

Appendix C

Inventory and Analysis Summary

**NYS Route 78 (Transit Road)
Corridor Management Study**

**Towns of Amherst and Clarence
Erie County**

Inventory & Analysis Summary

Prepared For:

Town of Amherst
Town of Clarence
New York State Department of Transportation

**Completed August 2002
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Transit Road Corridor Management Study

August 2002

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1 INTRODUCTION

1.1 Report Purpose

Transit Road (NYS Route 78) is an arterial highway that forms the border between the Towns of Amherst and Clarence, New York. Concerns about increasing traffic congestion on Transit Road have prompted these two towns to work together to address concerns regarding this important regional corridor. The growing traffic congestion as well as continued commercial development of land adjacent to the highway is viewed by many as having a negative impact on the area's quality of life.

The New York State Department of Transportation (NYSDOT) has completed several highway improvement projects within the corridor that are intended to address congestion and improve the mobility and safety of all users. The congestion and accidents associated with Transit Road can be attributed, in large part, to the large number of driveways serving the various commercial developments along the highway. The continuation of development along this corridor threatens to worsen the existing problems.

The Towns of Amherst and Clarence and the NYSDOT recognize that planned, orderly land development in conjunction with coordinated road improvements would minimize traffic congestion, improve safety and maximize the use of limited infrastructure resources. In addition, this cooperative planning effort will result in a comprehensively designed corridor that preserves and enhances safe and efficient transit for motorists and pedestrians and will ultimately encourage continued economic development in the future.

The Towns of Amherst and Clarence are working with the NYSDOT to develop goals and strategies that will facilitate economic development in the vicinity of the corridor without compromising the need for safe and efficient movement of people and goods. Because much of the land in certain portions of the study area is already developed, retrofitting existing development to improve access configurations will be a component of the plan. Existing businesses, landowners and the traveling public have been involved in the planning process to assure a realistic and achievable set of recommended actions. Directing new development into efficient access configurations will be the

focus for undeveloped parcels. Pedestrian and bicycle accommodations and aesthetic enhancements will also be considered.

This summary of existing conditions is the first step in a planning process that will lead to the creation of a Final Report. The report, in response to information contained in this document and the information collected from the Steering Committee and community at large, will contain recommendations for appropriate modifications to existing land use plans along the corridor. These recommendations might include: land use density and type adjustments; frontage requirements; set back requirements; shared and joint access requirements; driveway spacing standards; corner clearance standards; improved site circulation; and subdivision regulations that support the development of local roads.

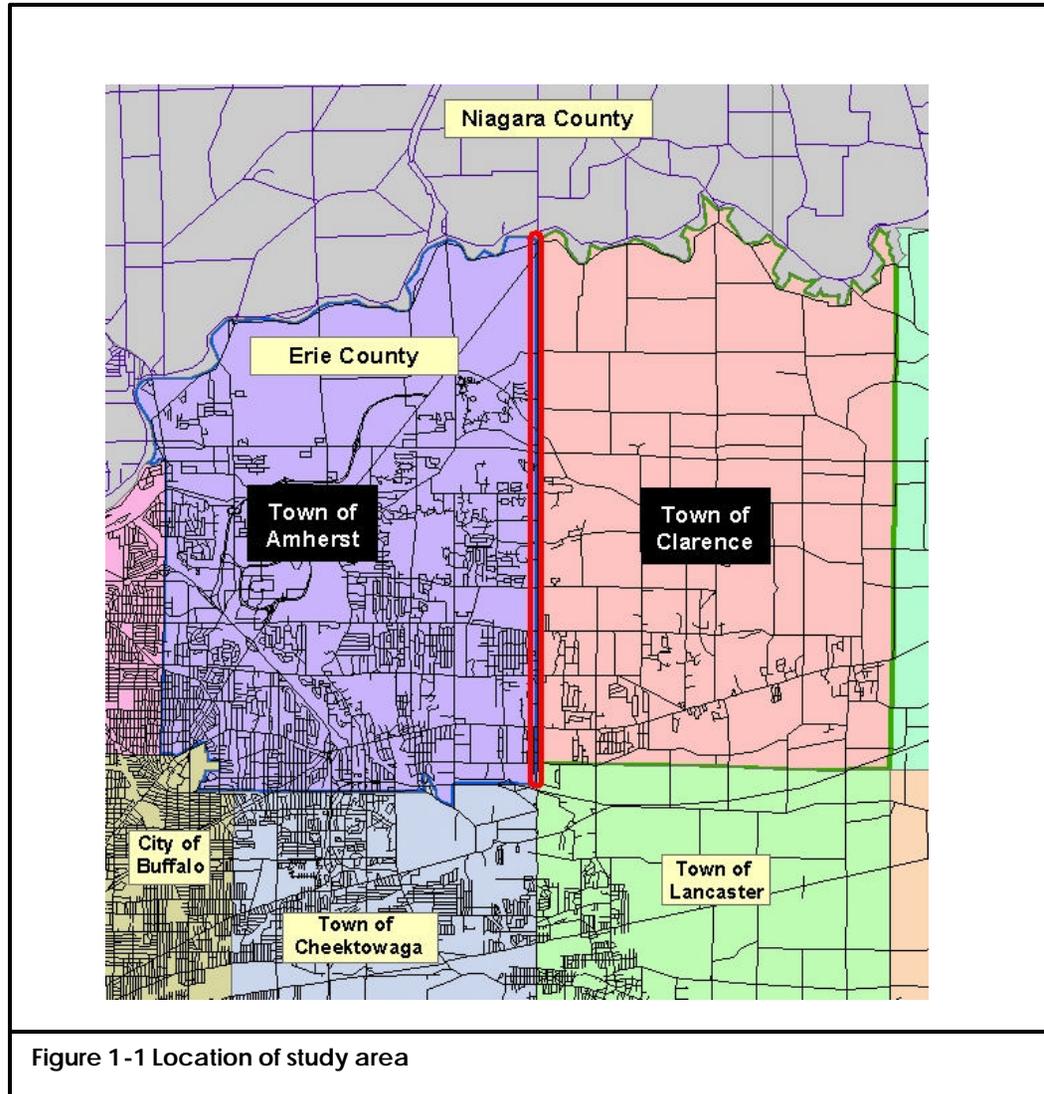
The plan will also contain recommendations for highway improvements such as road widening, medians, auxiliary turn lanes, median openings, future intersections, frontage/access roads, and local road improvements. Conceptual designs for the corridor will be developed to illustrate the transportation improvements that could and should be made to address the issues raised throughout the planning process.

Recommendations from this study will be incorporated into the Comprehensive Plans for both towns, which are currently being updated. The Town of Amherst will consider each recommendation of the study during the process of amending and updating the Draft Comprehensive Plan and proposed zoning amendments.

1.2 Description of Study Area

Transit Road (US Route 78) is an element of the regional transportation network; it runs from Route 20A in Orchard Park, Erie County, to the City of Lockport in Niagara County. It is the boundary between the Towns of Amherst and Clarence. The study area is approximately 10 miles long, and it has been defined to encompass approximately 500 feet on either side of Transit Road. The 500-foot buffer allows for consideration of land use and access management recommendations that could

affect side streets, rear access roads, and land use decisions for entire parcels adjacent to Transit Road.



2 Study process

2.1 Community Involvement

A Steering Committee, which includes representatives from the Towns of Amherst and Clarence, as well as business owners, property owners, and the NYSDOT, have managed this study. The Steering Committee has identified a corridor vision, goals and objectives, and it will review study products as they are completed. To ensure widespread community involvement in the planning process, a series of stakeholder meetings were conducted in September 2001 and a public workshop was conducted in May 2002.

A public information meeting will be held after a draft existing conditions summary has been completed. Comments from the public will be considered during the preparation of the final report.

2.2 Existing Plans or Studies

Town of Amherst

The Town of Amherst is in the process of completing its Bicentennial Comprehensive Plan. Many of the issues addressed in the Town's Vision, which will guide the community's decision making over the next two decades, are relevant to the concerns being addressed in the Transit Road Corridor Study. Driven by the desire to provide an "exceptional quality of life," the Plan establishes goals and policies in pursuit of the Vision and addresses quality of life issues that are directly related to the issues of land use and access management:

- Managing growth and change to preserve natural and cultural resources;
- Maintaining green space and revitalizing older neighborhoods and commercial corridors while accommodating quality new development; and
- Working to balance its role as a residential community and a center of regional activity.

The Comprehensive Plan transportation overview recognizes the impact that growth and development have had on the increasing traffic congestion. "Amherst's existing transportation

network is highly dependent upon private automobiles due to the Town's history of typical suburban style development... This dependency on the automobile has caused congestion along major roadway corridors and decreased safety for pedestrian and bicycle users."

The Town's Plan includes a wide variety of goals, objectives and policies that are relevant to this corridor study, particularly in the areas of land use and development, transportation and economic development. Although it would be imprudent to list all of the relevant goals, objectives and policies from the draft plan, a few examples have been provided here to show the connection between this corridor study and the overall direction of the community.

