

August 7, 2017

Noise Analysis Report
SUM-I 76/I 77/SR 8 Akron Central Interchange
PID 101402



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District 4
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The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by ODOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated December 11, 2015, and executed by FHWA and ODOT.



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EXECUTIVE SUMMARY

The Ohio Department of Transportation (ODOT) is proposing to improve the Central Interchange in Akron, Ohio. The Akron Central Interchange is located in Akron, Ohio at the intersection of Interstate 76 (I-76), Interstate 77 (I-77) and State Route 8 (SR 8) and is shown on Figure 1 in Appendix A. To address poor bridge conditions and to improve the substandard ramp geometrics, ODOT has proposed the reconstruction and realignment of ramps in the Central Interchange. The proposed improvement is shown on Figure 2 in Appendix A. The ramps to be improved include the eastbound (EB) I-76 ramp to northbound (NB) SR 8 (Ramp R) and the westbound (WB) I-76 ramp to southbound (SB) I-77 (Ramp N). The existing and proposed relocations of Ramp R and Ramp N are shown on Figure 2 in Appendix A. Also as part of the project, the I-76 WB exit ramp to NB SR 8 will be smoothed out by shifting the alignment slightly to the west. The existing EB I-76 exit ramp to Inman Street and the existing SB I-77 exit ramp to Lovers Lane will both be removed.

A noise analysis was prepared for all noise sensitive receivers located within 500 feet of the existing driving lanes and ramps along I-76 from the pedestrian crossover bridge at Sumner Street to a point approximately 800 feet west of Arlington Road and along SR 8 from a point approximately 500 feet north of the Johnston Street overpass to Lovers Lane on I-77. The project area for the noise analysis is shown on Figure 3 in Appendix A. The noise analysis for this project was conducted in accordance with the Code of Federal Regulations (CFR), Title 23, Part 772, and the U.S. Department of Transportation, Federal Highway Administration (FHWA), Highway Traffic Noise Analysis and Abatement Policy and Guidance (FHWA, 2011). The project was further conducted in accordance with the Ohio Department of Transportation (ODOT) noise policy pertaining to Standard Procedure for Analysis and Abatement of Highway Traffic Noise (ODOT, 2011) and the changes, clarifications and additions incorporated into ODOT's Highway Traffic Noise Analysis manual dated February 2013. Existing year 2016 noise levels and noise levels for Design Year 2036 Build alternative were modeled using the FHWA Traffic Noise Model (TNM) Version 2.5 (FHWA, 1998).

Traffic generated noise levels were predicted at nine noise sensitive areas (NSA), shown on Figure 5 in Appendix A, using the FHWA TNM Version 2.5 for the roadway configurations for the existing year 2020 and the design year 2040 Build alternative. TNM predicted traffic noise impacts to occur at all nine NSAs under the design year build roadway configuration.

In accordance with 23 CFR Part 772, when noise impacts are identified as a result of a proposed action, noise abatement measures must be considered for impacted sites predicted to approach or exceed the applicable FHWA NAC.

Noise abatement, in the form of noise barrier walls were found to be both reasonable and feasible for eight of the nine NSAs. Noise abatement was found to be not reasonable and feasible at NSA 2.

Noise barrier walls recommended for inclusion in the project are shown on the following table.

Recommended Noise Barrier Walls

Barrier	Barrier Length (feet)	Barrier Height (feet)	Square Footage of Barrier	Maximum Insertion Loss ^a (dB)	Benefitted Properties ^b	Barrier Cost ^c	Cost per benefitted receptor	Effectiveness		Barrier Location ^f	Barrier Recommended ^g
								Feasible ^d	Reasonable ^e		
NSA 1 Scenario 2	1,912	14	26,773	12.0	45	\$669,323	\$14,873	Yes	Yes	EOS	Yes
NSA 3 Scenario 2	1,894	16	30,304	7.7	32	\$754,713	\$23,584	Yes	Yes	EOS/ROW	Yes
NSA 4 Scenario 1	1,156	14	16,100	7.7	16 (Equivalent)	\$404,711	\$25,294	Yes	Yes	EOS/ROW	Yes
NSA 5 Scenario 1	1,656	14	23,184	11.1	69	\$747,460	\$10,832	Yes	Yes	EOS	Yes
NSA 6 Scenario 2	2,265	15	33,975	10.9	69	\$849,056	\$12,305	Yes	Yes	EOS/ROW	Yes
NSA 8 Scenario 1	1,910	14	26,740	9.8	22	\$669,366	\$30,425	Yes	Yes	ROW	Yes
NSA 9 Scenario 1	1,225	14	17,150	10.1	21	\$428,750	\$20,416	Yes	Yes	ROW	Yes

^a Insertion Loss (IL) is the maximum noise reduction provided by the noise barrier.

^b A receptor is considered benefitted by the noise barrier if the IL is 5dB or greater.

^c Cost is based on \$25 per square foot of noise barrier constructed on ground and \$100 per square foot constructed on structure..

^d A noise barrier is considered feasible if it can provide a substantial noise reduction of at least 7dB at one receptor location.

^e A noise barrier is considered cost reasonable if the cost per benefitted receptor is less than \$35,000.

^f The location of the noise barrier wall: ROW=noise barrier is located along the right of way line; EOS=noise barrier is located along the edge of shoulder.

^g Noise barrier recommendation is based on the number of benefitted receptors and the relative cost per benefitted receptor.

Section 1.0

INTRODUCTION

Project Description

The Akron Central Interchange is located in Akron, Ohio at the intersection of Interstate 76 (I-76), Interstate 77 (I-77) and State Route 8 (SR 8). The location of the Central Interchange is shown on Figure 1 in Appendix A. To address poor bridge conditions and to improve the substandard ramp geometrics, ODOT has proposed the reconstruction and realignment of ramps in the Central Interchange in Akron, Ohio. The ramps to be improved include the eastbound (EB) I-76 ramp to northbound (NB) SR 8 (Ramp R) and the westbound (WB) I-76 ramp to southbound (SB) I-77 (Ramp N). The existing and proposed relocations of Ramp R and Ramp N are shown on Figure 2 in Appendix A. Also as part of the project, the I-76 WB exit ramp to NB SR 8 will be smoothed out by shifting the alignment slightly to the west. The existing EB I-76 exit ramp to Inman Street and the existing SB I-77 exit ramp to Lovers Lane will both be removed.

A noise analysis was prepared for all noise sensitive receivers located within 500 feet of the existing driving lanes and ramps along I-76 from the pedestrian crossover bridge at Sumner Street to a point approximately 800 feet west of Arlington Road and along SR 8 from a point approximately 500 feet north of the Johnston Street overpass to Lovers Lane on I-77. The project area for the noise analysis is shown on Figure 3 in Appendix A.

Land Use

Land use within the study area is predominantly residential as shown on Figure 4 in Appendix A. On the east leg of I-76, Hoban High School is on the south side of the highway with the school's athletic fields being located on the north side of the highway. The two areas are connected by a pedestrian bridge. There are also isolated areas of manufacturing and a block of undeveloped land in the northwest quadrant of the interchange. The study area was divided into nine noise sensitive areas (NSA) as shown on Figure 5 in Appendix A. All nine NSAs have been modeled for the Existing Year 2020 and the Design Year 2040 noise levels and have been evaluated for noise impact.

Section 2.0 NOISE ANALYSIS

The noise analysis prepared for this project was conducted in accordance with the Code of Federal Regulations (CFR), Title 23, Part 772, and the U.S. Department of Transportation, FHWA, *Highway Traffic Noise Analysis and Abatement Policy and Guidance* (FHWA, 2011). The project was further conducted in accordance with the ODOT noise policy pertaining to *Standard Procedure for Analysis and Abatement of Highway Traffic Noise* (ODOT, 2015) and the changes, clarifications and additions incorporated into ODOT's Highway Traffic Noise Analysis manual dated April 2015. The Existing Year 2020 noise levels and noise levels for the Design Year 2040 Build alternatives were modeled using the FHWA Traffic Noise Model (TNM) Version 2.5 (FHWA, 1998). Specific data and assumptions used in this analysis are described as follows:

Applicability

This noise analysis has been performed in accordance with the policy that applies to Type I projects. A Type I project as described by the ODOT Standard Procedures for Analysis and Abatement of Highway Traffic noise document is a Federal aid highway project for the construction of highway on new location or the physical alteration of an existing highway which significantly changes either the horizontal or vertical alignment or increases the number of through traffic lanes (ODOT, 2015).

Analysis Objectives

The objectives of this noise analysis include: (1) identification of existing and future noise sensitive areas in the vicinity of the proposed roadway improvement; (2) characterization of the existing noise environment through computer modeling; (3) prediction of future year noise levels for the Design Year 2040 Build alternative through computer modeling, (4) comparison of existing year noise levels against future year noise levels to identify noise impact within the project area; (5) evaluation of reasonable and feasible noise abatement measures for reducing noise levels where noise impacts are identified; and, (6) communication of the results to the public and local officials.

Noise Descriptors

Noise descriptors are used to describe the time varying nature of noise. In this report, noise levels will be described as hourly A weighted equivalent sound level in decibels, or **dBA L_{eq(h)}**. Noise is defined as unwanted sound, which is produced by the vibration of sound pressure waves. Sound pressure levels are used to measure the intensity of sound and are described in terms of decibels (**dB**). Decibels are a logarithmic unit, which expresses the ratio of sound pressure level to a standard reference scale. The decibel scale has a range of 0-120 and is used to show the amount of sound pressure at a given location from the general environment of specific sources. An increase or decrease of 10 dB is perceived as doubling or halving of the sound intensity since the decibel scale is logarithmic. In general, the average person cannot detect an increase or decrease in sound pressure level of less than 3 dB. A change in sound pressure level of 5 dB is readily perceptible by most people.

Sound is composed of various frequencies which are measured in cycles per second or Hertz (Hz). The human ear can detect a wide range of frequencies from 20 to 20,000 Hz, but is most sensitive to sounds over a frequency range of 200 to 5,000 Hz. The human ear does not respond in a uniform manner to different frequency sounds. A sound pressure level of 70 dB will be perceived as much louder at 1,000 Hz than at 100

Hz. To account for this, various weighting methods have been developed to reflect human sensitivity to noise. The purpose of a weighting method is to de-emphasize the frequency ranges in which the human ear is less sensitive. The most commonly used measure of noise level is the A-weighted sound level (**dBA**). The dBA sound level is widely used for transportation related noise measurements and specifications for community noise ordinances and standards. The dBA has been shown to be highly correlated to human response to noise.

In addition to noise fluctuating in frequency, environmental noise will fluctuate in intensity from moment to moment. Over a period of time there will be quiet moments and peak levels resulting from noisy, identifiable sources (trucks, aircraft, etc.). Because of these fluctuations, it is common practice to average these noise level fluctuations over a specified period of time. The equivalent sound level over a given period of interest, L_{eq} , is widely accepted as a valid measure of community noise. The L_{eq} is equal to the equivalent steady state noise level which, in a stated time period, would contain the same acoustical energy as the time varying noise levels that actually occurred during the same time period. The hourly value of L_{eq} , based upon the peak hour percentage of the annual average daily traffic, is referred to as $L_{eq(h)}$. Surveys have shown that L_{eq} properly predicts annoyance, and this descriptor is commonly used for noise measurement, prediction, and impact assessment.

Noise Sensitive Areas (NSA)

The FHWA has established seven Activity Categories that must be considered for Noise Abatement Criteria (NAC). The Activity Categories are described in Table 1.

Activity Category	$L_{eq}(h)$	$L_{10}(h)$	Description of Activity Category
A	57 (Exterior)	60 (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	70	Residential
C	67 (Exterior)	70 (Exterior)	Active sports areas, amphitheatres, auditoriums, campgrounds, cemeteries, daycare centers, hospitals, libraries, medical facilities, parks picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreational areas, Section 4(f) sites, television studios, trails and trail crossings.
D	52 (Interior)	55 (Interior)	Auditoriums, daycare centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recording studios, schools and television studios.
E	72 (Exterior)	75 (Exterior)	Hotels, motels, offices, restaurant/bars, and other developed lands properties or activities not included in A-D, or F.
F	N/A	N/A	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical) and warehousing.
G	N/A	N/A	Undeveloped lands that are not permitted.

Nine NSAs were identified within the project area. The locations of the nine NSAs are shown on Figure 5 in Appendix A and described, from west to east as follows:

NSA 1

NSA 1 is located on the west leg of the Central Interchange on the north side of I-76. NSA 1 begins at the pedestrian crossover bridge at Sumner Street and extends east to Spicer Street, an approximate distance of 1,800 feet. NSA 1 is comprised entirely of residential dwelling units and falls into Activity Category B with an exterior noise abatement level of 67 dBA.

NSA 2

NSA 2 is located in the northwest quadrant of the Central Interchange. NSA 2 begins at Hedden Avenue and extends east to Wilson Street, an approximate distance of 900 feet. NSA 2 is comprised mostly of residential dwelling units with a couple of commercial buildings on the north side of Johnston Street. The noise sensitive receptors fall into Activity Category B having an exterior noise abatement level of 67 dBA.

NSA 3

NSA 3 is located in the northeast quadrant of the Central Interchange and fronts the sweeping exit ramp from WB I-76 to NB SR 8. NSA 3 begins at Inman Street and follows Lumiere Street north and west to Jonhstone Street, an approximate distance of 1,600 feet. NSA 3 is comprised of residential dwelling units having an Activity Category B exterior noise abatement level of 67 dBA.

NSA 4

NSA 4 is located on the east leg of the Central Interchange on the north side of I-76. NSA 4 begins at Inman Street and extends east an approximate distance of 1,700 feet. NSA 4 is comprised of the athletic fields of Hoban High School. A pedestrian overpass road connects the athletic fields to the high school and is situated near the center of the NSA. NSA 4 falls into Activity Category C having an exterior noise abatement level of 67 dBA.

NSA 5

NSA 5 is located on the west leg of the Central Interchange on the south side of I-76. NSA 5 begins at the pedestrian crossover bridge at Sumner Street and extends east, past Brown Street, along the SB exit ramp to SB I-77 to East Crosier Street. NSA 5 is comprised mostly of residential dwelling units, a church and several commercial buildings located on the north and south sides of South Street and in the SE quadrant of the interchange. The residential dwelling units fall into Activity Category B with an exterior noise abatement level of 67 dBA. The Church, Christ is the Answer Ministries located on the north side of South Street, has no areas for frequent outdoor use and falls into Activity Category D having an interior noise abatement level of 52 dBA.

NSA 6

NSA 6 is located in the southeast quadrant of the Central Interchange and fronts the sweeping exit ramp from NB I-77 to EB I-76. NSA 6 begins at Lafollette Street and follows the ramp north and east across Inman Street to a point west of the Hoban High School pedestrian bridge, an approximate distance of 2,400 feet. NSA 6 is comprised of residential dwelling units having an Activity Category B exterior noise abatement level of 67 dBA.

NSA 7

NSA 7 is located on the east leg of the Central Interchange on the south side of I-76. NSA 4 is comprised of Hoban High School and a block of tennis courts east of the high school. The high school has no areas for frequent outdoor use on the side of the building facing I-76. The high school falls into Activity Category D having an interior noise abatement level of 52 dBA. The tennis courts, located directly east of the high school, fall into Activity Category C having an exterior noise abatement level of 67 dBA.

NSA 8

NSA 8 is located on the south leg of the Central Interchange on the west side of I-77. NSA 8 begins just north of East Crosier Street and extends south to Lovers Lane, an approximate distance of 2,300 feet. NSA 8 is comprised entirely of residential dwelling units and falls into Activity Category B having an exterior noise abatement level of 67 dBA.

NSA 9

NSA 9 is located on the south leg of the Central Interchange on the east side of I-77. NSA 9 begins near the vacant Goodrich Middle School property and extends south to Lovers Lane, an approximate distance of 1,300 feet. NSA 9 is comprised entirely of residential dwelling units and falls into Activity Category B having an exterior noise abatement level of 67 dBA.

Traffic

Traffic volumes used in this analysis were provided by the ODOT Office of Statewide Planning & Research in an interoffice communication (IOC) dated September 7, 2016. The traffic data includes peak hour volumes and percentage of truck traffic for the Existing Year 2020 and Design Year 2040. Evening (PM) Peak hour traffic volume was used in the analysis to represent worst case conditions. Three (3) vehicle types were used in the noise model, automobiles, heavy trucks and medium trucks. Truck traffic volume was broken down to 70% heavy truck and 30% medium truck traffic. The same percentages were used in the existing year and design year noise models.

Traffic data used in the analysis are shown in the following table and the IOC detailing the traffic data is provided in Appendix B.

Roadway Section	Direction	Existing Year 2020	Design Year 2040	% Trucks Existing Year	% Trucks Design Year
I-76 west of the Central Interchange	EB Peak Hour	5,430	6,030	9	12
	WB Peak Hour	4,320	4,510	9	12
I-76 east of the Central Interchange	EB Peak Hour	4,560	5,190	12	12
	WB Peak Hour	4,200	4,490	10	19
SR 8 north of the Central Interchange	SB Peak Hour	6,730	7,460	8	6
	NB Peak Hour	5,190	5,690	5	6
I-77 south of the Central Interchange	SB Peak Hour	7,730	8,600	8	5
	NB Peak Hour	5,710	6,280	4	8
Ramp EB I-76 to NB SR 8	EB to NB	1,090	1,120	4	8

Roadway Section	Direction	Existing Year 2020	Design Year 2040	% Trucks Existing Year	% Trucks Design Year
Ramp EB I-76 to SB I-77	EB to SB	1,920	1,980	9	3
Ramp WB I-76 to NB SR 8	WB to NB	920	930	3	6
Ramp WB I-76 to SB I-77	WB to SB	1,280	1,390	10	5

Ambient Noise Measurements

A field visit was conducted in the project area to measure the existing noise environment at representative locations. Noise measurements were performed in accordance with the FHWA Report Number FHWA-PD-96-046, *Measurement of Highway Related Noise* (May, 1996). Measurements were taken at representative receptor sites for 15 minute intervals. The noise meter was tripod mounted with the microphone at a distance of approximately 4.9 feet above ground level and angled toward the dominate noise source. A foam windscreen was used for all noise measurements. Noise measurements were recorded with a Quest 2900 Type 2 Data Logging SLM. Ambient noise levels recorded at representative receptor sites are listed in the following table.

Location	Location Description	Measured Noise Level Leq
Location 1	NSA 2 - Front yard of home on Johnston Street facing I-76 WB	65.5
Location 2	NSA 3 - Front yard of home on Lumiere Street facing SR 8 NB	66.8
Location 3	NSA 3 - Side yard of home on Lumiere Street facing I-76 WB	70.2
Location 4	NSA 5 - Front yard of home on South St. facing I-76 EB.	67.1
Location 5	NSA 6 - Front yard of home on Hammel Street facing the ramp from I-77 NB to I-76 EB.	66.4
Location 6	NSA 8 - Front yard of home at the corner of Burkhardt/Kipling facing I-77 SB.	67.4
Location 7	NSA 9 - Side yard of home at corner of Coventry/Kipling facing NB I-77.	68.8

The noise meter continuously measures and records the ambient noise level and integrates these values into a L_{eq} for the duration of the reading.

Noise Model Validation

During each of the ambient noise measurement periods described previously, simultaneous data including traffic volume, speed, and vehicle composition were collected. During most of the measurement periods, traffic could be observed on both sides of I-76 and I-77. These traffic volumes were input into TNM V2.5 to validate the measured noise level with the modeled noise level at each representative site. The following table presents the TNM predicted noise levels based on the observed traffic data. The table also presents a comparison of the measured levels to the modeled levels at each representative receptor site.

Table 4. Comparison of Measured and Modeled Noise Levels			
Number	Measured Noise Level (L_{eq} in dBA)	Modeled Noise Level (L_{eq} in dBA)	Comparison of Modeled Level to Measured Level (dB)
Location 1	67.3	65.5	1.8
Location 2	68.8	66.8	2.0
Location 3	72.9	70.2	2.7
Location 4	67.7	67.1	0.6
Location 5	68.1	66.4	1.7
Location 6	69.6	67.4	2.2
Location 7	69.5	68.8	0.7

As shown by the comparison, TNM's ability to accurately predict traffic noise levels was confirmed. All of the ambient measurement sites are within ± 3 dB of the TNM predicted noise levels. In general, field measured noise levels will be higher than the modeled noise levels at the same receptor point because the modeled noise level is based solely on noise levels from traffic. It does not take into account ambient noise such as birds, light gusts of wind and other non-traffic noise sources. The TNM Sound Level Results as well as mapping indicating the location of field measurement sites are provided in Appendix C.

Section 3.0

NOISE MODELING

Existing Condition 2020

The most dominant noise source within the project area is traffic noise generated by traffic on I-76 and I-77. The FHWA Transportation Noise Model (TNM) Version 2.5 was used to determine the existing noise levels at sensitive receptor sites. Traffic noise levels for Existing Year 2020 condition was predicted for the PM peak hour condition using 2020 traffic volume and the existing roadway alignment.

Design Year 2040 Build Alternative

The Build Alternative is described as construction of the proposed project. TNM was used to predict future year noise levels for the Build 2040 alternative as if the project were constructed as in the project description. Noise levels for the Build alternative were modeled using the proposed roadway alignment and projected Design Year 2040 traffic volumes that are provided in Appendix B.

Section 4.0

IMPACT ASSESSMENT

To evaluate the significance of the changes in the predicted noise levels, FHWA has established NAC, as shown in Table 1, for various categories of land use and represents the upper limits of acceptable traffic generated noise emissions. According to FHWA guidance, a project may have a traffic noise impact if either or both of the following conditions exist:

- The predicted noise levels associated with the Build Alternative approach, meet, or exceed the applicable NAC. According to ODOT, noise levels "approach" the NAC when they are within 1 dB of the applicable NAC.
- A substantial increase occurs in predicted noise levels between the future year Build Alternative and the existing year noise level, even though the applicable NAC may not be approached or exceeded. A substantial increase is considered to be a 10 dB or greater increase, representing a doubling or more of the perceived existing noise level.

Almost all of the sensitive noise receptor sites in this analysis fall under the NAC Activity Category B and Activity Category C, both categories having an applicable NAC of 67 dBA [$L_{eq(h)}$]. Therefore, under Activity Category B and C, a predicted noise level of 66 dBA would approach the NAC and is considered a noise impact. The church in NSA 5 and Hoban High School in NSA 7 have no areas where frequent outdoor use would occur. Indoor noise levels were predicted for these two sites and would fall under NAC Activity Category D having an applicable Indoor NAC of 52 dBA [$L_{eq(h)}$].

Impact Assessment Summary

The evening PM peak hour was used to represent the worst-case traffic condition and is used for impact assessment for all of the NSAs in this analysis. In addition, the TNM-generated peak hour noise levels for the existing condition provides a baseline for a comparison to TNM-generated peak hour noise levels for the design year condition to determine the extent of noise impact, if any. Impact assessment for each of the nine NSAs is summarized in Appendix D and are described as follows:

NSA 1

A total of 48 noise sensitive receptors representing 96 individual dwelling units were analyzed for potential noise impact in NSA 1. As shown in Table 5, the predicted Existing Year 2020 noise levels range between 59 and 77 dBA. The predicted Design Year 2040 noise levels range from 60 to 77 dBA. The greatest increase in noise level from the existing year to the design year condition was predicted to be 1.1 dB at receptor site 1-41. None of the receptor sites is predicted to experience a substantial increase (>10dB increase) in noise level under the design year condition. However, 46 dwelling units were predicted to experience a noise level that would approach, meet, or exceed the Category B NAC. With a Design Year 2040 noise impact predicted for NSA 1, noise abatement measures were considered for this NSA. The Impact Assessment Summary for NSA 1 is provided in Appendix D. TNM output data sheets for the Existing Year 2020 and the Design Year 2040 model runs are provided in Appendix G. The existing year and design year noise levels for NSA 1 are summarized in the following table:

**Table 5 - NSA 1
North Side of I-76 Sumner Street to Spicer Street**

Receptor		2020 Existing Year	2040 Build		Impact Criteria			
Site	Dwelling Units	Calculated LAeq1h	Calculated LAeq1h	Increase Build over Existing	NAC Activity Category	Substantial Increase	Sound Level Criterion	Impact
		dBA	dBA	dB		dB	dBA	
1-1	1	72.1	72.3	0.1	B	10	66	Yes
1-2	1	76.6	76.9	0.3	B	10	66	Yes
1-3	2	68.6	69.0	0.4	B	10	66	Yes
1-4	1	71.5	71.6	0.1	B	10	66	Yes
1-5	2	66.2	66.7	0.5	B	10	66	Yes
1-6	2	66.8	66.8	0.0	B	10	66	Yes
1-7	2	59.7	59.6	1.0	B	10	66	No
1-8	3	63.8	63.1	0.7	B	10	66	No
1-9	2	59.8	59.3	0.5	B	10	66	No
1-10	1	74.2	74.1	0.1	B	10	66	Yes
1-11	1	75.0	75.3	0.3	B	10	66	Yes
1-12	1	70.7	70.6	0.1	B	10	66	Yes
1-13	4	70.9	70.8	0.1	B	10	66	Yes
1-14	2	71.4	71.7	0.3	B	10	66	Yes
1-15	2	67.4	67.9	0.5	B	10	66	Yes
1-16	2	65.0	65.6	0.6	B	10	66	Yes
1-17	2	63.9	64.2	0.3	B	10	66	No
1-18	2	65.2	65.7	0.5	B	10	66	Yes
1-19	1	64.4	64.8	0.4	B	10	66	No
1-20	2	64.1	64.4	0.3	B	10	66	No
1-21	2	64.4	64.8	0.4	B	10	66	No
1-22	2	65.2	65.5	0.3	B	10	66	Yes
1-23	2	57.7	57.7	0.0	B	10	66	No
1-24	3	60.5	60.7	0.2	B	10	66	No
1-25	4	61.1	61.2	0.1	B	10	66	No
1-26	2	59.2	59.7	0.5	B	10	66	No
1-27	2	59.1	59.4	0.3	B	10	66	No
1-28	2	73.7	73.9	0.2	B	10	66	Yes
1-29	2	74.6	75.1	0.5	B	10	66	Yes
1-30	3	74.4	75.0	0.5	B	10	66	Yes
1-31	2	70.5	70.1	0.3	B	10	66	Yes
1-32	2	69.9	70.6	0.8	B	10	66	Yes
1-33	2	65.4	67.2	0.1	B	10	66	Yes
1-34	2	68.1	68.8	0.7	B	10	66	Yes
1-35	2	64.8	66.4	0.9	B	10	66	Yes
1-36	3	67.0	67.7	0.7	B	10	66	Yes
1-37	2	67.2	67.9	0.7	B	10	66	Yes
1-38	2	66.8	67.5	0.7	B	10	66	Yes

Table 5 - NSA 1 North Side of I-76 Sumner Street to Spicer Street								
Receptor		2020 Existing Year	2040 Build		Impact Criteria			
Site	Dwelling Units	Calculated LAeq1h	Calculated LAeq1h	Increase Build over Existing	NAC Activity Category	Substantial Increase	Sound Level Criterion	Impact
		dBA	dBA	dB		dB	dBA	
1-39	2	62.7	62.7	0.0	B	10	66	No
1-40	3	61.7	62.4	0.7	B	10	66	No
1-41	1	62.2	63.3	1.1	B	10	66	No
1-42	2	65.6	66.3	0.6	B	10	66	No
1-43	3	64.3	65.2	0.8	B	10	66	No
1-44	2	63.6	64.1	0.5	B	10	66	No
1-45	1	65.1	64.8	0.3	B	10	66	No
1-46	1	63.8	63.8	0.0	B	10	66	No
1-47	2	62.4	62.8	0.3	B	10	66	No
1-48	3	62.5	62.7	0.2	B	10	66	No
Noise Impacts								46

Impacts in **bold type**

NSA 2

A total of 22 noise sensitive receptors representing 22 individual dwelling units were analyzed for potential noise impact at NSA 2. As shown in Table 6, the predicted Existing Year 2020 noise levels range between 63 and 72 dBA. The predicted Design Year 2040 noise levels also range from 63 to 72 dBA. The greatest increase in noise level from the existing year to the design year condition was predicted to be 1.6 dB at receptor site 2-20. None of the receptor sites is predicted to experience a substantial increase (>10dB increase) in noise level in the design year condition. However, 16 dwelling units were predicted to experience a noise level that would exceed the Category B NAC. With a Design Year 2040 noise impact predicted for NSA 2, noise abatement measures were considered for this NSA. The Impact Assessment Summary for NSA 1 is provided in Appendix D. TNM output data sheets for the Existing Year 2020 and the Design Year 2040 model runs are provided in Appendix G. The existing year and design year noise levels for NSA 2 are summarized in the following table:

Table 6 - NSA 2 Northwest Quadrant of the Central Interchange								
Receptor		2020 Existing Year	2040 Build		Impact Criteria			
Site	Dwelling Units	Calculated LAeq1h	Calculated LAeq1h	Increase Build over Existing	NAC Activity Category	Substantial Increase	Sound Level Criterion	Impact
		dBA	dBA	dB		dB	dBA	
2-1	1	72.1	72.3	0.1	B	10	66	Yes
2-2	1	76.6	76.9	0.5	B	10	66	Yes
2-3	2	68.6	69.0	0.3	B	10	66	Yes

Table 6 - NSA 2 Northwest Quadrant of the Central Interchange								
Receptor		2020 Existing Year	2040 Build		Impact Criteria			
Site	Dwelling Units	Calculated LAeq1h	Calculated LAeq1h	Increase Build over Existing	NAC Activity Category	Substantial Increase	Sound Level Criterion	Impact
		dBA	dBA	dB		dB	dBA	
2-4	1	71.5	71.6	0.7	B	10	66	Yes
2-5	1	67.4	67.5	0.8	B	10	66	Yes
2-6	1	66.8	67.3	0.4	B	10	66	Yes
2-7	1	66.6	66.9	0.4	B	10	66	Yes
2-8	1	66.7	67.4	0.3	B	10	66	Yes
2-9	1	67.6	68.4	0.1	B	10	66	Yes
2-10	1	70.6	71.0	0.1	B	10	66	Yes
2-11	1	71.8	72.2	0.3	B	10	66	Yes
2-12	1	66.0	66.5	0.5	B	10	66	Yes
2-13	1	65.7	66.5	0.6	B	10	66	Yes
2-14	1	65.6	66.2	0.3	B	10	66	Yes
2-15	1	65.5	66.2	0.5	B	10	66	Yes
2-16	1	64.6	65.7	0.4	B	10	66	Yes
2-17	1	65.2	65.8	0.3	B	10	66	Yes
2-18	1	63.7	64.5	0.4	B	10	66	No
2-19	1	63.9	64.4	0.3	B	10	66	No
2-20	1	64.0	64.6	1.6	B	10	66	No
2-21	1	62.8	63.5	1.1	B	10	66	No
2-22	1	62.5	63.2	1.3	B	10	66	No
Noise Impacts								17

Impacts in **bold** type

NSA 3

A total of 51 noise sensitive receptors representing 52 individual dwelling units were analyzed for potential noise impact in NSA 3. As shown in Table 7, the predicted Existing Year 2020 noise levels range between 62 and 73 dBA. The predicted Design Year 2040 noise levels range from 63 to 69 dBA. Some noise levels decreased in the design year because the WB I-76 ramp to NB SR 8 will be shifted west and away from some dwelling units. The greatest increase in noise level from the existing year to the design year condition was predicted to be 2.8 dB at receptor sites 3-36 and 3-38. None of the receptor sites is predicted to experience a substantial increase (>10dB increase) in noise level in the design year condition. However, 30 dwelling units were predicted to experience a noise level that would exceed the Category B NAC. With a Design Year 2040 noise impact predicted for NSA 3, noise abatement measures were considered for this NSA. The Impact Assessment Summary for NSA 3 is provided in Appendix D. TNM output data sheets for the Existing Year 2020 and the Design Year 2040 model runs for NSA 3 are provided in Appendix G. The existing year and design year noise levels for NSA 3 are summarized in the following table:

Table 7 - NSA 3 Northeast Quadrant of the Central Interchange
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Receptor		2020 Existing Year	2040 Build		Impact Criteria			
Site	Dwelling Units	Calculated LAeq1h	Calculated LAeq1h	Increase Build over Existing	NAC Activity Category	Substantial Increase	Sound Level Criterion	Impact
		dBA	dBA	dB		dB	dBA	
3-1	1	65.3	66.9	1.8	B	10	66	Yes
3-2	1	65.3	66.9	1.8	B	10	66	Yes
3-3	1	65.3	66.9	1.8	D	10	52	Yes
3-4	1	65.8	67.5	1.8	B	10	66	Yes
3-5	1	66.8	68.5	1.7	B	10	66	Yes
3-6	1	67.4	69.0	1.5	B	10	66	Yes
3-7	1	67.5	68.8	1.1	B	10	66	Yes
3-8	1	65.6	65.9	0.3	B	10	66	Yes
3-9	1	65.8	65.3	0.5	B	10	66	No
3-10	1	65.3	65.6	0.3	B	10	66	Yes
3-11	1	62.3	64.0	1.8	B	10	66	No
3-12	1	61.8	63.7	2.1	B	10	66	No
3-13	1	62.0	64.0	2.1	B	10	66	No
3-14	1	61.9	63.8	2.1	B	10	66	No
3-15	2	61.4	63.1	2.0	B	10	66	No
3-16	1	61.3	63.0	2.0	B	10	66	No
3-17	1	61.6	63.2	1.9	B	10	66	No
3-18	1	61.6	62.8	1.6	B	10	66	No
3-19	1	62.4	63.6	1.6	B	10	66	No
3-20	1	62.8	63.8	1.4	B	10	66	No
3-21	1	63.3	64.4	1.5	B	10	66	No
3-22	1	65.6	64.4	1.2	B	10	66	No
3-23	1	65.0	65.8	0.9	B	10	66	Yes
3-24	1	64.8	65.8	1.0	B	10	66	Yes
3-25	1	63.7	64.4	0.7	B	10	66	No
3-26	1	63.5	64.6	1.2	B	10	66	No
3-27	1	66.9	66.3	0.6	B	10	66	Yes
3-28	1	72.9	68.3	1.6	B	10	66	Yes
3-29	1	65.9	66.9	1.0	B	10	66	Yes
3-30	1	65.0	66.4	1.4	B	10	66	Yes
3-31	1	65.0	66.0	1.1	B	10	66	Yes
3-32	1	64.5	65.6	1.1	B	10	66	Yes
3-33	1	69.0	69.0	0.0	B	10	66	Yes
3-34	1	67.8	68.1	0.3	B	10	66	Yes
3-35	1	64.8	67.3	2.5	B	10	66	Yes
3-36	1	64.3	67.1	2.8	B	10	66	Yes
3-37	1	64.0	66.7	2.7	B	10	66	Yes
3-38	1	63.4	66.2	2.8	B	10	66	Yes
3-39	1	69.2	69.3	0.1	B	10	66	Yes
3-40	1	67.6	68.4	0.9	B	10	66	Yes
3-41	1	66.6	67.5	0.9	B	10	66	Yes
3-42	1	65.7	66.7	1.0	B	10	66	Yes
3-43	1	65.4	66.2	0.8	B	10	66	Yes
3-44	1	67.3	67.5	0.3	B	10	66	Yes

Table 7 - NSA 3 Northeast Quadrant of the Central Interchange								
Receptor		2020 Existing Year	2040 Build		Impact Criteria			
Site	Dwelling Units	Calculated LAeq1h	Calculated LAeq1h	Increase Build over Existing	NAC Activity Category	Substantial Increase	Sound Level Criterion	Impact
		dBA	dBA	dB		dB	dBA	
3-45	1	64.0	65.1	1.1	B	10	66	No
3-46	1	63.1	64.2	1.1	B	10	66	No
3-47	1	65.4	65.9	0.6	B	10	66	Yes
3-48	1	64.9	65.4	0.6	B	10	66	No
3-49	1	64.1	64.7	0.6	B	10	66	No
3-50	1	65.0	65.3	0.3	B	10	66	No
3-51	1	63.8	64.2	0.4	B	10	66	No
Noise Impacts								30

Impacts in **bold** type

NSA 4

NSA 4 is located on the east leg and the north side of I-76. NSA 4 consists of the Hoban High School athletic fields. The athletic fields and high school are connected via a pedestrian bridge over I-76. A total of eight areas of frequent outdoor use were analyzed for potential noise impact.

The following formula used to calculate the equivalent receptors at the Hoban High School Athletic fields is based on a conversation held with the athletic director of Hoban High School. There are 850 students enrolled at Hoban and 85% participate in athletics. There are 26 varsity teams and a similar number of junior varsity and several grade level sports. Of the sports teams at Hoban High School, nine use the athletic fields on the north side of I-76. The sports include football, girls and boys soccer, girls and boys track and field, girls and boys lacrosse, baseball and softball. The athletic director estimated that the fields are used on almost a daily basis when school is in session and also used for about a month in the summer for sport camps. The fields are generally closed for public use. The crossover bridge and trails to the athletic fields are only used for Hoban High School activities and have gates that are locked to discourage public use. The high school discourages public use of the fields due to liability issues.

850 students x 85% participation in sports rate = 722 student athletes.

26 varsity teams ÷ 9 teams that use the athletic fields = 35% of students using the fields adjacent to I-76.

722 student athletes x 35% = **253** athletes regularly using the fields

Average number of people ÷ Residence (household size Ohio Average) = **3**

Number of hours used = **8** hours (6.5 school hours and 1.5 after school hours)

Days used per year = 180 instructional days + 30 summer sport camp days = **210** days

(253 athletes ÷ 3 residence size) x (8 hours ÷ 24 hours day) x (210 days use ÷ 365 days year)
= 84 x 0.333 x 0.58 = 16.2 or **16 equivalent receptors**.

As shown in Table 8, the predicted Existing Year 2020 noise levels range from 52 to 69 dBA. The predicted

Design Year 2040 noise levels are predicted to range from 54-75 dBA. The highest increase in noise level from the Existing Year 2020 to the Design Year 2040 was predicted to be 6.5 dB at receptor site 4-7. The receptor site is not predicted to experience a substantial increase (>10dB increase) in noise level in the design year condition. However, four of the receptor sites are predicted to experience Design Year 2040 noise levels higher than the Category C (exterior) NAC. With a Design Year 2040 noise impact predicted for NSA 4, noise abatement measures were considered for NSA 4. The Impact Assessment Summary for NSA 4 is provided in Appendix D. TNM output data sheets for the Existing Year 2020 and the Design Year 2040 model runs for NSA 4 are provided in Appendix G. A summary of the noise modeling for NSA 4 is shown in the following table.

Receptor		2020 Existing Year	2040 Build		Impact Criteria			
Site	Dwelling Units	Calculated LAeq1h	Calculated LAeq1h	Increase Build over Existing	NAC Activity Category	Substantial Increase	Sound Level Criterion	Impact
		dBA	dBA	dB		dB	dBA	
4-1	---	64.0	64.7	0.7	B	10	66	No
4-2	---	65.1	65.2	0.1	B	10	66	No
4-3	---	64.3	64.5	0.2	B	10	66	No
4-4	---	64.0	64.3	0.3	B	10	66	No
4-7	---	68.0	74.5	6.5	B	10	66	Yes
4-8	---	69.1	74.1	5.0	B	10	66	Yes
4-9	---	63.7	66.2	0.5	B	10	66	Yes
4-10	---	68.6	68.5	0.1	B	10	66	Yes
16 Equivalent receptor sites								4

Impacts in **bold** type

NSA 5

A total of 45 noise sensitive receptors representing 96 individual dwelling units were analyzed for potential noise impact in NSA 5. As shown in Table 9, the predicted Existing Year 2020 exterior noise levels range between 63 and 74 dBA. The predicted Design Year 2040 exterior noise levels range from 63 to 75 dBA. The greatest increase in noise level from the existing year to the design year condition was predicted to be 0.7 dB at several receptor sites. Receptor 5-3 is a church facility (Christ is the Answer Ministries) with no areas for frequent outdoor use. The interior of the church was modeled, as an Activity Category D, for potential noise impact. Interior noise level predictions may be computed by subtracting from the predicted exterior levels the noise reduction factors for the building in question. Noise reduction factors were obtained from Table 7 in the FHWA *Highway Traffic Noise Analysis and Abatement Policy and Guidance* manual. The church is a brick structure having single glazed windows. Noise reduction due to the exterior structure of the building is 25 dB. Interior noise level for the existing year 2020 is 49.0 dBA and 49.3 dBA for the design year 2040. None of the receptor sites is predicted to experience a substantial increase (>10dB increase) in noise level in the design year condition. However, 60 dwelling units were predicted to experience a noise level that would exceed the Category B NAC. With a Design Year 2040 noise impact predicted for NSA 5, noise abatement measures were considered for this NSA. The Impact Assessment Summary for NSA 5 is provided in Appendix D. TNM output data sheets for the Existing Year 2020 and

the Design Year 2040 model runs for NSA 5 are provided in Appendix G. The existing year and design year noise levels for NSA 5 are summarized in the following table:

Table 9 - NSA 5								
North Side of I-76 Sumner Street to Spicer Street								
Receptor		2020 Existing Year	2040 Build		Impact Criteria			
Site	Dwelling Units	Calculated LAeq1h	Calculated LAeq1h	Increase Build over Existing	NAC Activity Category	Substantial Increase	Sound Level Criterion	Impact
		dBA	dBA	dB		dB	dBA	
5-1	1	73.4	73.6	0.2	B	10	66	Yes
5-2	1	74.0	74.0	0.0	B	10	66	Yes
5-3 Church ^B exterior/interior	1	74.0/49.0	74.3/49.3	0.3	D	10	51	No
5-4	2	71.8	72.8	1.0	B	10	66	Yes
5-5	2	73.9	75.0	1.1	B	10	66	Yes
5-6	2	73.5	73.4	0.1	B	10	66	Yes
5-7	2	72.6	72.2	0.4	B	10	66	Yes
5-8	1	71.4	71.8	0.4	B	10	66	Yes
5-9	1	67.3	67.5	0.2	B	10	66	Yes
5-10	3	67.9	68.2	0.3	B	10	66	Yes
5-11	3	68.1	68.2	0.1	B	10	66	Yes
5-12	4	67.2	67.6	0.4	B	10	66	Yes
5-13	2	67.2	67.5	0.3	B	10	66	Yes
5-14	2	69.1	69.8	0.7	B	10	66	Yes
5-15	2	69.0	69.7	0.7	B	10	66	Yes
5-16	2	63.7	63.8	0.1	B	10	66	No
5-17	2	64.6	64.8	0.2	B	10	66	No
5-18	3	65.3	65.4	0.1	B	10	66	No
5-19	2	66.4	66.6	0.2	B	10	66	Yes
5-20	2	65.7	65.3	0.4	B	10	66	No
5-21	2	65.1	65.1	0.0	B	10	66	No
5-22	3	65.0	65.6	0.6	B	10	66	Yes
5-23	1	66.1	66.0	0.1	B	10	66	Yes
5-24	1	68.3	68.2	0.1	B	10	66	Yes
5-25	1	67.4	67.3	0.1	B	10	66	Yes
5-26	2	65.9	66.4	0.5	B	10	66	Yes
5-27	1	68.4	68.7	0.3	B	10	66	Yes
5-28	2	66.9	67.4	0.5	B	10	66	Yes
5-29	1	62.7	62.9	0.2	B	10	66	No
5-30	2	62.9	63.0	0.1	B	10	66	No
5-31	1	64.6	64.9	0.3	B	10	66	No
5-32	2	64.2	64.5	0.3	B	10	66	No
5-33	3	63.3	63.6	0.3	B	10	66	No
5-34	3	63.7	63.8	0.1	B	10	66	No
5-35	2	64.1	64.1	0.0	B	10	66	No
5-36	2	63.7	63.9	0.2	B	10	66	No
5-37	1	64.6	64.7	0.1	B	10	66	No

Table 9 - NSA 5								
North Side of I-76 Sumner Street to Spicer Street								
Receptor		2020 Existing Year	2040 Build		Impact Criteria			
Site	Dwelling Units	Calculated LAeq1h	Calculated LAeq1h	Increase Build over Existing	NAC Activity Category	Substantial Increase	Sound Level Criterion	Impact
		dBA	dBA	dB		dB	dBA	
5-38	2	63.7	63.7	0.0	B	10	66	No
5-39	1	64.6	64.6	0.0	B	10	66	No
5-40	2	63.7	63.0	0.7	B	10	66	No
5-42	1	64.9	64.9	0.0	B	10	66	No
5-43	2	65.3	65.7	0.4	B	10	66	Yes
5-44	1	64.1	64.3	0.2	B	10	66	No
5-45	1	66.8	67.1	0.3	B	10	66	Yes
Impacted Receptors								60
Interior noise level predictions may be computed by subtracting from the predicted exterior levels the noise reduction factors for the building in question. Noise reduction factors were obtained from Table 7 in the FHWA <i>Highway Traffic Noise Analysis and Abatement Policy and Guidance</i> manual.								
A Ordinary light frame structure = 20 dB reduction B Masonry structure with single glaze windows = 25 dB reduction								

Impacts in **bold** type

NSA 6

A total of 53 noise sensitive receptors representing 108 individual dwelling units were analyzed for potential noise impact in NSA 6. As shown in Table 10, the predicted Existing Year 2020 noise levels range between 61 and 71 dBA. The predicted Design Year 2040 noise levels range from 61 to 73 dBA. The greatest increase in noise level from the existing year to the design year condition was predicted to be 0.7 dB at several receptor sites. None of the receptor sites are predicted to experience a substantial increase (>10dB increase) in noise level in the design year condition. However, 49 dwelling units were predicted to experience a noise level that would exceed the Category B NAC. With a Design Year 2040 noise impact predicted for NSA 6, noise abatement measures were considered for this NSA. The Impact Assessment Summary for NSA 6 is provided in Appendix D. TNM output data sheets for the Existing Year 2020 and the Design Year 2040 model runs for NSA 6 are provided in Appendix G. The existing year and design year noise levels for NSA 6 are summarized in the following table:

Table 10 - NSA 6								
Southeast Quadrant of the Central Interchange								
Receptor		2020 Existing Year	2040 Build		Impact Criteria			
Site	Dwelling Units	Calculated LAeq1h	Calculated LAeq1h	Increase Build over Existing	NAC Activity Category	Substantial Increase	Sound Level Criterion	Impact
		dBA	dBA	dB		dB	dBA	
6-1	2	65.8	68.2	2.4	B	10	66	Yes
6-2	2	62.9	64.7	1.8	B	10	66	No
6-3	2	61.6	63.1	1.5	D	10	52	No

**Table 10 - NSA 6
Southeast Quadrant of the Central Interchange**

Receptor		2020 Existing Year	2040 Build		Impact Criteria			
Site	Dwelling Units	Calculated LAeq1h	Calculated LAeq1h	Increase Build over Existing	NAC Activity Category	Substantial Increase	Sound Level Criterion	Impact
		dBA	dBA	dB		dB	dBA	
6-4	2	63.5	65.3	1.8	B	10	66	No
6-5	2	62.0	63.5	1.5	B	10	66	No
6-6	2	71.4	73.0	1.6	B	10	66	Yes
6-7	3	64.0	65.6	1.6	B	10	66	Yes
6-8	2	67.8	69.7	1.9	B	10	66	Yes
6-9	2	63.5	65.1	1.6	B	10	66	No
6-10	1	69.2	71.4	2.2	B	10	66	Yes
6-11	2	66.4	67.9	1.5	B	10	66	Yes
6-12	2	61.1	62.8	1.7	B	10	66	No
6-13	2	64.3	66.0	1.7	B	10	66	Yes
6-14	2	67.0	68.4	1.4	B	10	66	Yes
6-15	2	65.8	67.4	1.6	B	10	66	Yes
6-16	3	63.5	65.4	1.9	B	10	66	No
6-17	1	61.7	63.6	1.9	B	10	66	No
6-18	1	68.0	70.4	2.4	B	10	66	Yes
6-19	2	65.7	67.6	1.9	B	10	66	Yes
6-20	2	63.8	65.6	1.8	B	10	66	Yes
6-21	3	62.2	63.9	1.7	B	10	66	No
6-22	2	65.9	67.6	1.7	B	10	66	Yes
6-23	3	64.9	66.3	1.4	B	10	66	Yes
6-24	1	63.3	64.1	0.8	B	10	66	No
6-25	2	64.8	65.9	1.1	B	10	66	Yes
6-26	2	63.8	64.5	0.7	B	10	66	No
6-27	2	67.2	68.3	1.1	B	10	66	Yes
6-28	3	67.1	68.3	1.2	B	10	66	Yes
6-29	3	69.4	70.2	0.8	B	10	66	Yes
6-30	1	68.9	70.2	1.3	B	10	66	Yes
6-31	3	67.7	68.9	1.2	B	10	66	Yes
6-32	2	67.5	68.3	0.8	B	10	66	Yes
6-33	1	67.8	69.2	1.4	B	10	66	Yes
6-34	3	64.5	66.3	1.8	B	10	66	Yes
6-35	2	64.8	65.7	0.9	B	10	66	Yes
6-36	2	65.2	65.9	0.7	B	10	66	Yes
6-37	2	66.4	67.7	1.3	B	10	66	Yes
6-38	2	63.2	63.7	0.5	B	10	66	No
6-39	3	66.0	66.8	0.8	B	10	66	Yes
6-40	1	65.5	66.3	0.8	B	10	66	Yes
6-41	2	65.3	66.5	1.2	B	10	66	Yes
6-42	2	63.2	63.5	0.3	B	10	66	No
6-43	2	62.2	62.2	0.0	B	10	66	No
6-44	2	61.0	61.4	0.4	B	10	66	No
6-45	4	63.3	64.6	1.3	B	10	66	No

Table 10 - NSA 6 Southeast Quadrant of the Central Interchange								
Receptor		2020 Existing Year	2040 Build		Impact Criteria			
Site	Dwelling Units	Calculated LAeq1h	Calculated LAeq1h	Increase Build over Existing	NAC Activity Category	Substantial Increase	Sound Level Criterion	Impact
		dBA	dBA	dB		dB	dBA	
6-46	1	61.9	63.1	1.2	B	10	66	No
6-47	1	63.9	65.2	1.3	B	10	66	No
6-48	3	62.3	63.5	1.2	B	10	66	No
6-49	2	60.9	62.0	1.1	B	10	66	No
6-50	1	63.6	64.5	0.9	B	10	66	No
6-51	2	63.5	64.6	1.1	B	10	66	No
6-52	2	63.7	64.3	0.6	B	10	66	No
6-53	2	62.3	63.8	1.5	B	10	66	No
Noise Impacts								49

Impacts in **bold type**

NSA 7

Noise sensitive receptors in NSA 7 consist of Hoban High School and the Hoban High School tennis courts situated just east of the high school building. The Hoban High School building pre-dates the construction of I-76. What was once the front side of the school building is now the back side of the building that faces I-76. A new entrance was built on the south side of the building which faces away from I-76. There are no areas for frequent outdoor use on the side of the school building facing I-76. An interior noise level was predicted to determine the design year noise level. Interior noise level predictions may be computed by subtracting from the predicted exterior levels the noise reduction factors for the building in question. Noise reduction factors were obtained from Table 7 in the FHWA *Highway Traffic Noise Analysis and Abatement Policy and Guidance* manual. Hoban High School is a brick masonry building. During discussion with a representative of the high school, it was found that the building is not air conditioned and building windows are often kept open during warm weather. The noise reduction due to the exterior of the structure with open windows is 10 dB. As shown in Table 11 the exterior noise level for the existing year is 52.4 dBA and 53.5 dBA for the design year 2040. Applying a noise reduction of 10 dB provides an interior noise level of 42.4 dBA for the existing year and 43.5 dBA for the design year 2040. The increase in noise level from the existing year to the design year condition was predicted to be 1.1 dB at the building interior. The high school building is not predicted to experience a substantial increase (>10dB increase) in noise level in the design year condition. The design year 2040 interior noise level of 43.5 dBA is below the Activity Category D (interior) noise level of 52 dBA. The Hoban High School structure will not experience a design year noise impact with construction of the project.

The predicted existing year 2020 noise level for the Hoban High School tennis courts is 65.1 dBA and the predicted design year 2040 noise levels is 65.2 dBA – an increase of 0.1 dB. The tennis courts are not predicted to experience a substantial increase (>10dB increase) in noise level in the design year condition. The tennis courts were not predicted to experience a noise level that would exceed the Activity Category C noise level of 67 dBA. No noise impact is predicted for NSA 7 and the evaluation of noise abatement measures need not be considered for NSA 7. The Impact Assessment Summary for NSA 7 is provided in

Appendix D. TNM output data sheets for the Existing Year 2020 and the Design Year 2040 model runs for NSA 7 are provided in Appendix G. The existing year and design year noise levels for NSA 7 are summarized in the following table:

Table 11 - NSA 7 Hoban High School Athletic Fields								
Receptor		2020 Existing Year	2040 Build		Impact Criteria			
Site	Dwelling Units	Calculated LAeq1h	Calculated LAeq1h	Increase Build over Existing	NAC Activity Category	Substantial Increase	Sound Level Criterion	Impact
		dBA	dBA	dB		dB	dBA	
High School Building ^A Exterior/Interior	---	52.4/42.4	53.5/43.5	1.1	D	10	52 interior	No
Tennis Courts	---	65.1	65.2	0.1	C	10	66	No
Noise Impacts								0
Interior noise level predictions may be computed by subtracting from the predicted exterior levels the noise reduction factors for the building in question. Noise reduction factors were obtained from Table 7 in the FHWA <i>Highway Traffic Noise Analysis and Abatement Policy and Guidance</i> manual.								
^A All building types with open windows = 10 dB reduction								

NSA 8

A total of 44 noise sensitive receptors representing 44 individual dwelling units were analyzed for potential noise impact. As shown in Table 12, the predicted Existing Year 2020 noise levels range between 61 and 70 dBA. The predicted Design Year 2040 noise levels range from 62 to 72 dBA. The greatest increase in noise level from the existing year to the design year condition was predicted to be 2.1 dB at receptor sites 8-4 and 8-6. None of the receptor sites is predicted to experience a substantial increase (>10dB increase) in noise level in the design year condition. However, 22 dwelling units were predicted to experience a noise level that would exceed the Category B NAC. With a Design Year 2040 noise impact predicted for NSA 8, noise abatement measures were considered for this NSA. The Impact Assessment Summary for NSA 8 is provided in Appendix D. TNM output data sheets for the Existing Year 2020 and the Design Year 2040 model runs for NSA 8 are provided in Appendix G. The existing year and design year noise levels for NSA 8 are summarized in the following table:

Table 12 - NSA 8 Southeast Quadrant of the Central Interchange								
Receptor		2020 Existing Year	2040 Build		Impact Criteria			
Site	Dwelling Units	Calculated LAeq1h	Calculated LAeq1h	Increase Build over Existing	NAC Activity Category	Substantial Increase	Sound Level Criterion	Impact
		dBA	dBA	dB		dB	dBA	
8-1	1	62.9	64.4	1.5	B	10	66	No

**Table 12 - NSA 8
Southeast Quadrant of the Central Interchange**

Receptor		2020 Existing Year	2040 Build		Impact Criteria			
Site	Dwelling Units	Calculated LAeq1h	Calculated LAeq1h	Increase Build over Existing	NAC Activity Category	Substantial Increase	Sound Level Criterion	Impact
		dBA	dBA	dB		dB	dBA	
8-2	1	64.6	66.1	1.5	B	10	66	Yes
8-3	1	69.0	70.6	1.6	B	10	66	Yes
8-4	1	65.3	67.4	2.1	B	10	66	Yes
8-5	1	64.4	66.0	1.6	B	10	66	Yes
8-6	1	68.1	70.2	2.1	B	10	66	Yes
8-7	1	64.5	65.8	1.3	B	10	66	Yes
8-8	1	63.2	64.6	1.4	B	10	66	No
8-9	1	67.6	69.0	1.4	B	10	66	Yes
8-10	1	63.4	64.8	1.4	B	10	66	No
8-11	1	68.5	69.5	1.0	B	10	66	Yes
8-12	1	65.3	66.1	0.8	B	10	66	Yes
8-13	1	63.2	64.1	0.9	B	10	66	No
8-14	1	69.2	70.5	1.3	B	10	66	Yes
8-15	1	64.8	65.8	1.0	B	10	66	Yes
8-16	1	69.8	71.5	1.7	B	10	66	Yes
8-17	1	67.4	69.1	1.7	B	10	66	Yes
8-18	1	65.5	67.0	1.5	B	10	66	Yes
8-19	1	70.4	72.0	1.6	B	10	66	Yes
8-20	1	68.3	69.7	1.4	B	10	66	Yes
8-21	1	65.8	67.3	1.5	B	10	66	Yes
8-22	1	66.8	68.1	1.3	B	10	66	Yes
8-23	1	65.1	67.0	1.9	B	10	66	Yes
8-24	1	69.0	70.6	1.6	B	10	66	Yes
8-25	1	68.5	69.9	1.4	B	10	66	Yes
8-26	1	66.0	67.3	1.4	B	10	66	Yes
8-27	1	68.3	69.6	1.3	B	10	66	Yes
8-28	1	65.8	67.2	1.4	B	10	66	Yes
8-29	1	63.2	64.9	1.7	B	10	66	No
8-30	1	61.9	63.3	1.4	B	10	66	No
8-31	1	61.3	62.8	1.5	B	10	66	No
8-32	1	62.3	63.1	0.8	B	10	66	No
8-33	1	62.5	63.6	1.1	B	10	66	No
8-34	1	61.0	62.0	1.0	B	10	66	No
8-35	1	63.5	64.7	1.2	B	10	66	No
8-36	1	62.0	63.3	1.3	B	10	66	No
8-37	1	63.6	65.0	1.4	B	10	66	No
8-38	1	62.0	63.5	1.5	B	10	66	No
8-39	1	63.6	65.0	1.4	B	10	66	No
8-40	1	61.0	62.7	1.7	B	10	66	No
8-41	1	64.1	65.6	1.5	B	10	66	Yes
8-42	1	61.0	62.7	1.6	B	10	66	No
8-43	1	62.8	64.2	1.4	B	10	66	No

Table 12 - NSA 8 Southeast Quadrant of the Central Interchange								
Receptor		2020 Existing Year	2040 Build		Impact Criteria			
Site	Dwelling Units	Calculated LAeq1h	Calculated LAeq1h	Increase Build over Existing	NAC Activity Category	Substantial Increase	Sound Level Criterion	Impact
		dBA	dBA	dB		dB	dBA	
8-44	1	62.8	64.0	1.2	B	10	66	No
Noise Impacts								22

Impacts in **bold** type

NSA 9

A total of 33 noise sensitive receptors representing 33 individual dwelling units were analyzed for potential noise impact in NSA 9. As shown in Table 13, the predicted Existing Year 2020 noise levels range between 61 and 74 dBA. The predicted Design Year 2040 noise levels also range from 61 to 74 dBA. The greatest increase in noise level from the existing year to the design year condition was predicted to be 1.8 dB at receptor sites 9-21 and 9-27. None of the receptor sites is predicted to experience a substantial increase (>10dB increase) in noise level in the design year condition. However, 19 dwelling units were predicted to experience a noise level that would exceed the Category B NAC. With a Design Year 2040 noise impact predicted for NSA 9, noise abatement measures were considered for this NSA. The Impact Assessment Summary for NSA 9 is provided in Appendix D. TNM output data sheets for the Existing Year 2020 and the Design Year 2040 model runs for NSA 9 are provided in Appendix G. The existing year and design year noise levels for NSA 9 are summarized in the following table:

Table 13 - NSA 9 Southeast Quadrant of the Central Interchange								
Receptor		2020 Existing Year	2040 Build		Impact Criteria			
Site	Dwelling Units	Calculated LAeq1h	Calculated LAeq1h	Increase Build over Existing	NAC Activity Category	Substantial Increase	Sound Level Criterion	Impact
		dBA	dBA	dB		dB	dBA	
9-1	1	70.7	71.6	0.9	B	10	66	Yes
9-2	1	67.3	68.5	1.2	B	10	66	Yes
9-3	1	65.8	66.5	0.7	B	10	66	Yes
9-4	1	65.8	66.8	1.0	B	10	66	Yes
9-5	1	69.6	70.5	0.9	B	10	66	Yes
9-6	1	70.8	71.6	1.3	B	10	66	Yes
9-7	1	68.5	69.3	0.8	B	10	66	Yes
9-8	1	64.0	64.7	0.9	B	10	66	No
9-9	1	73.6	74.2	0.6	B	10	66	Yes
9-10	1	68.9	69.9	1.0	B	10	66	Yes
9-11	1	67.6	68.6	1.0	B	10	66	Yes
9-12	1	65.0	66.3	1.3	B	10	66	Yes
9-13	1	67.2	68.4	1.2	B	10	66	Yes

**Table 13 - NSA 9
Southeast Quadrant of the Central Interchange**

Receptor		2020 Existing Year	2040 Build		Impact Criteria			
Site	Dwelling Units	Calculated LAeq1h	Calculated LAeq1h	Increase Build over Existing	NAC Activity Category	Substantial Increase	Sound Level Criterion	Impact
		dBA	dBA	dB		dB	dBA	
9-14	1	65.7	66.9	1.2	B	10	66	Yes
9-15	1	70.4	71.4	1.0	B	10	66	Yes
9-16	1	67.1	68.2	1.1	B	10	66	Yes
9-17	1	65.5	66.7	1.2	B	10	66	Yes
9-18	1	64.0	65.3	1.3	B	10	66	No
9-19	1	71.1	71.9	0.8	B	10	66	Yes
9-20	1	68.6	69.5	0.9	B	10	66	Yes
9-21	1	63.6	65.4	1.8	B	10	66	No
9-22	1	63.5	64.0	0.5	B	10	66	No
9-23	1	62.4	63.0	0.6	B	10	66	No
9-24	1	63.0	63.4	0.4	B	10	66	No
9-25	1	65.9	66.7	0.8	B	10	66	Yes
9-26	1	63.2	64.8	1.6	B	10	66	No
9-27	1	62.7	64.5	1.8	B	10	66	No
9-28	1	62.7	64.2	1.5	B	10	66	No
9-29	1	61.5	63.1	1.6	B	10	66	No
9-30	1	63.5	64.7	1.2	B	10	66	No
9-31	1	61.7	63.1	1.4	B	10	66	No
9-32	1	60.7	61.1	0.4	B	10	66	No
9-33	1	63.3	63.9	0.6	B	10	66	No
Noise Impacts								19

Impacts in **bold** type

Section 5.0

EVALUATION OF NOISE ABATEMENT MEASURES

In accordance with 23 CFR Part 772, noise abatement measures were evaluated for sites which were predicted to approach or exceed the applicable FHWA NAC. Abatement measures that were considered include traffic management, modifications to the vertical and horizontal roadway alignments, noise insulation, and construction of permanent noise barriers within or adjacent to the right-of-way. In order to be considered for implementation, a potential mitigation measure must be determined to be both feasible and reasonable. Feasibility includes such considerations as effectiveness of the measure in attaining specified reductions in predicted noise levels, the cost of the measure, and the number of receptors that will benefit. Reasonableness considerations can include overall environmental effects, community desirability, the degree that future Build noise levels exceed existing noise levels, and the degree that future Build levels exceed No Build levels.

Traffic management measures: Traffic management measures, which can include restrictions on access to specific motor vehicle types, travel speed, traffic volumes, and/or time of operation, are sometimes used as noise abatement measures. A reduction in speed limit, while possibly generating some beneficial effects on noise level reduction, would affect the ability of the roadway to accommodate anticipated traffic volumes and reduce the capacity of the proposed facility. Limiting truck traffic and/or time of truck traffic operation is not a feasible option to reduce noise impacts due to the lack of nearby routes capable of handling the existing capacity. Limiting truck traffic may further result in economic impact that time use limitations may have on commercial traffic and businesses both within and beyond the project locale. Traffic management measures would not be feasible noise abatement measure; therefore, it is not considered as an option for this project.

Alteration of horizontal and vertical alignments: Alignment modifications generally involve orienting and/or siting the roadway a sufficient distance from noise sensitive areas to minimize noise impact. The horizontal and vertical alignment of the proposed roadway improvement is generally dictated by the existing I-76 and I-77 alignment and elevation. Vertical alignment is further dictated by the existing roadway elevations at ramp connection points, as well as bridge overpasses and underpasses along the existing alignment. Altering the proposed vertical alignment of the I-76 ramps N and R to reduce traffic noise impacts would result in an additional project cost through re-aligning the entire Central Interchange. Altering the horizontal alignment in a populated area would result in additional project cost due to acquisition of new permanent right-of-way, economic and social impact due to likely numerous residential and commercial relocations, and potential impacts on other public or institutional properties such as parks, churches, hospitals, libraries and schools. Furthermore, shifting the horizontal alignment away from sensitive receptor sites to reduce noise impacts will only shift the impacts on other sensitive receptor sites. Vertical and/or horizontal alignment modifications to the proposed alignment are were considered and turned out not to be feasible or reasonable noise abatement measures.

Acquisition of real property or interests therein to serve as a buffer zone: Buffer zones are undeveloped, open spaces which border a highway and are created when a highway agency purchases land or development rights, in addition to the normal right-of-way, so that future dwellings cannot be constructed next to the highway. Following ODOT guidelines, the amount of public funds considered reasonable for noise abatement purposes is \$35,000 per benefited noise sensitive receptor. A property acquisition program to provide a noise

buffer zone adjacent to the existing interstate is not a reasonable noise abatement measure because the land and numerous impacted residential properties adjacent to the project corridor are likely to be of a considerably higher value. Creating a buffer zone is not considered to be a reasonable or feasible abatement measure for this project.

Noise insulation of public use or nonprofit institutional structures: This mitigation measure applies only to public use structures. There are a few public use structures in the project area including Hoban High School which is not impacted by noise due to the project. Noise insulation is not considered for the residential structures or section 4(f) resource impacted by the proposed project.

Noise Barrier Construction: Noise barriers are generally the abatement measure most often associated with noise abatement on highway lane addition projects. Noise barriers reduce noise levels by blocking the sound path between the noise source and noise sensitive receptors. To be effective, noise barriers must be long, continuous, and sufficiently high to break the line of sight from the highway to the receptor. When designing a noise barrier wall, every attempt should be made to obtain a substantial noise reduction of at least 7 dB at front row receptors wherever possible. Noise barriers are generally designed to provide a minimum reduction of 4.5 dB for receptor sites located closest to the roadway. Noise levels must be reduced by a minimum of 4.5 dB at any sensitive receptor site for that site to be considered a benefited receptor. The construction of a noise barrier is considered a feasible mitigation measure if 40% of the impacted dwelling units receive at least a 4.5 dB noise reduction. The construction of a noise barrier is considered a reasonable mitigation measure if the construction cost is less than \$35,000 per benefited receptor. The cost per square foot of noise barrier wall construction, provided by ODOT is \$25. Reasonableness also includes the desires of the affected property owners to have a noise barrier constructed adjacent to their property.

Noise barrier design was facilitated through the use of TNM Version 2.5. TNM is an interactive computer program with the fundamental purpose of enabling the designer to develop an optimum noise barrier design, one that provides the desired noise reduction at the least cost. Site specific variables used in the computer model include barrier length, the geometry of the roadway to the receptor, barrier height, barrier design material (concrete), and the number of dwelling units benefited by the barrier. Based on the height and length of the modeled barrier, TNM calculates noise barrier effectiveness (noise reduction) and cost. The model can quickly change barrier heights to improve (optimize) the cost efficiency of the barrier system. The effectiveness of a barrier relates to the reduction in noise level the barrier provides and the number of people benefited by the barrier system.

The following subsections present a summary of the noise barrier wall analyses performed for the project area. TNM spreadsheets detailing the level of noise reduction at each receptor site and a description of the evaluated noise barriers and costs are provided Appendix D.

Barrier Wall Analysis

A noise barrier analysis was performed for the homes in the project area to determine if the construction of a noise barrier wall would be a reasonable and feasible measure in abating Design Year build traffic noise levels in the vicinity of the highway improvements. In the following tables, the noise wall scenarios for each NSA are compared. Light green shading is used to indicate a feasible and reasonable noise barrier wall. The darker

green shading is used to indicate the recommended scenario option. The bold print is used to indicate the recommended noise abatement measure for the NSA.

NSA 1

NSA 1 consists of 97 residential dwelling units located on the west leg and north side of I-76. Noise receptors near the west end of NSA 1, near the pedestrian walkover at Sumner Street, are situated at a similar elevation as I-76. Receptors near the east end of the NSA are at an elevation of up to 20 feet lower than I-76 at the Brown Street overpass. Receptors in NSA 1 are located right up to the I-76 ROW and a noise barrier, along the generally higher in elevation at the edge of shoulder (EOS), is the only option for the placement of a noise barrier wall. Two noise barrier scenarios were evaluated for NSA 1. NSA 1 Scenario 1 is a noise barrier wall located along the EOS extending from the pedestrian overpass to just east of Spicer Street. NSA 1 Scenario 2 is the same as Scenario 1 except the noise barrier wall would not be constructed on the bridge structure over Brown Street. The two noise wall scenarios modeled for NSA 1 are compared in the following tables.

NSA 1 Scenario 1				
Barrier Height	Barrier Length	Cost of barrier	Benefited Receptors	Cost per benefited Receptor
12	2,072	\$765,720	20	\$38,286
13	2,072	\$829,530	45	\$18,434
14	2,072	\$893,340	57	\$15,672
15	2,072	\$957,150	61	\$15,690
16	2,072	\$1,020,961	61	\$16,737
17	2,072	\$1,084,771	63	\$17,218

NSA 1 Scenario 2				
Barrier Height	Barrier Length	Cost of barrier	Benefited Receptors	Cost per benefited Receptor
12	1,912	\$573,705	20	\$28,685
13	1,912	\$621,514	38	\$16,355
14	1,912	\$669,323	45	\$14,873
15	1,912	\$717,132	47	\$15,258
16	1,912	\$764,940	49	\$15,611
17	1,912	\$812,749	49	\$16,586

Noise Barrier Scenario Recommendation NSA 1						
Scenario	Barrier Length	Barrier Height	Cost of Barrier	Benefited Receptors	Cost per Benefited Receptor	Recommended
Scenario 1	2,072'	14'	\$893,340	57	\$15,672	No
Scenario 2	1,912'	14'	\$669,323	45	\$14,873	Yes

Noise barrier wall NSA 1 Scenario 2 is recommended as the noise abatement measure for NSA 1.

NSA 2

NSA 2 consists of 22 residential dwelling units. Noise receptors in NSA 2 are situated at a higher elevation than SR 8 and also at a higher elevation than the SB SR 8 ramp to WB I-76. Most of the receptors in NSA 2 are also distanced from interstate by Johnston Street that runs at an angle through NSA 2. The ramp and roadway are in a cut and the only practical location for a noise barrier wall would be along the ROW. Noise barrier wall NSA 2 Scenario 1 was evaluated along the ROW of the SB SR 8 ramp to WB I-76. The noise barrier wall was evaluated at a height of 20 beginning south of the Johnston Street overpass and extending west an approximate distance of 900 feet.

NSA 2 Scenario 1				
Barrier Height	Barrier Length	Cost of barrier	Benefited Receptors	Cost per benefited Receptor
14	900	\$315,000	2	\$157,500
15	900	\$337,500	2	\$168,750
16	900	\$360,000	2	\$180,000
17	900	\$382,500	3	\$127,500
18	900	\$405,000	3	\$135,000
19	900	\$427,500	3	\$142,500
20	900	\$450,000	3	\$150,000

None of the configurations for a noise barrier wall in NSA 2 meet the criteria of a reasonable and feasible abatement measure. No noise barrier wall or other noise abatement measures recommended for NSA 2.

NSA 3

NSA 3 is comprised of 52 residential dwelling units. Noise receptors in NSA 3 are located at an elevation of about 20 feet lower than I-76 near the Inman Street overpass at the east side of the NSA. The ramp from WB I-76 to NB SR 8 begins to drop in elevation as it curves north towards Johnston Street as it drops into a cut beneath the Johnston Street bridge. The best alignment for a noise barrier wall at NSA 3 would be on the EOS along I-76 crossing over Inman Street and then transitioning to the right of way (ROW) as the noise barrier follows along the I-76 WB exit ramp to NB SR8 at the north end of the NSA. Two noise barrier scenarios were evaluated for NSA 3. Noise barrier wall NSA 3 Scenario 1 would be located along the EOS of I-76 beginning about 300 feet east of the Inman Street overpass and would continue west following the exit ramp to NB SR 8 transitioning to the ROW at a point north of Hammel Street and ending on the ROW just south of Johnston Street. Noise barrier wall NSA 3 Scenario 2 would be the same as NSA 3 Scenario 1 except that the noise barrier wall would not be built on the bridge structure over Inman Street. The bridge span over Inman Street is only 60 feet in length and both scenarios were similar in cost and number of receptors benefiting of the wall.

NSA 3 Scenario 1				
Barrier Height	Barrier Length	Cost of barrier	Benefited Receptors	Cost per benefited Receptor
13	1,954	\$700,285	12	\$58,357
14	1,954	\$762,178	16	\$47,636
15	1,954	\$808,021	20	\$40,401

NSA 3 Scenario 1				
Barrier Height	Barrier Length	Cost of barrier	Benefited Receptors	Cost per benefited Receptor
16	1,954	\$853,489	32	\$26,671
17	1,954	\$906,832	39	\$23,252
18	1,954	\$1,095,175	40	\$27,379

NSA 3 Scenario 2				
Barrier Height	Barrier Length	Cost of barrier	Benefited Receptors	Cost per benefited Receptor
13	1,894	\$613,204	10	\$61,320
14	1,894	\$660,374	15	\$44,024
15	1,894	\$707,543	20	\$35,377
16	1,894	\$754,713	32	\$23,584
17	1,894	\$801,975	37	\$21,675
18	1,894	\$849,052	38	\$22,343

Noise Barrier Scenario Summary NSA 3						
Scenario	Barrier Length	Barrier Height	Cost of Barrier	Benefited Receptors	Cost per Benefited Receptor	Recommended
Scenario 1	1,954	16'	\$861,889	32	\$26,671	No
Scenario 2	1,894	16'	\$754,713	32	\$23,584	Yes

Noise barrier wall NSA 3 Scenario 2 is recommended for construction as a noise abatement measure because of its lower cost compared to Scenario 1 and it is a feasible and reasonable measure without having to be built on the bridge structure over Inman Street.

NSA 4

NSA 4 is located on the east leg and the north side of I-76. NSA 4 consists of the Hoban High School athletic fields. The athletic fields and high school are connected via a pedestrian bridge over I-76. The athletic fields east of the pedestrian bridge are situated about 20 feet higher than I-76 and the fields west of the pedestrian bridge to Inman Street are located at a much lower elevation than the interstate. The only location for a noise barrier wall in NSA 4 would begin along the WB I-76 ROW about 800 feet west of Arlington Street. From this point NSA 4 Scenario 1 would continue west along the ROW to the pedestrian bridge. There would be a break in the noise barrier wall at this point to allow for continued access between the school and the fields via the pedestrian bridge. The exit ramp from WB I-75 to Inman Street will be removed as part of the project. On the west side of the pedestrian bridge the noise barrier wall would transition from the ROW to the EOS of WB I-76 and would end about 300 feet east of Inman Street. The end point for noise barrier NSA 4 Scenario 1 would be the same as the start point for noise barrier NSA 3 Scenarios 1 and 2.

Equivalent Receptors Calculation for NSA 4 – NAC Activity Category C

The following formula used to calculate the equivalent receptors at the Hoban High School Athletic fields is based on a conversation held with the athletic director of Hoban High School. There are 850 students enrolled at Hoban and 85% participate in athletics. There are 26 varsity teams and a similar number of junior varsity and several grade level sports. Of the sports teams at Hoban High School, nine use the athletic fields on the north side of I-76. The sports include football, girls and boys soccer, girls and boys track and field, girls and boys lacrosse, baseball and softball. The athletic director estimated that the fields are used on almost a daily basis when school is in session and also used for about a month in the summer for sport camps. The fields are generally closed for public use. The crossover bridge and trails to the athletic fields are only used for Hoban High School activities and have gates that are locked to discourage public use. The high school discourages public use of the fields due to liability issues.

850 students x 85% participation = 722 student athletes.

26 varsity teams ÷ 9 teams that use the athletic fields = 35% of students using the fields.

722 student athletes x 35% = **253** athletes using the fields

Average number of people ÷ Residence (household size Ohio Average) = **3**

Number of hours used = **8** hours (6.5 school hours and 1.5 after school hours)

Days used per year = 180 instructional days + 30 summer sport camp days = **210** days

(253 athletes ÷ 3 residence size) x (8 hours ÷ 24 hours day) x (210 days use ÷ 365 days year)

= 84 x 0.333 x 0.58 = 16.2 or **16 equivalent receptors**.

NSA 4 Scenario 1				
Barrier Height	Barrier Length	Cost of barrier	Benefited Receptors	Cost per benefited Receptor
12	1,156	\$346,895	12	\$28,907
13	1,156	\$375,803	14	\$26,843
13.5	1,156	\$391,754	14	\$27,982
14	1,156	\$404,711	16	\$25,294
14.5	1,156	\$422,000	16	\$26,375
15	1,156	\$433,639	16	\$27,102
15.5	1,156	\$449,591	16	\$28,100
16	1,156	\$462,527	16	\$28,907

Noise barrier wall NSA 4 Scenario 1 is recommended as a noise abatement measure for the project.

NSA 5

NSA 5 is comprised of 80 residential dwelling units. NSA 5 is located on the west leg of I-76 on the south side of the interstate. Receptors near the west end of NSA 5, near the pedestrian walkover, are situated at a similar elevation as the I-76 roadway. Receptors near the east end of the NSA are at an elevation of up to 20 feet lower than the I-76 roadway at the Brown Street overpass. Due to existing elevations, a noise barrier along the EOS would be the only location option. Two noise barrier scenarios were evaluated for NSA 5. The base map used for the figures of NSA 5 Scenario 1 and Scenario 2 is somewhat dated as I-76 east of Brown Street no longer runs on bridges. The streets below the bridges have been re-routed and I-76 is now constructed on fill.

Noise barrier wall NSA 5 Scenario 1 is located along the EOS extending from the pedestrian overpass to about 300' east of Brown Street. NSA 5 Scenario 2 is the same as Scenario 1 except the noise barrier wall would not be constructed on the bridge structure spanning Brown Street.

