Appendix N

Noise Study

NOTICE

The information contained in this Appendix was developed strictly for the purpose of evaluating the environmental impacts associated with the Ambassador Bridge Enhancement Project and responding to the regulatory requirements applicable to this proposal. Use of this information for other purposes is not intended, and any such use is at the risk of the user.

Noise Study Report

Ambassador Bridge Enhancement Project
From Windsor, Ontario, Canada to Detroit, Michigan, United States
Wayne County, Michigan

This Study evaluated improvement alternatives for the Ambassador Bridge Enhancement Project from the Canadian waters of the Detroit River to Detroit, Michigan, United States of America

Prepared for:

United States Coast Guard

August 2008

EXECUTIVE SUMMARY

The project identified as the "Ambassador Bridge Enhancement Project" will provide four full service traffic lanes plus two lanes dedicated to low risk commercial travelers over the Detroit River between Detroit and Windsor in the same corridor as the existing Ambassador Bridge. A new cable stayed bridge will be constructed that will connect directly to the existing Canadian and U.S. Plazas owned by DIBC/CTC. The Ambassador Bridge Enhancement Project will be constructed entirely within the limits of the current operations of the DIBC/CTC.

The land use near the project area in the United States is a developed urban area consisting of intermixed commercial, industrial, and residential areas. Detroit has many commercial buildings near the river. There is no residential land use immediately adjacent to the Ambassador Bridge corridor. To the east of the Ambassador Bridge in the Corktown Historic District are a few residences mixed with vacant land, and one church. No wetlands, schools, hospitals or military properties are near the project area. The Riverside Park is located adjacent to the proposed project on the west side along with several businesses.

The objectives of this Noise Study Report (NSR) are to identify noise-sensitive sites adjacent to the project corridor, to evaluate the significance of existing and future traffic noise levels at the sites with the improvements, and to evaluate the need for and effectiveness of noise abatement measures. Additional objectives include the evaluation of construction noise impacts.

The analysis was performed following Title 23 Code of Federal Regulations (CFR), Part 772 (*Procedures for Abatement of Highway Traffic Noise and Construction Noise*) and the *Michigan Department of Transportation Procedures and Rules for Implementation of State Transportation Commission Policy 10136 Noise Abatement*. The prediction of future traffic noise levels with the proposed roadway improvements was performed using the Federal Highway Administration's (FHWA's) Traffic Noise Model (TNM) Version 2.5). The TNM propagates sound energy, in one-third octave bands, between highways and nearby receivers, taking the intervening ground's acoustical characteristics, topography, and rows of buildings into account.

A total of 35 sites are being analyzed along the project corridor. Of those, 18 are single-family (SF) residences, 1 is a multi-family (MF) residence, 11 are businesses, 1 is a church, and 4 are parks (all 4 are within Riverside Park). Areas of frequent human use, such as backyards, sidewalks, or porches were used in the TNM.

The results of the analysis indicate that existing (2010) exterior traffic noise levels range from 53.5 to 74.0 dBA, with traffic noise levels predicted to approach, meet, or exceed the NAC at 3 of the sites. For the No-Build Alternative (2030), exterior traffic noise levels are predicted to range from 55.9 to 76.2 dBA, with levels predicted to approach, meet, or exceed the NAC at 5 of the sites. In the future (2030), with the proposed bridge,

exterior traffic noise levels are predicted to range from 56.8 to 75.7 dBA, with levels predicted to approach, meet, or exceed the NAC at 5 of the sites. All alternatives include the Ambassador Bridge Gateway Plaza Improvements.

When compared to the existing condition, exterior traffic noise levels are predicted to increase 1.4 to 4.8 dBA with the proposed Ambassador Bridge Enhancement Project. The average difference in noise levels at the 35 noise-sensitive sites between the Existing traffic noise levels and the Build Alternative is 2.5 dBA. No sites were predicted to experience a substantial increase (10 dBA or more) in traffic noise as a result of the project. When compared to the No-Build Alternative, exterior traffic noise levels are predicted to be almost identical to those with the improvements associated with the Ambassador Bridge Enhancement Project. The average difference in noise levels at the 35 noise-sensitive sites between the No-Build and Build Alternative is 0.13 dBA, ranging from an increase of 2.5 dBA to a decrease of 0.8 dBA.

Noise abatement measures were evaluated for the 5 noise-sensitive sites predicted to be affected by the proposed Ambassador Bridge Enhancement Project. The measures were traffic management, alignment modifications, property acquisition, and noise barriers. Although feasible, traffic management, alignment modifications, and property acquisitions were determined to be unreasonable methods to reduce the predicted traffic noise impacts for the affected sites.

Based on the results of the barrier analysis, the construction of a noise barrier is not a reasonable and feasible method of reducing predicted traffic noise impacts for any affected noise-sensitive sites. The predicted traffic noise levels between the No-Build and Build Alternatives were nearly identical with an average difference in noise levels of 0.13 dBA. In addition, three of the affected noise-sensitive sites registered traffic noise levels above the NAC in the existing conditions. This suggests that any impacts to the 5 affected noise-sensitive sites are not a result of the proposed project. Rather, the impacts are a result of current and future traffic along the existing roadway network.

TABLE OF CONTENTS

Section **Page**

1.0 INTRODUCTION.....1
1.1 Purpose and Nature of Project 1
1.2 Recent Improvements to the International Crossing.....1
1.3 Ambassador Bridge and Current Facilities 2
1.4 Proposed Enhancements 3
1.5 Land Use 4

2.0 METHODOLOGY 5

3.0 NOISE ANALYSIS.....7
3.1 Noise Sensitive Sites.....7
3.2 Measured Noise Levels.....13
3.3 Results of the Noise Analysis 14

4.0 EVALUATION OF ABATEMENT ALTERNATIVES 17
4.1 Traffic Management Measures 17
4.2 Alignment Modification.....18
4.3 Property Acquisition 18
4.4 Sound Proofing of Buildings 18
4.5 Noise Barriers 18
4.6 Summary 22

5.0 CONSTRUCTION NOISE AND VIBRATION.....24

LIST OF APPENDICES

Appendix A – Noise Data Sheets

Appendix B – Validation Documentation

Appendix C – TNM Input/Output

Appendix D – TNM Barrier Analysis

Appendix E – I-75 Input/Output

LIST OF TABLES

Table **Page**

Table 2-1 Traffic Growth Rates 6

Table 3-1 FHWA Noise Abatement Criteria 7

Table 3-2 Validation Data 13

Table 3-3 Predicted Traffic Noise Levels 15

Table 4-1 Barrier 1- Southbound Barrier Parameters 21

Table 4-2 Barrier 2 – Northbound Barrier Parameters 22

Table 4-6 Predicted Traffic Noise Levels of the 5 Affected Noise-Sensitive Sites 23

LIST OF FIGURES

Figure **Page**

Figure 1-1 Artist Rendering of Proposed Project 1

Figure 1-2 Project Location 3

Figure 3-1 Noise-Sensitive Sites 9

Figure 4-1 Noise Barrier Wall 1 and 2 20

SECTION 1.0

INTRODUCTION

1.1 PURPOSE AND NATURE OF PROJECT

Existing international border crossings in the Detroit River area include the Ambassador Bridge, the Detroit-Windsor Tunnel, two railroad tunnels, and a ferry crossing. The Ambassador Bridge connects Detroit, Michigan, United States and Windsor, Ontario, Canada. The main span of the existing Ambassador Bridge was the longest in the world when it was completed in 1929 and is currently the busiest international border crossing in North America. The Detroit International Bridge Company (DIBC) and Canadian Transit Company (CTC) own and operate the existing Ambassador Bridge as well as the connecting plazas.

The project identified as the "Ambassador Bridge Enhancement Project" will provide four full service traffic lanes plus two lanes dedicated to low risk commercial travelers over the Detroit River between Detroit and Windsor in the same corridor as the existing Ambassador Bridge. A new cable stayed bridge will be constructed that will connect directly to the existing Canadian and U.S. Plazas owned by DIBC/CTC. The Ambassador Bridge Enhancement Project will be constructed entirely within the limits of the current operations of the DIBC/CTC.

Figure 1-1. Artist Rendering of Proposed Project

This project provides a new state of the art structure across the Detroit River while making the existing structure available as a backup redundant resource in the case of an emergency or another impediment is encountered to the free flow of people and goods across the new structure. The existing Ambassador Bridge would also be available as a pedestrian and bicycle facility.

1.2 RECENT IMPROVEMENTS TO THE INTERNATIONAL CROSSING

Lack of access to international border crossings, delays, and congestion on border crossings can have an impact on trade between the United States and Canada and, therefore, impact the economies of both countries. In response to this, the Ambassador Bridge Gateway Project was developed by the Michigan Department of Transportation in cooperation with the DIBC/CTC and is currently underway to provide direct access between the Ambassador Bridge and the United States interstate system (I-75, I-96).

The Ambassador Bridge Gateway Project was originally approved with an Environmental Assessment and a Finding of No Significant Impact (FONSI) in a letter from the U.S. Department of Transportation Federal Highway Department on October 23, 1997. The Environmental Assessment was subsequently reevaluated and the FONSI was reaffirmed on two different occasions; first on September 9, 1999 and secondly on January 15, 2004.

The Ambassador Bridge Gateway Project, which includes modification of the highway interchange at the plaza and modifications of the Ambassador Bridge Plaza is scheduled for completion in 2009.

In addition, the "Windsor Plaza Expansion Project" is being completed by the DIBC/CTC on the Canadian side with the east expansion completed in January, 2006 and the west expansion scheduled to be completed in mid 2007. Both of these projects will improve security and the vehicle processing facilities on each side of the border crossing.

The DIBC/CTC Ambassador Bridge Enhancement Project would seamlessly integrate with the Gateway Project transportation plan already underway by building a new bridge near the existing Ambassador Bridge. This will ensure the continued functioning of the existing corridor, reduce congestion by more effectively implementing the low risk traveler program, promote economic growth and development, and likely improve air quality in the region.

1.3 AMBASSADOR BRIDGE AND CURRENT FACILITIES

The existing Ambassador Bridge is a suspension bridge that spans 9000 feet (2743 m) in length, with 1850 feet (564 m) over the Detroit River. The height of the two towers is 363 feet (111 m) tall. The vertical clearance of the bridge structure is 152 feet (46.3 m) over the Detroit River. The structure consists of a 55-foot (17 m) wide deck including four highway lanes of traffic, with two lanes traversing eastbound and two lanes traversing westbound. The maximum grade of the bridge is 5%. The Ambassador Bridge also contains a sidewalk that is currently closed.

The Ambassador Bridge lands in the United States near the Corktown Historic District of Detroit, Michigan connecting directly into the tolls, primary and secondary customs, and duty free facilities. The plaza facilities are bounded by I-75 on the west, St. Anne Street on the east, Fort Street on the south, and Porter Street on the north. Once cars exit the Ambassador Bridge, they enter the primary customs facility and then the tolls facility and then have direct access to I-75 and I-96 or can exit onto local streets. Trucks exiting the Ambassador Bridge bypass the customs and tolls plazas for cars and enter their primary and secondary customs and tolls plazas located east of the car plaza. If the trucks pass the primary and secondary customs, they travel west on Fort Street and gain access to the interstate system by heading north on Clark Street. There is also local access to the duty free shops from I-75, East Service Drive, and Porter Street.

The Ambassador Bridge lands in Canada near the University of Windsor in Windsor, Ontario connecting directly into the tolls and primary customs plazas. The plaza facilities

are bounded by Huron Church Road on the west, Northway Avenue on the east, Tecumseh Road on the north, and College Avenue on the south. Once cars exit the Ambassador Bridge, they enter the primary customs and tolls facilities and then exit onto Huron Church Road. The secondary customs facility and duty free shops are found in a separate facility further south. Trucks exiting the Ambassador Bridge also enter primary customs and tolls, exit onto Huron Church Road, and proceed to the secondary customs facility. From the secondary customs facility, the trucks have access to Highway 401 via Huron Church Road. There is local access to the bridge from Wyandotte Street and Huron Church Road.

1.4 PROPOSED ENHANCEMENTS

The DIBC/CTC has determined that the enhancement of the existing Ambassador Bridge crossing is feasible and desirable. The enhancement will include a new six lane cable stayed bridge located in the same corridor near the existing Ambassador Bridge, consistent with the approved and ongoing Gateway Project and Canadian Plaza Expansion Project. This bridge will simply tie directly into the existing plazas in both Canada and the United States without the need for modification to their currently approved and permitted configurations. The proposed bridge will run roughly parallel to the existing Ambassador Bridge. The width of the proposed bridge is set to allow transition directly into the plaza connection points in both the United States and Canada.

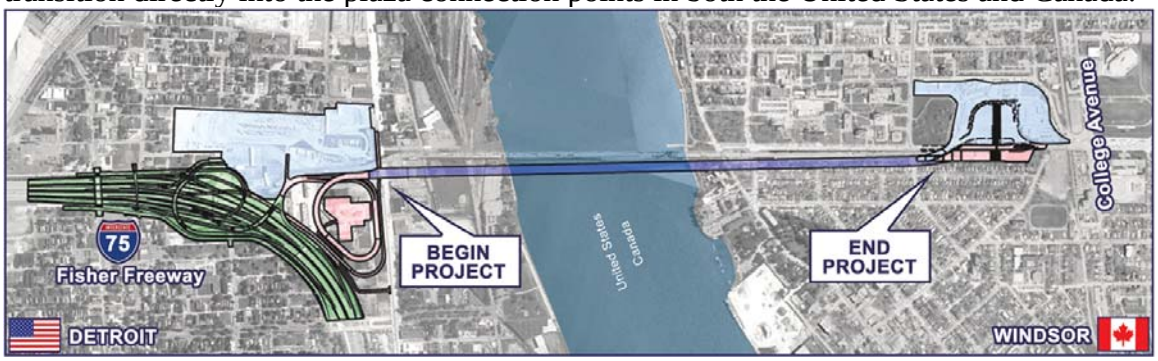


Figure 1-2. Project Location

The proposed bridge consists of 6 lanes of traffic with three in each direction. The outside lane will be restricted to low risk truck travelers who have been prescreened under the federal government's FAST (Free and Secure Trade) program. The middle lane will serve automobiles and trucks that have not been prescreened under the FAST program. The inside lanes will be reserved expressly for automobiles. Once the new structure is completed, the existing Ambassador Bridge will be taken out of service, inspected and necessary repairs completed. Once any necessary repairs are completed, the existing structure will be used for internal DIBC/CTC maintenance and operations, and also be available for pedestrian and bicycle uses. The original span will then also provide redundancy and backup support if traffic were to be temporarily impeded on the new span. This redundancy will ensure the continued free flow of traffic between Windsor and Detroit at all times.

All existing roads and streets in both the United States and Canada will remain open and will continue to function as they are currently approved and configured.

1.5 LAND USE

The land use near the project area in the United States is a developed urban area consisting of intermixed commercial, industrial, and residential areas. Services and manufacturing are the major employment sectors. Detroit is also known as the "Motor City" because it was and is the leader in the automotive industry. Detroit also has many commercial buildings near the river. To the east of the Ambassador Bridge in the Corktown Historic District are a few residences mixed with vacant land, and one church. No wetlands, schools or military properties are near the project area. The Riverside Park is located adjacent to the proposed project on the west side along with several businesses.

A noise impact assessment has been conducted to determine the scope and magnitude of project related effects. The objectives of the ABEP Noise Study are to:

- Identify noise sensitive sites adjacent to the project corridor;
- Evaluate the significance of existing and future traffic noise levels at the sites with the improvements;
- Evaluate the need for and effectiveness of noise abatement measures; and
- Evaluate impacts from construction noise.

SECTION 2.0

METHODOLOGY

Noise is defined as unwanted sound. The goal of the noise assessment is to assist in refining project designs, alignments, and mitigation actions that meet society's transportation needs without compromising personal privacy and quality of life. The noise study and analysis will be conducted in accordance with the following regulatory guidelines:

- Title 23 Code of Federal Regulations Part 772 Procedures for Abatement of Highway Traffic Noise and Construction Noise. (23CFR 772)
- Federal Highway Administration (FHWA) Report Number FHWA-PD-96-046: Measurement of Highway Related Noise. United States Department of Transportation Research and Special Programs Administration. May 1996.
- Michigan Department of Transportation Procedures and Rules for Implementation of State Transportation Commission Policy 10136 Noise Abatement. Michigan Department of Transportation Executive Bureau. July 2003.

The prediction of future traffic noise levels with the roadway improvement was performed using the Federal Highway Administration's (FHWA) computer model for highway traffic noise prediction and analysis – the Traffic Noise Model (TNM – Version 2.5). The TNM propagates sound energy, in one-third octave bands, between highways and nearby receivers taking the intervening ground's acoustical characteristics, topography, and rows of buildings into account.

The noise levels presented in this report are expressed in decibels (dB) on the A-weighted scale (dBA). This scale most closely approximates the response characteristics of the human ear to low level sound. All noise levels are reported as equivalent level (L_{aeq1h}), values which theoretically contain the same amount of acoustic energy as an actual time-varying A-weighted sound level over a period of 1 hour.

Traffic data was obtained by applying appropriate growth factors to Year 2004 and Year 2025 bridge volumes obtained from the Detroit River International Crossing (DRIC) Study Travel Demand Forecast prepared by IBI Group for URS Canada, dated September 2005. The appropriate growth rates as obtained from the DRIC study (Exhibits 5-9 and 5-20) are shown in **Table 2-1**. These values were used to obtain Year 2010 and Year 2030 Bridge volumes.

Table 2-1
Traffic Growth Rates

Time Period	Passenger Vehicles (Autos)	Commercial Vehicles (Trucks)
2004-2010	2.60%	3.60%
2025-2030	0.60%	2.00%

Future year design hour volumes were obtained by using a K30 factor of 9.7%. This K-factor is associated with an Urban Freeway and falls in the upper range the Federal Highway Administration's (FWHA) range of 7%-10%. Once the design hour bridge volumes were determined, movement percentages into and out of the U.S. Plaza and US Customs were applied in order to obtain traffic volumes throughout the U.S. Plaza and Customs facilities. The appropriate traffic movement percentages were obtained from the Ambassador Bridge/Gateway Project Reassessment dated June 2003 prepared by HNTB Michigan Inc.

Further, with the introduction of two new lanes, although restricted to FAST trucks, at the Ambassador Bridge, it is possible that the enhanced Ambassador Bridge would attract a portion of the trucks that would be diverted from the Blue Water Bridge to a new six lane facility. Even though only two additional restricted lanes will be added under the ABEP, a conservative approach to evaluating impacts resulting from the project would be to include the entire volume of traffic estimated to be diverted if a new six unrestricted lane facility was introduced. Based on these conservative assumptions, an upper bound 2030 volume using the ABEP is projected to be 7,358,000 trucks and 9,113,000 cars for a total of 16,471,000 vehicles.

SECTION 3.0

NOISE ANALYSIS

3.1 NOISE-SENSITIVE SITES

Noise sensitive sites are defined as properties where frequent human use occurs and where a lowered noise level would be of benefit. To evaluate traffic noise, the FHWA established the Noise Abatement Criteria (NAC). As shown in **Table 3-1**, the criteria vary according to a property's activity category.

Table 3-1
FHWA Noise Abatement Criteria (NAC)

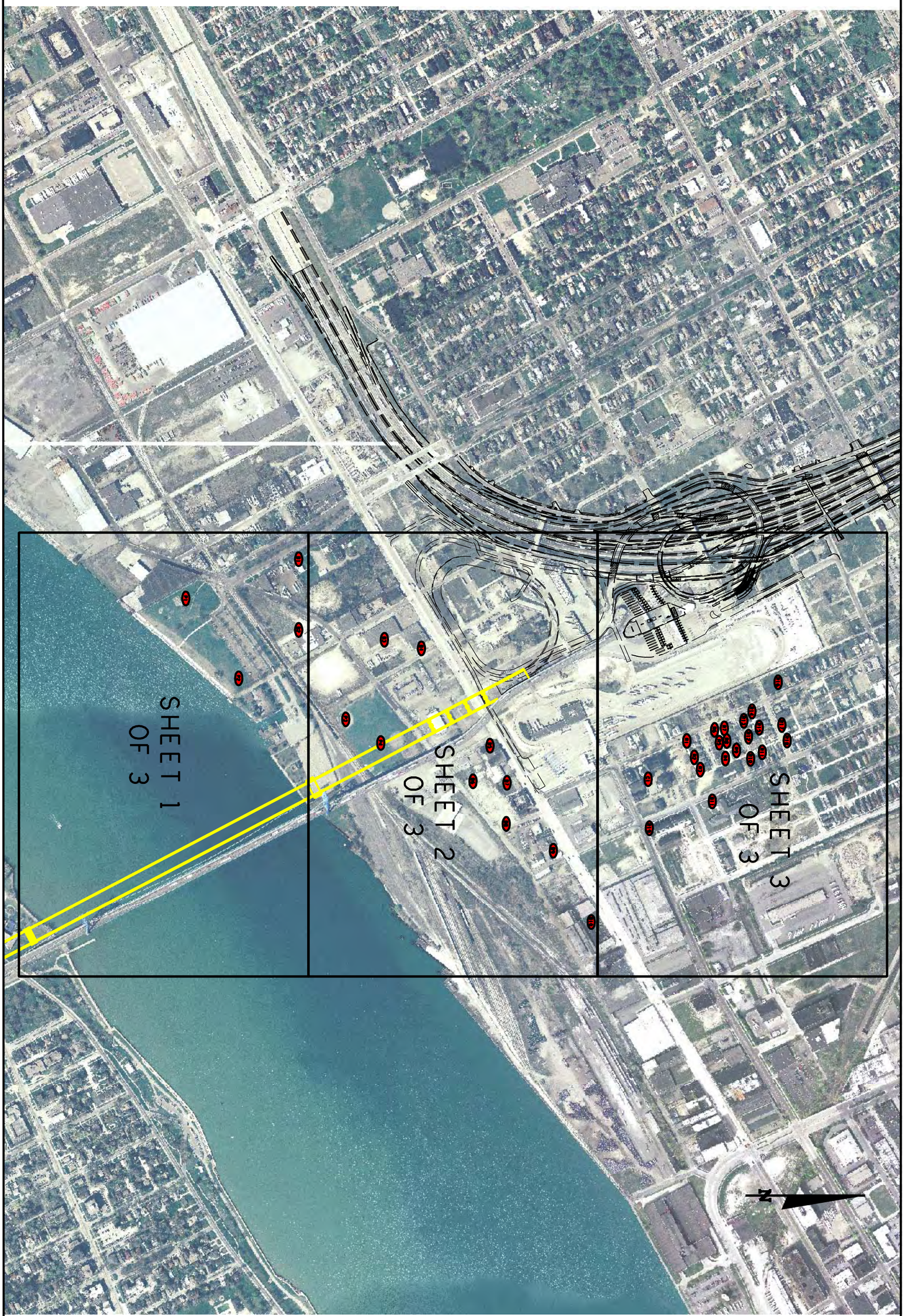
Activity Category	Abatement Level (in L_{aeq})	Description of activity category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, RV parks, day care centers, hospitals.
C	72 (Exterior)	Developed lands, properties, or activities not included in Categories A and B above.
D	N/A	Undeveloped lands.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, auditoriums.

When predicted noise levels "approach" or "exceed" the NAC or, when predicted noise levels increase substantially, the FHWA requires that noise abatement measures be considered. The MDOT defines the word "approach" to mean within 1 dBA of the NAC and considers that a substantial increase will occur if traffic noise levels are predicted to increase by 10 or more dBA as a direct result of a transportation improvement project. Increases of 10 dBA or more are not likely adjacent to the project corridor as increases of this magnitude typically occur at sites where no roadway existed previously.

There is no residential land use immediately adjacent to the Ambassador Bridge corridor. The closest residential area is approximately 1,200 feet from the proposed project, located near the St. Anne's Church. Riverside Park and Marina, a city park, is located adjacent to the proposed bridge. The remainder of the project area near the bridge consists of commercial and industrial uses. No schools or hospitals exist along the corridor.

A total of 35 sites are being analyzed along the project corridor. Of those, 18 are single-family (SF) residences, 1 is a multi-family (MF) residence, 11 are businesses, 1 is a church, and 4 are parks (all 4 are within Riverside Park). Areas of frequent human use, such as backyards, sidewalks, or porches were used in the TNM. The location of each of the noise-sensitive sites is shown on **Figure 3-1**. The residential sites, church, and park were considered Activity Category "B" as shown in **Table 3-1**. As such, exterior noise levels were evaluated for these sites, and noise abatement measures will be considered if the predicted exterior traffic noise level is 66.0 dBA or more, or if levels are predicted to increase by 10 dBA or more as a result of the proposed improvements. The businesses were considered Activity Category "C" as shown in **Table 3-1**. As such, exterior noise levels were evaluated for these sites, and noise abatement measures will be considered if the predicted exterior traffic noise level is 71.0 dBA or more, or if levels are predicted to increase by 10 dBA or more as a result of the proposed improvements.

Various factors affect the "transmittal" of sound from a source to a receiver. These factors include vegetation, intervening structures, elevation of the source and/or the receiver, surrounding topography and the type of ground surface between the source and the receiver. The attenuation (reduction) of sound levels due to intervening structures occurs when a receiver's view (line-of-sight) is obstructed or partially obstructed by dense objects (i.e. rows of buildings, barriers). The attenuation provided by a row of buildings (houses) depends on the actual length of the row occupied by the buildings.



American Consulting Professionals of Michigan, PLLC

AMBASSADOR Ambassador Bridge

FIGURE 3-1, SHEET LAYOUT PLAN
NOISE SENSITIVE SITES

SLP-1

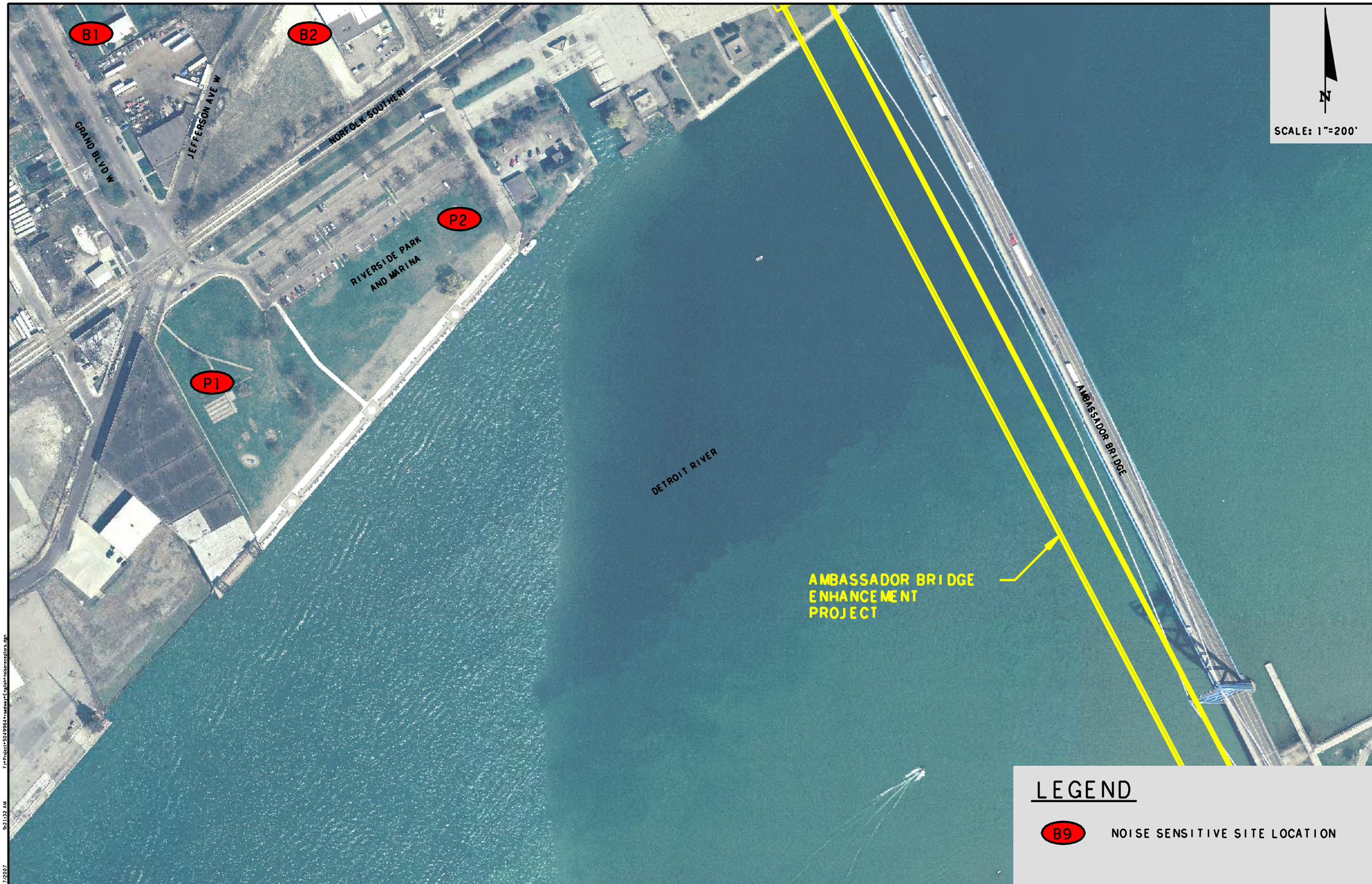


FIGURE 3-1
NOISE SENSITIVE SITES

AMBASSADOR
Ambassador Bridge

American
Consulting Professionals of Michigan, PLLC

1 of 3

4/17/2007 9:21:32 AM F:\Project\50169864\radway\English\noisereceptors.dgn

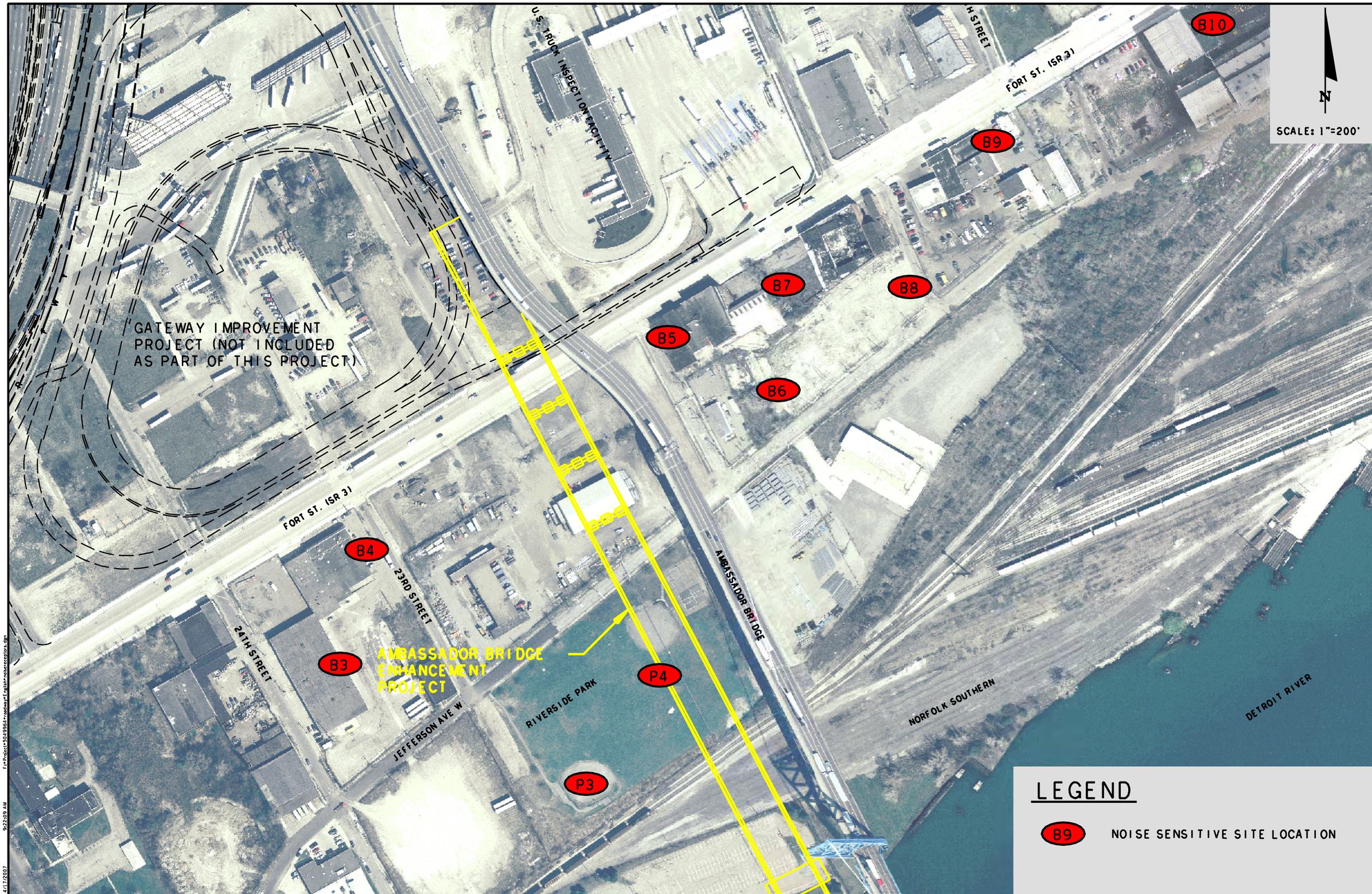


FIGURE 3-1
NOISE SENSITIVE SITES

2 of 3

AMBASSADOR
Ambassador Bridge

American
Consulting Professionals of Michigan, PLLC

4/17/2007 9:22:09 AM
Fx:Project:*50499.64*roadway*English*noisereceptors.dgn

LEGEND

B9 NOISE SENSITIVE SITE LOCATION

FIGURE 3-1
NOISE SENSITIVE SITES

3 of 3

AMBASSADOR
Ambassador Bridge

American
Consulting Professionals of Michigan, PLLC

4/17/2007 9:23:11 AM
f:\Project\5049964\roadway\English\noisereceptors.dgn

3.2 MEASURED NOISE LEVELS

As previously stated, future noise levels with the proposed improvements were modeled using the TNM. To ensure that these predictions are as accurate as possible, the computer model was validated using measured noise levels at locations adjacent to the project corridor. Traffic and meteorological data, including traffic volumes, vehicle speeds, and atmospheric conditions were recorded during each measurement period.

The field measurements for the ABEP were conducted in accordance the FHWA's *Measurement of Highway Related Noise* and the *Michigan Department of Transportation Procedures and Rules for Implementation of State Transportation Commission Policy 10136 Noise Abatement*. Each field measurement was obtained using a Casella CEL-450 Type 1 Sound Level Meter. The Type I Sound Level Meter was used to detect minute changes in atmospheric pressure caused by the vibration of air molecules or noise. The resultant noise level for each reading was averaged and the average ambient reading used to determine the increase in the noise level that can be expected in the area as a result of the proposed project. The meter was calibrated before and after each monitoring period with a Casella CEL-110/1 Sound Level Calibrator.

The measured field data were used as input for the TNM to determine if, given the topography and actual site conditions of the area, the computer model could "re-create" the measured noise levels with the existing roadway. Following MDOT guidelines, a noise prediction model is considered valid for the use of predicting traffic noise levels if the measured and predicted noise levels are within a tolerance standard of 3 dBA. Field measurements were taken between February 28 and March 1, 2007. The location at which the measurements were taken can be seen in **Figure 3-2.** Six sets of 15-minute measurements were taken during morning and/or afternoon rush-hour for directional traffic. Due to an error in the field, one 15-minute interval was rendered useless. Data collected in the field can be found in Appendix A.

Table 3-2 presents the field measurements and the computer validation results for the ABEP. As shown, the ability of the model to accurately predict noise levels for the project was confirmed. Documentation in support of the validation is provided in Appendix B of this report.

Table 3-2
Validation Data*

Location	Measurement Period	Modeled	Measured	Difference
Fort Street west of the existing Ambassador Bridge	1	N/A	N/A	N/A
	2	74.3	75.5	1.2
	3	74.5	75.5	1.0
	4	73.7	73.6	0.1
	5	73.9	74.5	0.6
	6	73.5	74.9	1.4
*Measurements were obtained between February 28 and March 1, 2007.				

3.3 RESULTS OF THE NOISE ANALYSIS

Table 3-3 presents the existing (2010) and future year (2030) traffic noise levels for noise-sensitive sites adjacent to the ABEP. Documentation in support of the analysis is provided in Appendix C of this report.

Initially, the existing traffic noise model included the I-75 interchange north of the proposed project. However, it was determined that this interchange did not alter the noise levels at the receptor locations. Of the 35 noise sensitive sites studied in the model, the average difference in measured levels with I-75 compared to noise levels measured without I-75 was 0.8 dBA, with a range from 0.0 dBA to 2.1 dBA. Therefore, I-75 was removed from further analyses. The existing traffic noise model was redone without I-75. Results of the analysis including I-75 can be found in Appendix E.

As shown in **Table 3-3**, the results of the analysis indicate that existing (2010) exterior traffic noise levels range from 53.5 to 74.0 dBA, with traffic noise levels predicted to approach, meet, or exceed the NAC at 3 of the sites. For the No-Build Alternative (2030), exterior traffic noise levels are predicted to range from 55.9 to 76.2 dBA, with levels predicted to approach, meet, or exceed the NAC at 5 of the sites. In the future (2030), with the proposed bridge, exterior traffic noise levels are predicted to range from 56.8 to 75.7 dBA, with levels predicted to approach, meet, or exceed the NAC at 5 of the sites. All alternatives include the Ambassador Bridge Gateway Plaza Improvements.

When compared to the existing condition, exterior traffic noise levels are predicted to increase 1.4 to 4.8 dBA with the proposed Ambassador Bridge Enhancement Project. The average difference in noise levels at the 35 noise-sensitive sites between the Existing traffic noise levels and the Build Alternative is 2.5 dBA. No sites were predicted to experience a substantial increase (10 dBA or more) in traffic noise as a result of the project. When compared to the No-Build Alternative, exterior traffic noise levels are predicted to be almost identical to those with the improvements associated with the Ambassador Bridge Enhancement Project. The average difference in noise levels at the 35 noise-sensitive sites between the No-Build and Build Alternative is 0.13 dBA, ranging from an increase of 2.5 dBA to a decrease of 0.8 dBA.

Table 3-3
Predicted Traffic Noise Levels

Site ID	# of Units	Land Use*	L_{Aeq1h} (dBA) Existing (2010)	No Build (2030)	Build (2030)	Difference between Build and Existing	Difference between Build and No-Build	Approaches Meets, or Exceeds NAC?
B1	1	Business	57.4	59.8	60.3	2.9	0.5	No
B2	1	Business	58.8	61.1	62.3	3.5	1.2	No
P1	1	Riverside Park	53.5	55.9	56.8	3.3	0.9	No
P2	1	Riverside Park	57.7	60.0	61.7	4.0	1.7	No
P3	1	Riverside Park	64.1	66.4	68.9	4.8	2.5	Yes
B3	1	Business	64.2	66.5	67.3	3.1	0.8	No
P4	1	Riverside Park	67.7	69.9	70.9	3.2	1.0	Yes
B4	1	Business	68.3	70.6	71.1	2.8	0.5	Yes
B5	1	Business	74.0	76.2	75.7	1.7	-0.5	Yes
B6	1	Business	68.8	71.0	70.2	1.4	-0.8	No
B7	1	Business	72.2	74.5	74.5	2.3	0.0	Yes
B8	1	Business	64.9	67.2	67.0	2.1	-0.2	No
B9	1	Business	62	64.3	64.2	2.2	-0.1	No
B10	1	Business	56.6	59.1	58.7	2.1	-0.4	No
C1	1	St. Anne's Church	60.3	62.8	62.7	2.4	-0.1	No
R1	1	SF	58.3	60.7	60.7	2.4	0.0	No
R2	1	SF	58.2	60.8	60.6	2.4	-0.2	No
R3	1	SF	58.1	60.7	60.5	2.4	-0.2	No
B11	1	Business	56.9	59.5	59.5	2.6	0.0	No
R4	1	SF	56.8	59.3	59.1	2.3	-0.2	No
R5	1	SF	56.9	59.3	59.2	2.3	-0.1	No
R6	1	SF	57.5	59.8	59.7	2.2	-0.1	No
R7	1	SF	57.7	60.1	60.0	2.3	-0.1	No
R8	1	SF	57.3	59.7	59.5	2.2	-0.2	No
R9	1	SF	56.8	59.3	59.2	2.4	-0.1	No
R10	1	SF	56.3	58.8	58.6	2.3	-0.2	No
R11	1	SF	56.0	58.5	58.3	2.3	-0.2	No
R12	1	SF	56.5	59.0	58.8	2.3	-0.2	No
R13	1	SF	56.6	59.0	58.9	2.3	-0.1	No
R14	1	SF	56.3	58.6	58.6	2.3	0.0	No
R15	1	SF	56.2	58.6	58.5	2.3	-0.1	No
R16	1	SF	56.3	58.5	58.5	2.2	0.0	No
R17	1	SF	55.6	58.1	58.0	2.4	-0.1	No

Table 3-3 (Continued)
Predicted Traffic Noise Levels

Site ID	# of Units	Land Use*	L_{Aeq1h} (dBA)					Approaches, Meets, or Exceeds NAC?
			Existing (2010)	No Build (2030)	Build (2030)	Difference between Build and Existing	Difference between Build and No-Build	
R18	1	SF	55.6	58.1	58.0	2.4	-0.1	No
R19	12	MF	59.0	61.5	61.4	2.4	-0.1	No

* Site ID names have been shortened. B = Business, P= Park, C=Church, R = Residence, SF = Single Family Residence; MF = Multi-family Complex

SECTION 4.0

EVALUATION OF ABATEMENT ALTERNATIVES

When predicted noise levels "approach" or exceed the NAC or, when predicted noise levels increase substantially, the FHWA requires that noise abatement measures be considered. The word "considered" means that an abatement analysis is required and each abatement measure would be discussed in the noise report; however, noise abatement measures would not be required for the project. Only the abatement measures that would be considered reasonable and feasible would be included in the project plans and specifications. The abatement alternatives that will be considered are traffic management, alternative roadway alignment, property acquisition, and noise barriers. The feasibility (engineering considerations) and reasonableness (amount of noise reduction provided, number of noise-sensitive sites benefited, absolute noise levels, cost, etc.) of the measures will be discussed and used to determine whether or not abatement measures should be used.

4.1 TRAFFIC MANAGEMENT MEASURES

The ABEP is meant to provide redundancy, potentially alleviate future traffic congestion (if the existing Ambassador Bridge was placed back into service) and aid in regional and international connectivity. Once the new structure is completed, the existing Ambassador Bridge will be taken out of service to effect repairs that are deemed necessary. Once any necessary repairs are completed, the existing structure will be used to provide redundancy and backup support when necessary to ensure the free flow of traffic between Windsor and Detroit at all times, currently the busiest trade corridor between the United States and Canada. This will reduce congestion, promote economic growth and development, and possibly increase air quality.

Traffic management measures that limit motor vehicle speeds and/or reduce volumes can be effective noise mitigation measures. However, these measures can also negate a project's ability to accommodate forecasted traffic volumes. For example, if traffic capacity were reduced, specifically that of trucks, the capacity of the bridge and plaza to handle the existing and forecast traffic demand would also be reduced. Therefore, reducing traffic speeds and/or traffic volumes is inconsistent with the goal of improving the region's ability to handle the existing and future forecast volumes. As such, although feasible, traffic management measures are not considered a reasonable noise mitigation measure for the project.

4.2 ALIGNMENT MODIFICATION

The proposed alignment will tie directly into the existing plazas in both the United States and Canada. A shift in the alignment would result in the need to shift the customs and toll plazas in both countries, likely resulting in the need of additional right-of-way and the taking of homes, parklands and churches. The proposed alignment seeks to minimize the need for additional right-of-way (ROW). As such, an alternative alignment is not considered a reasonable noise mitigation measure for the project.

4.3 PROPERTY ACQUISITION

Generally, property acquisition is only considered to purchase enough right-of-way to place a noise wall. However, the acquisition of property to provide noise buffers is not feasible due to the unavailability of vacant land in proximity to noise-sensitive sites. Property acquisition as a means of noise abatement will be considered when it is determined, with input from the community and involved agencies, to be cost effective, reasonable and prudent.

4.4 SOUND PROOFING OF BUILDINGS

Sound proofing of buildings is a relatively new way to combat traffic noise. Though effective, this abatement alternative is quite costly as it is implemented one structure at a time. Additionally, this method only benefits the internal space of the structure and not the primary, exterior use. Permission for installation would need to be obtained from the owner. Noise insulation is typically only used for schools and only when it is cost effective (i.e. cheaper than sound walls). No schools exist near the proposed project. For this reason, sound proofing of buildings is not considered a reasonable method of noise abatement.

4.5 NOISE BARRIERS

Noise barriers reduce noise levels by blocking the sound path between the noise source and the receiver. In order to effectively reduce traffic noise, a noise barrier must be relatively long, continuous (without intermittent openings), and sufficiently tall to provide a reduction in noise levels. Following MDOT procedures, the minimum requirements for a noise barrier to be considered both feasible and economically reasonable are as follows:

- The barrier must provide at least a 5 dBA reduction at the noise sensitive sites that experience the greatest reductions, with a design goal of 10 dBA or more desired.
- The barrier should not cost more than $34,200 per benefited dwelling unit (a benefited receiver is a site that receives at least a 5 dBA reduction in noise from the barrier) unless a higher level of expenditure can be justified by other circumstances. The current estimated cost to construct a noise barrier (materials and labor) is $25.00 per square foot.

Other factors are considered when evaluating noise barriers as a potential noise abatement measure address both the feasibility of the barriers (given site-specific details, can a barrier actually be constructed) and the reasonableness of the barriers. Other feasibility factors that relate to noise barriers include driver/pedestrian sight distance (safety), ingress and egress requirements to and from affected properties, right-of-way (ROW) requirements including access rights and easements for construction and/or maintenance, impacts on existing/planned utilities, and drainage.

Other reasonableness factors include:

- The relationship of the predicted future noise levels to the NAC (do the predicted levels approach, meet, or far surpass the NAC);
- Land use stability (are the noise-sensitive land uses likely to remain for an indefinite period of time);
- Antiquity (the amount of development that has occurred before and after the initial construction of a roadway);
- The desires of the affected property owners to have a noise barrier adjacent to their property; and
- Aesthetics.

4.5.1 NOISE BARRIER ANALYSIS

As previously stated, in year 2030, with the proposed Ambassador Bridge Enhancement Project, noise levels are predicted to approach, meet, or exceed the NAC at 5 noise-sensitive sites (P3, P4, B4, B5, B7) along the project corridor. The following section discusses the feasibility and reasonableness of providing noise barriers as an abatement measure for the affected sites. Documentation in support of the noise barrier analysis is provided in Appendix D of this report.

Barrier 1 – Southbound Barrier

Barrier 1 was evaluated for the 3 affected noise sensitive sites west of the proposed bridge including the two sites within Riverside Park (P3, P4) located closest to the bridge and one business (B4) (**Figure 4-1**).

The barrier was evaluated at a length of 1384 ft (422 m), extending from the Detroit River to north of Riverside Park. The barrier was located on top of the outside barrier wall of the structure on the southbound side of the proposed bridge. The height of the barrier was limited to 12 feet or less due to the height of the bridge structure.

