20 100 20 100 20 20 20 20 20 20 20 20 20 20 20 20 2	Detector Template	Left	Thru			Thru		Left	Thru	Right			
(i) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Leading Detector (ft)	20	100			100		70	100	20			
(i) 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 6 20 6 2	Trailing Detector (ft)	0	0			0		0	0	0			
(s) C1+Ex C1	Detector 1 Position(ft)	0	0			0		0	0	0			
Cl+EX Cl+E	Detector 1 Size(ft)	8	9			9		50	9	50			
(s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Detector 1 Type	CI+Ex	CI+Ex			CI+Ex		CI+EX	CI+EX	CI+Ex			
(s) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	Detector 1 Channel												
(s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			
s) 0.0 0.0 0.0 0.0 0.0 0.0 ((1) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			
(f) 94 94 94 94 94 94 94 94 94 94 94 94 94	Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0			
S C+Ex C+Ex C+Ex C+Ex C+Ex C+Ex C+Ex C+Ex	Detector 2 Position(ft)		94			94			94				
(s) pm+pt 0.0 0.0 custom 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Detector 2 Size(ft)		9 .			9 :			9 -				
(s) 0.0 0.0 0.0 0.0 0.0 1.0 0.0 0.0 0.0 0.0	Detector 2 Type		CI+EX			CI+EX			CI+EX				
(s) pm+pt 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Detector 2 Channel		d			0			d				
pm+pt custom 3 3 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Detector 2 Extend (s)		0.0			0.0			0.0				
2	Turn Type	bm+pt	,			c		custom	c	Perm			
	Protected Phases	- 4	0			7		n c	n	c			
	remitted Filases	o 7	7			•		2		2			

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Proposed Westwood C.C. Development 12: Sheridan Drive & I-290 NB

ions - AM Peak Hour	10/9/2014
Condit	
Full Development Conditions	

	1	†	<i>&gt;</i>	<b>&gt;</b>	ţ	✓	•	•	•	۶	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	1.0	4.0			4.0		4.0	4.0	4.0			
Minimum Split (s)	6.2	33.9			27.8		29.0	29.0	29.0			
Total Split (s)	26.0	81.0	0.0	0.0	22.0	0.0	29.0	29.0	29.0	0.0	0.0	0.0
Total Split (%)	23.6%	73.6%	%0.0	%0.0	20.0%	%0.0	26.4%	26.4%	26.4%	%0.0	%0:0	%0.0
Maximum Green (s)	21.7	75.1			49.2		23.8	23.8	23.8			
Yellow Time (s)	3.2	3.9			3.9		3.2	3.2	3.2			
All-Red Time (s)	Ξ:	2.0			1.9		2.0	2.0	5.0			
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
lotal Lost I ime (s)	4.3	5.9	4.0	4.0	2.8	4.0	2.5	5.2	5.2	4.0	4.0	4.0
Lead/Lag	Lead				Lag							
Vehicle Extension (s)	20	3.0			3.0		2.0	2.0	2.0			
Recall Mode	None	C-Max			C-Max		None	None	None			
Walk Time (s)		7.0			7.0							
Flash Dont Walk (s)		21.0			15.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)	82.1	80.5			61.4		18.4	18.4	18.4			
Actuated g/C Ratio	0.75	0.73			0.56		0.17	0.17	0.17			
v/c Ratio	0.82	0.44			0.64		0.76	0.72	69.0			
Control Delay	39.0	4.0			7.4		2.09	48.4	46.0			
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0			
Total Delay	39.0	4.0			7.4		2.09	48.4	46.0			
SOT	۵	⋖			⋖		ш	۵	٥			
Approach Delay		8.9			7.4			51.9				
Approach LOS		A			٧			Ω				
Intersection Summany												
Area Type: O	Other											
Cycle Length: 110												
Actuated Cycle Length: 110												
Offset: 8 (7%), Referenced to phase 2:WBT and 6:EBTL, Start of Green	phase 2:	WBT and	6:EBTL, !	Start of G	reen							
Natural Cycle: 80												
Control Type: Actuated-Coordinated	linated											
Maximum v/c Ratio: 0.82												
Intersection Signal Delay: 14.5	5 20 70 E%			<u>=</u> ⊆	Intersection LOS: B	LOS: B	ر					
Analysis Period (min) 15	0.00			2			)					
Splits and Phases: 12: She	ridan Dri\	12: Sheridan Drive & I-290 NB	NB NB									
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26 s	558								88			
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9<mark>8 %</mark>

Lanes, Volumes, Timings SRF & Associates

Proposed Westwood C.C. Development 13: Sheridan Drive & Harlem Road

Full Development Conditions - AM Peak Hour

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	*	æ	K	*	¥	KK	
Volume (vph)	806	315	521	898	285	868	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0	215		140	0	
Storage Lanes		-	-		.7	7	
Taper Length (ft)	0	730	100	100	100	25	
Fri	5.5	0.850	0.3	0.30	0.37	0.850	
Fit Protected			0.950		0.950		
Satd. Flow (prot)	3539	1583	3433	3539	3433	2787	
Flt Permitted			0.950		0.950		
Satd. Flow (perm)	3539	1583	3433	3539	3433	2787	
Right Turn on Red		N				Yes	
Satd. Flow (RTOR)						107	
Link Speed (mph)	45			45	32		
Link Distance (ft)	314			413	338		
Travel Time (s)	4.8			6.3	9.9		
Peak Hour Factor	0.85	0.85	0.92	0.92	06:0	0.90	
Adj. Flow (vph)	1068	371	299	943	317	866	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1068	371	299	943	317	866	
Enter Blocked Intersection	€.	2 2	g :	₽.	≥ .	2 :	
Lane Alignment	Left	Kight	Lett	Lett	Lett	Kight	
Median Width(II)	7.			74	74		
Link Offset(ft)	0 ;			0 /	0 ;		
Crosswalk Widin(ii) Two way Left Turn Lane	<u>o</u>			<u>o</u>	<u>o</u>		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		6	15		15	6	
Number of Detectors	2	-	-	2	-	_	
Detector Template	Thru	Right	Left	Thru	Left	Right	
Leading Detector (ft)	100	20	20	100	20	20	
Trailing Detector (ft)	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	
Detector 1 Size(ft)	9	70	8	9	70	20	
Detector 1 Type Detector 1 Channel	CI+EX	CI+Ex	CI+Ex	CI+Ex	CI+EX	CI+EX	
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)	94			94			
Detector 2 Size(ft)	9			9			
Detector 2 Type	CI+Ex			CI+Ex			
Detector 2 Channel							
Detector 2 Extend (s)	0.0			0.0			
Turn Type		vo+mq	Prot	,		bm+ov	
Protected Phases	7	m (	-	9	m	- (	
Permitted Phases		7	,	,	0	· 00	
Detector Phase	7	20	-	9	3	-	

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Proposed Westwood C.C. Development 13: Sheridan Drive & Harlem Road

Full Development Conditions - AM Peak Hour

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13:	

-	NBR		1.0	5.3	25.0	22.7%	20.7	3.2	1.	0.0	4.3	Lead	Yes	2.0	None				43.3	0.39	98.0	35.5	0.0	35.5	۵											LOS: C	ICU Level of Service C	
-	NBL		1.0	6.2		22.7%	19.8	3.2	2.0	0.0	5.2			2.0	None				14.5	0.13	0.70	54.1	0.0	54.1	۵	40.0	Ω									Intersection LOS: C	:U Level of	
	WBT		4.0	32.3	85.0	77.3%	80.7	3.2	1:1	0.0	4.3			2.0	None	7.0	21.0	0	86.0	0.78	0.34	3.4	0.0	3.4	⋖	23.9	U					_				<u>=</u>	೨	
	WBL		1.0	5.3	25.0	22.7%	20.7	3.2	1.1	0.0	4.3	Lead	Yes	2.0	None				23.6	0.21	0.77	58.1	0.0	58.1	ш							t of Green						
•	EBR		1.0	6.2	25.0	22.7%	19.8	3.2	2.0	0.0	5.2			2.0	None				76.9	0.70	0.34	7.5	0.0	7.5	⋖							EBT, Star						
	EBT		1.0	30.5	0.09	54.5%	54.5	3.9	1.6	0.0	2.5	Lag	Yes	2.0	C-Max	7.0	18.0	0	26.9	0.52	0.58	20.5	0.0	20.5	U	17.1	В		Other			phase 2:1		dinated		9.	ion 64.7%	
	Lane Group	Switch Phase	Minimum Initial (s)	Minimum Split (s)	Total Split (s)	Total Split (%)	Maximum Green (s)	Yellow Time (s)	All-Red Time (s)	Lost Time Adjust (s)	Total Lost Time (s)	Lead/Lag	Lead-Lag Optimize?	Vehicle Extension (s)	Recall Mode	Walk Time (s)	Flash Dont Walk (s)	Pedestrian Calls (#/hr)	Act Effct Green (s)	Actuated g/C Ratio	v/c Ratio	Control Delay	Queue Delay	Total Delay	SOT	Approach Delay	Approach LOS	Intersection Summary	Area Type:	Cycle Length: 110	Actuated Cycle Length: 110	Offset: 7 (6%), Referenced to phase 2:EBT, Start of Green	Natural Cycle: 60	Control Type: Actuated-Coordinated	Maximum v/c Ratio: 0.86	Intersection Signal Delay: 26.6	Intersection Capacity Utilization 64.7%	Analysis Period (min) 15

Splits and Phases: 13: Sheridan Drive & Harlem Road

Lanes, Volumes, Timings SRF & Associates

Proposed Westwood C.C. Development 14: I-290 SB & Harlem Road

Full Development Conditions - AM Peak Hour

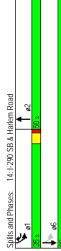
	<b>&gt;</b>	✓	<b>←</b>	•	٠	-	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations	r	æ	<b>*</b>		r	*	
Volume (vph)	298	744	478	21	413	391	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	0		0	330		
Storage Lanes	-	-		0	-		
Taper Length (ft)	72	100	70 0	25	100	0.05	
Fri	3	0.850	0.994	3	8	5	
Fit Protected	0.950				0.950		
Satd. Flow (prot)	1770	1583	3518	0	1770	3539	
Fit Permitted	0.950				0.215		
Satd. Flow (perm)	1770	1583	3518	0	400	3539	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		146	4				
Link Speed (mph)	30		32			35	
Link Distance (ft)	333		250			456	
Travel Time (s)	7.6		4.9			8.9	
Peak Hour Factor	0.81	0.81	0.87	0.87	0.88	0.88	
Adj. Flow (vph)	368	919	549	24	469	444	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	368	919	573	0	469	444	
Enter Blocked Intersection	8	2	8	8	8	2	
Lane Alignment	Left	Right	Fet	Right	Left	Left Left	
Median Width(ft)	12		15			12	
Link Uirset(it)	0 /		0 1			0 7	
CLOSSWAIN WILLING	2		2			2	
Loodway Eactor	5	100	5	0	00	0	
Headway Factor	3. 14	0.10	3.	90.	3. 5	9.	
Tulling Speed (Inpl) Number of Detectors	<u>.</u>	- ,	2	•	<u>.</u>	2	
Detector Template	- <del> </del>	Right	Thri		- Ho	Thru	
Leading Detector (ft)	8	20	100		70	100	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	70	20	9		20	9	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+EX	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)			94			94	
Detector 2 Size(ft)			9			9	
Detector 2 Type			CI+EX			CI+EX	
Detector 2 Channel			c				
Detector 2 Exterior (5)		, io. wid	0.0		tu. ma	0.0	
Turn Type	0	vo+IIId	C		piii+pi	4	
Permitted Phases	2	- ~	7		- 9	0	
Detector Phase	33	<b>—</b>	2		<b>—</b>	9	
	l	l	l	l	l	l	

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Proposed Westwood C.C. Developme 14: I-290 SB & Harlem Road

Full Development Conditions - AM Peak Hour	10/9/2014
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<b>→</b>	L SBT					9	ω	2 3.6			3 5.0	p	S	0 3.0	e None						7 0.20	1 8.4		1 8.4	В А	13.9	В								Intersection LOS: C	ICU Level of Service C
ノ 人	NBR SBL		4.0			0.0% 28.0%	30.7	3.2	<u>`</u>		4.0 4.	Lead	Yes	3.0	None				55.2	0.63	9.0	19.1	0.0	19.1	_										Intersect	ICU Lev
<b>-</b>	NBT		4.0	30.6	20.0	40.0%	45.0	3.6	1.4	0.0	2.0	Lag	Yes	3.0	Min	10.0	15.0	0	20.8	0.24		36.2		36	۵	36.2	Ω									
4	WBR		4.0	9.2	35.0	28.0%	(.,				4.3	Lead	Yes	3.0	None				57.9	99.0	0.84	19.6	0.0	19.6	В								-			٠,٥
-	WBL		4.0	22.0	40.0	32.0%	35.2	3.2	1.6	0.0	4.8			3.0	None				23.7	0.27	0.77	42.7	0.0	42.7	D	26.2	O		Other		38.3		Jncoordinate		t: 24.2	lization 67.79
	Lane Group	Switch Phase	Minimum Initial (s)	Minimum Split (s)	Total Split (s)	Total Split (%)	Maximum Green (s)	Yellow Time (s)	All-Red Time (s)	Lost Time Adjust (s)	Total Lost Time (s)	Lead/Lag	Lead-Lag Optimize?	Vehide Extension (s)	Recall Mode	Walk Time (s)	Flash Dont Walk (s)	Pedestrian Calls (#/hr)	Act Effct Green (s)	Actuated g/C Ratio	v/c Ratio	Control Delay	Queue Delay	Total Delay	SOT	Approach Delay	Approach LOS	Intersection Summary	Area Type:	Cycle Length: 125	Actuated Cycle Length: 88.3	Natural Cycle: 90	Control Type: Actuated-Uncoordinated	Maximum v/c Ratio: 0.84	Intersection Signal Delay: 24.2	Intersection Capacity Utilization 67.7%



Lanes, Volumes, Timings SRF & Associates

Full Development Conditions - AM Peak Hour Proposed Westwood C.C. Development 15: Maple Road & Proposed North Driveway

EBT E  977 1900 14 1900 14 113 45 1002 1002 1002 1002 1002 1002 1002 100	EBR WBL 61 110 900 1900 0 225 0 25 25 25 25 25 0 170 0 170 0 120 No No No light Left	₩BT 1007 1900 1900 1900 1900 1900 1900 1900	NBI 66 66 1900 1 100 0.0950 11770 30 1770 1770 1770 1770 1770 1770	NBR 1900 150 1 1.00 0.850 1583 Yes 40 0.92 105 No Right
977 1900 1-1900			1900 1900 1000 1000 1000 1000 1000 1000	97 1900 1900 1 1 2 2 5 1.00 1850 1850 1850 1983 40 105 105 105
977. 1900 17. 1900 17. 1002 0.991 17. 11.28 0.02 0 10.02 0 10.02 0 10.02 0 10.02 0 10.00 0 10.00 0 10.00 0 10.00 0 10.00 0			66 1900 0 1 1.00 0.950 1770 0.950 1770 1770 1770 1770 1770 1770 1770 17	97 150 150 1.00 1850 1883 Yes 40 105 105 105 105
0.95 0 0.95 0 0.991 0 0.991 0 0.991 0 0.991 0 0.991 0 0.92 0 0.92 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			1900 0 0 1 25 1.00 0.950 1770 0.950 1770 30 372 8.5 0.92 72 72 No	1900 150 1 25 1.00 1850 1883 Yes 40 0.92 105 105 No No
0.95 0 0.95 0 0.991 3507 3507 1108 1128 00 0 1062 0 0 100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			0 11.00 0.950 1770 0.950 1770 30 3372 8.5 0.92 72 No Left	150 1.00 1.00 1.850 1583 Yes 40 0.92 105 105 No No
0.991 0.991 3507 3507 113 45 1002 1002 1002 1002 1002 1002 1002 1003 100 100 100 100 100 100 10			100 0.950 1770 0.950 1770 1770 372 8.5 0.92 72 No	1.00 1.00 1850 1583 1583 40 0.92 105 105 No No
0.095 0 0.997 0 0.997 0 0.997 0 0.997 0 0.997 0 0.992 0 0.992 0 0.992 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			25 1.00 0.950 0.950 1770 372 8.5 0.92 72 No Left	25 1.00 1850 1583 Yes 40 105 105 No No
0.957 0 0.991 0 0.991 0 0.991 0 0.991 0 0 0.991 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			1.00 0.950 1770 0.950 1770 30 372 8.5 0.92 72 72 No	1.00 1583 1583 Yes 40 0.92 105 No No
0.991 3507 3507 1002 1102 0.92 0 0.92 0 106 1 106 1 100 1 100 0 0 0 0 0 0 0 0 0 0 0 0 0 0			0.950 1770 0.950 1770 30 372 8.5 0.92 72 72 No Left	(850 1583 Yes 40 0,92 105 No No
3507 3507 13 45 1002 1002 1002 1002 0 100 10 10 10 10 10 10 10 10 10 10 10			30 37 37 37 37 37 37 8.5 0.92 72 No	1583 Yes 40 0.92 105 105 No No
3507 3507 1128 on No Left Ri 1700 1100 1100 1100 1100 1100 1100 110			1770 0.950 1770 372 8.5 0.92 72 72 No Left	1583 Yes 40 0.92 105 NN NN NN
3507 13 45 1002 1002 1128 on 1062 0 1002 0 0 0 0 0 0 0 0 0 0 0 0 0			30 372 372 8.5 0.92 72 No No	1583 40 0.92 105 N N N N
3507			30 372 8.5 0.92 72 72 No Left	1583 Yes 40 0,92 105 No No Nght
13 45 1002 1002 1002 1062 0.92 0 1062 0 1128 0 107 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			30 372 8.5 0.92 72 72 No No	Yes 40 0.92 105 105 N N N N N
13 1002 0 1002 0 1002 0 1002 0 1002 0 1000 0 0 0			30 372 8.5 0.92 72 72 No Left	40 0.92 105 105 No Nghi
1002 15.2 0.92 0 0.92 0 11.28 0 1.00 1 1.00 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			30 372 8.5 0.92 72 72 No Left	0.92 105 105 105 No Nghi
1002 15.2 0.92 0.052 0 1128 0 1.00 1.00 1.00 0 0 0 0 0 0 0 0 0 0 0			372 8.5 0.92 72 72 No Left	0,92 105 105 No No Xight
15.2 0.92 0.92 11.08 0 1.00 1.00 1.00 0 0 0 0 0 0 0 0 0 0 0 0			8.5 0.92 72 72 No Left	0.92 105 105 No Nght
0.02 0 1062 0 1128 0 128 128 128 128 129 0 100 0 100 0 100 0 100 0 100 0 100 0 100 0 100 0 100 0 100 0 100 0 100 0			0.92 72 72 No No Left	0.92 105 105 No Nght
1062 1128 1128 12 100 100 100 100 100 100 100		= = =	72 72 No Left 12	105 105 No Right
1128 On No Left Ri 12 1.00 1 Thru 100 0 0 0 0 0 0 00 0 00		= -	72 No Left	105 No Right
1128 L M L M L M L M L M L M L M L M L M L M		= -	No Left	105 No Right
No No 12 12 16 1.00 1.00 100 0 0 0 0 0 0 0 0 0 0 0 0 0			2 Et 8	No Right
Left F Log CHEX CO 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			Left 12	Right
12 16 16 10 10 10 10 10 10 10 10 10 10 10 10 10		12	12	
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			1	
16 1.00 1.00 1.00 0 0 0 0 0 0 0 0 0 0 0 0		0	0	
1.00 1.00 0.00 0.00 0.00 0.00 0.00 0.00		16	16	
1.00 Thru 100 0 0 CHEX				
2 Thru 100 0 0 CI+EX 0.0	<del>( '</del>	1.00	1.00	1.00
	9 15		12	6
	_		<del></del>	
	Left		Left	Right
	8	100	20	20
	0		0	0
	0	0	0	0
	70		50	20
	CI+EX	CI+Ex	CI+Ex	CI+Ex
	0.0	0.0	0.0	0:0
	0.0		0.0	0.0
Detector 1 Delay (s) 0.0	0.0		0.0	0.0
Detector 2 Position(ft) 94		94		
Detector 2 Size(ft) 6		9		
Detector 2 Type CI+Ex		CI+Ex		
nel		c		
Detector 2 Extend (s) 0.0		0.0		
	bm+bt			bm+ov
Protected Phases 4	c	∞	7	33
Permitted Phases	∞			2
Detector Phase 4	3	∞	2	3

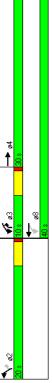
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Proposed Westwood C.C. Development

Full Development Conditions - AM Peak Hour	10/9/2014	
Proposed Westwood C.C. Development	15: Maple Road & Proposed North Driveway	,

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	
Switch Phase							
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0		8.0	20.0	20.0	8.0	
Total Split (s)	30.0	0.0	10.0	40.0	20.0	10.0	
Total Split (%)	20.0%	%0.0	16.7%	%1.99	33.3%	16.7%	
Maximum Green (s)	26.0		0.9	36.0	16.0	0.9	
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5		0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lag		Lead			Lead	
Lead-Lag Optimize?	Yes		Yes			Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	
Recall Mode	None		None	None	Min	None	
Walk Time (s)	2.0			2.0	2.0		
Flash Dont Walk (s)	11.0			11.0	11.0		
Pedestrian Calls (#/hr)	0			0	0		
Act Effct Green (s)	21.0		28.3	28.3	7.7	18.3	
Actuated g/C Ratio	0.47		0.63	0.63	0.17	0.41	
v/c Ratio	89.0		0.30	0.49	0.24	0.16	
Control Delay	12.1		4.9	4.9	50.9	8.5	
Queue Delay	0.0		0.0	0.0	0.0	0.0	
Total Delay	12.1		4.9	4.9	20.9	8.5	
FOS	В		⋖	A	ပ	A	
Approach Delay	12.1			4.9	13.5		
Approach LOS	В			A	В		
Intersection Summary							
Area Type: 0	Other						
Cycle Length: 60							
Actuated Cycle Length: 44.6							
Natural Cycle: 55							
Control Type: Actuated-Uncoordinated	ordinated						
Maximum v/c Ratio: 0.68							
Intersection Signal Delay: 8.7				드	Intersection LOS: A	-0S: A	
Intersection Capacity Utilization 48.7%	on 48.7%			2	:U Level o	CU Level of Service A	
Analysis Period (min) 15							

Splits and Phases: 15: Maple Road & Proposed North Driveway



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood C.C. Development Full Development Conditions - AM Peak Hour 16: Sheridan Drive & Proposed Ltd Access Driveway

Lanes, Volumes, Timings Synchro 7 Report SRF & Associates Page 29

Proposed Westwood C.C. Development Full Development Conditions - AM Peak Hour 16: Sheridan Drive & Proposed Ltd Access Driveway

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14   14   15   15   15   15   15   15	0.92 66 66 66 66 66 66 66 66 66 66 66 66 66	0 0% 0% 0.92 0 0 0 0 0.84 2653 1707 947 6.8	23 25 25 0.71 853	
27 1634 Free 6 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92	o la la la la la la la la la la la la la	Stop 0% 0.92 0.92 0 0 0 2653 1707 1707 6.84	0.92 0.71 853 0.69	
Free 0,92 0,92 0,92 0,92 0,92 0,92 0,92 0,92	Ö	Stop 0% 0.92 0 0 0.84 2.653 1707 1058 6.8	0.92 25 0.71 853 0	
0.92 0.92 0.92 0.92	o o	0.92 0 0 0.84 2.653 1707 1058 6.8	0.92 25 0.71 853 0	
0.92 0.92 0 29 1776 1 TWLTL TW 2 2 699 d 0.71	o	0.92 0 0 0.84 2.653 1707 1058	0.92 25 0.71 853 0	
29 1776 TWLTL TV 2 699 d 0.771		0.84 2653 1707 947 6.8	0 0 0.71	
TWLTL TW 2 699 d 0.71		0.84 2653 1707 947 6.8	0.71 853 0 6.9	
TWLTL TW 2 2 69 69 771 8		0.84 2653 1707 947 6.8	0.71 853 0 0	
TWLTL TW 2 2 699 699 d 1778		0.84 2653 1707 947 1058	0.71 853 0 0	
TWLTL TW 2 699 6771 8		0.84 2653 1707 947 1058	0.71 853 0 6.9	
TWLTL TW 2 699 d 0.71		0.84 2653 1707 947 1058	0.71 853 0 6.9	
TWLTL TW 2 699 69 1778		0.84 2653 1707 947 1058	0.71 853 0 6.9	
2 699 d 0.71		0.84 2653 1707 947 1058	0.71 853 0 6.9	
699 d 0.71		0.84 2653 1707 947 1058	0.71 853 0 6.9	
D a		0.84 2653 1707 947 1058	0.71 853 0 6.9	
a)		2653 1707 947 1058	853 0 6.9	
onf vol onf vol		1707 947 1058 6.8	0 6.9	
onfvol		947 1058 6.8	0 6.9	
		1058	0 6.9	
vCu, unblocked vol 1290		8 9	6.9	
4.1		5		
C, 2 stage (s)		2.8		
2.2		3.5	3.3	
on queue free %		100	45	
cM capacity (veh/h) 381		175	775	
Oirection, Lane # EB1 EB2 EB3	8 WB1	WB 2	WB 3	SB 1
29 888	853	853	72	25
29 0 0		0	0	0
0		0	72	25
1700		1700	1700	775
Volume to Capacity 0.08 0.52 0.52	0.50	0.50	0.04	0.03
oth (ft) 6 0		0	0	2
Control Delay (s) 15.2 0.0 0.0	0.0	0.0	0.0	8.6
				Α
Approach Delay (s) 0.2	0:0			8.6
Approach LOS				Α
ntersection Summary				
Average Delay 0.2 Intersection Capacity Utilization 53.4% Analysis Period (min) 15.		ICU Level of Service	Service	A

HOM Unsignalized Intersection Capacity Analysis SRF & Associates

Proposed Westwood C.C. Development Full Development Conditions - AM Peak Hour 17: Proposed Access Road & Frankhauser Road

	<b>\</b>	4	<b>-</b>	•	٠	<b>→</b>	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations	>		æ			€₩	
Volume (vph)	32	0	20	42	0	29	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1:00	1.00	
Frt			0.939				
Fit Protected	0.950						
Satd. Flow (prot)	1770	0	1749	0	0	1863	
Flt Permitted	0.950						
Satd. Flow (perm)	1770	0	1749	0	0	1863	
Link Speed (mph)	30		30			30	
Link Distance (ft)	252		825			231	
Travel Time (s)	2.7		18.8			5.3	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.73	0.73	
Adj. Flow (vph)	41	0	26	46	0	92	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	41	0	108	0	0	92	
Enter Blocked Intersection	S N	No	9	9	9	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	12		0			0	
Link Offset(ft)	0		0			0	
Crosswalk Width(ft)	16		16			16	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15	6		6	15		
Sign Control	Stop		Free			Free	
Intersection Summary							
Area Type: 0	Other						
Control Type: Unsignalized							
Intersection Capacity Utilization 15.2%	on 15.2%			ਹ	J Level of	ICU Level of Service A	
Analysis Period (min) 15							

Lanes, Volumes, Timings Synchro 7 Report SRF & Associates Page 31

Proposed Westwood C.C. Development Full Development Conditions - AM Peak Hour 177: Proposed Access Road & Frankhauser Road