NSA 5 Scenario 1				
Barrier Height	Barrier Length	Cost of barrier	Benefited Receptors	Cost per benefited Receptor
12	1,656	\$640,680	40	\$16,017
13	1,656	\$697,070	60	\$11,567
14	1,656	\$747,460	69	\$10,832
15	1,656	\$801,000	73	\$10,970
16	1,656	\$854,240	73	\$11,701
17	1,656	\$907,630	75	\$12,101

NSA 5 Scenario 2				
Barrier Height	Barrier Length	Cost of barrier	Benefited Receptors	Cost per benefited Receptor
12	1,496	\$448,938	31	\$14,481
13	1,496	\$486,350	43	\$11,310
14	1,496	\$523,762	50	\$10,475
15	1,496	\$561,000	56	\$10,020
16	1,496	\$598,585	60	\$9,976
17	1,496	\$635,996	61	\$10,426

Noise Barrier Scenario Summary NSA 5						
Scenario	Barrier Length	Barrier Height	Cost of Barrier	Benefited Receptors	Cost per Benefited Receptor	Recommended
Scenario 1	1,656	14'	\$747,460	69	\$10,832	Yes
Scenario 2	1,496	14'	\$523,764	50	\$10,475	No

Both NSA 5 noise barrier scenarios would be feasible and reasonable noise abatement measures. Comparing Scenario 1 to Scenario 2, Scenario 1 can provide noise abatement to 19 more residential dwelling units at about the same cost per benefited receptor. Scenario 1 is the preferred noise barrier scenario for this NSA.

NSA 6

NSA 6 is located in the southeast quadrant of the Central Interchange. On the west side of the NSA, NB I-77, and the ramp from NB I-77 to EB I-76 are located in a cut configuration as both the mainline I-77 and the ramp pass below Lafollette Street. The NB I-77 to EB I-76 ramp gains elevation as it moves east to a point at which it is constructed in a fill configuration as it passes over Inman Street and continues east along EB I-76 near Hoban High School. The best location for a noise barrier wall at NSA 6 would be begin on the ROW north of

Lafollette Street and would continue north and east along the ramp ROW to a point east of Hammel Street where the noise barrier wall would begin to transition to the EOS. The noise barrier wall would continue east along the EOS, crossing over Inman Street and ending on the EB I-76 EOS at a point west of Hoban High School. Two noise barrier scenarios were evaluated for NSA 6. Noise barrier wall NSA 6 Scenario 1 is located along the ROW beginning north of Lafollette Street, extending across Inman Street and ending at a point approximately 600' east of Inman Street. NSA 6 Scenario 2 is the same as Scenario 1 except the noise barrier wall would not be constructed on the bridge structure over Inman Street. The bridge span over Inman Street is only 60 feet in length and both noise barrier scenarios were similar in cost and number of receptors benefiting of the wall.

NSA 6 Scenario 1				
Barrier Height	Barrier Length	Cost of barrier	Benefited Receptors	Cost per benefited Receptor
13	2,325	\$812,498	51	\$15,931
14	2,325	\$877,098	59	\$14,866
15	2,325	\$939,748	71	\$13,235
16	2,325	\$1,002,000	81	\$12,175
17	2,325	\$1,065,048	81	\$13,148
18	2,325	\$1,127,698	81	\$13,922

NSA 6 Scenario 2				
Barrier Height	Barrier Length	Cost of barrier	Benefited Receptors	Cost per benefited Receptor
13	2,265	\$735,868	47	\$15,656
14	2,265	\$792,452	53	\$14,952
15	2,265	\$849,056	69	\$12,305
16	2,265	\$906,000	81	\$11,185
17	2,265	\$962,263	81	\$11,879
18	2,265	\$1,018,867	81	\$12,578

Noise Barrier Scenario Summary NSA 6						
Scenario	Barrier Length	Barrier Height	Cost of Barrier	Benefited Receptors	Cost per Benefited Receptor	Recommended
Scenario 1	2,325	15'	\$939,748	71	\$13,235	No
Scenario 2	2,265	15'	\$849,056	69	\$12,305	Yes

Both of the noise wall scenarios for NSA 6 have similar results. The bridge span over Inman Street is only 60 feet. Without a noise barrier on the bridge over Inman Street, abatement levels are reduced one to two decibels at receptors nearest the bridge. Abatement levels are not reduced under Scenario 2 resulting in a reduction of only two benefited dwelling units as compared to Scenario 1 with a noise barrier on structure. Scenario 2 is recommended as the noise abatement measure for NSA 6.

NSA 7

NSA 7 is located on the south side of I-76 at Hoban High School. At this location, I-76 is situated in a deep, steep cut configuration. The high school is located about 20 feet higher than the highway. There are no areas of frequent outdoor use on the side of the high school facing the interstate. An interior location was evaluated for the high school and an exterior location was evaluated near the tennis courts. No noise impacts were identified at this NSA. Consideration of noise abatement is not warranted.

NSA 8

NSA 8 is comprised of 44 residential dwelling units and is located on the west side of I-77 south of the Central Interchange. At this location, I-77 is situated in a cut configuration with the receptors situated about 10 to 20 feet higher than the highway elevation. The only location for a noise barrier wall would be along the west ROW line where the elevation is higher. The receptors in NSA 8 are located to the north and to the south of Lafollette Street. Two noise barrier scenarios were evaluated for NSA 8. Noise barrier wall NSA 8 Scenario 1 is located along the ROW beginning north of Lafollette Street and extending north along the ROW for distance of about 400 feet. Scenario 1 would also have a noise barrier wall beginning on the ROW south of Lafollette Street and would extend south to the Lovers Lane bridge over I-77. Scenario 2 is comprised of just the noise barrier wall south of Lafollette Street. The SB I-77 exit ramp to Lovers Lane will be removed as part of the project. As shown in Appendix B both scenarios would pass through the area of the removed ramp.

NSA 8 Scenario 1				
Barrier Height	Barrier Length	Cost of barrier	Benefited Receptors	Cost per benefited Receptor
12	1,910	\$573,717	19	\$30,195
13	1,910	\$621,526	20	\$31,076
14	1,910	\$669,366	22	\$30,425
15	1,910	\$717,146	26	\$27,582
16	1,910	\$764,956	28	\$27,319
17	1,910	\$774,000	30	\$25,666
18	1,910	\$859,500	30	\$28,650

NSA 8 Scenario 2				
Barrier Height	Barrier Length	Cost of barrier	Benefited Receptors	Cost per benefited Receptor
12	1,510	\$453,481	18	\$25,193
13	1,510	\$491,271	20	\$24,563
14	1,510	\$529,061	22	\$24,048
15	1,510	\$566,250	25	\$22,650
16	1,510	\$604,641	25	\$24,185
17	1,510	\$642,431	25	\$25,697

Noise Barrier Scenario Summary NSA 8						
Scenario	Barrier Length	Barrier Height	Cost of Barrier	Benefited Receptors	Cost per Benefited Receptor	Recommended
Scenario 1	1,910	14	\$669,366	22	\$30,425	Yes
Scenario 2	1,510'	14	\$529,061	22	\$24,048	No

NSA 9

NSA 9 is comprised of 33 residential dwelling units. NSA 9 is located on the east side of I-77 south of the Central Interchange. Similar to NSA 8, the receptors located in NSA 9 are situated at an elevation of about 10 to 20 feet higher than the highway elevation. The best location for a noise barrier wall would be along the east ROW line where the elevation is higher. One noise barrier wall scenario was evaluated for NSA 9. NSA 9 Scenario 1 would begin on the ROW just north of the Lovers Lane bridge over I-77. The noise barrier wall would extend north to a point about 150 feet north of Kipling Street. Noise barrier wall NSA 9 Scenario 1 would average 16 feet in height with a length of 1,225 feet. Noise barrier wall NSA 9 Scenario 1 is the recommended abatement measure.

NSA 9 Scenario 1				
Barrier Height	Barrier Length	Cost of barrier	Benefited Receptors	Cost per benefited Receptor
13	1,225	\$398,125	11	\$36,193
14	1,225	\$428,750	21	\$20,416
15	1,225	\$459,053	22	\$20,866
16	1,225	\$490,000	25	\$19,600
17	1,225	\$520,260	25	\$20,810
18	1,225	\$550,864	25	\$25,697

Noise Barrier Scenario Summary NSA 9						
Scenario	Barrier Length	Barrier Height	Cost of Barrier	Benefited Receptors	Cost per Benefited Receptor	Recommended
Scenario 1	1,225	14	\$428,750	21	\$20,416	Yes

SECTION 6.0 UNDEVELOPED LANDS

Information for Local Officials

In accordance with 23 CFR 772.17, in an effort to prevent future traffic noise impacts on currently undeveloped lands, highway agencies shall inform local officials within whose jurisdiction the highway project is located of the following:

- (a) The best estimation of future noise levels (for various distances from the highway improvement) for both developed and undeveloped lands and other properties in the immediate vicinity of the project,
- (b) Information that may be useful to local communities to protect future land development from becoming incompatible with anticipated highway noise levels,

For undeveloped properties which have not received a building permit by the date of NEPA document approval, design-year noise analyses were performed to determine the offset from the roadway at which future noise levels would approach an FHWA NAC. The only area in the project corridor that is undeveloped is located along the north side of the SB SR 8 exit ramp to WB I-76.

- A 400-foot section of land, fronting the highway, in the northwest quadrant of the Central Interchange on the north side of Johnston Street.

TNM was used to estimate the distance from the proposed roadway edge of pavement to a distance where traffic noise impact would occur for Activity Categories B and C and for Activity Category E based on the Design Year traffic volumes. The same traffic volumes and vehicle mix was used for this estimation purpose as was used for the Design Year 2040 Build condition. The dBA levels shown below are measured in feet from the proposed edge of pavement to points where 71 dBA (Activity Category E) would be expected to be encountered and to where 66 dBA (Activity Categories B and C) would be expected to be encountered.

North side of I-76

66 dBA contour	283 feet
71 dBA contour	74 feet

The distance away from the edge of shoulder of the north side of the SB SR 8 ramp to WB I-76 where the 66 dBA contour line would be expected to occur is at an average distance of 283 feet. The construction of any future noise sensitive land use within 283 feet of the proposed edge of shoulder in this section of the roadway corridor would be expected to experience noise levels that would exceed the Category B and the Category C NAC. The construction of any future noise sensitive land use within 74 feet of the proposed edge of shoulder in this section of roadway would be expected to experience noise levels that would exceed the Category E NAC.

Section 7.0

CONSTRUCTION NOISE

Noise sensitive receptors will also be subjected to noise impacts associated with the construction phase of the proposed project. Construction noise will generate temporary noise impacts on adjacent and nearby properties, particularly those in residential land use. Construction noise will be emitted intermittently by a range of construction equipment at varying levels of intensity based on the types of operations being performed and the number of pieces of equipment in operation at any given time. Depending on project circumstances, options are available to minimize the temporary adverse noise impacts, including the proper maintenance of equipment, most notably adequate lubrication, and non-leaking mufflers, equipment restriction modifications to reduce noise emissions and restrict the use of certain equipment by location and time of day, controlling non construction traffic by limiting heavy truck movements on residential streets, maximizing the distance between equipment and receptors where possible and, enclosing or screening noisy activities or stationary equipment.

Section 8.0

CONCLUSION AND RECOMMENDATION

A noise analysis was prepared for all noise sensitive receivers located within 500 feet of the existing driving lanes and ramps along I-76 from the pedestrian crossover bridge at Sumner Street to a point approximately 800 feet west of Arlington Road and along SR 8 from a point approximately 500 feet north of the Johnston Street overpass to Lovers Lane on I-77. Noise levels were modeled for the Existing Year 2020 and the Design Year 2040 Build alternative. The FHWA TNM predicted traffic noise impacts at over 100 receptor sites within the project corridor with implementation of the proposed project. Of the impacted receptor sites, all would experience peak hour traffic noise levels in excess of the Category B NAC or Category C NAC of 67 dBA. No receptor site was predicted to experience a substantial noise impact (increase > 10 dBA) as a result of the proposed action.

In accordance with 23 CFR Part 772, when noise impacts are identified as a result of a proposed action, noise abatement measures must be considered for impacted sites predicted to approach or exceed the applicable FHWA NAC. As described in Section 5.0, the only reasonable and feasible noise abatement measure identified for impacted sensitive receptor sites is the construction of noise barrier walls.

According to ODOT guidance, the criteria to determine the feasibility and reasonableness of noise barrier walls should consider the following items:

The amount of noise reduction provided: When considering noise abatement measures, every reasonable effort should be made to obtain a substantial noise reduction at sensitive receptor sites. In Ohio, a substantial reduction is 7 dB or more.

The number of dwelling units benefited: The threshold of noise reduction, which establishes a benefited property, is at least 4.5 dB. This reduction is determined at an exterior point where frequent human use occurs and a lowered noise level would be of benefit regardless of whether or not the property was identified as impacted.

The cost of the abatement: A reasonable cost for noise barrier walls is determined using a cost index based on total cost per dwelling unit benefited, as well as the unit cost per square foot of the noise barrier material installed for the walls. For a unit cost of \$25.00 per square foot of barrier wall a cost index of \$35,000 per benefited unit should be used.

The views of the impacted residents: In general, the views and desires of the impacted residents play a major consideration in determining the reasonableness of the noise abatement measure. Since noise barrier walls are not a feasible and reasonable noise abatement measure for this project, residents of the impacted properties will not be contacted to solicit their concerns/comments.

The noise barrier evaluation summary in Table 14 shows that noise barrier walls would be both a feasible and a reasonable noise abatement measure at seven of the nine NSAs. Table 15 shows the recommended noise barrier walls.

**Table 14.
Noise Barrier Evaluation Summary**

Barrier	Barrier Length (feet)	Barrier Height (feet)	Square Footage of Barrier	Maximum Insertion Loss ^a (dB)	Benefitted Properties ^b	Barrier Cost ^c	Cost per benefitted receptor	Effectiveness		Barrier Location ^f	Barrier Recommended ^g
								Feasible ^d	Reasonable ^e		
NSA 1 Scenario 1	2,072	14	29,008	12.5	57	\$893,340	\$15,672	Yes	Yes	EOS	No
NSA 1 Scenario 2	1,912	14	26,768	13.0	45	\$669,323	\$14,873	Yes	Yes	EOS	Yes
NSA 2 Scenario 1	900	20	18,000	9.0	3	\$450,000	\$150,000	No	No	ROW	No
NSA 3 Scenario 1	1,954	16	31,264	7.7	32	\$853,489	\$26,671	Yes	Yes	EOS/ROW	No
NSA 3 Scenario 2	1,894	16	30,304	7.7	32	\$754,713	\$23,584	Yes	Yes	EOS/ROW	Yes
NSA 4 Scenario 1	1,156	14	16,100	7.7	16 (Equivalent)	\$404,711	\$25,294	Yes	Yes	EOS/ROW	Yes
NSA 5 Scenario 1	1,656	14	23,184	11.1	69	\$747,460	\$10,832	Yes	Yes	EOS	Yes
NSA 5 Scenario 2	1,496	14	20,944	11.2	50	\$523,762	\$10,475	Yes	Yes	EOS	No
NSA 6 Scenario 1	2,325	15	34,875	11.2	71	\$939,748	\$13,325	Yes	Yes	EOS/ROW	No
NSA 6 Scenario 2	2,265	15	33,975	11.2	69	\$849,056	\$12,305	Yes	Yes	EOS/ROW	Yes
NSA 8 Scenario 1	1,910	14	26,740	9.8	22	\$669,366	\$30,425	Yes	Yes	ROW	Yes
NSA 8 Scenario 2	1,510	14	21,140	9.8	22	\$529,061	\$24,048	Yes	Yes	ROW	No
NSA 9 Scenario 1	1,225	14	17,150	10.1	21	\$428,750	\$20,416	Yes	Yes	ROW	Yes

Insertion Loss (IL) is the maximum noise reduction provided by the noise barrier.

^b A receptor is considered benefited by the noise barrier if the IL is 5dB or greater.

^c Cost is based on \$25 per square foot of noise barrier constructed on ground and \$100 per square foot constructed on structure..

^d A noise barrier is considered feasible if it can provide a substantial noise reduction of at least 7dB at one receptor location.

^e A noise barrier is considered cost reasonable if the cost per benefited receptor is less than \$35,000.

^f The location of the noise barrier wall: ROW=noise barrier is located along the right of way line; EOS=noise barrier is located along the edge of shoulder.

^g Noise barrier recommendation is based on the number of benefited receptors and the relative cost per benefited receptor.

**Table 15
Recommended Noise Barrier Walls**

Barrier	Barrier Length (feet)	Barrier Height (feet)	Square Footage of Barrier	Maximum Insertion Loss ^a (dB)	Benefitted Properties ^b	Barrier Cost ^c	Cost per benefited receptor	Effectiveness		Barrier Location ^f	Barrier Recommended ^g
								Feasible ^d	Reasonable ^e		
NSA 1 Scenario 2	1,912	14	26,773	12.0	45	\$669,323	\$14,873	Yes	Yes	EOS	Yes
NSA 3 Scenario 2	1,894	16	30,304	7.7	32	\$754,713	\$23,584	Yes	Yes	EOS/ROW	Yes
NSA 4 Scenario 1	1,156	14	16,100	7.7	16 (Equivalent)	\$404,711	\$25,294	Yes	Yes	EOS/ROW	Yes
NSA 5 Scenario 1	1,656	14	23,184	11.1	69	\$747,460	\$10,832	Yes	Yes	EOS	Yes
NSA 6 Scenario 2	2,265	15	33,975	10.9	69	\$849,056	\$12,305	Yes	Yes	EOS/ROW	Yes
NSA 8 Scenario 1	1,910	14	26,740	9.8	22	\$669,366	\$30,425	Yes	Yes	ROW	Yes
NSA 9 Scenario 1	1,225	14	17,150	10.1	21	\$428,750	\$20,416	Yes	Yes	ROW	Yes

^a Insertion Loss (IL) is the maximum noise reduction provided by the noise barrier.

^b A receptor is considered benefited by the noise barrier if the IL is 5dB or greater.

^c Cost is based on \$25 per square foot of noise barrier constructed on ground and \$100 per square foot constructed on structure..

^d A noise barrier is considered feasible if it can provide a substantial noise reduction of at least 7dB at one receptor location.

^e A noise barrier is considered cost reasonable if the cost per benefited receptor is less than \$35,000.

^f The location of the noise barrier wall: ROW=noise barrier is located along the right of way line; EOS=noise barrier is located along the edge of shoulder.

^g Noise barrier recommendation is based on the number of benefited receptors and the relative cost per benefited receptor.

Section 9.0 REFERENCES

Code of Federal Regulations (CFR) Title 23, Part 772, U.S. Department of Transportation, Federal Highway Administration (FHWA), *Procedures for Abatement of Highway Traffic Noise and Construction Noise*. Washington, D.C.

Ohio Department of Transportation, Office of Environmental Services. June, 2011. *Standard Procedure for Analysis and Abatement of Highway Traffic Noise*. Columbus, Ohio.

U.S. Department of Transportation, Federal Highway Administration. January, 1998. *FHWA Traffic Noise Model (TNM)*. Report No. FHWA-PD-96-009. Washington, D.C.

U.S. Department of Transportation, Federal Highway Administration. May, 1996. *Measurement of Highway-Related* Report No. FHWA-PD-96-046. Washington, D.C.

U.S. Department of Transportation, Federal Highway Administration. January, 2011. *Highway Traffic Noise Analysis and Abatement - Policy and Guidance*. Washington, D.C.

APPENDIX A

Figures

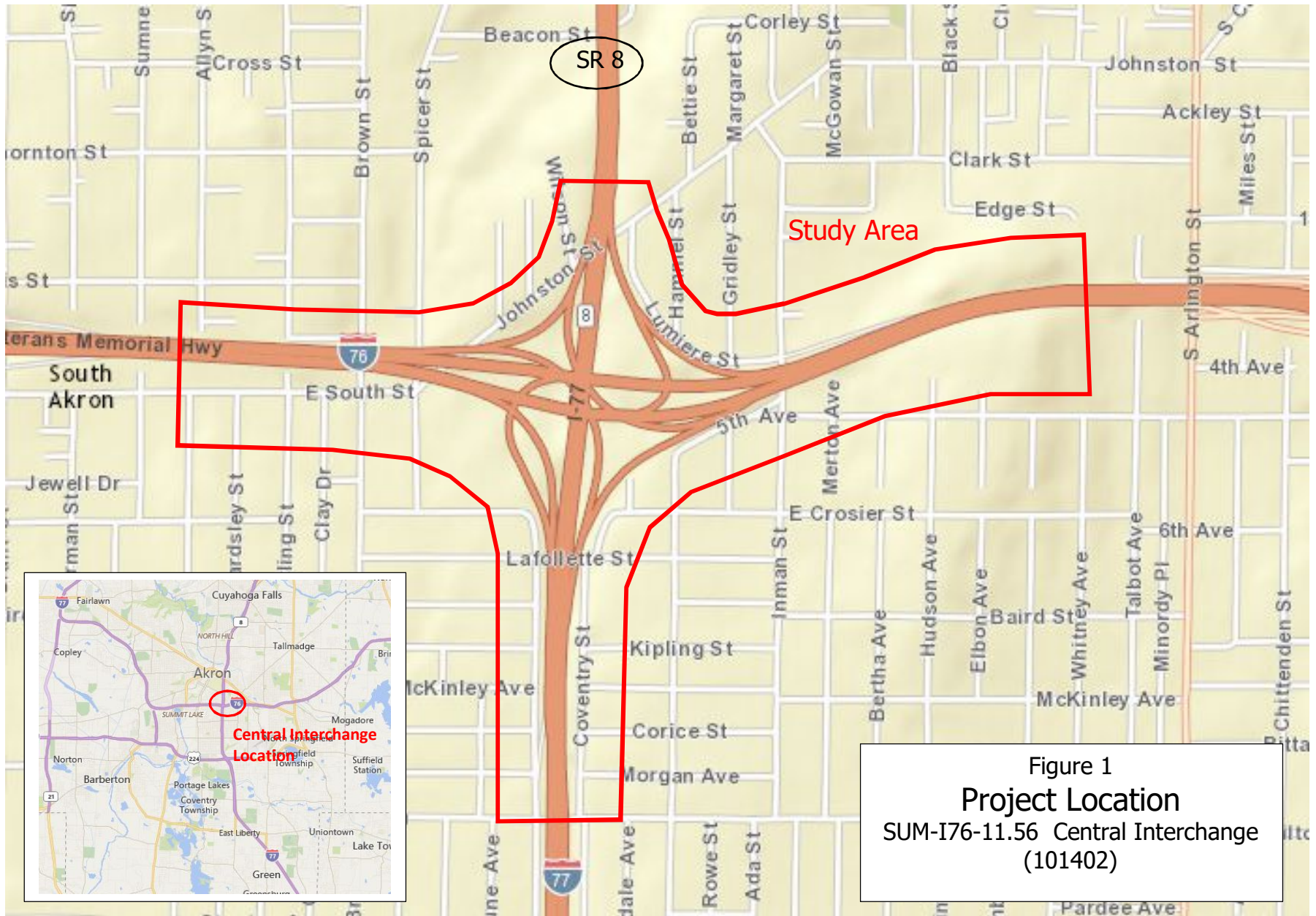
Figure 1. Project Location Map

Figure 2. Proposed Improvement

Figure 3. Study Area Map

Figure 4. Land Use Map

Figure 5. Noise Sensitive Areas



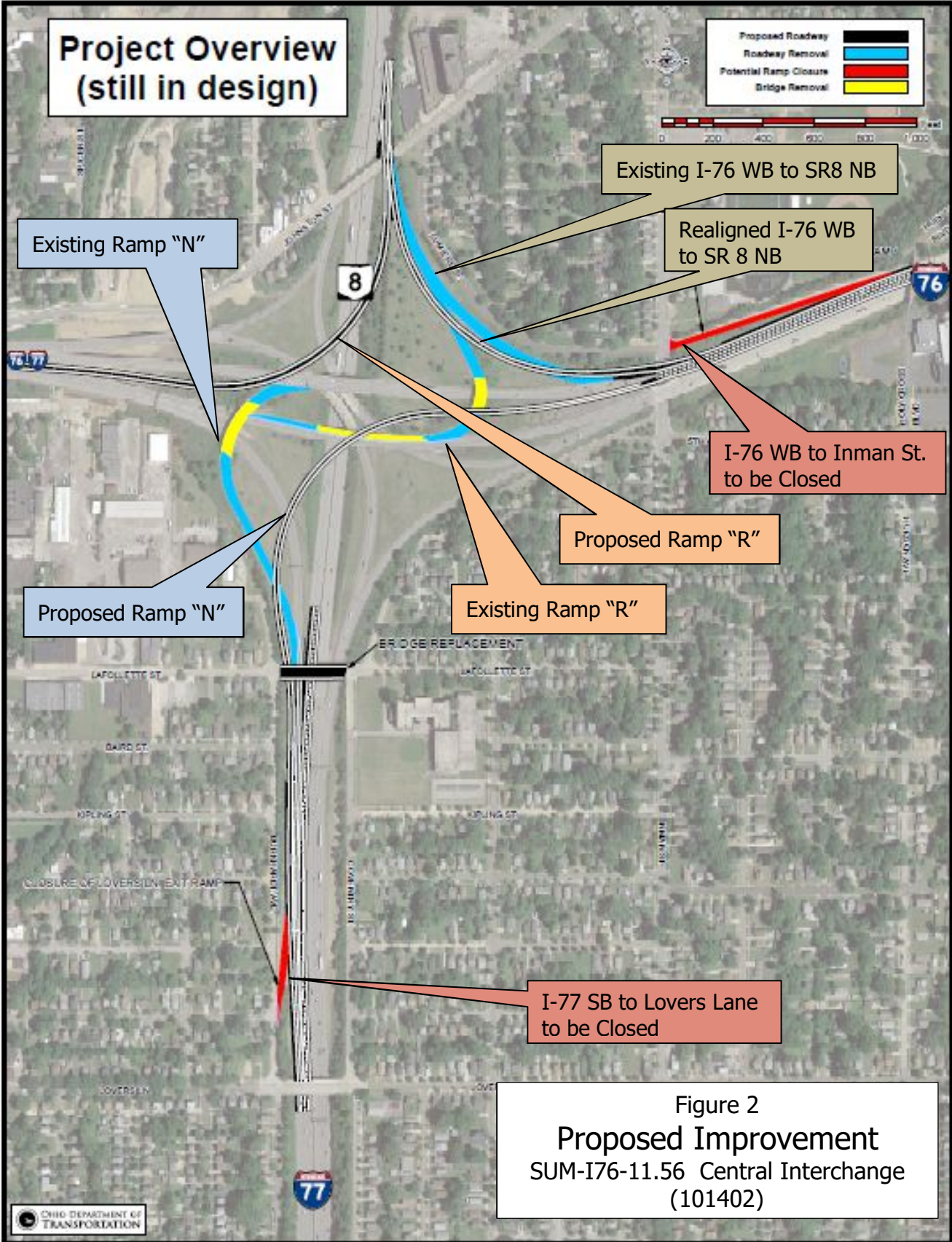


Figure 2
 Proposed Improvement
 SUM-I76-11.56 Central Interchange
 (101402)

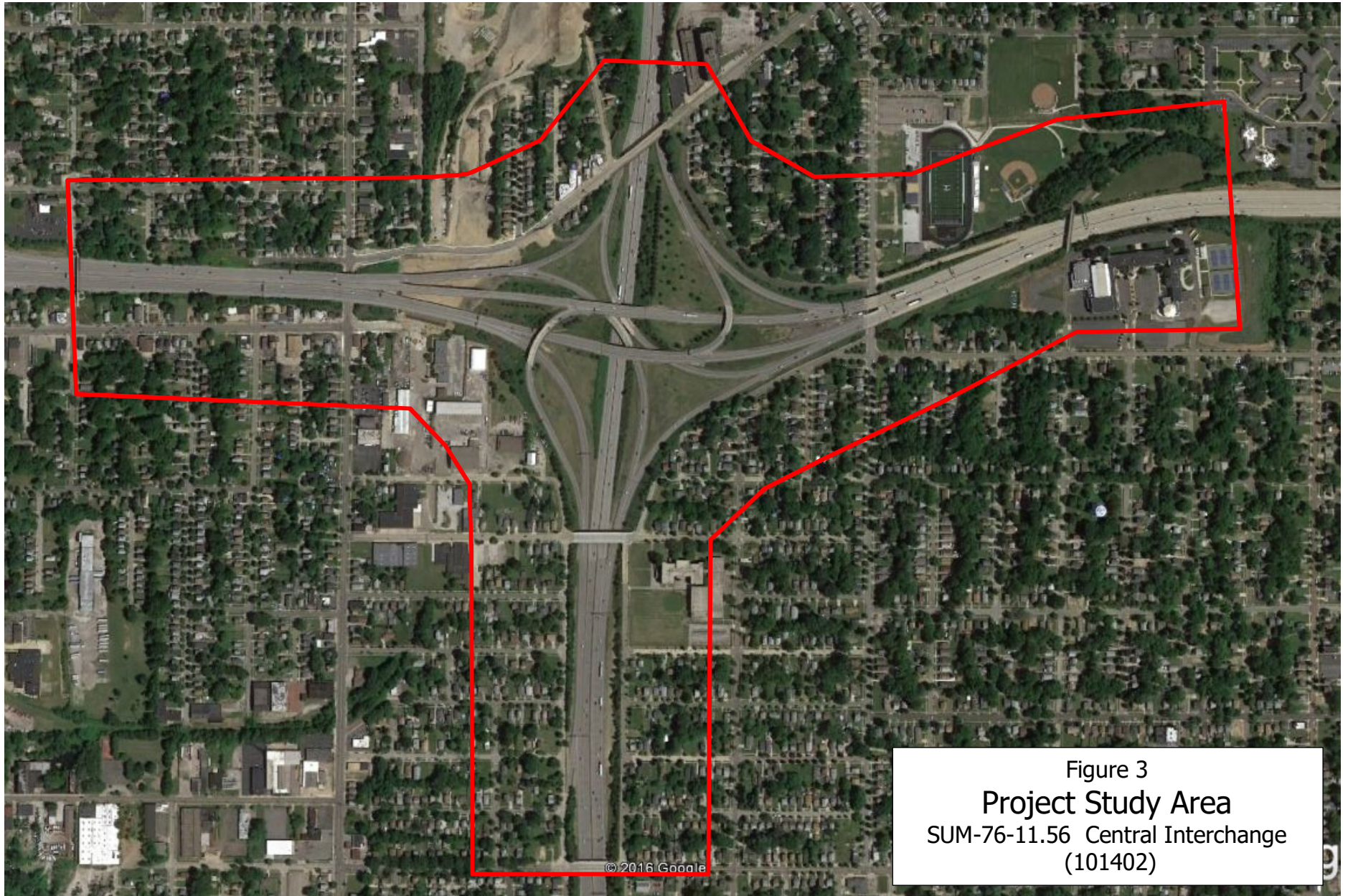
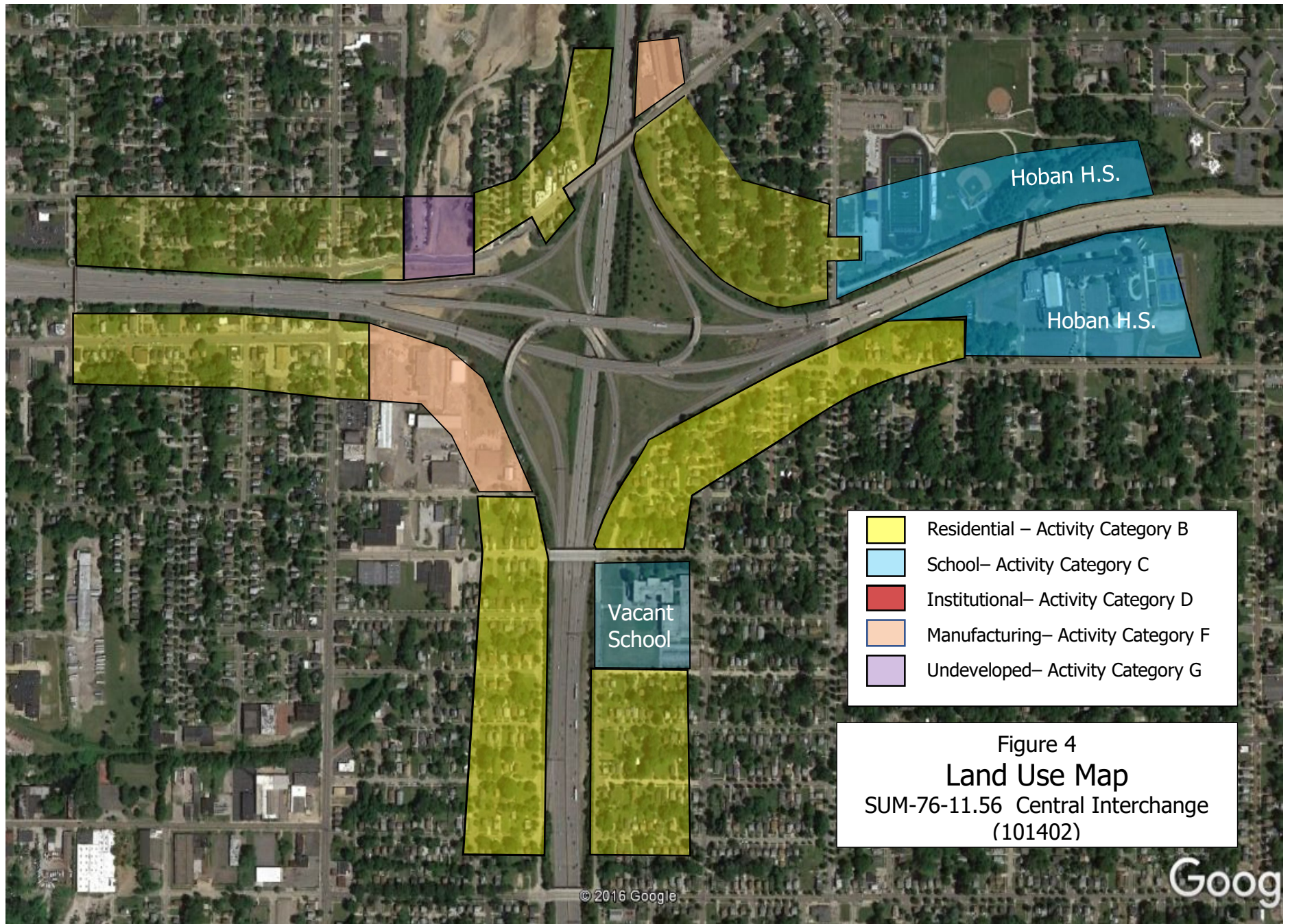


Figure 3
Project Study Area
SUM-76-11.56 Central Interchange
(101402)



- Residential – Activity Category B
- School– Activity Category C
- Institutional– Activity Category D
- Manufacturing– Activity Category F
- Undeveloped– Activity Category G

Figure 4
Land Use Map
 SUM-76-11.56 Central Interchange
 (101402)

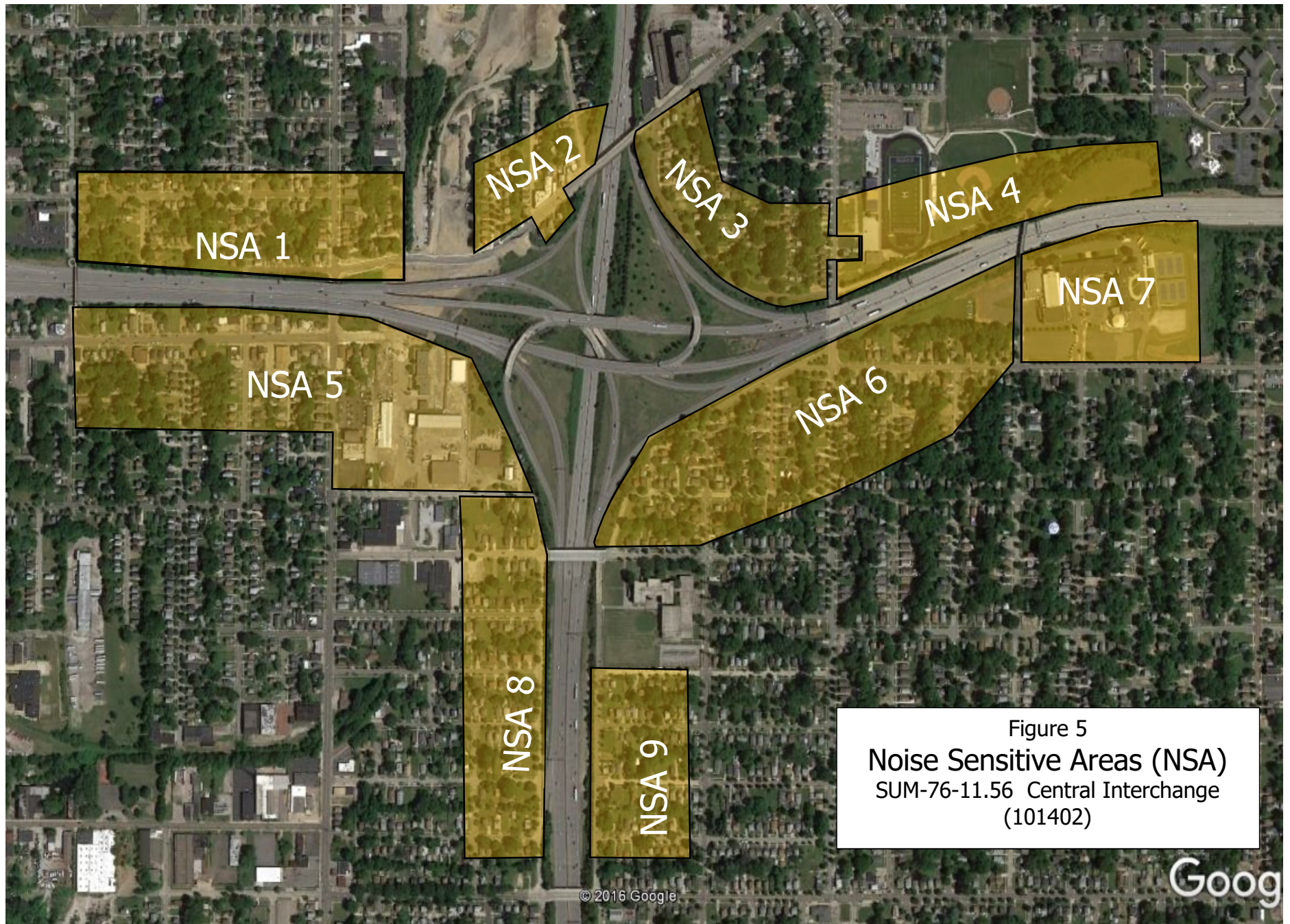


Figure 5
Noise Sensitive Areas (NSA)
SUM-76-11.56 Central Interchange
(101402)

APPENDIX B
Traffic Data

INTER-OFFICE COMMUNICATION

TO: Lorie Feudner, District 4

FROM: Bryan Raderstorf, Office of Statewide Planning and Research

SUBJECT: SUM-76-11.56

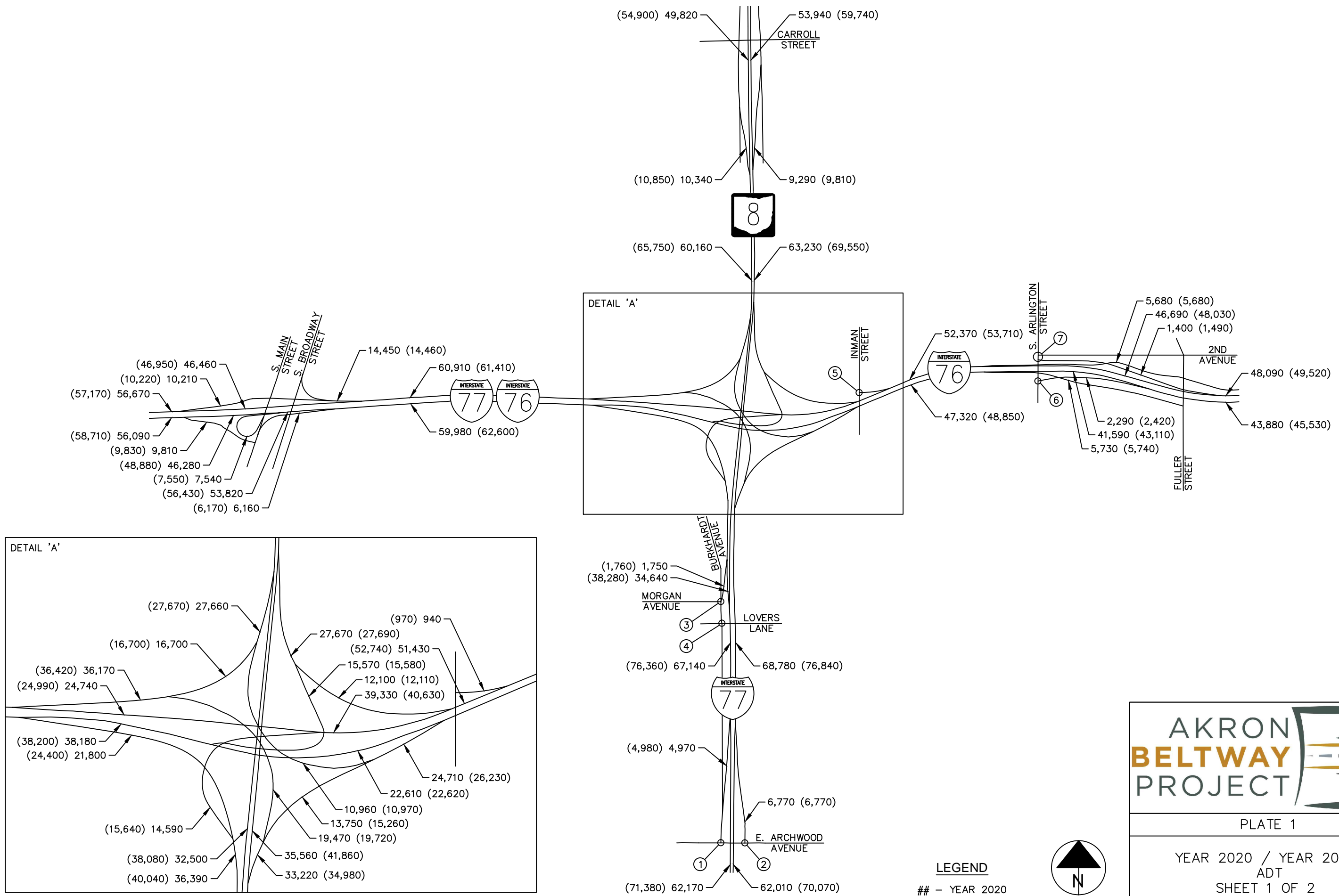
DATE: September 7, 2016

In reply to a request dated April 28, 2016, the Office of Statewide Planning and Research has reviewed the 2020/2040 traffic for the subject study and the volumes that were provided are reasonable.

The forecasts shown on the attached pages are certified for use in the subject project.

If you have any questions, please contact me at (614) 752-5736.

Drawing File: C:\2013\20130501\Traffic\Traffic_Requests\Central_Intersection\Figures\Volume_Plateand_Layout.dwg
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 Technician: cdeibel



LEGEND
 ## - YEAR 2020
 (##) - YEAR 2040



N.T.S.

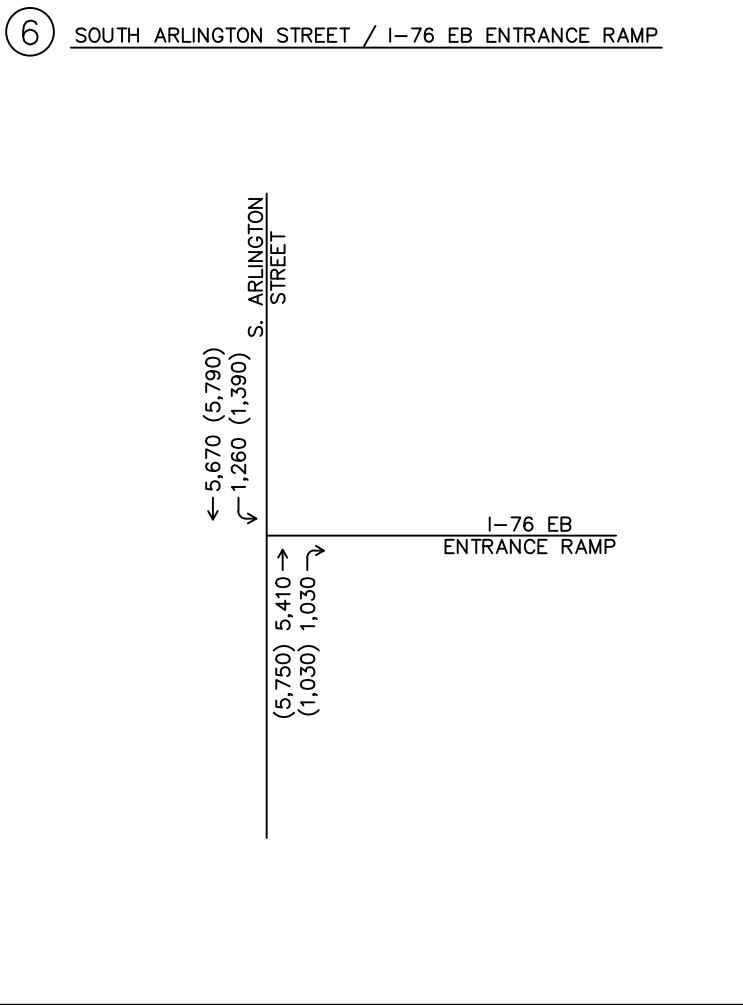
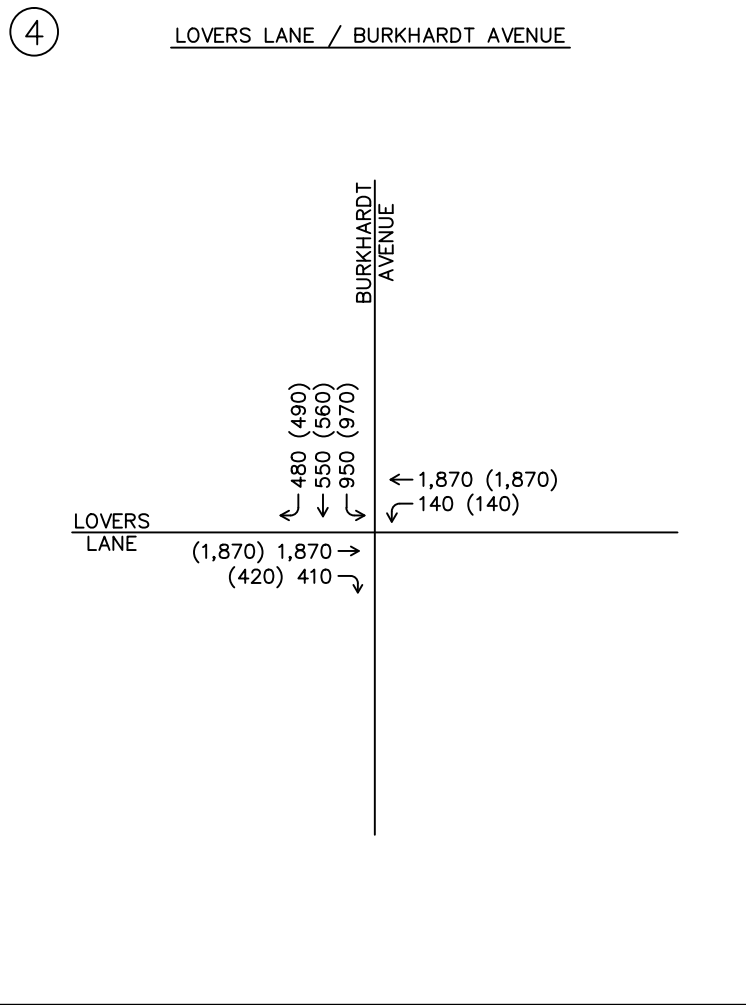
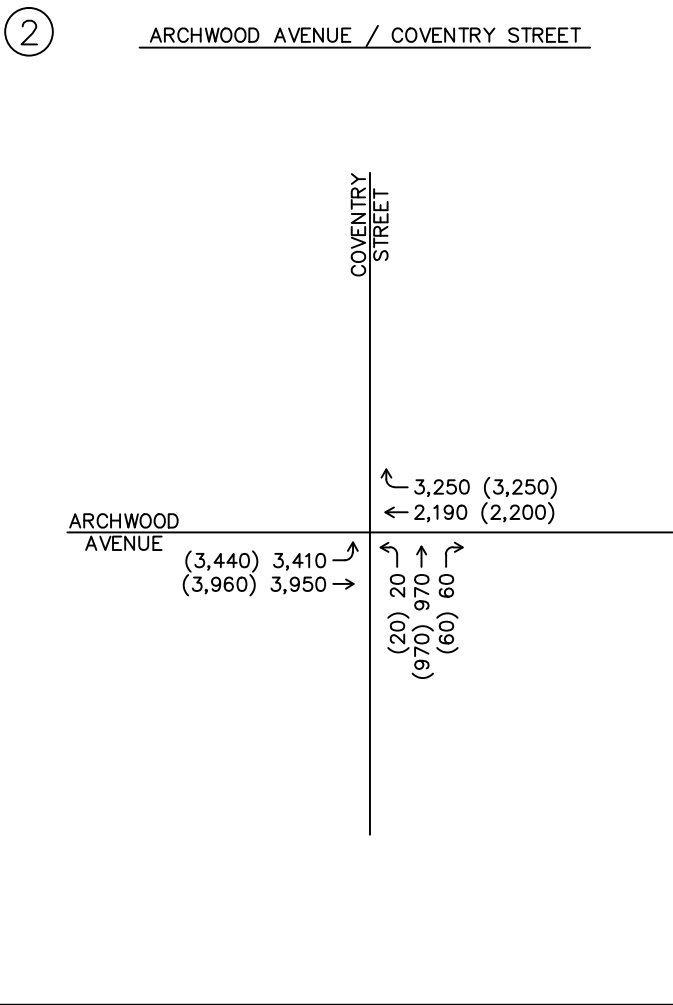
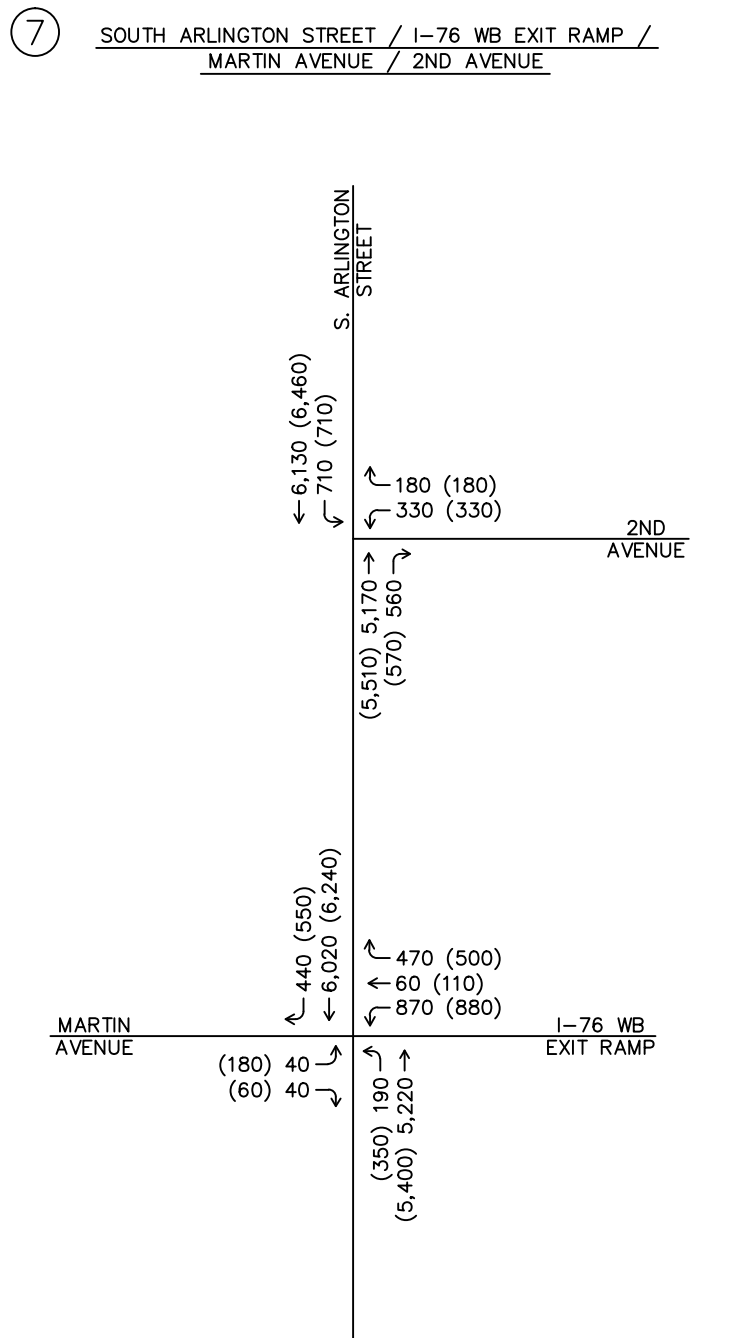
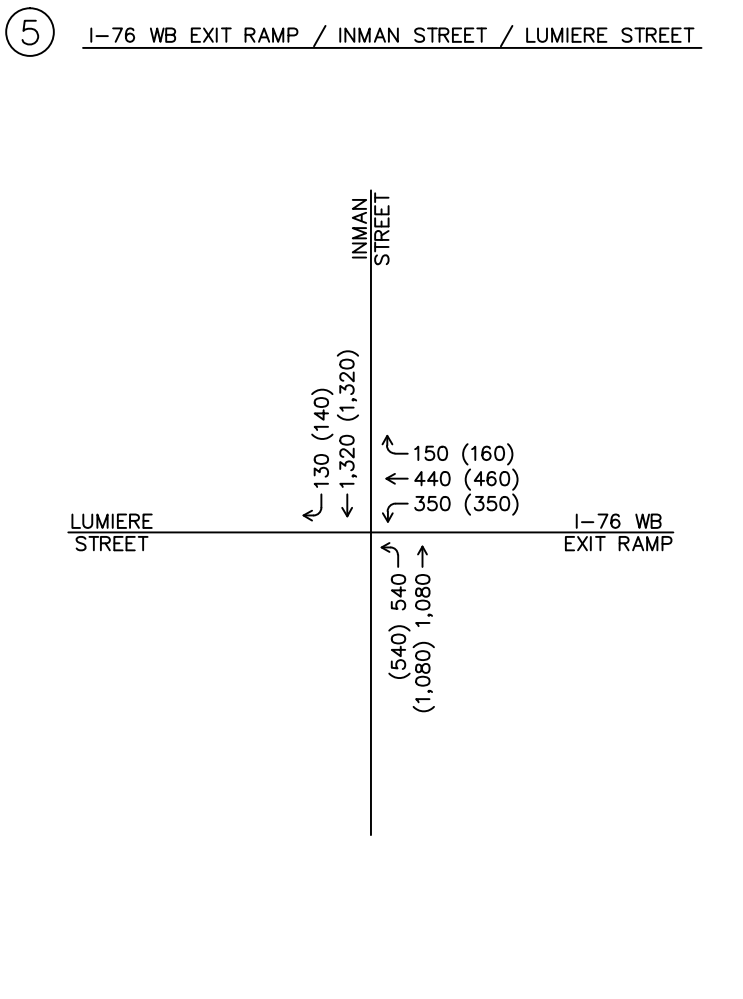
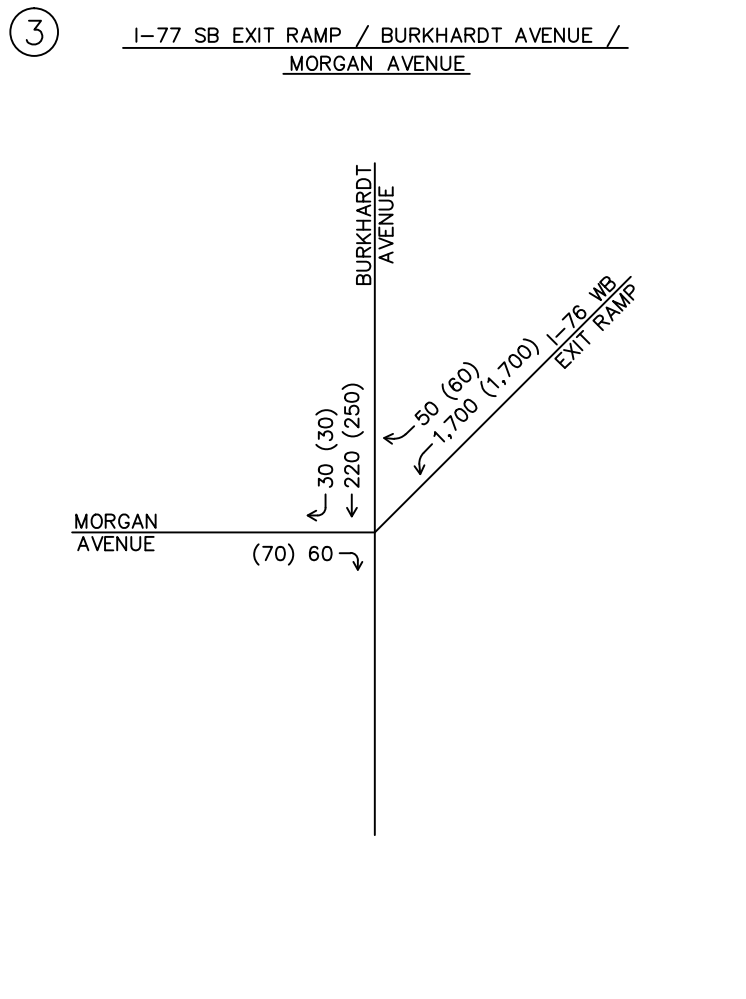
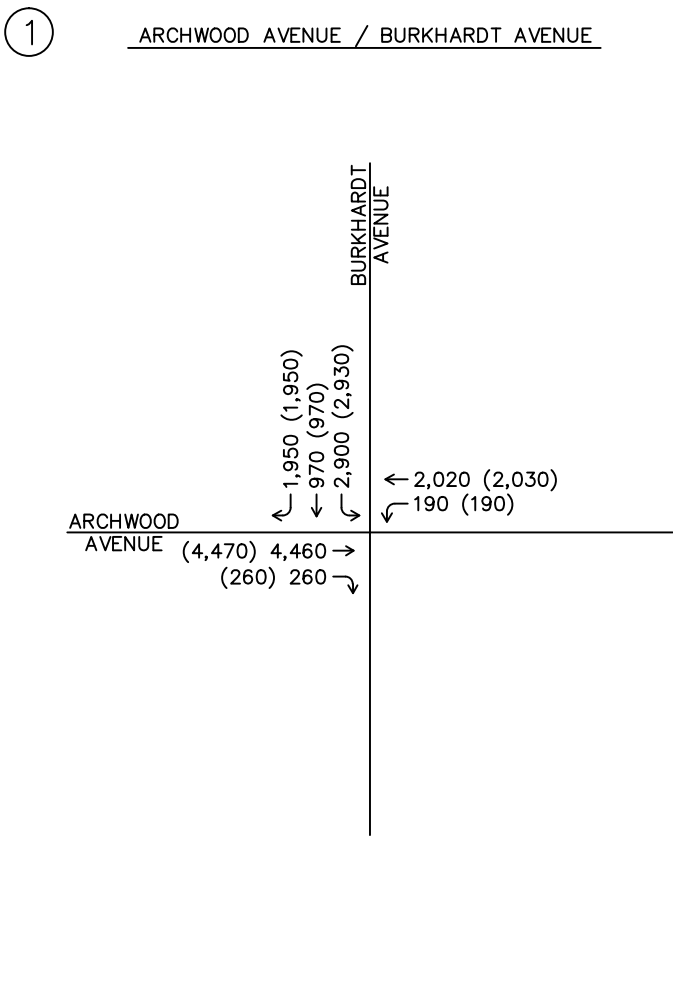


PLATE 1

YEAR 2020 / YEAR 2040
 ADT
 SHEET 1 OF 2

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 ## - YEAR 2020
 (##) - YEAR 2040

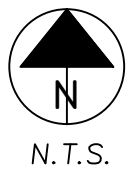


PLATE 1

YEAR 2020 / YEAR 2040
 ADT
 SHEET 2 OF 2

APRIL 2016 (REV. JULY 2016)

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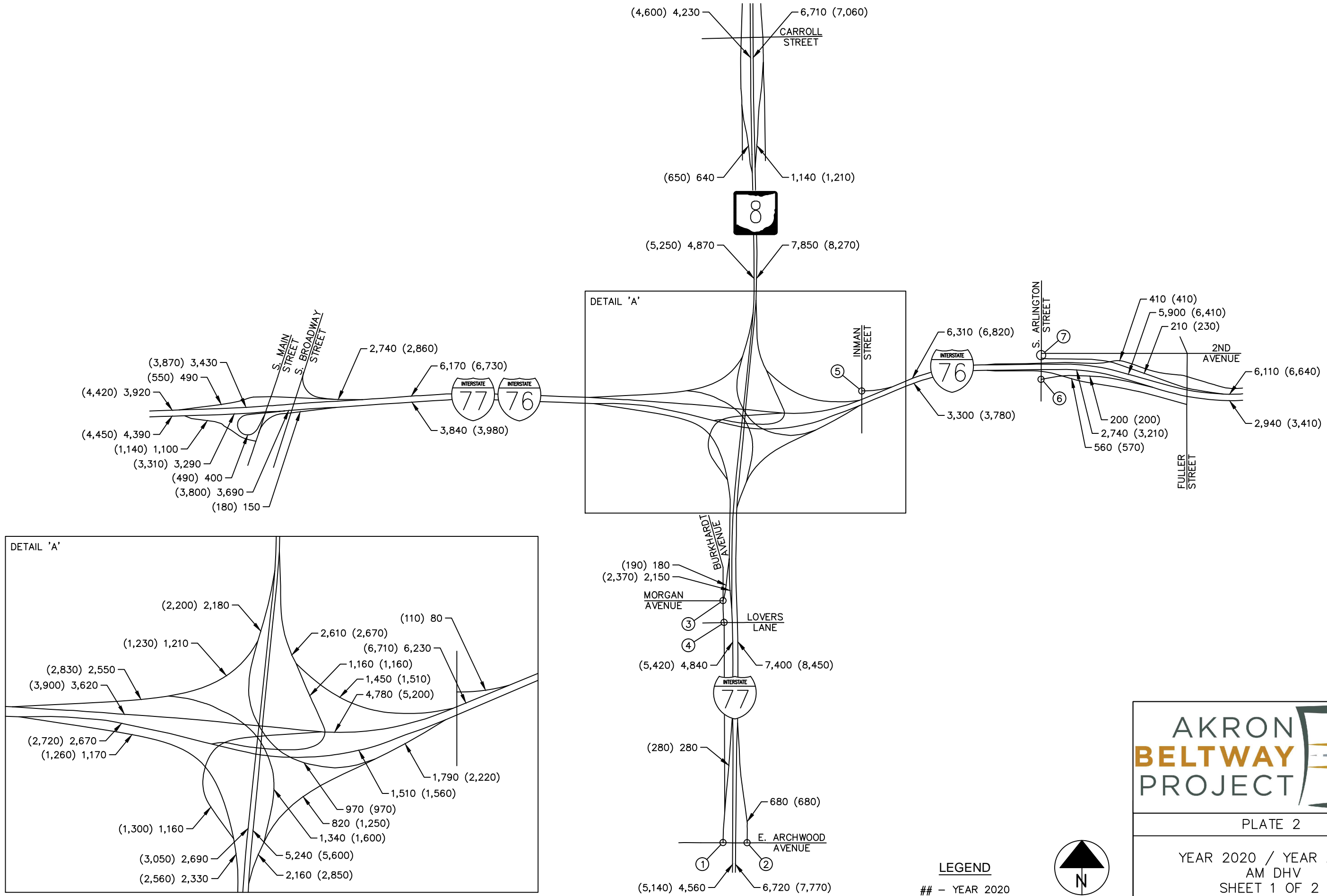


PLATE 2

YEAR 2020 / YEAR 2040
 AM DHV
 SHEET 1 OF 2

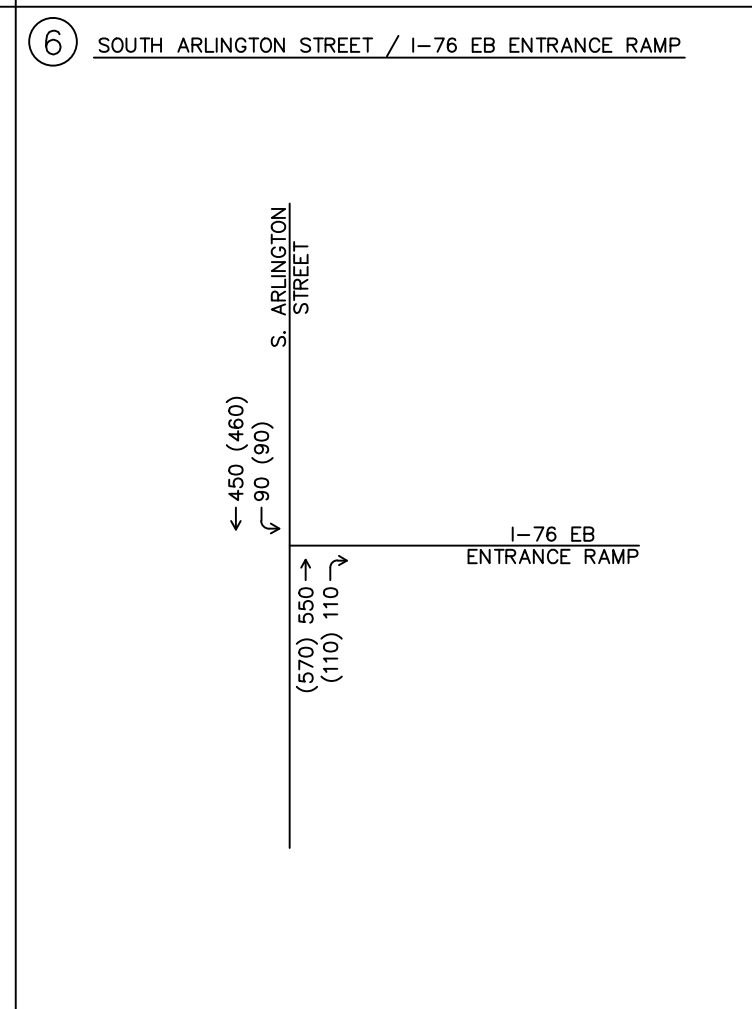
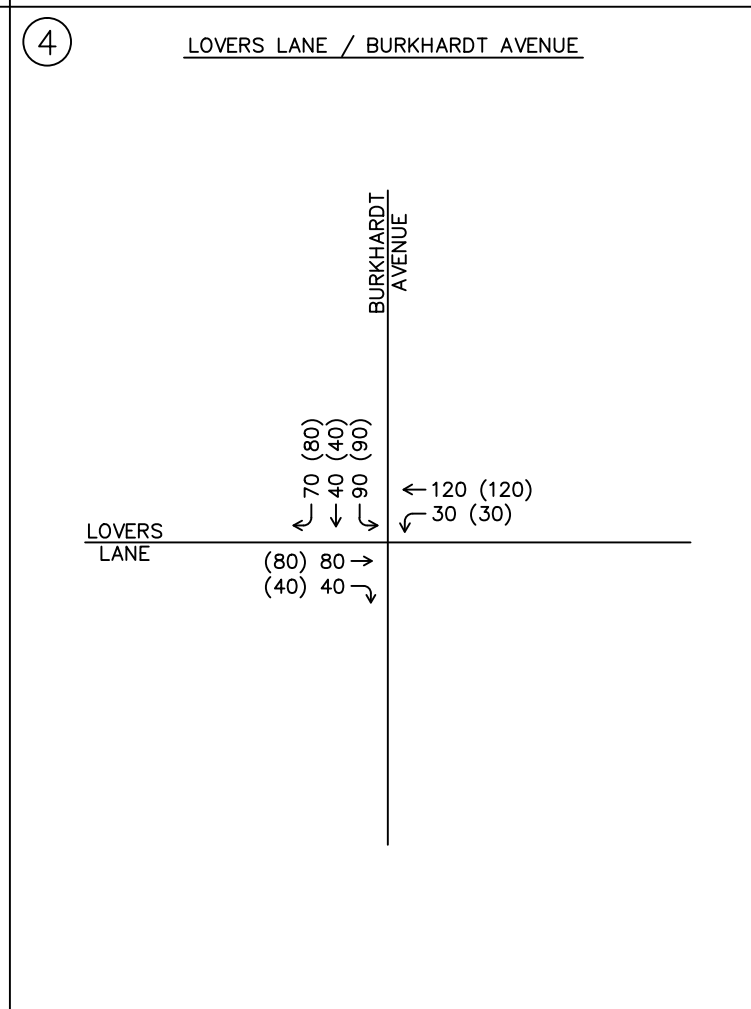
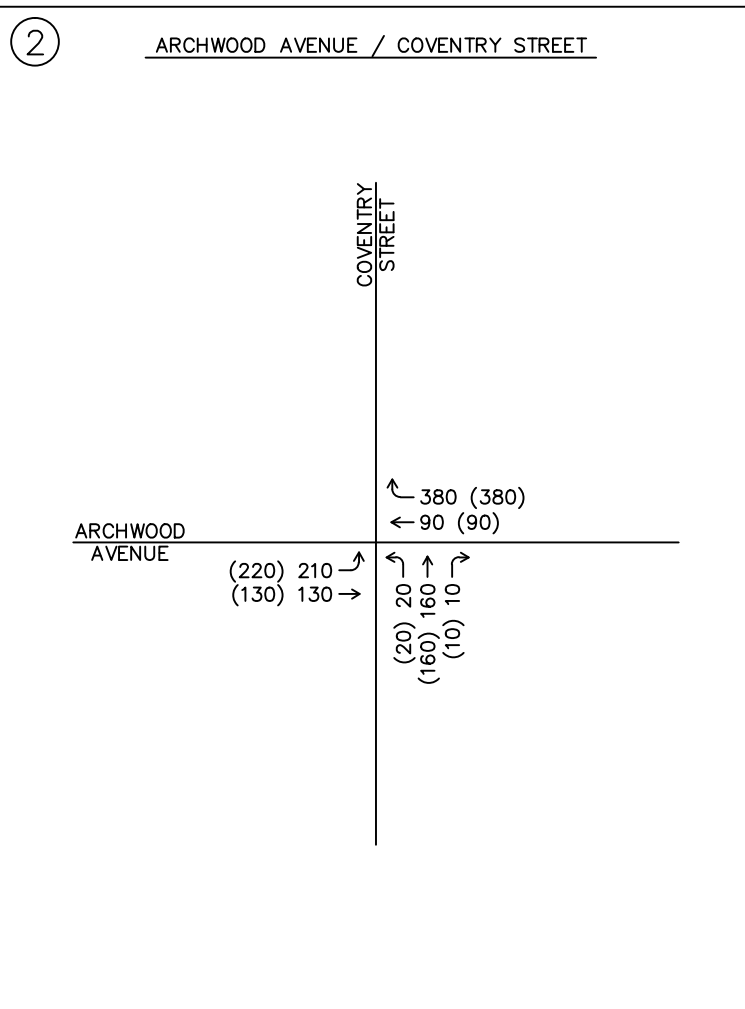
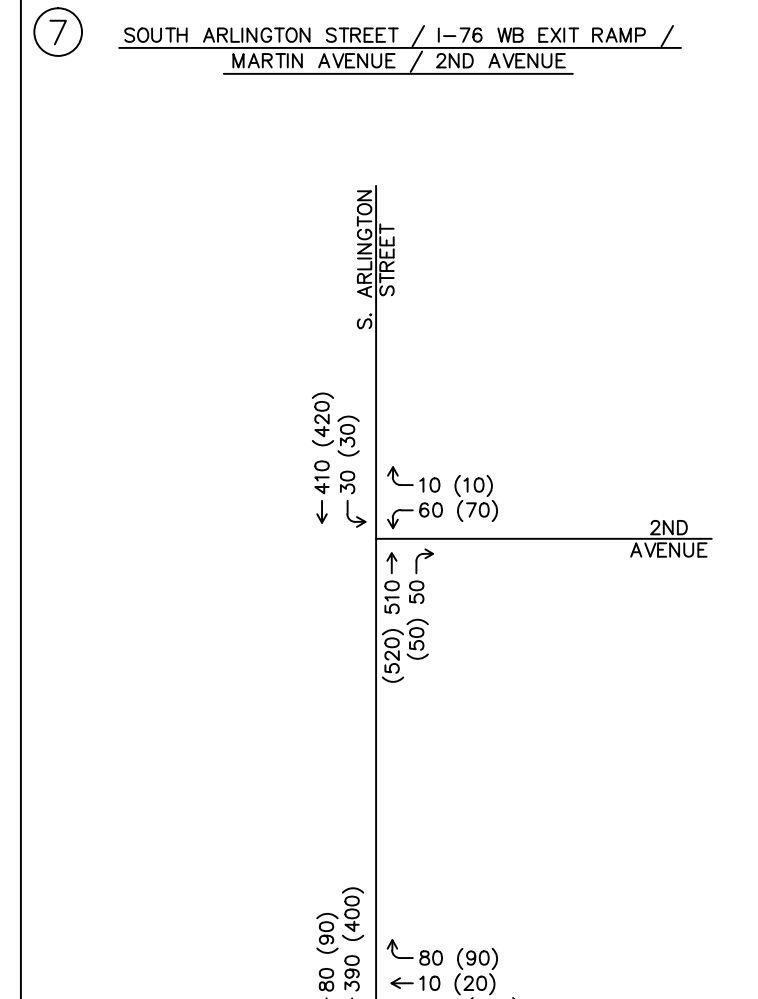
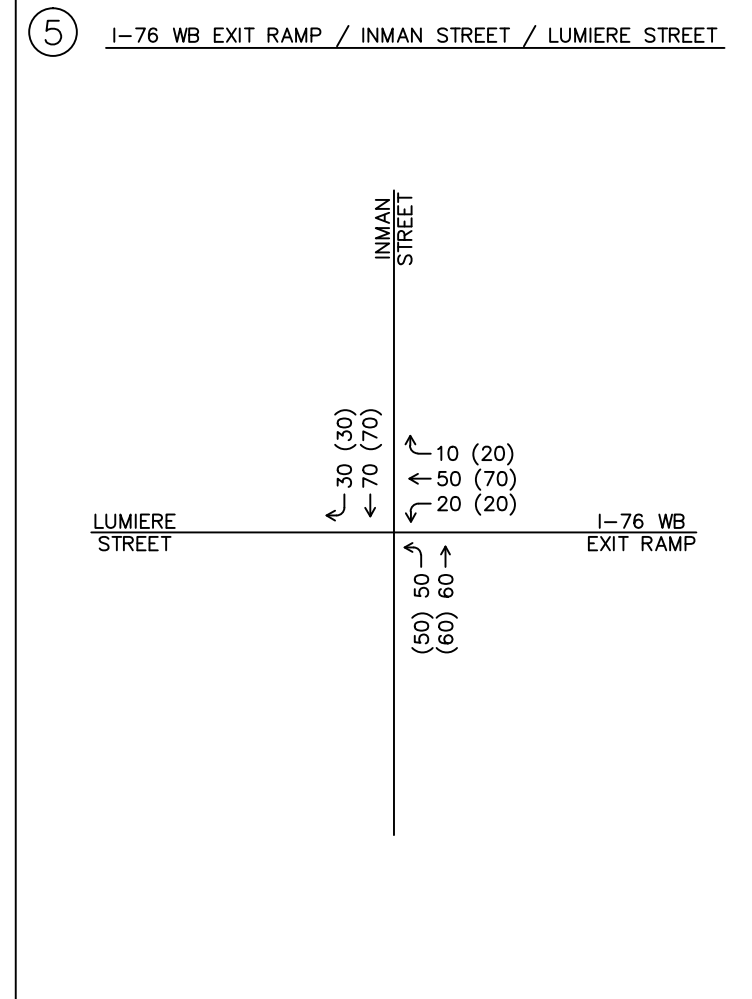
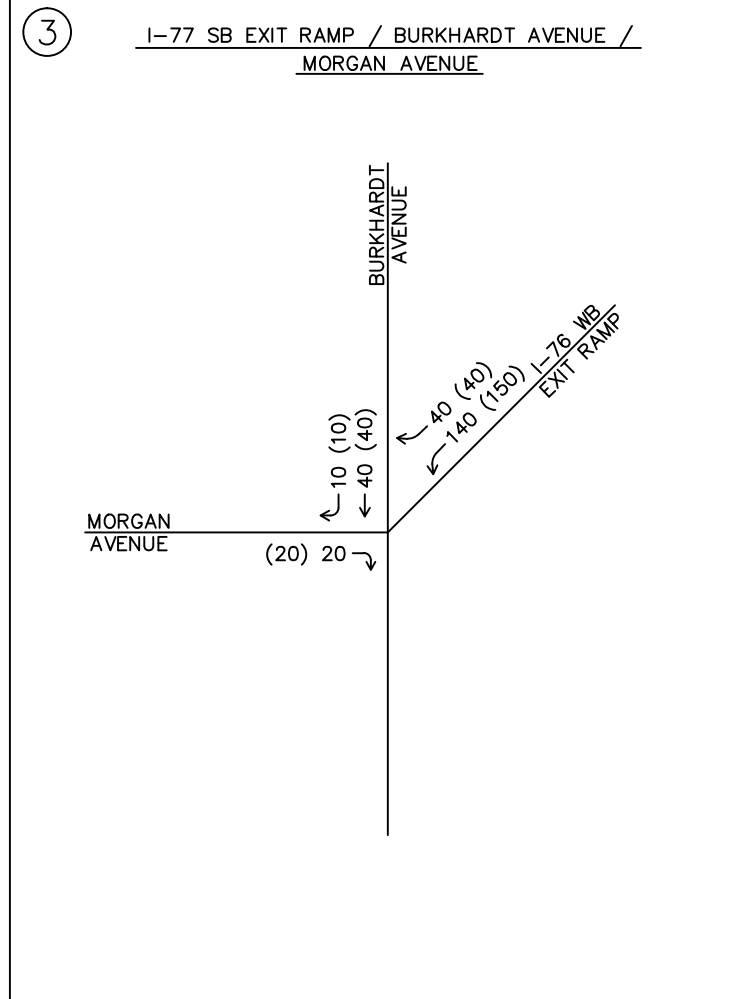
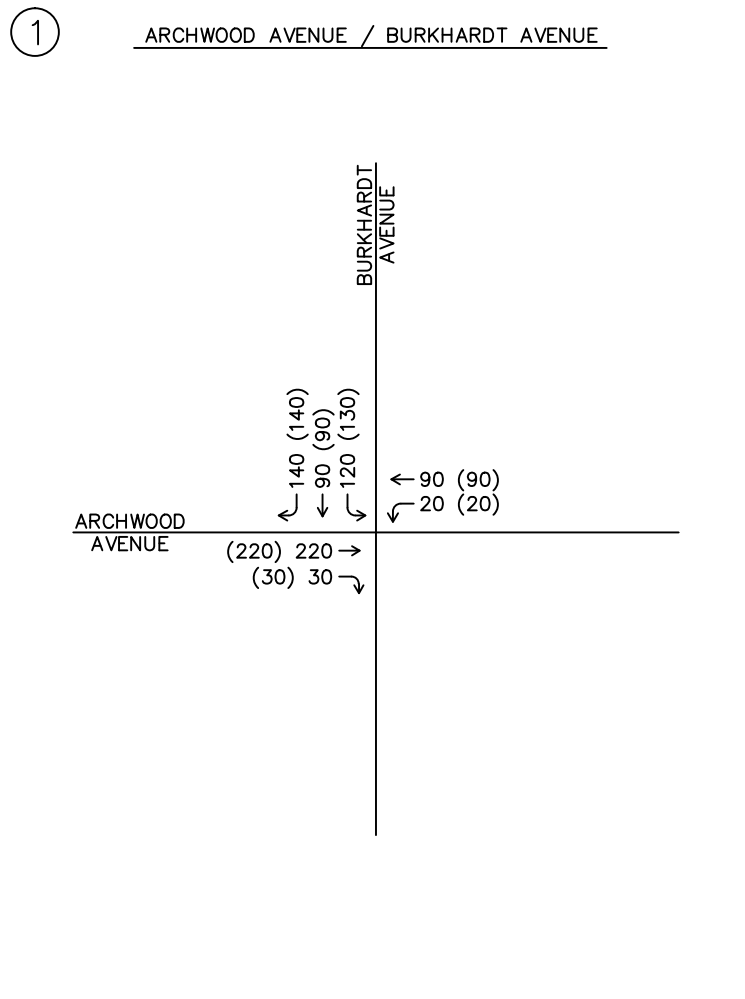
APRIL 2016 (REV. AUGUST 2016)



N.T.S.