- "A key principle is to coordinate transportation and land use policies to promote compact, mixed-use development patterns that reduce automobile dependency and encourage pedestrian activity."
- "Reduce future new commercial development in North Amherst and along highway strips."
- "As a general rule, future new commercial development (as opposed to redevelopment in existing commercial areas) should be limited to mixed-use centers and retail nodes designated at key locations such as major intersections rather than being allowed to proliferate along arterial roadways."
- "Placement of building and parking areas in relation to each other and public roads...The visual character of automobile-oriented corridors such as Niagara Falls Blvd. and Transit Road would be improved by policies that encourage a portion of required parking to be located to the side and rear of buildings in order to reduce the scale of front yard parking areas."
- "Promote commercial development patterns that reduce neighborhood impacts."
- "Adopt standards for neighborhood development compatibility with highways and use context sensitive solutions to pursue compatibility."

- “Improve system capacities through operational improvements, including improved access management and a comprehensive signal-timing plan.
- “Modify the Town’s engineering standards for roadways to reduce neighborhood impacts...examples include: reduced lane widths and turning radii, emphasis on targeted improvements rather than extensive widening that will adversely affect adjacent land uses; and traffic calming measures.”

Town of Clarence

The Town of Clarence’s Master Plan 2015 includes several community goals that are relevant to the Transit Road Corridor Management Plan:

- Preserve and protect the open character of the town
- Maintain and promote the historic character of Swormville
- Preserve existing green space through the redesign of land use regulations and design guidelines
- Provide consistent enforcement of land use regulations
- Adopt an orderly and balanced growth plan that protects existing residential areas.
- Coordinate planning efforts on a regional basis.

The Master Plan contains numerous observations and actions that are relevant to the corridor management study. The following are just a few examples:

- “As one of the fastest growing towns in the region, the Town of Clarence is concerned over loss of open space and productive agricultural lands... A common theme has emerged in community meetings, including goal setting meetings, that preservation of the rural character of the Towns is most important to its residents.”
- Commercial uses in the Hamlet of Swormville are limited to the Transit Road Corridor, which is zoned Major Arterial. Land behind current uses is farmland or vacant land, with access to

sanitary sewers in Erie County Sewer District # 5. Outside the immediate Transit Road Corridor, the Hamlet of Swormville remains largely undeveloped. Growth or investment in this area will be mostly new structure. “If the character of the area is to be maintained and promoted, then the Town will need to develop design standards that compliment the existing structures within the hamlet.”

- In the Hamlets, special districts should be created to develop municipal parking, sidewalk maintenance and historic lighting districts, all of which will make the area a walkable community.
- Create a separate zoning classification and district for Clarence Hollow, Clarence Center, Swormville, and other areas that the Town believes should develop using traditional neighborhood principles.
- “Change from Major Arterial to Neighborhood Business the section of Transit Road within the density flood zone (north of Lapp Road to just south of Tonawanda Creek Road) and add depth where feasible to encourage commercial development”
- “Identify areas along Transit Road in the Major Arterial Zone where the depth of the zone can be increased to accommodate more substantial projects without negatively impacting upon existing residential neighborhoods.”
- “Create a buffer zoning classification to allow for compatible uses between the Major Arterial and Commercial Zoning classifications and single-family residential areas.”
- “As growth continues within the Town of Clarence the volumes of traffic on collector roads, predominantly county maintained, will increase. It will be critical for the Town to thoroughly identify traffic impacts on the regional highway system when approving land uses.”
- “As a part of the LUAMP for Transit Road, one of the outputs will be a “tool box” of access management techniques to utilize on other highway sections within the Town. This will be

critical in maintaining levels of service without capital projects to widen existing roads. Transportation System Management (TSM) initiatives such as consolidation of driveways and use of parallel service roads within development parcels will be supported.”

2.3 Study Purpose

Transit Road, which is the boundary between the Towns of Amherst and Clarence, serves two important purposes:

1. The movement of goods and services; and
2. Access to commercial and residential development, which is particularly dense in the southern portion of the study area.

The purpose of this study is to identify action items that the Towns of Amherst and Clarence or others (NYSDOT, Erie County, property owners, etc.) can perform to effectively balance efficient traffic flow with safe and reasonable access to and from adjacent commercial and residential development along Transit Road. The action items may be in the form of recommendations for roadway improvements, site access modifications, site development regulations, zoning code changes, site plan review procedures, and other policies, standards, or procedures.

2.4 Study Objectives

The following objectives are desired from the formulation of the Transit Road Corridor Management Study:

1. Identify strategies to improve safety (e.g. reduce accidents/potential for accidents) and traffic flow (e.g. reduce vehicular travel times);
2. Improve access to area businesses;
3. Enhance aesthetic appeal of the corridor;
4. Increase and improve accommodations for pedestrians, bicyclists and transit;
5. Preserve the character and heritage of the Hamlet of Swormville;

6. Evaluate a range of techniques that can reduce or minimize the transportation impacts identified above; and
7. Identify those access management and land use techniques that will have the greatest benefits for improved transportation in the area, preserve investment in infrastructure and support the planning initiatives of both towns.

3 INVENTORY OF DATA, FEATURES, AND ACCESS CONTROL

3.1 Description of Transit Road

Transit Road is a north-south highway that is classified under the Federal Highway System as an urban principal arterial throughout the study area. Based on American Association of State Highway and Transportation Officials (AASHTO) guidelines, this classification is characterized by large traffic volumes within and through urban areas. Urban principal arterials are designed to provide a high degree of mobility for the longer trip length, as well as a higher operating speed and level of service.

The corridor is comprised of several sections that correspond to changes in roadway characteristics.

Transit Road consists of:

- Two-travel lanes in both directions from northern study limit at the Erie/Niagara County line to Millersport Highway.
- One-travel lane in both directions from Millersport Highway through the Hamlet of Swormville;
- Two-travel lanes in both directions from the Hamlet of Swormville to Sheridan Drive;
- Three-travel lanes in both directions from Sheridan Drive to Main Street;
- Two-travel lanes in both directions from Main Street to the Thruway (the southern boundary of the study area).

Due to the changing environment and uses along Transit Road, the corridor was divided into four Focus Areas. Where appropriate, this plan's data, analysis and recommendations will be provided at the Focus Area level. The map on the following page illustrates the general boundary of each Focus Area.

