

Niagara Gorge Corridor

***Robert Moses Parkway Removal
Main Street to Findlay Drive
Niagara Falls, NY***

Design Report/ Environmental Assessment

Appendix J - Noise Study

PIN 5757.91.121

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In cooperation with:

**New York State Department of Transportation
New York Power Authority
USA Niagara Development Corporation
The City of Niagara Falls, NY**



**NIAGARA GORGE CORRIDOR,
ROBERT MOSES PARKWAY REMOVAL PROJECT:
MAIN STREET TO FINDLAY DRIVE
NIAGARA FALLS, NIAGARA COUNTY, NEW YORK**

FINAL TRAFFIC NOISE ANALYSIS STUDY

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I. INTRODUCTION

The proposed project is located in the City of Niagara Falls, Niagara County, New York, as shown in the regional and site location maps in Attachment A. The project area covered in this traffic noise study includes approximately 2.0 miles of Robert Moses Parkway (RMP) beginning at Main Street near the Rainbow Bridge, and terminating at Findlay Drive at the southern limit of DeVeaux Woods State Park.

II. DESCRIPTION OF ALTERNATIVES

No-Build Alternative

The No-Build Alternative is established as a baseline against which the "Build Alternative" is compared. Under the No-Build Alternative, all built features of the RMP would remain in place between Main Street and Findlay Drive. This would involve continuation of the current use/alignment established under the 2000 "Pilot Project", including use of the former southbound expressway lanes as the "Robert Moses Parkway Trail"; use of the former northbound expressway lanes as a single, two-way, 40-mile-per-hour (MPH) highway; and continuation of all other existing expressway features, such as the Whirlpool Bridge overpass, pedestrian bridges, and access prevention from adjoining neighborhoods (e.g., fencing, guiderails, grade separation, etc.). In turn, the existing four-lane alignments of Whirlpool Street and Third Street would remain directly adjacent the RMP between Main Street and Findlay Drive.

Build Alternative

The Build Alternative would involve removal of the RMP (i.e., all vehicular lanes, lanes used for the Robert Moses Parkway Trail, the Whirlpool Bridge Plaza overpass, and all other RMP interchange/accessory facilities) from Main Street (NYS Rte 104) to Findlay Drive. The Build Alternative would also include:

- Reconstruction of Whirlpool Street from Main Street to Walnut Avenue and from Cedar Avenue to Findlay Drive as an at-grade, two-lane, 30-MPH road to accommodate north-south vehicular and potential future bus access, and removal of Whirlpool Street from Cedar Avenue to Walnut Avenue;
- Reconstruction of Third Street from Main Street to Cedar Avenue in a manner consistent with that of Whirlpool Street;
- Restoration of the landscape / habitat on lands reclaimed along the Niagara Gorge Rim from the removal of the RMP with native species;
- Construction of a pedestrian / bicycle trail network along the Gorge rim, connecting to other trail systems and adjoining neighborhoods; and
- Incorporation of amenities / betterments associated with the above improvements.

At the proposed intersection of Whirlpool Street and Findlay Drive, two T-intersection Conditions were considered. Condition A would provide a stop sign on Findlay Drive at the point where it

meets the extended Whirlpool Street. Condition B would provide a stop sign on Whirlpool Street at the point where it meets Findlay Drive. These intersection Conditions are shown in Attachment A.

III. SCOPE

The purpose of this noise study is to assess potential future traffic noise impacts for the Build Alternative and the No Build Alternative. This report includes a summary of the noise analysis, impact assessment, abatement investigation and conclusions. Procedures for this study conform to the requirements developed by the Federal Highway Administration (FHWA) as presented in Chapter I of Title 23, Code of Federal Regulations, Part 772 (23 CFR 772), Procedures for Abatement of Highway Traffic Noise and Construction Noise, and the New York State Department of Transportation (NYSDOT) The Environmental Manual (TEM) Section 4.4.18 Noise Analysis Policy and Procedures. The procedures include the following:

- A. Performing noise measurements at 16 receptors in the study area to determine existing noise levels.
- B. Determine Land Use Areas.
- C. Determining the existing peak hour noise levels to be used as the basis for comparison to future noise levels.
- D. Predicting future noise levels in the design year (2040) for each alternative within the study area.
- E. Identifying locations where the proposed improvement project will cause a traffic noise impact.
- F. Evaluating noise abatement alternatives for areas with future traffic noise impacts.
- G. Recommending a course of action that would provide noise abatement measures, if they are feasible and reasonable, for the impacted areas.
- H. Coordination with local officials.
- I. Estimating construction noise expected from the project and determining measures that can be implemented to minimize or eliminate its adverse impacts on the community.

23 CFR 772 requires that noise studies be performed for Type I projects. A Type I project is defined as a project on new location, or a project that significantly changes horizontal and/or vertical alignment, or includes the addition of a through travel lane. This project will significantly alter the existing Robert Moses Parkway by completely removing it within the limits of the project study area, thereby altering local traffic patterns. Therefore, a noise study is required.

IV. NOISE THEORY

When an object moves, the movements cause vibrations of the molecules in the air to move in waves. When the waves reach the human ear, it is called sound. Noise can be defined as unwanted sound. Sound becomes unwanted when it interferes with normal activities such as conversation, recreation, or sleeping. Assessing community reaction to noise requires a scale that relates subjective community response to a measurable property of that noise, preferably in terms of a single descriptor. The human perception of sound can be described by three variables: amplitude, frequency, and fluctuations in sound level with time.

The human ear is sensitive to a wide range of pressure levels. Amplitude is the perceived loudness of a sound, and is a measure of the sound pressure level. The sound pressure level of a noise is expressed in terms of the logarithmic scale of decibels (dB), which allows for the comparison of sounds. As the intensity of a noise increases, it is judged to be more annoying.

Frequency is the rate at which the sound source vibrates and is perceived as pitch, measured in Hertz (Hz). The human ear cannot perceive all frequencies equally well, and has a frequency range of hearing from 20 Hz to 20,000 Hz. Humans are less sensitive to low frequency sound than to high-frequency. To measure noise in a way that compares closely to the human ear's sensitivity, the A-weighted sound level is used to filter out frequencies to which the human ear does not respond. Thus, the A-weighted sound level in decibels (dBA) provides a simple measure of amplitude and frequency that correlates well with the human response to environmental noise.

Environmental noise is rarely constant with time. If noise is intermittent, irregular, or rhythmic rather than steady, it is quite often denoted as being less tolerable. It is necessary to use a method of measure that will account for this time-varying nature of sound when studying environmental noise. The equivalent sound level (L_{eq}) is a single value of sound level for a desired duration. The L_{eq} is a steady state, A-weighted sound level which includes all of the time-varying sound energy in the measurement period, including the fluctuating peaks and valleys of noise levels. The amplitude, frequency, and time variation of noise are combined into a single descriptor (L_{eq} in dBA) that helps to evaluate human response to noise, and has also been chosen for use in this study.

Noise Abatement Criteria (NAC) developed by the Federal Highway Administration (FHWA), define limits for determining impacts due to traffic noise levels in areas based on defined land use. These are summarized in Table 1. Federal regulations (23 CFR 772) define traffic noise impacts as "occurring when the predicted traffic noise levels approach or exceed the NAC, or when the predicted levels are substantially higher than the existing levels." In practice the NYSDOT definition of this regulation quantifies "approach" as within 1 dBA, and "substantially higher" as 6 dBA or greater. Therefore, an impact is considered to occur if the predicted future noise level is one decibel lower, equals or exceeds the NAC, or is 6 dBA or more above the existing noise level. If an impact is identified, abatement measures for reducing or eliminating the impact must be considered.

TABLE 1 FHWA NOISE ABATEMENT CRITERIA (NAC)		
Activity Category	Leq(h)	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)	Residential.
C	67 (Exterior)	Active sports areas, amphitheatres, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, schools, and television studios.
E	72 (Exterior)	Hotels, motels, offices, restaurants/bars and other developed lands, properties or activities not included in A-D or F.
F	--	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, ship yards, utilities (water resources, water treatment, electrical), and warehousing.
G	--	Undeveloped lands that are not permitted.

V. LAND USE DETERMINATION

Existing land uses were determined for the project area, and FHWA NAC corresponding to the land uses were assigned. FHWA Activity Categories for the project area are identified in Attachment B, and the corresponding NAC and land use descriptions are listed in Table 1.

The land on the west side of the RMP is dominated by open space owned and maintained by the New York Power Authority. This open space, which is available for public use, includes a paved walking/biking trail, rest area, and heavily wooded hiking trails, is be classified as FHWA Activity Category C, which has an exterior NAC of 67 dBA.

North of the Whirlpool Bridge terminus of the project at Findlay Drive, the land east of the RMP is a mixture of residential, commercial, and industrial properties. The project corridor primarily consists of residential properties, and the portion of the property (or "house lot" concept) where human activity is likely to occur is considered FHWA Activity Category B, which has an exterior NAC of 67 dBA. The area immediately north of Findlay Drive, which is part of DeVeaux Woods State Park, is considered FHWA Activity Category C, which also has an exterior NAC of 67 dBA.

The area around the Whirlpool Bridge is comprised of office buildings, a retail building, maintenance yards, and undeveloped lands. The office buildings are considered FHWA Activity Category C, having an exterior NAC of 67 dBA. The retail building and maintenance facilities (Activity Category F), as well as undeveloped lands (Activity Category G) do not have applicable FHWA NAC.

At the southern end of the corridor, the project area is a mixture of residential, hotels, restaurants, commercial, retail, and maintenance facility properties. The residential properties are Activity Category B, having an exterior NAC of 67 dBA. The hotels, restaurants, and other commercial properties are Activity Category E, having an exterior NAC of 72 dBA. The retail buildings and maintenance facility (Activity Category F) do not have applicable FHWA NAC.

VI. TRAFFIC

Traffic data from VISSIM modeling of the project corridor formed the basis for the traffic volumes used in the TNM 2.5 noise prediction models. The Existing (2010) AM and PM peak hour traffic volumes and operating speeds were modeled to determine the peak noise hour. Traffic counts and classifications taken during the September 2014 noise measurements were used to verify the vehicle mix that was used in the VISSIM model. Tabulation of the traffic information taken during the noise measurements can be found in Attachment C. The speeds were found to vary slightly by alternative and direction. These operating speeds can be found in Attachment D. The PM peak hour was used to determine traffic noise levels for the corridor because overall noise levels were found to be higher than the AM peak hour.

VII. NOISE LEVEL MEASUREMENTS

The noise measurements for the 16 sites shown in Attachment B, were obtained during September 2014. Noise measurement equipment included a Casella CEL-633C2 Type 2 sound level meter and microphone, windscreen, and CEL 110/2 acoustical calibrator. The noise meter meets ANSI Standard S1.4 for Type 2 noise meters and was mounted on a tripod approximately 5 feet above the ground. The numbers of cars, medium trucks, and heavy trucks traveling on Robert Moses Parkway and local roadways in close proximity to the measurement sites were counted using hand counts. The Noise Survey Data Sheets can be found in Attachment C.

A minimum of two sound level measurements were taken at each measurement site. One measurement was taken during the AM or PM peak traffic hour, and one during an off-peak traffic hour. These measurements aided in establishing existing noise levels, the peak noise hour, and the effects of noise sources other than the existing local street traffic. Each measurement was conducted for a minimum of 15 minutes. L_{eq} noise level readings were recorded at 5-minute intervals. If the 10- and 15-minute readings did not round to the same whole number, the measurement was continued until two consecutive 5-minute readings rounded to the same whole number. Traffic counts were converted (multiplied by 4 for a 15-minute measurement period) to represent an hourly volume of traffic for use in the TNM noise models. Vehicle speeds, potential natural barriers, and shielding were also observed and recorded at each

measurement site. The peak hour L_{eq} sound level measured at each measurement site has been summarized in Table 2.

Other noise sources identified included construction equipment, back-up warning devices, hammering, car doors closing, dogs barking, and tourism helicopters. During the noise measurements taken at the southern end of the corridor, the low rumble of Niagara Falls was audible. The frequent passing of helicopter tours was the most significant non-traffic noise observed. Helicopters were not recorded during the AM peak measurements, but were constant throughout the remainder of the day with as many as 12 helicopters counted during a single 15 minute noise measurement. All of these noise sources were considered as part of the existing noise environment.

VIII. TNM MODEL VALIDATION

After noise measurements were taken in the field, a TNM 2.5 noise prediction model reflecting existing roadway conditions was developed using available design mapping. When their presence was significant, rows of building shielding and terrain lines were incorporated into the model.

The noise meter data was reviewed to determine the ambient, or background, noise level for each measurement. This ambient noise level reflects the frequent helicopter noise observed at each site. For sites with measured noise levels exceeding ambient levels by 4 dBA or more, the ambient noise was subtracted from the measured noise level using logarithmic decibel subtraction, to determine the contribution from vehicular traffic, as shown in Table 2.

Traffic volumes, speeds, and classifications recorded during each measurement were applied to the TNM 2.5 model and used to predict the traffic generated noise levels at each of the measurement locations. The TNM predicted traffic noise was then compared to the traffic noise level from the measurements, as shown in Table 2. Adjustments in the modeling were made to provide close correlation and an accurate representation of the site characteristics. The human ear cannot distinguish between noise levels that differ by 3 dBA or less. Therefore, if the measured and modeled highway traffic noise models are within +/- 3 dBA for all of the sites, then the model is considered valid. The modeling for this project corridor was found to predict noise levels no more than 2 dBA different from the traffic noise levels contributed to the field measurements. The TNM model is therefore valid.

**TABLE 2
NOISE MONITORING AND MODEL VALIDATION RESULTS**

Site	Location	Date	Time		Measured Noise Levels			TNM Predicted Leq (dBA)	Difference Traffic - TNM (dBA)
			Start	End	Measured Leq (dBA)	Ambient Noise (dBA)	Traffic Noise ¹ (dBA)		
M1	2915 Whirlpool St.	9/4/14	5:06 pm	5:21 pm	58	54	56	55	-1
M2	2667 Whirlpool St.	9/4/14	5:27 pm	5:42 pm	61	57	59	57	-2
M3	Henry Wrobel Tower	9/4/14	11:05 am	11:20 am	57	53	55	54	-1
M4	710 Division St.	9/5/14	7:34 am	7:49 am	63	57	62	60	-2
M5	1634 Eighth St.	9/5/14	7:54 am	8:09 am	55	51	53	52	-1
M6	711 Pierce Ave.	9/5/14	7:13 am	7:28 am	62	53	61	60	-1
M7	RMP Trail Rest Area	9/9/14	8:39 am	8:59 am	55	50	53	54	1
M8	611 Ashland Dr.	9/5/14	8:35 am	8:50 am	61	54	60	59	-1
M9	316 Spruce Ave.	9/5/14	8:56 am	9:11 am	64	56	63	62	-1
M10	Niagara County Civic Bldg.	9/4/14	2:58 pm	3:13 pm	60	53	59	60	1
M11	Aquarium of Niagara	9/8/14	4:28 pm	4:43 pm	58	54	56	54	-2
M12	619 Third St.	9/9/14	7:58 am	8:13 am	60	54	59	57	-2
M13	Niagara Gorge Discovery Center	9/4/14	3:45 pm	4:05 pm	58	54	56	55	-1
M14	568 Third St.	9/9/14	8:16 am	8:31 am	55	51	53	51	-2
M15	492 Main St. (Rodeway Inn)	9/8/14	3:20 pm	3:40 pm	60	56	58	56	-2
M16	472 Main St. (Howard Johnson)	9/8/14	2:44 pm	3:04 pm	57	50	56	57	1

NOTE:

1. Decibels (dBA) are subtracted using logarithmic decibel subtraction. For example given two decibel levels X and Y, $X - Y = 10 * \log_{10}[10^{(X/10)} - 10^{(Y/10)}]$.

IX. PREDICTED EXISTING AND FUTURE NOISE LEVELS

The validated TNM model was then used to determine existing traffic noise levels. Additional noise receptors and land features were incorporated into this model. Existing PM peak hour traffic volumes, vehicle classifications, and speeds were applied. The resulting loudest hour traffic noise levels were used for comparison to future traffic noise levels to determine noise impacts. The computed existing noise levels are summarized in Table 3. The TNM output data is provided in Attachment D.

TNM 2.5 models representing future (2040) traffic conditions for the Null and Build Alternative were developed. To complete the models, projected future (2040) peak hour traffic volumes, vehicle classifications and speeds were applied. At the proposed T-intersection of Whirlpool Street and Findlay Drive, both Condition A and Condition B were modeled. The predicted future noise levels of the northern receptor locations are reported for each Condition.

To determine whether or not noise abatement measures are required, the future traffic noise levels for the Build Alternative were compared to levels approaching the NAC, and to the existing noise levels following the NYSDOT/ FHWA guidelines in order to identify impacts. The results of these comparisons are shown in Table 3.