Technician: cdeibel

Drawing File: C:\2013\2013050\SUM\9851\Traffic_Requests\Central_Interchange\Figures\Volume_Plates.dwg Layout: Plate 2-2
 Date: Aug 25, 2016 Time: 2:24 pm User: cdeibel



LEGEND

- YEAR 2020
 (##) - YEAR 2040

N.T.S.

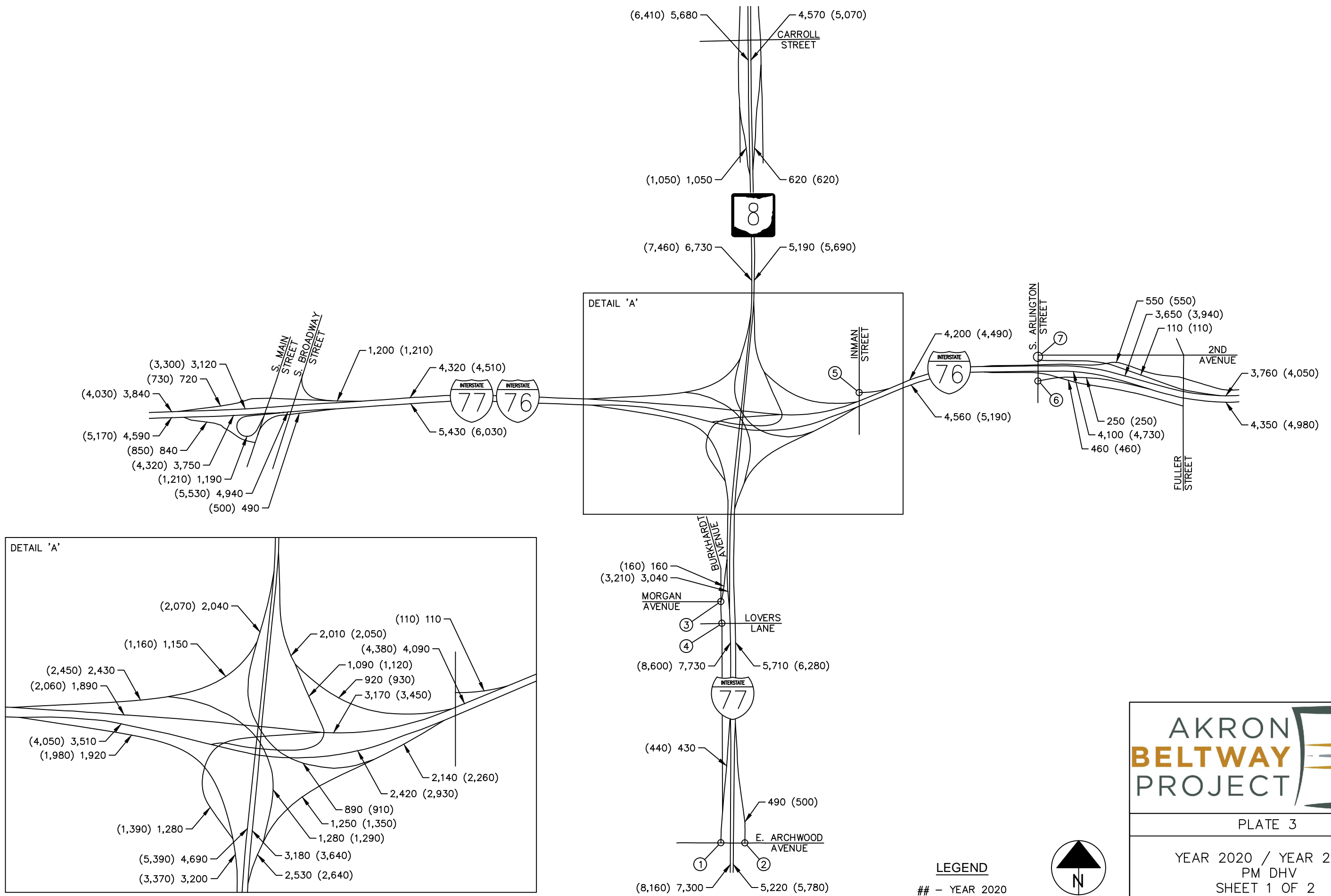
AKRON BELTWAY PROJECT

PLATE 2

YEAR 2020 / YEAR 2040
AM DHV
SHEET 2 OF 2

APRIL 2016 (REV. AUGUST 2016)

Drawing File: C:\2013\20130501\SUM\9851\Traffic_Requests\Central_Interchange\Figures\Volume_Plate3.dwg Layout: Plate 3-1
 Date: Aug 25, 2016 Time: 2:24 pm User: 15707953
 Technician: cdeibel



LEGEND
 ## - YEAR 2020
 ### - YEAR 2040



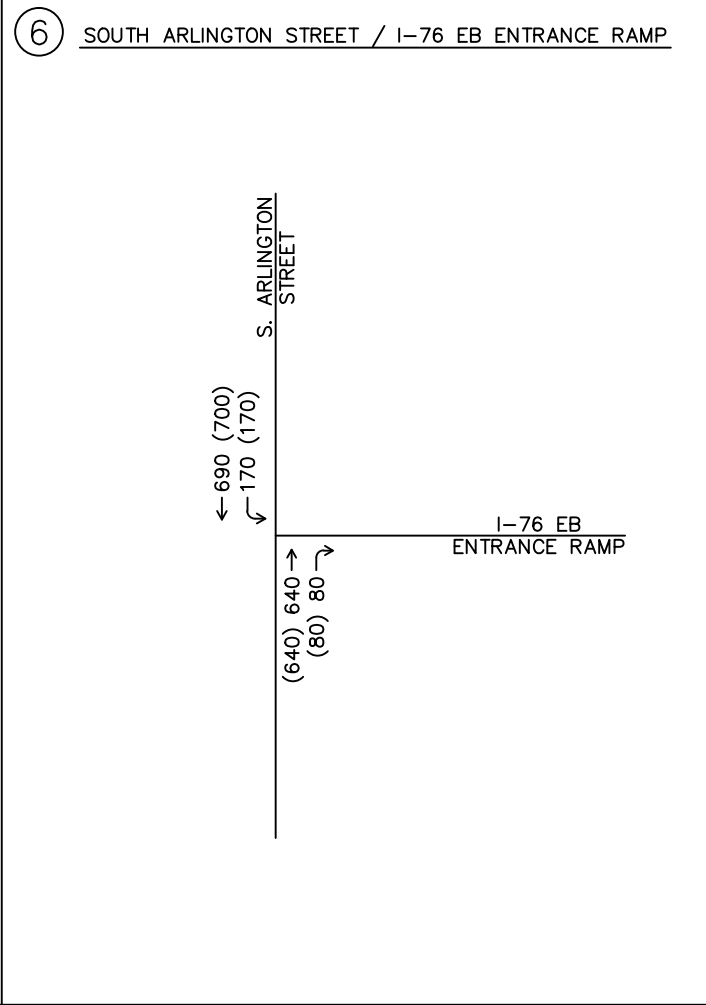
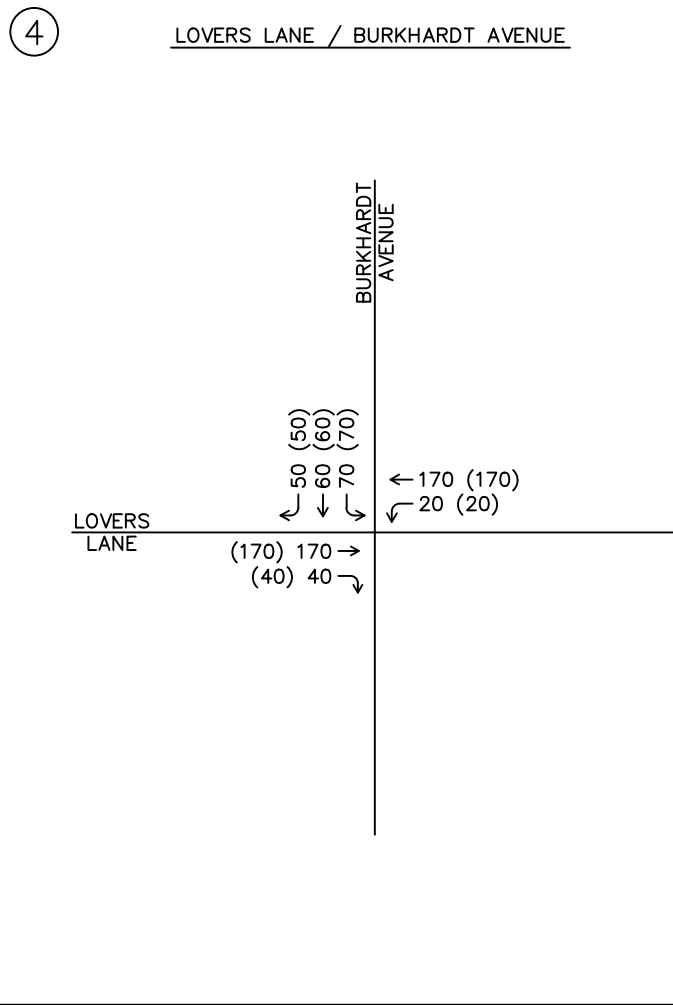
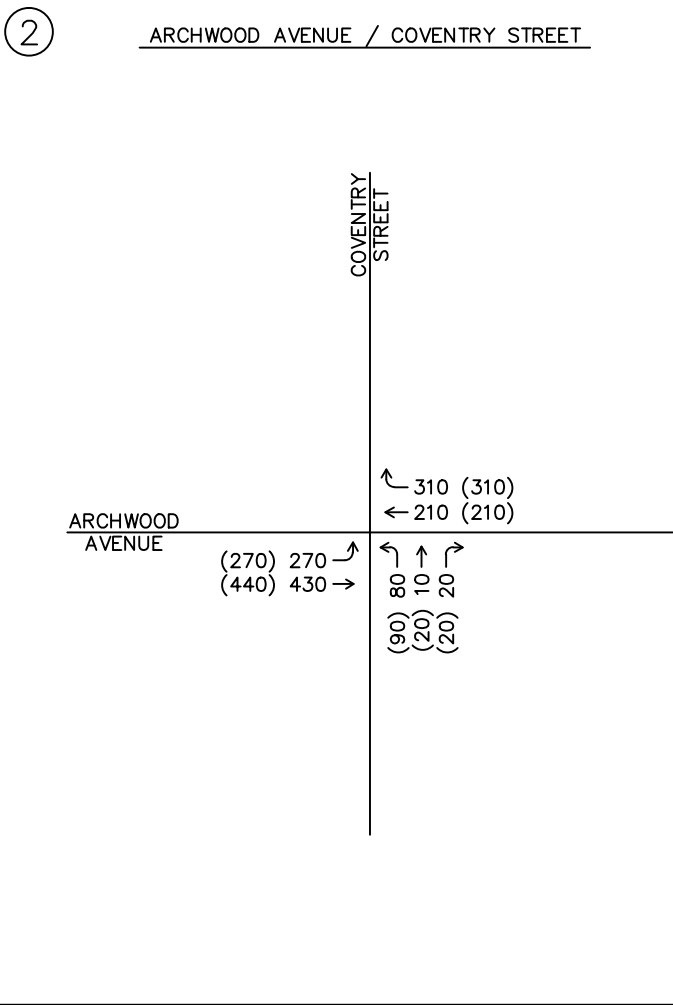
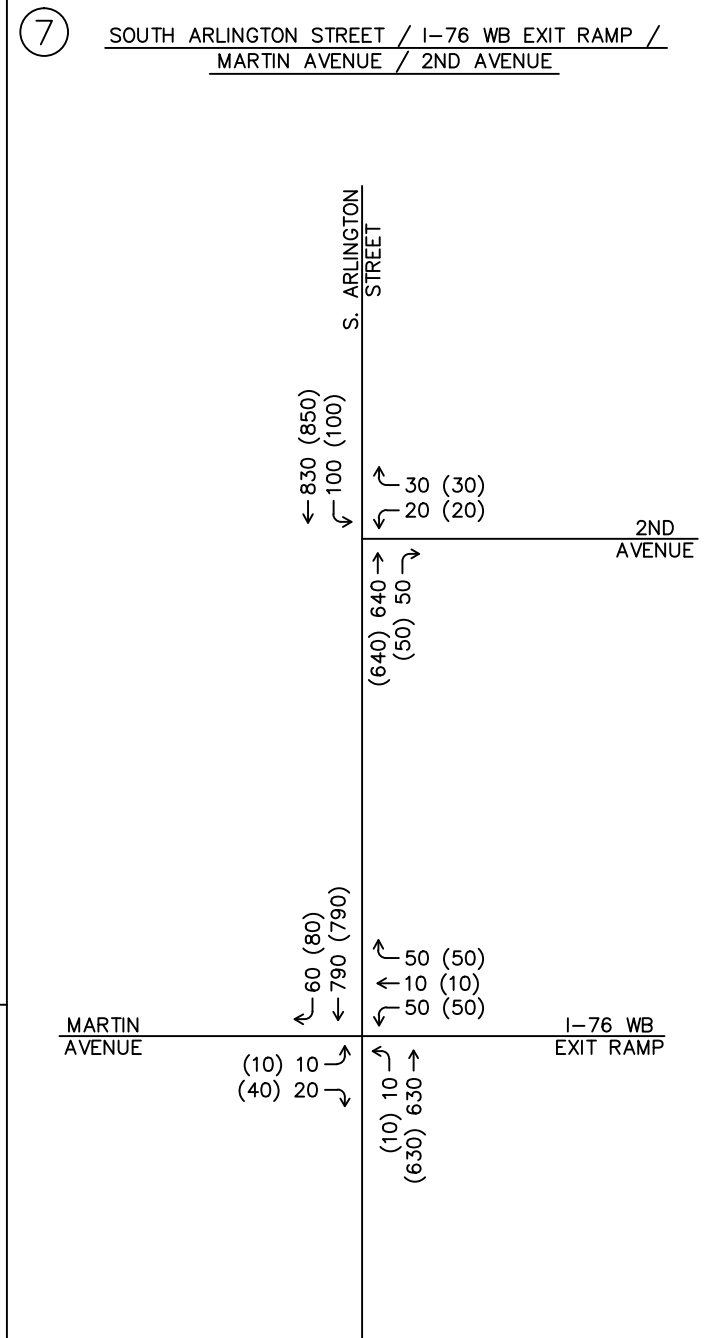
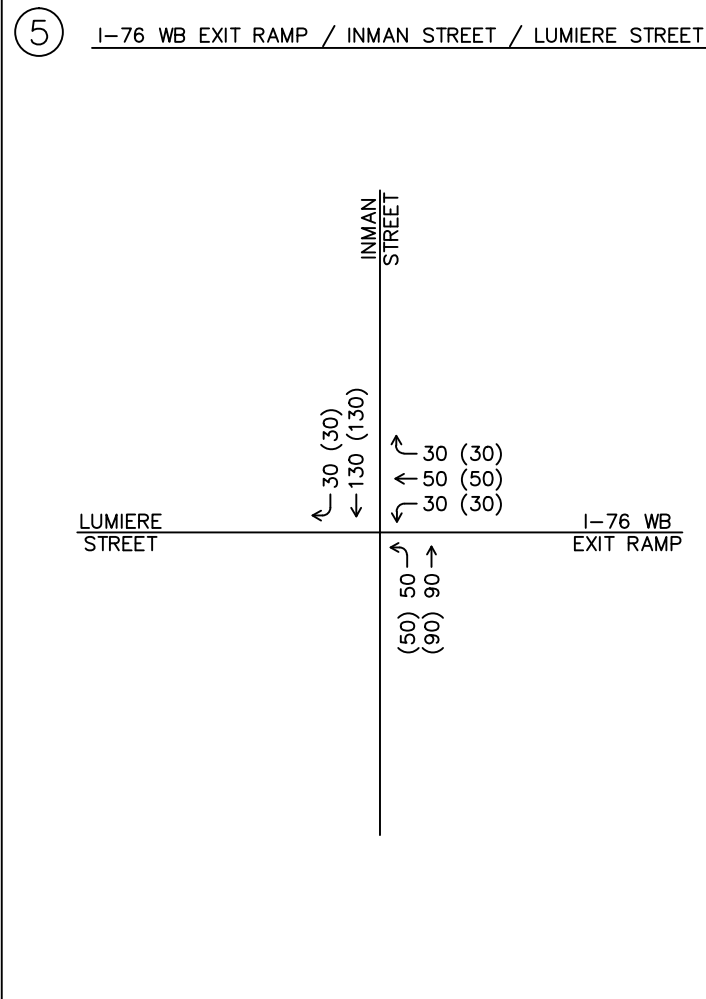
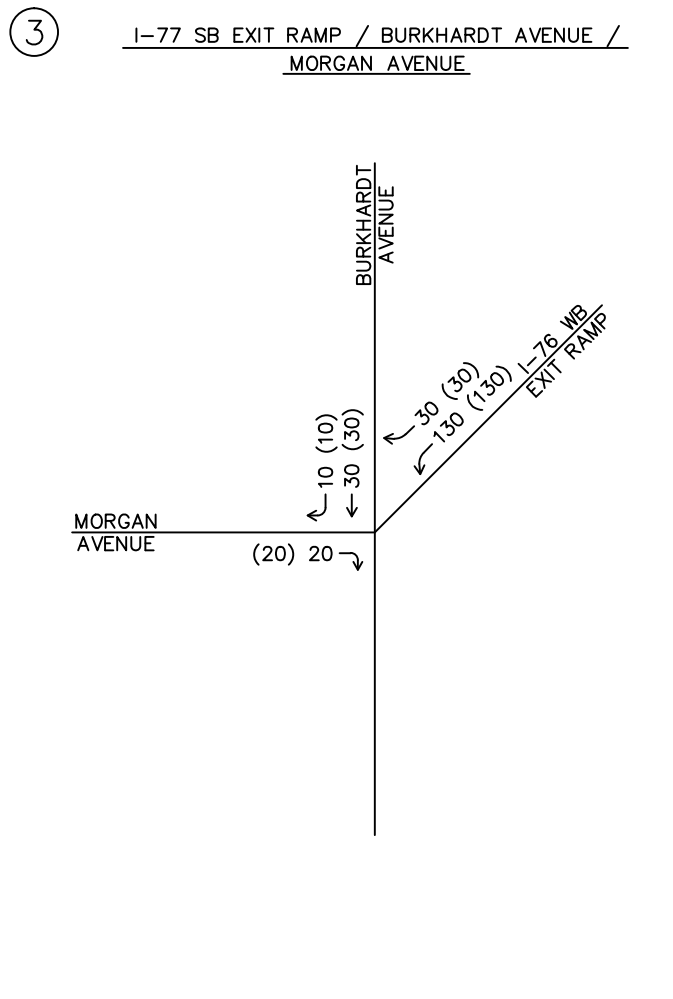
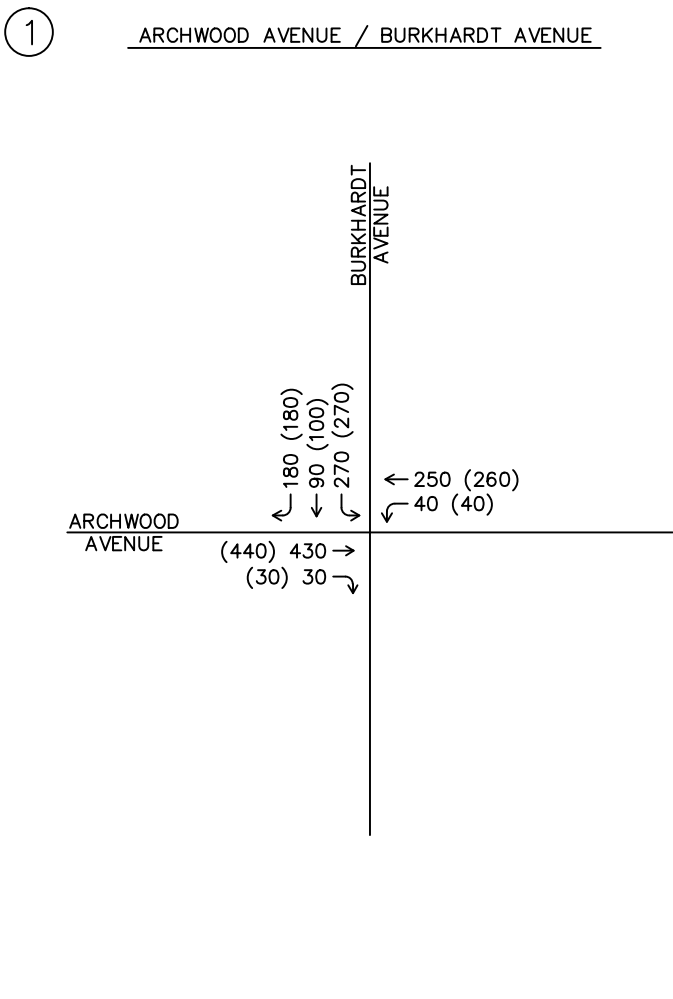
AKRON
BELTWAY
PROJECT

PLATE 3

YEAR 2020 / YEAR 2040
PM DHV
SHEET 1 OF 2

APRIL 2016 (REV. AUGUST 2016)

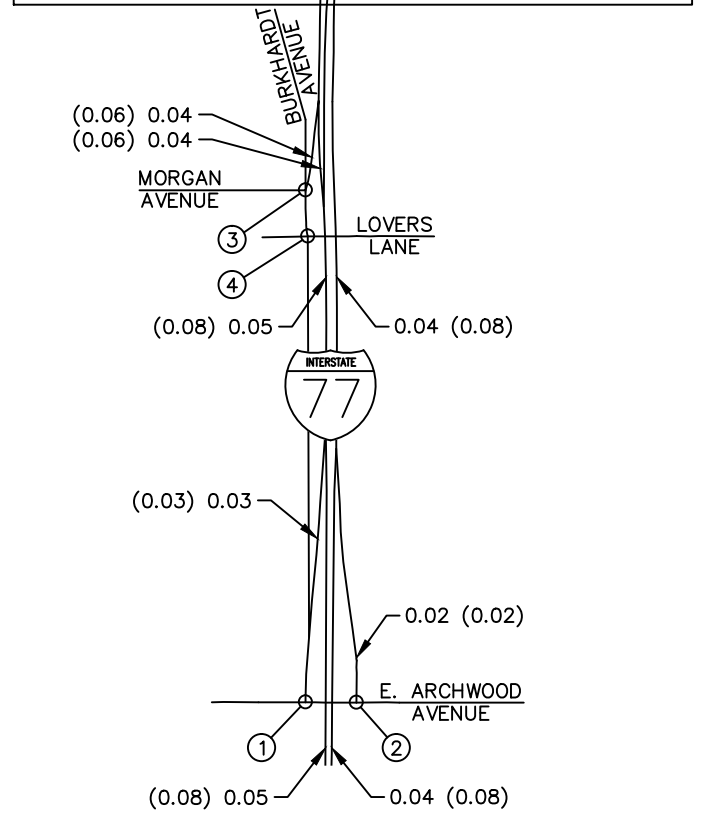
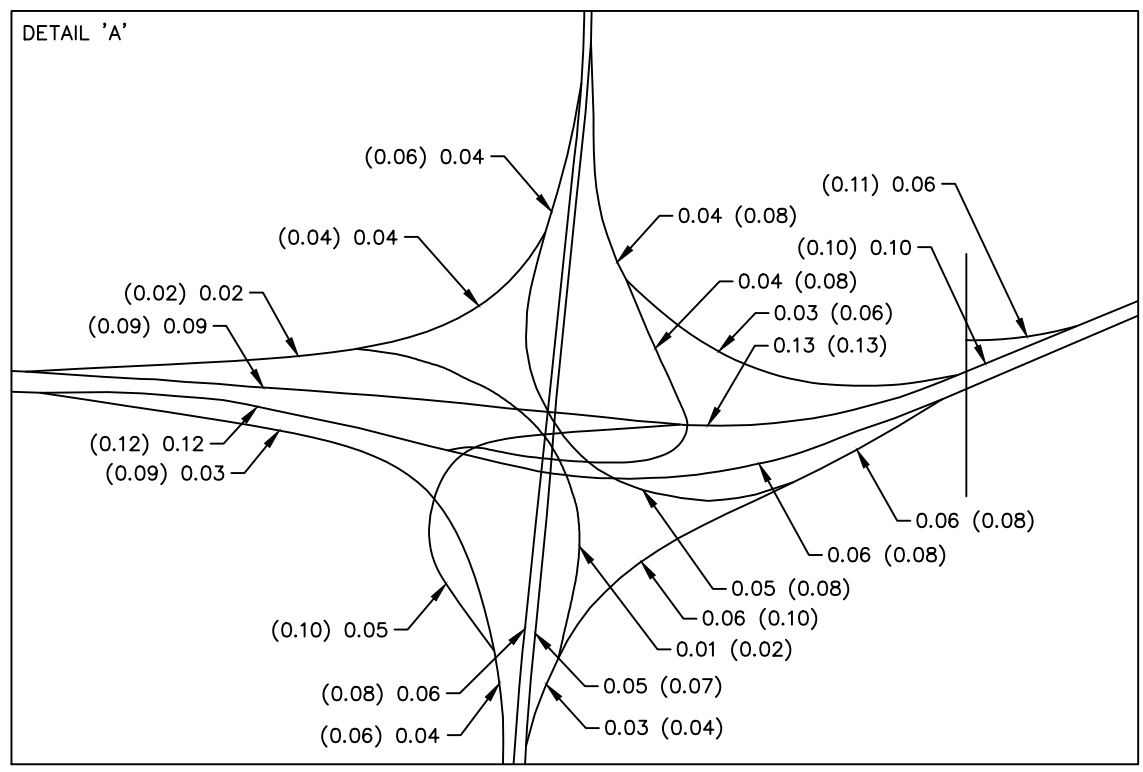
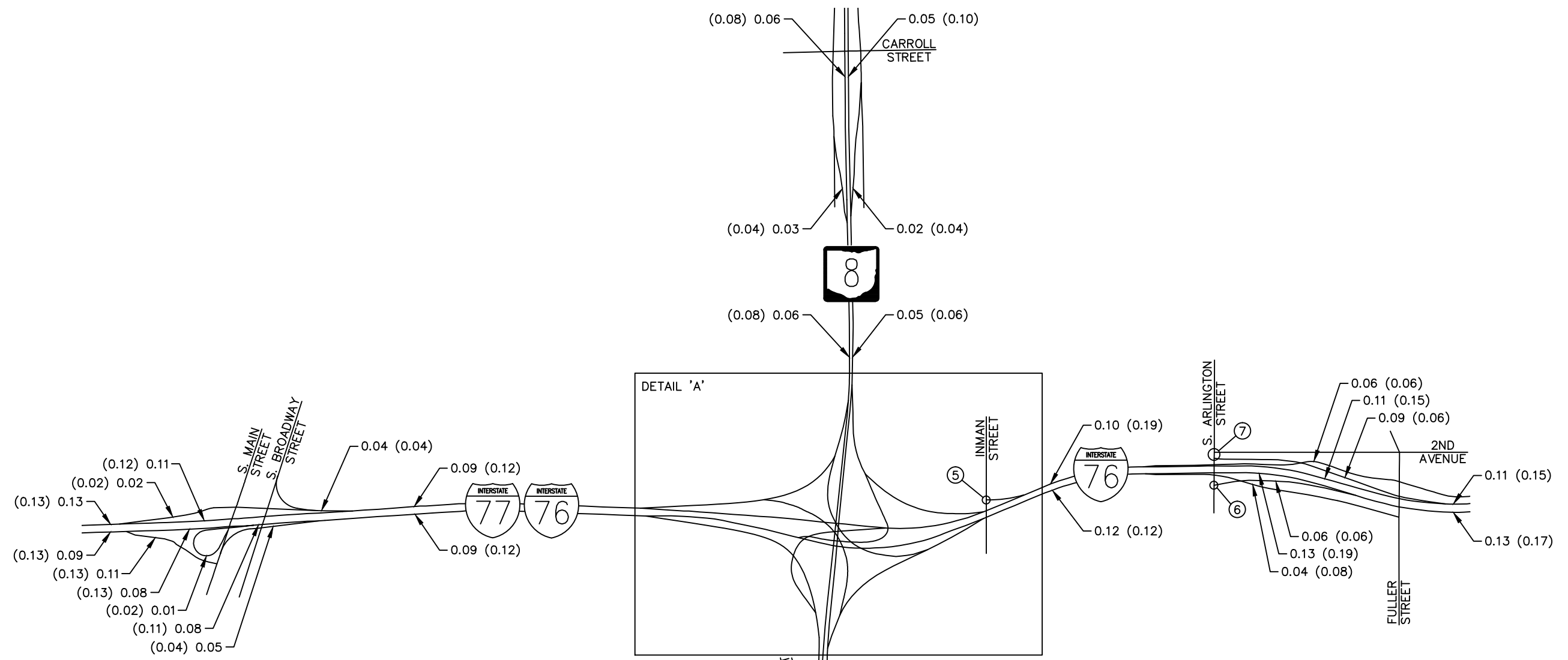
Drawing File: C:\2013\2013050\SUM\9851\Traffic\Central Interchange\Figures\Volume Plates.dwg Layout: Plate 3-2
 Date: Aug 25, 2016 Time: 2:24 pm User: cdeibel
 Technician: cdeibel



LEGEND
 ## - YEAR 2020
 (##) - YEAR 2040

AKRON BELTWAY PROJECT
 PLATE 3
 YEAR 2020 / YEAR 2040
 PM DHV
 SHEET 2 OF 2
 APRIL 2016 (REV. AUGUST 2016)

Drawing File: c:\2013\20130501\SUM\98591\Traffic_Requests\Central_Interchange\Figures\Volume_Plates.dwg Layout: Plate 4-1
 Date: Apr 22, 2016 Time: 10:34 am Title: 1:57/9853
 Technician: ddomrosky



LEGEND
 ## - TD
 (##) - T24



AKRON

BELTWAY

PROJECT

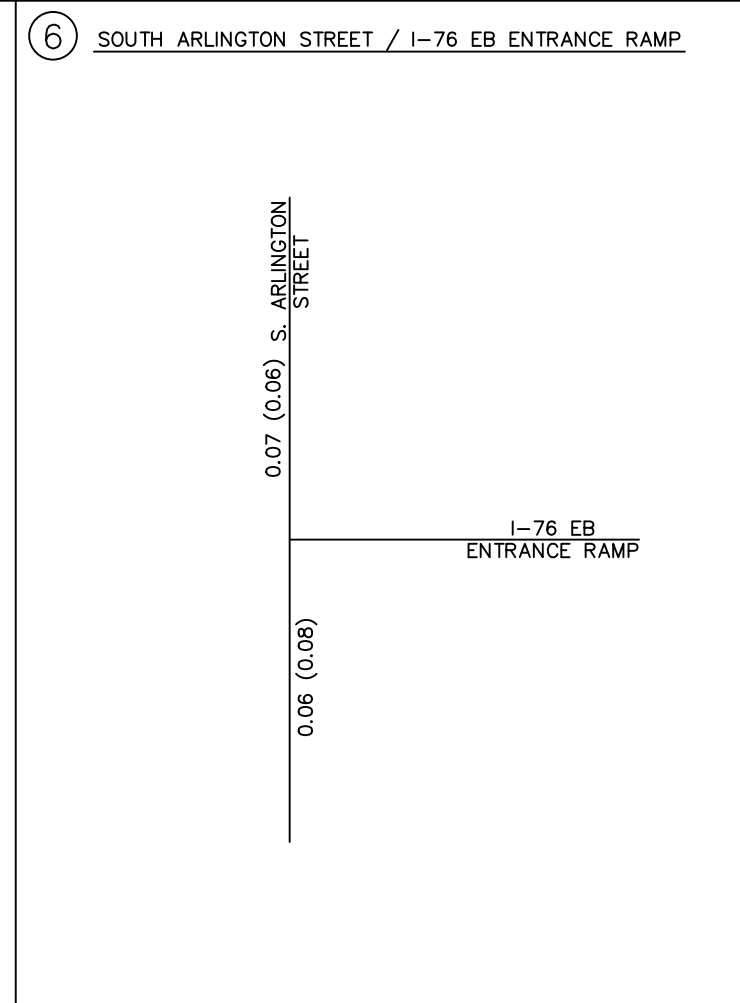
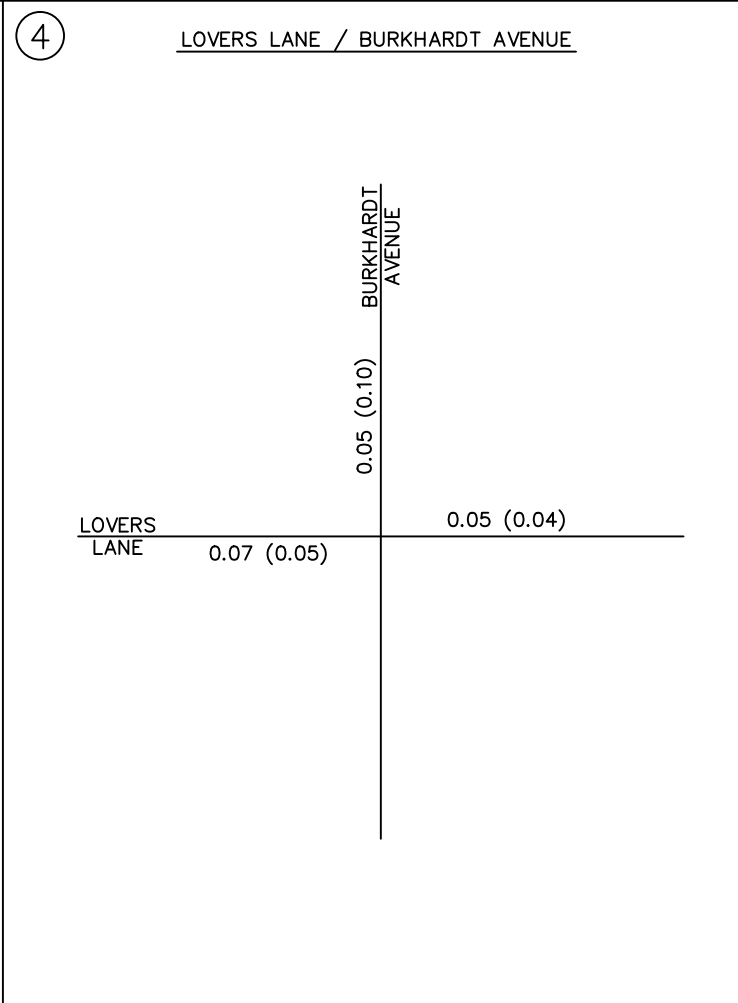
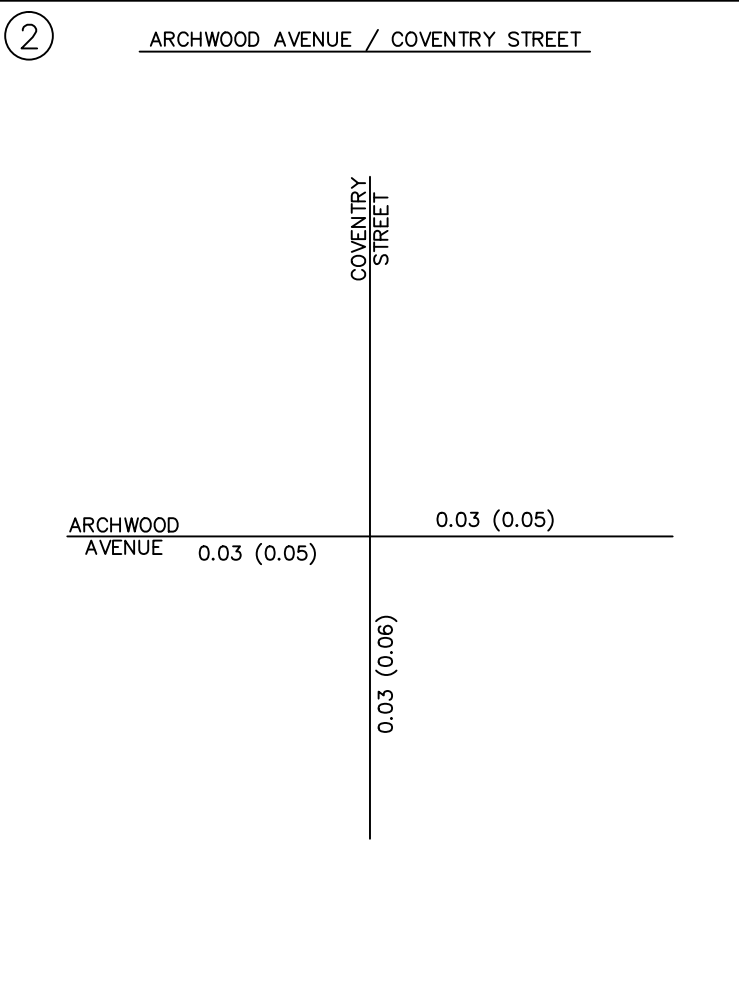
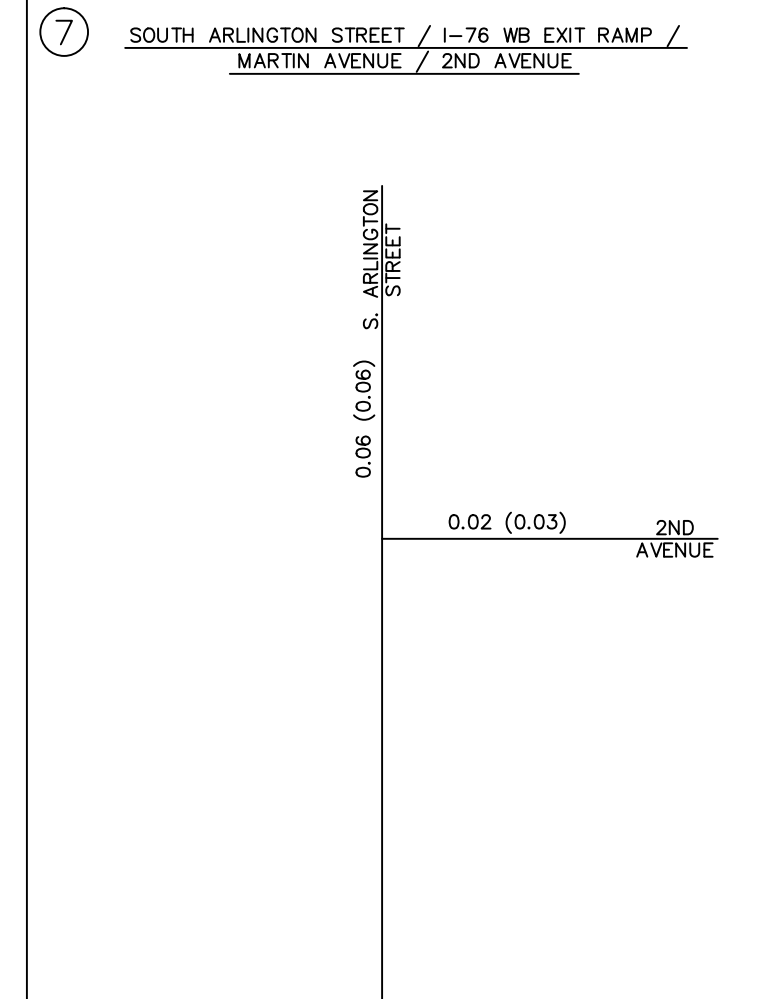
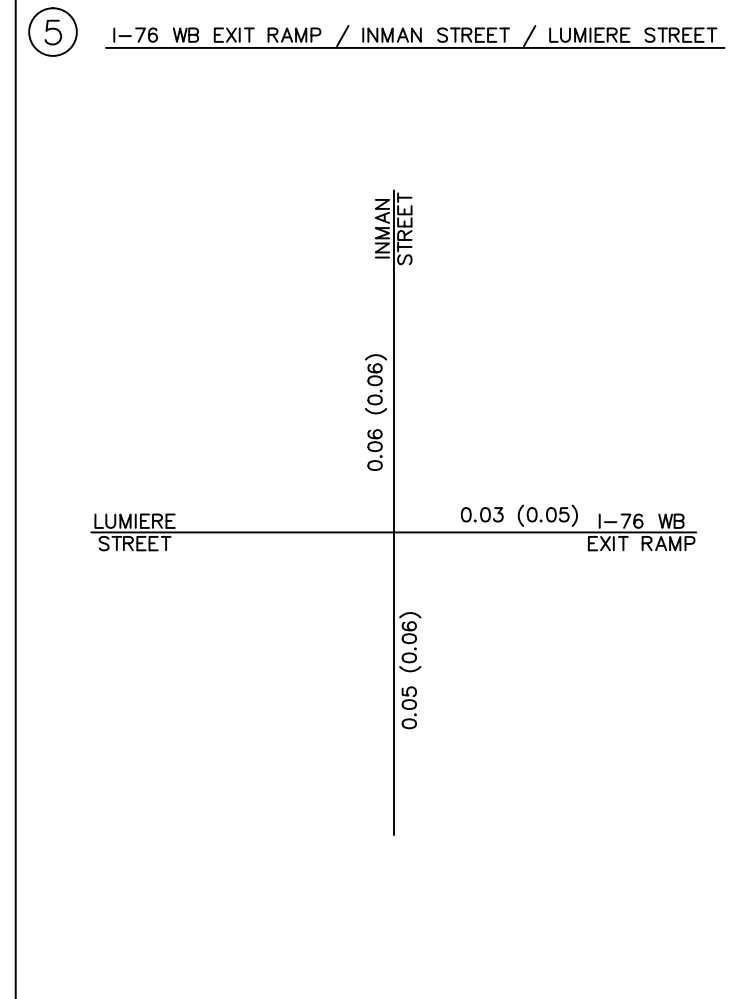
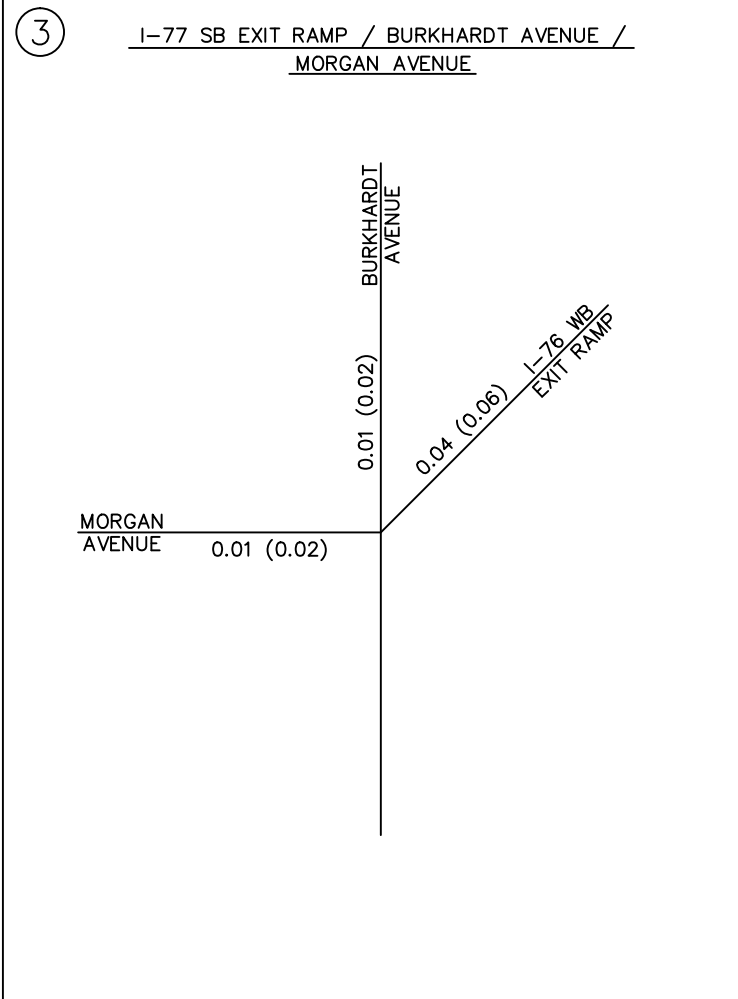
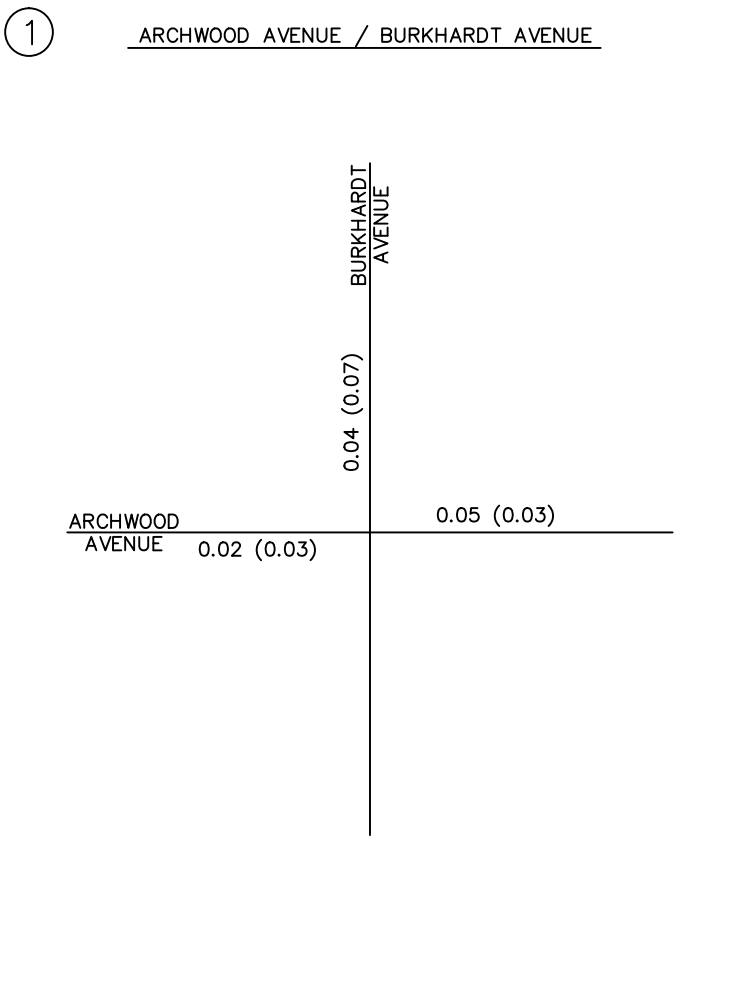
PLATE 4

TRUCK PERCENTAGES

SHEET 1 OF 2

APRIL 2016

Drawing File: c:\2013\201306\SUM\98531\Traffic_Requests\Central_Exchange\Figures\Volume_Plates.dwg Layout: Plate 4-2
 Date: Apr 22, 2016 Time: 10:23 am Title: -15078633
 Technician: ddombrosky




MARTIN AVENUE 0.01 (0.02) I-76 WB EXIT RAMP 0.09 (0.14)

0.04 (0.06)

0.06 (0.06) S. ARLINGTON STREET

0.02 (0.03) 2ND AVENUE

LEGEND
 ## - TD
 (##) - T24

 N.T.S.

AKRON BELTWAY PROJECT

PLATE 4

TRUCK PERCENTAGES SHEET 2 OF 2

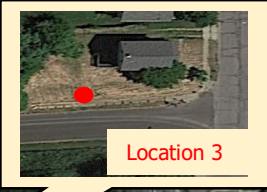
APRIL 2016

APPENDIX C

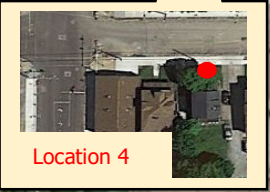
Field Noise Measurements and Noise Model Validation



Location 1



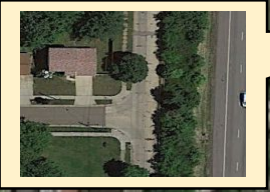
Location 3



Location 4



Location 5



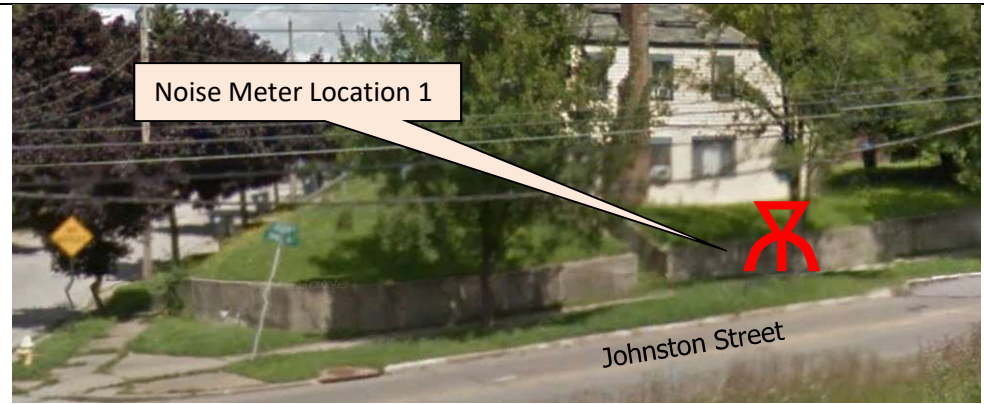
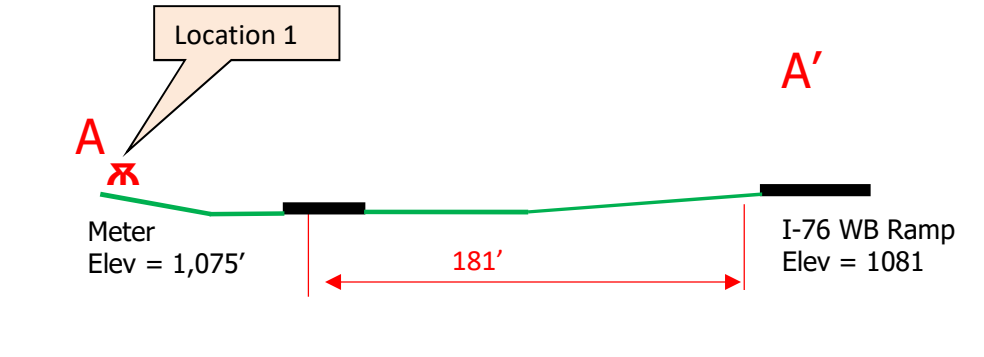
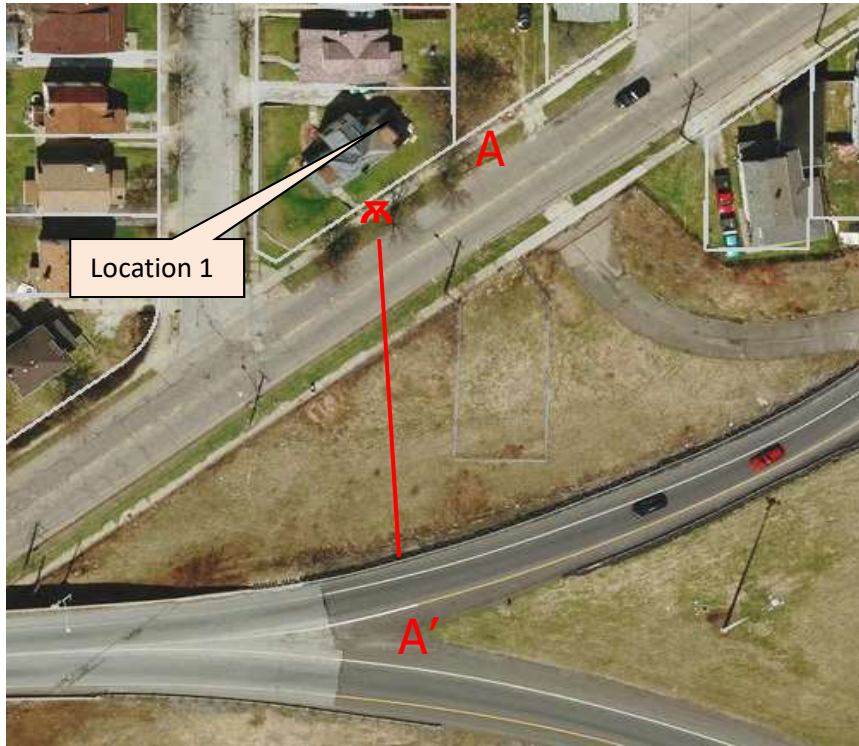
Location 8



Location 6

Noise Measurement Locations
SUM-76-Central Interchange (101402)

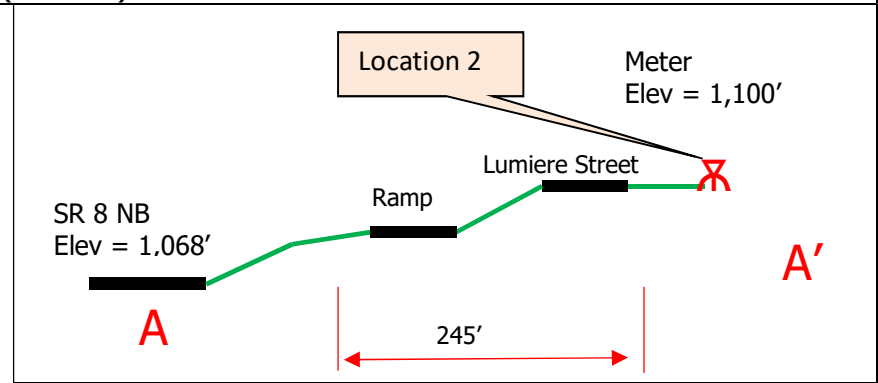
Field Worksheet – Location 1
SUM-76-11.56 (101402)



Traffic Volume				Measurement Site	Sound Measurements dBA (Leq)		
Roadway	Classification	Westbound	Eastbound		Each block = 1 minute (read left to right)		
SR 8 SB to I-76 WB	Auto	684		Location: Front yard of home on Johnston Street facing I-76 WB Date: 4/12/2016 Time: 8:10 AM Weather: Sunny, 50° Events:	65.7	65.3	68.5
	Medium Truck	8			70.1	69.3	67.4
	Heavy Truck	20			67.0	68.1	67.1
		Westbound			67.2	67.3	67.1
I-77 NB to I-76 westbound	Auto	728			67.1	67.2	67.3
	Medium Truck	10		15 minute Leq = 67.3dB			
	Heavy Truck	28					

Notes: The I-76 Functional Classification is an Urban Expressway. Noise level from Johnston Street higher than interchange related noise

Field Worksheet – Location 2
SUM-76-11.56 (101402)



Traffic Volume

Roadway	Classification	Northbound	
Ramp I-76 WB to SR 8 NB	Auto	944	
	Medium Truck	32	
	Heavy Truck	68	
		Northbound	
Ramp I-76 EB to SR 8 NB	Auto	680	
	Medium Truck	8	
	Heavy Truck	20	

Measurement Site

Location: Front yard of home on Lumiere Street facing SR 8 NB

Date: 4/12/2016

Time: 8:40

Weather: Sunny, 50°

Events:

**Sound Measurements
dBA (Leq)**

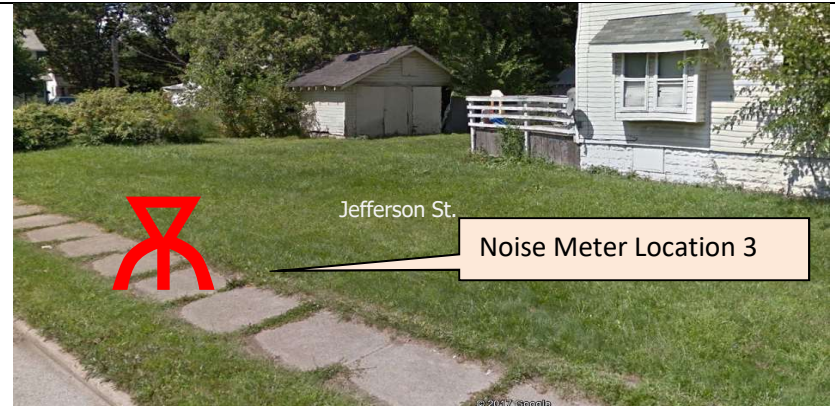
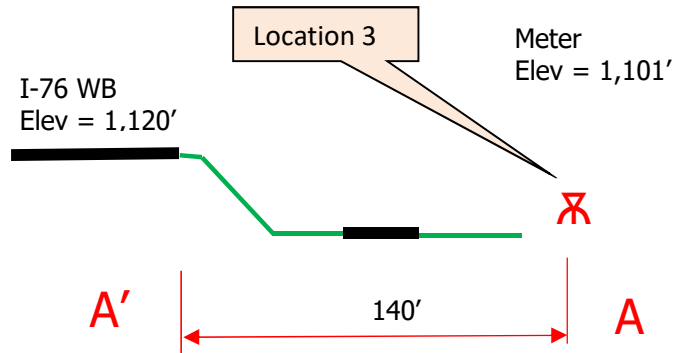
Each block = 1 minute
(read left to right)

69.3	69.8	69.4
69.7	69.6	69.3
69.3	69.1	69.0
69.0	68.9	68.9
68.9	68.9	68.8

15 minute Leq = 68.8dB

Notes: The I-76 Functional Classification is an Urban Expressway.

Field Worksheet – Location 3
SUM-76-11.56 (101402)



Traffic Volume

Roadway	Classification	Westbound	Eastbound
Ramp to SR 8 NB	Auto	944	
	Medium Truck	32	
	Heavy Truck	68	
		Westbound	Eastbound
I-76 WB	Auto	1352	
	Medium Truck	68	
	Heavy Truck	148	

Measurement Site

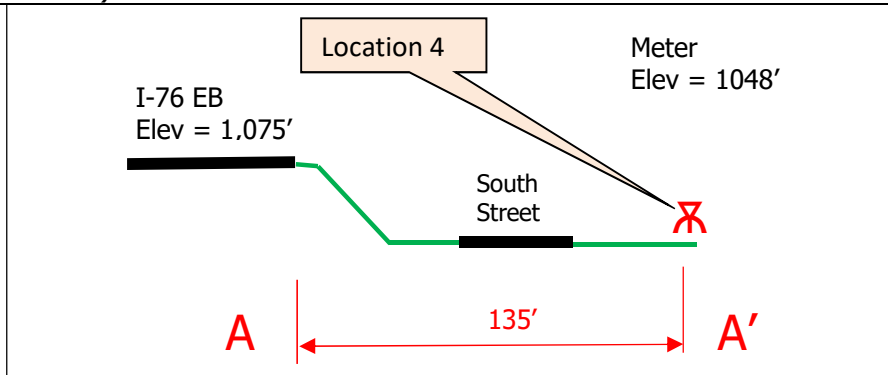
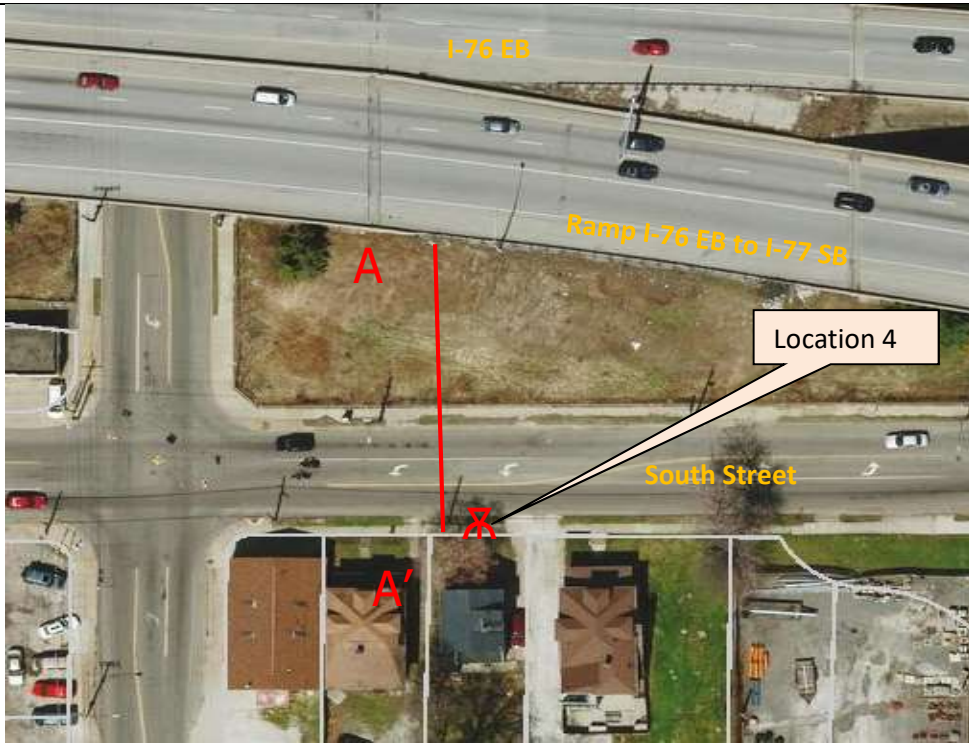
Location: Side yard of home on Lumiere Street facing I-76 WB
Date: 4/12/2016
Time: 9:15
Weather: Partly Cloudy, 55°
Events:

Sound Measurements dBA (Leq)

Each block = 1 minute (read left to right)		
70.1	70.9	71.4
71.9	72.4	72.7
72.8	72.8	72.9
66.272.9	72.9	72.8
72.9	72.9	72.9
15 minute Leq=72.9dB		

Notes: The I-76 Functional Classification is an Urban Expressway.

Field Worksheet – Location 4
SUM-76-11.56 (101402)



Traffic Volume

Roadway	Classification	Eastbound
I-76 EB	Auto	1,360
	Medium Truck	56
	Heavy Truck	108
Ramp I-76 EB to I-77 SB	Auto	1,010
	Medium Truck	16
	Heavy Truck	37

Measurement Site

Location: Front yard of home facing I-76 EB.
Date: 4/12/2016
Time: 9:44
Weather: Partly Cloudy, 58°
Events:

Sound Measurements dBA

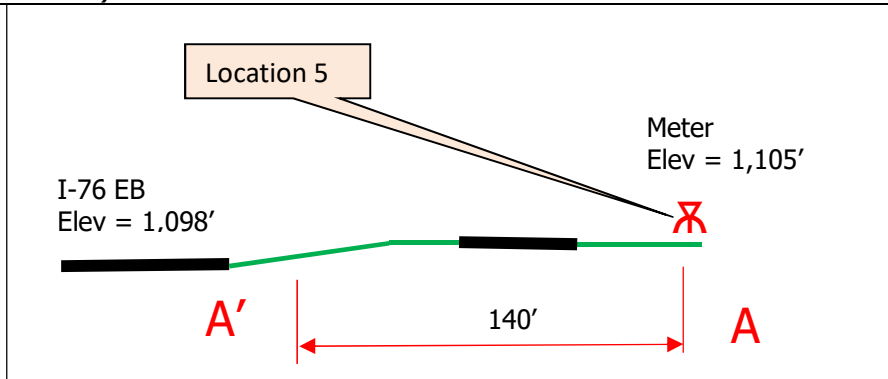
(Leq)
Each block = 1 minute
(read left to right)

67.0	67.6	67.7
67.7	67.6	67.6
67.6	67.7	67.8
67.7	67.7	67.7
67.7	67.7	67.7

15 minute Leq=67.7

Notes: The I-76 Functional Classification is an Urban Expressway.

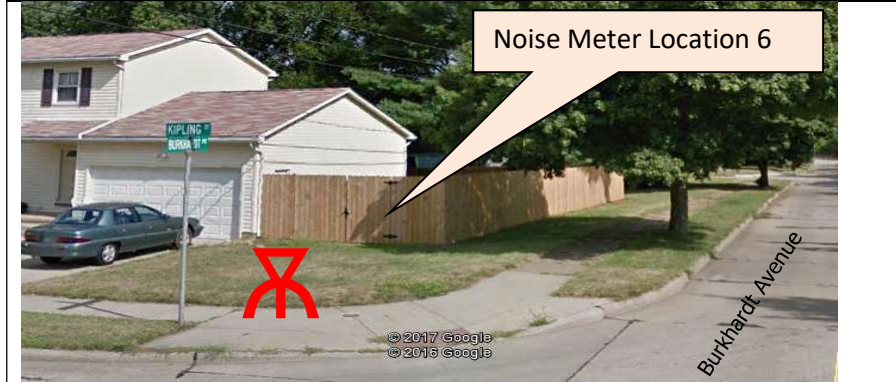
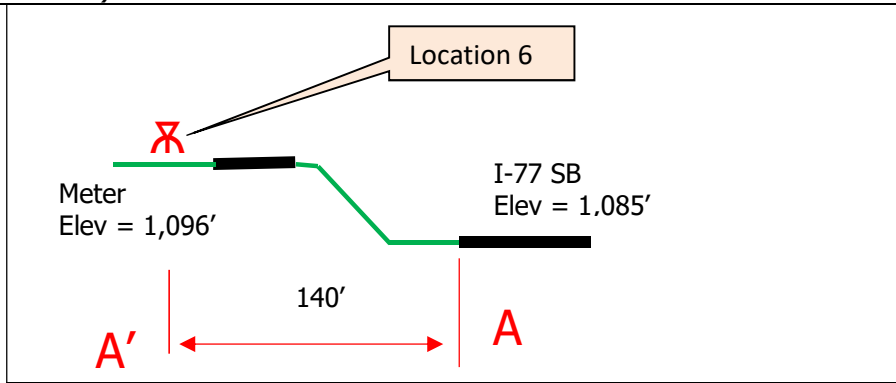
Field Worksheet – Location 5
SUM-76-11.56 (101402)



Traffic Volume				Measurement Site	Sound Measurements dBA (Leq)		
Roadway	Classification	Westbound	Eastbound	Location: Front yard of home on Hammel Street facing the ramp from I-77 NB to I-76 EB. Date: 4/12/2016 Time: 10:20 Weather: Partly Cloudy, 59°	Each block = 1 minute (read left to right)		
Ramp SB SR 8 to EBI-76	Auto		472		67.0	67.6	67.7
	Medium Truck		14	67.7	67.6	67.6	
	Heavy Truck		36	67.6	67.7	67.8	
		Westbound	Eastbound	66.2	67.9	68.0	
Ramp NB I-77 to EB I-76	Auto		728	68.1	68.1	68.1	
	Medium Truck		40	15 minute Leq=68.1			
	Heavy Truck		28				

Notes: The I-76 Functional Classification is a Urban Expressway.

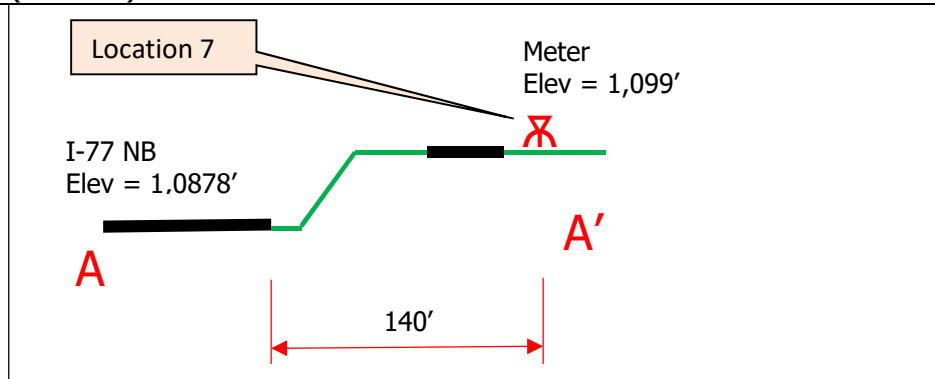
Field Worksheet – Location 6
SUM-76-11.56 (101402)



Traffic Volume				Measurement Site	Sound Measurements dBA (Leq)			
Roadway	Classification	Southbound	Location: Front yard of home at the corner of Burkhardt/Kipling facing I-77 SB.		Each block = 1 minute (read left to right)			
I-77 SB	Auto	3288		Date: 4/12/2016	69.1	69.1	69.2	
	Medium Truck	40		Time: 10:54	64.9	69.4	69.4	
	Heavy Truck	96		Weather: Partly Cloudy, 60°	69.4	69.4	69.5	
					69.5	69.5	69.6	
	Auto			Events:	69.6	69.6	69.6	
	Medium Truck				15 minute Leq=69.6			
	Heavy Truck							

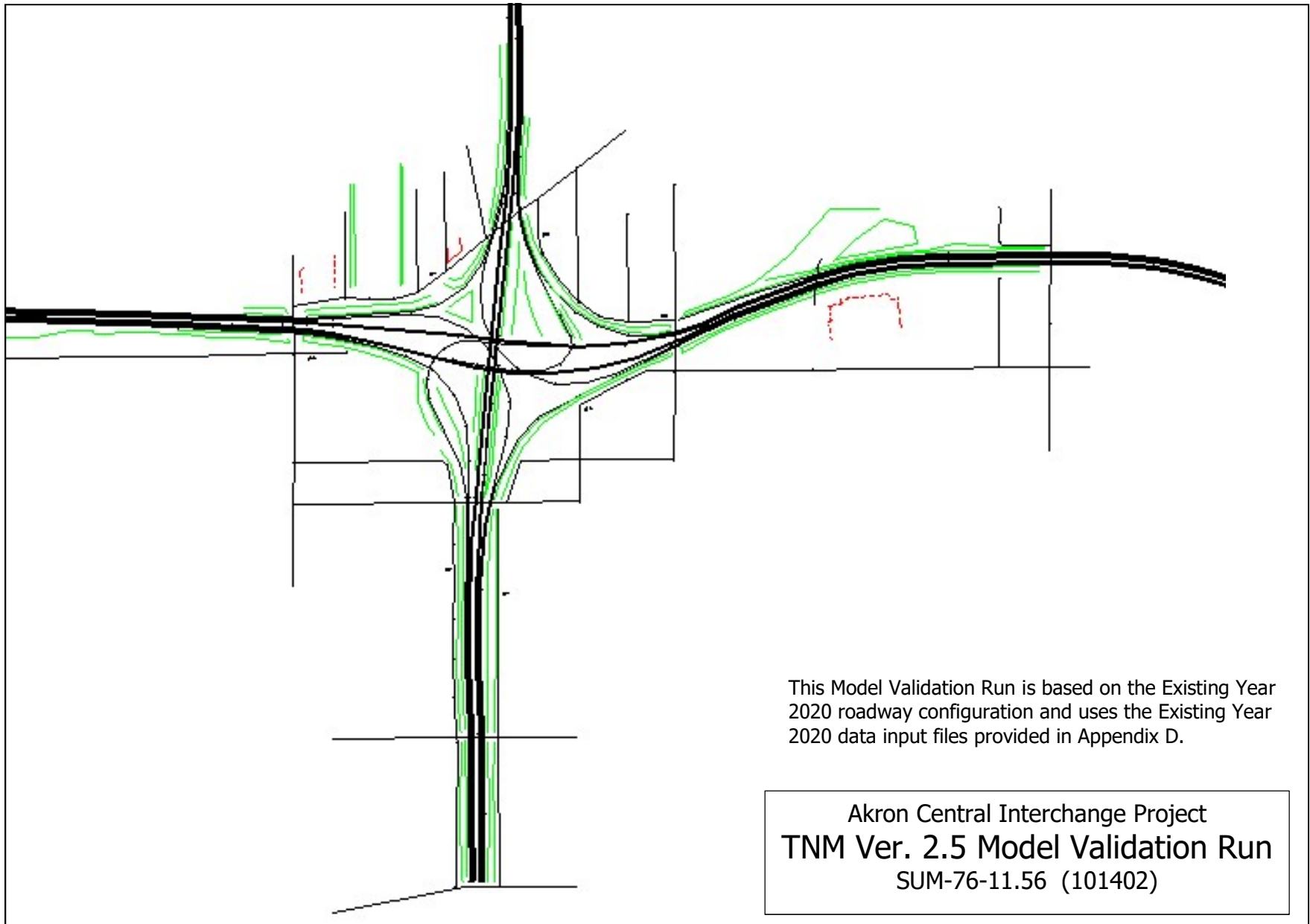
Notes: The I-76 Functional Classification is a Urban Expressway.

Field Worksheet – Location 7
SUM-76-11.56 (101402)



Traffic Volume				Measurement Site	Sound Measurements dBA		
Roadway	Classification	Northbound	Southbound (See Location 6)		(Leq) Each block = 1 minute (read left to right)		
I-77 NB	Auto	3288		Location: Side yard od home at corner of Coventry/Kipling facing NB I-77. Date: 4/12/2016 Time: 11:35 Weather: Partly Cloudy, 62 ⁰ Events:	68.5	68.1	68.4
	Medium Truck	40			68.9	69.8	68.7
	Heavy Truck	96			69.8	69.0	69.0
		Westbound			69.2	69.3	69.5
	Auto				69.5	69.5	69.5
	Medium Truck				15 minute Leq=69.5		
	Heavy Truck						

Notes: The I-76 Functional Classification is a Urban Expressway.