Movement         WBI         NBT         NBR         SBL         SBT           Lane Confidularians         Y         6         4         6         4           Signt Control         55         6         50         6         6         6           Signt Control         55         6         50         72         6         6         6           Signt Control         6         4         1         1         6         8         8         8         8         8         8         8         8         8         8         8         8         8         8         8         8         8	WBL WBR NBT  35 0 50 50 Slop 0% 0.85 0.85 41 0 59 175 84 64 6.2 3.5 3.3 3.5 3.3 95 100 815 976 WB1 NB1 SB1 41 00 00 815 0.06 0.05 0.06 A A A A A A A A A A A A A A A A A A A	NBT NBR 50 42 50 42 6085 0.85 6.85 5.9 49 825	
March   Marc	None  175 84 64 62 825 175 84 64 662 815 95 100 815 97 170 141 108 92 140 0 815 170 142 0 84 64 65 84 64 66 81 87 87 88 80 80 81 80 81 80 80 81 80 80 80 80 80 80 80 80 80 80 80 80 80	50 42 50 42 60 085 085 59 49 None 825	
Slop Free 0 67 Slop O% 0% 0% 0% 0% 085 0.85 0.85 0.85 0.73 0.73 0.85 0.85 0.85 0.73 0.73 0.85 0.85 0.85 0.73 0.73 0.85 0.85 0.85 0.73 0.73 0.85 0.85 0.85 0.73 0.73 0.85 0.85 0.85 0.73 0.73 0.85 0.85 0.85 0.73 0.73 0.815 0.84 0.84 0.815 0.76 0.84 0.815 0.76 0.84 0.815 1700 1482 0.05 0.06 0.00 0.07 0.00 0.07 0.00 0.07 0.00 0.07 0.00 0.07 0.00 0.07 0.00 0.07 0.00 0.07 0.00 0.07 0.00 0.07 0.00 0.07 0.00 0.07 0.00 0.07 0.00 0.07 0.00 0.07 0.00 0.0	Stop Stop Stop Stop Stop Stop Stop Stop	Free 0% 0.85 0.85 0.85 89 49 825	
Supp Free Free Color of the Col	Sup Prese No. 100% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0	None 825	
175   84   108   108   108   109	0.05 41 0 59 41 0 59 175 84 6.4 6.2 3.5 3.3 95 100 815 976 WB1 NB1 SB1 41 108 92 41 0 0 0 49 0 815 1700 1482 0.05 0.06 0.00 A A 0 0.00	0.85 59 49 None 825	2
175 84 108 175 84 108 175 84 108 175 84 108 1815 976 1482 1815 176 92 1815 176 188	175 84 825 175 84 6.2 6.4 6.2 3.5 3.3 9.5 100 815 976 WB1 NB1 SB1 41 108 92 41 0 0 815 1700 1482 0.05 0.06 0.00 A A A A A A A A A A A A A A A A A A	None 825	
None 825 175 84 108 175 84 108 6.4 6.2 4.1 6.4 6.2 4.1 815 976 1482 0.05 0.06 0.00 815 0.0 0.0 817 0.0 0.0 818 0.0 0.0 818 0.0 0.0 819 0.0 0.0	175 84 175 84 64 6.2 3.5 3.3 95 100 815 976 WB 1 NB 1 41 0 0 0 49 815 1700 0.05 0.06 4 0 9 7 0.0 A A	None 825	
None None 825  175 84 108  6.4 6.2 4.1  815 3.3 2.2  95 100 100  815 976 100 0  815 1700 1482  0.05 0.06 0.00  A 0 0 0  9.7 0.0 0.0  A 116  A 10 0 0  815 1700 1482  A 0 0 0  A 16  A 16  A 17  A 0 0 0  A 16  A 17  A 17  A 18  A 18  A 19  A 10  A 1	175 84 176 84 64 6.2 35 3.3 95 100 815 976 WB 1 NB 1 41 0 0 49 815 1700 0.05 0.05 0.05 4 0 9.7 0.0 A	None 825	
None 825  175 84 108 6.4 6.2 100 815 976 100 815 976 100 815 1700 1482 0.05 0.06 0.00 97 0.0 0.0 A A A A A A A A A A A A A A A A A A A	175 84 175 84 64 62 35 33 95 100 815 976 41 0 0 0 1700 005 006 9.7 0.0 A A	None 825	
None   None   None	175 84 175 84 6.4 6.2 3.5 3.3 95 100 815 976 41 0 41 0 0 49 815 1700 0.05 0.06 9.7 0.0 A A	None 825	
None   None   None	175 84 175 84 6.4 6.2 3.5 3.3 95 100 815 976 WB1 NB1 41 108 41 0 0 49 815 1700 0.05 0.06 9.7 0.0 A	None 825	
None   None   None     175   84   108     175   84   108     175   84   108     185   33   2.2     95   100   100     815   976   1482     41   108   92     41   108   92     41   108   92     41   108   92     41   108   92     42   0   0     815   1700   1482     40   0   0     97   0.0   0.0     A	175 84 176 84 64 62 35 3.3 95 100 815 976 WB 1 NB 1 41 0 0 49 815 1700 0.05 0.05 A A A A A A A A A A A A A A A A A A A	None 825	
175   84   108     175   84   108     6.4   6.2   4.1     6.4   6.2   4.1     9.5   100   100     815   976   1482     41   108   92   1482     41   108   92   1482     5	175 84 6.2 6.4 6.2 3.3 9.5 100 815 976 41 108 0 0 49 0 0.05 0.06 9.7 0.0 4 9.7 0.0 A A A A A	825	88 88 -1
825 175 84 108 175 84 108 64 6.2 4.1 64 6.2 4.1 815 976 1482 815 976 1482 41 0 0 0 815 1700 1482 0.05 0.06 0.00 9.7 0.0 0.0 A A A A A A A A A A A A A A A A A A	175 84 175 84 6.4 6.2 3.5 3.3 9.5 100 815 976 WB 1 NB 1 S 4 1 108 0 49 815 1700 0 49 815 1700 0 49 8 17 0.0 A A A	825	98 1.
175   84   108   108   175   84   108   4.1   108   4.1   108   815   976   1482   1	175 84 175 84 6.4 6.2 3.5 3.3 95 100 815 976 WB1 NB1 S 41 0 0 49 815 1700 1-108 0 49 816 1700 1-108 0 49 817 0.00 A 9-7 0.00 A A		28 1.
175 84 108 6.4 6.2 4.1 3.5 3.3 2.2 95 100 100 815 976 100 815 976 1482 41 108 92 41 108 92 41 0 0 0 815 1700 1482 0.05 0.06 0.00 9 7 0.0 0.0 A A A A A A A A A A A A A A A A A A	175 84 175 84 64 6.2 3.5 3.3 95 100 815 976 41 108 41 0 0 0 815 1700 1. 0.05 0.06 0 87 0.0		98 SC 1
175 84 108 6.4 6.2 4.1 3.5 3.3 2.2 95 100 100 815 976 1482 41 108 92 1482 41 0 0 0 815 1700 1482 0.05 0.06 0.00 9.7 0.0 0.0 A A A A A A A A A A A A A A A A A A	175 84 6.2 8.4 6.2 8.5 9.5 100 815 976 100 815 976 100 9.7 0.005 0.006 0.005 0.006 0.005 0.006 0.005 0.006 0.005 0.006 0.005 0.006 0.005 0.006 0		.1
175   84   108     6.4   6.2   4.1     6.4   6.2   4.1     3.5   3.3   2.2     95   100   1482     11   108   92     41   108   92     141   108   92     0 1   49   0     815   1482     0 0   0 0     9.7   0 0   0 0     A	175 84 6.4 6.2 3.5 3.3 95 100 815 976 41 108 41 0 0 49 815 1700 1. 0.05 0.06 C 0.05 0.06 C 0.05 0.06 C 0.05 0.06 C 0.05 0.06 C 0.05 0.06 C		.1
175 84 108 64 6.2 4.1 85 3.3 2.2 95 100 815 976 1482  WB 1 NB 1 SB 1 41 108 92 41 0 0 815 1700 1482 005 0.06 0.00 97 0.0 0.0 A A 97 0.0 0.0 A A 1.6 1.6 1.6 1.5.2% ICU Level of Service 15 170 145 15.2% ICU Level of Service	175 84 6.2 6.4 6.2 3.5 3.3 9.5 100 815 976 100 49 108 108 108 109 108 109 109 109 109 109 109 109 109 109 109		.1
3.5 3.3 2.2 9.5 100 100 815 976 1482  WB 1 NB 1 SB 1 4 1 108 92 4 1 0 0 815 1700 1482 0.05 0.06 0.00 9.7 0.0 0.0 A A A A A A A A A A A A A A A A A A	3.5 3.3 3.3 9.5 100 815 976 815 976 41 108 41 108 815 1700 1.005 0.06 0.06 0.06 0.06 0.06 0.06 0.06		<b>T</b> . S
3.5 3.3 2.2 95 100 100 815 976 100 100 100	3.5 3.3 95 100 815 976 41 108 41 0 0.05 0.06 0 9.7 0.0 A A		
35 3.3 2.2 815 976 100 815 976 1482  41 108 92 4 41 0 0 815 1482 0.05 0.06 0.00 9.7 0.0 0.0 A A A A A A A A A A A A A A A A A A	35 3.3 95 100 815 976 41 108 41 0 0 49 815 1700 1. 0.05 0.06 0 9.7 0.0 A A A		
95 100 100 815 976 1482  WB 1 NB 1 SB 1 4 1 108 92 4 1 0 0 815 1700 1482 0 0 0 0 9.7 0.0 0.0 A 9.7 0.0 0.0 A 9.7 0.0 0.0 A 9.7 0.0 0.0 A 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.7 1.6 1.7 1.6 1.7 1.6 1.7 1.6 1.7 1.6 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7	95 100 815 976 41 08 41 0 0 49 815 1700 1- 0.05 0.06 0 9,7 0.0 A A A		7::
NB   SB   1482   NB   SB   S	WB1 NB1 S WB1 NB1 S 41 108 41 0 0 49 815 1700 1- 0.05 0.06 C 4 0 9.7 0.0 A A A A		00
WB 1         NB 1         SB 1           41         108         92           41         0         0           0         4         0           815         1700         1482           0.05         0.06         0.00           9 7         0.0         0.0           A         A           A         A           A         A           A         1.6           A         1.6           A         1.5           A         1.5           A         1.5           A         1.5	WB1 NB1 S 41 108 41 108 0 0 4 815 1700 1- 0.05 0.06 0 9.7 0.0 A A A A		32
41 108 92 11 0 0 0 815 1700 1482 0.05 0.06 0.00 97 0.0 0.0 A A A A A A A A A A A A A A A A A A A	41 108 41 0 0 49 815 1700 1. 0.05 0.06 0 4 0 9.7 0.0 A A		
41 0 0 815 77 00 0.0 97 0.0 0.0 97 0.0 0.0 A A 9.7 0.0 0.0 A 1.6 ICU Level of Service	41 0 49 10 11 17 17 10 11 17 10 11 17 11 11 11 11 11 11 11 11 11 11 11		
815 1700 1482 0.05 0.06 0.00 4 0 0 9.7 0.0 0.0 A 9.7 0.0 0.0 A 1.6 1.6 1.6 1.5.2% ICU Level of Service	815 1700 1- 815 1700 1- 0.05 0.06 C 4 0 9.7 0.0 A A		
815 1700 1482 0.05 0.06 0.00 9.7 0.0 0.0 A 9.7 0.0 0.0 A 1.6 1.6 1.6 1.5.2% ICU Level of Service	815 1700 1- 0.05 0.06 0 4 0 9.7 0.0 A A A A A A		
0.05 0.06 0.00 4 0 0 9.7 0.0 0.0 A 9.7 0.0 0.0 A 1.6 1.6 1.6 1.5.2% ICU Level of Service	0.05 0.06 C 4 0 9.7 0.0 A A 9.7 0.0		
4 0 0 9.7 0.0 0.0 A 9.7 0.0 0.0 A 1.6 1.6 1.2,2% ICU Level of Service	4 0 9.7 0.0 A 9.7 0.0 A A	0.0	
9,7 0.0 0.0 A 9,7 0.0 0.0 A A 1,6 I CU Level of Service n)	9.7 0.0 A 9.7 0.0 A		
A 9,7 0.0 0.0 A 1.6 IOU Level of Service 15.2% ICU Level of Service 15.00 (1.0	A 9.7 0.0 A		
9.7 0.0 0.0 A 1.6 In the service of Service	9.7 0.0 A		
nmary 1.6 pacity Utilization 15.2% ICU Level of Service (min) 15			
nmary 1.6 pacity Utilization 15.2% ICU Level of Service (min) 15			
1.6 pacity Utilization 15.2% ICU Level of Service (min) 15	Intersection Summary		
15.2% ICU Level of Service 15	1.6		
	15.2%		
		15	

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

Proposed Westwood C.C. Development Full Development Conditions - AM Peak Hour 52: Proposed Access Driveway & North Forest Road

•	SBR		14	006	1.00			0		0				0.84	17		0	No	Right					1.00	6					
• →	SBT	æ	731			0.997		1857		1857	35	152	3.0		870		887	8		0	0	16		1.00		Free				
<b>←</b>	NBT	₩	442	1900	1.00		666.0	1861	666.0	1861	35	202	3.9	06:0	491		504	8	Left	0	0	16		1.00		Free				
•	NBL		12	1900	1.00			0		0				06:0	13		0	8	Left					1:00	15					
<i>&gt;</i>	EBR		25	1900	1.00			0		0				0.85	19		0	8	Right					1.00	6					
1	EBL	>	7	1900	1.00	0.881	0.994	1631	0.994	1631	30	238	5.4	0.85	∞		69	9	Left	12	0	16		1.00	15	Stop		Other		
	Lane Group	Lane Configurations	Volume (vph)	Ideal Flow (vphpl)	Lane Util. Factor	Frt	FIt Protected	Satd. Flow (prot)	FIt Permitted	Satd. Flow (perm)	Link Speed (mph)	Link Distance (ft)	Travel Time (s)	Peak Hour Factor	Adj. Flow (vph)	Shared Lane Traffic (%)	Lane Group Flow (vph)	Enter Blocked Intersection	Lane Alignment	Median Width(ft)	Link Offset(ft)	Crosswalk Width(ft)	Two way Left Turn Lane	Headway Factor	Turning Speed (mph)	Sign Control	Intersection Summary		Control Type: Unsignalized	

Synchro 7 Report Page 33 Lanes, Volumes, Timings SRF & Associates

Proposed Westwood C.C. Development Full Development Conditions - AM Peak Hour 52: Proposed Access Driveway & North Forest Road

Movement         EBL         EBR         NI           Lane Configurations         7         52         7           Volume (veh/h)         7         52         7           Volume (veh/h)         Stop         6           Grade         0%         8         6           Grade         0%         8         61           Peak Hour Factor         0.85         0.85         0.9           Pedestrians         Lane Width (ft)         8         61           Pedestrians         Lane Width (ft)         8         61           Walkin Lun face (veh)         Nedian storage         8         7           Percent Blockage         Nedian storage veh         Nedian storage veh         0.81         8           Wedian storage veh         Upstream signal (ft)         9         87         8           VC, conflicting volume         1396         879         8           VC, stage 1 conf vol         VC, conflicting volume         1372         87         4           VC, stage (s)         6.4         6.2         4         1           IC, stage (s)         6.3         3.5         3.3         2           IC, stage (s)         6.4         6.2	NBL NBT  44 12 Ffree 0% 0.90 0.90 13 491  None 887 4.1	SBT 731 Free 0% 870 None	14 17 17	
Very   Very		731 Free 0% 0.84 870 None	14 17	
(veh/h) 7 52 Introl Sbp 0% Ow rate (vph) 8 61 ans ans ans ans Ant (fft) 8 61 ans ans Ant (fft) 8 61 ans Ant		731 Free 0% 0.84 870	14 0.84 17	
ntrol Stop   Stop   O%   O%   O%   O%   O%   O%   O%   O		Free 0% 0.84 870 None	0.84 17	
ow rate (rph) 8 61  ans (rph) 8 61  ans (rph) 8 61  ans (rph) 8 61  ans (rph) 9 61  Blockage In flare (veh) 9 79  In signal (ft) 9 879 8  ge 1 conf vol 9 1372 879 8  ge 1 conf vol 9 6.4 6.2 9  et (s) 6.4 6.2 3  et (s) 6.4 6.2 3  et (s) 8.4 6.2 3		0% 0.84 870 None	17	
0.85 0.85 0 8 61 0.81 0.81 0.81 1.396 879 8 6.4 6.2 6.4 6.4 6.4 6.4 6.4 6.4 6.4 6.4 6.4 6.4		0.84 870 None	17 17	
0.81 1396 879 8 1372 879 8 6.4 6.2 3.5 3.3 94 83 94 83 128 347 7		None None	4	
0.81 1396 879 8 1372 879 8 6.4 6.2 3.5 3.3 94 8.2 128 347 7		None		
0.81 1396 879 8 1372 879 8 6.4 6.2 3.5 3.3 94 82 128 347 7		None		
0.81 1396 879 8 1372 879 8 6.4 6.2 3.5 3.3 94 6.2 94 6.2		None		
0.81 1396 879 8 1372 879 8 6.4 6.2 3 3.5 3.3 9 94 82 128 128 347 7		None		
0.81 1396 879 8 1372 879 8 6.4 6.2 3.5 3.3 94 82 128 347 7		None		
0.81 1396 879 8 1372 879 8 6.4 6.2 3.5 3.3 94 847 7 128 347 7		None		
0.81 1396 879 8 1372 879 8 6.4 6.2 3.5 3.3 94 8.2 128 347 7				
0.81 1396 879 8 1372 879 8 6.4 6.2 3.5 3.3 94 8.2 128 347 7				
1396 879 8 1372 879 8 64 6.2 3 35 3.3 9 94 82 128 347 7	887 887 4.1			
1396 879 8 1372 879 8 6.4 6.2 3.5 3.3 94 82 128 347 7	887 887 4.1			
1372 879 8 6.4 6.2 3.5 3.3 94 93 37 1	387 4.1			
1372 879 6 6.4 6.2 3.5 3.3 9.4 347 7 FR.1 MB.1 S1	887 4.1			
1372 879 8 6.4 6.2 3.5 3.3 94 82 128 347 7 FR 1 NR 1 S1	4.1			
6.4 6.2 3.5 3.3 9.4 82 128 347 7	4.1			
3.5 3.3 94 82 128 347 7	, ,			
3.5 3.3 94 82 128 347 FR1 NR 1 SI	٠,			
94 82 128 347 7 FR1 NR1 SI	7.7			
128 347 FB 1 NB 1 S	86			
FR1 NR1	763			
- 5	SB 1			
69 504	887			
8 13	0			
me Right 61 0	17			
288 763	1700			
0.24 0.02	0.52			
ith (ft) 23 1	0			
lay (s) 21.4 0.5	0.0			
C				
y (s) 21.4 0.5	0.0			
Approach LOS C				
Intersection Summary				
Intersection Capacity Utilization 49.6% Analysis Period (min)		ICU Level of Service	ervice A	Ā
	2			

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 1: Maple Road & Millersport Hwy SB

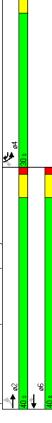
	^	†	ţ	4	۶	*	
ane Group	EBL	EBT	WBT	WBR	SBL	SBR	
ane Configurations	r	**	*	æ	k	ĸ	
Volume (vph)	60	686	606	229	09	174	
deal Flow (vohnl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	150		3	150	0	0	
Storage Lanes	-			-	· <del>-</del>	· <del>-</del>	
Faper Length (ft)	32			100	25	25	
-ane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	
Ţ.				0.850		0.850	
Fit Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583	
-It Permitted	0.268				0.950		
Satd. Flow (perm)	499	3539	3539	1583	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)						78	
_ink Speed (mph)		45	45		30		
ink Distance (ft)		222	654		781		
ravel Time (s)		8.4	6.6		6.4		
Peak Hour Factor	0.90	0.90	0.92	0.92	0.81	0.81	
Adj. Flow (vph)	32	1099	988	249	74	215	
Shared Lane Traffic (%)			0		i		
-ane Group Flow (vph)	37	6601	88 :	249	4 7	215	
Enter Blocked Intersection	0N -	ON -	ON -	ON T	ON -	0 I	
-ane Angriment	E E	Ee F	E :	Right	Ee ;	Rigni	
wealan wlath(rt)		2 0	2 0		2 0		
Trosswalk Width/#)		7 2	2		2 2		
Two way Left Turn Lane		2	Yes		2		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	12			6	15	6	
Number of Detectors	-	2	2	· <del></del>	-		
Detector Template	Left	Thru	Thru	Right	Left	Right	
eading Detector (ft)	70	100	100	50	20	50	
railing Detector (ft)	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	
_	8	9	9	70	70	20	
Detector 1 Type	CI+EX	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0:0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		9	9				
Detector 2 Type		CI+EX	CI+EX				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Perm	•	,	vo+mq		Perm	
Protected Phases	c	7	9	4 ,	4		
Permitted Phases	7	•		9		4 .	
Dototor Dhoop	c	C	9	_			

Synchro 7 Report Page 1

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 1: Maple Road & Millersport Hwy SB

	١	†	ļ	1	٠	*	
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	
Switch Phase							
Minimum Initial (s)	4.0	4.0	4.0	1.0	1.0	1.0	
Minimum Split (s)	9.1	9.1	9.1	6.2	6.2	6.2	
Total Split (s)	40.0	40.0	40.0	30.0	30.0	30.0	
Total Split (%)	57.1%	57.1%	57.1%	42.9%	45.9%	42.9%	
Maximum Green (s)	34.9	34.9	34.9	25.4	25.4	25.4	
Yellow Time (s)	3.9	3.9	3.9	3.2	3.2	3.2	
All-Red Time (s)	1.2	1.2	1.2	1.4	1.4	1.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	2.1	2.1	5.1	4.6	4.6	4.6	
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Min	C-Min	C-Min	None	None	None	
Act Effct Green (s)	48.4	48.4	48.4	70.0	11.9	11.9	
Actuated g/C Ratio	69.0	69.0	69.0	1.00	0.17	0.17	
v/c Ratio	0.09	0.45	0.40	0.16	0.25	0.64	
Control Delay	5.9	6.3	2.3	0.1	25.0	25.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	5.9	6.3	2.3	0.1	25.0	25.1	
FOS	⋖	A	⋖	⋖	ပ	U	
Approach Delay		6.3	<del>,</del>		25.0		
Approach LOS		∢	∢		ပ		
Intersection Summary							
	Other						
Cycle Length: 70							
Actuated Cycle Length: 70							
Offset: 17 (24%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	to phase	2:EBTL	and 6:WB	T, Start o	f Green		
Natural Cycle: 40							
Control Type: Actuated-Coordinated	linated						
Maximum v/c Ratio: 0.64							
Intersection Signal Delay: 6.3				드	Intersection LOS: A	LOS: A	
Intersection Capacity Utilization 44.0%	on 44.0%			2	U Level o	ICU Level of Service A	
Analysis Period (min) 15							

Splits and Phases: 1: Maple Road & Millersport Hwy SB



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 2: Maple Road & Millersport Hwy NB

Lane Group Lane Configurations Volume (vph) Ideal Flow (vphpl)		FRT	0		1	WBR					i	
Lane Configurations Volume (vph) Ideal Flow (vphpl)	EB	בה	EBR	WBL	WBT		MBL	NBT	NBR	SBL	SBT	SBR
Volume (vph) Ideal Flow (vphpl)	*	¥			<b>₩</b>		r	£,				
Ideal Flow (vphpl)	16	952	0	0	1046	31	91	.0	466	0	0	0
	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	-		0	0		0	<b>,</b>		0	0		0
Taper Length (ft)	20		22	25		25	25		25	22		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
F.T.	010				0.996		0	0.850				
Fit Protected	0.950	2520	<b>C</b>	c	35.25	c	1770	1592	c	c	c	
Jata: 1 low (prot) -It Permitted	0.124	6000	>	>	3323	>	0.950	2021	>	>	>	>
Satd. Flow (perm)	231	3539	0	0	3525	0	1770	1583	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					2			72				
Link Speed (mph)		45			45			9			30	
Link Distance (ft)		654			1770			319			263	
Fravel Time (s)		6.6			26.8			7.3			0.9	
Peak Hour Factor	0.91	0.91	0.91	0.87	0.87	0.87	0.84	0.84	0.84	0.92	0.92	0.92
Adj. Flow (vph)	107	1046	0	0	1202	36	108	0	222	0	0	0
Shared Lane Traffic (%)		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	•	•	000	•	6	i	•	•		
ane Group Flow (vph)	)OL	1046	0 1	0 1	1238	0 1	801	222	0 1	0 1	0 1	0
Enter Blocked Intersection	0N -	0N -	S :	0N -	0 S	9 <del>1</del>	9 -	0N -	2	0N -	0N -	2
-ane Alignment	Let	Len	Kigni	Гец	Len	KIGNI	Lell	Len 3	Kignt	Len	Len	Kigni
Median Width(It)		2 0			2 0			2 0			2 0	
IIIN Ollset(II)		7			7			2 2			7	
Fwo way Left Tirm Lane		Vec			Nay Vay			2			2	
Headway Factor	100	100	100	1 00	100	1 00	100	100	100	100	100	1 00
Furning Speed (mph)	1.5	2	6	15	2	6	13	3	6	5 5	2	6
Number of Detectors	·	2		2	2		· —	2		2		
Detector Template	Left	Thru			Thru		Left	Thru				
eading Detector (ft)	20	100			100		20	100				
railing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0	0				
	20	9			9		70	9				
Detector 1 Type	CI+EX	CI+Ex			CI+Ex		CI+Ex	CI+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		9 :			9 -			9 -				
Detector 2 Type		CI+EX			CI+EX			CH-EX				
Detector 2 Channel		d			d			d				
Detector 2 Extend (s)	1	0.0			0.0		ć	0.0				
Furn Type	pm+pt	c			4		FeIII	٥				
Protected Priases	0 0	7			0		٥	Ö				
Petinilleu Filases	7 1	c			,		0 0	c				

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 2: Maple Road & Millersport Hwy NB

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	1.0			4.0		1.0	1:0				
Minimum Split (s)	9.8	6.1			9.1		6.2	6.2				
Total Split (s)	10.0	41.0	0.0	0.0	31.0	0.0	29.0	29.0	0.0	0.0	0.0	0.0
Total Split (%)	14.3%	28.6%	%0.0	%0:0	44.3%	%0:0	41.4%	41.4%	%0.0	%0.0	%0:0	%0.0
Maximum Green (s)	5.4	35.9			25.9		24.4	24.4				
Yellow Time (s)	3.2	3.9			3.9		3.2	3.2				
All-Red Time (s)	1.4	1.2			1.2		1.4	1.4				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0:0	0.0
Total Lost Time (s)	4.6	5.1	4.0	4.0	5.1	4.0	4.6	4.6	4.0	4.0	4.0	4.0
Lead∕Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Recall Mode	None	C-Min			C-Min		None	None				
Act Effct Green (s)	37.0	36.5			28.5		23.8	23.8				
Actuated g/C Ratio	0.53	0.52			0.41		0.34	0.34				
v/c Ratio	0.44	0.57			98.0		0.18	0.95				
Control Delay	19.4	10.9			28.5		16.9	48.2				
Queue Delay	0.0	0.0			0.0		0.0	0.0				
Total Delay	19.4	10.9			28.5		16.9	48.2				
FOS	B	В			ပ		В	Ω				
Approach Delay		11.7			28.5			43.1				
Approach LOS		В			ပ			O				
Intersection Summary												
Area Type: 0	Other											
Cycle Length: 70												
Actuated Cycle Length: 70												
Offset: 5 (7%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	phase 2:	EBTL and	6:WBT, 3	Start of G	reen							
Natural Cycle: 80												
Control Type: Actuated-Coordinated	dinated											
Maximum v/c Ratio: 0.95												
Intersection Signal Delay: 25.3	3			드	Intersection LOS: C	LOS: C						
Intersection Capacity Utilization 76.0%	%0.97 nc			2	CU Level of Service D	f Service	D					
Analysis Period (min) 15												

Splits and Phases: 2: Maple Road & Millersport Hwy NB



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 3: Maple Road & Maplemere Road

	١	Ť	<u> </u>	-	r	/	1	_	_	k.	•	•
ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
ane Configurations	*	<b>₽</b>		*	<b>₽</b>			4			4	
Volume (vph)	36	1280	32	21	2%	62	22	0	12	11	∞	33
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	70		0	0		0	0		0
Storage Lanes	-		0	-		0	0		0	0		0
aper Length (ft)	22		22	20		25	25		22	22		25
ane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1:00	1.00	1:00	1.00	1.00
Į.		966.0			0.991			0.952			0.964	
It Protected	0.950			0.950				0.969			896.0	
Satd. Flow (prot)	1770	3525	0	1770	3507	0	0	1718	0	0	1738	0
It Permitted	0.202			0.147				0.785			0.767	
Satd. Flow (perm)	382	3525	0	274	3507	0	0	1392	0	0	1377	0
Right Turn on Red			Yes			Yes			Yes			Yes
satd. Flow (RTOR)		9			14			19			25	
ink Speed (mph)		45			45			9			30	
ink Distance (ft)		1770			1106			378			402	
ravel Time (s)		26.8			16.8			9.8			9.1	
Peak Hour Factor	0.94	0.94	0.94	0.87	0.87	0.87	0.62	0.62	0.62	0.81	0.81	0.81
Adj. Flow (vph)	38	1362	37	24	1111	71	35	0	19	95	10	88
Shared Lane Traffic (%)												
.ane Group Flow (vph)	33	1399	0	24	1182	0	0	24	0	0	143	0
Enter Blocked Intersection	9	%	8	%	%	%	8	8	8	8	9	8
ane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
wo way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
'urning Speed (mph)	15		6	15		6	15		6	15		6
Number of Detectors	_	2		_	2		<del>-</del>	2		<del>-</del>	2	
Detector Template	Left	Thr.		Left	Thr		Left	퇸		Fet	Thru	
eading Detector (ft)	70	100		20	100		20	100		20	100	
railing Detector (ft)	0 (	0		0	0		0 (	0 (		0 (	0	
Detector 1 Position(ft)	<b>&gt;</b> 8	ο ,		0 8	ο ,		0 8	o ·		0 8	Э,	
Detector   Size(it)	γ.	١		07 -	١		07 :	ا ٥		γ.	٥	
Detector 1 Type	CI+EX	CI+EX		CI+EX	CI+EX		CI+EX	CI+EX		CI+EX	CI+EX	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0:0		0:0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9 1			9 1			9 .			9 1	
Detector 2 Type		CI+EX			CI+EX			CH-EX			CI+EX	
Detector 2 Channel		0			d			d			d	
Detector 2 Extend (s)		0.0			0:0		ı	0.0			0.0	
Turn Type	Perm	d		Perm	,		Perm	c		Perm		
Protected Phases	c	7			9		c	∞			4	
Permitted Phases	7			9			œ			4		

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 3: Maple Road & Maplemere Road

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	0.6	0.6		0.6	0.6		27.0	27.0		27.0	27.0	
Total Split (s)	47.0	47.0	0.0	47.0	47.0	0.0	28.0	28.0	0.0	28.0	28.0	0.0
Total Split (%)	62.7%	62.7%	%0:0	62.7%	62.7%	%0:0	37.3%	37.3%	%0:0	37.3%	37.3%	%0.0
Maximum Green (s)	42.0	42.0		45.0	45.0		23.0	23.0		23.0	23.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	2.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)							7.0	7.0		7.0	7.0	
Flash Dont Walk (s)							15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)							0	0		0	0	
Act Effct Green (s)	34.6	34.6		34.6	34.6			6.7			10.3	
Actuated g/C Ratio	89.0	89.0		0.68	0.68			0.19			0.20	
v/c Ratio	0.15	0.58		0.13	0.49			0.19			0.48	
Control Delay	6.9	7.7		7.3	6.7			15.6			22.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	6.9	7.7		7.3	6.7			15.6			22.7	
S07	A	⋖		A	⋖			В			ပ	
Approach Delay		7.7			6.7			15.6			22.7	
Approach LOS		∢			⋖			В			O	
Intersection Summary												
Area Type:	Other											
Cycle Length: 75												
Actuated Cycle Length: 50	7.0											
Natural Cycle: 60												
Control Type: Actuated-Uncoordinated	ncoordinated											
Maximum v/c Ratio: 0.58												
Intersection Signal Delay: 8.2	8.2			= 5	Intersection LOS: A	LOS: A	•					
Intersection Capacity Utilization 52.6%	zation 52.6%			<u>⊇</u>	CU Level of Service A	i Service	¥					
Analysis Period (min) 13												

Splits and Phases: 3: Maple Road & Maplemere Road



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 4: Maple Road & Donna Lea Blvd