TABLE 3 SUMMARY OF TRAFFIC NOISE LEVELS (Leq)									
Site	Location	FHWA Activity Category /NAC	Equivalent Number of Residential Receptors ¹	Existing Noise Levels (dBA)	Predicted 2040 Noise Level		Noise Level Differences		Impact ²
					Null	Build	Build - Existing	Build - Null	
Whirlpool Street / Findlay Drive Condition A									
R1	RMP Trail	C / 67	4	54	56	52	-2	-4	
R3	DeVeaux Woods Baseball Diamond	C / 67	50	42	43	41	-1	-2	
M1	2915 Whirlpool St.	B / 67	2	62	62	62	0	0	
Whirlpool Street / Findlay Drive Condition B									
R1	RMP Trail	C / 67	4	54	56	53	-1	-3	
R3	DeVeaux Woods Baseball Diamond	C / 67	50	42	43	41	-1	-2	
M1	2915 Whirlpool St.	B / 67	2	62	62	62	0	0	
Build Alternative									
R2	RMP Trail	C / 67	4	55	56	49	-6	-7	
R4	Whirlpool St.	B / 67	2	61	61	61	0	0	
R5	Chestnut Ave.	B / 67	2	50	50	49	-1	-1	
R6	Whirlpool St.	B / 67	4	64	63	65	1	2	
R7	Whirlpool St.	B / 67	2	63	63	64	1	1	
R8	Chasm Ave. N	B / 67	1	53	53	54	1	1	
R9	Chasm Ave. S	B / 67	4	59	59	60	1	1	
R10	Whirlpool St.	B / 67	6	54	54	55	1	1	
M2	2667 Whirlpool St.	B / 67	3	64	64	65	1	1	
R11	Whirlpool St.	B / 67	6	54	55	55	1	0	
R12	2351 Whirlpool St.	E / 72	2	62	63	62	0	-1	
M3	Henry Wrobel Tower	B / 67	250	58	58	58	0	0	
R13	Lincoln Pl. N	B / 67	1	57	58	57	0	-1	
R14	Lincoln Pl. S	B / 67	4	56	57	57	1	0	
M4	710 Division St.	B / 67	1	62	63	65	3	2	

TABLE 3 CONTINUED
SUMMARY OF TRAFFIC NOISE LEVELS (Leq)

Site	Location	FHWA Activity Category /NAC	Equivalent Number of Residential Receptors ¹	Existing Noise Levels (dBA)	Predicted 2040 Noise Level		Noise Level Differences		Impact ²
					Null	Build	Build - Existing	Build - Null	
M5	1634 Eighth St.	B / 67	4	56	57	57	1	0	
R15	Linwood Ave.	B / 67	4	53	54	54	1	0	
R16	Willow Ave.	B / 67	5	59	60	59	0	-1	
R17	Pierce Ave. N	B / 67	1	61	62	62	1	0	
M6	711 Pierce Ave.	B / 67	3	62	63	65	3	2	
R18	Orchard Pkwy. N	B / 67	1	60	61	61	1	0	
M7	RMP Trail Rest Area	C / 67	9	55	57	54	-1	-3	
R19	Chilton Ave. N	B / 67	3	58	59	59	1	0	
R20	Chilton Ave. S	B / 67	2	55	56	55	0	-1	
M8	611 Ashland Dr.	B / 67	4	59	60	60	1	0	
R21	Elmwood Ave. N	B / 67	1	59	60	60	1	0	
R22	Elmwood Ave. S	B / 67	5	56	57	56	0	-1	
M9	316 Spruce Ave.	B / 67	1	64	65	65	1	0	
R23	Whirlpool St.	B / 67	1	64	64	65	1	1	
M10	Niagara County Civic Bldg.	C / 67	3	60	61	64	4	3	
M11	Aquarium of Niagara	C / 67	4	53	55	50	-3	-5	
R24	Third St.	B / 67	3	51	51	55	4	4	
M12	619 Third St.	B / 67	5	61	61	65	4	4	
R25	Third St.	B / 67	6	51	51	54	3	3	
R26	Third St.	B / 67	3	57	57	58	1	1	
M13	Niagara Gorge Discovery Center	C / 67	8	54	56	48	-6	-8	
M14	568 Third St.	B / 67	3	54	55	55	1	0	
M15	492 Main St. (Rodeway Inn)	E / 72	1	62	63	63	1	0	
M16	472 Main St. (Howard Johnson)	E / 72	3	60	62	56	-4	-6	

NOTES

1. Per NYSDOT The Environmental Manual (TEM) Section 4.4.18.5.3.2 guidance, for FHWA Activity Category C and E areas, the equivalent number of residential receptors was determined by dividing the area of frequent human use by the minimum high-density residential lot size from the City of Niagara Falls Zoning Ordinance (0.091 acres).
2. The predicted future noise level is one decibel lower, equals or exceeds the NAC, or is 6 dBA or more above the existing noise level.

X. NOISE IMPACT DETERMINATION

Federal regulations (23 CFR 772) define traffic noise impacts as "occurring when the predicted traffic noise levels approach or exceed the NAC, or when the predicted noise levels are substantially higher than the existing levels." In practice, the NYSDOT definition of this regulation quantifies "approach" as within 1 dBA and "substantially higher" as 6 dBA or greater. Therefore, an impact is considered to occur if the predicted future noise level is one decibel lower, equals or exceeds the NAC, or is 6 dBA or more above the existing noise level. If an impact is identified, abatement measures for reducing or eliminating the impact must be considered.

FHWA Activity Categories assigned to the particular areas of the project are shown in Attachment B. In determining impacts, all residential properties are FHWA Activity Category B, while the land within the parks, recreation areas, and office buildings are all FHWA Activity Category C. All lands classified as Category B and C activities have a corresponding NAC of 67 dBA. Since the approach threshold is 1 dBA, then an impact is considered to occur if the future noise level at these receptors is 66 dBA or greater.

The hotels, restaurants, and other commercial properties primarily located at the southern end of the corridor are Activity Category E, with exterior NAC of 72 dBA. With the approach threshold of 1 dBA, this means that an impact is considered to occur if the future noise level at these receptors is 71 dBA or greater.

For the Build Alternative, future year 2040 noise levels for the analysis sites range from 41 – 65 dBA. The noise change from the existing to the Build Alternative noise levels range from -6 dBA at the New York Power Authority open space and Niagara Gorge Discovery Center to +4 dBA on the east side of Third Street. This noise level increase is attributed to highway geometry changes, altered travel patterns due to the removal of the RMP, and the projected increase in traffic volume between 2010 and 2040.

The variation of Whirlpool Street / Findlay Drive Condition A and Condition B configurations were found to have minimal impact on noise levels. Only noise receptor R1 was determined to have any change in predicted noise levels between these Conditions. Condition A would result in 52 dBA, while Condition B would result in 53 dBA. Both of these noise levels are below existing noise levels of 54 dBA at this location, and significantly below the FHWA NAC of 67 dBA.

For each analysis site, the future predicted traffic noise levels do not approach or exceed the NAC established for the Activity Category, nor do they cause substantial increases of 6 dBA or greater over existing noise levels. Therefore, noise abatement was not considered along the corridor. Traffic noise impacts for the Build Alternative are summarized in Table 4 below.

TABLE 4 NOISE IMPACTS BY FHWA ACTIVITY CATEGORY						
Alternative	FHWA Category B – Number of Impacts		FHWA Category C– Number of Impacts		FHWA Category E– Number of Impacts	
	Existing	2040	Existing	2040	Existing	2040
Null	0	0	0	0	0	0
Build – Condition A	N/A	0	N/A	0	N/A	0
Build – Condition B	N/A	0	N/A	0	N/A	0

XI. NOISE ABATEMENT EVALUATION AND RECOMMENDATIONS

In regard to abatement, 23 CFR Part 772 requires that after an impact has been identified, "noise abatement shall be considered and evaluated for feasibility and reasonableness." No noise impacts were identified as a result of this project. Therefore, noise abatement was not considered.

XII. CONSTRUCTION NOISE

A. General

The noise produced on construction sites originates from a variety of sources, which can be described by identifying those phases of construction applicable to the proposed project. Specifically, each phase of construction has its own scope, objective, mix of equipment, and therefore, its own noise characteristics. For most projects these phases will overlap due to time constraints and interdependency of activities. The phases of construction typical to the subject project can be identified as: mobilization, earthwork, drainage, base preparation, paving, and clean-up. Earthwork operations were determined to produce a high amount of construction noise for this project.

The effective control of construction noise can be achieved by considering the following:

- Design modifications;
- The reduction of noise emitted from equipment (source control);
- The abatement of noise escaping from the site (site control); and
- Public Relations.

A discussion of each technique follows.

1. Design Modifications

The reduction of construction noise can be accomplished by design changes and alternative construction methods that reduce construction noise. The location of staging areas, haul roads, and detours can all be used to reduce the impact of construction noise on sensitive receptors. Construction techniques and equipment selection also play a role in construction noise levels.

2. Source Control

Mitigation of construction noise at the source is generally the most effective way to reduce construction noise levels. Noise emitted from construction equipment can be reduced by using equipment that:

- a. is properly muffled;
- b. uses engine vibration isolation mounts;
- c. is supercharged;
- d. is wheeled rather than tracked;
- e. if tracked, uses sealed and lubricated tracks;
- f. is properly maintained.

The use of a single large piece of equipment in place of several small units may reduce the noise produced by that particular type of equipment. Reduction of source noise levels can be attained by the modification of new equipment designs or retrofitting existing on-site equipment.

3. Site Control

This technique involves mitigating the noise escaping the site in the direction of receptors. Whenever possible, stationary equipment such as noise compressors and generators should be positioned as far from the receptors as practical. For those operations that require the continuous use of excessively noisy stationary equipment in close proximity to receptors, temporary noise barriers could be used if severe impacts were to be found.

4. Public Relations

Although community awareness will not lessen construction noise, involving the public and the local officials early in the construction operations can curtail a possibly adverse community reaction. A method for receiving and addressing complaints could be implemented if the public raises concerns during the design phase. The successful bidder could furnish a schedule for approval prior to commencement of construction operations, and inform the community, local businesses, or public agencies of upcoming operations. Public notices can also be used in advance of noisier construction phases to inform any affected residents.

Evenings and week-ends are traditionally the leisure hours for individuals when higher noise levels are less tolerable. The contractor could be informed that noise controls for construction equipment will be used for any work taking place beyond daylight hours, Monday through Saturday, and all day Sunday. In some cases, the daily time and duration of construction activities can be adjusted to reduce noise disturbances to receptors as well.

It must be emphasized that the effects of construction noise on receptors can be lessened, but cannot be eliminated using these techniques. Some of these techniques can also be used as a method of good practice to reduce construction noise in general, whether or not construction noise impacts actually occur.

B. Project Specific Recommendations

The construction related noise concerns for this project involve the Activity Category B, C, and E receptors located in close proximity to Whirlpool Street and Third Street. These receptors can be expected to experience significant short term increases in noise levels from time to time as construction operations progress.

This project has an estimated 24 to 36 month construction schedule. During construction of any alternative, a minimum of one lane of traffic in each direction along Whirlpool Street would be maintained. While minor inconveniences to local traffic may occur during construction, no major off-site detours would be necessary. Although the relative position of traffic with respect to receptors will vary as traffic is shifted, the traffic speeds will be reduced. Therefore, no noise impacts as a result of the maintenance of traffic plans are expected.

The following measures are recommended to ensure that construction noise will not become a significant issue:

1. Special Notes in the Contract Proposal outlining a method for handling complaints.
2. Special Notes in the Contract Proposal outlining a process for notifying residents in advance of construction operations.
3. Time restrictions on construction operations. Construction should be limited to the daytime hours (between 7 AM and 6 PM) weekdays except Sundays and Federal holidays. On occasion, the Contractor may be permitted to perform operations during the evening hours (between 6 PM and 10 PM) weekdays except Sundays and Federal holidays. The use of impact-type equipment should be limited to the daytime hours only except when approved by the Engineer-In-Charge.
4. To the greatest extent possible, locate stationary equipment so that the exhaust side of the equipment is pointed to the away from residential receptors.

In summary, this project can be expected to produce noise impacts on a short duration basis to numerous receptors during the estimated 24 to 36 month construction duration. It is recommended that the above referenced actions be taken to provide some degree of reduction in the annoyance associated with the construction noise from this project.

XIII. COORDINATION WITH LOCAL OFFICIALS

Minimizing future traffic noise impacts on currently undeveloped lands is made possible by coordination with local officials. Local governments are encouraged to prohibit noise-sensitive land uses adjacent to highways and require developers to plan, design, and construct projects in a manner that is sensitive to highway traffic noise.

A. Recommended Distances from Human Activities

The calculated distances between the centerline of Whirlpool/Third Street and various noise contours are based upon TNM 2.5 computed future loudest hour traffic noise levels, and are provided in Table 6. These distances are based on the TNM model for the future (2040) Build Alternative conditions.

TABLE 6 INFORMATION FOR LOCAL OFFICIALS			
Location		Distance from Centerline of Whirlpool/Third Street to Specified Noise Level (ft)	
		FHWA Category B & C 66 dBA ¹	FHWA Category E 71 dBA ²
Whirlpool St: Findlay Dr to Bellevue Ave	NB	45	15
	SB	30	15
Whirlpool St: Bellevue Ave to Cleveland St	NB	45	15
	SB	40	15
Whirlpool St: Cleveland St to Cedar St	NB	35	15
	SB	35	15
Third St: Cedar St to Walnut St	NB	35	<12
	SB	35	<12
Third St: Walnut St to Main St	NB	<12	<12
	SB	<12	<12

NOTES

1. The distance is measured from the centerline of Whirlpool/Third Street to the limit of the "active use area". The 66 dBA criteria represents the FHWA impact criteria for NAC B & C land uses.
2. The 71 dBA criteria represents the FHWA impact criteria for NAC E land uses.

B. Noise Compatible Land Use Planning References

Reference information such as "The Audible Landscape: A Manual for Highway Noise and Land Use"¹ and "Entering the Quiet Zone: Noise Compatible Land Use Planning"², and "Living with Noise"³ may be useful to local communities in protecting

¹ www.fhwa.dot.gov/environment/noise/noise_compatible_planning/federal_approach/audible_landscape/index.cfm

² www.fhwa.dot.gov/environment/noise/noise_compatible_planning/federal_approach/land_use/index.cfm

future land development from becoming incompatible with anticipated highway noise levels.

XIV. SUMMARY

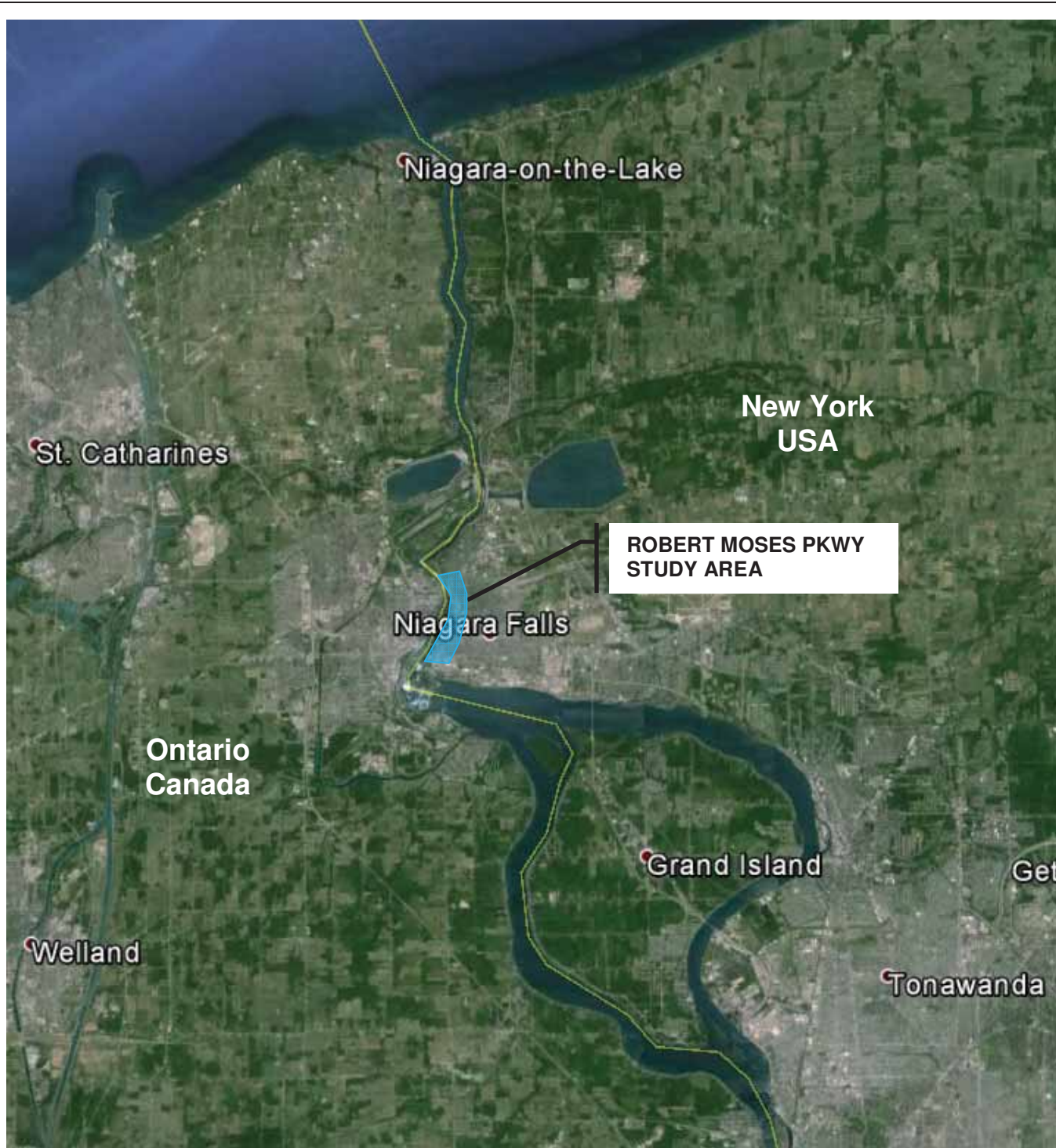
The noise analysis conforms to the requirements developed by the Federal Highway Administration (FHWA) as presented in Chapter I of Title 23, Code of Federal Regulations, Part 772 (23 CFR 772), Procedures for Abatement of Highway Traffic Noise and Construction Noise, and the New York State Department of Transportation (NYSDOT) The Environmental Manual (TEM) Section 4.4.18 Noise Analysis Policy and Procedures.

Noise measurements were taken at 16 receptor locations in the study area to determine existing noise levels. These field measurements were used to calibrate an existing conditions TNM 2.5 model. Existing peak hour noise levels were used as the basis for comparison to future noise levels. Future traffic noise levels were predicted using design year (2040) traffic for the Null and Build Alternatives. The Null and Build Alternatives were determined to result in no noise impacts at any of the analysis site locations. No noise abatement measures were considered.

This project can be expected to increase noise levels during the construction process, but the level of annoyance can be reduced if proper procedures are followed, which are recommended to be added to the Special Notes of the Contract Proposal.