RESULTS: SOUND LEVELS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.													20 June 2017																							
CMCox													TNM 2.5																							
													Calculated with TNM 2.5																							
RESULTS: SOUND LEVELS																																				
PROJECT/CONTRACT:													SUM-I76 Central Interchange (101402)																							
RUN:													Model Validation Run																							
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		With Barrier															
															LAeq1h		LAeq1h		Increase over existing		Type		Calculated		Noise Reduction											
																	Calculated		Crit'n		Calculated		Crit'n		Impact		LAeq1h		Calculated		Goal		Calculated			
																															minus		Goal			
															dBA		dBA		dBA		dB		dB				dBA		dB		dB		dB			
Loc1													40		1		67.3		65.5		66		-1.8		10		----		65.5		0.0		4		-4.5	
Loc2													41		1		68.8		66.8		66		-2.0		10		Snd Lvl		66.8		0.0		4		-4.5	
Loc3													42		1		72.9		70.2		66		-2.7		10		Snd Lvl		70.2		0.0		4		-4.5	
Loc4													43		1		67.7		67.1		66		-0.6		10		Snd Lvl		67.1		0.0		4		-4.5	
Loc5													44		1		68.1		66.4		66		-1.7		10		Snd Lvl		66.4		0.0		4		-4.5	
Loc6													45		1		69.6		67.4		66		-2.2		10		Snd Lvl		67.4		0.0		4		-4.5	
Loc7													46		1		69.5		68.8		66		-0.7		10		Snd Lvl		68.8		0.0		4		-4.5	
Dwelling Units															# DUs		Noise Reduction																			
																	Min		Avg		Max															
																	dB		dB		dB															
All Selected															7		0.0		0.0		0.0															
All Impacted															6		0.0		0.0		0.0															
All that meet NR Goal															0		0.0		0.0		0.0															

INPUT: RECEIVERS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.							20 June 2017					
CMCox							TNM 2.5					
INPUT: RECEIVERS												
PROJECT/CONTRACT:		SUM-I76 Central Interchange (101402)										
RUN:		Model Validation Run										
Receiver												
Name	No.	#DUs	Coordinates (ground)			Height above Ground	Input Sound Levels and Criteria				Active in Calc.	
			X	Y	Z		Existing LAeq1h	Impact LAeq1h	Criteria Sub'l	NR Goal		
			ft	ft	ft	ft	dBA	dBA	dB	dB		
Loc1	40	1	2,242,726.0	510,435.0	1,080.00	4.92	67.30	66	10.0	4.5	Y	
Loc2	41	1	2,243,507.0	510,707.0	1,102.00	4.92	68.80	66	10.0	4.5	Y	
Loc3	42	1	2,244,331.0	510,144.8	1,106.00	4.92	72.90	66	10.0	4.5	Y	
Loc4	43	1	2,241,887.0	509,849.0	1,050.00	4.92	67.70	66	10.0	4.5	Y	
Loc5	44	1	2,243,808.0	509,499.0	1,103.00	4.92	68.10	66	10.0	4.5	Y	
Loc6	45	1	2,242,827.0	508,386.0	1,094.00	4.92	69.60	66	10.0	4.5	Y	
Loc7	46	1	2,243,231.0	508,212.0	1,104.00	4.92	69.50	66	10.0	4.5	Y	

INPUT: TRAFFIC FOR LAeq1h Volumes

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.													
CMCox													
INPUT: TRAFFIC FOR LAeq1h Volumes													
PROJECT/CONTRACT:	SUM-I76 Central Interchange (101402)												
RUN:	Model Validation Run												
Roadway	Points												
Name	Name	No.	Segment										
			Autos		MTrucks		HTrucks		Buses		Motorcycles		
			V	S	V	S	V	S	V	S	V	S	
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	
I-76 EB1/Ramp I-76EB to I-77SB	point1	1	1010	0	16	55	37	55	0	0	0	0	
	point2	2	1010	55	16	55	37	55	0	0	0	0	
	point3	3	1010	55	16	55	37	55	0	0	0	0	
	point4	4	1010	55	16	55	37	55	0	0	0	0	
	point5	5	532	55	24	55	48	55	0	0	0	0	
	Brown Street	6	532	55	24	55	48	55	0	0	0	0	
	point7	7	532	55	24	55	48	55	0	0	0	0	
	On fill	8	506	55	8	55	20	55	0	0	0	0	
	point9	9	1010	55	16	55	37	55	0	0	0	0	
	point10	10	1010	55	16	55	37	55	0	0	0	0	
	point11	11	1010	55	16	55	37	55	0	0	0	0	
	point12	12	1010	55	16	55	37	55	0	0	0	0	
	point13	13	1010	55	16	55	37	55	0	0	0	0	
	point14	14	1010	55	16	55	37	55	0	0	0	0	
	Lafollette St. C	15	1010	55	16	55	37	55	0	0	0	0	
	point16	16	1010	55	16	55	37	55	0	0	0	0	
	point17	17	1010	55	16	55	37	55	0	0	0	0	
	point18	18	1010	55	16	55	37	55	0	0	0	0	
	Lover's Lane C	19	1010	55	16	55	37	55	0	0	0	0	
	point20	20	1010	55	16	55	37	55	0	0	0	0	
	Cole Ave. Ove	21											
Brown Street	At Kipling	22	0	0	0	0	0	0	0	0	0	0	
	At Baird	23	0	0	0	0	0	0	0	0	0	0	

INPUT: TRAFFIC FOR LAeq1h Volumes

SUM-I76 Central Interchange (101402)

	At Lofollette S	24	0	0	0	0	0	0	0	0	0	0
	At E Crosier	25	0	0	0	0	0	0	0	0	0	0
	At E South	26	0	0	0	0	0	0	0	0	0	0
	At Lamparter S	27	0	0	0	0	0	0	0	0	0	0
	At E Voris St	28										
Johnston Street	At Gridley Ave	29	0	0	0	0	0	0	0	0	0	0
	At Hammel St	30	0	0	0	0	0	0	0	0	0	0
	At Lumiere St.	31	0	0	0	0	0	0	0	0	0	0
	point32	32	0	0	0	0	0	0	0	0	0	0
	Wilson St	33	0	0	0	0	0	0	0	0	0	0
	Jonhston Ct	34	0	0	0	0	0	0	0	0	0	0
	Hedden Ave	35	0	0	0	0	0	0	0	0	0	0
	point36	36	0	0	0	0	0	0	0	0	0	0
	Spicer St.	37	0	0	0	0	0	0	0	0	0	0
	point38	38	0	0	0	0	0	0	0	0	0	0
	At Brown Stre	39										
I-76 WB to I-77 SB	point317	40	1010	55	16	55	37	55	0	0	0	0
	point41	41	1010	55	16	55	37	55	0	0	0	0
	point42	42	1010	55	16	55	37	55	0	0	0	0
	point43	43	1010	55	16	55	37	55	0	0	0	0
	point44	44	1010	55	16	55	37	55	0	0	0	0
	point45	45	1010	55	16	55	37	55	0	0	0	0
	point46	46	1010	55	16	55	37	55	0	0	0	0
	point47	47	1010	55	16	55	37	55	0	0	0	0
	point48	48	1010	55	16	55	37	55	0	0	0	0
	point49	49	1010	55	16	55	37	55	0	0	0	0
	point50	50	1010	55	16	55	37	55	0	0	0	0
	point51	51	1010	55	16	55	37	55	0	0	0	0
	Lafollette Ove	52	1010	55	16	55	37	55	0	0	0	0
	point53	53	1010	55	16	55	37	55	0	0	0	0
	point17	54	1010	55	16	55	37	55	0	0	0	0
	point18	55	1010	55	16	55	37	55	0	0	0	0
	Lover's Lane C	56	1010	55	16	55	37	55	0	0	0	0
	point20	57	1010	55	16	55	37	55	0	0	0	0
	Cole Ave. Ove	58										
SR8 SB1/Ramp SR8 SB to I-76 WB	Exchange St c	59	684	50	8	50	20	50	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

SUM-I76 Central Interchange (101402)

	point60	60	684	50	8	50	20	50	0	0	0	0
	Beacon St und	61	684	50	8	50	20	50	0	0	0	0
	point62	62	684	50	8	50	20	50	0	0	0	0
	point63	63	684	50	8	50	20	50	0	0	0	0
	point64	64	684	50	8	50	20	50	0	0	0	0
	point65	65	684	50	8	50	20	50	0	0	0	0
	Johnston St o	66	684	50	8	50	20	50	0	0	0	0
	point67	67	684	50	8	50	20	50	0	0	0	0
	point68	68	684	50	8	50	20	50	0	0	0	0
	point69	69	684	50	8	50	20	50	0	0	0	0
	begin fill	70	684	50	8	50	20	50	0	0	0	0
	point71	71	684	50	8	50	20	50	0	0	0	0
	Browm St und	72	684	50	8	50	20	50	0	0	0	0
	point73	73	684	50	8	50	20	50	0	0	0	0
	point74	74	684	50	8	50	20	50	0	0	0	0
	point75	75	684	50	8	50	20	50	0	0	0	0
	point76	76	684	50	8	50	20	50	0	0	0	0
	Grant St ovrpa	77										
Ramp SR8 SB to I76 EB	point78	78	472	50	14	50	36	50	0	0	0	0
	point79	79	472	50	14	50	36	50	0	0	0	0
	Johnston St o	80	472	50	14	50	36	50	0	0	0	0
	point81	81	472	50	14	50	36	50	0	0	0	0
	point82	82	472	50	14	50	36	50	0	0	0	0
	point83	83	472	50	14	50	36	50	0	0	0	0
	I-76 undrpa	84	472	50	14	50	36	50	0	0	0	0
	point85	85	472	50	14	50	36	50	0	0	0	0
	I-76 ovrpa	86	472	50	14	50	36	50	0	0	0	0
	point87	87	472	50	14	50	36	50	0	0	0	0
	point88	88	472	50	14	50	36	50	0	0	0	0
	point89	89	472	50	14	50	36	50	0	0	0	0
	point90	90	472	50	14	50	36	50	0	0	0	0
	Inman St ovrp	91	472	50	14	50	36	50	0	0	0	0
	point92	92	472	50	14	50	36	50	0	0	0	0
	point93	93	472	50	14	50	36	50	0	0	0	0
	ped bridge	204	472	50	14	50	36	50	0	0	0	0
	point95	205	472	50	14	50	36	50	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

SUM-I76 Central Interchange (101402)

	point96	272	472	50	14	50	36	50	0	0	0	0
	point258	273	472	50	14	50	36	50	0	0	0	0
	Arlington Rd	274	472	50	14	50	36	50	0	0	0	0
	point260	275	472	50	14	50	36	50	0	0	0	0
	point261	276	472	50	14	50	36	50	0	0	0	0
	point262	277	472	50	14	50	36	50	0	0	0	0
	point263	278	472	50	14	50	36	50	0	0	0	0
	point264	279										
SR8 SB thru lane 4	Exchange Stre	94	1010	55	16	55	37	55	0	0	0	0
	point95	95	1010	55	16	55	37	55	0	0	0	0
	point96	96	1010	55	16	55	37	55	0	0	0	0
	Beacon St unc	97	1010	55	16	55	37	55	0	0	0	0
	point98	98	1010	55	16	55	37	55	0	0	0	0
	point99	99	1010	55	16	55	37	55	0	0	0	0
	point100	100	1010	55	16	55	37	55	0	0	0	0
	point101	101	1010	55	16	55	37	55	0	0	0	0
	point102	102	1010	55	16	55	37	55	0	0	0	0
	point103	103	1010	55	16	55	37	55	0	0	0	0
	Lafollette ovrp	104	1010	55	16	55	37	55	0	0	0	0
	point105	105	1010	55	16	55	37	55	0	0	0	0
	point17	106	1010	55	16	55	37	55	0	0	0	0
	point18	107	1010	55	16	55	37	55	0	0	0	0
	Lover's Lane C	108	1010	55	16	55	37	55	0	0	0	0
	point20	109	1010	55	16	55	37	55	0	0	0	0
	Cole Ave. Ove	110										
SR8 SB thru lane 3	Exchange Stre	111	1010	55	16	55	37	55	0	0	0	0
	point95	112	1010	55	16	55	37	55	0	0	0	0
	point96	113	1010	55	16	55	37	55	0	0	0	0
	Beacon St unc	114	1010	55	16	55	37	55	0	0	0	0
	point98	115	1010	55	16	55	37	55	0	0	0	0
	point99	116	1010	55	16	55	37	55	0	0	0	0
	point100	117	1010	55	16	55	37	55	0	0	0	0
	point101	118	1010	55	16	55	37	55	0	0	0	0
	point102	119	1010	55	16	55	37	55	0	0	0	0
	point103	120	1010	55	16	55	37	55	0	0	0	0
	Lafollette ovrp	121	1010	55	16	55	37	55	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

SUM-I76 Central Interchange (101402)

	point105	122	1010	55	16	55	37	55	0	0	0	0
	point17	123	1010	55	16	55	37	55	0	0	0	0
	point18	124	1010	55	16	55	37	55	0	0	0	0
	Lover's Lane C	125	1010	55	16	55	37	55	0	0	0	0
	point20	126	1010	55	16	55	37	55	0	0	0	0
	Cole Ave. Ove	127										
I-77 NB thru lane 4	Cole Street	128	822	55	10	55	24	55	0	0	0	0
	point129	129	822	55	10	55	24	55	0	0	0	0
	Lovers Lane	130	822	55	10	55	24	55	0	0	0	0
	point131	131	822	55	10	55	24	55	0	0	0	0
	point132	132	822	55	10	55	24	55	0	0	0	0
	point133	133	822	55	10	55	24	55	0	0	0	0
	Lafollette Rd c	134	822	55	10	55	24	55	0	0	0	0
	point135	135	822	55	10	55	24	55	0	0	0	0
	point136	136	822	55	10	55	24	55	0	0	0	0
	I-76 EB ovrpa	137	822	55	10	55	24	55	0	0	0	0
	I-76WB ovrpa	138	822	55	10	55	24	55	0	0	0	0
	point139	139	822	55	10	55	24	55	0	0	0	0
	point140	140	822	55	10	55	24	55	0	0	0	0
	point141	141	822	55	10	55	24	55	0	0	0	0
	Beacon St unc	142	822	55	10	55	24	55	0	0	0	0
	point143	143	822	55	10	55	24	55	0	0	0	0
	point146	146	822	55	10	55	24	55	0	0	0	0
	Exchange St u	147										
I-77 NB thru lane 3	Cole Street	148	822	55	10	55	24	55	0	0	0	0
	point129	149	822	55	10	55	24	55	0	0	0	0
	Lovers Lane	150	822	55	10	55	24	55	0	0	0	0
	point131	151	822	55	10	55	24	55	0	0	0	0
	point132	152	822	55	10	55	24	55	0	0	0	0
	point133	153	822	55	10	55	24	55	0	0	0	0
	Lafollette Rd c	154	822	55	10	55	24	55	0	0	0	0
	point135	155	822	55	10	55	24	55	0	0	0	0
	point136	156	822	55	10	55	24	55	0	0	0	0
	I-76 EB ovrpa	157	822	55	10	55	24	55	0	0	0	0
	I-76WB ovrpa	158	822	55	10	55	24	55	0	0	0	0
	point139	159	822	55	10	55	24	55	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

SUM-I76 Central Interchange (101402)

	point140	160	822	55	10	55	24	55	0	0	0	0
	point141	161	822	55	10	55	24	55	0	0	0	0
	Beacon St und	162	822	55	10	55	24	55	0	0	0	0
	point143	163	822	55	10	55	24	55	0	0	0	0
	point146	164	822	55	10	55	24	55	0	0	0	0
	Exchange St u	165										
I-77 NB2/Ramp I-77NB to I-76WB	Cole Street	166	822	55	10	55	24	55	0	0	0	0
	point129	167	822	55	10	55	24	55	0	0	0	0
	Lovers Lane	168	822	55	10	55	24	55	0	0	0	0
	point131	169	822	55	10	55	24	55	0	0	0	0
	point132	170	822	55	10	55	24	55	0	0	0	0
	point133	171	822	55	10	55	24	55	0	0	0	0
	point172	172	822	55	10	55	24	55	0	0	0	0
	point173	173	822	55	10	55	24	55	0	0	0	0
	point182	182	822	55	10	55	24	55	0	0	0	0
	point183	183	822	55	10	55	24	55	0	0	0	0
	SR 8 ovrpa	184	822	55	10	55	24	55	0	0	0	0
	point185	185	728	55	10	55	28	55	0	0	0	0
	point186	186	728	55	10	55	28	55	0	0	0	0
	point187	187	728	55	10	55	28	55	0	0	0	0
	point188	188	728	55	10	55	28	55	0	0	0	0
	point71	189	728	55	10	55	28	55	0	0	0	0
	Browm St und	190	728	55	10	55	28	55	0	0	0	0
	point73	191	822	55	10	55	24	55	0	0	0	0
	point74	192	822	55	10	55	24	55	0	0	0	0
	point75	193	822	55	10	55	24	55	0	0	0	0
	point76	194	822	55	10	55	24	55	0	0	0	0
	Grant St ovrpa	195										
I77 NB1/Ramp I-77NB to I-76EB	Cole Street	174	822	55	10	55	24	55	0	0	0	0
	point129	175	822	55	10	55	24	55	0	0	0	0
	Lovers Lane	176	822	55	10	55	24	55	0	0	0	0
	point131	177	822	55	10	55	24	55	0	0	0	0
	point132	178	822	55	10	55	24	55	0	0	0	0
	point133	179	822	55	10	55	24	55	0	0	0	0
	point172	180	822	55	10	55	24	55	0	0	0	0
	point173	181	728	55	10	55	28	55	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

SUM-I76 Central Interchange (101402)

	point196	196	728	55	10	55	28	55	0	0	0	0
	point197	197	728	55	10	55	28	55	0	0	0	0
	point198	198	728	55	10	55	28	55	0	0	0	0
	Inman St ovrrp	199	728	55	10	55	28	55	0	0	0	0
	point92	200	728	55	10	55	28	55	0	0	0	0
	point93	201	728	55	10	55	28	55	0	0	0	0
	ped bridge	202	728	55	10	55	28	55	0	0	0	0
	point95	203										
I-76EB2	point1	207	1242	55	37	55	86	55	0	0	0	0
	point2	208	1242	55	37	55	86	55	0	0	0	0
	point3	209	1242	55	37	55	86	55	0	0	0	0
	point4	210	1242	55	37	55	86	55	0	0	0	0
	point5	211	504	55	8	55	18	55	0	0	0	0
	Brown Street	212	504	55	8	55	18	55	0	0	0	0
	point7	213	504	55	8	55	18	55	0	0	0	0
	On fill	214	504	55	8	55	18	55	0	0	0	0
	point9	215										
I-76EB thru lane 3	point1	217	680	55	28	55	54	55	0	0	0	0
	point2	218	680	55	28	55	54	55	0	0	0	0
	point3	219	680	55	28	55	54	55	0	0	0	0
	point4	220	680	55	28	55	54	55	0	0	0	0
	point5	221	680	55	28	55	54	55	0	0	0	0
	Brown Street	222	680	55	28	55	54	55	0	0	0	0
	point7	223	680	55	28	55	54	55	0	0	0	0
	On fill	224	680	55	28	55	54	55	0	0	0	0
	point225	225	680	55	28	55	54	55	0	0	0	0
	point226	226	680	55	28	55	54	55	0	0	0	0
	point237	237	680	55	28	55	54	55	0	0	0	0
	point238	238	680	55	28	55	54	55	0	0	0	0
	point239	239	680	55	28	55	54	55	0	0	0	0
	point240	240	680	55	28	55	54	55	0	0	0	0
	point242	242	680	55	28	55	54	55	0	0	0	0
	Inman St ovrrp	241	680	55	28	55	54	55	0	0	0	0
	point249	250	680	55	28	55	54	55	0	0	0	0
	point93	251	680	55	28	55	54	55	0	0	0	0
	ped bridge	252	680	55	28	55	54	55	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

SUM-I76 Central Interchange (101402)

	point95	253	680	55	28	55	54	55	0	0	0	0
	point96	265	680	55	28	55	54	55	0	0	0	0
	point258	266	680	55	28	55	54	55	0	0	0	0
	Arlington Rd	267	680	55	28	55	54	55	0	0	0	0
	point260	268	680	55	28	55	54	55	0	0	0	0
	point261	269	680	55	28	55	54	55	0	0	0	0
	point262	270	680	55	28	55	54	55	0	0	0	0
	point263	271	680	55	28	55	54	55	0	0	0	0
	point264	280										
I-76 EB thru lane 4	point1	227	680	55	28	55	54	55	0	0	0	0
	point2	228	680	55	28	55	54	55	0	0	0	0
	point3	229	680	55	28	55	54	55	0	0	0	0
	point4	230	680	55	28	55	54	55	0	0	0	0
	point5	231	680	55	28	55	54	55	0	0	0	0
	Brown Street	232	680	55	28	55	54	55	0	0	0	0
	point7	233	680	55	28	55	54	55	0	0	0	0
	On fill	234	680	55	28	55	54	55	0	0	0	0
	point225	235	680	55	28	55	54	55	0	0	0	0
	point226	236	680	55	28	55	54	55	0	0	0	0
	point237	243	680	55	28	55	54	55	0	0	0	0
	point238	244	680	55	28	55	54	55	0	0	0	0
	point239	245	680	55	28	55	54	55	0	0	0	0
	point240	246	680	55	28	55	54	55	0	0	0	0
	point242	247	680	55	28	55	54	55	0	0	0	0
	Inman St ovrrp	248	680	55	28	55	54	55	0	0	0	0
	point249	249	680	55	28	55	54	55	0	0	0	0
	point93	254	680	55	28	55	54	55	0	0	0	0
	ped bridge	255	680	55	28	55	54	55	0	0	0	0
	point95	256	680	55	28	55	54	55	0	0	0	0
	point96	257	680	55	28	55	54	55	0	0	0	0
	point258	258	680	55	28	55	54	55	0	0	0	0
	Arlington Rd	259	680	55	28	55	54	55	0	0	0	0
	point260	260	680	55	28	55	54	55	0	0	0	0
	point261	261	680	55	28	55	54	55	0	0	0	0
	point262	262	680	55	28	55	54	55	0	0	0	0
	point263	263	680	55	28	55	54	55	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

SUM-I76 Central Interchange (101402)

	point264	264										
Ramp I-76 EB to SR8 NB	point226	281	680	25	8	25	20	25	0	0	0	0
	point282	282	680	25	8	25	20	25	0	0	0	0
	point283	283	680	25	8	25	20	25	0	0	0	0
	point284	284	680	25	8	25	20	25	0	0	0	0
	point285	285	680	25	8	25	20	25	0	0	0	0
	point286	286	680	25	8	25	20	25	0	0	0	0
	I-76WB undrp	287	680	25	8	25	20	25	0	0	0	0
	point289	289	680	25	8	25	20	25	0	0	0	0
	point288	288	680	25	8	25	20	25	0	0	0	0
	point290	290	680	25	8	25	20	25	0	0	0	0
	point291	291	680	25	8	25	20	25	0	0	0	0
	point292	292	680	25	8	25	20	25	0	0	0	0
	Johnston St o	293	680	25	8	25	20	25	0	0	0	0
	point294	294	680	25	8	25	20	25	0	0	0	0
	point295	295	680	25	8	25	20	25	0	0	0	0
	point296	296	680	25	8	25	20	25	0	0	0	0
	Beacon St unc	297	680	25	8	25	20	25	0	0	0	0
	point143	298	680	25	8	25	20	25	0	0	0	0
	point146	299	680	25	8	25	20	25	0	0	0	0
	Exchange St u	300										
I-76 WB4 thru lane	point264	307	676	55	34	55	74	55	0	0	0	0
	point263	306	676	55	34	55	74	55	0	0	0	0
	point262	305	676	55	34	55	74	55	0	0	0	0
	point261	304	676	55	34	55	74	55	0	0	0	0
	Arlington Road	303	676	55	34	55	74	55	0	0	0	0
	point 259	302	676	55	34	55	74	55	0	0	0	0
	point258	301	676	55	34	55	74	55	0	0	0	0
	point308	308	676	55	34	55	74	55	0	0	0	0
	point310	310	676	55	34	55	74	55	0	0	0	0
	ped bridge	309	676	55	34	55	74	55	0	0	0	0
	point312	312	676	55	34	55	74	55	0	0	0	0
	point311	311	676	55	34	55	74	55	0	0	0	0
	Inman St undr	313	676	55	34	55	74	55	0	0	0	0
	point314	314	676	55	34	55	74	55	0	0	0	0
	point315	315	676	55	34	55	74	55	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

SUM-I76 Central Interchange (101402)

	Ramp ovrpa	316	676	55	34	55	74	55	0	0	0	0
	point317	317	676	55	34	55	74	55	0	0	0	0
	point318	318	676	55	34	55	74	55	0	0	0	0
	point319	319	676	55	34	55	74	55	0	0	0	0
	point320	320	676	55	34	55	74	55	0	0	0	0
	fill	321	676	55	34	55	74	55	0	0	0	0
	point323	323	676	55	34	55	74	55	0	0	0	0
	point322	322	676	55	34	55	74	55	0	0	0	0
	point324	324	676	55	34	55	74	55	0	0	0	0
	point74	394	676	55	34	55	74	55	0	0	0	0
	point75	395	676	55	34	55	74	55	0	0	0	0
	point76	396	676	55	34	55	74	55	0	0	0	0
	Grant St ovrpa	397										
I-76 WB3 thru lane	point264	325	608	55	30	55	66	55	0	0	0	0
	point263	326	608	55	30	55	66	55	0	0	0	0
	point262	327	608	55	30	55	66	55	0	0	0	0
	point261	328	608	55	30	55	66	55	0	0	0	0
	Arlington Road	329	608	55	30	55	66	55	0	0	0	0
	point 259	330	608	55	30	55	66	55	0	0	0	0
	point258	331	608	55	30	55	66	55	0	0	0	0
	point308	332	608	55	30	55	66	55	0	0	0	0
	point310	333	608	55	30	55	66	55	0	0	0	0
	ped bridge	334	608	55	30	55	66	55	0	0	0	0
	point312	335	608	55	30	55	66	55	0	0	0	0
	point311	336	608	55	30	55	66	55	0	0	0	0
	Inman St undr	337	608	55	30	55	66	55	0	0	0	0
	point314	338	608	55	30	55	66	55	0	0	0	0
	point315	339	608	55	30	55	66	55	0	0	0	0
	Ramp ovrpa	340	608	55	30	55	66	55	0	0	0	0
	point317	341	608	55	30	55	66	55	0	0	0	0
	point318	342	608	55	30	55	66	55	0	0	0	0
	point319	343	608	55	30	55	66	55	0	0	0	0
	point320	344	608	55	30	55	66	55	0	0	0	0
	fill	345	608	55	30	55	66	55	0	0	0	0
	point323	346	608	55	30	55	66	55	0	0	0	0
	point322	347	608	55	30	55	66	55	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

SUM-I76 Central Interchange (101402)

	point324	348	608	55	30	55	66	55	0	0	0	0
	point74	390	608	55	30	55	66	55	0	0	0	0
	point75	391	608	55	30	55	66	55	0	0	0	0
	point76	392	608	55	30	55	66	55	0	0	0	0
	Grant St ovrpa	393										
I-76WB2/Ramp I-76WB to SR 8 NB	point264	349	945	55	32	55	74	55	0	0	0	0
	point263	350	945	55	32	55	74	55	0	0	0	0
	point262	351	945	55	32	55	74	55	0	0	0	0
	point261	352	945	55	32	55	74	55	0	0	0	0
	Arlington Road	353	945	55	32	55	74	55	0	0	0	0
	point 259	354	945	55	32	55	74	55	0	0	0	0
	point258	355	945	55	32	55	74	55	0	0	0	0
	point308	356	945	55	32	55	74	55	0	0	0	0
	point310	357	945	55	32	55	74	55	0	0	0	0
	ped bridge	358	945	55	32	55	74	55	0	0	0	0
	point312	359	945	55	32	55	74	55	0	0	0	0
	point311	360	945	55	32	55	74	55	0	0	0	0
	Inman St undr	361	945	55	32	55	74	55	0	0	0	0
	point314	362	945	55	32	55	74	55	0	0	0	0
	point363	363	945	55	32	55	74	55	0	0	0	0
	point364	364	945	55	32	55	74	55	0	0	0	0
	point365	365	945	55	32	55	74	55	0	0	0	0
	point366	366	945	55	32	55	74	55	0	0	0	0
	point367	367	945	55	32	55	74	55	0	0	0	0
	point368	368	945	55	32	55	74	55	0	0	0	0
	point369	369	945	55	32	55	74	55	0	0	0	0
	Johnston St o	370	945	55	32	55	74	55	0	0	0	0
	point294	371	945	55	32	55	74	55	0	0	0	0
	point295	372	945	55	32	55	74	55	0	0	0	0
	point296	373	945	55	32	55	74	55	0	0	0	0
	Beacon St unc	374	945	55	32	55	74	55	0	0	0	0
	point143	375	945	55	32	55	74	55	0	0	0	0
	point146	376	945	55	32	55	74	55	0	0	0	0
	Exchange St u	377										
I-76 WB1	point264	378	945	55	32	55	74	55	0	0	0	0
	point263	379	945	55	32	55	74	55	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

SUM-I76 Central Interchange (101402)

	point262	380	945	55	32	55	74	55	0	0	0	0
	point261	381	945	55	32	55	74	55	0	0	0	0
	Arlington Road	382	945	55	32	55	74	55	0	0	0	0
	point 259	383	945	55	32	55	74	55	0	0	0	0
	point258	384	945	55	32	55	74	55	0	0	0	0
	point308	385	945	55	32	55	74	55	0	0	0	0
	point310	386	107	45	1	45	2	45	0	0	0	0
	ped bridge	387	107	45	1	45	2	45	0	0	0	0
	point388	388	107	45	1	45	2	45	0	0	0	0
	point389	389										
Lafellette Ave	Brown St	398	0	0	0	0	0	0	0	0	0	0
	Burkhardt Ave	399	0	0	0	0	0	0	0	0	0	0
	point400	400	0	0	0	0	0	0	0	0	0	0
	point401	401	0	0	0	0	0	0	0	0	0	0
	East Crosier	402	0	0	0	0	0	0	0	0	0	0
	Hammel St	403										
Lovers Lane	Dietz Ave	404	244	35	5	35	11	35	0	0	0	0
	Burkhardt Ave	405	244	35	5	35	11	35	0	0	0	0
	point406	406	244	35	5	35	11	35	0	0	0	0
	point407	407	244	35	5	35	11	35	0	0	0	0
	Coventry	408	244	35	5	35	11	35	0	0	0	0
	Hammel St	409										
Cole Ave	Dietz Ave	410	0	0	0	0	0	0	0	0	0	0
	Burkhardt Ave	411	0	0	0	0	0	0	0	0	0	0
	point412	412	0	0	0	0	0	0	0	0	0	0
	point413	413	0	0	0	0	0	0	0	0	0	0
	point414	414	0	0	0	0	0	0	0	0	0	0
	point415	415										
East Crosier Ave/Burkhardt Ave	Brown St	416	0	0	0	0	0	0	0	0	0	0
	point417	417	0	0	0	0	0	0	0	0	0	0
	point418	418	0	0	0	0	0	0	0	0	0	0
	Lafollette	419	0	0	0	0	0	0	0	0	0	0
	Baird St	420	0	0	0	0	0	0	0	0	0	0
	Kipling St	421	0	0	0	0	0	0	0	0	0	0
	McKinlet Ave	422	0	0	0	0	0	0	0	0	0	0
	Corice St.	423	0	0	0	0	0	0	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

SUM-I76 Central Interchange (101402)

	Morgan Ave	424	0	0	0	0	0	0	0	0	0	0
	Lovers Lane	425	0	0	0	0	0	0	0	0	0	0
	point426	426	0	0	0	0	0	0	0	0	0	0
	Stanton Ave	427	0	0	0	0	0	0	0	0	0	0
	Cole Ave	428										
Coventry Street	Cole Ave	429	0	0	0	0	0	0	0	0	0	0
	Lovers Lane	430	0	0	0	0	0	0	0	0	0	0
	point431	431	0	0	0	0	0	0	0	0	0	0
	Morgan Ave	432	0	0	0	0	0	0	0	0	0	0
	Corice St	433	0	0	0	0	0	0	0	0	0	0
	McKinley Ave	434	0	0	0	0	0	0	0	0	0	0
	Kipling	435	0	0	0	0	0	0	0	0	0	0
	Lafellette Ave	436										
East Crosiet	Lafellette Ave	437	0	0	0	0	0	0	0	0	0	0
	point438	438	0	0	0	0	0	0	0	0	0	0
	Hammell	439	0	0	0	0	0	0	0	0	0	0
	Gridley St.	440	0	0	0	0	0	0	0	0	0	0
	Inman St	441										
Hammel St/5th Ave	Lafollette	442	0	0	0	0	0	0	0	0	0	0
	East Crosier	443	0	0	0	0	0	0	0	0	0	0
	point444	444	0	0	0	0	0	0	0	0	0	0
	point445	445	0	0	0	0	0	0	0	0	0	0
	point446	446	0	0	0	0	0	0	0	0	0	0
	Inman St	447	0	0	0	0	0	0	0	0	0	0
	Merton Ave	448	0	0	0	0	0	0	0	0	0	0
	Bertha	449	0	0	0	0	0	0	0	0	0	0
	Hudson Ave	450	0	0	0	0	0	0	0	0	0	0
	Elbon Ave	479	0	0	0	0	0	0	0	0	0	0
	Winans Ave	480	0	0	0	0	0	0	0	0	0	0
	point481	481	0	0	0	0	0	0	0	0	0	0
	point482	482	0	0	0	0	0	0	0	0	0	0
	Arlington Road	483	0	0	0	0	0	0	0	0	0	0
	point484	484										
Inman St	E Crosier	451	0	0	0	0	0	0	0	0	0	0
	5th Ave	452	0	0	0	0	0	0	0	0	0	0
	Lumiere St	453	0	0	0	0	0	0	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

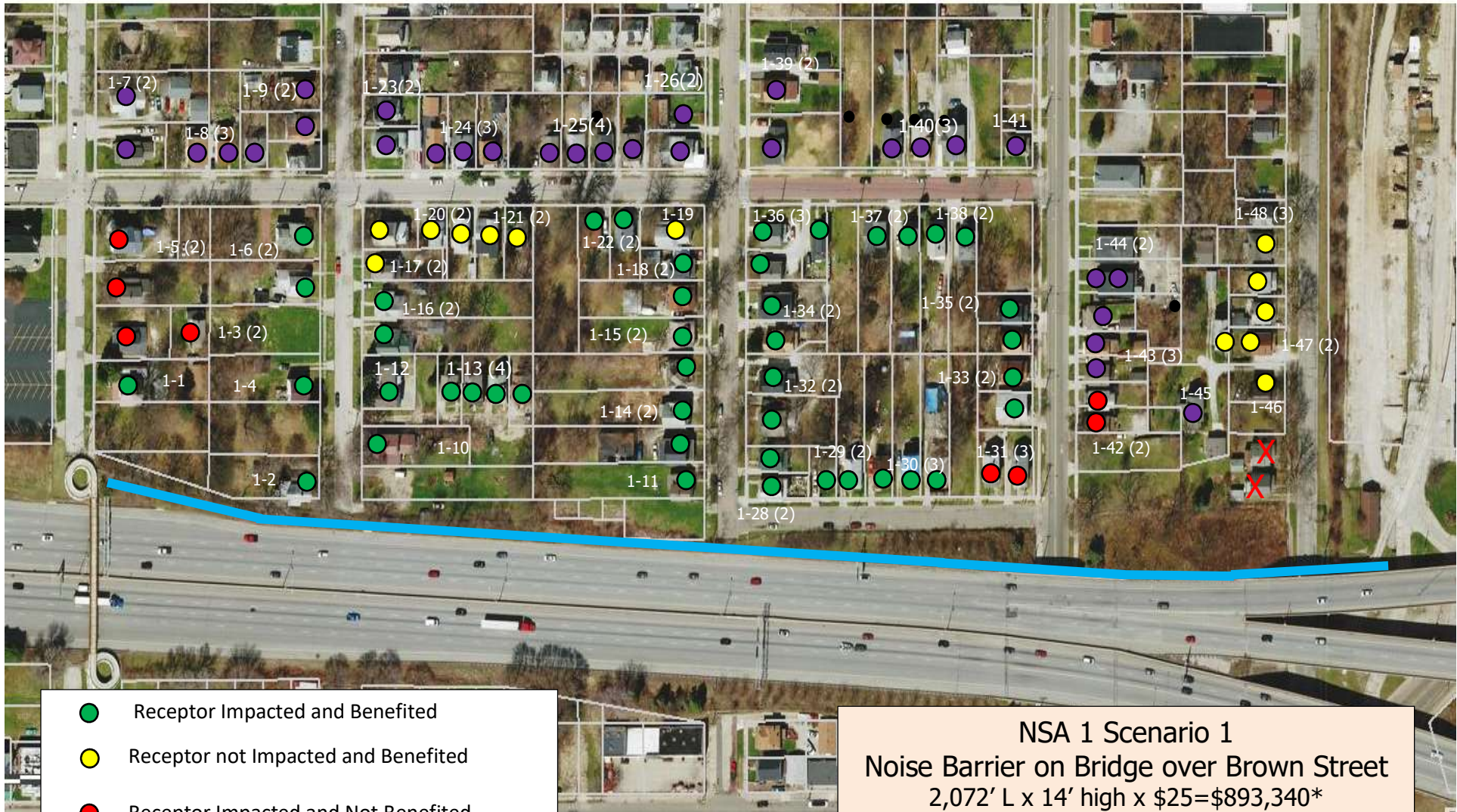
SUM-I76 Central Interchange (101402)

	Bradley Pl	454										
Lumiere St	Inman St	455	80	25	0	0	0	0	0	0	0	0
	Gridley St	456	80	25	0	0	0	0	0	0	0	0
	point457	457	80	25	0	0	0	0	0	0	0	0
	Hammel St	458	80	25	0	0	0	0	0	0	0	0
	point459	459	80	25	0	0	0	0	0	0	0	0
	point460	460	80	25	0	0	0	0	0	0	0	0
	point461	461	80	25	0	0	0	0	0	0	0	0
	point462	462										
Hammel St North	point463	463	0	0	0	0	0	0	0	0	0	0
	point464	464										
Wilson St	point465	465	0	0	0	0	0	0	0	0	0	0
	point466	466										
Johnston Ct	point467	467	0	0	0	0	0	0	0	0	0	0
	point468	468										
Hedden Avenue	point469	469	0	0	0	0	0	0	0	0	0	0
	point470	470	0	0	0	0	0	0	0	0	0	0
	point471	471										
South Street	Grant Street	472	0	0	0	0	0	0	0	0	0	0
	Sumner/Ped E	473	0	0	0	0	0	0	0	0	0	0
	Kling St.	474	0	0	0	0	0	0	0	0	0	0
	Brown St	475	0	0	0	0	0	0	0	0	0	0
	point476	476										
Talbot Ave	point477	477	0	0	0	0	0	0	0	0	0	0
	point478	478										
Arlington Road	point485	485	0	0	0	0	0	0	0	0	0	0
	point486	486	0	0	0	0	0	0	0	0	0	0
	point487	487	0	0	0	0	0	0	0	0	0	0
	point488	488	0	0	0	0	0	0	0	0	0	0
	point489	489										
MartinAve/Talbot Ave	Arlington	490	0	0	0	0	0	0	0	0	0	0
	point491	491	0	0	0	0	0	0	0	0	0	0
	point492	492	0	0	0	0	0	0	0	0	0	0
	point493	493										
Pedestrian Bridge over I-76 Hoban High	point494	494	0	0	0	0	0	0	0	0	0	0
	point495	495	0	0	0	0	0	0	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes**SUM-I76 Central Interchange (101402)**

	point496	496	0	0	0	0	0	0	0	0	0	0
	point497	497										
Gridley Street	point498	498	0	0	0	0	0	0	0	0	0	0
	point499	499										
Spicer St	point500	500	0	0	0	0	0	0	0	0	0	0
	point501	501										

APPENDIX D
Impact Assessment Summary



- Receptor Impacted and Benefited
- Receptor not Impacted and Benefited
- Receptor Impacted and Not Benefited
- Receptor Not Impacted and Not Benefited
- Noise Barrier
- X Dwelling Unit Removed

NSA 1 Scenario 1
Noise Barrier on Bridge over Brown Street
 2,072' L x 14' high x \$25=\$893,340*
 57 Benefited Receptors
 Cost per Benefited Receptor = \$15,672
 Feasible and Reasonable
Not Recommended

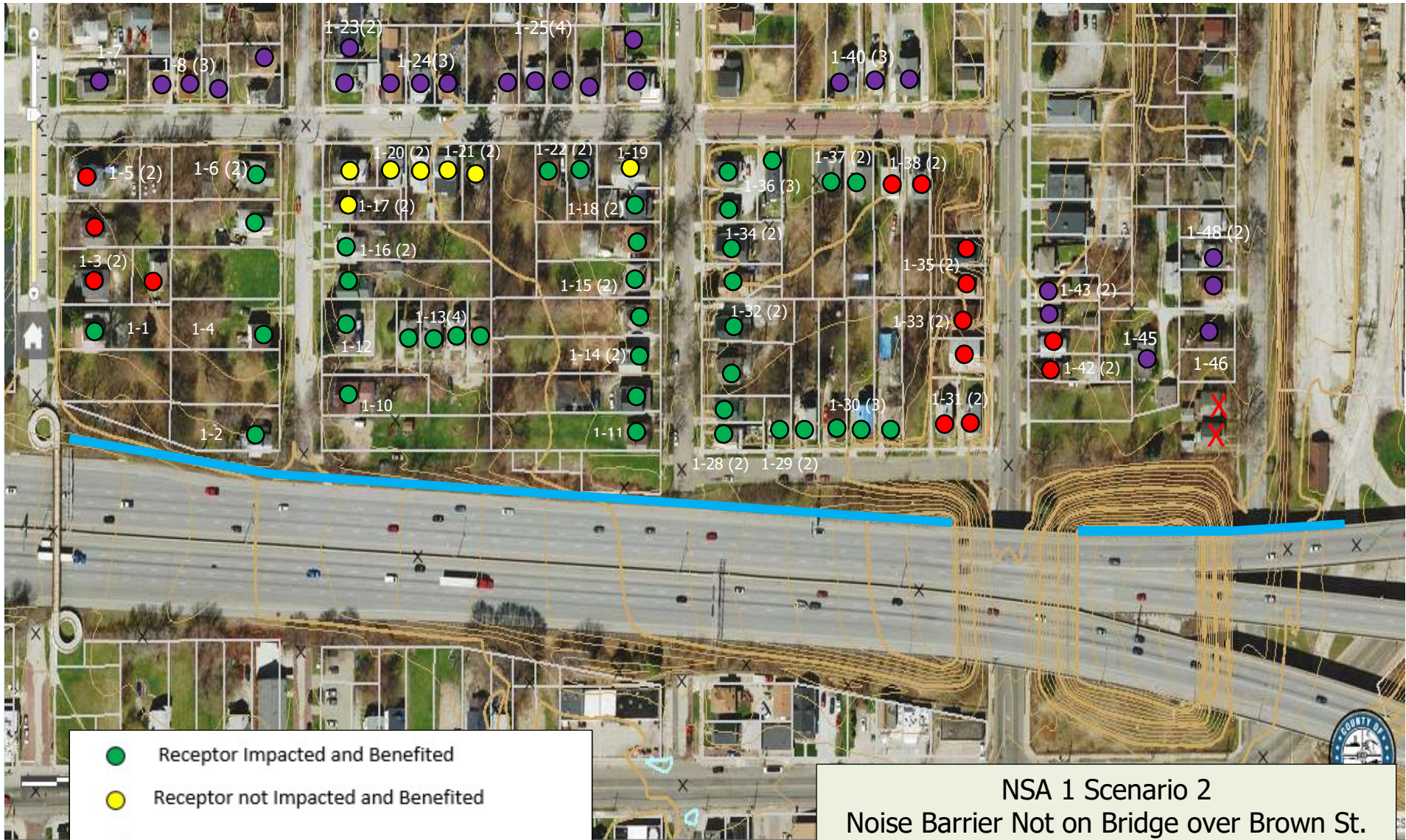
*includes \$100 ft² for barrier on bridge (160')

NSA 1 Scenario 1
Noise barrier on bridge over Brown Street

Receptor	Dwelling units	Existing Year Noise Level	Design Year Noise Level	Noise Level with Noise Barrier	Noise Reduction	Impacted	Benefited
NSA1-1	1	72.1	72.3	67.6	4.7	Yes	Yes (1)
NSA1-2	1	76.6	76.9	64.9	12.0	Yes	Yes (1)
NSA1-3	2	68.6	69.0	64.6	4.4	Yes	No
NSA1-4	1	71.5	71.6	63.6	8.0	Yes	Yes (1)
NSA1-5	2	66.2	66.7	63.1	3.6	Yes	No
NSA1-6	2	66.8	66.8	61.6	5.2	Yes	Yes (2)
NSA1-7	2	59.7	59.6	57.6	2.0	No	No
NSA1-8	3	63.8	63.1	59.3	3.8	No	No
NSA1-9	2	59.8	59.3	56.2	3.1	No	No
NSA1-10	1	74.2	74.1	63.6	10.5	Yes	Yes (1)
NSA1-11	1	75.0	75.3	65.0	10.3	Yes	Yes (1)
NSA1-12	1	70.7	70.6	61.9	8.7	Yes	Yes (1)
NSA1-13	4	70.9	70.8	62.2	8.6	Yes	Yes (4)
NSA1-14	2	71.4	71.7	62.9	8.8	Yes	Yes(2)
NSA1-15	2	67.4	67.9	60.9	7.0	Yes	Yes(2)
NSA1-16	2	65.0	65.6	60.2	5.4	Yes	Yes(2)
NSA1-17	2	63.9	64.2	59.5	4.7	No	Yes(2)
NSA1-18	2	65.2	65.7	59.8	5.9	Yes	Yes(2)
NSA1-19	1	64.4	64.8	59.2	5.6	No	Yes (1)
NSA1-20	2	64.1	64.4	59.4	5.0	No	Yes(2)
NSA1-21	2	64.4	64.8	59.5	5.3	No	Yes(2)
NSA1-22	2	65.2	65.5	59.9	5.6	Yes	Yes(2)
NSA1-23	2	57.7	57.7	54.9	2.8	No	No
NSA1-24	3	60.5	60.7	57.3	3.4	No	No
NSA1-25	4	61.1	61.2	57.7	3.5	No	No
NSA1-26	2	59.2	59.7	57.1	2.6	No	No
NSA1-27	2	59.1	59.4	56.6	2.8	No	No
NSA1-28	2	73.7	73.9	64.1	9.8	Yes	Yes (2)
NSA1-29	2	74.6	75.1	64.5	10.6	Yes	Yes(2)
NSA1-30	3	74.4	75.0	64.4	10.5	Yes	Yes (3)
NSA1-31	2	70.5	70.1	66.2	4.0	Yes	No
NSA1-32	2	69.9	70.6	62.9	7.8	Yes	Yes(2)
NSA1-33	2	65.4	67.2	62.5	5.0	Yes	Yes (2)
NSA1-34	2	68.1	68.8	62.5	6.3	Yes	Yes(2)

NSA 1 Scenario 1
Noise barrier on bridge over Brown Street

Receptor	Dwelling units	Existing Year Noise Level	Design Year Noise Level	Noise Level with Noise Barrier	Noise Reduction	Impacted	Benefited
NSA1-35	2	64.8	66.4	61.8	4.9	No	Yes (2)
NSA1-36	3	67.0	67.7	62.0	5.7	Yes	Yes (3)
NSA1-37	2	67.2	67.9	62.5	5.4	Yes	Yes(2)
NSA1-38	2	66.8	67.5	62.4	5.1	Yes	Yes(2)
NSA1-39	2	62.7	62.7	59.3	3.4	No	No
NSA1-40	3	61.7	62.4	59.3	3.1	No	No
NSA1-41	1	62.2	63.3	59.7	3.6	No	No
NSA1-42	2	65.6	66.3	62.6	3.6	No	No
NSA1-43	3	64.3	65.2	61.0	4.1	No	No
NSA1-44	2	63.60	64.1	59.7	4.4	No	No
NSA1-45	1	65.10	64.8	60.7	4.1	No	No
NSA1-46	1	63.80	63.8	59.1	4.7	No	Yes (1)
NSA1-47	2	62.40	62.8	58.0	4.7	No	Yes(2)
NSA1-48	3	62.50	62.7	58.1	4.6	No	Yes (3)
	97					46	57



- Receptor Impacted and Benefited
- Receptor not Impacted and Benefited
- Receptor Impacted and Not Benefited
- Receptor Not Impacted and Not Benefited
- Proposed Noise Barrier
- X Dwelling Unit Removed

NSA 1 Scenario 2
Noise Barrier Not on Bridge over Brown St.
 1,912' L x 14' high x \$25=\$669,323
 45 Benefited Receptors
 Cost per Benefited Receptor = \$14,873
 Feasible and Reasonable
Recommended Scenario

NSA 1 Scenario 2							
Noise barrier Not on bridge over Brown Street							
Receptor	Dwelling units	Existing Year Noise Level	Design Year Noise Level	Noise Level with Noise Barrier	Noise Reduction	Impacted	Benefited
NSA1-1	1	72.1	72.3	67.6	4.7	Yes	Yes (1)
NSA1-2	1	76.6	76.9	64.9	12.0	Yes	Yes (1)
NSA1-3	2	68.6	69.0	64.6	4.4	Yes	No
NSA1-4	1	71.5	71.6	63.6	8.0	Yes	Yes (1)
NSA1-5	2	66.2	66.7	63.	3.6	Yes	No
NSA1-6	2	66.8	66.8	61.2	5.6	Yes	Yes(2)
NSA1-7	2	59.7	59.6	57.5	2.1	No	No
NSA1-8	3	63.8	63.1	59.1	4.0	No	No
NSA1-9	2	59.8	59.3	56.0	3.3	No	No
NSA1-10	1	74.2	74.1	63.1	11.0	Yes	Yes(1)
NSA1-11	1	75.0	75.3	64.4	10.9	Yes	Yes (1)
NSA1-12	1	70.7	70.6	61.5	9.1	Yes	Yes (1)
NSA1-13	4	70.9	70.8	61.7	9.1	Yes	Yes (4)
NSA1-14	2	71.4	71.7	62.4	9.3	Yes	Yes(2)
NSA1-15	2	67.4	67.9	60.5	7.4	Yes	Yes(2)
NSA1-16	2	65.0	65.6	59.7	5.9	Yes	Yes(2)
NSA1-17	2	63.9	64.2	59.2	5.0	No	Yes(2)
NSA1-18	2	65.2	65.7	59.4	6.3	Yes	Yes(2)
NSA1-19	1	64.4	64.8	58.8	6.0	No	Yes (1)
NSA1-20	2	64.1	64.4	59.0	5.4	No	Yes(2)
NSA1-21	2	64.4	64.8	59.2	5.6	No	Yes(2)
NSA1-22	2	65.2	65.5	59.5	6.0	Yes	Yes(2)
NSA1-23	2	57.7	57.7	54.8	2.9	No	No
NSA1-24	3	60.5	60.7	57.1	3.6	No	No
NSA1-25	4	61.1	61.2	57.4	3.8	No	No
NSA1-26	2	59.2	59.7	57.0	2.7	No	No
NSA1-27	2	59.1	59.4	56.4	3.0	No	No
NSA1-28	2	73.7	73.9	63.8	10.1	Yes	Yes(2)
NSA1-29	2	74.6	75.1	64.2	10.9	Yes	Yes(2)
NSA1-30	3	74.4	75.0	65.3	9.6	Yes	Yes(3)
NSA1-31	2	70.5	70.1	67.5	2.7	Yes	No
NSA1-32	2	69.9	70.6	63.2	7.5	Yes	Yes(2)
NSA1-33	2	65.4	67.2	63.7	3.8	Yes	No
NSA1-34	2	68.1	68.8	62.9	5.9	Yes	Yes(2)

NSA 1 Scenario 2							
Noise barrier Not on bridge over Brown Street							
Receptor	Dwelling units	Existing Year Noise Level	Design Year Noise Level	Noise Level with Noise Barrier	Noise Reduction	Impacted	Benefited
NSA1-35	2	64.8	66.4	62.7	4.0	No	No
NSA1-36	3	67.0	67.7	62.3	5.4	Yes	Yes(3)
NSA1-37	2	67.2	67.9	63.0	4.9	Yes	Yes(2)
NSA1-38	2	66.8	67.5	63.1	4.4	Yes	No
NSA1-39	2	62.7	62.7	59.2	3.5	No	No
NSA1-40	3	61.7	62.4	59.3	3.1	No	No
NSA1-41	1	62.2	63.3	60.0	3.3	No	No
NSA1-42	2	65.6	66.3	63.8	2.4	Yes	No
NSA1-43	3	64.3	65.2	62.2	2.9	No	No
NSA1-44	2	63.60	64.1	60.7	3.4	No	No
NSA1-45	1	65.10	64.8	61.5	3.3	No	No
NSA1-46	1	63.80	63.8	59.7	4.1	No	No
NSA1-47	2	62.40	62.8	58.5	4.2	No	No
NSA1-48	3	62.50	62.7	58.7	4.0	No	No
	97					46	45



- Receptor Impacted and Benefited
- Receptor not Impacted and Benefited
- Receptor Impacted and Not Benefited
- Receptor Not Impacted and Not Benefited
- Proposed Noise Barrier

NSA 2 Scenario 1
 900' L x 20' high x \$25=\$450,000
 3 Benefited Receptors
 Cost per Benefited Receptor = \$150,000
Not Feasible and Not Reasonable
Not Recommended

NSA 2 Scenario 1

Noise barrier along ramp SB SR 8 to WB I-76 ROW

Receptor	Dwelling units	Existing Year Noise Level	Design Year Noise Level	Noise Level with Noise Barrier	Noise Reduction	Impacted	Benefited
NSA2-1	1	67.4	67.5	63.2	4.3	Yes	No
NSA2-2	1	66.8	67.3	63.6	3.7	Yes	No
NSA2-3	1	66.6	66.9	63.8	3.1	Yes	No
NSA2-4	1	66.7	67.4	63.8	3.6	Yes	No
NSA2-5	1	67.6	68.4	63.2	5.2	Yes	Yes
NSA2-6	1	70.6	71.0	62.7	8.3	Yes	Yes
NSA2-7	1	71.8	72.2	63.2	9.0	Yes	Yes
NSA2-8	1	66.0	66.5	63.8	2.7	Yes	No
NSA2-9	1	65.7	66.5	63.4	3.1	Yes	No
NSA2-10	1	65.6	66.2	63.8	2.4	Yes	No
NSA2-11	1	65.5	66.2	63.6	2.6	Yes	No
NSA2-12	1	64.6	65.7	62.6	3.1	Yes	No
NSA2-13	1	65.2	65.8	63.7	2.1	Yes	No
NSA2-14	1	63.7	64.5	62.3	2.2	No	No
NSA2-15	1	63.9	64.4	62.7	1.7	No	No
NSA2-16	1	64.0	64.6	62.7	1.9	No	No
NSA2-17	1	62.8	63.5	61.9	1.6	No	No
NSA2-18	1	62.5	63.2	61.9	1.3	No	No
NSA2-19	1	65.9	67.5	64.3	3.2	Yes	No
NSA2-20	1	65.3	66.9	65.7	1.2	Yes	No
NSA2-21	1	63.4	64.5	64.1	0.4	No	No
NSA2-22	1	66.3	66.3	66.3	0.0	Yes	No
	22					16	3



NSA 3 Scenario 1
Noise Barrier on Bridge over Inman Street
 1,954' L x 16' high x \$25=\$853,489*
 32 Benefited Receptors
 Cost per Benefited Receptor = \$26,671
Feasible and Reasonable
Not Recommended

*includes \$100 ft² for barrier on bridge (60')

- Receptor Impacted and Benefited
- Receptor not Impacted and Benefited
- Receptor Impacted and Not Benefited
- Receptor Not Impacted and Not Benefited
- Proposed Noise Barrier

NSA 3 Scenario 1

Noise Barrier on Bridge over Inman Street

Receptor	Dwelling units	Existing Year Noise Level	Design Year Noise Level	Noise Level with Noise Barrier	Noise Reduction	Impacted	Benefited
NSA 3-1	1	65.3	66.9	65.0	2.1	Yes	No
NSA 3-2	1	65.3	66.9	63.6	3.5	Yes	No
NSA 3-3	1	65.3	66.9	62.6	4.5	Yes	Yes (1)
NSA 3-4	1	65.8	67.5	62.0	5.6	Yes	Yes (1)
NSA 3-5	1	66.8	68.5	62.2	6.3	Yes	Yes (1)
NSA 3-6	1	67.4	69.0	62.0	6.9	Yes	Yes (1)
NSA 3-7	1	67.5	68.8	61.8	6.8	Yes	Yes (1)
NSA3-8	1	65.6	65.9	60.5	5.4	Yes	Yes (1)
NSA 3-9	1	65.8	65.3	59.7	5.6	No	Yes (1)
NSA 3-10	1	65.3	65.6	60.4	5.2	Yes	Yes (1)
NSA 3-11	1	62.3	64.0	60.3	3.8	No	No
NSA 3-12	1	61.8	63.7	60.6	3.3	No	No
NSA 3-13	1	62.0	64.0	61.0	3.1	No	No
NSA 3-14	1	61.9	63.8	61.3	2.7	No	No
NSA 3-15	2	61.4	63.1	60.9	2.5	No	No
NSA 3-16	1	61.3	63.0	61.1	2.2	No	No
NSA 3-17	1	61.6	63.2	61.6	1.9	No	No
NSA 3-18	1	61.6	62.8	61.7	1.5	No	No
NSA 3-19	1	62.4	63.6	62.1	1.5	No	No
NSA 3-20	1	62.8	63.8	62.1	1.7	No	No
NSA 3-21	1	63.3	64.4	63.1	1.3	No	No
NSA 3-22	1	65.6	64.4	59.0	5.4	No	Yes (1)
NSA 3-23	1	65.0	65.8	60.2	5.7	Yes	Yes (1)
NSA 3-24	1	64.8	65.8	60.7	5.1	Yes	Yes (1)
NSA 3-25	1	63.7	64.4	59.6	4.8	No	Yes (1)
NSA 3-26	1	63.5	64.6	61.5	3.2	No	No
NSA 3-27	1	66.9	66.3	60.0	6.3	Yes	Yes (1)
NSA 3-28	1	72.9	68.3	60.8	7.5	Yes	Yes (1)
NSA 3-29	1	65.9	66.9	60.8	6.1	Yes	Yes (1)

NSA 3 Scenario 1

Noise Barrier on Bridge over Inman Street

Receptor	Dwelling units	Existing Year Noise Level	Design Year Noise Level	Noise Level with Noise Barrier	Noise Reduction	Impacted	Benefited
NSA 3-30	1	65.0	66.4	60.8	5.6	Yes	Yes (1)
NSA 3-31	1	65.0	66.0	60.8	5.3	Yes	Yes (1)
NSA 3-32	1	64.5	65.6	60.8	4.8	Yes	Yes (1)
NSA3-33	1	69.0	69.0	62.4	6.6	Yes	Yes (1)
NSA 3-34	1	67.8	68.1	62.4	5.7	Yes	Yes (1)
NSA 3-35	1	64.8	67.3	61.7	5.6	Yes	Yes (1)
NSA 3-36	1	64.3	67.1	61.6	5.5	Yes	Yes (1)
NSA 3-37	1	64.0	66.7	61.5	5.2	Yes	Yes (1)
NSA 3-38	1	63.4	66.2	61.2	5.0	Yes	Yes (1)
NSA 3-39	1	69.2	69.3	65.0	4.3	Yes	No
NSA 3-40	1	67.6	68.4	63.8	4.7	Yes	Yes (1)
NSA 3-41	1	66.6	67.5	62.7	4.8	Yes	Yes (1)
NSA 3-42	1	65.7	66.7	61.8	4.9	Yes	Yes (1)
NSA 3-43	1	65.4	66.2	61.0	5.2	Yes	Yes (1)
NSA 3-44	1	67.3	67.5	63.1	4.5	Yes	Yes (1)
NSA3-45	1	64.0	65.1	60.7	4.4	No	No
NSA3-46	1	63.1	64.2	60.3	3.9	No	No
NSA3-47	1	65.4	65.9	61.0	5.0	Yes	Yes (1)
NSA3-48	1	64.9	65.4	60.7	4.8	Yes	Yes (1)
NSA3-49	1	64.1	64.7	60.3	4.4	No	No
NSA3-50	1	65.0	65.3	60.7	4.6	Yes	Yes (1)
NSA3-51	1	63.8	64.2	59.9	4.3	No	No
	52					32	32

NSA 3 Scenario 2
 Noise Barrier Not on Bridge over Inman St.
 1,887' L x 16' high x \$25=\$754,713
 32 Benefited Receptors
 Cost per Benefited Receptor = \$23,584
 Feasible and Reasonable
 Recommended Scenario



- Receptor Impacted and Benefited
- Receptor not Impacted and Benefited
- Receptor Impacted and Not Benefited
- Receptor Not Impacted and Not Benefited
- Proposed Noise Barrier

NSA 3 Scenario 2

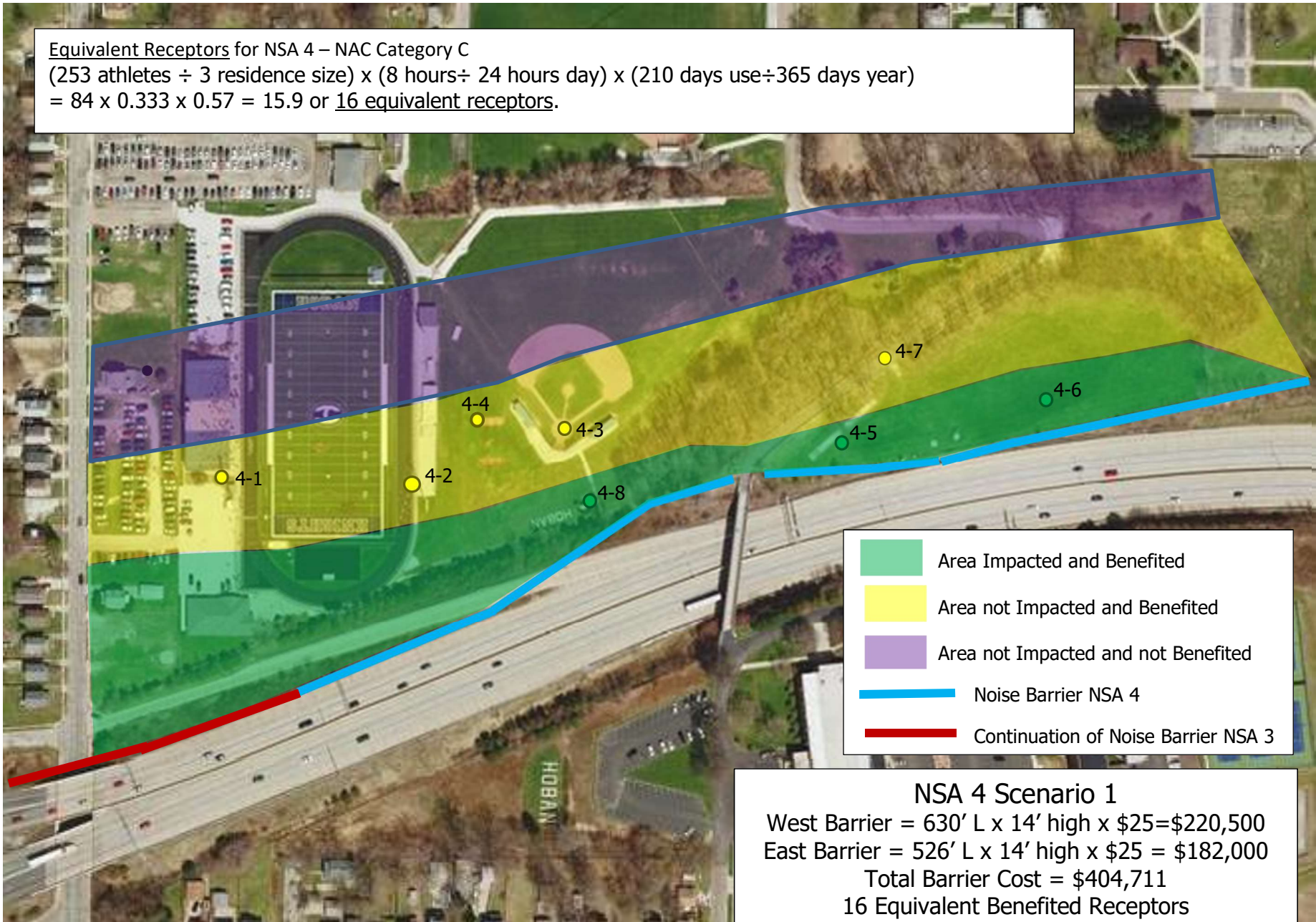
Noise Barrier Not on Bridge over Inman Street

Receptor	Dwelling units	Existing Year Noise Level	Design Year Noise Level	Noise Level with Noise Barrier	Noise Reduction	Impacted	Benefited
NSA 3-1	1	65.3	66.9	65.0	2.1	Yes	No
NSA 3-2	1	65.3	66.9	63.6	3.5	Yes	No
NSA 3-3	1	65.3	66.9	62.6	4.5	Yes	Yes (1)
NSA 3-4	1	65.8	67.5	62.0	5.6	Yes	Yes (1)
NSA 3-5	1	66.8	68.5	62.2	6.3	Yes	Yes (1)
NSA 3-6	1	67.4	69.0	62.0	6.9	Yes	Yes (1)
NSA 3-7	1	67.5	68.8	61.8	6.8	Yes	Yes (1)
NSA3-8	1	65.6	65.9	60.5	5.4	Yes	Yes (1)
NSA 3-9	1	65.8	65.3	59.7	5.6	No	Yes (1)
NSA 3-10	1	65.3	65.6	60.4	5.2	Yes	Yes (1)
NSA 3-11	1	62.3	64.0	60.3	3.8	No	No
NSA 3-12	1	61.8	63.7	60.6	3.3	No	No
NSA 3-13	1	62.0	64.0	61.0	3.1	No	No
NSA 3-14	1	61.9	63.8	61.3	2.7	No	No
NSA 3-15	2	61.4	63.1	60.9	2.5	No	No
NSA 3-16	1	61.3	63.0	61.1	2.2	No	No
NSA 3-17	1	61.6	63.2	61.6	1.9	No	No
NSA 3-18	1	61.6	62.8	61.7	1.5	No	No
NSA 3-19	1	62.4	63.6	61.9	1.7	No	No
NSA 3-20	1	62.8	63.8	62.7	1.1	No	No
NSA 3-21	1	63.3	64.4	62.9	1.5	No	No
NSA 3-22	1	65.6	64.4	59.0	5.4	No	Yes (1)
NSA 3-23	1	65.0	65.8	60.2	5.7	Yes	Yes (1)
NSA 3-24	1	64.8	65.8	60.7	5.1	Yes	Yes (1)
NSA 3-25	1	63.7	64.4	59.6	4.8	No	Yes (1)
NSA 3-26	1	63.5	64.6	61.5	3.2	No	No
NSA 3-27	1	66.9	66.3	60.0	6.3	Yes	Yes (1)
NSA 3-28	1	72.9	68.3	60.8	7.5	Yes	Yes (1)
NSA 3-29	1	65.9	66.9	60.8	6.1	Yes	Yes (1)

NSA 3 Scenario 2							
Noise Barrier Not on Bridge over Inman Street							
Receptor	Dwelling units	Existing Year Noise Level	Design Year Noise Level	Noise Level with Noise Barrier	Noise Reduction	Impacted	Benefited
NSA 3-30	1	65.0	66.4	60.8	5.6	Yes	Yes (1)
NSA 3-31	1	65.0	66.0	60.8	5.3	Yes	Yes (1)
NSA 3-32	1	64.5	65.6	60.8	4.8	Yes	Yes (1)
NSA3-33	1	69.0	69.0	62.4	6.6	Yes	Yes (1)
NSA 3-34	1	67.8	68.1	62.4	5.7	Yes	Yes (1)
NSA 3-35	1	64.8	67.3	61.7	5.6	Yes	Yes (1)
NSA 3-36	1	64.3	67.1	61.6	5.5	Yes	Yes (1)
NSA 3-37	1	64.0	66.7	61.5	5.2	Yes	Yes (1)
NSA 3-38	1	63.4	66.2	61.2	5.0	Yes	Yes (1)
NSA 3-39	1	69.2	69.3	65.0	4.3	Yes	No
NSA 3-40	1	67.6	68.4	63.8	4.7	Yes	Yes (1)
NSA 3-41	1	66.6	67.5	62.7	4.8	Yes	Yes (1)
NSA 3-42	1	65.7	66.7	61.8	4.9	Yes	Yes (1)
NSA 3-43	1	65.4	66.2	61.0	5.2	Yes	Yes (1)
NSA 3-44	1	67.3	67.5	63.1	4.5	Yes	Yes (1)
NSA3-45	1	64.0	65.1	60.7	4.4	No	No
NSA3-46	1	63.1	64.2	60.3	3.9	No	No
NSA3-47	1	65.4	65.9	61.0	5.0	Yes	Yes (1)
NSA3-48	1	64.9	65.4	60.7	4.8	No	Yes (1)
NSA3-49	1	64.1	64.7	60.3	4.4	Yes	No
NSA3-50	1	65.0	65.3	60.7	4.6	Yes	Yes (1)
NSA3-51	1	63.8	64.2	59.9	4.3	No	No
	52					43	32

Equivalent Receptors for NSA 4 – NAC Category C

$(253 \text{ athletes} \div 3 \text{ residence size}) \times (8 \text{ hours} \div 24 \text{ hours day}) \times (210 \text{ days use} \div 365 \text{ days year})$
 $= 84 \times 0.333 \times 0.57 = 15.9$ or 16 equivalent receptors.



- Area Impacted and Benefited
- Area not Impacted and Benefited
- Area not Impacted and not Benefited
- Noise Barrier NSA 4
- Continuation of Noise Barrier NSA 3

NSA 4 Scenario 1
West Barrier = 630' L x 14' high x \$25=\$220,500
East Barrier = 526' L x 14' high x \$25 = \$182,000
Total Barrier Cost = \$404,711
16 Equivalent Benefited Receptors
Cost per Benefited Receptor = \$25,294
Feasible and Reasonable

NSA 4 Scenario 1

Noise barrier along WB I-76 ROW

Receptor	Dwelling units	Existing Year Noise Level	Design Year Noise Level	Noise Level with Noise Barrier	Noise Reduction	Impacted	Benefited
NSA4-1	---	64.0	63.7	56.9	6.8	No	Yes
NSA4-2	---	65.1	64.5	56.8	7.7	No	Yes
NSA4-3	---	64.3	62.9	56.7	6.2	No	Yes
NSA4-4	---	64.0	63.4	56.2	7.2	No	Yes
NSA4-5	---	68.0	68.8	63.3	5.5	Yes	Yes
NSA4-6	---	69.1	69.8	62.3	7.5	Yes	Yes
NSA4-7	---	63.7	64.4	59.5	4.9	No	Yes
NSA4-8	---	68.6	65.6	59.9	5.7	Yes	Yes
						Equivalent Receptors	16



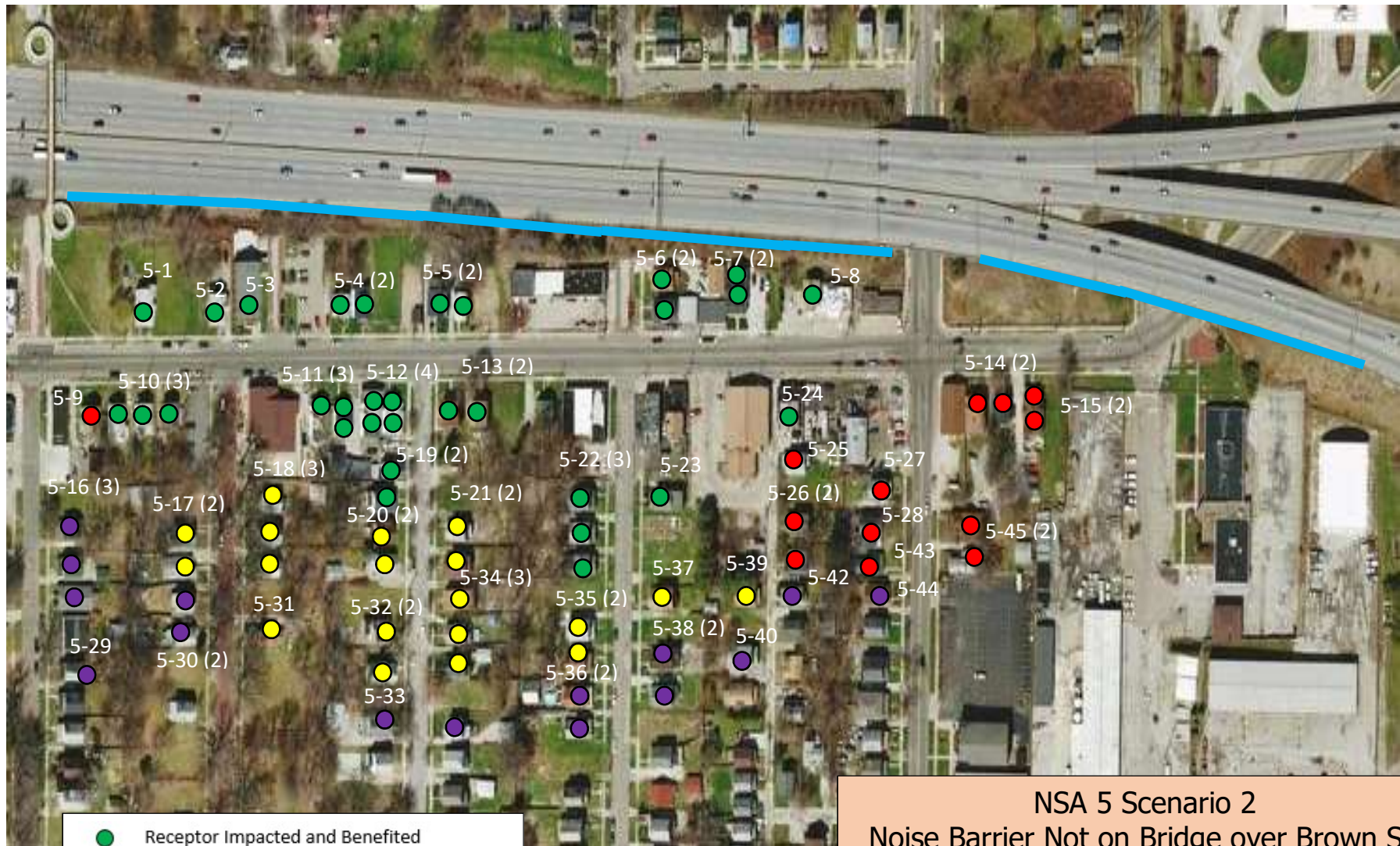
- Receptor Impacted and Benefited
- Receptor not Impacted and Benefited
- Receptor Impacted and Not Benefited
- Receptor Not Impacted and Not Benefited
- Proposed Noise Barrier

NSA 5 Scenario 1
Noise Barrier on Bridge over Brown Street
 1,656' L x 14' high x \$25=\$747,460*
 69 Benefited Receptors
 Cost per Benefited Receptor = \$10,832
 Feasible and Reasonable
Recommended Scenario

*includes \$100 ft² for barrier on bridge (160')

NSA 5 Scenario 1							
Noise Barrier on Bridge over Brown Street							
Receptor	Dwelling units	Existing Year Noise Level	Design Year Noise Level	Noise Level with Noise Barrier	Noise Reduction	Impacted	Benefited
NSA5-1	1	73.4	73.6	64.7	8.9	Yes	Yes (1)
NSA5-2	1	74.0	74.0	63.3	10.7	Yes	Yes (1)
NSA5-3	1	74.0	74.3	63.3	11.0	Yes	Yes (1)
NSA5-4	2	71.8	72.8	63.0	9.8	Yes	Yes (2)
NSA5-5	2	73.9	75.0	63.8	11.2	Yes	Yes (2)
NSA5-6	2	73.5	73.4	63.6	9.8	Yes	Yes (2)
NSA5-7	2	72.6	72.2	63.9	8.3	Yes	Yes (2)
NSA5-8	1	71.4	71.8	64.4	7.4	Yes	Yes (1)
NSA5-9	1	67.3	67.5	63.7	3.8	Yes	No
NSA5-10	3	67.9	68.2	63.1	5.1	Yes	Yes (3)
NSA5-11	3	68.1	68.2	60.9	7.3	Yes	Yes (3)
NSA5-12	4	67.2	67.6	60.6	7.0	Yes	Yes (4)
NSA5-13	2	67.2	67.5	60.6	6.9	Yes	Yes (2)
NSA5-14	2	69.1	69.8	64.8	5.0	Yes	Yes (2)
NSA5-15	2	69.0	69.7	65.1	4.6	Yes	Yes (2)
NSA5-16	2	63.7	63.8	60.1	3.7	No	No
NSA5-17	2	64.6	64.8	60.1	4.7	No	Yes (2)
NSA5-18	3	65.3	65.4	59.7	5.7	No	Yes (3)
NSA5-19	2	66.4	66.6	59.3	7.3	Yes	Yes (2)
NSA5-20	2	65.7	65.3	58.9	6.4	No	Yes (2)
NSA5-21	2	65.1	65.1	58.6	6.5	No	Yes (2)
NSA5-22	3	65.0	65.6	59.1	6.5	Yes	Yes (3)
NSA5-23	1	66.1	66.0	59.8	6.2	Yes	Yes (1)
NSA5-24	1	68.3	68.2	62.0	6.2	Yes	Yes (1)
NSA5-25	1	67.4	67.3	61.5	5.8	Yes	Yes (1)
NSA5-26	2	65.9	66.4	60.7	5.7	Yes	Yes (2)
NSA5-27	1	68.4	68.7	63.0	5.7	Yes	Yes (1)
NSA5-28	2	66.9	67.4	62.0	5.4	Yes	Yes (2)
NSA5-29	1	62.7	62.9	59.3	3.6	No	No

NSA 5 Scenario 1							
Noise Barrier on Bridge over Brown Street							
Receptor	Dwelling units	Existing Year Noise Level	Design Year Noise Level	Noise Level with Noise Barrier	Noise Reduction	Impacted	Benefited
NSA5-30	2	62.9	63.0	58.9	4.1	No	No
NSA5-31	1	64.6	64.9	60.3	4.6	No	Yes (1)
NSA5-32	2	64.2	64.5	59.5	5.0	No	Yes (2)
NSA5-33	3	63.3	63.6	59.4	4.2	No	No
NSA5-34	3	63.7	63.8	58.3	5.5	No	Yes (3)
NSA5-35	2	64.1	64.1	58.7	5.4	No	Yes (2)
NSA5-36	2	63.7	63.9	59.2	4.7	No	Yes (2)
NSA5-37	1	64.6	64.7	59.1	5.6	No	Yes (1)
NSA5-38	2	63.7	63.7	58.8	4.9	No	Yes (2)
NSA5-39	1	64.6	64.6	59.3	5.3	No	Yes (1)
NSA5-40	2	63.7	63.0	58.4	4.6	No	Yes (2)
NSA5-42	1	64.9	64.9	59.9	5.0	No	Yes (1)
NSA5-43	2	65.3	65.7	61.1	4.6	Yes	Yes (2)
NSA5-44	1	64.1	64.3	60.2	4.1	No	No
NSA5-45	1	66.8	67.1	62.7	4.4	Yes	No
	80					40	69



- Receptor Impacted and Benefited
- Receptor not Impacted and Benefited
- Receptor Impacted and Not Benefited
- Receptor Not Impacted and Not Benefited
- Proposed Noise Barrier

NSA 5 Scenario 2
Noise Barrier Not on Bridge over Brown St.
 1,496' L x 14' high x \$25=\$523,762
 50 Benefited Receptors
 Cost per Benefited Receptor = \$10,475
 Feasible and Reasonable
Not Recommended

NSA 5 Scenario 2

Noise Barrier Not on Bridge over Brown Street

Receptor	Dwelling units	Existing Year Noise Level	Design Year Noise Level	Noise Level with Noise Barrier	Noise Reduction	Impacted	Benefited
NSA5-1	1	73.4	73.6	64.7	8.9	Yes	Yes (1)
NSA5-2	1	74.0	74.0	63.3	10.7	Yes	Yes (1)
NSA5-3	1	74.0	74.3	63.3	11.0	Yes	Yes (1)
NSA5-4	2	71.8	72.8	63.0	9.8	Yes	Yes (2)
NSA5-5	2	73.9	75.0	63.9	11.1	Yes	Yes (2)
NSA5-6	2	73.5	73.4	63.8	9.6	Yes	Yes (2)
NSA5-7	2	72.6	72.2	64.6	7.6	Yes	Yes (2)
NSA5-8	1	71.4	71.8	65.8	6.0	Yes	Yes (1)
NSA5-9	1	67.3	67.5	63.7	3.8	Yes	No
NSA5-10	3	67.9	68.2	63.1	5.1	Yes	Yes (3)
NSA5-11	3	68.1	68.2	60.9	7.3	Yes	Yes (3)
NSA5-12	4	67.2	67.6	60.7	6.9	Yes	Yes (4)
NSA5-13	2	67.2	67.5	60.8	6.7	Yes	Yes (2)
NSA5-14	2	69.1	69.8	66.9	2.9	Yes	No
NSA5-15	2	69.0	69.7	66.4	3.3	Yes	No
NSA5-16	2	63.7	63.8	60.1	3.7	No	No
NSA5-17	2	64.6	64.8	60.1	4.7	No	Yes (2)
NSA5-18	3	65.3	65.4	59.8	5.6	No	Yes (3)
NSA5-19	2	66.4	66.6	59.4	7.2	Yes	Yes (2)
NSA5-20	2	65.7	65.3	59.0	6.3	No	Yes (2)
NSA5-21	2	65.1	65.1	58.8	6.3	No	Yes (2)
NSA5-22	3	65.0	65.6	59.4	6.2	Yes	Yes (3)
NSA5-23	1	66.1	66.0	60.4	5.6	Yes	Yes (1)
NSA5-24	1	68.3	68.2	63.5	4.7	Yes	Yes (1)
NSA5-25	1	67.4	67.3	63.0	4.3	Yes	No
NSA5-26	2	65.9	66.4	62.0	4.4	Yes	No
NSA5-27	1	68.4	68.7	64.8	3.9	Yes	No
NSA5-28	2	66.9	67.4	63.5	3.9	Yes	No
NSA5-29	1	62.7	62.9	59.3	3.6	No	No

NSA 5 Scenario 2

Noise Barrier Not on Bridge over Brown Street

Receptor	Dwelling units	Existing Year Noise Level	Design Year Noise Level	Noise Level with Noise Barrier	Noise Reduction	Impacted	Benefited
NSA5-30	2	62.9	63.0	59.0	4.0	No	No
NSA5-31	1	64.6	64.9	60.4	4.5	No	Yes (1)
NSA5-32	2	64.2	64.5	59.7	4.8	No	Yes (2)
NSA5-33	3	63.3	63.6	59.5	4.1	No	No
NSA5-34	3	63.7	63.8	58.5	5.3	No	Yes (3)
NSA5-35	2	64.1	64.1	59.1	5.0	No	Yes (2)
NSA5-36	2	63.7	63.9	59.6	4.3	No	No
NSA5-37	1	64.6	64.7	59.7	5.0	No	Yes (1)
NSA5-38	2	63.7	63.7	59.3	4.4	No	No
NSA5-39	1	64.6	64.6	60.1	4.5	No	Yes (1)
NSA5-40	2	63.7	63.0	58.9	4.1	No	No
NSA5-42	1	64.9	64.9	60.8	4.1	No	No
NSA5-43	2	65.3	65.7	61.9	3.0	Yes	No
NSA5-44	1	64.1	64.3	60.8	3.5	No	No
NSA5-45	1	66.8	67.1	63.6	3.5	Yes	No
	80					40	50



