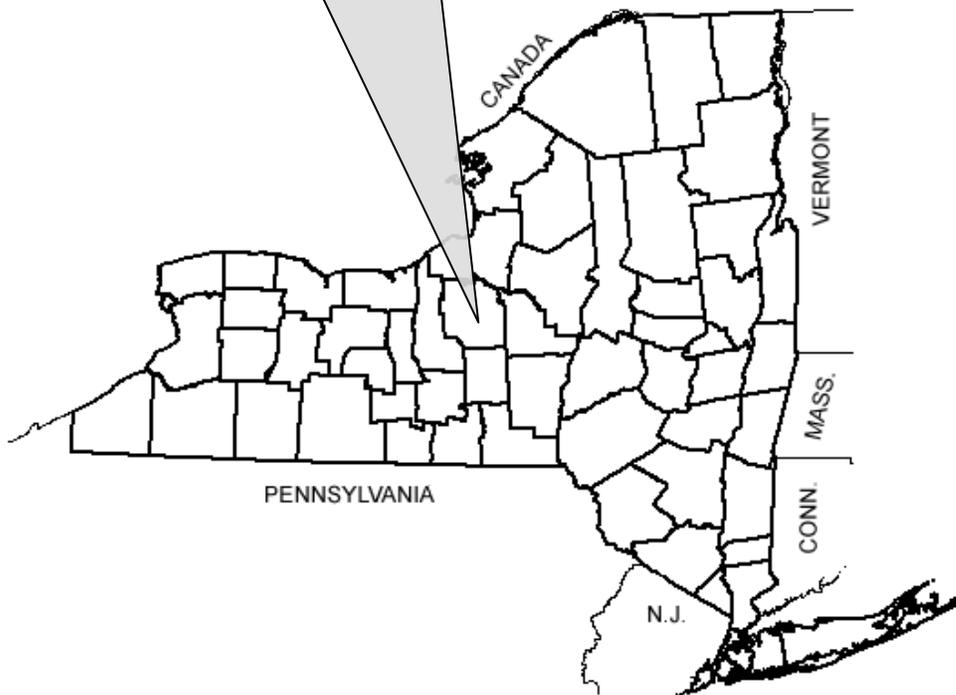


TRANSPORTATION

DRAFT INITIAL PROJECT PROPOSAL/ FINAL DESIGN REPORT

June 2011

Commercial Vehicle Ban
Route 370 (Onondaga Lake Parkway)
Town of Salina, Village of Liverpool
Onondaga County
P.I.N. 3M09.00



PROPOSED



This page intentionally left blank.

PROJECT APPROVAL SHEET

(Pursuant to SAFETEA-LU Matrix)

Milestones

Signatures

Dates

A. Recommendation for Initiation, Scope & Design Approval:

The project cost and schedule are consistent with the Regional Capital Program.

Regional Program Manager

B. Recommendation for Scope & Design Approval:

All requirements requisite to these actions and approvals have been met, the required independent quality control reviews separate from the functional group reviews have been accomplished, and the work is consistent with established standards, policies, regulations and procedures, except as otherwise noted and explained.

Regional Design Engineer

C. Initiation, Scope, and Design Approval:

The required environmental determinations have been made and the preferred alternative for this project is ready for final design.

Regional Director

LIST OF PREPARERS

Group Director Responsible for Production of the Design Approval Document:

Regional Design Engineer, NYSDOT Region 3

Description of Work Performed:

Directed the preparation of the Design Approval Document in accordance with established standards, policies, regulations and procedures, except as otherwise explained in this document.

Note: *It is a violation of law for any person, unless they are acting under the direction of a licensed professional engineer, architect, landscape architect, or land surveyor, to alter an item in any way. If an item bearing the stamp of a licensed professional is altered, the altering engineer, architect, landscape architect, or land surveyor shall stamp the document and include the notation "altered by" followed by their signature, the date of such alteration, and a specific description of the alteration.*

This report was prepared by the following NYSDOT staff:

Regional Design Engineer, NYSDOT, Region 3

Description of Work Performed:

Directly supervised the preparation of the Final Design Report in accordance with established standards, policies, regulations and procedures, except as otherwise explained in this document.

PLACE P.E. STAMP

Traffic Safety and Mobility Group, NYSDOT Region 3

Description of Work Performed: Prepared the Traffic study for the Design Approval Document in accordance with established standards, policies, regulations and procedures, except as otherwise explained in this document.

PLACE P.E. STAMP

PIN: 3M09.00.

PROJECT NAME: Commercial Vehicle Exclusion, Route 370, Onondaga Lake Parkway

MUNICIPALITY: Town of Salina, Village of Liverpool **COUNTY:** Onondaga County

ROUTE/SH #: Route 370 (Onondaga Lake Parkway), SH 5274

BIN: 7027400, CXS Railroad over Route 370

LIMITS: Milepoints (2005): From Mile point 370 33010 15.55 to Mile point 370 33010 17.45

Reference Markers: From RM 370 33011155 to Reference marker 370 3301 1174

PROJECT LENGTH: 1.9 **CENTERLINE MILES** 7.6 **LANE MILES**

FEDERAL AID SYSTEM: Non-NHS **FUNCTIONAL CLASS:** Urban Principal Arterial

EXISTING AADT: 23,200

PERCENT TRUCKS: 3% (This figure consists of all vehicles with more than 2 axles or more than 4 tires. Due to the presence of the CSX Bridge over Onondaga Lake Parkway, tractor trailers over 10'9" are currently directed to Old Liverpool Road).

EXISTING CHARACTERISTICS OF CONCERN: The section of Route 370 (Onondaga Lake Parkway) from Old Liverpool Road to I-81 passes through Onondaga Lake County Park and primarily serves commuter and recreational traffic, as well as bicycle and pedestrian traffic. To the northwest is the Village of Liverpool and to the southeast, the Parkway connects with I-81 and the City of Syracuse.

The CSX Railroad bridge over the Parkway (BIN 7027400) has a nonstandard vertical clearance. The bridge's height over the roadway (11 ft. 9 in. actual, 10 ft. 9 in. posted) is below current standards. Several signs on both approaches warn of the low vertical clearance. In addition, tractor-trailers are excluded from the Parkway, as per Title 15, Chapter VIII, Subchapter A, Part 6031, Sections 6031.09(a) and 6031.31(a) of the New York Codes, Rules and Regulations.

There has been a cluster of accidents involving large trucks (and one bus) hitting the CSX bridge. The recent Megabus crash involving the CSX bridge which occurred on 9/11/2010 resulted in 4 fatalities and numerous injuries. Over the last 24 years (1/1/1987 through 12/31/2010) there were 53 accidents involving the CSX bridge over the highway. During this period there were various signing changes implemented involving large ground mounted and overhead signs along both the Parkway and approaches to the Parkway. Under contract D256167 ('95-'96) large ground mounted warning signs were placed along both directions. Flashing beacons were installed on some of these large warning signs. Fluorescent orange panels were installed along the bottom chord of bridge. In addition, under contract D257107 (1997) several overhead signs were placed along the approach ramp at the east end of the Parkway and a new overhead sign and ground mounted signs were placed in the Village. A review of the accident reports (1/1/87 through 12/31/10) and crash history indicates a 24% reduction in the number of accidents involving the CSX bridge after the signs were installed.

A review of the accident reports (1/1/87 through 12/31/10) indicate that many of the operators appeared to be from the immediate area and thought they could "make it" under the clearly posted 10'-9" height clearance. A review of these 53 accidents reveals the following:

- 51% of the crashes involved eastbound motorists.
- 58% of the crashes involved drivers with out of state licenses.
- 42% of crashes involved in-state (NY) drivers, 90% of these were from the immediate surrounding area.
- Approximately 53% of crashes involved large tractor trailers with the remaining balance of 47% being box trucks with the exception of the recent bus crash.
- Approximately 78% of the crashes occurred during daylight hours.
- 9% of the crashes resulted in injuries with the remainder being property damage only with the exception of the Megabus accident.

PROJECT OBJECTIVE(S): Reduce the potential number of bridge hits by motorists who may be unaware of their actual vehicle height.

PROJECT ELEMENT(S) TO BE ADDRESSED:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Highway Element-Specific | <input type="checkbox"/> Operational Maintenance |
| <input type="checkbox"/> Bridge Element-Specific | <input type="checkbox"/> Where & When |
| <input checked="" type="checkbox"/> Other: Safety | |

DESCRIPTION OF PROPOSED WORK: This project involves excluding all commercial vehicles from using Route 370 (Onondaga Lake Parkway). Implementing a commercial vehicle ban on the Parkway will involve writing an official order excluding banned vehicles on the Parkway and installing, removing and replacing signs on and in advance of the Parkway and Old Liverpool Road. The sign work involves modifying both ground mounted and overhead signs. This work will be performed under PIN 3M09.00, Overhead Sign Job Order Contract.

A traffic study to determine the traffic impacts of the ban is in Appendix A. This study evaluated existing and proposed traffic and accident conditions and concluded there will be minimal impact to traffic on Old Liverpool Road if all commercial vehicles on the Parkway are excluded. The study also concluded this exclusion will reduce the potential number of bridge hits by motorists who may be unaware of their actual vehicle height.

- PRIORITY RESULTS:**
- | | | |
|---|--|-----------------------------------|
| <input type="checkbox"/> Mobility & Reliability | <input checked="" type="checkbox"/> Safety | <input type="checkbox"/> Security |
| <input type="checkbox"/> Economic Competitiveness | <input type="checkbox"/> Environmental Stewardship | |

- FUNDING SOURCE:**
- | | |
|--|----------------------------------|
| <input checked="" type="checkbox"/> 100% State | <input type="checkbox"/> Federal |
|--|----------------------------------|

SEQRA CLASSIFICATION:

- SEQRA Type:
- | | |
|---------------------------------|---|
| <input type="checkbox"/> Exempt | <input checked="" type="checkbox"/> Type II |
|---------------------------------|---|

PROBABLE SCHEDULE AND COST:

DESIRED LETTING: PIN 3M09.00, Overhead Sign Job Order Contract, was let on June 17, 2010.