³ www.fhwa.dot.gov/publications/publicroads/03jul/06.cfm

ATTACHMENT A
LOCATION MAP





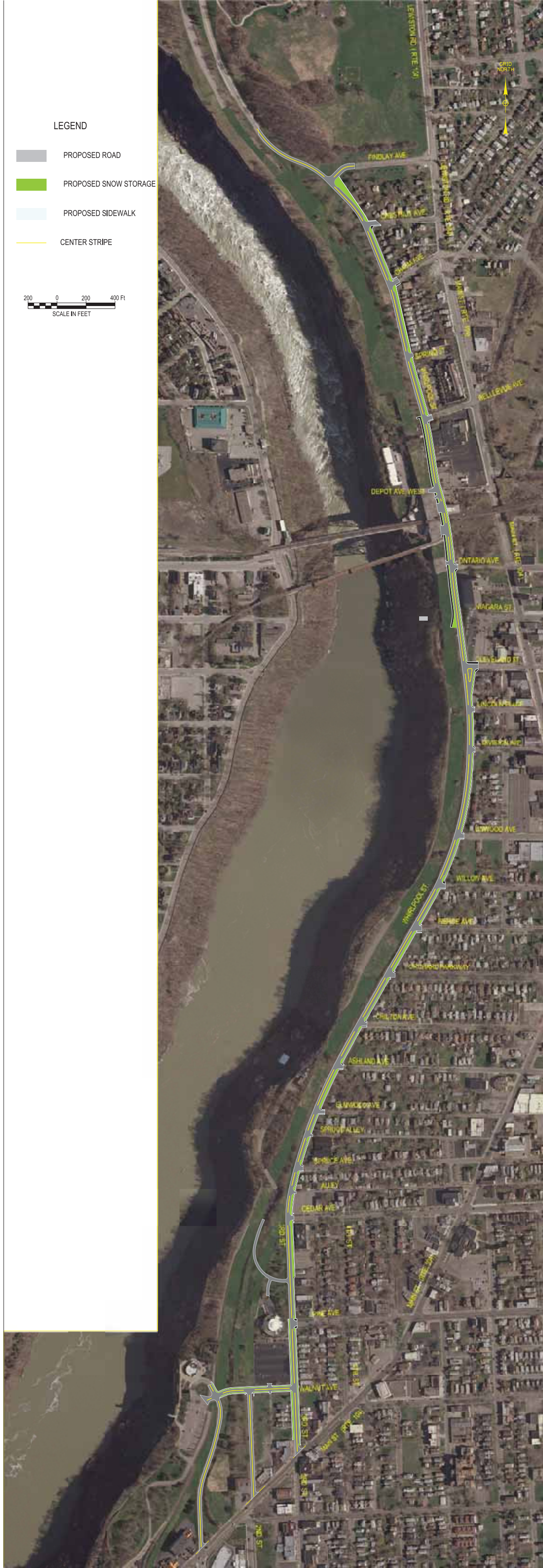
**TRAFFIC NOISE ANALYSIS STUDY
ROBERT MOSES PKWY REMOVAL PROJECT
NIAGARA FALLS, NY**

**FIGURE 2:
SITE LOCATION MAP**

SEPTEMBER 2015

LEGEND

- PROPOSED ROAD
- PROPOSED SNOW STORAGE
- PROPOSED SIDEWALK
- CENTER STRIPE



Condition A

Phase 1 Concepts

Findlay Drive

Traffic stops on
Findlay Drive



Condition B

Phase 1
Concepts

Findlay Drive

Traffic stops on
Whirlpool Street



ATTACHMENT B

ACTIVITY CATEGORY AND NOISE MEASUREMENT LOCATIONS



Legend



FHWA Activity Category

M1



Noise Measurement Location

R1



Noise Receptor Location



**NIAGARA GORGE CORRIDOR
ROBERT MOSES PARKWAY
REMOVAL PROJECT:
Main Street to Findlay Drive**

NIAGARA FALLS, NY

**FIGURE 1:
NOISE MEASUREMENT
AND RECEPTOR
LOCATIONS**

SEPTEMBER 2015



Legend



FHWA Activity Category

M1



Noise Measurement Location

R1



Noise Receptor Location

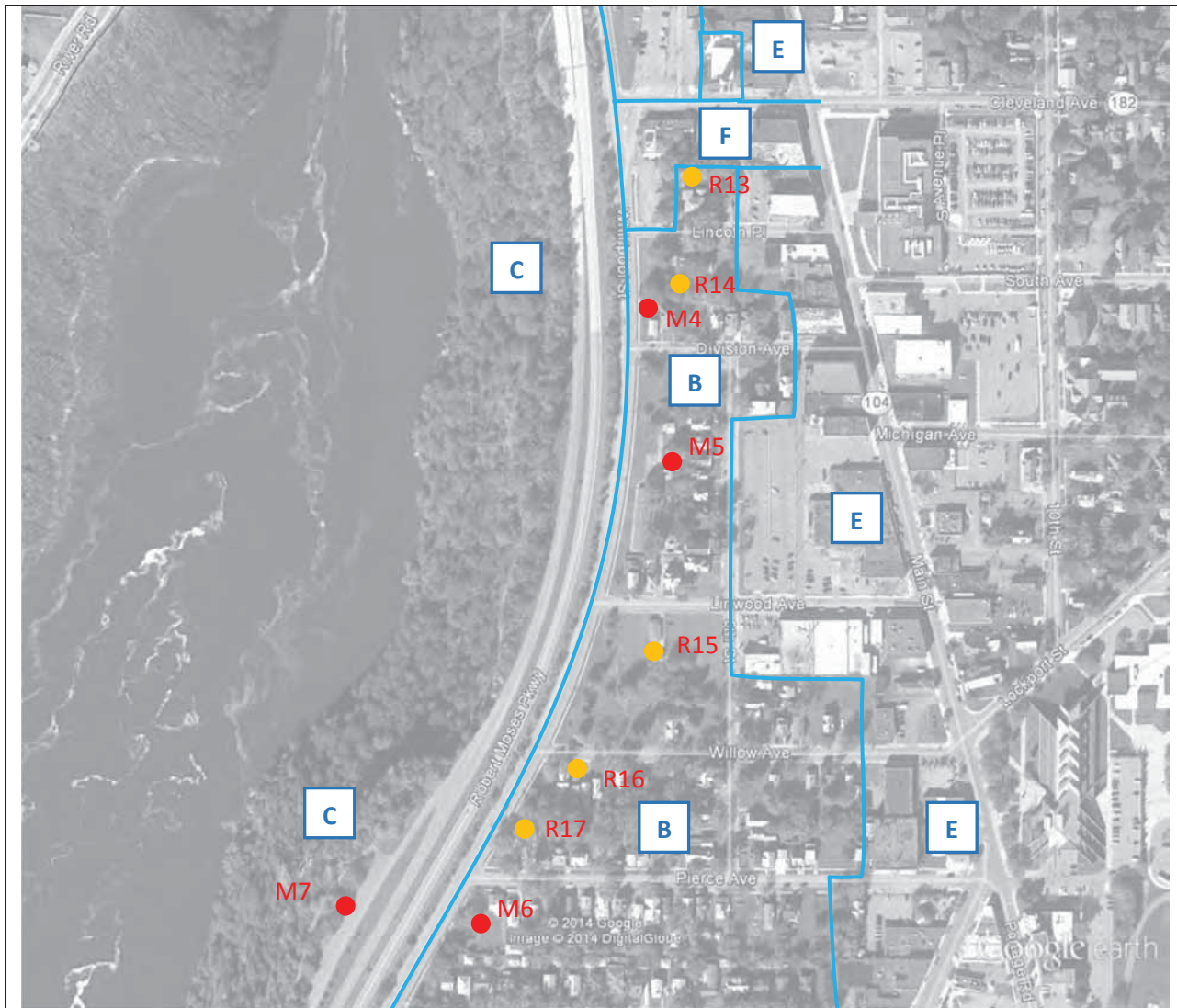


**NIAGARA GORGE CORRIDOR
ROBERT MOSES PARKWAY
REMOVAL PROJECT:
Main Street to Findlay Drive**

NIAGARA FALLS, NY

**FIGURE 2:
NOISE MEASUREMENT
AND RECEPTOR
LOCATIONS**

SEPTEMBER 2015



Legend



FHWA Activity Category

M1



Noise Measurement Location

R1



Noise Receptor Location

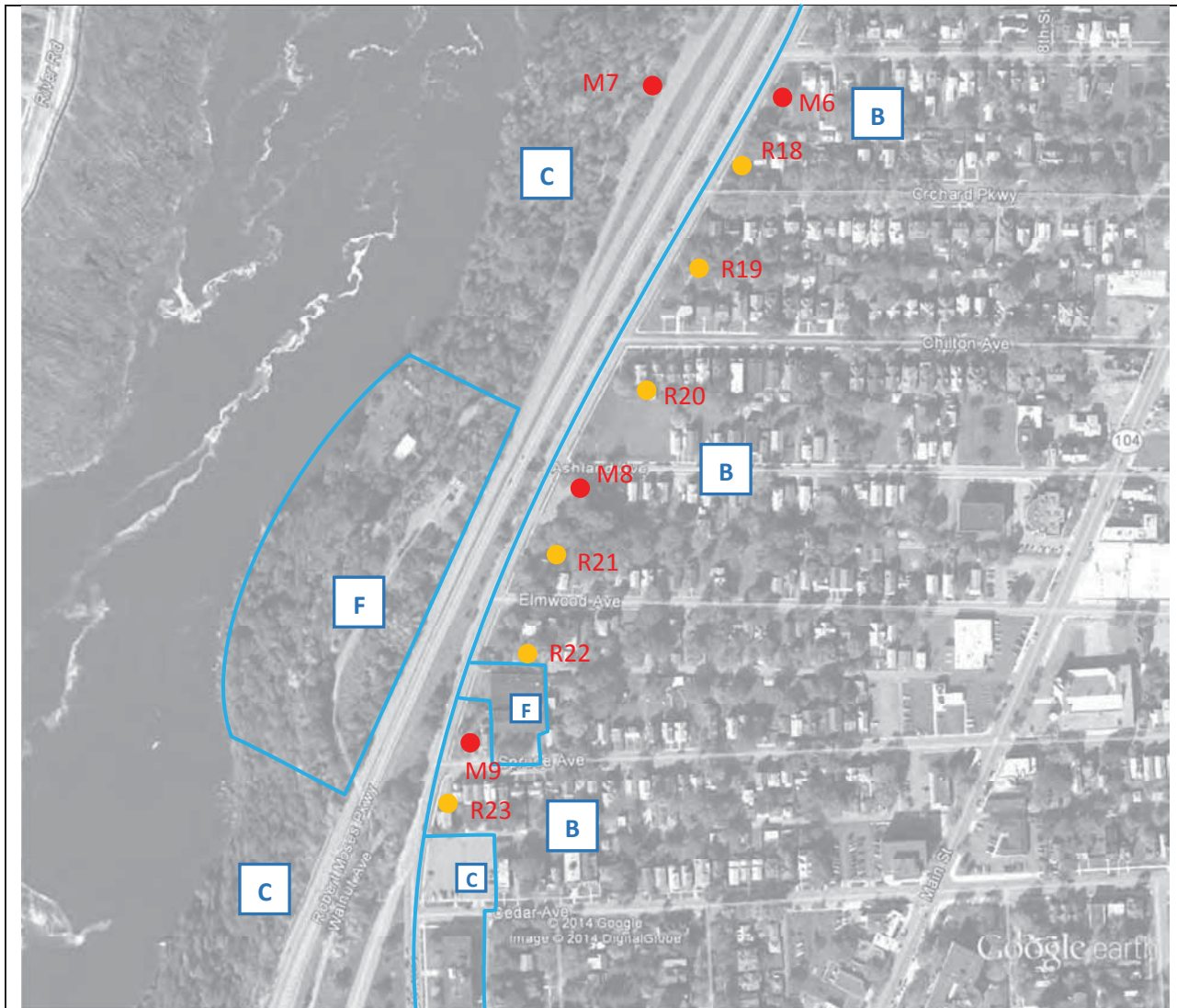


**NIAGARA GORGE CORRIDOR
ROBERT MOSES PARKWAY
REMOVAL PROJECT:
Main Street to Findlay Drive**

NIAGARA FALLS, NY

**FIGURE 3:
NOISE MEASUREMENT
AND RECEPTOR
LOCATIONS**

SEPTEMBER 2015



Legend



FHWA Activity Category

M1



Noise Measurement Location

R1



Noise Receptor Location

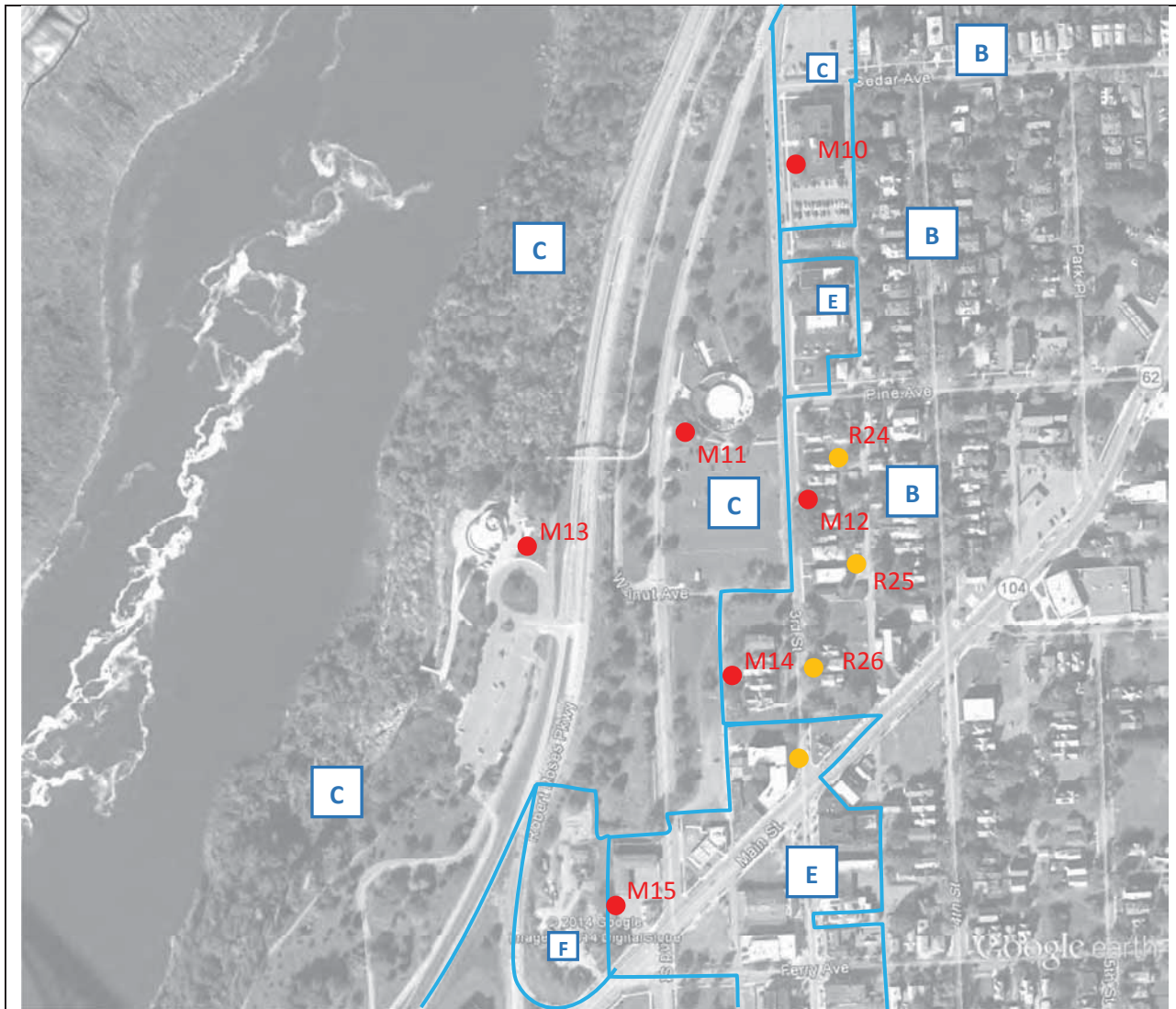


**NIAGARA GORGE CORRIDOR
ROBERT MOSES PARKWAY
REMOVAL PROJECT:
Main Street to Findlay Drive**

NIAGARA FALLS, NY

**FIGURE 4:
NOISE MEASUREMENT
AND RECEPTOR
LOCATIONS**

SEPTEMBER 2015



Legend



FHWA Activity Category

M1



Noise Measurement Location

R1



Noise Receptor Location



**NIAGARA GORGE CORRIDOR
ROBERT MOSES PARKWAY
REMOVAL PROJECT:
Main Street to Findlay Drive**

NIAGARA FALLS, NY

**FIGURE 5:
NOISE MEASUREMENT
AND RECEPTOR
LOCATIONS**

SEPTEMBER 2015



Legend



FHWA Activity Category

M1



Noise Measurement Location

R1



Noise Receptor Location




**NIAGARA GORGE CORRIDOR
ROBERT MOSES PARKWAY
REMOVAL PROJECT:
Main Street to Findlay Drive**


NIAGARA FALLS, NY


**FIGURE 6:
NOISE MEASUREMENT
AND RECEPTOR
LOCATIONS**


SEPTEMBER 2015


ATTACHMENT C
NOISE SURVEY DATA SHEETS


LOCATION:																
SITE NO.:	M1	ADDRESS:	2915 WHIRLPOOL ST													
NOISE MEASUREMENTS:																
DATE:	9/4/14	L _{eq} :	58													
TIME:	5:06 PM – 5:21 PM	L _{max} :	71.2													
TRAFFIC VOLUMES PER HOUR:																
ROAD:		Speed (mph)	Auto	Med Trucks	Hvy Trucks	Bus	Motorcycle									
Robert Moses Pkwy	NB	45	204	0	0	0	4									
	SB		116	0	0	0	0									
Whirlpool St	NB	35	100	0	0	0	0									
	SB		28	0	0	0	4									
Photo:		<table border="1"> <thead> <tr> <th colspan="2">ENVIRONMENTAL CONDITIONS:</th> </tr> </thead> <tbody> <tr> <td>TEMP:</td> <td>75 °F</td> </tr> <tr> <td>WIND VELOCITY:</td> <td>2-10 mph</td> </tr> <tr> <td>HUMIDITY:</td> <td>83%</td> </tr> <tr> <td>PVMT. CONDITION:</td> <td>dry</td> </tr> </tbody> </table>					ENVIRONMENTAL CONDITIONS:		TEMP:	75 °F	WIND VELOCITY:	2-10 mph	HUMIDITY:	83%	PVMT. CONDITION:	dry
ENVIRONMENTAL CONDITIONS:																
TEMP:	75 °F															
WIND VELOCITY:	2-10 mph															
HUMIDITY:	83%															
PVMT. CONDITION:	dry															
																