- Receptor Impacted and Benefited
- Receptor not Impacted and Benefited
- Receptor Impacted and Not Benefited
- Receptor Not Impacted and Not Benefited
- Proposed Noise Barrier

NSA 6 Scenario 1
Noise Barrier on Bridge over Inman Street
 2,325' L x 15' high x \$25=\$939,748*
 71 Benefited Receptors
 Cost per Benefited Receptor = \$13,235
Feasible and Reasonable

*includes \$100 ft² for barrier on bridge (60 feet)

NSA 6 Scenario 1
Noise Barrier on Bridge over Inman Street

Receptor	Dwelling units	Existing Year Noise Level	Design Year Noise Level	Noise Level with Noise Barrier	Noise Reduction with noise barrier	Impacted	Benefited
NSA 6-1	2	65.8	68.2	64.2	4.0	Yes	No
NSA 6-2	2	62.9	64.7	61.2	3.5	No	No
NSA 6-3	2	61.6	63.1	60.1	3.0	No	No
NSA 6-4	2	63.5	65.3	61.2	4.1	No	No
NSA 6-5	2	62.0	63.5	60.5	3.0	No	No
NSA 6-6	2	71.4	73.0	68.7	4.3	Yes	No
NSA 6-7	3	64.0	65.6	61.0	4.6	Yes	Yes (3)
NSA 6-8	2	67.8	69.7	62.7	7.0	Yes	Yes (2)
NSA 6-9	2	63.5	65.1	59.6	5.5	No	Yes (2)
NSA 6-10	1	69.2	71.4	60.8	10.6	Yes	Yes(1)
NSA 6-11	2	66.4	67.9	60.7	7.2	Yes	Yes (2)
NSA 6-12	2	61.1	62.8	59.6	3.2	No	No
NSA 6-13	2	64.3	66.0	62.5	3.5	Yes	No
NSA 6-14	2	67.0	68.4	61.8	6.6	Yes	Yes (2)
NSA 6-15	2	65.8	67.4	60.4	7.0	Yes	Yes (2)
NSA 6-16	3	63.5	65.4	60.3	5.1	No	Yes (3)
NSA 6-17	1	61.7	63.6	60.3	3.3	No	No
NSA 6-18	1	68.0	70.4	61.3	9.1	Yes	Yes (1)
NSA 6-19	2	65.7	67.6	59.9	7.7	Yes	Yes (2)
NSA 6-20	2	63.8	65.6	59.2	6.4	Yes	Yes (2)
NSA 6-21	3	62.2	63.9	59.1	4.8	No	Yes (3)
NSA 6-22	2	65.9	67.6	60.2	7.4	Yes	Yes (2)
NSA 6-23	3	64.9	66.3	59.1	7.2	Yes	Yes (3)
NSA 6-24	1	63.3	64.1	58.3	5.8	No	Yes (1)
NSA 6-25	2	64.8	65.9	58.9	7.0	Yes	Yes (2)
NSA 6-26	2	63.8	64.5	58.6	5.9	No	Yes (2)
NSA 6-27	2	67.2	68.3	61.7	6.6	Yes	Yes (2)
NSA 6-28	3	67.1	68.3	61.4	6.9	Yes	Yes (3)
NSA 6-29	3	69.4	70.2	62.8	7.4	Yes	Yes (3)

NSA 6 Scenario 1							
Noise Barrier on Bridge over Inman Street							
Receptor	Dwelling units	Existing Year Noise Level	Design Year Noise Level	Noise Level with Noise Barrier	Noise Reduction with noise barrier	Impacted	Benefited
NSA 6-30	1	68.9	70.2	62.0	8.2	Yes	Yes (1)
NSA 6-31	3	67.7	68.9	61.4	7.5	Yes	Yes (3)
NSA 6-32	2	67.5	68.3	62.0	6.3	Yes	Yes (2)
NSA 6-33	1	67.8	69.2	63.2	6.0	Yes	Yes (1)
NSA 6-34	3	64.5	66.3	62.5	3.8	Yes	No
NSA 6-35	2	64.8	65.7	63.8	1.9	Yes	No
NSA 6-36	2	65.2	65.9	59.3	6.6	Yes	Yes (2)
NSA 6-37	2	66.4	67.7	63.2	4.5	Yes	Yes (2)
NSA 6-38	2	63.2	63.7	58.1	5.6	No	Yes (2)
NSA 6-39	3	66.0	66.8	60.2	6.6	Yes	Yes (3)
NSA 6-40	1	65.5	66.3	60.3	6.0	Yes	Yes (1)
NSA 6-41	2	65.3	66.5	61.0	5.5	Yes	Yes (2)
NSA 6-42	2	63.2	63.5	57.8	5.7	No	Yes (2)
NSA 6-43	2	62.2	62.2	57.1	5.1	No	Yes (2)
NSA 6-44	2	61.0	61.4	56.9	4.5	No	Yes (2)
NSA 6-45	4	63.3	64.6	59.7	4.9	No	Yes (4)
NSA 6-46	1	61.9	63.1	58.8	4.3	No	No
NSA 6-47	1	63.9	65.2	60.6	4.6	No	Yes (1)
NSA 6-48	3	62.3	63.5	59.2	4.3	No	No
NSA 6-49	2	60.9	62.0	58.4	3.6	No	No
NSA 6-50	1	63.6	64.5	60.7	3.8	No	No
NSA 6-51	2	63.5	64.6	61.7	2.9	No	No
NSA 6-52	2	63.7	64.3	61.4	2.9	No	No
NSA6-53	2	62.3	63.8	60.9	2.9	No	No
	108					49	71



- Receptor Impacted and Benefited
- Receptor not Impacted and Benefited
- Receptor Impacted and Not Benefited
- Receptor Not Impacted and Not Benefited
- Proposed Noise Barrier

NSA 6 Scenario 2
Noise Barrier Not on Bridge over Inman St.
 2,265' L x 15' high x \$25=\$849,056
 69 Benefited Receptors
 Cost per Benefited Receptor = \$12,305
 Feasible and Reasonable
 Recommended

NSA 6 Scenario 2
Noise Barrier Not on Bridge over Inman Street

Receptor	Dwelling units	Existing Year Noise Level	Design Year Noise Level	Noise Level with Noise Barrier	Noise Reduction with noise barrier	Impacted	Benefited
NSA 6-1	2	65.8	68.2	64.2	4.0	Yes	No
NSA 6-2	2	62.9	64.7	61.2	3.5	No	No
NSA 6-3	2	61.6	63.1	60.1	3.0	No	No
NSA 6-4	2	63.5	65.3	61.2	4.1	No	No
NSA 6-5	2	62.0	63.5	60.5	3.0	No	No
NSA 6-6	2	71.4	73.0	68.7	4.3	Yes	No
NSA 6-7	3	64.0	65.6	61.0	4.6	Yes	Yes (3)
NSA 6-8	2	67.8	69.7	62.7	7.0	Yes	Yes (2)
NSA 6-9	2	63.5	65.1	59.6	5.5	No	Yes (2)
NSA 6-10	1	69.2	71.4	60.8	10.6	Yes	Yes (1)
NSA 6-11	2	66.4	67.9	60.7	7.2	Yes	Yes (2)
NSA 6-12	2	61.1	62.8	59.6	3.2	No	No
NSA 6-13	2	64.3	66.0	62.5	3.5	Yes	No
NSA 6-14	2	67.0	68.4	61.8	6.6	Yes	Yes (2)
NSA 6-15	2	65.8	67.4	60.4	7.0	Yes	Yes (2)
NSA 6-16	3	63.5	65.4	60.3	5.1	No	Yes (3)
NSA 6-17	1	61.7	63.6	60.4	3.2	No	No
NSA 6-18	1	68.0	70.4	61.3	9.1	Yes	Yes (1)
NSA 6-19	2	65.7	67.6	59.9	7.7	Yes	Yes (2)
NSA 6-20	2	63.8	65.6	59.3	6.3	Yes	Yes (2)
NSA 6-21	3	62.2	63.9	59.2	4.7	No	Yes (3)
NSA 6-22	2	65.9	67.6	61.3	6.3	Yes	Yes (2)
NSA 6-23	3	64.9	66.3	60.0	6.3	Yes	Yes (3)
NSA 6-24	1	63.3	64.1	58.9	5.2	No	Yes (1)
NSA 6-25	2	64.8	65.9	59.9	6.0	Yes	Yes (2)
NSA 6-26	2	63.8	64.5	59.3	5.2	No	Yes (2)
NSA 6-27	2	67.2	68.3	62.7	5.6	Yes	Yes (2)
NSA 6-28	3	67.1	68.3	61.8	6.5	Yes	Yes (3)
NSA 6-29	3	69.4	70.2	63.0	7.2	Yes	Yes (3)

NSA 6 Scenario 2

Noise Barrier Not on Bridge over Inman Street

Receptor	Dwelling units	Existing Year Noise Level	Design Year Noise Level	Noise Level with Noise Barrier	Noise Reduction with noise barrier	Impacted	Benefited
NSA 6-30	1	68.9	70.2	62.0	8.2	Yes	Yes (1)
NSA 6-31	3	67.7	68.9	61.4	7.5	Yes	Yes (3)
NSA 6-32	2	67.5	68.3	62.0	6.3	Yes	Yes (2)
NSA 6-33	1	67.8	69.2	63.2	6.0	Yes	Yes (1)
NSA 6-34	3	64.5	66.3	62.5	3.8	Yes	No
NSA 6-35	2	64.8	65.7	63.8	1.9	Yes	No
NSA 6-36	2	65.2	65.9	59.8	6.1	Yes	Yes (2)
NSA 6-37	2	66.4	67.7	63.5	4.2	Yes	No
NSA 6-38	2	63.2	63.7	58.4	5.3	No	Yes (2)
NSA 6-39	3	66.0	66.8	60.4	6.4	Yes	Yes (3)
NSA 6-40	1	65.5	66.3	60.3	6.0	Yes	Yes (1)
NSA 6-41	2	65.3	66.5	61.1	5.4	Yes	Yes (2)
NSA 6-42	2	63.2	63.5	58.0	5.5	No	Yes (2)
NSA 6-43	2	62.2	62.2	57.4	4.8	No	Yes (2)
NSA 6-44	2	61.0	61.4	57.1	4.3	No	No
NSA 6-45	4	63.3	64.6	59.8	4.8	No	Yes (4)
NSA 6-46	1	61.9	63.1	58.9	4.2	No	No
NSA 6-47	1	63.9	65.2	60.6	4.6	No	Yes (1)
NSA 6-48	3	62.3	63.5	59.3	4.2	No	No
NSA 6-49	2	60.9	62.0	58.5	3.5	No	No
NSA 6-50	1	63.6	64.5	60.8	3.7	No	No
NSA 6-51	2	63.5	64.6	61.7	2.9	No	No
NSA 6-52	2	63.7	64.3	61.5	2.8	No	No
NSA6-53	2	62.3	63.8	60.9	2.9	No	No
	108					49	69

**NSA 8 Scenario 1
Noise Barriers North and South
of Lafollette Street**

North: 400' L x 14' high x \$25 = \$140,275

South: 1,510' L x 14' high = \$529,061

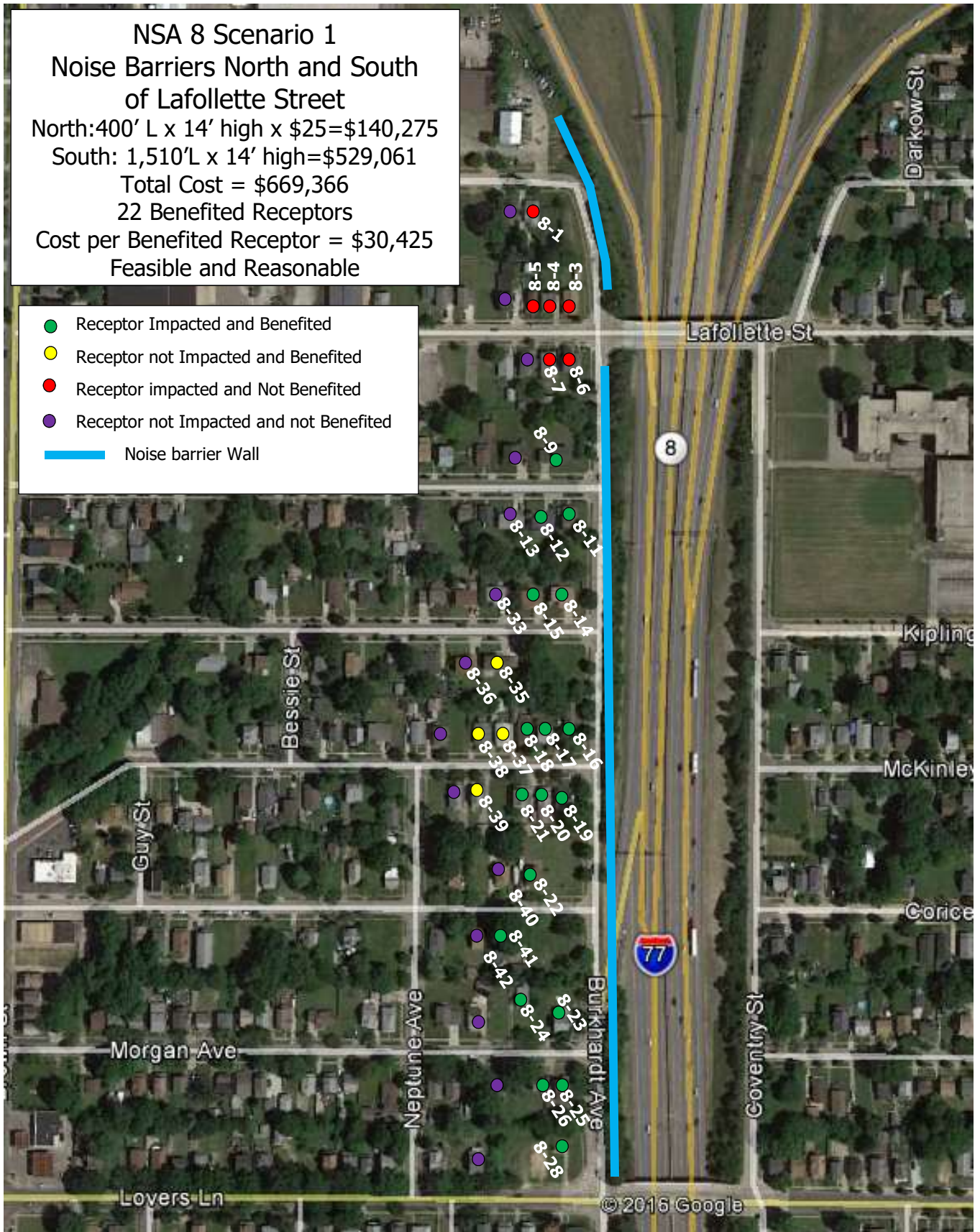
Total Cost = \$669,366

22 Benefited Receptors

Cost per Benefited Receptor = \$30,425

Feasible and Reasonable

- Receptor Impacted and Benefited
- Receptor not Impacted and Benefited
- Receptor impacted and Not Benefited
- Receptor not Impacted and not Benefited
- Noise barrier Wall



NSA 8 Scenario 1

Noise Barriers North and South of Lafollette Street

Receptor	Dwelling units	Existing Year Noise Level	Design Year Noise Level	Noise Level with Noise Barrier	Noise Reduction	Impacted	Benefited
NSA8-1	1	62.9	64.4	61.7	2.7	No	No
NSA8-2	1	64.6	66.1	62.4	3.7	Yes	No
NSA8-3	1	69.0	70.6	66.4	4.2	Yes	No
NSA8-4	1	65.3	67.4	63.3	4.1	Yes	No
NSA8-5	1	64.4	66.0	62.7	3.3	Yes	No
NSA8-6	1	68.1	70.2	65.8	4.4	Yes	No
NSA8-7	1	64.5	65.8	61.8	4.0	Yes	No
NSA8-8	1	63.2	64.6	61.0	3.6	No	No
NSA8-9	1	67.6	69.0	62.7	6.3	Yes	Yes
NSA8-10	1	63.4	64.8	61.3	3.5	No	No
NSA8-11	1	68.5	69.5	61.6	7.9	Yes	Yes
NSA8-12	1	65.3	66.1	60.6	5.5	Yes	Yes
NSA8-13	1	63.2	64.1	59.7	4.4	No	No
NSA8-14	1	69.2	70.5	62.3	8.2	Yes	Yes
NSA8-15	1	64.8	65.8	60.6	5.2	Yes	Yes
NSA8-16	1	69.8	71.5	62.5	9.0	Yes	Yes
NSA8-17	1	67.4	69.1	61.6	7.5	Yes	Yes
NSA8-18	1	65.5	67.0	60.8	6.2	Yes	Yes
NSA8-19	1	70.4	72.0	62.2	9.8	Yes	Yes
NSA8-20	1	68.3	69.7	61.9	7.8	Yes	Yes
NSA8-21	1	65.8	67.3	60.6	6.7	Yes	Yes
NSA8-22	1	66.8	68.1	61.1	7.0	Yes	Yes
NSA8-23	1	65.1	67.0	60.8	6.2	Yes	Yes
NSA8-24	1	69.0	70.6	62.1	8.5	Yes	Yes
NSA8-25	1	68.5	69.9	62.5	7.4	Yes	Yes
NSA8-26	1	66.0	67.3	61.8	5.5	Yes	Yes
NSA8-27	1	68.3	69.6	65.5	4.1	Yes	No
NSA8-28	1	65.8	67.2	62.7	4.5	Yes	Yes
NSA8-29	1	63.2	64.9	62.8	2.1	No	No
NSA8-30	1	61.9	63.3	60.3	3.0	No	No
NSA8-31	1	61.3	62.8	60.7	2.1	No	No
NSA8-32	1	62.3	63.1	59.1	4.0	No	No

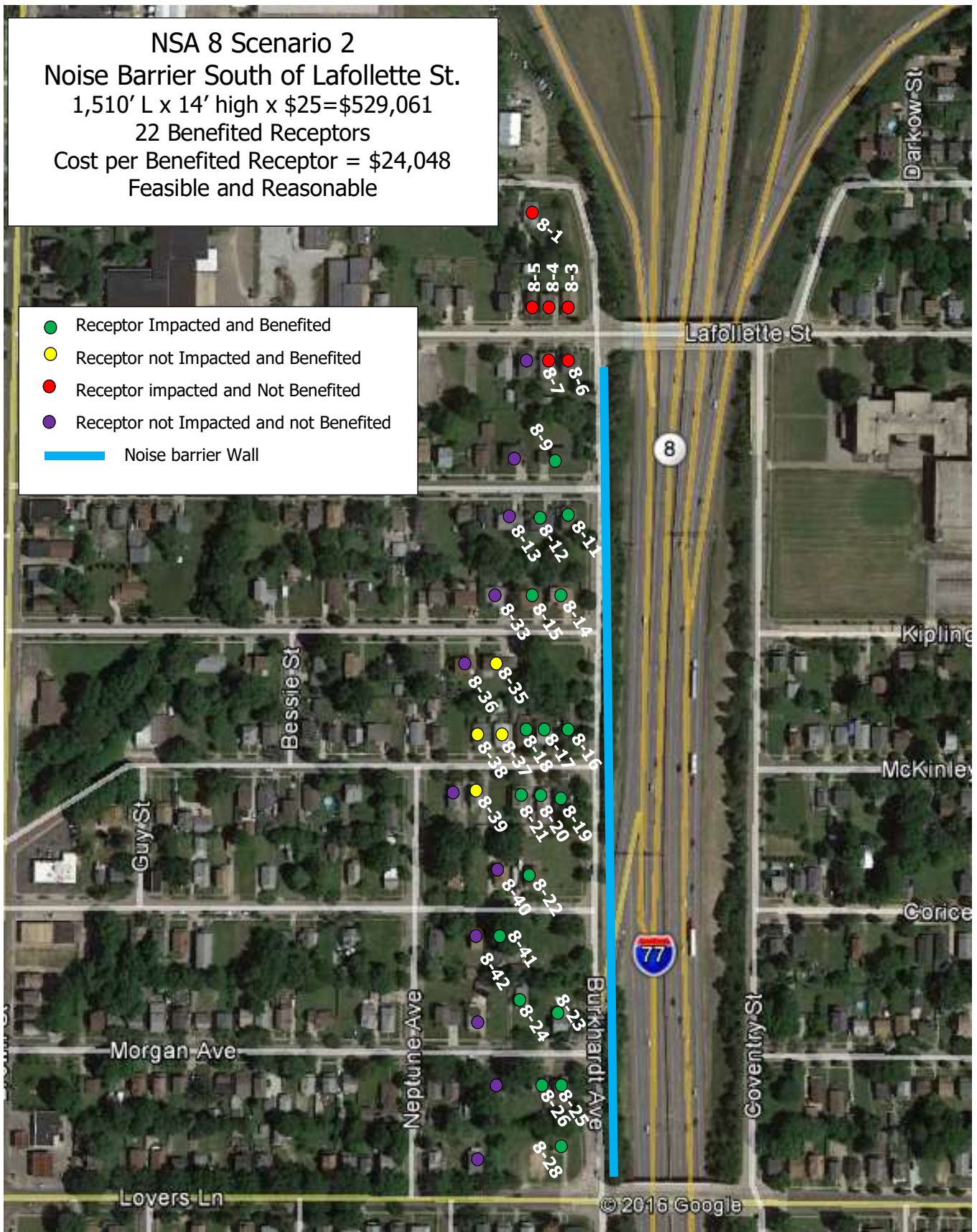
NSA 8 Scenario 1

Noise Barriers North and South of Lafollette Street

Receptor	Dwelling units	Existing Year Noise Level	Design Year Noise Level	Noise Level with Noise Barrier	Noise Reduction	Impacted	Benefited
NSA8-33	1	62.5	63.6	59.7	3.9	No	No
NSA8-34	1	61.0	62.0	59.1	2.9	No	No
NSA8-35	1	63.5	64.7	59.7	5.0	No	Yes
NSA8-36	1	62.0	63.3	59.0	4.3	No	No
NSA8-37	1	63.6	65.0	59.7	5.3	No	Yes
NSA8-38	1	62.0	63.5	58.9	4.6	No	Yes
NSA8-39	1	63.6	65.0	59.2	5.8	No	Yes
NSA8-40	1	61.0	62.7	58.3	4.4	No	No
NSA8-41	1	64.1	65.6	59.9	5.7	Yes	Yes
NSA8-42	1	61.0	62.7	58.6	4.1	No	No
NSA8-43	1	62.8	64.2	60.2	4.0	No	No
NSA8-44	1	62.8	64.0	61.3	2.7	No	No
	44					22	22

NSA 8 Scenario 2
 Noise Barrier South of Lafollette St.
 1,510' L x 14' high x \$25=\$529,061
 22 Benefited Receptors
 Cost per Benefited Receptor = \$24,048
 Feasible and Reasonable

- Receptor Impacted and Benefited
 - Receptor not Impacted and Benefited
 - Receptor impacted and Not Benefited
 - Receptor not Impacted and not Benefited
- Noise barrier Wall



NSA 8 Scenario 2

Noise Barriers North and South of Lafollette Street

Receptor	Dwelling units	Existing Year Noise Level	Design Year Noise Level	Noise Level with Noise Barrier	Noise Reduction with Noise Barrier	Impacted	Benefited
NSA8-1	1	62.9	64.4	64.2	0.2	No	No
NSA8-2	1	64.6	66.1	66.0	0.1	Yes	No
NSA8-3	1	69.0	70.6	70.4	0.2	Yes	No
NSA8-4	1	65.3	67.4	67.0	0.4	Yes	No
NSA8-5	1	64.4	66.0	65.7	0.3	Yes	No
NSA8-6	1	68.1	70.2	66.1	4.1	Yes	No
NSA8-7	1	64.5	65.8	62.2	3.6	Yes	No
NSA8-8	1	63.2	64.6	61.6	3.0	No	No
NSA8-9	1	67.6	69.0	63.3	5.7	Yes	Yes
NSA8-10	1	63.4	64.8	62.0	2.8	No	No
NSA8-11	1	68.5	69.5	61.7	7.8	Yes	Yes
NSA8-12	1	65.3	66.1	60.7	5.4	Yes	Yes
NSA8-13	1	63.2	64.1	59.9	4.2	No	No
NSA8-14	1	69.2	70.5	62.4	8.1	Yes	Yes
NSA8-15	1	64.8	65.8	60.8	5.0	Yes	Yes
NSA8-16	1	69.8	71.5	62.6	8.9	Yes	Yes
NSA8-17	1	67.4	69.1	61.6	7.5	Yes	Yes
NSA8-18	1	65.5	67.0	60.9	6.1	Yes	Yes
NSA8-19	1	70.4	72.0	62.2	9.8	Yes	Yes
NSA8-20	1	68.3	69.7	61.9	7.8	Yes	Yes
NSA8-21	1	65.8	67.3	60.6	6.7	Yes	Yes
NSA8-22	1	66.8	68.1	61.1	7.0	Yes	Yes
NSA8-23	1	65.1	67.0	60.8	6.2	Yes	Yes
NSA8-24	1	69.0	70.6	62.1	8.5	Yes	Yes
NSA8-25	1	68.5	69.9	62.5	7.4	Yes	Yes
NSA8-26	1	66.0	67.3	61.8	5.5	Yes	Yes
NSA8-27	1	68.3	69.6	65.5	4.1	Yes	No
NSA8-28	1	65.8	67.2	62.7	4.5	Yes	Yes
NSA8-29	1	63.2	64.9	64.5	0.4	No	No
NSA8-30	1	61.9	63.3	60.9	2.4	No	No
NSA8-31	1	61.3	62.8	61.3	1.5	No	No
NSA8-32	1	62.3	63.1	59.3	3.8	No	No

NSA 8 Scenario 2

Noise Barriers North and South of Lafollette Street

Receptor	Dwelling units	Existing Year Noise Level	Design Year Noise Level	Noise Level with Noise Barrier	Noise Reduction with Noise Barrier	Impacted	Benefited
NSA8-33	1	62.5	63.6	59.9	3.7	No	No
NSA8-34	1	61.0	62.0	59.3	2.7	No	No
NSA8-35	1	63.5	64.7	59.8	4.9	No	Yes
NSA8-36	1	62.0	63.3	59.0	4.3	No	No
NSA8-37	1	63.6	65.0	59.8	5.2	No	Yes
NSA8-38	1	62.0	63.5	59.0	4.5	No	Yes
NSA8-39	1	63.6	65.0	59.2	5.8	No	Yes
NSA8-40	1	61.0	62.7	58.3	4.4	No	No
NSA8-41	1	64.1	65.6	59.9	5.7	Yes	Yes
NSA8-42	1	61.0	62.7	58.6	4.1	No	No
NSA8-43	1	62.8	64.2	60.2	4.0	No	No
NSA8-44	1	62.8	64.0	61.3	2.7	No	No
	44					22	22

- Receptor Impacted and Benefited
- Receptor not Impacted and Benefited
- Receptor impacted and Not Benefited
- Receptor not Impacted and not Benefited
- Noise barrier Wall

NSA 9 Scenario 1
Noise Barrier East of I-77
 1,225' L x 14' high x \$25=\$428,750
 21 Benefited Receptors
 Cost per Benefited Receptor = \$20,416
 Feasible and Reasonable



NSA 8 Scenario 2

Noise Barriers North and South of Lafollette Street

Receptor	Dwelling units	Existing Year Noise Level	Design Year Noise Level	Noise Level with Noise Barrier	Noise Reduction with Noise Barrier	Impacted	Benefited
NSA 9-1	1	70.7	71.6	65.4	6.2	Yes	Yes
NSA 9-2	1	67.3	68.5	62.8	5.7	Yes	Yes
NSA 9-3	1	65.8	66.5	61.4	5.1	Yes	Yes
NSA 9-4	1	65.8	66.8	61.4	5.6	Yes	Yes
NSA 9-5	1	69.6	70.5	62.7	7.8	Yes	Yes
NSA 9-6	1	70.8	71.6	62.6	9.0	Yes	Yes
NSA 9-7	1	68.5	69.3	62.1	7.2	Yes	Yes
NSA 9-8	1	64.0	64.7	60.0	4.7	No	Yes
NSA 9-9	1	73.6	74.2	64.2	10.0	Yes	Yes
NSA 9-10	1	68.9	69.9	62.0	7.9	Yes	Yes
NSA 9-11	1	67.6	68.6	61.6	7.0	Yes	Yes
NSA 9-12	1	65.0	66.3	60.7	5.6	Yes	Yes
NSA 9-13	1	67.2	68.4	61.8	6.6	Yes	Yes
NSA 9-14	1	65.7	66.9	61.2	5.7	Yes	Yes
NSA 9-15	1	70.4	71.4	63.2	8.2	Yes	Yes
NSA 9-16	1	67.1	68.2	61.9	6.3	Yes	Yes
NSA 9-17	1	65.5	66.7	61.4	5.3	Yes	Yes
NSA 9-18	1	64.0	65.3	61.1	4.2	No	No
NSA 9-19	1	71.1	71.9	63.0	8.9	Yes	Yes
NSA 9-20	1	68.6	69.5	62.6	6.9	Yes	Yes
NSA 9-21	1	63.6	65.4	61.2	4.2	No	No
NSA 9-22	1	63.5	64.0	60.0	4.0	No	No
NSA 9-23	1	62.4	63.0	59.6	3.4	No	No
NSA 9-24	1	63.0	63.4	59.4	4.0	No	No
NSA 9-25	1	65.9	66.7	61.0	5.7	Yes	Yes
NSA 9-26	1	63.2	64.8	60.2	4.6	No	Yes
NSA 9-27	1	62.7	64.5	60.2	4.3	No	No
NSA 9-28	1	62.7	64.2	60.6	3.6	No	No
NSA 9-29	1	61.5	63.1	60.1	3.0	No	No
NSA 9-30	1	63.5	64.7	61.2	3.5	No	No
NSA 9-31	1	61.7	63.1	60.6	2.5	No	No
NSA 9-32	1	60.7	61.1	58.2	2.9	No	No

NSA 8 Scenario 2

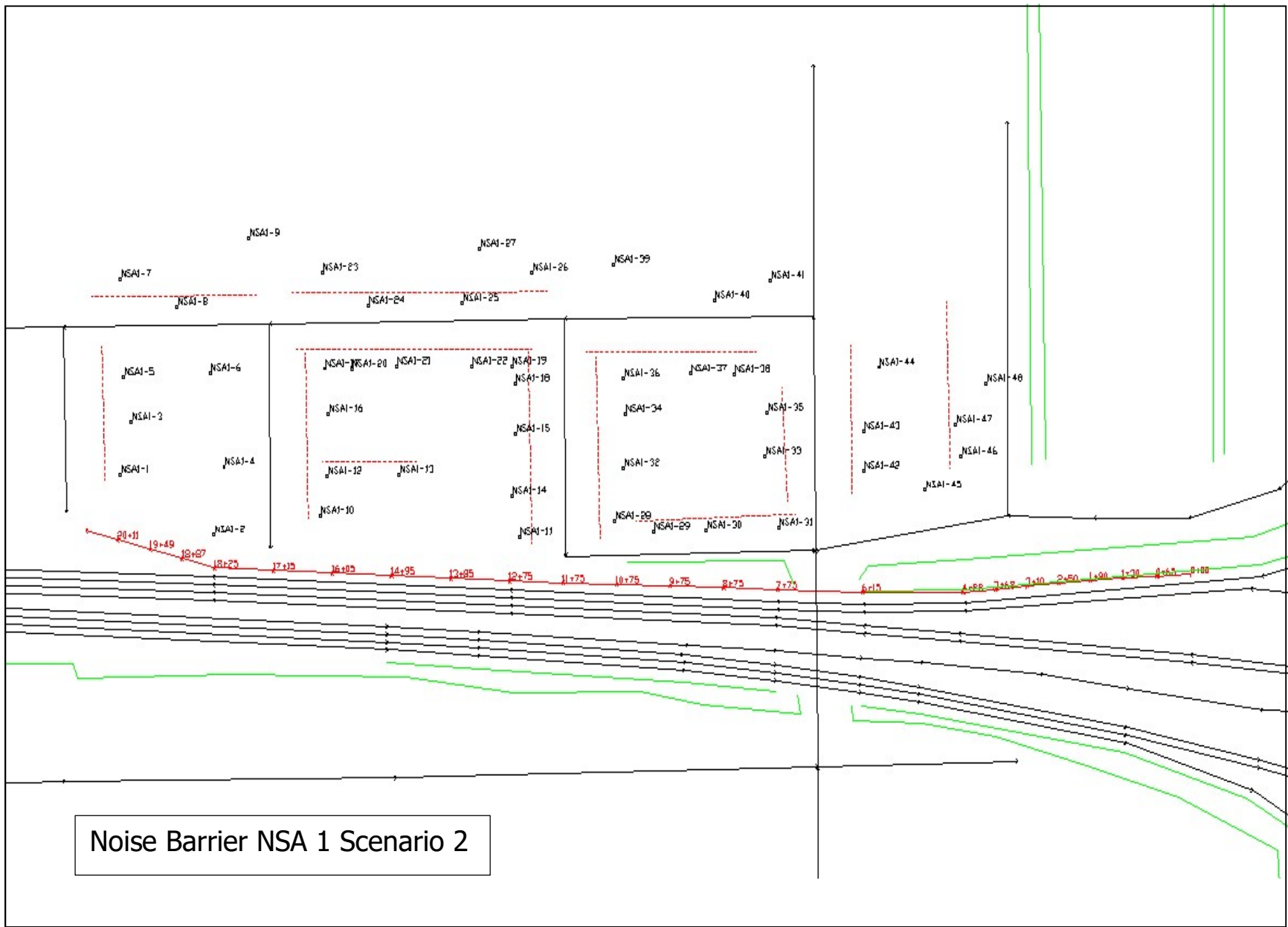
Noise Barriers North and South of Lafollette Street

Receptor	Dwelling units	Existing Year Noise Level	Design Year Noise Level	Noise Level with Noise Barrier	Noise Reduction with Noise Barrier	Impacted	Benefited
NSA 9-33	1	63.3	63.9	59.7	4.2	No	No
	33					19	25

APPENDIX E
Noise Barrier Design Tables

NSA 1 Scenario 2
Noise Barrier NOT on Bridge over Brown Street

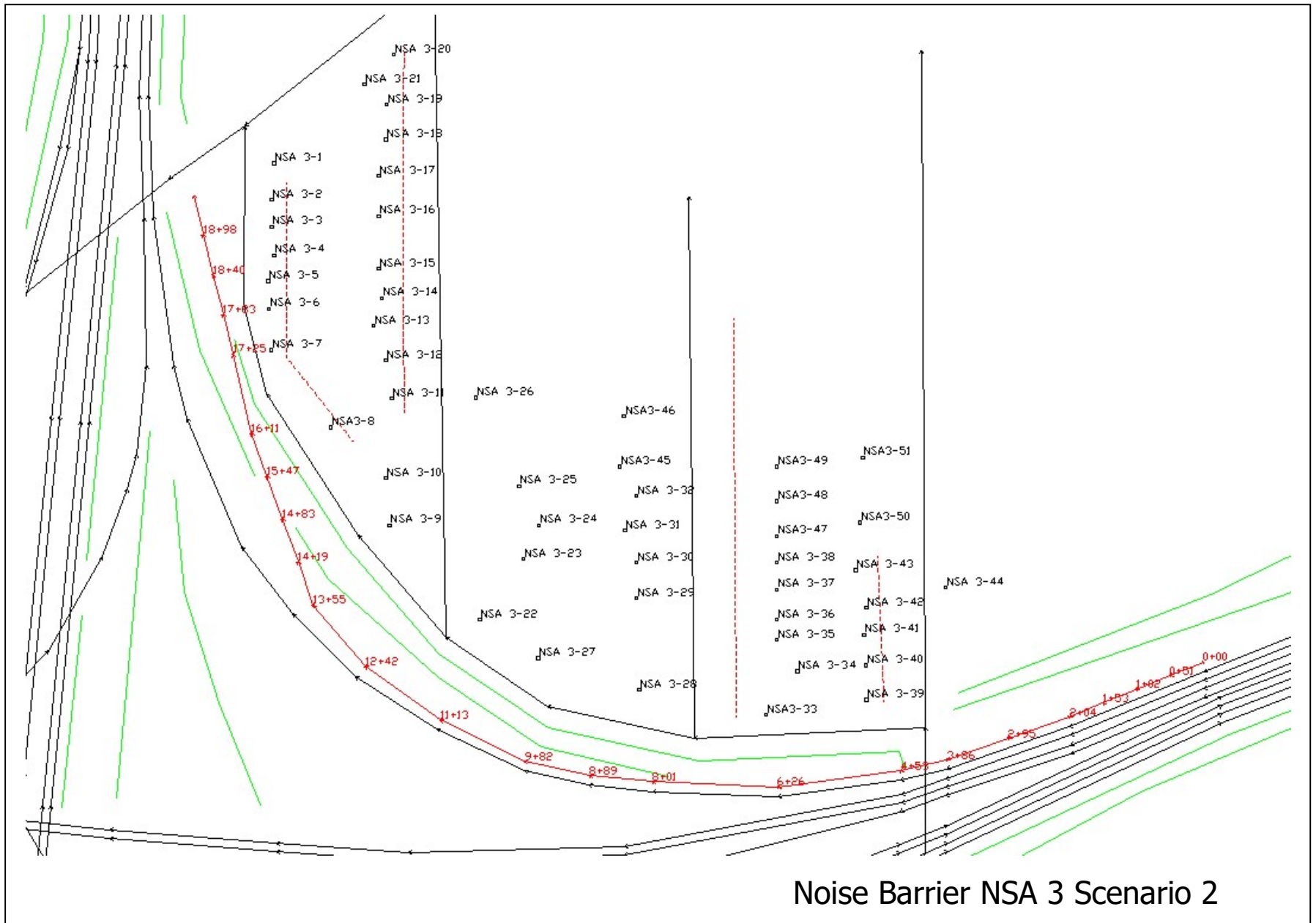
Noise Barrier Station	X	Y	Z (bottom)	Barrier Height	Z (top)
0+00	2,242,477.0	510,183.0	1,078.5	14	1,092.5
0+65	2,242,412.0	510,180.5	1,078.5	14	1,092.5
1+30	2,242,347.0	510,178.0	1,078.5	14	1,092.5
1+90	2,242,287.5	510,173.6	1,078.5	14	1,092.5
2+50	2,242,228.3	510,169.2	1,078.5	14	1,092.5
3+10	2,242,168.8	510,164.8	1,078.0	14	1,092.0
3+68	2,242,109.5	510,160.4	1,077.0	14	1,091.0
4+28	2,242,050.0	510,156.0	1,075.0	14	1,089.0
6+15	2,241,863.0	510,156.0	1,068.0	14	1,082.0
Brown Street – No Noise Barrier on bridge over Brown Street					
7+75	2,241,703.0	510,160.0	1,062.5	14	1,076.5
8+75	2,241,603.0	510,162.6	1,060.0	14	1,074.0
9+75	2,241,503.0	510,165.2	1,056.5	14	1,070.5
10+75	2,241,403.0	510,167.8	1,053.5	14	1,067.5
11+75	2,241,303.0	510,170.4	1,051.0	14	1,065.0
12+75	2,241,203.0	510,173.0	1,049.5	14	1,063.5
13+85	2,241,093.0	510,177.0	1,047.5	14	1,061.5
14+95	2,240,983.0	510,181.0	1,046.0	14	1,060.0
16+05	2,240,873.0	510,185.0	1,044.5	14	1,058.5
17+15	2,240,763.0	510,189.0	1,043.0	14	1,057.0
18+25	2,240,653.0	510,193.0	1,041.0	14	1,055.0
18+87	2,240,593.0	510,207.5	1,041.0	14	1,055.0
19+49	2,240,533.0	510,222.0	1,040.5	14	1,054.5
20+11	2,240,473.0	510,236.5	1,040.0	14	1,054.0
20+72	2,240,413.0	510,251.0	1,040.0	14	1,054.0



Noise Barrier NSA 1 Scenario 2

NSA 3 Scenario 2
Noise Barrier NOT on Bridge over Inman Street

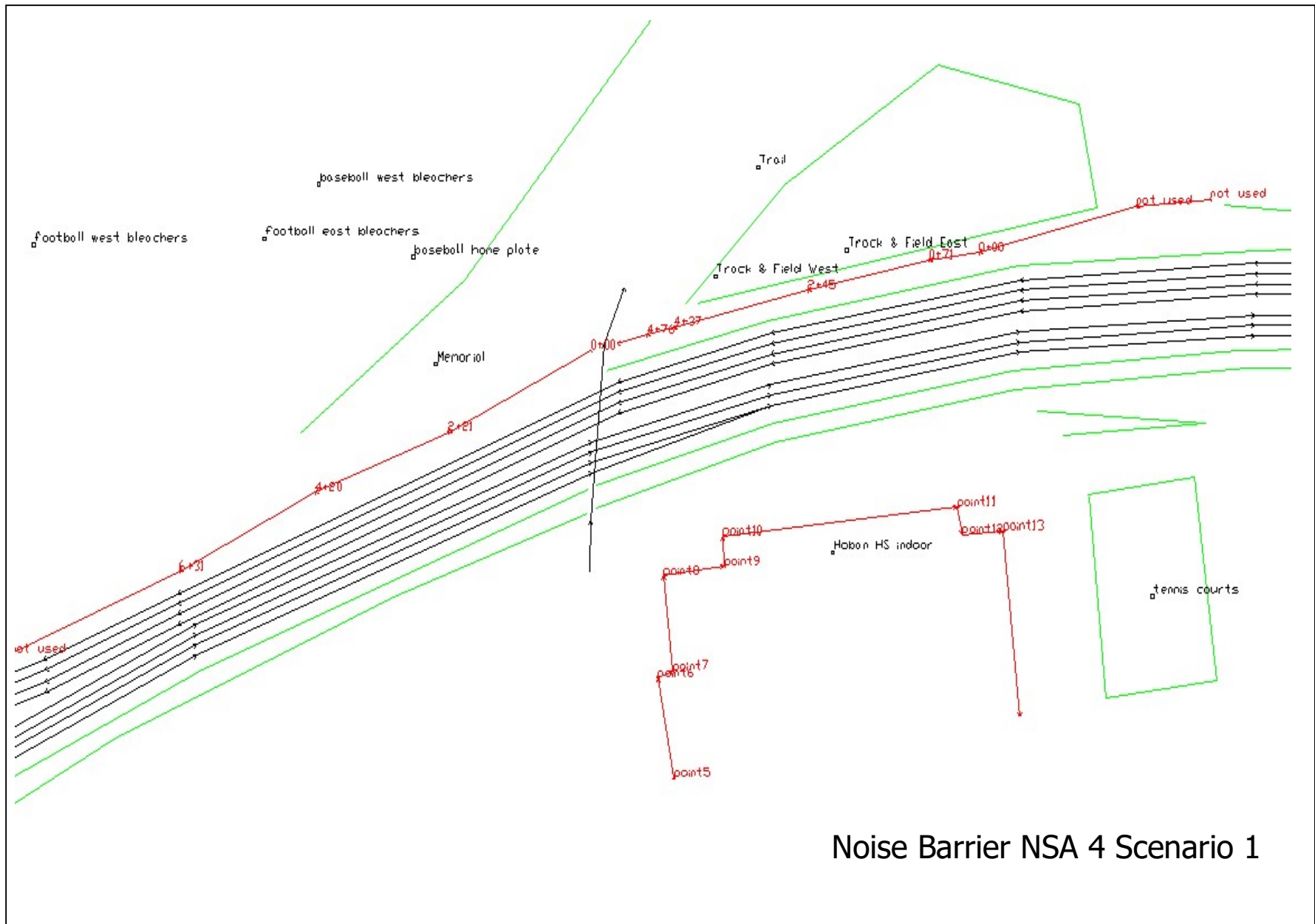
Noise Barrier Station	X	Y	Z (bottom)	Barrier Height	Z (top)
0+00	2,244,815.0	510,213.0	1,127.0	16	1,143.0
0+51	2,244,768.0	510,193.8	1,126.0	16	1,142.0
1+02	2,244,721.0	510,174.5	1,125.0	16	1,141.0
1+53	2,244,674.0	510,155.3	1,124.0	16	1,140.0
2+04	2,244,627.0	510,136.0	1,123.0	16	1,139.0
2+95	2,244,541.5	510,106.0	1,121.0	16	1,137.0
3+86	2,244,456.0	510,076.0	1,118.0	16	1,134.0
Inman Street – noise barrier not on bridge					
4+53	2,244,391.0	510,060.0	1,117.0	16	1,133.0
6+26	2,244,219.0	510,038.0	1,112.0	16	1,128.0
8+01	2,244,044.0	510,045.0	1,106.0	16	1,122.0
8+89	2,243,956.0	510,054.0	1,104.0	16	1,120.0
9+82	2,243,865.0	510,074.0	1,102.0	16	1,118.0
11+13	2,243,747.3	510,132.0	1,101.5	16	1,117.5
12+42	2,243,642.0	510,207.0	1,097.0	16	1,113.0
13+55	2,243,569.0	510,293.0	1,095.0	16	1,111.0
14+19	2,243,547.5	510,353.0	1,094.0	16	1,110.0
14+83	2,243,525.8	510,413.0	1,093.5	16	1,109.5
15+47	2,243,504.0	510,473.0	1,092.5	16	1,108.5
16+11	2,243,482.5	510,533.0	1,092.0	16	1,108.0
17+25	2,243,457.0	510,644.0	1,096.0	16	1,112.0
17+83	2,243,443.0	510,699.8	1,096.5	16	1,112.5
18+40	2,243,429.0	510,755.5	1,097.0	16	1,113.0
18+98	2,243,415.0	510,811.3	1,097.5	16	1,113.5
19+54	2,243,401.0	510,867.0	1,098.0	16	1,114.0



Noise Barrier NSA 3 Scenario 2

**NSA 4 Scenario 1
Hoban High School Athletic Fields**

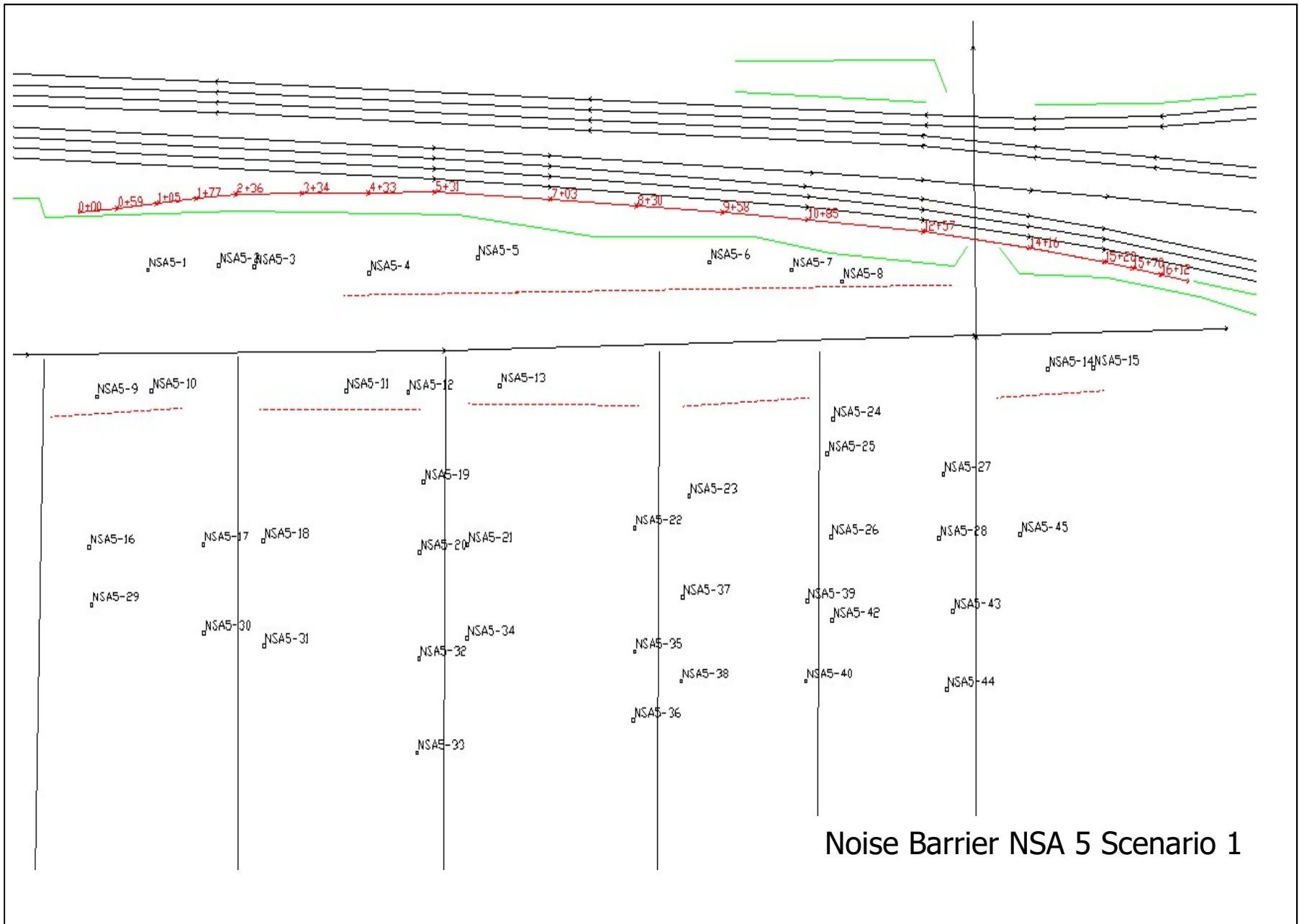
Noise Barrier Station	X	Y	Z (bottom)	Barrier Height	Z (top)
Noise Barrier East of Pedestrian Bridge					
0+00	2,245,936.0	510,596.0	1,146.00	14	1,160.0
0+71	2,245,866.0	510,587.0	1,146.00	14	1,160.0
2+45	2,245,696.0	510,552.0	1,145.00	14	1,159.0
4+37	2,245,509.0	510,509.0	1,145.00	14	1,159.0
4+76	2,245,471.0	510,500.0	1,146.00	14	1,160.0
5+20	2,245,429.0	510,490.0	1,150.00	14	1,164.0
Opening for Pedestrian Bridge					
Noise Barrier Wall west of Pedestrian Bridge					
0+00	2,245,393.0	510,482.0	1,148.00	14	1,162.0
2+21	2,245,193.0	510,387.0	1,136.00	14	1,150.0
4+20	2,245,007.0	510,317.0	1,126.00	14	1,140.0
6+31	2,244,817.0	510,225.0	1,125.00	14	1,136.0



Noise Barrier NSA 4 Scenario 1

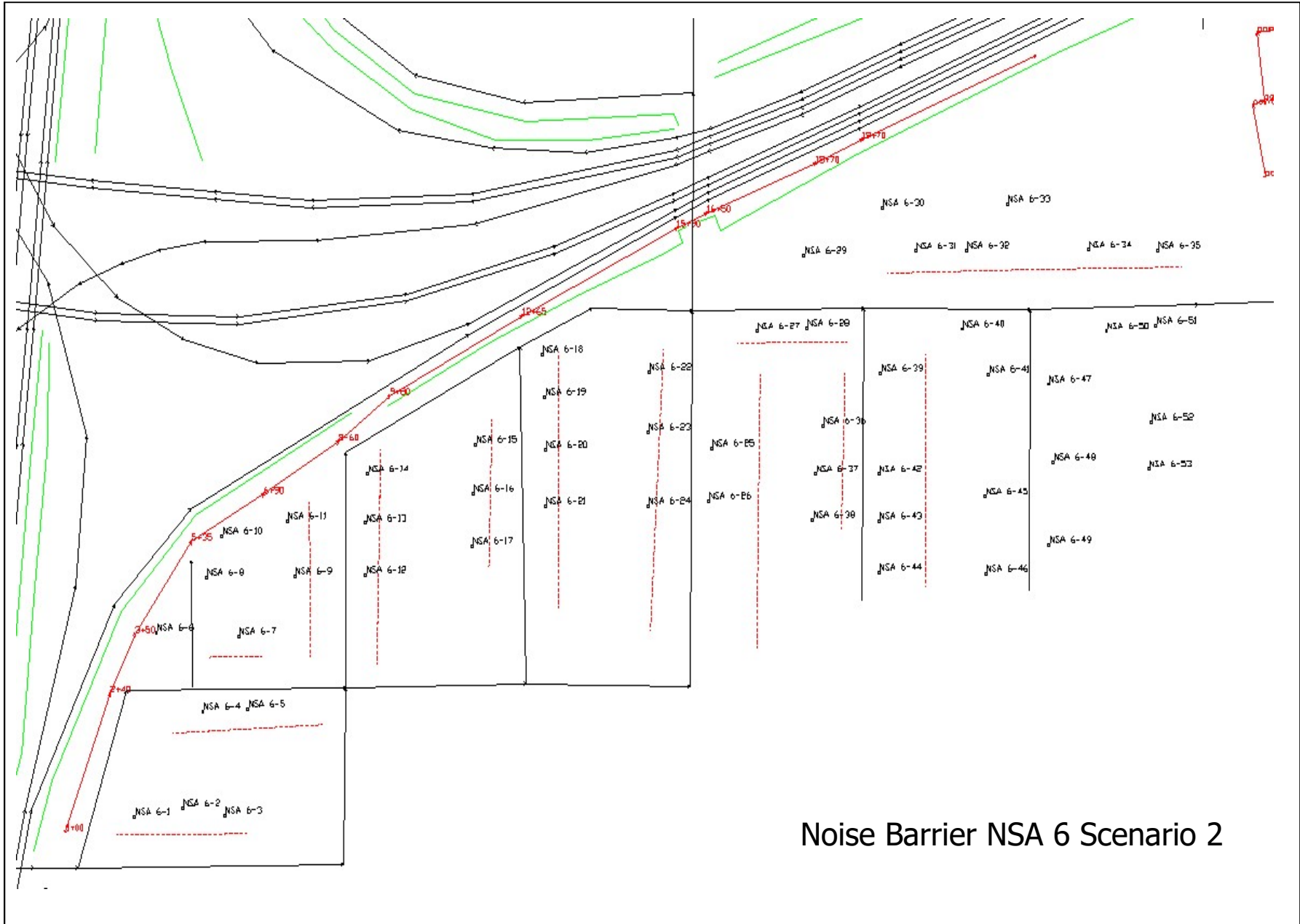
NSA 5 Scenario 1
Noise Barrier on Bridge over Brown Street

Noise Barrier Station	X	Y	Z (bottom)	Barrier Height	Z (top)
0+00	2,240,449.0	510,029.0	1,035.0	14	1,049.0
0+59	2,240,507.8	510,034.3	1,036.0	14	1,050.0
1+05	2,240,566.5	510,039.5	1,037.5	14	1,051.5
1+77	2,240,625.3	510,044.8	1,039.0	14	1,053.0
2+36	2,240,684.0	510,050.0	1,040.0	14	1,054.0
3+34	2,240,782.3	510,050.7	1,041.0	14	1,055.0
4+33	2,240,880.8	510,051.3	1,042.0	14	1,056.0
5+31	2,240,979.0	510,052.0	1,044.0	14	1,058.0
7+03	2,241,151.0	510,044.0	1,047.0	14	1,061.0
8+30	2,241,278.3	510,036.3	1,051.0	14	1,065.0
9+58	2,241,405.8	510,028.7	1,054.5	14	1,068.5
10+85	2,241,533.0	510,021.0	1,057.5	14	1,071.5
12+57	2,241,704.0	510,007.0	1,061.0	14	1,075.0
14+16	2,241,862.0	509,988.0	1,066.0	14	1,080.0
15+28	2,241,973.0	509,972.0	1,076.0	14	1,090.0
15+70	2,242,014.8	509,964.7	1,079.0	14	1,093.0
16+12	2,242,056.3	509,957.3	1,080.0	14	1,094.0
16+54	2,242,098.0	509,950.0	1,081.0	14	1,095.0



NSA 6 Scenario 2
Noise Barrier NOT on Bridge over Inman Street

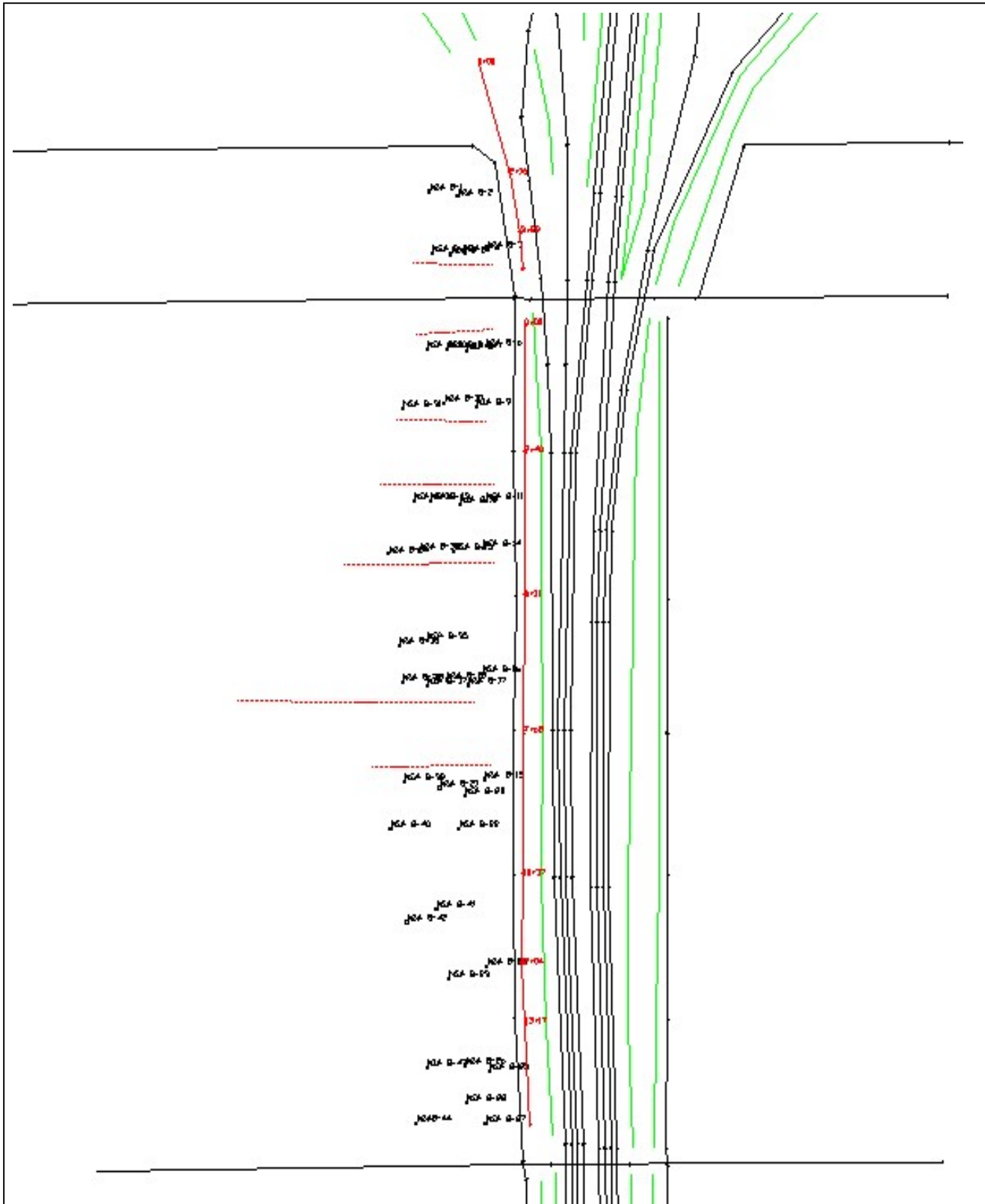
Noise Barrier Station	X	Y	Z (bottom)	Barrier Height	Z (top)
0+00	2,243,236	508,915	1,093.0	15.0	1,108.0
2+40	2,243,321	509,141	1,094.0	15.0	1,109.0
3+50	2,243,368	509,238	1,095.0	15.0	1,110.0
5+35	2,243,475	509,389	1,096.0	15.0	1,111.0
6+90	2,243,612	509,466	1,100.0	15.0	1,115.0
8-60	2,243,754	509,552	1,101.0	15.0	1,116.0
9+80	2,243,851	509,627	1,102.0	15.0	1,117.0
12+65	2,244,102	509,757	1,111.0	15.0	1,126.0
15+90	2,244,395	509,901	1,118.0	15.0	1,133.0
Bridge over Inman Street – No Noise Barrier on Bridge Structure					
16+50	2,244,452	509,925	1,120.0	15.0	1,135.0
18+70	2,244,658	510,006	1,122.0	15.0	1,137.0
19+70	2,244,746	510,045	1,125.0	15.0	1,140.0
23+25	2,245,076	510,182	1,130.0	15.0	1,145.0



Noise Barrier NSA 6 Scenario 2

NSA 8 Scenario 1

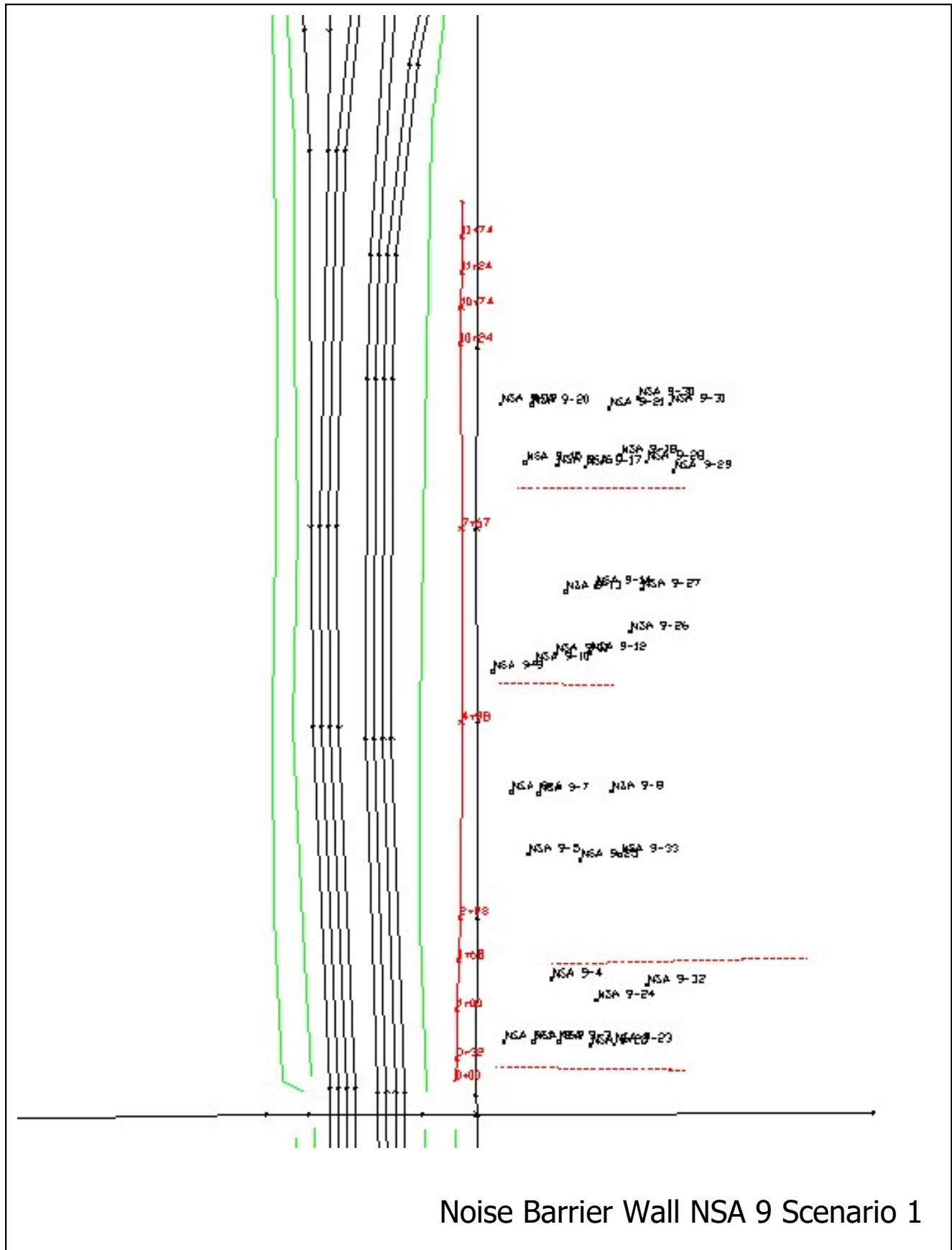
Noise Barrier Station	X	Y	Z (bottom)	Barrier Height	Z (top)
Noise Barrier North of Lafollette Road					
0+00	2,242,818.0	509,297.0	1,080.0	14	1,094.0
2+16	2,242,881.0	509,090.0	1,084.0	14	1,098.0
3+29	2,242,903.0	508,979.0	1,085.0	14	1,099.0
4+00	2,242,909.0	508,908.0	1,085.0	14	1,099.0
Break in Noise Barrier for Lafollette Road					
Noise Barrier South of Lafollette Road					
0+00	2,242,912.0	508,805.0	1,086.0	14	1,100.0
2+40	2,242,911.0	508,565.0	1,089.0	14	1,103.0
5+11	2,242,912.0	508,294.0	1,095.0	14	1,109.0
7+68	2,242,910.0	508,037.0	1,096.0	14	1,110.0
10+37	2,242,909.0	507,768.0	1,097.0	14	1,111.0
12+04	2,242,905.0	507,601.0	1,099.0	14	1,113.0
13+17	2,242,913.0	507,488.0	1,101.0	14	1,115.0
15+11	2,242,923.0	507,294.0	1,102.0	14	1,116.0



Noise Barrier Wall NSA 8 Scenario 1

NSA 9 Scenario 1

Noise Barrier Station	X	Y	Z (bottom)	Barrier Height	Z (top)
0+00	2,243,169.0	507,273.0	1,110.0	14	1,124.0
0+32	2,243,171.0	507,305.0	1,109.0	14	1,123.0
1+00	2,243,172.0	507,373.0	1,109.0	14	1,123.0
1+68	2,243,173.0	507,441.0	1,108.0	14	1,122.0
2+28	2,243,175.0	507,501.0	1,107.0	14	1,121.0
4+98	2,243,177.0	507,771.0	1,105.5	14	1,119.5
7+67	2,243,177.0	508,040.0	1,103.5	14	1,117.5
10+24	2,243,176.0	508,297.0	1,102.0	14	1,116.0
10+74	2,243,176.8	508,347.0	1,101.0	14	1,115.0
11+24	2,243,177.5	508,397.0	1,100.5	14	1,114.5
11+74	2,243,178.3	508,447.0	1,099.5	14	1,113.5
12+24	2,243,179.0	508,497.0	1,099.0	14	1,113.0



Noise Barrier Wall NSA 9 Scenario 1

APPENDIX F

Names and Addresses of Benefited Receptors
For Public Involvement

**NSA 1 Scenario 2
Benefited Receptors for Public Involvement**

TNM Number	Name	Address	City/State/Zip
1-1	Dan Relgin	739 Sumner Street	Akron, OH 44311
1-2	Norman Taylor, Sr	724 Allyn Street	Akron, OH 44311
1-4	Cindy Newsom	714 Allyn Street	Akron, OH 44311
1-6	Gino Vicini	702 Allyn Street	Akron, OH 44311
1-6	Bender Properties NW, LLC	313 Greensfield Lane	Akron, OH 44321
	Resident	696 Allyn Street	Akron, OH 44311
1-10	Brenda Harliss	721 Allyn Street	Akron, OH 44311
1-11	Robert Marshall	714 Kling Street	Akron, OH 44311
1-12	Joe Louis Lewis	713 Allyn Street	Akron, OH 44311
1-13	Ashley M. Ilg	383 Minnie Court	Akron, OH 44311
1-13	George & Jeanie Giusti	2129 Beach Drive	Akron, OH 44312
	Resident	387 Minnie Court	Akron, OH 44311
1-13	George & Jeanie Giusti	2129 Beach Drive	Akron, OH 44312
	Resident	387 Minnie Court	Akron, OH 44311
1-13	Dang Investments	105 Mayfield Avenue	Akron, OH 44313
	Resident	393 Minnie Court	Akron, OH 44311
1-14	Hui Chu Ying	710 Kling Street	Akron, OH 44311
1-14	Braymor Development, LLC	3409 Bailey Road	Cuyahoga Falls, OH 44221
	Resident	708 Kling Street	Akron, OH 44311
1-15	Monte Hendrix	702 Kling Street	Akron, OH 44311
1-15	Braymor Development, LLC	3409 Bailey Road	Cuyahoga Falls, OH 44221
	Resident	698 Kling Street	Akron, OH 44311
1-16	Min Chai Zheng	707 Allyn Street	Akron, OH 44311
1-16	Jing Qui Zheng	705 Allyn Street	Akron, OH 44311
1-17	Braymor Development, LLC	3409 Bailey Road	Cuyahoga Falls, OH 44221
	Resident	701 Allyn Street	Akron, OH 44311
1-17	David Nicol	697 Allyn Street	Akron, OH 44311
1-18	Richard Gritzinger	696 Kling Street	Akron, OH 44311
1-18	Donald K Slider	690 Kling Street	Akron, OH 44311
1-19	Matthew Freeman	2420 Wrens Drive	Stow, OH 44224
	Resident	686 Kling Street	Akron, OH 44311
1-20	Kenneth Meyn	374 East Voris Street	Akron, OH 44311
1-20	James Salivito	376 East Voris Street	Akron, OH 44311
1-21	John Gheith	380 East Voris Street	Akron, OH 44311
1-21	Cathy Lillie	386 East Voris Street	Akron, OH 44311
1-22	Alliance OH Holdings LLC	POB 928769	San Diego, CA 92192
	Resident	396 East Voris Street	Akron, OH 44311
1-22	Dang Investment	105 Mayfield Avenue	Akron, OH 44313
	Resident	400 East Voris Street	Akron, OH 44311
1-28	Casey McMaster	2251 Eisenhower Avenue	Alexandria, VA 22314
	Resident	713 Kling Street	Akron, OH 44311
1-28	James D. Mathers	709 Kling Street	Akron, OH 44311
1-29	Vernon Blouir	767 Gouglee Road	Akron, OH 44319
	Resident	443 Lamparter Street	Akron, OH 44311

**NSA 1 Scenario 2
Benefited Receptors for Public Involvement**

TNM Number	Name	Address	City/State/Zip
1-29	Bender Properties NW, LLC	313 Greensfield Lane	Akron, OH 44321
	Resident	445 Lamparter Street	
1-30	Beverly Lampers, Trustee	854 Martindale Drive	Tallmadge, OH 44278
	Resident	449 Lamparter Street	Akron, OH 44311
1-30	Darin Locy	453 Lamparter Street	Akron, OH 44311
1-30	Dung Quang Vo	457 Lamparter Street	Akron, OH 44311
1-32	Nicolas Huffman	705 Kling Street	Akron, OH 44311
1-32	James Kline, Jr	8549 Deep Cove Drive	Northfield, OH 44067
	Resident	701 Kling Street	Akron, OH 44311
1-34	Theodore Barr	3939 Allin Street #104	Long Beach CA 90803
	Resident	697 Kling Street	Akron, OH 44311
1-34	Braymor Development, LLC	3409 Bailey Road	Cuyahoga Falls, OH 44221
	Resident	693 Kling Street	Akron, OH 44311
1-36	John Kefalos	770 East Tuscarwawus Street	Barberton, OH 44203
	Resident	689 Kling Street	Akron, OH 44311
1-36	William McKown	576 Brown Street STE 1	Akron, OH 44311
	Resident	685 Kling Street	Akron, OH 44311
1-36	Donald Bulgrin	1254 Tumbleweed Street NE	Uniontown, OH 44685
	Resident	426 East Voris Street	Akron, OH 44311
1-37	Dennis Reid, Jr.	434 East Voris Street	Akron, OH 44311
1-37	Roger Carter	811 Valdes Avenue	Akron, OH 44320
	Resident	440 East Voris Street	Akron, OH 44311

**NSA 3 Scenario 2
Benefited Receptors for Public Involvement**

TNM Number	Name	Address	City/State/Zip
3-3	Linda & Wilbur Williams	1766 Karg Avenue	Akron, OH 44313
	Resident	559 Lumiere Street	Akron, OH 44306
3-4	Antonio Francis	575 Lumiere Street	Akron, OH 44306
	Resident	563 Lumiere Street	Akron, OH 44306
3-5	Craig Rhoten	567 Lumiere Street	Akron, OH 44306
3-6	John Irvine	45 Jefferson Drive	Hudson, OH 44236
	Resident	571 Lumiere Street	Akron, OH 44306
3-7	Patricia & Antonio Francis	575 Luminiere Street	Akron, OH 44306
3-8	Terry & Gloria Copen	520 Hammel Street	Akron, OH 44306
	Resident	522 Hammel Street	Akron, OH 44306
3-9	Lyle D. Leslie	538 Hammel Street	Akron, OH 44306
3-10	Donna J. Pollock	530 Hammel Street	Akron, OH 44306
3-22	Patrick Maculaitis	POB 866	New Philadelphia, OH 44663
	Resident	549 Hammel Street	Akron, OH 44306
3-23	Joseph & Lou Anne Ware	541 Hammel Street	Akron, OH 44306
3-24	Marie A Ware	537 Hammel Street	Akron, OH 44306
3-25	Johnathan Miller	609 South Arlington Road	Akron, OH 44306
	Resident	533 Hammel Street	Akron, OH 44306
3-27	Patrick Maculaitis	POB 866	New Philadelphia, OH 44663
	Resident	555 Hammel Street	Akron, OH 44306
3-28	Mark M. Mick	560 Gridley Street	Akron, OH 44306
3-29	Bradley Wise	548 Gridley Street	Akron, OH 44306
3-30	Robert & Vera Snowden	544 Gridley Street	Akron, OH 44306
3-31	Westside Property Investments	17590 Parkside Drive N	North Royalton, OH 44133
	Resident	538 Gridley Street	Akron, OH 44306
3-32	Cynthia Ridenour	536 Gridley Street	Akron, OH 44306
3-33	Mountainside Realty Ventures	14837 Detroit Avenue	Lakewood, OH 44107
	Resident	653 Gridley Street	Akron, OH 44306
3-34	Cvetkovich Properties LTD	317 Transit Drive	Tallmadge, OH 44278
	Resident	559 Gridley Street	Akron, OH 44306
3-35	Kelly Properties Inc.	POB 772	Bath, OH 44210
	Resident	555 Gridley Street	Akron, OH 44306
3-36	Donald Ridenour	2380 Lyndon Dr.	Uniontown, OH 44685
	Resident	553 Gridley Street	Akron, OH 44306
3-37	William & Grace Rauscher	551 Gridley Street	Akron, OH 44306
3-38	David McKiernan	539 Gridley Street	Akron, OH 44306
3-40	KP Properties LLC	19311 Prismo Lane	Huntington Beach, CA 92646
	Resident	580 Inman Street	Akron, OH 44306
3-41	Dean Smith Trustee	1739 Bent Bow Drive	Akron, OH 44313
	Resident	576 Inman Street	Akron, OH 44306
3-42	Sebastian Velez	POB 1022	Medina, OH 44258
	Resident	572 Inman Street	Akron, OH 44306
3-43	Lisa M. Woodall	568 Inman Street	Akron, OH 44306
3-44	Woodroe & Hannelore Summerfield	571 Inman Street	Akron, OH 44306

NSA 3 Scenario 2 Benefited Receptors for Public Involvement			
TNM Number	Name	Address	City/State/Zip
3-47	Cynthia Braham	537 Gridley Street	Akron, OH 44306
3-48	Eldridge & Eulah McCourt	533 Gridley Avenue	Akron, OH 44306
3-50	Gladys Headley	560 Inman Street	Akron, OH 44306

NSA 4 Scenario 1 Benefited Receptors for Public Involvement			
TNM Number	Name	Address	City/State/Zip
All NSA 4	Holy Cross Properties of Akron LLC	1 Holy Cross Boulevard	Akron, OH 44306

**NSA 5 Scenario 1
Benefited Receptors for Public Involvement**

TNM Number	Name	Address	City/State/Zip
5-1	Jane Herdina	363 East South Street	Akron, OH 44311
5-2	Dennis & Michelle Knight	58 Wayne Avenue	Akron, OH 44301
	Resident	375 East South Street	Akron, OH 44311
5-3	Christ is the Answer Ministries	POB 8202	Akron, OH 44320
		379 East South Street	Akron, OH 44311
5-4	Dennis & Michelle Knight	58 Wayne Avenue	Akron, OH 44301
	Resident	393 East South Street	Akron, OH 44311
5-4	Bruce Monchack	4065 State Road	Cuyahoga Falls, OH 44223
	Resident	397 East South Street	Akron, OH 44311
5-5	Dennis & Michelle Knight	58 Wayne Avenue	Akron, OH 44301
	Resident	409 East South Street	Akron, OH 44311
5-5	Bender Properties Southwest LLC	313 Greensfield Lane	Akron, OH 44321
	Resident	411 East South Street	Akron, OH 44311
5-6	Robert & Cynthia Murray	741 Kling Street	Akron, OH 44311
5-6	Kyle Congrove	745 Kling Street	Akron, OH 44311
5-7	John Irace	627 Sparrow Way	Wadsworth, OH 44281
	Resident	455 East South Street	Akron, OH 44311
5-7	John Irace	627 Sparrow Way	Wadsworth, OH 44281
	Resident	455 East South Street	Akron, OH 44311
5-8	Gild Properties LLC	1802 SR 43	Suffield, OH 44260
	Resident	469 East South Street	Akron, OH 44311
5-9	Kevin Preston	2331 Innes Road	Akron, OH 44321
	Resident	354 East South Street	Akron, OH 44311
5-10	Bender Properties Southwest LLC	313 Greensfield Lane	Akron, OH 44321
	Resident	358 East South Street	Akron, OH 44311
5-10	Bender Properties Southwest LLC	313 Greensfield Lane	Akron, OH 44321
	Resident	362 East South Street	Akron, OH 44311
5-10	David Fryberger	577 Fenn Road	Tallmadge, OH 44278
	Resident	366 East South Street	Akron, OH 44311
5-11	Dennis & Michelle Knight	58 Wayne Avenue	Akron, OH 44301
	Resident	390 East South Street	Akron, OH 44311
5-11	Bruce Monchack	4065 State Road	Cuyahoga Falls, OH 44223
	Resident	394 East South Street #1	Akron, OH 44311
	Resident	394 East South Street #2	Akron, OH 44311
5-12	Bruce Monchack	4065 State Road	Cuyahoga Falls, OH 44223
	Resident	398 East South Street #1	Akron, OH 44311
	Resident	398 East South Street #2	Akron, OH 44311
5-12	Bruce Monchack	4065 State Road	Cuyahoga Falls, OH 44223
	Resident	402 East South Street #1	Akron, OH 44311
	Resident	402 East South Street #2	Akron, OH 44311
5-13	Jerry F Higgins, Jr	3812 Easton Road	Barberton, OH 44203
	Resident	412 East South Street	Akron, OH 44311
5-13	Richard L. & Verlinda Bennett	418 East South Street	Akron, OH 44311
5-14	Eric Cooper & James Oxenrider	496 East South Street	Akron, OH 44311