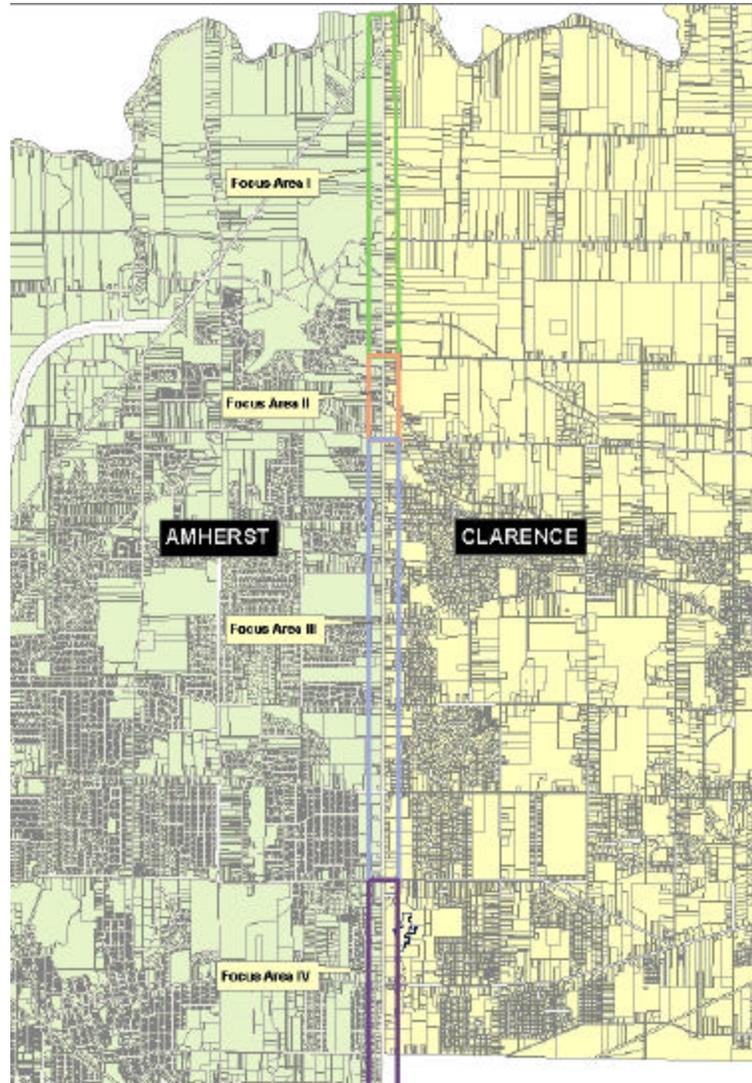


Figure 3-0 Focus Area Map

- 3.1.1 Focus Area I (Tonawanda Creek Road to Lapp Road) is located north of Swormville and is the least developed section of the study area. Characterized by undeveloped lands and a limited amount of clustered commercial development, this rural section of the corridor serves as a gateway into Amherst and Clarence from the north. This area, which is the termination point for Millersport Highway, is a commonly traveled commuter route.
- 3.1.2 Focus Area II (Lapp Road to N. French Road) is located in the Hamlet of Swormville. The Hamlet includes a mix of development that is pedestrian-scaled. Existing uses include a school, church, fire hall, post office, tavern and shopping. In this portion of the study area, Transit Road transitions to a reduced speed limit of 35 mph.
- 3.1.3 Focus Area III (N. French Road to Sheridan Drive) is located to the south of Swormville, and is generally defined as the area between Case and Maple Roads. The area includes a mix of development including suburban-scaled residential and commercial development. Along the corridor, commercial plazas range from suburban-styled plazas to stand alone commercial structures and converted residences. Although a large portion of the road frontage is developed, open parcels remain available for future development. In this area, Transit road has five lanes, sidewalks and a speed limit of 45 mph.
- 3.1.4 Focus Area IV (Sheridan Drive to the NYS Thruway) is the southern most portion of the Transit Road study area, located between Sheridan Highway and the NYS Thruway. Focus Area IV is the most intensely developed portion of the study area and has little to no vacant parcels available for development. Future development in the area will include redevelopment of existing parcels and structures or the creation of new outparcel developments. This portion of the corridor, which is a six-lane highway featuring a raised median and a 45 mph speed limit, is the most heavily traveled section of Transit Road.



Figure 3-1 The view traveling north on Transit Road near Sheridan Highway.



Figure 3-2 The view traveling south on Transit Road in Focus Area IV.

3.2 Highway Features

3.2.1 Road Profile

Within the study area, Transit Road is classified as a principal arterial in the Towns of Amherst and Clarence. The posted speed limit is 55 from County Line (northern study area limit) to Swormville and 45 mph from Swormville to the Thruway (southern study area limit). The profile of the road changes significantly throughout the study area, examples of which are illustrated in Figures 3-1 and 3-2. Consequently, information about the corridor's travel lanes, medians, curbs, shoulder and curb offsets varies considerably. Sections of the road are described in Table 3-1.

**Table 3-1
Road Profile Description**

Segment	Begin Station	End Station	Number Of Travel Lanes		Lane Widths	Center Lane/ Median	Median Width	Curbed	Shoulder Width or Curb Offset
			NB	SB					
NY Thruway to Wehrle Dr. (I-90 to CR 290)	11+85	35+82	2	2	10.5	TWLTL	11 +	Yes	6
Wehrle Dr. to Main St. (CR 290 to Route 5)	35+82	68+21	2	2	10.5	TWLTL	11 +	Yes	6
Main St. to Sheridan Dr. (Route 5 to Route 324)	68+21	107+90	3	3	10	Raised	16	Yes	6
Sheridan Dr. to Maple Rd. (Route 324 to CR 192)	107+90	155+72	2	2	10	TWLTL	11	Yes	2
Maple Rd. to Klein Rd./Roll Rd. (CR 192 to CR 277)	155+72	194+74	2	2	10	TWLTL	11	Yes	2
Klein Rd./Roll Rd. To French Rd. (CR 277 to CR 299)	194+74	316+51	2	2	10	TWLTL	11	Yes	2
French Rd. to Wolcott Rd. (CR 299 to CR 247)	316+51	407+34	1	1	12	None	0	No	8
Wolcott Rd. to Millersport Hwy. (CR 247 to Route 263)	407+34	496+47	1	1	12	None	0	No	8
Millersport Hwy. To Erie/Niagara County Line	496+47	509+67	2	2	10	TWLTL	16	No	4
<i>Source: SRF & Associates</i>									

3.2.2 Traffic

The highest volumes of traffic within the study area are located at the northern and southern ends of the study area. From Millersport Highway to the County Line, 27,300 vehicles travel that segment of Transit Road daily, according to New York State Department of Transportation (NYSDOT) data. From the New York State Thruway to Main Street, the Annual Average Daily Traffic (AADT) is estimated to be between 34,000 and 35,600. Table 1-2 contains the AADT figures for segments within the study area. The volume-to-capacity ratio (an indication of the relationship between the volume of traffic and the capacity of the highway) varies from 0.4 to 0.8. The lower ratios can be found in Focus Areas I and II, where there are lower volumes on two-lane segments. The higher ratios are located in the portion of the study area with the denser commercial development (Focus Areas III and IV). This range of volume-to-capacity ratios typically indicates that motorists are able to travel at or near the speed limit consistently within the study area. However, the higher V/C ratios in the southern portion of the study area may indicate the need for more intense land use and access management strategies.

Table 3-2 Traffic Volumes				
Segment	Volume AADT	Truck Percentage	DHV	V/C
NYS Thruway to Wehrle Dr.	35,600	6%	2,170	0.8
Wehrle Dr. to Main St.	34,000	6%	2,080	0.8
Main St. to Sheridan Dr.	27,600	6%	1,690	0.6
Sheridan Dr. to Maple Rd.	28,900	6%	1,760	0.6-0.7
Maple Rd. to Klein Rd.	19,100	5%	1,160	0.4
Klein Rd. to French Rd.	20,800	5%	1,270	0.5
French Rd. to Wolcott Rd.	12,700	6%	770	0.6
Wolcott Rd. to Millersport Hwy.	12,000	6%	740	0.6
Millersport Hwy. To County Line	27,300	6%	1,670	0.5

Table 3-3 contains a detailed analysis of the signal and side street locations throughout the study area. Where applicable, information on signal spacing and auxiliary travel lanes has been provided. This information is useful in identifying key or problematic intersections as well as evaluating and mitigating potential conflict points throughout that study area.

Side Street	Median Type	Station	Side Street Spacing	Signal	Signal Spacing	Auxiliary Travel Lanes			
						Feet	Feet	-	Feet
NYS Thruway (I-90)	TWLTL	11+85	-	No	-	-	-	-	-
Freeman Road	TWLTL	13+63	178	No	-	-	-	-	-
Wehrle Dr. (CR 290)	TWLTL	35+82	2,219	Yes	-	L	L	L	L & R
Garfield Rd.	TWLTL	46+63	1,081	Yes	1,081	-	-	-	-
Home Depot	TWLTL	50+73	410	Yes	410	-	-	-	-
Lyndhurst Rd.	TWLTL	57+38	665	No	-	-	-	-	-
Main St. (Route 5)	TWLTL / Raised	68+21	1,083	Yes	1,748	2L & R	2L & R	2L	2L
Tennyson Rd.	Raised	77+84	963	No	-	L	L	-	-
Center driveway to Eastern Hills Mall	Raised	92+56	1,472	Yes	2,435	-	-	-	-
North driveway to Eastern Hills Mall	Raised	101+92	936	No	-	L	L	-	-
Sheridan Dr. (South Access) (Route 324)	Raised / TWLTL	107+90	598	No	-	-	-	-	-
Sheridan Dr. (North Access) (Route 324)	TWLTL	118+93	1,103	Yes	2,637	L	L	-	-
3 rd Ave.	TWLTL	127+21	828	No	-	-	-	-	-

Table 3-3 Signal and Side Street Location Information									
Side Street	Median Type	Station	Side Street Spacing	Signal	Signal Spacing	Auxiliary Travel Lanes			
	-	Feet	Feet	-	Feet	NB	SB	EB	WB
Tops Plaza	TWLTL	128+31	110	Yes	938	L	L	L & R	L & R
Maple Rd./Greiner Rd. (CR 192)	TWLTL	155+72	2,741	Yes	2,741	L	L	L	L & R
Village Station Rd.	TWLTL	176+43	2,071	No	-	-	-	-	-
Renaissance Dr.	TWLTL	180+32	389	Yes	2,460	L	L & R	L & T/R	L & T/R
Klein Rd./Roll Rd. (CR 277)	TWLTL	194+74	1,442	Yes	1,442	L&R	L&R	L	L
Highland Farms Dr.	TWLTL	212+47	1,773	Yes	1,773	L	L	-	L
Hunt Club Circle	TWLTL	220+96	849	No	-	-	-	-	-
Clarence Center Rd.	TWLTL	235+30	1,434	Yes	2,283	-	L	-	R
Woodbridge Lane	TWLTL	248+73	1,343	No	-	-	-	-	-
East Amherst Fire Sta.	TWLTL	255+13	640	Yes	1,983	-	-	-	-
Casey Rd./Old Post Rd.	TWLTL	278+43	2,970	Yes	2,330	L	L	L	-
Miles Rd.	TWLTL	294+69	1,626	No	-	-	L	-	-
Deer Creek Lane	TWLTL	305+32	1,063	No	-	L	-	-	-
French Rd./County Rd. (CR 299)	TWLTL	316+51	1,119	Yes	3,808	L&R	L	L&R	L
Dodge Rd.	None	323+00	649	No	-	L	-	L	-
Smith Rd./Stahley Rd.	None	335+00	1,200	No	-	-	-	-	-
Lapp Rd.	None	355+12	2,012	No	-	-	-	-	-
Dann Rd. (CR 247)	None	405+19	5,007	No	-	-	-	-	-
Wolcott Rd. (CR 247)	None	407+34	215	No	-	-	-	-	-
Millersport Hwy. (Route 263)	None	496+47	8,913	Yes	17,996	L	R	L	-

Table 3-3 Signal and Side Street Location Information									
Side Street	Median Type	Station	Side Street Spacing	Signal	Signal Spacing	Auxiliary Travel Lanes			
	-	Feet	Feet	-	Feet	NB	SB	EB	WB
Tonawanda Creek Rd.	TWLTL	504+86	839	No	-	-	-	-	-

Source: NYSDOT

Table 3-4 on the following page provides detailed information concerning access density and driveway spacing throughout the study area. It also indicates the percentage of vehicles in the curb lane that are impacted by right turn entering movements at driveways and intersections. This information is helpful in evaluating the impacts of access density on safety, travel time, and operations.

