APPENDIX B

Appendix B: Supplemental Information to the Draft Environmental Impact Statement

1. Revised Hamburg Crossing Traffic Impact Study – January 2009.
2. Page 17 of the Wetland Delineation Report provided as Appendix 9 of the DEIS.
3. New York State Thruway Authority – Rules and Regulations, Part 105. Advertising Devices and General Guidelines Pertaining to Advertising Devices.
4. A landscape buffer plan with associated cross-section for the areas buffering the project site from adjacent residential areas.
5. A photometric lighting plan showing illumination levels on-site and at the property boundaries.
6. A description of the type of lighting proposed for the site.

Transportation Impact Study
for the proposed

Hamburg Crossings

Town of Hamburg, New York

Revised January 2009

Project No. 26077.12

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EXECUTIVE SUMMARY

OVERVIEW

The purpose of this report is to identify the potential traffic impacts associated with the proposed Hamburg Crossings development in the Town of Hamburg, Erie County, New York. This report investigates the existing and projects the future weekday PM and Saturday midday peak hour travel conditions at the proposed site drives and the nearby intersections affected by the development.

The proposed development consists of a shopping center with 652,813± sf of retail space and 115 hotel rooms. Access to the site will be provided via two access points on Route 75; one new driveway located north of I-90 interchange (approximately 300 ft south of Dartmouth Street) and one existing driveway located south of I-90 interchange via Commerce Place. The study area consists of fifteen existing intersections on Route 20 and Route 75.

A background growth rate of 1.5% based on the historical traffic volumes on Route 75 and Route 20 in the vicinity of the proposed site has been applied to the existing traffic volumes in the study area for the five years build-out period. Site generated traffic volumes for the proposed development are projected and distributed to the network based on existing travel patterns, population centers, and existing highway conditions. The operating characteristics of the proposed access points and impacts to the adjacent roadway network are identified and recommendations are provided to minimize any capacity or safety concerns. The proposed development is expected to be constructed in two phases. Analyses and recommendations for both Phase 1 and full development of the site are provided.

CONCLUSIONS AND RECOMMENDATIONS

This report addresses the traffic impact that can be expected from the proposed Hamburg Crossings development in the Town of Hamburg as described in this report.

The following list details specific recommendations to be considered as a result of the proposed Hamburg Crossings development:

1. Signal timing adjustments are recommended at the Route 20 / Legion Drive and Route 20 / Route 75 intersections as a result of the proposed development.

2. Re-construct Commerce Place at Route 75 with two exiting lanes (one right-turn lane and one left-turn lane) and one entering lane.

3. Construct the proposed site driveway on Route 75 with three exiting lanes (one right-turn lane and two left-turn lanes) and two entering lanes. The right turn entering the site should be channelized via a raised island and a right turn pocket should be constructed to the greatest length possible given the existing right of way constraints.

4. Install new three-color, multi-phase traffic signals at the proposed new site driveway and Commerce Place on Route 75. The signals should accommodate a permitted/protected northbound left turn phase and a westbound right turn overlap phase.

5. "No turn on red" signage is recommended on the eastbound approach at proposed new site driveway/Route 75 due to the close proximity to the thruway on ramp.

6. Re-stripe the existing two-way left turn lane to provide a 425' (350' storage and 75' taper) northbound left turn lane on Route 75 at proposed new site driveway.

7. Install signage such that motorists exiting the Thruway are directed to use the ramp to southbound Route 75 and enter the site via Commerce Place.

8. Appropriate pedestrian amenities shall be installed as required by NYSDOT.

9. All recommended roadway and intersection improvements on Route 75 are subject to review and approval by NYSDOT.

10. A post-development traffic analysis should be provided upon completion of Phase I to evaluate operating conditions at the site driveways and Thruway ramp intersections.

I. INTRODUCTION

The purpose of this report is to identify the potential traffic impact associated with the proposed Hamburg Crossing retail development on the west side of Route 75 (Camp Road) near the I-90 interchange in the Town of Hamburg, Erie County, New York. The operating characteristics of the proposed access points and impacts to the adjacent roadway network are identified.

The objectives of this report are as follows:

- To adequately assess the traffic impacts associated with the proposed development and identify the level of off-site access and traffic control improvements required to service the project;
- To provide public agencies a comprehensive study which evaluates and documents the traffic impacts and off-site improvements, where warranted;
- To provide a technically sound basis to identify impacts and related mitigation requirements in response to off-site traffic impacts;

In an effort to define traffic impact, this analysis determines the extent of existing traffic conditions, projects background traffic flow including area growth and nearby developments, and projects changes in traffic flow due to operation of the proposed facility.

II. PROJECT LOCATION AND STUDY AREA

The proposed site is bounded by NYS Route 75 to the east, retail type land uses to the north, residential/vacant lands to the west, and I-90 to the south in the Town of Hamburg, Erie County, New York. The site location and study area are illustrated in **Figure 1** – Location Plan (all figures are included in Section IX. at the end of this report).

The study area consists of fifteen existing intersections on Route 20 and Route 75. The lands adjacent to the proposed development consist primarily of commercial and residential type uses.

III. STUDY AREA HIGHWAY SYSTEM

The study area roadway system identified for investigation includes the portion of Route 20 between Rogers Road to the west and Route 62 to the east and Route 75 between Route 20 to the north, and Highland Avenue to the south. Fifteen (15) existing intersections are studied in detail in this report and are as follows:

1. NYS Route 75/Highland Avenue (signalized)
2. NYS Route 75/Legion Drive (signalized)
3. NYS Route 75/Elmview Avenue (unsignalized)
4. NYS Route 75/Scranton Road (signalized)

5. NYS Route 75/Deacon Street/Sunset Ct (unsignalized)
6. NYS Route 75/Sunset Drive (signalized)
7. NYS Route 75/Commerce Place (unsignalized)
8. NYS Route 75/Thruway Ramp (unsignalized)
9. NYS Route 75/Dartmouth Street (unsignalized)
10. NYS Route 75/Columbia Street (unsignalized)
11. NYS Route 20/ NYS Route 75 (signalized)
12. NYS Route 20/ Rogers Road (signalized)
13. NYS Route 20/ Sowles Road (signalized)
14. NYS Route 20/ Howard Road (signalized)
15. NYS Route 20/ NYS Route 62 (signalized)

The lane geometry at each of the study intersections is depicted in **Figure 2**.

NYS Route 20 (Southwestern Blvd) is owned and maintained by NYSDOT within the vicinity of the project. The highway is functionally classified as an east/west urban principal arterial highway with two lanes in each direction. The posted speed limit west of Route 75 is 50 MPH and to the east of Route 75 is 45 MPH. According to the most recent traffic volume data collected by NYSDOT in 2005, the annual average daily traffic (AADT) along Route 20 between Amsdell Road and Route 75 is 22,808 vehicles per day (vpd).

NYS Route 75 (Camp Road) is owned and maintained by NYSDOT within the vicinity of the project. The highway is functionally classified as a north/south urban minor arterial highway with two travel lanes in each direction, a two-way center left turn lane, and a posted speed limit of 45 mph in the vicinity of the site. According to the most recent traffic volume data collected by NYSDOT in 2005, the annual average daily traffic (AADT) along Route 75 south of Route 20 is approximately 25,848 vehicles per day (vpd).

NYS Route 62 (S Park Avenue) is owned and maintained by NYSDOT. The highway is functionally classified as a north/south urban principal arterial highway with a posted speed limit of 45 mph. NYS Route 62 is generally two lanes in each direction in the vicinity of Southwestern Boulevard. According to the most recent traffic volume data collected by NYSDOT in 2005, the annual average daily traffic (AADT) along Route 75 south of Route 20 is approximately 16,754 vehicles per day (vpd).

Rogers Road (CR 464) is a north-south roadway that provides a connection between Lakeshore Road (NYS Route 5) to the north and Pleasant Avenue (CR 122) to the south. The posted speed limit in the vicinity of the study area is 35 mph. Rogers Road has one travel lane in each direction with left turn lanes at the Southwestern Boulevard intersection.

Howard Road, Columbia Street, Dartmouth Street, Commerce Place, Deacon Street, Elmview Avenue, Sunset Drive, Scranton Road and Highland Avenue are

all local roadways under the jurisdiction of the Town of Hamburg. Sowles Road (County Road 162) and Legion Drive (County Road 134) are under the jurisdiction of Erie County Highway Department.

IV. EXISTING TRAFFIC CONDITIONS

A. Peak Intervals for Analysis

Given the functional characteristics of the corridor and the land use proposed for the site (retail development), the peak hours selected for analysis are the weekday PM and Saturday midday peaks. The combination of site traffic and adjacent through traffic produces the greatest demand during these time periods.

B. Existing Traffic Volume Data

Weekday PM (4:00-6:00pm) and Saturday midday (11:30am-1:30pm) peak traffic counts were collected by SRF & Associates (SRF) at the study area intersections identified above.

Peak hour volumes at six of the study area intersections (Route 20/Sowles Road and the Route 75 intersections with Route 20, Commerce Place, Sunset Drive, Scranton Road and I-90 Thruway drive) were collected on January 05 and 06, 2007. Peak hour volumes at four of the study area intersections (Route 75/Legion Drive intersection and the Route 20 intersections with Rogers Road, Howard Road and Route 62) were collected on January 12 and 13, 2007. Peak hour volume at Route 75/ Highland Avenue was collected on March 2 and 3, 2007. Peak hour volumes at four of the study area intersections (Route 75 intersections with Columbia Street, Dartmouth Street, Deacon Street and Elmview Avenue) were collected on September 07 and 08, 2007. The peak hour traffic periods generally occurred between 4:30 to 5:30 PM and 11:45 to 12:45 PM. Given the varied collection dates of the individual turning movement counts, all traffic volumes were reviewed to confirm the accuracy and relative balance of the collective traffic counts. Minor adjustments to the traffic volumes were made wherever necessary to balance the data within the network within reasonable and expected variations. The existing balanced peak hour volumes are depicted in **Figure 3**.

Existing Average Daily Traffic (ADT) information was obtained from the New York State Department of Transportation (NYSDOT) *Traffic Volume Report 2004 and NYSDOT Traffic Data Viewer Website*. **Figure 4** illustrates the ADT volumes on the study roadways.

C. Field Observations at Study Area Intersections

All intersections included in the project area were observed during both peak intervals to assess existing traffic operating conditions at each

intersection. Signal timing information was collected, at the previously identified signalized intersections, to determine peak hour phasing plans and phase durations during each interval. This information was used to support and/or calibrate capacity analysis models described in detail later in this report.

D. *Existing Accident Investigation*

Based on discussions with NYSDOT and given the completion of NYS Route 20 construction project, an investigation of existing accidents is not required at any intersections along Route 20. The NYSDOT construction project will change the operational and safety characteristics rendering historical accident information not meaningful.

However, accidents along Route 75 from Columbia Street to Highland Avenue were obtained from the Town/Village of Hamburg. The accidents included in the current review collectively covered a three-year time period from April 2004 through April 2007. During this period, 103 reportable accidents were documented at the intersections and segments along Route 75 between Columbia Street and Highland Avenue included in the study area.