March Couprations		†	<i>&gt;</i>	<b>\</b>	ļ	•	•	
1340 29 23 1038 1038 1038 1038 1038 1038 1038 103	ane Group	EBT	EBR	WBL	WBT	NBL	NBR	
1900 1900 1900 1900 1900 1900 1900 1900	ane Configurations	₩.		F	+	>		
1900 1900 1900 1900 1900 1900 1900 1900	(hdh)	1340	29	23	1038	12	21	
0.95 0.90 0.90 0.90 0.95 0.95 0.95 0.95	v (vphpl)	1900	1900	1900	1900	1900	1900	
0.95 0.95 1.00 0.95 0.997 0.997 0.995 1.00 0.995 0.997 0.997 0.995 1.00 0.995	ength (ft)		0	20		0	0	
25 25 26 0.95 0.95 0.95 0.997 0.950 0.957 0.950	-anes		0	-		-	0	
0.997 0.950	ngth (ft)		25	22		25	25	
0.997 0.950 3539 0.950 3539 0.950 3539 0.950 3539 0.950 3539 0.950	Factor	0.95	0.95	1.00		1.00	1.00	
3529 0 0,950 3539 0,950 3539 0,950 1770 3539 0,950 1770 3539 0,950 1700 1000 16.8		0.997				0.914		
3529 0 1770 3539 3529 0 1770 3539 45 45 45 1106 1000 1108 0.73 0.73 0.77 0.77 1836 40 30 1348 No No No No No Left Right Left Left Left Control of the contro	ted			0.950		0.982		
3529 0 950 45 45 46 1106 1000 1106 1000 0.73 0.77 0.77 1836 40 30 1348 No No	w (prot)	3529	0	1770		1672	0	
3529 0 1770 3539 45 1106 1108 1108 1033 0,73 0,77 0,77 11336 40 30 1348 11876 0 30 1348 11876 0 30 1348 11876 0 30 1348 11876 0 30 1348 11876 0 30 1348 11876 0 30 1348 11876 0 30 1348 11877 0 1348 11877 0 100 11877 0 100 11877 0 100 11877 0 100 11878 0 150 1	ted			0.950		0.982		
1106 16.8 10.73 10.73 10.73 10.73 11836 10.77 11836 10.77 11848 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.	w (perm)	3529	0	1770	3539	1672	0	
1106 1000 16.8 1000 16.8 10.8 10.8 10.8 10.8 10.8 10.8 10.8 10	ed (mph)	42			45	30		
16.8	ance (ft)	1106			1000	355		
0.73 0,73 0,77 0,77 0,77 1836 40 30 1348 1846 0 30 1348 1846 1846 1846 1846 1846 1846 1846 18	ne (s)	16.8			15.2	8.1		
1836 40 30 1348 1876 0 30 1348 No No No No No Left Right Left Left 12 0 0 16 16 16 Yes Yes 1.00 1.00 1.00 Free Attorn 48.0%	ur Factor	0.73	0.73	0.77	0.77	0.82	0.82	
1876 0 30 1348 No No No No Left Right Left Left 12 12 0 0 16 7 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	(vph)	1836	40	30	1348	12	56	
1876 0 30 1348 No No No No No 1748 12 12 17 16 16 17 17 16 17 18 16 17 19 17 19 17 19 18 10 1.00 1.00 1.00 100 1.00 1.00 1100 1.00 1.	ane Traffic (%)							
No No No No No No No No No No No No No N	up Flow (vph)	1876	0	9	1348	41	0	
Left Right Left Left 12 0 0 16 16 16 16 Yes Yes Yes 1.00 1.00 1.00 Free Free	cked Intersection	8	8	8	8	8	8	
12 12 12 12 12 16 16 16 16 16 16 10 1.00 1.00 1.00 1.0	nment	Left	Right	Left	Left	Left	Right	
0 0 0 0 16 16 16 16 16 16 100 1.00 1.00	Vidth(ft)	12			12	12		
16 16 16 17 16 17 16 17 16 17 17 17 17 17 17 17 17 17 17 17 17 17	et(ft)	0			0	0		
Yes Yes Yes 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	k Width(ft)	16			16	16		
1.00 1.00 1.00 1.00 1.00 Free 7 Free Cother 10 10 10 10 10 10 10 10 10 10 10 10 10	Left Turn Lane	Yes			Yes			
9 15 Free Other 110148.0% 1	Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Free Free Other	speed (mph)		6	15		12	6	
Other stion 48.0%	trol	Free			Free	Stop		
Other siton 48.0%	on Summary							
ition 48.0%		her						
ization 48.0%	ype: Unsignalized	00			ġ			
	on Capacity Utilizatio	n 48.0%			<u>ਤ</u>	l Level of	Service A	

Lanes, Volumes, Timings Synchro 7 Report SRF & Associates Page 7

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 4: Maple Road & Donna Lea Blvd

•	NBR		21			0.82	70									0.75	938			247	6.9			95	564	NB 1	40	15	26	251	0.16	74	1.77	U	22.1	O		rf Service A
<b>√</b> 1	WBT NBL	*	1038 12	0,		0.77 0.82							1.	2	1000	0.80	2589	1855	734	1869	6.8	5.8	3.5	88 !	127	WB 2 WB 3	674 674	0 0		·	0.4	0						ICU Level of Service
<b>\</b>	WBL	, -	73	ш.		0.77	90						TWLTL		7	0.75	1875			1499	4.1		2.2	91	332	WB 1	30		0	332	0.09	- 75	10.9	o ;	0.4			0.4
<i>&gt;</i>	EBT EBR	<b>₽</b> ₽	1340 29	Free		1024 40							TWLTL	2	1106											EB1 EB2	1224 652				0.72 0.38	0 0 0		,	0.0			loi
	Movement	Lane Configurations	Volume (veh/h)	Sign Control	Grade	Peak Hour Factor	Podestions	Pedestrians	Lane Width (ft)	Walking Speed (ft/s)	Percent Blockage	Right turn flare (veh)	Median type	Median storage veh)	Upstream signal (ft)	pX, platoon unblocked	vC, conflicting volume	vC1, stage 1 conf vol	vC2, stage 2 conf vol	vCu, unblocked vol	tC, single (s)	tC, 2 stage (s)	tF (s)	b0 dnene tree %	cM capacity (veh/h)	Direction, Lane #	Volume Total	Volume Left	Volume Right	ES3	Volume to Capacity	Queue Length 95th (ft)	Culli Delay (s)	Lane LOS	Approach Delay (s)	Approach LOS	Intersection Summary	Average Delay Intersection Capacity Utilization

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 5: Maple Road & Audubon Golf Club

	4	†	<i>&gt;</i>	<b>&gt;</b>	ţ	4	•	<b>←</b>	•	۶	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u>, -</u>	<b>₽</b>		<u>,-</u>	<b>₩</b>			4			÷	
Volume (vph)	0	1434	14	8	1089	2	10	0	9	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	20		0	0		0	0		0
Storage Lanes	-		0	-		0	0		0	0		0
Taper Length (ft)	22		22	25		25	25		25	22		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ŧ		0.999						0.948				
Fit Protected				0.950				0.970				
Satd. Flow (prot)	1863	3536	0	1770	3539	0	0	1713	0	0	1863	0
FIt Permitted				0.950				0.970				
Satd. Flow (perm)	1863	3536	0	1770	3539	0	0	1713	0	0	1863	0
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		446			226			469			111	
Travel Time (s)		8.9			8.4			10.7			2.5	
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.61	0.61	0.61	0.92	0.92	0.92
Adj. Flow (vph)	0	1559	15	6	1171	2	16	0	10	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1574	0	6	1173	0	0	26	0	0	0	0
Enter Blocked Intersection	8	%	S	8	8	8	8	8	S	8	8	S
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		6	15		6	15		6	15		6
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type: O	Other											
Control Type: Unsignalized												
Intersection Capacity Utilization 50.1%	ion 50.1%			⊇	U Level o	ICU Level of Service A	⋖					
Analysis Period (min) 15												

Lanes, Volumes, Timings Synchro 7 Report SRF & Associates Page 9

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 5: Maple Road & Audubon Golf Club

Movement         EBI         EBI         EBI         EBI         EBI         MBI         WBI         WBI         NBI         NBI         NBI         ABI         AB	•	4	†	<i>&gt;</i>	<b>&gt;</b>	ţ	4	•	<b>—</b>	•	۶	<b>→</b>	•
Originations         ↑		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
(ye/h)         0         1434         14         8         1089         2         10         6         0         0           ntrol         Free         Free         Free         1434         14         8         1089         2         10         0	Lane Configurations	-	₩.		¥	₩			4			4	
Free   Free   Free   Stop   O%   O%   O%   O%   O%   O%   O%   O	Volume (veh/h)	0	1434	14	' ∞	1089	2	10	0	9	0	0	0
Ow rate (wh)         O% OW         OW	Sign Control		Free			Free			Stop			Stop	
r 0,92 0,92 0,92 0,93 0,93 0,93 0,61 0,61 0,61 0,62 0,92 0,92 0,92 0,93 0,93 0,93 0,93 0,93 0,93 0,93 0,93			%0			%			%0			%0	
VP)         0         1559         15         9         1171         2         16         0         10         0           VP)         Profile		0.92	0.92	0.92	0.93	0.93	0.93	0.61	0.61	0.61	0.92	0.92	0.92
15    15	Hourly flow rate (vph)	0	1559	15	6	1171	2	16	0	10	0	0	0
Pub)  TMLTL  TMMTTL	Pedestrians												
Fig.     F	Lane Width (ft)												
eth)  TMLTL  TWLTL  TWLTL  (ft)  2  (ft)  2  (ft)  2  (ft)  2  (ft)  1173  1574  1566  1566  1189  118	Walking Speed (ft/s)												
eh)  TWLTL  TWLTL  (f)  CKed  (f)	Percent Blockage												
(17)  17)  17)  17)  17)  17)  17)  17)	Right turn flare (veh)												
cked lume 1173 1574 2169 2757 787 1978 2763 lume 1173 1574 2169 2757 787 1978 2763 lume 1173 1574 2169 2757 787 1978 2763 lume 1173 1574 2169 2190 2190 2189 1899 lume 1173 1574 2169 2190 2190 2190 2190 2190 2190 2190 219	Median type		WLTL			<b>LWLTL</b>							
(ft)  ly control of the control of t	Median storage veh)		2			2							
cked         1173         1574         2169         2757         787         1978         2763           fvol         1173         1574         2169         2757         787         1978         2763           rol         4.1         4.1         2169         2757         787         1789         1574           rol         4.1         4.1         2169         2757         787         1789         1584           rol         4.1         4.1         216         275         787         178         2763           rol         4.1         4.1         4.1         4.1         4.1         78         2763         4.0         3.3         3.5         4.0         3.3         3.5         4.0         3.3         3.5         4.0         3.5         4.0         3.3         3.5         4.0         3.5         4.0         3.5         4.0         3.5         4.0         3.3         3.5         4.0         3.5         4.0         3.5         4.0         3.5         4.0         3.3         3.5         4.0         3.3         3.5         4.0         3.3         3.5         4.0         3.3         3.5         4.0         3.3	Upstream signal (ft)												
1173   1574   2169   2757   787   1978   2763   1894   1895   1	pX, platoon unblocked												
Froo    1173   1574   2169   1566   1189		1173			1574			2169	2757	787	1978	2763	287
Variable   Variable	vC1, stage 1 conf vol							1566	1566		1189	1189	
1173   1574   2169   2757   787   1978   2763     4.1   4.1   4.1   7.5   6.5   6.9   7.5   6.5     2.2   2.2   2.2   3.5   4.0   3.3   3.5   4.0     100   98   88   100   97   100   100     100   98   88   100   97   100   100     101   102   1039   235   9   181   392   26   0     0								603	1190		789	1574	
11		1173			1574			2169	2757	787	1978	2763	587
22	tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
100   92   3.5   4.0   3.3   3.5   4.0   100	tC, 2 stage (s)							6.5	5.5		6.5	5.5	
100   98   85   100   97   100   1	tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
FB1   EB2   EB3   WB1   WB2   WB3   NB1   SB1	p0 queue free %	100			86			82	100	4	100	100	100
EB1   EB2   EB3   WB1   WB2   WB3   NB1   SB1	cM capacity (veh/h)	261			415			110	136	335	166	131	453
(s) 1039 535 9 781 392 26 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
ity 0.00 0.0 15 0.0 16	Volume Total	0	1039	535	6	781	392	26	0				
10	Volume Left	0	0	0	6	0	0	16	0				
ity 0.00 1700 1700 1700 1700 147 1700 1100 1110 1700 170	me Right	0	0	12	0	0	2	10	0				
ity 0.00 0.61 0.31 0.02 0.46 0.23 0.18 0.00 inf (ft) 0 0 0 2 0 0 16 0.0  (s) 0.0 0.0 0.0 13.9 0.0 0.0 34.7 0.0  (s) 0.0 0.0 0.1 3.9 0.0 0.0 34.7 0.0  E		1700	1700	1700	415	1700	1700	147	1700				
in (ii) 0 0 0 0 2 0 0 16 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0.00	0.61	0.31	0.02	0.46	0.23	0.18	0.00				
(s) 0.0 0.0 13.9 0.0 0.0 34.7 0.0 B B D A B D A A CO O.1 34.7 0.0 D A CO O.1 34.7 0.0 D A CO O.1 0.1 D A CO O.1 D A CO O.1 D D A CO O.1 D D D D D D D D D D D D D D D D D D D	Queue Length 95th (ft)	0	0	0	2	0	0	16	0				
B D A 0.1 34.7 0.0  (1.1 34.7 0.0  (1.4 0.4  Utilization 50.1% ICU Level of Service	Control Delay (s)	0.0	0.0	0.0	13.9	0.0	0.0	34.7	0.0				
0.0 0.1 34.7 0.0  1 A D A  0.4 0.4 ICU Level of Service 150.1% ICU Level of Service 15	Lane LOS				В			Ω	۷				
D A 0.4	Approach Delay (s)	0.0			0.1			34.7	0.0				
0.4 ICU Level of Service 15.1% ICU Level of Service 15.1%	Approach LOS							Ω	⋖				
0.4 Uilization 50.1% ICU Level of Service 15	Intersection Summary												
Utilization 50.1% ICU Level of Service 15	Average Delay			0.4									
	Intersection Capacity Utilization			50.1%	೨	U Level o	f Service			∢			
	Analysis Period (min)			15									
													ĺ

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 6: Maple Road & North Forest Road

			٠			DOM						0
	Ē	F	ב	iO/M	FOW		2	F	2	5	FCC	
Lane Group	EBL	EBI	EBK	WBL	WBI	WBK	NBL	NBI	NBK	SBL	SBI	SBK
Lane Configurations	-	‡	<b>K</b> _	<b>-</b>	‡	<b>K</b> _	<u>-</u>	•	<b>K</b> _	<b>-</b>	•	<b>K</b> _
Volume (vph)	216	1091	143	241	816	96	92	326	209	169	330	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	415		220	315		150	125		220	250		250
Storage Lanes	-		_	_		-	-		-	-		-
Taper Length (ft)	8		115	09		25	95		25	8		22
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
F.			0.850			0.850			0.850			0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
-It Permitted	0.183			0.091			0.155			0.160		
Satd. Flow (perm)	341	3539	1583	170	3539	1583	289	1863	1583	298	1863	1583
Right Turn on Red			Yes			8			Yes			Yes
Satd. Flow (RTOR)			129						23			9
ink Speed (mph)		45			42			32			32	
-ink Distance (ft)		1705			820			529			809	
Fravel Time (s)		25.8			12.4			10.3			11.8	
Peak Hour Factor	0.92	0.92	0.92	0.90	06:0	06:0	96:0	0.96	96.0	0.87	0.87	0.87
Adj. Flow (vph)	235	1186	155	268	406	107	96	374	218	194	448	166
Shared Lane Traffic (%)												
-ane Group Flow (vph)	235	1186	155	268	406	107	96	374	218	194	448	166
Enter Blocked Intersection	8	8	8	N <sub>o</sub>	2	2	No No	8	S	2	8	2
ane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12	,		12	,		12	,		12	,
ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Furning Speed (mph)	15		6	15		6	15		6	15		6
Number of Detectors	_	2	_	_	2	_	_	2	<del>-</del>	_	2	_
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
eading Detector (ft)	70	100	20	70	100	70	70	100	20	20	100	20
railing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	70	9	20	70	9	70	20	9	20	20	9	8
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+EX
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+Ex			CI+EX			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Furn Type	pm+pt		pm+ov	pm+pt		vo+mq	pm+pt		bm+ov	pm+pt		pm+ov
Protected Phases	2	2	m	-	9	7	m	∞	-	7	4	2
Permitted Phases	2		2	9		9	∞		∞	4		4
Detector Phase	2	2	3	_	9	7	3	∞	_	7	4	ב

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 6: Maple Road & North Forest Road

	١	†	<u> </u>	<b>\</b>	ļ	1	•	-	•	٠	•	*
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	1.0	4.0	1.0	1.0	4.0	1.0	1.0	4.0	1.0	1.0	4.0	1:0
Minimum Split (s)	7.0	35.0	7.0	7.0	32.0	7.0	7.0	35.0	7.0	7.0	35.0	7.0
Total Split (s)	20.0	47.0	11.0	23.0	20.0	15.0	11.0	35.0	23.0	15.0	39.0	20.0
Total Split (%)	16.7%	39.2%	9.5%	19.2%	41.7%	12.5%	9.5%	29.5%	19.2%	12.5%	32.5%	16.7%
Maximum Green (s)	14.0	41.0	2.0	17.0	44.0	0.6	2.0	29.0	17.0	0.6	33.0	14.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	9.0	0.9	0.9	0.9	0.9	0.9	0.9	9.0	0.9	0.9	0.9	9.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		22.0			22.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	53.7	41.0	52.0	0.09	44.1	59.1	31.7	26.7	48.6	39.7	30.7	49.5
Actuated g/C Ratio	0.46	0.35	0.45	0.51	0.38	0.51	0.27	0.23	0.42	0.34	0.26	0.42
v/c Ratio	0.75	0.95	0.20	0.88	0.68	0.13	0.68	0.88	0.32	0.00	0.91	0.24
Control Delay	33.5	54.5	5.9	58.4	34.0	16.8	52.4	62.9	21.6	71.1	9.99	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.5	54.5	5.9	58.4	34.0	16.8	52.4	62.9	21.6	71.1	9.99	14.0
SOT	U	۵	⋖	ш	ပ	В	۵	ш	U	ш	ш	В
Approach Delay		46.6			37.7			20.0			26.8	
Approach LOS		Ω			Ω			Ω			ш	
Intersection Summary												

Area Type:
Cycle Length: 120
Actualed Cycle Length: 116.6
Actualed Cycle Length: 116.6
Adural Cycle 95
Control Type: Actualed Locoordinated
Maximum Vc Ratio: 0.35
Intersection Signal Delay: 46.4
Intersection Capacity Utilization 91.8%
Intersection Los: D
Intersection Capacity Utilization 91.8%
Intersection Los: D
Intersection Capacity Utilization 91.8%
Splits and Phases: 6: Maple Road & North Forest Road

 Aff of
 Aff of

 23s
 47s

 47s
 11s

 25s
 47s

 47s
 39s

 45s
 45s

 50s
 55s

Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 7: Sheridan Drive & Mill Street

	^	†	۲	<b>/</b>	Ļ	/	•	<b>—</b>	•	۶	<b>→</b>	*
ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
-ane Configurations	*	₩		<u>,                                    </u>	₩		۴	\$		۳	2	
Volume (vph)	17	1411	56	121	1418	53	151	23	148	34	89	15
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	150		0	40		0	75		0
Storage Lanes	-		0	-		0	-		0	-		0
Faper Length (ft)	92		22	09		25	25		25	22		25
-ane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1:00	1.00	1.00
-t		0.997			0.995			0.890			0.973	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3529	0	1770	3522	0	1770	1658	0	1770	1812	0
It Permitted	0.097			0.054			0.559			0.608		
Satd. Flow (perm)	181	3529	0	101	3522	0	1041	1658	0	1133	1812	0
Right Turn on Red			8			Yes			8			Yes
Satd. Flow (RTOR)					2						7	
ink Speed (mph)		45			45			99			30	
ink Distance (ft)		2782			776			838			362	
ravel Time (s)		42.2			14.8			19.0			8.2	
Peak Hour Factor	0.84	0.84	0.84	0.92	0.92	0.92	0.83	0.83	0.83	0.77	0.77	0.77
Adj. Flow (vph)	8	1680	31	132	1541	28	182	99	178	4	88	19
Shared Lane Traffic (%)												
-ane Group Flow (vph)	8	1711	0	132	1599	0	182	242	0	44	107	0
Enter Blocked Intersection	8	8	8	8	8	8	8	8	8	8	8	8
ane Alignment	Left	ret	Right	Left	left:	Right	Left	Left	Right	Left	ret	Right
Median Width(ft)		12			12			12			12	
ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Iwo way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1:00	1.00	1.00
Turning Speed (mph)	13		6	12		6	13		6	72		6
Number of Detectors	- :	2		<del>-</del> .	2		<del>-</del> -	2			2	
Detector Template	Left			Left	Thru		le#	Thru		lett	Thr.	
eading Detector (ft)	20	100		20	100		20	100		20	100	
railing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	8	9		50	9		50	9		8	9	
Detector 1 Type	CI+EX	CI+Ex		CI+Ex	CI+EX		CI+Ex	CI+EX		CI+EX	CI+Ex	
Detector 1 Channel	d	d		d	d		d	d		d	0	
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+Ex			CI+EX			CI+EX			CI+Ex	
Detector 2 Channel Detector 2 Extend (s)		0.0			0.0			0.0			0:0	
Furn Type	Perm			pm+pt			pm+pt			Perm		
Protected Phases		2		-	9		3	∞			4	
Permitted Phases	2			9			∞			4		

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 7: Sheridan Drive & Mill Street

EBL         EBT         RBR         WBL         WBT         WBR         NBL         NBT         NBL         SBL         ALQ         4.0 <th>EBL         EBT         FBR         WBI         WBT         WBR         NBI         NBI         NBR           40         58         86         28.3         62         34.2         34.2         34.2         34.2         44.2         40         40         60&lt;</th> <th></th> <th>^</th> <th><b>†</b></th> <th><u> </u></th> <th><b>/</b></th> <th>ţ</th> <th>1</th> <th>•</th> <th><b>—</b></th> <th>•</th> <th>٠</th> <th><b>→</b></th> <th>*</th>	EBL         EBT         FBR         WBI         WBT         WBR         NBI         NBI         NBR           40         58         86         28.3         62         34.2         34.2         34.2         34.2         44.2         40         40         60<		^	<b>†</b>	<u> </u>	<b>/</b>	ţ	1	•	<b>—</b>	•	٠	<b>→</b>	*
40 40 110 40 110 40 40 40 40 40 40 40 783 283 283 283 283 62 283 62 342 342 342 342 342 750 750 00 120 91.0 00 100 440 0.0 340 340 340 340 288 288 288 288 288 288 288 288 288 28	40 40 10 40 10 40 10 40 10 40 10 40 283 283 283 283 62 283 62 383 62 342 342 342 343 343 343 343 343 343 34	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
40 40 40 10 40 110 40 40 40 40 40 40 40 40 798 383 62 283 86 2 383 65 342 342 342 342 342 342 342 342 342 342	40 40 10 40 1.0 4.0 1.0 1.0 4.0 1.0 1.0 4.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1	Switch Phase												
783         283         6.2         28.3         6.2         34	783         283         62         283         62         342           790         790         100         100         410         00           58.8%         58.8%         0.0%         89%         67.4%         0.0%         74%         206         226         00         226         226         20         226         227         226         227         226         227         226         227         226         227         226         227         227         226         227	Minimum Initial (s)	4.0	4.0		1.0	4.0		1.0	4.0		4.0	4.0	
790 790 00 120 91.0 00 100 44.0 00 34.0 34.0 34.0 38.58.8 0.0% 89% 67.4% 0.0% 1.4% 3.2% 0.0% 25.2% 25.2% 0.0% 25.2 3.2 4.3 4.3 4.3 4.3 4.3 4.3 3.2 4.3 3.2 3.2 3.2 3.2 3.2 1.1 1.2 2.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	790 770 00 120 910 00 100 440 000 58.5% 58.5% 0.0% 89% 67.4% 0.0% 17.4% 32.6% 0.0% 21.43 4.3 4.3 4.3 3.2 4.3 3.2 3.2 3.2 1.2 1.2 1.2 1.1 1.2 2.0 2.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	Minimum Split (s)	28.3	28.3		6.2	28.3		6.2	34.2		34.2	34.2	
5BF%         5BF%         0.0%         89%         674%         0.0%         74%         32.6%         0.0%         25.2%         25.2%         0.0%           735         735         77         86.5         48         38.8         32.8         38.8         28.8         98.8         13.8         32.8 <td>581% 585% 00% 89% 674% 00% 74% 326% 00% 24 735 735 77 855 48 388 73 735 77 855 48 388 73 2 32 43 32 32 71 12 12 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td> <td>Total Split (s)</td> <td>79.0</td> <td>79.0</td> <td></td> <td>12.0</td> <td>91.0</td> <td>0.0</td> <td>10.0</td> <td>44.0</td> <td>0.0</td> <td>34.0</td> <td>34.0</td> <td>0.0</td>	581% 585% 00% 89% 674% 00% 74% 326% 00% 24 735 735 77 855 48 388 73 735 77 855 48 388 73 2 32 43 32 32 71 12 12 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Total Split (s)	79.0	79.0		12.0	91.0	0.0	10.0	44.0	0.0	34.0	34.0	0.0
735 735 735 777 855 48 388 288 288 48 43 43 43 43 43 43 43 43 43 43 43 43 43	73.5 73.5 73.5 77.7 85.5 4.8 38.8 4.3 3.2 4.3 3.2 4.3 3.2 4.3 3.2 4.3 3.2 4.3 3.2 4.3 3.2 4.3 3.2 4.3 3.2 4.3 3.2 4.3 3.2 4.3 3.2 6.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Total Split (%)	58.5%	28.5%		8.9%	67.4%	%0.0	7.4%	32.6%	%0.0	25.2%	25.2%	0.0%
43     4.3     3.2     3.2     3.2     3.2     3.2       1.2     1.2     1.1     1.2     2.0     2.0     2.0     2.0       5.5     5.5     4.0     4.3     5.5     4.0     6.2     5.0     2.0     2.0       5.5     5.5     4.0     4.3     5.5     4.0     5.2     5.2     4.0     5.2     5.2       Lag     Lag     Lead     Lead     Lead     Lag	43         43         32         43         32           10         1.2         1.1         1.2         20         20           0.0         0.0         0.0         0.0         0.0         0.0         0.0           5.5         4.0         4.3         5.5         4.0         5.2         2.0           Lag         Lag         Lead         C.0         0.0         0.0         0.0         0.0           Ves         Yes	Maximum Green (s)	73.5	73.5		7.7	85.5		4.8	38.8		28.8	28.8	
112 112 113 114 115 2 0 20 20 20 20 20 20 20 20 20 20 20 20	112 112 112 112 2.0 2.0 5.5 5.5 4.0 4.3 5.5 4.0 5.2 5.2 4.0 1.49 Lag Lag Lead Lead Lead Ves Yes Yes Yes Yes Yes Yes Yes Yes Yes Y	Yellow Time (s)	4.3	4.3		3.2	4.3		3.2	3.2		3.2	3.2	
90 00 00 00 00 00 00 00 00 00 00 00 00 0	Second   S	All-Red Time (s)	1.2	1.2		1.	1.2		2.0	2.0		2.0	2.0	
55         55         4.0         4.3         5.5         4.0         5.2         5.2         4.0         5.2         5.2         5.2         4.0         5.2         5.2         4.0         1.0	S5   S5   40   43   55   40   5.2   5.2   4.0     Lag	Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lag         Lag         Lead         Lead         Lag         Lag         Lead         Lag         Lead         Lead         Lag         Yes         Ye	Lag   Lag   Lead   Lead     Yes   Yes   Yes   Yes     You   None   None   None   None   None     You   You   You     You   You	Total Lost Time (s)	5.5	5.5		4.3	5.5	4.0	5.2	5.2	4.0	5.2	5.2	4.0
Yes         30         30         30         30         30         30         30         30         30         30         30         30         220 <t< td=""><td>Yes         Yes         Yes         Yes           30         30         30         30         30           None         None         None         Max         Max           70         7.0         7.0         7.0         7.0           15.0         15.0         15.0         22.0         22.0           69.2         69.2         82.5         81.3         39.1         39.1           60.3         0.53         0.63         0.60         0.30         0.30           0.21         0.92         0.81         0.73         0.54         0.49           22.8         37.2         60.6         19.6         45.3         42.9           C         D         E         B         D         D           C         D         E         B         D         D           D         C         D         C         D         D         D           And         A</td><td>Lead/Lag</td><td>Lag</td><td>Lag</td><td></td><td>Lead</td><td></td><td></td><td>Lead</td><td></td><td></td><td>Lag</td><td>Lag</td><td></td></t<>	Yes         Yes         Yes         Yes           30         30         30         30         30           None         None         None         Max         Max           70         7.0         7.0         7.0         7.0           15.0         15.0         15.0         22.0         22.0           69.2         69.2         82.5         81.3         39.1         39.1           60.3         0.53         0.63         0.60         0.30         0.30           0.21         0.92         0.81         0.73         0.54         0.49           22.8         37.2         60.6         19.6         45.3         42.9           C         D         E         B         D         D           C         D         E         B         D         D           D         C         D         C         D         D         D           And         A	Lead/Lag	Lag	Lag		Lead			Lead			Lag	Lag	
30 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 None None None None None None None None	30   30   30   3.0     None   None   None   Max   Max     150   150   7.0   7.0   7.0     150   15.0   15.0   2.20     150   15.0   15.0   2.0     150   15.0   15.0   2.0     150   15.0   15.0   2.0     150   15.0   15.0   2.0     150   15.0   15.0   2.0     150   15.0   15.0   2.0     150   15.0   15.0   2.0     150   15.0   15.0   2.0     150   15.0   15.0   2.0     150   15.0   15.0   2.0     150   15.0   15.0   2.0     150   15.0   15.0     150   15.0   15.0     150   15.0   15.0     150   150   15.0     150   150   150     150   150     150   150   150     150   150   150     150   150   150     150   150   150     150   150   150     150   150   150     150   150   150     150   150   150     150   150   150     150   150   150     150   150   150     150   150   150     150   150     150   150   150     150   150   150     150   150   150     15	Lead-Lag Optimize?	Yes	Yes		Yes			Yes			Yes	Yes	
None         None         None         None         Mone         Max         Max         Max         Max           7.0         0	Nane         None         None         Mone         Max         Max           70         7.0         7.0         7.0         7.0           150         15.0         0         0         0         0           68.2         69.2         82.5         81.3         39.1         39.1         30.0           0.53         0.63         0.62         0.30         0.00         0.0	Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
7.0         0.0         0.0 <td>  10   10   10   10   10   10   10   10</td> <td>Recall Mode</td> <td>None</td> <td>None</td> <td></td> <td>None</td> <td>None</td> <td></td> <td>Max</td> <td>Max</td> <td></td> <td>Max</td> <td>Max</td> <td></td>	10   10   10   10   10   10   10   10	Recall Mode	None	None		None	None		Max	Max		Max	Max	
15.0   15.0   15.0   22.0   22.0   22.0   68.2   68.2   68.1   39.1   39.1   39.1   29.1   68.2   68.2   68.3   69.3	15.0   15.0   15.0   22.0     0.0   0   0   0     0.2   0.42   0.825   81.3   39.1   39.1     0.53   0.53   0.63   0.62   0.30   0.30     0.21   0.92   0.81   0.73   0.54   0.49     228   37.2   0.06   19.6   45.3   42.9     C	Walk Time (s)	7.0	7.0			7.0			7.0		7.0	7.0	
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Flash Dont Walk (s)	15.0	15.0			15.0			22.0		22.0	22.0	
69.2 69.2 82.5 81.3 39.1 39.1 29.1 Co. 2.2 Co. 3 0.63 0.62 0.30 0.30 0.22 0.53 0.63 0.62 0.30 0.30 0.22 0.53 0.63 0.64 0.64 0.45 0.54 0.49 0.18 0.22 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	69.2 69.2 89.2 81.3 39.1 39.1 39.1 39.1 50.5 30.5 50.5 50.5 50.5 50.5 50.5 50.5	Pedestrian Calls (#/hr)	0	0			0			0		0	0	
053 053 063 062 030 020 021 0.92 081 0.73 054 049 0.18 228 0.01 0.00 0.0 0.0 0.0 0.0 0.0 228 372 606 19,6 45,3 429 455 C D E B D D D C 371 C C D C C D C Mer   Mer  Intersection LOS: C Intervel of Service D Intervel of Service D	0.53 0.53 0.63 0.62 0.30 0.30 0.21 0.92 0.81 0.73 0.54 0.49 2.28 37.2 6.06 19.6 45.3 42.9 0.0 0.0 0.0 0.0 0.0 0.0 2.28 37.1 2.7 43.9 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Act Effct Green (s)	69.5	69.2		82.5	81.3		39.1	39.1		29.1	29.1	
021 0.92 0.81 0.73 0.54 0.49 0.18 028 37.2 6.06 19.6 45.3 42.9 45.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.9	021 0.92 0.81 0.73 0.54 0.49 228 37.2 60.6 19.6 45.3 42.9 228 37.2 60.6 19.6 45.3 42.9 C D E B D D C 37.1 22.7 43.9 C D C D C D C D D A3.9 Axd Intersection LOS: C Intersection LOS: C Intersection Cost C C C C C C C C C C C C C C C C C C C	Actuated g/C Ratio	0.53	0.53		0.63	0.62		0.30	0.30		0.22	0.22	
228 37.2 60.6 19.6 45.3 42.9 45.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	228 372 606 19,6 45,3 429 00 0.0 0.0 0.0 0.0 0.0 228 372 606 19,6 45,3 429 2	v/c Ratio	0.21	0.92		0.81	0.73		0.54	0.49		0.18	0.26	
00 00 00 00 00 00 00 00 00 00 00 00 00	228 37.2 606 19.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	Control Delay	22.8	37.2		9.09	19.6		45.3	42.9		45.5	42.6	
228 372 606 19,6 45,3 42,9 45,5 C D E B D D D D D D D D D D D D D D D D D	228 37.2 60.6 19.6 45.3 42.9 C D E B D D D C D C D C D C D C D C D	Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
C D E B D D D  37.1 22.7 43.9 D C D  ther  and  Intersection LOS: C  Intersection LOS: C  Intersection LOS: C  Intersection LOS: C	C D E B D 37.1 22.7  ther  And  Intersection LOS: C  in 78.6% ICU Level of Service D	Total Delay	22.8	37.2		9.09	19.6		45.3	42.9		45.5	42.6	
37.1 22.7 43.9 D C D D Inter  and Intersection LOS: C ICU Level of Service D	her control of the co	SOT	ပ	D		ш	В		۵	Ω		۵	۵	
There Do you was a second of the part of t	ther ord D	Approach Delay		37.1			22.7			43.9			43.5	
ther and an 78.6%	ther and 9 9 nn 78.6%	Approach LOS		۵			O			D			D	
her ard 9 8.6% I	ther and 9 9 nn 78.6%	Intersection Summary												
ord 9 1178.6%	ord 9 9 nr 78.6%		Other											
ord 9 10 11 12 12 13	ord ) nn 78.6%	Cycle Length: 135												
ord ) In 78.6%	ord 9 nn 78.6%	Actuated Cycle Length: 131.	τ.											
Incoord : 31.9 ization 78.6%	Incoord :31,9 Ization 78.6%	Natural Cycle: 110												
: 31.9 Ization 78.6%	: 31.9 ization 78.6%	Control Type: Semi Act-Uncu	oord											
: 31.9 Ization 78.6%	: 31.9 Ization 78.6%	Maximum v/c Ratio: 0.92												
ization 78.6%	ization 78.6%	Intersection Signal Delay: 31	1.9			=	tersection	LOS: C						
	Anakaia Dariad (min) 15	Intersection Capacity Utilizat	tion 78.6%			2	U Level o	f Service	٥					