LOCATION:																
SITE NO.:	M2	ADDRESS:	2667 WHIRLPOOL ST													
NOISE MEASUREMENTS:																
DATE:	9/4/14	L _{eq} :	61													
TIME:	5:27 PM – 5:42 PM	L _{max} :	78.1													
TRAFFIC VOLUMES PER HOUR:																
ROAD:		Speed (mph)	Auto	Med Trucks	Hvy Trucks	Bus	Motorcycle									
Robert Moses Pkwy	NB	45	136	0	0	0	4									
	SB		136	0	0	0	0									
Whirlpool St	NB	35	56	0	0	0	0									
	SB		32	0	0	0	0									
Photo:		<table border="1"> <thead> <tr> <th colspan="2">ENVIRONMENTAL CONDITIONS:</th> </tr> </thead> <tbody> <tr> <td>TEMP:</td> <td>84 °F</td> </tr> <tr> <td>WIND VELOCITY:</td> <td>10 mph</td> </tr> <tr> <td>HUMIDITY:</td> <td>83%</td> </tr> <tr> <td>PVMT. CONDITION:</td> <td>dry</td> </tr> </tbody> </table>					ENVIRONMENTAL CONDITIONS:		TEMP:	84 °F	WIND VELOCITY:	10 mph	HUMIDITY:	83%	PVMT. CONDITION:	dry
ENVIRONMENTAL CONDITIONS:																
TEMP:	84 °F															
WIND VELOCITY:	10 mph															
HUMIDITY:	83%															
PVMT. CONDITION:	dry															
																


LOCATION:								
SITE NO.:	M3	ADDRESS:	800 NIAGARA AVE (HENRY WROBEL TOWER)					
NOISE MEASUREMENTS:								
DATE:	9/4/14	L _{eq} :	57					
TIME:	11:05 AM – 11:20 AM	L _{max} :	80.0					
TRAFFIC VOLUMES PER HOUR:								
ROAD:		Speed (mph)	Auto	Med Trucks	Hvy Trucks	Bus	Motorcycle	
Robert Moses Pkwy	NB	55	68	0	0	0	0	
	SB		108	0	0	0	0	
Whirlpool St	NB	35	44	0	0	0	0	
	SB		84	0	0	0	0	
Photo:							ENVIRONMENTAL CONDITIONS:	
							TEMP:	77 °F
							WIND VELOCITY:	8 mph
							HUMIDITY:	63%
							PVMT. CONDITION:	dry


LOCATION:								
SITE NO.:	M4	ADDRESS:	710 DIVISION ST					
NOISE MEASUREMENTS:								
DATE:	9/5/14	L _{eq} :	63					
TIME:	7:34 AM – 7:49 AM	L _{max} :	80.0					
TRAFFIC VOLUMES PER HOUR:								
ROAD:		Speed (mph)	Auto	Med Trucks	Hvy Trucks	Bus	Motorcycle	
Robert Moses Pkwy	NB	45	56	0	0	0	0	
	SB		124	0	0	0	4	
Whirlpool St	NB	35	36	4	0	4	0	
	SB		128	4	0	0	0	
Photo:							ENVIRONMENTAL CONDITIONS:	
							TEMP:	76 °F
							WIND VELOCITY:	8 mph
							HUMIDITY:	76%
							PVMT. CONDITION:	dry


LOCATION:																
SITE NO.:	M5	ADDRESS:	1634 EIGHTH ST													
NOISE MEASUREMENTS:																
DATE:	9/5/14	L _{eq} :	55													
TIME:	7:54 AM – 8:09 AM	L _{max} :	64.7													
TRAFFIC VOLUMES PER HOUR:																
ROAD:		Speed (mph)	Auto	Med Trucks	Hvy Trucks	Bus	Motorcycle									
Robert Moses Pkwy	NB	45	44	0	0	0	4									
	SB		148	0	0	0	0									
Whirlpool St	NB	35	56	0	0	0	0									
	SB		120	0	0	0	0									
Photo:		<table border="1"> <tr> <th colspan="2">ENVIRONMENTAL CONDITIONS:</th> </tr> <tr> <td>TEMP:</td> <td>77°F</td> </tr> <tr> <td>WIND VELOCITY:</td> <td>0 mph</td> </tr> <tr> <td>HUMIDITY:</td> <td>76%</td> </tr> <tr> <td>PVMT. CONDITION:</td> <td>dry</td> </tr> </table>					ENVIRONMENTAL CONDITIONS:		TEMP:	77°F	WIND VELOCITY:	0 mph	HUMIDITY:	76%	PVMT. CONDITION:	dry
ENVIRONMENTAL CONDITIONS:																
TEMP:	77°F															
WIND VELOCITY:	0 mph															
HUMIDITY:	76%															
PVMT. CONDITION:	dry															
																


LOCATION:																
SITE NO.:	M6	ADDRESS:	711 PIERCE AVE													
NOISE MEASUREMENTS:																
DATE:	9/5/14	L _{eq} :	62													
TIME:	7:13 AM – 7:28 AM	L _{max} :	78.2													
TRAFFIC VOLUMES PER HOUR:																
ROAD:		Speed (mph)	Auto	Med Trucks	Hvy Trucks	Bus	Motorcycle									
Robert Moses Pkwy	NB	45	52	0	0	0	0									
	SB		176	0	0	0	4									
Whirlpool St	NB	40	40	0	0	0	0									
	SB		148	4	0	0	0									
Photo:		<table border="1"> <tr> <th colspan="2">ENVIRONMENTAL CONDITIONS:</th> </tr> <tr> <td>TEMP:</td> <td>77°F</td> </tr> <tr> <td>WIND VELOCITY:</td> <td>2 mph</td> </tr> <tr> <td>HUMIDITY:</td> <td>76%</td> </tr> <tr> <td>PVMT. CONDITION:</td> <td>dry</td> </tr> </table>					ENVIRONMENTAL CONDITIONS:		TEMP:	77°F	WIND VELOCITY:	2 mph	HUMIDITY:	76%	PVMT. CONDITION:	dry
ENVIRONMENTAL CONDITIONS:																
TEMP:	77°F															
WIND VELOCITY:	2 mph															
HUMIDITY:	76%															
PVMT. CONDITION:	dry															
																


LOCATION:									
SITE NO.:	M7	ADDRESS:	ROBERT MOSES PARKWAY TRAIL REST AREA						
NOISE MEASUREMENTS:									
DATE:	9/9/14	L _{eq} :	55						
TIME:	8:39 AM – 8:59 AM	L _{max} :	70.6						
TRAFFIC VOLUMES PER HOUR:									
ROAD:		Speed (mph)	Auto	Med Trucks	Hvy Trucks	Bus	Motorcycle		
Robert Moses Pkwy	NB	45	48	4	0	0	0		
	SB		165	0	0	3	6		
Whirlpool St	NB	35	72	4	0	0	0		
	SB		188	8	0	0	0		
Photo:							ENVIRONMENTAL CONDITIONS:		
							TEMP:	62 °F	
							WIND VELOCITY:	7-10 mph	
							HUMIDITY:	75%	
							PVMT. CONDITION:	dry	


LOCATION:									
SITE NO.:	M8	ADDRESS:	611 ASHLAND DR						
NOISE MEASUREMENTS:									
DATE:	9/5/14	L _{eq} :	61						
TIME:	8:35 AM – 8:50 AM	L _{max} :	80.3						
TRAFFIC VOLUMES PER HOUR:									
ROAD:		Speed (mph)	Auto	Med Trucks	Hvy Trucks	Bus	Motorcycle		
Robert Moses Pkwy	NB	45	72	0	4	4	0		
	SB		216	0	0	4	4		
Whirlpool St	NB	35	64	16	0	0	0		
	SB		152	12	0	0	0		
Photo:							ENVIRONMENTAL CONDITIONS:		
							TEMP:	77 °F	
							WIND VELOCITY:	2 mph	
							HUMIDITY:	76%	
							PVMT. CONDITION:	dry	


LOCATION:									
SITE NO.:	M9	ADDRESS:	316 SPRUCE AVE						
NOISE MEASUREMENTS:									
DATE:	9/5/14	L _{eq} :	64						
TIME:	8:56 AM – 9:11 AM	L _{max} :	81.5						
TRAFFIC VOLUMES PER HOUR:									
ROAD:		Speed (mph)	Auto	Med Trucks	Hvy Trucks	Bus	Motorcycle		
Robert Moses Pkwy	NB	45	60	4	0	4	0		
	SB		156	0	0	0	0		
Whirlpool St	NB	40	60	0	0	0	0		
	SB		160	4	0	0	0		
Photo:							ENVIRONMENTAL CONDITIONS:		
							TEMP:	76 °F	
							WIND VELOCITY:	8 mph	
							HUMIDITY:	76%	
							PVMT. CONDITION:	dry	

LOCATION:									
SITE NO.:	M10	ADDRESS:	775 THIRD ST (NIAGARA COUNTY CIVIC BUILDING)						
NOISE MEASUREMENTS:									
DATE:	9/4/14	L _{eq} :	60						
TIME:	2:58 PM – 3:13 PM	L _{max} :	71.8						
TRAFFIC VOLUMES PER HOUR:									
ROAD:		Speed (mph)	Auto	Med Trucks	Hvy Trucks	Bus	Motorcycle		
Robert Moses Pkwy	NB	45	288	0	0	0	8		
	SB		84	0	0	0	0		
Third St	NB	35	104	4	0	4	0		
	SB		136	8	0	0	0		
Photo:							ENVIRONMENTAL CONDITIONS:		
							TEMP:	84 °F	
							WIND VELOCITY:	10 mph	
							HUMIDITY:	45%	
							PVMT. CONDITION:	dry	

LOCATION:								
SITE NO.:	M11	ADDRESS:	701 WHIRLPOOL ST (AQUARIUM OF NIAGARA)					
NOISE MEASUREMENTS:								
DATE:	9/8/14	L _{eq} :	58					
TIME:	4:28 PM – 4:43 PM	L _{max} :	80.9					
TRAFFIC VOLUMES PER HOUR:								
ROAD:		Speed (mph)	Auto	Med Trucks	Hvy Trucks	Bus	Motorcycle	
Robert Moses Pkwy	NB	45	136	4	0	0	0	
	SB		88	4	0	4	0	
Closed - Whirlpool St	NB	15	0	0	0	0	0	
	SB		8	0	0	0	0	
Photo:							ENVIRONMENTAL CONDITIONS:	
							TEMP:	78 °F
							WIND VELOCITY:	1 mph
							HUMIDITY:	41%
							PVMT. CONDITION:	dry


LOCATION:								
SITE NO.:	M12	ADDRESS:	619 THIRD ST					
NOISE MEASUREMENTS:								
DATE:	9/9/14	L _{eq} :	60					
TIME:	7:58 AM – 8:13 AM	L _{max} :	78.1					
TRAFFIC VOLUMES PER HOUR:								
ROAD:		Speed (mph)	Auto	Med Trucks	Hvy Trucks	Bus	Motorcycle	
Third St	NB	35	40	0	0	0	0	
	SB		88	0	0	0	4	
Photo:							ENVIRONMENTAL CONDITIONS:	
							TEMP:	62 °F
							WIND VELOCITY:	7 mph
							HUMIDITY:	41%
							PVMT. CONDITION:	dry

LOCATION:							
SITE NO.:	M13	ADDRESS:	NIAGARA GORGE DISCOVERY CENTER				
NOISE MEASUREMENTS:							
DATE:	9/4/14	L_{eq}:	58				
TIME:	3:45 PM – 4:05 PM	L_{max}:	71.9				
TRAFFIC VOLUMES PER HOUR:							
ROAD:		Speed (mph)	Auto	Med Trucks	Hvy Trucks	Bus	Motorcycle
Robert Moses Pkwy	NB	45	165	3	0	0	0
	SB		129	12	0	0	0
Discovery Center Loop	-	10	6	0	0	3	0
	-		0	0	0	0	0
Photo:		ENVIRONMENTAL CONDITIONS:					
		TEMP:	84 °F				
		WIND VELOCITY:	8 mph				
		HUMIDITY:	45%				
		PVMT. CONDITION:	dry				

LOCATION:							
SITE NO.:	M14	ADDRESS:	568 THIRD ST				
NOISE MEASUREMENTS:							
DATE:	9/9/14	L_{eq}:	55				
TIME:	8:16 AM – 8:31 AM	L_{max}:	68.1				
TRAFFIC VOLUMES PER HOUR:							
ROAD:		Speed (mph)	Auto	Med Trucks	Hvy Trucks	Bus	Motorcycle
Robert Moses Pkwy	NB	45	28	0	0	0	0
	SB		128	0	0	0	0
Third St	NB	35	40	4	0	0	0
	SB		96	0	4	0	4
Photo:		ENVIRONMENTAL CONDITIONS:					
		TEMP:	62 °F				
		WIND VELOCITY:	7 mph				
		HUMIDITY:	75%				
		PVMT. CONDITION:	dry				

LOCATION:							
SITE NO.:	M15	ADDRESS:	492 MAIN ST (ROADWAY INN)				
NOISE MEASUREMENTS:							
DATE:	9/8/14	L _{eq} :	60				
TIME:	3:20 PM – 3:40 PM	L _{max} :	84.1				
TRAFFIC VOLUMES PER HOUR:							
ROAD:		Speed (mph)	Auto	Med Trucks	Hvy Trucks	Bus	Motorcycle
Main St	NB	30	144	9	3	3	0
	SB		231	0	0	6	3


Photo:



ENVIRONMENTAL CONDITIONS:	
TEMP:	76 °F
WIND VELOCITY:	1 mph
HUMIDITY:	41%
PVMT. CONDITION:	dry

LOCATION:							
SITE NO.:	M16	ADDRESS:	472 MAIN ST (HOWARD JOHNSON)				
NOISE MEASUREMENTS:							
DATE:	9/8/14	L _{eq} :	57				
TIME:	2:44 PM – 3:04 PM	L _{max} :	79.6				
TRAFFIC VOLUMES PER HOUR:							
ROAD:		Speed (mph)	Auto	Med Trucks	Hvy Trucks	Bus	Motorcycle
Robert Moses Pkwy	NB	20	111	12	0	0	3
	SB		105	9	3	0	0
Main St	NB	30	135	0	0	9	0
	SB		213	3	6	6	0

Photo:



ENVIRONMENTAL CONDITIONS:	
TEMP:	76 °F
WIND VELOCITY:	1 mph
HUMIDITY:	41%
PVMT. CONDITION:	dry

ATTACHMENT D
TNM 2.5 OUTPUT FILES

ATTACHMENT D1

EXISTING 2010 - TNM 2.5 OUTPUT FILES

RESULTS: SOUND LEVELS

Robert Moses Parkway North

KHEOPS
GMW

24 August 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS

PROJECT/CONTRACT: Robert Moses Parkway North

RUN: RMP - existing PM

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		No Barrier		Increase over existing		Type Impact	With Barrier		Calculated minus Goal dB
			LAeq1h	LAeq1h	LAeq1h	LAeq1h	Calculated	Crit'n Sub'l Inc		Calculated	Noise Reduction	
			dBA	dBA	dBA	dBA	dBA	dB		dBA	dB	dB
M1		2	1	0.0	61.8	66	61.8	10	----	61.8	0.0	8
M2		3	1	0.0	64.0	66	64.0	10	----	64.0	0.0	8
M3		5	250	0.0	57.5	66	57.5	10	----	57.5	0.0	8
M4		6	1	0.0	61.5	66	61.5	10	----	61.5	0.0	8
M5		7	1	0.0	55.8	66	55.8	10	----	55.8	0.0	8
M6		8	1	0.0	62.3	66	62.3	10	----	62.3	0.0	8
M7		9	1	0.0	55.3	66	55.3	10	----	55.3	0.0	8
M8		10	4	0.0	58.7	66	58.7	10	----	58.7	0.0	8
M9		11	1	0.0	63.8	66	63.8	10	----	63.8	0.0	8
M10		12	1	0.0	60.0	66	60.0	10	----	60.0	0.0	8
M11		13	1	0.0	53.4	66	53.4	10	----	53.4	0.0	8
M12		14	1	0.0	60.8	66	60.8	10	----	60.8	0.0	8
M13		15	1	0.0	54.2	66	54.2	10	----	54.2	0.0	8
M14		16	1	0.0	53.7	66	53.7	10	----	53.7	0.0	8
M15		17	1	0.0	62.4	66	62.4	10	----	62.4	0.0	8
M16		18	1	0.0	60.1	66	60.1	10	----	60.1	0.0	8
R1		21	1	0.0	54.0	66	54.0	10	----	54.0	0.0	8
R2		22	1	0.0	54.7	66	54.7	10	----	54.7	0.0	8
R3		23	1	0.0	41.5	66	41.5	10	----	41.5	0.0	8
R4		25	1	0.0	61.0	66	61.0	10	----	61.0	0.0	8
R5		26	1	0.0	49.7	66	49.7	10	----	49.7	0.0	8
R6		28	1	0.0	63.5	66	63.5	10	----	63.5	0.0	8

RESULTS: SOUND LEVELS

Robert Moses Parkway North

	30	1	0.0	62.8	66	62.8	10	62.8	0.0	8	-8.0
R7											
R8	31	1	0.0	53.0	66	53.0	10	53.0	0.0	8	-8.0
R9	32	1	0.0	59.4	66	59.4	10	59.4	0.0	8	-8.0
R10	33	1	0.0	53.7	66	53.7	10	53.7	0.0	8	-8.0
R11	34	1	0.0	54.4	66	54.4	10	54.4	0.0	8	-8.0
R12	37	1	0.0	62.2	66	62.2	10	62.2	0.0	8	-8.0
R13	38	1	0.0	56.5	66	56.5	10	56.5	0.0	8	-8.0
R14	39	1	0.0	55.8	66	55.8	10	55.8	0.0	8	-8.0
R15	43	1	0.0	53.0	66	53.0	10	53.0	0.0	8	-8.0
R16	44	1	0.0	58.6	66	58.6	10	58.6	0.0	8	-8.0
R17	45	1	0.0	60.8	66	60.8	10	60.8	0.0	8	-8.0
R18	48	1	0.0	59.8	66	59.8	10	59.8	0.0	8	-8.0
R19	52	1	0.0	57.9	66	57.9	10	57.9	0.0	8	-8.0
R20	54	1	0.0	54.7	66	54.7	10	54.7	0.0	8	-8.0
R21	57	1	0.0	59.4	66	59.4	10	59.4	0.0	8	-8.0
R22	59	1	0.0	56.1	66	56.1	10	56.1	0.0	8	-8.0
R23	61	1	0.0	63.7	66	63.7	10	63.7	0.0	8	-8.0
R24	63	1	0.0	50.8	66	50.8	10	50.8	0.0	8	-8.0
R25	67	1	0.0	50.6	66	50.6	10	50.6	0.0	8	-8.0
R26	68	1	0.0	56.5	66	56.5	10	56.5	0.0	8	-8.0

Dwelling Units

DUs Noise Reduction

	Min dB	Avg dB	Max dB
All Selected	295	0.0	0.0
All Impacted	1	0.0	0.0
All that meet NR Goal	0	0.0	0.0