SCHEDULED QUALIFIERS: Public Meeting 4(f)/106
 Permits Other - Identify
 Consultant(s) for: No Consultant Needed

Project Phase	Activity Duration	Estimated Cost	Fund Source	Obligation Date
Construction		\$60,000	100% State	June 2011
TOTAL		\$60,000		

BASIS OF ESTIMATE: Construction cost estimate is based on actual quantities and unit costs for similar work.

PROGRAM DISPOSITION:

The Overhead Sign Structure Job Order Contract was let in SFY 2010/11.

PROJECT CATEGORY: Maintenance (Element specific sign replacement).

STATEWIDE SIGNIFICANCE: No
Remarks:

ASSET MANAGEMENT (OPTIONAL): Applies Not Applicable

AM Team	IPP Initiator (Yes/No)	Asset Specific Cost Share (\$M)	Asset Team Specific Cost/Scope/Schedule/Concurrence (Team Chair Signature)
Pavement Structures Culverts Operations Environment			

ROW: The ROW Clearance Certificate was attached to the February 10, 2010 PS&E transmittal memo.

DATE: June 2011

Appendix A
Traffic Study

Exclude Commercial Vehicles from Parkway

Introduction:

As a result of comments received from the public and the October 5, 2010 Onondaga County Legislature resolution, the New York State Department of Transportation conducted a traffic study to determine the traffic impacts of having all commercial vehicles excluded from Onondaga Lake Parkway (Route 370) and diverted to Old Liverpool Road. This proposed exclusion would be from the section of Route 370 between the ramps to Old Liverpool Road and the intersection of Old Liverpool Road/Oswego Street/First Street.

The overall objective of excluding all commercial vehicles on the Onondaga Lake Parkway (Route 370) is to increase the safety of the traveling public. Since the majority of vehicles over 10' 9" are commercial vehicles, the implementation of this exclusion will reduce the potential number of bridge hits by motorists who may be unaware of their actual vehicle height. If implemented and enforced, motorists driving commercial vehicles will no longer be able to legally travel on Onondaga Lake Parkway (Route 370), and would then have to use alternate routes such as Old Liverpool Road to reach their destination.

The processes and methodology used to determine the effects of this proposed commercial vehicle exclusion on Onondaga Lake Parkway (Route 370), assumptions made, results and recommendations from the analysis are described in the following sections.

Existing conditions

Onondaga Lake Parkway (Route 370) is an urban principal arterial and major commuter route that passes through the County's Onondaga Lake Park. It is a four lane roadway (two lanes in each direction) with a speed limit of 55 mph and seasonal speed limit of 45 mph during the winter months within the Town of Salina, except for the western 0.3 miles in the Town, which has a speed limit of 30 mph. The speed limit of the Onondaga Lake Parkway is 30 mph within the Village of Liverpool.

Currently, commercial traffic is allowed to utilize the Onondaga Lake Parkway section of Route 370 to travel between Liverpool and Syracuse. The only existing exclusions are in place for Tractor Trailers (Title 15, Chapter VIII, Subchapter A, Part 6031, Sections 6031.09 (a) and 6031.31 (a) of the NYCRR), and for vehicles over 10 feet 9 inches (Vehicle & Traffic Law – Posted Height Restriction). There are numerous warning devices and signs (both ground mounted and overhead) stating the clearance in advance of the railroad bridge on both approaches of the parkway.

Old Liverpool Road is a four lane roadway (two lanes in each direction) that runs parallel with Onondaga Lake Parkway. The speed limit is 40 mph in the Town of Salina and 30 mph in the Village of Liverpool. The specific area studied was from the Old Liverpool Road and Buckley Road intersection to the Onondaga Lake Parkway (Route 370) at Old Liverpool Road intersection.

A. Existing Traffic Volumes

Traffic volume data was counted and collected from various resources to obtain the existing traffic volumes on Onondaga Lake Parkway and Old Liverpool Road for the

traffic study. In addition to traffic volume data, vehicle classification data was collected on the Onondaga Lake Parkway to determine the various types of vehicles that currently travel on Onondaga Lake Parkway. As a result of this collected data, it was found that Onondaga Lake Parkway has a 2010 AADT of 23,200 vehicles; with nearly evenly split directionally volumes. Old Liverpool Road has a 2006/2007 AADT of 13,300 to 16,900 vehicles. Intersection turning movement traffic volumes were also collected at the following signalized intersections on Old Liverpool Road:

- Onondaga Lake Parkway (Route 370) at Old Liverpool Road
- Old Liverpool Road at Electronics Parkway
- Old Liverpool Road at Eynsford Road
- Old Liverpool Road at Beechwood Avenue and Lakeview Terrace
- Old Liverpool Road at Buckley Road

Based on the traffic volumes collected at these intersections, the peak hours were determined to be:

AM Peak Hour:	7:15 AM – 8:15 AM
PM Peak Hour:	4:30 PM – 5:30 PM

Peak hour and directional AADT volumes are summarized in **Table 1**. The existing intersection turning movement counts for Old Liverpool Road for these peak periods can be seen in **Figure 1 and 2**.

B. Level of Service Analysis

A Level of Service (LOS) analysis was performed using Synchro 7 software. The above mentioned intersections along Old Liverpool Road were analyzed using the existing traffic volumes for both morning and evening peak periods. The results of this Level-of-Service Analysis, shown in **Table 4**, indicate that all of the signalized intersections operate at acceptable Level of Service for the existing conditions during the morning peak period.

During the evening peak period, the two intersections in the corridor that have the worst Level of Service are the Onondaga Lake Parkway (Route 370) at Old Liverpool Road intersection and Old Liverpool Road at Electronics Parkway intersection. The Onondaga Lake Parkway (Route 370) at Old Liverpool Road intersection has an overall LOS of E, with an average delay per vehicle of 64.3 seconds. This is largely due to the intersection being very large and complex, complex signal operation and phasing, close proximity to nearby intersections and railroad crossing, and heavy approach volumes on multiple approaches. The Old Liverpool Road at Electronics Parkway intersection has an overall LOS of D, with an average delay per vehicle of 47.6 seconds. Although the traffic volumes are low to average for an intersection of this size, the split-phase signal operation of this intersection for all the approaches has a negative impact on the Level of Service at this intersection.

C. Accident History

There are an average of two accidents per year involving a vehicle over 10' 9" hitting the CSX railroad bridge over Onondaga Lake Parkway (Route 370). Intersection Accident Rates and Linear Accident Rates were calculated for Old Liverpool Road as part of this traffic study. The Intersection Accident Rates exceed the statewide averages for similar intersections for all the signalized intersections within the study area. The calculated rates varied between one to three times the statewide average rates. However, the Old

Liverpool Road at Eynsford intersection only exceeds the statewide average by 2 percent.

The calculated Linear Accident Rate for Old Liverpool Road is 3.16 Acc/MVM, which is below the statewide average of 4.04 Acc/MVM. The accident rates are summarized in **Table 5**, and also shown in **Figure 5**.

D. Travel Time

On December 22, 2010 and December 27, 2010, travel time data was collected for both the Old Liverpool Road and Onondaga Lake Parkway (Route 370) corridor. The start and end points for this data collection were the center of the Onondaga Lake Parkway (Route 370) at Old Liverpool Road intersection (Heid's Corners) and the Little Creek Bridge on Park Street (just west of the railroad bridge over Park Street). Generally, the Onondaga Lake Parkway was the faster route, averaging approximately 3.5 minutes in either direction for both the morning and evening peak period. Old Liverpool Road took approximately 1 – 1.5 minutes longer during the morning peak period, and approximately 1.5 - 2 minutes longer during the evening peak period depending on the direction traveled. This travel time data is summarized in **Tables 6 and 7**.

E. Railroad Crossing - Old Liverpool Road

There is a one-track railroad crossing on Old Liverpool Road located just east of the intersection of Route 370 and Old Liverpool Road. This crossing is on the Montreal Secondary Branch line located at RR Milepost 4.2 and is owned and operated by CSXT.

The flasher and gate apparatus is equipped with cantilevered automatic flashing light signals and gates with the activation of the devices controlled by a grade crossing predictor, model GCP 3000. The railroad warning system (flashers and gates) are interconnected with the highway signal at the intersection of Old Liverpool Road and Route 370 under a "simultaneous preemption". The crossing is not equipped with LED lights. There are also sidewalk gates to accommodate and provide warning to pedestrian traffic. The current flasher and gate apparatus, with cantilevers were installed in 1992 and are in fair condition. The crossing surface is asphalt with rubber Epflex flanges. This surface was reconstructed in 1993 and is also in fair condition.

It has been determined that an Administrative Law Hearing is not required for diverting additional commercial vehicles onto Old Liverpool Road and across this railroad crossing.

F. Gap Analysis

Gap analysis data was collected at the Old Liverpool Road and Town Garden Drive intersection on March 1, 2011, and at the Old Liverpool Road and Greenpoint Avenue intersection on March 3, 2011. These intersections were chosen by Onondaga County Department of Transportation, and appear to be representative locations for volumes and traffic flow on Old Liverpool Road. Town Garden Drive appears to be representative of any of the numerous unsignalized intersecting roads and driveways on the western section of Old Liverpool Road between the Onondaga Lake Parkway and Electronics Parkway. Vehicles taking a left onto the Old Liverpool Road from Town Garden Drive are destined eastbound toward Syracuse, while right turning vehicles would be destined westbound toward Liverpool. Greenpoint Avenue appears to be representative of any of the numerous unsignalized intersecting roads and driveways on the eastern section of Old Liverpool Road between Electronics Parkway and Buckley Road. Vehicles taking a

left onto the Old Liverpool Road from Greenpoint Avenue are destined eastbound toward Syracuse, while right turning vehicles would be destined westbound toward Liverpool. The total number of gaps for each exiting turning movement for both intersections can be seen in **Table 8** below.