Splits and Phases: 7: Sheridan Drive & Mill Street



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 8: Sheridan Drive & North Forest Road

	١	Ť	*	-			_	_		k	•	,
ane Group	표	FBT	FBR	WBI	WBT	WBR	NBI	MRT	NBR	SB	SBT	SBR
ane Configurations	*	**	*	k	₩		*	*	*	*	*	*
Johnso (Aph)	138	1325	70K	30E	1212	άV	303	140	<b>-</b> 6	6	200	200
deal Flow (vohol)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	405		170	260	2		180	2	265	180		200
Storage Lanes	- 6			7		0	- 1		1	- 3		1
aper Lenath (ft)	200		25	200		25	25		25	25		25
ane Util. Factor	1.00	0.95	100	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00
t			0.850		0.994				0.850			0.850
-It Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3518	0	1770	1863	1583	1770	3539	1583
-It Permitted	0.073			690.0			0.163			0.152		
Satd. Flow (perm)	136	3539	1583	129	3518	0	304	1863	1583	283	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36		3				69			213
ink Speed (mph)		45			45			40			32	
ink Distance (ft)		696			2219			547			354	
ravel Time (s)		14.7			33.6			9.3			6.9	
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.89	0.89	0.89	0.95	0.95	0.95
Adj. Flow (vph)	147	1420	314	328	1304	25	339	527	92	88	536	213
Shared Lane Traffic (%)												
-ane Group Flow (vph)	147	1420	314	328	1356	0	339	527	92	88	536	213
Inter Blocked Intersection	9	8	8	8	%	8	%	8	8	8	8	8
ane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12	,		12	,		12	,		12	,
ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
wo way Left Turn Lane		Yes			Yes							
leadway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
'urning Speed (mph)	15		6	12		6	12		6	15		6
Number of Detectors	<del>-</del>	2	_	_	2		-	2	<del>-</del>	-	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
eading Detector (ft)	70	100	20	20	100		20	100	20	20	100	20
railing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	9	20	70	9		20	9	20	20	9	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+EX
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
etector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+Ex			CI+Ex			CI+EX			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
urn Type	pm+pt		vo+mq	pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases	-	9	7	2	7		7	4		က	∞	
Permitted Phases	9		9	2			4		4	00		α
		,										•

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 8: Sheridan Drive & North Forest Road

	1	†	<i>&gt;</i>	<b>&gt;</b>	ţ	4	•	<b>←</b>	•	۶	<b>→</b>	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.3	27.9	21.0	8.3	27.9		21.0	27.2	27.2	8.3	27.2	27.2
Total Split (s)	30.0	0.09	25.0	20.0	20.0	0.0	25.0	40.0	40.0	20.0	35.0	35.0
Total Split (%)	21.4%	42.9%	17.9%	14.3%	35.7%	%0.0	17.9%	28.6%	28.6%	14.3%	25.0%	25.0%
Maximum Green (s)	25.7	54.9	20.7	15.7	44.9		20.7	34.9	34.9	15.7	29.9	29.9
Yellow Time (s)	3.2	3.9	3.2	3.2	3.9		3.2	3.2	3.2	3.2	3.2	3.2
All-Red Time (s)	1.1	1.2	<del>[</del> -	1.	1.2		<del>[</del> -	1.9	1.9	Έ.	1.9	1.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0:0	0.0
Total Lost Time (s)	4.3	2.1	4.3	4.3	5.1	4.0	4.3	5.1	5.1	4.3	5.1	5.1
Lead∕Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	None	None	Max		None	None	None	None	None	None
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		15.0			15.0			15.0	15.0		15.0	15.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	68.1	54.9	80.7	73.7	58.3		52.2	37.3	37.3	36.9	26.3	26.3
Actuated g/C Ratio	0.50	0.40	0.59	0.54	0.43		0.38	0.27	0.27	0.27	0.19	0.19
v/c Ratio	0.68	1.00	0.33	1.27	0.00		1.00	1.04	0.19	0.47	0.78	0.45
Control Delay	43.3	63.9	13.8	182.6	46.5		85.3	9.7.6	14.0	37.0	61.2	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.3	63.9	13.8	182.6	46.5		85.3	9.76	14.0	37.0	61.2	8.8
SOT	O	ш	В	ш	۵		ш	ш	В	Ω	ш	A
Approach Delay		53.9			73.0			85.2			45.4	
Approach LOS		Ω			Ш			ш.			Ω	
Intersection Summary												

Intersection Signal Delay: 64.2 Intersection LOS; E
Intersection Capacity Utilization 100.3% ICU Level of Service G
Analysis Period (min) 15

Area Type:
Area Type:
Area Type:
Area Type:
Actualed Cycle Length: 136.5
Natural Cycle: 125
Control Type: Actualed-Uncoordinaled
Maximum wic Ratio: 1.27
Intersection Signat Delay: 64.2
Intersection Capacity Utilization 100.3%
Analysis Period (min) 15

Spits and Phases. 8: Sheridan Drive & North Forest Road

 01
 ← 02
 ← 04

 30s
 ← 04
 ← 04

 30s
 ← 04
 ← 04

 40s
 ← 05
 ← 04

 40s
 ← 05
 ← 04

 20s
 ← 05
 ← 05

 40s
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Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 10: Sheridan Drive & Proposed South Driveway

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	١	Ť	<b>/</b>	*		,	_	-	L	٨	+	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	<b>₽</b> ₽		*	ŧ	*		4			4	*-
Volume (vph)	175	1677	13	. 2	1595	83	13	.0	17	108	0	217
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	320		0	75		425	0		0	0		0
Storage Lanes	-		0	-		-	0		0	0		
Taper Length (ft)	52		25	25		75	25		25	52		72
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1:00	1.00	1.00	1.00	1.00	1.00
Ŧ		0.999				0.850		0.922				0.850
Fit Protected	0.950			0.950				0.979			0.950	
Satd. Flow (prot)	1770	3536	0	1770	3539	1583	0	1681	0	0	1770	1583
FIt Permitted	0.059			0.089				0.858			0.731	
Satd. Flow (perm)	110	3536	0	166	3539	1583	0	1474	0	0	1362	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				06		23				7
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		635			669			278			241	
Travel Time (s)		9.6			10.6			6.3			5.5	
Peak Hour Factor	0.92	0.87	0.87	0.94	0.94	0.92	0.75	0.92	0.75	0.92	0.92	0.92
Adj. Flow (vph)	190	1928	15	2	1697	06	17	0	23	117	0	236
Shared Lane Traffic (%)												
Lane Group Flow (vph)	190	1943	0	2	1697	06	0	40	0	0	117	236
Enter Blocked Intersection	9	8	9	9	9 8	8	8	S	8	9	2	8
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Tum Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	5		6	12		6	15		6	15		6
Number of Detectors	-	2			2	<b>-</b>	-	2		-	2	_
Detector Template	Left	Thru		Left	Thru	Right	Left	Thr.		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	8	9		50	9	20	20	9		8	9	8
Detector 1 Type	CI+EX	CI+Ex		CI+Ex	CI+EX	CI+Ex	CI+EX	CI+EX		CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel	d	d		d	d	d	d	0		d	d	0
Detector I Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector I Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		9			9			9			9	
Detector 2 Type		CI+Ex			CI+EX			CI+EX			CI+Ex	
Detector 2 Channel		d			d			d			c	
Detector 2 Extend (s)	•	0.0			0.0			0.0		•	0.0	
Turn Type	pm+pt			Perm	c	Perm	Perm	•		bm+pt	٠	pm+ov
Protected Phases		4		c	00	c	c	7		- 、	٥	_ `
Permitted Phases	4 1	,		∞ α		∞ α	7	•		۰ م		0 1
Detector Phase		4		×	×	×		7				

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 10: Sheridan Drive & Proposed South Driveway

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	0.6	21.0		21.0	21.0	21.0	21.0	21.0		0.6	21.0	0.6
Total Split (s)	19.0	80.0	0.0	61.0	61.0	61.0	10.0	10.0	0.0	20.0	30.0	19.0
Total Split (%)	17.3%	72.7%	%0:0	25.5%	22.5%	25.5%	9.1%	9.1%	%0.0	18.2%	27.3%	17.3%
Maximum Green (s)	14.0	75.0		26.0	26.0	26.0	2.0	2.0		15.0	25.0	14.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0:0	0.0
Total Lost Time (s)	2.0	2.0	4.0	2.0	2.0	2.0	2.0	2.0	4.0	2.0	2.0	2.0
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag		Lead		Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes		Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None	None	None
Walk Time (s)		2.0		2.0	2.0	2.0	2.0	2.0			2.0	
Flash Dont Walk (s)		11.0		11.0	11.0	11.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)		0		0	0	0	0	0			0	
Act Effct Green (s)	83.8	83.8		67.3	67.3	67.3		16.2			16.2	32.7
Actuated g/C Ratio	0.76	0.76		0.61	0.61	0.61		0.15			0.15	0.30
v/c Ratio	0.74	0.72		0.02	0.78	0.09		0.17			0.58	0.49
Control Delay	47.5	5.5		14.2	21.3	3.0		22.5			54.3	32.2
Queue Delay	0.0	0.1		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	47.5	9.6		14.2	21.3	3.0		22.5			54.3	32.2
FOS	۵	⋖		В	ပ	⋖		ပ			۵	O
Approach Delay		9.4			20.4			22.5			39.5	
Approach LOS		A			S			U			Ω	
Intersection Summary												
Area Type:	Other											
Cycle Length: 110												
Actuated Cycle Length: 110	0											
Offset: 76 (69%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	ed to phase	4:EBTL a	Ind 8:WB	TL, Start	of Green							
Natural Cycle: 90												
Control Type: Actuated-Coordinated	ordinated											
Maximum v/c Ratio: 0.78												
Intersection Signal Delay: 16.5	6.5			드	ntersection LOS: B	LOS: B						
Intersection Capacity Utilization 78.3%	ation 78.3%			2	:U Level o	ICU Level of Service D	D					
Analysis Period (min) 15												

Splits and Phases: 10; Sheridan Drive & Proposed South Driveway 92

Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 11: Sheridan Drive & Frankhauser Road

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	*	‡	<b>₩</b>		r	*-	
Volume (vph)	74	1772	1784	41	92	116	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	105			0	0	20	
Storage Lanes	-			0	_	-	
Taper Length (ft)	99			25	25	25	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
£			0.997			0.850	
Fit Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3529	0	1770	1583	
Fit Permitted	690.0				0.950		
Satd. Flow (perm)	129	3539	3529	0	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			4			21	
Link Speed (mph)		45	45		30		
Link Distance (fl)		1014	635		835		
Travel Time (s)		15.4	9.6		19.0		
Peak Hour Factor	06:0	06.0	0.91	0.91	0.82	0.82	
Adj. Flow (vph)	85	1969	1960	45	112	141	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	85	1969	2005	0	112	141	
Enter Blocked Intersection	No No	9	9 N	8	No No	No No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	91		16		
Two way Left Turn Lane		Yes	Yes				
Headway Factor	1:00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			6	12	6	
Number of Detectors	_	2	2		-	<del>-</del>	
Detector Template	Left	Thru	Thru		Left	Right	
Leading Detector (ft)	20	100	100		70	70	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	8	9	9		50	70	
Detector 1 Type	CI+EX	CI+Ex	CI+EX		CI+Ex	CI+EX	
Detector 1 Channel	0	0	0		0	0	
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		9	9				
Detector 2 Type		CI+Ex	CI+EX				
Detector 2 Channel Detector 2 Extend (s)		0.0	0.0				
Turn Type	Perm					Perm	
Protected Phases		2	9		4		
Permitted Phases	2					4	
	0	c	,				

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 11: Sheridan Drive & Frankhauser Road

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winton Phase Minimum Initial (s) 4.0 Minimum Split (s) 74.0 Total Split (%) 71.7% Maximum Green (s) 74.1 Maximum Green (s) 74.1 Maximum Green (s) 74.1 Cellow Time (s) 3.9 Lost Time (s) 0.0 otal Time (s) 0.0 cost Time (s) 4.8 ead/las of Onlinize?	0 40.0 0 40.0 9 78.9 71.7% 71.7% 1.1 74.1 74.1 74.1 9 0.9 0 0.0 0 0.0 8 4.8 8 4.8 0 3.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0 0.0 0 0 0 0	4.0 40.0 78.9 71.7% 74.1 3.9 0.0 0.0 4.8 3.0 C-Max 7.0 15.0 15.0	0.0%		1.0 31.1 31.1 28.3% 26.0 3.2 1.9 0.0 5.1 8.0 19.0 0 113.8 0.13.8
(s) s) n (s) t (s) (s) (s)		4.0 71.7% 71.7% 74.1 3.9 0.0 0.0 4.8 3.0 C-Max 7.0 15.0 15.0	0.0 0.0%		31.1 31.1 31.1 32.2 3.2 3.2 0.0 0.0 5.1 7.0 7.0 13.8 0.13.8
s) 77 (s) (s) (s) (s)		40.0 71.7% 74.1 3.9 0.0 0.0 0.0 4.8 3.0 C-Max 7.0 15.0 15.0	0.0000000000000000000000000000000000000		31.1 26.0 26.0 3.2 1.9 0.0 5.1 7.0 7.0 19.0 0 0.13.8
7: (s) (s) (s)	-	78.9 71.7% 74.1 3.9 0.0 0.0 4.8 3.0 7.0 15.0 15.0 86.3	0.0 0.0 0.0 4.0		331.1 26.0 3.2 1.9 0.0 0.0 5.1 3.0 None 7.0 19.0 13.8
7: n (\$) ) st (\$) (\$)		71.7% 74.1 3.9 0.0 0.0 4.8 3.0 7.0 15.0 15.0 86.3	0.0%		28.3% 26.0 3.2 1.9 0.0 5.1 3.0 None 7.0 13.8 0.13
n (s) ) st (s) (s)	٥	74.1 3.9 0.0 0.0 4.8 3.0 C-Max 7.0 15.0 0 86.3	0.0		26.0 3.2 3.2 0.0 0.0 5.1 7.0 7.0 13.8 0.13
) st (s) (s) size?	٥	3.9 0.0 0.0 0.0 4.8 3.0 C-Max 7.0 15.0 0 86.3	0.0		3.2 1.9 1.9 1.0 5.1 None 7.0 19.0 13.8 0.13
) st (s) (s) nize?	O O	0.0 0.0 4.8 3.0 C-Max 7.0 15.0 86.3	0.0		1.9 0.0 0.0 0.0 3.0 3.0 7.0 7.0 0 0 0 0.13
	O O	0.0 4.8 3.0 7.0 15.0 0 86.3	0.0		5.1 5.1 None 7.0 7.0 13.8 0.13
	٥	3.0 C-Max 7.0 7.0 15.0 0 86.3	4.0	3.0 None 7.0 19.0 0 13.8	5.1 3.0 None 7.0 7.0 13.8 0.13
Ontimize?	Ö	3.0 C-Max 7.0 15.0 0 86.3		3.0 None 7.0 19.0 0 13.8	3.0 None 7.0 19.0 13.8 0.13
Ontimize?	ن	3.0 C-Max 7.0 15.0 0 86.3		3.0 None 7.0 19.0 0 13.8	3.0 None None 17.0 0 0 0 13.8 0.13
Commerce.	Ö	3.0 C-Max 7.0 15.0 0 86.3		3.0 None 7.0 19.0 0 13.8	3.0 None 7.0 7.0 0 0 0 0.13
/ehicle Extension (s) 3.0	ن	C-Max 7.0 15.0 0 86.3		None 7.0 19.0 0 13.8	None 7.0 19.0 0 13.8 0.13
Recall Mode C-Max	0.7 0.	7.0 15.0 0 86.3		7.0 19.0 0 13.8	7.0 19.0 0 13.8 0.13
Valk Time (s) 7.		15.0 0 86.3		13.8	19.0 0 13.8 0.13
lash Dont Walk (s) 15.0		86.3		13.8	0 13.8 0.13
Pedestrian Calls (#/hr)		86.3		13.8	13.8 0.13 0.4E
Act Effct Green (s) 86.3		0 7 0		0.13	0.13
Actuated g/C Ratio 0.78	8 0.78	0.70		5	U 7E
	_	0.72		0.50	0.00
Control Delay 60.4	.4 6.8	4.9		51.7	52.2
y		0.0		0.0	0.0
otal Delay 60.4		4.9		51.7	52.2
	E A	A		۵	D
Approach Delay	0.6	4.9		52.0	
Approach LOS	⋖	∢		Ω	
ntersection Summary					
Area Type: Other					
Sycle Length: 110					
Actuated Cycle Length: 110					
Offset: 66 (60%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	ase 2:EBTL a	Ind 6:WBT	, Start of	Green	
Natural Cycle: 140					
Control Type: Actuated-Coordinated	_				
Maximum v/c Ratio: 0.81					
ntersection Signal Delay: 9.6			ī	Intersection LOS: A	LOS: A
ntersection Capacity Utilization 72.1%	1%		2	J Level o	ICU Level of Service C
Analysis Period (min) 15					

≱ ĕ Spilts and Phases: 11: Sheridan Drive & Frankhauser Road

Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 12: Sheridan Drive & I-290 NB

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-ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
-ane Configurations	*	444			4413		۴	4	¥L			
Volume (vph)	322	1429	0	0	1266	684	317	0	439	0	0	0
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	230		120	0		0
Storage Lanes	-		0	0		0	<del>-</del>		<del>-</del>	0		0
aper Length (ft)	105		22	25		25	25		25	22		25
ane Util. Factor	1:00	0.91	1:00	1.00	0.91	0.91	0.95	0.91	0.95	1:00	1.00	1:00
	0				0.947			0.882	0.850			
Fit Protected	0.950	1	•	•		•	0.950	0.989		•	•	•
satd. Flow (prot)	0//1	2085	0	0	4816	0	1681	1479	1504	0	0	0
- It Permitted	0.071		c	d	,104	c	0.950	0.989		d	d	•
Satd. Flow (perm)	132	2082	0;	0	4816	0;	1681	1479	1504	0	0	0
Right Turn on Red			Yes		:	Yes			Yes			Yes
Satd. Flow (RTOR)					163			92	9			
_ink Speed (mph)		42			42			30			30	
Link Distance (fl)		610			193			830			423	
Fravel Time (s)		9.5			2.9			18.9			9.6	
Peak Hour Factor	0.99	0.99	0.99	0.92	0.92	0.92	0.80	0.80	0.80	0.92	0.92	0.92
Adj. Flow (vph)	326	1443	0	0	1376	743	396	0	249	0	0	0
Shared Lane Traffic (%)							17%		45%			
-ane Group Flow (vph)	326	1443	0	0	2119	0	329	314	302	0	0	0
Enter Blocked Intersection	No No	No No	8	No No	%	%	9	8	8	8	No No	2
ane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
-ink Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
rwo way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Furning Speed (mph)	15		6	12		6	15		6	15		6
Number of Detectors	<del></del>	2			2		<del></del>	2	<del></del>			
Detector Template	Left	Thru			Thr		Left	뮡	Right			
eading Detector (ft)	20	100			100		70	100	70			
railing Detector (ft)	0	0			0		0	0	0			
Detector 1 Position(ft)	0	0			0		0	0	0			
	8	9			9		70	9	50			
Detector 1 Type	CI+Ex	CI+Ex			CI+Ex		CI+Ex	CI+Ex	CI+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		9			9			9				
Detector 2 Type		CI+Ex			CI+EX			CI+EX				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
rurn Type	bm+pt					_	custom		Perm			
Protected Phases		9			7		c	m	c			
Permitted Phases	۰ م				•		v) (	•	n			
000000								c	•			

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 12: Sheridan Drive & I-290 NB

	1	1	~	<b>\</b>	ţ	4	•	<b>←</b>	•	٠	<b>→</b>	•
Lane Group	EBE	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	1.0	4.0			4.0		4.0	4.0	4.0			
Minimum Split (s)	6.2	33.9			27.8		29.0	29.0	29.0			
Total Split (s)	25.0	81.0	0.0	0.0	26.0	0.0	29.0	29.0	29.0	0.0	0.0	0.0
Total Split (%)	22.7%	73.6%	%0.0	%0:0	20.9%	%0.0	26.4%	26.4%	26.4%	%0.0	%0.0	%0.0
Maximum Green (s)	20.7	75.1			20.5		23.8	23.8	23.8			
Yellow Time (s)	3.2	3.9			3.9		3.2	3.2	3.2			
All-Red Time (s)	<del></del>	2.0			1.9		2.0	2.0	5.0			
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.3	5.9	4.0	4.0	2.8	4.0	5.2	5.2	2.5	4.0	4.0	4.0
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	2.0	3.0			3.0		2.0	2.0	2.0			
Recall Mode	None	C-Max			С-Мах		None	None	None			
Walk Time (s)		7.0			7.0							
Flash Dont Walk (s)		21.0			15.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)	77.5	75.9			52.2		23.0	23.0	23.0			
Actuated g/C Ratio	0.70	69.0			0.47		0.21	0.21	0.21			
v/c Ratio	0.94	0.41			0.89		0.93	0.87	0.83			
Control Delay	54.7	7.4			21.0		77.5	57.7	51.9			
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0			
Total Delay	54.7	7.4			21.0		77.5	27.7	51.9			
SOT	۵	A			ပ		ш	ш	۵			
Approach Delay		16.9			21.0			62.7				
Approach LOS		В			O			ш				
Intersection Summary												
Area Type: Ot	Other											
Cycle Length: 110												
Actuated Cycle Length: 110												
Offset: 106 (96%), Referenced to phase 2:WBT and 6:EBTL, Start of Green	d to phase	e 2:WBT	and 6:EB	IL, Start	of Green							
Natural Cycle: 90												
Control Type: Actuated-Coordinated	linated											
Maximum v/c Ratio: 0.94												
Intersection Signal Delay: 27.6	2			드	Intersection LOS: C	LOS: C						
Intersection Capacity Utilization 85.4%	n 85.4%			2	ICU Level of Service E	f Service	ш					
Analysis Period (min) 15												
	do do	000000000000000000000000000000000000000	5									

Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 13: Sheridan Drive & Harlem Road

	<b>†</b>	>	<b>&gt;</b>	ţ	•	4	
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	‡	×	K.	*	K.	東東	
Volume (vph)	1027	604	489	1094	267	755	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0	215		140	0	
Storage Lanes		-	-		2	2	
Taper Length (ft)		230	100		100	25	
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.88	
Ft		0.850				0.850	
Fit Protected			0.950		0.950		
Satd. Flow (prot)	3539	1583	3433	3539	3433	2787	
Flt Permitted			0.950		0.950		
Satd. Flow (perm)	3539	1583	3433	3539	3433	2787	
Right Turn on Red		S				Yes	
Satd. Flow (RTOR)						22	
Link Speed (mph)	42			45	32		
Link Distance (ft)	314			610	338		
Travel Time (s)	4.8			9.5	9.9		
Peak Hour Factor	0.98	0.98	0.95	0.95	0.85	0.85	
Adj. Flow (vph)	1048	919	515	1152	314	888	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1048	616	515	1152	314	888	
Enter Blocked Intersection	9	9 N	No	9	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	12			24	24		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		6	15		12	6	
Number of Detectors	2	_	<del></del>	2	<del></del>	-	
Detector Template	맫	Right	Left	Thru	Left	Right	
Leading Detector (ft)	100	70	20	100	20	20	
Trailing Detector (ft)	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	
Detector 1 Size(ft)	9	20	20	9	20	20	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel	0	d	d	d	d	o o	
Detector I Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)	94			94			
Detector 2 Size(ft)	9			9			
Detector 2 Type	CI+Ex			CI+Ex			
Detector 2 Channel							
Detector 2 Extend (s)	0.0			0.0			
Turn Type		vo+mq	Prot			hm+ov	
Protected Phases	2	3	-	9	m	-	
Permitted Phases		2				က	
Detector Phase	2	3	-	9	3	-	

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 13: Sheridan Drive & Harlem Road

-ane Group Switch Phase	EBT	EBR	WBL	WBT	NBL	NBR	
Minimum Initial (s)	1.0	1.0	1.0	4.0	1.0	1.0	
Minimum Split (s) Fotal Split (s)	30.5	31.2	29.1	32.3	31.2	5.3	
otal Split (%)	45.2%	28.4%	26.5%	71.6%	28.4%	26.5%	
Maximum Green (s)	44.2	26.0	24.8	74.5	26.0	24.8	
rellow Time (s)	3.9	3.2	3.2	3.2	3.2	3.2	
All-Red Time (s)	1.6	2.0	Ξ:	Ξ:	2.0	11	
ost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Fotal Lost Time (s)	5.5	5.2	4.3	4.3	5.2	4.3	
Lead/Lag	Lag		Lead			Lead	
Lead-Lag Optimize?	Yes		Yes			Yes	
/ehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	
Recall Mode	C-Max	None	None	None	None	None	
Valk Time (s)	7.0			7.0			
-lash Dont Walk (s)	18.0			21.0			
Pedestrian Calls (#/hr)	0			0			
Act Effct Green (s)	57.1	77.4	23.1	85.7	14.8	43.1	
Actuated g/C Ratio	0.52	0.70	0.21	0.78	0.13	0.39	
	0.57	0.55	0.72	0.45	0.68	0.79	
Control Delay	20.7	10.8	31.0	9.2	52.8	32.5	
Queue Delay	0.0	0.0	0.0	0.7	0.0	0.0	
otal Delay	20.7	10.8	31.0	9.8	52.8	32.5	
	U	В	U	⋖	٥	ပ	
Approach Delay	17.1			16.4	37.8		
Approach LOS	В			В	Ω		
ntersection Summary							
Area Type:	Other						
Sycle Length: 110							
Actuated Cycle Length: 110	0						
Offset: 66 (60%), Referenced to phase 2:EBT, Start of Green	ed to phase	2:EBT, S	start of Gr	een			
Vatural Cycle: 60							
Control Type: Actuated-Coordinated	ordinated						
Maximum v/c Ratio: 0.79							
ntersection Signal Delay: 22.3 ntersection Capacity Utilization 63.0%	22.3 ation 63.0%			<u>=</u> 0	Intersection LOS: C ICU Level of Service	Intersection LOS: C ICU Level of Service B	

Splits and Phases: 13: Sheridan Drive & Harlem Road



Lanes, Volumes, Timings SRF & Associates

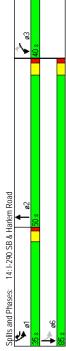
Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 14: I-290 SB & Harlem Road