INPUT: TRAFFIC FOR LAeq1h Volumes

Robert Moses Parkway North

KHEOPS
GMW

24 August 2015
TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT:
RUN:

Robert Moses Parkway North
RMP - existing PM

Roadway Name	Points Name	No.	Segment			Autos			MTrucks			HTrucks			Buses			Motorcycles		
			V	veh/hr	mph	V	veh/hr	mph	V	veh/hr	mph	V	veh/hr	mph	V	veh/hr	mph	V	veh/hr	mph
RMP - NB 1	point4	4	79	15	15	5	15	15	0	0	0	3	15	15	0	0	0	0	0	
	point3	3	79	15	15	5	15	15	0	0	0	3	15	15	0	0	0	0	0	
	point2	2	79	15	15	5	15	15	0	0	0	3	15	15	0	0	0	0	0	
	point1	1																		
	point5	5	79	15	15	5	15	15	0	0	0	3	15	15	0	0	0	0	0	
	point6	6																		
RMP - NB 2	point13	13	158	44	44	11	44	44	0	0	0	6	44	44	0	0	0	0	0	
	point12	12	158	44	44	11	44	44	0	0	0	6	44	44	0	0	0	0	0	
	point11	11	158	44	44	11	44	44	0	0	0	6	44	44	0	0	0	0	0	
	point10	10	158	44	44	11	44	44	0	0	0	6	44	44	0	0	0	0	0	
	point9	9	158	44	44	11	44	44	0	0	0	6	44	44	0	0	0	0	0	
	point8	8	158	44	44	11	44	44	0	0	0	6	44	44	0	0	0	0	0	0
RMP - NB 4	point7	7																		
	point47	47	158	44	44	11	44	44	0	0	0	6	44	44	0	0	0	0	0	
	point46	46	158	44	44	11	44	44	0	0	0	6	44	44	0	0	0	0	0	
	point45	45	158	44	44	11	44	44	0	0	0	6	44	44	0	0	0	0	0	
	point44	44	158	44	44	11	44	44	0	0	0	6	44	44	0	0	0	0	0	
	point43	43	158	44	44	11	44	44	0	0	0	6	44	44	0	0	0	0	0	
RMP - NB 5	point42	42	158	44	44	11	44	44	0	0	0	6	44	44	0	0	0	0	0	
	point41	41																		
	point48	48	158	44	44	11	44	44	0	0	0	6	44	44	0	0	0	0	0	

N:\2014\14NY147 Robert Moses North\4 - Technical Data\Calculations\Noise\2010 Exist PM

INPUT: TRAFFIC FOR LAeq1h Volumes

Robert Moses Parkway North

point49	49	158	44	11	44	0	0	0	6	44	0	0
point50	50	158	44	11	44	0	0	0	6	44	0	0
point51	51	158	44	11	44	0	0	0	6	44	0	0
point52	52	158	44	11	44	0	0	0	6	44	0	0
point53	53	158	44	11	44	0	0	0	6	44	0	0
point54	54	158	44	11	44	0	0	0	6	44	0	0
point55	55	158	44	11	44	0	0	0	6	44	0	0
point56	56											
RMP - NB 6												
point64	64	158	44	11	44	0	0	0	6	44	0	0
point63	63	158	44	11	44	0	0	0	6	44	0	0
point62	62	158	44	11	44	0	0	0	6	44	0	0
point61	61	158	44	11	44	0	0	0	6	44	0	0
point60	60	158	44	11	44	0	0	0	6	44	0	0
point59	59	158	44	11	44	0	0	0	6	44	0	0
point58	58	158	44	11	44	0	0	0	6	44	0	0
point57	57											
RMP - SB 1												
point73	73	81	46	2	46	0	0	0	4	46	0	0
point72	72	81	46	2	46	0	0	0	4	46	0	0
point71	71	81	46	2	46	0	0	0	4	46	0	0
point70	70	81	46	2	46	0	0	0	4	46	0	0
point69	69	81	46	2	46	0	0	0	4	46	0	0
point68	68	81	46	2	46	0	0	0	4	46	0	0
point67	67	81	46	2	46	0	0	0	4	46	0	0
point66	66	81	46	2	46	0	0	0	4	46	0	0
point65	65											
RMP - SB 2												
point84	84	81	44	2	44	0	0	0	4	44	0	0
point83	83	81	44	2	44	0	0	0	4	44	0	0
point82	82	81	44	2	44	0	0	0	4	44	0	0
point81	81	81	44	2	44	0	0	0	4	44	0	0
point80	80	81	44	2	44	0	0	0	4	44	0	0
point79	79	81	44	2	44	0	0	0	4	44	0	0
point78	78	81	44	2	44	0	0	0	4	44	0	0
point77	77	81	44	2	44	0	0	0	4	44	0	0
point76	76	81	44	2	44	0	0	0	4	44	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

		75	81	44	2	44	0	0	4	44	0	0
	point75											
	point74	74										
RMP - SB 3	point91	91	81	44	2	44	0	0	4	44	0	0
	point90	90	81	44	2	44	0	0	4	44	0	0
	point89	89	81	44	2	44	0	0	4	44	0	0
	point88	88	81	44	2	44	0	0	4	44	0	0
	point87	87	81	44	2	44	0	0	4	44	0	0
	point86	86	81	44	2	44	0	0	4	44	0	0
	point85	85										
RMP - SB 4	point118	118	81	44	2	44	0	0	4	44	0	0
	point117	117	81	44	2	44	0	0	4	44	0	0
	point116	116	81	44	2	44	0	0	4	44	0	0
	point115	115	81	44	2	44	0	0	4	44	0	0
	point114	114	81	44	2	44	0	0	4	44	0	0
	point113	113	81	44	2	44	0	0	4	44	0	0
	point112	112	81	44	2	44	0	0	4	44	0	0
	point111	111	81	44	2	44	0	0	4	44	0	0
	point110	110	81	44	2	44	0	0	4	44	0	0
	point109	109	81	44	2	44	0	0	4	44	0	0
	point108	108	81	44	2	44	0	0	4	44	0	0
	point107	107	81	44	2	44	0	0	4	44	0	0
	point106	106	81	44	2	44	0	0	4	44	0	0
	point105	105	81	44	2	44	0	0	4	44	0	0
	point104	104	81	44	2	44	0	0	4	44	0	0
	point103	103	81	44	2	44	0	0	4	44	0	0
	point102	102	81	44	2	44	0	0	4	44	0	0
	point101	101	81	44	2	44	0	0	4	44	0	0
	point100	100	81	44	2	44	0	0	4	44	0	0
	point99	99	81	44	2	44	0	0	4	44	0	0
	point98	98	81	44	2	44	0	0	4	44	0	0
	point97	97	81	44	2	44	0	0	4	44	0	0
	point96	96	81	44	2	44	0	0	4	44	0	0
	point95	95	81	44	2	44	0	0	4	44	0	0
	point94	94	81	44	2	44	0	0	4	44	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

Robert Moses Parkway North

	point93	93	81	44	2	44	0	0	4	44	0	0
RMP - SB 5	point92	92										
	point119	119	81	44	2	44	0	0	4	44	0	0
	point120	120	81	44	2	44	0	0	4	44	0	0
	point121	121	81	44	2	44	0	0	4	44	0	0
	point122	122	81	44	2	44	0	0	4	44	0	0
	point123	123	81	44	2	44	0	0	4	44	0	0
	point124	124	81	44	2	44	0	0	4	44	0	0
	point125	125	81	44	2	44	0	0	4	44	0	0
	point126	126										
Whirlpool - NB 1	point129	129	0	0	0	0	0	0	0	0	0	0
	point128	128	0	0	0	0	0	0	0	0	0	0
	point127	127										
Whirlpool - NB 2	point136	136	0	0	0	0	0	0	0	0	0	0
	point135	135	0	0	0	0	0	0	0	0	0	0
	point134	134	0	0	0	0	0	0	0	0	0	0
	point133	133	0	0	0	0	0	0	0	0	0	0
	point132	132	0	0	0	0	0	0	0	0	0	0
	point131	131	0	0	0	0	0	0	0	0	0	0
	point130	130										
Whirlpool - SB 2	point145	145	0	0	0	0	0	0	0	0	0	0
	point144	144	0	0	0	0	0	0	0	0	0	0
	point143	143	0	0	0	0	0	0	0	0	0	0
	point142	142	0	0	0	0	0	0	0	0	0	0
	point141	141	0	0	0	0	0	0	0	0	0	0
	point140	140	0	0	0	0	0	0	0	0	0	0
	point139	139	0	0	0	0	0	0	0	0	0	0
	point138	138	0	0	0	0	0	0	0	0	0	0
	point137	137										
Whirlpool - SB 3	point148	148	0	0	0	0	0	0	0	0	0	0
	point147	147	0	0	0	0	0	0	0	0	0	0
	point146	146										
3rd St - NB 2	point149	149	16	40	0	0	0	0	0	0	0	0
	point150	150										

INPUT: TRAFFIC FOR LAeq1h Volumes

Robert Moses Parkway North

	point208	208	16	40	0	0	0	0	0	0	0	0	0	0	0
3rd St - NB 3	point207	207													
Whirlpool - SB 1	point264	264	207	37	15	37	5	37	0	0	0	0	0	0	0
	point263	263	207	37	15	37	5	37	0	0	0	0	0	0	0
	point262	262	207	37	15	37	5	37	0	0	0	0	0	0	0
	point261	261	207	37	15	37	5	37	0	0	0	0	0	0	0
	point260	260	207	37	15	37	5	37	0	0	0	0	0	0	0
	point259	259	207	37	15	37	5	37	0	0	0	0	0	0	0
	point258	258	207	37	15	37	5	37	0	0	0	0	0	0	0
	point257	257	207	37	37	15	37	5	37	0	0	0	0	0	0
	point256	256	207	207	37	15	37	5	37	0	0	0	0	0	0
	point255	255	207	207	37	15	37	5	37	0	0	0	0	0	0
	point254	254	207	207	37	15	37	5	37	0	0	0	0	0	0
	point253	253	207	207	37	15	37	5	37	0	0	0	0	0	0
	point252	252													
3rd St - SB 2	point266	266	87	23	6	23	2	23	0	0	0	0	0	0	0
	point265	265													
Findlay Dr - WB 1	point268	268	95	35	7	35	1	35	0	0	0	0	0	0	0
	point267	267													
Findlay Dr - WB 2	point269	269	167	11	11	11	3	11	0	0	0	0	0	0	0
	point270	270	167	11	11	11	3	11	0	0	0	0	0	0	0
	point271	271	167	11	11	11	3	11	0	0	0	0	0	0	0
Findlay Dr - EB 1	point272	272													
	point276	276	89	27	2	27	3	27	0	0	0	0	0	0	0
	point275	275	89	27	2	27	3	27	0	0	0	0	0	0	0
	point274	274	89	27	2	27	3	27	0	0	0	0	0	0	0
	point273	273													
Findlay Dr - EB 2	point277	277	166	20	11	20	5	20	0	0	0	0	0	0	0
	point278	278													
Chestnut Ave - WB	point279	279	0	0	0	0	0	0	0	0	0	0	0	0	0
	point280	280	0	0	0	0	0	0	0	0	0	0	0	0	0
	point281	281													
	point284	284	0	0	0	0	0	0	0	0	0	0	0	0	0
	point283	283	0	0	0	0	0	0	0	0	0	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

Robert Moses Parkway North

Division Ave - EB	point320	320	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point319	319	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point318	318																	
Linwood Ave - WB	point321	321	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point322	322	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point323	323																	
Linwood Ave - EB	point326	326	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point325	325	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point324	324																	
Willow Ave - WB	point327	327	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point328	328	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point329	329																	
Willow Ave - EB	point332	332	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point331	331	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point330	330																	
Pierce Ave - WB	point333	333	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point334	334	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point335	335																	
Pierce Ave - EB	point338	338	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point337	337	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point336	336																	
Orchard Pkwy - WB	point339	339	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point340	340	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point341	341																	
Orchard Pkwy - EB	point344	344	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point343	343	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point342	342																	
Chilton Ave - EB	point347	347	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point346	346	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point345	345																	
Ashland Ave - WB	point348	348	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point349	349	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point350	350																	
Elmwood Ave - EB	point353	353	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

Robert Moses Parkway North

	point352	352	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point351	351																	
Spruce Ave - WB	point356	356	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point357	357	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point358	358																	
Alley	point359	359	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point360	360	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point361	361																	
Cedar Ave - WB	point362	362	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point363	363	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point364	364																	
Cedar Ave - EB	point367	367	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point366	366	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point365	365																	
Pine Ave - WB	point368	368	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point369	369	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point370	370																	
Pine Ave - EB	point373	373	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point372	372	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point371	371																	
Main St - WB 1	point375	375	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point374	374																	
Main St - WB 2	point377	377	445	9	32	9	8	9	19	9	19	9	9	19	9	9	9	9	0
	point376	376																	
Main St - WB 3	point379	379	396	11	29	11	7	11	19	11	19	11	7	19	11	19	11	11	0
	point378	378																	
Main St - WB 4	point381	381	396	11	29	11	7	11	19	11	19	11	7	19	11	19	11	11	0
	point380	380																	
Main St - WB 5	point393	393	396	11	29	11	7	11	19	11	19	11	7	19	11	19	11	11	0
	point392	392	396	11	29	11	7	11	19	11	19	11	7	19	11	19	11	11	0
	point391	391	396	11	29	11	7	11	19	11	19	11	7	19	11	19	11	11	0
	point390	390	396	11	29	11	7	11	19	11	19	11	7	19	11	19	11	11	0
	point389	389	396	11	29	11	7	11	19	11	19	11	7	19	11	19	11	11	0
	point388	388	396	11	29	11	7	11	19	11	19	11	7	19	11	19	11	11	0

INPUT: TRAFFIC FOR LAeq1h Volumes

Robert Moses Parkway North

point387	387	396	11	29	11	7	11	19	11	0	0
point386	386	396	11	29	11	7	11	19	11	0	0
point385	385	396	11	29	11	7	11	19	11	0	0
point384	384	396	11	29	11	7	11	19	11	0	0
point383	383	396	11	29	11	7	11	19	11	0	0
point382	382										
Main St - EB 1	point394	138	10	2	10	3	10	20	10	0	0
	point395	138	10	2	10	3	10	20	10	0	0
	point396	138	10	2	10	3	10	20	10	0	0
	point397	138	10	2	10	3	10	20	10	0	0
	point398	138	10	2	10	3	10	20	10	0	0
	point399	138	10	2	10	3	10	20	10	0	0
	point400	138	10	2	10	3	10	20	10	0	0
	point401	138	10	2	10	3	10	20	10	0	0
	point402	138	10	2	10	3	10	20	10	0	0
	point403	138	10	2	10	3	10	20	10	0	0
	point404	138	10	2	10	3	10	20	10	0	0
	point405	405									
Main St - EB 2	point406	138	10	2	10	3	10	20	10	0	0
	point407	407									
Main St - EB 3	point408	134	11	3	11	4	11	20	11	0	0
	point409	409									
Main St - EB 4	point410	0	0	0	0	0	0	0	0	0	0
	point411	411									
1st St - SB	point414	0	0	0	0	0	0	0	0	0	0
	point413	0	0	0	0	0	0	0	0	0	0
	point412	412									
1st St - NB	point415	0	0	0	0	0	0	0	0	0	0
	point416	0	0	0	0	0	0	0	0	0	0
	point417	417									
Ferry Ave - EB	point418	0	0	0	0	0	0	0	0	0	0
	point419	419									
Ferry Ave - WB	point421	0	0	0	0	0	0	0	0	0	0
	point420	420									

INPUT: TRAFFIC FOR LAeq1h Volumes

Robert Moses Parkway North

	point455	455																		
Walnut Ave - EB	point457	457	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point458	458																		
RMP - NB 3	point23	23	158	44	11	44	0	0	0	6	44	0	0	0	0	0	0	0	0	0
	point22	22	158	44	11	44	0	0	0	6	44	0	0	0	0	0	0	0	0	0
	point21	21	158	44	11	44	0	0	0	6	44	0	0	0	0	0	0	0	0	0
	point20	20	158	44	11	44	0	0	0	6	44	0	0	0	0	0	0	0	0	0
	point19	19	158	44	11	44	0	0	0	6	44	0	0	0	0	0	0	0	0	0
	point18	18	158	44	11	44	0	0	0	6	44	0	0	0	0	0	0	0	0	0
	point17	17	158	44	11	44	0	0	0	6	44	0	0	0	0	0	0	0	0	0
	point16	16	158	44	11	44	0	0	0	6	44	0	0	0	0	0	0	0	0	0
	point15	15	158	44	11	44	0	0	0	6	44	0	0	0	0	0	0	0	0	0
	point40	40	158	44	11	44	0	0	0	6	44	0	0	0	0	0	0	0	0	0
	point39	39	158	44	11	44	0	0	0	6	44	0	0	0	0	0	0	0	0	0
	point38	38	158	44	11	44	0	0	0	6	44	0	0	0	0	0	0	0	0	0
	point37	37	158	44	11	44	0	0	0	6	44	0	0	0	0	0	0	0	0	0
	point36	36	158	44	11	44	0	0	0	6	44	0	0	0	0	0	0	0	0	0
	point35	35	158	44	11	44	0	0	0	6	44	0	0	0	0	0	0	0	0	0
	point34	34	158	44	11	44	0	0	0	6	44	0	0	0	0	0	0	0	0	0
	point33	33	158	44	11	44	0	0	0	6	44	0	0	0	0	0	0	0	0	0
	point32	32	158	44	11	44	0	0	0	6	44	0	0	0	0	0	0	0	0	0
	point31	31	158	44	11	44	0	0	0	6	44	0	0	0	0	0	0	0	0	0
	point30	30	158	44	11	44	0	0	0	6	44	0	0	0	0	0	0	0	0	0
	point29	29	158	44	11	44	0	0	0	6	44	0	0	0	0	0	0	0	0	0
	point28	28	158	44	11	44	0	0	0	6	44	0	0	0	0	0	0	0	0	0
	point27	27	158	44	11	44	0	0	0	6	44	0	0	0	0	0	0	0	0	0
	point26	26	158	44	11	44	0	0	0	6	44	0	0	0	0	0	0	0	0	0
	point25	25	158	44	11	44	0	0	0	6	44	0	0	0	0	0	0	0	0	0
	point24	24																		
3rd St - SB 1	point215	215	97	34	6	34	2	34	0	0	0	0	0	0	0	0	0	0	0	0
	point214	214	97	34	6	34	2	34	0	0	0	0	0	0	0	0	0	0	0	0
	point213	213	97	34	6	34	2	34	0	0	0	0	0	0	0	0	0	0	0	0
	point212	212	97	34	6	34	2	34	0	0	0	0	0	0	0	0	0	0	0	0
	point211	211	97	34	6	34	2	34	0	0	0	0	0	0	0	0	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