The accident history was further investigated to identify high incident areas. Table I summarizes accidents occurring at each intersection and the roadway sections along Route 75. Based on the number of accidents at each intersection and roadway sections along Route 75, accident rates were calculated and compared to the statewide average for similar facilities. Accident rate calculations are included in the Appendix. Intersection rates are listed as accidents per million entering vehicles (ACC/MEV).

TABLE I: SUMMARY OF ACCIDENTS AND COMPARISON OF RATES

Intersection	Total No. of Accidents	Actual Project Rate	State Wide Average Rate
1. Route 75/Highland Avenue	2	0.11	0.60
2. Route 75/Legion Drive	12	0.47	0.29
3. Route 75/Scranton Road	2	0.09	0.46
4. Route 75/Sunset Drive	5	0.21	0.29
5. Route 75/Commerce Place	4	0.13	0.16
6. Route 75/Thruway Ramps	3	0.14	0.16
7. Route 75 between Highland Ave and Legion Dr	28	2.25	2.94
8. Route 75 between Legion Dr and Scranton Rd	8	0.62	2.94
9. Route 75 between Scranton Rd and Sunset Dr	19	1.80	2.94
10.Route 75 between Sunset Dr and Commerce Pl	8	0.91	2.94
11. Route 75 between Thruway Ramp and Columbia St	12	1.15	2.94

Accident (collision) diagrams have been produced for the intersections in the study area along Route 75 to identify specific clusters or accident patterns. An assessment of the information illustrated in the diagrams and Table I may indicate accident trends or specific causes for the identified accident clusters.

All roadway segments along Route 75 between Columbia Street and Highland Avenue and all intersections along Route 75 with the exception of Intersection 2 (Route 75/Legion Drive) had low accident rates compared to the statewide average. All intersections exhibiting greater than 5 accidents with accident rates that exceed the statewide average rate over the assessment period are discussed in detail below:

#2: Route 75/Legion Drive

A total of twelve (12) accidents were documented during the investigation period (3 years). The calculated accident rate is 62% higher than the statewide average for other similar 3-legged intersections. . The majority of accidents involved rear-end (5) collisions. The remaining accidents were categorized as left turn (2), right angle (3), right turn (1), and sideswipe (1). Notable accident clusters at this location include:

- 4 rear end collisions (westbound)
- 3 westbound right angle collisions with northbound through traffic

V. *FUTURE AREA DEVELOPMENT AND LOCAL GROWTH*

Construction of the proposed Hamburg Crossings development in Hamburg is anticipated to occur in two phases. Phase I is likely to occur within three years while phase 2 extend two additional years for a total of five years for full build out of the site. The Town of Hamburg was contacted to discuss current projects within the project study area that are currently under construction and/or approved. The following developments are approved/under construction in the study area:

- Wellington Woods Subdivision that consists of 54 single family residential units near the Lakeview Road/Lakeshore Road intersection,
- Treehaven Subdivision that consists of 90 single family residential units and 43 patio homes near the Route 5/Lakeshore Road intersection,
- Woodstream Estates Subdivision that consists of 85 single family residential units to the north of the site along Rogers Road (south of Cloverbank Road).
- A new Wal★Mart store on the northeast corner of Route 20/Rogers Road.

Therefore, traffic volumes related to all four of these developments were included in the background traffic conditions.

To account for normal increases in background traffic growth, including any unforeseen developments in the project study area, a growth rate of 1.5% per year has been applied to the existing traffic volumes in the study area for the Phase 1 and 2 build-out periods. The background traffic volumes are depicted in **Figure 5**.

New information indicates that 1% growth per year is more likely than the higher growth rate used in this study. In addition, a new Lowes store is currently under construction on Southwestern Boulevard to the east of Camp Road. Given these two changes, background traffic volumes were reviewed to determine if the volumes used in the analyses are higher than can be realistically expected. Reducing the growth rate to 1% per year and adding the traffic that will be generated by Lowes results in traffic volumes that are similar to those produced using the 1.5% per year growth rate and the above-mentioned developments. Therefore, no changes have been made to the background conditions.

VI. PROPOSED DEVELOPMENT

A. Description

The proposed development is located along the west side of Route 75 near the I-90 interchange in the Town of Hamburg, Erie County, New York. The proposed development consists of a shopping center with 652,813± sf of retail space and 115 hotel rooms at full development. The development will be constructed in two phases with approximately 450,000 s.f. of retail space developed during Phase 1.

Access to the site will be provided via two access points on Route 75; one new driveway located north of I-90 interchange (approximately 300 ft south of Dartmouth Street) and one existing driveway located south of I-90 interchange via Commerce Place for both phases of development.

B. Site Traffic Generation

The next step in the evaluation is to determine the additional traffic attributable to the development as defined, vehicle trips entering and exiting the site. Trip Generation, 7th Edition is used as a reference for this information. 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 PM and Saturday midday peaks, represent a more critical volume when analyzing the capacity of the system; 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. Trip generation can be defined as an

estimate of the number of trips generated by a specific building or land use. These trips represent the volume of new traffic added to the roadways due to the proposed development.

The volume of site-generated traffic at the proposed access drives has been estimated based on data contained in the Trip Generation manual. All trip generation calculations are included in Appendix A2 of this report. Table II shows the total site generated trips for the weekday PM and Saturday midday peak hours for the proposed development.

TABLE II: SITE GENERATED TRAFFIC VOLUMES

DESCRIPTION	PM PEAK		SAT PEAK	
	ENTER	EXIT	ENTER	EXIT
Phase I Retail 450,000 s.f. (Shopping Center)	**811**	**878**	**1196**	**1104**
Phase 2 Retail - 652,813 ± sf (Shopping Center)	1037	1123	1524	1407
Phase 2 115 Rooms Hotel	36	32	46	37
Full Build Total	**1073**	**1155**	**1570**	**1444**

C. *Determination of Pass-by Trips*

For certain types of developments the total number of driveway trips generated is different from the amount of new traffic added to the adjacent highway network by the generator. Retail-oriented developments (such as shopping centers, supermarkets, home improvement stores, discount stores, restaurants, banks, service stations, and convenience markets etc.) often locate adjacent to busy streets in order to attract the motorists already passing the site on the adjacent street system. These sites attract a portion of their trips from traffic passing the site.

Trips generated by retail-type uses, such as the Hamburg Crossings development, can be broken down into two categories: pass-by trips and primary trips. The "pass-by" traffic refers to the amount of existing traffic already on the roadway adjacent to the site (in this case Route 75) that, as it "passes by" the site, will enter the site driveways to patronize the various retail uses. That portion of the generated traffic attracted to the site would pass on the adjacent street system (Route 75) whether or not the site is developed and thus produces no new traffic at study area intersections other than the site driveways.

The ITE suggests that 34% and 26% of the weekday PM and Saturday midday peak hour traffic entering the proposed site comes from the existing traffic stream on Route 75. Based on the above information, consideration of the location of the proposed site, and the amount of traffic currently passing the

site, pass-by rates of 30% and 25% were used during the PM and Saturday peak periods for analysis purposes in this report. These percentage reductions were applied to the total site generated traffic. Table III shows the pass-by trip percentages that are applied to the site generated volumes and the resulting "new" traffic that will be added to the existing highway system for the weekday PM and Saturday midday peak periods.

TABLE III: PASS-BY & PRIMARY TRIPS

DESCRIPTION	PM PEAK		SAT PEAK	
	ENTER	EXIT	ENTER	EXIT
Phase I site generated volumes	811	878	1196	1104
Pass-by Trips - 30% (25%)	243	263	299	276
Phase I Resulting Primary Trips	**568**	**615**	**897**	**828**
Full Build Total site generated volumes	1073	1155	1570	1444
Pass-by Trips - 30% (25%)	*-322*	*-347*	*-393*	*-361*
Full Build Resulting Primary Trips	**751**	**808**	**1177**	**1083**

All trip generation calculations are included in the Appendix of this report.

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:

- Population centers in the area
- Existing highway network
- Existing traffic conditions and controls
- Existing travel patterns throughout the study area
- Site access drive locations

Figure 6 shows the anticipated trip distribution pattern percentages for the proposed development and **Figures 7A and 7B** illustrate the peak hour site generated traffic based on those percentages including pass-by trips for Phase I and Full Development respectively. The trip generation, distribution, and pass-by rates were reviewed and approved by NYSDOT.

E. *Projected Full Development Traffic Volumes*

The projected full development design hour traffic volumes were developed for each peak by combining the background traffic conditions (Figure 5), and

projected site generated volumes (Figures 7A & 7B) to yield the total traffic conditions expected at full development. **Figures 8A and 8B** show the total weekday PM and Saturday midday peak hour volumes anticipated for the proposed development under Phase I and full build out conditions respectively.

VII. OPERATIONAL ANALYSES

A. Sight Distance Investigation

Sight distances were investigated at the proposed site driveway along Route 75. Sight distance is provided at intersections to allow drivers to perceive the presence of potentially conflicting vehicles. This should occur in sufficient time for a motorist to stop or adjust their speed, as appropriate, to avoid a collision at the intersection. Sight distance is also provided at intersections to allow the drivers of stopped vehicles a sufficient view of the intersecting highway to anticipate and avoid potential incidents. If the available sight distance for an entering or crossing vehicle is at least equal to the appropriate stopping sight distance for the major road, then drivers have sufficient sight distance to anticipate and avoid collisions. To enhance traffic operations, intersection sight distances that exceed stopping sight distances are desirable along the major road.

A Policy on Geometric Design of Highways and Streets (AASHTO "Green Book") was used as a reference to establish the required stopping sight distance and desirable intersection sight distance for the proposed site drive.

Required stopping distances and desirable intersection sight distances are based on the design speed for a given section of roadway; generally the design speed is the posted speed limit plus 5 mph. In this case, the posted speed limit along Route 75 in the vicinity of the site is 45 mph. Hence a design speed of 50 mph was used. The required stopping distance and desirable intersection sight distance based on the design speed are shown in Table IV.

TABLE IV
SIGHT DISTANCE REQUIREMENTS AND MEASUREMENTS

INTERSECTION	Desirable Intersection Sight Distance for Left Turn from Stop (ft)	Required Stopping Sight Distance (ft)	Available Sight Distance (ft) to the:	
			Left	Right
Proposed Site Dr. @ Route 75	555'	425'	>700'	>700'

The available sight distances from the proposed site driveway on Route 75 exceed the minimum intersection sight distance and stopping sight distance at the design speed.

B. *Left-Turn Treatment Warrants*

Volume warrants for a northbound left turn lane at the proposed new site driveway on Route 75 were investigated using the Transportation Research Board's NCHRP Report 279, Intersection Channelization Design Guide, 1985. 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.

The combination of projected volumes turning left into the proposed new site driveway on Route 75 indicate that a northbound left turn lane is warranted during both peak periods under Phase I and Full development conditions.

C. *Traffic Signal Warrant Investigation*

Potential capacity deficiencies have been identified at the NYS Route 75/ new site driveway and NYS Route 75/Commerce Place intersections during the peak hours under Phase I and full development conditions. Traffic signals can mitigate this specific type of deficiency by providing controlled right-of-way to all approaches of the intersection. A detailed signal warrant investigation was performed to determine if threshold values are met under both Phase I and Full Build conditions.