	•		-	-		•	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations	*	*-	<b>₩</b>		r	<b>‡</b>	
Volume (vph)	234	404	583	=	533	524	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	0		0	330		
Storage Lanes	-	_		0	<del>-</del>		
Taper Length (ft)	22	25		25	75		
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95	
£		0.850	0.997				
Fit Protected	0.950				0.950		
Satd. Flow (prot)	1770	1583	3529	0	1770	3539	
Fit Permitted	0.950				0.147		
Satd. Flow (perm)	1770	1583	3529	0	274	3539	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		99	7				
Link Speed (mph)	30		32			32	
Link Distance (ft)	333		250			456	
ravel Time (s)	7.6		4.9			8.9	
Peak Hour Factor	69.0	69.0	0.77	0.77	0.92	0.92	
Adj. Flow (vph)	339	286	757	14	216	270	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	336	286	177	0	579	270	
Enter Blocked Intersection	2	2	9 8	2	8	8	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	12		12			12	
-ink Offset(ft)	0		0			0	
Crosswalk Width(ft)	16		16			16	
Two way Left Turn Lane							
Headway Factor	1:00	1.00	1.00	1.00	1.00	1.00	
Furning Speed (mph)	15	6		6	15		
Number of Detectors	<del></del>	_	2		<del></del>	2	
Detector Template	Left	Right	Thr		Left	Thru	
<ul><li>eading Detector (ft)</li></ul>	20	20	100		70	100	
railing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	20	9		70	9	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)			94			94	
Detector 2 Size(ft)			9			9	
Detector 2 Type			CI+Ex			CI+Ex	
Detector 2 Channel Detector 2 Extend (s)			0:0			0.0	
Turn Type		vo+mq			pm+pt		
Protected Phases	3	-	2		-	9	
Permitted Phases		က			9		
Detector Dhace	m	-	7			9	

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 14: I-290 SB & Harlem Road

	-	/	<b>—</b>	•	۶	<b>→</b>	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Switch Phase							
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	22.0	9.2	30.6		9.5	21.0	
Total Split (s)	40.0	35.0	20.0	0.0	35.0	85.0	
Total Split (%)	32.0%	28.0%	40.0%	%0:0	28.0%	%0.89	
Maximum Green (s)	35.2	30.7	45.0		30.7	80.0	
Yellow Time (s)	3.2	3.2	3.6		3.2	3.6	
All-Red Time (s)	1.6	::	1.4		1.	1.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0:0	
Total Lost Time (s)	4.8	4.3	2.0	4.0	4.3	5.0	
Lead/Lag		Lead	Lag		Lead		
Lead-Lag Optimize?		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	Min		None	None	
Walk Time (s)			10.0				
Flash Dont Walk (s)			15.0				
Pedestrian Calls (#/hr)			0				
Act Effct Green (s)	24.0	60.2	28.6		65.0	64.3	
Actuated g/C Ratio	0.24	0.61	0.29		99.0	0.65	
v/c Ratio	0.78	0.59	0.75		0.88	0.25	
Control Delay	48.9	13.9	37.0		39.9	8.0	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay	48.9	13.9	37.0		39.9	8.0	
SOT	D	В	۵		D	А	
Approach Delay	26.7		37.0			24.1	
Approach LOS	O		О			U	
Intersection Summary							
	Other						
Cycle Length: 125							
Actuated Cycle Length: 98.3							
Natural Cycle: 80							
Control Type: Actuated-Uncoordinated	ordinated						
Maximum v/c Ratio: 0.88							
Intersection Signal Delay: 28.4	4.			=	Intersection LOS: C	LOS: C	
Intersection Capacity Utilization 70.7%	on 70.7%			2	U Level o	CU Level of Service C	
Analysis Period (min) 15							



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 17: Proposed Access Road & Frankhauser Road

	<b>\</b>	4	<b>←</b>	•	٠	<b>→</b>	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations	×		æ			₩	
Volume (vph)	115	0	75	40	0	92	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1:00	1.00	
Frt			0.953				
Flt Protected	0.950						
Satd. Flow (prot)	1770	0	1775	0	0	1863	
Flt Permitted	0.950						
Satd. Flow (perm)	1770	0	1775	0	0	1863	
Link Speed (mph)	30		9			30	
Link Distance (ft)	223		832			104	
Travel Time (s)	5.1		19.0			2.4	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.82	0.82	
Adj. Flow (vph)	135	0	88	47	0	112	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	135	0	135	0	0	112	
Enter Blocked Intersection	8	9	8	8	8	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	12		0			0	
Link Offset(ft)	0		0			0	
Crosswalk Width(ft)	16		16			16	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1:00	1.00	1.00	1.00	
Turning Speed (mph)	15	6		6	15		
Sign Control	Stop		Free			Free	
Intersection Summary							
Area Type: 0	Other						
Control Type: Unsignalized							
Intersection Capacity Utilization 19.4%	on 19.4%			⋾	J Level of	ICU Level of Service A	
Analysis Period (min) 15							

Synchro 7 Report Page 27 Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 17: Proposed Access Road & Frankhauser Road

115 0   Fr   115 0   Color	Movement	WBL	WBR	NBT	NBR	SBL	SBT	
115	e Configurations	>		æ			€\$	
Siop   Free   Free   Free     Comparison	ime (veh/h)	115	0	75	40	0	92	
(tr) (185 0.85 0.85 0.82 0.82 (182 0.82 0.82 0.82 0.82 0.82 0.82 0.82 0.	1 Control	Stop		Free			Free	
r	de	%0		%0			%0	
ty)   135 0 88 47 0 112  tel)   None	k Hour Factor	0.85	0.85	0.85	0.85	0.82	0.82	
(f) (f) (f) (f) (f) (f) (f) (f) (f) (f)	ırly flow rate (vph)	135	0	88	47	0	112	
teh)  (th)	lestrians							
None   None   None   None	e Width (ft)							
eth)  (ft)  (ft)  (ft)  (ft)  (cked	king Speed (ft/s)							
eth)  None None  (t)  835  Cicked  Lume	cent Blockage							
(ft)  state of the	nt turn flare (veh)							
th)  (ft)  (	lian type			None			None	
(ft) 835  oxiced	lian storage veh)							
Crked  Lume	tream signal (ft)			832				
Fivol   135   13	platoon unblocked							
Vol   Col	conflicting volume	224	112			135		
Variation   224   112   135	, stage 1 conf vol							
ol 224 112 135  64 62 4.1  3.5 3.3 2.2  82 100 100  h) 764 941 1449  135 135 112  135 0 0  744 700 1449  ity 0.18 0.08 0.00  ith (1) 16 0 0  B  (s) 10,7 0.0 0.0  B  many  3.8  ICU Level of Service	, stage 2 conf vol							
(b) 16.4 6.2 4.1  3.5 3.3 2.2  8.2 100 100  100  100  100  118 1.8 11  118 0.0 0  110 10.7 0.0 0.0  8  (c) 10.7 0.0 0.0  8  (c) 10.1 10.7 0.0 0.0  8  (c) 10.1 10.7 0.0 0.0  8  (c) 10.1 10.7 0.0 0.0  8  (c) 10.1 10.7 0.0 0.0  8  (c) 10.1 10.1 10.1 10.1  10.2 10.1 10.1 10.1 10.1 10.1 10.1 10.1	, unblocked vol	224	112			135		
3.5   3.3   2.2     82   100   100     764   941   1449     WB	single (s)	6.4	6.2			4.1		
100   100	2 stage (s)							
No.   100	·	3.5	3.3			2.2		
## WB1 NB1 SB1 1449  ## WB1 NB1 SB1 1449  135 135 112  135 0 0 0  6 47 0 0  764 1700 1449  ccity 0.18 0.08 0.00  5) B	nene free %	82	100			100		
# WB1 NB1 SB1  135 135 112  136 0 0  764 1700 1449  bcity 0.18 0.08 0.00  5) 10.7 0.0 0.0  Bacity Utilization 19.4% ICU Level of Service	capacity (veh/h)	764	941			1449		
135 135 112  135 0 0  135 0 0  764 170 1449  both 0.18 0.08 0.00  51 10.7 0.0 0.0  B B  7(s) 10.7 0.0 0.0  B B  7(s) 10.7 0.0 0.0  10.8 0.00  10.9 0.0  10.9	ction, Lane #	WB 1	NB 1	SB 1				
135 0 0 70 47 0 764 1700 1449 95th (tt) 16 0 0 78 0.00 95th (tt) 10.7 0.0 0.0 8 0.00 10.7 0.0 0.0 8 B 78 10.7 0.0 0.0 19.4% ICU Level of Service	me Total	135	135	112				
city 0.47 0 764 1700 1449 city 0.18 0.08 0.00 5) 10.7 0.0 0.0 R (\$) 10.7 0.0 0.0 B Annary 3.8 Image 1.0 1.0 0.0 1.0 0.0 0.0 0.0 1.0 0.0 0.0 0.0 1.0 0.0 0.0 0.0 0.0 1.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	ime Left	135	0	0				
acity 764 1700 1449  acity 0.18 0.08 0.00  5) B 0.00  f.(s) 10.7 0.0 0.0  B 0.00  mmary 3.8  Included Interval of Service 1.25  Included Interval of Service	ime Right	0	47	0				
b5th (t) 16 0.08 0.00 5) 107 0.0 0.0 7(s) 10.7 0.0 0.0 B		764	1700	1449				
5th (th) 16 0 0 5) 10.7 0.0 0.0 6 8 6 (s) 10.7 0.0 0.0 7 10.8 B 7	ime to Capacity	0.18	0.08	0.00				
s) 10.7 0.0 0.0  (s) 10.7 0.0 0.0  mmary 3.8  10.4 ICU Level of Service	ue Length 95th (ft)	16	0	0				
(s) 10.7 0.0 0.0  B	itrol Delay (s)	10.7	0.0	0.0				
(s) 10.7 0.0 0.0  B B 3.8  apacity Utilization 19.4% ICU Level of Service	eLOS	В						
B 3.8 3.8 3.8 19.4% ICU Level of Service	roach Delay (s)	10.7	0.0	0.0				
mmary 3.8 3.8 3.8 19.4% ICU Level of Service	roach LOS	В						
3.8 3.8 pacity Utilization 19.4% ICU Level of Service	rsection Summary							
Utilization 19.4% ICU Level of Service	rage Delay			3.8				
	ntersection Capacity Utilization	uo		19.4%	⊇	U Level o	Service	A

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 52: Proposed Access Road & North Forest Road

•	SBR		1	1900	1.00			0		0				0.95	12		0	No	Right					1.00	6					ICU Level of Service A	
<b>→</b>	SBT	¢	714	1900	1.00	0.998		1859		1859	32	256	2.0	0.95	752		764	8	Left	0	0	16		1.00		Free				J Level o	
<b>←</b>	NBT	₩	623	1900	1.00		666.0	1861	666.0	1861	32	201	3.9	0.89	700		713	8	Left	0	0	16		1.00		Free				⊴	
•	NBL		12	1900	1.00			0		0				0.89	13		0	9	Left					1.00	15						
<u> </u>	EBR		73	1900	1.00			0		0				0.85	98		0	9	Right					1.00	6						
4	EBL	×	19	1900	1.00	0.893	0.660	1647	0.660	1647	30	284	6.5	0.85	22		108	8	Left	12	0	16		1.00	15	Stop		Other		n 54.6%	
	Lane Group	Lane Configurations	Volume (vph)	Ideal Flow (vphpl)	Lane Util. Factor	Frt	Fit Protected	Satd. Flow (prot)	Flt Permitted	Satd. Flow (perm)	Link Speed (mph)	Link Distance (fl)	Travel Time (s)	Peak Hour Factor	Adj. Flow (vph)	Shared Lane Traffic (%)	Lane Group Flow (vph)	Enter Blocked Intersection	Lane Alignment	Median Width(ft)	Link Offset(ft)	Crosswalk Width(ft)	Two way Left Turn Lane	Headway Factor	Turning Speed (mph)	Sign Control	Intersection Summary	Area Type: Ott	Control Type: Unsignalized	Intersection Capacity Utilization 54.6%	Analysis Period (min) 15

Lanes, Volumes, Timings Synchro 7 Report SRF & Associates Page 29

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 52: Proposed Access Road & North Forest Road

,	<u> </u>		•	<b>-</b>	<b>→</b>	*	
Movement	EBL EI	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	>-			₩	æ,		
(h)	19	73	12	623	714		
ntrol	Stop			Free	Free		
				%0	%		
		0.85	0.89	0.89	0.95	0.95	
Hourly flow rate (vph)	22	98	13	700	752	12	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			_	None	None		
Median storage veh)							
Upstream signal (ft)				865			
pa	0.71						
	1484 7	757	763				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1478 7	757	763				
tC, single (s)	6.4	6.2	4.1				
tC, 2 stage (s)							
tF (s)		3.3	2.2				
p0 queue free %		6/	86				
cM capacity (veh/h)	97 4	407	846				
Direction, Lane #	EB 1 NE	NB 1	SB 1				
Volume Total		713	763				
Volume Left	22	13	0				
Volume Right	98	0	12				
			1700				
		0.02	0.45				
th (ff)		<b>,</b>	0				
lay (s)		0.4	0.0				
	۵	⋖					
y (s)	30.8	0.4	0.0				
Approach LOS	D						
Intersection Summary							
Average Delay			2.3				
Intersection Capacity Utilization		2	54.6%	DOI	ICU Level of Service	Service A	
Analysis Period (min)			12				

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 56: Maple Road & Proposed North Driveway

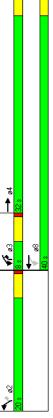
	t	*	•	FOR	-		
				HC/4			
Lane Group	EBT	EBR	WBL	WBI	NBL	NBR	
Lane Configurations	₩		r	‡	۴	*	
Volume (vph)	1294	19	108	981	08	147	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0	225		0	150	
Storage Lanes		0	<b>—</b>		<b>-</b>	-	
Taper Length (ft)		25	22		25	22	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00	
Ft	0.993					0.850	
Fit Protected			0.950		0.950		
Satd. Flow (prot)	3514	0	1770	3539	1770	1583	
Flt Permitted			0.129		0.950		
Satd. Flow (perm)	3514	0	240	3539	1770	1583	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)	12					92	
Link Speed (mph)	42			45	30		
Link Distance (ft)	1000			928	337		
Travel Time (s)	15.2			14.1	7.7		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	1407	73	117	1066	87	160	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1480	0	117	1066	87	160	
Enter Blocked Intersection	9 8	8	9	No No	No	%	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	12			12	12		
Link Offset(ft)	0 ;			0 ;	0 ;		
Crosswalk Width(#)	16			16	16		
Two way Left Turn Lane	, kes	9		Yes			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	•	6	<u>1</u>	•	13	6	
Number of Detectors	2			2	-	-	
Detector Template	맫		Left	Thr.	left	Right	
Leading Detector (ft)	100		20	100	20	70	
Trailing Detector (ft)	0		0	0	0	0 (	
Detector 1 Position(ft)	0		ع د	0	0 6	ی د	
Detector 1 Size(ii)	0 1		OF EV	0 1	CI-EV	OF-EV	
Detector 1 Channel	5		5		5	5	
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0	
Detector 2 Position(ft)	94			94			
Detector 2 Size(ft)	9			9			
Detector 2 Type	CI+EX			CI+Ex			
Detector 2 Extend (s)	0.0			0.0			
Turn Type			pm+pt			vo+ma	
Protected Phases	4		co	00	2	e	
Permitted Phases			∞			2	
Detector Phase	4		က	00	6	cc	

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Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 56: Maple Road & Proposed North Driveway

	†	<u> </u>	<b>\</b>	ļ	•	•	
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	
Switch Phase							
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0		8.0	20.0	20.0	8.0	
Total Split (s)	32.0	0.0	8.0	40.0	20.0	8.0	
Total Split (%)	53.3%	%0:0	13.3%	%1.99	33.3%	13.3%	
Maximum Green (s)	28.0		4.0	36.0	16.0	4.0	
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5		0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lag		Lead			Lead	
Lead-Lag Optimize?	Yes		Yes			Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	
Recall Mode	None		None	None	Min	None	
Walk Time (s)	2.0			2.0	2.0		
Flash Dont Walk (s)	11.0			11.0	11.0		
Pedestrian Calls (#/hr)	0			0	0		
Act Effct Green (s)	27.1		33.0	33.0	7.9	16.2	
Actuated g/C Ratio	0.55		0.67	0.67	0.16	0.33	
v/c Ratio	91.0		0.40	0.45	0.30	0.30	
Control Delay	13.1		7.3	4.6	22.4	14.0	
Queue Delay	0.0		0.0	0.0	0.0	0.0	
Total Delay	13.1		7.3	4.6	22.4	14.0	
TOS	В		A	A	ပ	В	
Approach Delay	13.1			4.9	17.0		
Approach LOS	В			A	В		
Intersection Summary							
	Other						
Cycle Length: 60							
Actuated Cycle Length: 49.2	<b>~</b> !						
Natural Cycle: 60							
Control Type: Actuated-Uncoordinated	oordinated						
Maximum v/c Ratio: 0.76							
Intersection Signal Delay: 10.1	0.1			드	Intersection LOS: B	LOS: B	
Intersection Capacity Utilization 58.3%	tion 58.3%			2	:U Level o	CU Level of Service B	
Analysis Period (min) 15							

Splits and Phases: 56: Maple Road & Proposed North Driveway



Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 59: Sheridan Drive & Proposed Ltd. Access Driveway

	1	<b>†</b>	ţ	4	٠	•	
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	*	‡	‡	*		<b>*</b> _	
Volume (vph)	33	1770	1645	11	0	38	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	200			425	0	0	
Storage Lanes	-			-	0	<del>-</del>	
Taper Length (ft)	22			75	25	25	
Lane Util. Factor	1:00	0.95	0.95	1.00	1.00	1.00	
Frt				0.850		0.865	
Fit Protected	0.950						
Satd. Flow (prot)	1770	3539	3539	1583	0	1611	
Fit Permitted	0.950						
Satd. Flow (perm)	1770	3539	3539	1583	0	1611	
Link Speed (mph)		45	45		30		
Link Distance (ft)		669	696		780		
Travel Time (s)		10.6	14.7		6.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	36	1924	1788	11	0	41	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	36	1924	1788	77	0	41	
Enter Blocked Intersection	2	Yes	2	8	8	8	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		0		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane		Yes	Yes				
Headway Factor	1:00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			6	15	6	
Sign Control		Free	Free		Stop		
Intersection Summary							
	Other						
Control Type: Unsignalized							
Intersection Capacity Utilization 55.5%	ion 55.5%			ਠ	J Level o	ICU Level of Service B	
Alialysis Fellou (illin) 15							

Synchro 7 Report Page 33 Lanes, Volumes, Timings SRF & Associates

Proposed Westwood Mixed Use Neighborhood Full Development Conditions - PM Peak Hour 59: Sheridan Drive & Proposed Ltd. Access Driveway

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Workship	Ī	FDT	TOW	WDD	CDI	CDD		
MOVEINEIN	EPL.	EDI	WDI	WDK	SDL	SDK		
Lane Configurations	r	‡	‡	*		*_		
Volume (veh/h)	33	1770	1645	7	0	88		
Sign Control		Free	Free		Stop			
Grade		%0	%0		%0			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Hourly flow rate (vph)	36	1924	1788	11	0	41		
Pedestrians								
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type		TWLTL TWLTL	TWLTL					
Median storage veh)		2	2					
Upstream signal (ft)		669	696					
pX, platoon unblocked	0.64				0.80	0.64		
vC, conflicting volume	1865				2822	894		
vC1, stage 1 conf vol					1788			
vC2, stage 2 conf vol					1034			
vCu, unblocked vol	1227				916	0		
C, single (s)	4.1				8.9	6.9		
C, 2 stage (s)					2.8			
F (s)	2.2				3.5	3.3		
p0 queue free %	06				100	94		
cM capacity (veh/h)	361				174	694		
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1	
Volume Total	36	396	396	894	894	11	41	
Volume Left	36	0	0	0	0	0	0	
Volume Right	0	0	0	0	0	11	41	
CSH	361	1700	1700	1700	1700	1700	694	
Volume to Capacity	0.10	0.57	0.57	0.53	0.53	0.05	90.0	
Queue Length 95th (ft)	∞	0	0	0	0	0	2	
Control Delay (s)	16.1	0.0	0.0	0.0	0.0	0.0	10.5	
Lane LOS	ပ						В	
Approach Delay (s)	0.3			0.0			10.5	
Approach LOS							В	
Intersection Summary								
Average Delay Intersection Capacity Utilization			0.3	21	ICU Level of Service	f Service		В
Application Doring (min.)								

HCM Unsignalized Intersection Capacity Analysis SRF & Associates

## Westwood Country Club Redevelopment Economic and Fiscal Impact

August, 2015



## Westwood Country Club Redevelopment

### **Economic and Fiscal Impact**

August, 2015

Prepared for:

Mensch Capital Partners

Prepared by:

Kent Gardner, Ph.D. Project Director



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### Summary

CGR was engaged by Mensch Capital Partners to estimate the economic and fiscal impact of the proposed Westwood County Club redevelopment in the Town of Amherst, NY. The developer proposes investing over \$238 million to redevelop the site that currently houses the Westwood Country Club.

This report details CGR's estimate of the impact of the proposed project plus a series of alternative site uses, as requested by the Town of Amherst, lead agency under the State Environmental Quality Review Act.

The redevelopment will have a short term impact during the construction phase of the project and an ongoing impact once operational. The impact will vary depending on which plan is selected. This report estimates the fiscal and economic impact of the redevelopment proposed for the Westwood Country Club in Amherst NY. Six plans have been studied and impacts estimated.

Using the project sponsor's preferred plan, we estimate that over the ten years modeled will result in about:

- 1,900 new residents to the Town of Amherst.
- 270 new students in the Williamsville Central School District.
- 2,200 jobs during the construction phase earning \$116 million.
- 320 new jobs once fully operational earning about \$16 million annually.
- \$25 to \$35 million net increase in property tax revenue (depending on the PILOT), consisting of an estimated \$27 million increase in cost offset by a \$52 million to \$63 million increase in revenue.
- \$14 to \$16 million net increase in state and local sales tax revenue.
- \$10 million net increase in NYS income tax revenue.
- \$2 million net increase in county occupancy tax revenue.

The fiscal impact to each of the taxing jurisdictions is summarized in the following tables.



#### Town Fiscal Impact over Ten Year Period (dollars in millions)\*

	Total Costs	Estimated Revenue	Net Revenue
Preferred Plan - No PILOT	\$5.1	\$11.5	\$6.4
Condo Ownership Alternative	\$5.1	\$10.1	\$5.0
Preferred Plan - PILOT for Office Park	\$5.1	\$10.0	\$4.9
Condo Ownership Alternative	\$5.1	\$8.7	\$3.6
Preferred Plan - PILOT for Office Park and Senior Development	\$5.1	\$9.5	\$4.4
Condo Ownership Alternative	\$5.1	\$8.2	\$3.1
Alternative 1 - Recreation Conservation Plan	\$0.4	\$1.0	\$0.6
Alternative 2 - Community Facility Plan	\$3.6	\$6.6	\$2.9
Alternative 3 - Residential Three Plan	\$2.0	\$5.6	\$3.6
Condo Ownership Alternative	\$2.0	\$3.4	\$1.4
Alternative 4 - Transitional Residential Plan	\$3.5	\$9.8	\$6.3
Condo Ownership Alternative	\$3.5	\$8.0	\$4.5
Alternative 5 - General Business Plan	\$3.5	\$8.2	\$4.7
Alternative 6 - Office Building Plan	\$3.1	\$15.3	\$12.2

<sup>\*</sup> Summed over 10 years. Future years discounted at 2%

#### County Fiscal Impact over Ten Year Period (dollars in millions)\*

	Total	Estimated	Net
	Costs	Revenue	Revenue
Preferred Plan - No PILOT	\$1.9	\$11.0	\$9.1
Condo Ownership Alternative	\$1.9	\$9.7	\$7.8
Preferred Plan - PILOT for Office Park	\$1.9	\$9.6	\$7.8
Condo Ownership Alternative	\$1.9	\$8.3	\$6.4
Preferred Plan - PILOT for Office Park and Senior Development	\$1.9	\$9.1	\$7.3
Condo Ownership Alternative	\$1.9	\$7.8	\$5.9
Alternative 1 - Recreation Conservation Plan	\$0.1	\$0.9	\$0.8
Alternative 2 - Community Facility Plan	\$1.2	\$6.2	\$5.0
Alternative 3 - Residential Three Plan	\$0.8	\$5.3	\$4.6
Condo Ownership Alternative	\$0.8	\$3.2	\$2.5
Alternative 4 - Transitional Residential Plan	\$1.6	\$9.4	\$7.8
Condo Ownership Alternative	\$1.6	\$7.7	\$6.1
Alternative 5 - General Business Plan	\$1.5	\$7.8	\$6.4
Alternative 6 - Office Building Plan	\$0.7	\$14.9	\$14.2
+ 0 · · · · · · · · · · · · · · · · · ·			

<sup>\*</sup> Summed over 10 years. Future years discounted at 2%



# School District Fiscal Impact over Ten Year Period (dollars in millions)\*

• • • • • • • • • • • • • • • • • • •		•	•
	Total Costs	Estimated Revenue	Net Revenue
Preferred Plan - No PILOT	\$20.2	\$40.1	\$19.9
Condo Ownership Alternative	\$20.2	\$35.3	\$15.1
Preferred Plan - PILOT for Office Park	\$20.2	\$35.1	\$14.9
Condo Ownership Alternative	\$20.2	\$30.3	\$10.1
Preferred Plan - PILOT for Office Park and Senior Development	\$20.2	\$33.3	\$13.1
Condo Ownership Alternative	\$20.2	\$28.5	\$8.3
Alternative 1 - Recreation Conservation Plan	\$0.0	\$3.4	\$3.4
Alternative 2 - Community Facility Plan	\$0.0	\$22.4	\$22.4
Alternative 3 - Residential Three Plan	\$16.7	\$19.6	\$2.9
Condo Ownership Alternative	\$16.7	\$12.0	-\$4.7
Alternative 4 - Transitional Residential Plan	\$24.2	\$34.4	\$10.2
Condo Ownership Alternative	\$24.2	\$28.2	\$4.1
Alternative 5 - General Business Plan	\$9.0	\$28.4	\$19.4
Alternative 6 - Office Building Plan	\$0.0	\$52.8	\$52.8

<sup>\*</sup> Summed over 10 years. Future years discounted at 2%



#### Acknowledgements

CGR would like to thank Brad Packard, Director of Development & Planning at Ciminelli Real Estate Corporation for providing information used in this report. We received additional information from the Town of Amherst Planning and Police departments and the Snyder Fire Department.

#### Staff Team

Principal project support was provided by Mike Silva, Data Analyst. Mr. Silva handled draft reporting, data entry, primary analysis and provided methodological support.

Paul Bishop, Associate Principal, conducted interviews and performed analysis pertaining to anticipated police, fire and emergency medical service impacts.



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## Introduction

CGR was engaged by Mensch Capital Partners to estimate the change in costs and/or service demands plus revenue resulting from the land use changes anticipated in either the partners' preferred plan or the alternatives posed by the Town of Amherst.

Changing the Westwood site from a golf course to a residential/commercial site will change the number of residents and businesses. It is reasonable to expect changes in the costs of community services as a result of this development.

# **Development Profiles**

The proposed development will be at the site of the Westwood Country Club in Amherst, NY, a town northeast of Buffalo, NY. The development will transform the golf course into the following mix of residential and commercial space.

#### **Preferred Plan**

- 1. **Mixed-Use Town Center Development (58.9 acres)** This portion of the project is meant to serve as the commercial core of the site with primary access to Sheridan Drive.
- 2. Mixed Use Town Center (22.2 acres- 352 residential units, 115,000 sq. ft. neighborhood business/office space) This site is planned to feature approximately 115,000 sq. ft. of neighborhood business and office space within the first floor of mixed use buildings focused around the central plaza and hotel space. The buildings in this space will consist of 2 and 3 story structures that include upper story residential development totaling 352 units.
- 3. Lake Edge Townhome Development (4.8 acres, 37 units total) This site is planned to have 37 townhome units developed along the central Westwood Lake and adjacent to the Town Center.
- 4. Office Development (15.2 acres) This project component will be directly adjacent to Sheridan Drive, offering the most direct access to interstate options within close proximity to the site. This area is planned to contain 2-story medical and professional office buildings with approximately 200,000 total square feet of available space.
- 5. **River Edge Townhome Development (11.6 acres)** This portion of the project will feature 56 rental townhome units in close proximity to the historic clubhouse that will provide both indoor and outdoor opportunities for public events and gatherings.



- 6. Clubhouse/Public Event Space (3.6 acres) The existing Country Club features a historic clubhouse facility that will serve as a space for community events and banquets. Directly adjacent to the clubhouse will be a public gathering space and open green approximately 1.2 acres in size for outdoor events.
- 7. **Hotel Development (1.5 acre site, 130 rooms)** The project will feature a 4-story 130 room hotel designed to be central to the Town Center development.
- 8. Single Family Residential Subdivision (46 acres, 160 lots) This subdivision is planned to include a mix of 113 patio home lots and 47 conventional single family lots to be serviced via new private roads that will be accessed off of the primary public right of way through the center of the development
- 9. Condominium Townhome Development (27.6 acres) This portion of the project is intended to be developed adjacent to the single family subdivision and will feature 84 townhome units with a community center that can be accessed by both the single family subdivision and townhome residents.
- 10. Creekside Conservation/Recreation Area (21.6 acres) This portion of the project will serve as the primary recreational opportunity for residents and adjacent neighbors. The park will include the Westwood Lake and Ellicott Creek corridor as significant natural features and will have a trail network extended and connected throughout the Westwood community.
- 11. **Senior Living Development (15 acres)** This project component will feature a 200 room assisted living facility. In addition, the building will also contain 96 independent living apartment units, connected via building corridors to the central community services offered within the assisted living facility.

In addition to the proposed development we modeled the impact of some alternative land uses summarized below:

#### Alternative 1 – Recreation Conservation ("RC") Plan

- 1. **Nine Hole Golf Course and Clubhouse** Retaining part of the existing country club.
- 2. **Indoor Recreation Center** ninety thousand square foot privately owned recreation center.
- 3. **Church** one hundred and thirty-seven thousand square foot church.



#### Alternative 2 - Community Facility ("CF") Plan

- 4. **Senior Apartments** 340 apartment units. 100 will be one bedroom and 240 will be two bedroom units, with a monthly rent of \$995 and \$1,200 respectively.
- 5. **Senior Living Development** 575 room assisted living facility. In addition, there will be 262 independent living apartment units.
- 6. **Cemetery** 17.5 acre cemetery.

#### Alternative 3 - Residential Three ("R-3") Plan

- 1. **Patio Home Subdivision** –185 two thousand square foot homes with a median price around \$250K.
- 2. **Single Family Home Subdivision** 135 twenty-eight hundred square foot homes with a median price of \$325K.