TABLE 8				
NUMBER OF GAPS FOR EXITING VEHICLES				
	AM PEAK HOUR (gaps/hour)		PM PEAK HOUR (gaps/hour)	
	LEFT	RIGHT	LEFT	RIGHT
Old Liverpool Road at Town Garden Drive	95	97	71	143
Old Liverpool Road at Greenpoint Avenue	77	110	74	107

In addition to collecting gap data, existing traffic volumes were collected on March 10, 2011 to determine the current number of vehicles exiting the side road at the Old Liverpool Road and Town Garden Drive intersection and the Old Liverpool Road and Greenpoint Avenue intersection. The traffic volumes for each exiting turning movement for both intersections can be seen in **Table 9** below.

TABLE 9						
VEHICLES EXITING SIDE ROAD						
	AM PEAK HOUR (vehicles/hour)			PM PEAK HOUR (vehicles/hour)		
	LEFT	RIGHT	TOTAL	LEFT	RIGHT	TOTAL
Old Liverpool Road at Town Garden Drive	54	29	83	23	19	42
Old Liverpool Road at Greenpoint Avenue	13	5	18	6	12	18

The existing traffic volumes indicate that the Old Liverpool Road at Town Garden Drive intersection have higher exiting volumes onto Old Liverpool Road than the Old Liverpool Road at Greenpoint Avenue intersection. In addition, these volumes were the highest during the morning peak hour.

Besides collecting traffic volumes and the number of gaps at both locations, the duration of each gap was timed and organized into categories. The gap data collected for all the turning movements for both locations can be seen in **Tables 10 and 11**. In order to quantify the number and duration of the gap times to a theoretical maximum volume capacity, each gap range was given a vehicle equivalent which represented the maximum number of vehicles that can exit together for a given gap time range. The vehicular equivalent for each peak hour represents the maximum number of turning vehicles that can exit if all the gap time was fully utilized. The calculated theoretical maximum number of turning vehicles for each peak period for both intersections can be

seen in the following table, **Table 12**.

TABLE 12				
MAXIMUM NUMBER OF EXITING VEHICLES				
	AM PEAK HOUR (veh. equivalent/hour)		PM PEAK HOUR (veh. equivalent/hour)	
	LEFT	RIGHT	LEFT	RIGHT
Old Liverpool Road at Town Garden Drive	281	303	157	412
Old Liverpool Road at Greenpoint Avenue	192	511	177	489

In comparing the number of gaps utilized for both intersections, we assumed the number of left turn gaps as the total number of available gaps within the given peak hour. This is a conservative analysis because the number of gaps for left turns is smaller than for the right turns, but longer in duration since vehicles need to find a gap in both directions at the same time to make a left turn. During the morning peak hour at Town Garden Drive, 83 exiting vehicles used 64 out of the 95 available gaps (67%); and during the evening peak hour, 42 exiting vehicles used 37 out of the 71 available gaps (52%). During the morning peak hour at Greenpoint Avenue, 18 exiting vehicles used 17 out of the 77 available gaps (22%); and during the evening peak hour, 18 exiting vehicles used 18 out of the 74 available gaps (24%). Generally, 75% or more of the exiting vehicles from the side roads at both locations turned with no other turning vehicles.

Additionally, the existing traffic volumes on the unsignalized side streets/driveways at both studied intersections are significantly lower than the calculated maximum number of turning vehicles that the gaps will accommodate. This indicates that not all the existing gaps are being utilized to their full capacity, and either more volume can be accommodated on the side roads/driveways or that more gap time is available to use for turning vehicles.

Based on existing traffic volumes, gap analysis, and observations in the field, there are more than sufficient gaps in traffic to accommodate the existing vehicles entering and exiting the driveways and unsignalized intersections along Old Liverpool Road. The existing three color signals along Old Liverpool Road provide good vehicular platooning to allow vehicles to turn easily and safely. The traffic volumes and gap usage tabulation are summarized in **Table 13**.

Proposed conditions:

A. Objective

As stated in the introduction section, the objective of this traffic study is to determine the traffic impacts of having all commercial vehicles excluded from Onondaga Lake Parkway (Route 370) and diverted to Old Liverpool Road. This proposed exclusion would be from the section of Route 370 between the ramps to Old Liverpool Road and the intersection of Old Liverpool Road/Oswego Street/First Street. The purpose of excluding all commercial vehicles on the Onondaga Lake Parkway (Route 370) is to increase the safety of the traveling public. Since the majority of vehicles over 10' 9" are commercial

vehicles, the implementation of this exclusion will reduce the potential number of bridge hits by motorists who may be unaware of their actual vehicle height. If implemented and enforced, motorists driving commercial vehicles will no longer be able to legally travel on Onondaga Lake Parkway (Route 370), and would then have to use alternate routes such as Old Liverpool Road to reach their destination.

B. Vehicle Classification and Volumes

The proposed commercial vehicle exclusion would encompass any vehicle with a commercial registration, including some pickups, some vans, box trucks, dump trucks, some buses, tractor trailers, and other various vehicles. Generally, these vehicles are classified as Vehicle Class F3 through F13. To establish the impact of the proposed commercial vehicle exclusion, a classification count was taken on Onondaga Lake Parkway in November 2010.

In addition to this classification count, manual counts of Vehicle Class F3 vehicles were taken on November 18, 2010 based on the license plates of the vehicles to determine the percentage of F3 vehicles that are considered commercial vehicles. Based on these traffic counts, it is estimated that two-thirds of the Vehicle Class F3 vehicles using the Parkway have commercial registrations. The results of these manual counts are summarized in the **Table 2**.

As a result of collected volume and classification data, **Table 3** below indicates the number of commercial vehicles that will be impacted by excluding commercial vehicles from using Onondaga Lake Parkway (Route 370):

VEHICLES IMPACTED BY COMMERCIAL VEHICLE EXCLUSION			
	AM PEAK HOUR (vehicles/hour)	PM PEAK HOUR (vehicles/hour)	24 HOURS (vehicles/day)
Eastbound (Liverpool to Syracuse)	155	96	1538
Westbound (Syracuse to Liverpool)	76	151	1462
Total	231	247	3000

In addition to the above table, more details about the traffic volumes and AADT for both Onondaga Lake Parkway (Route 370) and Old Liverpool Road collected as a result of this study can be seen in **Table 1**.

C. Assumptions and Trip Distribution

In order to maintain a conservative analysis in the study, it is assumed that all commercially registered vehicles are diverted from the Parkway to Old Liverpool Road. Therefore, this traffic study reflects a “worse case” scenario on the proposed conditions and impacts to Old Liverpool Road as a result of the proposed commercial vehicle exclusion. Realistically, the surrounding highways in the area provide motorists options for alternative routes to get to their destination that are impacted by this exclusion. In addition to this, there may be some commercially registered vehicles that continue to utilize the Parkway despite the exclusion.

The commercial vehicle volumes on the Onondaga Lake Parkway, as shown on **Table 3**, were subtracted from the Onondaga Lake Parkway volumes and distributed to the through movements for the five studied intersections along Old Liverpool Road. The proposed traffic volumes for Old Liverpool Road at all the studied intersections can be seen in **Figures 3 and 4**.

D. Level of Service Analysis

A Level of Service (LOS) analysis was performed for the proposed conditions at all the studied intersections along Old Liverpool Road. The proposed conditions involves having all the diverted commercial traffic volumes added to the existing peak hour traffic volumes for both the morning and evening peak periods. These proposed volumes were analyzed and the results of this Level-of-Service Analysis can be seen in **Table 4**.

In comparing the existing conditions with the proposed conditions in Table 4, there is only a minor degradation in Level of Service and increase in delay as a result of diverting the commercial vehicles from Onondaga Lake Parkway to Old Liverpool Road. These results were also supported by our field observations on the Old Liverpool Road during the traffic data collection for the study. Our field observations indicated that there is a large amount of reserve capacity not being utilized on Old Liverpool Road. The only two intersections of concern are Onondaga Lake Parkway (Route 370) at Old Liverpool Road and Old Liverpool Road at Electronics Parkway during the evening peak period.

The Onondaga Lake Parkway (Route 370) at Old Liverpool Road intersection will have an overall LOS of E, with an average delay per vehicle of 58.0 seconds. This Level of Service is similar to that of the existing condition scenario because the same volume is traveling through this intersection under both conditions. The differences only being that the volume is entering/exiting the intersection from different approaches.

The Old Liverpool Road at Electronics Parkway intersection will have an overall LOS of E, with an average delay per vehicle of 61.7 seconds. As stated earlier, the poor Level of Service is largely attributable to intersection geometry and the split-phase signal operation of this intersection for all the approaches. The increase in intersection delay is only 14.1 seconds and will have minimum impact for motorists traveling through this signalized intersection. There may be a possibility to improve the overall operations at this intersection by reconfiguring the approach lanes at this intersection to better match the turning movement traffic volumes. This lane reconfiguration may also provide an opportunity to improve the signal phasing of the intersection and remove the split phase signal operation on Old Liverpool Road.

The signal timing was reviewed in an effort to improve the operation of the signalized intersections under the proposed conditions. The only two intersections where signal timing were optimized and provided a better Level of Service were:

Old Liverpool Road at Buckley Road (AM and PM Peak)
Old Liverpool Road at Electronics Parkway (PM Peak)

The results of the Level of Service for the Proposed Conditions with optimized signal timing can be seen in the third and sixth columns in **Table 4**.

E. Accident Analysis

It is anticipated that the diversion of all commercial vehicles from Onondaga Lake Parkway to Old Liverpool Road will result in a slight increase in the number of accidents

along Old Liverpool Road as a result of the additional volume of traffic. It is also anticipated that the diversion of commercial vehicles will have a slight decrease in the number of overall accidents along Onondaga Lake Parkway as a result of a decrease in traffic volume. With the exclusion of commercial vehicles along Onondaga Lake Parkway drivers of commercial vehicles would not have to make a decision on entering the Parkway based on vehicle height as all commercial vehicles would be excluded. This exclusion is anticipated to have a substantial reduction in the number of bridge hits by commercial vehicles.