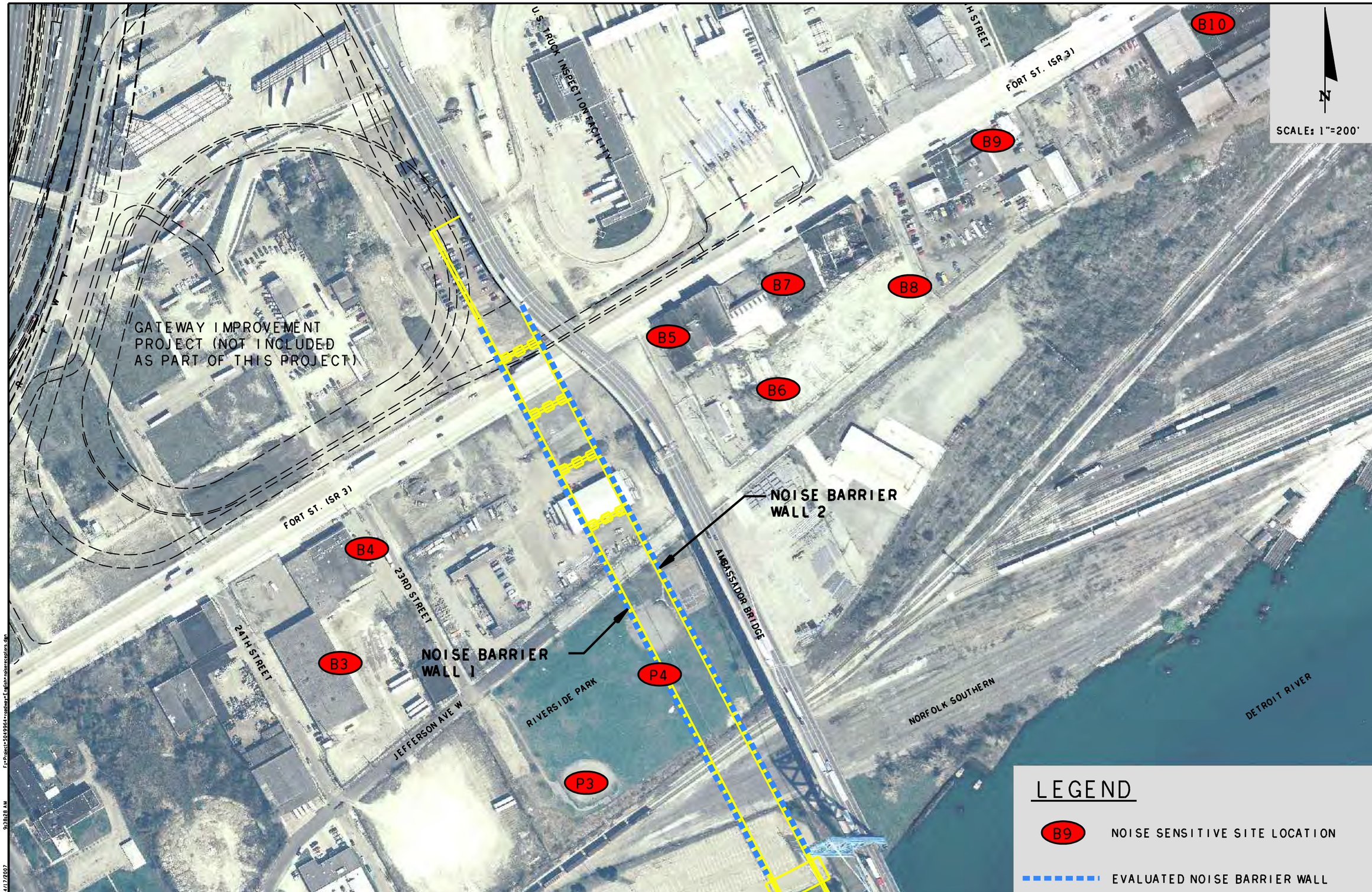


FIGURE 4-1. NOISE BARRIER WALLS 1 & 2
NOISE SENSITIVE SITES

AMBASSADOR Ambassador Bridge

American Consulting Professionals of Michigan, PLLC

4/17/2007 9:38:28 AM
F:\Projects\5049964\roadway\English\noisesensitiveplan.dgn

The results of the evaluation are provided in **Table 4-1**. The height of the barrier (8' – 10') did not affect the noise reduction between barrier heights; therefore, the table only shows the results for the 12 foot barrier which provided the most noise reduction in other sites. The barrier could not provide a noise reduction of more than 1.8 dBA for the affected noise sensitive sites. As shown, the barrier could not provide any reduction in traffic noise levels for the 3 affected noise-sensitive sites. Further, the goal of reducing traffic noise levels 10 dBA could not be achieved for any of the receivers at an 8-foot, 10-foot or 12-foot barrier height. The barrier is also not predicted to provide any of the residences with an insertion loss of at least 5 dBA.

Table 4-1
Barrier 1 – Southbound Barrier Parameters

Affected Receivers	Barrier Height	Calculated L_{Aeq1h}	Noise Reduction (dBA)			Reasonable Yes/No
			Calculated	Minimum required	Calc – Goal	
P3	12	68.0	1.8	5	-3.2	No
P4	12	69.9	0.3	5	-4.7	No
B4	12	71.0	0.5	5	-4.5	No

Based on the results of the analysis, Barrier 1 does not appear to be a reasonable or feasible noise abatement measure because the barrier is not predicted to provide at least the minimum required reduction in traffic noise. Therefore, this barrier will not be evaluated further.

Barrier 2 - Northbound Barrier

Barrier 2 was evaluated for the 2 affected noise sensitive sites east of the proposed bridge including two businesses (B5, B7) located closest to the bridge (**Figure 4-1**). Though it is worth noting that when compared to the no-build alternative, the predicted noise level of both of these noise sensitive sites decreased. This decrease is likely due to moving the source of traffic noise to the west, further from these noise sensitive sites. In addition, both of these affected noise sensitive sites registered noise levels above the NAC in the existing conditions as well.

The barrier was evaluated at a length of 1376 ft (419 m), parallel to Barrier 1 on the northbound side of the proposed bridge. The barrier was located on top of the outside barrier wall of the structure. The height of the barrier was limited to 12 feet or less due to the height of the structure.

The results of the evaluation are provided in **Table 4-2**. The height of the barrier did not affect the noise reduction between barrier heights; therefore, the table only shows the results for the 12 foot barrier which provided the most noise reduction in other sites. The barrier could not provide any noise reduction for the affected noise sensitive sites. As shown, the barrier could not provide any reduction in traffic noise levels for both affected noise-sensitive sites. Further, the goal of reducing traffic noise levels 10 dBA could not be achieved for any of the receivers at an 8-foot, 10-foot or 12-foot barrier height. The

barrier is also not predicted to provide any of the residences with an insertion loss of at least 5 dBA.

Table 4-2
Barrier 2 – Northbound Barrier Parameters

Affected Receivers	Barrier Height	Calculated L_{Aeq1h}	Noise Reduction (dBA)			Reasonable Yes/No
			Calculated	Minimum required	Calc – Goal	
B5	12	75.3	0.0	5	-5.0	No
B7	12	74.3	0.0	5	-5.0	No

Based on the results of the analysis, Barrier 2 does not appear to be a reasonable or feasible noise abatement measure because the barrier is not predicted to provide at least the minimum required reduction in traffic noise. Therefore, this barrier will not be evaluated further.

4.6 SUMMARY

Noise abatement measures were evaluated for the 5 noise-sensitive sites predicted to be affected by the proposed Ambassador Bridge Enhancement Project. The measures were traffic management, alignment modifications, property acquisition, and noise barriers. Although feasible, traffic management, alignment modification, and property acquisition were determined to be unreasonable methods to reduce the predicted traffic noise levels for the affected sites.

Based on the results of the barrier analysis, the construction of a noise barrier is not a reasonable and feasible method of reducing predicted traffic noise impacts for any affected noise-sensitive sites. The predicted traffic noise levels between the No-Build and Build Alternatives were nearly identical with an average difference in noise levels of 0.13 dBA. In addition, three of the affected noise-sensitive sites registered traffic noise levels above the NAC in the existing conditions (**Table 4-6**). This suggests that any impacts to the 5 affected noise-sensitive sites are not a result of the proposed project. Rather, the impacts are a result of current and future traffic along the existing roadway network.

The average difference between the existing and build conditions for the 5 affected noise-sensitive sites is 3.0 dBA, with differences ranging from 1.7 to 4.8 dBA. The average difference between the no-build and build conditions for the 5 affected noise-sensitive sites is 0.7 dBA, with differences ranging from a decrease of 0.5 dBA to an increase of 2.5 dBA. The difference in traffic noise between the no-build and build conditions is minimal due to their close proximity to Fort Street. The number of heavy trucks that travel the Fort Street corridor greatly influences traffic noise at these sites.

Further, of the 35 noise sensitive sites studied, 22 of them registered a decrease in predicted traffic noise levels with the proposed bridge and 5 of them experienced no change. These 22 sites are located east of the Ambassador Bridge and the proposed

project. The proposed project shifts the traffic from the existing Ambassador Bridge to approximately 100 feet west onto the proposed bridge, thereby decreasing the traffic noise impact to those 22 noise sensitive sites.

Table 4-6
Predicted Traffic Noise Levels of the 5 Affected Noise-Sensitive Sites

Site ID	# of Units	Land Use*	L_{Aeq1h} (dBA)					Approaches Meets, or Exceeds NAC?
			Existing (2010)	No Build (2030)	Build (2030)	Difference between Build and Existing	Difference between Build and No-Build	
P3	1	Riverside Park	64.1	66.4	68.9	4.8	2.5	Yes
P4	1	Riverside Park	67.7	69.9	70.9	3.2	1.0	Yes
B4	1	Business	68.3	70.6	71.1	2.8	0.5	Yes
B5	1	Business	74.0	76.2	75.7	1.7	-0.5	Yes
B7	1	Business	72.2	74.5	74.5	2.3	0.0	Yes

* Site ID names have been shortened. B = Business, P= Park, C=Church, R = Residence, SF = Single Family Residence; MF = Multi-family Complex

SECTION 5.0

NOISE CONTOURS AND TRANSBOUNDARY IMPACTS

Land use controls can be used to minimize traffic noise in future developments or areas where redevelopment occurs. Land uses such as residences, motels, schools, churches, recreation areas and parks are considered incompatible with highway noise levels above 66 dBA. In order to reduce the possibility of additional noise related impacts, noise level contours were developed for the future improved bridge. In addition, the noise contours can help determine the possibility of noise related transboundary impacts to Canada. These noise contours delineate the minimum distance from the improved roadway's edge of pavement where the FHWA Activity Category B land use should occur in 2030. Local planning officials can use the noise contour information to avoid development of noise sensitive land uses. The proposed bridge crossing as well as the proposed plaza were both analyzed for contours.

As shown in **Table 5-1,** the extent of the 66 dBA noise level on the proposed bridge extends approximately 450 ft (137 m) from the edge of pavement.

Table 5-1
Noise Contour for Proposed Bridge Crossing

Roadway Segment	DISTANCE TO 66 DBA ISOPLETH FROM Edge-of-Pavement[a]
Bridge Crossing	450 ft (137 m)

[a] Distances do not reflect any reduction in noise levels that would result from existing structures (shielding) and should be used for planning purposes only.

Land fall in Canada is approximately 1000 ft (305 m) from the United States border. Using this contour information, the sound levels from the proposed bridge at the United States border should decrease to 66 dBA within 450 ft (137 m) which is substantially less than the 1000 ft (305 m) distance to the closest noise sensitive site in Canada. Therefore, transboundary noise impacts from the ANSB project are not anticipated.

SECTION 6.0

CONSTRUCTION NOISE AND VIBRATION

Noise and vibration impacts relative to the proposed project will be discussed with respect to criteria established by the following organizations: Federal Highway Administration guidelines, United States Environmental Protection Agency, and local communities. An assessment of noise and vibration impacts will be conducted for the proposed project alignments. Projected noise and vibration levels will be compared to applicable criteria to determine the number of receptors adversely affected and the degree of impact for each alternative. Mitigation measures, where necessary, will be identified.

Construction of roadway improvements will have a temporary impact on noise-sensitive sites adjacent to the project corridor. Noise sensitive sites particularly sensitive to construction noise and vibration include eye centers and clinics, medical centers and hospitals, geriatric centers, sound recording studios, television and radio stations, technical laboratories, antique shops, and museums. None of these exist within 500 feet of the proposed project.

Trucks, earth moving equipment, pumps, and generators are sources of construction noise and vibration. If during final design it is determined that provisions to control vibration are necessary, the project's construction provisions can include the necessary provisions as needed. Special provisions can be included in the construction contract that relate to the control of noise. The provisions include:

- Operating factory recommended exhaust mufflers on internal combustion engines.
- Requiring the contractor to operate in forward passes or in a figure eight pattern when dumping, spreading, or compacting materials can minimize back-up alarm noise from heavy equipment and trucks.
- Requiring adequate equipment maintenance procedures to ensure the elimination of unnecessary noise caused by loose body parts on all construction equipment.
- Prohibiting excessive tailgate banging by haul trucks.
- Screening all stationary equipment from noise-sensitive receivers if the equipment is to operate beyond normal working hours. If feasible, this equipment can also be screened during normal working hours to reduce noise impacts.
- When feasible, establishing the contractor haul-routes to direct vehicles away from developed areas to ensure the noise from hauling operations is kept to a minimum.

If during final design it is determined that provisions to control vibration are necessary, the project's construction provisions can include the necessary provisions as needed.

APPENDIX A

NOISE DATA SHEETS

ACE NOISE MEASUREMENT DATA SHEET

Date: February 28, 2007 Measurement Taken By: DM, SW Run #: 1

Project: Ambassador Bridge Enhancement Project

Site Identification: Station 1: 3411 W Fort Street, Detroit, MI 48216

Start Time 12:02 PM End Time: 12:17 pm

Weather Conditions: Sky: Clear_____ Partly Cloudy_____ Cloudy___X____ Other_____
Temperature: 36 Wind Speed: 3
Wind Direction: NW Humidity: 80%

Equipment:

Sound Level Meter

Type: Casella CEL-450 Type I Serial Number: 074210
Date of Last Traceable Meter Calibration: 7/18/06
Field Calibration Reading: Start: 113.8 dB End: 113.8 dB
Response Settings: Fast__X__ Slow____ Weighting Scale: A

Calibrator

Type: Casella CEL 110/1 Class 1 Serial Number: 104777

TRAFFIC DATA

	3411 W. Fort Street			
Vehicle Types	Volume Eastbound	Volume Westbound	Speed Eastbound	Speed Westbound
Autos	36	40	33	33
Medium Trucks	26	28	36	31
Heavy Trucks	14	75	35	21
Buses	1	1	35	21
Motorcycles	0	0	0	0
Duration (in minutes)	15 Minutes			

RESULTS SUMMARY

LMAX: 68.4 LEQ: 67.9 L10 _____ L50 _____ L90 _____ LMIN: 67.6

Major Noise Source(s): Truck traffic exiting bridge plaza and driving west of Fort St.

Background Noise Source(s):

Unusual Events: **Due to error with meter, data was rendered useless**

Other Notes/Observations:

ACE NOISE MEASUREMENT DATA SHEET

Date: February 28, 2007 Measurement Taken By: DM, SW Run #: 2

Project: Ambassador Bridge Enhancement Project

Site Identification: Station 1: 3411 W Fort Street, Detroit, MI 48216

Start Time: 12:21 pm End Time: 12:36 pm

Weather Conditions: Sky: Clear_____ Partly Cloudy_____ Cloudy___X____ Other_____
Temperature: 36 Wind Speed: 3
Wind Direction: NW Humidity: 80%

Equipment:

Sound Level Meter

Type: Casella CEL-450 Type I Serial Number: 074210
Date of Last Traceable Meter Calibration: 7/18/06
Field Calibration Reading: Start: 113.8 dB End: 113.8 dB
Response Settings: Fast__X__ Slow____ Weighting Scale: A

Calibrator

Type: Casella CEL 110/1 Class 1 Serial Number: 104777

TRAFFIC DATA

Vehicle Types	3411 W. Fort Street			
	Volume Eastbound	Volume Westbound	Speed Eastbound	Speed Westbound
Autos	40	28	36	22
Medium Trucks	26	34	36	27
Heavy Trucks	21	73	33	25
Buses	3	1	33	25
Motorcycles	0	0	0	0
Duration (in minutes)	15 Minutes			

RESULTS SUMMARY

LMAX: 92.3 LEQ: 75.5 L10 _____ L50 _____ L90 _____ LMIN: 63.6

Major Noise Source(s): Truck traffic exiting bridge plaza and driving west of Fort St.

Background Noise Source(s):

Unusual Events: N/A

Other Notes/Observations:

ACE NOISE MEASUREMENT DATA SHEET

Date: February 28, 2007 Measurement Taken By: DM, SW Run #: 3

Project: Ambassador Bridge Enhancement Project

Site Identification: Station 1: 3411 W Fort Street, Detroit, MI 48216

Start Time: 12:40 pm End Time: 12:55 pm

Weather Conditions: Sky: Clear_____ Partly Cloudy_____ Cloudy___X____ Other_____
Temperature: 36 Wind Speed: 3
Wind Direction: NW Humidity: 80%

Equipment:

Sound Level Meter

Type: Casella CEL-450 Type I Serial Number: 074210
Date of Last Traceable Meter Calibration: 7/18/06
Field Calibration Reading: Start: 113.8 dB End: 113.8 dB
Response Settings: Fast__X__ Slow____ Weighting Scale: A

Calibrator

Type: Casella CEL 110/1 Class 1 Serial Number: 104777

TRAFFIC DATA

Vehicle Types	3411 W. Fort Street			
	Volume Eastbound	Volume Westbound	Speed Eastbound	Speed Westbound
Autos	31	34	35	28
Medium Trucks	19	30	36	33
Heavy Trucks	26	83	29	20
Buses	2	2	29	20
Motorcycles	0	0	0	0
Duration (in minutes)	15 Minutes			

RESULTS SUMMARY

LMAX: 88.1 LEQ: 75.5 L10 _____ L50 _____ L90 _____ LMIN: 63.9

Major Noise Source(s): Truck traffic exiting bridge plaza and driving west of Fort St.

Background Noise Source(s):

Unusual Events: N/A

Other Notes/Observations:

ACE NOISE MEASUREMENT DATA SHEET

Date: February 28, 2007 Measurement Taken By: DM, SW Run #: 4

Project: Ambassador Bridge Enhancement Project

Site Identification: Station 1: 3411 W Fort Street, Detroit, MI 48216

Start Time: 2:05 pm End Time: 2:20 pm

Weather Conditions: Sky: Clear_____ Partly Cloudy_____ Cloudy___X____ Other_____
Temperature: 36 Wind Speed: 6
Wind Direction: S Humidity: 87%

Equipment:

Sound Level Meter

Type: Casella CEL-450 Type I Serial Number: 074210
Date of Last Traceable Meter Calibration: 7/18/06
Field Calibration Reading: Start: 113.8 dB End: 113.8 dB
Response Settings: Fast__X__ Slow____ Weighting Scale: A

Calibrator

Type: Casella CEL 110/1 Class 1 Serial Number: 104777

TRAFFIC DATA

Vehicle Types	3411 W. Fort Street			
	Volume Eastbound	Volume Westbound	Speed Eastbound	Speed Westbound
Autos	34	33	34	26
Medium Trucks	20	25	33	27
Heavy Trucks	19	84	25	23
Buses	2	1	25	20
Motorcycles	0	0	0	0
Duration (in minutes)	15 Minutes			

RESULTS SUMMARY

LMAX: 83.7 LEQ: 73.6 L10 _____ L50 _____ L90 _____ LMIN: 58.5

Major Noise Source(s): Truck traffic exiting bridge plaza and driving west of Fort St.

Background Noise Source(s):

Unusual Events: N/A

Other Notes/Observations:

ACE NOISE MEASUREMENT DATA SHEET

Date: February 28, 2007 Measurement Taken By: DM, SW Run #: 5

Project: Ambassador Bridge Enhancement Project

Site Identification: Station 1: 3411 W Fort Street, Detroit, MI 48216

Start Time: 2:22 pm End Time: 2:37 pm

Weather Conditions: Sky: Clear_____ Partly Cloudy_____ Cloudy___X____ Other_____
Temperature: 36 Wind Speed: 6
Wind Direction: S Humidity: 87%

Equipment:

Sound Level Meter

Type: Casella CEL-450 Type I Serial Number: 074210
Date of Last Traceable Meter Calibration: 7/18/06
Field Calibration Reading: Start: 113.8 dB End: 113.8 dB
Response Settings: Fast__X__ Slow____ Weighting Scale: A

Calibrator

Type: Casella CEL 110/1 Class 1 Serial Number: 104777

TRAFFIC DATA

	3411 W. Fort Street			
Vehicle Types	Volume Eastbound	Volume Westbound	Speed Eastbound	Speed Westbound
Autos	42	48	39	31
Medium Trucks	36	38	37	32
Heavy Trucks	10	70	26	25
Buses	3	2	36	30
Motorcycles	0	0	0	0
Duration (in minutes)	15 Minutes			

RESULTS SUMMARY

LMAX: 87.2 LEQ: 74.5 L10 _____ L50 _____ L90 _____ LMIN: 58.8

Major Noise Source(s): Truck traffic exiting bridge plaza and driving west of Fort St.

Background Noise Source(s):

Unusual Events: N/A

Other Notes/Observations:

ACE NOISE MEASUREMENT DATA SHEET

Date: February 28, 2007 Measurement Taken By: DM, SW Run #: 6

Project: Ambassador Bridge Enhancement Project

Site Identification: Station 1: 3411 W Fort Street, Detroit, MI 48216

Start Time: 2:39 pm End Time: 2:54 pm

Weather Conditions: Sky: Clear_____ Partly Cloudy_____ Cloudy___X____ Other_____
Temperature: 36 Wind Speed: 6
Wind Direction: S Humidity: 87%

Equipment:

Sound Level Meter

Type: Casella CEL-450 Type I Serial Number: 074210
Date of Last Traceable Meter Calibration: 7/18/06
Field Calibration Reading: Start: 113.8 dB End: 113.8 dB
Response Settings: Fast__X__ Slow____ Weighting Scale: A

Calibrator

Type: Casella CEL 110/1 Class 1 Serial Number: 104777

TRAFFIC DATA

	3411 W. Fort Street			
Vehicle Types	Volume Eastbound	Volume Westbound	Speed Eastbound	Speed Westbound
Autos	39	36	33	32
Medium Trucks	18	22	34	26
Heavy Trucks	17	81	31	24
Buses	1	1	31	24
Motorcycles	0	0	0	0
Duration (in minutes)	15 Minutes			

RESULTS SUMMARY

LMAX: 87.5 LEQ: 74.9 L10 _____ L50 _____ L90 _____ LMIN: 58.9

Major Noise Source(s): Truck traffic exiting bridge plaza and driving west of Fort St.

Background Noise Source(s):

Unusual Events: Noise meter was paused accidently during the run and did not record sufficient information to be used during validation

Other Notes/Observations:

APPENDIX B

VALIDATION DOCUMENTATION

American Consulting Engineers
CC

17 April 2007
TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: Ambassador Bridge EA
RUN: Validation Model - Run 2

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway		Points									
Name	Width	Name	No.	Coordinates (pavement)			Flow Control			Segment	
				X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Roadway1	12.0	point1	1	13,470,425.0	299,694.8	582.00				Average	
		point2	2	13,472,470.0	300,927.1	581.00					
Roadway2	12.0	point3	3	13,470,419.0	299,705.1	582.00				Average	
		point4	4	13,472,464.0	300,937.3	581.00					
Roadway3	12.0	point5	5	13,470,413.0	299,715.4	582.00				Average	
		point6	6	13,472,458.0	300,947.6	581.00					
Roadway4	12.0	point8	8	13,472,445.0	300,968.2	581.00				Average	
		point7	7	13,470,400.0	299,735.9	582.00					
Roadway5	12.0	point10	10	13,472,439.0	300,978.4	581.00				Average	
		point9	9	13,470,394.0	299,746.2	582.00					
Roadway6	12.0	point12	12	13,472,433.0	300,988.7	581.00				Average	
		point11	11	13,470,388.0	299,756.5	582.00					

American Consulting Engineers
CC

17 April 2007
TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: Ambassador Bridge EA
RUN: Validation Model - Run 2

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Receiver3	3	1	13,471,285.0	300,203.1	581.00	4.92	0.00	66	10.0	5.0	Y

American Consulting Engineers
CC

17 April 2007
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Ambassador Bridge EA
RUN: Validation Model - Run 2
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 36 deg F, 80% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Receiver3	3	1	0.0	74.3	66	74.3	10	Snd Lvl	74.3	0.0	5	-5.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	1	0.0	0.0	0.0
All Impacted	1	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

American Consulting Engineers
CC

17 April 2007
TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: Ambassador Bridge EA
RUN: Validation Model - Run 3

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway		Points					Flow Control			Segment	
Name	Width	Name	No.	Coordinates (pavement) X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Roadway1	12.0	point1	1	13,470,425.0	299,694.8	582.00				Average	
		point2	2	13,472,470.0	300,927.1	581.00					
Roadway2	12.0	point3	3	13,470,419.0	299,705.1	582.00				Average	
		point4	4	13,472,464.0	300,937.3	581.00					
Roadway3	12.0	point5	5	13,470,413.0	299,715.4	582.00				Average	
		point6	6	13,472,458.0	300,947.6	581.00					
Roadway4	12.0	point8	8	13,472,445.0	300,968.2	581.00				Average	
		point7	7	13,470,400.0	299,735.9	582.00					
Roadway5	12.0	point10	10	13,472,439.0	300,978.4	581.00				Average	
		point9	9	13,470,394.0	299,746.2	582.00					
Roadway6	12.0	point12	12	13,472,433.0	300,988.7	581.00				Average	
		point11	11	13,470,388.0	299,756.5	582.00					

American Consulting Engineers
CC

17 April 2007
TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: Ambassador Bridge EA
RUN: Validation Model - Run 3

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Receiver3	3	1	13,471,285.0	300,203.1	581.00	4.92	0.00	66	10.0	5.0	Y

American Consulting Engineers
CC

17 April 2007
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Ambassador Bridge EA
RUN: Validation Model - Run 3
BARRIER DESIGN: INPUT HEIGHTS

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 36 deg F, 80% RH

Receiver												
Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Receiver3	3	1	0.0	74.5	66	74.5	10	Snd Lvl	74.5	0.0	5	-5.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	1	0.0	0.0	0.0
All Impacted	1	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

American Consulting Engineers
CC

17 April 2007
TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: Ambassador Bridge EA
RUN: Validation Model - Run 4

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway		Points					Flow Control			Segment	
Name	Width	Name	No.	Coordinates (pavement) X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Roadway1	12.0	point1	1	13,470,425.0	299,694.8	582.00				Average	
		point2	2	13,472,470.0	300,927.1	581.00					
Roadway2	12.0	point3	3	13,470,419.0	299,705.1	582.00				Average	
		point4	4	13,472,464.0	300,937.3	581.00					
Roadway3	12.0	point5	5	13,470,413.0	299,715.4	582.00				Average	
		point6	6	13,472,458.0	300,947.6	581.00					
Roadway4	12.0	point8	8	13,472,445.0	300,968.2	581.00				Average	
		point7	7	13,470,400.0	299,735.9	582.00					
Roadway5	12.0	point10	10	13,472,439.0	300,978.4	581.00				Average	
		point9	9	13,470,394.0	299,746.2	582.00					
Roadway6	12.0	point12	12	13,472,433.0	300,988.7	581.00				Average	
		point11	11	13,470,388.0	299,756.5	582.00					

American Consulting Engineers
CC

17 April 2007
TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: Ambassador Bridge EA
RUN: Validation Model - Run 4

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Receiver3	3	1	13,471,285.0	300,203.1	581.00	4.92	0.00	66	10.0	5.0	Y

American Consulting Engineers
CC

17 April 2007
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Ambassador Bridge EA
RUN: Validation Model - Run 4
BARRIER DESIGN: INPUT HEIGHTS

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 36 deg F, 87% RH

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Receiver3	3	1	0.0	73.7	66	73.7	10	Snd Lvl	73.7	0.0	5	-5.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	1	0.0	0.0	0.0
All Impacted	1	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

American Consulting Engineers
CC

17 April 2007
TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: Ambassador Bridge EA
RUN: Validation Model - Run 5

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway		Points									
Name	Width	Name	No.	Coordinates (pavement)			Flow Control			Segment	
				X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Roadway1	12.0	point1	1	13,470,425.0	299,694.8	582.00				Average	
		point2	2	13,472,470.0	300,927.1	581.00					
Roadway2	12.0	point3	3	13,470,419.0	299,705.1	582.00				Average	
		point4	4	13,472,464.0	300,937.3	581.00					
Roadway3	12.0	point5	5	13,470,413.0	299,715.4	582.00				Average	
		point6	6	13,472,458.0	300,947.6	581.00					
Roadway4	12.0	point8	8	13,472,445.0	300,968.2	581.00				Average	
		point7	7	13,470,400.0	299,735.9	582.00					
Roadway5	12.0	point10	10	13,472,439.0	300,978.4	581.00				Average	
		point9	9	13,470,394.0	299,746.2	582.00					
Roadway6	12.0	point12	12	13,472,433.0	300,988.7	581.00				Average	
		point11	11	13,470,388.0	299,756.5	582.00					

American Consulting Engineers
CC

17 April 2007
TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: Ambassador Bridge EA
RUN: Validation Model - Run 5

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Receiver3	3	1	13,471,285.0	300,203.1	581.00	4.92	0.00	66	10.0	5.0	Y

American Consulting Engineers
CC

17 April 2007
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Ambassador Bridge EA
RUN: Validation Model - Run 5
BARRIER DESIGN: INPUT HEIGHTS

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 36 deg F, 87% RH

Receiver												
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over existing		Type	Calculated	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc	Impact	LAeq1h	Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Receiver3	3	1	0.0	73.9	66	73.9	10	Snd Lvl	73.9	0.0	5	-5.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	1	0.0	0.0	0.0
All Impacted	1	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

American Consulting Engineers
CC

17 April 2007
TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: Ambassador Bridge EA
RUN: Validation Model - Run 6

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway		Points					Flow Control			Segment	
Name	Width	Name	No.	Coordinates (pavement) X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Roadway1	12.0	point1	1	13,470,425.0	299,694.8	582.00				Average	
		point2	2	13,472,470.0	300,927.1	581.00					
Roadway2	12.0	point3	3	13,470,419.0	299,705.1	582.00				Average	
		point4	4	13,472,464.0	300,937.3	581.00					
Roadway3	12.0	point5	5	13,470,413.0	299,715.4	582.00				Average	
		point6	6	13,472,458.0	300,947.6	581.00					
Roadway4	12.0	point8	8	13,472,445.0	300,968.2	581.00				Average	
		point7	7	13,470,400.0	299,735.9	582.00					
Roadway5	12.0	point10	10	13,472,439.0	300,978.4	581.00				Average	
		point9	9	13,470,394.0	299,746.2	582.00					
Roadway6	12.0	point12	12	13,472,433.0	300,988.7	581.00				Average	
		point11	11	13,470,388.0	299,756.5	582.00					

American Consulting Engineers
CC

17 April 2007
TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: Ambassador Bridge EA
RUN: Validation Model - Run 6

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Receiver3	3	1	13,471,285.0	300,203.1	581.00	4.92	0.00	66	10.0	5.0	Y

American Consulting Engineers
CC

17 April 2007
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Ambassador Bridge EA
RUN: Validation Model - Run 6
BARRIER DESIGN: INPUT HEIGHTS

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 36 deg F, 87% RH

Receiver												
Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Receiver3	3	1	0.0	73.5	66	73.5	10	Snd Lvl	73.5	0.0	5	-5.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	1	0.0	0.0	0.0
All Impacted	1	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

APPENDIX C

TNM INPUT/OUTPUT

American Consulting Engineers 18 August 2008
CC TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: Ambassador Bridge Enhancement
RUN: Existing Conditions - 2010

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Fort Street EB-1	12.0	point22	1	13,470,431.0	299,694.8	582.00				Average	
		point23	2	13,472,476.0	300,927.1	581.00					
Fort Street EB-2	12.0	point24	3	13,470,425.0	299,705.1	582.00				Average	
		point25	4	13,472,470.0	300,937.3	581.00					
Fort Street EB-3	12.0	point26	5	13,470,419.0	299,715.4	582.00				Average	
		point27	6	13,472,464.0	300,947.6	581.00					
Fort Street WB-3	12.0	point29	7	13,472,448.0	300,965.0	581.00				Average	
		point28	8	13,470,403.0	299,732.8	582.00					
Fort Street WB-2	12.0	point31	9	13,472,442.0	300,975.3	581.00				Average	
		point30	10	13,470,397.0	299,743.1	582.00					
Fort Street WB-1	12.0	point33	11	13,472,436.0	300,985.6	581.00				Average	
		point1224	1224	13,472,295.0	300,900.4	581.50				Average	
		point32	12	13,470,391.0	299,753.4	582.00					
NB I-75 & E. Service Drive to Bridge-B	20.0	point981	981	13,470,868.0	301,372.1	599.00				Average	Y
		point980	980	13,470,886.0	301,396.4	600.00				Average	Y
		point979	979	13,470,904.0	301,412.3	599.00				Average	Y
		point978	978	13,470,956.0	301,436.4	597.00				Average	Y
		point986	986	13,470,980.0	301,438.8	595.00				Average	Y
		point1111	1111	13,471,019.0	301,431.9	593.00					
NB I-75 & E. Service Drive to Bridge-a	20.0	point972	972	13,470,885.0	301,360.0	599.00				Average	Y
		point971	971	13,470,901.0	301,381.9	600.00				Average	Y
		point970	970	13,470,917.0	301,395.8	599.00				Average	Y
		point969	969	13,470,966.0	301,418.3	597.00				Average	Y
		point988	988	13,470,989.0	301,420.5	595.00				Average	Y
			0	13,471,030.0	301,414.0	593.00					

From Bridge to Truck Inspection Plaza 2	12.0	point1171	1171	13,471,442.0	301,356.5	630.00				Average	
		point1170	1170	13,471,446.0	301,505.5	620.00				Average	
		point1169	1169	13,471,464.0	301,600.6	618.00				Average	
		point1168	1168	13,471,473.0	301,671.0	615.00				Average	
		point1167	1167	13,471,481.0	301,724.3	613.00				Average	
		point1166	1166	13,471,471.0	301,767.1	610.00				Average	
		point1165	1165	13,471,454.0	301,827.4	608.00				Average	
		point1164	1164	13,471,334.0	302,094.3	602.00				Average	
		point1163	1163	13,471,236.0	302,299.5	597.00				Average	
		point1162	1162	13,471,209.0	302,378.2	594.00				Average	
		point1161	1161	13,471,204.0	302,452.2	591.00				Average	
		point1160	1160	13,471,203.0	302,509.4	591.00				Average	
		point1159	1159	13,471,224.0	302,570.2	591.00				Average	
		point1158	1158	13,471,254.0	302,605.4	592.00				Average	
		point1157	1157	13,471,315.0	302,645.2	592.00				Average	
		point1156	1156	13,471,389.0	302,656.8	593.00				Average	
		point1155	1155	13,471,446.0	302,650.1	593.00				Average	
		point1154	1154	13,471,508.0	302,612.6	594.00				Average	
		point1153	1153	13,471,560.0	302,518.8	594.00				Average	
		point1152	1152	13,471,681.0	302,251.2	592.00				Average	
		point1151	1151	13,471,784.0	302,008.5	591.00				Average	
		point1150	1150	13,471,909.0	301,721.4	590.00				Average	
		point1149	1149	13,472,061.0	301,354.2	584.00					
From Truck Inspection to Interstate -1	12.0	point1172	1172	13,472,061.0	301,354.2	584.00	Stop	0.00	100	Average	
		point1173	1173	13,472,253.0	300,896.7	581.00					
From Truck Inspection to Interstate -2	12.0	point1174	1174	13,472,023.0	301,338.1	584.00	Stop	0.00	100	Average	
		point1175	1175	13,472,191.0	300,881.1	581.00					
Customs to SB I-75	32.0	point1120	1120	13,471,251.0	301,905.8	600.00	Toll	0.00	100	Average	
		point956	956	13,471,131.0	302,147.4	598.00				Average	
		point957	957	13,471,040.0	302,322.5	607.00				Average	
		point958	958	13,471,012.0	302,362.6	609.00				Average	
		point959	959	13,470,978.0	302,389.4	611.00				Average	Y
		point941	941	13,470,783.0	302,469.6	620.00					
Bridge NB-2	12.0	point362	362	13,472,947.0	298,627.7	768.00				Average	Y
		point361	361	13,472,500.0	299,521.9	728.00				Average	Y
		point360	360	13,472,131.0	300,261.7	678.00				Average	Y
		point359	359	13,472,036.0	300,437.7	671.00				Average	Y
		point358	358	13,472,002.0	300,496.0	670.00				Average	Y
		point357	357	13,471,953.0	300,552.2	669.00				Average	Y

		point356	356	13,471,884.0	300,614.3	663.00				Average	Y
		point355	355	13,471,765.0	300,723.7	658.00				Average	Y
		point354	354	13,471,723.0	300,777.5	653.00				Average	Y
		point353	353	13,471,647.0	300,894.0	649.00				Average	Y
		point352	352	13,471,486.0	301,187.9	640.00				Average	Y
		point1118	1118	13,471,355.0	301,444.0	620.00				Average	
		point1117	1117	13,471,400.0	301,705.7	610.00				Average	
		point1116	1116	13,471,307.0	301,927.4	600.00					
To Bridge from I-75, I-96 & Service Dr.-B	19.0	point1192	1192	13,471,019.0	301,431.9	593.00	Onramp	0.00	100	Average	Y
		point1110	1110	13,471,105.0	301,432.2	592.00				Average	Y
		point1109	1109	13,471,189.0	301,430.2	591.00				Average	Y
		point1108	1108	13,471,242.0	301,412.8	590.00				Average	Y
		point1107	1107	13,471,272.0	301,370.4	589.00				Average	Y
		point1106	1106	13,471,332.0	301,261.0	588.00				Average	Y
		point1105	1105	13,471,406.0	301,123.5	588.00				Average	Y
		point1104	1104	13,471,494.0	300,949.2	590.00				Average	Y
		point1103	1103	13,471,580.0	300,749.0	591.00				Average	Y
		point1102	1102	13,471,564.0	300,652.5	592.00				Average	Y
		point1101	1101	13,471,521.0	300,575.2	593.00				Average	Y
		point1100	1100	13,471,394.0	300,482.9	595.00				Average	Y
		point1099	1099	13,471,212.0	300,377.5	597.00				Average	Y
		point1098	1098	13,471,028.0	300,273.7	599.00				Average	Y
		point1097	1097	13,470,947.0	300,254.4	600.00				Average	Y
		point1096	1096	13,470,877.0	300,276.5	601.00				Average	Y
		point1095	1095	13,470,845.0	300,297.6	602.00				Average	Y
		point1094	1094	13,470,810.0	300,362.5	603.00				Average	Y
		point1093	1093	13,470,788.0	300,421.5	604.00				Average	Y
		point1092	1092	13,470,809.0	300,528.5	605.00				Average	Y
		point1091	1091	13,470,838.0	300,622.6	606.00				Average	Y
		point1090	1090	13,470,873.0	300,736.5	608.00				Average	Y
		point1089	1089	13,470,904.0	300,835.5	610.00				Average	Y
		point1088	1088	13,470,937.0	300,943.2	612.00				Average	Y
		point1087	1087	13,470,959.0	300,972.6	613.00				Average	Y
		point1086	1086	13,470,989.0	301,012.3	614.00				Average	Y
		point1085	1085	13,471,039.0	301,045.4	616.00				Average	Y
		point1084	1084	13,471,077.0	301,057.5	617.00				Average	Y
		point1083	1083	13,471,116.0	301,069.5	618.00				Average	Y
		point1082	1082	13,471,192.0	301,093.4	621.00				Average	Y
		point1081	1081	13,471,276.0	301,083.5	624.00				Average	Y

		point1080	1080	13,471,336.0	301,076.5	626.00				Average	Y
		point1079	1079	13,471,392.0	301,057.3	629.00				Average	Y
		point1078	1078	13,471,531.0	300,998.5	636.00				Average	Y
		point1077	1077	13,471,580.0	300,965.1	640.00				Average	Y
		point1076	1076	13,471,631.0	300,907.9	651.00					
To Bridge from I-75, I-96 & Service Dr.-A	20.0	point1193	1193	13,471,030.0	301,414.0	593.00	Onramp	0.00	100	Average	Y
		point625	625	13,471,104.0	301,413.9	592.00				Average	Y
		point624	624	13,471,187.0	301,412.5	591.00				Average	Y
		point623	623	13,471,230.0	301,395.6	590.00				Average	Y
		point622	622	13,471,258.0	301,361.2	589.00				Average	Y
		point621	621	13,471,317.0	301,250.3	588.00				Average	Y
		point620	620	13,471,386.0	301,118.6	588.00				Average	Y
		point619	619	13,471,473.0	300,937.6	590.00				Average	Y
		point618	618	13,471,552.0	300,746.7	591.00				Average	Y
		point617	617	13,471,536.0	300,659.0	592.00				Average	Y
		point616	616	13,471,500.0	300,593.7	593.00				Average	Y
		point615	615	13,471,379.0	300,507.5	595.00				Average	Y
		point614	614	13,471,202.0	300,397.2	597.00				Average	Y
		point613	613	13,471,022.0	300,298.8	599.00				Average	Y
		point612	612	13,470,941.0	300,283.5	600.00				Average	Y
		point610	610	13,470,867.0	300,318.8	602.00				Average	Y
		point609	609	13,470,834.0	300,378.6	603.00				Average	Y
		point608	608	13,470,819.0	300,432.1	604.00				Average	Y
		point607	607	13,470,837.0	300,535.2	605.00				Average	Y
		point606	606	13,470,860.0	300,620.0	606.00				Average	Y
		point605	605	13,470,896.0	300,733.0	608.00				Average	Y
		point604	604	13,470,928.0	300,832.0	610.00				Average	Y
		point603	603	13,470,961.0	300,935.8	612.00				Average	Y
		point602	602	13,470,977.0	300,961.3	613.00				Average	Y
		point601	601	13,471,007.0	300,995.1	614.00				Average	Y
		point600	600	13,471,048.0	301,024.3	616.00				Average	Y
		point599	599	13,471,085.0	301,039.8	617.00				Average	Y
		point598	598	13,471,121.0	301,049.7	618.00				Average	Y
		point597	597	13,471,193.0	301,069.7	621.00				Average	Y
		point596	596	13,471,276.0	301,065.3	624.00				Average	Y
		point595	595	13,471,336.0	301,056.7	626.00				Average	Y
		point594	594	13,471,381.0	301,038.4	629.00				Average	Y
		point593	593	13,471,522.0	300,982.3	636.00				Average	Y
		point592	592	13,471,571.0	300,949.3	640.00				Average	Y

		point591	591	13,471,631.0	300,875.5	651.00					
To Bridge from I-75, I-96 & Service Dr.-D	20.0	point1194	1194	13,471,027.0	301,471.6	593.00	Onramp	0.00	100	Average	Y
		point531	531	13,471,093.0	301,468.1	592.00				Average	Y
		point530	530	13,471,197.0	301,468.8	591.00				Average	Y
		point529	529	13,471,267.0	301,442.8	590.00				Average	Y
		point528	528	13,471,363.0	301,279.9	588.00				Average	Y
		point527	527	13,471,443.0	301,136.8	588.00				Average	Y
		point526	526	13,471,501.0	301,021.6	589.00				Average	Y
		point525	525	13,471,542.0	300,967.6	590.00				Average	Y
		point524	524	13,471,629.0	300,756.9	591.00				Average	Y
		point523	523	13,471,612.0	300,639.4	592.00				Average	Y
		point522	522	13,471,569.0	300,543.5	593.00				Average	Y
		point521	521	13,471,231.0	300,333.0	597.00				Average	Y
		point520	520	13,471,040.0	300,223.8	599.00				Average	Y
		point519	519	13,470,953.0	300,213.3	600.00					
To Bridge from I-75, I-96 & Service Dr.-C	12.0	point1195	1195	13,471,023.0	301,452.4	593.00	Onramp	0.00	100	Average	Y
		point546	546	13,471,094.0	301,450.8	592.00				Average	Y
		point545	545	13,471,192.0	301,454.1	591.00				Average	Y
		point544	544	13,471,254.0	301,430.8	590.00				Average	Y
		point543	543	13,471,347.0	301,271.3	588.00				Average	Y
		point542	542	13,471,426.0	301,129.8	588.00				Average	Y
		point541	541	13,471,484.0	301,013.2	589.00				Average	Y
		point540	540	13,471,518.0	300,960.9	590.00				Average	Y
		point539	539	13,471,604.0	300,753.9	591.00				Average	Y
		point538	538	13,471,587.0	300,645.1	592.00				Average	Y
		point537	537	13,471,548.0	300,555.2	593.00				Average	Y
		point536	536	13,471,220.0	300,353.5	597.00				Average	Y
		point535	535	13,471,033.0	300,248.4	599.00				Average	Y
		point534	534	13,470,953.0	300,233.9	600.00					
Bridge NB-1	12.0	point373	373	13,472,959.0	298,632.4	768.00				Average	Y
		point372	372	13,472,512.0	299,526.6	728.00				Average	Y
		point371	371	13,472,140.0	300,266.4	678.00				Average	Y
		point370	370	13,472,050.0	300,443.1	671.00				Average	Y
		point369	369	13,472,009.0	300,504.9	670.00				Average	Y
		point368	368	13,471,959.0	300,562.4	669.00				Average	Y
		point367	367	13,471,892.0	300,622.8	663.00				Average	Y
		point366	366	13,471,772.0	300,732.8	658.00				Average	Y
		point365	365	13,471,728.0	300,788.5	653.00				Average	Y
		point364	364	13,471,662.0	300,901.5	649.00				Average	Y

		point1148	1148	13,471,501.0	301,196.3	640.00					
SB I-75 to Bridge	20.0	point1225	1225	13,470,790.0	301,526.8	604.00				Average	Y
		point533	533	13,470,987.0	301,479.6	595.00				Average	Y
		point532	532	13,471,027.0	301,471.6	593.00					
EB I-96 to Bridge	20.0	point1226	1226	13,470,782.0	301,507.7	604.00				Average	Y
		point548	548	13,470,983.0	301,466.2	595.00				Average	Y
		point547	547	13,471,023.0	301,452.4	593.00					
From Bridge to Truck Inspection Plaza 1	12.0	point1227	1227	13,471,501.0	301,196.3	640.00				Average	
		point1147	1147	13,471,461.0	301,354.1	630.00				Average	
		point1146	1146	13,471,465.0	301,496.7	620.00				Average	
		point1145	1145	13,471,489.0	301,635.7	617.00				Average	
		point1144	1144	13,471,500.0	301,685.8	615.00				Average	
		point1143	1143	13,471,502.0	301,728.9	613.00				Average	
		point1142	1142	13,471,496.0	301,772.5	610.00				Average	
		point1141	1141	13,471,470.0	301,844.0	608.00				Average	
		point1140	1140	13,471,385.0	302,029.3	603.00				Average	
		point1139	1139	13,471,291.0	302,236.9	598.00				Average	
		point1138	1138	13,471,239.0	302,360.4	595.00				Average	
		point1137	1137	13,471,224.0	302,455.0	591.00				Average	
		point1136	1136	13,471,251.0	302,548.9	591.00				Average	
		point1135	1135	13,471,304.0	302,595.0	592.00				Average	
		point1134	1134	13,471,352.0	302,616.5	592.00				Average	
		point1133	1133	13,471,406.0	302,621.4	593.00				Average	
		point1132	1132	13,471,483.0	302,591.1	593.00				Average	
		point1131	1131	13,471,532.0	302,514.7	594.00				Average	
		point1130	1130	13,471,576.0	302,422.7	593.00				Average	
		point1129	1129	13,471,619.0	302,328.7	592.00				Average	
		point1128	1128	13,471,757.0	302,010.3	591.00				Average	
		point1127	1127	13,471,877.0	301,731.8	590.00				Average	
		point1126	1126	13,472,023.0	301,338.1	584.00					
Bridge SB-1	22.0	point1228	1228	13,471,631.0	300,875.5	651.00				Average	Y
		point590	590	13,471,669.0	300,805.8	656.00				Average	Y
		point333	333	13,471,752.0	300,698.8	658.00				Average	Y
		point334	334	13,471,867.0	300,594.0	663.00				Average	Y
		point335	335	13,471,937.0	300,526.9	669.00				Average	Y
		point336	336	13,471,980.0	300,471.4	670.00				Average	Y
		point337	337	13,472,014.0	300,417.3	671.00				Average	Y
		point338	338	13,472,104.0	300,242.8	678.00				Average	Y
		point339	339	13,472,472.0	299,503.1	728.00				Average	Y

		point340	340	13,472,919.0	298,608.8	768.00					
Bridge SB-2	12.0	point1229	1229	13,471,631.0	300,907.9	651.00				Average	Y
		point1075	1075	13,471,685.0	300,813.0	656.00				Average	Y
		point344	344	13,471,764.0	300,708.6	658.00				Average	Y
		point345	345	13,471,883.0	300,602.0	663.00				Average	Y
		point346	346	13,471,949.0	300,539.9	669.00				Average	Y
		point347	347	13,471,997.0	300,481.8	670.00				Average	Y
		point348	348	13,472,028.0	300,427.0	671.00				Average	Y
		point349	349	13,472,123.0	300,250.2	678.00				Average	Y
		point350	350	13,472,492.0	299,510.5	728.00				Average	Y
		point351	351	13,472,939.0	298,616.2	768.00					
Customs to NB I-75	32.0	point1176	1176	13,471,307.0	301,927.4	600.00	Toll	0.00	100	Average	
		point1124	1124	13,471,187.0	302,173.5	598.00				Average	
		point731	731	13,471,088.0	302,361.6	598.00				Average	Y
		point730	730	13,471,047.0	302,419.6	600.00				Average	Y
		point1213	1213	13,470,999.0	302,450.1	602.00				Average	Y
		point728	728	13,470,865.0	302,503.8	598.00				Average	Y
		point727	727	13,470,805.0	302,536.8	594.00				Average	Y
		point726	726	13,470,769.0	302,587.5	590.00				Average	Y
		point720	720	13,470,595.0	302,923.8	576.00					
Truck Inspection to SB I-75	20.0	point387	387	13,472,191.0	300,880.9	581.00	Stop	0.00	100	Average	
		point388	388	13,471,793.0	300,644.8	584.00				Average	
		point389	389	13,471,142.0	300,258.8	588.00				Average	
		point1197	1197	13,470,903.0	300,114.6	592.00				Average	
		point391	391	13,470,852.0	300,111.1	593.00				Average	
		point392	392	13,470,745.0	300,146.4	596.00				Average	
		point393	393	13,470,686.0	300,188.7	598.00				Average	
		point394	394	13,470,660.0	300,272.3	601.00				Average	Y
		point395	395	13,470,658.0	300,337.4	603.00				Average	Y
		point1198	1198	13,470,656.0	300,337.4	603.00				Average	Y
		point396	396	13,470,693.0	300,438.7	607.00				Average	Y
		point397	397	13,470,785.0	300,692.7	615.00				Average	Y
		point398	398	13,470,935.0	301,337.0	624.00				Average	Y
		point518	518	13,470,965.0	301,606.1	626.00				Average	Y
		point517	517	13,470,969.0	301,935.5	611.00				Average	Y
		point516	516	13,470,947.0	302,238.1	608.00				Average	Y
		point515	515	13,470,925.0	302,312.2	610.00				Average	Y
		point514	514	13,470,873.0	302,394.4	613.00				Average	Y
		point955	955	13,470,775.0	302,451.3	620.00					