The need for a traffic signal is determined by comprehensive investigation of existing and projected traffic conditions and physical characteristics at the location. The Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD) published by the Federal Highway Administration (FHWA) in 2004 has set forth warrants to investigate the need for a traffic control signal. The eight warrants are as follows:

Warrant 1	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

These warrants and their criteria are fully explained in the MUTCD. The investigation will first focus on all warrants that are based exclusively on traffic volumes.

Warrant 1 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-1 in the MUTCD. Hourly traffic volumes expected under full development conditions along Route 75 at the new site driveway and Commerce Place intersections were projected based on the hourly traffic distribution measured by NYSDOT along Route 75 in 2005. Hourly traffic volumes expected to exit the site drive were projected based on the typical hourly distribution of Shopping Center Traffic based on actual data for 7 sites. Based upon these calculations, Warrant 1 is met at the site driveway and Commerce Place intersections under both Phase 1 and Full development conditions. Detailed signal warrant calculations are attached.

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, this warrant will be met at both site driveways under Phase 1 and full development conditions.

Based on the traffic signal warrant investigation, both traffic signal warrants that deal strictly with vehicular volumes are met at both the site driveways. Given the projected level of service on the proposed site driveway and Commerce Place and the high turning traffic volumes, signalization of both site driveways (Route 75/proposed new site driveway and Route 75/Commerce Place) are recommended with the Phase 1 development.

D. ***Capacity Analyses***

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, the capacity analysis specifically focuses on intersections.

Six Levels of Service are defined for analysis purposes. They are assigned letter designations, from "A" to "F", with LOS "A" representing operating conditions with the least time delay. LOS "F" is the least desirable operating

condition where longer delays are experienced by motorists. 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 unsignalized intersections is outlined in the 2000 Highway Capacity Manual (HCM 2000). Traffic analysis software, SYNCHRO (Build 614), which is based on procedures and methodologies contained in the HCM 2000, was used to analyze operating conditions at study area intersections. The procedure yields a Level of Service (LOS) based on the HCM 2000 as an indicator of how well intersections operate. Existing operating conditions are documented in the field and modeled using traffic analysis software. The traffic analysis models are calibrated based on the actual field observations. Operating conditions during the peak study periods under background conditions are evaluated to determine a basis for comparison with the projected future conditions.

Table V indicates the level of service results for existing, background, Phase I and Full development conditions for the proposed development. The discussion following the table summarizes the existing, background, and future capacity conditions.

TABLE V: INTERSECTION CAPACITY ANALYSIS RESULTS

INTERSECTION		EXISTING CONDITIONS		BACKGROUND CONDITIONS		PHASE I DEVELOPMENT CONDITIONS		FULL DEVELOPMENT CONDITIONS	
		PM	SAT	PM	SAT	PM	SAT	PM	SAT
Route 75(Lake Street) / Highland Avenue (S)									
EB - Highland Ave	Left	E	D	E	D	E	D	F(84.3)	D
	Thru/Right	D	C	D	C	D	C	D	C
WB - Highland Ave	Left	E	D	E	D	E	D	E	D
	Thru/Right	C	B	C	B	C	B	C	B
NB - Route 75	Left	A	A	A	A	A	A	A	A
	Thru/Right	A	A	A	A	A	A	A	A
SB - Route 75	Left	A	A	A	A	A	A	A	A
	Thru/Right	A	A	A	A	A	A	A	A
Overall LOS / Delay in sec/veh		A(7.5)	A(5.6)	A(7.9)	A(5.7)	A(9.0)	A(6.8)	A(9.8)	A(7.3)
Route 75(Camp Road) / Legion Drive (S)									
WB - Legion Dr	Left	C	B	C	C	C	C	C	C
	Right	A	A	A	A	A	B	B	B
NB - Route 75	Thru/Right	B	B	B	B	B	B	B	B
SB - Route 75	Left	B	A	B	B	C	C	D	E
	Thru	A	A	A	A	A	A	A	A
Overall LOS / Delay in sec/veh		B(12.3)	A(9.7)	B(13.2)	B(10.4)	B(15.7)	B(15.1)	B(17.8)	B(19.1)
Route 75(Camp Road) / Elmview Ave (U)									
EB - Elmview Ave	Left/Thru/Right	C	C	C	C	C	C	C	C
NB - Route 75	Left	A	A	A	A	A	A	A	A

TABLE V: INTERSECTION CAPACITY ANALYSIS RESULTS CONT'D

INTERSECTION		EXISTING CONDITIONS		BACKGROUND CONDITIONS		PHASE I DEVELOPMENT CONDITIONS		FULL DEVELOPMENT CONDITIONS	
		PM	SAT	PM	SAT	PM	SAT	PM	SAT
Route 75(Camp Road) / Scranton Road (S)									
EB - Scranton Rd	Left/Thru/Right	-	A	-	A	-	B	-	B
WB - Scranton Rd	Left	B	B	B	B	C	C	C	C
	Thru/Right	A	A	A	A	A	A	B	B
NB - Route 75	Left/Thru/Right	A	A	A	A	A	A	A	A
SB - Route 75	Left	B	A	B	A	C	B	C	C
	Thru/Right	A	A	A	A	A	A	A	A
Overall LOS / Delay in sec/veh		A(6.6)	A(6.2)	A(6.9)	A(6.4)	A(8.1)	A(7.7)	A(9.2)	A(8.8)
Route 75(Camp Road) / Sunset Ct. / Deacon St. (U)									
EB - Sunset Ct.	Left/Thru/Right	C	B	C	B	C	B	C	C
WB - Deacon St.	Left/Thru/Right	B	C	B	C	B	C	C	C
NB - Route 75	Left	B	A	B	A	B	B	B	B
SB - Route 75	Left	A	A	A	A	A	B	B	B
Route 75(Camp Road) / Sunset Drive (S)									
EB - Sunset Drive	Left	D	D	D	D	D	D	D	D
	Right	B	B	B	B	B	B	B	B
NB - Route 75	Left	A	A	A	A	B	A	B	A
	Thru	A	A	A	A	A	A	A	A
SB - Route 75	Thru	B	A	B	A	B	B	B	B
	Right	A	A	A	A	A	A	A	A
Overall LOS / Delay in sec/veh		B(10.5)	A(9.5)	B(11.2)	B(10.3)	B(13.3)	B(12.8)	B(14.5)	B(14.0)
Route 75(Camp Road) / Commerce Place (U)									
EB - Commerce Place	Left	NA	NA	NA	NA	F (*)	F (*)	F (*)	F (*)
	Right					F (*)	F (*)	F (*)	F (*)
	Left/Right	E	C	E	C	-	-	-	-
NB - Route 75	Left	B	A	B	A	E	C	F (91.5)	C
Route 75(Camp Road) / Proposed Site Drive (U)									
EB - Proposed Site Dr	Left	NA	NA	NA	NA	F (*)	F (*)	F (*)	F (*)
	Right					F (82.4)	F (*)	F (*)	F (*)
NB - Route 75	Left					C	C	D	E
Route 75(Camp Road) / Dartmouth Street (U)									
WB - Dartmouth	Left/Thru/Right	C	C	C	C	D	D	E	E
SB - Route 75	Left	B	B	B	B	C	C	C	C
Route 75(Camp Road) / Columbia Street (U)									
WB - Columbia St	Left/Thru/Right	C	C	D	C	E	D	E	E
SB - Route 75	Left	B	B	B	B	C	C	C	C

TABLE V: INTERSECTION CAPACITY ANALYSIS RESULTS CONT'D

INTERSECTION		EXISTING CONDITIONS		BACKGROUND CONDITIONS		PHASE I DEVELOPMENT CONDITIONS		FULL DEVELOPMENT CONDITIONS	
		PM	SAT	PM	SAT	PM	SAT	PM	SAT
Route 20(Southwestern Blvd) / Route 75 (S)									
EB - Route 20	Left	E	E	E	F(85.0)	E	F(85.0)	E	F(86.8)
	Thru	D	E	D	D	D	D	D	D
	Right	B	A	C	B	C	C	C	C
WB - Route 20	Left	E	E	E	E	E	E	E	F(91.6)
	Thru	D	D	D	D	D	D	D	D
	Right	A	A	A	A	A	A	A	A
NB - Route 75	Left	D	E	E	E	E	D	F(92.8)	E
	Thru	C	B	C	C	C	C	C	C
	Right	A	A	A	A	A	A	A	A
SB - Route 75	Left	E	E	E	E	E	E	E	E
	Thru	D	C	D	C	E	D	E	D
	Right	B	A	C	B	C	C	C	C
Overall LOS / Delay in sec/veh		D(37.2)	D(36.5)	D(41.5)	D(40.2)	D(46.0)	D(41.9)	D(51.5)	D(44.5)
Route 20(Southwestern Blvd) / Rogers Road (S)									
EB - Route 20	Left	A	A	A	A	A	A	A	A
	Thru/Right	A	A	A	A	A	A	A	A
WB - Route 20	Left	A	A	A	A	A	A	A	A
	Thru	A	A	A	A	A	A	A	A
	Right	A	A	A	A	A	A	A	A
NB - Rogers Road	Left	B	B	B	B	B	B	B	B
	Thru/Right	B	A	B	B	B	B	B	B
SB - Rogers Road	Left	B	B	C	C	C	C	C	C
	Thru/Right	B	A	B	B	B	B	B	B
Overall LOS / Delay in sec/veh		A(7.4)	A(6.3)	A(9.0)	A(7.2)	A(9.4)	A(8.0)	A(9.7)	A(8.3)
Route 20(Southwestern Blvd) / Sowles Road (S)									
EB - Route 20	Left	A	A	A	A	A	A	A	A
	Thru/Right	A	A	A	A	A	A	A	A
WB - Route 20	Left	A	A	A	A	A	A	A	A
	Thru/Right	A	A	A	A	A	A	A	A
NB - Sowles Road	Left	D	D	D	D	D	D	E	D
	Thru/Right	C	C	C	C	B	C	B	C
SB - Sowles Road	Left	C	C	C	C	C	C	C	C
	Thru/Right	C	C	C	C	C	C	C	C
Overall LOS / Delay in sec/veh		B(12.9)	A(9.8)	B(13.4)	B(10.3)	B(13.7)	B(11.1)	B(14.3)	B(11.6)
Route 20(Southwestern Blvd) / Howard Road (S)									
EB - Route 20	Left	A	A	A	A	A	A	A	A
	Thru/Right	A	A	A	A	A	A	A	A
WB - Route 20	Left	A	-	A	-	A	-	A	-
	Thru/Right	A	A	A	A	A	A	A	A
NB - Howard Rd	Left/Thru/Right	C	C	C	C	C	C	C	C
SB - Howard Rd	Left	D	D	D	E	D	E	D	E
	Thru/Right	A	A	A	A	A	A	A	A
Overall LOS / Delay in sec/veh		A(5.4)	A(6.2)	A(5.6)	A(6.5)	A(5.4)	A(6.3)	A(5.6)	A(6.3)

TABLE V: INTERSECTION CAPACITY ANALYSIS RESULTS CONT'D

INTERSECTION		EXISTING CONDITIONS		BACKGROUND CONDITIONS		PHASE I DEVELOPMENT CONDITIONS		FULL DEVELOPMENT CONDITIONS	
		PM	SAT	PM	SAT	PM	SAT	PM	SAT
Route 20(Southwestern Blvd) / Route 62(South Park) (S)									
EB - Route 20	Left	D	D	D	D	E	D	E	D
	Thru/Right	C	C	C	C	C	C	C	C
WB - Route 20	Left	D	D	E	D	E	D	E	D
	Thru/Right	D	C	D	C	D	C	D	C
NB - Route 62	Left	C	C	C	C	C	C	C	C
	Thru/Right	C	C	C	C	C	C	C	C
SB - Route 62	Left	B	C	C	C	C	C	C	C
	Thru/Right	D	C	D	C	D	C	D	C
Overall LOS / Delay in sec/veh		C(34.6)	C(29.1)	D(36.8)	C(31.2)	D(38.5)	C(32.7)	D(40.3)	C(34.0)

* Calculated delay exceeds two minutes per vehicle. Drivers are likely to accept shorter gaps in traffic to make left turns when this occurs.