F. Gap Analysis

In order to be conservative, the proposed conditions were analyzed assuming the worst-case scenario where all commercial vehicles being excluded from the Onondaga Lake Parkway use Old Liverpool Road as their alternate route. It is more than likely that some of the excluded vehicles will use alternate routes other than Old Liverpool Road. If all of the excluded commercial vehicles on Onondaga Lake Parkway use Old Liverpool Road, then we anticipate that the traffic volumes on the westerly end (near Town Garden Drive) on Old Liverpool Road will increase approximately 30% and 18% for the morning and evening peak hours, respectively. On the easterly end on Old Liverpool Road (near Greenpoint Avenue), we anticipate traffic volumes to increase approximately 23% and 17% for the morning and evening peak hours, respectively.

While we anticipate that these volume increases will reduce the duration and/or number of available gaps, the existing three color signals along Old Liverpool Road will continue to provide sufficient gaps to allow vehicles to complete their turns from the side streets/driveways easily and safely. The gap analysis results indicate that both the number and the duration of the gaps are not being fully utilized under existing conditions. Additionally, the existing traffic volumes on the unsignalized side streets/driveways are significantly lower than the calculated maximum number of turning vehicles that the gaps can accommodate. This suggests that either more volume can be accommodated on the side roads/driveways or that more gap time is available to use for turning vehicles on both the easterly and western end of Old Liverpool Road.

Based on the existing and projected traffic volumes, gap analysis, and observations in the field, there will continue to be sufficient gaps on Old Liverpool Road if the commercial vehicle exclusion is implemented on the Onondaga Lake Parkway. Although there will be additional traffic added to the through moments on Old Liverpool Road, we anticipate minimal impacts on vehicles turning from unsignalized side roads and driveways as a result of the proposed Onondaga Lake Parkway commercial vehicle exclusion.

Results and Recommendation:

It appears from the results of the traffic study, there will be a minimum impact to traffic on Old Liverpool Road if all commercial vehicles on Onondaga Lake Parkway (Route 370) were to be excluded. Our recommendation is to exclude all commercial vehicles from using Onondaga Lake Parkway (Route 370). Since the majority of vehicles over 10' 9" are commercial vehicles, the implementation of this exclusion will reduce the potential number of bridge hits by motorists who may be unaware of their actual vehicle height. Implementation of excluding commercial vehicles from using Onondaga Lake Parkway (Route 370) will involve, but not be limited to:

- Evaluating potential environmental impacts in accordance with State Environmental Quality Review (SEQR) Act regulations, along with other impacts.

- Writing an official order excluding commercial vehicles on the Onondaga Lake Parkway (Route 370)
- Installation, removal, and replacement of signs on and in advance of Onondaga Lake Parkway (Route 370) and Old Liverpool Road. This will involve both ground mounted and overhead signs.

**Table 1
Traffic Volumes and AADT's**

Onondaga Lake Parkway west end @ Heid's Corners			Old Liverpool Road east end @ Buckley Rd			Old Liverpool Road west end @ Heid's Corners		
	Existing	Proposed		Existing	Proposed		Existing	Proposed
2010 AADT EB	11500		2006 AADT EB	6200		2007 AADT EB	8500	
2010 AADT WB	11700		2006 AADT WB	7100		2007 AADT WB	8400	
2010 AADT Total	23200		2006 AADT Total	13300		2007 AADT Total	16900	
2010 AM Peak Volume EB	1850	1695	2010 AM Peak Volume EB	537	692	2010 AM Peak Volume EB	475	630
2010 AM Peak Volume WB	588	512	2010 AM Peak Volume WB	484	560	2010 AM Peak Volume WB	297	373
2010 AM Peak Volume Total	2438	2207	2010 AM Peak Volume Total	1021	1252	2010 AM Peak Volume Total	772	1003
2010 PM Peak Volume EB	940	844	2010 PM Peak Volume EB	594	690	2010 PM Peak Volume EB	564	660
2010 PM Peak Volume WB	1827	1676	2010 PM Peak Volume WB	826	977	2010 PM Peak Volume WB	708	859
2010 PM Peak Volume Total	2767	2520	2010 PM Peak Volume Total	1420	1667	2010 PM Peak Volume Total	1272	1519
2010 24hr Commercial Volume EB	1538	0						
2010 24hr Commercial Volume WB	1462	0						
2010 24hr Commercial Volume Total	3000	0						
2010 AM Peak Commercial EB	155							
2010 AM Peak Commercial WB	76							
2010 AM Peak Commercial Total	231							
2010 PM Peak Commercial EB	96							
2010 PM Peak Commercial WB	151							
2010 PM Peak Commercial Total	247							

Table 2

Onondaga Lake Parkway EB (towards Syracuse)

Counted 11/18/10

Vehicle Class F3 - Pickups, Vans, RV's

	7:00 - 7:30	7:30 - 8:00	8:00 - 8:30	8:30 - 9:00	Total	%
Commercial	41	31	52	28	152	67.3
Passenger	23	25	16	10	74	32.7
Total	64	56	68	38	226	

	11:00 - 11:30	11:30 - 12:00	12:00 - 12:30	12:30 - 1:00	Total	%
Commercial	30	29	25	20	104	75.4
Passenger	9	11	5	9	34	24.6
Total	39	40	30	29	138	

	2:30 - 3:00	3:00 - 3:30	3:30 - 4:00	4:00 - 4:30	Total	%
Commercial	32	30	45	17	124	65.6
Passenger	8	19	22	16	65	34.4
Total	40	49	67	33	189	

	All time periods above	Total	%
Commercial		380	68.7
Passenger		173	31.3
Total		553	

Onondaga Lake Parkway WB (towards Liverpool)

Counted 11/18/10

Vehicle Class F3 - Pickups, Vans, RV's

	7:00 - 7:30	7:30 - 8:00	8:00 - 8:30	8:30 - 9:00	Total	%
Commercial	22	21	21	22	86	67.2
Passenger	12	11	14	5	42	32.8
Total	34	32	35	27	128	

	11:00 - 11:30	11:30 - 12:00	12:00 - 12:30	12:30 - 1:00	Total	%
Commercial	21	35	27	31	114	76.5
Passenger	4	7	10	14	35	23.5
Total	25	42	37	45	149	

	2:30 - 3:00	3:00 - 3:30	3:30 - 4:00	4:00 - 4:30	Total	%
Commercial	31	39	33	42	145	60.7
Passenger	23	25	24	22	94	39.3
Total	54	64	57	64	239	

	All time periods above	Total	%
Commercial		345	66.9
Passenger		171	33.1
Total		516	

Summary for both directions of travel

	All time periods above, both directions	Total	%
Commercial		725	67.8
Passenger		344	32.2
Total		1069	

Based on this, assume 2/3 of F3 vehicles are Commercial.

Table 4
Level of Service Summary
Old Liverpool Road Corridor
Proposed Parkway Commercial Vehicle Diversion

Intersection	2010 AM Existing Conditions	2010 AM Proposed Conditions	2010 AM Proposed Conditions Optimized Timings	2010 PM Existing Conditions	2010 PM Proposed Conditions	2010 PM Proposed Conditions Optimized Timings
Onondaga Lake Pkwy / Old Liverpool Rd / Oswego St / First St (Heid's Corners)	B(17.2)	B(16.3)	B(16.3)	E(64.3)	E(58.0)	E(58.0)
EB Right (1 st Street)	D(41.2)	D(39.3)	D(39.3)	E(66.9)	E(66.9)	E(66.9)
NB Left (Onondaga Lk Pkwy)	C(27.4)	C(25.6)	C(25.6)	F(86.2)	D(51.5)	D(51.5)
SB Left (Oswego Street)	C(21.1)	C(22.6)	C(22.6)	E(64.9)	F(126.3)	F(126.3)
SB Through (Oswego Street)	B(10.1)	A(8.4)	A(8.4)	A(4.4)	A(4.1)	A(4.1)
NW Left (Old Liverpool Rd)	D(50.1)	D(51.0)	D(51.0)	F(256.9)	F(256.9)	F(256.9)
NW Through (Old Liverpool Rd)	A(8.8)	A(9.2)	A(9.2)	C(29.5)	D(37.8)	D(37.8)
Old Liverpool Rd / Electronics Pkwy / Rite Aid Driveway	C(27.8)	D(38.0)	D(38.0)	D(47.6)	E(75.2)	E(61.7)*
SE Left/Through/Right	D(37.0)	D(42.1)	D(42.1)	D(49.2)	D(52.4)	E(75.2)*
NW Left/Through/Right	C(22.3)	C(32.8)	C(32.8)	D(46.8)	F(110.8)	E(59.5)*
NE Left/Through/Right (Rite Aid Driveway)	A(0.0)	A(0.0)	A(0.0)	D(52.7)	D(53.4)	F(83.0)*
SW Left/Through (Electronics Pkwy)	C(34.6)	D(52.3)	D(52.3)	E(75.1)	F(80.8)	F(80.2)*
SW Right (Electronics Pkwy)	A(7.2)	A(9.3)	A(9.3)	B(14.6)	B(14.3)	B(19.2)*
Old Liverpool Rd / Eynsford Rd / Liverpool Dentist Center Driveway	A(6.5)	A(6.4)	A(6.4)	A(5.2)	A(5.1)	A(5.1)
SE Left/Through/Right	A(6.2)	A(6.0)	A(6.0)	A(4.3)	A(4.1)	A(4.1)
NW Left/Through/Right	A(6.0)	A(5.7)	A(5.7)	A(5.0)	A(5.1)	A(5.1)
NE Left/Through/Right (Dentist Driveway)	A(0.0)	A(0.0)	A(0.0)	B(19.0)	C(20.8)	C(20.8)
SW Left/Through/Right (Eynsford Rd)	B(12.6)	B(14.9)	B(14.9)	B(13.8)	B(15.1)	B(15.1)
Old Liverpool Road / Beechwood Ave / Lakeview Terr	A(7.6)	A(7.5)	A(7.5)	A(8.3)	A(8.5)	A(8.5)
SE Left/Through/Right	A(5.2)	A(5.7)	A(5.7)	A(6.3)	A(6.9)	A(6.9)
NW Left/Through/Right	A(5.0)	A(5.2)	A(5.2)	A(5.6)	A(6.2)	A(6.2)
NE Left/Through/Right (Lakeview Terr)	B(15.4)	B(15.4)	B(15.4)	B(16.7)	B(16.7)	B(16.7)
SW Left/Through/Right (Beechwood Ave)	C(29.2)	C(29.2)	C(29.2)	C(28.6)	C(28.6)	C(28.6)
Old Liverpool Road / Buckley Road	B(14.8)	B(15.1)	B(14.9)*	B(18.4)	B(19.7)	B(18.2)*
NW Through	B(10.6)	B(11.0)	B(12.0)*	B(11.7)	B(12.1)	B(14.2)*
SB Through/Right (Buckley Rd)	C(21.4)	C(22.4)	C(20.2)*	C(29.7)	D(35.1)	C(26.3)*

*Optimized signal timings for Old Liverpool/Buckley (AM&PM), and Old Liverpool/Electronics (PM only).