Truck Inspection to WB I-96	20.0	point1181	1181	13,472,253.0	300,896.7	581.00	Stop	0.00	100	Average	
		point374	374	13,472,198.0	300,862.0	581.00				Average	
		point375	375	13,471,800.0	300,625.9	584.00				Average	
		point376	376	13,471,149.0	300,239.9	588.00				Average	
		point378	378	13,470,908.0	300,094.1	592.00				Average	
		point379	379	13,470,845.0	300,090.6	593.00				Average	
		point380	380	13,470,730.0	300,131.5	596.00				Average	
		point381	381	13,470,667.0	300,179.2	598.00				Average	
		point382	382	13,470,639.0	300,268.2	601.00				Average	Y
		point383	383	13,470,637.0	300,337.2	603.00				Average	Y
		point384	384	13,470,673.0	300,435.9	607.00				Average	Y
		point385	385	13,470,765.0	300,689.2	615.00				Average	Y
		point386	386	13,470,914.0	301,332.8	624.00				Average	Y
		point711	711	13,470,944.0	301,612.0	626.00				Average	Y
		point1201	1201	13,470,946.0	301,759.6	624.00				Average	Y
		point708	708	13,470,913.0	301,906.3	617.00				Average	Y
		point707	707	13,470,865.0	302,016.3	613.00				Average	Y
		point706	706	13,470,711.0	302,264.8	598.00				Average	Y
		point705	705	13,470,671.0	302,346.3	591.00				Average	
		point704	704	13,470,538.0	302,760.0	589.00				Average	
		point699	699	13,470,479.0	302,891.8	587.00					
Customs to WB I-96	32.0	point1178	1178	13,471,278.0	301,917.9	600.00	Toll	0.00	100	Average	
		point1122	1122	13,471,158.0	302,164.6	598.00				Average	
		point506	506	13,471,061.0	302,349.3	598.00				Average	Y
		point505	505	13,471,025.0	302,398.7	599.00				Average	Y
		point504	504	13,470,997.0	302,419.6	600.00				Average	Y
		point1212	1212	13,470,953.0	302,440.8	601.00				Average	Y
		point1209	1209	13,470,764.0	302,515.9	603.00				Average	Y
		point501	501	13,470,701.0	302,549.8	598.00				Average	Y
		point500	500	13,470,648.0	302,604.4	594.00				Average	Y
		point499	499	13,470,506.0	302,897.5	590.00					

American Consulting Engineers **18 August 2008**
CC **TNM 2.5**

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: **Ambassador Bridge Enhancement**
RUN: **Existing Conditions - 2010**

Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Fort Street EB-1	point22	1	76	35	2	35	12	35	2	35	0	0
	point23	2										
Fort Street EB-2	point24	3	76	35	2	35	12	35	2	35	0	0
	point25	4										
Fort Street EB-3	point26	5	76	35	2	35	12	35	2	35	0	0
	point27	6										
Fort Street WB-3	point29	7	149	35	6	35	35	35	5	35	0	0
	point28	8										
Fort Street WB-2	point31	9	149	35	6	35	35	35	5	35	0	0
	point30	10										
Fort Street WB-1	point33	11	149	35	6	35	35	35	5	35	0	0
	point1224	1224	149	35	6	35	35	35	5	35	0	0
	point32	12										
NB I-75 & E. Service Drive to Bridge-B	point981	981	181	20	27	20	153	20	0	0	0	0
	point980	980	181	20	27	20	153	20	0	0	0	0
	point979	979	181	20	27	20	153	20	0	0	0	0
	point978	978	181	20	27	20	153	20	0	0	0	0
	point986	986	181	20	27	20	153	20	0	0	0	0
	point1111	1111										
NB I-75 & E. Service Drive to Bridge-a	point972	972	181	20	27	20	153	20	0	0	0	0
	point971	971	181	20	27	20	153	20	0	0	0	0
	point970	970	181	20	27	20	153	20	0	0	0	0
	point969	969	181	20	27	20	153	20	0	0	0	0

	point988	988	181	20	27	20	153	20	0	0	0	0
		0										
From Bridge to Truck Inspection Plaza 2	point1171	1171	0	0	41	20	231	20	0	0	0	0
	point1170	1170	0	0	41	20	231	20	0	0	0	0
	point1169	1169	0	0	41	20	231	20	0	0	0	0
	point1168	1168	0	0	41	20	231	20	0	0	0	0
	point1167	1167	0	0	41	20	231	20	0	0	0	0
	point1166	1166	0	0	41	20	231	20	0	0	0	0
	point1165	1165	0	0	41	20	231	20	0	0	0	0
	point1164	1164	0	0	41	20	231	20	0	0	0	0
	point1163	1163	0	0	41	20	231	20	0	0	0	0
	point1162	1162	0	0	41	20	231	20	0	0	0	0
	point1161	1161	0	0	41	20	231	20	0	0	0	0
	point1160	1160	0	0	41	20	231	20	0	0	0	0
	point1159	1159	0	0	41	20	231	20	0	0	0	0
	point1158	1158	0	0	41	20	231	20	0	0	0	0
	point1157	1157	0	0	41	20	231	20	0	0	0	0
	point1156	1156	0	0	41	20	231	20	0	0	0	0
	point1155	1155	0	0	41	20	231	20	0	0	0	0
	point1154	1154	0	0	41	20	231	20	0	0	0	0
	point1153	1153	0	0	41	20	231	20	0	0	0	0
	point1152	1152	0	0	41	20	231	20	0	0	0	0
	point1151	1151	0	0	41	20	231	20	0	0	0	0
	point1150	1150	0	0	41	20	231	20	0	0	0	0
	point1149	1149										
From Truck Inspection to Interstate -1	point1172	1172	0	0	41	20	231	20	0	0	0	0
	point1173	1173										
From Truck Inspection to Interstate -2	point1174	1174	0	0	41	20	231	20	0	0	0	0
	point1175	1175										
Customs to SB I-75	point1120	1120	266	20	4	20	0	0	0	0	0	0
	point956	956	266	20	4	20	0	0	0	0	0	0
	point957	957	266	20	4	20	0	0	0	0	0	0
	point958	958	266	20	4	20	0	0	0	0	0	0
	point959	959	266	20	4	20	0	0	0	0	0	0
	point941	941										
Bridge NB-2	point362	362	470	37	42	37	241	37	0	0	0	0

	point361	361	470	37	42	37	241	37	0	0	0	0
	point360	360	470	37	42	37	241	37	0	0	0	0
	point359	359	470	37	42	37	241	37	0	0	0	0
	point358	358	470	37	42	37	241	37	0	0	0	0
	point357	357	470	37	42	37	241	37	0	0	0	0
	point356	356	470	37	42	37	241	37	0	0	0	0
	point355	355	470	37	42	37	241	37	0	0	0	0
	point354	354	470	37	42	37	241	37	0	0	0	0
	point353	353	470	20	42	20	241	20	0	0	0	0
	point352	352	940	20	21	20	0	0	0	0	0	0
	point1118	1118	940	20	21	20	0	0	0	0	0	0
	point1117	1117	940	20	21	20	0	0	0	0	0	0
	point1116	1116										
To Bridge from I-75, I-96 & Service Dr.-B	point1192	1192	245	20	20	20	116	20	0	0	0	0
	point1110	1110	245	20	20	20	116	20	0	0	0	0
	point1109	1109	245	20	20	20	116	20	0	0	0	0
	point1108	1108	245	20	20	20	116	20	0	0	0	0
	point1107	1107	245	20	20	20	116	20	0	0	0	0
	point1106	1106	245	20	20	20	116	20	0	0	0	0
	point1105	1105	245	20	20	20	116	20	0	0	0	0
	point1104	1104	245	20	20	20	116	20	0	0	0	0
	point1103	1103	245	20	20	20	116	20	0	0	0	0
	point1102	1102	245	20	20	20	116	20	0	0	0	0
	point1101	1101	245	20	20	20	116	20	0	0	0	0
	point1100	1100	245	20	20	20	116	20	0	0	0	0
	point1099	1099	245	20	20	20	116	20	0	0	0	0
	point1098	1098	245	20	20	20	116	20	0	0	0	0
	point1097	1097	489	20	41	20	230	20	0	0	0	0
	point1096	1096	489	20	41	20	230	20	0	0	0	0
	point1095	1095	489	20	41	20	230	20	0	0	0	0
	point1094	1094	489	20	41	20	230	20	0	0	0	0
	point1093	1093	489	20	41	20	230	20	0	0	0	0
	point1092	1092	489	20	41	20	230	20	0	0	0	0
	point1091	1091	489	20	41	20	230	20	0	0	0	0
	point1090	1090	489	20	41	20	230	20	0	0	0	0
	point1089	1089	489	20	41	20	230	20	0	0	0	0

	point1088	1088	489	20	41	20	230	20	0	0	0	0
	point1087	1087	489	20	41	20	230	20	0	0	0	0
	point1086	1086	489	20	41	20	230	20	0	0	0	0
	point1085	1085	489	20	41	20	230	20	0	0	0	0
	point1084	1084	489	20	41	20	230	20	0	0	0	0
	point1083	1083	489	20	41	20	230	20	0	0	0	0
	point1082	1082	489	20	41	20	230	20	0	0	0	0
	point1081	1081	489	20	41	20	230	20	0	0	0	0
	point1080	1080	489	20	41	20	230	20	0	0	0	0
	point1079	1079	489	20	41	20	230	20	0	0	0	0
	point1078	1078	489	20	41	20	230	20	0	0	0	0
	point1077	1077	489	20	41	20	230	20	0	0	0	0
	point1076	1076										
To Bridge from I-75, I-96 & Service Dr.-A	point1193	1193	245	20	20	20	116	20	0	0	0	0
	point625	625	245	20	20	20	116	20	0	0	0	0
	point624	624	245	20	20	20	116	20	0	0	0	0
	point623	623	245	20	20	20	116	20	0	0	0	0
	point622	622	245	20	20	20	116	20	0	0	0	0
	point621	621	245	20	20	20	116	20	0	0	0	0
	point620	620	245	20	20	20	116	20	0	0	0	0
	point619	619	245	20	20	20	116	20	0	0	0	0
	point618	618	245	20	20	20	116	20	0	0	0	0
	point617	617	245	20	20	20	116	20	0	0	0	0
	point616	616	245	20	20	20	116	20	0	0	0	0
	point615	615	245	20	20	20	116	20	0	0	0	0
	point614	614	245	20	20	20	116	20	0	0	0	0
	point613	613	245	20	20	20	116	20	0	0	0	0
	point612	612	489	20	41	20	230	20	0	0	0	0
	point610	610	489	20	41	20	230	20	0	0	0	0
	point609	609	489	20	41	20	230	20	0	0	0	0
	point608	608	489	20	41	20	230	20	0	0	0	0
	point607	607	489	20	41	20	230	20	0	0	0	0
	point606	606	489	20	41	20	230	20	0	0	0	0
	point605	605	489	20	41	20	230	20	0	0	0	0
	point604	604	489	20	41	20	230	20	0	0	0	0
	point603	603	489	20	41	20	230	20	0	0	0	0

	point602	602	489	20	41	20	230	20	0	0	0	0
	point601	601	489	20	41	20	230	20	0	0	0	0
	point600	600	489	20	41	20	230	20	0	0	0	0
	point599	599	489	20	41	20	230	20	0	0	0	0
	point598	598	489	20	41	20	230	20	0	0	0	0
	point597	597	489	20	41	20	230	20	0	0	0	0
	point596	596	489	20	41	20	230	20	0	0	0	0
	point595	595	489	20	41	20	230	20	0	0	0	0
	point594	594	489	20	41	20	230	20	0	0	0	0
	point593	593	489	20	41	20	230	20	0	0	0	0
	point592	592	489	20	41	20	230	20	0	0	0	0
	point591	591										
To Bridge from I-75, I-96 & Service Dr.-D	point1194	1194	245	20	20	20	116	20	0	0	0	0
	point531	531	245	20	20	20	116	20	0	0	0	0
	point530	530	245	20	20	20	116	20	0	0	0	0
	point529	529	245	20	20	20	116	20	0	0	0	0
	point528	528	245	20	20	20	116	20	0	0	0	0
	point527	527	245	20	20	20	116	20	0	0	0	0
	point526	526	245	20	20	20	116	20	0	0	0	0
	point525	525	245	20	20	20	116	20	0	0	0	0
	point524	524	245	20	20	20	116	20	0	0	0	0
	point523	523	245	20	20	20	116	20	0	0	0	0
	point522	522	245	20	20	20	116	20	0	0	0	0
	point521	521	245	20	20	20	116	20	0	0	0	0
	point520	520	245	20	20	20	116	20	0	0	0	0
	point519	519										
To Bridge from I-75, I-96 & Service Dr.-C	point1195	1195	245	20	20	20	116	20	0	0	0	0
	point546	546	245	20	20	20	116	20	0	0	0	0
	point545	545	245	20	20	20	116	20	0	0	0	0
	point544	544	245	20	20	20	116	20	0	0	0	0
	point543	543	245	20	20	20	116	20	0	0	0	0
	point542	542	245	20	20	20	116	20	0	0	0	0
	point541	541	245	20	20	20	116	20	0	0	0	0
	point540	540	245	20	20	20	116	20	0	0	0	0
	point539	539	245	20	20	20	116	20	0	0	0	0
	point538	538	245	20	20	20	116	20	0	0	0	0

	point537	537	245	20	20	20	116	20	0	0	0	0
	point536	536	245	20	20	20	116	20	0	0	0	0
	point535	535	245	20	20	20	116	20	0	0	0	0
	point534	534										
Bridge NB-1	point373	373	470	37	42	37	241	37	0	0	0	0
	point372	372	470	37	42	37	241	37	0	0	0	0
	point371	371	470	37	42	37	241	37	0	0	0	0
	point370	370	470	37	42	37	241	37	0	0	0	0
	point369	369	470	37	42	37	241	37	0	0	0	0
	point368	368	470	37	42	37	241	37	0	0	0	0
	point367	367	470	37	42	37	241	37	0	0	0	0
	point366	366	470	37	42	37	241	37	0	0	0	0
	point365	365	470	37	42	37	241	37	0	0	0	0
	point364	364	470	20	42	20	241	20	0	0	0	0
	point1148	1148										
SB I-75 to Bridge	point1225	1225	309	20	14	20	77	20	0	0	0	0
	point533	533	309	20	14	20	77	20	0	0	0	0
	point532	532										
EB I-96 to Bridge	point1226	1226	309	20	14	20	77	20	0	0	0	0
	point548	548	309	20	14	20	77	20	0	0	0	0
	point547	547										
From Bridge to Truck Inspection Plaza 1	point1227	1227	0	0	82	20	462	20	0	0	0	0
	point1147	1147	0	0	41	20	231	20	0	0	0	0
	point1146	1146	0	0	41	20	231	20	0	0	0	0
	point1145	1145	0	0	41	20	231	20	0	0	0	0
	point1144	1144	0	0	41	20	231	20	0	0	0	0
	point1143	1143	0	0	41	20	231	20	0	0	0	0
	point1142	1142	0	0	41	20	231	20	0	0	0	0
	point1141	1141	0	0	41	20	231	20	0	0	0	0
	point1140	1140	0	0	41	20	231	20	0	0	0	0
	point1139	1139	0	0	41	20	231	20	0	0	0	0
	point1138	1138	0	0	41	20	231	20	0	0	0	0
	point1137	1137	0	0	41	20	231	20	0	0	0	0
	point1136	1136	0	0	41	20	231	20	0	0	0	0
	point1135	1135	0	0	41	20	231	20	0	0	0	0
	point1134	1134	0	0	41	20	231	20	0	0	0	0

	point1133	1133	0	0	41	20	231	20	0	0	0	0
	point1132	1132	0	0	41	20	231	20	0	0	0	0
	point1131	1131	0	0	41	20	231	20	0	0	0	0
	point1130	1130	0	0	41	20	231	20	0	0	0	0
	point1129	1129	0	0	41	20	231	20	0	0	0	0
	point1128	1128	0	0	41	20	231	20	0	0	0	0
	point1127	1127	0	0	41	20	231	20	0	0	0	0
	point1126	1126										
Bridge SB-1	point1228	1228	489	37	41	37	230	37	0	0	0	0
	point590	590	489	37	41	37	230	37	0	0	0	0
	point333	333	489	37	41	37	230	37	0	0	0	0
	point334	334	489	37	41	37	230	37	0	0	0	0
	point335	335	489	37	41	37	230	37	0	0	0	0
	point336	336	489	37	41	37	230	37	0	0	0	0
	point337	337	489	37	41	37	230	37	0	0	0	0
	point338	338	489	37	41	37	230	37	0	0	0	0
	point339	339	489	37	41	37	230	37	0	0	0	0
	point340	340										
Bridge SB-2	point1229	1229	489	37	41	37	230	37	0	0	0	0
	point1075	1075	489	37	41	37	230	37	0	0	0	0
	point344	344	489	37	41	37	230	37	0	0	0	0
	point345	345	489	37	41	37	230	37	0	0	0	0
	point346	346	489	37	41	37	230	37	0	0	0	0
	point347	347	489	37	41	37	230	37	0	0	0	0
	point348	348	489	37	41	37	230	37	0	0	0	0
	point349	349	489	37	41	37	230	37	0	0	0	0
	point350	350	489	37	41	37	230	37	0	0	0	0
	point351	351										
Customs to NB I-75	point1176	1176	163	20	1	20	0	0	0	0	0	0
	point1124	1124	163	20	1	20	0	0	0	0	0	0
	point731	731	163	20	1	20	0	0	0	0	0	0
	point730	730	163	20	1	20	0	0	0	0	0	0
	point1213	1213	163	20	1	20	0	0	0	0	0	0
	point728	728	163	20	1	20	0	0	0	0	0	0
	point727	727	163	20	1	20	0	0	0	0	0	0
	point726	726	163	20	1	20	0	0	0	0	0	0

	point720	720										
Truck Inspection to SB I-75	point387	387	0	0	36	20	204	20	0	0	0	0
	point388	388	0	0	36	20	204	20	0	0	0	0
	point389	389	0	0	36	20	204	20	0	0	0	0
	point1197	1197	0	0	36	20	204	20	0	0	0	0
	point391	391	0	0	36	20	204	20	0	0	0	0
	point392	392	0	0	36	20	204	20	0	0	0	0
	point393	393	0	0	36	20	204	20	0	0	0	0
	point394	394	0	0	36	20	204	20	0	0	0	0
	point395	395	0	0	36	20	204	20	0	0	0	0
	point1198	1198	0	0	36	20	204	20	0	0	0	0
	point396	396	0	0	36	20	204	20	0	0	0	0
	point397	397	0	0	36	20	204	20	0	0	0	0
	point398	398	0	0	36	20	204	20	0	0	0	0
	point518	518	0	0	36	20	204	20	0	0	0	0
	point517	517	0	0	36	20	204	20	0	0	0	0
	point516	516	0	0	36	20	204	20	0	0	0	0
	point515	515	0	0	36	20	204	20	0	0	0	0
	point514	514	0	0	36	20	204	20	0	0	0	0
	point955	955										
Truck Inspection to WB I-96	point1181	1181	0	0	27	20	153	20	0	0	0	0
	point374	374	0	0	27	20	153	20	0	0	0	0
	point375	375	0	0	27	20	153	20	0	0	0	0
	point376	376	0	0	27	20	153	20	0	0	0	0
	point378	378	0	0	27	20	153	20	0	0	0	0
	point379	379	0	0	27	20	153	20	0	0	0	0
	point380	380	0	0	27	20	153	20	0	0	0	0
	point381	381	0	0	27	20	153	20	0	0	0	0
	point382	382	0	0	27	20	153	20	0	0	0	0
	point383	383	0	0	27	20	153	20	0	0	0	0
	point384	384	0	0	27	20	153	20	0	0	0	0
	point385	385	0	0	27	20	153	20	0	0	0	0
	point386	386	0	0	27	20	153	20	0	0	0	0
	point711	711	0	0	27	20	153	20	0	0	0	0
	point1201	1201	0	0	27	20	153	20	0	0	0	0
	point708	708	0	0	27	20	153	20	0	0	0	0

	point707	707	0	0	27	20	153	20	0	0	0	0
	point706	706	0	0	27	20	153	20	0	0	0	0
	point705	705	0	0	27	20	153	20	0	0	0	0
	point704	704	0	0	27	20	153	20	0	0	0	0
	point699	699										
Customs to WB I-96	point1178	1178	511	20	16	20	0	0	0	0	0	0
	point1122	1122	511	20	16	20	0	0	0	0	0	0
	point506	506	511	20	16	20	0	0	0	0	0	0
	point505	505	511	20	16	20	0	0	0	0	0	0
	point504	504	511	20	16	20	0	0	0	0	0	0
	point1212	1212	511	20	16	20	0	0	0	0	0	0
	point1209	1209	511	20	16	20	0	0	0	0	0	0
	point501	501	511	20	16	20	0	0	0	0	0	0
	point500	500	511	20	16	20	0	0	0	0	0	0
	point499	499										

American Consulting Engineers
CC

17 April 2007
TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: Ambassador Bridge Enhancement
RUN: Existing Conditions - 2010

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Business 1	9	1	13,470,767.0	299,315.0	574.00	4.92	0.00	71	10.0	5.0	Y
Business 2	10	1	13,471,258.0	299,315.0	574.00	4.92	0.00	71	10.0	5.0	Y
Riverside Park 2	11	1	13,471,590.0	298,898.7	571.00	4.92	0.00	66	10.0	5.0	Y
Riverside Park 1	12	1	13,471,038.0	298,535.7	571.00	4.92	0.00	66	10.0	5.0	Y
Riverside Park 3	14	1	13,471,874.0	299,639.7	571.00	4.92	0.00	66	10.0	5.0	Y
Business 3	15	1	13,471,325.0	299,907.4	576.00	4.92	0.00	71	10.0	5.0	Y
Riverside Park 4	16	1	13,472,038.0	299,881.2	574.00	4.92	0.00	66	10.0	5.0	Y
Business 4	17	1	13,471,381.0	300,162.0	581.00	4.92	0.00	71	10.0	5.0	Y
Business 6	19	1	13,472,300.0	300,518.3	574.00	4.92	0.00	71	10.0	5.0	Y
Business 5	20	1	13,472,054.0	300,634.5	580.00	4.92	0.00	71	10.0	5.0	Y
Business 7	21	1	13,472,311.0	300,753.9	577.00	4.92	0.00	71	10.0	5.0	Y
Business 8	22	1	13,472,595.0	300,747.5	574.00	4.92	0.00	71	10.0	5.0	Y
Business 9	23	1	13,472,782.0	301,073.0	578.00	4.92	0.00	71	10.0	5.0	Y
Business 10	24	1	13,473,274.0	301,335.6	580.00	4.92	0.00	71	10.0	5.0	Y
St. Anne's Church	26	1	13,472,287.0	301,727.7	586.00	4.92	0.00	66	10.0	5.0	Y
Residence 1	27	1	13,472,023.0	301,995.0	591.00	4.92	0.00	66	10.0	5.0	Y
Residence 2	28	1	13,472,137.0	302,048.6	591.00	4.92	0.00	66	10.0	5.0	Y
Residence 3	29	1	13,472,220.0	302,088.4	591.00	4.92	0.00	66	10.0	5.0	Y
Bagley Center	30	1	13,472,442.0	302,171.1	594.00	4.92	0.00	71	10.0	5.0	Y
Residence 4	31	1	13,472,145.0	302,261.1	589.00	4.92	0.00	66	10.0	5.0	Y
Residence 5	32	1	13,472,023.0	302,224.7	589.00	4.92	0.00	66	10.0	5.0	Y
Residence 6	33	1	13,471,946.0	302,186.7	594.00	4.92	0.00	66	10.0	5.0	Y

Residence 7	34	1	13,471,945.0	302,260.2	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 8	35	1	13,472,023.0	302,262.8	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 9	36	1	13,472,089.0	302,338.1	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 10	37	1	13,472,149.0	302,436.3	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 11	39	1	13,472,103.0	302,516.8	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 12	40	1	13,471,993.0	302,419.9	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 13	41	1	13,471,886.0	302,387.9	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 14	42	1	13,471,821.0	302,443.2	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 15	43	1	13,471,932.0	302,494.3	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 16	44	1	13,471,619.0	302,623.7	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 17	45	1	13,471,914.0	302,650.5	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 18	46	1	13,472,022.0	302,688.6	594.00	4.92	0.00	66	10.0	5.0	Y
Multi-family Complex	51	12	13,472,641.0	301,721.5	587.00	4.92	0.00	66	10.0	5.0	Y

American Consulting Engineers 17 April 2007
CC TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: Ambassador Bridge Enhancement
RUN: Existing Conditions - 2010

Barrier Name	Type	Height Min	Height Max	If Wall $ per Unit Area	If Berm $ per Unit Vol.	Top Width	Run:Rise	Add'tnl $ per Unit Length
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft
Existing Wall 1	W	0.00	99.99	0.00				0.00
Existing Wall 2	W	0.00	99.99	0.00				0.00
Existing Wall 3	W	0.00	99.99	0.00				0.00
Existing Wall 4	W	0.00	99.99	0.00				0.00
Existing Wall 5	W	0.00	99.99	0.00				0.00
Existing Wall 6	W	0.00	99.99	0.00				0.00
Existing Wall 7	W	0.00	99.99	0.00				0.00
Existing Wall 8	W	0.00	99.99	0.00				0.00
Existing Wall 9	W	0.00	99.99	0.00				0.00
Existing Wall 10	W	0.00	99.99	0.00				0.00
Existing Wall 11	W	0.00	99.99	0.00				0.00
Existing Wall 12	W	0.00	99.99	0.00				0.00

Points Name	No.	Coordinates (bottom) X	Y	Z	Height at Point	Segment Seg Ht Incre-ment	Perturbs #Up	#Dn	On Struct?	Important Reflec-tions?
		ft	ft	ft	ft	ft				
point26	26	13,471,269.0	302,867.0	589.00	12.00	0.00	0	0		
point27	27	13,470,963.0	302,732.3	587.00	12.00					
point28	28	13,471,316.0	302,886.3	589.00	10.00	0.00	0	0		
point29	29	13,471,269.0	302,867.0	589.00	10.00					
point30	30	13,471,316.0	302,886.3	589.00	12.00	0.00	0	0		
point31	31	13,471,406.0	302,925.8	591.00	12.00	0.00	0	0		
point32	32	13,471,538.0	302,625.6	594.00	12.00					
point33	33	13,471,907.0	301,763.0	591.00	24.00	0.00	0	0		
point34	34	13,471,538.0	302,625.6	594.00	24.00					
point35	35	13,472,050.0	301,439.4	584.00	20.00	0.00	0	0		
point36	36	13,471,907.0	301,763.0	591.00	20.00					
point37	37	13,472,050.0	301,439.4	584.00	14.00	0.00	0	0		
point38	38	13,472,094.0	301,426.8	584.00	14.00	0.00	0	0		
point39	39	13,472,138.0	301,447.2	584.00	14.00	0.00	0	0		
point40	40	13,472,155.0	301,412.3	584.00	14.00					
point43	43	13,472,155.0	301,412.3	584.00	12.00	0.00	0	0		
point44	44	13,472,188.0	301,337.3	584.00	12.00	0.00	0	0		
point45	45	13,472,237.0	301,359.3	584.00	12.00					
point46	46	13,472,237.0	301,359.3	584.00	8.00	0.00	0	0		
point47	47	13,472,245.0	301,362.1	584.00	8.00	0.00	0	0		
point48	48	13,472,251.0	301,346.2	584.00	8.00					
point49	49	13,472,298.0	301,241.2	584.00	7.00	0.00	0	0		
point50	50	13,472,251.0	301,346.2	584.00	7.00					
point51	51	13,472,309.0	301,215.8	584.00	10.00	0.00	0	0		
point52	52	13,472,298.0	301,241.2	584.00	10.00					
point53	53	13,472,326.0	301,174.6	583.00	7.00	0.00	0	0		
point54	54	13,472,309.0	301,215.8	584.00	7.00					
point55	55	13,472,326.0	301,174.6	583.00	6.00	0.00	0	0		
point56	56	13,472,403.0	300,998.1	581.00	6.00	0.00	0	0		
point57	57	13,472,394.0	300,974.0	581.00	6.00	0.00	0	0		
point58	58	13,472,321.0	300,930.8	581.00	6.00					

American Consulting Engineers 18 April 2007
CC TNM 2.5

INPUT: GROUND ZONES
PROJECT/CONTRACT: Ambassador Bridge Enhancement
RUN: Existing Conditions - 2010

Ground Zone			Points		
Name	Type	Flow Resistivity	No.	Coordinates X	Y
		cgs rayls		ft	ft
Duty Free Store	Pavement	20000	13	13,470,999.0	300,964.1
			14	13,471,059.0	301,017.2
			15	13,471,204.0	301,058.9
			16	13,471,378.0	301,024.8
			17	13,471,427.0	300,990.7
			18	13,471,522.0	300,767.0
			19	13,471,518.0	300,679.8
			20	13,471,480.0	300,607.8
			21	13,471,431.0	300,581.2
			22	13,470,950.0	300,865.6
Gateway Plaza	Pavement	20000	36	13,471,386.0	301,310.6
			37	13,471,331.0	301,441.7
			23	13,471,193.0	301,724.9
			24	13,470,980.0	302,245.7
			25	13,471,201.0	302,344.9
			28	13,471,075.0	302,558.5
			29	13,470,972.0	302,729.4
			30	13,471,401.0	302,918.1
			31	13,471,924.0	301,707.9
			38	13,472,042.0	301,436.2
			40	13,472,084.0	301,419.7
			41	13,472,139.0	301,436.1

			42	13,472,183.0	301,328.7
			43	13,472,237.0	301,352.1
			39	13,472,392.0	301,001.9
			32	13,472,141.0	300,866.1
			33	13,471,771.0	300,650.2
			34	13,471,689.0	300,762.4
			35	13,471,568.0	300,984.7

American Consulting Engineers
CC

17 April 2007
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Ambassador Bridge Enhancement
RUN: Existing Conditions - 2010
BARRIER DESIGN: INPUT HEIGHTS

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Business 1	9	1	0.0	57.4	71	57.4	10	----	57.4	0.0	5	-5.0
Business 2	10	1	0.0	58.8	71	58.8	10	----	58.8	0.0	5	-5.0
Riverside Park 2	11	1	0.0	57.7	66	57.7	10	----	57.7	0.0	5	-5.0
Riverside Park 1	12	1	0.0	53.5	66	53.5	10	----	53.5	0.0	5	-5.0
Riverside Park 3	14	1	0.0	64.1	66	64.1	10	----	64.1	0.0	5	-5.0
Business 3	15	1	0.0	64.2	71	64.2	10	----	64.2	0.0	5	-5.0
Riverside Park 4	16	1	0.0	67.7	66	67.7	10	Snd Lvl	67.7	0.0	5	-5.0
Business 4	17	1	0.0	68.3	71	68.3	10	----	68.3	0.0	5	-5.0
Business 6	19	1	0.0	68.8	71	68.8	10	----	68.8	0.0	5	-5.0
Business 5	20	1	0.0	74.0	71	74.0	10	Snd Lvl	74.0	0.0	5	-5.0
Business 7	21	1	0.0	72.2	71	72.2	10	Snd Lvl	72.2	0.0	5	-5.0
Business 8	22	1	0.0	64.9	71	64.9	10	----	64.9	0.0	5	-5.0
Business 9	23	1	0.0	62.0	71	62.0	10	----	62.0	0.0	5	-5.0
Business 10	24	1	0.0	56.6	71	56.6	10	----	56.6	0.0	5	-5.0
St. Anne's Church	26	1	0.0	60.3	66	60.3	10	----	60.3	0.0	5	-5.0
Residence 1	27	1	0.0	58.3	66	58.3	10	----	58.3	0.0	5	-5.0
Residence 2	28	1	0.0	58.2	66	58.2	10	----	58.2	0.0	5	-5.0
Residence 3	29	1	0.0	58.1	66	58.1	10	----	58.1	0.0	5	-5.0
Bagley Center	30	1	0.0	56.9	71	56.9	10	----	56.9	0.0	5	-5.0
Residence 4	31	1	0.0	56.8	66	56.8	10	----	56.8	0.0	5	-5.0
Residence 5	32	1	0.0	56.9	66	56.9	10	----	56.9	0.0	5	-5.0
Residence 6	33	1	0.0	57.5	66	57.5	10	----	57.5	0.0	5	-5.0
Residence 7	34	1	0.0	57.7	66	57.7	10	----	57.7	0.0	5	-5.0

Residence 8	35	1	0.0	57.3	66	57.3	10	----	57.3	0.0	5	-5.0
Residence 9	36	1	0.0	56.8	66	56.8	10	----	56.8	0.0	5	-5.0
Residence 10	37	1	0.0	56.3	66	56.3	10	----	56.3	0.0	5	-5.0
Residence 11	39	1	0.0	56.0	66	56.0	10	----	56.0	0.0	5	-5.0
Residence 12	40	1	0.0	56.5	66	56.5	10	----	56.5	0.0	5	-5.0
Residence 13	41	1	0.0	56.6	66	56.6	10	----	56.6	0.0	5	-5.0
Residence 14	42	1	0.0	56.3	66	56.3	10	----	56.3	0.0	5	-5.0
Residence 15	43	1	0.0	56.2	66	56.2	10	----	56.2	0.0	5	-5.0
Residence 16	44	1	0.0	56.3	66	56.3	10	----	56.3	0.0	5	-5.0
Residence 17	45	1	0.0	55.6	66	55.6	10	----	55.6	0.0	5	-5.0
Residence 18	46	1	0.0	55.6	66	55.6	10	----	55.6	0.0	5	-5.0
Multi-family Complex	51	12	0.0	59.0	66	59.0	10	----	59.0	0.0	5	-5.0

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	46	0.0	0.0	0.0
All Impacted	3	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

American Consulting Engineers 18 August 2008
CC TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: Ambassador Bridge Enhancement
RUN: No-Build Conditions - Year 2030

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Fort Street EB-1	12.0	point22	1	13,470,431.0	299,694.8	582.00				Average	
		point23	2	13,472,476.0	300,927.1	581.00					
Fort Street EB-2	12.0	point24	3	13,470,425.0	299,705.1	582.00				Average	
		point25	4	13,472,470.0	300,937.3	581.00					
Fort Street EB-3	12.0	point26	5	13,470,419.0	299,715.4	582.00				Average	
		point27	6	13,472,464.0	300,947.6	581.00					
Fort Street WB-3	12.0	point29	7	13,472,448.0	300,965.0	581.00				Average	
		point28	8	13,470,403.0	299,732.8	582.00					
Fort Street WB-2	12.0	point31	9	13,472,442.0	300,975.3	581.00				Average	
		point30	10	13,470,397.0	299,743.1	582.00					
Fort Street WB-1	12.0	point33	11	13,472,436.0	300,985.6	581.00				Average	
		point1224	1224	13,472,295.0	300,900.4	581.50				Average	
		point32	12	13,470,391.0	299,753.4	582.00					
NB I-75 & E. Service Drive to Bridge-B	20.0	point981	981	13,470,868.0	301,372.1	599.00				Average	Y
		point980	980	13,470,886.0	301,396.4	600.00				Average	Y
		point979	979	13,470,904.0	301,412.3	599.00				Average	Y
		point978	978	13,470,956.0	301,436.4	597.00				Average	Y
		point986	986	13,470,980.0	301,438.8	595.00				Average	Y
		point1111	1111	13,471,019.0	301,431.9	593.00					
NB I-75 & E. Service Drive to Bridge-a	20.0	point972	972	13,470,885.0	301,360.0	599.00				Average	Y
		point971	971	13,470,901.0	301,381.9	600.00				Average	Y
		point970	970	13,470,917.0	301,395.8	599.00				Average	Y
		point969	969	13,470,966.0	301,418.3	597.00				Average	Y
		point988	988	13,470,989.0	301,420.5	595.00				Average	Y
			0	13,471,030.0	301,414.0	593.00					

From Bridge to Truck Inspection Plaza 2	12.0	point1171	1171	13,471,442.0	301,356.5	630.00				Average	
		point1170	1170	13,471,446.0	301,505.5	620.00				Average	
		point1169	1169	13,471,464.0	301,600.6	618.00				Average	
		point1168	1168	13,471,473.0	301,671.0	615.00				Average	
		point1167	1167	13,471,481.0	301,724.3	613.00				Average	
		point1166	1166	13,471,471.0	301,767.1	610.00				Average	
		point1165	1165	13,471,454.0	301,827.4	608.00				Average	
		point1164	1164	13,471,334.0	302,094.3	602.00				Average	
		point1163	1163	13,471,236.0	302,299.5	597.00				Average	
		point1162	1162	13,471,209.0	302,378.2	594.00				Average	
		point1161	1161	13,471,204.0	302,452.2	591.00				Average	
		point1160	1160	13,471,203.0	302,509.4	591.00				Average	
		point1159	1159	13,471,224.0	302,570.2	591.00				Average	
		point1158	1158	13,471,254.0	302,605.4	592.00				Average	
		point1157	1157	13,471,315.0	302,645.2	592.00				Average	
		point1156	1156	13,471,389.0	302,656.8	593.00				Average	
		point1155	1155	13,471,446.0	302,650.1	593.00				Average	
		point1154	1154	13,471,508.0	302,612.6	594.00				Average	
		point1153	1153	13,471,560.0	302,518.8	594.00				Average	
		point1152	1152	13,471,681.0	302,251.2	592.00				Average	
		point1151	1151	13,471,784.0	302,008.5	591.00				Average	
		point1150	1150	13,471,909.0	301,721.4	590.00				Average	
		point1149	1149	13,472,061.0	301,354.2	584.00					
From Truck Inspection to Interstate -1	12.0	point1172	1172	13,472,061.0	301,354.2	584.00	Stop	0.00	100	Average	
		point1173	1173	13,472,253.0	300,896.7	581.00					
From Truck Inspection to Interstate -2	12.0	point1174	1174	13,472,023.0	301,338.1	584.00	Stop	0.00	100	Average	
		point1175	1175	13,472,191.0	300,881.1	581.00					
Customs to SB I-75	32.0	point1120	1120	13,471,249.0	301,907.5	600.00	Toll	0.00	100	Average	
		point956	956	13,471,136.0	302,140.8	598.00				Average	
		point957	957	13,471,041.0	302,324.2	607.00				Average	
		point958	958	13,471,016.0	302,356.0	609.00				Average	
		point959	959	13,470,974.0	302,387.8	611.00				Average	Y
		point941	941	13,470,783.0	302,469.6	620.00					
Bridge NB-2	12.0	point362	362	13,472,948.0	298,625.5	768.00				Average	Y
		point361	361	13,472,501.0	299,519.8	728.00				Average	Y
		point360	360	13,472,132.0	300,259.5	678.00				Average	Y
		point359	359	13,472,037.0	300,435.5	671.00				Average	Y
		point358	358	13,472,003.0	300,493.8	670.00				Average	Y
		point357	357	13,471,954.0	300,550.1	669.00				Average	Y

		point356	356	13,471,885.0	300,612.1	663.00				Average	Y
		point355	355	13,471,766.0	300,721.6	658.00				Average	Y
		point354	354	13,471,724.0	300,775.3	653.00				Average	Y
		point353	353	13,471,648.0	300,891.8	649.00				Average	Y
		point352	352	13,471,487.0	301,185.8	640.00				Average	Y
		point1118	1118	13,471,356.0	301,441.8	620.00				Average	
		point1117	1117	13,471,401.0	301,703.6	610.00				Average	
		point1116	1116	13,471,307.0	301,929.0	600.00					
To Bridge from I-75, I-96 & Service Dr.-B	19.0	point1192	1192	13,471,019.0	301,431.9	593.00	Onramp	0.00	100	Average	Y
		point1110	1110	13,471,105.0	301,432.2	592.00				Average	Y
		point1109	1109	13,471,189.0	301,430.2	591.00				Average	Y
		point1108	1108	13,471,242.0	301,412.8	590.00				Average	Y
		point1107	1107	13,471,272.0	301,370.4	589.00				Average	Y
		point1106	1106	13,471,332.0	301,261.0	588.00				Average	Y
		point1105	1105	13,471,406.0	301,123.5	588.00				Average	Y
		point1104	1104	13,471,494.0	300,949.2	590.00				Average	Y
		point1103	1103	13,471,580.0	300,749.0	591.00				Average	Y
		point1102	1102	13,471,564.0	300,652.5	592.00				Average	Y
		point1101	1101	13,471,521.0	300,575.2	593.00				Average	Y
		point1100	1100	13,471,394.0	300,482.9	595.00				Average	Y
		point1099	1099	13,471,212.0	300,377.5	597.00				Average	Y
		point1098	1098	13,471,028.0	300,273.7	599.00				Average	Y
		point1097	1097	13,470,947.0	300,254.4	600.00				Average	Y
		point1096	1096	13,470,877.0	300,276.5	601.00				Average	Y
		point1095	1095	13,470,845.0	300,297.6	602.00				Average	Y
		point1094	1094	13,470,810.0	300,362.5	603.00				Average	Y
		point1093	1093	13,470,788.0	300,421.5	604.00				Average	Y
		point1092	1092	13,470,809.0	300,528.5	605.00				Average	Y
		point1091	1091	13,470,838.0	300,622.6	606.00				Average	Y
		point1090	1090	13,470,873.0	300,736.5	608.00				Average	Y
		point1089	1089	13,470,904.0	300,835.5	610.00				Average	Y
		point1088	1088	13,470,937.0	300,943.2	612.00				Average	Y
		point1087	1087	13,470,959.0	300,972.6	613.00				Average	Y
		point1086	1086	13,470,989.0	301,012.3	614.00				Average	Y
		point1085	1085	13,471,039.0	301,045.4	616.00				Average	Y
		point1084	1084	13,471,077.0	301,057.5	617.00				Average	Y
		point1083	1083	13,471,116.0	301,069.5	618.00				Average	Y
		point1082	1082	13,471,192.0	301,093.4	621.00				Average	Y
		point1081	1081	13,471,276.0	301,083.5	624.00				Average	Y

		point1080	1080	13,471,336.0	301,076.5	626.00				Average	Y
		point1079	1079	13,471,392.0	301,057.3	629.00				Average	Y
		point1078	1078	13,471,531.0	300,998.5	636.00				Average	Y
		point1077	1077	13,471,580.0	300,965.1	640.00				Average	Y
		point1076	1076	13,471,631.0	300,905.0	651.00					
To Bridge from I-75, I-96 & Service Dr.-A	20.0	point1193	1193	13,471,030.0	301,414.0	593.00	Onramp	0.00	100	Average	Y
		point625	625	13,471,104.0	301,413.9	592.00				Average	Y
		point624	624	13,471,187.0	301,412.5	591.00				Average	Y
		point623	623	13,471,230.0	301,395.6	590.00				Average	Y
		point622	622	13,471,258.0	301,361.2	589.00				Average	Y
		point621	621	13,471,317.0	301,250.3	588.00				Average	Y
		point620	620	13,471,386.0	301,118.6	588.00				Average	Y
		point619	619	13,471,473.0	300,937.6	590.00				Average	Y
		point618	618	13,471,552.0	300,746.7	591.00				Average	Y
		point617	617	13,471,536.0	300,659.0	592.00				Average	Y
		point616	616	13,471,500.0	300,593.7	593.00				Average	Y
		point615	615	13,471,379.0	300,507.5	595.00				Average	Y
		point614	614	13,471,202.0	300,397.2	597.00				Average	Y
		point613	613	13,471,022.0	300,298.8	599.00				Average	Y
		point612	612	13,470,941.0	300,283.5	600.00				Average	Y
		point610	610	13,470,867.0	300,318.8	602.00				Average	Y
		point609	609	13,470,834.0	300,378.6	603.00				Average	Y
		point608	608	13,470,819.0	300,432.1	604.00				Average	Y
		point607	607	13,470,837.0	300,535.2	605.00				Average	Y
		point606	606	13,470,860.0	300,620.0	606.00				Average	Y
		point605	605	13,470,896.0	300,733.0	608.00				Average	Y
		point604	604	13,470,928.0	300,832.0	610.00				Average	Y
		point603	603	13,470,961.0	300,935.8	612.00				Average	Y
		point602	602	13,470,977.0	300,961.3	613.00				Average	Y
		point601	601	13,471,007.0	300,995.1	614.00				Average	Y
		point600	600	13,471,048.0	301,024.3	616.00				Average	Y
		point599	599	13,471,085.0	301,039.8	617.00				Average	Y
		point598	598	13,471,121.0	301,049.7	618.00				Average	Y
		point597	597	13,471,193.0	301,069.7	621.00				Average	Y
		point596	596	13,471,276.0	301,065.3	624.00				Average	Y
		point595	595	13,471,336.0	301,056.7	626.00				Average	Y
		point594	594	13,471,381.0	301,038.4	629.00				Average	Y
		point593	593	13,471,522.0	300,982.3	636.00				Average	Y
		point592	592	13,471,571.0	300,949.3	640.00				Average	Y

		point591	591	13,471,631.0	300,875.5	651.00					
To Bridge from I-75, I-96 & Service Dr.-D	20.0	point1194	1194	13,471,027.0	301,471.6	593.00	Onramp	0.00	100	Average	Y
		point531	531	13,471,093.0	301,468.1	592.00				Average	Y
		point530	530	13,471,197.0	301,468.8	591.00				Average	Y
		point529	529	13,471,267.0	301,442.8	590.00				Average	Y
		point528	528	13,471,363.0	301,279.9	588.00				Average	Y
		point527	527	13,471,443.0	301,136.8	588.00				Average	Y
		point526	526	13,471,501.0	301,021.6	589.00				Average	Y
		point525	525	13,471,542.0	300,967.6	590.00				Average	Y
		point524	524	13,471,629.0	300,756.9	591.00				Average	Y
		point523	523	13,471,612.0	300,639.4	592.00				Average	Y
		point522	522	13,471,569.0	300,543.5	593.00				Average	Y
		point521	521	13,471,231.0	300,333.0	597.00				Average	Y
		point520	520	13,471,040.0	300,223.8	599.00				Average	Y
		point519	519	13,470,953.0	300,213.3	600.00					
To Bridge from I-75, I-96 & Service Dr.-C	12.0	point1195	1195	13,471,023.0	301,452.4	593.00	Onramp	0.00	100	Average	Y
		point546	546	13,471,094.0	301,450.8	592.00				Average	Y
		point545	545	13,471,192.0	301,454.1	591.00				Average	Y
		point544	544	13,471,254.0	301,430.8	590.00				Average	Y
		point543	543	13,471,347.0	301,271.3	588.00				Average	Y
		point542	542	13,471,426.0	301,129.8	588.00				Average	Y
		point541	541	13,471,484.0	301,013.2	589.00				Average	Y
		point540	540	13,471,518.0	300,960.9	590.00				Average	Y
		point539	539	13,471,604.0	300,753.9	591.00				Average	Y
		point538	538	13,471,587.0	300,645.1	592.00				Average	Y
		point537	537	13,471,548.0	300,555.2	593.00				Average	Y
		point536	536	13,471,220.0	300,353.5	597.00				Average	Y
		point535	535	13,471,033.0	300,248.4	599.00				Average	Y
		point534	534	13,470,953.0	300,233.9	600.00					
Bridge NB-1	12.0	point373	373	13,472,960.0	298,633.0	768.00				Average	Y
		point372	372	13,472,513.0	299,527.2	728.00				Average	Y
		point371	371	13,472,141.0	300,267.0	678.00				Average	Y
		point370	370	13,472,051.0	300,443.7	671.00				Average	Y
		point369	369	13,472,010.0	300,505.5	670.00				Average	Y
		point368	368	13,471,960.0	300,563.0	669.00				Average	Y
		point367	367	13,471,893.0	300,623.3	663.00				Average	Y
		point366	366	13,471,773.0	300,733.3	658.00				Average	Y
		point365	365	13,471,729.0	300,789.1	653.00				Average	Y
		point364	364	13,471,663.0	300,902.1	649.00				Average	Y

		point1148	1148	13,471,502.0	301,196.8	640.00					
SB I-75 & EB I-96 to Bridge-A	20.0	point1225	1225	13,470,790.0	301,526.8	604.00				Average	Y
		point533	533	13,470,987.0	301,479.6	595.00				Average	Y
		point532	532	13,471,027.0	301,471.6	593.00					
SB I-75 & EB I-96 to Bridge-B	20.0	point1226	1226	13,470,782.0	301,507.7	604.00				Average	Y
		point548	548	13,470,983.0	301,466.2	595.00				Average	Y
		point547	547	13,471,023.0	301,452.4	593.00					
From Bridge to Truck Inspection Plaza 1	12.0	point1227	1227	13,471,502.0	301,196.8	640.00				Average	
		point1147	1147	13,471,461.0	301,354.1	630.00				Average	
		point1146	1146	13,471,465.0	301,496.7	620.00				Average	
		point1145	1145	13,471,489.0	301,635.7	617.00				Average	
		point1144	1144	13,471,500.0	301,685.8	615.00				Average	
		point1143	1143	13,471,502.0	301,728.9	613.00				Average	
		point1142	1142	13,471,496.0	301,772.5	610.00				Average	
		point1141	1141	13,471,470.0	301,844.0	608.00				Average	
		point1140	1140	13,471,385.0	302,029.3	603.00				Average	
		point1139	1139	13,471,291.0	302,236.9	598.00				Average	
		point1138	1138	13,471,239.0	302,360.4	595.00				Average	
		point1137	1137	13,471,224.0	302,455.0	591.00				Average	
		point1136	1136	13,471,251.0	302,548.9	591.00				Average	
		point1135	1135	13,471,304.0	302,595.0	592.00				Average	
		point1134	1134	13,471,352.0	302,616.5	592.00				Average	
		point1133	1133	13,471,406.0	302,621.4	593.00				Average	
		point1132	1132	13,471,483.0	302,591.1	593.00				Average	
		point1131	1131	13,471,532.0	302,514.7	594.00				Average	
		point1130	1130	13,471,576.0	302,422.7	593.00				Average	
		point1129	1129	13,471,619.0	302,328.7	592.00				Average	
		point1128	1128	13,471,757.0	302,010.3	591.00				Average	
		point1127	1127	13,471,877.0	301,731.8	590.00				Average	
		point1126	1126	13,472,023.0	301,338.1	584.00					
Bridge SB-1	22.0	point1228	1228	13,471,631.0	300,875.5	651.00				Average	Y
		point590	590	13,471,669.0	300,805.8	656.00				Average	Y
		point333	333	13,471,752.0	300,698.8	658.00				Average	Y
		point334	334	13,471,867.0	300,594.0	663.00				Average	Y
		point335	335	13,471,937.0	300,526.9	669.00				Average	Y
		point336	336	13,471,980.0	300,471.4	670.00				Average	Y
		point337	337	13,472,014.0	300,417.3	671.00				Average	Y
		point338	338	13,472,104.0	300,242.8	678.00				Average	Y
		point339	339	13,472,472.0	299,503.1	728.00				Average	Y

		point340	340	13,472,919.0	298,608.8	768.00					
Bridge SB-2	12.0	point1229	1229	13,471,631.0	300,905.0	651.00				Average	Y
		point1075	1075	13,471,685.0	300,810.1	656.00				Average	Y
		point344	344	13,471,764.0	300,705.7	658.00				Average	Y
		point345	345	13,471,883.0	300,599.0	663.00				Average	Y
		point346	346	13,471,949.0	300,537.0	669.00				Average	Y
		point347	347	13,471,997.0	300,478.9	670.00				Average	Y
		point348	348	13,472,028.0	300,424.1	671.00				Average	Y
		point349	349	13,472,123.0	300,247.2	678.00				Average	Y
		point350	350	13,472,492.0	299,507.6	728.00				Average	Y
		point351	351	13,472,939.0	298,613.3	768.00					
Customs to NB I-75	32.0	point1176	1176	13,471,307.0	301,929.0	600.00	Toll	0.00	100	Average	
		point1124	1124	13,471,186.0	302,173.5	598.00				Average	
		point731	731	13,471,089.0	302,361.6	598.00				Average	Y
		point730	730	13,471,045.0	302,417.8	600.00				Average	Y
		point1213	1213	13,470,998.0	302,450.1	602.00				Average	Y
		point728	728	13,470,863.0	302,507.0	598.00				Average	Y
		point727	727	13,470,805.0	302,536.8	594.00				Average	Y
		point726	726	13,470,769.0	302,587.5	590.00				Average	Y
		point720	720	13,470,595.0	302,923.8	576.00					
Truck Inspection to SB I-75	20.0	point387	387	13,472,191.0	300,880.9	581.00	Stop	0.00	100	Average	
		point388	388	13,471,793.0	300,644.8	584.00				Average	
		point389	389	13,471,142.0	300,258.8	588.00				Average	
		point1197	1197	13,470,903.0	300,114.6	592.00				Average	
		point391	391	13,470,852.0	300,111.1	593.00				Average	
		point392	392	13,470,745.0	300,146.4	596.00				Average	
		point393	393	13,470,686.0	300,188.7	598.00				Average	
		point394	394	13,470,660.0	300,272.3	601.00				Average	Y
		point395	395	13,470,658.0	300,337.4	603.00				Average	Y
		point1198	1198	13,470,656.0	300,337.4	603.00				Average	Y
		point396	396	13,470,693.0	300,438.7	607.00				Average	Y
		point397	397	13,470,785.0	300,692.7	615.00				Average	Y
		point398	398	13,470,935.0	301,337.0	624.00				Average	Y
		point518	518	13,470,965.0	301,606.1	626.00				Average	Y
		point517	517	13,470,969.0	301,935.5	611.00				Average	Y
		point516	516	13,470,947.0	302,238.1	608.00				Average	Y
		point515	515	13,470,925.0	302,312.2	610.00				Average	Y
		point514	514	13,470,873.0	302,394.4	613.00				Average	Y
		point955	955	13,470,779.0	302,451.3	620.00					