#### Alternative 4 – Transitional Residential ("TND") Plan

- 1. **Mixed Use Town Center** ninety-eight thousand square feet of neighborhood business and office space and 366 two bedroom residential units.
- 2. **Lake Edge Townhome Development** 51 townhome units with a monthly rent around \$1,680.
- 3. **Office Development** A little more than one hundred twenty thousand square feet of space.
- 4. **River Edge Townhome Development** 56 rental townhome with a monthly rent around \$1,680.
- 5. Hotel Development A 4-story 130 room hotel.
- 6. **Single Family Residential Subdivision** This subdivision is planned to include a mix of 150 patio home lots and 47 conventional single family lots.
- 7. **Condominium Townhome Development** 114 townhome units with a median sale price around \$180K.

#### Alternative 5 – General Business ("GB") Plan

1. **Multi-Family Town Home Development** – 252 units in total, half of which are two bedroom units and half three bedroom units. Monthly rent is \$1,680 and \$1,980 respectively.



- 2. **Student Housing** 145 studio units, 145 one bedroom units and 150 two bedroom units. Monthly rent is \$990, \$1,650 and \$2,800 respectively.
- 3. **Retail Plaza/Out Parcels** 435,000 square feet of commercial space divided primarily between retail, food service, and other commercial uses.

#### Alternative 6 – Office Building ("OB") Plan

Office Park Development – 1,212,500 square feet of office space.

#### **Condominium Ownership Alternative**

CGR was asked to model a condominium ownership alternative. The patio home, town home and single family home subdivisions at the Westwood site might be developed as condominiums. NYS Real Property Law dictates that condominiums be assessed for real property purposes on the basis of income, not market value. CGR used the estimates prepared by Real Property Services, Inc. in a report provided by Mensch Capital Partners dated July 21, 2015.

This condominium ownership alternative impacts the modeling of the preferred, residential three and transitional residential plans. The assessed value of the condominiums is typically lower than market value assessment. All other assumptions (i.e. number of housing units, residential population estimates, etc.) are unchanged.

# Residential Population

# **Housing Units**

We estimated the population change by starting with the number of new housing units. These data were provided to us by Mensch Capital Partners. The following table summarizes the number of housing units under each of the plans:



## **New Housing Units**

	Total		ental l				es by V \$1,000's	
		1*	2	3	4	\$262	\$325	\$415
Preferred Plan	985	248	493	0	0	84	113	47
Mixed-Use Town Center	445		445					
Mixed-Use Apartments (2 BR)	352		352					
River's Edge Townhomes	56		56					
Lake Edge Townhomes	37		37					
Single Family Residential Subdivision	160						113	47
Patio Home Lots	113						113	
Conventional Single Family Home Lots	47							47
Condominium Townhome Development	84					84		
Senior Living Development	296	248	48					
Alternative 1 - Recreation Conservation Plan	0	0	0	0	0	0	0	0
Alternative 2 - Community Facility Plan	1,177	806	371	0	0	0	0	0
Senior Apartments	340	100	240					
Senior Living Development	837	706	131					
Alternative 3 - Residential Three Plan	320	0	0	0	0	0	185	135
Patio Home Subdivision	185						185	
Single Family Home Subdivision	135							135
Alternative 4 - Transitional Residential Plan	784	0	473	0	0	114	150	47
Mixed-Use Town Center	473		473					
Mixed-Use Apartments (2 BR)	366		366					
River's Edge Townhomes	56		56					
Lake Edge Townhomes	51		51					
Single Family Residential Subdivision	197						150	47
Patio Home Lots	150						150	
Conventional Single Family Home Lots	47							47
Condominium Townhome Development	114					114		
Alternative 5 - General Business Plan	692	145	271	126	150	0	0	0
Multi-Family Town Home Development	252		126	126				
Student Housing	440	145	145		150			
Alternative 6 - Office Building Plan	0	0	0	0	0	0	0	0

Note: \* Includes studios and assisted living facility units



Monthly rent for a one bedroom or studio unit are just under \$1,000 and the two bedroom apartments range from \$1,120 to \$1,680.

#### Households

From these data we estimated the number of new households. We assume only one household will live in a housing unit and that once a housing unit is built it will be fully occupied. Thus the number of new households is equal to the number of new housing units.

The only exception to this assumption is the case of the senior living center. We assume that senior living center housing units will maintain a 95% occupancy rate.

# Population

We employed census data to estimate the number of people per household. This was done using the most recent Public Release Microdata Survey (PUMS) data for the American Community Survey (ACS) for the Buffalo-Niagara Falls Metropolitan Statistical Area.

Using the PUMS data we estimated the number of persons per household and the number of school-aged children per household. The PUMS data allowed us to break this out by housing characteristics (number of rooms for rental housing and the home value for owner occupied homes). The following table details the ratios:

#### Census Bureau Population Demographics

Housing Type	Persons	School Aged Children
Renter Occupied Hom	ıe	
2 Bedroom Unit	1.8	0.2
3 Bedroom Unit	2.7	0.7
4 Bedroom Unit	3.7	1.2
Owner Occupied Hom	ne	
\$250,000 - \$299,999	3.2	0.7
\$300,000 - \$399,999	3.3	0.7
\$400,000 - \$499,999	3.2	0.7

Source: Census Bureau 2007-11 PUMS (Buffalo MSA)

We applied the above ratios to the number of households we estimated to get the change in residents. In the case where there were one room units (senior living development) we assumed one person.

# School Age Children



To estimate the impact on the school district, we applied the average number of school aged children per housing unit as reported to the American Community Survey for the Buffalo Metro, based on the type of housing contemplated for the development.

The proposed plan would result in the following increase in a total of 689 housing units that potentially would have school age children. The following table summarizes the estimated number of children based on the Buffalo MSA PUMS assumptions detailed in the preceding table.

#### Estimated School Age Children

	Housing Units	School Age Children
Renter Occupied Hou	sing (all 2 B	R dwellings)
2 Bedroom	445	101
Owner Occupied Hou	sing	
\$250,000 - \$299,999	84	57
\$300,000 - \$399,999	113	81
\$400,000 - \$499,999	47	31
Total	689	271

Source: Census Bureau 2007-11 PUMS (Buffalo MSA)

This is one of the most important assumptions in the study. These estimates, combined with information on excess capacity in the school district (based on information provided by the district to the project sponsors) suggest that the development will not absorb the district's excess capacity and force the construction of a new building. It may require a change in attendance boundaries for individual schools, but this is a periodic need confronted by most school districts. While one-time costs may be incurred, redistricting does not generally cause a change in the ongoing per pupil cost of public education.

# Demographic Estimates

Combining the parameters of the project with parameters and estimates discussed above, we have developed estimates of the demographic impact of the preferred project and alternatives. See table below.



#### Population Assumptions and Estimates

(Note: Despite the apparent precision of these figures, these are only estimates and should be treated accordingly)

	Households	People per Household	New Residents	New Children
Preferred Plan	970	N/A	1,928	271
Mixed-Use Town Center	445	N/A	821	101
Mixed-Use Apartments (2 BR)	352	1.8	649	80
River's Edge Townhomes	56	1.8	103	13
Lake Edge Townhomes	37	1.8	68	8
Single Family Residential Subdivision	160	N/A	523	113
Patio Home Lots	113	3.3	371	81
Conventional Single Family Home Lots	47	3.2	152	31
Condominium Townhome Development	84	3.2	265	57
Senior Living Development*	281	N/A	320	N/A
Alternative 1 - Recreation Conservation Plan	0	N/A	0	0
Alternative 2 - Community Facility Plan	1,135	N/A	1,240	0
Senior Apartments	340	N/A	340	N/A
Senior Living Development**	795	N/A	900	N/A
Alternative 3 - Residential Three Plan	320	N/A	1,043	223
Patio Home Subdivision	185	3.3	607	133
Single Family Home Subdivision	135	3.2	436	90
Alternative 4 - Transitional Residential Plan	784	N/A	1,876	324
Mixed-Use Town Center	473	N/A	872	108
Mixed-Use Apartments (2 BR)	366	1.8	675	83
River's Edge Townhomes	56	1.8	103	13
Lake Edge Townhomes	51	1.8	94	12
Single Family Residential Subdivision	197	N/A	644	139
Patio Home Lots	150	3.3	492	108
Conventional Single Family Home Lots	47	3.2	152	31
Condominium Townhome Development	114	3.2	360	77
Alternative 5 - General Business Plan	692	N/A	1,546	121
Multi-Family Town Home Development	252	Multiple	579	121
Student Housing	440	Multiple	967	N/A
Alternative 6 - Office Building Plan	0	N/A	0	0

Note: \* The senior living development has 296 housing units but we estimated 277 household due to an assumed 95% occupancy rate. \*\* The senior living development has 837 housing units but we estimated 795 household due to the 95% occupancy rate. We assumed 100% occupancy rates for all other housing units.



# **Economic Impact**

CGR was asked to model the economic impact of the preferred plan. The impact of this proposed development can be broken down into two parts. The first part is the construction phase. During the construction phase \$238 million will be invested in the site. This will be spent on labor and materials. It will provide temporary construction jobs and paychecks to the workers. The state will collect income tax, and there will be sales tax generated on the material spending. This impact will be temporary in nature, but will be substantial.

Once the site is fully operational, the development will create jobs and deliver paychecks to the workers, about one quarter of whom are assumed to be new to the region. There will be an increase in income tax, sales tax, occupancy tax and property tax revenues for local and state governments. There will also be an increase in government services demand, which will result in an increase in the costs for providing government services.

This report details these economic and fiscal impacts. CGR focuses on the Buffalo metropolitan area (Erie and Niagara counties) as the level of analysis in determining the economic impact. Throughout the report any reference to "the region" makes reference to the Buffalo metropolitan area. New York State is the level of analysis for estimation of the income and sales tax impact.

CGR used IMPLAN, a regional input-output modeling system, for estimating the spillover economic impact. IMPLAN is widely acknowledged to be a credible tool for estimating spillover economic activity. The IMPLAN database, created by MIG, Inc., consists of two major parts: 1) a national-level technology matrix and 2) estimates of sectorial activity for final demand, final payments, industry output and employment for each county in the U.S. along with state and national totals. Data are updated annually. IMPLAN estimates the direct, indirect and induced impacts of economic change through the use of multipliers, and estimates the impact of an increase in demand in a particular sector on 440 different industries/sectors of the local economy.

## **Construction Phase Impact**

During the construction phase there will be a substantial but temporary impact on the economy. The following table summarizes the economic impact during the construction phase:



#### Temporary Construction Impact (dollars in millions)

	Direct	Spillover	Total
Employment	1,600	700	2,200
Labor Income	\$81.6	\$34.1	\$115.8

The project's construction spending will support about 1,600 yearlong FTE construction jobs. Spending by their suppliers will support an additional 700 jobs for a total impact of 2,200 jobs.

This project will result in an estimated \$116 million of income for workers. The construction workers themselves will be paid about \$82 million dollars in total. The spillover payroll sums to about \$34 million for the 700 workers.

# **Operational Phase Impact**

#### **Commercial Square Footage**

After construction the amount of space available for businesses in the Town of Amherst will increase by the following amounts:

#### **New Commercial Square Footage**

	Square Feet
Preferred Plan	537,200
Mixed-Use Town Center	115,000
Office Park	200,000
Hotel	66,400
Senior Living Center*	155,800
Alternative 1 - Recreation Conservation Plan	227,000
Alternative 2 - Community Facility Plan	N/A
Alternative 3 - Residential Three Plan	N/A
Alternative 4 - Transitional Residential Plan	285,100
Mixed-Use Town Center	98,000
Office Park	120,700
Hotel	66,400
Alternative 5 - General Business Plan	435,000
Retail Plaza/Out Parcels	435,000
Alternative 6 - Office Building Plan	1,212,500
Office Park	1,212,500

<sup>\*</sup> Note: 155,800 sq. ft. of Preferred Plan total New Commercial Square Footage is assigned to the assisted living housing units within the Senior Living Center



The cost of community services explained later in this report will draw upon these figures in estimating the costs for the new businesses.

#### **Employment**

Employment estimates were supplied to CGR by the project sponsor for the senior living development and hotel. Employment for all other components were estimated applying average square footage per worker ratios developed by the U.S. Department of Energy's Commercial Buildings Energy Consumption Survey. The following table summarizes the square footage, the square footage per worker ratio and the estimated employment:

#### Workers Estimated by Square Footage by Use

	Square Footage	Square Foot per Worker	Estimated Workers
Total	537,200	N/A	716
Food Sales	5,800	877	7
Food Service	17,300	528	33
Retail	46,000	1,246	37
Office	223,000	434	514
Service	23,000	1,105	21
Hotel*	66,400	N/A	32
Senior Care*	155,800	N/A	73

Source: U.S. Department of Energy and Mensch Capital Partners Note: \*Estimate of direct employment was supplied by Mensch

We assumed that 25% of these jobs would be new to the region and 75% would be relocation from somewhere else in the region. We stress that this is a key assumption applied in this analysis. If the development serves as a catalyst for an expansion in regional economic activity and brings a larger proportion of new activity, the impacts will be greater. To the extent that the development simply displaces economic activity already taking place in the metro area, these impacts will be much smaller. The fiscal impacts for the Town of Amherst are more easily predicted, however, and are very likely to occur. The following table summarizes what the impact will be on an annual basis.

#### Annual Permanent Impact (dollars in millions)

	Direct	Spillover	Total
Employment	180	140	320
Labor Income	\$9.8	\$6.0	\$15.9

Of the 700 jobs that are expected to be located on the Westwood project site, we are assuming that about 180 are new to the region. The spending by these companies



and their employees will spur on an additional 140 jobs in the local economy for a total impact of approximately 320 additional jobs.

Each year employees working at the site will earn in total around \$10 million. After adding in the spillover income of \$6 million, the region could expect an additional \$16 million in income each year.

# Fiscal Impact

#### Revenue

#### **Property Tax**

We were asked to present property tax estimates for the preferred plan and alternatives. We were also asked to model two additional scenarios for the preferred plan: one where a PILOT agreement is applied to the office park component of the development; and one where the PILOT agreement is applied to both the office park plus the senior living development components of the development.

#### **Assessed Value**

The property tax revenue impact is driven by the expected taxable assessed value of the property after development.

We have adopted different assumptions for residential and nonresidential properties. The assessed values of the homes are assumed to be equal to their sale prices. For the nonresidential portions of the development, we used their construction costs to represent the assessment.

Since part of the recreation conservation alternative retains part of the current golf course we assumed two-thirds of the current assessed value to represent the assessed value of the smaller golf course.

For the condominium ownership alternative CGR drew upon the work of Donald A. Griebner, President of Real Property Services, LLC. Mr. Griebner was engaged by Mensch Capital Partners to estimate the assessment and taxation of the residential condominiums. The following table summarizes his conclusions:

#### Condominium Ownership Alternative Assessed Value Assumptions

	Income Approach	Market Value
Patio Home Units	\$200,000	\$325,000
Single Family "Large Lot" Units	\$255,000	\$415,000
Condominium Townhome Units	\$167,000	\$262,000



CGR used these assessment assumptions in lieu of the sale price of the homes for the assessed value in the condominium alternative.

Ultimately the Town Assessor would determine these values, of course. Our approach permits some estimate of fiscal impact in advance of the detailed work of the assessor. The following table summarizes our findings:

#### Estimated Assessed Value (dollars in millions)

Currently	\$2.5
Preferred Plan	\$239.9
Condo Ownership Alternative	\$210.3
Alternative 1 - Recreation Conservation Plan	\$22.2
Alternative 2 - Community Facility Plan	\$135.8
Alternative 3 - Residential Three Plan	\$116.2
Condo Ownership Alternative	\$71.4
Alternative 4 - Transitional Residential Plan	\$203.8
Condo Ownership Alternative	\$166.7
Alternative 5 - General Business Plan	\$170.4
Alternative 6 - Office Building Plan	\$327.4

#### **Estimated Property Taxes**

The Westwood property owners are currently paying property tax. After development and the resulting increase in the assessed value, the amount that will come in to all taxing jurisdictions will increase. We use the taxable assessed values described above along with the tax rates that were developed as part of the cost of community service to estimate how much revenue would come in. The following tables present the increase property tax revenue that can be expected after the development:

#### Annual Property Tax Revenues (dollars in millions)

	Town of Amherst	Williamsville School District	Erie County	Total
Preferred Plan	\$1.3	\$4.4	\$1.2	\$6.8
Condo Ownership Alternative	\$1.1	\$3.8	\$1.1	\$6.0
Alternative 1 - Recreation Conservation Plan	\$0.1	\$0.4	\$0.1	\$0.6
Alternative 2 - Community Facility Plan	\$0.7	\$2.4	\$0.7	\$3.8
Alternative 3 - Residential Three Plan	\$0.6	\$2.1	\$0.6	\$3.3
Condo Ownership Alternative	\$0.4	\$1.3	\$0.4	\$2.0
Alternative 4 - Transitional Residential Plan	\$1.1	\$3.7	\$1.0	\$5.8
Condo Ownership Alternative	\$0.9	\$3.1	\$0.8	\$4.8
Alternative 5 - General Business Plan	\$0.9	\$3.1	\$0.9	\$4.8
Alternative 6 - Office Building Plan	\$1.7	\$5.8	\$1.6	\$9.1



#### Property Tax Revenues over Ten Year Period (dollars in millions)\*

	Town of Amherst	Williamsville School District	Erie County	Total
Preferred Plan	\$11.5	\$40.1	\$11.0	\$62.6
Condo Ownership Alternative	\$10.1	\$35.3	\$9.7	\$55.0
Alternative 1 - Recreation Conservation Plan	\$1.0	\$3.4	\$0.9	\$5.3
Alternative 2 - Community Facility Plan	\$6.6	\$22.4	\$6.2	\$35.2
Alternative 3 - Residential Three Plan	\$5.6	\$19.6	\$5.3	\$30.5
Condo Ownership Alternative	\$3.4	\$12.0	\$3.2	\$18.6
Alternative 4 - Transitional Residential Plan	\$9.8	\$34.4	\$9.4	\$53.5
Condo Ownership Alternative	\$8.0	\$28.2	\$7.7	\$43.9
Alternative 5 - General Business Plan	\$8.2	\$28.4	\$7.8	\$44.4
Alternative 6 - Office Building Plan	\$15.3	\$52.8	\$14.9	\$83.0

<sup>\*</sup> Summed over 10 years. Future years discounted at 2%

#### **PILOT Calculations**

CGR estimated PILOT revenue for the preferred plan under two scenarios: one where the PILOT is only granted for the office park and another where it is on the office park and elder care components. We used the Amherst IDA's ten year real property tax abatement for general office, multi-tenant facilities, facilities for the aging and commercial (office) projects in our estimation process. The abatement rates and revenue projections are summarized in the tables below:

#### **Amherst IDA Abatement Policy**

Project Tax Year	Tax on Value-Added Portion of the Assessed Valuation
1	20%
2	25%
3	30%
4	35%
5	40%
6	45%
7	50%
8	55%
9	60%
10	60%



# Property Tax Revenues with PILOTS on Preferred Plan over Ten Year Period (dollars in millions)\*

	Town of Amherst	Williamsville School District	Erie County	Total
No PILOT	\$11.5	\$40.1	\$11.0	\$62.6
With PILOT for Office Park	\$10.0	\$35.1	\$9.6	\$54.8
With PILOT for Office Park and Senior Development	\$9.5	\$33.3	\$9.1	\$52.0

<sup>\*</sup> Summed over 10 years. Future years discounted at 2%

Due to the substantial change in the taxable assessed value, the estimated increase in tax revenues will more than cover the additional costs of government services. This is the case even when some property tax revenue is given away in a PILOT agreement as illustrated in the table below:

# Estimated Net Revenue on Preferred Plan over Ten Year Period (dollars in millions)\*

	Town of Amherst	Williamsville School District	Erie County	Total
No PILOT	\$6.4	\$19.9	\$9.1	\$35.4
With PILOT for Office Park	\$4.9	\$14.9	\$7.8	\$27.6
With PILOT for Office Park and Senior Development	\$4.4	\$13.1	\$7.3	\$24.8

<sup>\*</sup> Summed over 10 years. Future years discounted at 2%

CGR also estimated PILOT revenue and net revenue over the costs of government services for the office building plan (alternative 6). Applying the IDA abatement policy detailed above to the whole office park the revenue projections are summarized in the tables below:

# Property Tax Revenues with PILOTS on Office Building Plan (Alt. 6) over Ten Year Period (dollars in millions)\*

	Town of Amherst	Williamsville School District	Erie County	Total
No PILOT	\$15.3	\$52.8	\$14.9	\$83.0
With PILOT	\$6.4	\$21.9	\$6.2	\$34.5

<sup>\*</sup> Summed over 10 years. Future years discounted at 2%

# Estimated Net Revenue on Office Building Plan over Ten Year Period (dollars in millions)\*

	Town of Amherst	Williamsville School District	Erie County	Total
No PILOT	\$12.2	\$52.8	\$14.2	\$79.2
With PILOT	\$3.2	\$21.9	\$5.5	\$30.6

<sup>\*</sup> Summed over 10 years. Future years discounted at 2%



#### Sales Tax

During the construction period, sales tax is earned both on construction materials and on sales-taxable spending by workers, both those being paid directly by the project directly and the spillover payroll that is associated with employee spending.

Sales tax revenue earned on an annual basis after the project has been completed is derived from the spending of employees on site and the spillover payroll that is associated with employee spending.

To estimate the sales tax revenue derived from payroll, we first determined what share of income is spent on sales taxable goods and services. This was done by dividing the region's sales taxable sales as reported by the New York Department of Taxation (about \$16 billion) by the Bureau of Economic Analysis's estimate of personal income (about \$47 billion), which equals 35%. We applied that share (35%) to the labor income estimates. Then we applied the sales tax rate (8.75% = 4% for NYS and 4.75% for local governments).

For the sales tax revenue from project spending we applied the sales tax rate to the estimated share of construction spending subject to sales tax (40%). Note that the sales tax due on construction materials is often waived as part of a PILOT agreement with the local industrial development agency (as the property becomes technically "owned" by the IDA, a tax exempt entity).

Sales tax revenue will be generated during both the construction and operational phases. The table below summarizes sales tax revenue totals by jurisdiction:

#### Sales Tax Revenue (dollars in millions)

	NYS	Total Local	Total	Estimated Amherst
Total Sales Tax Revenue	\$5.6	\$6.7	\$12.3	\$0.38
Construction Phase ONLY	\$5.4	\$6.4	\$11.9	\$0.37
Project Spending (subject to PILOT)	\$1.1	\$1.3	\$2.4	\$0.07
Project Spending (not subject to PILOT)	\$2.7	\$3.2	\$5.9	\$0.18
Employee Spending (not subject to PILOT)	\$1.6	\$1.9	\$3.5	\$0.11
Operational Phase (annual)	\$0.2	\$0.3	\$0.5	\$0.01

NOTE: Amherst currently receives 5.7% of the local sales tax.



#### Sales Tax Revenues over Ten Year Period (dollars in millions)

	NYS	Local	Total	Estimated Amherst
Total Sales Tax Revenue	\$7.4	\$8.8	\$16.3	\$0.51
Construction Phase ONLY	\$5.4	\$6.4	\$11.9	\$0.37
Project Spending (subject to PILOT)	\$1.1	\$1.3	\$2.4	\$0.07
Project Spending (not subject to PILOT)	\$2.7	\$3.2	\$5.9	\$0.18
Employee Spending (not subject to PILOT)	\$1.6	\$1.9	\$3.5	\$0.11
Operational Phase*	\$2.0	\$2.4	\$4.4	\$0.14

<sup>\*</sup> Summed over 10 years. Future years discounted at 2%

NOTE: Amherst currently receives 5.7% of the local sales tax.

Project spending on materials during the construction phase will result in an estimated \$8 million in sales tax revenue for the state and the local governments. As construction labor income is spent it will also generate about \$3 million in sales tax revenue. Construction spending on materials for the office park would generate about \$1.8 million in sales tax revenue. Approximately \$0.6 million comes from the senior living development construction spending. All other components make up the remaining \$5.6 million.

If a PILOT agreement is agreed to between the developer and the Amherst IDA, it would only affect the office park and senior living community, thus reducing sales tax receipts by \$2.4 million, of which about \$70,000 would flow to Amherst in absence of the PILOT.

Once operational, employee spending will have a continued fiscal impact. The present value of 10 years of additional sales tax revenue is estimated to be a little over \$4 million in total.

Due to the sales tax revenue sharing agreement that exists, we estimate that over a ten year period the Town of Amherst would receive around \$510,000 (net present value).

#### **Occupancy Tax**

Once operational, the onsite hotel will collect occupancy tax which will benefit the County. We estimate the occupancy tax using occupancy rates and average daily room rate data provided by Mensch Capital Partners. We estimate annual occupancy tax revenues will total around \$0.2 million. We also estimate ten years of occupancy tax revenue to have the present value of about \$2 million.

#### **Income Tax**

We estimate NYS income tax revenue by calculating the "effective" income tax rates from NYS Department of Taxation data reporting total tax liability and total taxable rate by income class. These figures allow CGR to estimate the effective average tax rate by



income class. We applied the effective tax rate for the Buffalo metropolitan area to the income estimates generated by our economic impact analysis. The following table summarizes the present value of the income tax receipts during the two phases.

#### Annual Income Tax Revenue (dollars in millions)

	Direct	Spillover	Total
Total Income Tax Revenue	\$3.4	\$1.5	\$4.9
Construction Phase	\$3.0	\$1.3	\$4.3
Operational Phase	\$0.4	\$0.2	\$0.6

#### Income Tax Revenue over Ten Year Period (dollars in millions)

	Direct	Spillover	Total
Total Income Tax Revenue	\$6.4	\$3.1	\$9.5
Construction Phase	\$3.0	\$1.3	\$4.3
Operational Phase*	\$3.3	\$1.9	\$5.2

<sup>\*</sup> Summed over 10 years. Future years discounted at 2%

A total of about \$4.3 million will result from the construction phase. 70% of it will come through the spending of the construction workers and the remaining 30% will be from the spending of supporting firms' workers.

Once operational, New York State will receive a new stream of income tax revenue from firms located on site that are new to the region. We estimate that the present value of ten years of the additional income tax revenue totals about \$5 million. An estimated \$3 million is due directly to the employees at the Westwood site. There will also be a corporate income tax benefit that will flow to New York State, though we are unable to estimate this impact without knowledge of what businesses will be located at the site.

#### **Revenue Summary**

The development of the Westwood site is expected to spur a significant increase in tax revenue. Over the next ten years the present value of the revenue totals about \$85 million assuming no PILOT agreement. This is summarized below:

#### Annual Revenue Summary (dollars in millions)

Total Revenue	\$20.4
Income Tax	\$4.9
Construction Phase	\$4.3
Operational Phase	\$0.6
Sales Tax	\$8.5
Project Construction Spending	\$4.5
Employee Spending	\$4.0
Construction Phase	\$3.5
Operational Phase	\$0.5
Occupancy Tax	\$0.2
New Property Tax (No PILOT)	\$6.8

#### Estimated Revenue over Ten Year Period (dollars in millions)\*

Total Revenue	\$86.4
Income Tax	\$9.5
Construction Phase	\$4.3
Operational Phase	\$5.2
Sales Tax	\$12.5
Project Construction Spending	\$4.5
Employee Spending	\$7.9
Construction Phase	\$3.5
Operational Phase	\$4.4
Occupancy Tax	\$1.9
New Property Tax (No PILOT)	\$62.5

<sup>\*</sup> Summed over 10 years. Future years discounted at 2%

# **Cost of Community Service**

The increase in residents and business will result in an increase in demand for government services. The increase demand will have an increase cost of providing these community services. The cost of community services were computed in two parts. The first part can be thought of as the incremental increase in the operational expenses.

We assume that the increase in demand can be met with only minor additional costs for most services. For example, the library may have to purchase more computers or hire an additional librarian but won't have to build a new library.



After allocating all benefits across specific lines we broke the costs into fixed and variable parts. The fixed costs would not change due to the increase in government services demand however the variable part would.

Because businesses have a different need and cost for governmental services than residents, we broke the variable cost out by residential and non-residential parts. We then created per capita or per housing unit costs figures for the residential side and per commercial square feet on the non-residential side. We did this across all funds and lines of the budget. From this we could estimate the cost impact of the development. Since the costs of community service on the residential side is tied to the number of residents, and this is assumed not to vary if the housing unit is developed as a condominium or not, the costs of community services under the condominium ownership alternatives are assumed to be the same

#### **Town of Amherst**

The Town of Amherst is a large community with a history of professional management and an established structure for delivering public services. The Westwood Development will require an increase in the quantity of public services. The following table summarizes our estimates of the marginal expenses:

#### Town of Amherst Cost of Community Service Assumptions

	Added Costs Per Each
New Person	\$24
New Housing Unit	\$203
New Commercial SF	\$0.2

#### Changes in Community Service Demand Factors

	People	Housing Units	Commercial SF
Preferred Plan	1,928	985	537,168
Alternative 1 - Recreation Conservation Plan	0	0	227,000
Alternative 2 - Community Facility Plan	1,240	1,177	0
Alternative 3 - Residential Three Plan	1,043	320	0
Alternative 4 - Transitional Residential Plan	1,876	784	285,068
Alternative 5 - General Business Plan	1,546	692	435,000
Alternative 6 - Office Building Plan	0	0	1,212,500

Multiplying the changes by the cost would result in the following additional costs for the Town of Amherst:



#### Additional Costs of Community Services (dollars in thousands)

	People	Housing Units	Commercial SF	Total Costs
Preferred Plan	\$45	\$199	\$95	\$341
Alternative 1 - Recreation Conservation Plan	\$0	\$0	\$40	\$40
Alternative 2 - Community Facility Plan	\$30	\$238	\$0	\$268
Alternative 3 - Residential Three Plan	\$25	\$65	\$0	\$90
Alternative 4 - Transitional Residential Plan	\$45	\$159	\$51	\$254
Alternative 5 - General Business Plan	\$37	\$140	\$77	\$254
Alternative 6 - Office Building Plan	\$0	\$0	\$215	\$215

#### **Public Parks**

There are some costs that would result from the development that would be in addition to these incremental cost increases, such as public park space. There are over 4,500 acres dedicated to parks, recreation and open space in the Town of Amherst according to the Planning Department. We assume that the existing parks and recreational administrative staff could oversee the proposed 26.1 acre increase with minimal additional cost. Nonetheless, this would add a new park to the system. There will be some site costs associated with the park land. Estimating on an average cost per acre we assume that the new park space would cost the town about \$90,000 per year. This is based on the clubhouse remaining under private ownership.