Table 5
Intersection and Linear Accident Rates Summary

Intersection Accident Rates	Calculated Accident Rate (Acc/Mev)		Statewide Accident Rate (Acc/Mev)		Above or Below State Avg?
Intersection of Old Liverpool Road with					
Oswego St/First St/Onondaga Lake Pkwy	0.54		0.23		Above
Electronics Pkwy/Rite Aid Driveway	0.52		0.38		Above
Eynsford Rd/Liverpool Dentist Center	0.39		0.38		Above
Beechwood Ave/Lakeview Terrace	0.67		0.38		Above
Buckley Road	1.16		0.38		Above

Linear Accident Rate	Calculated Accident Rate (Acc/MVM)		Statewide Accident Rate* (Acc/MVM)		Above or Below State Avg?
Old Liverpool Road	3.16		4.04		Below

*Urban, 4 Lane, Undivided, No control of access

Table 6							
Travel Time Runs - AM Peak - 12/22/10							
Old Liverpool Road				Onondaga Lake Parkway			
Run #	WB	Run #	EB	Run #	WB	Run #	EB
1	4:50	2	5:12	3	3:36	4	3:37
5	5:28	6	5:02	7	3:31	8	3:25
9	4:56	10	4:22	11	3:29	12	3:32
13	5:35	14	4:13				
15	5:08	16	4:31				
Average		Average		Average		Average	
5:11		4:40		3:32		3:31	
Speed Limit		40 (town)/30 (village)		Speed Limit		45 (town)/30 (village)	
3 Color Signals		Yes		3 Color Signals		No	
School Bus Stops		Yes		School Bus Stops		No	
Centro Bus Stops		Yes		Centro Bus Stops		No	
Start Time		7:30 AM					
End Time		9:30 AM					
Weather		Heavy Overcast/Cloudy					
Surface Condition		Damp					
Westerly Start/Stop Point		Heid's Corners - Center of Intersection					
Easterly Start/Stop Point		Little Creek Bridge (100' N of Railroad bridge over Park Street)					

Table 7							
Travel Time Runs - PM Peak - 12/27/10							
Old Liverpool Road				Onondaga Lake Parkway			
Run #	WB	Run #	EB	Run #	WB	Run #	EB
1	5:18	2	4:40	3	3:41	4	3:36
5	4:49	6	5:20	7	3:43	8	3:28
9	5:45	10	4:31	11	3:34	12	3:35
13	5:43	14	6:38	19	3:33	20	3:39
15	6:25	16	4:59				
17	5:50	18	4:42				
Average	5:38	Average	5:08	Average	3:38	Average	3:35
Speed Limit				40 (town)/30 (village)			
3 Color Signals				Yes			
School Bus Stops				No (not in session)			
Centro Bus Stops				Yes			
Speed Limit				45 (town)/30 (village)			
3 Color Signals				No			
School Bus Stops				No			
Centro Bus Stops				No			
Start Time		3:00 PM					
End Time		6:00 PM					
Weather		Cloudy, Windy, Heavy Overcast					
Surface Condition		Dry					
Westerly Start/Stop Point		Heid's Corners - Center of Intersection					
Easterly Start/Stop Point		Little Creek Bridge (100' N of Railroad bridge over Park Street)*					

* Note - Signal at Park Street and Carousel Center Dr/Alliance Bank Parkway, just east of the easterly start/stop point, was being manually operated during this study.

Table 10

Intersection Gap Study

Old Liverpool Road @ Town Garden Drive Left Turns Exiting Town Garden Drive March 1, 2011

Gap Time 8-10 sec 11-14 sec 15-17 sec 18-21 sec 22-24 sec 25-28 sec 29+ sec
 Vehicle Equivalent x1 x2 x3 x4 x5 x6 x7 Total for interval Total for hour

Morning Peak		x1	x2	x3	x4	x5	x6	x7	Total for interval	Total for hour
7:15 to 7:30 AM	# of Gaps	9	9	2	1	2	1	3	27	
	# of Vehicles	9	18	6	4	10	6	21	74	
7:30 to 7:45 AM	# of Gaps	4	4	2	3	2	3	2	20	
	# of Vehicles	4	8	6	12	10	18	14	72	
7:45 to 8:00 AM	# of Gaps	7	5	3	1	0	1	3	20	
	# of Vehicles	7	10	9	4	0	6	21	57	
8:00 to 8:15 AM	# of Gaps	8	6	7	2	2	2	1	28	
	# of Vehicles	8	12	21	8	10	12	7	78	
									Total No. of Gap	95
									Total No. of Vehicles	281

Evening Peak		x1	x2	x3	x4	x5	x6	x7	Total for interval	Total for hour
4:30 to 4:45 PM	# of Gaps	12	4	2	3	0	0	0	21	
	# of Vehicles	12	8	6	12	0	0	0	38	
4:45 to 5:00 PM	# of Gaps	6	5	3	3	2	0	1	20	
	# of Vehicles	6	10	9	12	10	0	7	54	
5:00 to 5:15 PM	# of Gaps	5	3	5	0	1	1	0	15	
	# of Vehicles	5	6	15	0	5	6	0	37	
5:15 to 5:30 PM	# of Gaps	8	4	1	1	1	0	0	15	
	# of Vehicles	8	8	3	4	5	0	0	28	
									Total No. of Gap	71
									Total No. of Vehicles	157

Table 10 - continued

Intersection Gap Study

Old Liverpool Road @ Town Garden Drive Right Turns Exiting Town Garden Drive March 1, 2011

Gap Time 7-9 sec 10-13 sec 14-16 sec 17-19 sec 20-22 sec 23-26 sec 27-29 sec 30+ sec Total for Total for
 Vehicle Equivalent x1 x2 x3 x4 x5 x6 x7 x8 interval hour

Morning Peak		x1	x2	x3	x4	x5	x6	x7	x8	interval	hour
7:15 to 7:30 AM	# of Gaps	4	7	2	2	1	3	2	5	26	
	# of Vehicles	4	14	6	8	5	18	14	40	109	
7:30 to 7:45 AM	# of Gaps	4	4	1	2	3	1	2	2	19	
	# of Vehicles	4	8	3	8	15	6	14	16	74	
7:45 to 8:00 AM	# of Gaps	13	7	2	1	1	1	0	1	26	
	# of Vehicles	13	14	6	4	5	6	0	8	56	
8:00 to 8:15 AM	# of Gaps	9	5	6	4	1	1	0	0	26	
	# of Vehicles	9	10	18	16	5	6	0	0	64	
Total No. of Gap										97	
Total No. of Vehicles										303	

Evening Peak		x1	x2	x3	x4	x5	x6	x7	x8	interval	hour
4:30 to 4:45 PM	# of Gaps	11	6	5	2	3	1	0	4	32	
	# of Vehicles	11	12	15	8	15	6	0	32	99	
4:45 to 5:00 PM	# of Gaps	8	10	4	6	3	2	0	3	36	
	# of Vehicles	8	20	12	24	15	12	0	24	115	
5:00 to 5:15 PM	# of Gaps	14	9	2	2	4	4	3	0	38	
	# of Vehicles	14	18	6	8	20	24	21	0	111	
5:15 to 5:30 PM	# of Gaps	18	8	1	3	4	3	0	0	37	
	# of Vehicles	18	16	3	12	20	18	0	0	87	
Total No. of Gap										143	
Total No. of Vehicles										412	

Table 11

Intersection Gap Study

Old Liverpool Road @ Greenpoint Ave Left Turns Exiting Greenpoint Ave March 3, 2011

Gap Time 8-10 sec 11-14 sec 15-17 sec 18-21 sec 22-24 sec 25-28 sec 29+ sec
 Vehicle Equivalent x1 x2 x3 x4 x5 x6 x7 Total for interval Total for hour

Morning Peak		x1	x2	x3	x4	x5	x6	x7	Total for interval	Total for hour
7:15 to 7:30 AM	# of Gaps	10	9	5	0	1	0	0	25	
	# of Vehicles	10	18	15	0	5	0	0	48	
7:30 to 7:45 AM	# of Gaps	6	5	4	1	0	2	1	19	
	# of Vehicles	6	10	12	4	0	12	7	51	
7:45 to 8:00 AM	# of Gaps	4	4	3	1	2	0	2	16	
	# of Vehicles	4	8	9	4	10	0	14	49	
8:00 to 8:15 AM	# of Gaps	4	5	5	1	1	1	0	17	
	# of Vehicles	4	10	15	4	5	6	0	44	
									Total No. of Gap	77
									Total No. of Vehicles	192