Truck Inspection to WB I-96	20.0	point1181	1181	13,472,253.0	300,896.7	581.00	Stop	0.00	100	Average	
		point374	374	13,472,198.0	300,862.0	581.00				Average	
		point375	375	13,471,800.0	300,625.9	584.00				Average	
		point376	376	13,471,149.0	300,239.9	588.00				Average	
		point378	378	13,470,908.0	300,094.1	592.00				Average	
		point379	379	13,470,845.0	300,090.6	593.00				Average	
		point380	380	13,470,730.0	300,131.5	596.00				Average	
		point381	381	13,470,667.0	300,179.2	598.00				Average	
		point382	382	13,470,639.0	300,268.2	601.00				Average	Y
		point383	383	13,470,637.0	300,337.2	603.00				Average	Y
		point384	384	13,470,673.0	300,435.9	607.00				Average	Y
		point385	385	13,470,765.0	300,689.2	615.00				Average	Y
		point386	386	13,470,914.0	301,332.8	624.00				Average	Y
		point711	711	13,470,944.0	301,612.0	626.00				Average	Y
		point1201	1201	13,470,946.0	301,759.6	624.00				Average	Y
		point708	708	13,470,913.0	301,906.3	617.00				Average	Y
		point707	707	13,470,865.0	302,016.3	613.00				Average	Y
		point706	706	13,470,711.0	302,264.8	598.00				Average	Y
		point705	705	13,470,671.0	302,346.3	591.00				Average	
		point704	704	13,470,538.0	302,760.0	589.00				Average	
		point699	699	13,470,479.0	302,891.8	587.00					
Customs to WB I-96	32.0	point1178	1178	13,471,278.0	301,917.9	600.00	Toll	0.00	100	Average	
		point1122	1122	13,471,158.0	302,164.6	598.00				Average	
		point506	506	13,471,061.0	302,349.3	598.00				Average	Y
		point505	505	13,471,025.0	302,398.7	599.00				Average	Y
		point504	504	13,470,997.0	302,419.6	600.00				Average	Y
		point1212	1212	13,470,953.0	302,440.8	601.00				Average	Y
		point1209	1209	13,470,764.0	302,515.9	603.00				Average	Y
		point501	501	13,470,701.0	302,549.8	598.00				Average	Y
		point500	500	13,470,648.0	302,604.4	594.00				Average	Y
		point499	499	13,470,506.0	302,897.5	590.00					

American Consulting Engineers **18 August 2008**
CC **TNM 2.5**

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: **Ambassador Bridge Enhancement**
RUN: **No-Build Conditions - Year 2030**

Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Fort Street EB-1	point22	1	122	35	3	35	19	35	3	35	0	0
	point23	2										
Fort Street EB-2	point24	3	122	35	3	35	19	35	3	35	0	0
	point25	4										
Fort Street EB-3	point26	5	122	35	3	35	19	35	3	35	0	0
	point27	6										
Fort Street WB-3	point29	7	240	35	11	35	61	35	8	35	0	0
	point28	8										
Fort Street WB-2	point31	9	240	35	11	35	61	35	8	35	0	0
	point30	10										
Fort Street WB-1	point33	11	240	35	11	35	61	35	8	35	0	0
	point1224	1224	240	35	11	35	61	35	8	35	0	0
	point32	12										
NB I-75 & E. Service Drive to Bridge-B	point981	981	231	20	47	20	264	20	0	0	0	0
	point980	980	231	20	47	20	264	20	0	0	0	0
	point979	979	231	20	47	20	264	20	0	0	0	0
	point978	978	231	20	47	20	264	20	0	0	0	0
	point986	986	231	20	47	20	264	20	0	0	0	0
	point1111	1111										
NB I-75 & E. Service Drive to Bridge-a	point972	972	231	20	47	20	264	20	0	0	0	0
	point971	971	231	20	47	20	264	20	0	0	0	0
	point970	970	231	20	47	20	264	20	0	0	0	0
	point969	969	231	20	47	20	264	20	0	0	0	0

	point988	988	231	20	47	20	264	20	0	0	0	0
		0										
From Bridge to Truck Inspection Plaza 2	point1171	1171	0	0	71	20	398	20	0	0	0	0
	point1170	1170	0	0	71	20	398	20	0	0	0	0
	point1169	1169	0	0	71	20	398	20	0	0	0	0
	point1168	1168	0	0	71	20	398	20	0	0	0	0
	point1167	1167	0	0	71	20	398	20	0	0	0	0
	point1166	1166	0	0	71	20	398	20	0	0	0	0
	point1165	1165	0	0	71	20	398	20	0	0	0	0
	point1164	1164	0	0	71	20	398	20	0	0	0	0
	point1163	1163	0	0	71	20	398	20	0	0	0	0
	point1162	1162	0	0	71	20	398	20	0	0	0	0
	point1161	1161	0	0	71	20	398	20	0	0	0	0
	point1160	1160	0	0	71	20	398	20	0	0	0	0
	point1159	1159	0	0	71	20	398	20	0	0	0	0
	point1158	1158	0	0	71	20	398	20	0	0	0	0
	point1157	1157	0	0	71	20	398	20	0	0	0	0
	point1156	1156	0	0	71	20	398	20	0	0	0	0
	point1155	1155	0	0	71	20	398	20	0	0	0	0
	point1154	1154	0	0	71	20	398	20	0	0	0	0
	point1153	1153	0	0	71	20	398	20	0	0	0	0
	point1152	1152	0	0	71	20	398	20	0	0	0	0
	point1151	1151	0	0	71	20	398	20	0	0	0	0
	point1150	1150	0	0	71	20	398	20	0	0	0	0
	point1149	1149										
From Truck Inspection to Interstate -1	point1172	1172	0	0	71	20	398	20	0	0	0	0
	point1173	1173										
From Truck Inspection to Interstate -2	point1174	1174	0	0	71	20	398	20	0	0	0	0
	point1175	1175										
Customs to SB I-75	point1120	1120	341	20	7	20	0	0	0	0	0	0
	point956	956	341	20	7	20	0	0	0	0	0	0
	point957	957	341	20	7	20	0	0	0	0	0	0
	point958	958	341	20	7	20	0	0	0	0	0	0
	point959	959	341	20	7	20	0	0	0	0	0	0
	point941	941										
Bridge NB-2	point362	362	601	37	73	37	414	37	0	0	0	0

	point361	361	601	37	73	37	414	37	0	0	0	0
	point360	360	601	37	73	37	414	37	0	0	0	0
	point359	359	601	37	73	37	414	37	0	0	0	0
	point358	358	601	37	73	37	414	37	0	0	0	0
	point357	357	601	37	73	37	414	37	0	0	0	0
	point356	356	601	37	73	37	414	37	0	0	0	0
	point355	355	601	37	73	37	414	37	0	0	0	0
	point354	354	601	37	73	37	414	37	0	0	0	0
	point353	353	601	37	73	37	414	37	0	0	0	0
	point352	352	1203	20	37	20	0	0	0	0	0	0
	point1118	1118	1203	20	37	20	0	0	0	0	0	0
	point1117	1117	1203	20	37	20	0	0	0	0	0	0
	point1116	1116										
To Bridge from I-75, I-96 & Service Dr.-B	point1192	1192	313	20	36	20	199	20	0	0	0	0
	point1110	1110	313	20	36	20	199	20	0	0	0	0
	point1109	1109	313	20	36	20	199	20	0	0	0	0
	point1108	1108	313	20	36	20	199	20	0	0	0	0
	point1107	1107	313	20	36	20	199	20	0	0	0	0
	point1106	1106	313	20	36	20	199	20	0	0	0	0
	point1105	1105	313	20	36	20	199	20	0	0	0	0
	point1104	1104	313	20	36	20	199	20	0	0	0	0
	point1103	1103	313	20	36	20	199	20	0	0	0	0
	point1102	1102	313	20	36	20	199	20	0	0	0	0
	point1101	1101	313	20	36	20	199	20	0	0	0	0
	point1100	1100	313	20	36	20	199	20	0	0	0	0
	point1099	1099	313	20	36	20	199	20	0	0	0	0
	point1098	1098	313	20	36	20	199	20	0	0	0	0
	point1097	1097	626	20	72	20	398	20	0	0	0	0
	point1096	1096	626	20	72	20	398	20	0	0	0	0
	point1095	1095	626	20	72	20	398	20	0	0	0	0
	point1094	1094	626	20	72	20	398	20	0	0	0	0
	point1093	1093	626	20	72	20	398	20	0	0	0	0
	point1092	1092	626	20	72	20	398	20	0	0	0	0
	point1091	1091	626	20	72	20	398	20	0	0	0	0
	point1090	1090	626	20	72	20	398	20	0	0	0	0
	point1089	1089	626	20	72	20	398	20	0	0	0	0

	point1088	1088	626	20	72	20	398	20	0	0	0	0
	point1087	1087	626	20	72	20	398	20	0	0	0	0
	point1086	1086	626	20	72	20	398	20	0	0	0	0
	point1085	1085	626	20	72	20	398	20	0	0	0	0
	point1084	1084	626	20	72	20	398	20	0	0	0	0
	point1083	1083	626	20	72	20	398	20	0	0	0	0
	point1082	1082	626	20	72	20	398	20	0	0	0	0
	point1081	1081	626	20	72	20	398	20	0	0	0	0
	point1080	1080	626	20	72	20	398	20	0	0	0	0
	point1079	1079	626	20	72	20	398	20	0	0	0	0
	point1078	1078	626	20	72	20	398	20	0	0	0	0
	point1077	1077	626	20	72	20	398	20	0	0	0	0
	point1076	1076										
To Bridge from I-75, I-96 & Service Dr.-A	point1193	1193	313	20	36	20	199	20	0	0	0	0
	point625	625	313	20	36	20	199	20	0	0	0	0
	point624	624	313	20	36	20	199	20	0	0	0	0
	point623	623	313	20	36	20	199	20	0	0	0	0
	point622	622	313	20	36	20	199	20	0	0	0	0
	point621	621	313	20	36	20	199	20	0	0	0	0
	point620	620	313	20	36	20	199	20	0	0	0	0
	point619	619	313	20	36	20	199	20	0	0	0	0
	point618	618	313	20	36	20	199	20	0	0	0	0
	point617	617	313	20	36	20	199	20	0	0	0	0
	point616	616	313	20	36	20	199	20	0	0	0	0
	point615	615	313	20	36	20	199	20	0	0	0	0
	point614	614	313	20	36	20	199	20	0	0	0	0
	point613	613	313	20	36	20	199	20	0	0	0	0
	point612	612	626	20	72	20	398	20	0	0	0	0
	point610	610	626	20	72	20	398	20	0	0	0	0
	point609	609	626	20	72	20	398	20	0	0	0	0
	point608	608	626	20	72	20	398	20	0	0	0	0
	point607	607	626	20	72	20	398	20	0	0	0	0
	point606	606	626	20	72	20	398	20	0	0	0	0
	point605	605	626	20	72	20	398	20	0	0	0	0
	point604	604	626	20	72	20	398	20	0	0	0	0
	point603	603	626	20	72	20	398	20	0	0	0	0

	point602	602	626	20	72	20	398	20	0	0	0	0
	point601	601	626	20	72	20	398	20	0	0	0	0
	point600	600	626	20	72	20	398	20	0	0	0	0
	point599	599	626	20	72	20	398	20	0	0	0	0
	point598	598	626	20	72	20	398	20	0	0	0	0
	point597	597	626	20	72	20	398	20	0	0	0	0
	point596	596	626	20	72	20	398	20	0	0	0	0
	point595	595	626	20	72	20	398	20	0	0	0	0
	point594	594	626	20	72	20	398	20	0	0	0	0
	point593	593	626	20	72	20	398	20	0	0	0	0
	point592	592	626	20	72	20	398	20	0	0	0	0
	point591	591										
To Bridge from I-75, I-96 & Service Dr.-D	point1194	1194	313	20	36	20	199	20	0	0	0	0
	point531	531	313	20	36	20	199	20	0	0	0	0
	point530	530	313	20	36	20	199	20	0	0	0	0
	point529	529	313	20	36	20	199	20	0	0	0	0
	point528	528	313	20	36	20	199	20	0	0	0	0
	point527	527	313	20	36	20	199	20	0	0	0	0
	point526	526	313	20	36	20	199	20	0	0	0	0
	point525	525	313	20	36	20	199	20	0	0	0	0
	point524	524	313	20	36	20	199	20	0	0	0	0
	point523	523	313	20	36	20	199	20	0	0	0	0
	point522	522	313	20	36	20	199	20	0	0	0	0
	point521	521	313	20	36	20	199	20	0	0	0	0
	point520	520	313	20	36	20	199	20	0	0	0	0
	point519	519										
To Bridge from I-75, I-96 & Service Dr.-C	point1195	1195	313	20	36	20	199	20	0	0	0	0
	point546	546	313	20	36	20	199	20	0	0	0	0
	point545	545	313	20	36	20	199	20	0	0	0	0
	point544	544	313	20	36	20	199	20	0	0	0	0
	point543	543	313	20	36	20	199	20	0	0	0	0
	point542	542	313	20	36	20	199	20	0	0	0	0
	point541	541	313	20	36	20	199	20	0	0	0	0
	point540	540	313	20	36	20	199	20	0	0	0	0
	point539	539	313	20	36	20	199	20	0	0	0	0
	point538	538	313	20	36	20	199	20	0	0	0	0

	point537	537	313	20	36	20	199	20	0	0	0	0
	point536	536	313	20	36	20	199	20	0	0	0	0
	point535	535	313	20	36	20	199	20	0	0	0	0
	point534	534										
Bridge NB-1	point373	373	601	37	73	37	414	37	0	0	0	0
	point372	372	601	37	73	37	414	37	0	0	0	0
	point371	371	601	37	73	37	414	37	0	0	0	0
	point370	370	601	37	73	37	414	37	0	0	0	0
	point369	369	601	37	73	37	414	37	0	0	0	0
	point368	368	601	37	73	37	414	37	0	0	0	0
	point367	367	601	37	73	37	414	37	0	0	0	0
	point366	366	601	37	73	37	414	37	0	0	0	0
	point365	365	601	37	73	37	414	37	0	0	0	0
	point364	364	601	37	73	37	414	37	0	0	0	0
	point1148	1148										
SB I-75 & EB I-96 to Bridge-A	point1225	1225	395	20	24	20	133	20	0	0	0	0
	point533	533	395	20	24	20	133	20	0	0	0	0
	point532	532										
SB I-75 & EB I-96 to Bridge-B	point1226	1226	395	20	24	20	133	20	0	0	0	0
	point548	548	395	20	24	20	133	20	0	0	0	0
	point547	547										
From Bridge to Truck Inspection Plaza 1	point1227	1227	0	0	141	20	796	20	0	0	0	0
	point1147	1147	0	0	71	20	398	20	0	0	0	0
	point1146	1146	0	0	71	20	398	20	0	0	0	0
	point1145	1145	0	0	71	20	398	20	0	0	0	0
	point1144	1144	0	0	71	20	398	20	0	0	0	0
	point1143	1143	0	0	71	20	398	20	0	0	0	0
	point1142	1142	0	0	71	20	398	20	0	0	0	0
	point1141	1141	0	0	71	20	398	20	0	0	0	0
	point1140	1140	0	0	71	20	398	20	0	0	0	0
	point1139	1139	0	0	71	20	398	20	0	0	0	0
	point1138	1138	0	0	71	20	398	20	0	0	0	0
	point1137	1137	0	0	71	20	398	20	0	0	0	0
	point1136	1136	0	0	71	20	398	20	0	0	0	0
	point1135	1135	0	0	71	20	398	20	0	0	0	0
	point1134	1134	0	0	71	20	398	20	0	0	0	0

	point1133	1133	0	0	71	20	398	20	0	0	0	0
	point1132	1132	0	0	71	20	398	20	0	0	0	0
	point1131	1131	0	0	71	20	398	20	0	0	0	0
	point1130	1130	0	0	71	20	398	20	0	0	0	0
	point1129	1129	0	0	71	20	398	20	0	0	0	0
	point1128	1128	0	0	71	20	398	20	0	0	0	0
	point1127	1127	0	0	71	20	398	20	0	0	0	0
	point1126	1126										
Bridge SB-1	point1228	1228	626	37	72	37	398	37	0	0	0	0
	point590	590	626	37	72	37	398	37	0	0	0	0
	point333	333	626	37	72	37	398	37	0	0	0	0
	point334	334	626	37	72	37	398	37	0	0	0	0
	point335	335	616	37	69	37	391	37	0	0	0	0
	point336	336	626	37	72	37	398	37	0	0	0	0
	point337	337	626	37	72	37	398	37	0	0	0	0
	point338	338	626	37	72	37	398	37	0	0	0	0
	point339	339	626	37	72	37	398	37	0	0	0	0
	point340	340										
Bridge SB-2	point1229	1229	626	37	72	37	398	37	0	0	0	0
	point1075	1075	626	37	72	37	398	37	0	0	0	0
	point344	344	626	37	72	37	398	37	0	0	0	0
	point345	345	626	37	72	37	398	37	0	0	0	0
	point346	346	626	37	72	37	398	37	0	0	0	0
	point347	347	616	37	69	37	391	37	0	0	0	0
	point348	348	626	37	72	37	398	37	0	0	0	0
	point349	349	626	37	72	37	398	37	0	0	0	0
	point350	350	626	37	72	37	398	37	0	0	0	0
	point351	351										
Customs to NB I-75	point1176	1176	208	20	2	20	0	0	0	0	0	0
	point1124	1124	208	20	2	20	0	0	0	0	0	0
	point731	731	208	20	2	20	0	0	0	0	0	0
	point730	730	208	20	2	20	0	0	0	0	0	0
	point1213	1213	208	20	2	20	0	0	0	0	0	0
	point728	728	208	20	2	20	0	0	0	0	0	0
	point727	727	208	20	2	20	0	0	0	0	0	0
	point726	726	208	20	2	20	0	0	0	0	0	0

	point720	720										
Truck Inspection to SB I-75	point387	387	0	0	62	20	351	20	0	0	0	0
	point388	388	0	0	62	20	351	20	0	0	0	0
	point389	389	0	0	62	20	351	20	0	0	0	0
	point1197	1197	0	0	62	20	351	20	0	0	0	0
	point391	391	0	0	62	20	351	20	0	0	0	0
	point392	392	0	0	62	20	351	20	0	0	0	0
	point393	393	0	0	62	20	351	20	0	0	0	0
	point394	394	0	0	62	20	351	20	0	0	0	0
	point395	395	0	0	61	20	345	20	0	0	0	0
	point1198	1198	0	0	62	20	351	20	0	0	0	0
	point396	396	0	0	62	20	351	20	0	0	0	0
	point397	397	0	0	62	20	351	20	0	0	0	0
	point398	398	0	0	62	20	351	20	0	0	0	0
	point518	518	0	0	62	20	351	20	0	0	0	0
	point517	517	0	0	62	20	351	20	0	0	0	0
	point516	516	0	0	62	20	351	20	0	0	0	0
	point515	515	0	0	62	20	351	20	0	0	0	0
	point514	514	0	0	62	20	351	20	0	0	0	0
	point955	955										
Truck Inspection to WB I-96	point1181	1181	0	0	46	20	263	20	0	0	0	0
	point374	374	0	0	46	20	263	20	0	0	0	0
	point375	375	0	0	46	20	263	20	0	0	0	0
	point376	376	0	0	46	20	263	20	0	0	0	0
	point378	378	0	0	46	20	263	20	0	0	0	0
	point379	379	0	0	46	20	263	20	0	0	0	0
	point380	380	0	0	46	20	263	20	0	0	0	0
	point381	381	0	0	46	20	263	20	0	0	0	0
	point382	382	0	0	46	20	263	20	0	0	0	0
	point383	383	0	0	46	20	263	20	0	0	0	0
	point384	384	0	0	46	20	263	20	0	0	0	0
	point385	385	0	0	46	20	263	20	0	0	0	0
	point386	386	0	0	46	20	263	20	0	0	0	0
	point711	711	0	0	46	20	263	20	0	0	0	0
	point1201	1201	0	0	46	20	263	20	0	0	0	0
	point708	708	0	0	46	20	263	20	0	0	0	0

	point707	707	0	0	46	20	263	20	0	0	0	0
	point706	706	0	0	46	20	263	20	0	0	0	0
	point705	705	0	0	46	20	263	20	0	0	0	0
	point704	704	0	0	46	20	263	20	0	0	0	0
	point699	699										
Customs to WB I-96	point1178	1178	654	20	27	20	0	0	0	0	0	0
	point1122	1122	654	20	27	20	0	0	0	0	0	0
	point506	506	654	20	27	20	0	0	0	0	0	0
	point505	505	654	20	27	20	0	0	0	0	0	0
	point504	504	654	20	27	20	0	0	0	0	0	0
	point1212	1212	654	20	27	20	0	0	0	0	0	0
	point1209	1209	654	20	27	20	0	0	0	0	0	0
	point501	501	654	20	27	20	0	0	0	0	0	0
	point500	500	654	20	27	20	0	0	0	0	0	0
	point499	499										

American Consulting Engineers 17 April 2007
CC TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: Ambassador Bridge Enhancement
RUN: No-Build Conditions - Year 2030

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Business 1	9	1	13,470,767.0	299,315.0	574.00	4.92	0.00	71	10.0	5.0	Y
Business 2	10	1	13,471,258.0	299,315.0	574.00	4.92	0.00	71	10.0	5.0	Y
Riverside Park 2	11	1	13,471,590.0	298,898.7	571.00	4.92	0.00	66	10.0	5.0	Y
Riverside Park 1	12	1	13,471,038.0	298,535.7	571.00	4.92	0.00	66	10.0	5.0	Y
Riverside Park 3	14	1	13,471,874.0	299,639.7	571.00	4.92	0.00	66	10.0	5.0	Y
Business 3	15	1	13,471,325.0	299,907.4	576.00	4.92	0.00	71	10.0	5.0	Y
Riverside Park 4	16	1	13,472,038.0	299,881.2	574.00	4.92	0.00	66	10.0	5.0	Y
Business 4	17	1	13,471,381.0	300,162.0	581.00	4.92	0.00	71	10.0	5.0	Y
Business 6	19	1	13,472,300.0	300,518.3	574.00	4.92	0.00	71	10.0	5.0	Y
Business 5	20	1	13,472,054.0	300,634.5	580.00	4.92	0.00	71	10.0	5.0	Y
Business 7	21	1	13,472,311.0	300,753.9	577.00	4.92	0.00	71	10.0	5.0	Y
Business 8	22	1	13,472,595.0	300,747.5	574.00	4.92	0.00	71	10.0	5.0	Y
Business 9	23	1	13,472,782.0	301,073.0	578.00	4.92	0.00	71	10.0	5.0	Y
Business 10	24	1	13,473,274.0	301,335.6	580.00	4.92	0.00	71	10.0	5.0	Y
St. Anne's Church	26	1	13,472,287.0	301,727.7	586.00	4.92	0.00	66	10.0	5.0	Y
Residence 1	27	1	13,472,023.0	301,995.0	591.00	4.92	0.00	66	10.0	5.0	Y
Residence 2	28	1	13,472,137.0	302,048.6	591.00	4.92	0.00	66	10.0	5.0	Y
Residence 3	29	1	13,472,220.0	302,088.4	591.00	4.92	0.00	66	10.0	5.0	Y
Bagley Center	30	1	13,472,442.0	302,171.1	594.00	4.92	0.00	71	10.0	5.0	Y
Residence 4	31	1	13,472,145.0	302,261.1	589.00	4.92	0.00	66	10.0	5.0	Y
Residence 5	32	1	13,472,023.0	302,224.7	589.00	4.92	0.00	66	10.0	5.0	Y
Residence 6	33	1	13,471,946.0	302,186.7	594.00	4.92	0.00	66	10.0	5.0	Y

Residence 7	34	1	13,471,945.0	302,260.2	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 8	35	1	13,472,023.0	302,262.8	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 9	36	1	13,472,089.0	302,338.1	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 10	37	1	13,472,149.0	302,436.3	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 11	39	1	13,472,103.0	302,516.8	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 12	40	1	13,471,993.0	302,419.9	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 13	41	1	13,471,886.0	302,387.9	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 14	42	1	13,471,821.0	302,443.2	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 15	43	1	13,471,932.0	302,494.3	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 16	44	1	13,471,619.0	302,623.7	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 17	45	1	13,471,914.0	302,650.5	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 18	46	1	13,472,022.0	302,688.6	594.00	4.92	0.00	66	10.0	5.0	Y
Multi-family Complex	51	12	13,472,642.0	301,720.9	587.00	4.92	0.00	66	10.0	5.0	Y

American Consulting Engineers 17 April 2007
CC TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: Ambassador Bridge Enhancement
RUN: No-Build Conditions - Year 2030

Barrier Name	Type	Height Min	Height Max	If Wall $ per Unit Area	If Berm $ per Unit Vol.	Top Width	Run:Rise	Add'tnl $ per Unit Length	Points Name	No.	Coordinates (bottom) X	Y	Z	Height at Point	Segment Seg Ht Incre-ment	Perturbs #Up	Perturbs #Dn	On Struct?	Important Reflec-tions?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Existing Wall 1	W	0.00	99.99	0.00				0.00	point26	26	13,471,269.0	302,867.0	589.00	12.00	0.00	0	0		
									point27	27	13,470,963.0	302,732.3	587.00	12.00					
Existing Wall 2	W	0.00	99.99	0.00				0.00	point28	28	13,471,316.0	302,886.3	589.00	10.00	0.00	0	0		
									point29	29	13,471,269.0	302,867.0	589.00	10.00					
Existing Wall 3	W	0.00	99.99	0.00				0.00	point30	30	13,471,316.0	302,886.3	589.00	12.00	0.00	0	0		
									point31	31	13,471,406.0	302,925.8	591.00	12.00	0.00	0	0		
									point32	32	13,471,538.0	302,625.6	594.00	12.00					
Existing Wall 4	W	0.00	99.99	0.00				0.00	point33	33	13,471,907.0	301,763.0	591.00	24.00	0.00	0	0		
									point34	34	13,471,538.0	302,625.6	594.00	24.00					
Existing Wall 5	W	0.00	99.99	0.00				0.00	point35	35	13,472,050.0	301,439.4	584.00	20.00	0.00	0	0		
									point36	36	13,471,907.0	301,763.0	591.00	20.00					
Existing Wall 6	W	0.00	99.99	0.00				0.00	point37	37	13,472,050.0	301,439.4	584.00	14.00	0.00	0	0		
									point38	38	13,472,094.0	301,426.8	584.00	14.00	0.00	0	0		
									point39	39	13,472,138.0	301,447.2	584.00	14.00	0.00	0	0		
									point40	40	13,472,155.0	301,412.3	584.00	14.00					
Existing Wall 7	W	0.00	99.99	0.00				0.00	point43	43	13,472,155.0	301,412.3	584.00	12.00	0.00	0	0		
									point44	44	13,472,188.0	301,337.3	584.00	12.00	0.00	0	0		
									point45	45	13,472,237.0	301,359.3	584.00	12.00					
Existing Wall 8	W	0.00	99.99	0.00				0.00	point46	46	13,472,237.0	301,359.3	584.00	8.00	0.00	0	0		
									point47	47	13,472,245.0	301,362.1	584.00	8.00	0.00	0	0		
									point48	48	13,472,251.0	301,346.2	584.00	8.00					
Existing Wall 9	W	0.00	99.99	0.00				0.00	point49	49	13,472,298.0	301,241.2	584.00	7.00	0.00	0	0		
									point50	50	13,472,251.0	301,346.2	584.00	7.00					
Existing Wall 10	W	0.00	99.99	0.00				0.00	point51	51	13,472,309.0	301,215.8	584.00	10.00	0.00	0	0		
									point52	52	13,472,298.0	301,241.2	584.00	10.00					
Existing Wall 11	W	0.00	99.99	0.00				0.00	point53	53	13,472,326.0	301,174.6	583.00	7.00	0.00	0	0		
									point54	54	13,472,309.0	301,215.8	584.00	7.00					
Existing Wall 12	W	0.00	99.99	0.00				0.00	point55	55	13,472,326.0	301,174.6	583.00	6.00	0.00	0	0		
									point56	56	13,472,403.0	300,998.1	581.00	6.00	0.00	0	0		
									point57	57	13,472,394.0	300,974.0	581.00	6.00	0.00	0	0		
									point58	58	13,472,321.0	300,930.8	581.00	6.00					

American Consulting Engineers — **18 August 2008**

CC — **TNM 2.5**

INPUT: GROUND ZONES

PROJECT/CONTRACT: **Ambassador Bridge Enhancement**

RUN: **No-Build Conditions - Year 2030**

Ground Zone			Points		
Name	Type	Flow Resistivity	No.	Coordinates X	Y
		cgs rayls		ft	ft
Duty Free Store	Pavement	20000	13	13,470,999.0	300,964.1
			14	13,471,059.0	301,017.2
			15	13,471,204.0	301,058.9
			16	13,471,378.0	301,024.8
			17	13,471,427.0	300,990.7
			18	13,471,522.0	300,767.0
			19	13,471,518.0	300,679.8
			20	13,471,480.0	300,607.8
			21	13,471,431.0	300,581.2
			22	13,470,950.0	300,865.6
Gateway Plaza	Pavement	20000	36	13,471,386.0	301,310.6
			37	13,471,331.0	301,441.7
			23	13,471,193.0	301,724.9
			24	13,470,980.0	302,245.7
			25	13,471,201.0	302,344.9
			28	13,471,075.0	302,558.5
			29	13,470,972.0	302,729.4
			30	13,471,401.0	302,918.1
			31	13,471,924.0	301,707.9
			38	13,472,042.0	301,436.2
			40	13,472,084.0	301,419.7
			41	13,472,139.0	301,436.1
			42	13,472,183.0	301,328.7

			43	13,472,237.0	301,352.1
			39	13,472,392.0	301,001.9
			32	13,472,141.0	300,866.1
			33	13,471,771.0	300,650.2
			34	13,471,689.0	300,762.4
			35	13,471,568.0	300,984.7

American Consulting Engineers
CC

17 April 2007
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Ambassador Bridge Enhancement
RUN: No-Build Conditions - Year 2030
BARRIER DESIGN: INPUT HEIGHTS

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Business 1	9	1	0.0	59.8	71	59.8	10	----	59.8	0.0	5	-5.0
Business 2	10	1	0.0	61.1	71	61.1	10	----	61.1	0.0	5	-5.0
Riverside Park 2	11	1	0.0	60.0	66	60.0	10	----	60.0	0.0	5	-5.0
Riverside Park 1	12	1	0.0	55.9	66	55.9	10	----	55.9	0.0	5	-5.0
Riverside Park 3	14	1	0.0	66.4	66	66.4	10	Snd Lvl	66.4	0.0	5	-5.0
Business 3	15	1	0.0	66.5	71	66.5	10	----	66.5	0.0	5	-5.0
Riverside Park 4	16	1	0.0	69.9	66	69.9	10	Snd Lvl	69.9	0.0	5	-5.0
Business 4	17	1	0.0	70.6	71	70.6	10	----	70.6	0.0	5	-5.0
Business 6	19	1	0.0	71.0	71	71.0	10	Snd Lvl	71.0	0.0	5	-5.0
Business 5	20	1	0.0	76.2	71	76.2	10	Snd Lvl	76.2	0.0	5	-5.0
Business 7	21	1	0.0	74.5	71	74.5	10	Snd Lvl	74.5	0.0	5	-5.0
Business 8	22	1	0.0	67.2	71	67.2	10	----	67.2	0.0	5	-5.0
Business 9	23	1	0.0	64.3	71	64.3	10	----	64.3	0.0	5	-5.0
Business 10	24	1	0.0	59.1	71	59.1	10	----	59.1	0.0	5	-5.0
St. Anne's Church	26	1	0.0	62.8	66	62.8	10	----	62.8	0.0	5	-5.0
Residence 1	27	1	0.0	60.7	66	60.7	10	----	60.7	0.0	5	-5.0
Residence 2	28	1	0.0	60.8	66	60.8	10	----	60.8	0.0	5	-5.0
Residence 3	29	1	0.0	60.7	66	60.7	10	----	60.7	0.0	5	-5.0
Bagley Center	30	1	0.0	59.5	71	59.5	10	----	59.5	0.0	5	-5.0
Residence 4	31	1	0.0	59.3	66	59.3	10	----	59.3	0.0	5	-5.0
Residence 5	32	1	0.0	59.3	66	59.3	10	----	59.3	0.0	5	-5.0
Residence 6	33	1	0.0	59.8	66	59.8	10	----	59.8	0.0	5	-5.0
Residence 7	34	1	0.0	60.1	66	60.1	10	----	60.1	0.0	5	-5.0

Residence 8	35	1	0.0	59.7	66	59.7	10	----	59.7	0.0	5	-5.0
Residence 9	36	1	0.0	59.3	66	59.3	10	----	59.3	0.0	5	-5.0
Residence 10	37	1	0.0	58.8	66	58.8	10	----	58.8	0.0	5	-5.0
Residence 11	39	1	0.0	58.5	66	58.5	10	----	58.5	0.0	5	-5.0
Residence 12	40	1	0.0	59.0	66	59.0	10	----	59.0	0.0	5	-5.0
Residence 13	41	1	0.0	59.0	66	59.0	10	----	59.0	0.0	5	-5.0
Residence 14	42	1	0.0	58.6	66	58.6	10	----	58.6	0.0	5	-5.0
Residence 15	43	1	0.0	58.6	66	58.6	10	----	58.6	0.0	5	-5.0
Residence 16	44	1	0.0	58.5	66	58.5	10	----	58.5	0.0	5	-5.0
Residence 17	45	1	0.0	58.1	66	58.1	10	----	58.1	0.0	5	-5.0
Residence 18	46	1	0.0	58.1	66	58.1	10	----	58.1	0.0	5	-5.0
Multi-family Complex	51	12	0.0	61.5	66	61.5	10	----	61.5	0.0	5	-5.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	46	0.0	0.0	0.0
All Impacted	5	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

American Consulting Engineers 18 August 2008
CC TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: Ambassador Bridge Enhancement
RUN: Build Conditions - Year 2030

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Fort Street EB-1	12.0	point22	1	13,470,431.0	299,694.8	582.00				Average	
		point23	2	13,472,476.0	300,927.1	581.00					
Fort Street EB-2	12.0	point24	3	13,470,425.0	299,705.1	582.00				Average	
		point25	4	13,472,470.0	300,937.3	581.00					
Fort Street EB-3	12.0	point26	5	13,470,419.0	299,715.4	582.00				Average	
		point27	6	13,472,464.0	300,947.6	581.00					
Fort Street WB-3	12.0	point29	7	13,472,448.0	300,965.0	581.00				Average	
		point28	8	13,470,403.0	299,732.8	582.00					
Fort Street WB-2	12.0	point31	9	13,472,442.0	300,975.3	581.00				Average	
		point30	10	13,470,397.0	299,743.1	582.00					
Fort Street WB-1	12.0	point33	11	13,472,436.0	300,985.6	581.00				Average	
		point1224	1224	13,472,295.0	300,900.4	581.50				Average	
		point32	12	13,470,391.0	299,753.4	582.00					
NB I-75 & E. Service Drive to Bridge-B	20.0	point981	981	13,470,868.0	301,372.1	599.00				Average	Y
		point980	980	13,470,886.0	301,396.4	600.00				Average	Y
		point979	979	13,470,904.0	301,412.3	599.00				Average	Y
		point978	978	13,470,956.0	301,436.4	597.00				Average	Y
		point986	986	13,470,980.0	301,438.8	595.00				Average	Y
		point1111	1111	13,471,019.0	301,431.9	593.00					
NB I-75 & E. Service Drive to Bridge-a	20.0	point972	972	13,470,885.0	301,360.0	599.00				Average	Y
		point971	971	13,470,901.0	301,381.9	600.00				Average	Y
		point970	970	13,470,917.0	301,395.8	599.00				Average	Y
		point969	969	13,470,966.0	301,418.3	597.00				Average	Y
		point988	988	13,470,989.0	301,420.5	595.00				Average	Y
			0	13,471,030.0	301,414.0	593.00					