Table 3-4 Access Density Data						
Segment	Length of Segment (ft)	ADT - 1 Direction (vph)	Number of Drives	Access Density (/mile)	Average Driveway Spacing (ft)	% Of Right-Lane Through Vehicles impacted at least once per quarter mile
NB - Thruway to Main Street	5636	17646	15	14	376	12
SB - Thruway to Main Street	5636	16954	21	20	268	16
NB - Main Street to Sheridan Drive	3969	15732	10	13	397	12
SB - Main Street to Sheridan Drive	3969	11868	17	23	233	19
NB - Sheridan Drive to Maple Road	4782	16814	20	22	239	18
SB - Sheridan Drive to Maple Road	4782	12086	16	18	299	15
NB - Maple Road to Klein Road	3902	10696	18	24	217	20
SB - Maple Road to Klein Road	3902	8404	6	8	650	7
NB - Klein Road to North French	12177	11232	21	9	580	8
SB - Klein Road to North French	12177	9568	27	12	451	10
NB - North French to Millersport Hwy	17996	7366	21	6	857	5
SB - North French to Millersport Hwy	17996	5334	13	4	1384	3
NB - Millersport Hwy to Niagara Co Line	1320	7747	3	12	440	10
SB - Millersport Hwy to Niagara Co Line	1320	4953	2	8	660	7
<i>Source: NYSDOT</i>						

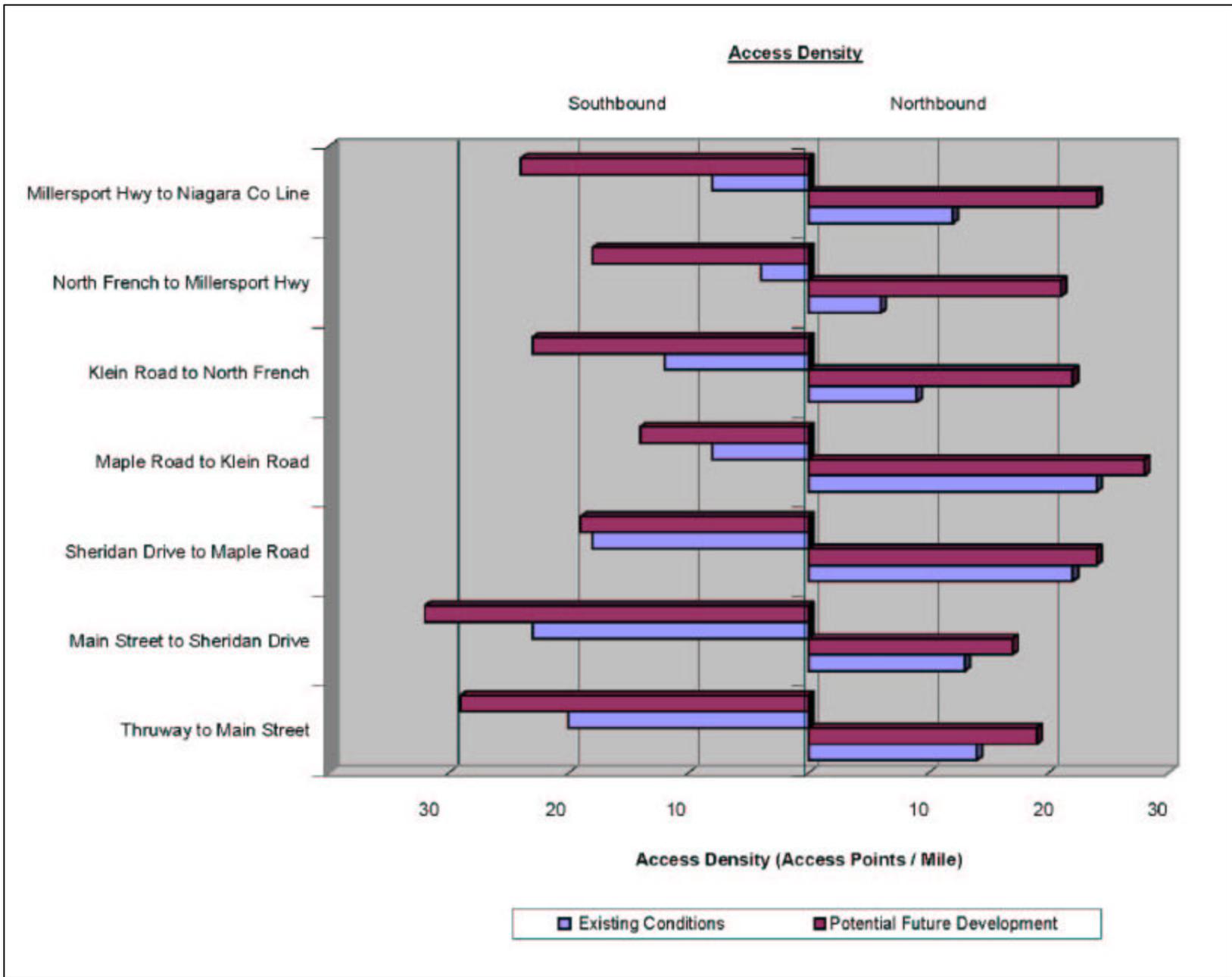


Figure 3-3 Access Density

There is a strong correlation between travel time and speed and access density and traffic signal spacing. Table 3-5 indicates the traffic signal density, travel time rate, speed, and travel time for each segment evaluated. Figure 3-4 on the following page depicts the changes in speed in each segment as it relates to traffic signal density.

Table 3-5 Traffic Signal Density, Speed and Travel Time						
Segment Along Transit Road	Number of Signals	Signal Density (/mile)	ADT - 1 Direction (vph)	Travel Time Rate (min/mi)	Speed (mph)	Travel Time For Segment (min)
Thruway to Main Street	4	4 Sig./Mile	17646	4.08	14.7	4.37
Main Street to Sheridan Drive	2	3 Sig./Mile	15732	2.28	26.4	1.71
Sheridan Drive to Maple Road	2	3 Sig./Mile	16814	3.53	17.0	3.21
Maple Road to Klein Road	2	3 Sig./Mile	10696	2.30	26.1	1.66
Klein Road to North French	5	2 Sig./Mile	11232	2.16	27.8	4.99
North French to County Line	1	1 Sig./Mile	7366	2.40	25.0	8.78
Total Corridor	16					24.72

Source: SRF & Associates

Closely or irregularly spaced access and traffic signals on arterial roadways often result in frequent stops, unnecessary delays, increased fuel consumption and vehicular emissions and higher crash rates. High signal density makes it more difficult to develop timing plans that can accommodate varying traffic conditions efficiently. Both Table 3-5 and Figure 3-4 provide evidence that this dynamic exists within the study area. Generally speaking, as signal density increased, travel time increased and travel speed decreased along Transit Road.