Evening Peak		x1	x2	x3	x4	x5	x6	x7	Total for interval	Total for hour
4:30 to 4:45 PM	# of Gaps	7	5	4	2	0	1	0	19	
	# of Vehicles	7	10	12	8	0	6	0	43	
4:45 to 5:00 PM	# of Gaps	7	7	3	2	1	1	0	21	
	# of Vehicles	7	14	9	8	5	6	0	49	
5:00 to 5:15 PM	# of Gaps	5	5	4	0	1	0	1	16	
	# of Vehicles	5	10	12	0	5	0	7	39	
5:15 to 5:30 PM	# of Gaps	5	6	3	2	1	0	1	18	
	# of Vehicles	5	12	9	8	5	0	7	46	
									Total No. of Gap	74
									Total No. of Vehicles	177

Table 11 - continued

Intersection Gap Study

March 3, 2011

Right Turns Exiting Greenpoint Ave

Old Liverpool Road @ Greenpoint Ave

Gap Time 7-9 sec 10-13 sec 14-16 sec 17-19 sec 20-22 sec 23-26 sec 27-29 sec 30+ sec Total for Total for
 Vehicle Equivalent x1 x2 x3 x4 x5 x6 x7 x8 interval hour

Morning Peak

7:15 to 7:30 AM	# of Gaps	6	3	2	2	0	1	1	1	7	22	
	# of Vehicles	6	6	6	8	0	6	7	7	56	95	
7:30 to 7:45 AM	# of Gaps	7	2	1	2	1	1	3	3	10	27	
	# of Vehicles	7	4	3	8	5	6	21	80	134		
7:45 to 8:00 AM	# of Gaps	8	3	2	2	1	1	3	9	29		
	# of Vehicles	8	6	6	8	5	6	21	72	132		
8:00 to 8:15 AM	# of Gaps	7	6	1	0	2	5	0	11	32		
	# of Vehicles	7	12	3	0	10	30	0	88	150		
											Total No. of Gap	110
											Total No. of Vehicles	511

Evening Peak

4:30 to 4:45 PM	# of Gaps	9	5	1	1	2	3	0	8	29		
	# of Vehicles	9	10	3	4	10	18	0	64	118		
4:45 to 5:00 PM	# of Gaps	6	3	2	2	3	5	1	6	28		
	# of Vehicles	6	6	6	8	15	30	7	48	126		
5:00 to 5:15 PM	# of Gaps	4	3	1	1	0	3	1	9	22		
	# of Vehicles	4	6	3	4	0	18	7	72	114		
5:15 to 5:30 PM	# of Gaps	6	5	1	0	2	3	4	7	28		
	# of Vehicles	6	10	3	0	10	18	28	56	131		
											Total No. of Gap	107
											Total No. of Vehicles	489

Table 13

Summary of Turning Movement Counts and Gap Usage For Side Streets in Gap Analysis

3/10/2011

AM Peak Hour	7:15 - 8:15 AM	Vehicles From Side Road			Gap Usage by Side Road (Both Turn Movements) *						Total Available Gaps **	% Used
		Rights	Lefts	Total	Gap (1 Veh.)	%	Gap (2 Veh.)	%	Gap (3 Veh.)	%		
Town Garden Drive @ Old Liverpool Road		29	54	83	48	75.0%	13	20.3%	3	4.7%	95	67.4%
Greenpoint Avenue @ Old Liverpool Road		5	13	18	16	94.1%	1	5.9%	0	0.0%	77	22.1%
PM Peak Hour	4:30 - 5:30 PM	Vehicles From Side Road			Gap Usage by Side Road (Both Turn Movements) *						Total Available Gaps **	% Used
		Rights	Lefts	Total	Gap (1 Veh.)	%	Gap (2 Veh.)	%	Gap (3 Veh.)	%		
Town Garden Drive @ Old Liverpool Road		19	23	42	34	91.9%	3	8.1%	0	0.0%	71	52.1%
Greenpoint Avenue @ Old Liverpool Road		12	6	18	18	100.0%	0	0.0%	0	0.0%	74	24.3%

* During our data collection, no more than 3 vehicles utilized the same gap when turning onto Old Liverpool Road.

** Total Available Gaps taken from left turns exiting from Tables 10 & 11. This provides the most conservative comparison of total gaps available to actual gaps used.