From Truck Inspection to Interstate -1	12.0	point1172	1172	13,472,061.0	301,354.2	584.00	Stop	0.00	100	Average	
		point1173	1173	13,472,253.0	300,896.7	581.00					
From Truck Inspection to Interstate -2	12.0	point1174	1174	13,472,023.0	301,338.1	584.00	Stop	0.00	100	Average	
		point1175	1175	13,472,191.0	300,881.1	581.00					
Customs to SB I-75	32.0	point1120	1120	13,471,251.0	301,907.5	600.00	Toll	0.00	100	Average	
		point956	956	13,471,134.0	302,143.3	598.00				Average	
		point957	957	13,471,042.0	302,321.8	607.00				Average	
		point958	958	13,471,020.0	302,360.2	609.00				Average	
		point959	959	13,470,981.0	302,396.1	611.00				Average	Y
		point941	941	13,470,783.0	302,469.6	620.00					
To Bridge from I-75, I-96 & Service Dr.-B	19.0	point1192	1192	13,471,019.0	301,431.9	593.00	Onramp	0.00	100	Average	Y
		point1110	1110	13,471,105.0	301,432.2	592.00				Average	Y
		point1109	1109	13,471,189.0	301,430.2	591.00				Average	Y
		point1108	1108	13,471,242.0	301,412.8	590.00				Average	Y
		point1107	1107	13,471,272.0	301,370.4	589.00				Average	Y
		point1106	1106	13,471,332.0	301,261.0	588.00				Average	Y
		point1105	1105	13,471,406.0	301,123.5	588.00				Average	Y
		point1104	1104	13,471,494.0	300,949.2	590.00				Average	Y
		point1103	1103	13,471,580.0	300,749.0	591.00				Average	Y
		point1102	1102	13,471,564.0	300,652.5	592.00				Average	Y
		point1101	1101	13,471,521.0	300,575.2	593.00				Average	Y
		point1100	1100	13,471,394.0	300,482.9	595.00				Average	Y
		point1099	1099	13,471,212.0	300,377.5	597.00				Average	Y
		point1098	1098	13,471,028.0	300,273.7	599.00				Average	Y
		point1097	1097	13,470,947.0	300,254.4	600.00				Average	Y
		point1096	1096	13,470,877.0	300,276.5	601.00				Average	Y
		point1095	1095	13,470,845.0	300,297.6	602.00				Average	Y
		point1094	1094	13,470,810.0	300,362.5	603.00				Average	Y
		point1093	1093	13,470,788.0	300,421.5	604.00				Average	Y
		point1092	1092	13,470,809.0	300,528.5	605.00				Average	Y
		point1091	1091	13,470,838.0	300,622.6	606.00				Average	Y
		point1090	1090	13,470,873.0	300,736.5	608.00				Average	Y
		point1089	1089	13,470,904.0	300,835.5	610.00				Average	Y
		point1088	1088	13,470,937.0	300,943.2	612.00				Average	Y
		point1087	1087	13,470,959.0	300,972.6	613.00				Average	Y
		point1086	1086	13,470,989.0	301,012.3	614.00				Average	Y
		point1085	1085	13,471,039.0	301,045.4	616.00				Average	Y
		point1084	1084	13,471,077.0	301,057.5	617.00				Average	Y
		point1083	1083	13,471,116.0	301,069.5	618.00				Average	Y

		point1082	1082	13,471,192.0	301,093.4	621.00				Average	Y
		point1081	1081	13,471,276.0	301,083.5	624.00				Average	Y
		point1080	1080	13,471,336.0	301,076.5	626.00				Average	Y
		point1079	1079	13,471,392.0	301,057.3	629.00				Average	Y
		point1078	1078	13,471,543.0	300,989.9	636.00				Average	Y
		point1077	1077	13,471,573.0	300,955.1	640.00					
To Bridge from I-75, I-96 & Service Dr.-A	20.0	point1193	1193	13,471,030.0	301,414.0	593.00	Onramp	0.00	100	Average	Y
		point625	625	13,471,104.0	301,413.9	592.00				Average	Y
		point624	624	13,471,187.0	301,412.5	591.00				Average	Y
		point623	623	13,471,230.0	301,395.6	590.00				Average	Y
		point622	622	13,471,258.0	301,361.2	589.00				Average	Y
		point621	621	13,471,317.0	301,250.3	588.00				Average	Y
		point620	620	13,471,386.0	301,118.6	588.00				Average	Y
		point619	619	13,471,473.0	300,937.6	590.00				Average	Y
		point618	618	13,471,552.0	300,746.7	591.00				Average	Y
		point617	617	13,471,536.0	300,659.0	592.00				Average	Y
		point616	616	13,471,500.0	300,593.7	593.00				Average	Y
		point615	615	13,471,379.0	300,507.5	595.00				Average	Y
		point614	614	13,471,202.0	300,397.2	597.00				Average	Y
		point613	613	13,471,022.0	300,298.8	599.00				Average	Y
		point612	612	13,470,943.0	300,280.2	600.00				Average	Y
		point610	610	13,470,866.0	300,313.1	602.00				Average	Y
		point609	609	13,470,832.0	300,376.3	603.00				Average	Y
		point608	608	13,470,814.0	300,426.5	604.00				Average	Y
		point607	607	13,470,832.0	300,532.9	605.00				Average	Y
		point606	606	13,470,860.0	300,620.0	606.00				Average	Y
		point605	605	13,470,896.0	300,733.0	608.00				Average	Y
		point604	604	13,470,928.0	300,832.0	610.00				Average	Y
		point603	603	13,470,961.0	300,935.8	612.00				Average	Y
		point602	602	13,470,977.0	300,961.3	613.00				Average	Y
		point601	601	13,471,007.0	300,995.1	614.00				Average	Y
		point600	600	13,471,048.0	301,024.3	616.00				Average	Y
		point599	599	13,471,085.0	301,039.8	617.00				Average	Y
		point598	598	13,471,121.0	301,049.7	618.00				Average	Y
		point597	597	13,471,193.0	301,069.7	621.00				Average	Y
		point596	596	13,471,276.0	301,065.3	624.00				Average	Y
		point595	595	13,471,336.0	301,056.7	626.00				Average	Y
		point594	594	13,471,381.0	301,038.4	629.00				Average	Y
		point593	593	13,471,522.0	300,982.3	636.00				Average	Y

		point592	592	13,471,561.0	300,940.8	640.00					
To Bridge from I-75, I-96 & Service Dr.-D	20.0	point1194	1194	13,471,027.0	301,471.6	593.00	Onramp	0.00	100	Average	Y
		point531	531	13,471,093.0	301,468.1	592.00				Average	Y
		point530	530	13,471,197.0	301,468.8	591.00				Average	Y
		point529	529	13,471,267.0	301,442.8	590.00				Average	Y
		point528	528	13,471,363.0	301,279.9	588.00				Average	Y
		point527	527	13,471,443.0	301,136.8	588.00				Average	Y
		point526	526	13,471,501.0	301,021.6	589.00				Average	Y
		point525	525	13,471,542.0	300,967.6	590.00				Average	Y
		point524	524	13,471,629.0	300,756.9	591.00				Average	Y
		point523	523	13,471,612.0	300,639.4	592.00				Average	Y
		point522	522	13,471,569.0	300,543.5	593.00				Average	Y
		point521	521	13,471,231.0	300,333.0	597.00				Average	Y
		point520	520	13,471,040.0	300,223.8	599.00				Average	Y
		point519	519	13,470,953.0	300,213.3	600.00					
SB I-75 & EB I-96 to Bridge-A	20.0	point1225	1225	13,470,790.0	301,526.8	604.00				Average	Y
		point533	533	13,470,987.0	301,479.6	595.00				Average	Y
		point532	532	13,471,027.0	301,471.6	593.00					
SB I-75 & EB I-96 to Bridge-B	20.0	point1226	1226	13,470,782.0	301,507.7	604.00				Average	Y
		point548	548	13,470,983.0	301,466.2	595.00				Average	Y
		point547	547	13,471,023.0	301,452.4	593.00					
Customs to NB I-75	32.0	point1176	1176	13,471,306.0	301,930.6	600.00	Toll	0.00	100	Average	
		point1124	1124	13,471,186.0	302,176.3	598.00				Average	
		point731	731	13,471,087.0	302,365.2	598.00				Average	Y
		point730	730	13,471,048.0	302,418.2	600.00				Average	Y
		point1213	1213	13,471,000.0	302,452.8	602.00				Average	Y
		point728	728	13,470,863.0	302,513.4	598.00				Average	Y
		point727	727	13,470,807.0	302,538.8	594.00				Average	Y
		point726	726	13,470,769.0	302,587.5	590.00				Average	Y
		point720	720	13,470,595.0	302,923.8	576.00					
Truck Inspection to SB I-75	20.0	point387	387	13,472,191.0	300,880.9	581.00	Stop	0.00	100	Average	
		point388	388	13,471,793.0	300,644.8	584.00				Average	
		point389	389	13,471,142.0	300,258.8	588.00				Average	
		point1197	1197	13,470,903.0	300,114.6	592.00				Average	
		point391	391	13,470,852.0	300,111.1	593.00				Average	
		point392	392	13,470,745.0	300,146.4	596.00				Average	
		point393	393	13,470,686.0	300,188.7	598.00				Average	
		point394	394	13,470,660.0	300,272.3	601.00				Average	Y
		point395	395	13,470,658.0	300,337.4	603.00				Average	Y

		point1198	1198	13,470,656.0	300,337.4	603.00				Average	Y
		point396	396	13,470,693.0	300,438.7	607.00				Average	Y
		point397	397	13,470,785.0	300,692.7	615.00				Average	Y
		point398	398	13,470,935.0	301,337.0	624.00				Average	Y
		point518	518	13,470,965.0	301,606.1	626.00				Average	Y
		point517	517	13,470,969.0	301,935.5	611.00				Average	Y
		point516	516	13,470,947.0	302,238.1	608.00				Average	Y
		point515	515	13,470,925.0	302,312.2	610.00				Average	Y
		point514	514	13,470,873.0	302,394.4	613.00				Average	Y
		point955	955	13,470,779.0	302,451.3	620.00					
Truck Inspection to WB I-96	20.0	point1181	1181	13,472,253.0	300,896.7	581.00	Stop	0.00	100	Average	
		point374	374	13,472,198.0	300,862.0	581.00				Average	
		point375	375	13,471,800.0	300,625.9	584.00				Average	
		point376	376	13,471,149.0	300,239.9	588.00				Average	
		point378	378	13,470,908.0	300,094.1	592.00				Average	
		point379	379	13,470,845.0	300,090.6	593.00				Average	
		point380	380	13,470,730.0	300,131.5	596.00				Average	
		point381	381	13,470,667.0	300,179.2	598.00				Average	
		point382	382	13,470,639.0	300,268.2	601.00				Average	Y
		point383	383	13,470,637.0	300,337.2	603.00				Average	Y
		point384	384	13,470,673.0	300,435.9	607.00				Average	Y
		point385	385	13,470,765.0	300,689.2	615.00				Average	Y
		point386	386	13,470,914.0	301,332.8	624.00				Average	Y
		point711	711	13,470,944.0	301,612.0	626.00				Average	Y
		point1201	1201	13,470,946.0	301,759.6	624.00				Average	Y
		point708	708	13,470,913.0	301,906.3	617.00				Average	Y
		point707	707	13,470,865.0	302,016.3	613.00				Average	Y
		point706	706	13,470,711.0	302,264.8	598.00				Average	Y
		point705	705	13,470,671.0	302,346.3	591.00				Average	
		point704	704	13,470,538.0	302,760.0	589.00				Average	
		point699	699	13,470,479.0	302,891.8	587.00					
Customs to WB I-96	32.0	point1178	1178	13,471,278.0	301,917.9	600.00	Toll	0.00	100	Average	
		point1122	1122	13,471,158.0	302,164.6	598.00				Average	
		point506	506	13,471,061.0	302,349.3	598.00				Average	Y
		point505	505	13,471,025.0	302,398.7	599.00				Average	Y
		point504	504	13,470,997.0	302,419.6	600.00				Average	Y
		point1212	1212	13,470,953.0	302,440.8	601.00				Average	Y
		point1209	1209	13,470,764.0	302,515.9	603.00				Average	Y
		point501	501	13,470,701.0	302,549.8	598.00				Average	Y

		point500	500	13,470,648.0	302,604.4	594.00				Average	Y
		point499	499	13,470,506.0	302,897.5	590.00					
From Bridge to Customs 2	12.0	point1294	1294	13,471,392.0	301,352.2	620.00				Average	
		point1292	1292	13,471,393.0	301,693.0	610.00				Average	
		point1293	1293	13,471,278.0	301,917.9	600.00					
To Bridge from I-75, I-96 & Service Dr.-C	12.0	point1195	1195	13,471,023.0	301,452.4	593.00	Onramp	0.00	100	Average	Y
		point546	546	13,471,094.0	301,450.8	592.00				Average	Y
		point545	545	13,471,192.0	301,454.1	591.00				Average	Y
		point544	544	13,471,254.0	301,430.8	590.00				Average	Y
		point543	543	13,471,347.0	301,271.3	588.00				Average	Y
		point542	542	13,471,426.0	301,129.8	588.00				Average	Y
		point541	541	13,471,484.0	301,013.2	589.00				Average	Y
		point540	540	13,471,518.0	300,960.9	590.00				Average	Y
		point539	539	13,471,604.0	300,753.9	591.00				Average	Y
		point538	538	13,471,587.0	300,645.1	592.00				Average	Y
		point537	537	13,471,548.0	300,555.2	593.00				Average	Y
		point536	536	13,471,220.0	300,353.5	597.00				Average	Y
		point535	535	13,471,033.0	300,248.4	599.00				Average	Y
		point1266	1266	13,470,953.0	300,233.9	600.00				Average	Y
		point1267	1267	13,470,871.0	300,256.1	601.00				Average	Y
		point1268	1268	13,470,830.0	300,284.6	602.00				Average	Y
		point1269	1269	13,470,791.0	300,354.9	603.00				Average	Y
		point1270	1270	13,470,769.0	300,414.8	604.00				Average	Y
		v	1271	13,470,789.0	300,529.9	605.00				Average	Y
		point1272	1272	13,470,818.0	300,625.9	606.00				Average	Y
		point1273	1273	13,470,817.0	300,624.4	606.00				Average	Y
		point1274	1274	13,470,853.0	300,740.4	608.00				Average	Y
		point1275	1275	13,470,882.0	300,840.2	610.00				Average	Y
		point1276	1276	13,470,915.0	300,947.7	612.00				Average	Y
		point1277	1277	13,470,941.0	300,981.9	613.00				Average	Y
		point1278	1278	13,470,973.0	301,021.9	614.00				Average	Y
		point1279	1279	13,470,972.0	301,020.5	614.00				Average	Y
		point1280	1280	13,471,027.0	301,058.6	616.00				Average	Y
		point1281	1281	13,471,184.0	301,108.0	621.00				Average	Y
		point1282	1282	13,471,334.0	301,092.8	626.00				Average	Y
		point1283	1283	13,471,393.0	301,073.8	629.00				Average	Y
		point1284	1284	13,471,543.0	301,009.1	636.00				Average	Y
		point1285	1285	13,471,586.0	300,963.9	640.00					
Bridge SB-1	20.0	point1299	1299	13,471,561.0	300,940.8	640.00				Average	Y

		point1241	1241	13,471,688.0	300,663.7	658.00				Average	Y
		point1262	1262	13,471,808.0	300,422.3	670.00				Average	Y
		point1263	1263	13,471,843.0	300,349.5	671.00				Average	Y
		point1264	1264	13,471,925.0	300,182.1	678.00				Average	Y
		point1265	1265	13,472,300.0	299,427.7	728.00				Average	Y
		point1240	1240	13,472,745.0	298,545.1	768.00					
Bridge SB-2	12.0	point1300	1300	13,471,573.0	300,955.1	640.00				Average	Y
		point1239	1239	13,471,704.0	300,668.0	658.00				Average	Y
		point1258	1258	13,471,826.0	300,424.4	670.00				Average	Y
		point1259	1259	13,471,857.0	300,360.6	671.00				Average	Y
		point1260	1260	13,471,940.0	300,191.5	678.00				Average	Y
		point1261	1261	13,472,316.0	299,431.5	728.00				Average	Y
		point1238	1238	13,472,763.0	298,546.7	768.00					
Bridge SB-3	19.0	point1286	1286	13,471,586.0	300,963.9	640.00				Average	Y
		point1237	1237	13,471,717.0	300,676.0	658.00				Average	Y
		point1254	1254	13,471,841.0	300,429.4	670.00				Average	Y
		point1255	1255	13,471,874.0	300,363.1	671.00				Average	Y
		point1256	1256	13,471,960.0	300,188.5	678.00				Average	Y
		point1257	1257	13,472,331.0	299,438.5	728.00				Average	Y
		point1236	1236	13,472,776.0	298,554.8	768.00					
Bridge NB-2	12.0	point1232	1232	13,472,803.0	298,578.7	768.00				Average	Y
		point1246	1246	13,472,362.0	299,462.2	728.00				Average	Y
		point1247	1247	13,471,991.0	300,207.9	678.00				Average	Y
		point1248	1248	13,471,902.0	300,384.2	671.00				Average	Y
		point1249	1249	13,471,871.0	300,445.6	670.00				Average	Y
		point1290	1290	13,471,747.0	300,693.9	658.00				Average	Y
		point1297	1297	13,471,513.0	301,194.9	640.00				Average	Y
		point1171	1171	13,471,442.0	301,356.5	630.00					
Bridge NB-1	20.0	point1230	1230	13,472,816.0	298,589.4	768.00				Average	Y
		point1242	1242	13,472,379.0	299,467.1	728.00				Average	Y
		point1243	1243	13,472,009.0	300,212.1	678.00				Average	Y
		point1244	1244	13,471,915.0	300,395.7	671.00				Average	Y
		point1245	1245	13,471,885.0	300,453.8	670.00				Average	Y
		point1289	1289	13,471,764.0	300,699.9	658.00				Average	Y
		point1227	1227	13,471,528.0	301,198.3	640.00				Average	Y
		point1147	1147	13,471,461.0	301,354.1	630.00					
From Bridge to Truck Inspection Plaza 1	12.0	point1301	1301	13,471,442.0	301,356.5	630.00				Average	
		point1170	1170	13,471,446.0	301,505.5	620.00				Average	
		point1169	1169	13,471,464.0	301,600.6	618.00				Average	

		point1168	1168	13,471,473.0	301,671.0	615.00				Average	
		point1167	1167	13,471,481.0	301,724.3	613.00				Average	
		point1166	1166	13,471,471.0	301,767.1	610.00				Average	
		point1165	1165	13,471,454.0	301,827.4	608.00				Average	
		point1164	1164	13,471,334.0	302,094.3	602.00				Average	
		point1163	1163	13,471,236.0	302,299.5	597.00				Average	
		point1162	1162	13,471,209.0	302,378.2	594.00				Average	
		point1161	1161	13,471,204.0	302,452.2	591.00				Average	
		point1160	1160	13,471,203.0	302,509.4	591.00				Average	
		point1159	1159	13,471,224.0	302,570.2	591.00				Average	
		point1158	1158	13,471,254.0	302,605.4	592.00				Average	
		point1157	1157	13,471,315.0	302,645.2	592.00				Average	
		point1156	1156	13,471,389.0	302,656.8	593.00				Average	
		point1155	1155	13,471,446.0	302,650.1	593.00				Average	
		point1154	1154	13,471,508.0	302,612.6	594.00				Average	
		point1153	1153	13,471,560.0	302,518.8	594.00				Average	
		point1152	1152	13,471,681.0	302,251.2	592.00				Average	
		point1151	1151	13,471,784.0	302,008.5	591.00				Average	
		point1150	1150	13,471,909.0	301,721.4	590.00				Average	
		point1149	1149	13,472,061.0	301,354.2	584.00					
From Bridge to Truck Inspection Plaza 2	20.0	point1302	1302	13,471,461.0	301,354.1	630.00				Average	
		point1146	1146	13,471,465.0	301,496.7	620.00				Average	
		point1145	1145	13,471,489.0	301,635.7	617.00				Average	
		point1144	1144	13,471,500.0	301,685.8	615.00				Average	
		point1143	1143	13,471,502.0	301,728.9	613.00				Average	
		point1142	1142	13,471,496.0	301,772.5	610.00				Average	
		point1141	1141	13,471,470.0	301,844.0	608.00				Average	
		point1140	1140	13,471,385.0	302,029.3	603.00				Average	
		point1139	1139	13,471,291.0	302,236.9	598.00				Average	
		point1138	1138	13,471,239.0	302,360.4	595.00				Average	
		point1137	1137	13,471,224.0	302,455.0	591.00				Average	
		point1136	1136	13,471,251.0	302,548.9	591.00				Average	
		point1135	1135	13,471,304.0	302,595.0	592.00				Average	
		point1134	1134	13,471,352.0	302,616.5	592.00				Average	
		point1133	1133	13,471,406.0	302,621.4	593.00				Average	
		point1132	1132	13,471,483.0	302,591.1	593.00				Average	
		point1131	1131	13,471,532.0	302,514.7	594.00				Average	
		point1130	1130	13,471,576.0	302,422.7	593.00				Average	
		point1129	1129	13,471,619.0	302,328.7	592.00				Average	

		point1128	1128	13,471,757.0	302,010.3	591.00				Average	
		point1127	1127	13,471,877.0	301,731.8	590.00				Average	
		point1126	1126	13,472,023.0	301,338.1	584.00					
Bridge NB-3	19.0	point1234	1234	13,472,790.0	298,570.3	768.00				Average	Y
		point1250	1250	13,472,347.0	299,453.3	728.00				Average	Y
		point1251	1251	13,471,976.0	300,201.4	678.00				Average	Y
		point1252	1252	13,471,889.0	300,374.8	671.00				Average	Y
		point1253	1253	13,471,856.0	300,441.1	670.00				Average	Y
		point1288	1288	13,471,733.0	300,688.0	658.00				Average	Y
		point1298	1298	13,471,493.0	301,184.3	640.00				Average	Y
		point1118	1118	13,471,415.0	301,349.2	620.00					
From Bridge to Customs 1	19.0	point1303	1303	13,471,415.0	301,349.2	620.00				Average	
		point1117	1117	13,471,416.0	301,703.6	610.00				Average	
		point1116	1116	13,471,306.0	301,930.6	600.00					

American Consulting Engineers **18 August 2008**
CC **TNM 2.5**

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: **Ambassador Bridge Enhancement**
RUN: **Build Conditions - Year 2030**

Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Fort Street EB-1	point22	1	124	35	3	35	19	35	3	35	0	0
	point23	2										
Fort Street EB-2	point24	3	124	35	3	35	19	35	3	35	0	0
	point25	4										
Fort Street EB-3	point26	5	124	35	3	35	19	35	3	35	0	0
	point27	6										
Fort Street WB-3	point29	7	244	35	11	35	61	35	8	35	0	0
	point28	8										
Fort Street WB-2	point31	9	244	35	11	35	61	35	8	35	0	0
	point30	10										
Fort Street WB-1	point33	11	244	35	11	35	61	35	8	35	0	0
	point1224	1224	244	35	11	35	61	35	8	35	0	0
	point32	12										
NB I-75 & E. Service Drive to Bridge-B	point981	981	232	20	47	20	264	20	0	0	0	0
	point980	980	232	20	47	20	264	20	0	0	0	0
	point979	979	232	20	47	20	264	20	0	0	0	0
	point978	978	232	20	47	20	264	20	0	0	0	0
	point986	986	232	20	47	20	264	20	0	0	0	0
	point1111	1111										
NB I-75 & E. Service Drive to Bridge-a	point972	972	232	20	47	20	264	20	0	0	0	0
	point971	971	232	20	47	20	264	20	0	0	0	0
	point970	970	232	20	47	20	264	20	0	0	0	0
	point969	969	232	20	47	20	264	20	0	0	0	0

	point988	988	232	20	47	20	264	20	0	0	0	0
		0										
From Truck Inspection to Interstate -1	point1172	1172	0	0	55	20	414	20	0	0	0	0
	point1173	1173										
From Truck Inspection to Interstate -2	point1174	1174	0	0	55	20	414	20	0	0	0	0
	point1175	1175										
Customs to SB I-75	point1120	1120	341	20	7	20	0	0	0	0	0	0
	point956	956	341	20	7	20	0	0	0	0	0	0
	point957	957	341	20	7	20	0	0	0	0	0	0
	point958	958	341	20	7	20	0	0	0	0	0	0
	point959	959	341	20	7	20	0	0	0	0	0	0
	point941	941										
To Bridge from I-75, I-96 & Service Dr.-B	point1192	1192	313	20	35	20	199	20	0	0	0	0
	point1110	1110	313	20	35	20	199	20	0	0	0	0
	point1109	1109	313	20	35	20	199	20	0	0	0	0
	point1108	1108	313	20	35	20	199	20	0	0	0	0
	point1107	1107	313	20	35	20	199	20	0	0	0	0
	point1106	1106	313	20	35	20	199	20	0	0	0	0
	point1105	1105	313	20	35	20	199	20	0	0	0	0
	point1104	1104	313	20	35	20	199	20	0	0	0	0
	point1103	1103	313	20	35	20	199	20	0	0	0	0
	point1102	1102	313	20	35	20	199	20	0	0	0	0
	point1101	1101	313	20	35	20	199	20	0	0	0	0
	point1100	1100	313	20	35	20	199	20	0	0	0	0
	point1099	1099	313	20	35	20	199	20	0	0	0	0
	point1098	1098	313	20	35	20	199	20	0	0	0	0
	point1097	1097	418	20	47	20	265	20	0	0	0	0
	point1096	1096	418	20	47	20	265	20	0	0	0	0
	point1095	1095	418	20	47	20	265	20	0	0	0	0
	point1094	1094	418	20	47	20	265	20	0	0	0	0
	point1093	1093	418	20	47	20	265	20	0	0	0	0
	point1092	1092	418	20	47	20	265	20	0	0	0	0
	point1091	1091	418	20	47	20	265	20	0	0	0	0
	point1090	1090	418	20	47	20	265	20	0	0	0	0
	point1089	1089	418	20	47	20	265	20	0	0	0	0
	point1088	1088	418	20	47	20	265	20	0	0	0	0

	point1087	1087	418	20	47	20	265	20	0	0	0	0
	point1086	1086	418	20	47	20	265	20	0	0	0	0
	point1085	1085	418	20	47	20	265	20	0	0	0	0
	point1084	1084	418	20	47	20	265	20	0	0	0	0
	point1083	1083	418	20	47	20	265	20	0	0	0	0
	point1082	1082	418	20	47	20	265	20	0	0	0	0
	point1081	1081	418	20	47	20	265	20	0	0	0	0
	point1080	1080	418	20	47	20	265	20	0	0	0	0
	point1079	1079	418	20	47	20	265	20	0	0	0	0
	point1078	1078	418	20	47	20	265	20	0	0	0	0
	point1077	1077										
To Bridge from I-75, I-96 & Service Dr.-A	point1193	1193	313	20	35	20	199	20	0	0	0	0
	point625	625	313	20	35	20	199	20	0	0	0	0
	point624	624	313	20	35	20	199	20	0	0	0	0
	point623	623	313	20	35	20	199	20	0	0	0	0
	point622	622	313	20	35	20	199	20	0	0	0	0
	point621	621	313	20	35	20	199	20	0	0	0	0
	point620	620	313	20	35	20	199	20	0	0	0	0
	point619	619	313	20	35	20	199	20	0	0	0	0
	point618	618	313	20	35	20	199	20	0	0	0	0
	point617	617	313	20	35	20	199	20	0	0	0	0
	point616	616	313	20	35	20	199	20	0	0	0	0
	point615	615	313	20	35	20	199	20	0	0	0	0
	point614	614	313	20	35	20	199	20	0	0	0	0
	point613	613	313	20	35	20	199	20	0	0	0	0
	point612	612	418	20	47	20	265	20	0	0	0	0
	point610	610	418	20	47	20	265	20	0	0	0	0
	point609	609	418	20	47	20	265	20	0	0	0	0
	point608	608	418	20	47	20	265	20	0	0	0	0
	point607	607	418	20	47	20	265	20	0	0	0	0
	point606	606	418	20	47	20	265	20	0	0	0	0
	point605	605	418	20	47	20	265	20	0	0	0	0
	point604	604	418	20	47	20	265	20	0	0	0	0
	point603	603	418	20	47	20	265	20	0	0	0	0
	point602	602	411	20	46	20	261	20	0	0	0	0
	point601	601	418	20	47	20	265	20	0	0	0	0

	point600	600	418	20	47	20	265	20	0	0	0	0
	point599	599	411	20	46	20	261	20	0	0	0	0
	point598	598	418	20	47	20	265	20	0	0	0	0
	point597	597	418	20	47	20	265	20	0	0	0	0
	point596	596	418	20	47	20	265	20	0	0	0	0
	point595	595	418	20	47	20	265	20	0	0	0	0
	point594	594	418	20	47	20	265	20	0	0	0	0
	point593	593	418	20	47	20	265	20	0	0	0	0
	point592	592										
To Bridge from I-75, I-96 & Service Dr.-D	point1194	1194	313	20	35	20	199	20	0	0	0	0
	point531	531	313	20	35	20	199	20	0	0	0	0
	point530	530	313	20	35	20	199	20	0	0	0	0
	point529	529	313	20	35	20	199	20	0	0	0	0
	point528	528	313	20	35	20	199	20	0	0	0	0
	point527	527	313	20	35	20	199	20	0	0	0	0
	point526	526	313	20	35	20	199	20	0	0	0	0
	point525	525	313	20	35	20	199	20	0	0	0	0
	point524	524	313	20	35	20	199	20	0	0	0	0
	point523	523	313	20	35	20	199	20	0	0	0	0
	point522	522	313	20	35	20	199	20	0	0	0	0
	point521	521	313	20	35	20	199	20	0	0	0	0
	point520	520	313	20	35	20	199	20	0	0	0	0
	point519	519										
SB I-75 & EB I-96 to Bridge-A	point1225	1225	395	20	24	20	134	20	0	0	0	0
	point533	533	395	20	24	20	134	20	0	0	0	0
	point532	532										
SB I-75 & EB I-96 to Bridge-B	point1226	1226	395	20	24	20	134	20	0	0	0	0
	point548	548	395	20	24	20	134	20	0	0	0	0
	point547	547										
Customs to NB I-75	point1176	1176	208	20	2	20	0	0	0	0	0	0
	point1124	1124	208	20	2	20	0	0	0	0	0	0
	point731	731	208	20	2	20	0	0	0	0	0	0
	point730	730	208	20	2	20	0	0	0	0	0	0
	point1213	1213	208	20	2	20	0	0	0	0	0	0
	point728	728	208	20	2	20	0	0	0	0	0	0
	point727	727	208	20	2	20	0	0	0	0	0	0

	point726	726	208	20	2	20	0	0	0	0	0	0
	point720	720										
Truck Inspection to SB I-75	point387	387	0	0	62	20	351	20	0	0	0	0
	point388	388	0	0	62	20	351	20	0	0	0	0
	point389	389	0	0	62	20	351	20	0	0	0	0
	point1197	1197	0	0	62	20	351	20	0	0	0	0
	point391	391	0	0	62	20	351	20	0	0	0	0
	point392	392	0	0	62	20	351	20	0	0	0	0
	point393	393	0	0	62	20	351	20	0	0	0	0
	point394	394	0	0	62	20	351	20	0	0	0	0
	point395	395	0	0	62	20	351	20	0	0	0	0
	point1198	1198	0	0	62	20	351	20	0	0	0	0
	point396	396	0	0	62	20	351	20	0	0	0	0
	point397	397	0	0	62	20	351	20	0	0	0	0
	point398	398	0	0	62	20	351	20	0	0	0	0
	point518	518	0	0	62	20	351	20	0	0	0	0
	point517	517	0	0	62	20	351	20	0	0	0	0
	point516	516	0	0	62	20	351	20	0	0	0	0
	point515	515	0	0	62	20	351	20	0	0	0	0
	point514	514	0	0	62	20	351	20	0	0	0	0
	point955	955										
Truck Inspection to WB I-96	point1181	1181	0	0	46	20	263	20	0	0	0	0
	point374	374	0	0	46	20	263	20	0	0	0	0
	point375	375	0	0	46	20	263	20	0	0	0	0
	point376	376	0	0	46	20	263	20	0	0	0	0
	point378	378	0	0	46	20	263	20	0	0	0	0
	point379	379	0	0	46	20	263	20	0	0	0	0
	point380	380	0	0	46	20	263	20	0	0	0	0
	point381	381	0	0	46	20	263	20	0	0	0	0
	point382	382	0	0	46	20	263	20	0	0	0	0
	point383	383	0	0	46	20	263	20	0	0	0	0
	point384	384	0	0	46	20	263	20	0	0	0	0
	point385	385	0	0	46	20	263	20	0	0	0	0
	point386	386	0	0	46	20	263	20	0	0	0	0
	point711	711	0	0	46	20	263	20	0	0	0	0
	point1201	1201	0	0	46	20	263	20	0	0	0	0

	point708	708	0	0	46	20	263	20	0	0	0	0
	point707	707	0	0	46	20	263	20	0	0	0	0
	point706	706	0	0	46	20	263	20	0	0	0	0
	point705	705	0	0	46	20	263	20	0	0	0	0
	point704	704	0	0	46	20	263	20	0	0	0	0
	point699	699										
Customs to WB I-96	point1178	1178	654	20	27	20	0	0	0	0	0	0
	point1122	1122	654	20	27	20	0	0	0	0	0	0
	point506	506	654	20	27	20	0	0	0	0	0	0
	point505	505	654	20	27	20	0	0	0	0	0	0
	point504	504	654	20	27	20	0	0	0	0	0	0
	point1212	1212	654	20	27	20	0	0	0	0	0	0
	point1209	1209	654	20	27	20	0	0	0	0	0	0
	point501	501	654	20	27	20	0	0	0	0	0	0
	point500	500	654	20	27	20	0	0	0	0	0	0
	point499	499										
From Bridge to Customs 2	point1294	1294	602	20	18	20	0	0	0	0	0	0
	point1292	1292	602	20	18	20	0	0	0	0	0	0
	point1293	1293										
To Bridge from I-75, I-96 & Service Dr.-C	point1195	1195	313	20	35	20	199	20	0	0	0	0
	point546	546	313	20	35	20	199	20	0	0	0	0
	point545	545	313	20	35	20	199	20	0	0	0	0
	point544	544	313	20	35	20	199	20	0	0	0	0
	point543	543	313	20	35	20	199	20	0	0	0	0
	point542	542	313	20	35	20	199	20	0	0	0	0
	point541	541	313	20	35	20	199	20	0	0	0	0
	point540	540	313	20	35	20	199	20	0	0	0	0
	point539	539	313	20	35	20	199	20	0	0	0	0
	point538	538	313	20	35	20	199	20	0	0	0	0
	point537	537	313	20	35	20	199	20	0	0	0	0
	point536	536	313	20	35	20	199	20	0	0	0	0
	point535	535	313	20	35	20	199	20	0	0	0	0
	point1266	1266	418	20	47	20	265	20	0	0	0	0
	point1267	1267	418	20	47	20	265	20	0	0	0	0
	point1268	1268	418	20	47	20	265	20	0	0	0	0
	point1269	1269	418	20	47	20	265	20	0	0	0	0

	point1270	1270	418	20	47	20	265	20	0	0	0	0
	v	1271	418	20	47	20	265	20	0	0	0	0
	point1272	1272	313	20	35	20	199	20	0	0	0	0
	point1273	1273	418	20	47	20	265	20	0	0	0	0
	point1274	1274	418	20	47	20	265	20	0	0	0	0
	point1275	1275	418	20	47	20	265	20	0	0	0	0
	point1276	1276	313	20	35	20	199	20	0	0	0	0
	point1277	1277	418	20	47	20	265	20	0	0	0	0
	point1278	1278	313	20	35	20	199	20	0	0	0	0
	point1279	1279	418	20	47	20	265	20	0	0	0	0
	point1280	1280	418	20	47	20	265	20	0	0	0	0
	point1281	1281	418	20	47	20	265	20	0	0	0	0
	point1282	1282	418	20	47	20	265	20	0	0	0	0
	point1283	1283	418	20	47	20	265	20	0	0	0	0
	point1284	1284	418	20	47	20	265	20	0	0	0	0
	point1285	1285										
Bridge SB-1	point1299	1299	0	0	70	45	398	45	0	0	0	0
	point1241	1241	0	0	70	45	398	45	0	0	0	0
	point1262	1262	0	0	70	45	398	45	0	0	0	0
	point1263	1263	0	0	70	45	398	45	0	0	0	0
	point1264	1264	0	0	70	45	398	45	0	0	0	0
	point1265	1265	0	0	70	45	398	45	0	0	0	0
	point1240	1240										
Bridge SB-2	point1300	1300	392	45	70	45	398	45	0	0	0	0
	point1239	1239	392	45	70	45	398	45	0	0	0	0
	point1258	1258	392	45	70	45	398	45	0	0	0	0
	point1259	1259	392	45	70	45	398	45	0	0	0	0
	point1260	1260	392	45	70	45	398	45	0	0	0	0
	point1261	1261	392	45	70	45	398	45	0	0	0	0
	point1238	1238										
Bridge SB-3	point1286	1286	860	45	0	0	0	0	0	0	0	0
	point1237	1237	860	45	0	0	0	0	0	0	0	0
	point1254	1254	860	45	0	0	0	0	0	0	0	0
	point1255	1255	860	45	0	0	0	0	0	0	0	0
	point1256	1256	860	45	0	0	0	0	0	0	0	0
	point1257	1257	860	45	0	0	0	0	0	0	0	0

	point1236	1236										
Bridge NB-2	point1232	1232	367	45	73	45	414	45	0	0	0	0
	point1246	1246	367	45	73	45	414	45	0	0	0	0
	point1247	1247	367	45	73	45	414	45	0	0	0	0
	point1248	1248	367	45	73	45	414	45	0	0	0	0
	point1249	1249	367	45	73	45	414	45	0	0	0	0
	point1290	1290	367	45	73	45	414	45	0	0	0	0
	point1297	1297	367	45	73	45	414	45	0	0	0	0
	point1171	1171										
Bridge NB-1	point1230	1230	0	0	73	45	414	45	0	0	0	0
	point1242	1242	0	0	73	45	414	45	0	0	0	0
	point1243	1243	0	0	73	45	414	45	0	0	0	0
	point1244	1244	0	0	73	45	414	45	0	0	0	0
	point1245	1245	0	0	73	45	414	45	0	0	0	0
	point1289	1289	0	0	73	45	414	45	0	0	0	0
	point1227	1227	0	0	73	45	414	45	0	0	0	0
	point1147	1147										
From Bridge to Truck Inspection Plaza 1	point1301	1301	0	0	55	20	414	20	0	0	0	0
	point1170	1170	0	0	55	20	414	20	0	0	0	0
	point1169	1169	0	0	55	20	414	20	0	0	0	0
	point1168	1168	0	0	55	20	414	20	0	0	0	0
	point1167	1167	0	0	55	20	414	20	0	0	0	0
	point1166	1166	0	0	55	20	414	20	0	0	0	0
	point1165	1165	0	0	55	20	414	20	0	0	0	0
	point1164	1164	0	0	55	20	414	20	0	0	0	0
	point1163	1163	0	0	55	20	414	20	0	0	0	0
	point1162	1162	0	0	55	20	414	20	0	0	0	0
	point1161	1161	0	0	55	20	414	20	0	0	0	0
	point1160	1160	0	0	55	20	414	20	0	0	0	0
	point1159	1159	0	0	55	20	414	20	0	0	0	0
	point1158	1158	0	0	55	20	414	20	0	0	0	0
	point1157	1157	0	0	55	20	414	20	0	0	0	0
	point1156	1156	0	0	55	20	414	20	0	0	0	0
	point1155	1155	0	0	55	20	414	20	0	0	0	0
	point1154	1154	0	0	55	20	414	20	0	0	0	0
	point1153	1153	0	0	55	20	414	20	0	0	0	0

	point1152	1152	0	0	55	20	414	20	0	0	0	0
	point1151	1151	0	0	55	20	414	20	0	0	0	0
	point1150	1150	0	0	55	20	414	20	0	0	0	0
	point1149	1149										
From Bridge to Truck Inspection Plaza 2	point1302	1302	0	0	55	20	414	20	0	0	0	0
	point1146	1146	0	0	55	20	414	20	0	0	0	0
	point1145	1145	0	0	55	20	414	20	0	0	0	0
	point1144	1144	0	0	55	20	414	20	0	0	0	0
	point1143	1143	0	0	55	20	414	20	0	0	0	0
	point1142	1142	0	0	55	20	414	20	0	0	0	0
	point1141	1141	0	0	55	20	414	20	0	0	0	0
	point1140	1140	0	0	55	20	414	20	0	0	0	0
	point1139	1139	0	0	55	20	414	20	0	0	0	0
	point1138	1138	0	0	55	20	414	20	0	0	0	0
	point1137	1137	0	0	55	20	414	20	0	0	0	0
	point1136	1136	0	0	55	20	414	20	0	0	0	0
	point1135	1135	0	0	55	20	414	20	0	0	0	0
	point1134	1134	0	0	55	20	414	20	0	0	0	0
	point1133	1133	0	0	55	20	414	20	0	0	0	0
	point1132	1132	0	0	55	20	414	20	0	0	0	0
	point1131	1131	0	0	55	20	414	20	0	0	0	0
	point1130	1130	0	0	55	20	414	20	0	0	0	0
	point1129	1129	0	0	55	20	414	20	0	0	0	0
	point1128	1128	0	0	55	20	414	20	0	0	0	0
	point1127	1127	0	0	55	20	414	20	0	0	0	0
	point1126	1126										
Bridge NB-3	point1234	1234	836	20	0	0	0	0	0	0	0	0
	point1250	1250	836	20	0	0	0	0	0	0	0	0
	point1251	1251	836	20	0	0	0	0	0	0	0	0
	point1252	1252	836	20	0	0	0	0	0	0	0	0
	point1253	1253	836	20	0	0	0	0	0	0	0	0
	point1288	1288	836	20	0	0	0	0	0	0	0	0
	point1298	1298	836	20	0	0	0	0	0	0	0	0
	point1118	1118										
From Bridge to Customs 1	point1303	1303	602	20	18	20	0	0	0	0	0	0
	point1117	1117	602	20	18	20	0	0	0	0	0	0

	point1116	1116										

American Consulting Engineers **18 August 2008**
CC **TNM 2.5**

INPUT: RECEIVERS
PROJECT/CONTRACT: **Ambassador Bridge Enhancement**
RUN: **Build Conditions - Year 2030**

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria: Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Business 1	9	1	13,470,767.0	299,315.0	574.00	4.92	0.00	71	10.0	5.0	Y
Business 2	10	1	13,471,258.0	299,315.0	574.00	4.92	0.00	71	10.0	5.0	Y
Riverside Park 2	11	1	13,471,590.0	298,898.7	571.00	4.92	0.00	66	10.0	5.0	Y
Riverside Park 1	12	1	13,471,038.0	298,535.7	571.00	4.92	0.00	66	10.0	5.0	Y
Riverside Park 3	14	1	13,471,874.0	299,639.7	571.00	4.92	0.00	66	10.0	5.0	Y
Business 3	15	1	13,471,325.0	299,907.4	576.00	4.92	0.00	71	10.0	5.0	Y
Riverside Park 4	16	1	13,472,038.0	299,881.2	574.00	4.92	0.00	66	10.0	5.0	Y
Business 4	17	1	13,471,381.0	300,162.0	581.00	4.92	0.00	71	10.0	5.0	Y
Business 6	19	1	13,472,300.0	300,518.3	574.00	4.92	0.00	71	10.0	5.0	Y
Business 5	20	1	13,472,054.0	300,634.5	580.00	4.92	0.00	71	10.0	5.0	Y
Business 7	21	1	13,472,311.0	300,753.9	577.00	4.92	0.00	71	10.0	5.0	Y
Business 8	22	1	13,472,595.0	300,747.5	574.00	4.92	0.00	71	10.0	5.0	Y
Business 9	23	1	13,472,782.0	301,073.0	578.00	4.92	0.00	71	10.0	5.0	Y
Business 10	24	1	13,473,274.0	301,335.6	580.00	4.92	0.00	71	10.0	5.0	Y
St. Anne's Church	26	1	13,472,287.0	301,727.7	586.00	4.92	0.00	66	10.0	5.0	Y
Residence 1	27	1	13,472,023.0	301,995.0	591.00	4.92	0.00	66	10.0	5.0	Y
Residence 2	28	1	13,472,137.0	302,048.6	591.00	4.92	0.00	66	10.0	5.0	Y
Residence 3	29	1	13,472,220.0	302,088.4	591.00	4.92	0.00	66	10.0	5.0	Y
Bagley Center	30	1	13,472,442.0	302,171.1	594.00	4.92	0.00	71	10.0	5.0	Y
Residence 4	31	1	13,472,145.0	302,261.1	589.00	4.92	0.00	66	10.0	5.0	Y
Residence 5	32	1	13,472,023.0	302,224.7	589.00	4.92	0.00	66	10.0	5.0	Y
Residence 6	33	1	13,471,946.0	302,186.7	594.00	4.92	0.00	66	10.0	5.0	Y

Residence 7	34	1	13,471,945.0	302,260.2	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 8	35	1	13,472,023.0	302,262.8	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 9	36	1	13,472,089.0	302,338.1	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 10	37	1	13,472,149.0	302,436.3	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 11	39	1	13,472,103.0	302,516.8	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 12	40	1	13,471,993.0	302,419.9	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 13	41	1	13,471,886.0	302,387.9	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 14	42	1	13,471,821.0	302,443.2	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 15	43	1	13,471,932.0	302,494.3	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 16	44	1	13,471,619.0	302,623.7	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 17	45	1	13,471,914.0	302,650.5	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 18	46	1	13,472,022.0	302,688.6	594.00	4.92	0.00	66	10.0	5.0	Y
Multi-family Complex	51	12	13,472,642.0	301,720.5	587.00	4.92	0.00	66	10.0	5.0	Y

American Consulting Engineers **18 August 2008**
CC **TNM 2.5**

INPUT: BARRIERS
PROJECT/CONTRACT: **Ambassador Bridge Enhancement**
RUN: **Build Conditions - Year 2030**

Barrier Name	Type	Height Min	Height Max	If Wall $ per Unit Area	If Berm $ per Unit Vol.	Top Width	Run:Rise	Add'tnl $ per Unit Length	Points Name	No.	Coordinates (bottom) X	Y	Z	Height at Point	Segment Seg Ht Increment	Perturbs #Up	#Dn	On Struct?	Important Reflections?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Existing Wall 1	W	0.00	99.99	0.00				0.00	point26	26	13,471,269.0	302,867.0	589.00	12.00	0.00	0	0		
									point27	27	13,470,963.0	302,732.3	587.00	12.00					
Existing Wall 2	W	0.00	99.99	0.00				0.00	point28	28	13,471,316.0	302,886.3	589.00	10.00	0.00	0	0		
									point29	29	13,471,269.0	302,867.0	589.00	10.00					
Existing Wall 3	W	0.00	99.99	0.00				0.00	point30	30	13,471,316.0	302,886.3	589.00	12.00	0.00	0	0		
									point31	31	13,471,406.0	302,925.8	591.00	12.00	0.00	0	0		
									point32	32	13,471,538.0	302,625.6	594.00	12.00					
Existing Wall 4	W	0.00	99.99	0.00				0.00	point33	33	13,471,907.0	301,763.0	591.00	24.00	0.00	0	0		
									point34	34	13,471,538.0	302,625.6	594.00	24.00					
Existing Wall 5	W	0.00	99.99	0.00				0.00	point35	35	13,472,050.0	301,439.4	584.00	20.00	0.00	0	0		
									point36	36	13,471,907.0	301,763.0	591.00	20.00					
Existing Wall 6	W	0.00	99.99	0.00				0.00	point37	37	13,472,050.0	301,439.4	584.00	14.00	0.00	0	0		
									point38	38	13,472,094.0	301,426.8	584.00	14.00	0.00	0	0		
									point39	39	13,472,138.0	301,447.2	584.00	14.00	0.00	0	0		
									point40	40	13,472,155.0	301,412.3	584.00	14.00					
Existing Wall 7	W	0.00	99.99	0.00				0.00	point43	43	13,472,155.0	301,412.3	584.00	12.00	0.00	0	0		
									point44	44	13,472,188.0	301,337.3	584.00	12.00	0.00	0	0		
									point45	45	13,472,237.0	301,359.3	584.00	12.00					
Existing Wall 8	W	0.00	99.99	0.00				0.00	point46	46	13,472,237.0	301,359.3	584.00	8.00	0.00	0	0		
									point47	47	13,472,245.0	301,362.1	584.00	8.00	0.00	0	0		
									point48	48	13,472,251.0	301,346.2	584.00	8.00					
Existing Wall 9	W	0.00	99.99	0.00				0.00	point49	49	13,472,298.0	301,241.2	584.00	7.00	0.00	0	0		
									point50	50	13,472,251.0	301,346.2	584.00	7.00					
Existing Wall 10	W	0.00	99.99	0.00				0.00	point51	51	13,472,309.0	301,215.8	584.00	10.00	0.00	0	0		
									point52	52	13,472,298.0	301,241.2	584.00	10.00					
Existing Wall 11	W	0.00	99.99	0.00				0.00	point53	53	13,472,326.0	301,174.6	583.00	7.00	0.00	0	0		
									point54	54	13,472,309.0	301,215.8	584.00	7.00					
Existing Wall 12	W	0.00	99.99	0.00				0.00	point55	55	13,472,326.0	301,174.6	583.00	6.00	0.00	0	0		
									point56	56	13,472,403.0	300,998.1	581.00	6.00	0.00	0	0		
									point57	57	13,472,394.0	300,974.0	581.00	6.00	0.00	0	0		
									point58	58	13,472,321.0	300,930.8	581.00	6.00					

American Consulting Engineers — **18 August 2008**

CC — **TNM 2.5**

INPUT: GROUND ZONES

PROJECT/CONTRACT: **Ambassador Bridge Enhancement**

RUN: **Build Conditions - Year 2030**

Ground Zone			Points		
Name	Type	Flow Resistivity	No.	Coordinates X	Y
		cgs rayls		ft	ft
Duty Free Store	Pavement	20000	13	13,470,999.0	300,964.1
			14	13,471,059.0	301,017.2
			15	13,471,204.0	301,058.9
			16	13,471,378.0	301,024.8
			17	13,471,427.0	300,990.7
			18	13,471,522.0	300,767.0
			19	13,471,518.0	300,679.8
			20	13,471,480.0	300,607.8
			21	13,471,431.0	300,581.2
			22	13,470,950.0	300,865.6
Gateway Plaza	Pavement	20000	36	13,471,386.0	301,310.6
			37	13,471,331.0	301,441.7
			23	13,471,193.0	301,724.9
			24	13,470,980.0	302,245.7
			25	13,471,201.0	302,344.9
			28	13,471,075.0	302,558.5
			29	13,470,972.0	302,729.4
			30	13,471,401.0	302,918.1
			31	13,471,924.0	301,707.9
			38	13,472,042.0	301,436.2
			40	13,472,084.0	301,419.7
			41	13,472,139.0	301,436.1
			42	13,472,183.0	301,328.7

			43	13,472,237.0	301,352.1
			39	13,472,392.0	301,001.9
			32	13,472,141.0	300,866.1
			33	13,471,771.0	300,650.2
			34	13,471,689.0	300,762.4
			35	13,471,568.0	300,984.7

American Consulting Engineers
CC
18 August 2008
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Ambassador Bridge Enhancement
RUN: Build Conditions - Year 2030
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Business 1	9	1	0.0	60.3	71	60.3	10	----	60.3	0.0	5	-5.0
Business 2	10	1	0.0	62.3	71	62.3	10	----	62.3	0.0	5	-5.0
Riverside Park 2	11	1	0.0	61.7	66	61.7	10	----	61.7	0.0	5	-5.0
Riverside Park 1	12	1	0.0	56.8	66	56.8	10	----	56.8	0.0	5	-5.0
Riverside Park 3	14	1	0.0	68.9	66	68.9	10	Snd Lvl	68.9	0.0	5	-5.0
Business 3	15	1	0.0	67.3	71	67.3	10	----	67.3	0.0	5	-5.0
Riverside Park 4	16	1	0.0	70.9	66	70.9	10	Snd Lvl	70.9	0.0	5	-5.0
Business 4	17	1	0.0	71.1	71	71.1	10	Snd Lvl	71.1	0.0	5	-5.0
Business 6	19	1	0.0	70.2	71	70.2	10	----	70.2	0.0	5	-5.0
Business 5	20	1	0.0	75.7	71	75.7	10	Snd Lvl	75.7	0.0	5	-5.0
Business 7	21	1	0.0	74.5	71	74.5	10	Snd Lvl	74.5	0.0	5	-5.0
Business 8	22	1	0.0	67.0	71	67.0	10	----	67.0	0.0	5	-5.0
Business 9	23	1	0.0	64.2	71	64.2	10	----	64.2	0.0	5	-5.0
Business 10	24	1	0.0	58.7	71	58.7	10	----	58.7	0.0	5	-5.0
St. Anne's Church	26	1	0.0	62.7	66	62.7	10	----	62.7	0.0	5	-5.0
Residence 1	27	1	0.0	60.7	66	60.7	10	----	60.7	0.0	5	-5.0
Residence 2	28	1	0.0	60.6	66	60.6	10	----	60.6	0.0	5	-5.0
Residence 3	29	1	0.0	60.5	66	60.5	10	----	60.5	0.0	5	-5.0
Bagley Center	30	1	0.0	59.5	71	59.5	10	----	59.5	0.0	5	-5.0
Residence 4	31	1	0.0	59.1	66	59.1	10	----	59.1	0.0	5	-5.0
Residence 5	32	1	0.0	59.2	66	59.2	10	----	59.2	0.0	5	-5.0
Residence 6	33	1	0.0	59.7	66	59.7	10	----	59.7	0.0	5	-5.0
Residence 7	34	1	0.0	60.0	66	60.0	10	----	60.0	0.0	5	-5.0
Residence 8	35	1	0.0	59.5	66	59.5	10	----	59.5	0.0	5	-5.0

Residence 9	36	1	0.0	59.2	66	59.2	10	----	59.2	0.0	5	-5.0
Residence 10	37	1	0.0	58.6	66	58.6	10	----	58.6	0.0	5	-5.0
Residence 11	39	1	0.0	58.3	66	58.3	10	----	58.3	0.0	5	-5.0
Residence 12	40	1	0.0	58.8	66	58.8	10	----	58.8	0.0	5	-5.0
Residence 13	41	1	0.0	58.9	66	58.9	10	----	58.9	0.0	5	-5.0
Residence 14	42	1	0.0	58.6	66	58.6	10	----	58.6	0.0	5	-5.0
Residence 15	43	1	0.0	58.5	66	58.5	10	----	58.5	0.0	5	-5.0
Residence 16	44	1	0.0	58.5	66	58.5	10	----	58.5	0.0	5	-5.0
Residence 17	45	1	0.0	58.0	66	58.0	10	----	58.0	0.0	5	-5.0
Residence 18	46	1	0.0	58.0	66	58.0	10	----	58.0	0.0	5	-5.0
Multi-family Complex	51	12	0.0	61.4	66	61.4	10	----	61.4	0.0	5	-5.0

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	46	0.0	0.0	0.0
All Impacted	5	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

APPENDIX D

TNM BARRIER ANALYSIS

American Consulting Engineers 18 August 2008
CC TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: Ambassador Bridge Enhancement
RUN: Barrier Analysis - Northbound Barrier