**NSA 5 Scenario 1
Benefited Receptors for Public Involvement**

TNM Number	Name	Address	City/State/Zip
5-14	John G. Irace	627 Sparrow Way	Wadsworth, OH 44281
	Resident	500 East South Street	Akron, OH 44311
5-15	John G. Irace	627 Sparrow Way	Wadsworth, OH 44281
	Resident	504 East South Street #1	Akron, OH 44311
	Resident	504 East South Street #2	Akron, OH 44311
5-17	Charles Bertison	169 Polonia Avenue	Akron, OH 44319
	Resident	784 Allyn Street	Akron, OH 44311
5-17	Jerry & Lila Fausnight	1853 Gless Avenue	Akron, OH 44301
	Resident	786 Allyn Street	Akron, OH 44311
5-18	Bender Properties	313 Greensfield Lane	Akron, OH 44321
	Resident	777 Allyn Street	Akron, OH 44311
5-18	Bender Properties	313 Greensfield Lane	Akron, OH 44321
	Resident	783 Allyn Street	Akron, OH 44311
5-18	Jeanette Farrell	4646 E Lootens Lane	Homedale, ID 83628
	Resident	787 Allyn Street	Akron, OH 44311
5-19	JBJ Trading Company	516 N Placentia Avenue	Pacentia, CA 92870
	Resident	766 Beardsley Street	Akron, OH 44311
5-19	Semgen Holdings llc	575 Jerico Turnpike Suite 100	Jerico, NY 11753
	Resident	768 Beardsley Street	Akron, OH 44311
5-20	Equity Trust Co. FBO Steven Leary	POB 22042	Akron, OH 44302
	Resident	772 Beardsley Street	Akron, OH 44311
5-20	Equity Trust Co. FBO Steven Leary	POB 22042	Akron, OH 44302
	Resident	776 Beardsley Street	Akron, OH 44311
5-21	Samuel E Nelson	773 Beardsley Street	Akron, OH 44311
5-21	Adria Mundy	779 Beardsley Street	Akron, OH 44311
5-22	MVH Holdings	2923 Chautauqua Drive	Stow, OH 44224
	Resident	768 Kling Street	Akron, OH 44311
5-22	Richard Spencer	772 Kling Street	Akron, OH 44311
5-22	Roy William Kress	776 Kling Street	Akron, OH 44311
5-23	Thomas & Cynthia Henry	2696 Canton Road	Uniontown, OH 44685
	Resident	767 Kling Street	Akron, OH 44311
5-24	Cameron Mack	50 S Maple Street Suite 1	Akron, OH 44303
	Resident	466 E South Street	Akron, OH 44311
5-25	Betty Slater	6079 Powdermill Road	Kent, OH 44240
	Resident	745 Clay Drive	Akron, OH 44311
5-26	AA Rental Investments LLC	1454 East Avenue	Akron, OH 44307
	Resident	753 Clay Drive	Akron, OH 44311
5-26	Dang Investments	105 Mayfield Avenue	Akron, OH 44313
	Resident	755 Clay Drive	Akron, OH 44311
5-27	Samir Abdelqader	750 Brown Street	Akron, OH 44311
5-28	Donald & Betty Slater	6079 Powdermill Road	Kent, OH 44240
	Resident	756 Brown Street	Akron, OH 44311
5-28	Joe Stephen Riley Foundation	760 Brown Street	Akron, OH 44311
5-31	Real Estate for All LLC	312 Sunny Meadow Blvd	Brampton, Ontario L6R3C3

**NSA 5 Scenario 1
Benefited Receptors for Public Involvement**

TNM Number	Name	Address	City/State/Zip
	Resident	791 Allyn Street	Akron, OH 44311
5-32	Edward Marquette	782 Beardsley Street	Akron, OH 44311
5-32	Naomia Ricks	792 Beardsley Street	Akron, OH 44311
5-34	Mountainside Realty LLC	14837 Detroit Avenue	Lakewood, OH 44107
	Resident	783 Beardsley Street	Akron, OH 44311
5-34	Debra James	1799 Akron Peninsula Road	Akron, OH 44313
	Resident	785 Beardsley Street	Akron, OH 44311
5-34	David & Melissa Nelson	789 Beardsley Street	Akron, OH 44311
5-35	Emil Katona	784 Kling Street	Akron, OH 44311
5-35	Michael Cowens	788 Kling Street	Akron, OH 44311
5-36	Michael Cowans	792 Kling Street	Akron, OH 44311
5-36	A 1 Rental Properties	POB 391	Greenlawn, NY 11740
	Resident	796 Kling Street	Akron, OH 44311
5-37	Kaushik Saha	779 Kling Street	Akron, OH 44311
5-38	Michael Cowens	792 Kling Street	Akron, OH 44311
	Resident	781 Kling Street	Akron, OH 44311
5-38	Daniel & Ellen Stein	9771 Cooper Lane	Cincinnati, OH 45242
	Resident	795 Kling Street	Akron, OH 44311
5-39	Ace Management	1145 Comet Road	Clinton, OH 44216
	Resident	760 Clay Drive	Akron, OH 44311
5-40	Orchard Lane Enterprises LLC	4020 Bellaire Lane	Peninsula, OH 44264
	Resident	770 Clay Drive	Akron, OH 44311
5-40	Roy Pritt	808 Clay Drive	Akron, OH 44311
	Resident	792 Clay Drive	Akron, OH 44311
5-42	Dang Investments	105 Mayfield Avenue	Akron, OH 44313
	Resident	759 Clay Drive	Akron, OH 44311
5-43	Susan Bradnick	762 Brown Street	Akron, OH 44311
5-43	Akron Bible Church	783 Brown Street	Akron, OH 44311
	Resident	768 Brown Street	Akron, OH 44311

**NSA 6 Scenario 2
Benefited Receptors for Public Involvement**

TNM Number	Name	Address	City/State/Zip
6-7	Clay East	711 E Crosier Street	Akron, OH 44306
6-7	Dang Investment	105 Mayfield Avenue	Akron, OH 44313
	Resident	715 E Crosier Street	Akron, OH 44306
6-7	Beverly Cook	610 Sandford Avenue	Akron, OH 44303
	Resident	719 E Crosier	Akron, OH 44306
6-8	Patrick Leymon	709 Darkow Street	Akron, OH 44306
6-8	Clay East	711 E Crosier Street	Akron, OH 44306
	Resident	705 Darkow Street	Akron, OH 44306
6-9	Gladys Ballard	648 Hammel Street	Akron, OH 44306
6-9	Denise Williams	642 Hammel Street	Akron, OH 44306
6-10	Dang Investments	105 Mayfield Avenue	Akron, OH 44313
	Resident	701 Darkow Street	Akron, OH 44306
6-11	David E Voss	638 Hammel Street	Akron, OH 44306
6-11	Dennis & Shiela Franklin	634 Hammel Street	Akron, OH 44306
6-14	Dawn Franklin	625 Hammel Street	Akron, OH 44306
6-14	Marsha Hosey	629 Hammel Street	Akron, OH 44306
6-15	Cathie & Adam Kolleth	630 Gridley Avenue	Akron, OH 44306
6-15	Robert Eisenbrei	2684 Timberline Trail	Cuyahoga Falls, OH 44223
	Resident	636 Gridley Avenue	Akron, OH 44306
6-16	Patricia Mae Simmons	640 Gridley Avenue	Akron, OH 44306
6-16	CAH Properties	1043 Perry Street	Columbus, OH 43201
	Resident	642 Gridley Avenue	Akron, OH 44306
6-16	Eisenbrei Real Estate Holdings	2684 Timberline Trail	Cuyahoga Falls, OH 44223
	Resident	646 Gridley Avenue	Akron, OH 44306
6-18	R&S Properties & Investments	3946 Leewood Drive	Stow, OH 44224
	Resident	617 Gridley Avenue	Akron, OH 44306
6-19	AMHA	100 W Cedar Street	Akron, OH 44307
	Resident	621 Gridley Avenue	Akron, OH 44306
6-19	Richard M. & Jill Wooley	2311 Frashure Drive	Akron, OH 44321
	Resident	625 Gridley Avenue	Akron, OH 44306
6-20	Vondie Boykin	629 Gridley Avenue	Akron, OH 44306
6-20	Cory Stepp	635 Gridley Avenue	Akron, OH 44306
6-21	Sherry & James Pride	639 Gridley Avenue	Akron, OH 44306
6-21	Robert & Lois Eisenbrei	2684 Timberline Trail	Cuyahoga Falls, OH 44223
	Resident	643 Gridley Avenue	Akron, OH 44306
6-21	Gene Bowers	645 Gridley Avenue	Akron, OH 44306
6-22	Victor Lownsbury	634 Inman Street	Akron, OH 44306
6-22	Alice Baldwin	638 Inman Street	Akron, OH 44306
6-23	James Hyatt	2225 Watkins Street	Akron, OH 44305
	Resident	642 Inman Street	Akron, OH 44306
6-23	Larry Hunt	648 Inman Street	Akron, OH 44306
6-23	Pamela Decker	652 Inman Street	Akron, OH 44306
6-24	Gerald Altizer	2234 Ardentale Avenue	Akron, OH 44312
	Resident	658 Inman Street	Akron, OH 44306

**NSA 6 Scenario 2
Benefited Receptors for Public Involvement**

TNM Number	Name	Address	City/State/Zip
6-25	Ronald Miller	2162 S Arlington Road	Akron, OH 44306
	Resident	639 Inman Street	Akron, OH 44306
6-25	Daniel Bridle	1310 Connecticut Woods	Hudson, OH 44236
	Resident	641 Inman Street	Akron, OH 44306
6-26	Elaine Chin	110 Sabetha Place	Akron, OH 44314
	Resident	645 Inman Street	Akron, OH 44306
6-26	Quality Home Improvement	610 Hudson Street	Akron, OH 44306
	Resident	649 Inman Street	Akron, OH 44306
6-27	Pacific Northwest Partners	8821 5 th Avenue NE Suite 1	Seattle, WA 98115
	Resident	832 Fifth Avenue	Akron, OH 44306
6-27	All In Moore Investment Group	2215 SR 44	Atwater, OH 44201
	Resident	836 Fifth Avenue	Akron, OH 44306
6-28	Daniel Cuffe	1131 Calvin Street	Akron, OH 44312
	Resident	840 Fifth Avenue	Akron, OH 44306
6-28	Fields Collins Properties LLC	556 Talmadge Road	Cuyahoga Falls, OH 44221
	Resident	844 Fifth Avenue	Akron, OH 44306
6-28	Michael Sapp	103 Valentine Farms Lane	Akron, OH 44333
	Resident	846 Fifth Avenue	Akron, OH 44306
6-29	David Andrew Miller	839 Fifth Avenue	Akron, OH 44306
6-29	Dondi Williams, Sr	68 Jewett Street	Akron, OH 44305
	Resident	843 Fifth Avenue	Akron, OH 44306
6-29	Cynthia Draher	99 N College Street	Akron, OH 44304
	Resident	847 Fifth Avenue	Akron, OH 44306
6-30	Kelly Properties	POB 772	Bath, OH 44210
	Resident	587 Merton Avenue	Akron, OH 44306
6-31	Henry & Sonja Dixson	577 S Hawkins Avenue	Akron, OH 44320
	Resident	857 Fifth Avenue	Akron, OH 44306
6-31	Morris & Corrine Pringle	8651 Fifth Avenue	Akron, OH 44306
6-31	Lanard Richardson	1977 Wells Creek Run	Akron, OH 44312
	Resident	871 Fifth Avenue	Akron, OH 44306
6-32	Tracy Nevins	875 Fifth Avenue	Akron, OH 44306
6-32	TZ & Mary Nevins	879 Fifth Avenue	Akron, OH 44306
6-33	Sandra Bogan	883 Fifth Avenue	Akron, OH 44306
6-36	Thomas Losh	182 Stephens Road	Akron, OH 44312
	Resident	614 Merton Avenue	Akron, OH 44306
6-36	Darlene & Jerry Whitis	620 Merton Avenue	Akron, OH 44306
6-37	Summit County Land Reutilization	1180 S Main Street Suite 230	Akron, OH 44301
	Resident	624 Merton Avenue	Akron, OH 44306
6-37	Sandra Brown	626 Merton, Avenue	Akron, OH 44306
6-38	Jose Felix	918 Beardsley Street	Akron, OH 44306
	Resident	632 Merton Avenue	Akron, OH 44306
6-38	Emily & Christopher Gaul	638 Merton Avenue	Akron, OH 44306
6-39	Eleanor Jone Properties LLC	339 Siebler Avenue	Akron, OH 44312
	Resident	860 fifth Avenue	Akron, OH 44306

**NSA 6 Scenario 2
Benefited Receptors for Public Involvement**

TNM Number	Name	Address	City/State/Zip
6-39	Rafael Maldonado & Amanda Cisneros	13204 SW 9 th Terrace	Miami, FL 33184
	Resident	864 Fifth Avenue	Akron, OH 44306
6-39	Summit County Land Reutilization	1180 S Main Street Suite 230	Akron, OH 44301
	Resident	609 Merton Avenue	Akron, OH 44306
6-40	Philip Trudeau	872 Fifth Avenue	Akron, OH 44306
6-41	L D & Cathi Smith	880 Fifth Avenue	Akron, OH 44306
6-41	Curtis Mitchell	967 Cole Avenue	Akron, OH 44306
	Resident	572 Bertha Avenue	Akron, OH 44306
6-42	Summit County Land Reutilization	1180 S Main Street Suite 230	Akron, OH 44301
	Resident	609 Merton Avenue	Akron, OH 44306
6-42	Dennis Coleman	437 Briarwood Drive	Akron, OH 44302
	Resident	615 Merton Avenue	Akron, OH 44306
6-43	Dennis Hailstock & Nola Thomas	623 Merton Avenue	Akron, OH 44306
6-43	Alan & Angela Carter	627 Merton Avenue	Akron, OH 44306
6-45	Rebecca Montgomery & Nicholas Miller	4131 Wadsworth Road	Barberton, OH 44203
	Resident	588 Bertha Avenue	Akron, OH 44306
6-45	Venture Capitol Holdings LLC	POB 1052	Akron, OH 44309
	Resident	590 Bertha Avenue	Akron, OH 44306
6-45	Pamela Sue Jones	592 Bertha Avenue	Akron, OH 44306
6-45	Ramona Hamilton	700 Excelsior Avenue	Akron, OH 44306
	Resident	596 Bertha Avenue	Akron, OH 44306
6-47	Jeff Brandon	5184 Glenmore Way	Medina, OH 44256
	Resident	571 Bertha Avenue	Akron, OH 44306

**NSA 8 Scenario 1
Benefited Receptors for Public Involvement**

TNM Number	Name	Address	City/State/Zip
8-6	Ella & Willie Ray	5237 Arabian Way	Indianapolis, IN 46228
	Resident	630 Lafollette Street	Akron, OH 44311
8-9	Deborah Roberson	629 Baird Street	Akron, OH 44311
8-11	Equity Trust Co. FBO Daniel Powers		
	Resident	632 Baird Street	Akron, OH 44311
8-12	Christopher & Gail Richards	628 Baird Street	Akron, OH 44311
8-13	Terry & Deloris Henderson	620 Baird Street	Akron, OH 44311
8-14	Janice Calhoun	631 Kipling Street	Akron, OH 44311
8-15	Lynette Miller	623 Kipling Street	Akron, OH 44311
8-16	LTC Enterprises #3	1730 McTaggart Drive	Akron, OH 44320
	Resident	627 McKinley Ave	Akron, OH 44311
8-18	Daniel Mancini	2770 SR 43	Mogadore, OH 44260
	Resident	621 McKinley Avenue	Akron, OH 44311
8-19	Alliance OH Holdings LLC	POB 928769	San Diego, CA 92192
	Resident	626 McKinley Avenue	Akron, OH 44311
8-20	Janice Calhoun & Stephanie Bradshaw	622 McKinley Avenue	Akron, OH 44311
8-21	Ira Joe Calhoun	618 McKinley Avenue	Akron, OH 44311
8-22	Gerald & Edith Gulley	623 Corice Street	Akron, OH 44311
8-23	Phyllis Vincent	629 Morgan Street	Akron, OH 44311
8-25	Dang Investment	105 Mayfield Avenue	Akron, OH 44313
	Resident	630 Morgan Avenue	Akron, OH 44311
8-26	Ronnie Hutton, Trustee	4469 Anatolia Drive	Rancho Cordova, CA 95742
	Resident	626 Morgan Avenue	Akron, OH 44311
8-35	Vanthalith Khounborin	618 Kipling Street	Akron, OH 44311
8-37	Janet Lee Jones	617 McKinley Avenue	Akron, OH 44311
8-38	Linda Futrell	613 McKinley Avenue	Akron, OH 44311
8-39	Beverly Ely	681 Garth Avenue	Akron, OH 44320
	Resident	612 McKinley Avenue	Akron, OH 44311
8-40	Jacqueline Reed	615 Cornice Street	Akron, OH 44311
8-41	Avie Boyer	618 Corice Street	Akron, OH 44311

**NSA 9 Scenario 1
Benefited Receptors for Public Involvement**

TNM Number	Name	Address	City/State/Zip
9-1	Michael Zmija	4961 Boneta Road	Medina, OH 44256
	Resident	669 Lovers Lane	Akron, OH 44306
9-2	Thomas Wiseman	673 Lovers Lane	Akron, OH 44306
9-3	Alfred Goldsmith	2030 Lee Drive	Akron, OH 44306
	Resident	675 Lovers Lane	Akron, OH 44306
9-4	William Dipaolo, Sr.	1300 Dietz Avenue	Akron, OH 44301
	Resident	680 Morgan Avenue	Akron, OH 44306
9-5	Ronald Lieving	675 Morgan Avenue	Akron, OH 44306
9-6	Carl & Victoria Wright, Jr.	668 Corice Street	Akron, OH 44306
9-7	Brandon Wright	674 Corice Street	Akron, OH 44306
9-8	Michael Zmija	4961 Boneta Road	Medina, OH 44256
	Resident	686 Corice Street	Akron, OH 44306
9-9	Deon Alexander	669 Corice Street	Akron, OH 44306
9-10	Cid Norris	3713 Easton Road	Barberton, OH 44203
	Resident	673 Corice Street	Akron, OH 44306
9-11	Latisha Norris	3713 Easton Road	Barberton, OH 44203
	Resident	677 Corice Street	Akron, OH 44306
9-12	Hayley Fedelischak	681 Corice Street	Akron, OH 44306
9-13	Michael Harpley	674 McKinley Avenue	Akron, OH 44306
9-14	Terrance Allen	678 McKinley Avenue	Akron, OH 44306
9-15	Valentine Asset Management LLC	1746 Marigold Avenue	Akron, OH 44301
	Resident	669 McKinley Avenue	Akron, OH 44306
9-16	Deloris McCall	405 Weeks Street	Akron, OH 44306
	Resident	673 McKinley Avenue	Akron, OH 44306
9-17	Sharon McKim	677 McKinley Street	Akron, OH 44306
9-19	Barbara Valentine	1282 Kipling Street	Akron, OH 44320
	Resident	672 Kipling Street	Akron, OH 44306
9-20	Jeff Brandon	5184 Glenmore Way	Akron, OH 44306
	Resident 676 Kipling Street		Akron, OH 44306
9-25	Leon Simon, Jr.	681 Morgan Avenue	Akron, OH 44306
9-26	Debrah Green, Trustee	1128 Taplin Avenue	Akron, OH 44319
	Resident	685 Corice Street	Akron, OH 44306

APPENDIX G

TNM Input/Output Files

EXISTING YEAR 2020

TNM Files used in all Existing Year 2020 Model Runs

INPUT: ROADWAYS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc. CMCox				1 August 2017 TNM 2.5							
INPUT: ROADWAYS				SUM-I76 Central Interchange (101402)			Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA				
PROJECT/CONTRACT:				NSA 1 2020							
RUN:											
Roadway Name	Width	Points Name	No.	Coordinates (pavement)			Flow Control			Segment	
				X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
I-76 EB1/Ramp I-76EB to I-77SB	12.0	point1	1	2,239,535.0	510,115.0	1,016.00				Average	
		point2	2	2,239,900.0	510,108.0	1,024.00				Average	
		point3	3	2,240,219.0	510,096.0	1,032.00				Average	
		point4	4	2,240,979.0	510,067.0	1,046.00				Average	
		point5	5	2,241,359.0	510,054.0	1,052.00				Average	
		Brown Str	6	2,241,702.0	510,040.0	1,062.00				Average	Y
		point7	7	2,241,866.0	510,026.0	1,070.00				Average	
		On fill	8	2,242,042.0	510,001.0	1,079.00				Average	
		point9	9	2,242,347.0	509,938.0	1,084.00				Average	
		point10	10	2,242,556.0	509,873.0	1,083.00				Average	
		point11	11	2,242,746.0	509,767.0	1,080.00				Average	
		point12	12	2,242,890.0	509,602.0	1,075.00				Average	
		point13	13	2,242,978.0	509,386.0	1,072.00				Average	
		point14	14	2,242,998.0	509,142.0	1,067.00				Average	
		Lafollette S	15	2,242,997.0	508,886.0	1,066.00				Average	
		point16	16	2,242,991.0	508,561.0	1,077.00				Average	
		point17	17	2,242,979.0	508,038.0	1,090.00				Average	
		point18	18	2,242,983.0	507,761.0	1,093.00				Average	
		Lover's La	19	2,243,006.0	507,258.0	1,086.00				Average	
		point20	20	2,243,006.0	506,706.0	1,084.00				Average	
		Cole Ave.	21	2,243,011.0	506,224.0	1,090.00					
Brown Street	28.0	At Kipling	22	2,241,770.0	508,281.0	1,079.00				Average	
		At Baird	23	2,241,774.0	508,556.0	1,075.00				Average	
		At Lofollet	24	2,241,774.0	508,845.0	1,067.00				Average	
		At E Crosi	25	2,241,781.0	509,134.0	1,059.00				Average	

INPUT: ROADWAYS

SUM-I76 Central Interchange (101402)

		At E South	26	2,241,781.0	509,888.0	1,047.00				Average	
		At Lampar	27	2,241,776.0	510,220.0	1,037.00				Average	
		At E Voris	28	2,241,773.0	510,581.0	1,044.00				Average	
		At Lovisa	518	2,241,772.0	510,969.0	1,043.00					
Johnston Street	40.0	At Gridley	29	2,244,073.0	511,439.0	1,122.00				Average	
		At Hamme	30	2,243,738.0	511,173.0	1,113.00				Average	
		At Lumiere	31	2,243,473.0	510,963.0	1,102.00				Average	
		point32	32	2,243,367.0	510,889.0	1,102.00				Average	Y
		Wilson St	33	2,243,115.0	510,688.0	1,089.00				Average	
		Jonhston C	34	2,242,835.0	510,457.0	1,079.00				Average	
		Hedden A	35	2,242,641.0	510,314.0	1,067.00				Average	
		point36	36	2,242,472.0	510,270.0	1,050.00				Average	
		Spicer St.	37	2,242,296.0	510,270.0	1,039.00				Average	
		point38	38	2,242,134.0	510,273.0	1,039.00				Average	
		At Brown S	39	2,241,776.0	510,220.0	1,037.00					
I-76 WB to I-77 SB	12.0	point317	40	2,243,633.0	509,937.0	1,094.00				Average	
		point41	41	2,243,502.0	509,936.0	1,094.00				Average	
		point42	42	2,243,284.0	509,954.0	1,090.00				Average	Y
		point43	43	2,243,018.0	509,977.0	1,104.00				Average	Y
		point44	44	2,242,946.0	509,974.0	1,104.00				Average	
		point45	45	2,242,874.0	509,952.0	1,104.00				Average	
		point46	46	2,242,815.0	509,911.0	1,104.00				Average	Y
		point47	47	2,242,745.0	509,830.0	1,100.00				Average	Y
		point48	48	2,242,707.0	509,706.0	1,097.00				Average	
		point49	49	2,242,721.0	509,574.0	1,090.00				Average	
		point50	50	2,242,829.0	509,347.0	1,080.00				Average	
		point51	51	2,242,934.0	509,127.0	1,066.00				Average	
		Lafollette C	52	2,242,977.0	508,889.0	1,066.00				Average	
		point53	53	2,242,979.0	508,561.0	1,077.00				Average	
		point17	54	2,242,967.0	508,038.0	1,090.00				Average	
		point18	55	2,242,971.0	507,761.0	1,093.00				Average	
		Lover's La	56	2,242,994.0	507,258.0	1,086.00				Average	
		point20	57	2,242,994.0	506,706.0	1,084.00				Average	
		Cole Ave.	58	2,242,999.0	506,224.0	1,090.00					
SR8 SB1/Ramp SR8 SB to I-76 WB	12.0	Beacon St	61	2,243,264.0	512,211.0	1,056.00				Average	Y
		point62	62	2,243,268.0	512,039.0	1,060.00				Average	
		point63	63	2,243,273.0	511,571.0	1,074.00				Average	
		point64	64	2,243,242.0	511,069.0	1,078.00				Average	
		point65	65	2,243,213.0	510,930.0	1,075.00				Average	

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		Johnston S	66	2,243,164.0	510,734.0	1,072.00				Average	
		point67	67	2,243,089.0	510,515.0	1,072.00				Average	
		point68	68	2,242,964.0	510,345.0	1,077.00				Average	
		point69	69	2,242,785.0	510,224.0	1,080.00				Average	
		begin fill	70	2,242,608.0	510,180.0	1,082.00				Average	
		point71	71	2,242,053.0	510,139.0	1,078.00				Average	
		Browm St	72	2,241,864.0	510,137.0	1,070.00				Average	Y
		point73	73	2,241,704.0	510,141.0	1,063.00				Average	
		point74	74	2,241,205.0	510,159.0	1,050.00				Average	
		point75	75	2,240,651.0	510,179.0	1,041.00				Average	
		point76	76	2,240,156.0	510,193.0	1,030.00				Average	
		Grant St o	77	2,239,533.0	510,210.0	1,018.00					
Ramp SR8 SB to I76 EB	12.0	point78	78	2,243,242.0	511,069.0	1,078.00				Average	
		point79	79	2,243,225.0	510,930.0	1,075.00				Average	
		Johnston S	80	2,243,180.0	510,771.0	1,072.00				Average	
		point81	81	2,243,104.0	510,512.0	1,072.00				Average	
		point82	82	2,243,074.0	510,334.0	1,075.00				Average	
		point83	83	2,243,092.0	510,148.0	1,077.00				Average	
		I-76 undrp	84	2,243,127.0	510,047.0	1,078.00				Average	Y
		point85	85	2,243,214.0	509,903.0	1,079.00				Average	
		I-76 ovrpa	86	2,243,335.0	509,787.0	1,081.00				Average	
		point87	87	2,243,461.0	509,719.0	1,088.00				Average	
		point88	88	2,243,601.0	509,680.0	1,099.00				Average	
		point89	89	2,243,813.0	509,683.0	1,105.00				Average	
		point90	90	2,244,002.0	509,745.0	1,111.00				Average	
		Inman St c	91	2,244,394.0	509,931.0	1,118.00				Average	Y
		point92	92	2,244,457.0	509,960.0	1,120.00				Average	
		point93	93	2,244,841.0	510,140.0	1,133.00				Average	
		ped bridge	204	2,245,394.0	510,352.0	1,136.00				Average	
		point95	205	2,245,645.0	510,418.0	1,135.00				Average	
		point96	272	2,245,993.0	510,480.0	1,123.00				Average	
		point258	273	2,246,321.0	510,499.0	1,116.00					
SR8 SB thru lane 4	12.0	point96	96	2,243,288.0	512,224.0	1,056.20				Average	Y
		Beacon St	97	2,243,291.0	512,057.0	1,060.20				Average	
		point98	98	2,243,296.0	511,550.0	1,074.20				Average	
		point99	99	2,243,265.0	511,050.0	1,078.20				Average	
		point100	100	2,243,214.0	510,550.0	1,067.20				Average	
		point101	101	2,243,164.0	510,050.0	1,058.20				Average	
		point102	102	2,243,112.0	509,550.0	1,056.20				Average	

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		point103	103	2,243,063.0	509,050.0	1,066.20				Average	
		Lafollette c	104	2,243,048.0	508,887.0	1,068.20				Average	
		point105	105	2,243,015.0	508,561.0	1,077.20				Average	
		point17	106	2,243,003.0	508,038.0	1,090.20				Average	
		point18	107	2,243,007.0	507,761.0	1,093.20				Average	
		Lover's La	108	2,243,030.0	507,258.0	1,086.20				Average	
		point20	109	2,243,030.0	506,706.0	1,084.20				Average	
		Cole Ave.	110	2,243,035.0	506,224.0	1,090.00					
SR8 SB thru lane 3	12.0	point96	113	2,243,276.0	512,217.0	1,056.10				Average	Y
		Beacon St	114	2,243,279.0	512,048.0	1,060.10				Average	
		point98	115	2,243,284.0	511,550.0	1,074.10				Average	
		point99	116	2,243,253.0	511,050.0	1,078.10				Average	
		point100	117	2,243,202.0	510,550.0	1,067.10				Average	
		point101	118	2,243,152.0	510,050.0	1,058.10				Average	
		point102	119	2,243,100.0	509,550.0	1,056.10				Average	
		point103	120	2,243,051.0	509,050.0	1,066.10				Average	
		Lafollette c	121	2,243,036.0	508,887.0	1,068.10				Average	
		point105	122	2,243,003.0	508,561.0	1,077.10				Average	
		point17	123	2,242,991.0	508,038.0	1,090.10				Average	
		point18	124	2,242,995.0	507,761.0	1,093.10				Average	
		Lover's La	125	2,243,018.0	507,258.0	1,086.10				Average	
		point20	126	2,243,018.0	506,706.0	1,084.10				Average	
		Cole Ave.	127	2,243,023.0	506,224.0	1,090.00					
I-77 NB thru lane 4	12.0	Cole Stree	128	2,243,068.0	506,222.0	1,090.00				Average	
		point129	129	2,243,069.0	506,700.0	1,084.00				Average	
		Lovers La	130	2,243,061.0	507,259.0	1,086.00				Average	
		point131	131	2,243,044.0	507,750.0	1,093.00				Average	
		point132	132	2,243,045.0	508,250.0	1,084.00				Average	
		point133	133	2,243,051.0	508,423.0	1,080.00				Average	
		Lafollette I	134	2,243,079.0	508,891.0	1,068.00				Average	
		point135	135	2,243,095.0	509,053.0	1,066.00				Average	
		point136	136	2,243,143.0	509,550.0	1,056.00				Average	
		I-76 EB ov	137	2,243,164.0	509,740.0	1,055.00				Average	
		I-76WB ov	138	2,243,190.0	510,012.0	1,058.00				Average	
		point139	139	2,243,244.0	510,550.0	1,067.00				Average	
		point140	140	2,243,294.0	511,050.0	1,078.00				Average	
		point141	141	2,243,329.0	511,548.0	1,072.00				Average	
		Beacon St	142	2,243,325.0	512,080.0	1,060.00				Average	
		point143	143	2,243,321.0	512,249.0	1,056.00					

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I-77 NB thru lane 3	12.0	Cole Street	148	2,243,080.0	506,222.0	1,090.00				Average	
		point129	149	2,243,081.0	506,700.0	1,084.00				Average	
		Lovers Lane	150	2,243,073.0	507,259.0	1,086.00				Average	
		point131	151	2,243,056.0	507,750.0	1,093.00				Average	
		point132	152	2,243,057.0	508,250.0	1,084.00				Average	
		point133	153	2,243,063.0	508,423.0	1,080.00				Average	
		Lafollette	154	2,243,092.0	508,891.0	1,068.00				Average	
		point135	155	2,243,107.0	509,053.0	1,066.00				Average	
		point136	156	2,243,155.0	509,550.0	1,056.00				Average	
		I-76 EB overpass	157	2,243,176.0	509,740.0	1,055.00				Average	
		I-76WB overpass	158	2,243,202.0	510,012.0	1,058.00				Average	
		point139	159	2,243,256.0	510,550.0	1,067.00				Average	
		point140	160	2,243,306.0	511,050.0	1,078.00				Average	
		point141	161	2,243,341.0	511,548.0	1,072.00				Average	
		Beacon Street	162	2,243,337.0	512,080.0	1,060.00				Average	
		point143	163	2,243,333.0	512,249.0	1,056.00					
I-77 NB2/Ramp I-77NB to I-76WB	12.0	Cole Street	166	2,243,092.0	506,222.0	1,090.00				Average	
		point129	167	2,243,093.0	506,700.0	1,084.00				Average	
		Lovers Lane	168	2,243,085.0	507,259.0	1,086.00				Average	
		point131	169	2,243,068.0	507,750.0	1,093.00				Average	
		point132	170	2,243,069.0	508,250.0	1,084.00				Average	
		point133	171	2,243,075.0	508,423.0	1,080.00				Average	
		point172	172	2,243,105.0	508,687.0	1,073.00				Average	
		point173	173	2,243,159.0	508,951.0	1,071.00				Average	
		point182	182	2,243,255.0	509,317.0	1,076.00				Average	
		point183	183	2,243,276.0	509,561.0	1,076.00				Average	
		SR 8 overpass	184	2,243,203.0	509,812.0	1,076.00				Average	Y
		point185	185	2,243,112.0	509,942.0	1,077.00				Average	
		point186	186	2,242,975.0	510,062.0	1,079.00				Average	
		point187	187	2,242,776.0	510,145.0	1,081.00				Average	
		point188	188	2,242,588.0	510,161.0	1,082.00				Average	
		point71	189	2,242,053.0	510,127.0	1,078.00				Average	
		Brown Street	190	2,241,864.0	510,125.0	1,070.00				Average	Y
		point73	191	2,241,704.0	510,129.0	1,063.00				Average	
		point74	192	2,241,205.0	510,147.0	1,050.00				Average	
		point75	193	2,240,651.0	510,167.0	1,041.00				Average	
		point76	194	2,240,156.0	510,181.0	1,030.00				Average	
		Grant Street overpass	195	2,239,533.0	510,198.0	1,018.00					
I77 NB1/Ramp I-77NB to I-76EB	12.0	Cole Street	174	2,243,104.0	506,222.0	1,090.00				Average	

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		point129	175	2,243,105.0	506,700.0	1,084.00				Average	
		Lovers La	176	2,243,097.0	507,259.0	1,086.00				Average	
		point131	177	2,243,080.0	507,750.0	1,093.00				Average	
		point132	178	2,243,081.0	508,250.0	1,084.00				Average	
		point133	179	2,243,087.0	508,423.0	1,080.00				Average	
		point172	180	2,243,117.0	508,687.0	1,073.00				Average	
		point173	181	2,243,171.0	508,951.0	1,071.00				Average	
		point196	196	2,243,329.0	509,286.0	1,078.00				Average	
		point197	197	2,243,474.0	509,443.0	1,088.00				Average	
		point198	198	2,244,000.0	509,726.0	1,111.00				Average	
		Inman St c	199	2,244,394.0	509,919.0	1,118.00				Average	Y
		point92	200	2,244,457.0	509,948.0	1,120.00				Average	
		point93	201	2,244,841.0	510,128.0	1,133.00				Average	
		ped bridge	202	2,245,394.0	510,340.0	1,136.00				Average	
		point95	203	2,245,645.0	510,418.0	1,135.00					
I-76EB2	12.0	point1	207	2,239,535.0	510,127.0	1,016.00				Average	
		point2	208	2,239,900.0	510,120.0	1,024.00				Average	
		point3	209	2,240,219.0	510,108.0	1,032.00				Average	
		point4	210	2,240,979.0	510,079.0	1,046.00				Average	
		point5	211	2,241,359.0	510,066.0	1,052.00				Average	
		Brown Stre	212	2,241,702.0	510,052.0	1,062.00				Average	Y
		point7	213	2,241,866.0	510,038.0	1,070.00				Average	
		On fill	214	2,242,042.0	510,013.0	1,079.00				Average	
		point9	215	2,242,347.0	509,938.0	1,084.00					
I-76EB thru lane 3	12.0	point1	217	2,239,535.0	510,139.0	1,016.00				Average	
		point2	218	2,239,900.0	510,132.0	1,024.00				Average	
		point3	219	2,240,219.0	510,120.0	1,032.00				Average	
		point4	220	2,240,979.0	510,091.0	1,046.00				Average	
		point5	221	2,241,359.0	510,078.0	1,052.00				Average	
		Brown Stre	222	2,241,702.0	510,064.0	1,062.00				Average	Y
		point7	223	2,241,866.0	510,050.0	1,070.00				Average	
		On fill	224	2,242,042.0	510,025.0	1,079.00				Average	
		point225	225	2,242,365.0	509,949.0	1,087.00				Average	
		point226	226	2,242,796.0	509,845.0	1,090.00				Average	
		point237	237	2,243,058.0	509,784.0	1,093.00				Average	Y
		point238	238	2,243,297.0	509,750.0	1,102.00				Average	Y
		point239	239	2,243,564.0	509,744.0	1,114.00				Average	
		point240	240	2,243,883.0	509,781.0	1,118.00				Average	
		point242	242	2,244,165.0	509,859.0	1,119.00				Average	

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		Inman St c	241	2,244,391.0	509,946.0	1,118.00				Average	Y
		point249	250	2,244,457.0	509,972.0	1,120.00				Average	
		point93	251	2,244,841.0	510,152.0	1,133.00				Average	
		ped bridge	252	2,245,394.0	510,364.0	1,136.00				Average	
		point95	253	2,245,645.0	510,430.0	1,135.00				Average	
		point96	265	2,245,993.0	510,492.0	1,123.00				Average	
		point258	266	2,246,321.0	510,511.0	1,116.00					
I-76 EB thru lane 4	12.0	point1	227	2,239,535.0	510,151.0	1,016.00				Average	
		point2	228	2,239,900.0	510,144.0	1,024.00				Average	
		point3	229	2,240,219.0	510,132.0	1,032.00				Average	
		point4	230	2,240,979.0	510,103.0	1,046.00				Average	
		point5	231	2,241,359.0	510,090.0	1,052.00				Average	
		Brown Str	232	2,241,702.0	510,076.0	1,062.00				Average	Y
		point7	233	2,241,866.0	510,062.0	1,070.00				Average	
		On fill	234	2,242,042.0	510,037.0	1,079.00				Average	
		point225	235	2,242,365.0	509,961.0	1,087.00				Average	
		point226	236	2,242,796.0	509,857.0	1,090.00				Average	
		point237	243	2,243,058.0	509,796.0	1,093.00				Average	Y
		point238	244	2,243,297.0	509,762.0	1,102.00				Average	Y
		point239	245	2,243,564.0	509,756.0	1,114.00				Average	
		point240	246	2,243,883.0	509,793.0	1,118.00				Average	
		point242	247	2,244,165.0	509,871.0	1,119.00				Average	
		Inman St c	248	2,244,391.0	509,958.0	1,118.00				Average	Y
		point249	249	2,244,457.0	509,984.0	1,120.00				Average	
		point93	254	2,244,841.0	510,164.0	1,133.00				Average	
		ped bridge	255	2,245,394.0	510,376.0	1,136.00				Average	
		point95	256	2,245,645.0	510,442.0	1,135.00				Average	
		point96	257	2,245,993.0	510,504.0	1,123.00				Average	
		point258	258	2,246,321.0	510,523.0	1,116.00					
Ramp I-76 EB to SR8 NB	12.0	point226	281	2,242,796.0	509,857.0	1,090.00				Average	
		point282	282	2,242,884.0	509,848.0	1,086.00				Average	
		point283	283	2,243,062.0	509,811.0	1,093.00				Average	Y
		point284	284	2,243,297.0	509,774.0	1,104.00				Average	Y
		point285	285	2,243,513.0	509,771.0	1,106.00				Average	
		point286	286	2,243,631.0	509,816.0	1,112.00				Average	
		I-76WB ur	287	2,243,684.0	509,880.0	1,113.00				Average	Y
		point289	289	2,243,710.0	509,937.0	1,112.00				Average	Y
		point288	288	2,243,696.0	510,018.0	1,110.00				Average	
		point290	290	2,243,625.0	510,161.0	1,107.00				Average	

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		point291	291	2,243,463.0	510,474.0	1,090.00				Average	
		point292	292	2,243,386.0	510,645.0	1,082.00				Average	
		Johnston S	293	2,243,340.0	510,830.0	1,079.00				Average	
		point294	294	2,243,326.0	511,006.0	1,078.00				Average	
		point295	295	2,243,335.0	511,256.0	1,075.00				Average	
		point296	296	2,243,353.0	511,548.0	1,072.00				Average	
		Beacon St	297	2,243,349.0	512,080.0	1,060.00				Average	
		point143	298	2,243,345.0	512,249.0	1,056.00					
I-76 WB4 thru lane	12.0	point258	301	2,246,321.0	510,547.0	1,116.00				Average	
		point308	308	2,245,993.0	510,528.0	1,123.00				Average	
		point310	310	2,245,645.0	510,466.0	1,137.00				Average	
		ped bridge	309	2,245,394.0	510,400.0	1,138.00				Average	
		point312	312	2,244,841.0	510,188.0	1,133.00				Average	
		point311	311	2,244,629.0	510,084.0	1,133.00				Average	
		Inman St u	313	2,244,454.0	510,025.0	1,120.00				Average	Y
		point314	314	2,244,392.0	510,008.0	1,118.00				Average	
		point315	315	2,244,069.0	509,946.0	1,100.00				Average	
		Ramp ovrr	316	2,243,728.0	509,933.0	1,095.00				Average	
		point317	317	2,243,633.0	509,937.0	1,094.00				Average	
		point318	318	2,243,502.0	509,948.0	1,094.00				Average	
		point319	319	2,243,284.0	509,966.0	1,090.00				Average	Y
		point320	320	2,242,916.0	510,006.0	1,105.00				Average	Y
		fill	321	2,242,476.0	510,047.0	1,095.00				Average	
		point323	323	2,242,043.0	510,080.0	1,078.00				Average	
		point322	322	2,241,865.0	510,092.0	1,070.00				Average	Y
		point324	324	2,241,699.0	510,105.0	1,063.00				Average	
		point74	394	2,241,205.0	510,123.0	1,050.00				Average	
		point75	395	2,240,651.0	510,143.0	1,041.00				Average	
		point76	396	2,240,156.0	510,157.0	1,030.00				Average	
		Grant St o	397	2,239,533.0	510,174.0	1,018.00					
I-76 WB3 thru lane	12.0	point258	331	2,246,321.0	510,559.0	1,116.00				Average	
		point308	332	2,245,993.0	510,540.0	1,123.00				Average	
		point310	333	2,245,645.0	510,478.0	1,137.00				Average	
		ped bridge	334	2,245,394.0	510,412.0	1,138.00				Average	
		point312	335	2,244,841.0	510,200.0	1,133.00				Average	
		point311	336	2,244,629.0	510,096.0	1,133.00				Average	
		Inman St u	337	2,244,454.0	510,037.0	1,120.00				Average	Y
		point314	338	2,244,392.0	510,020.0	1,118.00				Average	
		point315	339	2,244,069.0	509,958.0	1,100.00				Average	

INPUT: ROADWAYS

SUM-I76 Central Interchange (101402)

		Ramp ovrr	340	2,243,728.0	509,945.0	1,095.00				Average	
		point317	341	2,243,633.0	509,949.0	1,094.00				Average	
		point318	342	2,243,502.0	509,960.0	1,094.00				Average	
		point319	343	2,243,284.0	509,978.0	1,090.00				Average	Y
		point320	344	2,242,916.0	510,018.0	1,105.00				Average	Y
		fill	345	2,242,476.0	510,059.0	1,095.00				Average	
		point323	346	2,242,043.0	510,092.0	1,078.00				Average	
		point322	347	2,241,865.0	510,104.0	1,070.00				Average	Y
		point324	348	2,241,699.0	510,117.0	1,063.00				Average	
		point74	390	2,241,205.0	510,135.0	1,050.00				Average	
		point75	391	2,240,651.0	510,155.0	1,041.00				Average	
		point76	392	2,240,156.0	510,169.0	1,030.00				Average	
		Grant St o	393	2,239,533.0	510,186.0	1,018.00					
I-76WB2/Ramp I-76WB to SR 8 NB	12.0	point258	355	2,246,321.0	510,571.0	1,116.00				Average	
		point308	356	2,245,993.0	510,552.0	1,123.00				Average	
		point310	357	2,245,645.0	510,490.0	1,137.00				Average	
		ped bridge	358	2,245,394.0	510,424.0	1,138.00				Average	
		point312	359	2,244,841.0	510,212.0	1,133.00				Average	
		point311	360	2,244,629.0	510,108.0	1,133.00				Average	
		Inman St u	361	2,244,454.0	510,049.0	1,120.00				Average	Y
		point314	362	2,244,392.0	510,032.0	1,118.00				Average	
		point363	363	2,244,277.0	510,013.0	1,112.00				Average	
		point364	364	2,244,099.0	510,016.0	1,106.00				Average	
		point365	365	2,243,880.0	510,081.0	1,105.00				Average	
		point366	366	2,243,728.0	510,178.0	1,102.00				Average	
		point367	367	2,243,578.0	510,326.0	1,099.00				Average	
		point368	368	2,243,475.0	510,474.0	1,090.00				Average	
		point369	369	2,243,398.0	510,645.0	1,082.00				Average	
		Johnston S	370	2,243,352.0	510,830.0	1,079.00				Average	
		point294	371	2,243,338.0	511,006.0	1,078.00				Average	
		point295	372	2,243,347.0	511,256.0	1,075.00				Average	
		point296	373	2,243,365.0	511,548.0	1,072.00				Average	
		Beacon St	374	2,243,361.0	512,080.0	1,060.00				Average	
		point143	375	2,243,357.0	512,249.0	1,056.00					
I-76 WB1	12.0	point258	384	2,246,321.0	510,583.0	1,116.00				Average	
		point308	385	2,245,993.0	510,564.0	1,123.00				Average	
		point310	386	2,245,645.0	510,502.0	1,137.00				Average	
		ped bridge	387	2,245,394.0	510,436.0	1,139.00				Average	
		point388	388	2,244,999.0	510,315.0	1,122.00				Average	

INPUT: ROADWAYS

SUM-I76 Central Interchange (101402)

		point389	389	2,244,435.0	510,120.9	1,105.00					
Lafayette Ave	24.0	Brown St	398	2,241,774.0	508,845.0	1,067.00				Average	
		Burkhardt	399	2,242,893.0	508,856.0	1,086.00				Average	
		point400	400	2,242,957.0	508,856.0	1,086.00				Average	Y
		point401	401	2,243,176.0	508,856.0	1,092.00				Average	
		East Crosi	402	2,243,259.0	508,856.0	1,092.00				Average	
		Hammel S	403	2,243,763.0	508,861.0	1,102.00					
Lovers Lane	20.0	Dietz Ave	404	2,242,055.0	507,210.0	1,093.00				Average	
		Burkhardt	405	2,242,908.0	507,225.0	1,104.00				Average	
		point406	406	2,242,968.0	507,224.0	1,104.00				Average	Y
		point407	407	2,243,125.0	507,224.0	1,109.00				Average	
		Coventry	408	2,243,199.0	507,226.0	1,111.00				Average	
		Hammel S	409	2,243,753.0	507,228.0	1,125.00					
Cole Ave	20.0	Dietz Ave	410	2,242,048.0	506,010.0	1,098.00				Average	
		Burkhardt	411	2,242,906.0	506,183.0	1,109.00				Average	
		point412	412	2,242,976.0	506,187.0	1,109.00				Average	Y
		point413	413	2,243,132.0	506,189.0	1,118.00				Average	
		point414	414	2,243,215.0	506,189.0	1,119.00				Average	
		point415	415	2,243,747.0	506,192.0	1,132.00					
East Crosier Ave/Burkhardt Ave	20.0	Brown St	416	2,241,781.0	509,134.0	1,059.00				Average	
		point417	417	2,242,811.0	509,143.0	1,083.00				Average	
		point418	418	2,242,853.0	509,111.0	1,084.00				Average	
		Lafollette	419	2,242,893.0	508,856.0	1,086.00				Average	
		Baird St	420	2,242,889.0	508,564.0	1,090.00				Average	
		Kipling St	421	2,242,894.0	508,292.0	1,095.00				Average	
		McKinlet A	422	2,242,890.0	508,039.0	1,097.00				Average	
		Corice St.	423	2,242,890.0	507,765.0	1,098.00				Average	
		Morgan Av	424	2,242,891.0	507,497.0	1,102.00				Average	
		Lovers La	425	2,242,908.0	507,225.0	1,104.00				Average	
		point426	426	2,242,916.0	507,192.0	1,104.00				Average	
		Stanton Av	427	2,242,910.0	506,562.0	1,111.00				Average	
		Cole Ave	428	2,242,906.0	506,183.0	1,109.00					
Coventry Street	20.0	Cole Ave	429	2,243,215.0	506,189.0	1,119.00				Average	
		Lovers La	430	2,243,199.0	507,226.0	1,111.00				Average	
		point431	431	2,243,196.0	507,256.0	1,110.00				Average	
		Morgan Av	432	2,243,199.0	507,500.0	1,108.00				Average	
		Corice St	433	2,243,199.0	507,773.0	1,106.00				Average	
		McKinley A	434	2,243,198.0	508,041.0	1,102.00				Average	
		Kipling	435	2,243,199.0	508,294.0	1,102.00				Average	

INPUT: ROADWAYS

SUM-I76 Central Interchange (101402)

		Lafellette	436	2,243,199.0	508,824.0	1,096.00					
East Crosiet	20.0	Lafellette	437	2,243,259.0	508,856.0	1,092.00				Average	
		point438	438	2,243,352.0	509,146.0	1,097.00				Average	
		Hammell	439	2,243,767.0	509,150.0	1,100.00				Average	
		Gridley St	440	2,244,108.0	509,157.0	1,099.00				Average	
		Inman St	441	2,244,420.0	509,152.0	1,102.00					
Inman St	20.0	E Crosier	451	2,244,420.0	509,152.0	1,102.00				Average	
		5th Ave	452	2,244,424.0	509,765.0	1,100.00				Average	
		Lumiere S	453	2,244,426.0	510,121.0	1,105.00				Average	
		Bradley Pl	454	2,244,420.0	511,069.0	1,107.00					
Lumiere St	20.0	Inman St	455	2,244,426.0	510,121.0	1,105.00				Average	
		Gridley St	456	2,244,102.0	510,106.0	1,097.00				Average	
		point457	457	2,243,897.0	510,150.0	1,093.00				Average	
		Hammel S	458	2,243,754.0	510,248.0	1,090.00				Average	
		point459	459	2,243,632.0	510,390.0	1,092.00				Average	
		point460	460	2,243,504.0	510,588.0	1,095.00				Average	
		point461	461	2,243,471.0	510,712.0	1,098.00				Average	
		point462	462	2,243,473.0	510,963.0	1,102.00					
Hammel St North	20.0	point463	463	2,243,754.0	510,248.0	1,090.00				Average	
		point464	464	2,243,738.0	511,173.0	1,113.00					
Wilson St	12.0	point465	465	2,243,115.0	510,688.0	1,089.00				Average	
		point466	466	2,242,978.0	511,334.0	1,085.00					
Johnston Ct	20.0	point467	467	2,242,835.0	510,457.0	1,079.00				Average	
		point468	468	2,242,822.0	511,153.0	1,078.00					
Hedden Avenue	20.0	point469	469	2,242,641.0	510,314.0	1,067.00				Average	
		point470	470	2,242,634.0	510,682.0	1,075.00				Average	
		point471	471	2,242,629.0	511,040.0	1,064.00					
South Street	40.0	Grant Stre	472	2,239,511.0	509,844.0	1,035.00				Average	
		Sumner/P	473	2,240,376.0	509,865.0	1,033.00				Average	
		Kling St.	474	2,240,994.0	509,870.0	1,041.00				Average	
		Brown St	475	2,241,781.0	509,888.0	1,047.00				Average	
		point476	476	2,242,155.0	509,896.0	1,050.00					
Pedestrian Bridge over I-76 Hoban High	12.0	point494	494	2,245,391.0	510,225.0	1,159.00				Average	
		point495	495	2,245,392.0	510,284.0	1,158.00				Average	Y
		point496	496	2,245,411.0	510,489.0	1,158.00				Average	
		point497	497	2,245,440.0	510,556.0	1,159.00					
Gridley Street	12.0	point498	498	2,244,102.0	510,106.0	1,097.00				Average	
		point499	499	2,244,095.0	510,865.0	1,103.00					
Spicer St	24.0	point500	500	2,242,134.0	510,273.0	1,039.00				Average	

INPUT: ROADWAYS

SUM-I76 Central Interchange (101402)

		point501	501	2,242,134.0	510,881.0	1,022.00					
Ramp I=77SB to Lovers Lane	12.0	point502	502	2,242,967.0	508,038.0	1,090.00				Average	
		point503	503	2,242,952.0	507,867.0	1,093.00				Average	
		point504	504	2,242,915.0	507,586.0	1,099.00				Average	
		Morgan Av	505	2,242,891.0	507,497.0	1,102.00					
Voris Street	20.0	at Brown	506	2,241,773.0	510,581.0	1,044.00				Average	
		at King	507	2,241,308.0	510,577.0	1,057.00				Average	
		at Allyn	508	2,240,757.0	510,569.0	1,045.00				Average	
		at Sumner	509	2,240,372.0	510,563.0	1,043.00				Average	
		at Sherma	512	2,239,944.0	510,557.0	1,041.00					
Sumner Street	12.0	point510	510	2,240,372.0	510,563.0	1,043.00				Average	
		Smuner S	511	2,240,378.0	510,277.0	1,038.00					
Allyn Street	20.0	point513	513	2,240,757.0	510,569.0	1,045.00				Average	
		point514	514	2,240,759.0	510,223.0	1,040.00					
King St/Lampeter St	20.0	point515	515	2,241,308.0	510,577.0	1,057.00				Average	
		point516	516	2,241,310.0	510,211.0	1,051.00				Average	
		point517	517	2,241,776.0	510,220.0	1,037.00					

INPUT: TRAFFIC FOR LAeq1h Volumes

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.												
CMCox												
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PROJECT/CONTRACT:	SUM-I76 Central Interchange (101402)											
RUN:	NSA 1 2020											
Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
I-76 EB1/Ramp I-76EB to I-77SB	point1	1	1242	55	37	55	86	55	0	0	0	0
	point2	2	1242	55	37	55	86	55	0	0	0	0
	point3	3	1242	55	37	55	86	55	0	0	0	0
	point4	4	1242	55	37	55	86	55	0	0	0	0
	point5	5	1242	55	37	55	86	55	0	0	0	0
	Brown Street	6	1242	55	37	55	86	55	0	0	0	0
	point7	7	932	50	8	50	20	50	0	0	0	0
	On fill	8	932	50	8	50	20	50	0	0	0	0
	point9	9	1864	50	16	50	40	50	0	0	0	0
	point10	10	1864	50	16	50	40	50	0	0	0	0
	point11	11	1864	50	16	50	40	50	0	0	0	0
	point12	12	1864	50	16	50	40	50	0	0	0	0
	point13	13	1864	50	16	50	40	50	0	0	0	0
	point14	14	1864	50	16	50	40	50	0	0	0	0
	Lafollette St. C	15	1864	50	16	50	40	50	0	0	0	0
	point16	16	1836	55	29	55	68	55	0	0	0	0
	point17	17	1836	55	29	55	68	55	0	0	0	0
	point18	18	1836	55	29	55	68	55	0	0	0	0
	Lover's Lane C	19	1836	55	29	55	68	55	0	0	0	0
	point20	20	1836	55	29	55	68	55	0	0	0	0
	Cole Ave. Ove	21										
Brown Street	At Kipling	22	0	0	0	0	0	0	0	0	0	0
	At Baird	23	0	0	0	0	0	0	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

SUM-I76 Central Interchange (101402)

	At Lofollette S	24	0	0	0	0	0	0	0	0	0	0
	At E Crosier	25	0	0	0	0	0	0	0	0	0	0
	At E South	26	0	0	0	0	0	0	0	0	0	0
	At Lamparter S	27	0	0	0	0	0	0	0	0	0	0
	At E Voris St	28	0	0	0	0	0	0	0	0	0	0
	At Lovisa St	518										
Johnston Street	At Gridley Ave	29	0	0	0	0	0	0	0	0	0	0
	At Hammel St	30	0	0	0	0	0	0	0	0	0	0
	At Lumiere St.	31	0	0	0	0	0	0	0	0	0	0
	point32	32	0	0	0	0	0	0	0	0	0	0
	Wilson St	33	0	0	0	0	0	0	0	0	0	0
	Jonhston Ct	34	0	0	0	0	0	0	0	0	0	0
	Hedden Ave	35	0	0	0	0	0	0	0	0	0	0
	point36	36	0	0	0	0	0	0	0	0	0	0
	Spicer St.	37	0	0	0	0	0	0	0	0	0	0
	point38	38	0	0	0	0	0	0	0	0	0	0
	At Brown Stre	39										
I-76 WB to I-77 SB	point317	40	1216	30	19	30	45	30	0	0	0	0
	point41	41	1216	30	19	30	45	30	0	0	0	0
	point42	42	1216	30	19	30	45	30	0	0	0	0
	point43	43	1216	30	19	30	45	30	0	0	0	0
	point44	44	1216	30	19	30	45	30	0	0	0	0
	point45	45	1216	30	19	30	45	30	0	0	0	0
	point46	46	0	0	0	0	0	0	0	0	0	0
	point47	47	1216	30	19	30	45	30	0	0	0	0
	point48	48	1216	30	19	30	45	30	0	0	0	0
	point49	49	1216	30	19	30	45	30	0	0	0	0
	point50	50	1216	30	19	30	45	30	0	0	0	0
	point51	51	1216	30	19	30	45	30	0	0	0	0
	Lafollette Ove	52	1216	30	19	30	45	30	0	0	0	0
	point53	53	1836	55	29	55	68	55	0	0	0	0
	point17	54	1836	55	29	55	68	55	0	0	0	0
	point18	55	1836	55	29	55	68	55	0	0	0	0
	Lover's Lane C	56	1836	55	29	55	68	55	0	0	0	0
	point20	57	1836	55	29	55	68	55	0	0	0	0
	Cole Ave. Ove	58										

INPUT: TRAFFIC FOR LAeq1h Volumes

SUM-I76 Central Interchange (101402)

SR8 SB1/Ramp SR8 SB to I-76 WB	Beacon St und	61	2243	55	41	55	94	55	0	0	0	0
	point62	62	2243	55	41	55	94	55	0	0	0	0
	point63	63	2243	55	41	55	94	55	0	0	0	0
	point64	64	979	50	13	50	28	50	0	0	0	0
	point65	65	979	50	13	50	28	50	0	0	0	0
	Johnston St o	66	1104	50	14	50	32	50	0	0	0	0
	point67	67	1104	50	14	50	32	50	0	0	0	0
	point68	68	1104	50	14	50	32	50	0	0	0	0
	point69	69	1104	50	14	50	32	50	0	0	0	0
	begin fill	70	1104	50	14	50	32	50	0	0	0	0
	point71	71	1104	50	14	50	32	50	0	0	0	0
	Browm St und	72	1104	50	14	50	32	50	0	0	0	0
	point73	73	983	55	29	55	68	55	0	0	0	0
	point74	74	983	55	29	55	68	55	0	0	0	0
	point75	75	983	55	29	55	68	55	0	0	0	0
	point76	76	983	55	29	55	68	55	0	0	0	0
	Grant St ovrpa	77										
Ramp SR8 SB to I76 EB	point78	78	979	50	13	50	28	50	0	0	0	0
	point79	79	979	50	13	50	28	50	0	0	0	0
	Johnston St o	80	846	50	14	50	30	50	0	0	0	0
	point81	81	846	50	14	50	30	50	0	0	0	0
	point82	82	846	50	14	50	30	50	0	0	0	0
	point83	83	846	50	14	50	30	50	0	0	0	0
	I-76 undrpa	84	846	50	14	50	30	50	0	0	0	0
	point85	85	846	50	14	50	30	50	0	0	0	0
	I-76 ovrpa	86	846	50	14	50	30	50	0	0	0	0
	point87	87	846	50	14	50	30	50	0	0	0	0
	point88	88	846	50	14	50	30	50	0	0	0	0
	point89	89	846	50	14	50	30	50	0	0	0	0
	point90	90	846	50	14	50	30	50	0	0	0	0
	Inman St ovrp	91	0	0	0	0	0	0	0	0	0	0
	point92	92	1003	55	41	55	96	55	0	0	0	0
	point93	93	1003	55	41	55	96	55	0	0	0	0
	ped bridge	204	1003	55	41	55	96	55	0	0	0	0
	point95	205	1337	55	55	55	128	55	0	0	0	0
	point96	272	1337	55	55	55	128	55	0	0	0	0

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SUM-I76 Central Interchange (101402)

	point258	273										
SR8 SB thru lane 4	point96	96	2243	55	41	55	94	55	0	0	0	0
	Beacon St unc	97	2243	55	41	55	94	55	0	0	0	0
	point98	98	2243	55	41	55	94	55	0	0	0	0
	point99	99	2204	50	42	50	99	50	0	0	0	0
	point100	100	2204	50	42	50	99	50	0	0	0	0
	point101	101	2204	50	42	50	99	50	0	0	0	0
	point102	102	2204	50	42	50	99	50	0	0	0	0
	point103	103	2204	50	42	50	99	50	0	0	0	0
	Lafollette ovrrp	104	2204	50	42	50	99	50	0	0	0	0
	point105	105	1836	55	29	55	68	55	0	0	0	0
	point17	106	1836	55	29	55	68	55	0	0	0	0
	point18	107	1836	55	29	55	68	55	0	0	0	0
	Lover's Lane C	108	1836	55	29	55	68	55	0	0	0	0
	point20	109	1836	55	29	55	68	55	0	0	0	0
	Cole Ave. Ove	110										
SR8 SB thru lane 3	point96	113	2243	55	41	55	94	55	0	0	0	0
	Beacon St unc	114	2243	55	41	55	94	55	0	0	0	0
	point98	115	2243	55	41	55	94	55	0	0	0	0
	point99	116	2204	50	42	50	99	50	0	0	0	0
	point100	117	2204	50	42	50	99	50	0	0	0	0
	point101	118	2204	50	42	50	99	50	0	0	0	0
	point102	119	2204	50	42	50	99	50	0	0	0	0
	point103	120	2204	50	42	50	99	50	0	0	0	0
	Lafollette ovrrp	121	2204	50	42	50	99	50	0	0	0	0
	point105	122	1836	55	29	55	68	55	0	0	0	0
	point17	123	1836	55	29	55	68	55	0	0	0	0
	point18	124	1836	55	29	55	68	55	0	0	0	0
	Lover's Lane C	125	1836	55	29	55	68	55	0	0	0	0
	point20	126	1836	55	29	55	68	55	0	0	0	0
	Cole Ave. Ove	127										
I-77 NB thru lane 4	Cole Street	128	1371	55	17	55	40	55	0	0	0	0
	point129	129	1371	55	17	55	40	55	0	0	0	0
	Lovers Lane	130	1371	55	17	55	40	55	0	0	0	0
	point131	131	1371	55	17	55	40	55	0	0	0	0
	point132	132	1371	55	17	55	40	55	0	0	0	0

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SUM-I76 Central Interchange (101402)

	point133	133	1511	55	25	55	55	55	0	0	0	0
	Lafollette Rd c	134	1511	55	25	55	55	55	0	0	0	0
	point135	135	1511	55	25	55	55	55	0	0	0	0
	point136	136	1511	55	25	55	55	55	0	0	0	0
	I-76 EB ovrpa	137	1511	55	25	55	55	55	0	0	0	0
	I-76WB ovrpa	138	1511	55	25	55	55	55	0	0	0	0
	point139	139	1511	55	25	55	55	55	0	0	0	0
	point140	140	1511	55	25	55	55	55	0	0	0	0
	point141	141	1298	55	24	55	55	55	0	0	0	0
	Beacon St unc	142	1298	55	24	55	55	55	0	0	0	0
	point143	143										
I-77 NB thru lane 3	Cole Street	148	1371	55	17	55	40	55	0	0	0	0
	point129	149	1371	55	17	55	40	55	0	0	0	0
	Lovers Lane	150	1371	55	17	55	40	55	0	0	0	0
	point131	151	1371	55	17	55	40	55	0	0	0	0
	point132	152	1371	55	17	55	40	55	0	0	0	0
	point133	153	1511	55	25	55	55	55	0	0	0	0
	Lafollette Rd c	154	1511	55	25	55	55	55	0	0	0	0
	point135	155	1511	55	25	55	55	55	0	0	0	0
	point136	156	1511	55	25	55	55	55	0	0	0	0
	I-76 EB ovrpa	157	1511	55	25	55	55	55	0	0	0	0
	I-76WB ovrpa	158	1511	55	25	55	55	55	0	0	0	0
	point139	159	1511	55	25	55	55	55	0	0	0	0
	point140	160	1511	55	25	55	55	55	0	0	0	0
	point141	161	1298	55	24	55	55	55	0	0	0	0
	Beacon St unc	162	1298	55	24	55	55	55	0	0	0	0
	point143	163										
I-77 NB2/Ramp I-77NB to I-76WB	Cole Street	166	1371	55	17	55	40	55	0	0	0	0
	point129	167	1371	55	17	55	40	55	0	0	0	0
	Lovers Lane	168	1371	55	17	55	40	55	0	0	0	0
	point131	169	1371	55	17	55	40	55	0	0	0	0
	point132	170	1371	55	17	55	40	55	0	0	0	0
	point133	171	1267	50	5	50	8	50	0	0	0	0
	point172	172	1267	50	5	50	8	50	0	0	0	0
	point173	173	1267	50	5	50	8	50	0	0	0	0
	point182	182	1267	50	5	50	8	50	0	0	0	0

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SUM-I76 Central Interchange (101402)

	point183	183	1267	50	5	50	8	50	0	0	0	0
	SR 8 ovrpa	184	1267	50	5	50	8	50	0	0	0	0
	point185	185	1267	50	5	50	8	50	0	0	0	0
	point186	186	1267	50	5	50	8	50	0	0	0	0
	point187	187	1267	50	5	50	8	50	0	0	0	0
	point188	188	1267	50	5	50	8	50	0	0	0	0
	point71	189	1267	50	5	50	8	50	0	0	0	0
	Browm St und	190	1267	50	5	50	8	50	0	0	0	0
	point73	191	983	55	29	55	68	55	0	0	0	0
	point74	192	983	55	29	55	68	55	0	0	0	0
	point75	193	983	55	29	55	68	55	0	0	0	0
	point76	194	983	55	29	55	68	55	0	0	0	0
	Grant St ovrpa	195										
I77 NB1/Ramp I-77NB to I-76EB	Cole Street	174	1371	55	17	55	40	55	0	0	0	0
	point129	175	1371	55	17	55	40	55	0	0	0	0
	Lovers Lane	176	1371	55	17	55	40	55	0	0	0	0
	point131	177	1371	55	17	55	40	55	0	0	0	0
	point132	178	1371	55	17	55	40	55	0	0	0	0
	point133	179	1175	50	22	50	51	50	0	0	0	0
	point172	180	1175	50	22	50	51	50	0	0	0	0
	point173	181	1175	50	22	50	51	50	0	0	0	0
	point196	196	1175	50	22	50	51	50	0	0	0	0
	point197	197	1175	50	22	50	51	50	0	0	0	0
	point198	198	1175	50	22	50	51	50	0	0	0	0
	Inman St ovrp	199	1175	50	22	50	51	50	0	0	0	0
	point92	200	1003	55	41	55	96	55	0	0	0	0
	point93	201	1003	55	41	55	96	55	0	0	0	0
	ped bridge	202	1003	55	41	55	96	55	0	0	0	0
	point95	203										
I-76EB2	point1	207	1242	55	37	55	86	55	0	0	0	0
	point2	208	1242	55	37	55	86	55	0	0	0	0
	point3	209	1242	55	37	55	86	55	0	0	0	0
	point4	210	1242	55	37	55	86	55	0	0	0	0
	point5	211	1242	55	37	55	86	55	0	0	0	0
	Brown Street	212	1242	55	37	55	86	55	0	0	0	0
	point7	213	932	50	8	50	20	50	0	0	0	0

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SUM-I76 Central Interchange (101402)

	On fill	214	932	50	8	50	20	50	0	0	0	0
	point9	215										
I-76EB thru lane 3	point1	217	1242	55	37	55	86	55	0	0	0	0
	point2	218	1242	55	37	55	86	55	0	0	0	0
	point3	219	1242	55	37	55	86	55	0	0	0	0
	point4	220	1242	55	37	55	86	55	0	0	0	0
	point5	221	1242	55	37	55	86	55	0	0	0	0
	Brown Street	222	1242	55	37	55	86	55	0	0	0	0
	point7	223	1544	55	62	55	148	55	0	0	0	0
	On fill	224	1544	55	62	55	148	55	0	0	0	0
	point225	225	1544	55	62	55	148	55	0	0	0	0
	point226	226	1137	55	22	55	51	55	0	0	0	0
	point237	237	1137	55	22	55	51	55	0	0	0	0
	point238	238	1137	55	22	55	51	55	0	0	0	0
	point239	239	1137	55	22	55	51	55	0	0	0	0
	point240	240	1137	55	22	55	51	55	0	0	0	0
	point242	242	1137	55	22	55	51	55	0	0	0	0
	Inman St ovrrp	241	1137	55	22	55	51	55	0	0	0	0
	point249	250	1003	55	41	55	96	55	0	0	0	0
	point93	251	1003	55	41	55	96	55	0	0	0	0
	ped bridge	252	1003	55	41	55	96	55	0	0	0	0
	point95	253	1337	55	55	55	128	55	0	0	0	0
	point96	265	1337	55	55	55	128	55	0	0	0	0
	point258	266										
I-76 EB thru lane 4	point1	227	1242	55	37	55	86	55	0	0	0	0
	point2	228	1242	55	37	55	86	55	0	0	0	0
	point3	229	1242	55	37	55	86	55	0	0	0	0
	point4	230	1242	55	37	55	86	55	0	0	0	0
	point5	231	1242	55	37	55	86	55	0	0	0	0
	Brown Street	232	1242	55	37	55	86	55	0	0	0	0
	point7	233	1544	55	62	55	148	55	0	0	0	0
	On fill	234	1544	55	62	55	148	55	0	0	0	0
	point225	235	1544	55	62	55	148	55	0	0	0	0
	point226	236	1137	55	22	55	51	55	0	0	0	0
	point237	243	1137	55	22	55	51	55	0	0	0	0
	point238	244	1137	55	22	55	51	55	0	0	0	0

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SUM-I76 Central Interchange (101402)

	point239	245	1137	55	22	55	51	55	0	0	0	0
	point240	246	1137	55	22	55	51	55	0	0	0	0
	point242	247	1137	55	22	55	51	55	0	0	0	0
	Inman St ovrrp	248	1137	55	22	55	51	55	0	0	0	0
	point249	249	1003	55	41	55	96	55	0	0	0	0
	point93	254	1003	55	41	55	96	55	0	0	0	0
	ped bridge	255	1003	55	41	55	96	55	0	0	0	0
	point95	256	1337	55	55	55	128	55	0	0	0	0
	point96	257	1337	55	55	55	128	55	0	0	0	0
	point258	258										
Ramp I-76 EB to SR8 NB	point226	281	1046	25	13	25	31	25	0	0	0	0
	point282	282	1046	25	13	25	31	25	0	0	0	0
	point283	283	1046	25	13	25	31	25	0	0	0	0
	point284	284	1046	25	13	25	31	25	0	0	0	0
	point285	285	1046	25	13	25	31	25	0	0	0	0
	point286	286	1046	25	13	25	31	25	0	0	0	0
	I-76WB undrp	287	1046	25	13	25	31	25	0	0	0	0
	point289	289	1046	25	13	25	31	25	0	0	0	0
	point288	288	1046	25	13	25	31	25	0	0	0	0
	point290	290	1046	25	13	25	31	25	0	0	0	0
	point291	291	1046	25	13	25	31	25	0	0	0	0
	point292	292	1046	25	13	25	31	25	0	0	0	0
	Johnston St or	293	1046	25	13	25	31	25	0	0	0	0
	point294	294	1046	25	13	25	31	25	0	0	0	0
	point295	295	1046	25	13	25	31	25	0	0	0	0
	point296	296	1298	55	24	55	55	55	0	0	0	0
	Beacon St und	297	1298	55	24	55	55	55	0	0	0	0
	point143	298										
I-76 WB4 thru lane	point258	301	945	55	32	55	74	55	0	0	0	0
	point308	308	945	55	32	55	74	55	0	0	0	0
	point310	310	1260	55	42	55	98	55	0	0	0	0
	ped bridge	309	1260	55	42	55	98	55	0	0	0	0
	point312	312	1260	55	42	55	98	55	0	0	0	0
	point311	311	1260	55	42	55	98	55	0	0	0	0
	Inman St undr	313	1379	55	62	55	144	55	0	0	0	0
	point314	314	1379	55	62	55	144	55	0	0	0	0

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SUM-I76 Central Interchange (101402)

	point315	315	1379	55	62	55	144	55	0	0	0	0
	Ramp ovrpa	316	1379	55	62	55	144	55	0	0	0	0
	point317	317	860	55	26	55	60	55	0	0	0	0
	point318	318	860	55	26	55	60	55	0	0	0	0
	point319	319	860	55	26	55	60	55	0	0	0	0
	point320	320	860	55	26	55	60	55	0	0	0	0
	fill	321	860	55	26	55	60	55	0	0	0	0
	point323	323	860	55	26	55	60	55	0	0	0	0
	point322	322	860	55	26	55	60	55	0	0	0	0
	point324	324	983	55	29	55	68	55	0	0	0	0
	point74	394	983	55	29	55	68	55	0	0	0	0
	point75	395	983	55	29	55	68	55	0	0	0	0
	point76	396	983	55	29	55	68	55	0	0	0	0
	Grant St ovrpa	397										
I-76 WB3 thru lane	point258	331	945	55	32	55	74	55	0	0	0	0
	point308	332	945	55	32	55	74	55	0	0	0	0
	point310	333	1260	55	42	55	98	55	0	0	0	0
	ped bridge	334	1260	55	42	55	98	55	0	0	0	0
	point312	335	1260	55	42	55	98	55	0	0	0	0
	point311	336	1260	55	42	55	98	55	0	0	0	0
	Inman St undr	337	1379	55	62	55	144	55	0	0	0	0
	point314	338	1379	55	62	55	144	55	0	0	0	0
	point315	339	1379	55	62	55	144	55	0	0	0	0
	Ramp ovrpa	340	1379	55	62	55	144	55	0	0	0	0
	point317	341	860	55	26	55	60	55	0	0	0	0
	point318	342	860	55	26	55	60	55	0	0	0	0
	point319	343	860	55	26	55	60	55	0	0	0	0
	point320	344	860	55	26	55	60	55	0	0	0	0
	fill	345	860	55	26	55	60	55	0	0	0	0
	point323	346	860	55	26	55	60	55	0	0	0	0
	point322	347	860	55	26	55	60	55	0	0	0	0
	point324	348	983	55	29	55	68	55	0	0	0	0
	point74	390	983	55	29	55	68	55	0	0	0	0
	point75	391	983	55	29	55	68	55	0	0	0	0
	point76	392	983	55	29	55	68	55	0	0	0	0
	Grant St ovrpa	393										

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SUM-I76 Central Interchange (101402)

I-76WB2/Ramp I-76WB to SR 8 NB	point258	355	945	55	32	55	74	55	0	0	0	0
	point308	356	945	55	32	55	74	55	0	0	0	0
	point310	357	1260	55	42	55	98	55	0	0	0	0
	ped bridge	358	1260	55	42	55	98	55	0	0	0	0
	point312	359	1260	55	42	55	98	55	0	0	0	0
	point311	360	1260	55	42	55	98	55	0	0	0	0
	Inman St undr	361	892	50	9	50	19	50	0	0	0	0
	point314	362	892	50	9	50	19	50	0	0	0	0
	point363	363	892	50	9	50	19	50	0	0	0	0
	point364	364	892	50	9	50	19	50	0	0	0	0
	point365	365	892	50	9	50	19	50	0	0	0	0
	point366	366	892	50	9	50	19	50	0	0	0	0
	point367	367	892	50	9	50	19	50	0	0	0	0
	point368	368	892	50	9	50	19	50	0	0	0	0
	point369	369	892	50	9	50	19	50	0	0	0	0
	Johnston St o	370	892	50	9	50	19	50	0	0	0	0
	point294	371	892	50	9	50	19	50	0	0	0	0
	point295	372	892	50	9	50	19	50	0	0	0	0
	point296	373	1298	55	24	55	55	55	0	0	0	0
	Beacon St unc	374	1298	55	24	55	55	55	0	0	0	0
	point143	375										
I-76 WB1	point258	384	945	55	32	55	74	55	0	0	0	0
	point308	385	945	55	32	55	74	55	0	0	0	0
	point310	386	107	45	1	45	2	45	0	0	0	0
	ped bridge	387	107	45	1	45	2	45	0	0	0	0
	point388	388	107	45	1	45	2	45	0	0	0	0
	point389	389										
Lafayette Ave	Brown St	398	0	0	0	0	0	0	0	0	0	0
	Burkhardt Ave	399	0	0	0	0	0	0	0	0	0	0
	point400	400	0	0	0	0	0	0	0	0	0	0
	point401	401	0	0	0	0	0	0	0	0	0	0
	East Crosier	402	0	0	0	0	0	0	0	0	0	0
	Hammel St	403										
Lovers Lane	Dietz Ave	404	244	35	5	35	11	35	0	0	0	0
	Burkhardt Ave	405	244	35	5	35	11	35	0	0	0	0
	point406	406	244	35	5	35	11	35	0	0	0	0