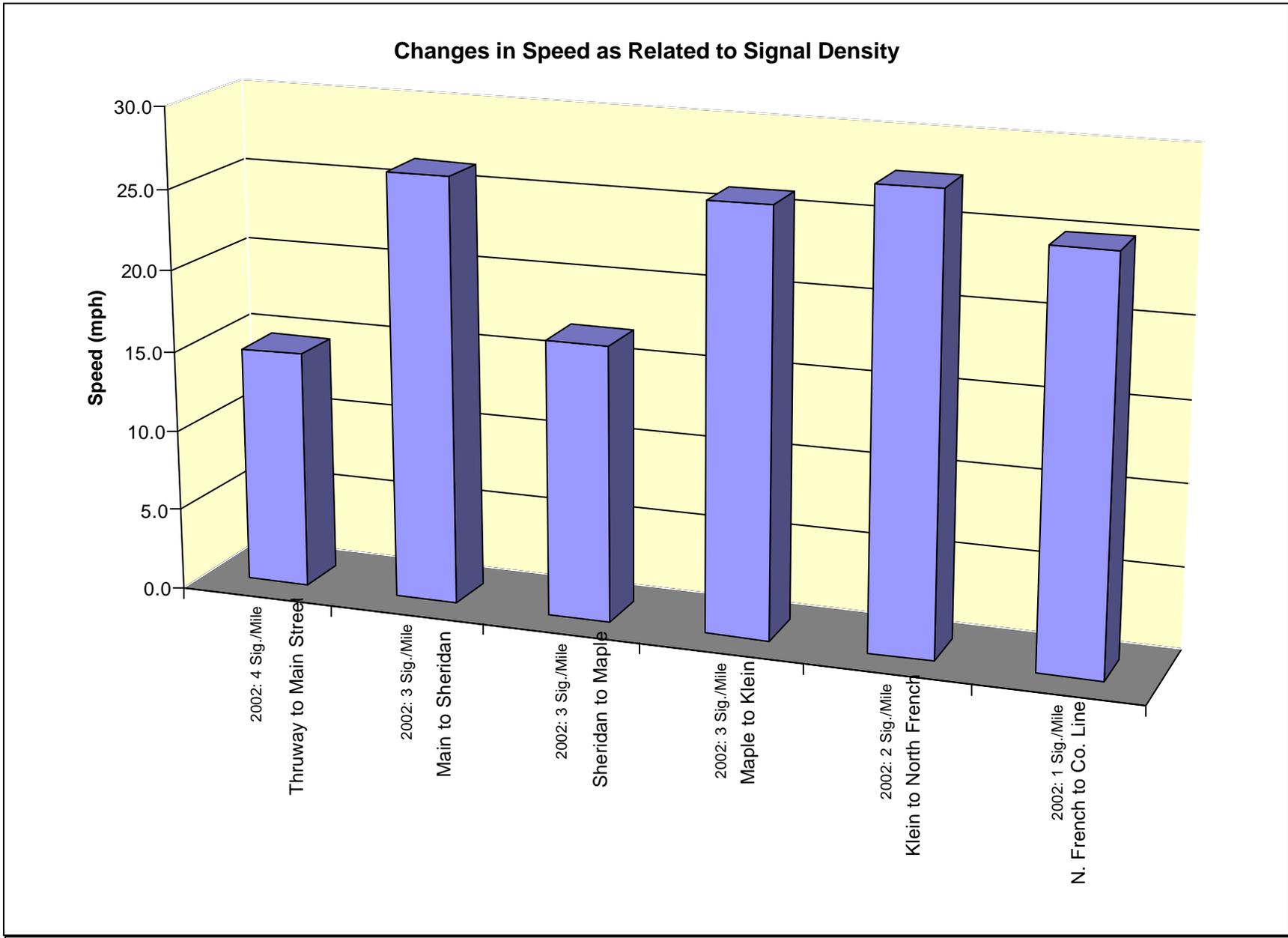


Figure 3-4 Changes in Speed as Related to Signal Density

Existing PM turning movement counts were available at some study area intersections from various sources, including the NYSDOT, Greater Buffalo Niagara Region Transportation Council (GBNRTC) and previous studies. The data, existing PM peak hour turning movement volumes at each study intersection, were collected between 1989 and 2000.

Procedures outlined in the 2000 Highway Capacity Manual and information derived using SYNCHRO traffic analysis procedures and Intersection Capacity Utilization (ICU) methods were used to evaluate existing traffic operations.

The Intersection Capacity Utilization can be thought of as an intersection wide volume-to-capacity ratio. ICU is an ideal solution for traffic planning purposes. Its intended applications are for traffic impact studies, future roadway design and congestion management programs. The ICU is not intended for operations or signal timing design. Although the ICU does not provide a complete picture of intersection performance, it does provide a clear view of the intersection's volume as related to its capacity.

The ICU Level of Service is different from the Synchro or HCM levels of service, which are based on average delay. The ICU Level of Service (LOS) gives insight into how a signalized intersection is functioning and how much extra capacity is available to handle traffic fluctuations and incidents. ICU is not a value that can be measured with a stopwatch, but it does give a good reading on the conditions that can be expected at the intersection. A brief description of the conditions expected for each level of service follows:

LOS A, $ICU \leq 0.60$: The intersection has no congestion. A cycle length of 80 seconds or less will move traffic efficiently. All traffic should be served on the first cycle. Traffic fluctuations, accidents, and lane closures can be handled with minimal congestion. This intersection can accommodate up to 40% more traffic on all movements.

LOS B, $0.60 < ICU \leq 0.70$: The intersection has very little congestion. Almost all traffic will be served on the first cycle. A cycle length of 90 seconds or less will move traffic efficiently.

Traffic fluctuations, accidents, and lane closures can be handled with minimal congestion. This intersection can accommodate up to 30% more traffic on all movements.

LOS C, $0.70 < ICU \leq 0.80$: The intersection has no major congestion. Most traffic should be served on the first cycle. A cycle length of 100 seconds or less will move traffic efficiently. Traffic fluctuations, accidents, and lane closures may cause some congestion. This intersection can accommodate up to 20% more traffic on all movements.

LOS D, $0.80 < ICU \leq 0.90$: The intersection normally has no congestion. The majority of traffic should be served on the first cycle. A cycle length of 110 seconds or less will move traffic efficiently. Traffic fluctuations, accidents, and lane closures can cause significant congestion. Sub optimal signal timings cause congestion. This intersection can accommodate up to 10% more traffic on all movements.

LOS E, $0.90 < ICU \leq 1.00$: The intersection is right on the verge of congested conditions. Many vehicles are not served on the first cycle. A cycle length of 120 seconds is required to move all traffic. Minor traffic fluctuations, accidents, and lane closures can cause significant congestion. Sub optimal signal timings can cause significant congestion. This intersection has less than 10% reserve capacity available.

LOS F, $1.00 < ICU \leq 1.10$: The intersection is over capacity and likely experiences congestion periods of 15 to 60 minutes per day. Residual queues at the end of green are common. A cycle length over 120 seconds is required to move all traffic. Minor traffic fluctuations, accidents, and lane closures can cause increased congestion. Sub optimal signal timings can cause increased congestion.

LOS G, $1.10 < ICU \leq 1.20$: The intersection is 10% to 20% over capacity and likely experiences congestion periods of 60 to 120 minutes per day. Long queues are common. A cycle length over 120 seconds is required to move all traffic. Motorists may be choosing alternate routes, if they exist, or making fewer trips during the peak hour. Signal timings can be used to "ration" capacity to the priority movements.

LOS H, $1.20 < ICU$: The intersection is 20% over capacity and could experience congestion periods of over 120 minutes per day. Long queues are common. A cycle length over 120 seconds is required to move all traffic. Motorists may be choosing alternate routes, if they exist, or make fewer trips during the peak hour. Signal timings can be used to "ration" capacity to the priority movements.

Table 3-6 on the following page indicates the existing ICU at each study intersection.

Table 3-6 Intersection Capacity Utilization		
Intersection	Signalized	ICU
Wehrle Drive	Yes	1.12
Garfield Road	Yes	.70
Home Depot	Yes	.70
Lyndhurst Road	No	N/A
Main Street	Yes	.71
Tennyson Road	No	N/A
Center driveway to Eastern Hills Mall	Yes	N/A
North driveway to Eastern Hills Mall	No	N/A
Sheridan Drive (South Access) (Route 324)	No	N/A
Sheridan Drive (North Access) (Route 324)	Yes	.73
3rd Avenue	No	N/A
Tops Plaza	Yes	N/A
Maple Road/Greiner Road (CR 192)	Yes	1.02
Village Station Road	No	N/A
Renaissance Drive	Yes	N/A
Klein Road/Roll Road	Yes	.76
Highland Farms Drive	Yes	N/A
Hunt Club Circle	No*	.33
Clarence Center Road	Yes	.54
Woodbridge Lane	No	N/A
East Amherst Fire Station	Yes	N/A
Casey Road/Old Post Road	Yes	.60
Miles Road	No*	.47
Deer Creek Lane	No	N/A

Table 3-6 Intersection Capacity Utilization		
Intersection	Signalized	ICU
French Road/County Road (CR 299)	Yes	.74
Dodge Road	No*	.95
Smith Road/Stahley Road	No*	.93
Lapp Road	No	N/A
Dann Road (CR 247)	No	N/A
Wolcott Road (CR 247)	No	N/A
Millersport Creek Road	Yes	N/A
Tonawanda Creek Road	No	1.65

N/A = no data available at intersection

* = ICU calculation reflects potential ICU under signalization

Table 3-6 indicates that the intersections of Transit Road with Wehrle Drive, Maple Road/Greiner Road (CR 192), and Tonawanda Creek Road (if signalized) are currently exceeding their capacities. In addition the intersections of Transit Road with Dodge Road and Smith Road/Stahley Road would be very near capacity if they were signalized.

3.2.3 Accidents

Accident reports for the intersections within the limits of this project were investigated to assess the safety history. The accidents included in the current review occurred during a three-year time period from January 1997 through December 1999. During this period, 1,078 accidents were documented at the intersections included in the study area.

The accident history was further investigated to identify the number of accidents occurring at signalized and unsignalized intersections to determine how many accidents may be

correctable through access management techniques. Of the 1,078 accidents that occurred in the study area during the three-year investigation period, 228 occurred at signalized locations and 850 occurred at unsignalized locations (intersections and driveways). The number of accidents occurring at signalized and unsignalized locations is further subdivided into sections based on the study area segments shown in Table 3-7.