Robert Moses Parkway North

Whirpool - NB 3-2-2	point462	462	113	32	6	32	3	32	0	0	0	0
	point171	171	113	32	6	32	3	32	0	0	0	0
	point170	170										
Whirpool - NB 3-2-2-2	point463	463	191	33	13	33	5	33	0	0	0	0
	point169	169	191	33	13	33	5	33	0	0	0	0
	point168	168	191	33	13	33	5	33	0	0	0	0
	point167	167	191	33	13	33	5	33	0	0	0	0
	point166	166	191	33	13	33	5	33	0	0	0	0
	point165	165	191	33	13	33	5	33	0	0	0	0
	point164	164										
Whirpool - NB 3-2-2-2-2	point464	464	196	27	14	27	5	27	0	0	0	0
	point163	163	196	27	14	27	5	27	0	0	0	0
	point162	162	196	27	14	27	5	27	0	0	0	0
	point161	161	196	27	14	27	5	27	0	0	0	0
	point160	160	196	27	14	27	5	27	0	0	0	0
	point159	159	196	27	14	27	5	27	0	0	0	0
	point158	158	196	27	14	27	5	27	0	0	0	0
	point157	157	196	27	14	27	5	27	0	0	0	0
	point156	156	196	27	14	27	5	27	0	0	0	0
	point155	155	196	27	14	27	5	27	0	0	0	0
	point154	154	196	27	14	27	5	27	0	0	0	0
	point153	153	196	27	14	27	5	27	0	0	0	0
	point152	152	196	27	14	27	5	27	0	0	0	0
	point151	151										
Whirpool - SB 1-2	point465	465	206	34	15	34	5	34	6	34	0	0
	point251	251	206	34	15	34	5	34	6	34	0	0
	point250	250	206	34	15	34	5	34	6	34	0	0
	point249	249	206	34	15	34	5	34	6	34	0	0
	point248	248	206	34	15	34	5	34	6	34	0	0
	point247	247										
Whirpool - SB 1-2-2	point466	466	163	34	12	34	4	34	0	0	0	0
	point246	246	163	34	12	34	4	34	0	0	0	0
	point245	245										
Whirpool - SB 1-2-2-2	point467	467	72	32	5	32	2	32	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

Robert Moses Parkway North

point244	244	72	32	5	32	2	32	0	0	0
point243	243	72	32	5	32	2	32	0	0	0
point242	242	72	32	5	32	2	32	0	0	0
point241	241	72	32	5	32	2	32	0	0	0
point240	240	72	32	5	32	2	32	0	0	0
point239	239	72	32	5	32	2	32	0	0	0
point238	238	72	32	5	32	2	32	0	0	0
point237	237	72	32	5	32	2	32	0	0	0
point236	236	72	32	5	32	2	32	0	0	0
point235	235	72	32	5	32	2	32	0	0	0
point234	234	72	32	5	32	2	32	0	0	0
point233	233									
Whirpool - SB 1-2-2-2	468	130	35	10	35	3	35	0	0	0
point32	232	130	35	10	35	3	35	0	0	0
point231	231	130	35	10	35	3	35	0	0	0
point230	230	130	35	10	35	3	35	0	0	0
point229	229	130	35	10	35	3	35	0	0	0
point228	228	130	35	10	35	3	35	0	0	0
point227	227	130	35	10	35	3	35	0	0	0
point226	226	130	35	10	35	3	35	0	0	0
point225	225	130	35	10	35	3	35	0	0	0
point224	224	130	35	10	35	3	35	0	0	0
point223	223	130	35	10	35	3	35	0	0	0
point222	222	130	35	10	35	3	35	0	0	0
point221	221	130	35	10	35	3	35	0	0	0
point220	220	130	35	10	35	3	35	0	0	0
point219	219	130	35	10	35	3	35	0	0	0
point218	218	130	35	10	35	3	35	0	0	0
point217	217	130	35	10	35	3	35	0	0	0
point216	216									
3rd St - NB 3-2	469	67	39	3	39	2	39	0	0	0
point206	206	67	39	3	39	2	39	0	0	0
point205	205	67	39	3	39	2	39	0	0	0
point204	204									

INPUT: TRAFFIC FOR LAeq1h Volumes

3rd St - SB 1-2	point470	470	87	23	6	23	2	23	0	0	0	0
	point209	209										

Robert Moses Parkway North

Robert Moses Parkway North	23	2	23	0	0	0	0

ATTACHMENT D2

NO-BUILD ALTERNATIVE 2040 - TNM 2.5 OUTPUT FILES

RESULTS: SOUND LEVELS

Robert Moses Parkway North

KHEOPS
GMW

24 August 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS

PROJECT/CONTRACT: Robert Moses Parkway North

RUN: RMP - 2040 No Build PM

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		No Barrier		Increase over existing		Type Impact	With Barrier		Calculated minus Goal dB	
			L Aeq1h	dBA	L Aeq1h	dBA	Calculated	Crit'n		Calculated	L Aeq1h		Noise Reduction
M1	2	1	0.0	61.9	0.0	66	61.9	10	----	61.9	0.0	8	-8.0
M2	3	1	0.0	64.2	0.0	66	64.2	10	----	64.2	0.0	8	-8.0
M3	5	250	0.0	58.3	0.0	66	58.3	10	----	58.3	0.0	8	-8.0
M4	6	1	0.0	62.5	0.0	66	62.5	10	----	62.5	0.0	8	-8.0
M5	7	1	0.0	56.9	0.0	66	56.9	10	----	56.9	0.0	8	-8.0
M6	8	1	0.0	63.1	0.0	66	63.1	10	----	63.1	0.0	8	-8.0
M7	9	1	0.0	56.5	0.0	66	56.5	10	----	56.5	0.0	8	-8.0
M8	10	4	0.0	59.5	0.0	66	59.5	10	----	59.5	0.0	8	-8.0
M9	11	1	0.0	64.9	0.0	66	64.9	10	----	64.9	0.0	8	-8.0
M10	12	1	0.0	60.5	0.0	66	60.5	10	----	60.5	0.0	8	-8.0
M11	13	1	0.0	55.0	0.0	66	55.0	10	----	55.0	0.0	8	-8.0
M12	14	1	0.0	61.4	0.0	66	61.4	10	----	61.4	0.0	8	-8.0
M13	15	1	0.0	55.7	0.0	66	55.7	10	----	55.7	0.0	8	-8.0
M14	16	1	0.0	54.7	0.0	66	54.7	10	----	54.7	0.0	8	-8.0
M15	17	1	0.0	63.3	0.0	66	63.3	10	----	63.3	0.0	8	-8.0
M16	18	1	0.0	61.5	0.0	66	61.5	10	----	61.5	0.0	8	-8.0
R1	21	1	0.0	55.5	0.0	66	55.5	10	----	55.5	0.0	8	-8.0
R2	22	1	0.0	55.9	0.0	66	55.9	10	----	55.9	0.0	8	-8.0
R3	23	1	0.0	42.6	0.0	66	42.6	10	----	42.6	0.0	8	-8.0
R4	25	1	0.0	61.0	0.0	66	61.0	10	----	61.0	0.0	8	-8.0
R5	26	1	0.0	50.4	0.0	66	50.4	10	----	50.4	0.0	8	-8.0
R6	28	1	0.0	63.3	0.0	66	63.3	10	----	63.3	0.0	8	-8.0

RESULTS: SOUND LEVELS

Robert Moses Parkway North

	30	1	0.0	62.7	66	62.7	10	62.7	0.0	8	-8.0
R7											
R8	31	1	0.0	53.0	66	53.0	10	53.0	0.0	8	-8.0
R9	32	1	0.0	59.4	66	59.4	10	59.4	0.0	8	-8.0
R10	33	1	0.0	53.9	66	53.9	10	53.9	0.0	8	-8.0
R11	34	1	0.0	54.9	66	54.9	10	54.9	0.0	8	-8.0
R12	37	1	0.0	62.7	66	62.7	10	62.7	0.0	8	-8.0
R13	38	1	0.0	57.6	66	57.6	10	57.6	0.0	8	-8.0
R14	39	1	0.0	56.9	66	56.9	10	56.9	0.0	8	-8.0
R15	43	1	0.0	54.1	66	54.1	10	54.1	0.0	8	-8.0
R16	44	1	0.0	59.6	66	59.6	10	59.6	0.0	8	-8.0
R17	45	1	0.0	61.7	66	61.7	10	61.7	0.0	8	-8.0
R18	48	1	0.0	60.6	66	60.6	10	60.6	0.0	8	-8.0
R19	52	1	0.0	58.8	66	58.8	10	58.8	0.0	8	-8.0
R20	54	1	0.0	55.6	66	55.6	10	55.6	0.0	8	-8.0
R21	57	1	0.0	60.1	66	60.1	10	60.1	0.0	8	-8.0
R22	59	1	0.0	56.9	66	56.9	10	56.9	0.0	8	-8.0
R23	61	1	0.0	64.3	66	64.3	10	64.3	0.0	8	-8.0
R24	63	1	0.0	51.3	66	51.3	10	51.3	0.0	8	-8.0
R25	67	1	0.0	51.3	66	51.3	10	51.3	0.0	8	-8.0
R26	68	1	0.0	57.4	66	57.4	10	57.4	0.0	8	-8.0

Dwelling Units

DUs Noise Reduction

	Min dB	Avg dB	Max dB
All Selected	295	0.0	0.0
All Impacted	1	0.0	0.0
All that meet NR Goal	0	0.0	0.0

INPUT: TRAFFIC FOR LAeq1h Volumes

Robert Moses Parkway North

KHEOPS
GMW

24 August 2015
TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT:
RUN:

Robert Moses Parkway North
RMP - 2040 No Build PM

Roadway		Points											
Name	No.	Segment		Autos		MTrucks		HTrucks		Buses		Motorcycles	
		V	S	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	veh/hr	mph
RMP NB - ramp from Main St	point4	4	95	15	15	6	15	2	15	4	15	0	0
	point3	3	95	15	15	6	15	2	15	4	15	0	0
	point2	2	95	15	15	6	15	2	15	4	15	0	0
	point1	1											
	point5	5	95	15	15	6	15	2	15	4	15	0	0
	point6	6											
RMP - NB 2	point13	13	190	43	43	12	43	4	43	8	43	0	0
	point12	12	190	43	43	12	43	4	43	8	43	0	0
	point11	11	190	43	43	12	43	4	43	8	43	0	0
	point10	10	190	43	43	12	43	4	43	8	43	0	0
	point9	9	190	43	43	12	43	4	43	8	43	0	0
	point8	8	190	43	43	12	43	4	43	8	43	0	0
RMP - NB 4	point7	7											
	point47	47	190	43	43	12	43	4	43	8	43	0	0
	point46	46	190	43	43	12	43	4	43	8	43	0	0
	point45	45	190	43	43	12	43	4	43	8	43	0	0
	point44	44	190	43	43	12	43	4	43	8	43	0	0
	point43	43	190	43	43	12	43	4	43	8	43	0	0
RMP - NB 5	point42	42	190	43	43	12	43	4	43	8	43	0	0
	point41	41											
	point48	48	190	43	43	12	43	4	43	8	43	0	0

N:\2014\14NY147 Robert Moses North\4 - Technical Data\Calculations\Noise\2040 NB PM

INPUT: TRAFFIC FOR LAeq1h Volumes

Robert Moses Parkway North

point49	49	190	43	12	43	4	43	8	43	0	0
point50	50	190	43	12	43	4	43	8	43	0	0
point51	51	190	43	12	43	4	43	8	43	0	0
point52	52	190	43	12	43	4	43	8	43	0	0
point53	53	190	43	12	43	4	43	8	43	0	0
point54	54	190	43	12	43	4	43	8	43	0	0
point55	55	190	43	12	43	4	43	8	43	0	0
point56	56										
RMP - NB 6											
point64	64	190	43	12	43	4	43	8	43	0	0
point63	63	190	43	12	43	4	43	8	43	0	0
point62	62	190	43	12	43	4	43	8	43	0	0
point61	61	190	43	12	43	4	43	8	43	0	0
point60	60	190	43	12	43	4	43	8	43	0	0
point59	59	190	43	12	43	4	43	8	43	0	0
point58	58	190	43	12	43	4	43	8	43	0	0
point57	57										
RMP - SB 1											
point73	73	103	44	2	44	3	44	4	44	0	0
point72	72	103	44	2	44	3	44	4	44	0	0
point71	71	103	44	2	44	3	44	4	44	0	0
point70	70	103	44	2	44	3	44	4	44	0	0
point69	69	103	44	2	44	3	44	4	44	0	0
point68	68	103	44	2	44	3	44	4	44	0	0
point67	67	103	44	2	44	3	44	4	44	0	0
point66	66	103	44	2	44	3	44	4	44	0	0
point65	65										
RMP - SB 2											
point84	84	103	44	2	44	3	44	4	44	0	0
point83	83	103	44	2	44	3	44	4	44	0	0
point82	82	103	44	2	44	3	44	4	44	0	0
point81	81	103	44	2	44	3	44	4	44	0	0
point80	80	103	44	2	44	3	44	4	44	0	0
point79	79	103	44	2	44	3	44	4	44	0	0
point78	78	103	44	2	44	3	44	4	44	0	0
point77	77	103	44	2	44	3	44	4	44	0	0
point76	76	103	44	2	44	3	44	4	44	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

		75	103	44	2	44	3	44	4	44	0	0
	point75		103	44								
	point74	74										
RMP - SB 3	point91	91	103	44	2	44	3	44	4	44	0	0
	point90	90	103	44	2	44	3	44	4	44	0	0
	point89	89	103	44	2	44	3	44	4	44	0	0
	point88	88	103	44	2	44	3	44	4	44	0	0
	point87	87	103	44	2	44	3	44	4	44	0	0
	point86	86	103	44	2	44	3	44	4	44	0	0
	point85	85										
RMP - SB 4	point118	118	103	44	2	44	3	44	4	44	0	0
	point117	117	103	44	2	44	3	44	4	44	0	0
	point116	116	103	44	2	44	3	44	4	44	0	0
	point115	115	103	44	2	44	3	44	4	44	0	0
	point114	114	103	44	2	44	3	44	4	44	0	0
	point113	113	103	44	2	44	3	44	4	44	0	0
	point112	112	103	44	2	44	3	44	4	44	0	0
	point111	111	103	44	2	44	3	44	4	44	0	0
	point110	110	103	44	2	44	3	44	4	44	0	0
	point109	109	103	44	2	44	3	44	4	44	0	0
	point108	108	103	44	2	44	3	44	4	44	0	0
	point107	107	103	44	2	44	3	44	4	44	0	0
	point106	106	103	44	2	44	3	44	4	44	0	0
	point105	105	103	44	2	44	3	44	4	44	0	0
	point104	104	103	44	2	44	3	44	4	44	0	0
	point103	103	103	44	2	44	3	44	4	44	0	0
	point102	102	103	44	2	44	3	44	4	44	0	0
	point101	101	103	44	2	44	3	44	4	44	0	0
	point100	100	103	44	2	44	3	44	4	44	0	0
	point99	99	103	44	2	44	3	44	4	44	0	0
	point98	98	103	44	2	44	3	44	4	44	0	0
	point97	97	103	44	2	44	3	44	4	44	0	0
	point96	96	103	44	2	44	3	44	4	44	0	0
	point95	95	103	44	2	44	3	44	4	44	0	0
	point94	94	103	44	2	44	3	44	4	44	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

	point93	93	103	44	2	44	3	44	4	44	0	0
	point92	92										
RMP - SB 5	point119	119	103	44	2	44	3	44	4	44	0	0
	point120	120	103	44	2	44	3	44	4	44	0	0
	point121	121	103	44	2	44	3	44	4	44	0	0
	point122	122	103	44	2	44	3	44	4	44	0	0
	point123	123	103	44	2	44	3	44	4	44	0	0
	point124	124	103	44	2	44	3	44	4	44	0	0
	point125	125	103	44	2	44	3	44	4	44	0	0
	point126	126										
Whirlpool - NB 1	point129	129	0	0	0	0	0	0	0	0	0	0
	point128	128	0	0	0	0	0	0	0	0	0	0
	point127	127										
Whirlpool - NB 2	point136	136	0	0	0	0	0	0	0	0	0	0
	point135	135	0	0	0	0	0	0	0	0	0	0
	point134	134	0	0	0	0	0	0	0	0	0	0
	point133	133	0	0	0	0	0	0	0	0	0	0
	point132	132	0	0	0	0	0	0	0	0	0	0
	point131	131	0	0	0	0	0	0	0	0	0	0
	point130	130										
Whirlpool - SB 2	point145	145	0	0	0	0	0	0	0	0	0	0
	point144	144	0	0	0	0	0	0	0	0	0	0
	point143	143	0	0	0	0	0	0	0	0	0	0
	point142	142	0	0	0	0	0	0	0	0	0	0
	point141	141	0	0	0	0	0	0	0	0	0	0
	point140	140	0	0	0	0	0	0	0	0	0	0
	point139	139	0	0	0	0	0	0	0	0	0	0
	point138	138	0	0	0	0	0	0	0	0	0	0
	point137	137										
Whirlpool - SB 3	point148	148	0	0	0	0	0	0	0	0	0	0
	point147	147	0	0	0	0	0	0	0	0	0	0
	point146	146										
3rd St - NB 2	point149	149	18	40	0	0	0	0	0	0	0	0
	point150	150										