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SUM-I76 Central Interchange (101402)

	point407	407	244	35	5	35	11	35	0	0	0	0
	Coventry	408	244	35	5	35	11	35	0	0	0	0
	Hammel St	409										
Cole Ave	Dietz Ave	410	0	0	0	0	0	0	0	0	0	0
	Burkhardt Ave	411	0	0	0	0	0	0	0	0	0	0
	point412	412	0	0	0	0	0	0	0	0	0	0
	point413	413	0	0	0	0	0	0	0	0	0	0
	point414	414	0	0	0	0	0	0	0	0	0	0
	point415	415										
East Crosier Ave/Burkhardt Ave	Brown St	416	0	0	0	0	0	0	0	0	0	0
	point417	417	0	0	0	0	0	0	0	0	0	0
	point418	418	0	0	0	0	0	0	0	0	0	0
	Lafollette	419	40	35	0	0	0	0	0	0	0	0
	Baird St	420	40	35	0	0	0	0	0	0	0	0
	Kipling St	421	40	35	0	0	0	0	0	0	0	0
	McKinlet Ave	422	40	35	0	0	0	0	0	0	0	0
	Corice St.	423	40	35	0	0	0	0	0	0	0	0
	Morgan Ave	424	171	35	3	35	6	35	0	0	0	0
	Lovers Lane	425	0	0	0	0	0	0	0	0	0	0
	point426	426	0	0	0	0	0	0	0	0	0	0
	Stanton Ave	427	0	0	0	0	0	0	0	0	0	0
	Cole Ave	428										
Coventry Street	Cole Ave	429	0	0	0	0	0	0	0	0	0	0
	Lovers Lane	430	0	0	0	0	0	0	0	0	0	0
	point431	431	0	0	0	0	0	0	0	0	0	0
	Morgan Ave	432	0	0	0	0	0	0	0	0	0	0
	Corice St	433	0	0	0	0	0	0	0	0	0	0
	McKinley Ave	434	0	0	0	0	0	0	0	0	0	0
	Kipling	435	0	0	0	0	0	0	0	0	0	0
	Lafellette Ave	436										
East Crosiet	Lafellette Ave	437	0	0	0	0	0	0	0	0	0	0
	point438	438	0	0	0	0	0	0	0	0	0	0
	Hammell	439	0	0	0	0	0	0	0	0	0	0
	Gridley St.	440	0	0	0	0	0	0	0	0	0	0
	Inman St	441										
Inman St	E Crosier	451	0	0	0	0	0	0	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

SUM-I76 Central Interchange (101402)

	5th Ave	452	0	0	0	0	0	0	0	0	0	0
	Lumiere St	453	0	0	0	0	0	0	0	0	0	0
	Bradley Pl	454										
Lumiere St	Inman St	455	80	25	0	0	0	0	0	0	0	0
	Gridley St	456	80	25	0	0	0	0	0	0	0	0
	point457	457	80	25	0	0	0	0	0	0	0	0
	Hammel St	458	80	25	0	0	0	0	0	0	0	0
	point459	459	80	25	0	0	0	0	0	0	0	0
	point460	460	80	25	0	0	0	0	0	0	0	0
	point461	461	80	25	0	0	0	0	0	0	0	0
	point462	462										
Hammel St North	point463	463	0	0	0	0	0	0	0	0	0	0
	point464	464										
Wilson St	point465	465	0	0	0	0	0	0	0	0	0	0
	point466	466										
Johnston Ct	point467	467	0	0	0	0	0	0	0	0	0	0
	point468	468										
Hedden Avenue	point469	469	0	0	0	0	0	0	0	0	0	0
	point470	470	0	0	0	0	0	0	0	0	0	0
	point471	471										
South Street	Grant Street	472	0	0	0	0	0	0	0	0	0	0
	Sumner/Ped E	473	0	0	0	0	0	0	0	0	0	0
	Kling St.	474	0	0	0	0	0	0	0	0	0	0
	Brown St	475	0	0	0	0	0	0	0	0	0	0
	point476	476										
Pedestrian Bridge over I-76 Hoban High	point494	494	0	0	0	0	0	0	0	0	0	0
	point495	495	0	0	0	0	0	0	0	0	0	0
	point496	496	0	0	0	0	0	0	0	0	0	0
	point497	497										
Gridley Street	point498	498	0	0	0	0	0	0	0	0	0	0
	point499	499										
Spicer St	point500	500	0	0	0	0	0	0	0	0	0	0
	point501	501										
Ramp I=77SB to Lovers Lane	point502	502	150	50	3	50	7	50	0	0	0	0
	point503	503	150	50	3	50	7	50	0	0	0	0
	point504	504	150	50	3	50	7	50	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

SUM-I76 Central Interchange (101402)

	Morgan Ave	505											
Voris Street	at Brown	506	0	0	0	0	0	0	0	0	0	0	0
	at King	507	0	0	0	0	0	0	0	0	0	0	0
	at Allyn	508	0	0	0	0	0	0	0	0	0	0	0
	at Sumner	509	0	0	0	0	0	0	0	0	0	0	0
	at Sherman	512											
Sumner Street	point510	510	0	0	0	0	0	0	0	0	0	0	0
	Smuner St	511											
Allyn Street	point513	513	0	0	0	0	0	0	0	0	0	0	0
	point514	514											
King St/Lampeter St	point515	515	0	0	0	0	0	0	0	0	0	0	0
	point516	516	0	0	0	0	0	0	0	0	0	0	0
	point517	517											

INPUT: TERRAIN LINES

SUM-I76 Centra

Lawhon & Assoc.			1 August 2017	
CMCox			TNM 2.5	
INPUT: TERRAIN LINES				
PROJECT/CONTRACT:		SUM-I76 Central Interchange (101402)		
RUN:		NSA 1 2020		
Terrain Line	Points			
Name	No.	Coordinates (ground)		
		X	Y	Z
		ft	ft	ft
ROW South 1	1	2,239,528.0	509,978.0	1,035.00
	2	2,239,829.0	510,001.0	1,040.00
	3	2,239,988.0	509,998.0	1,040.00
	4	2,240,230.0	510,045.0	1,038.00
	5	2,240,390.0	510,046.0	1,036.00
	6	2,240,399.0	510,024.0	1,034.00
	7	2,240,687.0	510,030.0	1,036.00
	8	2,241,011.0	510,026.0	1,040.00
	9	2,241,214.0	510,001.0	1,046.00
	10	2,241,450.0	510,002.0	1,046.00
	11	2,241,565.0	509,982.0	1,046.00
	12	2,241,748.0	509,968.0	1,046.00
	13	2,241,743.0	509,998.0	1,048.00
Terrain Line2	14	2,241,848.5	510,006.5	1,048.00
	15	2,241,845.5	509,972.2	1,048.00
	16	2,241,974.2	509,954.2	1,048.00
	17	2,242,115.8	509,939.1	1,050.00
	18	2,242,290.2	509,888.0	1,055.00
	19	2,242,453.0	509,839.8	1,060.00
	20	2,242,639.8	509,758.6	1,066.00
	21	2,242,645.8	509,677.3	1,068.00
	22	2,242,639.8	509,549.7	1,070.00
	23	2,242,706.0	509,399.2	1,072.00
	24	2,242,763.0	509,317.9	1,080.00
Terrain Line3	25	2,242,771.8	509,647.6	1,076.00
	26	2,242,846.0	509,487.1	1,070.00
	27	2,242,912.0	509,373.9	1,068.00
	28	2,242,961.0	509,186.7	1,064.00
	29	2,242,969.0	509,087.0	1,066.00
Terrain Line4	30	2,242,805.5	509,218.1	1,084.00
	31	2,242,873.0	509,115.1	1,084.00
	32	2,242,890.0	509,028.2	1,084.00
	33	2,242,915.2	508,896.4	1,084.00
Terrain Line5	34	2,242,912.8	508,830.4	1,086.00
	35	2,242,915.2	508,566.8	1,088.00
	36	2,242,920.2	508,288.0	1,094.00
	37	2,242,917.8	508,039.2	1,096.00

INPUT: TERRAIN LINES

SUM-I76 Centra

	38	2,242,912.8	507,766.0	1,097.00
	39	2,242,913.0	507,683.2	1,099.00
Terrain Line6	42	2,242,945.8	507,191.2	1,103.00
	43	2,242,938.0	506,715.2	1,110.00
	44	2,242,940.5	506,236.2	1,108.00
	45	2,242,963.5	506,213.4	1,108.00
Terrain Line7	46	2,242,973.5	507,206.4	1,086.00
	47	2,242,976.0	506,710.2	1,084.00
	48	2,242,978.5	506,251.5	1,089.00
Terrain Line8	49	2,242,953.2	508,827.9	1,068.00
	50	2,242,961.0	508,571.9	1,076.00
	51	2,242,955.8	508,298.2	1,083.00
	52	2,242,948.2	508,040.2	1,089.00
	53	2,242,946.5	507,938.9	1,092.00
Terrain Line9	56	2,243,098.0	509,760.0	1,056.00
	57	2,243,082.8	509,562.2	1,056.00
	58	2,243,037.0	509,065.5	1,060.00
Terrain Line10	59	2,243,049.8	509,739.7	1,078.00
	60	2,243,037.0	509,564.8	1,078.00
	61	2,243,031.5	509,341.2	1,078.00
Terrain Line11	62	2,243,192.8	509,732.9	1,054.00
	63	2,243,172.2	509,543.5	1,057.00
	64	2,243,124.8	509,053.2	1,060.00
	65	2,243,106.0	508,893.2	1,066.00
	66	2,243,153.2	509,043.1	1,068.00
	67	2,243,178.5	509,314.6	1,070.00
	68	2,243,202.2	509,552.3	1,071.00
	69	2,243,203.8	509,714.9	1,072.00
Terrain Line12	70	2,243,129.5	506,225.5	1,089.00
	71	2,243,131.2	506,691.8	1,085.00
	72	2,243,126.5	507,206.4	1,085.00
Terrain Line13	73	2,243,167.5	506,228.1	1,116.00
	74	2,243,169.0	506,698.8	1,116.00
	75	2,243,162.8	506,872.7	1,112.00
	76	2,243,169.0	507,205.8	1,110.00
Terrain Line14	77	2,243,128.0	507,257.8	1,085.00
	78	2,243,120.0	507,488.3	1,090.00
	79	2,243,120.0	507,757.9	1,092.00
	80	2,243,124.8	508,031.0	1,090.00
	81	2,243,128.0	508,282.3	1,084.00
	82	2,243,136.0	508,601.2	1,080.00
	83	2,243,161.2	508,822.8	1,070.00
Terrain Line15	84	2,243,172.2	507,258.2	1,110.00
	85	2,243,173.8	507,495.0	1,108.00
	86	2,243,180.0	507,766.5	1,106.00
	87	2,243,180.0	508,042.7	1,104.00
	88	2,243,181.8	508,288.9	1,102.00
	89	2,243,180.0	508,816.5	1,096.00

INPUT: TERRAIN LINES

SUM-I76 Centra

Terrain Line16	90	2,243,175.2	508,883.4	1,071.00
	91	2,243,210.0	508,998.6	1,072.00
	92	2,243,341.0	509,274.8	1,077.00
	93	2,243,483.0	509,432.7	1,086.00
	94	2,243,779.8	509,600.0	1,101.00
	95	2,244,065.5	509,742.1	1,110.00
	96	2,244,214.0	509,813.8	1,116.00
	97	2,244,394.0	509,895.8	1,116.00
Terrain Line17	98	2,243,219.5	508,880.9	1,094.00
	99	2,243,330.0	509,172.9	1,096.00
	100	2,243,372.5	509,256.5	1,097.00
	101	2,243,513.0	509,412.8	1,100.00
	102	2,243,790.8	509,584.9	1,099.00
	103	2,244,040.2	509,714.3	1,098.00
	104	2,244,210.8	509,791.7	1,099.00
	105	2,244,362.2	509,856.4	1,110.00
	106	2,244,405.0	509,876.9	1,100.00
	107	2,244,406.5	509,905.3	1,100.00
Terrain Line18	108	2,244,466.8	509,931.1	1,120.00
	109	2,244,849.8	510,111.3	1,132.00
Terrain Line19	115	2,244,470.0	509,915.0	1,100.00
	116	2,244,476.5	509,895.7	1,100.00
	117	2,244,727.5	510,030.9	1,106.00
	118	2,245,117.0	510,195.1	1,122.00
	119	2,245,387.5	510,292.9	1,159.00
Terrain Line21	127	2,245,991.2	510,580.2	1,122.00
	128	2,245,640.2	510,515.6	1,136.00
	129	2,245,414.0	510,458.8	1,138.00
Terrain Line22	134	2,246,373.0	510,645.7	1,110.00
	135	2,246,170.5	510,602.7	1,142.00
	136	2,245,996.2	510,594.0	1,147.00
	137	2,245,638.5	510,525.1	1,146.00
	138	2,245,417.0	510,477.7	1,158.00
Terrain Line22-2	146	2,245,836.0	510,887.0	1,132.00
	145	2,245,657.0	510,890.0	1,114.00
	144	2,245,499.0	510,893.0	1,100.00
	143	2,245,215.0	510,564.0	1,100.00
	141	2,244,986.0	510,385.0	1,105.00
	139	2,244,826.0	510,307.0	1,104.00
	140	2,244,471.2	510,169.7	1,103.00
Terrain Line24	147	2,245,526.0	510,536.0	1,145.00
	148	2,245,664.0	510,674.0	1,144.00
	149	2,245,878.0	510,814.0	1,144.00
	150	2,246,076.0	510,768.0	1,145.00
	151	2,246,100.0	510,648.0	1,145.00
	152	2,245,541.0	510,537.0	1,144.00
Terrain Line22-2	153	2,245,398.8	510,475.6	1,158.00
	142	2,245,042.8	510,393.8	1,105.00

INPUT: TERRAIN LINES

SUM-I76 Centra

Terrain Line21-2	154	2,245,398.2	510,455.2	1,138.00
	130	2,244,992.5	510,329.1	1,121.00
	131	2,244,464.8	510,146.0	1,105.00
Terrain Line27	155	2,244,386.8	510,049.4	1,117.00
	156	2,244,283.8	510,027.8	1,111.00
	157	2,244,106.5	510,032.6	1,105.00
	158	2,243,888.8	510,094.9	1,104.00
	159	2,243,745.0	510,190.7	1,101.00
	160	2,243,589.2	510,329.5	1,098.00
	161	2,243,486.2	510,473.2	1,089.00
	162	2,243,409.8	510,648.9	1,081.00
	163	2,243,364.2	510,842.9	1,076.00
Terrain Line28	164	2,244,396.2	510,067.6	1,098.00
	165	2,244,389.0	510,086.7	1,098.00
	166	2,244,109.0	510,074.8	1,095.00
	167	2,243,898.2	510,120.2	1,093.00
	168	2,243,745.0	510,223.2	1,091.00
	169	2,243,615.8	510,371.7	1,089.00
	170	2,243,486.2	510,572.8	1,094.00
	171	2,243,438.5	510,693.0	1,096.00
	172	2,243,397.8	510,843.8	1,098.00
	173	2,243,381.0	510,858.2	1,098.00
Terrain Line29	174	2,243,634.8	510,226.6	1,102.00
	175	2,243,721.0	510,099.7	1,096.00
	176	2,243,769.0	510,020.7	1,094.00
	177	2,243,771.2	509,979.9	1,094.00
Terrain Line30	178	2,243,625.2	510,188.2	1,106.00
	179	2,243,713.8	510,025.4	1,109.00
	180	2,243,728.2	509,982.3	1,109.00
Terrain Line18-2	181	2,244,849.8	510,111.3	1,132.00
	110	2,245,389.5	510,321.1	1,135.00
Terrain Line19-2	182	2,245,400.2	510,298.1	1,159.00
	120	2,245,651.5	510,375.3	1,164.00
	121	2,245,986.2	510,436.5	1,158.00
	122	2,246,311.2	510,462.2	1,144.00
Terrain Line18-2-2	183	2,245,401.2	510,324.8	1,135.00
	111	2,245,648.2	510,397.8	1,134.00
	112	2,245,983.0	510,459.0	1,122.00
	113	2,246,298.5	510,481.6	1,115.00
Terrain Line34	184	2,243,536.2	510,311.4	1,098.00
	185	2,243,613.2	510,157.4	1,106.00
	186	2,243,678.5	510,021.0	1,109.00
Terrain Line35	187	2,243,495.5	510,011.7	1,089.00
	188	2,243,437.0	510,156.3	1,087.00
	189	2,243,389.2	510,310.2	1,090.00
	190	2,243,372.8	510,468.1	1,094.00
Terrain Line36	192	2,243,217.0	510,008.4	1,057.00
	193	2,243,271.0	510,549.0	1,066.00

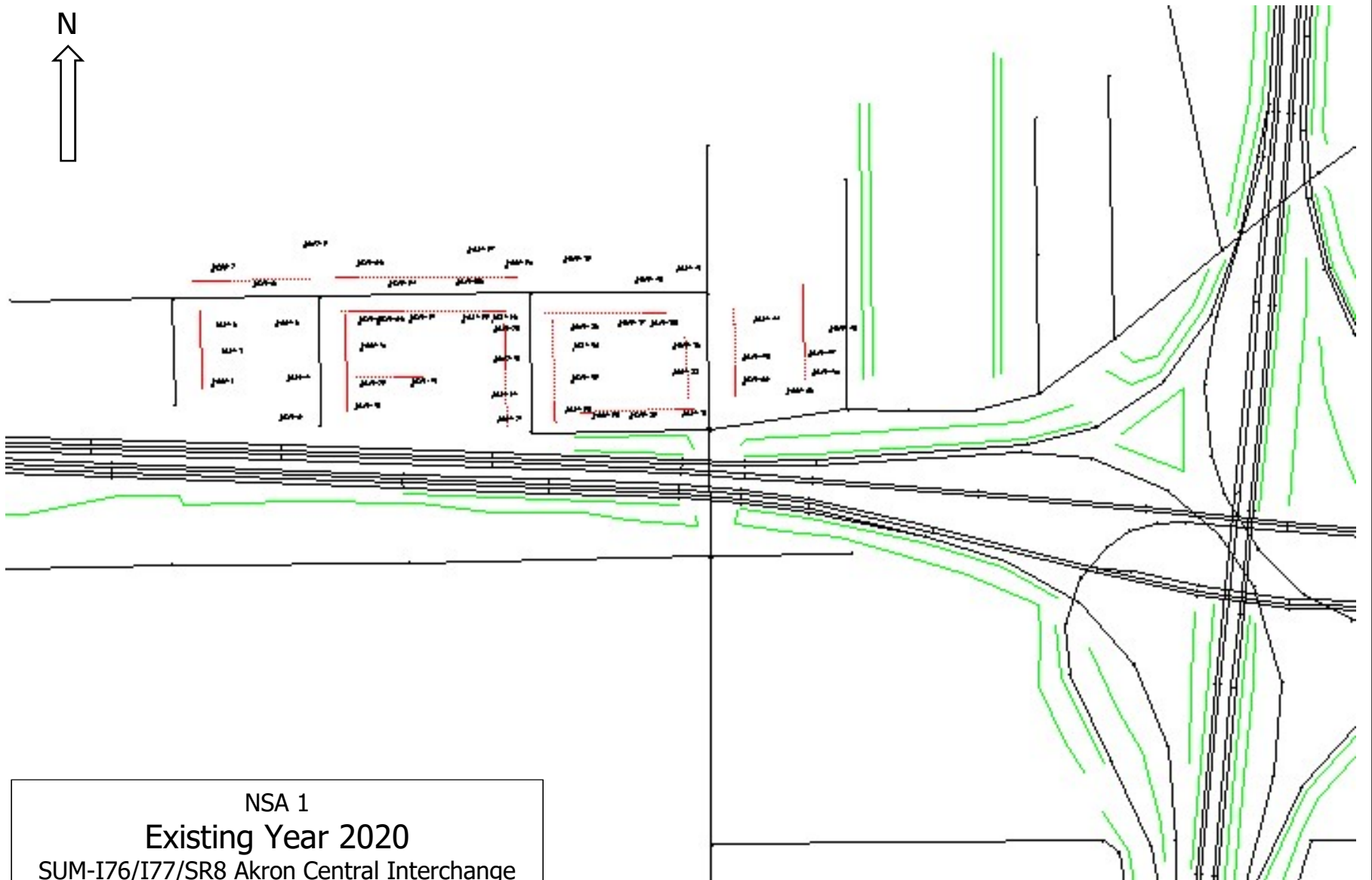
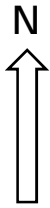
INPUT: TERRAIN LINES

SUM-I76 Centra

	194	2,243,296.0	510,808.8	1,071.00
Terrain Line37	195	2,243,293.0	510,023.2	1,094.00
	196	2,243,340.0	510,537.5	1,090.00
	197	2,243,338.2	510,671.4	1,080.00
Terrain Line38	198	2,243,354.0	510,993.5	1,077.00
	199	2,243,363.0	511,249.6	1,077.00
	200	2,243,380.0	511,543.8	1,071.00
Terrain Line39	201	2,243,392.2	510,966.6	1,100.00
	202	2,243,384.0	511,004.8	1,100.00
	203	2,243,395.0	511,240.6	1,100.00
	204	2,243,412.0	511,530.3	1,110.00
Terrain Line40	205	2,242,839.5	510,182.2	1,069.00
	206	2,243,017.0	510,112.5	1,074.00
	207	2,243,017.0	510,328.2	1,072.00
	208	2,242,853.0	510,202.4	1,069.00
Terrain Line41	209	2,243,253.0	512,036.7	1,059.00
	210	2,243,258.0	511,582.9	1,073.00
	211	2,243,226.0	511,084.7	1,077.00
	212	2,243,149.0	510,740.6	1,071.00
Terrain Line42	213	2,243,213.0	512,025.4	1,092.00
	214	2,243,223.0	511,587.4	1,094.00
	215	2,243,191.0	511,081.1	1,094.00
	216	2,243,131.5	510,778.8	1,100.00
Terrain Line43	217	2,243,124.8	510,661.1	1,071.00
	218	2,243,074.0	510,539.8	1,071.00
	219	2,242,954.0	510,366.8	1,076.00
	220	2,242,880.0	510,335.3	1,076.00
	221	2,242,812.5	510,378.0	1,076.00
Terrain Line44	222	2,243,084.2	510,638.6	1,087.00
	223	2,243,048.5	510,555.5	1,087.00
	224	2,242,947.2	510,414.0	1,086.00
	225	2,242,884.5	510,398.2	1,082.00
	226	2,242,850.8	510,425.2	1,082.00
Terrain Line45	227	2,242,776.8	510,239.0	1,079.00
	228	2,242,606.0	510,195.0	1,081.00
	229	2,242,051.2	510,154.0	1,077.00
	230	2,241,867.0	510,152.0	1,069.00
Terrain Line46	231	2,242,729.5	510,284.0	1,068.00
	232	2,242,592.5	510,240.0	1,058.00
	233	2,242,055.8	510,206.8	1,043.00
	234	2,241,873.8	510,195.6	1,040.00
	235	2,241,855.8	510,173.2	1,038.00
Terrain Line47	236	2,242,518.2	510,356.6	1,060.00
	237	2,242,518.2	511,212.3	1,060.00
Terrain Line48	238	2,242,539.0	510,369.0	1,074.00
	239	2,242,539.0	511,195.7	1,070.00
Terrain Line49	240	2,241,736.0	510,167.7	1,040.00
	241	2,241,719.0	510,204.3	1,040.00

INPUT: TERRAIN LINES**SUM-I76 Centra**

	242	2,241,423.0	510,202.1	1,054.00
Terrain Line50	243	2,241,705.5	510,156.0	1,061.00
	244	2,241,422.8	510,167.0	1,054.00
Terrain Line51	245	2,240,975.5	510,052.8	1,045.00
	246	2,241,356.2	510,036.3	1,051.00
	247	2,241,700.2	510,023.0	1,061.00
Terrain Line52	248	2,241,861.5	510,012.7	1,069.00
	249	2,242,036.8	509,989.1	1,078.00
	250	2,242,338.2	509,923.2	1,083.00
	251	2,242,546.2	509,860.3	1,082.00
	252	2,242,694.5	509,774.7	1,079.00
Terrain Line52-2	253	2,242,684.2	509,708.7	1,096.00
	254	2,242,698.2	509,574.4	1,089.00
	255	2,242,813.0	509,340.2	1,079.00
Terrain Line54	257	2,242,178.5	510,352.6	1,040.00
	258	2,242,170.5	511,076.2	1,020.00
Terrain Line55	259	2,242,206.2	510,360.6	1,048.00
	260	2,242,194.2	511,076.2	1,034.00
Terrain Line8-2	261	2,242,947.5	507,730.1	1,092.00
	54	2,242,955.8	507,483.7	1,090.00
	55	2,242,968.5	507,275.9	1,086.00
Terrain Line5-2	262	2,242,915.2	507,547.6	1,101.00
	40	2,242,928.0	507,272.3	1,101.00
	41	2,242,958.5	507,254.6	1,102.00



NSA 1
Existing Year 2020
SUM-I76/I77/SR8 Akron Central Interchange
PID 101402

RESULTS: SOUND LEVELS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc. CMCox													1 August 2017 TNM 2.5 Calculated with TNM 2.5																					
RESULTS: SOUND LEVELS																																		
PROJECT/CONTRACT:													SUM-I76 Central Interchange (101402)																					
RUN:													NSA 1 2020																					
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		With Barrier													
															LAeq1h		LAeq1h		Increase over existing		Type		Calculated		Noise Reduction									
																	Calculated		Crit'n		Calculated		Crit'n		Impact		LAeq1h		Calculated		Goal		Calculated	
																															minus		Goal	
															dBA		dBA		dBA		dB		dB				dBA		dB		dB		dB	
NSA1-1		36	1	0.0	72.1	66	72.1	10	Snd Lvl	72.1	0.0	4	-4.5																					
NSA1-2		37	1	0.0	76.6	66	76.6	10	Snd Lvl	76.6	0.0	4	-4.5																					
NSA1-3		38	2	0.0	68.6	66	68.6	10	Snd Lvl	68.6	0.0	4	-4.5																					
NSA1-4		40	1	0.0	71.5	66	71.5	10	Snd Lvl	71.5	0.0	4	-4.5																					
NSA1-10		41	1	0.0	74.2	66	74.2	10	Snd Lvl	74.2	0.0	4	-4.5																					
NSA1-12		42	1	0.0	70.7	66	70.7	10	Snd Lvl	70.7	0.0	4	-4.5																					
NSA1-13		45	4	0.0	70.9	66	70.9	10	Snd Lvl	70.9	0.0	4	-4.5																					
NSA1-11		47	1	0.0	75.0	66	75.0	10	Snd Lvl	75.0	0.0	4	-4.5																					
NSA1-28		48	2	0.0	73.7	66	73.7	10	Snd Lvl	73.7	0.0	4	-4.5																					
NSA1-29		50	2	0.0	74.6	66	74.6	10	Snd Lvl	74.6	0.0	4	-4.5																					
NSA1-30		52	3	0.0	74.4	66	74.4	10	Snd Lvl	74.4	0.0	4	-4.5																					
NSA1-31		55	2	0.0	70.5	66	70.5	10	Snd Lvl	70.5	0.0	4	-4.5																					
NSA1-14		56	2	0.0	71.4	66	71.4	10	Snd Lvl	71.4	0.0	4	-4.5																					
NSA1-32		59	2	0.0	69.9	66	69.9	10	Snd Lvl	69.9	0.0	4	-4.5																					
NSA1-33		60	2	0.0	65.4	66	65.4	10	----	65.4	0.0	4	-4.5																					
NSA1-42		62	2	0.0	65.6	66	65.6	10	----	65.6	0.0	4	-4.5																					
NSA1-15		63	2	0.0	67.4	66	67.4	10	Snd Lvl	67.4	0.0	4	-4.5																					
NSA1-43		66	3	0.0	64.3	66	64.3	10	----	64.3	0.0	4	-4.5																					
NSA1-5		83	2	0.0	66.2	66	66.2	10	Snd Lvl	66.2	0.0	4	-4.5																					
NSA1-6		84	2	0.0	66.8	66	66.8	10	Snd Lvl	66.8	0.0	4	-4.5																					
NSA1-16		85	2	0.0	65.0	66	65.0	10	----	65.0	0.0	4	-4.5																					
NSA1-34		88	2	0.0	68.1	66	68.1	10	Snd Lvl	68.1	0.0	4	-4.5																					
NSA1-18		89	2	0.0	65.2	66	65.2	10	----	65.2	0.0	4	-4.5																					
NSA1-35		91	2	0.0	64.8	66	64.8	10	----	64.8	0.0	4	-4.5																					

RESULTS: SOUND LEVELS

SUM-I76 Central Interchange (101402)

NSA1-36	92	3	0.0	67.0	66	67.0	10	Snd Lvl	67.0	0.0	4	-4.5
NSA1-37	93	2	0.0	67.2	66	67.2	10	Snd Lvl	67.2	0.0	4	-4.5
NSA1-38	94	2	0.0	66.8	66	66.8	10	Snd Lvl	66.8	0.0	4	-4.5
NSA1-17	95	2	0.0	63.9	66	63.9	10	----	63.9	0.0	4	-4.5
NSA1-19	96	1	0.0	64.4	66	64.4	10	----	64.4	0.0	4	-4.5
NSA1-39	97	2	0.0	62.7	66	62.7	10	----	62.7	0.0	4	-4.5
NSA1-40	98	3	0.0	61.7	66	61.7	10	----	61.7	0.0	4	-4.5
NSA1-41	99	1	0.0	62.2	66	62.2	10	----	62.2	0.0	4	-4.5
NSA1-20	102	2	0.0	64.1	66	64.1	10	----	64.1	0.0	4	-4.5
NSA1-21	103	2	0.0	64.4	66	64.4	10	----	64.4	0.0	4	-4.5
NSA1-22	104	2	0.0	65.2	66	65.2	10	----	65.2	0.0	4	-4.5
NSA1-23	105	2	0.0	57.7	66	57.7	10	----	57.7	0.0	4	-4.5
NSA1-24	106	3	0.0	60.5	66	60.5	10	----	60.5	0.0	4	-4.5
NSA1-25	107	4	0.0	61.1	66	61.1	10	----	61.1	0.0	4	-4.5
NSA1-26	108	2	0.0	59.2	66	59.2	10	----	59.2	0.0	4	-4.5
NSA1-27	109	2	0.0	59.1	66	59.1	10	----	59.1	0.0	4	-4.5
NSA1-44	110	2	0.0	63.6	66	63.6	10	----	63.6	0.0	4	-4.5
NSA1-45	111	1	0.0	65.1	66	65.1	10	----	65.1	0.0	4	-4.5
NSA1-46	112	1	0.0	63.8	66	63.8	10	----	63.8	0.0	4	-4.5
NSA1-47	113	2	0.0	62.4	66	62.4	10	----	62.4	0.0	4	-4.5
NSA1-7	114	2	0.0	59.7	66	59.7	10	----	59.7	0.0	4	-4.5
NSA1-8	115	3	0.0	63.8	66	63.8	10	----	63.8	0.0	4	-4.5
NSA1-9	116	2	0.0	59.8	66	59.8	10	----	59.8	0.0	4	-4.5
NSA1-48	117	3	0.0	62.5	66	62.5	10	----	62.5	0.0	4	-4.5
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		97	0.0	0.0	0.0							
All Impacted		40	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

INPUT: RECEIVERS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.							1 August 2017				
CMCox							TNM 2.5				
INPUT: RECEIVERS											
PROJECT/CONTRACT:		SUM-I76 Central Interchange (101402)									
RUN:		NSA 1 2020									
Receiver											
Name	No.	#DUs	Coordinates (ground)			Height above Ground	Input Sound Levels and Criteria				Active in Calc.
			X	Y	Z		Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	
			ft	ft	ft	ft	dBA	dBA	dB	dB	
NSA1-1	36	1	2,240,478.0	510,337.0	1,044.00	4.92	0.00	66	10.0	4.5	Y
NSA1-2	37	1	2,240,653.0	510,244.0	1,043.00	4.92	0.00	66	10.0	4.5	Y
NSA1-3	38	2	2,240,499.0	510,417.0	1,046.00	4.92	0.00	66	10.0	4.5	Y
NSA1-4	40	1	2,240,672.0	510,348.0	1,046.00	4.92	0.00	66	10.0	4.5	Y
NSA1-10	41	1	2,240,851.0	510,274.0	1,045.00	4.92	0.00	66	10.0	4.5	Y
NSA1-12	42	1	2,240,865.0	510,334.0	1,045.00	4.92	0.00	66	10.0	4.5	Y
NSA1-13	45	4	2,240,999.0	510,337.0	1,047.00	4.92	0.00	66	10.0	4.5	Y
NSA1-11	47	1	2,241,224.0	510,241.0	1,053.00	4.92	0.00	66	10.0	4.5	Y
NSA1-28	48	2	2,241,401.0	510,265.0	1,055.00	4.92	0.00	66	10.0	4.5	Y
NSA1-29	50	2	2,241,474.0	510,249.0	1,054.00	4.92	0.00	66	10.0	4.5	Y
NSA1-30	52	3	2,241,572.0	510,251.0	1,054.00	4.92	0.00	66	10.0	4.5	Y
NSA1-31	55	2	2,241,707.0	510,255.0	1,044.00	4.92	0.00	66	10.0	4.5	Y
NSA1-14	56	2	2,241,209.0	510,304.0	1,053.00	4.92	0.00	66	10.0	4.5	Y
NSA1-32	59	2	2,241,418.0	510,347.0	1,057.00	4.92	0.00	66	10.0	4.5	Y
NSA1-33	60	2	2,241,682.0	510,365.0	1,044.00	4.92	0.00	66	10.0	4.5	Y
NSA1-42	62	2	2,241,866.0	510,342.0	1,039.00	4.92	0.00	66	10.0	4.5	Y
NSA1-15	63	2	2,241,216.0	510,399.0	1,055.00	4.92	0.00	66	10.0	4.5	Y
NSA1-43	66	3	2,241,866.0	510,403.0	1,039.00	4.92	0.00	66	10.0	4.5	Y
NSA1-5	83	2	2,240,484.0	510,486.0	1,046.00	4.92	0.00	66	10.0	4.5	Y
NSA1-6	84	2	2,240,646.0	510,493.0	1,048.00	4.92	0.00	66	10.0	4.5	Y
NSA1-16	85	2	2,240,867.0	510,430.0	1,046.00	4.92	0.00	66	10.0	4.5	Y
NSA1-34	88	2	2,241,421.0	510,430.0	1,059.00	4.92	0.00	66	10.0	4.5	Y

INPUT: RECEIVERS**SUM-I76 Central Interchange (101402)**

NSA1-18	89	2	2,241,215.0	510,477.0	1,056.00	4.92	0.00	66	10.0	4.5	Y
NSA1-35	91	2	2,241,686.0	510,432.0	1,046.00	4.92	0.00	66	10.0	4.5	Y
NSA1-36	92	3	2,241,418.0	510,484.0	1,060.00	4.92	0.00	66	10.0	4.5	Y
NSA1-37	93	2	2,241,543.0	510,492.0	1,061.00	4.92	0.00	66	10.0	4.5	Y
NSA1-38	94	2	2,241,624.0	510,491.0	1,057.00	4.92	0.00	66	10.0	4.5	Y
NSA1-17	95	2	2,240,860.0	510,500.0	1,046.00	4.92	0.00	66	10.0	4.5	Y
NSA1-19	96	1	2,241,209.0	510,504.0	1,055.00	4.92	0.00	66	10.0	4.5	Y
NSA1-39	97	2	2,241,399.0	510,660.0	1,060.00	4.92	0.00	66	10.0	4.5	Y
NSA1-40	98	3	2,241,587.0	510,605.0	1,062.00	4.92	0.00	66	10.0	4.5	Y
NSA1-41	99	1	2,241,692.0	510,635.0	1,052.00	4.92	0.00	66	10.0	4.5	Y
NSA1-20	102	2	2,240,910.0	510,499.0	1,047.00	4.92	0.00	66	10.0	4.5	Y
NSA1-21	103	2	2,240,994.0	510,504.0	1,050.00	4.92	0.00	66	10.0	4.5	Y
NSA1-22	104	2	2,241,134.0	510,504.0	1,054.00	4.92	0.00	66	10.0	4.5	Y
NSA1-23	105	2	2,240,855.0	510,648.0	1,046.00	4.92	0.00	66	10.0	4.5	Y
NSA1-24	106	3	2,240,941.0	510,597.0	1,049.00	4.92	0.00	66	10.0	4.5	Y
NSA1-25	107	4	2,241,117.0	510,600.0	1,053.00	4.92	0.00	66	10.0	4.5	Y
NSA1-26	108	2	2,241,247.0	510,647.0	1,054.00	4.92	0.00	66	10.0	4.5	Y
NSA1-27	109	2	2,241,149.0	510,684.0	1,054.00	4.92	0.00	66	10.0	4.5	Y
NSA1-44	110	2	2,241,894.0	510,502.0	1,040.00	4.92	0.00	66	10.0	4.5	Y
NSA1-45	111	1	2,241,981.0	510,313.0	1,036.00	4.92	0.00	66	10.0	4.5	Y
NSA1-46	112	1	2,242,048.0	510,364.0	1,036.00	4.92	0.00	66	10.0	4.5	Y
NSA1-47	113	2	2,242,038.0	510,413.0	1,033.00	4.92	0.00	66	10.0	4.5	Y
NSA1-7	114	2	2,240,478.0	510,637.0	1,045.00	4.92	0.00	66	10.0	4.5	Y
NSA1-8	115	3	2,240,584.0	510,594.0	1,045.00	4.92	0.00	66	10.0	4.5	Y
NSA1-9	116	2	2,240,718.0	510,700.0	1,045.00	4.92	0.00	66	10.0	4.5	Y
NSA1-48	117	3	2,242,095.0	510,477.0	1,032.00	4.92	0.00	66	10.0	4.5	Y

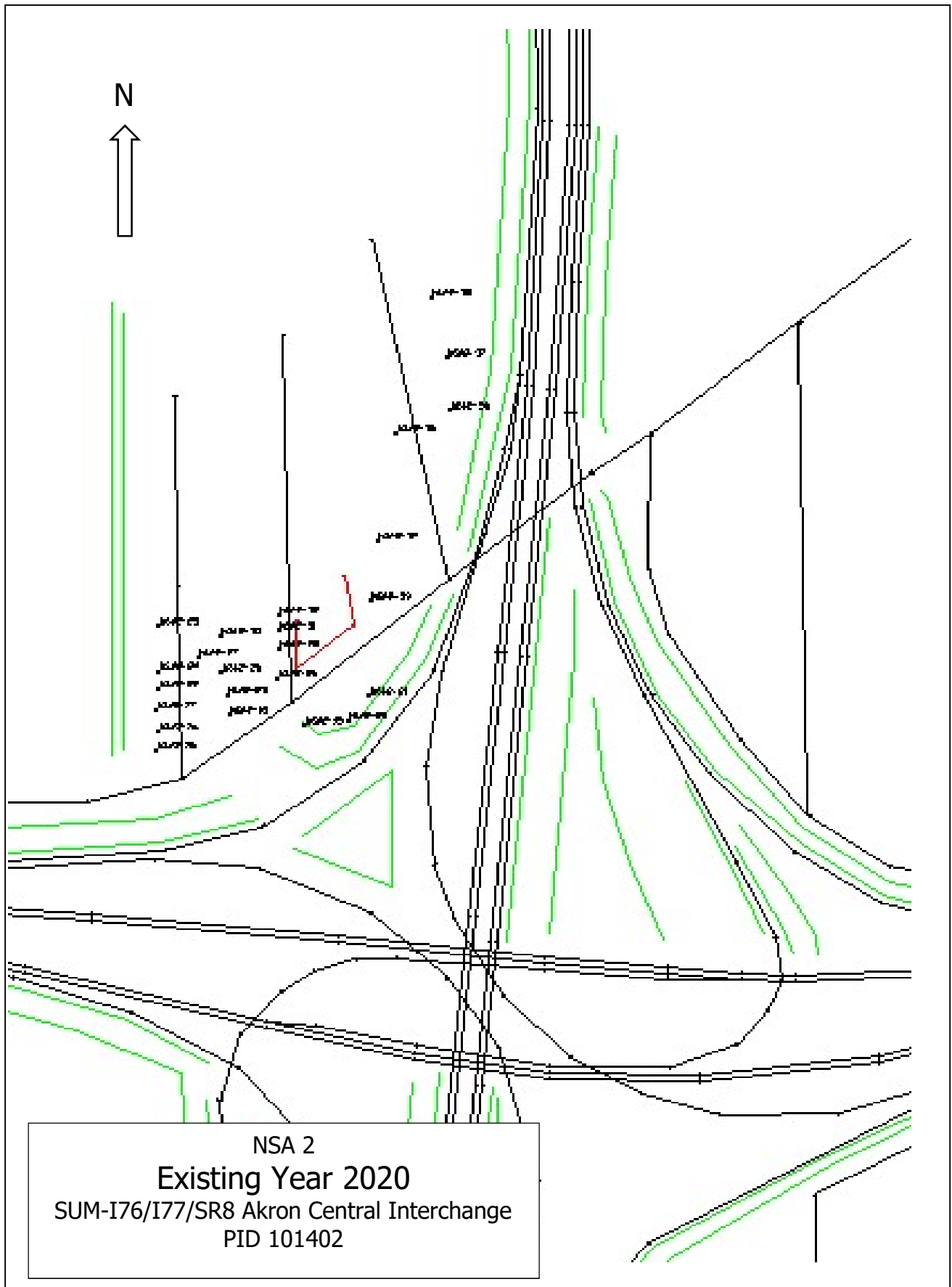
INPUT: BUILDING ROWS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.					1 August 2017		
CMCox					TNM 2.5		
INPUT: BUILDING ROWS							
PROJECT/CONTRACT:		SUM-I76 Central Interchange (101402)					
RUN:		NSA 1 2020					
Building Row			Points				
Name	Average	Building	No.	Coordinates (ground)			
	Height	Percent		X	Y	Z	
	ft	%		ft	ft	ft	
Allyn St ws	15.00	60	11	2,240,829.0	510,269.0	1,045.00	
			12	2,240,824.2	510,525.0	1,045.00	
Minnie Ct ws	20.00	80	14	2,240,855.0	510,357.0	1,047.00	
			16	2,241,032.0	510,356.0	1,055.00	
King Street ws	18.00	70	17	2,241,247.0	510,231.0	1,053.00	
			18	2,241,240.5	510,501.3	1,057.00	
King Street es	18.00	60	19	2,241,374.0	510,239.0	1,057.00	
			20	2,241,366.0	510,511.2	1,057.00	
Lamparter Street ns	20.00	60	21	2,241,441.0	510,265.0	1,055.00	
			22	2,241,741.0	510,276.0	1,044.00	
Sumner Street es	20.00	60	23	2,240,450.0	510,328.0	1,044.00	
			24	2,240,444.0	510,535.0	1,046.00	
Brown Street ws	22.00	70	25	2,241,724.0	510,296.0	1,044.00	
			26	2,241,713.0	510,473.0	1,046.00	
Brown Street ES	20.00	80	27	2,241,844.0	510,308.3	1,038.00	
			28	2,241,842.0	510,537.7	1,043.00	
Building10	15.00	50	29	2,242,028.0	510,346.0	1,034.00	
			30	2,242,020.0	510,605.0	1,031.00	
Building11	18.00	70	31	2,240,800.0	510,617.0	1,046.00	
			32	2,241,277.0	510,618.0	1,056.00	
Building12	18.00	70	33	2,240,425.0	510,610.0	1,046.00	
			34	2,240,733.0	510,612.9	1,046.00	
Building13	18.00	60	35	2,240,808.0	510,529.0	1,046.00	
			36	2,241,248.0	510,529.0	1,057.00	

INPUT: BUILDING ROWS**SUM-I76 Central Interchange (101402)**

Building14	18.00	70	37	2,241,348.0	510,525.0	1,060.00
			38	2,241,667.0	510,526.0	1,068.00



NSA 2
Existing Year 2020
SUM-I76/I77/SR8 Akron Central Interchange
PID 101402

RESULTS: SOUND LEVELS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.													1 August 2017	
CMCox													TNM 2.5	
													Calculated with TNM 2.5	
RESULTS: SOUND LEVELS														
PROJECT/CONTRACT:			SUM-I76 Central Interchange (101402)											
RUN:			NSA 2 2020											
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			With Barrier						
				LAeq1h	LAeq1h		Increase over existing		Type	Calculated	Noise Reduction			
					Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated	
								Sub'l Inc					minus	
													Goal	
				dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB	
NSA2-1		1	1	0.0	67.2	66	67.2	10	Snd Lvl	67.2	0.0	8	-8.0	
NSA2-2		2	1	0.0	65.2	66	65.2	10	----	65.2	0.0	8	-8.0	
NSA2-3		3	1	0.0	63.5	66	63.5	10	----	63.5	0.0	8	-8.0	
NSA2-4		4	1	0.0	66.1	66	66.1	10	Snd Lvl	66.1	0.0	8	-8.0	
NSA2-5		5	1	0.0	65.0	66	65.0	10	----	65.0	0.0	8	-8.0	
NSA2-6		6	1	0.0	65.2	66	65.2	10	----	65.2	0.0	8	-8.0	
NSA2-7		7	1	0.0	63.8	66	63.8	10	----	63.8	0.0	8	-8.0	
NSA2-8		8	1	0.0	62.3	66	62.3	10	----	62.3	0.0	8	-8.0	
NSA2-9		9	1	0.0	64.4	66	64.4	10	----	64.4	0.0	8	-8.0	
NSA2-10		10	1	0.0	62.8	66	62.8	10	----	62.8	0.0	8	-8.0	
NSA2-11		11	4	0.0	64.5	66	64.5	10	----	64.5	0.0	8	-8.0	
NSA2-12		12	1	0.0	62.0	66	62.0	10	----	62.0	0.0	8	-8.0	
NSA2-13		13	4	0.0	64.1	66	64.1	10	----	64.1	0.0	8	-8.0	
NSA2-14		14	1	0.0	63.2	66	63.2	10	----	63.2	0.0	8	-8.0	
NSA2-15		15	1	0.0	67.4	66	67.4	10	Snd Lvl	67.4	0.0	8	-8.0	
NSA2-16		16	1	0.0	66.8	66	66.8	10	Snd Lvl	66.8	0.0	8	-8.0	
NSA2-17		17	1	0.0	66.6	66	66.6	10	Snd Lvl	66.6	0.0	8	-8.0	
NSA2-18		18	1	0.0	66.7	66	66.7	10	Snd Lvl	66.7	0.0	8	-8.0	
NSA2-19		19	1	0.0	67.6	66	67.6	10	Snd Lvl	67.6	0.0	8	-8.0	
NSA2-20		20	1	0.0	70.6	66	70.6	10	Snd Lvl	70.6	0.0	8	-8.0	
NSA2-21		21	1	0.0	71.8	66	71.8	10	Snd Lvl	71.8	0.0	8	-8.0	
NSA2-22		22	1	0.0	66.0	66	66.0	10	Snd Lvl	66.0	0.0	8	-8.0	
NSA2-23		23	1	0.0	65.7	66	65.7	10	----	65.7	0.0	8	-8.0	
NSA2-24		24	1	0.0	65.6	66	65.6	10	----	65.6	0.0	8	-8.0	

RESULTS: SOUND LEVELS

SUM-I76 Central Interchange (101402)

NSA2-25	25	1	0.0	65.5	66	65.5	10	----	65.5	0.0	8	-8.0
NSA2-26	26	1	0.0	64.6	66	64.6	10	----	64.6	0.0	8	-8.0
NSA2-27	27	1	0.0	65.2	66	65.2	10	----	65.2	0.0	8	-8.0
NSA2-28	28	1	0.0	63.7	66	63.7	10	----	63.7	0.0	8	-8.0
NSA2-29	29	1	0.0	63.9	66	63.9	10	----	63.9	0.0	8	-8.0
NSA2-30	30	1	0.0	64.0	66	64.0	10	----	64.0	0.0	8	-8.0
NSA2-31	31	1	0.0	62.8	66	62.8	10	----	62.8	0.0	8	-8.0
NSA2-32	32	1	0.0	62.5	66	62.5	10	----	62.5	0.0	8	-8.0
NSA2-33	33	1	0.0	65.9	66	65.9	10	----	65.9	0.0	8	-8.0
NSA2-34	34	1	0.0	65.3	66	65.3	10	----	65.3	0.0	8	-8.0
NSA2-35	35	1	0.0	63.4	66	63.4	10	----	63.4	0.0	8	-8.0
NSA2-36	36	1	0.0	65.0	66	65.0	10	----	65.0	0.0	8	-8.0
NSA2-37	37	1	0.0	65.1	66	65.1	10	----	65.1	0.0	8	-8.0
NSA2-38	38	1	0.0	63.4	66	63.4	10	----	63.4	0.0	8	-8.0
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		44	0.0	0.0	0.0							
All Impacted		10	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

INPUT: RECEIVERS

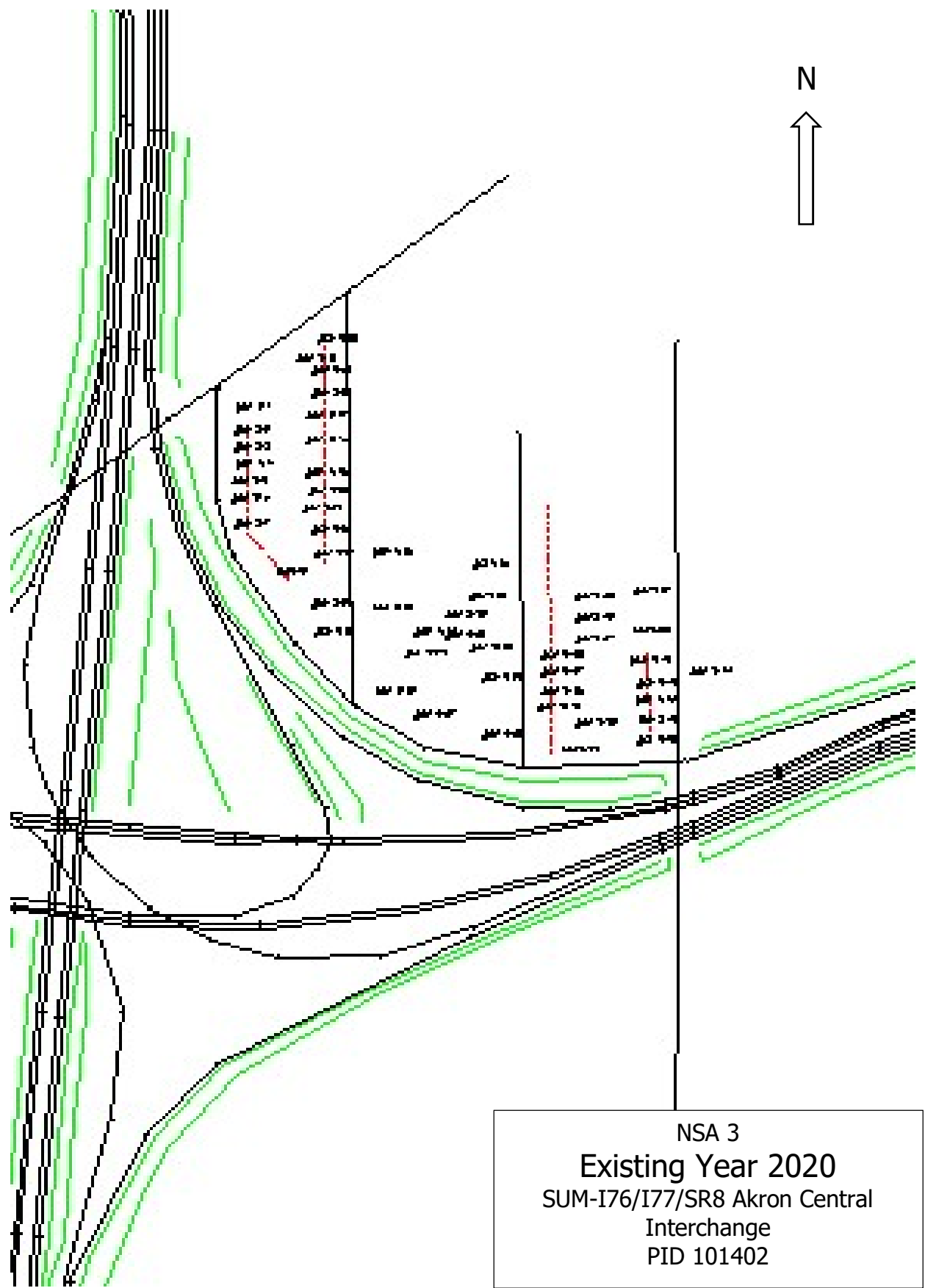
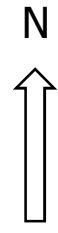
SUM-I76 Central Interchange (101402)

Lawhon & Assoc.							1 August 2017				
CMCox							TNM 2.5				
INPUT: RECEIVERS											
PROJECT/CONTRACT:		SUM-I76 Central Interchange (101402)									
RUN:		NSA 2 2020									
Receiver											
Name	No.	#DUs	Coordinates (ground)			Height above Ground	Input Sound Levels and Criteria				Active in Calc.
			X	Y	Z		Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	
			ft	ft	ft	ft	dBA	dBA	dB	dB	
NSA2-1	1	1	2,241,864.0	510,319.0	1,038.00	4.92	0.00	66	10.0	8.0	
NSA2-2	2	1	2,241,982.0	510,317.0	1,035.00	4.92	0.00	66	10.0	8.0	
NSA2-3	3	1	2,242,091.0	510,353.0	1,034.00	4.92	0.00	66	10.0	8.0	
NSA2-4	4	1	2,241,866.0	510,350.0	1,039.00	4.92	0.00	66	10.0	8.0	
NSA2-5	5	1	2,241,855.0	510,384.0	1,040.00	4.92	0.00	66	10.0	8.0	
NSA2-6	6	1	2,241,866.0	510,406.0	1,041.00	4.92	0.00	66	10.0	8.0	
NSA2-7	7	1	2,241,997.0	510,412.0	1,032.00	4.92	0.00	66	10.0	8.0	
NSA2-8	8	1	2,242,090.0	510,410.0	1,034.00	4.92	0.00	66	10.0	8.0	
NSA2-9	9	1	2,241,852.0	510,440.0	1,041.00	4.92	0.00	66	10.0	8.0	
NSA2-10	10	1	2,242,090.0	510,451.0	1,038.00	4.92	0.00	66	10.0	8.0	
NSA2-11	11	4	2,241,898.0	510,485.0	1,041.00	4.92	0.00	66	10.0	8.0	
NSA2-12	12	1	2,242,090.0	510,484.0	1,034.00	4.92	0.00	66	10.0	8.0	
NSA2-13	13	4	2,241,896.0	510,515.0	1,041.00	4.92	0.00	66	10.0	8.0	
NSA2-14	14	1	2,242,040.0	510,525.0	1,035.00	4.92	0.00	66	10.0	8.0	
NSA2-15	15	1	2,242,597.0	510,368.0	1,070.00	4.92	0.00	66	10.0	8.0	
NSA2-16	16	1	2,242,601.0	510,404.0	1,072.00	4.92	0.00	66	10.0	8.0	
NSA2-17	17	1	2,242,597.0	510,445.0	1,075.00	4.92	0.00	66	10.0	8.0	
NSA2-18	18	1	2,242,726.0	510,435.0	1,080.00	4.92	0.00	66	10.0	8.0	
NSA2-19	19	1	2,242,860.0	510,415.0	1,082.00	4.92	0.00	66	10.0	8.0	
NSA2-20	20	1	2,242,936.0	510,425.0	1,084.00	4.92	0.00	66	10.0	8.0	
NSA2-21	21	1	2,242,975.0	510,470.0	1,086.00	4.92	0.00	66	10.0	8.0	
NSA2-22	22	1	2,242,601.0	510,485.0	1,076.00	4.92	0.00	66	10.0	8.0	

INPUT: RECEIVERS**SUM-I76 Central Interchange (101402)**

NSA2-23	23	1	2,242,721.0	510,473.0	1,078.00	4.92	0.00	66	10.0	8.0	
NSA2-24	24	1	2,242,601.0	510,517.0	1,077.00	4.92	0.00	66	10.0	8.0	
NSA2-25	25	1	2,242,712.0	510,515.0	1,081.00	4.92	0.00	66	10.0	8.0	
NSA2-26	26	1	2,242,812.0	510,505.0	1,078.00	4.92	0.00	66	10.0	8.0	
NSA2-27	27	1	2,242,670.0	510,544.0	1,081.00	4.92	0.00	66	10.0	8.0	
NSA2-28	28	1	2,242,814.0	510,559.0	1,084.00	4.92	0.00	66	10.0	8.0	
NSA2-29	29	1	2,242,601.0	510,602.0	1,072.00	4.92	0.00	66	10.0	8.0	
NSA2-30	30	1	2,242,711.0	510,583.0	1,076.00	4.92	0.00	66	10.0	8.0	
NSA2-31	31	1	2,242,813.0	510,594.0	1,083.00	4.92	0.00	66	10.0	8.0	
NSA2-32	32	1	2,242,814.0	510,624.0	1,083.00	4.92	0.00	66	10.0	8.0	
NSA2-33	33	1	2,242,977.0	510,649.0	1,087.00	4.92	0.00	66	10.0	8.0	
NSA2-34	34	1	2,242,990.0	510,763.0	1,089.00	4.92	0.00	66	10.0	8.0	
NSA2-35	35	1	2,243,023.0	510,966.0	1,087.00	4.92	0.00	66	10.0	8.0	Y
NSA2-36	36	1	2,243,118.0	511,008.0	1,092.00	4.92	0.00	66	10.0	8.0	Y
NSA2-37	37	1	2,243,111.0	511,107.0	1,093.00	4.92	0.00	66	10.0	8.0	Y
NSA2-38	38	1	2,243,085.0	511,222.0	1,093.00	4.92	0.00	66	10.0	8.0	Y

NSA 3



NSA 3
Existing Year 2020
SUM-I76/I77/SR8 Akron Central
Interchange
PID 101402

RESULTS: SOUND LEVELS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.													
CMCox													
1 August 2017													
TNM 2.5													
Calculated with TNM 2.5													
RESULTS: SOUND LEVELS													
PROJECT/CONTRACT: SUM-I76 Central Interchange (101402)													
RUN: Existing Year 2020 NSA 3													
BARRIER DESIGN: INPUT HEIGHTS													
Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.													
ATMOSPHERICS: 68 deg F, 50% RH													
Receiver													
Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h	Increase over existing			Type	With Barrier LAeq1h	Noise Reduction			
				Calculated	Crit'n	Calculated	Crit'n	Impact		Calculated	Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB	dB
NSA 3-1	36	1	0.0	65.3	66	65.3	10	----	65.3	0.0	8	-8.0	
NSA 3-2	37	1	0.0	65.3	66	65.3	10	----	65.3	0.0	8	-8.0	
NSA 3-3	38	1	0.0	65.3	66	65.3	10	----	65.3	0.0	8	-8.0	
NSA 3-4	39	1	0.0	65.8	66	65.8	10	----	65.8	0.0	8	-8.0	
NSA 3-5	40	1	0.0	66.8	66	66.8	10	Snd Lvl	66.8	0.0	8	-8.0	
NSA 3-6	41	1	0.0	67.4	66	67.4	10	Snd Lvl	67.4	0.0	8	-8.0	
NSA 3-7	42	1	0.0	67.5	66	67.5	10	Snd Lvl	67.5	0.0	8	-8.0	
NSA3-8	43	1	0.0	65.6	66	65.6	10	----	65.6	0.0	8	-8.0	
NSA 3-9	44	1	0.0	65.8	66	65.8	10	----	65.8	0.0	8	-8.0	
NSA 3-10	45	1	0.0	65.3	66	65.3	10	----	65.3	0.0	8	-8.0	
NSA 3-11	46	1	0.0	62.3	66	62.3	10	----	62.3	0.0	8	-8.0	
NSA 3-12	47	1	0.0	61.8	66	61.8	10	----	61.8	0.0	8	-8.0	
NSA 3-13	48	1	0.0	62.0	66	62.0	10	----	62.0	0.0	8	-8.0	
NSA 3-14	49	1	0.0	61.9	66	61.9	10	----	61.9	0.0	8	-8.0	
NSA 3-15	50	2	0.0	61.4	66	61.4	10	----	61.4	0.0	8	-8.0	
NSA 3-16	51	1	0.0	61.3	66	61.3	10	----	61.3	0.0	8	-8.0	
NSA 3-17	52	1	0.0	61.6	66	61.6	10	----	61.6	0.0	8	-8.0	
NSA 3-18	53	1	0.0	61.6	66	61.6	10	----	61.6	0.0	8	-8.0	
NSA 3-19	54	1	0.0	62.4	66	62.4	10	----	62.4	0.0	8	-8.0	
NSA 3-20	55	1	0.0	62.8	66	62.8	10	----	62.8	0.0	8	-8.0	
NSA 3-21	56	1	0.0	63.3	66	63.3	10	----	63.3	0.0	8	-8.0	
NSA 3-22	57	1	0.0	65.5	66	65.5	10	----	65.5	0.0	8	-8.0	
NSA 3-23	58	1	0.0	65.0	66	65.0	10	----	65.0	0.0	8	-8.0	
NSA 3-24	59	1	0.0	64.8	66	64.8	10	----	64.8	0.0	8	-8.0	

RESULTS: SOUND LEVELS

SUM-I76 Central Interchange (101402)

NSA 3-25	60	1	0.0	63.7	66	63.7	10	----	63.7	0.0	8	-8.0
NSA 3-26	61	1	0.0	63.5	66	63.5	10	----	63.5	0.0	8	-8.0
NSA 3-27	62	1	0.0	66.9	66	66.9	10	Snd Lvl	66.9	0.0	8	-8.0
NSA 3-28	63	1	0.0	72.9	66	72.9	10	Snd Lvl	72.9	0.0	8	-8.0
NSA 3-29	64	1	0.0	65.9	66	65.9	10	----	65.9	0.0	8	-8.0
NSA 3-30	65	1	0.0	65.0	66	65.0	10	----	65.0	0.0	8	-8.0
NSA 3=31	66	1	0.0	65.0	66	65.0	10	----	65.0	0.0	8	-8.0
NSA 3-32	67	1	0.0	64.5	66	64.5	10	----	64.5	0.0	8	-8.0
NSA3-33	68	1	0.0	69.0	66	69.0	10	Snd Lvl	69.0	0.0	8	-8.0
NSA 3-34	69	1	0.0	67.8	66	67.8	10	Snd Lvl	67.8	0.0	8	-8.0
NSA 3-35	70	1	0.0	64.8	66	64.8	10	----	64.8	0.0	8	-8.0
NSA 3-36	71	1	0.0	64.3	66	64.3	10	----	64.3	0.0	8	-8.0
NSA 3-37	72	1	0.0	64.0	66	64.0	10	----	64.0	0.0	8	-8.0
NSA 3-38	73	1	0.0	63.4	66	63.4	10	----	63.4	0.0	8	-8.0
NSA 3-39	74	1	0.0	69.2	66	69.2	10	Snd Lvl	69.2	0.0	8	-8.0
NSA 3-40	75	1	0.0	67.6	66	67.6	10	Snd Lvl	67.6	0.0	8	-8.0
NSA 3-41	76	1	0.0	66.6	66	66.6	10	Snd Lvl	66.6	0.0	8	-8.0
NSA 3-42	77	1	0.0	65.7	66	65.7	10	----	65.7	0.0	8	-8.0
NSA 3-43	78	1	0.0	65.4	66	65.4	10	----	65.4	0.0	8	-8.0
NSA 3-44	79	1	0.0	67.3	66	67.3	10	Snd Lvl	67.3	0.0	8	-8.0
NSA3-45	80	1	0.0	64.0	66	64.0	10	----	64.0	0.0	8	-8.0
NSA3-46	81	1	0.0	63.1	66	63.1	10	----	63.1	0.0	8	-8.0
NSA3-47	82	1	0.0	65.4	66	65.4	10	----	65.4	0.0	8	-8.0
NSA3-48	83	1	0.0	64.9	66	64.9	10	----	64.9	0.0	8	-8.0
NSA3-49	84	1	0.0	64.1	66	64.1	10	----	64.1	0.0	8	-8.0
NSA3-50	85	1	0.0	65.0	66	65.0	10	----	65.0	0.0	8	-8.0
NSA3-51	86	1	0.0	63.8	66	63.8	10	----	63.8	0.0	8	-8.0
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		52	0.0	0.0	0.0							
All Impacted		11	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

INPUT: RECEIVERS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.							1 August 2017				
CMCox							TNM 2.5				
INPUT: RECEIVERS											
PROJECT/CONTRACT:		SUM-I76 Central Interchange (101402)									
RUN:		Existing Year 2020 NSA 3									
Receiver											
Name	No.	#DUs	Coordinates (ground)			Height above Ground	Input Sound Levels and Criteria				Active in Calc.
			X	Y	Z		Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	
			ft	ft	ft	ft	dBA	dBA	dB	dB	
NSA 3-1	36	1	2,243,514.0	510,911.0	1,104.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-2	37	1	2,243,511.0	510,860.0	1,103.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-3	38	1	2,243,511.0	510,822.0	1,102.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-4	39	1	2,243,514.0	510,782.0	1,102.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-5	40	1	2,243,506.0	510,746.0	1,102.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-6	41	1	2,243,507.0	510,707.0	1,102.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-7	42	1	2,243,510.0	510,649.0	1,100.00	4.92	0.00	66	10.0	8.0	Y
NSA3-8	43	1	2,243,593.0	510,541.0	1,099.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-9	44	1	2,243,676.0	510,404.0	1,095.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-10	45	1	2,243,671.0	510,470.0	1,099.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-11	46	1	2,243,679.0	510,582.0	1,102.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-12	47	1	2,243,671.0	510,635.0	1,103.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-13	48	1	2,243,653.0	510,683.0	1,104.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-14	49	1	2,243,665.0	510,722.0	1,106.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-15	50	2	2,243,661.0	510,763.0	1,105.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-16	51	1	2,243,661.0	510,837.0	1,107.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-17	52	1	2,243,661.0	510,893.0	1,109.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-18	53	1	2,243,671.0	510,944.0	1,110.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-19	54	1	2,243,672.0	510,993.0	1,113.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-20	55	1	2,243,682.0	511,063.0	1,116.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-21	56	1	2,243,641.0	511,021.0	1,113.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-22	57	1	2,243,802.0	510,272.0	1,091.00	4.92	0.00	66	10.0	8.0	Y

INPUT: RECEIVERS**SUM-I76 Central Interchange (101402)**

NSA 3-23	58	1	2,243,863.0	510,357.0	1,099.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-24	59	1	2,243,885.0	510,404.0	1,102.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-25	60	1	2,243,796.0	510,459.0	1,098.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-26	61	1	2,243,796.0	510,583.0	1,106.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-27	62	1	2,243,884.0	510,218.0	1,095.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-28	63	1	2,244,025.0	510,174.0	1,198.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-29	64	1	2,244,021.0	510,302.0	1,101.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-30	65	1	2,244,000.0	510,369.0	1,102.00	4.92	0.00	66	10.0	8.0	Y
NSA 3=31	66	1	2,243,948.0	510,397.0	1,103.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-32	67	1	2,243,947.0	510,445.0	1,104.00	4.92	0.00	66	10.0	8.0	Y
NSA3-33	68	1	2,244,187.0	510,139.0	1,099.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-34	69	1	2,244,217.0	510,200.0	1,099.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-35	70	1	2,244,141.0	510,236.0	1,099.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-36	71	1	2,244,147.0	510,272.0	1,100.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-37	72	1	2,244,145.0	510,314.0	1,101.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-38	73	1	2,244,145.0	510,352.0	1,101.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-39	74	1	2,244,343.0	510,160.0	1,100.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-40	75	1	2,244,342.0	510,208.0	1,101.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-41	76	1	2,244,340.0	510,251.0	1,101.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-42	77	1	2,244,343.0	510,289.0	1,101.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-43	78	1	2,244,328.0	510,341.0	1,101.00	4.92	0.00	66	10.0	8.0	Y
NSA 3-44	79	1	2,244,454.0	510,317.0	1,103.00	4.92	0.00	66	10.0	8.0	Y
NSA3-45	80	1	2,243,998.0	510,486.0	1,104.00	4.92	0.00	66	10.0	8.0	Y
NSA3-46	81	1	2,244,004.0	510,557.0	1,104.00	4.92	0.00	66	10.0	8.0	Y
NSA3-47	82	1	2,244,217.5	510,389.0	1,102.00	4.92	0.00	66	10.0	8.0	Y
NSA3-48	83	1	2,244,217.5	510,438.0	1,103.00	4.92	0.00	66	10.0	8.0	Y
NSA3-49	84	1	2,244,217.5	510,486.0	1,103.00	4.92	0.00	66	10.0	8.0	Y
NSA3-50	85	1	2,244,334.0	510,408.0	1,101.00	4.92	0.00	66	10.0	8.0	Y
NSA3-51	86	1	2,244,338.0	510,499.0	1,102.00	4.92	0.00	66	10.0	8.0	Y

INPUT: BUILDING ROWS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.							1 August 2017
CMCox							TNM 2.5
INPUT: BUILDING ROWS							
PROJECT/CONTRACT:		SUM-I76 Central Interchange (101402)					
RUN:		Existing Year 2020 NSA 3					
Building Row			Points				
Name	Average	Building	No.	Coordinates (ground)			
	Height	Percent		X	Y	Z	
	ft	%		ft	ft	ft	
Lumiere St ws	20.00	70	11	2,243,532.0	510,883.0	1,104.00	
			12	2,243,532.0	510,639.0	1,100.00	
			13	2,243,626.0	510,520.0	1,099.00	
Hammel St ws	20.00	70	14	2,243,696.0	511,073.0	1,116.00	
			16	2,243,694.2	510,910.4	1,110.00	
			15	2,243,696.0	510,561.0	1,102.00	
Gridley Street es	18.00	70	17	2,244,157.0	510,694.0	1,102.00	
			18	2,244,161.0	510,134.0	1,099.00	
Inman Street	18.00	60	19	2,244,359.0	510,360.0	1,101.00	
			20	2,244,368.0	510,156.0	1,100.00	

RESULTS: SOUND LEVELS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc. CMCox		1 August 2017 TNM 2.5 Calculated with TNM 2.5										
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		SUM-I76 Central Interchange (101402)										
RUN:		Existing Year 2020 NSA 4 and 7										
BARRIER DESIGN:		INPUT HEIGHTS Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.										
ATMOSPHERICS:		68 deg F, 50% RH										
Receiver												
Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h	Increase over existing		Type	With Barrier	Noise Reduction			
				Calculated	Crit'n	Calculated	Crit'n	Impact	Calculated LAeq1h	Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
football west bleachers	110	1	0.0	64.0	66	64.0	10	----	64.0	0.0	4	-4.5
football east bleachers	111	1	0.0	65.1	66	65.1	10	----	65.1	0.0	4	-4.5
baseball home plate	112	1	0.0	64.3	66	64.3	10	----	64.3	0.0	4	-4.5
baseball west bleachers	113	1	0.0	64.0	66	64.0	10	----	64.0	0.0	4	-4.5
tennis courts	114	1	0.0	58.3	66	58.3	10	----	58.3	0.0	4	-4.5
Hoban HS indoor	115	1	0.0	52.4	66	52.4	10	----	52.4	0.0	4	-4.5
Track & Field West	116	1	0.0	68.0	66	68.0	10	Snd Lvl	68.0	0.0	4	-4.5
Track & Field East	117	1	0.0	69.1	66	69.1	10	Snd Lvl	69.1	0.0	4	-4.5
Trail	118	1	0.0	63.7	66	63.7	10	----	63.7	0.0	4	-4.5
Memorial	119	1	0.0	68.6	66	68.6	10	Snd Lvl	68.6	0.0	4	-4.5
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		10	0.0	0.0	0.0							
All Impacted		3	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

INPUT: RECEIVERS

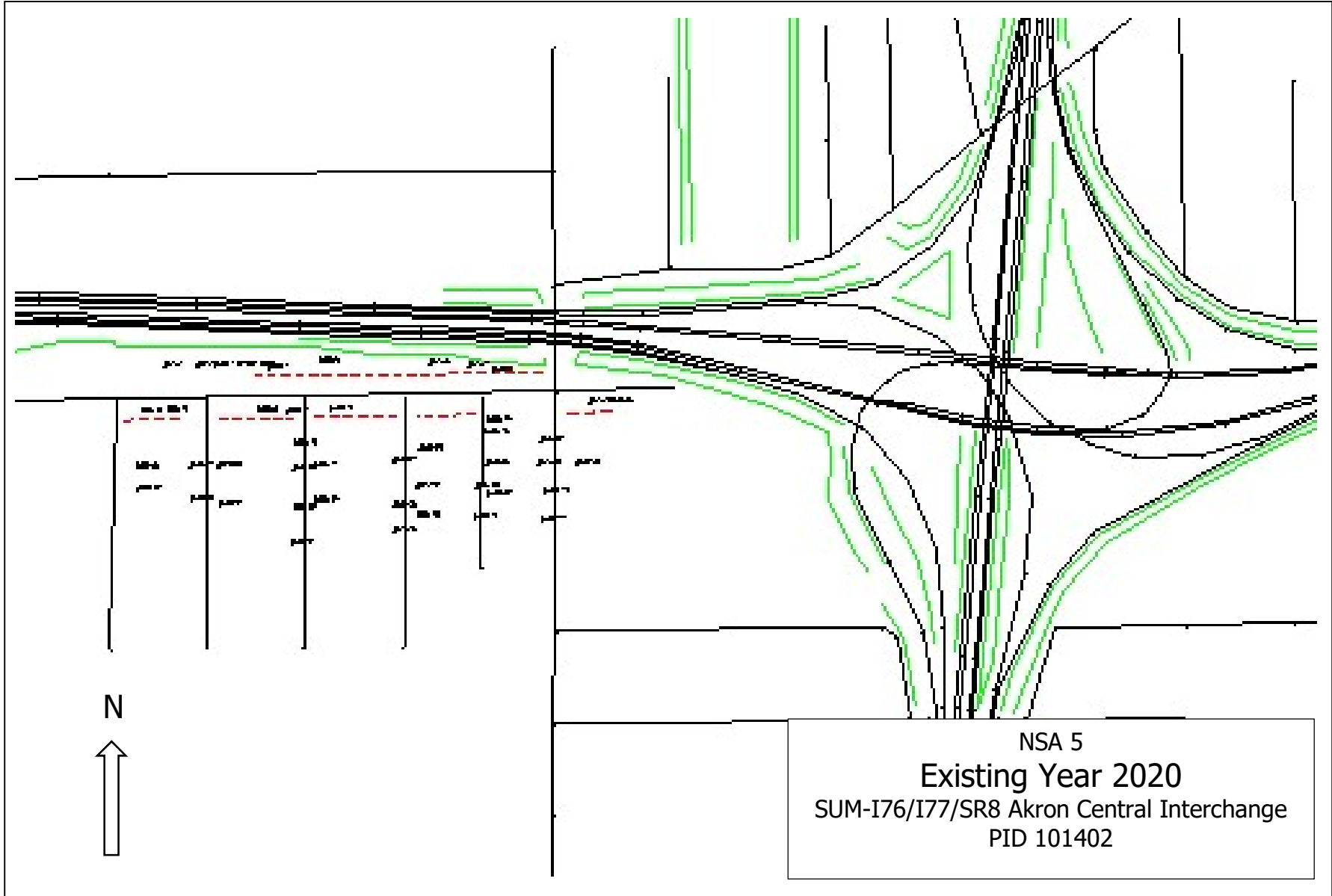
SUM-I76 Central Interchange (101402)

Lawhon & Assoc.												
CMCox												
INPUT: RECEIVERS												
PROJECT/CONTRACT:	SUM-I76 Central Interchange (101402)											
RUN:	Existing Year 2020 NSA 4 and 7											
Receiver												
Name	No.	#DUs	Coordinates (ground)			Height	Input Sound Levels and Criteria				Active	
			X	Y	Z	above	Existing	Impact Criteria		NR	in	
						Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.	
			ft	ft	ft	ft	dBA	dBA	dB	dB		
football west bleachers	110	1	2,244,613.0	510,605.0	1,101.00	4.92	0.00	66	10.0	4.5	Y	
football east bleachers	111	1	2,244,936.0	510,612.0	1,101.00	4.92	0.00	66	10.0	4.5	Y	
baseball home plate	112	1	2,245,144.0	510,591.0	1,100.00	4.92	0.00	66	10.0	4.5	Y	
baseball west bleachers	113	1	2,245,012.0	510,675.0	1,100.00	4.92	0.00	66	10.0	4.5	Y	
tennis courts	114	1	2,246,178.0	510,195.8	1,150.00	4.92	0.00	66	10.0	4.5	Y	
Hoban HS indoor	115	1	2,245,731.2	510,247.0	1,168.00	4.92	0.00	66	10.0	4.5	Y	
Track & Field West	116	1	2,245,567.0	510,568.0	1,144.00	4.92	0.00	66	10.0	4.5	Y	
Track & Field East	117	1	2,245,751.0	510,599.0	1,144.00	4.92	0.00	66	10.0	4.5	Y	
Trail	118	1	2,245,627.0	510,695.0	1,143.00	4.92	0.00	66	10.0	4.5	Y	
Memorial	119	1	2,245,176.0	510,466.0	1,118.00	4.92	0.00	66	10.0	4.5	Y	

INPUT: BUILDING ROWS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.					1 August 2017	
CMCox					TNM 2.5	
INPUT: BUILDING ROWS						
PROJECT/CONTRACT:		SUM-I76 Central Interchange (101402)				
RUN:		Existing Year 2020 NSA 4 and 5				
Building Row			Points			
Name	Average	Building	No.	Coordinates (ground)		
	Height	Percent		X	Y	Z
	ft	%		ft	ft	ft
<< This table is empty >>						



NSA 5
Existing Year 2020
SUM-I76/I77/SR8 Akron Central Interchange
PID 101402

RESULTS: SOUND LEVELS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.												
CMCox												
1 August 2017												
TNM 2.5												
Calculated with TNM 2.5												
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT: SUM-I76 Central Interchange (101402)												
RUN: Existing Year 2020 NSA 5												
BARRIER DESIGN: INPUT HEIGHTS												
Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.												
ATMOSPHERICS: 68 deg F, 50% RH												
Receiver												
Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h	Increase over existing		Type	With Barrier		Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n	Impact	Calculated LAeq1h	Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
NSA5-1	36	1	0.0	73.4	66	73.4	10	Snd Lvl	73.4	0.0	8	-8.0
NSA5-2	37	1	0.0	74.0	66	74.0	10	Snd Lvl	74.0	0.0	8	-8.0
NSA5-3 church indoor	38	1	0.0	74.0	66	74.0	10	Snd Lvl	74.0	0.0	8	-8.0
NSA5-4	39	2	0.0	71.8	66	71.8	10	Snd Lvl	71.8	0.0	8	-8.0
NSA5-5	41	2	0.0	73.9	66	73.9	10	Snd Lvl	73.9	0.0	8	-8.0
NSA5-6	43	2	0.0	73.5	66	73.5	10	Snd Lvl	73.5	0.0	8	-8.0
NSA5-7	45	2	0.0	72.6	66	72.6	10	Snd Lvl	72.6	0.0	8	-8.0
NSA5-8	46	1	0.0	71.4	66	71.4	10	Snd Lvl	71.4	0.0	8	-8.0
NSA5-9	47	1	0.0	67.3	66	67.3	10	Snd Lvl	67.3	0.0	8	-8.0
NSA5-10	49	3	0.0	67.9	66	67.9	10	Snd Lvl	67.9	0.0	8	-8.0
NSA5-11	51	3	0.0	68.1	66	68.1	10	Snd Lvl	68.1	0.0	8	-8.0
NSA5-12	53	4	0.0	67.2	66	67.2	10	Snd Lvl	67.2	0.0	8	-8.0
NSA5-13	54	2	0.0	67.2	66	67.2	10	Snd Lvl	67.2	0.0	8	-8.0
NSA5-14	56	2	0.0	69.1	66	69.1	10	Snd Lvl	69.1	0.0	8	-8.0
NSA5-15	58	2	0.0	69.0	66	69.0	10	Snd Lvl	69.0	0.0	8	-8.0
NSA5-16	59	2	0.0	63.7	66	63.7	10	----	63.7	0.0	8	-8.0
NSA5-17	60	2	0.0	64.6	66	64.6	10	----	64.6	0.0	8	-8.0
NSA5-18	61	3	0.0	65.3	66	65.3	10	----	65.3	0.0	8	-8.0
NSA5-19	62	2	0.0	66.4	66	66.4	10	Snd Lvl	66.4	0.0	8	-8.0
NSA5-22	63	3	0.0	65.7	66	65.7	10	----	65.7	0.0	8	-8.0
NSA5-23	64	1	0.0	66.1	66	66.1	10	Snd Lvl	66.1	0.0	8	-8.0
NSA5-24	65	1	0.0	68.3	66	68.3	10	Snd Lvl	68.3	0.0	8	-8.0
NSA5-25	66	1	0.0	67.4	66	67.4	10	Snd Lvl	67.4	0.0	8	-8.0
NSA5-26	83	2	0.0	65.9	66	65.9	10	----	65.9	0.0	8	-8.0