Table 3-7			
Number of Accidents at Signalized and Unsignalized Locations			
Segment Along Transit Road	Number of Accidents at Signalized Intersections	Number of Accidents at Unsignalized Intersections	Total Number of Accidents
Wehrle to Main Street	96	359	455
Tennyson to Sheridan Drive	11	100	111
3 rd Ave to Maple Road	39	112	151
Village Station to Klein Road	26	53	79
Highland Farms to North French	50	136	186
Dodge to Millersport	6	90	96
Total Corridor	228	850	1078

Roadway median treatments influence how well roadways operate, their accident experience, and the access they provide to adjacent developments. The basic choices for designing medians are:

- Whether to install a continuous TWLTL;
 - Whether to install a non-traversable (physical) median on an undivided roadway;
- and

- Whether and when to replace a TWLTL with a non-traversable median.

TWLTL's and medians improve traffic operations and safety by removing left turns from through travel lanes. While TWLTL's provide more ubiquitous access and maximize flexibility, medians physically separate opposing traffic, which limits access and conflicts and provides better pedestrian refuge. Medians also serve as a traffic-calming agent by encouraging slower speeds.

Installation of a raised median in the segments that currently have a two-way-left-turn lane, or installation of two-way-left-turn lane in segments that are currently undivided may result in decreases in accident rates of 11% to 15%.

Noticeable increases in the levels of service, volume-to-ratio capacity levels and accidents were found in segments of the corridor that had more travel lanes and more densely developed adjacent land uses. Average travel times and speeds decreased significantly in these areas as well. While the higher traffic volumes in these segments contributed to some of these conditions, the analysis indicated that the number and spacing of driveways were also significant contributors to the observed conditions. These types of issues are typically related to land use, development patterns and site planning. Consequently, the data confirm that conditions along Transit Road could be improved in the future through the application of access management principles/techniques.

3.3 Land Use Features

3.3.1 Regulations

Transit Road separates two neighboring towns. Rather than describe the zoning for each town separately, zoning will be described according to the Focus Area location along the corridor. This method will provide a comprehensive overview of the regulations affecting the corridor, as well as a better context and understanding of the existing and intended development throughout the study area.

Focus Area I (North of Swormville / County Line to Lapp Rd.) – In Amherst, a majority of the parcels adjacent to the corridor are zoned Suburban Agricultural (SA). According to the Town’s Zoning Code, this classification is intended to “provide areas within the town for low-density, semi-rural single-family detached residential development which would also accommodate farms and other farm-related and other non-intensive compatible activities.” There are also significant areas devoted to Multi-Family Residential (MF-5), General Business (GB), and Single-Family Residential (R-3). On the Clarence side, the parcels immediately adjacent to the corridor are zoned Major Arterial. The Major Arterial zone is intended to “provide appropriate space and, in particular, sufficient depth from an abutting road or highway to satisfy the needs of modern local retail, office and institutional development, including the need for off-street parking spaces and loading areas where a large proportion of shoppers and other persons come by automobile.” Lands to the east of the Major Arterial zoned area are generally classified as Agricultural. It should be noted that on the proposed zoning map, the parcels adjacent to the corridor would be rezoned to Restricted Business. The outlying areas would continue to be designated as Agriculture/Residential.

Focus Area II (Swormville / Lapp Rd. to N. French Rd.) – In Amherst, the parcels adjacent to the corridor are a mix of suburban, agricultural, residential and business. In Clarence this area is currently zoned as Major Arterial. However, in the proposed zoning map, this area would be rezoned to Traditional Neighborhood.

Focus Area III (N. French Rd. to Sheridan Drive) – In Amherst, there is a predominant pattern of commercial zoning along the Transit Road frontage and multi-family zoning immediately adjacent. The multi-family residential zones buffer single-family residential areas located to the west from commercial uses along the highway frontage. Other zoning classifications include Community Facilities and Suburban Agricultural Residential. In Clarence, the corridor is zoned Major Arterial, with an increasing amount of Residential-A zoning abutting commercial uses along the arterial.

Focus Area IV (Sheridan Drive to the NYS Thruway) – The pattern of commercial, multi-family and residential zoning evident north of Sheridan Drive (Focus Area III) is also evident between Sheridan Drive and Main Street. South of Main Street, the pattern changes significantly. Here a narrow band of commercial zoning (General Business) directly abuts single-family zoning to the west, which makes redevelopment in this area difficult. As noted above, this segment of Focus Area IV is designated for large-scale retail development. In Clarence, the zoning along the corridor remains Major Arterial. The zoning abutting that district includes:

- Planned Unit Residential Development (PURD) – “To permit flexible land use and design regulations through the use of performance criteria so that multi-use neighborhoods or portions thereof may be developed in a manner which incorporates a variety of residential types and certain non residential uses;”
- Residential-A – allows for single-family dwellings as well as home-based occupations that do not require more than one non-resident assistant.
- Commercial – allows for commercial or business enterprises offering goods and services for sale at wholesale or retail such as shopping centers, heating/electrical/plumbing shops, drive-in restaurants, and multi-family dwellings.

Although the zoning classifications differ in these two communities, the corridor generally transitions from rural surroundings in the north to denser commercial (strip) development in the southern portion of the study area.

3.3.2 Developable Land

The density and location of existing development and a community's preferences for scale and appearance have a significant impact on the definition of the term "developable land." However, based on a review of the towns' existing vacant parcels (derived from Real Property system classifications) and current land use and zoning maps, it is reasonable to assume that a bulk of the under developed land in and near the study area is located in Focus Area I (north of Swormville). There are also significant pockets of under developed land along the corridor north of Casey Road. Additionally, there are portions of developable land along the corridor, and immediately adjacent to it, in Focus Areas II and III. Of particular concern are vacant parcels located in the Hamlet of Swormville. Both towns have identified this area for preservation of the character and heritage. How the developable land in this area is used will impact transportation through the Hamlet as well as its overall sense of place.

3.3.3 Water and Sewer Availability

Public water is readily available along the corridor throughout the study area. The Sewer District Map in the Figures section of this summary shows the location of the sewer districts in the Towns of Amherst and Clarence. However, sewers are generally unavailable north of Swormville. Amherst's Bicentennial Comprehensive Plan calls for eliminating the sewer district there. In Clarence, Focus Area I (north of Swormville) is the only portion of the study area that does not have access to public sewer. The Town of Clarence does not anticipate extending a sewer district in this area in the near future.

3.4 Environmental Features

A review of existing environmental features must be included in any discussion of future land use and access management since they will ultimately affect the possibility for, density, and type of development that can occur in the study area.

3.4.1 Federal and State Wetlands

The natural features map included in the Figures section of this summary shows a limited amount of State and/or Federal wetlands located on or near the corridor within the study area. There is a considerable amount of federal and state wetlands located in close proximity to the corridor in Focus Area I. In addition, a small portion of federal wetlands is located along the corridor near Swormville. Development in or near these areas will be impacted by the presence of wetlands as a result.

3.4.2 Floodplains

Designated floodways associated with Ransom and Black Creeks cross the corridor within the study area. Because of its width, the Black Creek Floodway will have a significant impact on the development potential in this segment of the corridor. The presence of floodplain and floodways limit the amount and intensity of development that can occur in this portion of the study area.

3.4.3 Other Features

There are no topographic or geologic features that will significantly impact the planning effort for Transit Road.

3.5 Development, Re-Development and Roadway Improvements Plans

3.5.1 Development Plans

At this time there is one known development project slated along the Transit Road corridor that should be considered as part of this study. A 600-unit residential development just north of Dann Road, which includes new road connections to Millersport Highway, is underway in the Town of Amherst. Additionally, Renaissance Drive, midway between Klein and Maple Roads, has been completed between Transit Road and Covent Garden Lane. Currently, 231

residential units with access to the new roadway are in the final stages of the approval process. There are no other specific plans for new development along the corridor that need to be considered as part of this study. The Towns anticipate that any new development would be located in the Focus Areas II (the Hamlet) and III. This plan will make land use and access management recommendations that can be applied to future development projects.

3.5.2 Redevelopment Plans

Much of the redevelopment opportunities along the corridor will occur in Focus Area IV, which is the most intensely developed segment of the study area. This plan will take into consideration the cyclical redevelopment that is typically found in these types of areas where retail development and businesses come and go over the course of time.

3.6 Existing Access Management Regulations

3.6.1 Existing Document Review

In addition to the pertinent recommendations reviewed and described in Section 2.2 and 3.3 of this report, the following access management provisions were identified within the Towns of Amherst and Clarence's Zoning Code & Subdivision Regulations.

3.6.2 Zoning Code

Amherst

The Town of Amherst's zoning ordinance includes minimum lot size, width, space between buildings and density requirements for all zoning classifications, which directly affects the spacing of driveways. In addition, the code includes for certain classifications, detailed requirements related to pedestrian connections and street design. For example, in the code's section on "regulations applying to all districts," there are requirements that are pertinent to land use and access management. Some examples have been provided here.