Barrier Name	Type	Height Min	Height Max	If Wall $ per Unit Area	If Berm $ per Unit Vol.	Top Width	Run:Rise	Add'tnl $ per Unit Length	Points Name	No.	Coordinates (bottom) X	Y	Z	Height at Point	Segment Seg Ht Increment	Perturbs #Up	#Dn	On Struct?	Important Reflections?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Existing Wall 1	W	0.00	99.99	0.00				0.00	point26	26	13,471,269.0	302,867.0	589.00	12.00	0.00	0	0		
									point27	27	13,470,963.0	302,732.3	587.00	12.00					
Existing Wall 2	W	0.00	99.99	0.00				0.00	point28	28	13,471,316.0	302,886.3	589.00	10.00	0.00	0	0		
									point29	29	13,471,269.0	302,867.0	589.00	10.00					
Existing Wall 3	W	0.00	99.99	0.00				0.00	point30	30	13,471,316.0	302,886.3	589.00	12.00	0.00	0	0		
									point31	31	13,471,406.0	302,925.8	591.00	12.00	0.00	0	0		
									point32	32	13,471,538.0	302,625.6	594.00	12.00					
Existing Wall 4	W	0.00	99.99	0.00				0.00	point33	33	13,471,907.0	301,763.0	591.00	24.00	0.00	0	0		
									point34	34	13,471,538.0	302,625.6	594.00	24.00					
Existing Wall 5	W	0.00	99.99	0.00				0.00	point35	35	13,472,050.0	301,439.4	584.00	20.00	0.00	0	0		
									point36	36	13,471,907.0	301,763.0	591.00	20.00					
Existing Wall 6	W	0.00	99.99	0.00				0.00	point37	37	13,472,050.0	301,439.4	584.00	14.00	0.00	0	0		
									point38	38	13,472,094.0	301,426.8	584.00	14.00	0.00	0	0		
									point39	39	13,472,138.0	301,447.2	584.00	14.00	0.00	0	0		
									point40	40	13,472,155.0	301,412.3	584.00	14.00					
Existing Wall 7	W	0.00	99.99	0.00				0.00	point43	43	13,472,155.0	301,412.3	584.00	12.00	0.00	0	0		
									point44	44	13,472,188.0	301,337.3	584.00	12.00	0.00	0	0		
									point45	45	13,472,237.0	301,359.3	584.00	12.00					
Existing Wall 8	W	0.00	99.99	0.00				0.00	point46	46	13,472,237.0	301,359.3	584.00	8.00	0.00	0	0		
									point47	47	13,472,245.0	301,362.1	584.00	8.00	0.00	0	0		
									point48	48	13,472,251.0	301,346.2	584.00	8.00					
Existing Wall 9	W	0.00	99.99	0.00				0.00	point49	49	13,472,298.0	301,241.2	584.00	7.00	0.00	0	0		
									point50	50	13,472,251.0	301,346.2	584.00	7.00					
Existing Wall 10	W	0.00	99.99	0.00				0.00	point51	51	13,472,309.0	301,215.8	584.00	10.00	0.00	0	0		
									point52	52	13,472,298.0	301,241.2	584.00	10.00					
Existing Wall 11	W	0.00	99.99	0.00				0.00	point53	53	13,472,326.0	301,174.6	583.00	7.00	0.00	0	0		
									point54	54	13,472,309.0	301,215.8	584.00	7.00					
Existing Wall 12	W	0.00	99.99	0.00				0.00	point55	55	13,472,326.0	301,174.6	583.00	6.00	0.00	0	0		
									point56	56	13,472,403.0	300,998.1	581.00	6.00	0.00	0	0		
									point57	57	13,472,394.0	300,974.0	581.00	6.00	0.00	0	0		
									point58	58	13,472,321.0	300,930.8	581.00	6.00					
NB Barrier 2	W	8.00	12.00	25.00				0.00	point59	59	13,472,385.0	299,474.5	728.00	8.00	2.00	2	0	Y	
									point60	60	13,472,015.0	300,217.8	678.00	8.00	2.00	2	0	Y	
									point61	61	13,471,925.0	300,394.2	671.00	8.00	2.00	2	0	Y	
									point62	62	13,471,892.0	300,457.7	670.00	8.00	2.00	2	0	Y	

									point63	63	13,471,770.0	300,705.1	658.00	8.00						

American Consulting Engineers **18 August 2008**
CC **TNM 2.5**
Calculated with TNM 2.5

RESULTS: BARRIER DESIGN
PROJECT/CONTRACT: **Ambassador Bridge Enhancement**
RUN: **Barrier Analysis - Northbound Barrier**
BARRIER DESIGN: **12ft**

ATMOSPHERICS: **68 deg F, 50% RH**

Selected Receivers

Name	No.	Calc LAeq1h	Noise Reduction Calc	Noise Reduction Goal	Noise Reduction Calc-Goal	Barrier Reviewed	Important Segments Name	Important Segments No.	Important Segments Height	Partial LAeq1h
		dBA	dB	dB	dB				ft	dBA
Business 1	9	60.3	-0.0	5	-5.0					
Business 2	10	62.2	0.0	5	-5.0					
Riverside Park 2	11	61.7	-0.0	5	-5.0					
Riverside Park 1	12	56.8	-0.0	5	-5.0					
Riverside Park 3	14	68.9	0.0	5	-5.0					
Business 3	15	67.3	-0.0	5	-5.0					
Riverside Park 4	16	70.3	0.0	5	-5.0					
Business 4	17	71.0	0.0	5	-5.0					
Business 6	19	69.3	0.1	5	-4.9	NB Barrier 2	point62	62	12.0	48.8
						NB Barrier 2	point59	59	12.0	45.1
						NB Barrier 2	point60	60	12.0	42.7
						NB Barrier 2	point61	61	12.0	38.3
Business 5	20	75.3	0.0	5	-5.0	NB Barrier 2	point62	62	12.0	52.8
						NB Barrier 2	point60	60	12.0	42.3
						NB Barrier 2	point59	59	12.0	42.1
						NB Barrier 2	point61	61	12.0	40.1
Business 7	21	74.3	0.0	5	-5.0	NB Barrier 2	point62	62	12.0	48.3
						NB Barrier 2	point59	59	12.0	43.9
						NB Barrier 2	point60	60	12.0	41.5
						NB Barrier 2	point61	61	12.0	37.4
Business 8	22	66.4	0.4	5	-4.6	NB Barrier 2	point62	62	12.0	44.2

						NB Barrier 2	point59	59	12.0	43.2
						NB Barrier 2	point60	60	12.0	39.5
						NB Barrier 2	point61	61	12.0	35.1
Business 9	23	63.8	0.3	5	-4.7	NB Barrier 2	point62	62	12.0	41.1
						NB Barrier 2	point59	59	12.0	40.9
						NB Barrier 2	point60	60	12.0	36.9
						NB Barrier 2	point61	61	12.0	32.4
Business 10	24	58.4	0.3	5	-4.7	NB Barrier 2	point62	62	12.0	37.5
						NB Barrier 2	point59	59	12.0	37.4
						NB Barrier 2	point60	60	12.0	32.4
						NB Barrier 2	point61	61	12.0	27.9
St. Anne's Church	26	62.4	0.2	5	-4.8	NB Barrier 2	point59	59	12.0	43.3
						NB Barrier 2	point62	62	12.0	39.8
						NB Barrier 2	point60	60	12.0	39.1
						NB Barrier 2	point61	61	12.0	34.7
Residence 1	27	60.5	0.2	5	-4.8	NB Barrier 2	point59	59	12.0	44.9
						NB Barrier 2	point60	60	12.0	40.6
						NB Barrier 2	point62	62	12.0	39.6
						NB Barrier 2	point61	61	12.0	34.1
Residence 2	28	60.3	0.3	5	-4.7	NB Barrier 2	point59	59	12.0	44.9
						NB Barrier 2	point60	60	12.0	38.8
						NB Barrier 2	point62	62	12.0	35.8
						NB Barrier 2	point61	61	12.0	33.8
Residence 3	29	60.2	0.3	5	-4.7	NB Barrier 2	point59	59	12.0	44.4
						NB Barrier 2	point60	60	12.0	38.7
						NB Barrier 2	point62	62	12.0	37.8
						NB Barrier 2	point61	61	12.0	33.6
Bagley Center	30	59.2	0.3	5	-4.7	NB Barrier 2	point59	59	12.0	44.8
						NB Barrier 2	point62	62	12.0	38.5
						NB Barrier 2	point60	60	12.0	38.0
						NB Barrier 2	point61	61	12.0	33.2
Residence 4	31	58.9	0.2	5	-4.8	NB Barrier 2	point59	59	12.0	44.7
						NB Barrier 2	point60	60	12.0	39.2
						NB Barrier 2	point62	62	12.0	36.2
						NB Barrier 2	point61	61	12.0	33.1
Residence 5	32	58.9	0.2	5	-4.8	NB Barrier 2	point59	59	12.0	44.8

						NB Barrier 2	point60	60	12.0	39.8
						NB Barrier 2	point62	62	12.0	38.1
						NB Barrier 2	point61	61	12.0	33.3
Residence 6	33	59.6	0.1	5	-4.9	NB Barrier 2	point59	59	12.0	44.9
						NB Barrier 2	point60	60	12.0	40.3
						NB Barrier 2	point62	62	12.0	35.7
						NB Barrier 2	point61	61	12.0	33.6
Residence 7	34	59.8	0.1	5	-4.9	NB Barrier 2	point59	59	12.0	44.5
						NB Barrier 2	point60	60	12.0	40.1
						NB Barrier 2	point62	62	12.0	37.9
						NB Barrier 2	point61	61	12.0	33.4
Residence 8	35	59.3	0.2	5	-4.8	NB Barrier 2	point59	59	12.0	44.7
						NB Barrier 2	point60	60	12.0	39.6
						NB Barrier 2	point62	62	12.0	38.0
						NB Barrier 2	point61	61	12.0	33.4
Residence 9	36	59.0	0.2	5	-4.8	NB Barrier 2	point59	59	12.0	44.4
						NB Barrier 2	point60	60	12.0	39.1
						NB Barrier 2	point62	62	12.0	38.5
						NB Barrier 2	point61	61	12.0	33.0
Residence 10	37	58.5	0.1	5	-4.9	NB Barrier 2	point59	59	12.0	44.0
						NB Barrier 2	point60	60	12.0	38.8
						NB Barrier 2	point62	62	12.0	35.7
						NB Barrier 2	point61	61	12.0	32.7
Residence 11	39	58.2	0.1	5	-4.9	NB Barrier 2	point59	59	12.0	43.8
						NB Barrier 2	point60	60	12.0	38.8
						NB Barrier 2	point62	62	12.0	37.8
						NB Barrier 2	point61	61	12.0	32.4
Residence 12	40	58.6	0.2	5	-4.8	NB Barrier 2	point59	59	12.0	44.0
						NB Barrier 2	point60	60	12.0	39.1
						NB Barrier 2	point62	62	12.0	37.1
						NB Barrier 2	point61	61	12.0	32.9
Residence 13	41	58.7	0.2	5	-4.8	NB Barrier 2	point59	59	12.0	44.1
						NB Barrier 2	point60	60	12.0	39.4
						NB Barrier 2	point62	62	12.0	38.0
						NB Barrier 2	point61	61	12.0	32.7
Residence 14	42	58.5	0.1	5	-4.9	NB Barrier 2	point59	59	12.0	43.9

						NB Barrier 2	point60	60	12.0	39.4
						NB Barrier 2	point62	62	12.0	36.0
						NB Barrier 2	point61	61	12.0	32.1
Residence 15	43	58.3	0.2	5	-4.8	NB Barrier 2	point59	59	12.0	43.8
						NB Barrier 2	point60	60	12.0	39.0
						NB Barrier 2	point62	62	12.0	36.8
						NB Barrier 2	point61	61	12.0	32.6
Residence 16	44	58.5	-0.0	5	-5.0	NB Barrier 2	point59	59	12.0	38.6
						NB Barrier 2	point60	60	12.0	33.8
						NB Barrier 2	point62	62	12.0	30.8
						NB Barrier 2	point61	61	12.0	23.8
Residence 17	45	57.8	0.1	5	-4.9	NB Barrier 2	point59	59	12.0	43.3
						NB Barrier 2	point62	62	12.0	39.8
						NB Barrier 2	point60	60	12.0	38.1
						NB Barrier 2	point61	61	12.0	32.1
Residence 18	46	57.9	0.1	5	-4.9	NB Barrier 2	point59	59	12.0	43.3
						NB Barrier 2	point62	62	12.0	39.5
						NB Barrier 2	point60	60	12.0	37.9
						NB Barrier 2	point61	61	12.0	32.0
Multi-family Complex	51	61.0	0.4	5	-4.6	NB Barrier 2	point59	59	12.0	41.9
						NB Barrier 2	point62	62	12.0	40.4
						NB Barrier 2	point60	60	12.0	38.5
						NB Barrier 2	point61	61	12.0	34.1
Total Cost, All Barriers (including additional cost(s))					$412720					

American Consulting Engineers				**18 August 2008**						
CC				**TNM 2.5**						
RESULTS: BARRIER DESCRIPTIONS										
PROJECT/CONTRACT:	**Ambassador Bridge Enhancement**									
RUN:	**Barrier Analysis - Northbound Barrier**									
BARRIER DESIGN:	**12ft**									
Barriers										
Name	**Type**	**Heights along Barrier**			**Length**	**If Wall**	**If Berm**			**Cost**
		Min	**Avg**	**Max**		**Area**	**Volume**	**Top**	**Run:Rise**	
								Width		
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
NB Barrier 2	W	12.00	12.00	12.00	1376	16509				412720
									Total Cost:	412720

American Consulting Engineers
CC
19 August 2008
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Ambassador Bridge Enhancement
RUN: Barrier Analysis - Northbound Barrier
BARRIER DESIGN: 12ft
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Business 1	9	1	0.0	60.3	71	60.3	10	----	60.3	0.0	5	-5.0
Business 2	10	1	0.0	62.2	71	62.2	10	----	62.2	0.0	5	-5.0
Riverside Park 2	11	1	0.0	61.7	66	61.7	10	----	61.7	0.0	5	-5.0
Riverside Park 1	12	1	0.0	56.8	66	56.8	10	----	56.8	0.0	5	-5.0
Riverside Park 3	14	1	0.0	68.9	66	68.9	10	Snd Lvl	68.9	0.0	5	-5.0
Business 3	15	1	0.0	67.3	71	67.3	10	----	67.3	0.0	5	-5.0
Riverside Park 4	16	1	0.0	70.3	66	70.3	10	Snd Lvl	70.3	0.0	5	-5.0
Business 4	17	1	0.0	71.0	71	71.0	10	Snd Lvl	71.0	0.0	5	-5.0
Business 6	19	1	0.0	69.4	71	69.4	10	----	69.3	0.1	5	-4.9
Business 5	20	1	0.0	75.3	71	75.3	10	Snd Lvl	75.3	0.0	5	-5.0
Business 7	21	1	0.0	74.3	71	74.3	10	Snd Lvl	74.3	0.0	5	-5.0
Business 8	22	1	0.0	66.8	71	66.8	10	----	66.4	0.4	5	-4.6
Business 9	23	1	0.0	64.1	71	64.1	10	----	63.8	0.3	5	-4.7
Business 10	24	1	0.0	58.7	71	58.7	10	----	58.4	0.3	5	-4.7
St. Anne's Church	26	1	0.0	62.6	66	62.6	10	----	62.4	0.2	5	-4.8
Residence 1	27	1	0.0	60.7	66	60.7	10	----	60.5	0.2	5	-4.8
Residence 2	28	1	0.0	60.6	66	60.6	10	----	60.3	0.3	5	-4.7
Residence 3	29	1	0.0	60.5	66	60.5	10	----	60.2	0.3	5	-4.7
Bagley Center	30	1	0.0	59.5	71	59.5	10	----	59.2	0.3	5	-4.7
Residence 4	31	1	0.0	59.1	66	59.1	10	----	58.9	0.2	5	-4.8
Residence 5	32	1	0.0	59.1	66	59.1	10	----	58.9	0.2	5	-4.8
Residence 6	33	1	0.0	59.7	66	59.7	10	----	59.6	0.1	5	-4.9
Residence 7	34	1	0.0	59.9	66	59.9	10	----	59.8	0.1	5	-4.9
Residence 8	35	1	0.0	59.5	66	59.5	10	----	59.3	0.2	5	-4.8

Residence 9	36	1	0.0	59.2	66	59.2	10	----	59.0	0.2	5	-4.8
Residence 10	37	1	0.0	58.6	66	58.6	10	----	58.5	0.1	5	-4.9
Residence 11	39	1	0.0	58.3	66	58.3	10	----	58.2	0.1	5	-4.9
Residence 12	40	1	0.0	58.8	66	58.8	10	----	58.6	0.2	5	-4.8
Residence 13	41	1	0.0	58.9	66	58.9	10	----	58.7	0.2	5	-4.8
Residence 14	42	1	0.0	58.6	66	58.6	10	----	58.5	0.1	5	-4.9
Residence 15	43	1	0.0	58.5	66	58.5	10	----	58.3	0.2	5	-4.8
Residence 16	44	1	0.0	58.5	66	58.5	10	----	58.5	0.0	5	-5.0
Residence 17	45	1	0.0	57.9	66	57.9	10	----	57.8	0.1	5	-4.9
Residence 18	46	1	0.0	58.0	66	58.0	10	----	57.9	0.1	5	-4.9
Multi-family Complex	51	12	0.0	61.4	66	61.4	10	----	61.0	0.4	5	-4.6

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	46	0.0	0.1	0.4
All Impacted	5	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

American Consulting Engineers **18 August 2008**
CC **TNM 2.5**

INPUT: BARRIERS
PROJECT/CONTRACT: **Ambassador Bridge Enhancement**
RUN: **Barrier Analysis - Southbound Barrier**

Barrier Name	Type	Height Min	Height Max	If Wall $ per Unit Area	If Berm $ per Unit Vol.	Top Width	Run:Rise	Add'tnl $ per Unit Length	Points Name	No.	Coordinates (bottom) X	Y	Z	Height at Point	Segment Seg Ht Increment	Perturbs #Up	#Dn	On Struct?	Important Reflections?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Existing Wall 1	W	0.00	99.99	0.00				0.00	point26	26	13,471,269.0	302,867.0	589.00	12.00	0.00	0	0		
									point27	27	13,470,963.0	302,732.3	587.00	12.00					
Existing Wall 2	W	0.00	99.99	0.00				0.00	point28	28	13,471,316.0	302,886.3	589.00	10.00	0.00	0	0		
									point29	29	13,471,269.0	302,867.0	589.00	10.00					
Existing Wall 3	W	0.00	99.99	0.00				0.00	point30	30	13,471,316.0	302,886.3	589.00	12.00	0.00	0	0		
									point31	31	13,471,406.0	302,925.8	591.00	12.00	0.00	0	0		
									point32	32	13,471,538.0	302,625.6	594.00	12.00					
Existing Wall 4	W	0.00	99.99	0.00				0.00	point33	33	13,471,907.0	301,763.0	591.00	24.00	0.00	0	0		
									point34	34	13,471,538.0	302,625.6	594.00	24.00					
Existing Wall 5	W	0.00	99.99	0.00				0.00	point35	35	13,472,050.0	301,439.4	584.00	20.00	0.00	0	0		
									point36	36	13,471,907.0	301,763.0	591.00	20.00					
Existing Wall 6	W	0.00	99.99	0.00				0.00	point37	37	13,472,050.0	301,439.4	584.00	14.00	0.00	0	0		
									point38	38	13,472,094.0	301,426.8	584.00	14.00	0.00	0	0		
									point39	39	13,472,138.0	301,447.2	584.00	14.00	0.00	0	0		
									point40	40	13,472,155.0	301,412.3	584.00	14.00					
Existing Wall 7	W	0.00	99.99	0.00				0.00	point43	43	13,472,155.0	301,412.3	584.00	12.00	0.00	0	0		
									point44	44	13,472,188.0	301,337.3	584.00	12.00	0.00	0	0		
									point45	45	13,472,237.0	301,359.3	584.00	12.00					
Existing Wall 8	W	0.00	99.99	0.00				0.00	point46	46	13,472,237.0	301,359.3	584.00	8.00	0.00	0	0		
									point47	47	13,472,245.0	301,362.1	584.00	8.00	0.00	0	0		
									point48	48	13,472,251.0	301,346.2	584.00	8.00					
Existing Wall 9	W	0.00	99.99	0.00				0.00	point49	49	13,472,298.0	301,241.2	584.00	7.00	0.00	0	0		
									point50	50	13,472,251.0	301,346.2	584.00	7.00					
Existing Wall 10	W	0.00	99.99	0.00				0.00	point51	51	13,472,309.0	301,215.8	584.00	10.00	0.00	0	0		
									point52	52	13,472,298.0	301,241.2	584.00	10.00					
Existing Wall 11	W	0.00	99.99	0.00				0.00	point53	53	13,472,326.0	301,174.6	583.00	7.00	0.00	0	0		
									point54	54	13,472,309.0	301,215.8	584.00	7.00					
Existing Wall 12	W	0.00	99.99	0.00				0.00	point55	55	13,472,326.0	301,174.6	583.00	6.00	0.00	0	0		
									point56	56	13,472,403.0	300,998.1	581.00	6.00	0.00	0	0		
									point57	57	13,472,394.0	300,974.0	581.00	6.00	0.00	0	0		
									point58	58	13,472,321.0	300,930.8	581.00	6.00					
SB Barrier 1	W	8.00	12.00	25.00				0.00	point64	64	13,472,291.0	299,421.6	728.00	8.00	2.00	2	0	Y	
									point65	65	13,471,913.0	300,177.7	678.00	8.00	2.00	2	0	Y	
									point66	66	13,471,829.0	300,349.3	671.00	8.00	2.00	2	0	Y	
									point67	67	13,471,797.0	300,413.0	670.00	8.00	2.00	2	0	Y	

									point68	68	13,471,672.0	300,659.2	658.00	8.00					

American Consulting Engineers 18 August 2008
CC TNM 2.5
Calculated with TNM 2.5

RESULTS: BARRIER DESIGN
PROJECT/CONTRACT: Ambassador Bridge Enhancement
RUN: Barrier Analysis - Southbound Barrier
BARRIER DESIGN: 12ft

ATMOSPHERICS: 68 deg F, 50% RH

Selected Receivers

Name	No.	Calc LAeq1h	Noise Reduction Calc	Goal	Calc-Goal	Barrier Reviewed	Important Segments Name	No.	Height	Partial LAeq1h
		dBA	dB	dB	dB				ft	dBA
Business 1	9	59.7	0.5	5	-4.5	SB Barrier 1	point64	64	12.0	41.2
						SB Barrier 1	point67	67	12.0	38.1
						SB Barrier 1	point65	65	12.0	34.8
						SB Barrier 1	point66	66	12.0	30.6
Business 2	10	61.2	0.9	5	-4.1	SB Barrier 1	point64	64	12.0	44.9
						SB Barrier 1	point67	67	12.0	38.9
						SB Barrier 1	point65	65	12.0	37.2
						SB Barrier 1	point66	66	12.0	32.5
Riverside Park 2	11	60.8	0.7	5	-4.3	SB Barrier 1	point64	64	12.0	43.6
						SB Barrier 1	point67	67	12.0	36.6
						SB Barrier 1	point65	65	12.0	33.8
						SB Barrier 1	point66	66	12.0	29.0
Riverside Park 1	12	56.2	0.5	5	-4.5	SB Barrier 1	point64	64	12.0	38.2
						SB Barrier 1	point67	67	12.0	33.8
						SB Barrier 1	point65	65	12.0	30.0
						SB Barrier 1	point66	66	12.0	25.8
Riverside Park 3	14	66.2	1.8	5	-3.2	SB Barrier 1	point64	64	12.0	51.6
						SB Barrier 1	point65	65	12.0	41.2
						SB Barrier 1	point67	67	12.0	41.0
						SB Barrier 1	point66	66	12.0	35.4
Business 3	15	66.3	0.9	5	-4.1	SB Barrier 1	point64	64	12.0	47.8

						SB Barrier 1	point67	67	12.0	45.1
						SB Barrier 1	point65	65	12.0	43.4
						SB Barrier 1	point66	66	12.0	39.2
Riverside Park 4	16	69.6	0.3	5	-4.7	SB Barrier 1	point64	64	12.0	56.3
						SB Barrier 1	point65	65	12.0	30.1
						SB Barrier 1	point67	67	12.0	29.8
						SB Barrier 1	point66	66	12.0	27.3
Business 4	17	70.5	0.5	5	-4.5	SB Barrier 1	point64	64	12.0	48.3
						SB Barrier 1	point67	67	12.0	47.8
						SB Barrier 1	point65	65	12.0	45.5
						SB Barrier 1	point66	66	12.0	41.9
Business 6	19	70.2	-0.0	5	-5.0					
Business 5	20	75.7	-0.0	5	-5.0					
Business 7	21	74.4	0.0	5	-5.0					
Business 8	22	66.9	0.0	5	-5.0					
Business 9	23	64.2	0.0	5	-5.0					
Business 10	24	58.8	-0.0	5	-5.0					
St. Anne's Church	26	62.7	-0.0	5	-5.0					
Residence 1	27	60.7	0.0	5	-5.0					
Residence 2	28	60.6	-0.0	5	-5.0					
Residence 3	29	60.5	-0.0	5	-5.0					
Bagley Center	30	59.5	0.0	5	-5.0					
Residence 4	31	59.1	0.0	5	-5.0					
Residence 5	32	59.1	0.0	5	-5.0					
Residence 6	33	59.7	0.0	5	-5.0					
Residence 7	34	59.9	0.0	5	-5.0					
Residence 8	35	59.5	0.0	5	-5.0					
Residence 9	36	59.2	0.0	5	-5.0					
Residence 10	37	58.6	0.0	5	-5.0					
Residence 11	39	58.3	0.0	5	-5.0					
Residence 12	40	58.8	-0.0	5	-5.0					
Residence 13	41	58.9	-0.0	5	-5.0					
Residence 14	42	58.6	-0.0	5	-5.0					
Residence 15	43	58.5	-0.0	5	-5.0					
Residence 16	44	58.5	-0.0	5	-5.0					
Residence 17	45	57.9	0.0	5	-5.0					

Residence 18	46	58.0	0.0	5	-5.0					
Multi-family Complex	51	61.4	0.0	5	-5.0					
Total Cost, All Barriers (including additional cost(s))					$415141					

American Consulting Engineers				**18 August 2008**						
CC				**TNM 2.5**						
RESULTS: BARRIER DESCRIPTIONS										
PROJECT/CONTRACT:	**Ambassador Bridge Enhancement**									
RUN:	**Barrier Analysis - Southbound Barrier**									
BARRIER DESIGN:	**12ft**									
Barriers										
Name	**Type**	**Heights along Barrier**			**Length**	**If Wall**	**If Berm**			**Cost**
		Min	**Avg**	**Max**		**Area**	**Volume**	**Top**	**Run:Rise**	
								Width		
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
SB Barrier 1	W	12.00	12.00	12.00	1384	16606				415141
									Total Cost:	415141

American Consulting Engineers
CC
19 August 2008
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Ambassador Bridge Enhancement
RUN: Barrier Analysis - Southbound Barrier
BARRIER DESIGN: 12ft
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Business 1	9	1	0.0	60.2	71	60.2	10	----	59.7	0.5	5	-4.5
Business 2	10	1	0.0	62.1	71	62.1	10	----	61.2	0.9	5	-4.1
Riverside Park 2	11	1	0.0	61.5	66	61.5	10	----	60.8	0.7	5	-4.3
Riverside Park 1	12	1	0.0	56.7	66	56.7	10	----	56.2	0.5	5	-4.5
Riverside Park 3	14	1	0.0	68.0	66	68.0	10	Snd Lvl	66.2	1.8	5	-3.2
Business 3	15	1	0.0	67.2	71	67.2	10	----	66.3	0.9	5	-4.1
Riverside Park 4	16	1	0.0	69.9	66	69.9	10	Snd Lvl	69.6	0.3	5	-4.7
Business 4	17	1	0.0	71.0	71	71.0	10	Snd Lvl	70.5	0.5	5	-4.5
Business 6	19	1	0.0	70.2	71	70.2	10	----	70.2	0.0	5	-5.0
Business 5	20	1	0.0	75.7	71	75.7	10	Snd Lvl	75.7	0.0	5	-5.0
Business 7	21	1	0.0	74.4	71	74.4	10	Snd Lvl	74.4	0.0	5	-5.0
Business 8	22	1	0.0	66.9	71	66.9	10	----	66.9	0.0	5	-5.0
Business 9	23	1	0.0	64.2	71	64.2	10	----	64.2	0.0	5	-5.0
Business 10	24	1	0.0	58.8	71	58.8	10	----	58.8	0.0	5	-5.0
St. Anne's Church	26	1	0.0	62.7	66	62.7	10	----	62.7	0.0	5	-5.0
Residence 1	27	1	0.0	60.7	66	60.7	10	----	60.7	0.0	5	-5.0
Residence 2	28	1	0.0	60.6	66	60.6	10	----	60.6	0.0	5	-5.0
Residence 3	29	1	0.0	60.5	66	60.5	10	----	60.5	0.0	5	-5.0
Bagley Center	30	1	0.0	59.5	71	59.5	10	----	59.5	0.0	5	-5.0
Residence 4	31	1	0.0	59.1	66	59.1	10	----	59.1	0.0	5	-5.0
Residence 5	32	1	0.0	59.1	66	59.1	10	----	59.1	0.0	5	-5.0
Residence 6	33	1	0.0	59.7	66	59.7	10	----	59.7	0.0	5	-5.0
Residence 7	34	1	0.0	59.9	66	59.9	10	----	59.9	0.0	5	-5.0
Residence 8	35	1	0.0	59.5	66	59.5	10	----	59.5	0.0	5	-5.0

Residence 9	36	1	0.0	59.2	66	59.2	10	----	59.2	0.0	5	-5.0
Residence 10	37	1	0.0	58.6	66	58.6	10	----	58.6	0.0	5	-5.0
Residence 11	39	1	0.0	58.3	66	58.3	10	----	58.3	0.0	5	-5.0
Residence 12	40	1	0.0	58.8	66	58.8	10	----	58.8	0.0	5	-5.0
Residence 13	41	1	0.0	58.9	66	58.9	10	----	58.9	0.0	5	-5.0
Residence 14	42	1	0.0	58.6	66	58.6	10	----	58.6	0.0	5	-5.0
Residence 15	43	1	0.0	58.5	66	58.5	10	----	58.5	0.0	5	-5.0
Residence 16	44	1	0.0	58.5	66	58.5	10	----	58.5	0.0	5	-5.0
Residence 17	45	1	0.0	57.9	66	57.9	10	----	57.9	0.0	5	-5.0
Residence 18	46	1	0.0	58.0	66	58.0	10	----	58.0	0.0	5	-5.0
Multi-family Complex	51	12	0.0	61.4	66	61.4	10	----	61.4	0.0	5	-5.0

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	46	0.0	0.2	1.8
All Impacted	5	0.0	0.5	1.8
All that meet NR Goal	0	0.0	0.0	0.0

APPENDIX E

TNM INPUT/OUTPUT

FOR I-75 ANALYSIS

American Consulting Engineers
CC

18 April 2007
TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: Ambassador Bridge Enhancement
RUN: Opening Year 2010 With I-75

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway		Points					Flow Control			Segment	
Name	Width	Name	No.	Coordinates (pavement) X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Fort Street EB-1	12.0	point22	1	13,470,431.0	299,694.8	582.00				Average	
		point23	2	13,472,476.0	300,927.1	581.00					
Fort Street EB-2	12.0	point24	3	13,470,425.0	299,705.1	582.00				Average	
		point25	4	13,472,470.0	300,937.3	581.00					
Fort Street EB-3	12.0	point26	5	13,470,419.0	299,715.4	582.00				Average	
		point27	6	13,472,464.0	300,947.6	581.00					
Fort Street WB-3	12.0	point29	7	13,472,448.0	300,965.0	581.00				Average	
		point28	8	13,470,403.0	299,732.8	582.00					
Fort Street WB-2	12.0	point31	9	13,472,442.0	300,975.3	581.00				Average	
		point30	10	13,470,397.0	299,743.1	582.00					
SB I-75f	22.0	point923	923	13,470,243.0	300,376.7	573.00				Average	
		point922	922	13,470,228.0	300,353.7	573.00				Average	
		point921	921	13,470,142.0	300,254.3	573.00					
Bridge SB-2	20.0	point985	985	13,470,754.0	300,870.2	590.00				Average	Y
		point984	984	13,470,795.0	301,029.6	593.00				Average	Y
		point983	983	13,470,826.0	301,190.4	596.00				Average	Y
		point982	982	13,470,854.0	301,335.4	598.00				Average	Y
		point981	981	13,470,868.0	301,372.1	599.00				Average	Y
		point980	980	13,470,886.0	301,396.4	600.00				Average	Y
		point979	979	13,470,904.0	301,412.3	599.00				Average	Y
		point978	978	13,470,956.0	301,436.4	597.00				Average	Y
		point986	986	13,470,980.0	301,438.8	595.00				Average	Y
		point1111	1111	13,471,020.0	301,431.8	593.00					
Bridge SB-1	20.0	point976	976	13,470,773.0	300,860.9	590.00				Average	Y
		point975	975	13,470,814.0	301,020.7	593.00				Average	Y

		point974	974	13,470,845.0	301,181.8	596.00				Average	Y
		point973	973	13,470,873.0	301,325.8	598.00				Average	Y
		point972	972	13,470,885.0	301,360.0	599.00				Average	Y
		point971	971	13,470,901.0	301,381.9	600.00				Average	Y
		point970	970	13,470,917.0	301,395.8	599.00				Average	Y
		point969	969	13,470,966.0	301,418.3	597.00				Average	Y
		point988	988	13,470,989.0	301,420.5	595.00				Average	Y
		point626	626	13,471,029.0	301,413.7	593.00					
WB I-96a	20.0	point412	412	13,470,210.0	300,184.7	573.00				Average	
		point413	413	13,470,348.0	300,349.8	574.00				Average	
		point805	805	13,470,414.0	300,447.3	574.00				Average	
		point804	804	13,470,473.0	300,547.8	575.00				Average	
		point803	803	13,470,547.0	300,693.2	576.00				Average	
		point802	802	13,470,593.0	300,804.2	577.00				Average	
		point811	811	13,470,664.0	301,016.9	578.00					
NB I-75 to Vernor	22.0	point418	418	13,470,258.0	300,147.6	573.00				Average	
		point996	996	13,470,400.0	300,316.5	574.00				Average	
		point995	995	13,470,467.0	300,415.3	574.00				Average	
		point994	994	13,470,528.0	300,518.6	575.00				Average	
		point993	993	13,470,602.0	300,666.8	576.00				Average	
		point992	992	13,470,650.0	300,781.0	577.00				Average	
		point1004	1004	13,470,722.0	300,996.6	578.00				Average	
		point1003	1003	13,470,757.0	301,114.8	577.00				Average	
		point1002	1002	13,470,807.0	301,339.8	577.00				Average	
		point1001	1001	13,470,834.0	301,540.3	576.00				Average	
		point1000	1000	13,470,844.0	301,669.0	576.00				Average	
		point999	999	13,470,848.0	301,782.6	576.00				Average	
		point998	998	13,470,843.0	301,950.6	575.00				Average	
		point997	997	13,470,844.0	302,045.2	575.00					
SB I-75 to Vernor	20.0	point478	478	13,470,025.0	303,598.3	576.00				Average	
		point479	479	13,470,153.0	303,331.2	576.00				Average	
		point512	512	13,470,280.0	303,063.8	577.00				Average	
		point511	511	13,470,345.0	302,919.6	578.00				Average	
		point510	510	13,470,374.0	302,845.8	578.00				Average	Y
		point465	465	13,470,522.0	302,365.3	596.00					
EB I-96 to Toll Plaza	20.0	point471	471	13,469,983.0	303,546.2	576.00				Average	
		point470	470	13,470,028.0	303,446.4	576.00				Average	
		point469	469	13,470,111.0	303,263.4	577.00				Average	

		point842	842	13,470,235.0	302,969.1	577.00				Average	
		point841	841	13,470,273.0	302,850.7	581.00					
SB I-75 to Toll Plaza	20.0	point466	466	13,470,356.0	302,839.8	578.00				Average	Y
		point819	819	13,470,500.0	302,354.7	596.00					
SB I-75a	20.0	point430	430	13,469,762.0	304,255.7	577.00				Average	
		point490	490	13,469,951.0	303,863.8	576.00				Average	
		point488	488	13,470,062.0	303,626.9	576.00				Average	
		point489	489	13,470,278.0	303,189.9	576.00				Average	
		point637	637	13,470,279.0	303,189.5	576.00				Average	
		point636	636	13,470,412.0	302,908.9	576.00				Average	
		point635	635	13,470,470.0	302,762.3	576.00				Average	
		point634	634	13,470,533.0	302,582.5	575.00				Average	
		point633	633	13,470,588.0	302,387.9	574.00				Average	
		point632	632	13,470,633.0	302,188.7	574.00				Average	
		point631	631	13,470,670.0	301,943.5	575.00				Average	
		point630	630	13,470,687.0	301,752.8	576.00				Average	
		point671	671	13,470,693.0	301,508.7	576.00				Average	
		point670	670	13,470,691.0	301,415.6	577.00				Average	
		point669	669	13,470,685.0	301,343.4	577.00				Average	
		point668	668	13,470,677.0	301,270.1	577.00				Average	
		point665	665	13,470,667.0	301,184.8	577.00				Average	
		point663	663	13,470,637.0	301,037.0	578.00				Average	
		point662	662	13,470,605.0	300,922.5	578.00				Average	
		point661	661	13,470,555.0	300,784.7	577.00				Average	
		point660	660	13,470,526.0	300,718.7	576.00				Average	
		point659	659	13,470,475.0	300,611.2	575.00				Average	
		point658	658	13,470,392.0	300,468.8	574.00				Average	
		point657	657	13,470,350.0	300,407.8	574.00				Average	
		point411	411	13,470,305.0	300,347.2	573.00				Average	
		point410	410	13,470,288.0	300,320.6	573.00				Average	
		point409	409	13,470,198.0	300,217.9	573.00					
SB I-75b	12.0	point432	432	13,469,747.0	304,249.0	577.00				Average	
		point484	484	13,469,936.0	303,857.2	576.00				Average	
		point486	486	13,470,047.0	303,620.1	576.00				Average	
		point646	646	13,470,264.0	303,182.9	576.00				Average	
		point645	645	13,470,397.0	302,902.6	576.00				Average	
		point644	644	13,470,455.0	302,756.7	576.00				Average	
		point643	643	13,470,518.0	302,577.4	575.00				Average	

		point642	642	13,470,572.0	302,383.5	574.00				Average	
		point641	641	13,470,618.0	302,185.0	574.00				Average	
		point640	640	13,470,654.0	301,940.6	575.00				Average	
		point639	639	13,470,671.0	301,750.7	576.00				Average	
		point689	689	13,470,677.0	301,506.9	576.00				Average	
		point688	688	13,470,671.0	301,372.1	577.00				Average	
		point687	687	13,470,663.0	301,299.9	577.00				Average	
		point672	672	13,470,650.0	301,184.9	577.00				Average	
		point674	674	13,470,622.0	301,038.8	578.00				Average	
		point682	682	13,470,589.0	300,925.1	578.00				Average	
		point681	681	13,470,540.0	300,787.7	577.00				Average	
		point680	680	13,470,511.0	300,722.2	576.00				Average	
		point679	679	13,470,461.0	300,615.3	575.00				Average	
		point678	678	13,470,378.0	300,473.7	574.00				Average	
		point677	677	13,470,337.0	300,413.3	574.00				Average	
		point685	685	13,470,291.0	300,352.2	573.00				Average	
		point684	684	13,470,274.0	300,326.3	573.00				Average	
		point683	683	13,470,185.0	300,224.3	573.00					
SB I-75c	22.0	point434	434	13,469,731.0	304,241.7	577.00				Average	
		point480	480	13,469,919.0	303,850.1	576.00				Average	
		point482	482	13,470,033.0	303,613.3	576.00				Average	
		point655	655	13,470,249.0	303,176.3	576.00				Average	
		point654	654	13,470,382.0	302,896.3	576.00				Average	
		point653	653	13,470,440.0	302,751.0	576.00				Average	
		point652	652	13,470,502.0	302,572.4	575.00				Average	
		point651	651	13,470,557.0	302,379.0	574.00				Average	
		point650	650	13,470,602.0	302,181.3	574.00				Average	
		point649	649	13,470,638.0	301,937.8	575.00				Average	
		point648	648	13,470,655.0	301,748.6	576.00				Average	
		point1025	1025	13,470,661.0	301,505.2	576.00				Average	
		point1024	1024	13,470,654.0	301,363.2	577.00				Average	
		point1021	1021	13,470,634.0	301,186.4	577.00				Average	
		point1019	1019	13,470,606.0	301,040.6	578.00				Average	
		point1018	1018	13,470,574.0	300,927.7	578.00				Average	
		point1017	1017	13,470,525.0	300,790.7	577.00				Average	
		point1016	1016	13,470,496.0	300,725.7	576.00				Average	
		point1015	1015	13,470,446.0	300,619.4	575.00				Average	
		point1014	1014	13,470,364.0	300,478.7	574.00				Average	

		point1013	1013	13,470,323.0	300,418.9	574.00				Average	
		point1011	1011	13,470,276.0	300,357.2	573.00				Average	
		point1010	1010	13,470,260.0	300,332.1	573.00				Average	
		point1009	1009	13,470,172.0	300,230.7	573.00					
EB I-96a to SB I-75	20.0	point436	436	13,469,704.0	304,241.6	577.00				Average	
		point1030	1030	13,469,815.0	304,010.0	577.00				Average	
		point477	477	13,469,892.0	303,849.3	576.00				Average	
		point476	476	13,470,001.0	303,606.6	576.00				Average	
		point475	475	13,470,214.0	303,132.4	576.00				Average	
		point855	855	13,470,298.0	302,935.0	576.00				Average	
		point857	857	13,470,338.0	302,817.8	576.00				Average	
		point858	858	13,470,381.0	302,672.0	575.00				Average	
		point859	859	13,470,477.0	302,313.2	574.00				Average	
		point863	863	13,470,565.0	301,986.7	575.00				Average	
		point871	871	13,470,618.0	301,766.8	576.00				Average	
		point870	870	13,470,641.0	301,651.6	576.00					
EB I-96b to SB I-75	22.0	point438	438	13,469,683.0	304,236.4	577.00				Average	
		point1032	1032	13,469,794.0	304,004.9	577.00				Average	
		point474	474	13,469,871.0	303,844.4	576.00				Average	
		point473	473	13,469,980.0	303,601.7	576.00				Average	
		point472	472	13,470,193.0	303,127.5	576.00				Average	
		point852	852	13,470,279.0	302,924.7	576.00				Average	
		point851	851	13,470,316.0	302,820.2	576.00				Average	
		point850	850	13,470,349.0	302,710.3	575.00				Average	
		point849	849	13,470,455.0	302,310.1	574.00				Average	
		point861	861	13,470,543.0	301,983.5	575.00				Average	
		point867	867	13,470,597.0	301,767.9	576.00					
Truck Inspection to SB I-75	20.0	point387	387	13,472,191.0	300,880.9	581.00	Stop	0.00	100	Average	
		point388	388	13,471,793.0	300,644.8	584.00				Average	
		point389	389	13,471,142.0	300,258.8	588.00				Average	
		point390	390	13,470,903.0	300,114.6	592.00					
NB I-75 to SB Bridge	20.0	point406	406	13,470,270.0	300,134.2	573.00				Average	
		point405	405	13,470,414.0	300,292.9	577.00				Average	
		point404	404	13,470,563.0	300,480.2	580.00				Average	
		point403	403	13,470,644.0	300,601.5	583.00				Average	
		point402	402	13,470,715.0	300,742.1	587.00				Average	
		point1028	1028	13,470,750.0	300,844.1	590.00				Average	
		point1029	1029	13,470,754.0	300,870.2	590.00					

NB I-75c	12.0	point416	416	13,470,245.0	300,160.8	573.00			Average	
		point798	798	13,470,386.0	300,328.7	574.00			Average	
		point797	797	13,470,453.0	300,427.2	574.00			Average	
		point796	796	13,470,513.0	300,529.8	575.00			Average	
		point795	795	13,470,587.0	300,677.2	576.00			Average	
		point794	794	13,470,635.0	300,790.7	577.00			Average	
		point777	777	13,470,707.0	301,005.4	578.00			Average	
		point776	776	13,470,742.0	301,123.2	577.00			Average	
		point775	775	13,470,791.0	301,347.4	577.00			Average	
		point774	774	13,470,819.0	301,547.0	576.00			Average	
		point773	773	13,470,828.0	301,675.1	576.00			Average	
		point772	772	13,470,832.0	301,788.1	576.00			Average	
		point771	771	13,470,827.0	301,955.4	575.00			Average	
		point739	739	13,470,819.0	302,051.3	575.00				
NB I-75b	12.0	point1026	1026	13,470,235.0	300,168.4	573.00			Average	
		point791	791	13,470,375.0	300,335.4	574.00			Average	
		point790	790	13,470,442.0	300,433.6	574.00			Average	
		point789	789	13,470,501.0	300,535.5	575.00			Average	
		point788	788	13,470,576.0	300,682.2	576.00			Average	
		point787	787	13,470,623.0	300,794.9	577.00			Average	
		point769	769	13,470,694.0	301,008.8	578.00			Average	
		point768	768	13,470,729.0	301,126.3	577.00			Average	
		point767	767	13,470,779.0	301,349.5	577.00			Average	
		point766	766	13,470,806.0	301,548.2	576.00			Average	
		point765	765	13,470,815.0	301,675.7	576.00			Average	
		point764	764	13,470,819.0	301,788.1	576.00			Average	
		point763	763	13,470,814.0	301,954.8	575.00			Average	
		point746	746	13,470,806.0	302,049.6	575.00			Average	
		point745	745	13,470,778.0	302,248.6	574.00			Average	
		point744	744	13,470,738.0	302,434.5	574.00			Average	
		point743	743	13,470,672.0	302,644.3	575.00			Average	
		point742	742	13,470,614.0	302,792.0	576.00			Average	
		point741	741	13,470,518.0	302,988.5	576.00			Average	
		point714	714	13,470,298.0	303,416.8	576.00			Average	
		point422	422	13,470,258.0	303,493.0	576.00			Average	
		point1218	1218	13,470,003.0	303,984.5	577.50			Average	
		point423	423	13,469,790.0	304,392.9	579.00				
NB I-75a	12.0	point414	414	13,470,224.0	300,176.2	573.00			Average	

		point784	784	13,470,363.0	300,342.2	574.00				Average	
		point783	783	13,470,430.0	300,440.0	574.00				Average	
		point782	782	13,470,489.0	300,541.2	575.00				Average	
		point781	781	13,470,563.0	300,687.3	576.00				Average	
		point780	780	13,470,609.0	300,799.1	577.00				Average	
		point761	761	13,470,681.0	301,012.2	578.00					
East Service Dr. to SB Bridge	12.0	point399	399	13,470,288.0	300,059.3	590.00				Average	
		point965	965	13,470,448.0	300,214.6	589.00				Average	
		point964	964	13,470,588.0	300,413.4	588.00				Average	
		point963	963	13,470,681.0	300,589.8	587.00				Average	
		point962	962	13,470,724.0	300,699.2	588.00				Average	
		point966	966	13,470,767.0	300,837.7	590.00				Average	
		point967	967	13,470,773.0	300,860.9	590.00					
Roadway329	12.0	point1171	1171	13,471,442.0	301,356.5	630.00				Average	
		point1170	1170	13,471,446.0	301,505.5	620.00				Average	
		point1169	1169	13,471,464.0	301,600.6	618.00				Average	
		point1168	1168	13,471,473.0	301,671.0	615.00				Average	
		point1167	1167	13,471,481.0	301,724.3	613.00				Average	
		point1166	1166	13,471,471.0	301,767.1	610.00				Average	
		point1165	1165	13,471,454.0	301,827.4	608.00				Average	
		point1164	1164	13,471,334.0	302,094.3	602.00				Average	
		point1163	1163	13,471,236.0	302,299.5	597.00				Average	
		point1162	1162	13,471,209.0	302,378.2	594.00				Average	
		point1161	1161	13,471,204.0	302,452.2	591.00				Average	
		point1160	1160	13,471,203.0	302,509.4	591.00				Average	
		point1159	1159	13,471,224.0	302,570.2	591.00				Average	
		point1158	1158	13,471,254.0	302,605.4	592.00				Average	
		point1157	1157	13,471,315.0	302,645.2	592.00				Average	
		point1156	1156	13,471,389.0	302,656.8	593.00				Average	
		point1155	1155	13,471,446.0	302,650.1	593.00				Average	
		point1154	1154	13,471,508.0	302,612.6	594.00				Average	
		point1153	1153	13,471,560.0	302,518.8	594.00				Average	
		point1152	1152	13,471,681.0	302,251.2	592.00				Average	
		point1151	1151	13,471,784.0	302,008.5	591.00				Average	
		point1150	1150	13,471,909.0	301,721.4	590.00				Average	
		point1149	1149	13,472,061.0	301,354.2	584.00					
Roadway330	12.0	point1172	1172	13,472,061.0	301,354.2	584.00	Stop	0.00	100	Average	
		point1173	1173	13,472,253.0	300,896.7	581.00					