The following intersections operate at level of services (LOS) "E" or better under existing, background, Phase 1, and Full development conditions and no changes in LOS are anticipated on any of the movements between the background and full development conditions. No improvements are warranted or recommended at these intersections:

- Route 75/Elmview Avenue,
- Route 20/Rogers Road,
- Route 20/Howard Road,
- Route 20/Route 62

The following intersections experienced decreases in levels of service related to borderline conditions as a result of the proposed Hamburg Crossings development (i.e. the delay was approaching thresholds that define differences in the letter designations for level of service). All movements are projected to operate at LOS "D" or better without any mitigation:

- Route 75/Scranton Road,
- Route 75/Sunset Ct/Deacon Street
- Route 75/Sunset Drive
- Route 20/Sowles Road

The remaining intersections are discussed in detail below. Several alternatives were explored to mitigate traffic impacts at the Route 75 intersections with Commerce Place, the site driveway, and the Thruway ramps. These alternatives and the resulting operating conditions are discussed in Section E below.

Route 75 / Highland Avenue

All movements at the Route 75/Highland Avenue intersection operate at average LOS "E" or better under existing, background, Phase I and full development conditions with the exception of the eastbound left turn movement which is project to operate at LOS "F" under full development conditions during the PM peak hour. This LOS change can be mitigated via signal timing adjustments to maintain LOS "E" or better on all approaches.

Route 75 / Legion Drive

All movements at the Route 75/Legion Drive intersection operate at average LOS "C" or better under existing, background, Phase I and full development conditions with the exception of the southbound left turn movement which operates at LOS "C" under Phase I conditions, and "D/E" under full development conditions during the PM/Saturday peak hours respectively. This LOS change can be mitigated via signal timing adjustments to maintain LOS "C" or better on all approaches.

Route 75 / Dartmouth Street

All movements at the Route 75/Columbia Street intersection operate at LOS "C" or better under existing, background, Phase I and full development conditions with the exception of the westbound approach. This approach is projected to decline from LOS "C" to "D" between the background and Phase I conditions and to "E" during both peaks under full development conditions.

A preliminary review of the Federal MUTCD Traffic Signal Warrants indicates that it is unlikely that any of the two key warrants (four hour volumes and eight hour volumes) would be met at this intersection. A new traffic signal at the proposed site drive intersection will create gaps in through traffic on Route 75 that do not currently exist which will improve the opportunities for traffic to exit Dartmouth Street during the peak hours. Therefore, no mitigation is recommended at this intersection.

Route 75 / Columbia Street

All movements at the Route 75/Columbia Street intersection operate at LOS "D" or better under existing, background, Phase I and full development conditions with the exception of the westbound approach under Phase I and full development conditions. The westbound approach is projected to decline from LOS "D"/"C" to "E"/"D" during the PM/Saturday peak hours between the background and Phase I conditions respectively and to "E" during both peaks between background and full development conditions.

This approach is projected to decline from LOS "C" to "D" between the background and Phase I conditions and to "E" during both peaks under full development conditions.

A preliminary review of the Federal MUTCD Traffic Signal Warrants indicates that it is unlikely that any of the two key warrants (four hour volumes and eight hour volumes) would be met at this intersection. Therefore, no mitigation is recommended at this intersection.

Route 75 / Route 20

All movements on Route 75/Route 20 intersection operate at LOS "E" or better under existing, background, and future conditions with the exception of the eastbound left turn movement under background, Phase I and full development conditions, the westbound left turn movement under full development conditions which operate at LOS "F" during the SAT peak hour, and the northbound left turn movement which operates at LOS "F" during the PM peak hour under full development conditions. These LOS changes can be mitigated via signal timing adjustments to maintain LOS "E" or better on all approaches.

E. *Alternatives for Mitigation on Route 75 at the Proposed Site*

Phase I Alternatives:

Four different alternatives were analyzed for the Phase I development at the Route 75/Proposed site driveway intersection.

Alternative IA

There are no changes to the existing lane geometry on Route 75. A 50' long southbound right turn storage bay is added to Route 75 at the site drive. This lane will be utilized both by traffic entering the site and also traffic destined to the I-90 on ramp. Under this alternative:

- The southbound right turn storage bay is short resulting in queuing that will block the right most thru lane.
- There will be conflicts between the traffic turning right into the site, and the traffic destined to the on-ramp due to greater a speed differential thereby increasing the potential for rear-end accidents.
- Queuing on Camp Road southbound will extend more than 1,100 feet during the Saturday peak hour.

Alternative IB

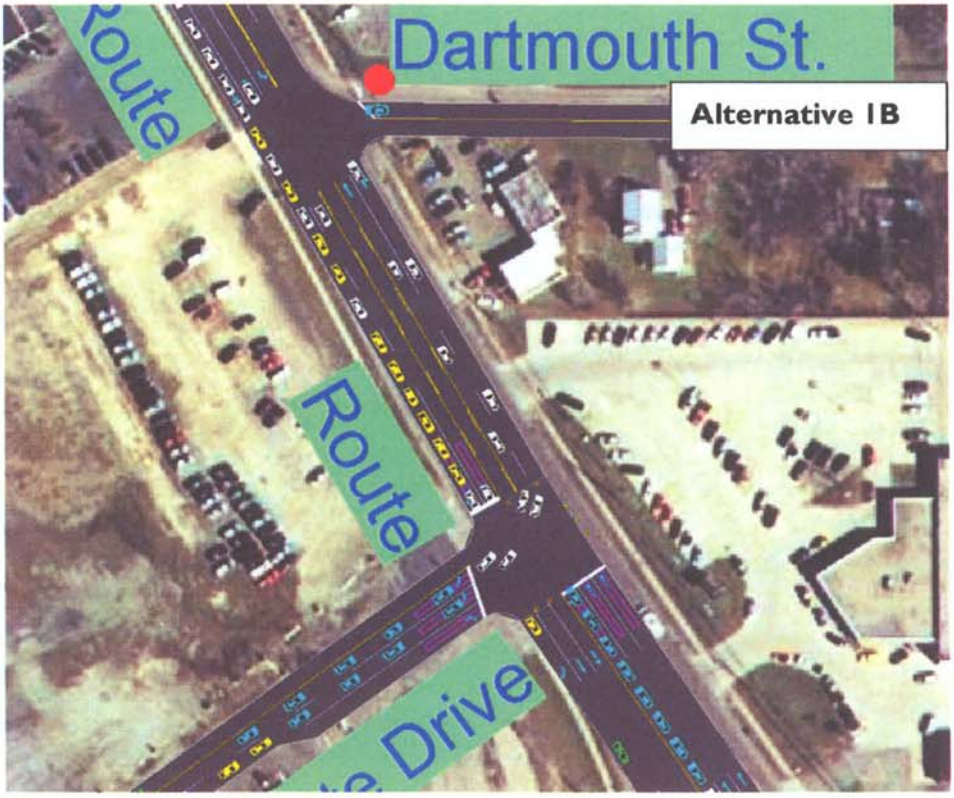
The existing southbound right turn storage bay, currently used for the on-ramp, at the site driveway is removed. The right turn movement into the site shares a lane with the through traffic which is primarily destined to the on-ramp. The queuing that resulted from lane blockages under Alternative 1A is reduced slightly.

The right-turn acceleration lane onto the I-90 on-ramp will begin after crossing through the site drive intersection.

Under Alternative IB:

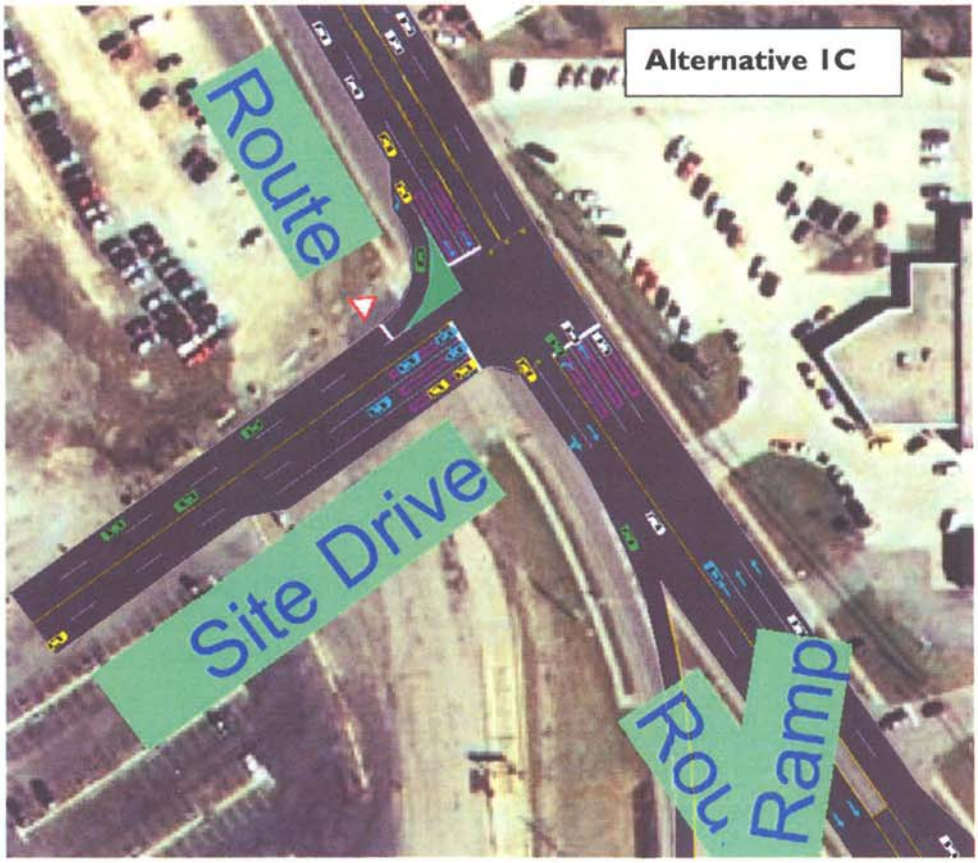
- There will be conflicts between the traffic turning right into the site, and the traffic destined to the on-ramp due to greater a speed differential thereby likely increasing the potential for rear-end accidents.