- A schedule of minimum parking requirements is provided for specific residential, commercial and industrial uses and configurations, which ranges from two to seven parking spaces per 1,000 sq. ft. of floor space.
- Guidelines for off street parking location and dimensions are provided
- “Pedestrian walks between parking areas and buildings shall be provided to assure pedestrian safety.”
- “Entrance and exit driveways serving parking, loading and stacking facilities, drive-in businesses, fee parking lots and public parking lots shall be provided in location, size and number so as to interfere as little as possible with the use of adjacent property and the flow of traffic on the streets to which they connect.”
- “Approval of a site plan or subdivision, including individual phases of a site plan or subdivision, shall not be granted where a cul-de-sac, dead-end or any street with only one point of access from an improved public right-of-way exceeds 800 feet in length as measured along the center line from the single point of access at the public right-of-way, except as otherwise approved by the Planning Board.”

Clarence

Throughout the study area, the zoning classification in this corridor is Major Arterial in the Town of Clarence. The town’s existing zoning code recognizes the potential impact that development in this zone will have on traffic. “Areas intended to be included within the Major Arterial District are those which abut highways which connect directly to arterial highways such as the New York State Thruway, which have public facilities such as public water and public sewer for intensive development and in which there is a trend toward intensive development with accompanying increase on traffic.

The Town’s Code also specifies the allowable lot size, building size, yard size, setbacks and specifications for off-street parking and loading, which will impact how closely driveways are spaced and distance of driveway throat length. No other guidelines related to access management are included. In addition, the code specifies minimum parking space requirements for various

uses permitted within the district, which ranges from five to 10 spaces per 1,000 sq. ft. of shop or retail space.

It is important to note that the current zoning map is under review and that a portion of the study area, north of Swormville, may be rezoned to Restricted Business. The change in zoning would affect the type and density of development occurring in this portion of the study area. Once approved, the zoning changes should be considered in any land use and access management decisions made for the area.

3.6.3 Subdivision Regulations

Amherst

The Town of Amherst's Subdivision Regulations include location of streets, street widths, block size, intersections, the continuation of streets, and dead end streets that would have a direct effect on the community's ability to implement corridor and access management techniques.

- “Local Streets shall be so aligned that their use by through traffic will be discouraged.”
- “The creation of dead-end or loop residential streets will be encouraged wherever the Board finds that such type of development will not interfere with normal traffic circulation in the areas.”
- “Minor or secondary street openings into collector or major arterial roads shall, in general, be at least 500 feet apart.”
- “A plan for safe and convenient pedestrian circulation within the subdivision and between the subdivision and surrounding areas shall be provided.”

The Town also has Residential Subdivision Street Specifications which impacts access management in and around residential areas. More specifically, the regulations state the following:

- “Driveway entrances should be avoided on arterial streets and wherever possible on collector streets.”
- “Pedestrian, bicycle and vehicular traffic should be separated to the extent possible.”
- “Whenever possible, residential street layouts should be planned to avoid four-way intersections.”
- “Turning lanes at heavily traveled intersections should be provided.”
- “To the extent feasible, the number of street intersections should be minimized.”
- “If the adjacent property is undeveloped and the street must be a dead end street temporarily, the right-of-way and improvements shall be extended to the property line.”
- “The Board may require marginal access streets, reverse frontage with screen planting contained in a non-access reservation along the rear property line. For adequate protection of residential properties.” (Town Subdivision Regulation)
- “Minor or secondary street openings into collector, major or arterial streets shall be at least 500 feet apart.” (Town Subdivision Regulation)

Clarence

The Town of Clarence’s Subdivision Regulations include location of streets, street widths, block size, intersections, the continuation of streets, and dead end streets that would have a direct effect on the community’s ability to implement corridor and access management techniques.

- “Minor streets shall be so laid out that their use by through traffic will be discouraged.”
- “Where a subdivision abuts or contains an existing or proposed arterial street, the Board may require marginal-access streets, reverse frontage with screen planting contained in a non-access reservation along or near the property line, deep lots with or without rear service alleys, or such other treatment as may be necessary for adequate protection of residential properties and to afford separation of through and local traffic.”
- “Intersections with arterial streets should be held to a minimum and preferably spaced at least one thousand (1,000) feet apart.”

The Town also includes specifications, which impact pedestrian access management. For example:

- “Pedestrian crosswalks (rights-of-way) not less than ten (10) feet wide, shall be required where deemed essential to provide circulation or access to schools, playgrounds, shopping centers, transportation and other community facilities.”

4 EXISTING PROBLEM IDENTIFICATION

4.1 Key Issues

A good Corridor Management Plan builds upon the corridor's strengths, addresses its weaknesses, capitalizes on its opportunities, and identifies threats to its ability to efficiently move people and goods while providing access to local businesses. The following list of strengths, weaknesses, opportunities, and threats was identified for Transit Road during the second Steering Committee meeting and at the Stakeholder Workshops.

Strengths:

1. Historic nature of Swormville is an asset
2. Traffic moves well through area
3. Population/market area
4. Volume of traffic
5. Accessibility
6. Provides tax base
7. Role in regional transportation system (N/S)

Weaknesses:

1. Lack of north/south travel options
2. Too many access points (conflict points)
3. Development is not consistent with function of Road (Swormville)
4. Unsafe corridor
5. Swormville businesses are struggling
6. Difficult exiting Dodge to go North on Transit
7. Left turns at Staley

Opportunities:

1. Create a theme/character
2. Redevelopment of property
3. Need sidewalk on Transit in Swormville
4. N. French should be widened
5. Uniformity of travel (appearance of corridor)
6. More commercial development elsewhere (Clarence)
7. Opportunity to plan for future to the north
8. Access control (easier in planning stage)
9. Development interest

Threats:

1. Loss of Swormville
2. Median
3. Inconsistent zoning
4. Road construction projects
5. Moving toll barrier
6. Too easy to develop to the north

4.2 Access Management Needs

Safe and efficient transportation infrastructure and traffic operations are fundamental to local and regional economic development. Maintaining a safe and efficient transportation system, however, requires a careful balancing between the need to accommodate through traffic and the need to provide high quality access to properties abutting the roadway.

The New York State Department of Transportation has adopted an “Arterial Access Management Initiative” to meet the demands of providing a transportation system that balances the needs of someone who wants to get from point A to point B rapidly, like a commuter, with another person who wants to enter and exit driveways safely, like a shopper or a resident. However, this initiative requires collaboration between NYSDOT and local governments. As it unites transportation and land-use management strategies in order to preserve and enhance mobility while promoting the desired development along roadways.

A key component of this initiative is the use of access management techniques. Access management techniques coordinate the development of lands and their access points. This technique can reduce the need for future costly highway improvements required to address safety and capacity issues.

Land developments (large or small) occurring over time, slowly increase their effect on the safety and capacity of the roadway. Developing one parcel at a time may not have a significant effect. However, as the number of developments increase the cumulative effect is greater than anticipated for each separate development. Therefore, a comprehensive approach to land use and access management planning yield the highest return from state, local, and private investment in infrastructure and land development. A comprehensive land use and access management plan also provides the land developer and the community with a strategy for meeting their other, non-transportation objectives for the corridor.

For the Transit Road corridor the need for a comprehensive approach to land use and access management will help the Towns of Amherst and Clarence address several key issues, such as:

- Identifying strategies for minimizing curb cuts, especially in the more densely developed portions of the study area (Focus Area IV) to improve safety and traffic flow;
- Understanding the impacts that each municipality's decisions regarding development, site planning and land use have on one another and how these decisions impact traffic conditions along the corridor; and
- Determining goals regarding future changes to land use and development and identify access management techniques and transportation solutions that can help achieve them;

4.3 Existing Transportation Problems

Based on a review of the Towns of Amherst and Clarence's official documents and input from the Steering Committee, the following project objectives were identified:

- A. Provide a transportation system with the access needed to accommodate existing and future development;
- B. Reduce the potential for accidents;
- C. Increase accommodations and safety for pedestrians and bicyclists;
- D. Consider a network of internal access roads;
- E. Improve the appearance of the development within the study areas in order to enhance these areas as gateways into the community; and
- F. Promote development of interior properties.

Additional transportation issues may be identified as part of the evaluation of future development scenarios.

4.4 Existing Land Use Issues

Based on a review of the Towns of Amherst and Clarence's official documents and input from the Steering Committee the following land use issues were identified:

- Existing zoning maps for the Towns promote strip development through the use of linear zones such as General Business (GB) and Major Arterial (MA);
- Design guidelines intended to achieve a higher quality of architecture and site development within each study area do not exist;

Although Town subdivision regulations address the development of local roads, none of the Town's official documents includes zoning provisions for corner clearance standards, minimum driveway spacing, or land use density and type adjustments.

Other zoning, land use, and access issues may be determined as part of the evaluation of future development scenarios.

4.5 Design Issues

A Preferred Development Survey (PDS) was administered to the Steering Committee and stakeholders. A PDS consists of a series of images depicting various types and styles of development. These images are then ranked and the scores averaged to determine which types of development the community should encourage and what types should be avoided, in the future. The results for Transit Road are contained in the PDS Results shown in Figure 4-1.