This would be in addition to the estimated \$16,000 increase per year for the increase demand of the existing parks and recreation stock already figured in the model above as a result of the projected increase in population. These are generous assumptions. As was previously shown in the report the revenues accrued by the Town will be more than sufficient to cover the increase in the costs. The Project Sponsor has indicated they are willing to consider either a public park approach or maintaining the publicly accessible park area as privately held property that is maintained by the homeowners association at no cost to the Town.

#### **Fire Protection Costs**

Based on our discussion with the Snyder Fire District any residential development of the Westwood site would require a new fire station as the current station is about 3 miles away. This is a significant capital cost outlay which is not represented by our marginal costs derived from the budget.

Based on our research the fire station will cost \$925,000 to build and equip. A light rescue vehicle will need to be acquired at a cost of \$55,000 including all necessary equipment. In addition to creating a substation, the fire company indicated that it might need to develop a water rescue capability to respond to events in the water



features that would be created in the project. This will cost about \$10,000. In total there will be about a \$990,000 expense.

We assume that the fire district will bond these costs. We assume a 4.9% interest rate for the bond and a 10 year term. Based on this we would estimate a cost of about \$127,000 per year. These costs are not included in the above calculations. Once again it was shown earlier that the revenues will be more than sufficient to cover the increase in costs.

#### **Police Costs**

We approached the increase in demand for police costs in two ways. First, we used the budget model and projected an increase in cost based on the increase in the number of housing units and commercial square feet. By this method the preferred development would increase costs by around \$130,000.

CGR also contacted the police department directly and studied current calls for service, estimating the possible increase in calls for service that would be expected from the development. This approach to modeling suggests that new calls for service generated by the completed development would be about 790 each year or about 2 calls per day.

It is possible that the Police Department could absorb the increase in calls from this development without additional staff. However, based on the increase in calls for service and the static staffing levels, the department believes that existing capacity would be strained and that the department might require an additional officer to adequately respond to the increased calls for service. The cost of an officer's salary is about \$71,000 plus an additional two thirds (\$47,000) for benefits leading to a total estimated cost for an additional officer of \$118,000, within the same order of magnitude as the sum derived by our other approach.

In the interest of providing the community with a more conservative figure, we have used the \$130,000 estimate in our modeling of the police costs to the Town. Once again, it was shown earlier that the increase in revenues will be sufficient to meet any increase in police costs.

#### **Public Infrastructure Costs**

The Town of Amherst has special district funds (i.e. lighting, water, sewer, drainage, etc.) to manage their public infrastructure. Special districts will have to be established or extended to service the development. Since the public infrastructure is new we have no reason to expect any large public infrastructure outlays in the next 10 years. Usage fees rates will be set and will cover the costs of maintenance.



#### **Erie County**

A similar approach was used for estimating the costs to Erie County. Its costs are summarized in the following tables:

#### **Erie County Cost of Community Services Assumptions**

	Added Costs Per Each
New Person	\$66
New Housing Unit	\$45
New Commercial SF	\$0.1

#### Additional Costs of Community Services (dollars in thousands)

	People	Housing Units	Commercial SF	Total Costs
Preferred Plan	\$127	\$44	\$34	\$205
Alternative 1 - Recreation Conservation Plan	\$0	\$0	\$14	\$14
Alternative 2 - Community Facility Plan	\$82	\$53	\$0	\$135
Alternative 3 - Residential Three Plan	\$69	\$14	\$0	\$83
Alternative 4 - Transitional Residential Plan	\$124	\$35	\$18	\$177
Alternative 5 - General Business Plan	\$102	\$31	\$27	\$160
Alternative 6 - Office Building Plan	\$0	\$0	\$76	\$76

The major cost centers for the county are social services and public safety. Since the Town of Amherst has its own police force, we do not anticipate a substantial increase in demand for the Erie County Sherriff's services.

We likewise do not expect a significant increase in social service demand for these new residents. According to census data, about 8% for the Town of Amherst residents are living in poverty. About two thirds of persons living in poverty in Erie County are residents of Buffalo.

#### Persons Living in Poverty

	Number	Share of Erie
Erie County	80,686	100%
Buffalo	52,285	65%
Suburbs	28,400	35%
Amherst	6,127	8%

Source: Census Bureau 2012 ACS 1-Year Estimates

If we assume that 8% of the new residents would be living in poverty and that social service costs are uniformly distributed among the population based on poverty status,



then the increase in population would result in the addition of 158 people needing social services. Based on these proportions, we estimate additional health and human services costs to total about \$176,000 per year, \$151,000 being specifically Department of Social Services. This figure is generous, however, as the home prices and rents of the proposed development are not likely to attract residents in need of support from Erie County Social Services.

#### **School District**

The development will be located in the Williamsville Central School District. The incremental tax revenue to the school district per child is greater than the incremental cost of education, provided that existing buildings can accommodate the children without requiring an expansion. The Project Sponsor has met with the WCSD administration and has received confirmation that they have sufficient capacity within their existing facilities and staff to serve the anticipated increase in enrollment.

The cost per student, based off the difference between state aid per student and the spending per student, is \$8,142. Total annual school district costs are summarized in the following table:

#### Estimated Annual School Costs (dollars in thousands)

	New Children	Total Costs
Preferred Plan	271	\$2,205
Alternative 1 - Recreation Conservation Plan	0	\$0
Alternative 2 - Community Facility Plan	0	\$0
Alternative 3 - Residential Three Plan	223	\$1,818
Alternative 4 - Transitional Residential Plan	324	\$2,639
Alternative 5 - General Business Plan	121	\$983
Alternative 6 - Office Building Plan	0	\$0

#### **Cost Summary**

CGR analyzed the budget impact on town services for both residential and commercial separately. We assume a portion of each line item of the budget to be variable based upon CGR's experience and best estimate of marginal impact when new people and/or houses come into the community. Each item of the budget is assumed to be impacted by residential development and commercial development. The following table summarizes the assumptions used to calculate the costs of community services:



<b>Total Annual Costs of Communit</b>	y Services (dollars in thousands)
---------------------------------------	-----------------------------------

		Town				School District	Total
	Marginal	Additional (	Costs	Town	County		
	Cost Model	Fire Protection	New Park	Total			
Preferred Plan	\$341	\$128	\$89	\$558	\$205	\$2,205	\$2,968
Alternative 1 - Recreation Conservation Plan	\$40			\$40	\$14	\$0	\$55
Alternative 2 - Community Facility Plan	\$268	\$128		\$396	\$135	\$0	\$530
Alternative 3 - Residential Three Plan	\$90	\$128		\$217	\$83	\$1,818	\$2,118
Alternative 4 - Transitional Residential Plan	\$254	\$128		\$382	\$177	\$2,639	\$3,197
Alternative 5 - General Business Plan	\$254	\$128		\$382	\$160	\$983	\$1,526
Alternative 6 - Office Building Plan	\$215	\$128		\$343	\$76	\$0	\$419

The estimated cost of government services to support this new development is about \$0.5 to \$29 million annually depending on which plan is selected. The following table summarizes the ten year costs on a discounted present value basis (discounting at 2%):

Total Costs of Community Services over Ten Year Period (dollars in millions)\*

	Town of Amherst	Williamsville School District	Erie County	Total
Preferred Plan	\$5.1	\$20.2	\$1.9	\$27.2
Alternative 1 - Recreation Conservation Plan	\$0.4	\$0.0	\$0.1	\$0.5
Alternative 2 - Community Facility Plan	\$3.6	\$0.0	\$1.2	\$4.9
Alternative 3 - Residential Three Plan	\$2.0	\$16.7	\$0.8	\$19.4
Alternative 4 - Transitional Residential Plan	\$3.5	\$24.2	\$1.6	\$29.3
Alternative 5 - General Business Plan	\$3.5	\$9.0	\$1.5	\$14.0
Alternative 6 - Office Building Plan	\$3.1	\$0.0	\$0.7	\$3.8

<sup>\*</sup> Summed over 10 years. Future years discounted at 2%

### Conclusion

This report estimates the fiscal and economic impact of the redevelopment proposed for the Westwood Country Club in Amherst NY. The fiscal impact to each of the taxing jurisdictions is summarized in the following tables.



#### Town Fiscal Impact over Ten Year Period (dollars in millions)\*

	Total Costs	Estimated Revenue	Net Revenue
Preferred Plan - No PILOT	\$5.1	\$11.5	\$6.4
Condo Ownership Alternative	\$5.1	\$10.1	\$5.0
Preferred Plan - PILOT for Office Park	\$5.1	\$10.0	\$4.9
Condo Ownership Alternative	\$5.1	\$8.7	\$3.6
Preferred Plan - PILOT for Office Park and Senior Development	\$5.1	\$9.5	\$4.4
Condo Ownership Alternative	\$5.1	\$8.2	\$3.1
Alternative 1 - Recreation Conservation Plan	\$0.4	\$1.0	\$0.6
Alternative 2 - Community Facility Plan	\$3.6	\$6.6	\$2.9
Alternative 3 - Residential Three Plan	\$2.0	\$5.6	\$3.6
Condo Ownership Alternative	\$2.0	\$3.4	\$1.4
Alternative 4 - Transitional Residential Plan	\$3.5	\$9.8	\$6.3
Condo Ownership Alternative	\$3.5	\$8.0	\$4.5
Alternative 5 - General Business Plan	\$3.5	\$8.2	\$4.7
Alternative 6 - Office Building Plan	\$3.1	\$15.3	\$12.2

<sup>\*</sup> Summed over 10 years. Future years discounted at 2%

#### County Fiscal Impact over Ten Year Period (dollars in millions)\*

	Total Costs	Estimated	Net
	Total Costs	Revenue	Revenue
Preferred Plan - No PILOT	\$1.9	\$11.0	\$9.1
Condo Ownership Alternative	\$1.9	\$9.7	\$7.8
Preferred Plan - PILOT for Office Park	\$1.9	\$9.6	\$7.8
Condo Ownership Alternative	\$1.9	\$8.3	\$6.4
Preferred Plan - PILOT for Office Park and Senior Development	\$1.9	\$9.1	\$7.3
Condo Ownership Alternative	\$1.9	\$7.8	\$5.9
Alternative 1 - Recreation Conservation Plan	\$0.1	\$0.9	\$0.8
Alternative 2 - Community Facility Plan	\$1.2	\$6.2	\$5.0
Alternative 3 - Residential Three Plan	\$0.8	\$5.3	\$4.6
Condo Ownership Alternative	\$0.8	\$3.2	\$2.5
Alternative 4 - Transitional Residential Plan	\$1.6	\$9.4	\$7.8
Condo Ownership Alternative	\$1.6	\$7.7	\$6.1
Alternative 5 - General Business Plan	\$1.5	\$7.8	\$6.4
Alternative 6 - Office Building Plan	\$0.7	\$14.9	\$14.2

<sup>\*</sup> Summed over 10 years. Future years discounted at 2%



#### School District Fiscal Impact over Ten Year Period (dollars in millions)\*

	Total Costs	Estimated Revenue	Net Revenue
Preferred Plan - No PILOT	\$20.2	\$40.1	\$19.9
Condo Ownership Alternative	\$20.2	\$35.3	\$15.1
Preferred Plan - PILOT for Office Park	\$20.2	\$35.1	\$14.9
Condo Ownership Alternative	\$20.2	\$30.3	\$10.1
Preferred Plan - PILOT for Office Park and Senior Development	\$20.2	\$33.3	\$13.1
Condo Ownership Alternative	\$20.2	\$28.5	\$8.3
Alternative 1 - Recreation Conservation Plan	\$0.0	\$3.4	\$3.4
Alternative 2 - Community Facility Plan	\$0.0	\$22.4	\$22.4
Alternative 3 - Residential Three Plan	\$16.7	\$19.6	\$2.9
Condo Ownership Alternative	\$16.7	\$12.0	-\$4.7
Alternative 4 - Transitional Residential Plan	\$24.2	\$34.3	\$10.2
Condo Ownership Alternative	\$24.2	\$28.2	\$4.1
Alternative 5 - General Business Plan	\$9.0	\$28.4	\$19.4
Alternative 6 - Office Building Plan	\$0.0	\$52.8	\$52.8

<sup>\*</sup> Summed over 10 years. Future years discounted at 2%

The redevelopment will have a short term economic impact during the construction phase of the project and an ongoing economic impact once operational.

Using the project sponsor's preferred plan, we estimate that over the ten years modeled will result in about:

- 1,900 new residents to the Town of Amherst.
- 270 new students in the Williamsville Central School District.
- 2,200 jobs during the construction phase earning \$116 million.
- 320 new jobs once fully operational earning about \$16 million annually.
- \$25 to \$35 million net increase in property tax revenue (depending on the PILOT), consisting of an estimated \$27 million increase in cost offset by a \$52 million to \$63 million increase in revenue.
- \$14 to \$16 million net increase in state and local sales tax revenue.
- \$10 million net increase in NYS income tax revenue.
- \$2 million net increase in county occupancy tax revenue.

The six alternative development scenarios provide the town's Planning Department and the community with a perspective on the condominium ownership alternatives that can be physically placed within the site footprint. Although CGR has assessed the



fiscal costs and benefits associated with each of these scenarios, CGR has not determined whether these scenarios are economically feasible within the Amherst market.

The key conclusion to be drawn from this analysis is that the developer's preferred plan—which the developer's analysis has concluded is economically viable—would add substantially more to town, county and school district revenue than to the costs imposed upon these levels of government by the development proposed.



# Residential Condominium Assessment and Taxation Analysis for the Westwood Neighborhood Project

Client: Mensch Capital Partners, LLC

c/o Andrew J. Shaevel

**Managing Partner** 

Prepared By: Real Property Services, LLC

Donald A. Griebner, President

RPS File Number: 15-199

Date of Analysis: July 21, 2015

#### **MASTER PLAN**



#### MASTER PLAN – TARGET AREA



- (I) Patio Homes 113 Units
- (J) Larger Lots Single Family 47 Units
- (K) Townhomes 84 Units



July 21, 2015

Mensch Capital Partners, LLC 5477 Main Street Williamsville, New York 14221 Att: Mr. Andrew J. Shaevel Managing Partner

Re: Condominium Assessment and Tax Analysis Westwood Neighborhood Project

Town of Amherst, New York

Dear Mr. Shaevel,

At your request and pursuant to our contract, I have completed an assessment and tax analysis for the planned residential units within the proposed Westwood Neighborhood Project in the Town of Amherst. My analysis and projections are based upon application of NYSRPTL 339-Y which states that condominiums in New York State are to be assessed for real estate tax purposes based upon their rental value.

## **Overview of Project**

The proposed Westwood Neighborhood Project reflects the planned redevelopment of the Westwood Country Club property in the Town of Amherst. The project's location is bounded by Sheridan Drive, North Forest Road, Maple Road, and Fairways Boulevard, and will transform the existing golf course property into a mix of residential and commercial uses.

Multiple alternative development options have been detailed by the developer, however this analysis will focus on the residential component of the preferred alternative. The residential mix of offerings in this plan, along with their projected sales prices as provided by the developer, are as follows:

<b>Building Type</b>	No. of Units	Average Square Footage	Average No of Bedrooms	Average Sales Price	Lot Value	Building Price/SF	Overall Price/SF
Single-Family	47	2,800	3	\$415,000	\$90,000	\$116	\$148
Patio Homes	113	2,000	3	\$325,000	\$75,000	\$125	\$163
Condominiums / Townhouses	84	1,600	3	\$262,000	\$50,000	\$133	\$164

NOTE: The size and sales price projections above have been provided by the developer and reflect average quality build-out and finishes.

### **Scope of Analysis**

My analysis involved an income-based valuation for each of the three (3) types of residential units to be offered within the condominium offering plan. A Pro Forma Operating Statement has been constructed for each unit type, projecting market level income (rent), vacancy and collection, operating expenses and reserves. The resultant net operating incomes were then capitalized into value, indicating an appropriate "condominium assessment" for each unit type.

It should be noted that the "Assessors Method" of capitalization was utilized, meaning that the derived market level capitalization rate (7%) was adjusted by adding the overall tax rate (\$31.00/1,000 or 3.1%) to create a tax-adjusted capitalization rate of 10.1%. This rate is applied to the net operating income before real estate taxes are deducted in order to derive a value at tax equilibrium. (Note: The tax rate reflects adjustment for the STAR exemption).

Operating expenses for insurance, utilities, maintenance, management, professional fees, and reserve for replacement were applied at typical market levels for a multi-unit complex. If the tax expense were added in, the overall expense ratio would be 44%, which is in line with the market for a newer multi-unit complex as is being assumed here.

Following are the market rental comparables that were reviewed in order to derive appropriate rents for each unit type. Pro Forma Operating Statements are then constructed, concluding to a capitalized value which reflects the appropriate condominium assessment for each unit type. From these condominium assessment levels, real estate tax projections are made based upon current tax rates for town, county, school and special district taxes.

## **Rental Comparables: Single-Family**

Address	Year Built	Size	Rent/Month	Rent/SF
Rubino Court	2005	3,420sf	\$3,334	\$.97
Williamsville		4/3	(rent to own)	
5326 Coyote Court	2000	3,850sf	\$3,300	\$.86
Williamsville		4/2.5	(furnished)	
Subject Units	2015	2,800sf	\$2,800	\$1.00
		3/2.5		

Conclusion: \$1.00/sf or \$2,800/mo. for the subject units. (Note: Smaller units will command more per square foot).

## **Rental Comparables: Patio Homes**

Address	Year Built	Size	Rent/Month	Rent/SF
62 Union Common	2003	2,300sf	\$1,750	\$.76
Williamsville		2/2		
1280 Sweet Home Rd.	2013	1,800sf	\$2,000	\$1.11
(apartment)		2/2		
Amherst				
Subject Units	2015	2,000sf	\$2,200	\$1.10
		3/2		

Conclusion: \$1.10/sf or \$2,200/mo. for the subject units.

## Rental Comparables: Condominium/Townhouse

Address	Year Built	Size	Rent/Month	Rent/SF
2211 Sweet Home Rd.	2013	2,000sf	\$2,140	\$1.07
Amherst		4/2.5		
2367 Sweet Home Rd.	2012	1,700sf	\$1,780	\$1.05
Amherst		3/2.5		
1691 Maple Road	2013	1,500sf	\$1,650	\$1.10
Amherst		3/1.5		
42 Sean Riley	2013	1,500sf	\$1,496	\$1.00
Amherst				
Subject Units	2015	1,600sf	\$1,760	\$1.10
		3/2		

Conclusion: \$1.10/sf or \$1,760/mo. for the subject units.

Pro Forma Op	erating Statement			
Single Family H	lomes @ 2,800+/- sf			
Pro Forma 1				
Income				
2,800sf @ \$1.00/sf = \$2,800/mo. x 12	=	\$	33,600	
Less: Vacancy & Collection @ 5%:		\$	(1,680)	
Effective Gross Income:		\$	31,920	
Expenses:				
Real Estate Taxes	(In Cap Rate	9)		
Insurance (2.5%):	\$798	,		
Utilities:	<b>,</b> ,,,,			
Water & Common (2.5%):	\$798			
Maintenance (7%):	\$2,234			
Management (5%):	\$1,596			
Professional Fees (.5%):	\$160			
Replacement Reserves (2%):	\$638			
Total Operating Expenses Before R	eal Estate Taxes:		(\$6,224)	
Net Operating Income Before Real	Estate Taxes:		\$25,696	
Capitalization Rate: .07 + .031 =			0.101	
Indicated Condominium Assessmer	nt:		\$254,416	
			\$255,000	®
Single-Family Home C	ondominium Assessm	ent:		
	55,000	-III		
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Note: Condominium assessment of \$2 sales price of \$415,000.	55,000 equates to 61%	or projec	tea	

Pro Forma Ope	erating Statement	
Patio Home	s @ 2,000+/- sf	
Pro Forma 2		
Income		
2,000sf @ \$1.10/sf = \$2,200/mo. x 12	= \$ 26,400	
Less: Vacancy & Collection @ 5%:	\$ (1,320)	
Effective Gross Income:	\$ 25.080	
Expenses:		
Real Estate Taxes	(In Cap Rate)	
Insurance (2.5%):	\$627	
Utilities:		
Water & Common (2.5%):	\$627	
Maintenance (7%):	\$1,756	
Management (5%):	\$1,254	
Professional Fees (.5%):	\$125	
Replacement Reserves (2%):	<u>\$502</u>	L
Total Operating Expenses Before R	leal Estate Taxes: (\$4,891)	
Total Operating Expenses before K	teal Estate Taxes. (\$\psi_4,031)	
Net Operating Income Before Real	Estate Taxes: \$20,189	
Capitalization Rate: .07 + .031 =	0.101	
Indicated Condominium Assessmer	nt: \$199,891	
	\$200,000	®
Patio Home Condo	minium Assessment:	
\$20	0,000	
Note: Condominium assessment of \$2 sales price of \$325,000.	00,000 equates to 61% of projected	

ghborhood Project perating Statement			+	
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\$524				
\$1,468				
\$1,049				
\$105				
<u>\$420</u>				
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Real Estate Taxes: (\$4,090)	•	(\$4,090	1	
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ent: \$167,188	1	\$167,18	3	
\$167,000			$\rightarrow$	®
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wnhouse Assessment:				
67,000				
57,000				

## **Tax Projections**

Following are the current tax rates per \$1,000 that apply to the existing subject property:

Town of Amherst: \$3.00

County of Erie: \$4.70

Special Districts: \$6.36

Williamsville School \$18.97

\$33.03

## **Tax Computation**

Property Type	Sale Price	Appropriate Assessment as Condominium	%	Amherst Town Tax \$3.00/1,000	Erie County Tax \$4.70/1,000	Williamsville School Tax w/STAR	Special Districts \$6.36/1,000	Total Taxes w/STAR
Single-Family	\$415,000	\$255,000	61%	\$765	\$1,199	\$4,268	\$1,622	\$7,854
Patio Homes	\$325,000	\$200,000	61%	\$600	\$940	\$3,225	\$1,272	\$6,037
Condominium /	\$262,000	\$160,000	61%	\$480	\$752	\$2,466	\$1,018	\$4,716
Townhouse								

## **Cumulative Tax Impact at Stabilization (2015 Dollars)**

<b>Property Type</b>	Annual Taxes (Net of STAR)	No. of Units	Total Taxes
Single-Family	\$7,854	47	\$369,138
Patio Homes	\$6,037	113	\$682,181
Condominium /	\$4,716	84	\$396,144
Townhouse			
			\$1,447,463

## **Total Projected Annual Tax Revenue:**

Town of Amherst: \$144,075

County of Erie: \$225,741

Williamsville School: \$772,165

Special Districts: \$305,482

Total: \$1,447,463

## Conclusion

My research and analysis has concluded to the above-stated levels of assessment as condominiums for each of the proposed unit types, based upon the preliminary sales price levels provided. Thank you for the opportunity to complete this analysis.

Respectfully submitted,

Donald A. Griebner President/Principal Appraiser New York State Certified General Real Estate Appraiser ID #: 46-4373



A Traditional Neighborhood in the heart of Amherst.

## Retail Market Study & Tenanting Strategy Report



## January 31, 2015

## **Prepared For:**

Andrew J. Shaevel, Managing Partner Mensch Capital Partners, LLC 5477 Main Street Williamsville, NY 14221

### Prepared By:



A Retail Real Estate Consulting Firm www.consultmjb.com

## Michael J. Berne, President, MJB Consulting

California

2730 Forest Avenue, Suite W Berkeley, California 94705 Office Phone: 510.356.4956

Email: info@consultmjb.com

**New York** 

85 Fourth Avenue, Suite 6A New York, New York 10003 Office Phone: 917.816.8367



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## MJB Consulting: A Retail Real Estate Consulting Firm

## I. MJB Consulting- About Our Firm

**MJB Consulting** (MJB) is an award-winning, New York City- and San Francisco Bay Area-based retail planning and real estate consulting concern retained across the U.S., Canada and the U.K. to undertake market analyses, devise tenanting strategies and spearhead recruitment efforts.

Our clients include municipalities, quasi-public/non-profit development corporations, BID's and institutions as well as private developers, landlords and retailers.



We are among the nation's leading consultancies on urban and Downtown retail, having strategized and recruited for high-profile CBD's like Brooklyn (NY), Newark (NJ), Toronto, Pittsburgh, Cleveland, Minneapolis, St. Louis, San Antonio and Denver, among others.

In addition, we have worked in many other satellite Downtowns and neighborhood business districts within larger cities and metros, including, for example, ones in London (U.K.), New York City, Boston (Cambridge), Philadelphia, Baltimore, Cleveland, Columbus (OH), Cincinnati (Covington), Atlanta (Decatur), Milwaukee, Minneapolis-St. Paul, Seattle, San Francisco (Berkeley) and Los Angeles (Long Beach).

Finally, we are also active in smaller cities and markets, including Downtown and "Main Street" business districts in New Haven (CT), Albany (NY), Kitchener (ON, CA), Akron, Fort Wayne (IN), Dubuque, Roanoke (VA), Raleigh, Winnipeg, Saskatoon (SK, CA), Wichita, Corpus Christi, Las Cruces (NM), Albuquerque, Tuscon and Modesto, among numerous others.



## **Our Principal**

Our Principal, **Michael J. Berne**, is one of the nation's foremost experts on urban and Downtown retail.

Michael is a regular speaker at International Downtown Association (IDA) conferences. He is also a member

of the IDA Board and sits on its Executive Committee.

In addition, Michael has presented at the annual gatherings of the International Economic Development Council (IEDC), the National Main Street Center, the Local Initiatives Support Corporation (LISC) and the International Council of Shopping Centers (ICSC), among others.

Michael has lectured at the University of Pennsylvania, written numerous articles for the Urban Land Institute's (ULI) *Urban Land magazine* as well as the prestigious *Journal of Urban Affairs*, served on expert advisory panels for the ULI and the IEDC, and appeared in high-profile publications such as *The Washington Post*, *The Financial Times* and *The San Francisco Chronicle*.

Michael received a B.A. degree from Columbia University (Columbia College) in New York City and an M.Phil degree from Cambridge University (Gonville & Caius College) in the United Kingdom. He currently splits his time between residences/offices in New York City's Union Square and Berkeley's Elmwood neighborhood.

## MJB Consulting: A Retail Real Estate Consulting Firm

## Our Unique Approach

We at MJB Consulting approach our work differently from our competitors, and offer unique strengths and specialized expertise in a number of areas:

- We are retail specialists: it is our passion and our obsession.
- 2. We are in tune with the newest trends and the latest thinking, as a result of working across North America and beyond.
- We are able to identify opportunities where others cannot, with our emphasis on psycho-graphics and our understanding of diverse sub-markets.
- We fully immerse ourselves in our study areas, as if we were locals ("total immersion"), in order to truly understand their unique rhythms and sensibilities.
- We possess a keen understanding of the tenant's perspective, as a result of practical experience in the leasing and selling of retail space.
- We have devised a number of proprietary tools, including our database of retailers willing to consider Downtown and "Main Street" settings.





- We have promoted the concept of small "chain-lets" as balancing local distinctiveness with the landlord's desire for creditworthy tenants.
- 8. We do more than provide lots of data; we also interpret all of that information and tell you what to do with it on a block-by-block level.
- We do not write reports that sit on shelves: our scopeof-work typically proceeds to implementation, including actual recruitment and staff training.
- 10. We are able to explain the nuances and intricacies of retail clearly and accessibly to different sorts of audiences, including those new to the field.
- 11. We do not pull punches, but we are able to convey the harsh realities while still generating excitement for what is in fact possible.
- 12. We are a boutique consultancy: our Principal (and not some junior associate) is the Project Manager and the one who develops the work product.

### **II. Report Purpose**

In November 2014, Mensch Capital Partners retained MJB Consulting ("MJB"), a retail planning and real estate consultancy firm based in New York City and the San Francisco Bay Area, to undertake a retail market study and devise a tenanting strategy for its proposed mixed-use redevelopment of the Westwood Country Club ("Project") site in Amherst, NY. MJB was also asked to evaluate the project's potential impact on the retail mix along Main Street in the Village of Williamsville.

MJB was instructed by Mensch Capital Partners LLC to consider certain baseline assumptions in evaluating the retail potential of the site. These included the following:

- The project would contain a pedestrian oriented, mixed-use core with a modestly scaled retail component on the order of 100,000 to 125,000 square feet and laid out in accordance with established site location principles so as to maximize the likelihood of successful lease-up. (The specifics of the current site plan have not been taken into account in this assessment).
- The site plan for the retail component of the proposed mixed-use project would not be designed to accommodate larger-format "big box" superstores measuring 50,000 square feet or more in size, as these already exist on and would be more appropriate for other high-volume arterials within the Town of Amherst, such as Niagara Falls Boulevard (U.S. 62), Transit Road (SR 78) and Sheridan Drive (SR 324).
- The tenanting strategy for the retail component would be geared instead towards smaller-format businesses that complement other on-site residential/commercial uses and adjacent neighborhoods, and/or fill underserved niches in the competitive marketplace.

### III. Scope of Work

MJB's scope-of-work for this assignment consisted of the following:

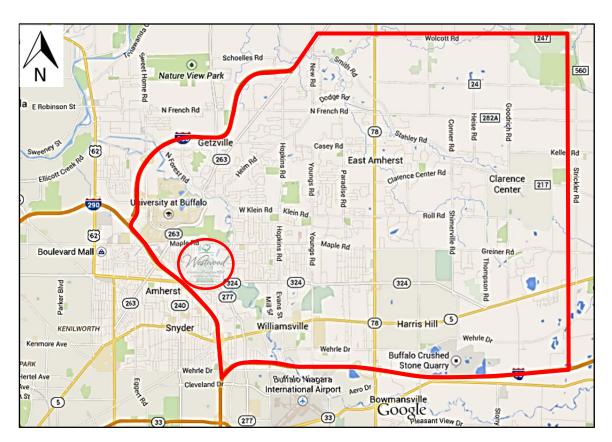
- Guided tour from and extensive discussions with Andrew Shaevel of Mensch Capital Partners and Brad Packard of Ciminelli Real Estate Corporation, for the purpose of understanding project vision, specific plans and broader context, as well as review of the current site plan and design standards.
- Self-guided touring of the subject site and immediate vicinity as well as other Amherst communities and business districts, including Main Street / Snyder, Sheridan and Evans, Hopkins and Klein, etc.
- Observations of existing retail mix and dynamics on Main Street / Williamsville, as well as review of the 2013 "Main Street Corridor Market Study" by Market & Feasibility Advisors, the 2013 "Picture Main Street" report by and for the Village of Williamsville.