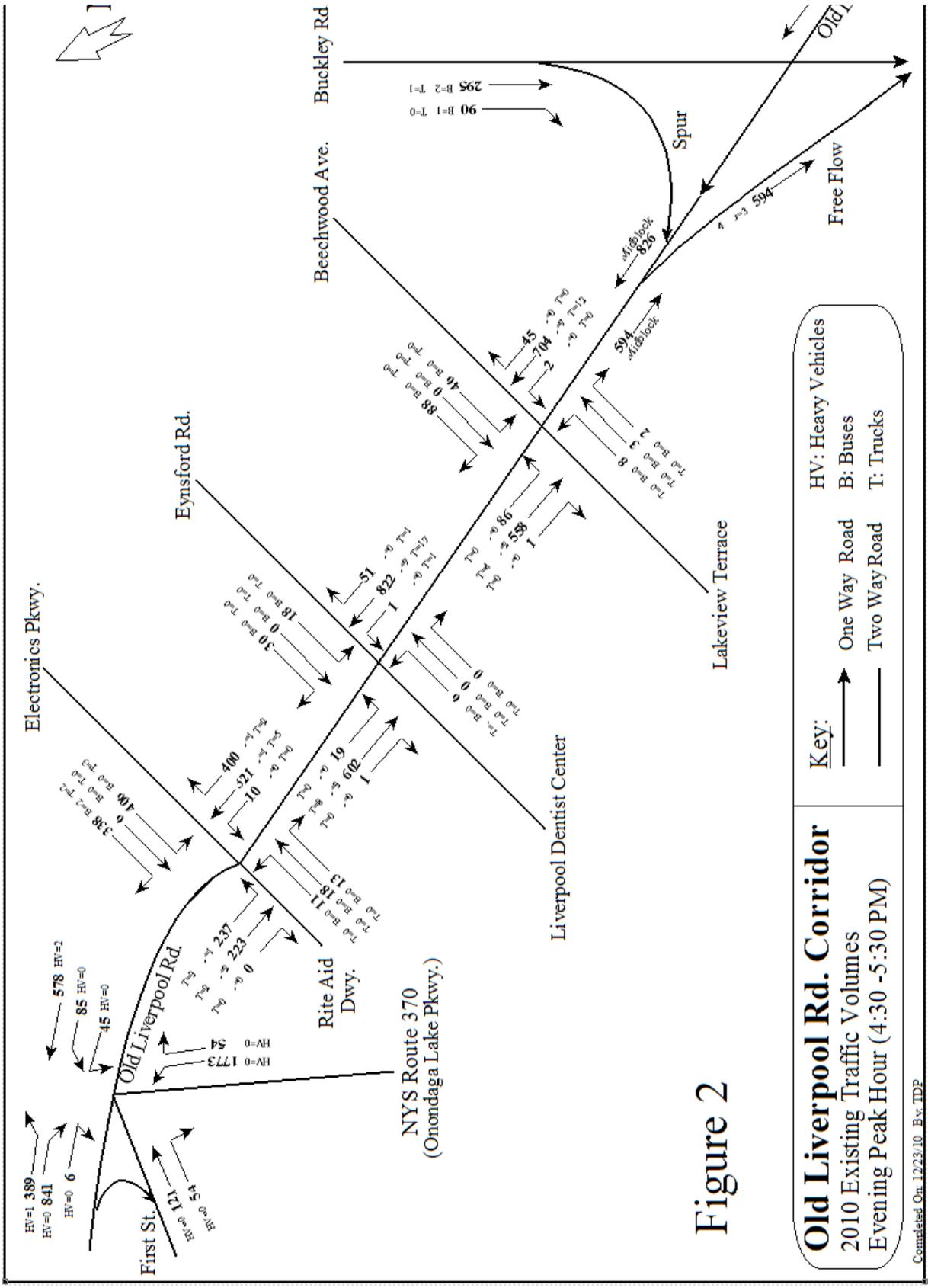


Figure 2

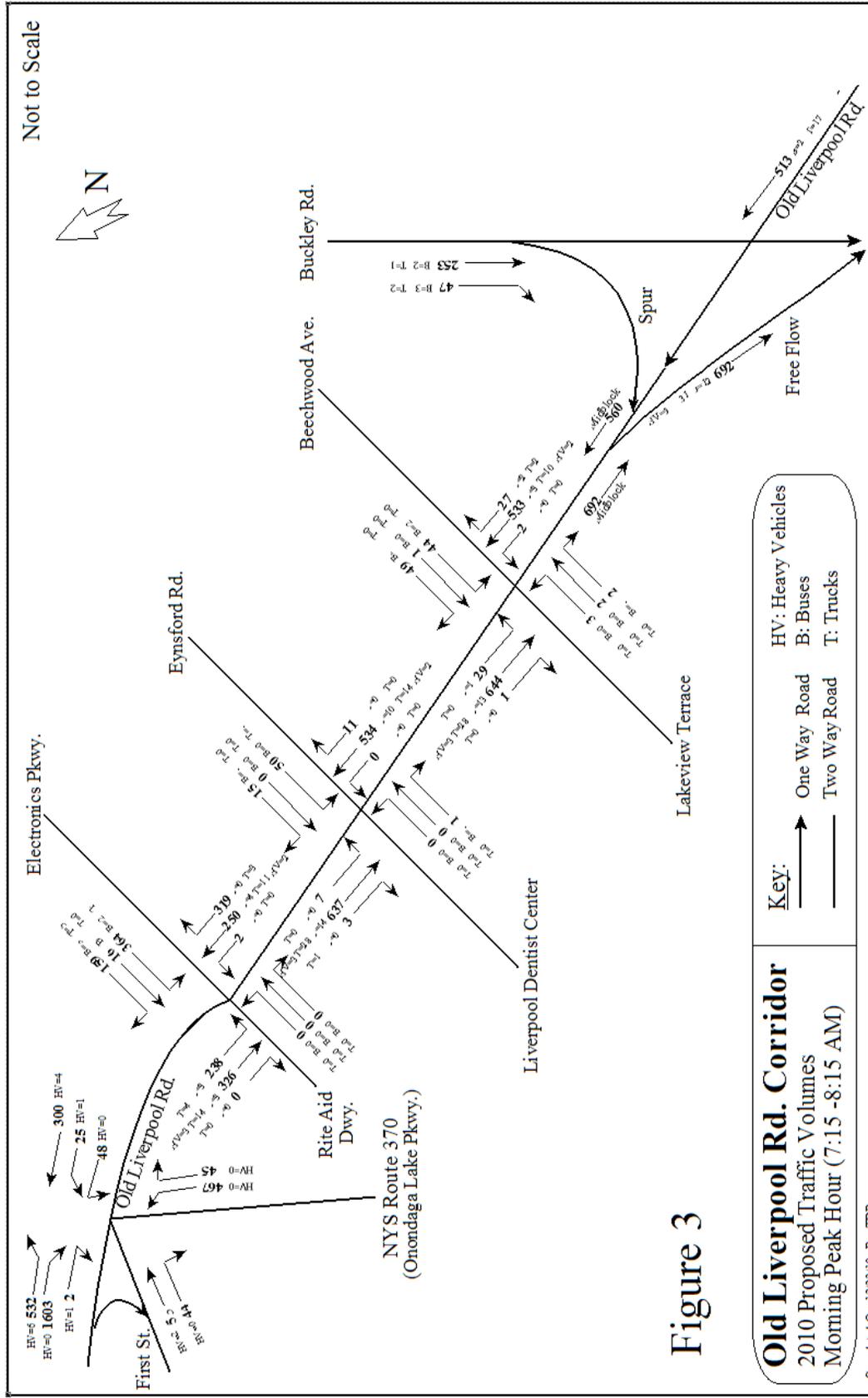


Figure 3

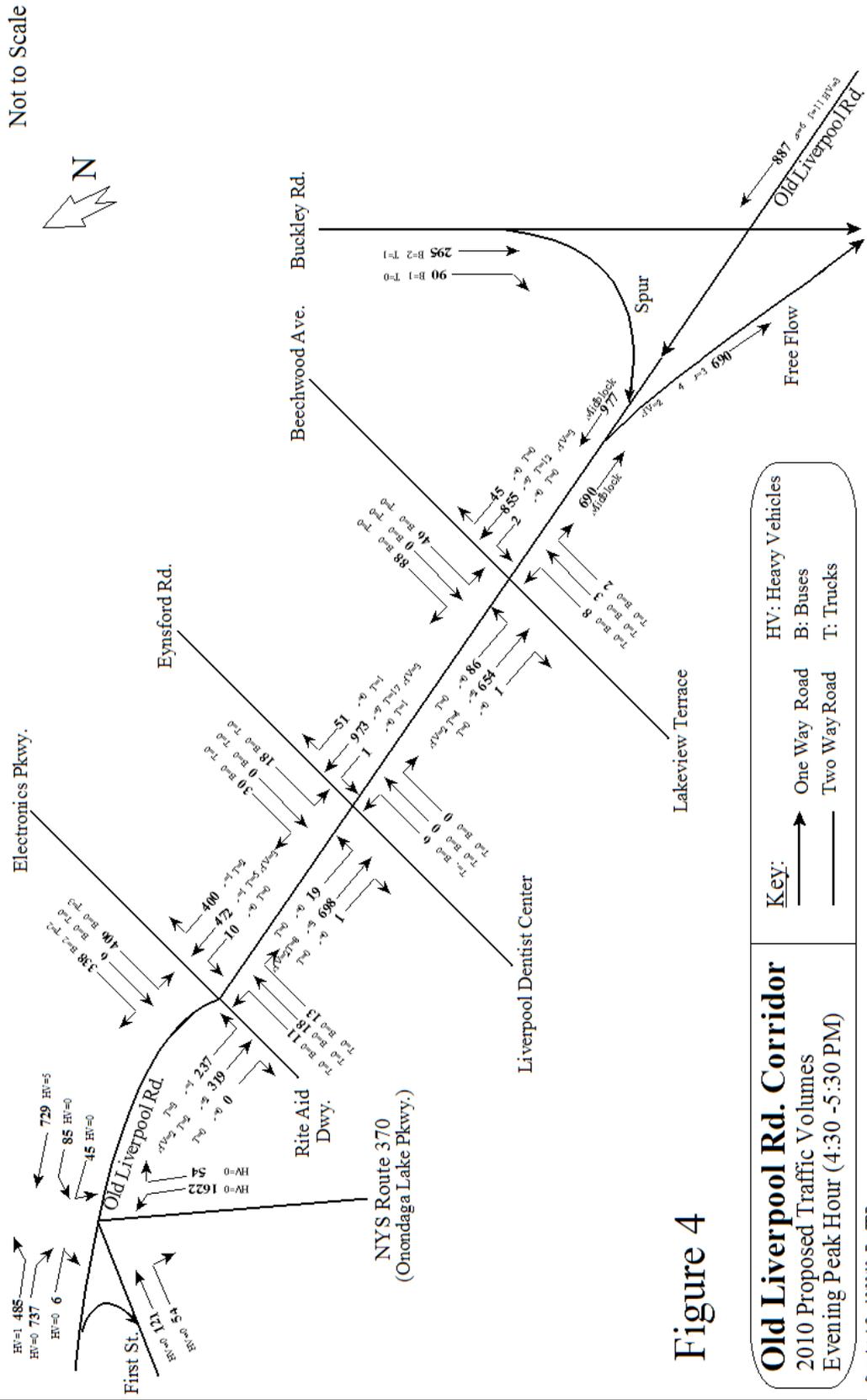
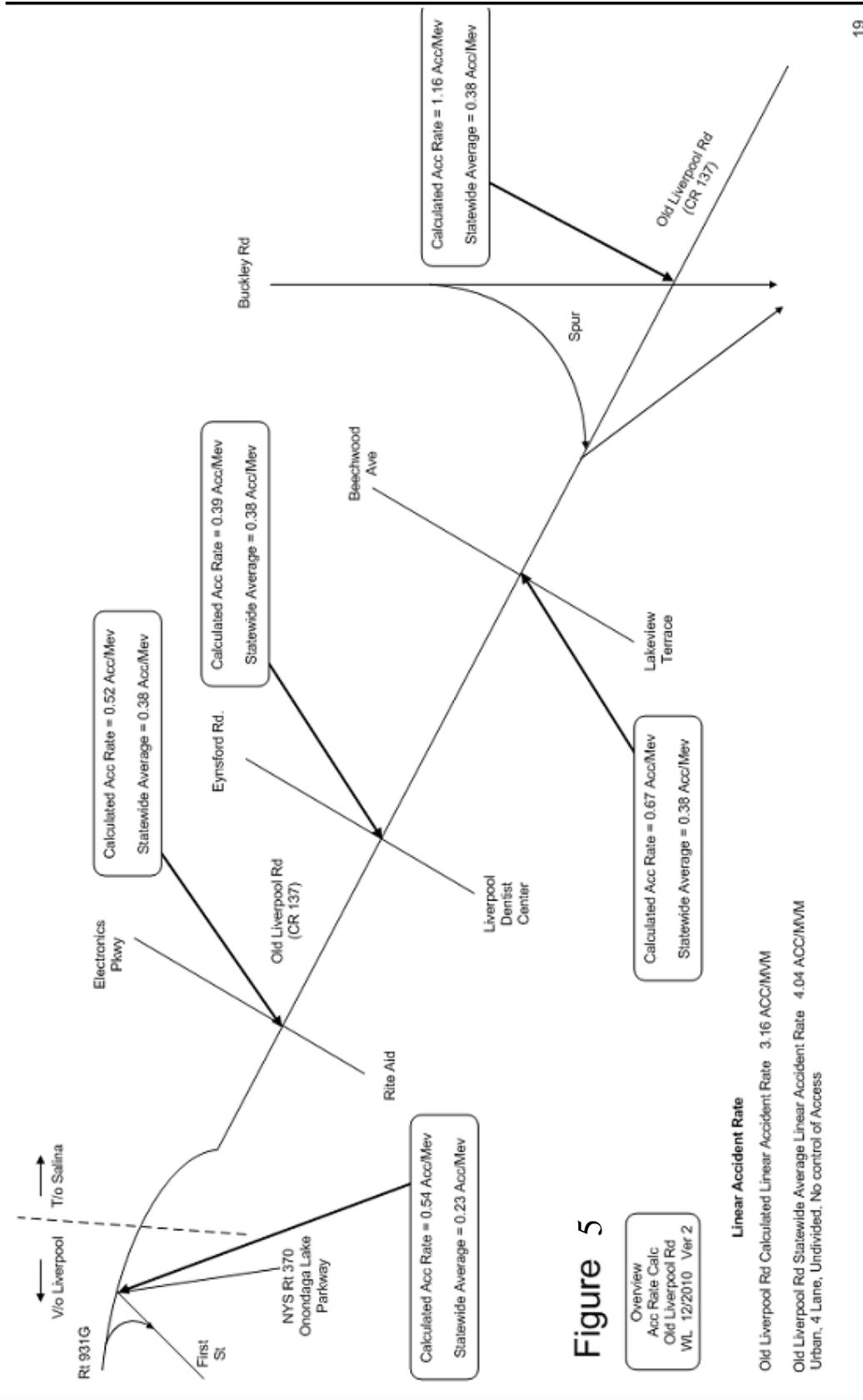