- Queuing on Camp Road southbound will extend more than 700 feet.



Alternative 1C

Alternative 1C alters the Alternative 1B geometry by providing a southbound channelized right turn instead of a shared thru-right lane for traffic entering the site driveway. This requires an additional entering lane on the site driveway thereby allowing the right turns to enter the site without stopping and without yielding to entering left turns.



Alternative 1D

Alternative 1D is identical to Alternative 1C with the addition of a 50' southbound storage lane for traffic turning right into the site. This alternative provides the best levels of service and least amount of southbound queuing on Route 75 at the site driveway under Phase I.

Capacity Analysis

Table I indicates the level of service results for the four alternatives under Phase I at the proposed driveway on Route 75.

TABLE VI - PHASE I CAPACITY ANALYSIS RESULTS

INTERSECTION	MOVEMENT	ALT IA		ALT IB		ALT IC		ALT ID	
		PM	SAT	PM	SAT	PM	SAT	PM	SAT
Route 75/ Proposed Site Drive									
EB - Proposed Site Dr	Left	D	D	D	D	D	D	D	D
	Right	C	C	C	D	C	D	C	D
NB - Route 75	Left	E	F(109.6)	E	E	E	E	E	A
	Thru	A	A	A	A	A	A	A	A
SB - Route 75	Thru/Right	B	B	C	B	C	B		
	Thru							B	B
	Right							B	A
Overall LOS / Delay in sec/veh		B(17.4)	C(23.1)	C(21.9)	B(19.7)	C(21.9)	B(19.7)	B(18.0)	B(15.6)

Vehicle Queue Analysis

A queuing analysis was performed for the Phase I development conditions at the Route 75/proposed site driveway intersection under each Alternative. The following table shows the southbound queuing on Camp Road at the Site driveway and the percentage of time (during the peak hour) that queues block the Dartmouth St intersection.

TABLE VII – QUEUING ANALYSIS

MOE	ALT IA		ALTI B		ALT IC		ALT ID	
	PM	SAT	PM	SAT	PM	SAT	PM	SAT
Average Queue Length (feet)	515	1361	486	525	419	317	414	376
Upstream Block Time (%) to Dartmouth Street	19	45	27	25	18	11	19	7

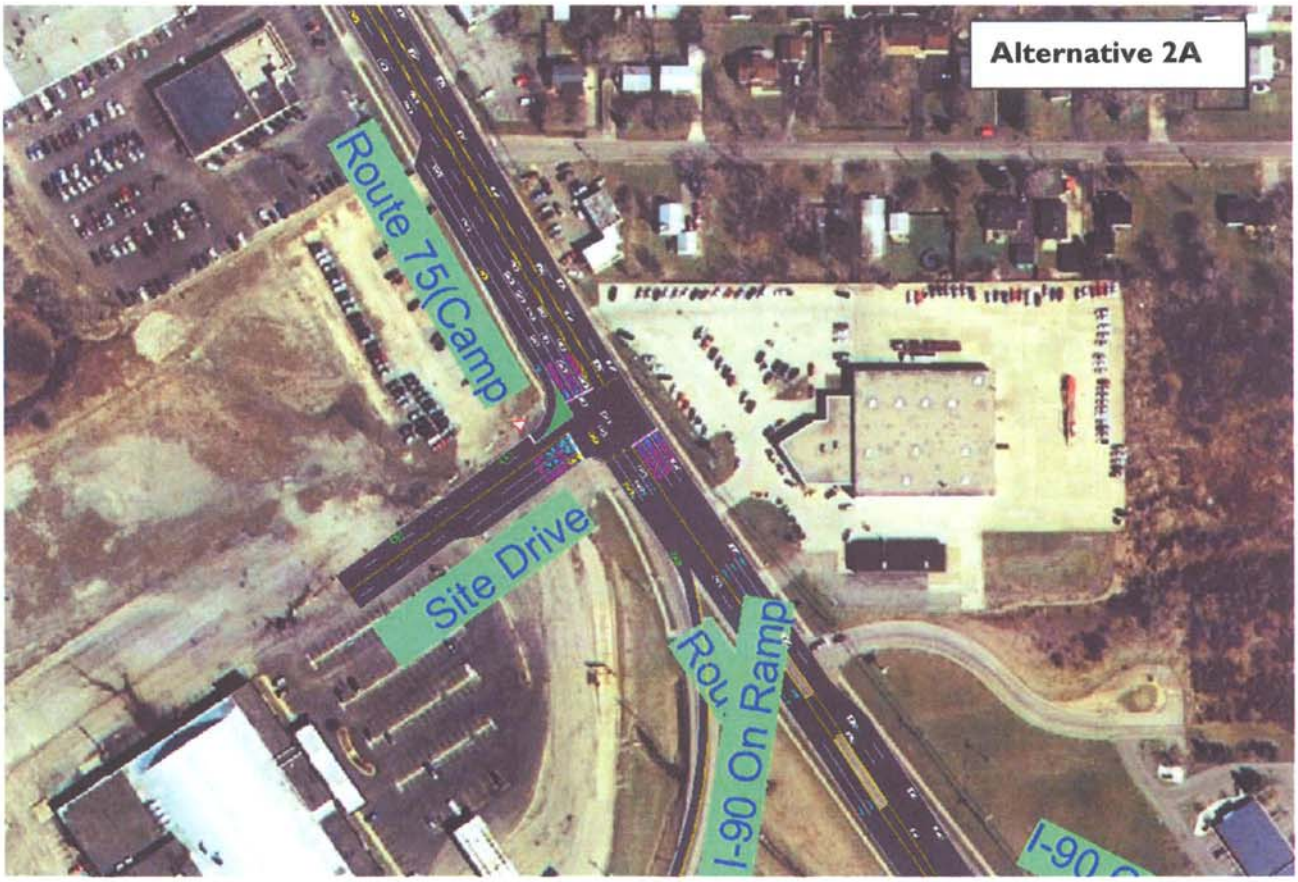
Phase 2 (Full Build Out) Alternatives:

Three different alternatives were analyzed for the Full Build conditions. The intersections affected by these alternatives and therefore included in the analysis are: Route 75/Proposed site driveway, Route 75/Commerce Place and the Thruway interchange on and off-ramps.

The alternatives analyze the following mitigation:

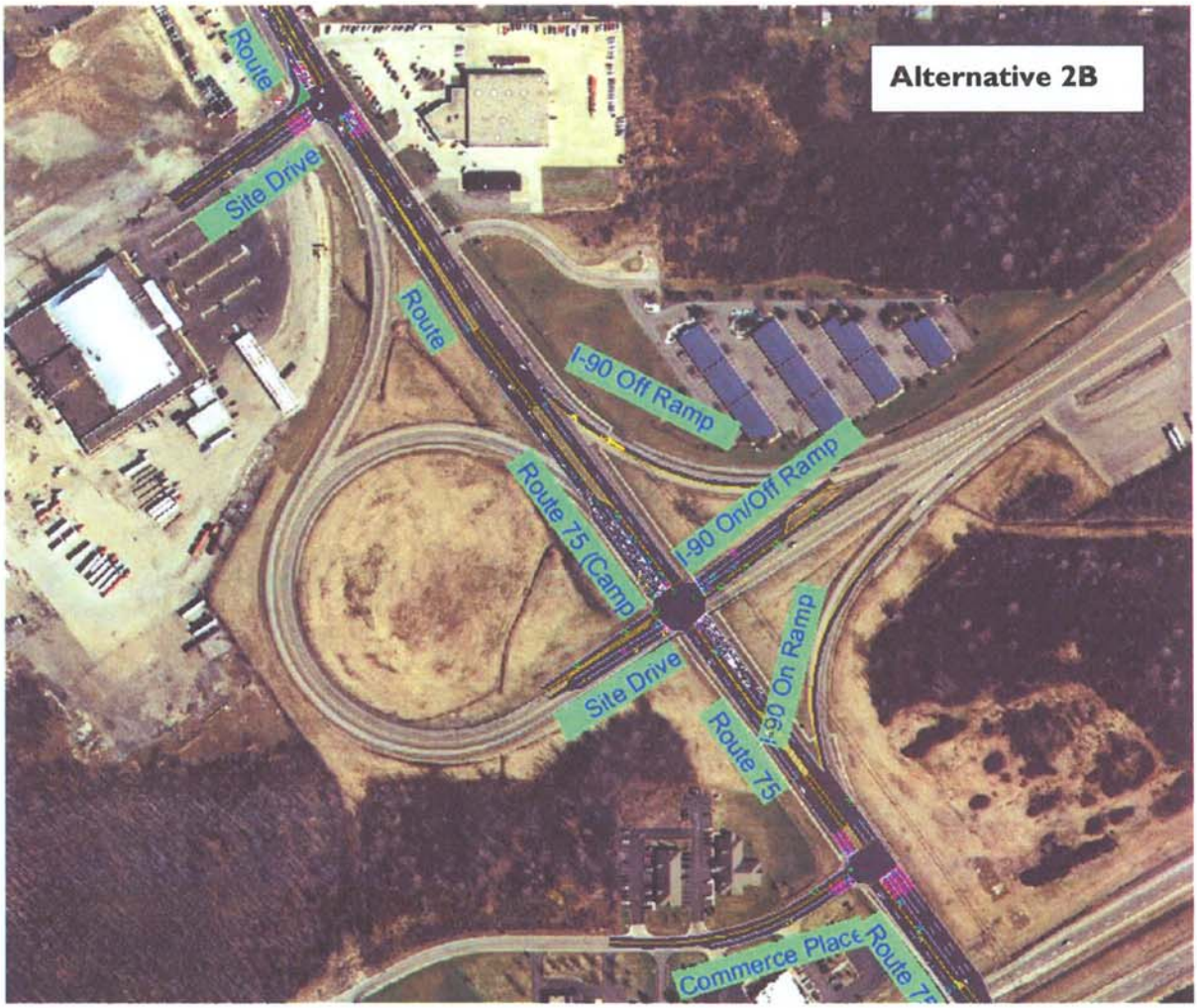
Alternative 2A

- Construct two additional southbound lanes providing 325 feet of storage. The lanes include one thru lane aligned to provide access to the southbound Thruway on-ramp and one right turn lane at the site driveway.



Alternative 2B

- Install three new traffic signals on Route 75 at the site driveway, at-grade Thruway/site driveway (requires removal of the existing bridge and Thruway ramps) and at the Commerce Place intersection.



Alternative 2C

- The same as Alternative 2B except the proposed development has only two access points and the Route 75/Thruway intersection is a "T" intersection.

Capacity Analysis

Table VIII indicates the level of service results for the four alternatives under Full Build Out at the proposed site driveway locations.

The results indicate that all of the full build alternatives provide acceptable operating conditions. Level of Service "D" or better is maintained for every movement with the exception of the northbound left turn movement at the northerly site driveway under all three alternatives. Alternative 2B provides the best overall levels of service at the north and south site drive intersections, however, the Thruway/site drive intersection operates at overall LOS "D" during the PM commuter peak hour. Alternative 2A provides overall LOS "C" or better at the two site driveway intersections while maintaining the current ramp configuration which provides very little delay to motorists entering or exiting the Thruway.