Comparing the low ranking images with the existing development within the study area and there are several similarities:

- Single-story commercial establishments;
- Plastic, interior lit signs;
- Inconsistent landscaping;
- Parking in the front of the building;
- Typical "franchise" buildings; and
- Little or no designated pedestrian facilities.

The PDS results will be incorporated into the development scenarios that are created and reviewed through this planning process. In addition, the PDS results could serve as the basis for future design guidelines and provide examples of the favorable development and designs that need to be implemented along this corridor and perhaps in other areas of the Towns of Amherst and Clarence.

A review of the PDS Results indicates that the high-ranking images convey the community's preferences for design elements such as:

- Commercial establishments that appear multiple story and are placed close to the street;
- Parking located to the rear of structure;
- Designated pedestrian facilities along highway and connecting highway to stores and businesses;
- Franchise architecture that is not “cookie cutter” and utilizes natural materials (brick, wood, etc);
- Vertical rooflines that hide heating and cooling units;
- Strong gateway treatments such as monument signs and landscaping;
- Generous landscaping on commercial properties;
- Signs constructed of natural material (wood, brick, etc) that are exterior lit.

Therefore, as new development occurs in the study area, every effort should be made to ensure these design elements are used. This may include the adoption of design standards or the use of a community architect.

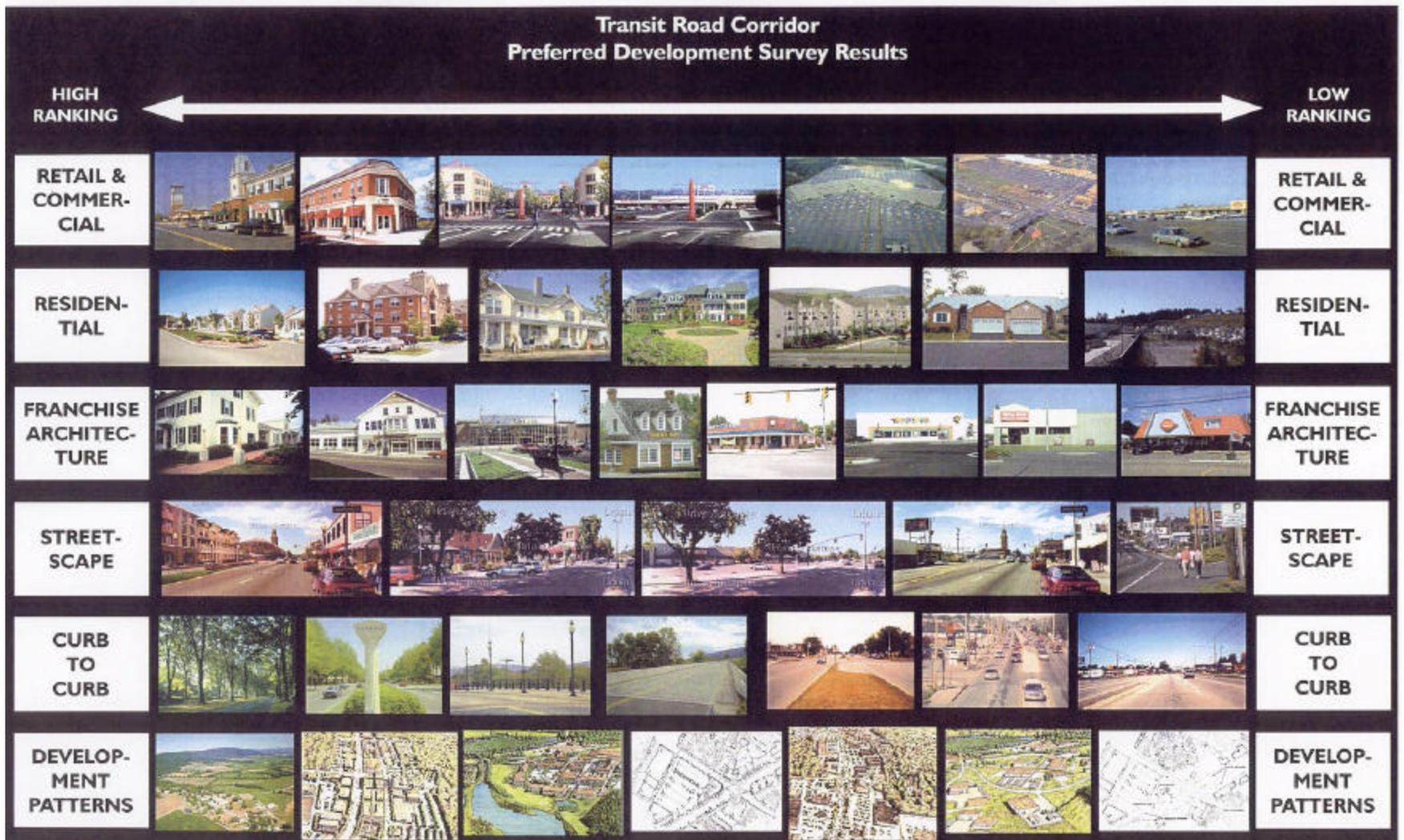


Figure 4-1 The results of the Preferred Development Survey indicate what types of development should be encouraged (high ranking images to the left) and the types that should be avoided (low ranking images to the right)

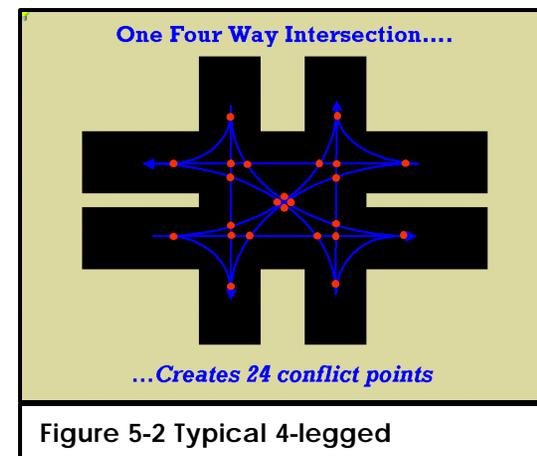
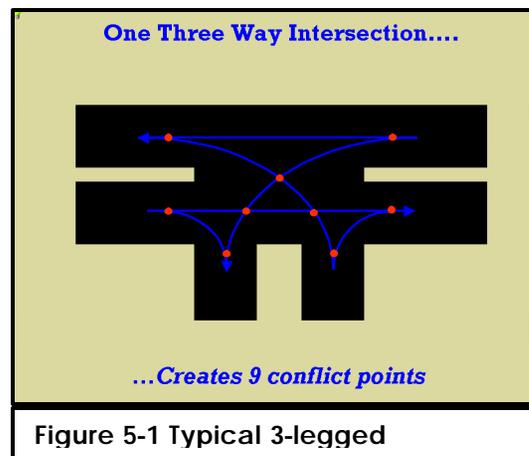
5 ACCESS MANAGEMENT CONSIDERATIONS

5.1 General

As stated in Section 4.2, a key component of NYSDOT's "Arterial Access Management Initiative" is the application of access management techniques. Recommendations for access management will be provided in a Final Report for this study and will include a coordinated set of transportation and land use strategies as well as land development and subdivision regulation recommendations. These recommendations, when implemented in concert, will help the towns achieve the study goals and objectives and address the problems identified above. A plan for access within the study area will be developed to coordinate the development of lands and their access points.

5.2 Safety

As the diagrams below illustrate, each three-legged intersection creates 9 additional conflict points and each four-legged intersection creates an additional 24 conflict points. Conflict points are the intersections of two lines of travel for two motor vehicles. The number of conflict points along a corridor has a direct correlation with the accident rate of the facility. In other words, if the number of conflicts along a corridor can be kept to a minimum, the conditions for the traveling public will be safer.



5.3 Examples of Access Management

The two images below are from the book entitled Above and Beyond and are illustrative of good and bad examples of access management. The image on the left shows a typical suburban corridor with little or no access management provisions. Each parcel has one to two curb cuts, the driveways are not spaced properly, and there is no interconnection between parcels.



Figure 5-4 Highway commercial designed as typical suburban strip with no access management provisions



Figure 5-5 Highway commercial uses that are interconnected and have access to the lower volume side road

The image on the right shows two highway commercial uses that are interconnected and serviced by one full access driveway on the main road, one right in and right out access on the main road closer to the intersection, and a full access onto the lower volume side road.

This arrangement allows for the development of properties while minimizing the circulation and safety impacts to the highway system.

5.4 Access Management Provisions

In order to successfully implement access management with the study area, both towns will need to address some or all of the following:

- Access spacing standards;
- Corner clearances;
- Joint and cross driveway design;
- Requirements for outparcels;
- Flag lot standards;
- Site plan review procedures; and
- New streets or extensions of existing streets.

The next step in this study process is to develop specific recommendations for Transit Road, in the form of a Final Report, with input from the Steering Committee that will incorporate the items listed above.