Roadway331	12.0	point1174	1174	13,472,023.0	301,338.1	584.00	Stop	0.00	100	Average	
		point1175	1175	13,472,191.0	300,881.1	581.00					
Customs Plaza to SB I-75	12.0	point1120	1120	13,471,261.0	301,907.5	600.00	Toll	0.00	100	Average	
		point956	956	13,471,141.0	302,147.4	598.00				Average	
		point957	957	13,471,050.0	302,325.8	607.00				Average	
		point958	958	13,471,022.0	302,364.3	609.00				Average	
		point959	959	13,470,981.0	302,396.1	611.00				Average	Y
		point941	941	13,470,783.0	302,469.6	620.00					
Customs to WB I-96 S	20.0	point1178	1178	13,471,278.0	301,917.9	600.00	Toll	0.00	100	Average	
		point1122	1122	13,471,158.0	302,164.6	598.00				Average	
		point506	506	13,471,061.0	302,349.3	598.00				Average	Y
		point505	505	13,471,025.0	302,398.7	599.00				Average	Y
		point504	504	13,470,997.0	302,419.6	600.00				Average	Y
		point503	503	13,470,953.0	302,440.8	601.00					
Customs to NB I-75-S	20.0	point1176	1176	13,471,300.0	301,922.4	600.00	Toll	0.00	100	Average	
		point1124	1124	13,471,175.0	302,170.2	598.00				Average	
		point731	731	13,471,077.0	302,354.9	598.00				Average	Y
		point730	730	13,471,038.0	302,407.9	600.00				Average	Y
		point729	729	13,470,996.0	302,438.5	602.00					
Bridge NB-2	19.0	point362	362	13,472,963.0	298,625.5	768.00				Average	Y
		point361	361	13,472,516.0	299,519.8	728.00				Average	Y
		point360	360	13,472,147.0	300,259.5	678.00				Average	Y
		point359	359	13,472,052.0	300,435.5	671.00				Average	Y
		point358	358	13,472,018.0	300,493.8	670.00				Average	Y
		point357	357	13,471,969.0	300,550.1	669.00				Average	Y
		point356	356	13,471,900.0	300,612.1	663.00				Average	Y
		point355	355	13,471,781.0	300,721.6	658.00				Average	Y
		point354	354	13,471,739.0	300,775.3	653.00				Average	Y
		point353	353	13,471,663.0	300,891.8	649.00				Average	Y
		point352	352	13,471,502.0	301,185.8	640.00				Average	Y
		point1118	1118	13,471,371.0	301,441.8	620.00				Average	
		point1117	1117	13,471,416.0	301,703.6	610.00				Average	
		point1116	1116	13,471,300.0	301,922.4	600.00					
Truck Inspection to WB I-96	20.0	point1181	1181	13,472,253.0	300,896.7	581.00	Stop	0.00	100	Average	
		point374	374	13,472,198.0	300,862.0	581.00				Average	
		point375	375	13,471,800.0	300,625.9	584.00				Average	
		point376	376	13,471,149.0	300,239.9	588.00				Average	
		point378	378	13,470,908.0	300,094.1	592.00				Average	

		point379	379	13,470,845.0	300,090.6	593.00				Average	
		point380	380	13,470,730.0	300,131.5	596.00				Average	
		point381	381	13,470,667.0	300,179.2	598.00				Average	
		point382	382	13,470,639.0	300,268.2	601.00				Average	Y
		point383	383	13,470,637.0	300,337.2	603.00				Average	Y
		point384	384	13,470,673.0	300,435.9	607.00				Average	Y
		point385	385	13,470,765.0	300,689.2	615.00				Average	Y
		point386	386	13,470,914.0	301,332.8	624.00				Average	Y
		point711	711	13,470,944.0	301,612.0	626.00				Average	Y
		point709	709	13,470,946.0	301,759.6	624.00					
NB I-75a-2	20.0	point1182	1182	13,470,681.0	301,012.2	578.00				Average	
		point760	760	13,470,712.0	301,128.5	577.00				Average	
		point759	759	13,470,762.0	301,350.9	577.00				Average	
		point758	758	13,470,789.0	301,548.8	576.00				Average	
		point757	757	13,470,798.0	301,675.6	576.00				Average	
		point756	756	13,470,802.0	301,787.3	576.00				Average	
		point755	755	13,470,797.0	301,953.3	575.00				Average	
		point753	753	13,470,790.0	302,047.2	575.00				Average	
		point752	752	13,470,761.0	302,245.7	574.00				Average	
		point751	751	13,470,721.0	302,430.7	574.00				Average	
		point750	750	13,470,656.0	302,639.6	575.00				Average	
		point749	749	13,470,598.0	302,786.4	576.00				Average	
		point748	748	13,470,502.0	302,982.3	576.00				Average	
		point716	716	13,470,282.0	303,410.6	576.00				Average	
		point424	424	13,470,243.0	303,486.7	576.00				Average	
		point1219	1219	13,469,988.0	303,977.1	577.50				Average	
		point425	425	13,469,775.0	304,386.6	579.00					
NB I-75 to Vernor-2	32.0	point1183	1183	13,470,842.0	302,046.1	575.00				Average	
		point1007	1007	13,470,831.0	302,227.3	575.00				Average	
		point1006	1006	13,470,814.0	302,543.2	574.00				Average	
		point445	445	13,470,773.0	302,662.8	574.00				Average	
		point444	444	13,470,685.0	302,833.7	579.00				Average	
		point443	443	13,470,295.0	303,571.5	596.00					
NB I-75c-2	12.0	point1184	1184	13,470,270.0	303,499.8	576.00				Average	
		point1207	1207	13,470,016.0	303,988.3	577.50					
WB I-96a-2	32.0	point1185	1185	13,470,665.0	301,016.9	578.00				Average	
		point810	810	13,470,709.0	301,205.3	577.00				Average	
		point809	809	13,470,732.0	301,390.9	577.00				Average	

		point808	808	13,470,738.0	301,641.1	576.00				Average	
		point696	696	13,470,711.0	301,919.8	575.00				Average	
		point695	695	13,470,683.0	302,102.7	575.00				Average	
		point694	694	13,470,626.0	302,367.8	574.00				Average	
		point693	693	13,470,565.0	302,583.8	575.00				Average	
		point692	692	13,470,472.0	302,839.7	575.00				Average	
		point691	691	13,470,396.0	303,014.3	576.00				Average	
		point690	690	13,470,194.0	303,425.0	576.00				Average	
		point428	428	13,470,137.0	303,544.9	576.00				Average	
		point1216	1216	13,469,943.0	303,941.8	577.50				Average	
		point429	429	13,469,749.0	304,338.8	579.00					
NB I-75c-2	22.0	point1186	1186	13,470,819.0	302,051.3	575.00				Average	
		point738	738	13,470,795.0	302,250.7	574.00				Average	
		point737	737	13,470,755.0	302,439.1	574.00				Average	
		point736	736	13,470,688.0	302,651.3	575.00				Average	
		point735	735	13,470,631.0	302,798.3	576.00				Average	
		point734	734	13,470,533.0	302,996.8	576.00				Average	
		point712	712	13,470,324.0	303,407.6	576.00				Average	
		point420	420	13,470,270.0	303,499.8	576.00					
EB I-96 to Toll Plaza-2	20.0	point1187	1187	13,470,509.0	301,813.0	606.00				Average	Y
		point835	835	13,470,535.0	301,734.8	606.00				Average	Y
		point832	832	13,470,566.0	301,675.2	607.00				Average	Y
		point831	831	13,470,623.0	301,606.4	608.00				Average	Y
		point830	830	13,470,696.0	301,548.1	606.00				Average	Y
		point829	829	13,470,782.0	301,507.7	604.00				Average	Y
		point548	548	13,470,983.0	301,466.2	595.00				Average	Y
		point547	547	13,471,022.0	301,453.2	593.00					
SB I-75 to Toll Plaza-2	20.0	point1188	1188	13,470,531.0	301,826.2	606.00				Average	Y
		point821	821	13,470,545.0	301,765.2	606.00				Average	Y
		point822	822	13,470,580.0	301,690.6	607.00				Average	Y
		point826	826	13,470,636.0	301,622.7	608.00				Average	Y
		point825	825	13,470,707.0	301,566.1	606.00				Average	Y
		point824	824	13,470,790.0	301,526.8	604.00				Average	Y
		point533	533	13,470,987.0	301,479.6	595.00				Average	Y
		point532	532	13,471,027.0	301,471.6	593.00					
Truck Inspection to SB I-75-2-2	12.0	point1191	1191	13,470,253.0	300,370.2	573.00				Average	
		point892	892	13,470,240.0	300,344.8	573.00				Average	
		point891	891	13,470,153.0	300,244.7	573.00					

Bridge SB-2-2	19.0	point1192	1192	13,471,019.0	301,431.9	593.00	Onramp	0.00	100	Average	Y
		point1110	1110	13,471,105.0	301,432.2	592.00				Average	Y
		point1109	1109	13,471,189.0	301,430.2	591.00				Average	Y
		point1108	1108	13,471,242.0	301,412.8	590.00				Average	Y
		point1107	1107	13,471,272.0	301,370.4	589.00				Average	Y
		point1106	1106	13,471,332.0	301,261.0	588.00				Average	Y
		point1105	1105	13,471,406.0	301,123.5	588.00				Average	Y
		point1104	1104	13,471,494.0	300,949.2	590.00				Average	Y
		point1103	1103	13,471,580.0	300,749.0	591.00				Average	Y
		point1102	1102	13,471,564.0	300,652.5	592.00				Average	Y
		point1101	1101	13,471,521.0	300,575.2	593.00				Average	Y
		point1100	1100	13,471,394.0	300,482.9	595.00				Average	Y
		point1099	1099	13,471,212.0	300,377.5	597.00				Average	Y
		point1098	1098	13,471,028.0	300,273.7	599.00				Average	Y
		point1097	1097	13,470,947.0	300,254.4	600.00				Average	Y
		point1096	1096	13,470,877.0	300,276.5	601.00				Average	Y
		point1095	1095	13,470,845.0	300,297.6	602.00				Average	Y
		point1094	1094	13,470,810.0	300,362.5	603.00				Average	Y
		point1093	1093	13,470,788.0	300,421.5	604.00				Average	Y
		point1092	1092	13,470,809.0	300,528.5	605.00				Average	Y
		point1091	1091	13,470,838.0	300,622.6	606.00				Average	Y
		point1090	1090	13,470,873.0	300,736.5	608.00				Average	Y
		point1089	1089	13,470,904.0	300,835.5	610.00				Average	Y
		point1088	1088	13,470,937.0	300,943.2	612.00				Average	Y
		point1087	1087	13,470,959.0	300,972.6	613.00				Average	Y
		point1086	1086	13,470,989.0	301,012.3	614.00				Average	Y
		point1085	1085	13,471,039.0	301,045.4	616.00				Average	Y
		point1084	1084	13,471,077.0	301,057.5	617.00				Average	Y
		point1083	1083	13,471,116.0	301,069.5	618.00				Average	Y
		point1082	1082	13,471,192.0	301,093.4	621.00				Average	Y
		point1081	1081	13,471,276.0	301,083.5	624.00				Average	Y
		point1080	1080	13,471,336.0	301,076.5	626.00				Average	Y
		point1079	1079	13,471,392.0	301,057.3	629.00				Average	Y
		point1078	1078	13,471,531.0	300,998.5	636.00				Average	Y
		point1077	1077	13,471,580.0	300,965.1	640.00				Average	Y
		point1076	1076	13,471,633.0	300,907.9	651.00					
Bridge SB-1-2	20.0	point1193	1193	13,471,030.0	301,414.0	593.00	Onramp	0.00	100	Average	Y
		point625	625	13,471,104.0	301,413.9	592.00				Average	Y

		point624	624	13,471,187.0	301,412.5	591.00				Average	Y
		point623	623	13,471,230.0	301,395.6	590.00				Average	Y
		point622	622	13,471,258.0	301,361.2	589.00				Average	Y
		point621	621	13,471,317.0	301,250.3	588.00				Average	Y
		point620	620	13,471,386.0	301,118.6	588.00				Average	Y
		point619	619	13,471,473.0	300,937.6	590.00				Average	Y
		point618	618	13,471,552.0	300,746.7	591.00				Average	Y
		point617	617	13,471,536.0	300,659.0	592.00				Average	Y
		point616	616	13,471,500.0	300,593.7	593.00				Average	Y
		point615	615	13,471,379.0	300,507.5	595.00				Average	Y
		point614	614	13,471,202.0	300,397.2	597.00				Average	Y
		point613	613	13,471,022.0	300,298.8	599.00				Average	Y
		point612	612	13,470,941.0	300,283.5	600.00				Average	Y
		point610	610	13,470,867.0	300,318.8	602.00				Average	Y
		point609	609	13,470,834.0	300,378.6	603.00				Average	Y
		point608	608	13,470,819.0	300,432.1	604.00				Average	Y
		point607	607	13,470,837.0	300,535.2	605.00				Average	Y
		point606	606	13,470,860.0	300,620.0	606.00				Average	Y
		point605	605	13,470,896.0	300,733.0	608.00				Average	Y
		point604	604	13,470,928.0	300,832.0	610.00				Average	Y
		point603	603	13,470,961.0	300,935.8	612.00				Average	Y
		point602	602	13,470,977.0	300,961.3	613.00				Average	Y
		point601	601	13,471,007.0	300,995.1	614.00				Average	Y
		point600	600	13,471,048.0	301,024.3	616.00				Average	Y
		point599	599	13,471,085.0	301,039.8	617.00				Average	Y
		point598	598	13,471,121.0	301,049.7	618.00				Average	Y
		point597	597	13,471,193.0	301,069.7	621.00				Average	Y
		point596	596	13,471,276.0	301,065.3	624.00				Average	Y
		point595	595	13,471,336.0	301,056.7	626.00				Average	Y
		point594	594	13,471,381.0	301,038.4	629.00				Average	Y
		point593	593	13,471,522.0	300,982.3	636.00				Average	Y
		point592	592	13,471,571.0	300,949.3	640.00				Average	Y
		point591	591	13,471,631.0	300,875.5	651.00				Average	Y
		point590	590	13,471,669.0	300,805.8	656.00					
SB I-75 to Toll Plaza-2-2	20.0	point1194	1194	13,471,027.0	301,471.6	593.00	Onramp	0.00	100	Average	Y
		point531	531	13,471,093.0	301,468.1	592.00				Average	Y
		point530	530	13,471,197.0	301,468.8	591.00				Average	Y
		point529	529	13,471,267.0	301,442.8	590.00				Average	Y

		point528	528	13,471,363.0	301,279.9	588.00				Average	Y
		point527	527	13,471,443.0	301,136.8	588.00				Average	Y
		point526	526	13,471,501.0	301,021.6	589.00				Average	Y
		point525	525	13,471,542.0	300,967.6	590.00				Average	Y
		point524	524	13,471,629.0	300,756.9	591.00				Average	Y
		point523	523	13,471,612.0	300,639.4	592.00				Average	Y
		point522	522	13,471,569.0	300,543.5	593.00				Average	Y
		point521	521	13,471,231.0	300,333.0	597.00				Average	Y
		point520	520	13,471,040.0	300,223.8	599.00				Average	Y
		point519	519	13,470,953.0	300,213.3	600.00					
EB I-96 to Toll Plaza-2-2	12.0	point1195	1195	13,471,023.0	301,452.4	593.00	Onramp	0.00	100	Average	Y
		point546	546	13,471,094.0	301,450.8	592.00				Average	Y
		point545	545	13,471,192.0	301,454.1	591.00				Average	Y
		point544	544	13,471,254.0	301,430.8	590.00				Average	Y
		point543	543	13,471,347.0	301,271.3	588.00				Average	Y
		point542	542	13,471,426.0	301,129.8	588.00				Average	Y
		point541	541	13,471,484.0	301,013.2	589.00				Average	Y
		point540	540	13,471,518.0	300,960.9	590.00				Average	Y
		point539	539	13,471,604.0	300,753.9	591.00				Average	Y
		point538	538	13,471,587.0	300,645.1	592.00				Average	Y
		point537	537	13,471,548.0	300,555.2	593.00				Average	Y
		point536	536	13,471,220.0	300,353.5	597.00				Average	Y
		point535	535	13,471,033.0	300,248.4	599.00				Average	Y
		point534	534	13,470,953.0	300,233.9	600.00					
Customs Plaza to SB I-75-2	20.0	point1196	1196	13,470,783.0	302,469.6	620.00	Onramp	0.00	100	Average	Y
		point940	940	13,470,694.0	302,503.1	621.00				Average	Y
		point939	939	13,470,601.0	302,511.7	621.00				Average	Y
		point938	938	13,470,512.0	302,491.7	620.00				Average	Y
		point937	937	13,470,476.0	302,476.0	620.00				Average	Y
		point936	936	13,470,420.0	302,440.0	619.00				Average	Y
		point935	935	13,470,371.0	302,394.1	618.00				Average	Y
		point934	934	13,470,327.0	302,321.8	616.00				Average	Y
		point933	933	13,470,306.0	302,259.1	612.00				Average	Y
		point932	932	13,470,298.0	302,193.4	608.00				Average	Y
		point931	931	13,470,302.0	302,137.8	604.00				Average	Y
		point930	930	13,470,324.0	302,060.7	600.00				Average	Y
		point928	928	13,470,429.0	301,805.9	595.00				Average	Y
		point927	927	13,470,490.0	301,653.3	592.00					

Truck Inspection to SB I-75-2	20.0	point1197	1197	13,470,903.0	300,114.6	592.00				Average	
		point391	391	13,470,852.0	300,111.1	593.00				Average	
		point392	392	13,470,745.0	300,146.4	596.00				Average	
		point393	393	13,470,686.0	300,188.7	598.00				Average	
		point394	394	13,470,660.0	300,272.3	601.00				Average	Y
		point395	395	13,470,658.0	300,337.4	603.00					
Truck Inspection to SB I-75-2-2	20.0	point1198	1198	13,470,656.0	300,337.4	603.00				Average	Y
		point396	396	13,470,693.0	300,438.7	607.00				Average	Y
		point397	397	13,470,785.0	300,692.7	615.00				Average	Y
		point398	398	13,470,935.0	301,337.0	624.00				Average	Y
		point518	518	13,470,965.0	301,606.1	626.00				Average	Y
		point517	517	13,470,969.0	301,935.5	611.00				Average	Y
		point516	516	13,470,947.0	302,238.1	608.00				Average	Y
		point515	515	13,470,925.0	302,312.2	610.00				Average	Y
		point514	514	13,470,873.0	302,394.4	613.00				Average	Y
		point955	955	13,470,779.0	302,451.3	615.00					
SB I-75 to Toll Plaza-2	32.0	point1200	1200	13,470,500.0	302,354.7	596.00				Average	
		point818	818	13,470,513.0	302,283.5	598.00				Average	
		point817	817	13,470,521.0	302,225.6	600.00				Average	
		point816	816	13,470,529.0	302,166.9	601.00				Average	Y
		point815	815	13,470,532.0	302,104.9	603.00				Average	Y
		point814	814	13,470,519.0	301,915.6	604.00				Average	Y
		point813	813	13,470,523.0	301,862.7	605.00					
Truck Inspection to WB I-96-2	32.0	point1201	1201	13,470,946.0	301,759.6	624.00	Onramp	0.00	100	Average	Y
		point708	708	13,470,913.0	301,906.3	617.00				Average	Y
		point707	707	13,470,865.0	302,016.3	613.00				Average	Y
		point706	706	13,470,711.0	302,264.8	598.00				Average	Y
		point705	705	13,470,671.0	302,346.3	591.00				Average	
		point704	704	13,470,538.0	302,760.0	589.00				Average	
		point699	699	13,470,438.0	302,981.6	587.00					
SB I-75d-2	12.0	point1202	1202	13,470,589.0	301,043.9	578.00				Average	
		point887	887	13,470,563.0	300,931.8	578.00				Average	
		point886	886	13,470,514.0	300,795.2	577.00				Average	
		point885	885	13,470,485.0	300,730.7	576.00				Average	
		point884	884	13,470,435.0	300,625.0	575.00				Average	
		point883	883	13,470,354.0	300,485.1	574.00				Average	
		point882	882	13,470,313.0	300,425.9	574.00				Average	
		point890	890	13,470,266.0	300,363.7	573.00				Average	

		point889	889	13,470,251.0	300,339.3	573.00				Average	
		point888	888	13,470,163.0	300,238.6	573.00					
EB I-96a to SB I-75-2	22.0	point1189	1189	13,470,641.0	301,651.6	576.00				Average	
		point869	869	13,470,642.0	301,595.8	576.00				Average	
		point868	868	13,470,643.0	301,504.1	576.00				Average	
		point875	875	13,470,641.0	301,406.3	576.00				Average	
		point874	874	13,470,637.0	301,363.1	577.00				Average	
		point873	873	13,470,633.0	301,309.6	577.00				Average	
		point877	877	13,470,617.0	301,188.4	577.00				Average	
		point879	879	13,470,589.0	301,043.9	578.00					
SB I-75 to Vernor-2	32.0	point1203	1203	13,470,522.0	302,365.3	596.00				Average	Y
		point464	464	13,470,564.0	302,127.8	603.00				Average	Y
		point463	463	13,470,586.0	302,003.1	603.00				Average	Y
		point462	462	13,470,599.0	301,959.2	603.00				Average	Y
		point461	461	13,470,623.0	301,917.1	602.00				Average	Y
		point460	460	13,470,654.0	301,878.3	602.00				Average	Y
		point459	459	13,470,711.0	301,837.2	602.00				Average	Y
		point458	458	13,470,765.0	301,816.5	602.00				Average	Y
		point457	457	13,470,835.0	301,808.8	601.00				Average	Y
		point456	456	13,470,881.0	301,814.2	598.00				Average	Y
		point455	455	13,470,937.0	301,832.7	594.00				Average	Y
		point454	454	13,470,993.0	301,868.2	592.00				Average	Y
		point453	453	13,471,024.0	301,899.1	590.00				Average	Y
		point452	452	13,471,060.0	301,953.0	588.00				Average	Y
		point451	451	13,471,081.0	302,023.4	586.00				Average	Y
		point450	450	13,471,082.0	302,083.0	584.00				Average	Y
		point449	449	13,471,075.0	302,127.2	582.00				Average	Y
		point448	448	13,471,051.0	302,184.1	580.00				Average	Y
		point447	447	13,470,849.0	302,564.6	572.00				Average	
		point442	442	13,470,792.0	302,668.6	573.00					
SB I-75 to Toll Plaza-2-2	32.0	point1204	1204	13,470,523.0	301,862.7	605.00				Average	Y
		point820	820	13,470,531.0	301,826.2	606.00					
SB I-75 to Vernor-2-2	32.0	point1205	1205	13,470,792.0	302,668.3	573.00				Average	
		point441	441	13,470,704.0	302,839.2	579.00				Average	
		point440	440	13,470,310.0	303,577.2	596.00					
Customs to NB I-75-2	22.0	point1206	1206	13,470,327.0	303,438.8	576.00				Average	
		point718	718	13,470,283.0	303,510.0	576.00				Average	
		point719	719	13,470,033.0	303,991.1	578.00					

NB I-75c-2-2	22.0	point1208	1208	13,470,016.0	303,988.3	577.50				Average	
		point421	421	13,469,799.0	304,398.4	579.00					
Customs to WB I-96-2	32.0	point1209	1209	13,470,764.0	302,515.9	603.00	Onramp	0.00	100	Average	Y
		point501	501	13,470,701.0	302,549.8	598.00				Average	Y
		point500	500	13,470,648.0	302,604.4	594.00				Average	Y
		point499	499	13,470,506.0	302,897.5	590.00					
Customs to WB I-96-2-2	20.0	point1210	1210	13,470,506.0	302,897.5	590.00				Average	Y
		point702	702	13,470,461.0	302,991.2	587.00				Average	Y
		point701	701	13,470,335.0	303,244.1	583.00				Average	
		point700	700	13,470,235.0	303,440.5	579.00				Average	
		point627	627	13,470,175.0	303,557.3	576.00				Average	
		point1217	1217	13,469,972.0	303,956.3	577.00					
Truck Inspection to WB I-96-2-2	20.0	point1211	1211	13,470,438.0	302,981.3	587.00				Average	Y
		point698	698	13,470,314.0	303,230.6	583.00				Average	
		point697	697	13,470,213.0	303,430.9	579.00				Average	
		point426	426	13,470,154.0	303,552.0	576.00				Average	
		point1215	1215	13,469,956.0	303,949.0	577.50				Average	
		point427	427	13,469,765.0	304,345.9	579.00					
Customs to WB I-96-N	32.0	point1212	1212	13,470,953.0	302,440.8	601.00	Onramp	0.00	100	Average	Y
		point502	502	13,470,764.0	302,515.9	603.00					
Customs to NB I-75-N	32.0	point1213	1213	13,470,996.0	302,438.5	602.00	Onramp	0.00	100	Average	Y
		point728	728	13,470,855.0	302,497.1	598.00				Average	Y
		point727	727	13,470,805.0	302,536.8	594.00				Average	Y
		point726	726	13,470,769.0	302,587.5	590.00				Average	Y
		point725	725	13,470,621.0	302,895.8	587.00				Average	Y
		point722	722	13,470,395.0	303,324.9	580.00				Average	
		point720	720	13,470,327.0	303,438.8	576.00					
EB I-96 to Toll Plaza-2	32.0	point1214	1214	13,470,273.0	302,852.1	581.00				Average	
		point840	840	13,470,316.0	302,712.3	586.00				Average	
		point839	839	13,470,410.0	302,209.5	598.00				Average	
		point838	838	13,470,458.0	301,998.4	602.00				Average	Y
		point836	836	13,470,509.0	301,813.0	606.00					
Truck Inspection to SB I-75-2-2	20.0	point1199	1199	13,470,779.0	302,451.2	615.00	Onramp	0.00	100	Average	Y
		point954	954	13,470,693.0	302,484.1	621.00				Average	Y
		point953	953	13,470,602.0	302,492.4	621.00				Average	Y
		point952	952	13,470,517.0	302,473.1	620.00				Average	Y
		point951	951	13,470,483.0	302,456.9	620.00				Average	Y
		point950	950	13,470,429.0	302,422.0	619.00				Average	Y

		point949	949	13,470,384.0	302,377.5	618.00				Average	Y
		point948	948	13,470,343.0	302,309.9	616.00				Average	Y
		point947	947	13,470,327.0	302,254.6	612.00				Average	Y
		point946	946	13,470,319.0	302,188.2	608.00				Average	Y
		point945	945	13,470,322.0	302,139.8	604.00				Average	Y
		point944	944	13,470,344.0	302,067.0	600.00				Average	Y
		point1220	1220	13,470,450.0	301,807.2	595.00				Average	Y
		point910	910	13,470,517.0	301,647.7	592.00					
Truck Inspection to SB I-75-2-2-2	20.0	point1221	1221	13,470,517.0	301,647.7	592.00				Average	
		point909	909	13,470,555.0	301,559.1	589.00				Average	
		point908	908	13,470,581.0	301,467.8	586.00				Average	
		point907	907	13,470,588.0	301,357.8	583.00				Average	
		point906	906	13,470,591.0	301,298.5	580.00				Average	
		point1190	1190	13,470,583.0	301,190.4	577.00				Average	
		point901	901	13,470,566.0	301,047.2	578.00				Average	
		point900	900	13,470,549.0	300,935.8	578.00				Average	
		point899	899	13,470,499.0	300,799.6	577.00				Average	
		point898	898	13,470,471.0	300,735.7	576.00				Average	
		point897	897	13,470,422.0	300,630.6	575.00				Average	
		point896	896	13,470,341.0	300,491.5	574.00				Average	
		point895	895	13,470,300.0	300,432.9	574.00				Average	
		point893	893	13,470,253.0	300,370.2	573.00					
Bridge NB-1	12.0	point373	373	13,472,986.0	298,634.4	768.00				Average	Y
		point372	372	13,472,539.0	299,528.7	728.00				Average	Y
		point371	371	13,472,167.0	300,268.4	678.00				Average	Y
		point370	370	13,472,077.0	300,445.2	671.00				Average	Y
		point369	369	13,472,036.0	300,507.0	670.00				Average	Y
		point368	368	13,471,986.0	300,564.4	669.00				Average	Y
		point367	367	13,471,919.0	300,624.8	663.00				Average	Y
		point366	366	13,471,799.0	300,734.8	658.00				Average	Y
		point365	365	13,471,755.0	300,790.5	653.00				Average	Y
		point364	364	13,471,689.0	300,903.5	649.00				Average	Y
		point363	363	13,471,529.0	301,197.2	640.00				Average	Y
		point1148	1148	13,471,529.0	301,195.6	640.00				Average	
		point1147	1147	13,471,461.0	301,354.1	630.00				Average	
		point1146	1146	13,471,465.0	301,496.7	620.00				Average	
		point1145	1145	13,471,489.0	301,635.7	617.00				Average	
		point1144	1144	13,471,500.0	301,685.8	615.00				Average	

		point1143	1143	13,471,502.0	301,728.9	613.00				Average	
		point1142	1142	13,471,496.0	301,772.5	610.00				Average	
		point1141	1141	13,471,470.0	301,844.0	608.00				Average	
		point1140	1140	13,471,385.0	302,029.3	603.00				Average	
		point1139	1139	13,471,291.0	302,236.9	598.00				Average	
		point1138	1138	13,471,239.0	302,360.4	595.00				Average	
		point1137	1137	13,471,224.0	302,455.0	591.00				Average	
		point1136	1136	13,471,251.0	302,548.9	591.00				Average	
		point1135	1135	13,471,304.0	302,595.0	592.00				Average	
		point1134	1134	13,471,352.0	302,616.5	592.00				Average	
		point1133	1133	13,471,406.0	302,621.4	593.00				Average	
		point1132	1132	13,471,483.0	302,591.1	593.00				Average	
		point1131	1131	13,471,532.0	302,514.7	594.00				Average	
		point1130	1130	13,471,576.0	302,422.7	593.00				Average	
		point1129	1129	13,471,619.0	302,328.7	592.00				Average	
		point1128	1128	13,471,757.0	302,010.3	591.00				Average	
		point1127	1127	13,471,877.0	301,731.8	590.00				Average	
		point1126	1126	13,472,023.0	301,338.1	584.00					
Fort Street WB-1	12.0	point33	11	13,472,436.0	300,985.6	581.00				Average	
		point1225	1225	13,472,295.0	300,900.4	581.50				Average	
		point32	12	13,470,391.0	299,753.4	582.00					
Bridge SB-2-2-2	19.0	point1226	1226	13,471,633.0	300,907.9	651.00				Average	Y
		point1075	1075	13,471,687.0	300,813.0	656.00				Average	Y
		point344	344	13,471,766.0	300,708.6	658.00				Average	Y
		point345	345	13,471,885.0	300,601.9	663.00				Average	Y
		point346	346	13,471,951.0	300,539.9	669.00				Average	Y
		point347	347	13,471,999.0	300,481.8	670.00				Average	Y
		point348	348	13,472,030.0	300,427.0	671.00				Average	Y
		point349	349	13,472,125.0	300,250.2	678.00				Average	Y
		point350	350	13,472,494.0	299,510.5	728.00				Average	Y
		point351	351	13,472,941.0	298,616.2	768.00					
Bridge SB-1-2-2	20.0	point1227	1227	13,471,669.0	300,805.8	656.00				Average	Y
		point333	333	13,471,752.0	300,698.8	658.00				Average	Y
		point334	334	13,471,867.0	300,594.0	663.00				Average	Y
		point335	335	13,471,937.0	300,526.9	669.00				Average	Y
		point336	336	13,471,980.0	300,471.4	670.00				Average	Y
		point337	337	13,472,014.0	300,417.3	671.00				Average	Y
		point338	338	13,472,104.0	300,242.8	678.00				Average	Y

		point339	339	13,472,472.0	299,503.1	728.00				Average	Y
		point340	340	13,472,919.0	298,608.8	768.00					

American Consulting Engineers 18 April 2007
CC TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: Ambassador Bridge Enhancement
RUN: Opening Year 2010 With I-75

Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Fort Street EB-1	point22	1	76	35	2	35	12	35	2	35	0	0
	point23	2										
Fort Street EB-2	point24	3	76	35	2	35	12	35	2	35	0	0
	point25	4										
Fort Street EB-3	point26	5	76	35	2	35	12	35	2	35	0	0
	point27	6										
Fort Street WB-3	point29	7	149	35	6	35	35	35	5	35	0	0
	point28	8										
Fort Street WB-2	point31	9	149	35	6	35	35	35	5	35	0	0
	point30	10										
SB I-75f	point923	923	931	55	13	55	73	55	0	0	0	0
	point922	922	931	55	13	55	73	55	0	0	0	0
	point921	921										
Bridge SB-2	point985	985	181	20	27	20	153	20	0	0	0	0
	point984	984	181	20	27	20	153	20	0	0	0	0
	point983	983	181	20	27	20	153	20	0	0	0	0
	point982	982	181	20	27	20	153	20	0	0	0	0
	point981	981	181	20	27	20	153	20	0	0	0	0
	point980	980	181	20	27	20	153	20	0	0	0	0
	point979	979	181	20	27	20	153	20	0	0	0	0
	point978	978	181	20	27	20	153	20	0	0	0	0
	point986	986	181	20	27	20	153	20	0	0	0	0

	point1111	1111										
Bridge SB-1	point976	976	181	20	27	20	153	20	0	0	0	0
	point975	975	181	20	27	20	153	20	0	0	0	0
	point974	974	181	20	27	20	153	20	0	0	0	0
	point973	973	181	20	27	20	153	20	0	0	0	0
	point972	972	181	20	27	20	153	20	0	0	0	0
	point971	971	181	20	27	20	153	20	0	0	0	0
	point970	970	181	20	27	20	153	20	0	0	0	0
	point969	969	181	20	27	20	153	20	0	0	0	0
	point988	988	181	20	27	20	153	20	0	0	0	0
	point626	626										
WB I-96a	point412	412	1119	55	9	55	49	55	0	0	0	0
	point413	413	1119	55	9	55	49	55	0	0	0	0
	point805	805	1119	55	9	55	49	55	0	0	0	0
	point804	804	1119	55	9	55	49	55	0	0	0	0
	point803	803	1119	55	9	55	49	55	0	0	0	0
	point802	802	1119	55	9	55	49	55	0	0	0	0
	point811	811										
NB I-75 to Vernor	point418	418	1119	55	9	55	49	55	0	0	0	0
	point996	996	1119	55	9	55	49	55	0	0	0	0
	point995	995	1119	55	9	55	49	55	0	0	0	0
	point994	994	1119	55	9	55	49	55	0	0	0	0
	point993	993	1119	55	9	55	49	55	0	0	0	0
	point992	992	1119	55	9	55	49	55	0	0	0	0
	point1004	1004	1171	55	10	55	59	55	0	0	0	0
	point1003	1003	1171	55	10	55	59	55	0	0	0	0
	point1002	1002	1171	55	10	55	59	55	0	0	0	0
	point1001	1001	1171	55	10	55	59	55	0	0	0	0
	point1000	1000	1171	55	10	55	59	55	0	0	0	0
	point999	999	1171	55	10	55	59	55	0	0	0	0
	point998	998	408	20	7	20	38	20	0	0	0	0
	point997	997										
SB I-75 to Vernor	point478	478	181	20	3	20	15	20	0	0	0	0
	point479	479	181	20	3	20	15	20	0	0	0	0
	point512	512	181	20	3	20	15	20	0	0	0	0

	point511	511	181	20	3	20	15	20	0	0	0	0
	point510	510	181	20	3	20	15	20	0	0	0	0
	point465	465										
EB I-96 to Toll Plaza	point471	471	468	20	23	20	127	20	0	0	0	0
	point470	470	468	20	23	20	127	20	0	0	0	0
	point469	469	468	20	23	20	127	20	0	0	0	0
	point842	842	468	20	23	20	127	20	0	0	0	0
	point841	841										
SB I-75 to Toll Plaza	point466	466	149	20	5	20	27	20	0	0	0	0
	point819	819										
SB I-75a	point430	430	1378	55	12	55	68	55	0	0	0	0
	point490	490	1378	55	12	55	68	55	0	0	0	0
	point488	488	1268	55	10	55	54	55	0	0	0	0
	point489	489	0	0	0	0	0	0	0	0	0	0
	point637	637	1268	55	10	55	54	55	0	0	0	0
	point636	636	1268	55	10	55	54	55	0	0	0	0
	point635	635	1268	55	10	55	54	55	0	0	0	0
	point634	634	1268	55	10	55	54	55	0	0	0	0
	point633	633	1268	55	10	55	54	55	0	0	0	0
	point632	632	1268	55	10	55	54	55	0	0	0	0
	point631	631	1268	55	10	55	54	55	0	0	0	0
	point630	630	1268	55	10	55	54	55	0	0	0	0
	point671	671	1251	55	9	55	52	55	0	0	0	0
	point670	670	1251	55	9	55	52	55	0	0	0	0
	point669	669	1251	55	9	55	52	55	0	0	0	0
	point668	668	1251	55	9	55	52	55	0	0	0	0
	point665	665	1251	55	9	55	52	55	0	0	0	0
	point663	663	1251	55	9	55	52	55	0	0	0	0
	point662	662	1054	55	15	55	82	55	0	0	0	0
	point661	661	1054	55	15	55	82	55	0	0	0	0
	point660	660	1054	55	15	55	82	55	0	0	0	0
	point659	659	1054	55	15	55	82	55	0	0	0	0
	point658	658	1054	55	15	55	82	55	0	0	0	0
	point657	657	1054	55	15	55	82	55	0	0	0	0
	point411	411	931	55	13	55	73	55	0	0	0	0

	point410	410	931	55	13	55	73	55	0	0	0	0
	point409	409										
SB I-75b	point432	432	1378	55	12	55	68	55	0	0	0	0
	point484	484	1378	55	12	55	68	55	0	0	0	0
	point486	486	1268	55	10	55	54	55	0	0	0	0
	point646	646	1268	55	10	55	54	55	0	0	0	0
	point645	645	1268	55	10	55	54	55	0	0	0	0
	point644	644	1268	55	10	55	54	55	0	0	0	0
	point643	643	1268	55	10	55	54	55	0	0	0	0
	point642	642	1268	55	10	55	54	55	0	0	0	0
	point641	641	1268	55	10	55	54	55	0	0	0	0
	point640	640	1268	55	10	55	54	55	0	0	0	0
	point639	639	1268	55	10	55	54	55	0	0	0	0
	point689	689	1251	55	9	55	52	55	0	0	0	0
	point688	688	1251	55	9	55	52	55	0	0	0	0
	point687	687	1251	55	9	55	52	55	0	0	0	0
	point672	672	1251	55	9	55	52	55	0	0	0	0
	point674	674	1251	55	9	55	52	55	0	0	0	0
	point682	682	1054	55	15	55	82	55	0	0	0	0
	point681	681	1054	55	15	55	82	55	0	0	0	0
	point680	680	1054	55	15	55	82	55	0	0	0	0
	point679	679	1054	55	15	55	82	55	0	0	0	0
	point678	678	1054	55	15	55	82	55	0	0	0	0
	point677	677	1054	55	15	55	82	55	0	0	0	0
	point685	685	931	55	13	55	73	55	0	0	0	0
	point684	684	931	55	13	55	73	55	0	0	0	0
	point683	683										
SB I-75c	point434	434	1378	55	12	55	68	55	0	0	0	0
	point480	480	1378	55	12	55	68	55	0	0	0	0
	point482	482	1268	55	10	55	54	55	0	0	0	0
	point655	655	1268	55	10	55	54	55	0	0	0	0
	point654	654	1268	55	10	55	54	55	0	0	0	0
	point653	653	1268	55	10	55	54	55	0	0	0	0
	point652	652	1268	55	10	55	54	55	0	0	0	0
	point651	651	1268	55	10	55	54	55	0	0	0	0

	point650	650	1268	55	10	55	54	55	0	0	0	0
	point649	649	1268	55	10	55	54	55	0	0	0	0
	point648	648	1268	55	10	55	54	55	0	0	0	0
	point1025	1025	1251	55	9	55	52	55	0	0	0	0
	point1024	1024	1251	55	9	55	52	55	0	0	0	0
	point1021	1021	1251	55	9	55	52	55	0	0	0	0
	point1019	1019	1251	55	9	55	52	55	0	0	0	0
	point1018	1018	1054	55	15	55	82	55	0	0	0	0
	point1017	1017	1054	55	15	55	82	55	0	0	0	0
	point1016	1016	1054	55	15	55	82	55	0	0	0	0
	point1015	1015	1054	55	15	55	82	55	0	0	0	0
	point1014	1014	1054	55	15	55	82	55	0	0	0	0
	point1013	1013	1054	55	15	55	82	55	0	0	0	0
	point1011	1011	931	55	13	55	73	55	0	0	0	0
	point1010	1010	931	55	13	55	73	55	0	0	0	0
	point1009	1009										
EB I-96a to SB I-75	point436	436	600	55	4	55	22	55	0	0	0	0
	point1030	1030	600	55	4	55	22	55	0	0	0	0
	point477	477	600	55	4	55	22	55	0	0	0	0
	point476	476	600	55	4	55	22	55	0	0	0	0
	point475	475	600	55	4	55	22	55	0	0	0	0
	point855	855	600	55	4	55	22	55	0	0	0	0
	point857	857	600	55	4	55	22	55	0	0	0	0
	point858	858	600	55	4	55	22	55	0	0	0	0
	point859	859	600	55	4	55	22	55	0	0	0	0
	point863	863	600	55	4	55	22	55	0	0	0	0
	point871	871	1200	55	8	55	44	55	0	0	0	0
	point870	870										
EB I-96b to SB I-75	point438	438	600	55	4	55	22	55	0	0	0	0
	point1032	1032	600	55	4	55	22	55	0	0	0	0
	point474	474	600	55	4	55	22	55	0	0	0	0
	point473	473	600	55	4	55	22	55	0	0	0	0
	point472	472	600	55	4	55	22	55	0	0	0	0
	point852	852	600	55	4	55	22	55	0	0	0	0
	point851	851	600	55	4	55	22	55	0	0	0	0

	point850	850	600	55	4	55	22	55	0	0	0	0
	point849	849	600	55	4	55	22	55	0	0	0	0
	point861	861	600	55	4	55	22	55	0	0	0	0
	point867	867										
Truck Inspection to SB I-75	point387	387	0	0	36	20	204	20	0	0	0	0
	point388	388	0	0	36	20	204	20	0	0	0	0
	point389	389	0	0	36	20	204	20	0	0	0	0
	point390	390										
NB I-75 to SB Bridge	point406	406	243	20	36	20	206	20	0	0	0	0
	point405	405	243	20	36	20	206	20	0	0	0	0
	point404	404	243	20	36	20	206	20	0	0	0	0
	point403	403	243	20	36	20	206	20	0	0	0	0
	point402	402	243	20	36	20	206	20	0	0	0	0
	point1028	1028	181	20	27	20	153	20	0	0	0	0
	point1029	1029										
NB I-75c	point416	416	1119	55	9	55	49	55	0	0	0	0
	point798	798	1119	55	9	55	49	55	0	0	0	0
	point797	797	1119	55	9	55	49	55	0	0	0	0
	point796	796	1119	55	9	55	49	55	0	0	0	0
	point795	795	1119	55	9	55	49	55	0	0	0	0
	point794	794	1119	55	9	55	49	55	0	0	0	0
	point777	777	1171	55	10	55	59	55	0	0	0	0
	point776	776	1171	55	10	55	59	55	0	0	0	0
	point775	775	1171	55	10	55	59	55	0	0	0	0
	point774	774	1171	55	10	55	59	55	0	0	0	0
	point773	773	1171	55	10	55	59	55	0	0	0	0
	point772	772	1171	55	10	55	59	55	0	0	0	0
	point771	771	1425	55	12	55	65	55	0	0	0	0
	point739	739										
NB I-75b	point1026	1026	1119	55	9	55	49	55	0	0	0	0
	point791	791	1119	55	9	55	49	55	0	0	0	0
	point790	790	1119	55	9	55	49	55	0	0	0	0
	point789	789	1119	55	9	55	49	55	0	0	0	0
	point788	788	1119	55	9	55	49	55	0	0	0	0
	point787	787	1119	55	9	55	49	55	0	0	0	0

	point769	769	1171	55	10	55	59	55	0	0	0	0
	point768	768	1171	55	10	55	59	55	0	0	0	0
	point767	767	1171	55	10	55	59	55	0	0	0	0
	point766	766	1171	55	10	55	59	55	0	0	0	0
	point765	765	1171	55	10	55	59	55	0	0	0	0
	point764	764	1171	55	10	55	59	55	0	0	0	0
	point763	763	1425	55	12	55	65	55	0	0	0	0
	point746	746	1425	55	12	55	65	55	0	0	0	0
	point745	745	1425	55	12	55	65	55	0	0	0	0
	point744	744	1425	55	12	55	65	55	0	0	0	0
	point743	743	1425	55	12	55	65	55	0	0	0	0
	point742	742	1425	55	12	55	65	55	0	0	0	0
	point741	741	1425	55	12	55	65	55	0	0	0	0
	point714	714	1425	55	12	55	65	55	0	0	0	0
	point422	422	1425	55	12	55	65	55	0	0	0	0
	point1218	1218	1479	55	12	55	66	55	0	0	0	0
	point423	423										
NB I-75a	point414	414	1119	55	9	55	49	55	0	0	0	0
	point784	784	1119	55	9	55	49	55	0	0	0	0
	point783	783	1119	55	9	55	49	55	0	0	0	0
	point782	782	1119	55	9	55	49	55	0	0	0	0
	point781	781	1119	55	9	55	49	55	0	0	0	0
	point780	780	1119	55	9	55	49	55	0	0	0	0
	point761	761										
East Service Dr. to SB Bridge	point399	399	118	20	18	20	100	20	0	0	0	0
	point965	965	118	20	18	20	100	20	0	0	0	0
	point964	964	118	20	18	20	100	20	0	0	0	0
	point963	963	118	20	18	20	100	20	0	0	0	0
	point962	962	118	20	18	20	100	20	0	0	0	0
	point966	966	181	20	27	20	153	20	0	0	0	0
	point967	967										
Roadway329	point1171	1171	0	0	41	20	231	20	0	0	0	0
	point1170	1170	0	0	41	20	231	20	0	0	0	0
	point1169	1169	0	0	41	20	231	20	0	0	0	0
	point1168	1168	0	0	41	20	231	20	0	0	0	0

	point1167	1167	0	0	41	20	231	20	0	0	0	0
	point1166	1166	0	0	41	20	231	20	0	0	0	0
	point1165	1165	0	0	41	20	231	20	0	0	0	0
	point1164	1164	0	0	41	20	231	20	0	0	0	0
	point1163	1163	0	0	41	20	231	20	0	0	0	0
	point1162	1162	0	0	41	20	231	20	0	0	0	0
	point1161	1161	0	0	41	20	231	20	0	0	0	0
	point1160	1160	0	0	41	20	231	20	0	0	0	0
	point1159	1159	0	0	41	20	231	20	0	0	0	0
	point1158	1158	0	0	41	20	231	20	0	0	0	0
	point1157	1157	0	0	41	20	231	20	0	0	0	0
	point1156	1156	0	0	41	20	231	20	0	0	0	0
	point1155	1155	0	0	41	20	231	20	0	0	0	0
	point1154	1154	0	0	41	20	231	20	0	0	0	0
	point1153	1153	0	0	41	20	231	20	0	0	0	0
	point1152	1152	0	0	41	20	231	20	0	0	0	0
	point1151	1151	0	0	41	20	231	20	0	0	0	0
	point1150	1150	0	0	41	20	231	20	0	0	0	0
	point1149	1149										
Roadway330	point1172	1172	0	0	32	20	178	20	0	0	0	0
	point1173	1173										
Roadway331	point1174	1174	0	0	32	20	178	20	0	0	0	0
	point1175	1175										
Customs Plaza to SB I-75	point1120	1120	266	20	4	20	0	0	0	0	0	0
	point956	956	266	20	4	20	0	0	0	0	0	0
	point957	957	266	20	4	20	0	0	0	0	0	0
	point958	958	266	20	4	20	0	0	0	0	0	0
	point959	959	266	20	4	20	0	0	0	0	0	0
	point941	941										
Customs to WB I-96 S	point1178	1178	511	20	16	20	0	0	0	0	0	0
	point1122	1122	511	20	16	20	0	0	0	0	0	0
	point506	506	511	20	16	20	0	0	0	0	0	0
	point505	505	511	20	16	20	0	0	0	0	0	0
	point504	504	511	20	16	20	0	0	0	0	0	0
	point503	503										