Removal of the Thruway ramps improves operating conditions along Camp Road slightly. However, the costs of this alternative must be considered in comparison to the benefits.

Alternative 2A requires right of way to the north of the proposed development that is not currently available.

Alternatives involving roundabouts at one or more of the intersections were considered and dismissed due to right of way requirements and opposition from the Hamburg Town Supervisor's office. The volume of traffic using the study intersections would require the roundabouts to support two circulating lanes. Multi-lane roundabouts have not been used extensively in New York State and can be challenging for uneducated motorists.

Concerns regarding weaving maneuvers between the Thruway ramp to northbound Route 75 and the site driveway were evaluated. The distance between the ramp and the driveway is greater than 800 feet. Given the speed of traffic exiting the ramp, likely 30-35 mph, and the low volume of traffic that is likely to make this movement, the weaving maneuver is not a significant safety concern. However, signage is recommended to be located such that motorists exiting the Thruway are directed to use the ramp to southbound Route 75 and enter the site via Commerce Place to avoid the weaving maneuver.

TABLE VIII - FULL DEVELOPMENT CAPACITY ANALYSIS RESULTS

INTERSECTION		ALT 2A		ALT 2B		ALT 2C	
		PM	SAT	PM	SAT	PM	SAT
Route 75/Commerce Place							
EB-Commerce Pl.	Left	D	D	D	D	D	D
	Right	D	B	C	C	D	C
NB - Route 75	Left	D	C	C	A	D	C
	Thru	A	A	A	A	A	A
SB - Route 75	Thru/Right	C	C	B	B	D	C
Overall LOS / Delay in sec/veh		C(29.2)	B(19.4)	B(14.9)	B(10.6)	D(40.3)	C(23.7)
Route 75/Thruway Drive							
EB - Thruway Drive	Left	NA	NA	C	D		
	Thru			D	C		
	Right			C	A		
WB - Thruway Drive	Left			C	D	C	C
	Thru			D	D		
	Right					C	B
NB - Route 75 (Camp Road)	Left			D	D		
	Thru			C	D	D	D
	Right					A	B
SB - Route 75 (Camp Road)	Left			D	D	D	C
	Thru			D	C	B	B
	Right			A	A		
Overall LOS / Delay in sec/veh				D(38.4)	C(33.3)	C(28.1)	C(22.6)
Route 75/ Proposed Site Drive							
EB - Proposed Site Dr	Left	D	D	D	D	D	D
	Right	C	C	C	C	C	C
NB - Route 75	Left	E	E	D	E	E	E
	Thru	A	A	A	A	A	A
SB - Route 75	Thru	B	C	B	B	C	C
	Right	A	A	A	A	B	C
Overall LOS / Delay in sec/veh		B(18.6)	C(22.8)	B(10.9)	B(12.1)	C(22.4)	C(28.3)

* Calculated delay exceeds two minutes per vehicle.

VIII. CONCLUSIONS AND RECOMMENDATIONS

This report addresses the traffic impact that can be expected from the proposed Hamburg Crossings development in the Town of Hamburg as described in this report.

The following list details specific recommendations to be considered as a result of the proposed Hamburg Crossings development:

1. Signal timing adjustments are recommended at the Route 20 / Legion Drive and Route 20 / Route 75 intersections as a result of the proposed development.

2. Re-construct Commerce Place at Route 75 with two exiting lanes (one right-turn lane and one left-turn lane) and one entering lane.

3. Construct the proposed site driveway on Route 75 with three exiting lanes (one right-turn lane and two left-turn lanes) and two entering lanes. The right turn entering the site should be channelized via a raised island and a right turn pocket should be constructed to the greatest length possible given the existing right of way constraints.

4. Install new three-color, multi-phase traffic signals at the proposed new site driveway and Commerce Place on Route 75. The signals should accommodate a permitted/protected northbound left turn phase and a westbound right turn overlap phase.

5. "No turn on red" signage is recommended on the eastbound approach at proposed new site driveway/Route 75 due to the close proximity to the thruway on ramp.

6. Re-stripe the existing two-way left turn lane to provide a 425' (350' storage and 75' taper) northbound left turn lane on Route 75 at proposed new site driveway.

7. Install signage such that motorists exiting the Thruway are directed to use the ramp to southbound Route 75 and enter the site via Commerce Place.

8. Appropriate pedestrian amenities shall be installed as required by NYSDOT.

9. All recommended roadway and intersection improvements on Route 75 are subject to review and approval by NYSDOT.

10. A post-development traffic analysis should be provided upon completion of Phase I to evaluate operating conditions at the site driveways and Thruway ramp intersections.

IX. FIGURES

Figures 1 through 8 are included on the following pages.

SECTION VI
RECOMMENDATIONS

Five (5) wetland areas totaling 7.22± acres (on-site) were identified during the course of a field investigation based upon the three parameter technique (vegetation, soils, and hydrology) outlined in the Corps Manual. It is EDI's professional opinion that wetland areas 4 and 5 and possibly 3, as depicted on Figure 7 of this report, are isolated and do not appear to meet the current interpretation of Federally jurisdictional wetlands. Wetland areas 1 and 2 are part of the tributary drainage system to Lake Erie and would likely be considered under the jurisdiction of the U.S. Army Corps of Engineers.

The Corps and New York State Department of Environmental Conservation approach their regulatory analyses by first considering avoidance of wetlands and minimization of wetland losses. EDI recommends the following:

(1) If no impacts to potential federally regulated wetlands, it is the professional opinion of EDI that the project may proceed without the need for an Article 24 or Section 404 permit.

(2) If wetland impacts are proposed to less than 0.10 acre of potential Federally jurisdictional wetland area, it is EDI's recommendation that the project may proceed under the current Nationwide 39 permit (valid until March 17, 2007) without the need for pre-notification to the U.S. Army Corps of Engineers. We strongly suggest the applicant thoroughly review the conditions of this permit. The permit language and other pertinent information can be found at http://www.usace.army.mil/inet/functions/cw/cecwo/reg/nationwide_permits.htm .

(3) If wetland impacts are proposed to greater than 0.10 acre of potentially Federally jurisdictional wetland area (including wetland areas EDI feels are isolated and non-jurisdictional), we recommend that this report, along with a Joint Application for Permit and required supporting documentation be submitted to the U.S. Army Corps of

RULES AND REGULATIONS OF THE NEW YORK STATE THRUWAY AUTHORITY

Part 105. ADVERTISING DEVICES

§105.1 Statutory Reference

The erection or maintenance of any advertising device, located within 660 feet of the nearest edge of the right-of-way of the Thruway is prohibited pursuant to section 361-a of the Public Authorities Law.

§105.2 Definitions

For the purposes of this Part, the following definitions shall apply:

a. Advertising device shall include any billboard, sign, notice, poster, display or other device intended to attract or which does attract the attention of operators of motor vehicles on the Thruway, and shall include a structure erected or used in connection with the display of any such device and all lighting or other attachments used in conjunction therewith.

b. Off-premises device shall include an advertising device displaying a message pertaining to a business or service not conducted or provided on the property on which the device is located.

§105.3 Prohibited Advertising Devices

a. The following are prohibited:

1. Advertising devices which advertise activities that are illegal under Federal, State or municipal laws or regulation;

2. Obsolete advertising devices;

3. Advertising devices not securely affixed in place;

4. Advertising devices which purport to be or are imitations of or resemble or are likely to be construed as official traffic control devices or railroad signs or signals, or which attempted to direct or regulate the movement of traffic, or which hide from view or interfere with the effectiveness of any official traffic control device or any railroad sign or signal;

5. Advertising devices which prevent the driver of a vehicle from having a clear and unobstructed view;

6. Advertising devices which contain, include or are illuminated by any flashing, intermittent or moving light or lights;

7. Advertising devices which permit beams or rays of light to be directed at any portion of the Thruway system, or which cause glare and tend to interfere with any driver's operation of a vehicle on the Thruway system;

8. Advertising devices which move or have any animated or moving parts;

9. Advertising devices on trees, rocks or other natural features;

10. Advertising devices which, based on established policy or in the judgment of the Thruway Authority, constitute a traffic hazard; and

11. Off-premises devices, except that the following off-premises devices may be permitted under this Part: devices located in areas within 660 feet of the nearest edge of the right-of-way which are zoned industrial or commercial under authority of State law and which lie within the boundaries of cities having a population greater than 250,000; provided that no off-premises advertising device shall be permitted to be maintained within 660 feet of the nearest edge of the Niagara section right-of-way within the city of Buffalo north to Elm Street.

b. Whenever an off-premises advertising device prohibited under subdivision (a) of this section, but lawful under prior law, is located in areas within 660 feet of the nearest edge of the right-of-way of Interstates 84 or 287, and construction of same at its present location commenced with respect to Interstate 85 on or before September 1, 1992 and with respect to Interstate 287 on or before April 1, 1991, the same may continue to be maintained, subject to permitting under the Part, for a reasonable period not to exceed the longer of two years from commencement of construction or the period which the owner of the advertising device can demonstrate is necessary to avoid substantial financial loss. In determining what constitutes substantial financial loss, the Authority may consider such factors as initial capital investment, investment realization at the time of the permit application, life expectancy of the investment, the existence or non-existence of a lease obligation, and existence of a contingency clause permitting termination of the lease. Failure to apply for a permit under this Part shall constitute presumptive evidence that immediate removal of the off-premises advertising device will cause no substantial economic loss.

§105.4 Exclusions

a. Excluded from these regulations are:

1. Advertising devices which are not visible from any traveled portion of the Thruway system;

2. Advertising devices for which the attraction is deemed incidental by the Thruway Authority;

3. Directional or other official signs and signals erected or maintained by the State or other public agency having jurisdiction; and

4. Information required or authorized by law to be posted or displayed thereon.

§105.5 Permits

Application for a permit or renewal thereof for each separate advertising device shall be on forms adopted by the Thruway Authority and shall contain such information as the Thruway Authority may require.

§105.6 Restrictions as to Thruway Lands

Notwithstanding the purpose for which it may be erected or the persons to whom it may be visible, no advertising device shall be erected or maintained on lands under the jurisdiction of the Thruway Authority except devices by the Thruway Authority or with the consent of the Thruway Authority.

TAF-620
(5/2007)

NEW YORK STATE THRUWAY AUTHORITY
BUREAU OF TRAFFIC MANAGEMENT

GENERAL GUIDELINES PERTAINING TO ADVERTISING DEVICES

I. These guidelines supplement section 361-a of the Public Authorities Law and Part 105 of the Rules and Regulations of the NYS Thruway Authority.

II. All advertising devices subject to a permit will be evaluated with respect to the following guidelines:

A. Normally, a limit of one device facing each direction of traffic will be allowed for an individual property owner or individual business.

B. An additional entrance sign may be allowed for a motel, gas station, shopping center, etc. when necessary to identify such entrance from the local highway.

1. The legend on an entrance sign is limited to no more than four lines and/or twelve words of copy, including the name of the business.

2. A list of the individual businesses is not allowed on a shopping center entrance sign.

C. A street address or telephone number is not permitted. A web address also is not permitted unless the official name of the company includes ".com" or a similar web address ending; in this case, the applicant must submit documentation stating that this is the official name of the company.