Figure 4



Appendix B

Environmental Documentation

Environmental Scoping Checklist					
PIN: 3M0900			DESIGNER:		
DESCRIPTION: Rte 370 Onondaga Lake Parkway commercial vehicle ban			ENVIRON. CONTACT: Dan Powers		
COUNTY: Onondaga			TYPE FUNDING: 100% State		
			DATE: 5/25/11		
			REVISION DATE:		
ENVIRONMENTAL CLASSIFICATION	NEPA:	NOT SUBJECT TO NEPA REVIEW			
	SEQRA:	TYPE II (NON EA/EIS)	SUBJECT TO SEQR PROCESSING:	Yes	
ENVIRONMENTAL ISSUE		INVOLVEMENT		FURTHER REVIEW REQUIRED	COMMENTS
		YES	NO		
1.	Parkland - State, County & Local Parks & Trails	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See explanation.
2.	Parkland - Nationwide 4(f), Section 4(f), Section 6(f), Section 1010	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See explanation.
3.	Historic & Archaeological Resources - General and/or Section 4(f)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See explanation.
4.	Natural Landmarks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.	Visual Resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.	Coast Guard Bridge Permit	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
7.	Floodplains	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See explanation.
8.	Wetlands - Federal	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See explanation.
9.	Executive Order 11990	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See explanation.
10.	Wetlands - State - Article 24 (Freshwater) or Article 25 (Tidal) Permit	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See explanation.
11.	Corps of Engineers - Section 10 or 404, Nationwide or Individual Permits	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
12.	Water Quality Certification - Section 401	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
13.	Water Quality Analysis	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
14.	Sole Source Aquifer	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Primary Aquifer only.
15.	SPDES Stormwater Permit	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
16.	Wild, Scenic & Recreational Rivers - Federal or State	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
17.	Coastal Zone Management	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

18.	Critical Environmental Areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
19.	Endangered or Threatened Species	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See explanation.
20.	Farmland or Agricultural District	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
21.	Scenic Roads	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
22.	Air Quality Analysis	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See explanation.
23.	Noise Analysis	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
24.	Energy Analysis	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See explanation.
25.	Asbestos	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
26.	Hazardous Waste	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
27.	Pedestrian Facilities / ADA Issues	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
28.	Bicycle facilities	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
29.	GreenLITES	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
30.	MS4 location? TDML- Outfall location change?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See explanation.

NOTES:**#1 Parkland - State, County & Local Parks & Trails**

Onondaga Lake Park and St. Marie among the Iroquois are located within the project limits. Although commercial vehicles will not be allowed on the parkway, the regulation will not prevent the delivery or pickup of merchandise or other property to the Onondaga Lake Park and St. Marie among the Iroquois.

#2 Parkland - Nationwide 4(f), Section 4(f), Section 6(f), Section 1010

The proposed project is 100% State funded, therefore Sections 4(f), 6(f) and 1010 of the U.S. Department of Transportation Act does not apply.

#3 Historic & Archaeological Resources - General and/or Section 4(f)

The general proposed project will not require project activities within previously undisturbed areas that have the potential to contain archeological resources.

#7. Floodplains:

As shown on the NYSDOT GIS data base for the 100 year floodplains, part of the Onondaga Lake watershed, which is located within the project corridor, is within a Special Flood Hazard Area with an AE floodplain designation. An AE designates this area of special flood hazard with water surface elevations that have been determined. The area that will be inundated by the flood event has a 1-percent chance of being equaled or exceeded in any given year. The 1-percent annual chance flood is also referred to as the base flood or 100-year flood. However, this project does not involve work that would affect the floodplain, such as fills or altering drainage patterns, is proposed floodplain and therefore there are no significant impacts on natural beneficial floodplain values.

#8. Wetlands – Federal:

There is a Federal Freshwater Emergent wetland and freshwater ponds located within the project limits. However, a Section 401 Water Quality Certification is not required for the proposed project, since it does not involve work within the waters of the United States, including wetlands (Section 10 or Section 404).

#9. EO 11990:

Since federal funding will not be used in the design or construction of this project, further investigation of Executive Order 11990 will not be required.

#10. Wetlands – State:

There are NYSDEC regulated freshwater wetlands, SYW-11 and SYW-12 and regulated adjacent areas (100ft) within the project area, as per the NYSDEC Freshwater Wetlands Maps on the NYSDOT GIS database. Since this project will not impact any of these areas, no further investigation is required and Environmental Conservation Law, Article 25 is satisfied.

#19. Endangered or Threatened Species:**New York State Threatened and Endangered Species**

NY Natural Heritage Program database was screened for known and potential occurrences of rare species and rare/significant ecological communities in the project screening area. A 2 mile radius screening of the project area showed that there is a known endangered plant species near our project. This highway safety project will have no impact to this species or its habitat. A potential plant species was shown to occur in our project area; however, it is noted in the database that in 1940 they failed to find it in the degraded salt marsh. The database also showed that there is an inland salt pond community near our project area yet it is noted that this community is severely degraded and that there is no salt marsh left. The scope of work for this highway safety project will have no impact to any known or potential rare species or to any rare ecological community.

Federal Threatened and Endangered Species

This state funded highway safety project was screened for compliance with ESA Section 9. The U.S. Fish and Wildlife Service New York State Field Office website and the NY Natural Heritage Program database were reviewed for potential impacts from this project to federally protected species in Onondaga County. No known locations for federally listed species occur within a 2 mile radius of our project area. Based on the scope of work for this highway safety project, we will not be impacting any wetlands, water bodies, streams, forested area or other suitable habitat. An Indian bat hibernaculum is approximately 8 miles from our project area; however, this project will not have any impacts to the hibernaculum. This project will have No Effect on any federally protected species or their habitat within Onondaga County

#22. Air Quality Analysis:

This project will not require a carbon monoxide (CO) microscale analysis as this project will not exceed the volume thresholds shown in Table 3C of the NYSDOT Environmental Procedures Manual (EPM), Chapter 1.1. The project also does not require an air quality mesoscale analysis per the criteria identified in Chapter 1.1 of the EPM. However, since this project will be classified as a SEQR Type II action and will increase traffic volumes, a particulate matter (PM) microscale analysis was performed per Chapter 1.2 of the EPM.

The PM microscale analysis was conducted to evaluate the impacts of diverting all commercial vehicles to Old Liverpool Road. This analysis was performed in accordance with methodologies presented in Chapters 1.1 and 1.2 of NYSDOT's EPM.

The results of this analysis indicate that the estimated PM₁₀ and PM_{2.5} impacts of the project are less

than the NYSDOT potential significant impact thresholds. As such, no significant PM10 or PM2.5 impacts are anticipated. As a result of these findings, the potential PM impacts of the proposed project are not considered to be significant.

The project area is designated as being in attainment for PM₁₀, PM_{2.5}, and ozone, and a maintenance area (former nonattainment area) for CO. On April 13, 2011, the Interagency Consultation Group (IGC) concurred with the NYSDOT that this project is an exempt project from regional transportation conformity requirements.

#24. Energy:

An energy assessment is not required for the proposed project since it is not expected to:

- a. Increase or decrease VMT;
- b. Generate additional vehicle trips;
- c. Significantly affect land use development patterns;
- d. Result in a shift in travel patterns; or
- e. Significantly increase or decrease vehicle operating speeds.

Therefore, the project will not significantly affect energy consumption.

#30. MS4 location? TMDL – Outfall location Change?:

This project is located within the Syracuse/ Salina MS4. It is considered an Automatic designation. This project is located within the Onondaga Lake TMDL. However, this project will have no impact to drainage including culvert work, drain inlets, ditches, increased impervious, etc.

1. SEQR

This project is being progressed by the New York State Department of Transportation as a Type II project under the State Environmental Quality Review Act (SEQRA) as per part 15 of the New York Codes, Rules and Regulations, Title 17 (17 NYCRR 15).

In accordance with 17 NYCRR 15.14(d) and 17 NYCRR.15.14(e)(37), this project is a SEQR Type II project because the project does not include or result in:

1. the acquisition of any occupied dwelling units or principal structures of businesses;
2. significant changes in passenger or vehicle traffic volume, vehicle mix, local travel patterns or access (other than changes that would occur without the project);
3. more than minor social, economic or environmental effects upon occupied dwelling units, businesses, abutting properties or other established human activities;
4. significant inconsistency with current plans or goals that have been adopted by local governmental bodies;
5. physical alteration of more than 1.0 ha (2.5 acres) of publicly owned or operated park land, recreation area or designated open space;
6. an effect on any historic district, site, building, structure or object that is listed, or may be eligible for listing, on the National Register of Historic Places, or any historic building, structure site or prehistoric site that has been proposed by the Committee on the Registers for consideration by the New York State Board of Historic Preservation for a recommendation to the state Historic Preservation Officer for a nomination for inclusion in said register;
7. more than minor alteration of, or adverse effect upon, any property, protected area, or natural or manmade resource of national, State or local significance, including but not limited to:
 - (a) freshwater or tidal wetlands and associated areas;
 - (b) flood plain areas;
 - (c) prime or unique agricultural areas;
 - (d) agricultural districts so designated pursuant to article 25, section 203, when more than one acre of such district may be affected;
 - (e) water resources, including lakes, reservoirs, rivers, streams;
 - (f) water supply sources;
 - (g) designated wild, scenic and recreational rivers;
 - (h) unique ecological, natural wooded or scenic areas;
 - (i) rare, endangered or threatened species formally designated as

- such pursuant to Federal law; and
 - (j) any area officially designated as a critical environmental area pursuant to 6 NYCRR Part 617; and
 - 8. the requirement for an indirect source air quality permit, pursuant to 6 NYCRR Part 203.
- #2 This project will not create significant changes in passenger vehicle traffic volume, vehicle mix, local travel patterns or access. Changes to the vehicle traffic volumes, vehicle mix and local travel patterns are discussed in the traffic study for the Commercial Vehicle Exclusion (see Appendix A). The traffic study concludes that these changes will have minimum impact to traffic on Old Liverpool Parkway if all commercial vehicles on Onondaga Lake Parkway were to be excluded. Although commercial vehicles will not be allowed on the parkway, the regulation will not prevent the delivery or pickup of merchandise or other property to the Onondaga Lake Park, St. Marie among the Iroquois or other businesses along the Parkway.
- #6 This project is not considered an undertaking as defined under Section 1409 of the State Regulations under the State Historic Preservation Act of 1980.
- #8 As indicated in the air analysis report conducted for this project, “PM Microscale Analysis Technical Report, May 2011”, the requirement for an indirect source air quality permit, pursuant to 6 NYCRR Part 203 has not been met.