- Survey and assessment of competing districts and centers, including (but not limited to) Walden Galleria, Boulevard Mall / Boulevard, Eastern Hills Mall / Transit Road, Northtown Plaza, Sheridan Avenue and Maple Road corridors, Fashion Outlets of Niagara Falls, Outlet Collection at Niagara, University at Buffalo (UB) / North Campus, Main Street / University Heights, Elmwood Village, Hertel Avenue / North Buffalo, etc.
- Interviews with local retail leasing professionals, including Ronald "Gunner"
   Tronolone of MJ Peterson Real Estate as well as Benedict J. Borruso and Arthur H. Judelsohn of Pyramid Brokerage Company.
- Review of available data on the structure and trajectory of the regional economy, including reference to the 2006 Economic Analysis undertaken by Donald A. Griebner in connection with Benderson Development Company's application for the redevelopment of the former Buffalo Gun Club site on Maple Road in the Town of Amherst.
- Retrieval and nuanced analysis of demographic and sales-leakage data for both a theoretical "primary trade area" and the Buffalo-Niagara Metropolitan Statistical Area (MSA), as well as a specific grocery store trade area.
- Gathering of available data on non-residential consumer sub-markets, such as daytime workers, UB students and faculty/staff, Canadian tourists, etc., drawing on a variety of sources that include the Buffalo Niagara Enterprise website, UB's 2013-2023 Facilities Master Plan, UB's 2014 "Student Housing Market Analysis" by Asset Campus Housing, etc.
- Delineation of a core customer(s) for the project's retail component, including detailing of demographic and psycho-graphic characteristics, the latter utilizing MJB's proprietary lifestyle segmentation analysis.
- Consideration and evaluation of local comparables such as University Place on Sweet Home Road and French Road Commons on North French Road, as well as reference to appropriate analogs from across North America, including outreach to existing contacts with information on the Emory Point development in suburban Atlanta.
- Research on specific retail prospects that might serve as traffic-generating anchors for the project, drawing on MJB's proprietary database of larger brands typically willing to consider such opportunities.

In undertaking this scope of work as outlined above, MJB's Principal, Michael J. Berne, applied the firm's unique "total immersion" methodology, staying in Williamsville and exploring the area for a period of seven days in November 2014. Identifying the right "positioning" of a retail mix requires an assessment of two discrete "markets", one in

which consumers demand goods and services from businesses, and the other in which tenants seek street-level space from landlords.

#### IV. Consumer Demand Evaluation



## WESTWOOD PROJECT SITE Primary Trade Area

Within the polygon drawn to correspond to the site's "primary trade area" (above), there are, as of 2015, an estimated 103,111 residents -- a number that has been growing since 2000 and is expected to continue increasing until at least 2020. A relatively high percentage possesses a B.A. degree or more (53%) and works in a creative class job (also, 53%). Not surprisingly, median household income (roughly \$79,000) and median home value (about \$215,000) are well above metro-wide averages.

Sales leakage figures indicate that this primary trade area can support additional operators in specific categories, including, for instance, specialty grocery; sporting goods; home furnishings; shoes; jewelry; luggage and leather goods; cosmetics, beauty supplies and perfume; office supplies and stationery; drinking places as well as restaurants. These numbers also suggest opportunity for so-called "non-traditional" retail, like, say, vendor markets.

<sup>&</sup>lt;sup>1</sup> Based on figures from Nielsen-Claritas and analyzed by MJB Consulting.

Both the University at Buffalo and Daemon College currently lack a true central gathering place in close proximity to their respective campuses for shopping, eating, studying, recreating and socializing. On-campus retail offerings for both students and faculty/staff are limited, and public safety remains a concern on Main Street in University Heights District, which is also not particularly convenient for UB's North Campus, where most of the residential dormitories and off-campus student housing complexes as well as all of the undergraduate programs are located. And while Maple Road is closer, the auto orientation along that corridor has the effect of dispersing the energy among multiple disconnected businesses.

While the trade area consists overwhelmingly of native-born Caucasians, its diverse character is also worth noting. In particular, there are some 8,600 residents of Asian descent – largely Indian, Chinese and Korean -- with median household incomes of \$102,000 (higher than any other ethnicity). <sup>2</sup> With its 6,600 international students, UB ranks 17<sup>th</sup> among the 2,900 colleges and universities surveyed nationally, and extrapolating from their (much) higher tuitions, these foreign students typically arrive with financial resources. With all of this spending power, the corresponding retail offer could be enhanced.

Canadian traffic and trade should decline somewhat in the near term due to the weakening Canadian dollar as well as the 700,000 square feet of (more conveniently located) outlet mall space that was recently developed. However, Canadian shoppers are likely to remain a major sub-market for Western New York shops, restaurants and other businesses – particularly those sitting along its circumferential beltway (I-190, I-290 and I-90) -- due to the (still) better selection, (still) cheaper prices and lower taxes, the comparative ease and affordability of flying to and from Buffalo as well as, on a more basic level, the appeal of the different and the novel.

Unlike other suburbs in Western New York, the Town of Amherst is also an employment destination. Indeed, based on the rule-of-thumb that the typical worker will drive as many as seven minutes for lunch and/or daytime conveniences, the project would be able to draw from a population of some 44,000 employees, of which 33% are in higher-earning "creative class" occupations<sup>3</sup>, driven primarily by the growth engines of health care and higher education. <sup>4</sup>

A population of 1.14 million normally translates to four to five regional shopping destinations, yet the Buffalo-Niagara MSA has only one bona fide top-tier mall – the Walden Galleria, along 1-90 in the Town of Cheektowaga. Furthermore, metro-wide sales leakage figures indicate that there is still latent potential in a number of retail categories, including, for instance, specialty grocery; sporting goods; jewelry; luggage and leather goods; cosmetics, beauty supplies and perfume; office supplies and stationery; as

<sup>&</sup>lt;sup>2</sup> Based on figures from Nielsen-Claritas and analyzed by MJB Consulting.

<sup>&</sup>lt;sup>3</sup> Based on figures from Nielsen-Claritas and analyzed by MJB Consulting.

 $<sup>^{\</sup>rm 4}$  Based on figures from the Commercial Listing System GIS mapping program on the Buffalo Niagara Enterprise website.

well as "non-traditional" retail – many of which also happen to echo the ones leaking from the trade area (above).

Furthermore, both the Buffalo-Niagara MSA and Canada's Niagara Region still lack a true "town/village center" development -- along the lines of, say, the Legacy Village and Crocker Park projects in suburban Cleveland or Southside Works in Pittsburgh – that features a traditional two-sided, pedestrian-oriented retailing corridor lined with mixed-use buildings and that functions as a sort of community living room. The Amherst Town Centre/University Town Centre concept proposed for the old Buffalo Gun Club property along Maple Road would have qualified, but it is no longer under consideration and the property has since been sold to a national developer of student housing complexes.

### V. Tenant Demand Evaluation

In recent years, whether due to the relative stability of their respective economies, the diminishing opportunities in saturated first-tier markets or various other factors, the major metros of Upstate New York have started to draw the attention of certain higher-end retail concepts that had previously ignored them. The Buffalo-Niagara MSA, for example, has welcomed Trader Joe's and a Whole Foods Market is anticipated to open in the next year, while others like Recreational Equipment Inc. (REI), L.L. Bean and Costco Wholesale continue to evaluate sites in Western New York.

Furthermore, there is reason to believe that this sort of interest will continue to grow, with the population and employment gains expected in connection with various "next-generation" economic development initiatives in the Buffalo Niagara region, including the ongoing expansion of the Buffalo Niagara Medical Campus, IBM's decision to occupy a vast swath of Downtown Buffalo's high-profile Key Center office building with a new software research facility as well as the large SolarCity factory planned for the Riverbend site in South Buffalo.

From the tenant's perspective, the site itself offers a location within one of the metropolitan area's most desirable suburbs (Amherst) and adjacent to another desirable suburb (Clarence). Not only does its trade area outperform the MSA on educational attainment, income levels and home values (see above), but also, the population continues to increase steadily even as the region stagnates or shrinks. And aside from the numbers, real estate professionals can be just as impacted by a sub-market's "soft" attributes – its cachet and brand, for instance – as lay consumers.

Another of the site's selling points is its visibility and access. Its planned entrance sits along Sheridan Drive (SR 324), a principal arterial road with almost 40,000 cars per day, with secondary ingress/egress along Maple Road, with 22,000 cars per day and just a quick one-minute drive from UB's North Campus. <sup>5</sup> And it has the ability to draw

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<sup>&</sup>lt;sup>5</sup> New York State Department of Transportation Traffic Data Viewer. Retrieved from <a href="https://www.dot.ny.gov/tdv">https://www.dot.ny.gov/tdv</a>. 2013.

regionally and beyond as a result of its location just 0.5 miles from the Harlem Road / Sheridan Drive interchange on Western New York's circumferential beltway, an approximately 25-minute drive to and from the Canadian border.

At 170 acres, the site is capable of accommodating development on a large scale, with a considerable amount of retail square footage as well as several other sources of captive, "in-place" demand from the other on-site uses (i.e. residential, office, hotel). And with the project's size and aspirations as well as its distinctiveness as the first true mixed-use village/town center in the region, there should be little difficulty in generating attention within the local tenant community.

The site is located in the "Eastern Hills" sub-market, which boasted a 7.2% retail vacancy rate as of 4Q 2012, by far the lowest in the Buffalo-Niagara region -- as compared to 10.8% for "Boulevard", 14.4% for "Galleria", 13.0% for the metro as a whole and 12.9% nationally.<sup>6</sup> The tightness in the leasing environment, combined with the high barriers-to-entry for new development, should act to intensify demand for new retail inventory.

The Walden Galleria's sales levels of more than \$600 per square foot<sup>7</sup> – compared to the nationwide average of \$468 per square foot – deem it a "Class A" mall. This, combined with its low vacancy rate as well as the physical limitations to its further expansion, suggests the possibility of "spillover" tenant demand that could benefit other regionally oriented centers, particularly ones located amidst or near concentrations of that mall's well-educated, relatively affluent core customer.

With so-called comparison goods (that is, goods for which one typically prefers to "comparison-shop", like apparel, footwear, jewelry, furniture, etc.), the consumer typically gravitates to existing districts and centers that already offer a broad array of options. And partly for this reason, tenants selling such merchandise prefer to open in close proximity to other operators in their respective categories (even their direct competitors); with a bias towards the largest such clusters.

The site, however, would be considered a classic "tweener" location in the leasing community, as it sits *between* two established mall-anchored, strip-heavy shopping destinations with strong gravitational pull -- Niagara Falls Boulevard (U.S. 62) and Transit Road (SR 78) — and it offers no nearby fashion co-tenancy of its own and just 115,000 square feet to work with. That said, certain brands have started to experiment with smaller, "neighborhood-scaled" formats that could more easily tap such interstitial opportunities.

While the negotiation of retail rent levels will ultimately be driven to a significant degree by pro-forma considerations, open-air centers typically have lower occupancy costs than enclosed malls. Prime small-shop spaces at Walden Galleria and Boulevard Mall can be

<sup>&</sup>lt;sup>6</sup> According to CB Richard Ellis' *Retail Marketview Report* for the 4<sup>th</sup> quarter of 2012, as stated in the "Main Street Corridor Market Study" submitted by Market & Feasibility Advisors in May 2013.

<sup>&</sup>lt;sup>7</sup> According to industry experts, as stated in a 5/11/09 *Buffalo Business First* article by James Fink entitled "Galleria changed WNY retailing".

as high as \$60 per square foot plus a percentage component as well as CAM charges, with even sub-optimal locations within those centers pegged at roughly \$30 per square foot. This suggests an opportunity for the project, which sits in a sub-market that can presently support at least \$17 to \$25 per square foot NNN.

An important variable, of course, is Northtown Plaza. Also an open-air center, its new owners are reportedly offering many long-time tenants just short-term, one-year leases at \$20 per square foot NNN. One presumes, however, that its occupancy costs will increase considerably once the new Whole Foods Market anchor is in place, the retail bays are physically overhauled and the overall atmospherics improved. Of course, the project might have to offer more than just a slight discount in order to effectively undercut Northtown.

The one category in which the site might be able to claim some relevant co-tenancy is home furnishings: it is just a three-minute drive along Sheridan Drive from Ethan Allen, which sits at the eastern edge of a stretch of that corridor containing a cluster of larger-format, mid-market furniture retailers (i.e. Ethan Allen, Bassett Home Furnishings, Newtrend Furniture, La-Z-Boy Furniture Galleries, Carolina Furniture, HomeGoods, etc.), some of which could be displaced in the coming years by Whole Foods Market-driven redevelopment.

### VI. Retail Positioning

Given all of the above factors, the site's retail component will likely require a different format, one that does not necessarily fit within existing shopping-center typologies – and that might not have many direct antecedents or comparables -- but rather, represents a unique hybrid of sorts, customized to the specifics of the marketplace. Indeed, with the industry currently in a period of upheaval, this kind of creative approach is becoming far more commonplace and necessary.

In order to differentiate itself (as well as the larger development) in the marketplace, the retail component should take the form of a "village center", with its signature element a traditional two-sided, pedestrian-oriented corridor lined with mixed-use buildings, its street-level spaces filled with a diverse range of retail categories that also include comparison goods, restaurants as well as coffeehouses, public spaces and other sorts of "Third Place" venues (that is, central gathering places separate from home and work) that can help to forge a sense of identity and "neighborhood" in what would otherwise be a relatively atomized and anonymous suburban environment.

This is to be contrasted with something like The Orchard (on North Buffalo Road in Orchard Park) or a redeveloped Northtown Plaza (see above), which are smaller and larger examples of the "lifestyle center" -- that is, a strip mall without traditional department store anchors yet nonetheless containing a cluster of comparison goods stores historically found in regional malls -- or, for that matter, University Place, on Sweet Home Road across from UB's North Campus, which adds upper floor apartments but lacks connectivity with adjacent residential neighborhoods and devotes

its primary place-making opportunity to a large surface parking lot; and, with just 20,000 square feet of retail space, does not provide the critical mass needed to attract much more than fast food purveyors and basic services.

While a well-integrated grouping of on-site uses, including a diverse array of housing types, a large amount of office space and a hotel, will surely impact the composition of the foot traffic and the retail mix as well as the development's overall energy and positioning, the "anchor" stores are the ones that will ultimately determine the nature and extent of the destination trade. However, given the project's "tweener" location, its anchoring strategy will have to be less conventional, with little hope of attracting the full-price department stores that drive traffic to regional malls or the large-format discounters that fill power centers.

The Buffalo-Niagara MSA not only leaks sales of roughly \$7 million in the sporting goods category, but also, appears particularly light on fashions for the outdoor lifestyle, which have become ever more popular among younger consumers, even those who do not actually participate in such activities. While likely to be intrigued by the presence of Whole Foods Market, a retailer such as Seattle, WA-based REI might still be a possibility if tied in with nearby Elliott Creek as well as other on-site and nearby recreational amenities that competing centers, including Northtown Plaza, cannot offer.

Also, a community-oriented <u>bookstore</u> such as a Talking Leaves & Books might be enticed by the primary trade area's high levels of educational attainment as well as the site's close proximity to UB's North Campus. The locally based chain-let has clearly shown an ability to survive in a fast-changing industry – where, contrary to popular belief, the number of independently owned shops has actually been *growing* -- and while Talking Leaves is no doubt somewhat limited in capacity and resources and might be initially wary of a third location, it was willing to open on Elmwood Avenue in 2001 because community residents pushed for and offered to invest in the store.

Another possible anchor is a <u>specialty grocer</u>, defined as one that focuses to a greater extent on gourmet and natural/organic products than a conventional supermarket. One candidate is the hugely popular Lexington Co-operative Market, which has been searching for a location for a second store but has yet to commit to one. There is also Orchard Fresh; the new format that locally based Tops Friendly Market debuted in Orchard Park almost two years ago (although after initially planning for an aggressive rollout, it decided to put a hold on new locations). Other operators from further afield, like Greensboro, NC-based The Fresh Market or the Cleveland, OH-based Constantinos Market, might be tempted as well.

That said, a value-oriented concept with a lower price point would probably be able to compete more effectively with both Wegmans as well as the new Whole Foods Market. Operators such as Phoenix, AZ-based Sprouts Farmers Market, Boulder, CO-based Lucky's Farmers Market and the Chicago, IL-based Fresh Thyme Farmers Market are presently concentrating on expansion across the Southeast and Midwest, but at their

current rate of growth, will likely pursue locations in Upstate/Western New York in the not-too-distant future.

Finally, while the higher-profile <u>home</u> brands that have yet to establish a presence in the Buffalo-Niagara MSA (e.g. Restoration Hardware, West Elm, Sur le Table, etc.) are more likely to gravitate to Northtown Plaza with its Whole Foods Market anchor, there might still be an opportunity to draw lesser-known national "chain-lets" to the site, especially given the existing Sheridan Drive furniture cluster that starts just to the west (with Ethan Allen), like, for instance, the Los Angeles-based Z Gallerie, the Oakland, CA-based Cost Plus World Market (now owned by Bed Bath & Beyond), the Nashville, TN-based Kirkland's or perhaps even one or more of the Canadian concepts (e.g. Structube, Urban Barn, etc.) that could be tempted to cross the border and test the U.S. market.

Fashion is unlikely to play more than a supportive role in the retail mix. As in the furniture category, operators selling such merchandise typically prefer to locate near each other, resulting in a competitive disadvantage for districts and projects that are effectively starting from scratch. Smaller "mini-anchors", however, could help to establish a stream of foot traffic for a more modest collection of stores. Houston, TX-based Charming Charlie, for example, appeals to a wide range of shoppers with its jewelry and accessories emporiums.

Amenities such as bookstores and niche grocers, while admittedly lower-margin retailers, should nevertheless be aggressively pursued for the site and then subsidized once there (if necessary), not just to drive pedestrian traffic and boost in-line leasing, but also, to underscore the project's mixed-use, community-oriented lifestyle, clearly differentiate it in the marketplace and perhaps even justify a premium for its other components. Indeed, especially if coupled with an in-store coffeehouse, a locally oriented bookseller can – in contrast to say, a mass-market operator like a Barnes & Noble or a Books-A-Million – become that "Third Place" to which the locals will gravitate as their "home away from home [and work]."

Even, however, if the project is ultimately not able to attract any of the above anchors, it is not necessarily fatal: a <u>cluster of unique and diversified restaurants</u>, for example, can also play the role of primary traffic driver. On this point, the trade area does not appear to contain many of the kinds of modern dining concepts that appeal to more contemporary tastes and sensibilities. Indeed, a growing number of eating establishments today are able to offer a casually up-market experience, with high-quality food and beverage served in a stylishly appointed space, while keeping to a relatively moderate price point that is accessible to a broad range of sub-markets.

Canadian restaurateurs have been especially quick to jump on this trend, with a number of the so-called "premium casual" brands, like Earls Kitchen & Bar, JOEY and The Keg having already opened U.S. locations, and facing an extremely fierce battle for market share and premier sites across Canada. But also, in the U.S., the "fast-casual" model (i.e. counter service but with higher-quality ingredients, more up-market atmospherics and slightly elevated pricing) has changed perceptions of gourmet dining, how such food is

served and in what kinds of environments, etc., and has even been embraced in some cases by celebrated restaurateurs and chefs, most notably by Danny Meyer with his Shake Shack empire.

A dining cluster is even more powerful if offered in concert with other sorts of <u>non-traditional magnets</u>, including not just the aforementioned "Third Place" venues but also, creative programming of the project's public spaces, like, for example, "fashion truck" pods and vendor markets, weekly food truck fairs and event nights (e.g. movies screened on building walls, open-air dancing lessons, etc.), perhaps even the full-sized Americana Carousel formerly situated in the Boulevard Mall's food court (but which will not be relocated within that center).

In contrast to an exclusive focus on "deal-making", where individual storefronts are leased without reference to any sort of broader vision, the tenanting of the project's inline spaces must be approached with an eye towards the larger whole. As in any well-conceived shopping center, concepts should be selected on the basis of whether they synergize with and generate cross-traffic for their neighbors, for this will yield a cohesive, mutually reinforcing retail mix that amounts to more than the sum of its component parts.

The type of anchor will shape the basic contours of the in-line tenanting strategy. A grocery store, for instance, typically implies other convenience-oriented businesses as well as quick-service food and beverage purveyors. Furthermore, a *specialty* grocer such as the kind proposed for this project implies a broader range of concepts – "fast-casual" eateries (see above), clothing boutiques, etc. – that are united not so much by the purpose of the shopping trip (e.g. basic essentials, versus discretionary buying) as the lifestyle and psycho-graphic of the core customer.

In order to differentiate itself in the marketplace and compete for tenants in such a "tweener" location, the project should as a general rule deemphasize large ubiquitous brands in favor of smaller national, regional and local "chain-lets". For example, in contrast to the lineup at Walden Galleria's "ThEATry", well established, Buffalo-area restaurateurs might be approached with the idea of developing new concepts at the site. Similarly, boutiques in Elmwood Village or on Hertel Avenue might be pursued for an additional location that taps the Amherst sub-market.

In sum, with all of these tenanting opportunities, it would be realistic to expect to fill and sustain at least 75,000 to 100,000 square feet of retail space at the site, with a significant percentage – say, one-third to as much as one-half – devoted to food and beverage, perhaps one 20,000 to 25,000 square foot anchor (along with basic conveniences and services, particularly if it is a specialty grocer) and then, a modest collection of comparison goods retailers targeting the two primary sub-markets of Baby Boomers and 20-somethings.

A close comparable would be Emory Point, in the Atlanta metro. Sitting in the shadow of the similarly well-off, well-educated suburb (Decatur), at a stand-alone location but in

close proximity to both a university (Emory University) and other major employers (e.g. CDC headquarters), this mixed-use village center, developed by locally based Cousins Properties and opened in 2012, will contain a total of 122,000 square feet of retail space as well as 758 apartments upon completion of its Phase II this year, with a Phase III still to come.

Emory Point's retail mix, also devised with the intention of complementing a successful Downtown nearby (Decatur's), is similar to the one envisioned above for the project. Phase II will be adding a 25,000 square foot Earth Fare specialty grocer as an anchor, but Phase I did not contain a primary traffic generator within its 80,000 square feet of retail space, save a 24-hour CVS. Rather, its draw has been rooted largely in a cache of national and local dining chain-lets, with one, a new concept by an established Atlanta restaurateur, even receiving national attention.

Meanwhile, all six of the shops that comprise the center's modest (and anchor-less) offering of fashion retailers remain. And while sales figures are not known, the interest from others, according to Cousins, has been "overwhelming" and partly spurred the decision to commence with Phase II.<sup>8</sup> The balance between large national brands (LOFT, Francesca's and Jos. A. Bank) and smaller chain-lets (i.e. Lizard Thicket, Fab'rik and American Threads) has been even, and will likely remain so in Phase II.

### VII. Broader Impact

It is important to note at the outset that Main Street in Williamsville offers a number of compelling attributes as a retail location. With an interchange on I-290 and as Amherst's busiest east-west thoroughfare, the corridor boasts traffic counts of nearly 45,000 cars per day, translating to superior visibility and access. Furthermore, it enjoys a positive brand in association with Amherst, which is not only a "choice" suburb within the MSA but also, unlike the others, one with a large employment base as well.

Main Street also offers strong co-tenancy. Its effective anchor, the still-expanding Tony Walker & Co., is probably the most upscale department store in Western New York, and headlines a mix of comparison goods retailers that also includes up-market brands like Talbots, Chico's and Calico Corners as well as popular, independently-owned and operated boutiques such as Monarch, Blum's Swimwear and Leelee.

Moreover, the corridor's current trajectory is a positive one. The roster of high-caliber operators appears to be growing, with the recent arrivals of Alex and Ani, D'Avolio, Billybar and Moor Pat, and a number of the region's leading developers are active there. In addition, the Village, with the leadership of the Mayor, has been moving aggressively to transform the high-volume arterial into a more pedestrian-friendly space as well as create a new public square centered on the iconic Water Mill property.

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<sup>&</sup>lt;sup>8</sup> As based on a 10/18/13 *Curbed Atlanta* blog post by Josh Green entitled "Is Emory Point Poised To Be Atlanta's Next Mini-City?".

<sup>&</sup>lt;sup>9</sup> New York State Department of Transportation Traffic Data Viewer. Retrieved from https://www.dot.ny.gov/tdv. 2013.

That said, the project certainly could compete with Williamsville for certain kinds of retail concepts and consumers. Both locations will have been developed in the spirit of a walk-able, pedestrian scaled environment that typically supports smaller-format businesses.

There will be distinguishing factors, however, that put the project at a competitive disadvantage vis-à-vis Williamsville when vying for tenants. Most notably, with a history dating to the 1800's, Main Street has had a "head start" of sorts, with the corridor firmly established as a commercial corridor, able to offer existing co-tenancy in the targeted categories and, as discussed above, presently enjoying some leasing momentum as well as local political support.

Also, overall occupancy costs on the most "Main Street-like" stretch of Main Street – that with the historic, zero-setback building fabric – currently range from roughly \$16 to \$20 per square foot, whereas the site would currently bear at least the mid \$20's to low \$30's per square foot (i.e. a base of \$17 to 25 per square foot plus NNN), as new construction built to modern specifications and tenanted with synergy and cross-traffic in mind tends not to be priced as affordably as stand-alone "second-generation" spaces. Williamsville, then, would, in this respect, remain the preferred option for the kinds of smaller independently owned and operated businesses that it most values.

And even if certain tenants still prefer the project, there is some merit to the proverb that "a rising tide lifts all boats". With dining, for example, greater variety and selection often acts to *expand* the trade area and generate increasing returns to scale. Savvy restaurateurs, then, are typically not afraid of competition; on the contrary, they usually welcome it. Indeed, Bryan Bryndle was not worried about cannibalizing his Tabree Restaurant in Snyder when he opened Billybar in Williamsville, just five minutes away.

In fact, many locally based entrepreneurs, particularly those in the food and beverage space, relish the opportunity to create, develop and/or operate different concepts, and actually derive some benefit from co-locating them within the same sub-market. Take, as another example, Michael Shatzel: the impresario behind the new Moor Pat craft beer bar in Williamsville, he owns both Coles and Blue Monk, which sit less than a mile away from each other on Elmwood Avenue.

Not only might an operator enjoying strong returns at the site be willing to consider another concept on Main Street, but also, such success would then be associated in the broader tenant community with the sub-market as a whole, boosting interest among other entrepreneurs in nearby districts as well, especially since the project itself is only going to contain a relatively modest amount of retail space, thereby limiting its ability to capture all of the spill-over.

Finally, the project might offer the only opportunity in Amherst that certain operators would be willing to consider. Larger-format retail anchors in particular might be quite wary of the kinds of complex, drawn-out redevelopment schemes that would likely be

necessary on Main Street in Williamsville in order to create suitably sized space (and sufficient off-street parking) that meets their various needs and specifications, especially in light of the hard line that the Village and/or the community might take on matters of site planning.

In terms of the consumer, while he/she might at first be drawn to the novelty of the project, there is reason to believe that in the longer term, there would be sufficient demand to sustain both as healthy and vibrant business districts.

Indeed, by considering the sub-market's broader retail ecology and identifying the different roles that individual districts/centers might play within it, one is freed from the conventional zero-sum logic that typically underlies concerns about cannibalization, and can devise a retail mix for the project that would complement – or at least not compete directly with -- what already exists on Main Street in Williamsville.

For example, the core customer on Main Street skews slightly older, reflecting Williamsville's median age in the upper 40's, and the Williamsville community clearly treasures the village's and corridor's historic character. On the other hand, the site might be developed with a more current aesthetic and vibe, and tenanted with concepts – perhaps additional locations of successful operators from Elmwood Village or Hertel Avenue -- that would appeal to a somewhat younger demographic in its 20's and 30's.

In keeping with this orientation, the project might also pitch itself to a greater extent to diverse sub-markets in its midst. For instance, Main Street's retail mix caters almost exclusively to mainstream tastes, yet 8% of the trade area is of Asian descent -- well above 3% for the MSA as a whole – and might desire a broader selection than what currently exists along Sheridan Drive (which itself might soon be displaced by Whole Foods-related redevelopment).

In addition, the project might pursue categories that are currently leaking large volumes of sales and sub niches that do not already exist on Main Street. Examples might include, as discussed above, outdoor sporting goods or home furnishings and accessories. Meanwhile, it could forgo the active pursuit of more overtly up-market fashion concepts that cater to the well-off, 45-and-over shopper, thereby mooting a potential impediment to that cluster's future expansion along the corridor.

Obviously there is going to be some overlap: for instance, Main Street already contains offerings that also appeal to a younger demographic (e.g. Leelee, Alex and Ani), to a more contemporary sensibility (e.g. Billybar), to a diverse clientele (e.g. The Original Pancake House) and to an outdoor sports enthusiast (e.g. Old Orchard Fly Shop, JB's Tennis Shop). In a system of *private* actors, however, this is unavoidable, and, some might say, desirable, ensuring the sort of ongoing reinvention and evolution that ultimately fortifies such districts in the face of changing habits and outside threats.

### **VIII. Conclusion & Findings**

- The project would provide both the Buffalo-Niagara MSA and Canada's Niagara Region with its first true "town/village center" development, featuring a traditional two-sided, pedestrian-oriented retailing corridor lined with mixed-use buildings and functioning as a sort of community living room.
- The project would target a diverse range of consumer sub-markets, including residents of the primary trade area as well as nearby daytime workers; students, faculty and staff at University at Buffalo's North Campus; visitors from Canada; and, for certain "niche" offerings, shoppers from across the metro.
- Given its "tweener" location between two established mall-anchored, strip-heavy shopping destinations with strong gravitational pull, the project's anchoring would be unconventional and "niche"-driven, led by one or more of the following: an outdoor sporting goods purveyor, a local bookstore, a specialty grocer, a home goods retailer, a restaurant cluster as well as other non-traditional magnets, like, for instance, vendor markets or fashion truck "pods".
- It would be realistic to expect to fill and sustain at least 75,000 to 100,000 square feet of retail space at the site, with, say, one 20,000 to 25,000 square foot anchor; a significant percentage one-third to as much as one-half devoted to food and beverage; a modest collection of comparison goods stores narrowly targeting the specific lifestyles and psychographics of the core customer(s); and some basic conveniences servicing the on-site demand.
- In order to differentiate itself in the marketplace and compete for tenants in a "tweener" location, the retail component should as a general rule deemphasize large ubiquitous brands in favor of smaller national, regional and local "chain-lets" and multiconcept operators (MCO's) as well as select Canadian brands interested in growing their U.S. portfolios.
- Not only, however, can Williamsville point to a number of compelling site attributes and competitive advantages as a retail location, but also, it would in many respects benefit from the project's success: as just one example, its landlords and brokers could find themselves fielding more calls from (higher-caliber) leasing prospects.

Indeed, by considering the broader retail ecology and identifying the different roles that individual districts/centers might play within it, one is freed from the conventional zero-sum logic that typically underlies such concerns, and can devise a tenant mix for the project that complements -- if not directly feeds -- the existing dynamic in Williamsville.