D. A sign should consist of two colors, one for the legend and a contrasting color for the background. If it will not cause unreasonable distraction, a symbol, logo or additional colors may be allowed.

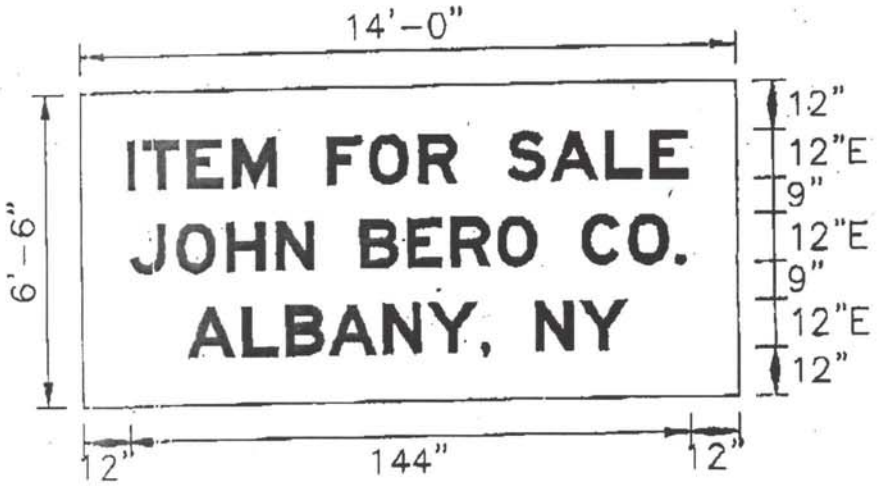
E. Outdoor advertising signs, displays and devices which include the steady illumination of sign faces, panels or slats that rotate or change to different messages in a fixed position, commonly known and referred to as "changeable or multiple message signs", may be allowed, provided the change of one sign face to another does not occur more than once every six seconds, and the actual change process is accomplished in three seconds or less.

F. The sign and legend should be large enough to be seen and read within a reasonable and appropriate time. It should not be so large as to cause an unreasonable distraction or violate the natural scenic beauty or aesthetic features at its location.

In general:

1. The sign should not exceed 200 square feet in area or 30 feet in any one dimension. The top of a sign should not be more than 40 feet above the Thruway road surface adjacent to its location. A sign on a building will be considered in relation to the size of the building.

2. An example layout for a sign with 12 inch capital letters is shown below:



In general, the width of the sign can be approximated by multiplying the number of letters and spaces in the longest line of text, including right and left edge spaces, by the height of the letters. The spacing between lines of text should not be less than ¾ of the average height of the uppercase letters in the adjacent lines of text. The spacing to the top and bottom borders should be equal to the uppercase letter height of the adjacent lines of text. The lateral spacing from the right and left edges of the longest line of text to the vertical borders shall be essentially the same as the height of the largest letters.

III. Some advertising devices may be excluded from a need for a permit.

A. An advertising device visible from a main roadway of the Thruway system may be excluded from a need for a permit when such device is:

1. Deemed incidental and otherwise in conformance with section 361-a of the Public Authorities Law or Part 105 of the Thruway's Rules and Regulations.

2. Among a multitude of devices oriented toward local highways and not causing an unreasonable distraction to Thruway travelers.

B. An advertising device visible from an interchange roadway but not visible from a main roadway of the Thruway system may be excluded from permit requirement when such device is:

1. Deemed incidental and otherwise in conformance with section 361-a of the Public Authorities Law or Part 105 of the Thruway's Rules and Regulations.

2. Among a multitude of devices oriented toward local highways and not causing an unreasonable distraction to Thruway travelers.

IV. Fees for advertising device permits are as follows:

Inspection Fee:
$50.00 (non-refundable) for each advertising device

Annual Signage Fees:
$20.00 for each advertising device up to 100 sq. ft. in area;
$50.00 for each advertising device from 101 sq. ft. to 200 sq. ft. in area

SECTION 361-A, PUBLIC AUTHORITIES LAW

(Chapter 593, Laws of 1952, effective April 10, 1952, as amended by Chapter 316, Laws of 1961, effective April 6, 1961)

§361-a. Restriction and regulation of advertising devices

1. Except as otherwise provided in this section, the erection or maintenance of any advertising device located within six hundred sixty feet of the nearest edge of the right-of-way of the thruway without a written permit therefor granted by the authority pursuant to this section is prohibited.

2. The term "advertising device" as used in this section shall include any billboard, sign, notice, poster, display or other device intended to attract or which does attract the attention of operators of motor vehicles on the thruway, and shall, where so determined by the authority, include a structure erected or used in connection with the display of any such device and all lighting or other attachments used in conjunction therewith.

3. The authority may from time to time adopt, modify, amend or repeal regulations governing the issuance of permits or renewals thereof for the erection and maintenance of advertising devices. Such regulations shall be designed to effectuate the general purposes of this article and the specific objectives and standards hereinafter set forth:

   (a) To provide for maximum visibility along the thruway system and connecting roads or highways;

   (b) To prevent unreasonable distraction of operators of motor vehicles;

   (c) To prevent confusion with regard to traffic lights, signs or signals or otherwise interfere with the effectiveness of traffic regulations;

   (d) To preserve and enhance the natural scenic beauty or the aesthetic features of the thruway system and adjacent areas;

   (e) To promote maximum safety, comfort and well-being of the users of the thruway.

4. To effectuate the purposes of this section, the authority may limit the application of any regulation adopted hereunder to exclude or include, in whole or in part:

   (a) Specified areas of the thruway system based upon use, population density, nature of the surrounding community, special conditions prevailing therein, or such other factors as may make differentiation or separate classification or regulation necessary, proper or desirable;

   (b) Particular types or classes of advertising devices based upon size, design, lighting or such other factors as may make differentiation or separate classification or regulation necessary, proper or desirable;

(c) The erection or maintenance of advertising devices on particular sections or portions of the thruway system.

(d) Notwithstanding any contrary provisions of this section, the authority shall permit the erection of not more than six advertising billboard signs in the city of New Rochelle along interstate route ninety-five where the location and erection of such signs are:

(1) consistent with and part of an urban renewal program which decreases the total number of advertising billboard signs in the renewal area;

(2) approved by such city;

(3) part of the subject of a United States District Court settlement order regarding the regulation of such signs within such city; and

(4) consistent with the size, lighting, spacing and all other requirements of federal law, including those established in the agreements entered into by the state pursuant to sections eighty-six and eighty-eight of the highway law.

5. Application for permits or renewals thereof shall be on forms prescribed by the authority and shall contain such information as the authority may require. The authority may by regulation adopt, modify, amend or repeal permit application fees, annual permit fees and permit renewal fees, provided, however, that such fees shall not exceed the advertising device fees established by regulation by the commissioner of transportation. Each permit shall be valid for a period to be established by the authority and may be renewed from time to time for such periods, as established by the authority, within thirty days of the expiration date thereof upon payment to the authority of the renewal fee.

6. The permit or renewal thereof shall be revocable at any time on thirty days notice to the permittee in the event of a violation of the requirements of this section or any regulation lawfully adopted hereunder. Any advertising device erected or maintained after September first, nineteen hundred fifty-two in violation of this section or any regulation adopted hereunder is hereby declared to be, and is, a public nuisance and such device may without notice be abated and removed by any officer or employee of the authority, or upon request of the authority, by any peace officer acting pursuant to his special duties, or police officer.

7. The authority by regulation may exclude from the coverage of this section advertising devices which it finds do not interfere with safety on the thruway system or contravene any of the other standards set forth in this section, including but not limited to

(a) Advertising devices which are to be erected or maintained on property for the purpose of setting forth or indicating

(1) The name and address of the owner, lessee or occupant of such property, or

(2) The name or type of business or profession conducted on such property, or

(3) Information required or authorized by law to be posted or displayed thereon.

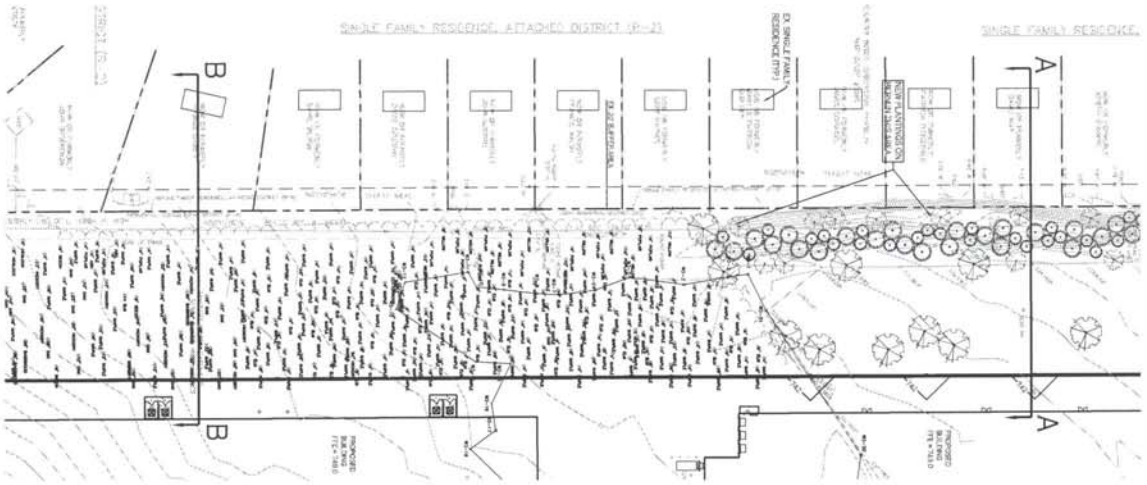
(b) Advertising devices which are not visible from any traveled portion of the thruway system;

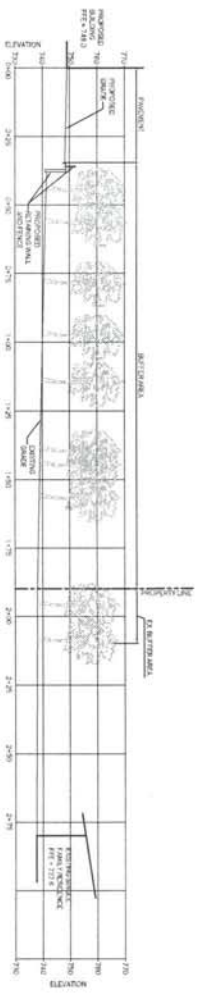
(c) Advertising devices indicating the sale or leasing of the property upon which they are placed.

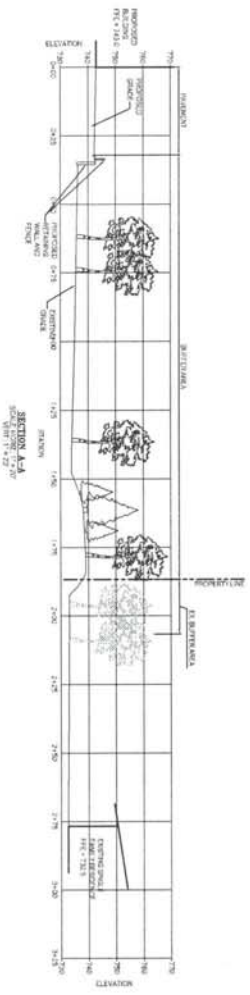
(d) Directional or other official signs and signals erected or maintained by the state or other public agency having jurisdiction.