Customs to NB I-75-S	point1176	1176	163	20	1	20	0	0	0	0	0	0
	point1124	1124	163	20	1	20	0	0	0	0	0	0
	point731	731	163	20	1	20	0	0	0	0	0	0
	point730	730	163	20	1	20	0	0	0	0	0	0
	point729	729										
Bridge NB-2	point362	362	470	37	42	37	241	37	0	0	0	0
	point361	361	470	37	42	37	241	37	0	0	0	0
	point360	360	470	37	42	37	241	37	0	0	0	0
	point359	359	470	37	42	37	241	37	0	0	0	0
	point358	358	470	37	42	37	241	37	0	0	0	0
	point357	357	470	37	42	37	241	37	0	0	0	0
	point356	356	470	37	42	37	241	37	0	0	0	0
	point355	355	470	37	42	37	241	37	0	0	0	0
	point354	354	470	37	42	37	241	37	0	0	0	0
	point353	353	470	37	42	37	241	37	0	0	0	0
	point352	352	940	20	21	20	0	0	0	0	0	0
	point1118	1118	940	20	21	20	0	0	0	0	0	0
	point1117	1117	940	20	21	20	0	0	0	0	0	0
	point1116	1116										
Truck Inspection to WB I-96	point1181	1181	0	0	27	20	153	20	0	0	0	0
	point374	374	0	0	27	20	153	20	0	0	0	0
	point375	375	0	0	27	20	153	20	0	0	0	0
	point376	376	0	0	27	20	153	20	0	0	0	0
	point378	378	0	0	27	20	153	20	0	0	0	0
	point379	379	0	0	27	20	153	20	0	0	0	0
	point380	380	0	0	27	20	153	20	0	0	0	0
	point381	381	0	0	27	20	153	20	0	0	0	0
	point382	382	0	0	27	20	153	20	0	0	0	0
	point383	383	0	0	27	20	153	20	0	0	0	0
	point384	384	0	0	27	20	153	20	0	0	0	0
	point385	385	0	0	27	20	153	20	0	0	0	0
	point386	386	0	0	27	20	153	20	0	0	0	0
	point711	711	0	0	27	20	153	20	0	0	0	0
	point709	709										
NB I-75a-2	point1182	1182	1171	55	10	55	59	55	0	0	0	0

	point760	760	1171	55	10	55	59	55	0	0	0	0
	point759	759	1171	55	10	55	59	55	0	0	0	0
	point758	758	1171	55	10	55	59	55	0	0	0	0
	point757	757	1171	55	10	55	59	55	0	0	0	0
	point756	756	1171	55	10	55	59	55	0	0	0	0
	point755	755	1425	55	12	55	65	55	0	0	0	0
	point753	753	1425	55	12	55	65	55	0	0	0	0
	point752	752	1425	55	12	55	65	55	0	0	0	0
	point751	751	1425	55	12	55	65	55	0	0	0	0
	point750	750	1425	55	12	55	65	55	0	0	0	0
	point749	749	1425	55	12	55	65	55	0	0	0	0
	point748	748	1425	55	12	55	65	55	0	0	0	0
	point716	716	1425	55	12	55	65	55	0	0	0	0
	point424	424	1425	55	12	55	65	55	0	0	0	0
	point1219	1219	1479	55	12	55	66	55	0	0	0	0
	point425	425										
NB I-75 to Vernor-2	point1183	1183	408	20	7	20	38	20	0	0	0	0
	point1007	1007	408	20	7	20	38	20	0	0	0	0
	point1006	1006	408	20	7	20	38	20	0	0	0	0
	point445	445	295	20	5	20	27	20	0	0	0	0
	point444	444	295	20	5	20	27	20	0	0	0	0
	point443	443										
NB I-75c-2	point1184	1184	1425	55	12	55	65	55	0	0	0	0
	point1207	1207										
WB I-96a-2	point1185	1185	915	55	2	55	13	55	0	0	0	0
	point810	810	915	55	2	55	13	55	0	0	0	0
	point809	809	915	55	2	55	13	55	0	0	0	0
	point808	808	915	55	2	55	13	55	0	0	0	0
	point696	696	915	55	2	55	13	55	0	0	0	0
	point695	695	915	55	2	55	13	55	0	0	0	0
	point694	694	915	55	2	55	13	55	0	0	0	0
	point693	693	915	55	2	55	13	55	0	0	0	0
	point692	692	915	55	2	55	13	55	0	0	0	0
	point691	691	915	55	2	55	13	55	0	0	0	0
	point690	690	475	55	11	55	59	55	0	0	0	0

	point428	428	475	55	11	55	59	55	0	0	0	0
	point1216	1216	713	55	16	55	90	55	0	0	0	0
	point429	429										
NB I-75c-2	point1186	1186	1425	55	12	55	65	55	0	0	0	0
	point738	738	1425	55	12	55	65	55	0	0	0	0
	point737	737	1425	55	12	55	65	55	0	0	0	0
	point736	736	1425	55	12	55	65	55	0	0	0	0
	point735	735	1425	55	12	55	65	55	0	0	0	0
	point734	734	1425	55	12	55	65	55	0	0	0	0
	point712	712	1425	55	12	55	65	55	0	0	0	0
	point420	420										
EB I-96 to Toll Plaza-2	point1187	1187	468	20	23	20	127	20	0	0	0	0
	point835	835	468	20	23	20	127	20	0	0	0	0
	point832	832	309	20	14	20	77	20	0	0	0	0
	point831	831	309	20	14	20	77	20	0	0	0	0
	point830	830	309	20	14	20	77	20	0	0	0	0
	point829	829	309	20	14	20	77	20	0	0	0	0
	point548	548	309	20	14	20	77	20	0	0	0	0
	point547	547										
SB I-75 to Toll Plaza-2	point1188	1188	149	20	5	20	27	20	0	0	0	0
	point821	821	149	20	5	20	27	20	0	0	0	0
	point822	822	309	20	14	20	77	20	0	0	0	0
	point826	826	309	20	14	20	77	20	0	0	0	0
	point825	825	309	20	14	20	77	20	0	0	0	0
	point824	824	309	20	14	20	77	20	0	0	0	0
	point533	533	309	20	14	20	77	20	0	0	0	0
	point532	532										
Truck Inspection to SB I-75-2-2	point1191	1191	931	55	13	55	73	55	0	0	0	0
	point892	892	931	55	13	55	73	55	0	0	0	0
	point891	891										
Bridge SB-2-2	point1192	1192	245	20	81	20	461	20	0	0	0	0
	point1110	1110	245	20	81	20	461	20	0	0	0	0
	point1109	1109	245	20	81	20	461	20	0	0	0	0
	point1108	1108	245	20	81	20	461	20	0	0	0	0
	point1107	1107	245	20	81	20	461	20	0	0	0	0

	point1106	1106	245	20	81	20	461	20	0	0	0	0
	point1105	1105	245	20	81	20	461	20	0	0	0	0
	point1104	1104	245	20	81	20	461	20	0	0	0	0
	point1103	1103	245	20	81	20	461	20	0	0	0	0
	point1102	1102	245	20	81	20	461	20	0	0	0	0
	point1101	1101	245	20	81	20	461	20	0	0	0	0
	point1100	1100	245	20	81	20	461	20	0	0	0	0
	point1099	1099	245	20	81	20	461	20	0	0	0	0
	point1098	1098	245	20	81	20	461	20	0	0	0	0
	point1097	1097	489	20	41	20	230	20	0	0	0	0
	point1096	1096	489	20	41	20	230	20	0	0	0	0
	point1095	1095	489	20	41	20	230	20	0	0	0	0
	point1094	1094	489	20	41	20	230	20	0	0	0	0
	point1093	1093	489	20	41	20	230	20	0	0	0	0
	point1092	1092	489	20	41	20	230	20	0	0	0	0
	point1091	1091	489	20	41	20	230	20	0	0	0	0
	point1090	1090	489	20	41	20	230	20	0	0	0	0
	point1089	1089	489	20	41	20	230	20	0	0	0	0
	point1088	1088	489	20	41	20	230	20	0	0	0	0
	point1087	1087	489	20	41	20	230	20	0	0	0	0
	point1086	1086	489	20	41	20	230	20	0	0	0	0
	point1085	1085	489	20	41	20	230	20	0	0	0	0
	point1084	1084	489	20	41	20	230	20	0	0	0	0
	point1083	1083	489	20	41	20	230	20	0	0	0	0
	point1082	1082	489	20	41	20	230	20	0	0	0	0
	point1081	1081	489	20	41	20	230	20	0	0	0	0
	point1080	1080	489	20	41	20	230	20	0	0	0	0
	point1079	1079	489	20	41	20	230	20	0	0	0	0
	point1078	1078	489	20	41	20	230	20	0	0	0	0
	point1077	1077	489	20	41	20	230	20	0	0	0	0
	point1076	1076										
Bridge SB-1-2	point1193	1193	245	20	81	20	461	20	0	0	0	0
	point625	625	245	20	81	20	461	20	0	0	0	0
	point624	624	245	20	81	20	461	20	0	0	0	0
	point623	623	245	20	81	20	461	20	0	0	0	0

	point622	622	245	20	81	20	461	20	0	0	0	0
	point621	621	245	20	81	20	461	20	0	0	0	0
	point620	620	245	20	81	20	461	20	0	0	0	0
	point619	619	245	20	81	20	461	20	0	0	0	0
	point618	618	245	20	81	20	461	20	0	0	0	0
	point617	617	245	20	81	20	461	20	0	0	0	0
	point616	616	245	20	81	20	461	20	0	0	0	0
	point615	615	245	20	81	20	461	20	0	0	0	0
	point614	614	245	20	81	20	461	20	0	0	0	0
	point613	613	245	20	81	20	461	20	0	0	0	0
	point612	612	489	20	41	20	230	20	0	0	0	0
	point610	610	489	20	41	20	230	20	0	0	0	0
	point609	609	489	20	41	20	230	20	0	0	0	0
	point608	608	489	20	41	20	230	20	0	0	0	0
	point607	607	489	20	41	20	230	20	0	0	0	0
	point606	606	489	20	41	20	230	20	0	0	0	0
	point605	605	489	20	41	20	230	20	0	0	0	0
	point604	604	489	20	41	20	230	20	0	0	0	0
	point603	603	489	20	41	20	230	20	0	0	0	0
	point602	602	489	20	41	20	230	20	0	0	0	0
	point601	601	489	20	41	20	230	20	0	0	0	0
	point600	600	489	20	41	20	230	20	0	0	0	0
	point599	599	489	20	41	20	230	20	0	0	0	0
	point598	598	489	20	41	20	230	20	0	0	0	0
	point597	597	489	20	41	20	230	20	0	0	0	0
	point596	596	489	20	41	20	230	20	0	0	0	0
	point595	595	489	20	41	20	230	20	0	0	0	0
	point594	594	489	20	41	20	230	20	0	0	0	0
	point593	593	489	20	41	20	230	20	0	0	0	0
	point592	592	489	20	41	20	230	20	0	0	0	0
	point591	591	489	37	41	37	230	37	0	0	0	0
	point590	590										
SB I-75 to Toll Plaza-2-2	point1194	1194	245	20	81	20	461	20	0	0	0	0
	point531	531	245	20	81	20	461	20	0	0	0	0
	point530	530	245	20	81	20	461	20	0	0	0	0

	point529	529	245	20	81	20	461	20	0	0	0	0
	point528	528	245	20	81	20	461	20	0	0	0	0
	point527	527	245	20	81	20	461	20	0	0	0	0
	point526	526	245	20	81	20	461	20	0	0	0	0
	point525	525	245	20	81	20	461	20	0	0	0	0
	point524	524	245	20	81	20	461	20	0	0	0	0
	point523	523	245	20	81	20	461	20	0	0	0	0
	point522	522	245	20	81	20	461	20	0	0	0	0
	point521	521	245	20	81	20	461	20	0	0	0	0
	point520	520	245	20	81	20	461	20	0	0	0	0
	point519	519										
EB I-96 to Toll Plaza-2-2	point1195	1195	245	20	81	20	461	20	0	0	0	0
	point546	546	245	20	81	20	461	20	0	0	0	0
	point545	545	245	20	81	20	461	20	0	0	0	0
	point544	544	245	20	81	20	461	20	0	0	0	0
	point543	543	245	20	81	20	461	20	0	0	0	0
	point542	542	245	20	81	20	461	20	0	0	0	0
	point541	541	245	20	81	20	461	20	0	0	0	0
	point540	540	245	20	81	20	461	20	0	0	0	0
	point539	539	245	20	81	20	461	20	0	0	0	0
	point538	538	245	20	81	20	461	20	0	0	0	0
	point537	537	245	20	81	20	461	20	0	0	0	0
	point536	536	245	20	81	20	461	20	0	0	0	0
	point535	535	245	20	81	20	461	20	0	0	0	0
	point534	534										
Customs Plaza to SB I-75-2	point1196	1196	133	20	18	20	104	20	0	0	0	0
	point940	940	133	20	18	20	104	20	0	0	0	0
	point939	939	133	20	18	20	104	20	0	0	0	0
	point938	938	133	20	18	20	104	20	0	0	0	0
	point937	937	133	20	18	20	104	20	0	0	0	0
	point936	936	133	20	18	20	104	20	0	0	0	0
	point935	935	133	20	18	20	104	20	0	0	0	0
	point934	934	133	20	18	20	104	20	0	0	0	0
	point933	933	133	20	18	20	104	20	0	0	0	0
	point932	932	133	20	18	20	104	20	0	0	0	0

	point931	931	133	20	18	20	104	20	0	0	0	0
	point930	930	133	20	18	20	104	20	0	0	0	0
	point928	928	133	20	18	20	104	20	0	0	0	0
	point927	927										
Truck Inspection to SB I-75-2	point1197	1197	0	0	36	20	204	20	0	0	0	0
	point391	391	0	0	36	20	204	20	0	0	0	0
	point392	392	0	0	36	20	204	20	0	0	0	0
	point393	393	0	0	36	20	204	20	0	0	0	0
	point394	394	0	0	36	20	204	20	0	0	0	0
	point395	395										
Truck Inspection to SB I-75-2-2	point1198	1198	0	0	36	20	204	20	0	0	0	0
	point396	396	0	0	36	20	204	20	0	0	0	0
	point397	397	0	0	36	20	204	20	0	0	0	0
	point398	398	0	0	36	20	204	20	0	0	0	0
	point518	518	0	0	36	20	204	20	0	0	0	0
	point517	517	0	0	36	20	204	20	0	0	0	0
	point516	516	0	0	36	20	204	20	0	0	0	0
	point515	515	0	0	36	20	204	20	0	0	0	0
	point514	514	0	0	36	20	204	20	0	0	0	0
	point955	955										
SB I-75 to Toll Plaza-2	point1200	1200	149	20	5	20	27	20	0	0	0	0
	point818	818	149	20	5	20	27	20	0	0	0	0
	point817	817	149	20	5	20	27	20	0	0	0	0
	point816	816	149	20	5	20	27	20	0	0	0	0
	point815	815	149	20	5	20	27	20	0	0	0	0
	point814	814	149	20	5	20	27	20	0	0	0	0
	point813	813										
Truck Inspection to WB I-96-2	point1201	1201	0	0	27	20	153	20	0	0	0	0
	point708	708	0	0	27	20	153	20	0	0	0	0
	point707	707	0	0	27	20	153	20	0	0	0	0
	point706	706	0	0	27	20	153	20	0	0	0	0
	point705	705	0	0	27	20	153	20	0	0	0	0
	point704	704	0	0	27	20	153	20	0	0	0	0
	point699	699										
SB I-75d-2	point1202	1202	1251	55	9	55	52	55	0	0	0	0

	point887	887	1054	55	15	55	82	55	0	0	0	0
	point886	886	1054	55	15	55	82	55	0	0	0	0
	point885	885	1054	55	15	55	82	55	0	0	0	0
	point884	884	1054	55	15	55	82	55	0	0	0	0
	point883	883	1054	55	15	55	82	55	0	0	0	0
	point882	882	1054	55	15	55	82	55	0	0	0	0
	point890	890	931	55	13	55	73	55	0	0	0	0
	point889	889	931	55	13	55	73	55	0	0	0	0
	point888	888										
EB I-96a to SB I-75-2	point1189	1189	1200	55	8	55	44	55	0	0	0	0
	point869	869	1200	55	8	55	44	55	0	0	0	0
	point868	868	1251	55	9	55	52	55	0	0	0	0
	point875	875	1251	55	9	55	52	55	0	0	0	0
	point874	874	1251	55	9	55	52	55	0	0	0	0
	point873	873	1251	55	9	55	52	55	0	0	0	0
	point877	877	1251	55	9	55	52	55	0	0	0	0
	point879	879										
SB I-75 to Vernor-2	point1203	1203	181	20	3	20	15	20	0	0	0	0
	point464	464	181	20	3	20	15	20	0	0	0	0
	point463	463	181	20	3	20	15	20	0	0	0	0
	point462	462	181	20	3	20	15	20	0	0	0	0
	point461	461	181	20	3	20	15	20	0	0	0	0
	point460	460	181	20	3	20	15	20	0	0	0	0
	point459	459	181	20	3	20	15	20	0	0	0	0
	point458	458	181	20	3	20	15	20	0	0	0	0
	point457	457	181	20	3	20	15	20	0	0	0	0
	point456	456	181	20	3	20	15	20	0	0	0	0
	point455	455	181	20	3	20	15	20	0	0	0	0
	point454	454	181	20	3	20	15	20	0	0	0	0
	point453	453	181	20	3	20	15	20	0	0	0	0
	point452	452	181	20	3	20	15	20	0	0	0	0
	point451	451	181	20	3	20	15	20	0	0	0	0
	point450	450	181	20	3	20	15	20	0	0	0	0
	point449	449	181	20	3	20	15	20	0	0	0	0
	point448	448	181	20	3	20	15	20	0	0	0	0

	point447	447	181	20	3	20	15	20	0	0	0	0
	point442	442										
SB I-75 to Toll Plaza-2-2	point1204	1204	149	20	5	20	27	20	0	0	0	0
	point820	820										
SB I-75 to Vernor-2-2	point1205	1205	295	20	5	20	27	20	0	0	0	0
	point441	441	295	20	5	20	27	20	0	0	0	0
	point440	440										
Customs to NB I-75-2	point1206	1206	163	20	1	20	0	0	0	0	0	0
	point718	718	163	20	1	20	0	0	0	0	0	0
	point719	719										
NB I-75c-2-2	point1208	1208	1479	55	12	55	66	55	0	0	0	0
	point421	421										
Customs to WB I-96-2	point1209	1209	511	20	16	20	0	0	0	0	0	0
	point501	501	511	20	16	20	0	0	0	0	0	0
	point500	500	511	20	16	20	0	0	0	0	0	0
	point499	499										
Customs to WB I-96-2-2	point1210	1210	511	20	16	20	0	0	0	0	0	0
	point702	702	256	55	15	55	83	55	0	0	0	0
	point701	701	256	55	15	55	83	55	0	0	0	0
	point700	700	475	55	11	55	59	55	0	0	0	0
	point627	627	475	55	11	55	59	55	0	0	0	0
	point1217	1217										
Truck Inspection to WB I-96-2-2	point1211	1211	256	55	15	55	83	55	0	0	0	0
	point698	698	256	55	15	55	83	55	0	0	0	0
	point697	697	475	55	11	55	59	55	0	0	0	0
	point426	426	475	55	11	55	59	55	0	0	0	0
	point1215	1215	713	55	16	55	90	55	0	0	0	0
	point427	427										
Customs to WB I-96-N	point1212	1212	511	20	16	20	0	0	0	0	0	0
	point502	502										
Customs to NB I-75-N	point1213	1213	163	20	1	20	0	0	0	0	0	0
	point728	728	163	20	1	20	0	0	0	0	0	0
	point727	727	163	20	1	20	0	0	0	0	0	0
	point726	726	163	20	1	20	0	0	0	0	0	0
	point725	725	163	20	1	20	0	0	0	0	0	0

	point722	722	163	20	1	20	0	0	0	0	0	0
	point720	720										
EB I-96 to Toll Plaza-2	point1214	1214	468	20	23	20	127	20	0	0	0	0
	point840	840	468	20	23	20	127	20	0	0	0	0
	point839	839	468	20	23	20	127	20	0	0	0	0
	point838	838	468	20	23	20	127	20	0	0	0	0
	point836	836										
Truck Inspection to SB I-75-2-2	point1199	1199	133	20	18	20	104	20	0	0	0	0
	point954	954	133	20	18	20	104	20	0	0	0	0
	point953	953	133	20	18	20	104	20	0	0	0	0
	point952	952	133	20	18	20	104	20	0	0	0	0
	point951	951	133	20	18	20	104	20	0	0	0	0
	point950	950	133	20	18	20	104	20	0	0	0	0
	point949	949	133	20	18	20	104	20	0	0	0	0
	point948	948	133	20	18	20	104	20	0	0	0	0
	point947	947	133	20	18	20	104	20	0	0	0	0
	point946	946	133	20	18	20	104	20	0	0	0	0
	point945	945	133	20	18	20	104	20	0	0	0	0
	point944	944	133	20	18	20	104	20	0	0	0	0
	point1220	1220	133	20	18	20	104	20	0	0	0	0
	point910	910										
Truck Inspection to SB I-75-2-2-2	point1221	1221	266	20	36	20	208	20	0	0	0	0
	point909	909	266	20	36	20	208	20	0	0	0	0
	point908	908	266	20	36	20	208	20	0	0	0	0
	point907	907	266	20	36	20	208	20	0	0	0	0
	point906	906	266	20	36	20	208	20	0	0	0	0
	point1190	1190	266	20	36	20	208	20	0	0	0	0
	point901	901	266	20	36	20	208	20	0	0	0	0
	point900	900	1054	55	15	55	82	55	0	0	0	0
	point899	899	1054	55	15	55	82	55	0	0	0	0
	point898	898	1054	55	15	55	82	55	0	0	0	0
	point897	897	1054	55	15	55	82	55	0	0	0	0
	point896	896	1054	55	15	55	82	55	0	0	0	0
	point895	895	1054	55	15	55	82	55	0	0	0	0
	point893	893										

Bridge NB-1	point373	373	470	37	42	37	241	37	0	0	0	0
	point372	372	470	37	42	37	241	37	0	0	0	0
	point371	371	470	37	42	37	241	37	0	0	0	0
	point370	370	470	37	42	37	241	37	0	0	0	0
	point369	369	470	37	42	37	241	37	0	0	0	0
	point368	368	470	37	42	37	241	37	0	0	0	0
	point367	367	470	37	42	37	241	37	0	0	0	0
	point366	366	470	37	42	37	241	37	0	0	0	0
	point365	365	470	37	42	37	241	37	0	0	0	0
	point364	364	470	37	42	37	241	37	0	0	0	0
	point363	363	30	45	30	45	30	45	0	0	0	0
	point1148	1148	0	0	82	20	462	20	0	0	0	0
	point1147	1147	0	0	41	20	231	20	0	0	0	0
	point1146	1146	0	0	41	20	231	20	0	0	0	0
	point1145	1145	0	0	41	20	231	20	0	0	0	0
	point1144	1144	0	0	41	20	231	20	0	0	0	0
	point1143	1143	0	0	41	20	231	20	0	0	0	0
	point1142	1142	0	0	41	20	231	20	0	0	0	0
	point1141	1141	0	0	41	20	231	20	0	0	0	0
	point1140	1140	0	0	41	20	231	20	0	0	0	0
	point1139	1139	0	0	41	20	231	20	0	0	0	0
	point1138	1138	0	0	41	20	231	20	0	0	0	0
	point1137	1137	0	0	41	20	231	20	0	0	0	0
	point1136	1136	0	0	41	20	231	20	0	0	0	0
	point1135	1135	0	0	41	20	231	20	0	0	0	0
	point1134	1134	0	0	41	20	231	20	0	0	0	0
	point1133	1133	0	0	41	20	231	20	0	0	0	0
	point1132	1132	0	0	41	20	231	20	0	0	0	0
	point1131	1131	0	0	41	20	231	20	0	0	0	0
	point1130	1130	0	0	41	20	231	20	0	0	0	0
	point1129	1129	0	0	41	20	231	20	0	0	0	0
	point1128	1128	0	0	41	20	231	20	0	0	0	0
	point1127	1127	0	0	41	20	231	20	0	0	0	0
	point1126	1126										
Fort Street WB-1	point33	11	149	35	6	35	35	35	5	35	0	0

	point1225	1225	149	35	6	35	35	35	5	35	0	0
	point32	12										
Bridge SB-2-2-2	point1226	1226	489	37	41	37	230	37	0	0	0	0
	point1075	1075	489	37	41	37	230	37	0	0	0	0
	point344	344	489	37	41	37	230	37	0	0	0	0
	point345	345	489	37	41	37	230	37	0	0	0	0
	point346	346	489	37	41	37	230	37	0	0	0	0
	point347	347	489	37	41	37	230	37	0	0	0	0
	point348	348	489	37	41	37	230	37	0	0	0	0
	point349	349	489	37	41	37	230	37	0	0	0	0
	point350	350	489	37	41	37	230	37	0	0	0	0
	point351	351										
Bridge SB-1-2-2	point1227	1227	489	37	41	37	230	37	0	0	0	0
	point333	333	489	37	41	37	230	37	0	0	0	0
	point334	334	489	37	41	37	230	37	0	0	0	0
	point335	335	489	37	41	37	230	37	0	0	0	0
	point336	336	489	37	41	37	230	37	0	0	0	0
	point337	337	489	37	41	37	230	37	0	0	0	0
	point338	338	489	37	41	37	230	37	0	0	0	0
	point339	339	489	37	41	37	230	37	0	0	0	0
	point340	340										

American Consulting Engineers
CC

18 April 2007
TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: Ambassador Bridge Enhancement
RUN: Opening Year 2010 With I-75

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Business 1	9	1	13,470,767.0	299,315.0	574.00	4.92	0.00	71	10.0	5.0	Y
Business 2	10	1	13,471,258.0	299,315.0	574.00	4.92	0.00	71	10.0	5.0	Y
Riverside Park 2	11	1	13,471,590.0	298,898.7	571.00	4.92	0.00	66	10.0	5.0	Y
Riverside Park 1	12	1	13,471,038.0	298,535.7	571.00	4.92	0.00	66	10.0	5.0	Y
Riverside Park 3	14	1	13,471,874.0	299,639.7	571.00	4.92	0.00	66	10.0	5.0	Y
Business 3	15	1	13,471,325.0	299,907.4	576.00	4.92	0.00	71	10.0	5.0	Y
Riverside Park 4	16	1	13,472,038.0	299,881.2	574.00	4.92	0.00	66	10.0	5.0	Y
Business 4	17	1	13,471,381.0	300,162.0	581.00	4.92	0.00	71	10.0	5.0	Y
Business 6	19	1	13,472,300.0	300,518.3	574.00	4.92	0.00	71	10.0	5.0	Y
Business 5	20	1	13,472,054.0	300,634.5	580.00	4.92	0.00	71	10.0	5.0	Y
Business 7	21	1	13,472,311.0	300,753.9	577.00	4.92	0.00	71	10.0	5.0	Y
Business 8	22	1	13,472,595.0	300,747.5	574.00	4.92	0.00	71	10.0	5.0	Y
Business 9	23	1	13,472,782.0	301,073.0	578.00	4.92	0.00	71	10.0	5.0	Y
Business 10	24	1	13,473,274.0	301,335.6	580.00	4.92	0.00	71	10.0	5.0	Y
St. Anne's Church	26	1	13,472,287.0	301,727.7	586.00	4.92	0.00	66	10.0	5.0	Y
Residence 1	27	1	13,472,023.0	301,995.0	591.00	4.92	0.00	66	10.0	5.0	Y
Residence 2	28	1	13,472,137.0	302,048.6	591.00	4.92	0.00	66	10.0	5.0	Y
Residence 3	29	1	13,472,220.0	302,088.4	591.00	4.92	0.00	66	10.0	5.0	Y
Bagley Center	30	1	13,472,442.0	302,171.1	594.00	4.92	0.00	71	10.0	5.0	Y
Residence 4	31	1	13,472,145.0	302,261.1	589.00	4.92	0.00	66	10.0	5.0	Y
Residence 5	32	1	13,472,023.0	302,224.7	589.00	4.92	0.00	66	10.0	5.0	Y
Residence 6	33	1	13,471,946.0	302,186.7	594.00	4.92	0.00	66	10.0	5.0	Y

Residence 7	34	1	13,471,945.0	302,260.2	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 8	35	1	13,472,023.0	302,262.8	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 9	36	1	13,472,089.0	302,338.1	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 10	37	1	13,472,149.0	302,436.3	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 11	39	1	13,472,103.0	302,516.8	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 12	40	1	13,471,993.0	302,419.9	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 13	41	1	13,471,886.0	302,387.9	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 14	42	1	13,471,821.0	302,443.2	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 15	43	1	13,471,932.0	302,494.3	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 16	44	1	13,471,619.0	302,623.7	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 17	45	1	13,471,914.0	302,650.5	594.00	4.92	0.00	66	10.0	5.0	Y
Residence 18	46	1	13,472,022.0	302,688.6	594.00	4.92	0.00	66	10.0	5.0	Y
Multi-family Complex	51	12	13,472,641.0	301,721.5	587.00	4.92	0.00	66	10.0	5.0	Y

American Consulting Engineers 18 April 2007
CC TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: Ambassador Bridge Enhancement
RUN: Opening Year 2010 With I-75

Barrier Name	Type	Height Min	Height Max	If Wall $ per Unit Area	If Berm $ per Unit Vol.	Top Width	Run:Rise	Add'tnl $ per Unit Length
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft
Existing Wall 1	W	0.00	99.99	0.00				0.00
Existing Wall 2	W	0.00	99.99	0.00				0.00
Existing Wall 3	W	0.00	99.99	0.00				0.00
Existing Wall 4	W	0.00	99.99	0.00				0.00
Existing Wall 5	W	0.00	99.99	0.00				0.00
Existing Wall 6	W	0.00	99.99	0.00				0.00
Existing Wall 7	W	0.00	99.99	0.00				0.00
Existing Wall 8	W	0.00	99.99	0.00				0.00
Existing Wall 9	W	0.00	99.99	0.00				0.00
Existing Wall 10	W	0.00	99.99	0.00				0.00
Existing Wall 11	W	0.00	99.99	0.00				0.00
Existing Wall 12	W	0.00	99.99	0.00				0.00

Points Name	No.	Coordinates (bottom) X	Y	Z	Height at Point	Segment Seg Ht Incre-ment	Perturbs #Up	#Dn	On Struct?	Important Reflec-tions?
		ft	ft	ft	ft	ft				
point26	26	13,471,269.0	302,867.0	589.00	12.00	0.00	0	0		
point27	27	13,470,963.0	302,732.3	587.00	12.00					
point28	28	13,471,316.0	302,886.3	589.00	10.00	0.00	0	0		
point29	29	13,471,269.0	302,867.0	589.00	10.00					
point30	30	13,471,316.0	302,886.3	589.00	12.00	0.00	0	0		
point31	31	13,471,406.0	302,925.8	591.00	12.00	0.00	0	0		
point32	32	13,471,538.0	302,625.6	594.00	12.00					
point33	33	13,471,907.0	301,763.0	591.00	24.00	0.00	0	0		
point34	34	13,471,538.0	302,625.6	594.00	24.00					
point35	35	13,472,050.0	301,439.4	584.00	20.00	0.00	0	0		
point36	36	13,471,907.0	301,763.0	591.00	20.00					
point37	37	13,472,050.0	301,439.4	584.00	14.00	0.00	0	0		
point38	38	13,472,094.0	301,426.8	584.00	14.00	0.00	0	0		
point39	39	13,472,138.0	301,447.2	584.00	14.00	0.00	0	0		
point40	40	13,472,155.0	301,412.3	584.00	14.00					
point43	43	13,472,155.0	301,412.3	584.00	12.00	0.00	0	0		
point44	44	13,472,188.0	301,337.3	584.00	12.00	0.00	0	0		
point45	45	13,472,237.0	301,359.3	584.00	12.00					
point46	46	13,472,237.0	301,359.3	584.00	8.00	0.00	0	0		
point47	47	13,472,245.0	301,362.1	584.00	8.00	0.00	0	0		
point48	48	13,472,251.0	301,346.2	584.00	8.00					
point49	49	13,472,298.0	301,241.2	584.00	7.00	0.00	0	0		
point50	50	13,472,251.0	301,346.2	584.00	7.00					
point51	51	13,472,309.0	301,215.8	584.00	10.00	0.00	0	0		
point52	52	13,472,298.0	301,241.2	584.00	10.00					
point53	53	13,472,326.0	301,174.6	583.00	7.00	0.00	0	0		
point54	54	13,472,309.0	301,215.8	584.00	7.00					
point55	55	13,472,326.0	301,174.6	583.00	6.00	0.00	0	0		
point56	56	13,472,403.0	300,998.1	581.00	6.00	0.00	0	0		
point57	57	13,472,394.0	300,974.0	581.00	6.00	0.00	0	0		
point58	58	13,472,321.0	300,930.8	581.00	6.00					

American Consulting Engineers 18 April 2007
CC TNM 2.5

INPUT: GROUND ZONES
PROJECT/CONTRACT: Ambassador Bridge Enhancement
RUN: Opening Year 2010 With I-75

Ground Zone			Points		
Name	Type	Flow Resistivity	No.	Coordinates X	Y
		cgs rayls		ft	ft
Duty Free Store	Pavement	20000	13	13,470,999.0	300,964.1
			14	13,471,059.0	301,017.2
			15	13,471,204.0	301,058.9
			16	13,471,378.0	301,024.8
			17	13,471,427.0	300,990.7
			18	13,471,522.0	300,767.0
			19	13,471,518.0	300,679.8
			20	13,471,480.0	300,607.8
			21	13,471,431.0	300,581.2
			22	13,470,950.0	300,865.6
Gateway Plaza	Pavement	20000	36	13,471,386.0	301,310.6
			37	13,471,331.0	301,441.7
			23	13,471,193.0	301,724.9
			24	13,470,980.0	302,245.7
			25	13,471,201.0	302,344.9
			28	13,471,075.0	302,558.5
			29	13,470,972.0	302,729.4
			30	13,471,401.0	302,918.1
			31	13,471,924.0	301,707.9
			38	13,472,042.0	301,436.2
			40	13,472,084.0	301,419.7
			41	13,472,139.0	301,436.1

			42	13,472,183.0	301,328.7
			43	13,472,237.0	301,352.1
			39	13,472,392.0	301,001.9
			32	13,472,141.0	300,866.1
			33	13,471,771.0	300,650.2
			34	13,471,689.0	300,762.4
			35	13,471,568.0	300,984.7

American Consulting Engineers
CC

18 April 2007
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Ambassador Bridge Enhancement
RUN: Opening Year 2010 With I-75
BARRIER DESIGN: INPUT HEIGHTS

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Business 1	9	1	0.0	59.1	71	59.1	10	----	59.1	0.0	5	-5.0
Business 2	10	1	0.0	60.2	71	60.2	10	----	60.2	0.0	5	-5.0
Riverside Park 2	11	1	0.0	58.6	66	58.6	10	----	58.6	0.0	5	-5.0
Riverside Park 1	12	1	0.0	54.9	66	54.9	10	----	54.9	0.0	5	-5.0
Riverside Park 3	14	1	0.0	64.6	66	64.6	10	----	64.6	0.0	5	-5.0
Business 3	15	1	0.0	66.0	71	66.0	10	----	66.0	0.0	5	-5.0
Riverside Park 4	16	1	0.0	67.8	66	67.8	10	Snd Lvl	67.8	0.0	5	-5.0
Business 4	17	1	0.0	70.4	71	70.4	10	----	70.4	0.0	5	-5.0
Business 6	19	1	0.0	69.1	71	69.1	10	----	69.1	0.0	5	-5.0
Business 5	20	1	0.0	74.2	71	74.2	10	Snd Lvl	74.2	0.0	5	-5.0
Business 7	21	1	0.0	72.1	71	72.1	10	Snd Lvl	72.1	0.0	5	-5.0
Business 8	22	1	0.0	65.1	71	65.1	10	----	65.1	0.0	5	-5.0
Business 9	23	1	0.0	62.2	71	62.2	10	----	62.2	0.0	5	-5.0
Business 10	24	1	0.0	57.2	71	57.2	10	----	57.2	0.0	5	-5.0
St. Anne's Church	26	1	0.0	60.5	66	60.5	10	----	60.5	0.0	5	-5.0
Residence 1	27	1	0.0	58.8	66	58.8	10	----	58.8	0.0	5	-5.0
Residence 2	28	1	0.0	58.7	66	58.7	10	----	58.7	0.0	5	-5.0
Residence 3	29	1	0.0	58.5	66	58.5	10	----	58.5	0.0	5	-5.0
Bagley Center	30	1	0.0	57.5	71	57.5	10	----	57.5	0.0	5	-5.0
Residence 4	31	1	0.0	57.5	66	57.5	10	----	57.5	0.0	5	-5.0
Residence 5	32	1	0.0	57.6	66	57.6	10	----	57.6	0.0	5	-5.0
Residence 6	33	1	0.0	58.2	66	58.2	10	----	58.2	0.0	5	-5.0
Residence 7	34	1	0.0	58.4	66	58.4	10	----	58.4	0.0	5	-5.0

Residence 8	35	1	0.0	58.1	66	58.1	10	----	58.1	0.0	5	-5.0
Residence 9	36	1	0.0	57.7	66	57.7	10	----	57.7	0.0	5	-5.0
Residence 10	37	1	0.0	57.2	66	57.2	10	----	57.2	0.0	5	-5.0
Residence 11	39	1	0.0	57.1	66	57.1	10	----	57.1	0.0	5	-5.0
Residence 12	40	1	0.0	57.5	66	57.5	10	----	57.5	0.0	5	-5.0
Residence 13	41	1	0.0	57.7	66	57.7	10	----	57.7	0.0	5	-5.0
Residence 14	42	1	0.0	57.5	66	57.5	10	----	57.5	0.0	5	-5.0
Residence 15	43	1	0.0	57.4	66	57.4	10	----	57.4	0.0	5	-5.0
Residence 16	44	1	0.0	57.5	66	57.5	10	----	57.5	0.0	5	-5.0
Residence 17	45	1	0.0	57.0	66	57.0	10	----	57.0	0.0	5	-5.0
Residence 18	46	1	0.0	57.0	66	57.0	10	----	57.0	0.0	5	-5.0
Multi-family Complex	51	12	0.0	59.3	66	59.3	10	----	59.3	0.0	5	-5.0

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	46	0.0	0.0	0.0
All Impacted	3	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

LPES, Inc.
Engineering and Planning

April 29, 2008

Booz | Allen | Hamilton
Attn: Kurt W. Buchholz
Suite 1100
1550 Crystal Drive
Arlington, VA 22202-4158
(703) 412-7504

RE: **Validation of Noise Analysis for Ambassador Bridge Enhancement Project For United States Coast Guard Environmental Management Office (CG-443)**

Dear Mr. Buchholz,

LPES, Inc. is pleased to submit the attached Validation of Noise Analysis for Ambassador Bridge Enhancement Project. LPES, Inc. reviewed technical information and conclusions in the Final Environmental Assessment (EA) for the Ambassador Bridge Enhancement Project, the Noise Appendix (currently Appendix N) of the Final EA, and the noise information in the draft narrative of the EA.

All concerns specifically outlined in the Work Elements for Ambassador Bridge Noise Review where addressed. I limited my review and comments to these work elements.

If you have any questions or concerns, feel free to call.

Sincerely,

Timothy Lavallee, P.E.
Principal, Senior Engineer

14053 Lawnes Creek Road Smithfield, VA 23403 (P) 757.357.0730 (F) 757.357.0780 www.lpesinc.com

Was it appropriate to use the FHWA Noise Abatement Criteria, 23 CFR 772, and the Michigan DOT Policy 10136 Noise Abatement to determine level of impact for this privately funded bridge project? Is there any other threshold we are supposed to compare against? Does Type I or Type II criteria apply? (EA V2: Appendix N page ii-iii, 5)

Detroit's International Bridge Company (DIBC) choice of using the Federal Highway Administration (FHWA) Noise Abatement Criteria, 23 CFR 772, and the Michigan Department of Transportation (DOT) Policy 10136 Noise Abatement to determine level of impact for this *privately* funded bridge project is appropriate. Regardless of the need to comply with either regulation, procedures outlined in the guidances are the current standards for the evaluation of transportation noise and its effects. The FHWA Noise Abatement Criteria amounts to the "hard look" that National Environmental Policy Act (NEPA) requires. There are no standards or thresholds that are more applicable.

In fact, the FHWA Noise Abatement Criteria, and the Michigan DOT Policy are stricter than NEPA. The Council of Environmental Quality (CEQ) regulations require inclusion of the No Action Alternative, which serves as a baseline against which the impacts of the proposed action and alternatives should be evaluated. FHWA and Michigan DOT ask for a comparison to the existing conditions, not the future comparative baseline NEPA requires (i.e., No Action Alternative or no-build scenario). Based on available data, the project does not effectively exceed either impact criteria in any significant way.

The Type I standard applies. Type I standard applies to *new* highway projects, additional lanes, traffic reconfigurations, etc. Type II criteria apply to new and existing developments and receptors near *existing* highways.

Is the TNM Version 2.5 model the correct model to use for future traffic noise levels? (EA V2: Appendix N, page ii)

Traffic Noise Model (TNM) Version 2.5 is the correct model to use for the prediction of both existing and future traffic noise levels. TNM is the state-of-the-art noise model for the assessment of highway noise and abatement measures. It is the standard noise model for FHWA noise modeling, and V2.5 is the current version.

Is the conclusion legitimate that noise barriers are not a reasonable and feasible method of reducing predicted traffic noise? Is there enough mitigation documentation here to support no significant impact? (EA V2: Appendix N, page iii, 17-23 ; EA V1: Section 4, page 121-122)

Based on the analysis presented, the conclusion that noise barriers are not a reasonable and feasible method of reducing predicted traffic noise is legitimate. The documentation is consistent with the FHWA guidelines and supports this conclusion.

Implementation of the proposed action would have both short-term and long-term minor adverse effects to the noise environment. Due to the limited amount of receptors potentially affected, minor adverse effects to the noise environment are possible with or without barriers. A finding of no significant impact, with respect to noise, is appropriate.

Are the 1500 ft parameter and the 3dB multiplier reasonable parameters for this study? (DIBC draft response to comments: Response 1 pages 1-2 and 11-12, Response 2 pages 15-17)

The 1500-ft parameter is reasonable parameter for this study. A minimum reduction of approximately 15 dB(A) would be expected when a site 50 ft from the roadway is compared to one 1500 ft away. Roadway noise would have to be extremely (unreasonably) high (>81 dBA at 50 feet) to have any effect at a distance of 1500-ft. This is verified for receptors identified in the study at this distance (i.e., R18 and B10). At this distance, the roadway of interest would likely be audible; however, it would not be substantially louder than or discernable from, other noise sources in this setting. Additional receptor sites farther from the project area would not provide additional pertinent information.

The 3dB multiplier is a reasonable parameter for this study. A reduction of 3dB per doubling of distance from a line source of noise (such as a roadway) is a standard conservative assumption. This parameter is particularly appropriate for hard surfaces, elevated sources or receivers, sound propagating over barriers, and no intervening structures. Other conditions (i.e., soft ground, intervening structures, etc.) would reduce noise levels even more (~4.5 dB).

The objectives listed in the Executive Summary state that an additional objective is to include the evaluation of construction noise impacts. Section 6 of Appendix N states that noise and vibration impacts relative to the proposed project will be discussed with respect to criteria established by FHWA, EPA and local communities, but there is no analysis of construction impacts in the document. Should this be required of the applicant based upon the available information? (EA V2: Appendix N page ii, 25)

> It is standard practice for quantitative construction noise analysis to be performed in Environmental Assessments (EAs) for large infrastructure construction projects in urban environments that last for more than several months. Therefore, quantitative construction noise assessments should be performed in this EA. In addition, it may be possible to describe certain basic measures that may be taken to reduce the potential impact; for example, prohibiting the noisiest construction activities during night hours, if deemed necessary. Notably, the Detroit Code of Ordinance has provisions for nuisance noise only. The ordinance does not contain strict (quantified) noise limits or time-of-day limitations to construction activities.

Does the identification and evaluation of the 35 noise sensitive sites appear to be adequate? (EA V2: Appendix N page 7-16)

> The identification and evaluation of the 35 noise sensitive sites appears adequate. After reviewing the figures and aerials for the area, no additional receptors closer to the project could be identified. Additional receptor sites farther from the project area would not provide additional pertinent information. Both overall sound levels and the change in sound levels between the build and no-build scenario would be lower at additional receptor sites located farther from the project area.
>
> The change in sound levels between the existing and no-build scenarios would be [are] comparable for all sites (about 2 dBA). Given that the traffic volume is approximately the same, the overall sound levels for the build and no-build scenarios would be the same for all sites where the change in distance to roadway (between the build and no-build scenarios) was relatively small when compared to the overall distance from the project. In other words, sites relatively far away would have the same sound levels under the build and no-build scenario. This is true for all receptors greater than a few hundred feet. Notably, 32 of the 35 receptors had a net change in sound level of less than 1 dB, and none greater than 3dB.

Does the noise contour determination of 450 ft for 66 dBA appear to be accurate? (EA V2: Appendix N page 24)

The noise contour determination of 450 ft for 66 dBA appears to be accurate. An independent screening analysis was run using TNM Version 2.5 for similar traffic flows on a single lane, strait and level roadway, with no additional assumptions. The noise reduced to 66 dBA approximately 500 feet from the shoulder. Any additional assumptions such as soft ground, subtle changes in source or receptor elevations, roadway curvature could easily reduce this distance to 450 feet as stated. Notably, this type analysis is for planning purposes. Actually levels could be slightly higher or lower depending on localized characteristics such as intervening structures or additional reflective surfaces.

Confirm data seems legitimate based upon presented materials. (EA V2: Appendix N data section)

A general review of the data, results, and the stated material was performed. In general, the analysis was appropriate for the type, size, and scope of the action. No readily obvious or verifiable inconsistencies or defects were identified.

To further strengthen the determination that noise data and analyses for the proposed action are sound, collection of the following additional information should be considered:

- The action states that both the new bridge and the old bridge may become operational during peak traffic periods (Appendix N, page 3). This could lead to an effective doubling (or more) of the noise due to these combined sources. This condition was not analyzed. If it is a part of the action or a reasonably foreseeable action it should be considered and appropriate assessments should be performed.

- It appears the traffic inputs in the noise analysis do not reflect the lane restrictions outlined in the description of the action (Appendix N, page 3). Effects on noise due to these restrictions would likely be minor; however, they should be considered in some form.

  It appears only one and not both northbound lanes on the bridge was included in the analysis of the existing conditions and no-build scenario (Appendix C of Appendix N, existing conditions and no-build scenario, page 5). This would result in a reduction of the modeled noise levels for the existing and no-build conditions, effectively increasing the change in noise and stated impact from the Proposed Action.

Do the replies to Michigan DOT comments on the noise assessment meet NEPA requirements?

NEPA does not specifically require responses to comments at the EA level unless they change the overall outcome of the document. Comment and response is the process for which many agencies continue to involve the public to the greatest extent possible. In the process, agencies often use criteria outlined in the Environmental Impact Statement (EIS) portion of the CEQ regulation when responding to EA comments. For an EIS, an agency must respond to substantive comments in one of the following five basic ways (40 CFR 1503.4).

1. Modifying alternatives
2. Developing or analyzing alternatives not given serious consideration
3. Supplementing, improving, or modifying the analysis
4. Making factual corrections
5. Explaining why the comments do not need further agency response

The draft responses to the Michigan DOT comments are consistent with the process outlined above. The Michigan DOT comments do not warrant changes to the document; therefore, explaining why the comments do not need further agency response is appropriate (5). It might be prudent to clearly state that "the comments do not need further agency response."

Based on professional judgment of this analysis, a general review of the stated material, and experience with other noise analyses conducted for comparable roadway and bridge noise evaluations, the response to comments appear to technically address the Michigan DOT comments.

Does the analysis provided in our document stop at international boundary for noise or if it spans the entire length of the bridge?

The analysis in the EA is confined to the area surrounding the base of the bridge in the United States. It does not address noise on the waterway or in Canada.

Comments from Scot M. Striffler, United States Coast Guard, dated August 7, 2008

Comment 1: It appears the traffic inputs in the noise analysis do not reflect the lane restrictions outlined in the description of the action (Appendix N, page 3). Effects on noise due to these restrictions would likely be minor; however, they should be considered in some form.

Response: ***The Build alternative TNM model run was updated taking into account the traffic restrictions as stated in the description. A conservative approach of 50 percent FAST trucks was used for the outside lane where only FAST trucks will be allowed. The remainder of truck traffic was distributed to the middle lane of traffic. All autos were distributed to the inside and middle lanes only. The TNM model was re-run and all required updates were made to the report to reflect this change.***

Comment 2: It appears only one and not both northbound lanes on the bridge was included in the analysis of the existing conditions and no-build scenario (Appendix C of Appendix N, existing conditions and no-build scenario, page 5). This would result in a reduction of the modeled noise levels for the existing and no-build conditions, effectively increasing the change in noise and stated impact from the Proposed Action.

Response: ***Both northbound lanes were analyzed, however; there was a labeling error in the TNM file. One of the northbound lanes was labeled as From Bridge to Customs and this caused some confusion. These have be re-labeled and updated in the Appendices of the report.***