INPUT: TRAFFIC FOR LAeq1h Volumes

Robert Moses Parkway North

	point208	208	18	40	0	0	0	0	0	0	0	0	0	0	0
3rd St - NB 3	point208	208	18	40	0	0	0	0	0	0	0	0	0	0	0
	point207	207													
Whirlpool - SB 1	point264	264	261	36	1	36	3	36	3	36	3	36	3	36	0
	point263	263	261	36	1	36	3	36	3	36	3	36	3	36	0
	point262	262	261	36	1	36	3	36	3	36	3	36	3	36	0
	point261	261	261	36	1	36	3	36	3	36	3	36	3	36	0
	point260	260	261	36	1	36	3	36	3	36	3	36	3	36	0
	point259	259	261	36	1	36	3	36	3	36	3	36	3	36	0
	point258	258	261	36	1	36	3	36	3	36	3	36	3	36	0
	point257	257	261	36	1	36	3	36	3	36	3	36	3	36	0
	point256	256	261	36	1	36	3	36	3	36	3	36	3	36	0
	point255	255	261	36	1	36	3	36	3	36	3	36	3	36	0
	point254	254	261	36	1	36	3	36	3	36	3	36	3	36	0
	point253	253	261	36	1	36	3	36	3	36	3	36	3	36	0
	point252	252													
3rd St - SB 2	point266	266	105	24	7	24	2	24	2	24	0	0	0	0	0
	point265	265													
Findlay Dr - WB 1	point268	268	109	34	8	34	3	34	3	34	0	0	0	0	0
	point267	267													
Findlay Dr - WB 2	point269	269	236	10	13	10	5	10	5	10	2	10	2	10	0
	point270	270	236	10	13	10	5	10	5	10	2	10	2	10	0
	point271	271	236	10	13	10	5	10	5	10	2	10	2	10	0
	point272	272													
Findlay Dr - EB 1	point276	276	110	26	2	26	5	26	5	26	0	0	0	0	0
	point275	275	110	26	2	26	5	26	5	26	0	0	0	0	0
	point274	274	110	26	2	26	5	26	5	26	0	0	0	0	0
	point273	273													
Findlay Dr - EB 2	point277	277	232	17	12	17	5	17	5	17	1	17	1	17	0
	point278	278													
Chestnut Ave - WB	point279	279	0	0	0	0	0	0	0	0	0	0	0	0	0
	point280	280	0	0	0	0	0	0	0	0	0	0	0	0	0
	point281	281													
Chestnut Ave - EB	point284	284	0	0	0	0	0	0	0	0	0	0	0	0	0
	point283	283	0	0	0	0	0	0	0	0	0	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

Robert Moses Parkway North

Division Ave - EB	point320	320	0	0	0	0	0	0	0	0	0	0	0	0
	point319	319	0	0	0	0	0	0	0	0	0	0	0	0
	point318	318												
Linwood Ave - WB	point321	321	0	0	0	0	0	0	0	0	0	0	0	0
	point322	322	0	0	0	0	0	0	0	0	0	0	0	0
	point323	323												
Linwood Ave - EB	point326	326	0	0	0	0	0	0	0	0	0	0	0	0
	point325	325	0	0	0	0	0	0	0	0	0	0	0	0
	point324	324												
Willow Ave - WB	point327	327	0	0	0	0	0	0	0	0	0	0	0	0
	point328	328	0	0	0	0	0	0	0	0	0	0	0	0
	point329	329												
Willow Ave - EB	point332	332	0	0	0	0	0	0	0	0	0	0	0	0
	point331	331	0	0	0	0	0	0	0	0	0	0	0	0
	point330	330												
Pierce Ave - WB	point333	333	0	0	0	0	0	0	0	0	0	0	0	0
	point334	334	0	0	0	0	0	0	0	0	0	0	0	0
	point335	335												
Pierce Ave - EB	point338	338	0	0	0	0	0	0	0	0	0	0	0	0
	point337	337	0	0	0	0	0	0	0	0	0	0	0	0
	point336	336												
Orchard Pkwy - WB	point339	339	0	0	0	0	0	0	0	0	0	0	0	0
	point340	340	0	0	0	0	0	0	0	0	0	0	0	0
	point341	341												
Orchard Pkwy - EB	point344	344	0	0	0	0	0	0	0	0	0	0	0	0
	point343	343	0	0	0	0	0	0	0	0	0	0	0	0
	point342	342												
Chilton Ave - EB	point347	347	0	0	0	0	0	0	0	0	0	0	0	0
	point346	346	0	0	0	0	0	0	0	0	0	0	0	0
	point345	345												
Ashland Ave - WB	point348	348	0	0	0	0	0	0	0	0	0	0	0	0
	point349	349	0	0	0	0	0	0	0	0	0	0	0	0
	point350	350												
Elimwood Ave - EB	point353	353	0	0	0	0	0	0	0	0	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

Robert Moses Parkway North

	point352	352	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point351	351																	
Spruce Ave - WB	point356	356	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point357	357	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point358	358																	
Alley	point359	359	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point360	360	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point361	361																	
Cedar Ave - WB	point362	362	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point363	363	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point364	364																	
Cedar Ave - EB	point367	367	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point366	366	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point365	365																	
Pine Ave - WB	point368	368	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point369	369	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point370	370																	
Pine Ave - EB	point373	373	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point372	372	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point371	371																	
Main St - WB 1	point375	375	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point374	374																	
Main St - WB 2	point377	377	534	8	40	8	8	8	8	8	8	8	8	19	8	8	0	0	0
	point376	376																	
Main St - WB 3	point379	379	481	11	34	11	11	11	8	11	11	8	11	20	11	0	0	0	0
	point378	378																	
Main St - WB 4	point381	381	481	11	34	11	11	8	8	11	11	8	11	20	11	0	0	0	0
	point380	380																	
Main St - WB 5	point393	393	481	11	34	11	11	8	8	11	11	8	11	20	11	0	0	0	0
	point392	392	481	11	34	11	11	8	8	11	11	8	11	20	11	0	0	0	0
	point391	391	481	11	34	11	11	8	8	11	11	8	11	20	11	0	0	0	0
	point390	390	481	11	34	11	11	8	8	11	11	8	11	20	11	0	0	0	0
	point389	389	481	11	34	11	11	8	8	11	11	8	11	20	11	0	0	0	0
	point388	388	481	11	34	11	11	8	8	11	11	8	11	20	11	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

Robert Moses Parkway North

point387	387	481	11	34	11	8	11	20	11	0	0
point386	386	481	11	34	11	8	11	20	11	0	0
point385	385	481	11	34	11	8	11	20	11	0	0
point384	384	481	11	34	11	8	11	20	11	0	0
point383	383	481	11	34	11	8	11	20	11	0	0
point382	382										
point394	394	161	9	3	9	3	9	20	9	0	0
point395	395	161	9	3	9	3	9	20	9	0	0
point396	396	161	9	3	9	3	9	20	9	0	0
point397	397	161	9	3	9	3	9	20	9	0	0
point398	398	161	9	3	9	3	9	20	9	0	0
point399	399	161	9	3	9	3	9	20	9	0	0
point400	400	161	9	3	9	3	9	20	9	0	0
point401	401	161	9	3	9	3	9	20	9	0	0
point402	402	161	9	3	9	3	9	20	9	0	0
point403	403	161	9	3	9	3	9	20	9	0	0
point404	404	161	9	3	9	3	9	41	9	0	0
point405	405										
point406	406	161	9	3	9	3	9	20	9	0	0
point407	407										
point408	408	155	12	3	12	3	12	18	12	0	0
point409	409										
point410	410	0	0	0	0	0	0	0	0	0	0
point411	411										
point414	414	0	0	0	0	0	0	0	0	0	0
point413	413	0	0	0	0	0	0	0	0	0	0
point412	412										
point415	415	0	0	0	0	0	0	0	0	0	0
point416	416	0	0	0	0	0	0	0	0	0	0
point417	417										
point418	418	0	0	0	0	0	0	0	0	0	0
point419	419										
point421	421	0	0	0	0	0	0	0	0	0	0
point420	420										

INPUT: TRAFFIC FOR LAeq1h Volumes

Robert Moses Parkway North

Whirlpool - NB 3-2-2	point462	462	130	31	6	31	2	31	4	31	0	0
	point171	171	130	31	6	31	2	31	4	31	0	0
	point170	170										
Whirlpool - NB 3-2-2-2	point463	463	238	33	15	33	5	33	3	33	0	0
	point169	169	238	33	15	33	5	33	3	33	0	0
	point168	168	238	33	15	33	5	33	3	33	0	0
	point167	167	238	33	15	33	5	33	3	33	0	0
	point166	166	238	33	15	33	5	33	3	33	0	0
	point165	165	238	33	15	33	5	33	3	33	0	0
	point164	164										
Whirlpool - NB 3-2-2-2-2	point464	464	246	27	16	27	6	27	3	27	0	0
	point163	163	246	27	16	27	6	27	3	27	0	0
	point162	162	246	27	16	27	6	27	3	27	0	0
	point161	161	246	27	16	27	6	27	3	27	0	0
	point160	160	246	27	16	27	6	27	3	27	0	0
	point159	159	246	27	16	27	6	27	3	27	0	0
	point158	158	246	27	16	27	6	27	3	27	0	0
	point157	157	246	27	16	27	6	27	3	27	0	0
	point156	156	246	27	16	27	6	27	3	27	0	0
	point155	155	246	27	16	27	6	27	3	27	0	0
	point154	154	246	27	16	27	6	27	3	27	0	0
	point153	153	246	27	16	27	6	27	3	27	0	0
	point152	152	246	27	16	27	6	27	3	27	0	0
	point151	151										
Whirlpool - SB 1-2	point465	465	265	33	3	33	4	33	8	33	0	0
	point251	251	265	33	3	33	4	33	8	33	0	0
	point250	250	265	33	3	33	4	33	8	33	0	0
	point249	249	265	33	3	33	4	33	8	33	0	0
	point248	248	265	33	3	33	4	33	8	33	0	0
	point247	247										
Whirlpool - SB 1-2-2	point466	466	208	33	8	33	4	33	1	33	0	0
	point246	246	208	33	8	33	4	33	1	33	0	0
	point245	245										
Whirlpool - SB 1-2-2-2	point467	467	93	32	5	32	2	32	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

	point244	244	93	32	5	32	2	32	0	0
	point243	243	93	32	5	32	2	32	0	0
	point242	242	93	32	5	32	2	32	0	0
	point241	241	93	32	5	32	2	32	0	0
	point240	240	93	32	5	32	2	32	0	0
	point239	239	93	32	5	32	2	32	0	0
	point238	238	93	32	5	32	2	32	0	0
	point237	237	93	32	5	32	2	32	0	0
	point236	236	93	32	5	32	2	32	0	0
	point235	235	93	32	5	32	2	32	0	0
	point234	234	93	32	5	32	2	32	0	0
	point233	233								
Whirlpool - SB 1-2-2-2	point468	468	162	34	10	34	4	34	0	0
	point232	232	162	34	10	34	4	34	0	0
	point231	231	162	34	10	34	4	34	0	0
	point230	230	162	34	10	34	4	34	0	0
	point229	229	162	34	10	34	4	34	0	0
	point228	228	162	34	10	34	4	34	0	0
	point227	227	162	34	10	34	4	34	0	0
	point226	226	162	34	10	34	4	34	0	0
	point225	225	162	34	10	34	4	34	0	0
	point224	224	162	34	10	34	4	34	0	0
	point223	223	162	34	10	34	4	34	0	0
	point222	222	162	34	10	34	4	34	0	0
	point221	221	162	34	10	34	4	34	0	0
	point220	220	162	34	10	34	4	34	0	0
	point219	219	162	34	10	34	4	34	0	0
	point218	218	162	34	10	34	4	34	0	0
	point217	217	162	34	10	34	4	34	0	0
	point216	216								
3rd St - NB 3-2	point469	469	76	39	3	39	2	39	1	39
	point206	206	76	39	3	39	2	39	1	39
	point205	205	76	39	3	39	2	39	1	39
	point204	204								

INPUT: TRAFFIC FOR LAeq1h Volumes

3rd St - SB 1-2	point470	470	105	24	7	24	2	24	0	0	0
	point209	209									

Robert Moses Parkway North

	24	2	24	0	0	0

ATTACHMENT D3

BUILD ALTERNATIVE 2040 - TNM 2.5 OUTPUT FILES

RESULTS: SOUND LEVELS

Robert Moses Parkway North

KHEOPS
GMW

24 August 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS

PROJECT/CONTRACT:
RMP - 2040 Build PM - Condition A

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		No Barrier		Increase over existing		Type Impact	With Barrier		Calculated minus Goal dB	
			L _{Aeq} 1h	dBA	L _{Aeq} 1h	dBA	Calculated	Crit'n		Calculated	Crit'n		Calculated
M1	2	1	0.0	61.9	66	61.9	10	----	10	61.9	0.0	8	-8.0
M2	3	1	0.0	65.3	66	65.3	10	----	10	65.3	0.0	8	-8.0
M3	5	250	0.0	57.7	66	57.7	10	----	10	57.7	0.0	8	-8.0
M4	6	1	0.0	64.7	66	64.7	10	----	10	64.7	0.0	8	-8.0
M5	7	1	0.0	57.1	66	57.1	10	----	10	57.1	0.0	8	-8.0
M6	8	1	0.0	64.8	66	64.8	10	----	10	64.8	0.0	8	-8.0
M7	9	1	0.0	53.5	66	53.5	10	----	10	53.5	0.0	8	-8.0
M8	10	4	0.0	59.5	66	59.5	10	----	10	59.5	0.0	8	-8.0
M9	11	1	0.0	65.4	66	65.4	10	----	10	65.4	0.0	8	-8.0
M10	12	1	0.0	63.6	66	63.6	10	----	10	63.6	0.0	8	-8.0
M11	13	1	0.0	49.6	66	49.6	10	----	10	49.6	0.0	8	-8.0
M12	14	1	0.0	65.1	66	65.1	10	----	10	65.1	0.0	8	-8.0
M13	15	1	0.0	47.7	66	47.7	10	----	10	47.7	0.0	8	-8.0
M14	16	1	0.0	55.0	66	55.0	10	----	10	55.0	0.0	8	-8.0
M15	17	1	0.0	63.2	66	63.2	10	----	10	63.2	0.0	8	-8.0
M16	18	1	0.0	55.7	66	55.7	10	----	10	55.7	0.0	8	-8.0
R1	21	1	0.0	52.1	66	52.1	10	----	10	52.1	0.0	8	-8.0
R2	22	1	0.0	49.4	66	49.4	10	----	10	49.4	0.0	8	-8.0
R3	23	1	0.0	40.9	66	40.9	10	----	10	40.9	0.0	8	-8.0
R4	25	1	0.0	61.2	66	61.2	10	----	10	61.2	0.0	8	-8.0
R5	26	1	0.0	49.2	66	49.2	10	----	10	49.2	0.0	8	-8.0
R6	28	1	0.0	64.9	66	64.9	10	----	10	64.9	0.0	8	-8.0

RESULTS: SOUND LEVELS

Robert Moses Parkway North

	30	1	0.0	64.1	66	64.1	10	64.1	0.0	8	-8.0
R7											
R8	31	1	0.0	53.9	66	53.9	10	53.9	0.0	8	-8.0
R9	32	1	0.0	60.2	66	60.2	10	60.2	0.0	8	-8.0
R10	33	1	0.0	54.6	66	54.6	10	54.6	0.0	8	-8.0
R11	34	1	0.0	55.2	66	55.2	10	55.2	0.0	8	-8.0
R12	37	1	0.0	61.7	66	61.7	10	61.7	0.0	8	-8.0
R13	38	1	0.0	56.9	66	56.9	10	56.9	0.0	8	-8.0
R14	39	1	0.0	57.1	66	57.1	10	57.1	0.0	8	-8.0
R15	43	1	0.0	54.1	66	54.1	10	54.1	0.0	8	-8.0
R16	44	1	0.0	59.2	66	59.2	10	59.2	0.0	8	-8.0
R17	45	1	0.0	61.9	66	61.9	10	61.9	0.0	8	-8.0
R18	48	1	0.0	61.3	66	61.3	10	61.3	0.0	8	-8.0
R19	52	1	0.0	58.6	66	58.6	10	58.6	0.0	8	-8.0
R20	54	1	0.0	55.3	66	55.3	10	55.3	0.0	8	-8.0
R21	57	1	0.0	60.0	66	60.0	10	60.0	0.0	8	-8.0
R22	59	1	0.0	56.4	66	56.4	10	56.4	0.0	8	-8.0
R23	61	1	0.0	65.0	66	65.0	10	65.0	0.0	8	-8.0
R24	63	1	0.0	54.5	66	54.5	10	54.5	0.0	8	-8.0
R25	67	1	0.0	53.5	66	53.5	10	53.5	0.0	8	-8.0
R26	68	1	0.0	57.7	66	57.7	10	57.7	0.0	8	-8.0

Dwelling Units

	# DUs	Noise Reduction		
		Min dB	Avg dB	Max dB
All Selected	295	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

RESULTS: SOUND LEVELS

Robert Moses Parkway North

KHEOPS
GMW

24 August 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS

PROJECT/CONTRACT: Robert Moses Parkway North
RUN: RMP - 2040 Build PM - Condition B
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 dBA	No Barrier LAeq1h Calculated	Crit'n	Increase over existing		Type Impact	With Barrier		Calculated minus Goal dB	
						Calculated	Crit'n Sub'l Inc		Calculated LAeq1h dBA	Noise Reduction Calculated Goal dB		
M1	2	1	0.0	61.8	66	61.8	10	----	61.8	0.0	8	-8.0
M2	3	1	0.0	65.3	66	65.3	10	----	65.3	0.0	8	-8.0
M3	5	250	0.0	57.7	66	57.7	10	----	57.7	0.0	8	-8.0
M4	6	1	0.0	64.7	66	64.7	10	----	64.7	0.0	8	-8.0
M5	7	1	0.0	57.1	66	57.1	10	----	57.1	0.0	8	-8.0
M6	8	1	0.0	64.8	66	64.8	10	----	64.8	0.0	8	-8.0
M7	9	1	0.0	53.5	66	53.5	10	----	53.5	0.0	8	-8.0
M8	10	4	0.0	59.5	66	59.5	10	----	59.5	0.0	8	-8.0
M9	11	1	0.0	65.4	66	65.4	10	----	65.4	0.0	8	-8.0
M10	12	1	0.0	63.6	66	63.6	10	----	63.6	0.0	8	-8.0
M11	13	1	0.0	49.6	66	49.6	10	----	49.6	0.0	8	-8.0
M12	14	1	0.0	65.1	66	65.1	10	----	65.1	0.0	8	-8.0
M13	15	1	0.0	47.7	66	47.7	10	----	47.7	0.0	8	-8.0
M14	16	1	0.0	55.0	66	55.0	10	----	55.0	0.0	8	-8.0
M15	17	1	0.0	63.2	66	63.2	10	----	63.2	0.0	8	-8.0
M16	18	1	0.0	55.7	66	55.7	10	----	55.7	0.0	8	-8.0
M17	19	1	0.0	66.5	66	66.5	10	Snd Lvl	66.5	0.0	8	-8.0
R1	21	1	0.0	52.5	66	52.5	10	----	52.5	0.0	8	-8.0
R2	22	1	0.0	49.5	66	49.5	10	----	49.5	0.0	8	-8.0
R3	23	1	0.0	40.8	66	40.8	10	----	40.8	0.0	8	-8.0
R4	25	1	0.0	61.2	66	61.2	10	----	61.2	0.0	8	-8.0
R5	26	1	0.0	49.3	66	49.3	10	----	49.3	0.0	8	-8.0
R6	28	1	0.0	64.9	66	64.9	10	----	64.9	0.0	8	-8.0