8. Nothing in this section shall apply with respect to any property which is owned or leased by the state of New York or any agency thereof or with respect to which the state of New York or any agency thereof has or shall have a valid easement or covenant with the owner thereof concerning the restriction, removal or prohibition of advertising devices.

9. Nothing in this section shall be construed to abrogate or affect the provisions of any municipal ordinance, regulation or resolution which are more restrictive concerning advertising devices than the provisions of this section or of the regulations adopted hereunder.







PROJECT NAME:

Civil Plans For

Hamburg Crossings

Camp Road
Town of Hamburg, New York
BDCLLC Property No. 4148

REVISIONS:

No.	Description	Date

DRAWING NAME:
Landscaping
Cross Sections

Date:
Drawn by:
Scale:
8/08
JPB
As Noted

DRAWING NO.
C-5.4A
Project no.: 07.021

Carmina Wood Morris
465 Main Street, Suite 600
Buffalo, New York 14203
P: 716.842.3195
F: 716.842.0349

REVISIONS		
REV #	DATE	BY:
1	10/29/07	J.P.
2	10/30/07	J.P.
3	11/1/07	J.P.

BASED ON THE INFORMATION PROVIDED, ALL DIMENSIONS AND LUMINAIRE LOCATIONS SHOWN REPRESENT RECOMMENDED POSITIONS. THE ENGINEER AND/OR ARCHITECT MUST DETERMINE APPLICABILITY OF THE LAYOUT TO EXISTING OR FUTURE FIELD CONDITIONS.

THIS LIGHTING PATTERN REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS UTILIZING CURRENT INDUSTRY STANDARD LAMP RATINGS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS. ACTUAL PERFORMANCE OF ANY MANUFACTURER'S LUMINAIRE MAY VARY DUE TO VARIATIONS IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS AND OTHER VARIABLE FIELD CONDITIONS.

Statistical Area Summary

Description	Avg	Max	Min	Avg/Min	Max/Min
OVERALL SUMMARY	5.24	15.6	0.0	N.A.	N.A.
PARKING SUMMARY	5.67	14.9	0.1	56.70	149.00

Luminaire Schedule

Symbol	Qty	Label	Arrangement	Lumens	LLF	Description	
	38	A	3 @ 120 DEGREES	128000	0.600	VLS-1VSR5-1000-PSMH-FG	39' POLE 3' BASE
	3	B	SINGLE	128000	0.600	VLS-1VSR5-1000-PSMH-FG	39' POLE 3' BASE
	3	B	2@0°	128000	0.600	VLS-1VSR5-1000-PSMH-FG	39' POLE 3' BASE
	2	C	3 @ 120 DEGREES	44000	0.600	VLS-1VSR5-400-PSMH-FG	25' MOUNTING HEIGHT
	2	C	SINGLE	128000	0.600	VLS-1VSR-2F-1000-PSMH-FG-DS	39' POLE 3' BASE
	18	F	ROTATED 2 IN 90	128000	0.600	VLS-1VSR-2F-1000-PSMH-FG-DS	39' POLE 3' BASE
	3	G	SINGLE	44000	0.600	VLS-1VSW1F-400-PSMH-FG-DS	25' MOUNTING HEIGHT
	26	H	SINGLE	44000	0.600	VLS-1H-3-400-PSMH-FG	18' MOUNTING HEIGHT
	6	I	SINGLE	23500	0.600	VLS-1H-S-3-250-PSMH-FG	14' MOUNTING HEIGHT

HAMBURG CROSSING

WLS LIGHTING SYSTEMS

WLS-5356A	DATE - 10/23/07	SCALE 1"=100'	800-633-8711	PM: BRETT	BY: J.P.	SHEET 1 OF 1

WLS LIGHTING SYSTEMS

Flat-lensed fixtures meet IESNA full cutoff classification

FV SERIES

VERTICAL LAMP/FLAT GLASS LENS

SPECIFICATIONS

HOUSING The FV Series formed aluminum housing is finished to produce a clean, sharp appearance and ensures weather-tight construction. Available in 2 sizes: Medium (reduced envelope 400 Watt Lamp) and Reduced (reduced envelope 1000 Watt Lamp).

LENS/GASKET A flat tempered glass lens is sealed to the housing with an EPDM gasket, preventing entry of moisture and insects. Combined with the vertical burn feature, the flat glass lens provides high performance lighting.

TOP ACCESS Is secured by four captive stainless steel fasteners and provides ease of installation and servicing.

FINISHES Each fixture is finished with a baked-on polyester powder finishing process to give the fixture an exceptionally attractive appearance. Standard finish colors include bronze, buff, black, platinum, white and green. The polyester finish withstands extreme weather changes without cracking or peeling. Consult factory for available custom colors and pinstripe decal options.

REFLECTORS/DISTRIBUTION PATTERNS The FV Series fixture is available in four reflector systems and distribution patterns, all with vertical burn lamps: Type II (2), Type III (3), Type V (5), and Perimeter Forward Throw (FP). Reflectors are field-rotatable, enabling generous flexibility in distribution patterns without fixture movement.

LIGHT SOURCES Designed to operate with Pulse-Start Metal Halide, Super Metal Halide, Metal Halide, Metal Halide Reduced Envelope or High Pressure Sodium.

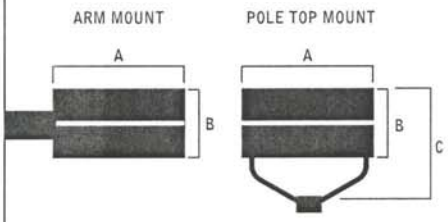
SOCKETS Porcelain mogul-base sockets with spring-reinforced contacts.

BALLAST Metal Halide, Super Metal Halide, and High Pressure Sodium feature a high-power factor CWA ballast, and are designed for -20 F operation.

BRACKETS Arm Mount: 5 1/2" x 2 1/2" x 12" length shipped standard. (An 8" bracket is available for single or D180 configurations, but must be ordered separately from Options column of the ordering chart.) A Round Pole Plate (RPP) is required for mounting to 3" - 5" round poles. (See Options in Luminaire Ordering Information.) **Pole Top:** Cast aluminum mounting hub conceals the wiring compartment and mounting hardware (consisting of four 11/16" O.D. aluminum rods for medium fixtures and 7/8" O.D. aluminum rods for large fixtures, and high-strength grade-five steel bolt with nylon insert and split lock washer for double locking.)

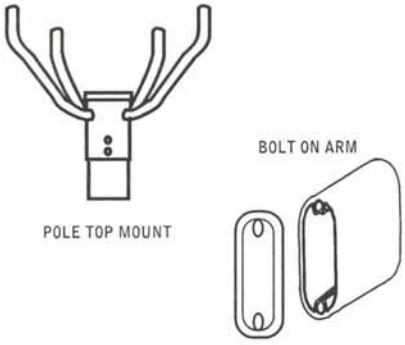
c UL us LISTED listed for wet locations.

DIMENSIONS



	A	B	C	EPA
FVM	21 5/8"	12 3/4"	21 15/16"	2.8
FVR	21 5/8"	16"	25"	3.5

MOUNTING BRACKETS



Approved By: _____

Project Name: _____

Location: _____

Date: _____

WLS LIGHTING SYSTEMS
MANUFACTURING SINCE 1969

P.O. Box 100519 ▪ Fort Worth, TX 76185
800.633.8711 ▪ Fax: 817.735.4824 ▪ **www.wlslighting.com**

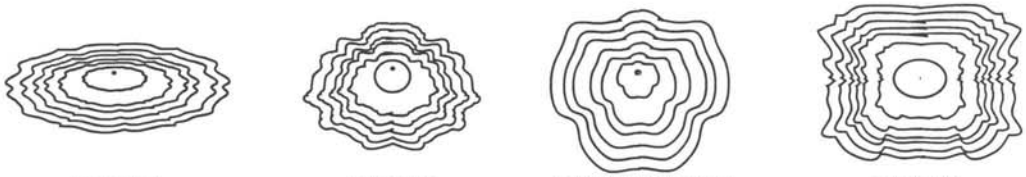
FV SERIES

VERTICAL LAMP/FLAT GLASS LENS

FIXTURE MOUNTING CONFIGURATIONS

POLE TOP MOUNT | SINGLE | D90° | D180° | T90° | TN120° | Q90°

OPTICS



TYPE II (2) | TYPE III (3) | FORWARD THROW (FP) | TYPE V (5)

NOTE: Based on 1000 Watt MH vertical burn. Consult factory for accurate optics.

ORDERING INFORMATION

SELECT APPROPRIATE CHOICE FROM EACH COLUMN TO FORMULATE ORDER CODE. Refer to example below.

LUMINAIRE PREFIX	DISTRIBUTION	LAMP WATTAGE	LIGHT SOURCE	LENS	LINE VOLTAGE	LUMINAIRE FINISH	OPTIONS
FVM	**2** - Type II **3** - Type III **FP** - Perimeter Forward Throw **5** - Type V	**250W** **320W** **400W**	**PSMH** - Pulse-Start Metal Halide 250, 320 Watt **HPS** - High Pressure Sodium 250, 400 Watt **MHR** - Metal Halide Reduced Envelope 400 Watt **MH** - Metal Halide 250 Watt	**FG** - Flat Glass	**480V** **MT** - Multi Tap[3] **TT** - Tri Tap[2]	**BRZ** - Bronze **BLK** - Black **PLT** - Platinum **BUF** - Buff **WHT** - White **GRN** - Green **CC** - Custom Color	**LL** - Less Lamp **GS** - Glare Shield **8BK** - 8" Bracket **RPP** - Round Pole Plate **BKT-WM** - Wall Mount Plate **PT** - Pole Top **SF** - Single Fusing **DF** - Double Fusing **AS** - Accent Striping **PC** - Photo Cell **NO** - No Options
FVR	**2** - Type II **3** - Type III **FP** - Perimeter Forward Throw **5** - Type V **AF** - Automotive Forward	**400W** **750W** **1000W**	**MHR** - Metal Halide Reduced Envelope 1000 Watt **PSMH** - Pulse-Start Metal Halide **HPS** - High Pressure Sodium[1]				

FVR	5	1000	MHR	FG	MT	BRZ	NO

(EXAMPLE ORDER)

ORDER:

WLS _____ ___ _____ _____ _____ _____ _____ _____

NOTE:
1. Voltage for 750W High Pressure Sodium must be specified.
2. Consult factory for international voltages. (120, 277, 347 Voltage)
3. MT - Multi Tap is shipped standard unless otherwise specified. (Multi Tap consists of 120V, 208V, 240V, and 277V. Multi Tap is pre-wired for highest voltage. Alternate voltages will require field re-wiring.)

Approved By: _____

Project Name: _____

Location: _____

Date: _____

WLS LIGHTING SYSTEMS
MANUFACTURING SINCE 1969

P.O. Box 100519 ▪ Fort Worth, TX 76185
800.633.8711 ▪ Fax: 817.735.4824 ▪ **www.wlslighting.com**