RESULTS: SOUND LEVELS

Robert Moses Parkway North

	30	1	0.0	64.1	66	64.1	10	64.1	0.0	8	-8.0
R7											
R8											
R9											
R10											
R11											
R12											
R13											
R14											
R15											
R16											
R17											
R18											
R19											
R20											
R21											
R22											
R23											
R24											
R25											
R26											

Dwelling Units

	# DUs	Noise Reduction		
		Min dB	Avg dB	Max dB
All Selected	295	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

INPUT: TRAFFIC FOR LAeq1h Volumes

Robert Moses Parkway North

KHEOPS
GMW

24 August 2015
TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT:
RUN: RMP - 2040 Build PM - Condition A

Robert Moses Parkway North
RMP - 2040 Build PM - Condition A

Roadway Name	Points Name	No.	Segment			MTrucks			HTrucks			Buses			Motorcycles		
			Autos			V			V			V			V		
			veh/hr	S	mph	veh/hr	S	mph	veh/hr	S	mph	veh/hr	S	mph	veh/hr	S	mph
RMP - NB 1	point5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	point6	6															
RMP - NB 2	point13	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	point12	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	point11	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	point10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	point9	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	point8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	point7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	point495	495															
RMP - NB 6	point486	486	452	38	38	16	38	6	38	11	38	0	0	0	0	0	
	point64	64															
RMP - SB 1	point73	73	369	38	38	1	38	3	38	7	38	0	0	0	0	0	
	point72	72	369	38	38	1	38	3	38	7	38	0	0	0	0	0	
	point71	71	369	38	38	1	38	3	38	7	38	0	0	0	0	0	
	point70	70	369	38	38	1	38	3	38	7	38	0	0	0	0	0	
	point69	69	369	38	38	1	38	3	38	7	38	0	0	0	0	0	
	point68	68	369	38	38	1	38	3	38	7	38	0	0	0	0	0	
	point67	67	369	38	38	1	38	3	38	7	38	0	0	0	0	0	
	point66	66	369	38	38	1	38	3	38	7	38	0	0	0	0	0	
	point483	483	369	38	38	1	38	3	38	7	38	0	0	0	0	0	

N:\2014\14NY147 Robert Moses North\4 - Technical Data\Calculations\Noise\2040 Build PMA

INPUT: TRAFFIC FOR LAeq1h Volumes

Robert Moses Parkway North

	point484	484	369	38	1	38	3	38	7	38	0	0
RMP - SB 5	point65	65										
	point496	496	0	0	0	0	0	0	0	0	0	0
	point119	119	0	0	0	0	0	0	0	0	0	0
	point120	120	0	0	0	0	0	0	0	0	0	0
	point121	121	0	0	0	0	0	0	0	0	0	0
	point122	122	0	0	0	0	0	0	0	0	0	0
	point123	123	0	0	0	0	0	0	0	0	0	0
	point124	124	0	0	0	0	0	0	0	0	0	0
	point125	125	0	0	0	0	0	0	0	0	0	0
	point126	126										
Whirlpool - NB 1	point129	129	0	0	0	0	0	0	0	0	0	0
	point128	128	0	0	0	0	0	0	0	0	0	0
	point127	127										
Whirlpool - SB 3	point148	148	0	0	0	0	0	0	0	0	0	0
	point147	147	0	0	0	0	0	0	0	0	0	0
	point146	146										
3rd St - NB 2	point149	149	18	41	0	0	0	0	0	0	0	0
	point150	150										
3rd St - NB 3	point208	208	223	40	0	0	0	0	0	0	0	0
	point207	207										
Whirlpool - SB 1	point262	262	369	38	1	38	3	38	7	38	0	0
	point261	261	369	38	1	38	3	38	7	38	0	0
	point260	260	369	38	1	38	3	38	7	38	0	0
	point259	259	369	38	1	38	3	38	7	38	0	0
	point258	258	369	38	1	38	3	38	7	38	0	0
	point257	257	369	38	1	38	3	38	7	38	0	0
	point256	256	369	38	1	38	3	38	7	38	0	0
	point255	255	369	38	1	38	3	38	7	38	0	0
	point254	254	369	38	1	38	3	38	7	38	0	0
	point253	253	369	38	1	38	3	38	7	38	0	0
	point252	252										
3rd St - SB 2	point266	266	105	10	7	10	2	10	0	0	0	0
	point265	265										

INPUT: TRAFFIC FOR LAeq1h Volumes

Robert Moses Parkway North

	point268	268	109	21	8	21	3	21	0	0	0
Findlay Dr - WB 1	point268	268	109	21	8	21	3	21	0	0	0
	point478	478	109	21	8	21	3	21	0	0	0
	point479	479	109	21	8	21	3	21	0	0	0
	point480	480	109	21	8	21	3	21	0	0	0
	point481	481									
Findlay Dr - EB 2	point471	471	233	19	12	19	5	19	1	19	0
	point277	277	233	19	12	19	5	19	1	19	0
	point474	474									
Chestnut Ave - WB	point279	279	0	0	0	0	0	0	0	0	0
	point280	280	0	0	0	0	0	0	0	0	0
	point281	281									
Chestnut Ave - EB	point284	284	0	0	0	0	0	0	0	0	0
	point283	283	0	0	0	0	0	0	0	0	0
	point282	282									
Chasm Ave - WB	point285	285	0	0	0	0	0	0	0	0	0
	point286	286	0	0	0	0	0	0	0	0	0
	point287	287									
Chasm Ave - EB	point290	290	0	0	0	0	0	0	0	0	0
	point289	289	0	0	0	0	0	0	0	0	0
	point288	288									
Belleve Ave - WB	point291	291	0	0	0	0	0	0	0	0	0
	point292	292	0	0	0	0	0	0	0	0	0
	point293	293									
Belleve Ave - EB	point296	296	0	0	0	0	0	0	0	0	0
	point295	295	0	0	0	0	0	0	0	0	0
	point294	294									
Ontario Ave - WB	point297	297	0	0	0	0	0	0	0	0	0
	point298	298	0	0	0	0	0	0	0	0	0
	point299	299									
Ontario Ave - EB	point302	302	0	0	0	0	0	0	0	0	0
	point301	301	0	0	0	0	0	0	0	0	0
	point300	300									
Cleveland Ave - WB	point303	303	0	0	0	0	0	0	0	0	0
	point304	304	0	0	0	0	0	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

Robert Moses Parkway North

Main St - WB 2	point374	374	534	8	40	8	8	8	19	8	0	0
	point377	377										
	point376	376										
Main St - WB 3	point379	379	481	11	34	11	8	11	20	11	0	0
	point378	378										
Main St - WB 4	point381	381	481	11	34	11	8	11	20	11	0	0
	point380	380										
Main St - WB 5	point393	393	481	11	34	11	8	11	20	11	0	0
	point392	392	481	11	34	11	8	11	20	11	0	0
	point391	391	481	11	34	11	8	11	20	11	0	0
	point390	390	481	11	34	11	8	11	20	11	0	0
	point389	389	481	11	34	11	8	11	20	11	0	0
	point388	388	481	11	34	11	8	11	20	11	0	0
	point387	387	481	11	34	11	8	11	20	11	0	0
	point386	386	481	11	34	11	8	11	20	11	0	0
	point385	385	481	11	34	11	8	11	20	11	0	0
	point384	384	481	11	34	11	8	11	20	11	0	0
	point383	383	481	11	34	11	8	11	20	11	0	0
	point382	382										
Main St - EB 1	point394	394	161	9	3	9	3	9	20	9	0	0
	point395	395	161	9	3	9	3	9	20	9	0	0
	point396	396	161	9	3	9	3	9	20	9	0	0
	point397	397	161	9	3	9	3	9	20	9	0	0
	point398	398	161	9	3	9	3	9	20	9	0	0
	point399	399	161	9	3	9	3	9	20	9	0	0
	point400	400	161	9	3	9	3	9	20	9	0	0
	point401	401	161	9	3	9	3	9	20	9	0	0
	point402	402	161	9	3	9	3	9	20	9	0	0
	point403	403	161	9	3	9	3	9	20	9	0	0
	point404	404	161	9	3	9	3	9	20	9	0	0
	point405	405										
Main St - EB 2	point406	406	161	9	3	9	3	9	20	9	0	0
	point407	407										
Main St - EB 3	point408	408	155	12	3	12	3	12	18	12	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

Robert Moses Parkway North

	point443	443	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cleveland Ave - ramp to EB	point444	444																		
Walnut Ave - WB	point456	456	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walnut Ave - EB	point455	455																		
	point457	457	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	point458	458																		
3rd St - SB 1	point215	215	213	35	7	35	2	35	4	35	0	0	0	0	0	0	0	0	0	0
	point214	214	213	35	7	35	2	35	4	35	0	0	0	0	0	0	0	0	0	0
	point213	213	213	35	7	35	2	35	4	35	0	0	0	0	0	0	0	0	0	0
	point212	212	213	35	7	35	2	35	4	35	0	0	0	0	0	0	0	0	0	0
	point211	211	213	35	7	35	2	35	4	35	0	0	0	0	0	0	0	0	0	0
	point210	210																		
Whirpool - NB 3	point460	460	336	39	7	39	3	39	9	39	0	0	0	0	0	0	0	0	0	0
	point202	202	336	39	7	39	3	39	9	39	0	0	0	0	0	0	0	0	0	0
	point201	201	336	39	7	39	3	39	9	39	0	0	0	0	0	0	0	0	0	0
	point200	200	336	39	7	39	3	39	9	39	0	0	0	0	0	0	0	0	0	0
	point199	199	336	39	7	39	3	39	9	39	0	0	0	0	0	0	0	0	0	0
	point198	198	336	39	7	39	3	39	9	39	0	0	0	0	0	0	0	0	0	0
	point197	197	336	39	7	39	3	39	9	39	0	0	0	0	0	0	0	0	0	0
	point196	196	336	39	7	39	3	39	9	39	0	0	0	0	0	0	0	0	0	0
	point195	195	336	39	7	39	3	39	9	39	0	0	0	0	0	0	0	0	0	0
	point194	194	336	39	7	39	3	39	9	39	0	0	0	0	0	0	0	0	0	0
	point193	193	336	39	7	39	3	39	9	39	0	0	0	0	0	0	0	0	0	0
	point192	192	336	39	7	39	3	39	9	39	0	0	0	0	0	0	0	0	0	0
	point191	191	336	39	7	39	3	39	9	39	0	0	0	0	0	0	0	0	0	0
	point190	190	336	39	7	39	3	39	9	39	0	0	0	0	0	0	0	0	0	0
	point189	189	336	39	7	39	3	39	9	39	0	0	0	0	0	0	0	0	0	0
	point188	188	336	39	7	39	3	39	9	39	0	0	0	0	0	0	0	0	0	0
	point187	187	336	39	7	39	3	39	9	39	0	0	0	0	0	0	0	0	0	0
	point186	186	336	39	7	39	3	39	9	39	0	0	0	0	0	0	0	0	0	0
	point185	185	336	39	7	39	3	39	9	39	0	0	0	0	0	0	0	0	0	0
	point184	184																		
Whirpool - NB 3-2	point461	461	344	39	7	39	3	39	12	39	0	0	0	0	0	0	0	0	0	0
	point183	183	344	39	7	39	3	39	12	39	0	0	0	0	0	0	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

Robert Moses Parkway North

	point182	182	344	39	7	39	3	39	12	39	0	0
	point181	181	344	39	7	39	3	39	12	39	0	0
	point180	180	344	39	7	39	3	39	12	39	0	0
	point179	179	344	39	7	39	3	39	12	39	0	0
	point178	178	344	39	7	39	3	39	12	39	0	0
	point177	177	172	39	7	39	3	39	12	39	0	0
	point176	176	344	39	7	39	3	39	12	39	0	0
	point175	175	344	39	7	39	3	39	12	39	0	0
	point174	174	344	39	7	39	3	39	12	39	0	0
	point173	173	344	39	7	39	3	39	12	39	0	0
	point172	172										
	point462	462	336	39	6	39	2	39	12	39	0	0
	point171	171	336	39	6	39	2	39	12	39	0	0
	point170	170										
	point463	463	444	35	15	35	5	35	11	35	0	0
	point169	169	444	35	15	35	5	35	11	35	0	0
	point168	168	444	35	15	35	5	35	11	35	0	0
	point167	167	444	35	15	35	5	35	11	35	0	0
	point166	166	444	35	15	35	5	35	11	35	0	0
	point165	165	444	35	15	35	5	35	11	35	0	0
	point164	164										
	point464	464	452	38	16	38	6	38	11	38	0	0
	point163	163	452	38	16	38	6	38	11	38	0	0
	point162	162	452	38	16	38	6	38	11	38	0	0
	point161	161	452	38	16	38	6	38	11	38	0	0
	point160	160	452	38	16	38	6	38	11	38	0	0
	point159	159	452	38	16	38	6	38	11	38	0	0
	point158	158	452	38	16	38	6	38	11	38	0	0
	point157	157	452	38	16	38	6	38	11	38	0	0
	point156	156	452	38	16	38	6	38	11	38	0	0
	point155	155	452	38	16	38	6	38	11	38	0	0
	point154	154	452	38	16	38	6	38	11	38	0	0
	point153	153										
	point465	465	373	24	3	24	4	24	12	24	0	0
	Whirpool - SB 1-2											

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	point251	251	373	24	3	24	4	24	12	24	0	0
	point250	250	373	24	3	24	4	24	12	24	0	0
	point249	249	373	24	3	24	4	24	12	24	0	0
	point248	248	373	24	3	24	4	24	12	24	0	0
	point247	247										
Whirlpool - SB 1-2-2	point466	466	316	38	8	38	4	38	5	38	0	0
	point246	246	316	38	8	38	4	38	5	38	0	0
	point245	245										
Whirlpool - SB 1-2-2-2	point467	467	201	38	5	38	2	38	4	38	0	0
	point244	244	201	38	5	38	2	38	4	38	0	0
	point243	243	201	38	5	38	2	38	4	38	0	0
	point242	242	201	38	5	38	2	38	4	38	0	0
	point241	241	201	38	5	38	2	38	4	38	0	0
	point240	240	201	38	5	38	2	38	4	38	0	0
	point239	239	201	38	5	38	2	38	4	38	0	0
	point238	238	201	38	5	38	2	38	4	38	0	0
	point237	237	201	38	5	38	2	38	4	38	0	0
	point236	236	201	38	5	38	2	38	4	38	0	0
	point235	235	201	38	5	38	2	38	4	38	0	0
	point234	234	201	38	5	38	2	38	4	38	0	0
	point233	233										
Whirlpool - SB 1-2-2-2-2	point468	468	270	38	10	38	4	38	4	38	0	0
	point232	232	270	38	10	38	4	38	4	38	0	0
	point231	231	270	38	10	38	4	38	4	38	0	0
	point230	230	270	38	10	38	4	38	4	38	0	0
	point229	229	270	38	10	38	4	38	4	38	0	0
	point228	228	270	38	10	38	4	38	4	38	0	0
	point227	227	270	38	10	38	4	38	4	38	0	0
	point226	226	270	38	10	38	4	38	4	38	0	0
	point225	225	270	38	10	38	4	38	4	38	0	0
	point224	224	270	38	10	38	4	38	4	38	0	0
	point223	223	270	38	10	38	4	38	4	38	0	0
	point222	222	270	38	10	38	4	38	4	38	0	0
	point221	221	270	38	10	38	4	38	4	38	0	0

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	point220	220	270	38	10	38	4	38	4	38	0	0
	point219	219	270	38	10	38	4	38	4	38	0	0
	point218	218	270	38	10	38	4	38	4	38	0	0
	point217	217	270	38	10	38	4	38	4	38	0	0
	point216	216										
3rd St - NB 3-2	point469	469	282	38	3	38	2	38	9	38	0	0
	point206	206	282	38	3	38	2	38	9	38	0	0
	point205	205	282	38	3	38	2	38	9	38	0	0
	point204	204										
3rd St - SB 1-2	point470	470	213	36	7	36	2	36	4	36	0	0
	point209	209										
Roadway92	point488	488	0	0	0	0	0	0	0	0	0	0
	point489	489	0	0	0	0	0	0	0	0	0	0
	point491	491										
Roadway93	point492	492	0	0	0	0	0	0	0	0	0	0
	point493	493	0	0	0	0	0	0	0	0	0	0
	point494	494										
Findlay Dr - WB 1-2	point497	497	109	21	8	21	3	21	0	0	0	0
	point267	267	109	21	8	21	3	21	0	0	0	0
	point473	473										
Findlay Dr - EB 2-2	point498	498	233	19	12	19	5	19	1	19	0	0
	point475	475	233	19	12	19	5	19	1	19	0	0
	point476	476	233	19	12	19	5	19	1	19	0	0
	point477	477	233	19	12	19	5	19	1	19	0	0
	point278	278										
RMP - SB 1-2	point505	505	369	38	1	38	3	38	7	38	0	0
	point487	487										
RMP - NB 6-2	point506	506	452	38	16	38	6	38	11	38	0	0
	point485	485	452	38	16	38	6	38	11	38	0	0
	point482	482	452	38	16	38	6	38	11	38	0	0
	point63	63	452	38	16	38	6	38	11	38	0	0
	point62	62	452	38	16	38	6	38	11	38	0	0
	point61	61	452	38	16	38	6	38	11	38	0	0
	point60	60	452	38	16	38	6	38	11	38	0	0

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	point59	59	452	38	16	38	6	38	11	38	0	0
	point58	58	452	38	16	38	6	38	11	38	0	0
	point57	57										
Condition B - NB Whirlpool	point507	507	0	0	0	0	0	0	0	0	0	0
	point508	508	0	0	0	0	0	0	0	0	0	0
	point509	509										
Condition B - SB Whirlpool	point512	512	0	0	0	0	0	0	0	0	0	0
	point511	511	0	0	0	0	0	0	0	0	0	0
	point510	510										
Condition B - EB Findlay 1	point513	513	0	0	0	0	0	0	0	0	0	0
	point514	514										
Condition B - EB Findlay 2	point515	515	0	0	0	0	0	0	0	0	0	0
	point516	516										
Condition B - WB Findlay 1	point517	517	0	0	0	0	0	0	0	0	0	0
	point518	518										
Condition B - WB Findlay 2	point519	519	0	0	0	0	0	0	0	0	0	0
	point520	520										