RESULTS: SOUND LEVELS

SUM-I76 Central Interchange (101402)

NSA5-29	84	1	0.0	62.7	66	62.7	10	----	62.7	0.0	8	-8.0
NSA5-30	85	2	0.0	62.9	66	62.9	10	----	62.9	0.0	8	-8.0
NSA5-31	86	1	0.0	64.6	66	64.6	10	----	64.6	0.0	8	-8.0
NSA5-20	87	2	0.0	65.1	66	65.1	10	----	65.1	0.0	8	-8.0
NSA5-21	88	2	0.0	65.0	66	65.0	10	----	65.0	0.0	8	-8.0
NSA5-27	90	1	0.0	68.4	66	68.4	10	Snd Lvl	68.4	0.0	8	-8.0
NSA5-28	91	2	0.0	66.9	66	66.9	10	Snd Lvl	66.9	0.0	8	-8.0
NSA5-32	94	2	0.0	64.2	66	64.2	10	----	64.2	0.0	8	-8.0
NSA5-33	95	3	0.0	63.3	66	63.3	10	----	63.3	0.0	8	-8.0
NSA5-34	96	3	0.0	63.7	66	63.7	10	----	63.7	0.0	8	-8.0
NSA5-35	97	2	0.0	64.1	66	64.1	10	----	64.1	0.0	8	-8.0
NSA5-36	98	2	0.0	63.7	66	63.7	10	----	63.7	0.0	8	-8.0
NSA5-37	99	1	0.0	64.6	66	64.6	10	----	64.6	0.0	8	-8.0
NSA5-38	100	2	0.0	63.7	66	63.7	10	----	63.7	0.0	8	-8.0
NSA5-39	101	1	0.0	31.8	66	31.8	10	----	31.8	0.0	8	-8.0
NSA5-40	102	2	0.0	31.2	66	31.2	10	----	31.2	0.0	8	-8.0
NSA5-42	103	1	0.0	64.9	66	64.9	10	----	64.9	0.0	8	-8.0
NSA5-43	104	2	0.0	65.3	66	65.3	10	----	65.3	0.0	8	-8.0
NSA5-44	105	1	0.0	64.1	66	64.1	10	----	64.1	0.0	8	-8.0
NSA5-45	106	1	0.0	66.8	66	66.8	10	Snd Lvl	66.8	0.0	8	-8.0
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		80	0.0	0.0	0.0							
All Impacted		38	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

INPUT: RECEIVERS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc. CMCox							1 August 2017 TNM 2.5				
INPUT: RECEIVERS											
PROJECT/CONTRACT:		SUM-I76 Central Interchange (101402)									
RUN:		Existing Year 2020 NSA 5									
Receiver											
Name	No.	#DUs	Coordinates (ground)			Height above Ground	Input Sound Levels and Criteria				Active in Calc.
			X	Y	Z		Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	
			ft	ft	ft	ft	dBA	dBA	dB	dB	
NSA5-1	36	1	2,240,552.0	509,963.0	1,034.00	4.92	0.00	66	10.0	8.0	
NSA5-2	37	1	2,240,657.0	509,968.0	1,035.00	4.92	0.00	66	10.0	8.0	
NSA5-3 church indoor	38	1	2,240,710.0	509,967.0	1,036.00	4.92	0.00	66	10.0	8.0	
NSA5-4	39	2	2,240,880.0	509,959.0	1,036.00	4.92	0.00	66	10.0	8.0	
NSA5-5	41	2	2,241,041.0	509,977.0	1,040.00	4.92	0.00	66	10.0	8.0	
NSA5-6	43	2	2,241,385.0	509,972.0	1,044.00	4.92	0.00	66	10.0	8.0	
NSA5-7	45	2	2,241,507.0	509,963.0	1,046.00	4.92	0.00	66	10.0	8.0	
NSA5-8	46	1	2,241,582.0	509,950.0	1,046.00	4.92	0.00	66	10.0	8.0	
NSA5-9	47	1	2,240,476.0	509,817.0	1,034.00	4.92	0.00	66	10.0	8.0	
NSA5-10	49	3	2,240,557.0	509,824.0	1,035.00	4.92	0.00	66	10.0	8.0	
NSA5-11	51	3	2,240,846.0	509,824.0	1,037.00	4.92	0.00	66	10.0	8.0	
NSA5-12	53	4	2,240,938.0	509,822.0	1,037.00	4.92	0.00	66	10.0	8.0	
NSA5-13	54	2	2,241,074.0	509,830.0	1,037.00	4.92	0.00	66	10.0	8.0	
NSA5-14	56	2	2,241,887.0	509,849.0	1,050.00	4.92	0.00	66	10.0	8.0	
NSA5-15	58	2	2,241,955.0	509,850.0	1,052.00	4.92	0.00	66	10.0	8.0	
NSA5-16	59	2	2,240,465.0	509,645.0	1,036.00	4.92	0.00	66	10.0	8.0	
NSA5-17	60	2	2,240,634.0	509,648.0	1,039.00	4.92	0.00	66	10.0	8.0	
NSA5-18	61	3	2,240,723.0	509,652.0	1,041.00	4.92	0.00	66	10.0	8.0	
NSA5-19	62	2	2,240,961.0	509,719.0	1,040.00	4.92	0.00	66	10.0	8.0	
NSA5-22	63	3	2,241,274.0	509,667.0	1,043.00	4.92	0.00	66	10.0	8.0	
NSA5-23	64	1	2,241,355.0	509,703.0	1,043.00	4.92	0.00	66	10.0	8.0	
NSA5-24	65	1	2,241,568.0	509,791.0	1,046.00	4.92	0.00	66	10.0	8.0	

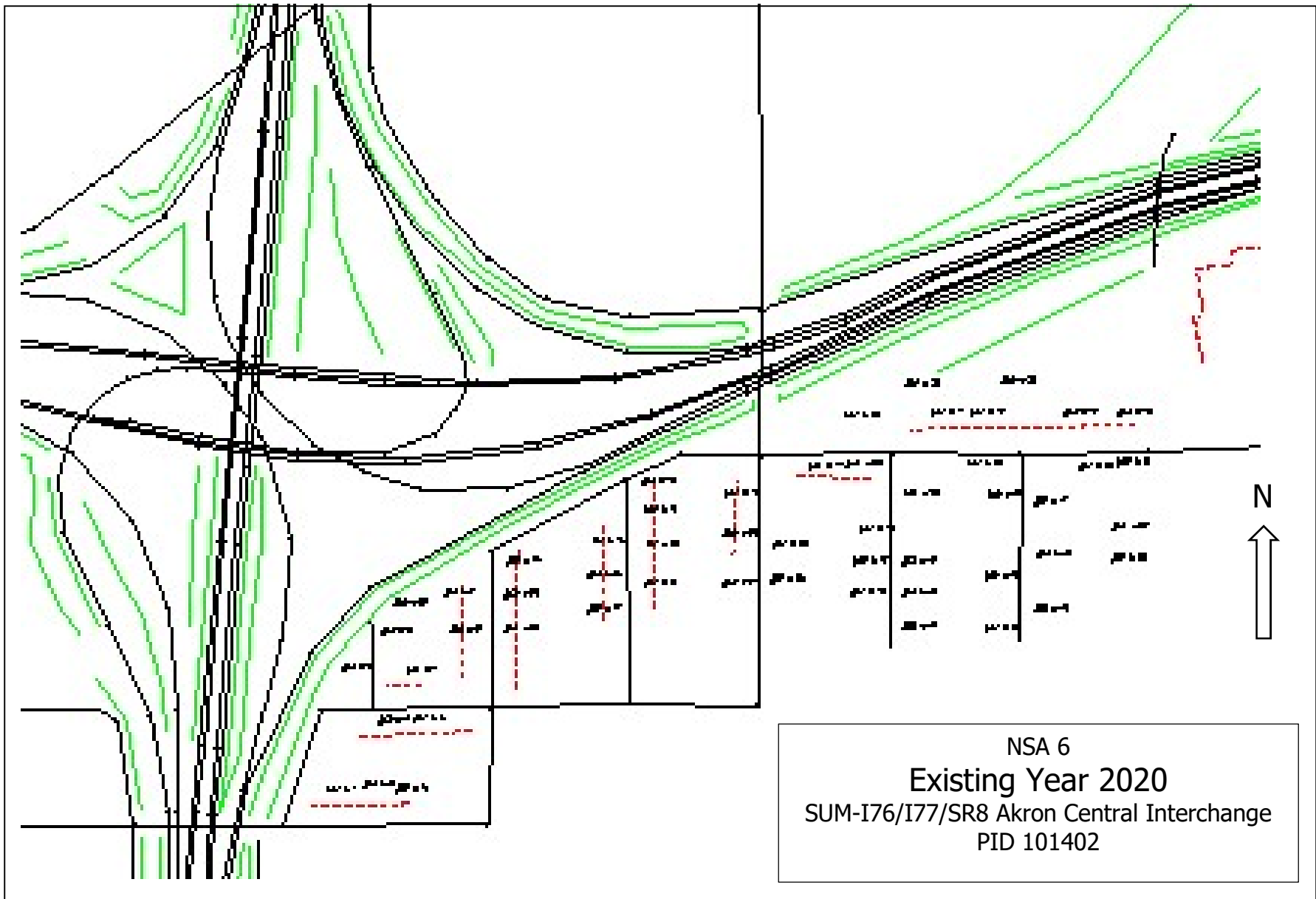
INPUT: RECEIVERS**SUM-I76 Central Interchange (101402)**

NSA5-25	66	1	2,241,560.0	509,752.0	1,046.00	4.92	0.00	66	10.0	8.0	
NSA5-26	83	2	2,241,565.0	509,656.0	1,048.00	4.92	0.00	66	10.0	8.0	
NSA5-29	84	1	2,240,468.0	509,579.0	1,036.00	4.92	0.00	66	10.0	8.0	
NSA5-30	85	2	2,240,635.0	509,546.5	1,041.00	4.92	0.00	66	10.0	8.0	
NSA5-31	86	1	2,240,724.0	509,531.0	1,050.00	4.92	0.00	66	10.0	8.0	
NSA5-20	87	2	2,240,955.0	509,639.0	1,042.00	4.92	0.00	66	10.0	8.0	
NSA5-21	88	2	2,241,026.0	509,647.0	1,040.00	4.92	0.00	66	10.0	8.0	
NSA5-27	90	1	2,241,732.0	509,728.0	1,053.00	4.92	0.00	66	10.0	8.0	
NSA5-28	91	2	2,241,726.0	509,655.0	1,054.00	4.92	0.00	66	10.0	8.0	
NSA5-32	94	2	2,240,954.0	509,517.0	1,050.00	4.92	0.00	66	10.0	8.0	
NSA5-33	95	3	2,240,951.0	509,409.0	1,056.00	4.92	0.00	66	10.0	8.0	
NSA5-34	96	3	2,241,025.0	509,540.0	1,043.00	4.92	0.00	66	10.0	8.0	Y
NSA5-35	97	2	2,241,274.0	509,525.0	1,048.00	4.92	0.00	66	10.0	8.0	
NSA5-36	98	2	2,241,272.0	509,446.0	1,054.00	4.92	0.00	66	10.0	8.0	
NSA5-37	99	1	2,241,345.0	509,587.0	1,045.00	4.92	0.00	66	10.0	8.0	Y
NSA5-38	100	2	2,241,343.0	509,491.0	1,048.00	4.92	0.00	66	10.0	8.0	Y
NSA5-39	101	1	2,241,530.0	509,583.0	0.00	4.92	0.00	66	10.0	8.0	Y
NSA5-40	102	2	2,241,528.0	509,491.0	0.00	4.92	0.00	66	10.0	8.0	Y
NSA5-42	103	1	2,241,567.0	509,561.0	1,049.00	4.92	0.00	66	10.0	8.0	Y
NSA5-43	104	2	2,241,746.0	509,571.0	1,054.00	4.92	0.00	66	10.0	8.0	Y
NSA5-44	105	1	2,241,737.0	509,482.0	1,055.00	4.92	0.00	66	10.0	8.0	Y
NSA5-45	106	1	2,241,846.0	509,659.0	1,055.00	4.92	0.00	66	10.0	8.0	Y

INPUT: BUILDING ROWS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.					1 August 2017		
CMCox					TNM 2.5		
INPUT: BUILDING ROWS							
PROJECT/CONTRACT:		SUM-I76 Central Interchange (101402)					
RUN:		Existing Year 2020 NSA 5					
Building Row			Points				
Name	Average	Building	No.	Coordinates (ground)			
	Height	Percent		X	Y	Z	
	ft	%		ft	ft	ft	
South Street ns	18.00	70	11	2,240,842.0	509,934.0	1,036.00	
			12	2,241,745.0	509,946.0	1,046.00	
South Street ss1	20.00	80	14	2,240,408.0	509,794.0	1,034.00	
			16	2,240,603.0	509,804.0	1,035.00	
South Street ss2	18.00	80	17	2,240,717.0	509,802.0	1,037.00	
			18	2,240,957.0	509,802.0	1,037.00	
South Street ss3	18.00	60	19	2,241,027.0	509,809.0	1,037.00	
			20	2,241,282.0	509,807.0	1,039.00	
South Street ss4	18.00	50	21	2,241,346.0	509,806.0	1,039.00	
			22	2,241,534.0	509,816.0	1,043.00	
South Street ss5	20.00	80	23	2,241,811.0	509,816.0	1,050.00	
			24	2,241,972.0	509,824.0	1,052.00	



RESULTS: SOUND LEVELS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc. CMCox													1 August 2017 TNM 2.5 Calculated with TNM 2.5																							
RESULTS: SOUND LEVELS																																				
PROJECT/CONTRACT:													SUM-I76 Central Interchange (101402)																							
RUN:													Existing Year 2020 NSA 6																							
BARRIER DESIGN:													INPUT HEIGHTS																							
													Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.																							
ATMOSPHERICS:													68 deg F, 50% RH																							
Receiver																																				
Name													No.		#DUs		Existing		No Barrier		With Barrier															
															LAeq1h		LAeq1h		Increase over existing		Type		Calculated		Noise Reduction											
																	Calculated		Crit'n		Calculated		Crit'n		Impact		LAeq1h		Calculated		Goal		Calculated			
																													minus		Goal					
															dBA		dBA		dBA		dB		dB				dBA		dB		dB		dB			
NSA 6-1													61		2		0.0		65.8		66		65.8		10		----		65.8		0.0		4		-4.5	
NSA 6-2													62		2		0.0		62.9		66		62.9		10		----		62.9		0.0		4		-4.5	
NSA 6-3													63		2		0.0		61.6		66		61.6		10		----		61.6		0.0		4		-4.5	
NSA 6-4													65		2		0.0		63.5		66		63.5		10		----		63.5		0.0		4		-4.5	
NSA 6-5													66		2		0.0		62.0		66		62.0		10		----		62.0		0.0		4		-4.5	
NSA 6-6													67		2		0.0		71.4		66		71.4		10		Snd Lvl		71.4		0.0		4		-4.5	
NSA 6-7													68		3		0.0		64.0		66		64.0		10		----		64.0		0.0		4		-4.5	
NSA 6-8													69		2		0.0		67.8		66		67.8		10		Snd Lvl		67.8		0.0		4		-4.5	
NSA 6-9													70		2		0.0		63.5		66		63.5		10		----		63.5		0.0		4		-4.5	
NSA 6-10													71		1		0.0		69.2		66		69.2		10		Snd Lvl		69.2		0.0		4		-4.5	
NSA 6-11													72		2		0.0		66.4		66		66.4		10		Snd Lvl		66.4		0.0		4		-4.5	
NSA 6-12													73		2		0.0		61.1		66		61.1		10		----		61.1		0.0		4		-4.5	
NSA 6-13													74		2		0.0		64.3		66		64.3		10		----		64.3		0.0		4		-4.5	
NSA 6-14													77		2		0.0		67.0		66		67.0		10		Snd Lvl		67.0		0.0		4		-4.5	
NSA 6-15													78		2		0.0		65.8		66		65.8		10		----		65.8		0.0		4		-4.5	
NSA 6-16													79		3		0.0		63.5		66		63.5		10		----		63.5		0.0		4		-4.5	
NSA 6-17													80		1		0.0		61.7		66		61.7		10		----		61.7		0.0		4		-4.5	
NSA 6-18													83		1		0.0		68.0		66		68.0		10		Snd Lvl		68.0		0.0		4		-4.5	
NSA 6-19													84		2		0.0		65.7		66		65.7		10		----		65.7		0.0		4		-4.5	
NSA 6-20													85		2		0.0		63.8		66		63.8		10		----		63.8		0.0		4		-4.5	
NSA 6-21													86		3		0.0		62.2		66		62.2		10		----		62.2		0.0		4		-4.5	
NSA 6-22													87		2		0.0		65.9		66		65.9		10		----		65.9		0.0		4		-4.5	
NSA 6-23													88		3		0.0		64.9		66		64.9		10		----		64.9		0.0		4		-4.5	
NSA 6-24													89		1		0.0		63.3		66		63.3		10		----		63.3		0.0		4		-4.5	

RESULTS: SOUND LEVELS

SUM-I76 Central Interchange (101402)

NSA 6-25	91	2	0.0	64.8	66	64.8	10	----	64.8	0.0	4	-4.5
NSA 6-26	92	2	0.0	63.8	66	63.8	10	----	63.8	0.0	4	-4.5
NSA 6-27	93	2	0.0	67.2	66	67.2	10	Snd Lvl	67.2	0.0	4	-4.5
NSA 6-28	94	3	0.0	67.1	66	67.1	10	Snd Lvl	67.1	0.0	4	-4.5
NSA 6-29	98	3	0.0	69.4	66	69.4	10	Snd Lvl	69.4	0.0	4	-4.5
NSA 6-30	99	1	0.0	68.9	66	68.9	10	Snd Lvl	68.9	0.0	4	-4.5
NSA 6-31	100	3	0.0	67.7	66	67.7	10	Snd Lvl	67.7	0.0	4	-4.5
NSA 6-32	101	2	0.0	67.5	66	67.5	10	Snd Lvl	67.5	0.0	4	-4.5
NSA 6-33	102	1	0.0	67.8	66	67.8	10	Snd Lvl	67.8	0.0	4	-4.5
NSA 6-34	103	3	0.0	64.5	66	64.5	10	----	64.5	0.0	4	-4.5
NSA 6-35	105	2	0.0	64.8	66	64.8	10	----	64.8	0.0	4	-4.5
NSA 6-36	106	2	0.0	65.2	66	65.2	10	----	65.2	0.0	4	-4.5
NSA 6-37	107	2	0.0	66.4	66	66.4	10	Snd Lvl	66.4	0.0	4	-4.5
NSA 6-38	108	2	0.0	63.2	66	63.2	10	----	63.2	0.0	4	-4.5
NSA 6-39	109	3	0.0	66.0	66	66.0	10	Snd Lvl	66.0	0.0	4	-4.5
NSA 6-40	110	1	0.0	65.5	66	65.5	10	----	65.5	0.0	4	-4.5
NSA 6-41	111	2	0.0	65.3	66	65.3	10	----	65.3	0.0	4	-4.5
NSA 6-42	112	2	0.0	63.2	66	63.2	10	----	63.2	0.0	4	-4.5
NSA 6-43	113	2	0.0	62.2	66	62.2	10	----	62.2	0.0	4	-4.5
NSA 6-44	114	2	0.0	61.0	66	61.0	10	----	61.0	0.0	4	-4.5
NSA 6-45	115	4	0.0	63.3	66	63.3	10	----	63.3	0.0	4	-4.5
NSA 6-46	116	1	0.0	61.9	66	61.9	10	----	61.9	0.0	4	-4.5
NSA 6-47	117	1	0.0	63.9	66	63.9	10	----	63.9	0.0	4	-4.5
NSA 6-48	118	3	0.0	62.3	66	62.3	10	----	62.3	0.0	4	-4.5
NSA 6-49	119	2	0.0	60.9	66	60.9	10	----	60.9	0.0	4	-4.5
NSA 6-50	120	1	0.0	63.6	66	63.6	10	----	63.6	0.0	4	-4.5
NSA 6-51	121	2	0.0	63.5	66	63.5	10	----	63.5	0.0	4	-4.5
NSA 6-52	122	2	0.0	43.4	66	43.4	10	----	43.4	0.0	4	-4.5
NSA 6-53	123	2	0.0	44.4	66	44.4	10	----	44.4	0.0	4	-4.5
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		108	0.0	0.0	0.0							
All Impacted		30	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

INPUT: RECEIVERS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.							1 August 2017				
CMCox							TNM 2.5				
INPUT: RECEIVERS											
PROJECT/CONTRACT:		SUM-I76 Central Interchange (101402)									
RUN:		Existing Year 2020 NSA 6									
Receiver											
Name	No.	#DUs	Coordinates (ground)			Height above Ground	Input Sound Levels and Criteria				Active in Calc.
			X	Y	Z		Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	
			ft	ft	ft	ft	dBA	dBA	dB	dB	
NSA 6-1	61	2	2,243,367.0	508,939.0	1,101.00	4.92	0.00	66	10.0	4.5	
NSA 6-2	62	2	2,243,458.0	508,953.0	1,102.00	4.92	0.00	66	10.0	4.5	
NSA 6-3	63	2	2,243,537.0	508,942.0	1,103.00	4.92	0.00	66	10.0	4.5	
NSA 6-4	65	2	2,243,496.0	509,111.0	1,102.00	4.92	0.00	66	10.0	4.5	
NSA 6-5	66	2	2,243,581.0	509,115.0	1,103.00	4.92	0.00	66	10.0	4.5	
NSA 6-6	67	2	2,243,408.0	509,240.0	1,108.00	4.92	0.00	66	10.0	4.5	
NSA 6-7	68	3	2,243,564.0	509,234.0	1,102.00	4.92	0.00	66	10.0	4.5	
NSA 6-8	69	2	2,243,503.0	509,330.0	1,103.00	4.92	0.00	66	10.0	4.5	
NSA 6-9	70	2	2,243,670.0	509,332.0	1,100.00	4.92	0.00	66	10.0	4.5	
NSA 6-10	71	1	2,243,532.0	509,398.0	1,100.00	4.92	0.00	66	10.0	4.5	
NSA 6-11	72	2	2,243,656.0	509,422.0	1,100.00	4.92	0.00	66	10.0	4.5	
NSA 6-12	73	2	2,243,804.0	509,334.0	1,100.00	4.92	0.00	66	10.0	4.5	
NSA 6-13	74	2	2,243,804.0	509,419.0	1,103.00	4.92	0.00	66	10.0	4.5	
NSA 6-14	77	2	2,243,808.0	509,499.0	1,103.00	4.92	0.00	66	10.0	4.5	
NSA 6-15	78	2	2,244,013.0	509,547.0	1,098.00	4.92	0.00	66	10.0	4.5	
NSA 6-16	79	3	2,244,008.0	509,467.0	1,098.00	4.92	0.00	66	10.0	4.5	
NSA 6-17	80	1	2,244,006.0	509,382.0	1,098.00	4.92	0.00	66	10.0	4.5	
NSA 6-18	83	1	2,244,139.0	509,695.0	1,097.00	4.92	0.00	66	10.0	4.5	
NSA 6-19	84	2	2,244,144.0	509,625.0	1,097.00	4.92	0.00	66	10.0	4.5	
NSA 6-20	85	2	2,244,145.0	509,538.0	1,097.00	4.92	0.00	66	10.0	4.5	
NSA 6-21	86	3	2,244,145.0	509,446.0	1,097.00	4.92	0.00	66	10.0	4.5	
NSA 6-22	87	2	2,244,341.0	509,665.0	1,100.00	4.92	0.00	66	10.0	4.5	

INPUT: RECEIVERS**SUM-I76 Central Interchange (101402)**

NSA 6-23	88	3	2,244,339.0	509,567.0	1,101.00	4.92	0.00	66	10.0	4.5	
NSA 6-24	89	1	2,244,339.0	509,447.0	1,101.00	4.92	0.00	66	10.0	4.5	
NSA 6-25	91	2	2,244,460.0	509,541.0	1,105.00	4.92	0.00	66	10.0	4.5	
NSA 6-26	92	2	2,244,454.0	509,455.0	1,105.00	4.92	0.00	66	10.0	4.5	
NSA 6-27	93	2	2,244,546.0	509,732.0	1,105.00	4.92	0.00	66	10.0	4.5	
NSA 6-28	94	3	2,244,640.0	509,737.0	1,108.00	4.92	0.00	66	10.0	4.5	
NSA 6-29	98	3	2,244,635.0	509,855.0	1,108.00	4.92	0.00	66	10.0	4.5	
NSA 6-30	99	1	2,244,783.0	509,933.0	1,108.00	4.92	0.00	66	10.0	4.5	
NSA 6-31	100	3	2,244,847.0	509,863.0	1,112.00	4.92	0.00	66	10.0	4.5	
NSA 6-32	101	2	2,244,943.0	509,864.0	1,118.00	4.92	0.00	66	10.0	4.5	
NSA 6-33	102	1	2,245,020.0	509,940.0	1,120.00	4.92	0.00	66	10.0	4.5	
NSA 6-34	103	3	2,245,174.0	509,865.0	1,126.00	4.92	0.00	66	10.0	4.5	
NSA 6-35	105	2	2,245,305.0	509,864.0	1,155.00	4.92	0.00	66	10.0	4.5	
NSA 6-36	106	2	2,244,671.0	509,578.0	1,110.00	4.92	0.00	66	10.0	4.5	
NSA 6-37	107	2	2,244,657.0	509,499.0	1,137.00	4.92	0.00	66	10.0	4.5	
NSA 6-38	108	2	2,244,651.0	509,424.0	1,110.00	4.92	0.00	66	10.0	4.5	
NSA 6-39	109	3	2,244,780.0	509,663.0	1,113.00	4.92	0.00	66	10.0	4.5	Y
NSA 6-40	110	1	2,244,935.0	509,736.0	1,117.00	4.92	0.00	66	10.0	4.5	Y
NSA 6-41	111	2	2,244,985.0	509,662.0	1,125.00	4.92	0.00	66	10.0	4.5	Y
NSA 6-42	112	2	2,244,777.0	509,499.0	1,112.00	4.92	0.00	66	10.0	4.5	Y
NSA 6-43	113	2	2,244,777.0	509,422.0	1,112.00	4.92	0.00	66	10.0	4.5	Y
NSA 6-44	114	2	2,244,777.0	509,339.0	1,112.00	4.92	0.00	66	10.0	4.5	Y
NSA 6-45	115	4	2,244,978.0	509,462.0	1,129.00	4.92	0.00	66	10.0	4.5	Y
NSA 6-46	116	1	2,244,979.0	509,336.0	1,130.00	4.92	0.00	66	10.0	4.5	Y
NSA 6-47	117	1	2,245,098.0	509,646.0	1,132.00	4.92	0.00	66	10.0	4.5	Y
NSA 6-48	118	3	2,245,107.0	509,518.0	1,132.00	4.92	0.00	66	10.0	4.5	Y
NSA 6-49	119	2	2,245,099.0	509,383.0	1,133.00	4.92	0.00	66	10.0	4.5	Y
NSA 6-50	120	1	2,245,208.0	509,732.0	1,140.00	4.92	0.00	66	10.0	4.5	Y
NSA 6-51	121	2	2,245,302.0	509,741.0	1,154.00	4.92	0.00	66	10.0	4.5	Y
NSA 6-52	122	2	2,245,292.0	509,583.0	1,062.00	4.92	0.00	66	10.0	4.5	Y
NSA 6-53	123	2	2,245,288.0	509,507.0	1,063.00	4.92	0.00	66	10.0	4.5	Y

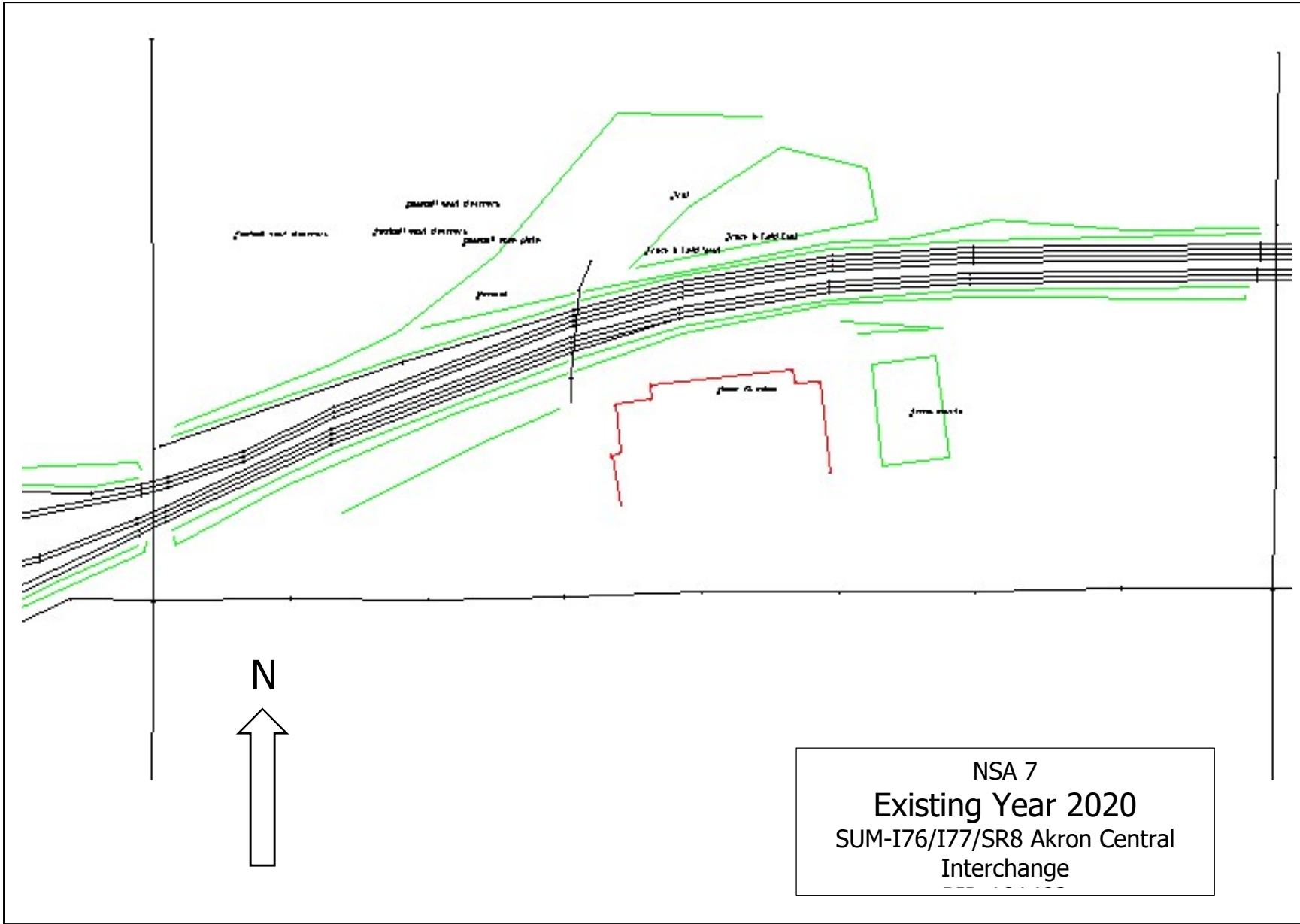
INPUT: BUILDING ROWS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.					1 August 2017		
CMCox					TNM 2.5		
INPUT: BUILDING ROWS							
PROJECT/CONTRACT:		SUM-I76 Central Interchange (101402)					
RUN:		Existing Year 2020 NSA 6					
Building Row			Points				
Name	Average	Building	No.	Coordinates (ground)			
	Height	Percent		X	Y	Z	
	ft	%		ft	ft	ft	
Hoban High School	30.00	80	1	2,245,509.0	509,985.0	1,163.00	
			2	2,245,486.0	510,101.0	1,164.00	
			3	2,245,507.0	510,109.0	1,165.00	
			4	2,245,494.0	510,220.0	1,165.00	
			5	2,245,579.0	510,231.0	1,167.00	
			6	2,245,577.0	510,266.0	1,167.00	
			7	2,245,905.0	510,300.0	1,166.00	
			8	2,245,912.0	510,268.0	1,166.00	
			9	2,245,969.0	510,272.0	1,163.00	
			10	2,245,993.0	510,056.0	1,163.00	
Lafayette rd	16.00	80	24	2,243,333.0	508,910.0	1,101.00	
			25	2,243,580.0	508,912.0	1,103.00	
E Crosier ss	18.00	60	26	2,243,439.0	509,076.0	1,102.00	
			27	2,243,724.0	509,090.0	1,104.00	
Corice St ns	18.00	60	28	2,243,510.0	509,200.0	1,102.00	
			29	2,243,609.0	509,202.0	1,104.00	
Hammel Street	20.00	70	30	2,243,698.0	509,452.0	1,104.00	
			31	2,243,700.0	509,199.0	1,102.00	
Hammel Street es	18.00	70	32	2,243,833.0	509,539.0	1,102.00	
			33	2,243,826.0	509,187.0	1,105.00	
Inman St ws	18.00	60	34	2,244,369.0	509,703.0	1,100.00	
			35	2,244,359.0	509,509.0	1,101.00	
Gridley St ws	18.00	70	36	2,244,044.0	509,588.0	1,097.00	
			37	2,244,038.0	509,346.0	1,099.00	

INPUT: BUILDING ROWS**SUM-I76 Central Interchange (101402)**

Gridley es	20.00	70	38	2,244,169.0	509,699.0	1,097.00
			39	2,244,169.0	509,386.0	1,098.00
Fifth Avenue ns	18.00	70	40	2,244,793.0	509,827.0	1,100.00
			41	2,245,069.0	509,833.0	1,124.00
			42	2,245,353.0	509,837.0	1,155.00
Fifth Ave ss	18.00	60	43	2,244,509.0	509,713.0	1,105.00
			44	2,244,699.0	509,708.0	1,104.00



RESULTS: SOUND LEVELS

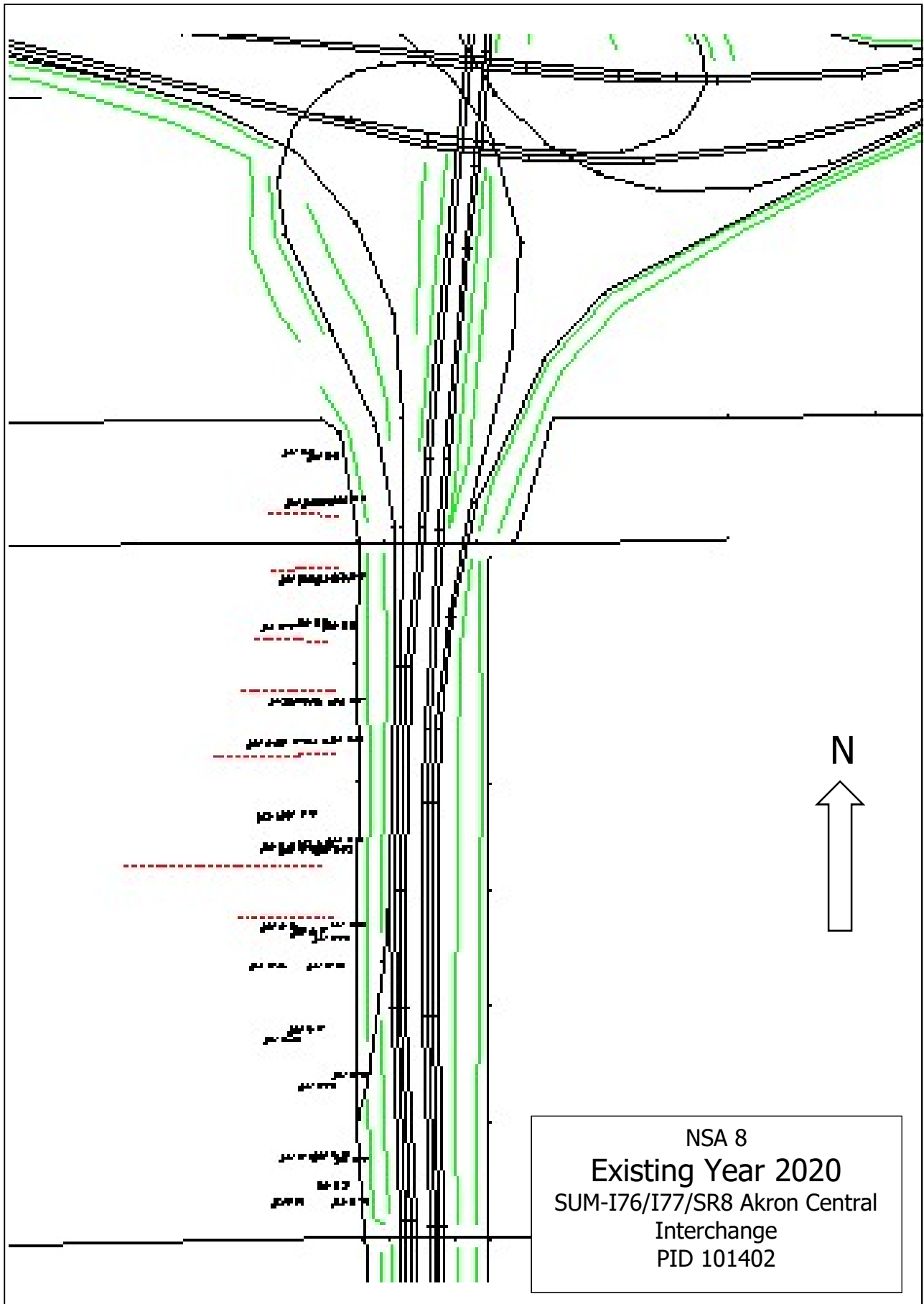
SUM-I76 Central Interchange (101402)

Lawhon & Assoc.													1 August 2017																							
CMCox													TNM 2.5																							
													Calculated with TNM 2.5																							
RESULTS: SOUND LEVELS																																				
PROJECT/CONTRACT:													SUM-I76 Central Interchange (101402)																							
RUN:													Existing Year 2020 NSA 4 and 7																							
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		With Barrier															
															LAeq1h		LAeq1h		Increase over existing		Type		Calculated		Noise Reduction											
																	Calculated		Crit'n		Calculated		Crit'n		Impact		LAeq1h		Calculated		Goal		Calculated			
																													minus		Goal					
															dBA		dBA		dBA		dB		dB				dBA		dB		dB		dB			
football west bleachers													110		1		0.0		64.0		66		64.0		10		----		64.0		0.0		4		-4.5	
football east bleachers													111		1		0.0		65.1		66		65.1		10		----		65.1		0.0		4		-4.5	
baseball home plate													112		1		0.0		64.3		66		64.3		10		----		64.3		0.0		4		-4.5	
baseball west bleachers													113		1		0.0		64.0		66		64.0		10		----		64.0		0.0		4		-4.5	
tennis courts													114		1		0.0		58.3		66		58.3		10		----		58.3		0.0		4		-4.5	
Hoban HS indoor													115		1		0.0		52.4		66		52.4		10		----		52.4		0.0		4		-4.5	
Track & Field West													116		1		0.0		68.0		66		68.0		10		Snd Lvl		68.0		0.0		4		-4.5	
Track & Field East													117		1		0.0		69.1		66		69.1		10		Snd Lvl		69.1		0.0		4		-4.5	
Trail													118		1		0.0		63.7		66		63.7		10		----		63.7		0.0		4		-4.5	
Memorial													119		1		0.0		68.6		66		68.6		10		Snd Lvl		68.6		0.0		4		-4.5	
Dwelling Units															# DUs		Noise Reduction																			
																	Min		Avg		Max															
																	dB		dB		dB															
All Selected															10		0.0		0.0		0.0															
All Impacted															3		0.0		0.0		0.0															
All that meet NR Goal															0		0.0		0.0		0.0															

INPUT: RECEIVERS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.													
CMCox													
						1 August 2017							
						TNM 2.5							
INPUT: RECEIVERS													
PROJECT/CONTRACT:		SUM-I76 Central Interchange (101402)											
RUN:		Existing Year 2020 NSA 4 and 7											
Receiver													
Name	No.	#DUs	Coordinates (ground)			Height	Input Sound Levels and Criteria				Active		
			X	Y	Z	above	Existing	Impact Criteria		NR	in		
						Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.		
			ft	ft	ft	ft	dBA	dBA	dB	dB			
football west bleachers	110	1	2,244,613.0	510,605.0	1,101.00	4.92	0.00	66	10.0	4.5	Y		
football east bleachers	111	1	2,244,936.0	510,612.0	1,101.00	4.92	0.00	66	10.0	4.5	Y		
baseball home plate	112	1	2,245,144.0	510,591.0	1,100.00	4.92	0.00	66	10.0	4.5	Y		
baseball west bleachers	113	1	2,245,012.0	510,675.0	1,100.00	4.92	0.00	66	10.0	4.5	Y		
tennis courts	114	1	2,246,178.0	510,195.8	1,150.00	4.92	0.00	66	10.0	4.5	Y		
Hoban HS indoor	115	1	2,245,731.2	510,247.0	1,168.00	4.92	0.00	66	10.0	4.5	Y		
Track & Field West	116	1	2,245,567.0	510,568.0	1,144.00	4.92	0.00	66	10.0	4.5	Y		
Track & Field East	117	1	2,245,751.0	510,599.0	1,144.00	4.92	0.00	66	10.0	4.5	Y		
Trail	118	1	2,245,627.0	510,695.0	1,143.00	4.92	0.00	66	10.0	4.5	Y		
Memorial	119	1	2,245,176.0	510,466.0	1,118.00	4.92	0.00	66	10.0	4.5	Y		



RESULTS: SOUND LEVELS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc. CMCox													1 August 2017 TNM 2.5 Calculated with TNM 2.5	
RESULTS: SOUND LEVELS														
PROJECT/CONTRACT:			SUM-I76 Central Interchange (101402)											
RUN:			Existing Year 2020 NSA 8											
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	With Barrier			
				LAeq1h	LAeq1h				Impact	Calculated	Noise Reduction			
					Calculated	Crit'n	Calculated	Crit'n			Calculated	Calculated	Goal	Calculated
								Sub'l Inc						minus
														Goal
				dBA	dBA	dBA	dB	dB			dBA	dB	dB	dB
NSA 8-1		1	1	0.0	69.6	66	69.6	10	Snd Lvl	69.6	0.0	8	-8.0	
NSA 8-2		2	1	0.0	69.2	66	69.2	10	Snd Lvl	69.2	0.0	8	-8.0	
NSA 8-3		3	2	0.0	69.3	66	69.3	10	Snd Lvl	69.3	0.0	8	-8.0	
NSA 8-4		4	1	0.0	67.5	66	67.5	10	Snd Lvl	67.5	0.0	8	-8.0	
NSA 8-5		5	1	0.0	66.6	66	66.6	10	Snd Lvl	66.6	0.0	8	-8.0	
NSA 8-6		6	1	0.0	63.2	66	63.2	10	----	63.2	0.0	8	-8.0	
NSA 8-7		7	1	0.0	62.9	66	62.9	10	----	62.9	0.0	8	-8.0	
NSA 8-8		8	1	0.0	64.6	66	64.6	10	----	64.6	0.0	8	-8.0	
NSA 8-9		9	1	0.0	69.0	66	69.0	10	Snd Lvl	69.0	0.0	8	-8.0	
NSA 8-10		10	1	0.0	65.3	66	65.3	10	----	65.3	0.0	8	-8.0	
NSA 8-11		11	1	0.0	64.4	66	64.4	10	----	64.4	0.0	8	-8.0	
NSA 8-12		12	1	0.0	68.1	66	68.1	10	Snd Lvl	68.1	0.0	8	-8.0	
NSA 8-13		13	1	0.0	64.5	66	64.5	10	----	64.5	0.0	8	-8.0	
NSA 8-14		14	1	0.0	63.2	66	63.2	10	----	63.2	0.0	8	-8.0	
NSA 8-15		15	1	0.0	67.6	66	67.6	10	Snd Lvl	67.6	0.0	8	-8.0	
NSA 8-16		16	1	0.0	63.4	66	63.4	10	----	63.4	0.0	8	-8.0	
NSA 8-17		17	1	0.0	68.5	66	68.5	10	Snd Lvl	68.5	0.0	8	-8.0	
NSA 8-18		18	1	0.0	65.3	66	65.3	10	----	65.3	0.0	8	-8.0	
NSA 8-19		19	1	0.0	63.2	66	63.2	10	----	63.2	0.0	8	-8.0	
NSA 8-20		20	1	0.0	69.2	66	69.2	10	Snd Lvl	69.2	0.0	8	-8.0	
NSA 8-21		21	1	0.0	64.8	66	64.8	10	----	64.8	0.0	8	-8.0	
NSA 8-22		22	1	0.0	69.8	66	69.8	10	Snd Lvl	69.8	0.0	8	-8.0	
NSA 8-23		23	1	0.0	67.4	66	67.4	10	Snd Lvl	67.4	0.0	8	-8.0	
NSA 8-24		24	1	0.0	65.5	66	65.5	10	----	65.5	0.0	8	-8.0	

RESULTS: SOUND LEVELS

SUM-I76 Central Interchange (101402)

NSA 8-25	25	1	0.0	70.4	66	70.4	10	Snd Lvl	70.4	0.0	8	-8.0
NSA 8-26	26	1	0.0	68.3	66	68.3	10	Snd Lvl	68.3	0.0	8	-8.0
NSA 8-27	27	1	0.0	65.8	66	65.8	10	----	65.8	0.0	8	-8.0
NSA 8-28	28	1	0.0	66.8	66	66.8	10	Snd Lvl	66.8	0.0	8	-8.0
NSA 8-29	29	1	0.0	65.1	66	65.1	10	----	65.1	0.0	8	-8.0
NSA 8-30	30	1	0.0	69.0	66	69.0	10	Snd Lvl	69.0	0.0	8	-8.0
NSA 8-31	31	1	0.0	68.5	66	68.5	10	Snd Lvl	68.5	0.0	8	-8.0
NSA 8-32	32	1	0.0	66.0	66	66.0	10	Snd Lvl	66.0	0.0	8	-8.0
NSA 8-33	33	1	0.0	68.3	66	68.3	10	Snd Lvl	68.3	0.0	8	-8.0
NSA 8-34	34	1	0.0	65.8	66	65.8	10	----	65.8	0.0	8	-8.0
NSA 8-35	35	1	0.0	63.2	66	63.2	10	----	63.2	0.0	8	-8.0
NSA 8-36	36	1	0.0	61.9	66	61.9	10	----	61.9	0.0	8	-8.0
NSA 8-37	37	1	0.0	61.3	66	61.3	10	----	61.3	0.0	8	-8.0
NSA 8-38	38	1	0.0	62.3	66	62.3	10	----	62.3	0.0	8	-8.0
NSA 8-39	39	1	0.0	62.5	66	62.5	10	----	62.5	0.0	8	-8.0
NSA 8-40	40	1	0.0	61.0	66	61.0	10	----	61.0	0.0	8	-8.0
NSA 8-41	41	1	0.0	63.5	66	63.5	10	----	63.5	0.0	8	-8.0
NSA 8-42	42	1	0.0	62.0	66	62.0	10	----	62.0	0.0	8	-8.0
NSA 8-43	43	1	0.0	63.6	66	63.6	10	----	63.6	0.0	8	-8.0
NSA 8-44	44	1	0.0	62.0	66	62.0	10	----	62.0	0.0	8	-8.0
NSA 8-45	45	1	0.0	63.5	66	63.5	10	----	63.5	0.0	8	-8.0
NSA 8-46	46	1	0.0	61.0	66	61.0	10	----	61.0	0.0	8	-8.0
NSA 8-47	47	1	0.0	64.1	66	64.1	10	----	64.1	0.0	8	-8.0
NSA 8-48	48	1	0.0	61.0	66	61.0	10	----	61.0	0.0	8	-8.0
NSA 8-49	49	1	0.0	62.8	66	62.8	10	----	62.8	0.0	8	-8.0
NSA8-50	50	1	0.0	62.8	66	62.8	10	----	62.8	0.0	8	-8.0
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		51	0.0	0.0	0.0							
All Impacted		20	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

INPUT: RECEIVERS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.							1 August 2017				
CMCox							TNM 2.5				
INPUT: RECEIVERS											
PROJECT/CONTRACT:		SUM-I76 Central Interchange (101402)									
RUN:		Existing Year 2020 NSA 8									
Receiver											
Name	No.	#DUs	Coordinates (ground)			Height above Ground	Input Sound Levels and Criteria				Active in Calc.
			X	Y	Z		Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	
			ft	ft	ft	ft	dBA	dBA	dB	dB	
NSA 8-1	1	1	2,241,861.0	509,848.0	1,051.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-2	2	1	2,241,906.0	509,846.0	1,051.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-3	3	2	2,241,960.0	509,847.0	1,053.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-4	4	1	2,241,817.0	509,682.0	1,055.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-5	5	1	2,241,818.0	509,635.0	1,055.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-6	6	1	2,241,874.0	509,446.0	1,056.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-7	7	1	2,242,720.0	509,058.0	1,082.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-8	8	1	2,242,777.0	509,049.0	1,083.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-9	9	1	2,242,837.0	508,950.0	1,086.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-10	10	1	2,242,791.0	508,943.0	1,086.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-11	11	1	2,242,763.0	508,940.0	1,086.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-12	12	1	2,242,834.0	508,766.0	1,087.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-13	13	1	2,242,795.0	508,758.0	1,085.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-14	14	1	2,242,756.0	508,761.0	1,086.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-15	15	1	2,242,814.0	508,653.0	1,089.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-16	16	1	2,242,750.0	508,660.0	1,087.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-17	17	1	2,242,834.0	508,475.0	1,090.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-18	18	1	2,242,781.0	508,468.0	1,090.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-19	19	1	2,242,722.0	508,474.0	1,091.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-20	20	1	2,242,827.0	508,386.0	1,094.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-21	21	1	2,242,769.0	508,379.0	1,092.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-22	22	1	2,242,825.0	508,149.0	1,096.00	4.92	0.00	66	10.0	8.0	Y

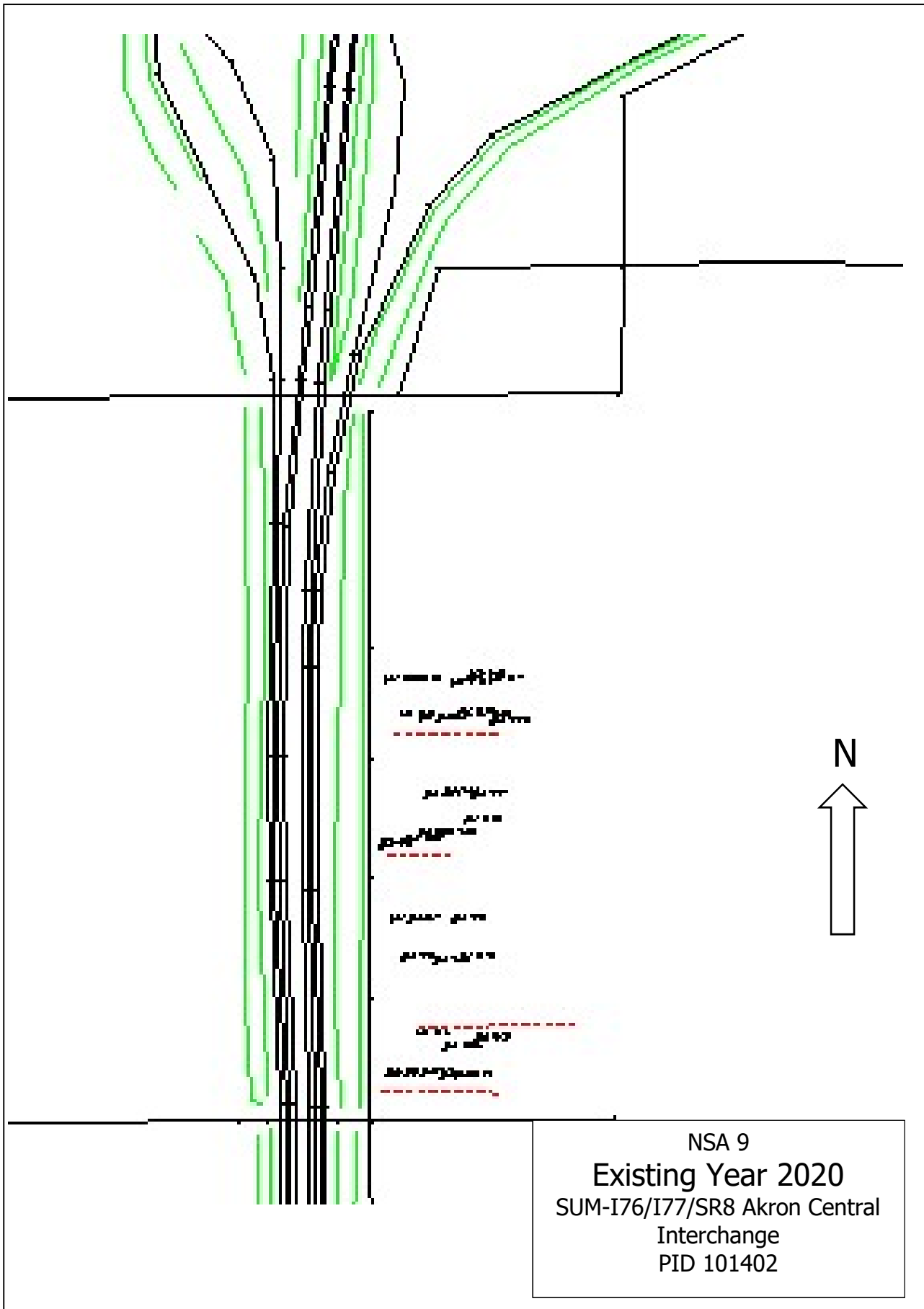
INPUT: RECEIVERS**SUM-I76 Central Interchange (101402)**

NSA 8-23	23	1	2,242,797.0	508,128.0	1,095.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-24	24	1	2,242,755.0	508,138.0	1,095.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-25	25	1	2,242,831.0	507,950.0	1,096.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-26	26	1	2,242,791.0	507,919.0	1,097.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-27	27	1	2,242,741.0	507,934.0	1,097.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-28	28	1	2,242,779.0	507,856.0	1,094.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-29	29	1	2,242,759.0	507,574.0	1,099.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-30	30	1	2,242,835.0	507,598.0	1,098.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-31	31	1	2,242,840.0	507,400.0	1,101.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-32	32	1	2,242,792.0	507,411.0	1,101.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-33	33	1	2,242,833.0	507,301.0	1,103.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-34	34	1	2,242,794.0	507,341.0	1,102.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-35	35	1	2,242,726.0	508,941.0	1,086.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-36	36	1	2,242,715.0	508,761.0	1,086.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-37	37	1	2,242,667.0	508,649.0	1,087.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-38	38	1	2,242,689.0	508,475.0	1,091.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-39	39	1	2,242,700.0	508,381.0	1,092.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-40	40	1	2,242,638.0	508,375.0	1,092.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-41	41	1	2,242,716.0	508,211.0	1,092.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-42	42	1	2,242,659.0	508,203.0	1,092.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-43	43	1	2,242,715.0	508,127.0	1,094.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-44	44	1	2,242,666.0	508,134.0	1,093.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-45	45	1	2,242,670.0	507,946.0	1,097.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-46	46	1	2,242,642.0	507,856.0	1,093.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-47	47	1	2,242,734.0	507,705.0	1,094.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-48	48	1	2,242,675.0	507,681.0	1,093.00	4.92	0.00	66	10.0	8.0	Y
NSA 8-49	49	1	2,242,715.0	507,407.0	1,100.00	4.92	0.00	66	10.0	8.0	Y
NSA8-50	50	1	2,242,694.0	507,302.0	1,100.00	4.92	0.00	66	10.0	8.0	Y

INPUT: BUILDING ROWS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.					1 August 2017		
CMCox					TNM 2.5		
INPUT: BUILDING ROWS							
PROJECT/CONTRACT:		SUM-I76 Central Interchange (101402)					
RUN:		Existing Year 2020 NSA 8					
Building Row			Points				
Name	Average	Building	No.	Coordinates (ground)			
	Height	Percent		X	Y	Z	
	ft	%		ft	ft	ft	
Lafayette ns	20.00	70	11	2,242,688.0	508,923.0	1,086.00	
			12	2,242,849.0	508,919.0	1,086.00	
Laffeyette ss	15.00	75	13	2,242,694.0	508,789.0	1,086.00	
			14	2,242,849.0	508,798.0	1,087.00	
Baired ns	20.00	60	15	2,242,655.0	508,628.0	1,087.00	
			16	2,242,835.0	508,624.0	1,089.00	
Baird ss	15.00	70	17	2,242,623.0	508,506.0	1,091.00	
			18	2,242,852.0	508,506.0	1,090.00	
Kipling NS	15.00	75	19	2,242,550.0	508,354.0	1,092.00	
			20	2,242,853.0	508,358.0	1,094.00	
McKinley ns	15.00	70	21	2,242,336.0	508,097.0	1,093.00	
			22	2,242,813.0	508,095.0	1,095.00	
McKinley ss	15.00	60	23	2,242,607.0	507,973.0	1,097.00	
			24	2,242,846.0	507,977.0	1,096.00	



RESULTS: SOUND LEVELS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc. CMCox													1 August 2017 TNM 2.5 Calculated with TNM 2.5																							
RESULTS: SOUND LEVELS																																				
PROJECT/CONTRACT:													SUM-I76 Central Interchange (101402)																							
RUN:													Existing Year 2020 NSA 9																							
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		With Barrier															
															LAeq1h		LAeq1h		Increase over existing		Type		Calculated		Noise Reduction											
																	Calculated		Crit'n		Calculated		Crit'n		Impact		LAeq1h		Calculated		Goal		Calculated			
																															minus					
																															Goal					
															dBA		dBA		dBA		dB		dB				dBA		dB		dB		dB			
NSA 9-1													39		1		0.0		70.7		66		70.7		10		Snd Lvl		70.7		0.0		4		-4.5	
NSA 9-2													40		1		0.0		67.3		66		67.3		10		Snd Lvl		67.3		0.0		4		-4.5	
NSA 9-3													41		1		0.0		65.8		66		65.8		10		----		65.8		0.0		4		-4.5	
NSA 9-4													42		1		0.0		65.8		66		65.8		10		----		65.8		0.0		4		-4.5	
NSA 9-5													43		1		0.0		69.6		66		69.6		10		Snd Lvl		69.6		0.0		4		-4.5	
NSA 9-6													44		1		0.0		70.8		66		70.8		10		Snd Lvl		70.8		0.0		4		-4.5	
NSA 9-7													45		1		0.0		68.5		66		68.5		10		Snd Lvl		68.5		0.0		4		-4.5	
NSA 9-8													46		1		0.0		64.0		66		64.0		10		----		64.0		0.0		4		-4.5	
NSA 9-9													47		1		0.0		73.6		66		73.6		10		Snd Lvl		73.6		0.0		4		-4.5	
NSA 9-10													48		1		0.0		68.9		66		68.9		10		Snd Lvl		68.9		0.0		4		-4.5	
NSA 9-11													49		1		0.0		67.6		66		67.6		10		Snd Lvl		67.6		0.0		4		-4.5	
NSA 9-12													50		1		0.0		65.0		66		65.0		10		----		65.0		0.0		4		-4.5	
NSA 9-13													51		1		0.0		67.2		66		67.2		10		Snd Lvl		67.2		0.0		4		-4.5	
NSA 9-14													52		1		0.0		65.7		66		65.7		10		----		65.7		0.0		4		-4.5	
NSA 9-15													53		1		0.0		70.4		66		70.4		10		Snd Lvl		70.4		0.0		4		-4.5	
NSA 9-16													54		1		0.0		67.1		66		67.1		10		Snd Lvl		67.1		0.0		4		-4.5	
NSA 9-17													55		1		0.0		65.5		66		65.5		10		----		65.5		0.0		4		-4.5	
NSA 9-18													56		1		0.0		64.0		66		64.0		10		----		64.0		0.0		4		-4.5	
NSA 9-19													57		1		0.0		71.1		66		71.1		10		Snd Lvl		71.1		0.0		4		-4.5	
NSA 9-20													58		1		0.0		68.6		66		68.6		10		Snd Lvl		68.6		0.0		4		-4.5	
NSA 9-21													59		1		0.0		63.6		66		63.6		10		----		63.6		0.0		4		-4.5	
NSA 9-22													110		1		0.0		63.5		66		63.5		10		----		63.5		0.0		4		-4.5	
NSA 9-23													111		1		0.0		62.4		66		62.4		10		----		62.4		0.0		4		-4.5	
NSA 9-24													112		1		0.0		63.0		66		63.0		10		----		63.0		0.0		4		-4.5	

RESULTS: SOUND LEVELS

SUM-I76 Central Interchange (101402)

NSA 9-25	113	1	0.0	65.9	66	65.9	10	----	65.9	0.0	4	-4.5
NSA 9-26	114	1	0.0	63.2	66	63.2	10	----	63.2	0.0	4	-4.5
NSA 9-27	115	1	0.0	62.7	66	62.7	10	----	62.7	0.0	4	-4.5
NSA 9-28	116	1	0.0	62.7	66	62.7	10	----	62.7	0.0	4	-4.5
NSA 9-29	117	1	0.0	61.5	66	61.5	10	----	61.5	0.0	4	-4.5
NSA 9-30	118	1	0.0	63.5	66	63.5	10	----	63.5	0.0	4	-4.5
NSA 9-31	119	1	0.0	61.7	66	61.7	10	----	61.7	0.0	4	-4.5
NSA 9-32	120	1	0.0	60.7	66	60.7	10	----	60.7	0.0	4	-4.5
NSA 9-33	121	1	0.0	63.3	66	63.3	10	----	63.3	0.0	4	-4.5
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		33	0.0	0.0	0.0							
All Impacted		13	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

INPUT: RECEIVERS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.							1 August 2017				
CMCox							TNM 2.5				
INPUT: RECEIVERS											
PROJECT/CONTRACT:		SUM-I76 Central Interchange (101402)									
RUN:		Existing Year 2020 NSA 9									
Receiver											
Name	No.	#DUs	Coordinates (ground)			Height above Ground	Input Sound Levels and Criteria				Active in Calc.
			X	Y	Z		Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	
			ft	ft	ft	ft	dBA	dBA	dB	dB	
NSA 9-1	39	1	2,243,236.0	507,326.0	1,113.00	4.92	0.00	66	10.0	4.5	
NSA 9-2	40	1	2,243,277.0	507,327.0	1,115.00	4.92	0.00	66	10.0	4.5	
NSA 9-3	41	1	2,243,313.0	507,327.0	1,116.00	4.92	0.00	66	10.0	4.5	
NSA 9-4	42	1	2,243,302.0	507,413.0	1,113.00	4.92	0.00	66	10.0	4.5	
NSA 9-5	43	1	2,243,270.0	507,587.0	1,113.00	4.92	0.00	66	10.0	4.5	
NSA 9-6	44	1	2,243,246.0	507,673.0	1,110.00	4.92	0.00	66	10.0	4.5	
NSA 9-7	45	1	2,243,284.0	507,671.0	1,112.00	4.92	0.00	66	10.0	4.5	
NSA 9-8	46	1	2,243,386.0	507,674.0	1,115.00	4.92	0.00	66	10.0	4.5	
NSA 9-9	47	1	2,243,220.0	507,841.0	1,110.00	4.92	0.00	66	10.0	4.5	
NSA 9-10	48	1	2,243,279.0	507,853.0	1,111.00	4.92	0.00	66	10.0	4.5	
NSA 9-11	49	1	2,243,307.0	507,865.0	1,112.00	4.92	0.00	66	10.0	4.5	
NSA 9-12	50	1	2,243,356.0	507,866.0	1,113.00	4.92	0.00	66	10.0	4.5	
NSA 9-13	51	1	2,243,322.0	507,952.0	1,112.00	4.92	0.00	66	10.0	4.5	
NSA 9-14	52	1	2,243,363.0	507,959.0	1,114.00	4.92	0.00	66	10.0	4.5	
NSA 9-15	53	1	2,243,266.0	508,131.0	1,109.00	4.92	0.00	66	10.0	4.5	
NSA 9-16	54	1	2,243,310.0	508,127.0	1,110.00	4.92	0.00	66	10.0	4.5	
NSA 9-17	55	1	2,243,349.0	508,125.0	1,112.00	4.92	0.00	66	10.0	4.5	
NSA 9-18	56	1	2,243,398.0	508,141.0	1,114.00	4.92	0.00	66	10.0	4.5	
NSA 9-19	57	1	2,243,231.0	508,212.0	1,104.00	4.92	0.00	66	10.0	4.5	
NSA 9-20	58	1	2,243,275.0	508,210.0	1,106.00	4.92	0.00	66	10.0	4.5	
NSA 9-21	59	1	2,243,382.0	508,206.0	1,110.00	4.92	0.00	66	10.0	4.5	
NSA 9-22	110	1	2,243,356.0	507,321.0	1,116.00	4.92	0.00	66	10.0	4.5	Y

INPUT: RECEIVERS**SUM-I76 Central Interchange (101402)**

NSA 9-23	111	1	2,243,389.0	507,323.0	1,118.00	4.92	0.00	66	10.0	4.5	Y
NSA 9-24	112	1	2,243,365.0	507,384.0	1,115.00	4.92	0.00	66	10.0	4.5	Y
NSA 9-25	113	1	2,243,342.0	507,579.0	1,116.00	4.92	0.00	66	10.0	4.5	Y
NSA 9-26	114	1	2,243,412.0	507,896.0	1,115.00	4.92	0.00	66	10.0	4.5	Y
NSA 9-27	115	1	2,243,428.0	507,955.0	1,115.00	4.92	0.00	66	10.0	4.5	Y
NSA 9-28	116	1	2,243,434.0	508,132.0	1,115.00	4.92	0.00	66	10.0	4.5	Y
NSA 9-29	117	1	2,243,472.0	508,119.0	1,116.00	4.92	0.00	66	10.0	4.5	Y
NSA 9-30	118	1	2,243,422.0	508,221.0	1,114.00	4.92	0.00	66	10.0	4.5	Y
NSA 9-31	119	1	2,243,467.0	508,212.0	1,113.00	4.92	0.00	66	10.0	4.5	Y
NSA 9-32	120	1	2,243,435.0	507,405.0	1,117.00	4.92	0.00	66	10.0	4.5	Y
NSA 9-33	121	1	2,243,398.0	507,586.0	1,116.00	4.92	0.00	66	10.0	4.5	Y

INPUT: BUILDING ROWS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.							1 August 2017
CMCox							TNM 2.5
INPUT: BUILDING ROWS							
PROJECT/CONTRACT:			SUM-I76 Central Interchange (101402)				
RUN:			Existing Year 2020 NSA 9				
Building Row			Points				
Name	Average	Building	No.	Coordinates (ground)			
	Height	Percent		X	Y	Z	
	ft	%		ft	ft	ft	
Lovers Lane ns	18.00	70	16	2,243,225.0	507,291.0	1,113.00	
			17	2,243,489.0	507,287.0	1,119.00	
Morgan Road ss	16.00	50	18	2,243,303.0	507,434.0	1,113.00	
			19	2,243,660.0	507,443.0	1,120.00	
Corice St	16.00	50	20	2,243,230.0	507,825.0	1,110.00	
			21	2,243,390.0	507,821.0	1,113.00	
McKinlet Ave ss	15.00	50	22	2,243,255.0	508,095.0	1,109.00	
			23	2,243,489.0	508,095.0	1,117.00	

DESIGN YEAR 2040

TNM Files used in all Design Year 2040 Model Runs

INPUT: ROADWAYS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc. CMCox							1 August 2017 TNM 2.5				
INPUT: ROADWAYS							Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA				
PROJECT/CONTRACT:		SUM-I76 Central Interchange (101402)									
RUN:		Design Year 2040 all runs									
Roadway Name	Width	Points Name	No.	Coordinates (pavement)			Flow Control			Segment	
				X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
I-76 EB1/Ramp I-76EB to I-77SB	12.0	point1	1	2,239,535.0	510,115.0	1,016.00				Average	
		point2	2	2,239,900.0	510,108.0	1,024.00				Average	
		point3	3	2,240,219.0	510,096.0	1,032.00				Average	
		point4	4	2,240,979.0	510,067.0	1,044.00				Average	
		Begin Proj	505	2,241,151.0	510,058.0	1,049.00				Average	
		point5	5	2,241,533.0	510,035.0	1,058.00				Average	
		Brown Street	6	2,241,704.0	510,020.0	1,060.00				Average	Y
		Brown Street	7	2,241,862.0	510,001.0	1,066.00				Average	
		On fill	8	2,241,973.0	509,986.0	1,079.00				Average	
		Pro 6	9	2,242,358.0	509,923.0	1,087.00				Average	
		point10	10	2,242,594.0	509,850.0	1,083.00				Average	
		point11	11	2,242,741.0	509,765.0	1,080.00				Average	
		point12	12	2,242,890.0	509,602.0	1,075.00				Average	
		point13	13	2,242,978.0	509,386.0	1,072.00				Average	
		point14	14	2,242,998.0	509,142.0	1,067.00				Average	
		Lafollette S	15	2,242,997.0	508,886.0	1,066.00				Average	
		point558	558	2,242,993.0	508,727.0	1,071.50				Average	
		point16	16	2,242,991.0	508,561.0	1,077.00				Average	
		point17	17	2,242,979.0	508,038.0	1,090.00				Average	
		point18	18	2,242,983.0	507,761.0	1,093.00				Average	
Brown Street	28.0	At Kipling	22	2,241,770.0	508,281.0	1,079.00				Average	
		At Baird	23	2,241,774.0	508,556.0	1,075.00				Average	
		At Lofollet	24	2,241,774.0	508,845.0	1,067.00				Average	
		At E Crosi	25	2,241,781.0	509,134.0	1,059.00				Average	
		At E South	26	2,241,781.0	509,888.0	1,047.00				Average	

INPUT: ROADWAYS

SUM-I76 Central Interchange (101402)

		At Lampar	27	2,241,776.0	510,220.0	1,037.00				Average	
		At E Voris	28	2,241,773.0	510,581.0	1,044.00				Average	
		At Lovisa	559	2,241,772.0	510,969.0	1,043.00					
Johnston Street	20.0	At Gridley	29	2,244,073.0	511,439.0	1,122.00				Average	
		At Hamme	30	2,243,738.0	511,173.0	1,113.00				Average	
		At Lumiere	31	2,243,473.0	510,963.0	1,102.00				Average	
		point32	32	2,243,367.0	510,889.0	1,102.00				Average	Y
		Wilson St	33	2,243,115.0	510,688.0	1,089.00				Average	
		Jonhston C	34	2,242,835.0	510,457.0	1,079.00				Average	
		Hedden A	35	2,242,641.0	510,314.0	1,067.00				Average	
		point36	36	2,242,472.0	510,270.0	1,050.00				Average	
		Spicer St.	37	2,242,296.0	510,270.0	1,039.00				Average	
		point38	38	2,242,134.0	510,273.0	1,039.00				Average	
		At Brown S	39	2,241,776.0	510,220.0	1,037.00					
I-76 WB to I-77 SB	12.0	point17	54	2,242,967.0	508,038.0	1,090.00				Average	
		point18	55	2,242,971.0	507,761.0	1,093.00					
Ramp SR8 SB to I76 EB	12.0	point78	78	2,243,242.0	511,069.0	1,078.00				Average	
		point79	79	2,243,225.0	510,930.0	1,075.00				Average	
		Johnston S	80	2,243,180.0	510,771.0	1,072.00				Average	
		point81	81	2,243,104.0	510,512.0	1,072.00				Average	
		point82	82	2,243,074.0	510,334.0	1,075.00				Average	
		point83	83	2,243,092.0	510,148.0	1,077.00				Average	
		I-76 undrp	84	2,243,127.0	510,047.0	1,078.00				Average	Y
		point85	85	2,243,214.0	509,903.0	1,079.00				Average	
		I-76 ovrpa	86	2,243,335.0	509,787.0	1,081.00				Average	
		point87	87	2,243,461.0	509,719.0	1,088.00				Average	
		point88	88	2,243,601.0	509,680.0	1,099.00				Average	
		point89	89	2,243,813.0	509,683.0	1,105.00				Average	
		point90	90	2,244,002.0	509,745.0	1,111.00				Average	
		Inman St c	91	2,244,394.0	509,931.0	1,118.00				Average	Y
		point92	92	2,244,457.0	509,960.0	1,120.00				Average	
		point93	93	2,244,841.0	510,140.0	1,133.00				Average	
		ped bridge	204	2,245,394.0	510,352.0	1,136.00				Average	
		point95	205	2,245,645.0	510,418.0	1,135.00				Average	
		point96	272	2,245,993.0	510,480.0	1,123.00				Average	
		point258	273	2,246,321.0	510,499.0	1,116.00				Average	
		Arlington F	274	2,246,986.0	510,507.0	1,090.00					
I-76EB thru lane 2	12.0	point1	207	2,239,535.0	510,127.0	1,016.00				Average	
		point2	208	2,239,900.0	510,120.0	1,024.00				Average	

INPUT: ROADWAYS

SUM-I76 Central Interchange (101402)

		point3	209	2,240,219.0	510,108.0	1,032.00				Average	
		point4	210	2,240,979.0	510,079.0	1,044.00				Average	
		Begin Proj	504	2,241,151.0	510,070.0	1,049.00				Average	
		point5	211	2,241,535.0	510,047.0	1,058.00				Average	
		Brown Stre	212	2,241,704.0	510,032.0	1,060.00				Average	Y
		Brown Stre	213	2,241,862.0	510,013.0	1,066.00				Average	
		On fill	214	2,241,973.0	509,998.0	1,079.00				Average	
		Pro 6	215	2,242,358.0	509,935.0	1,087.00				Average	
		Pro 7	509	2,242,607.0	509,885.0	1,088.50				Average	
		Pro8	510	2,242,789.0	509,842.0	1,089.00				Average	
		End Prop	514	2,243,058.0	509,778.0	1,089.00					
I-76EB thru lane 3	12.0	point1	217	2,239,535.0	510,139.0	1,016.00				Average	
		point2	218	2,239,900.0	510,132.0	1,024.00				Average	
		point3	219	2,240,219.0	510,120.0	1,032.00				Average	
		point4	220	2,240,979.0	510,091.0	1,044.00				Average	
		Begin Proj	503	2,241,151.0	510,082.0	1,049.00				Average	
		Pro 2	221	2,241,530.0	510,059.0	1,058.00				Average	
		Brown Stre	222	2,241,704.0	510,044.0	1,060.00				Average	Y
		Brown Stre	223	2,241,862.0	510,025.0	1,066.00				Average	
		Pro 5	224	2,241,973.0	510,010.0	1,079.00				Average	
		Pro 6	225	2,242,358.0	509,947.0	1,087.00				Average	
		Por 7	508	2,242,607.0	509,897.0	1,088.50				Average	
		Pro 8	226	2,242,789.0	509,854.0	1,089.00				Average	
		End Prop	513	2,243,058.0	509,790.0	1,089.00					
I-76 EB thru lane 4 Prop Ramp EB to NB	12.0	point1	227	2,239,535.0	510,151.0	1,016.00				Average	
		point2	228	2,239,900.0	510,144.0	1,024.00				Average	
		point3	229	2,240,219.0	510,132.0	1,032.00				Average	
		point4	230	2,240,979.0	510,103.0	1,044.00				Average	
		Begin Proj	502	2,241,151.0	510,094.0	1,049.00				Average	
		Prop 2	231	2,241,540.0	510,074.0	1,058.00				Average	
		Brown Stre	232	2,241,704.0	510,066.0	1,060.00				Average	Y
		Brown Stre	233	2,241,865.0	510,054.0	1,066.00				Average	
		On fill	234	2,241,978.0	510,047.0	1,079.00				Average	
		point225	235	2,242,202.0	510,029.0	1,087.00				Average	
		point506	506	2,242,363.0	510,007.0	1,088.50				Average	
		point507	507	2,242,613.0	509,974.0	1,089.25				Average	
		Begin Brid	236	2,242,673.0	509,972.0	1,090.00				Average	Y
		Pier 1	515	2,242,759.0	509,977.0	1,111.00				Average	Y
		Pier 2	516	2,242,843.0	509,994.0	1,121.00				Average	Y

INPUT: ROADWAYS

SUM-I76 Central Interchange (101402)

		Pier 3	517	2,242,958.0	510,038.0	1,122.00				Average	Y
		Pier 4	518	2,243,062.0	510,100.0	1,117.00				Average	Y
		Pier 5	519	2,243,121.0	510,148.0	1,113.00				Average	Y
		Pier 6	520	2,243,199.0	510,229.0	1,108.00				Average	Y
		Pier 7	521	2,243,274.0	510,360.0	1,104.00				Average	Y
		Pier 8	522	2,243,309.0	510,455.0	1,100.00				Average	Y
		End Bridge	523	2,243,322.0	510,503.0	1,096.00				Average	
		point524	524	2,243,336.0	510,628.0	1,090.00				Average	
		point525	525	2,243,332.0	510,835.0	1,088.00				Average	
		end prop r	526	2,243,326.0	511,006.0	1,078.00					
Lafayette Ave	24.0	Brown St	398	2,241,774.0	508,845.0	1,067.00				Average	
		Burkhardt	399	2,242,893.0	508,856.0	1,086.00				Average	
		point400	400	2,242,927.5	508,854.6	1,086.00				Average	Y
		point401	401	2,243,176.0	508,856.0	1,092.00				Average	
		East Crosi	402	2,243,259.0	508,856.0	1,092.00				Average	
		Hammel S	403	2,243,763.0	508,861.0	1,102.00					
East Crosier Ave/Burkhardt Ave	20.0	Brown St	416	2,241,781.0	509,134.0	1,059.00				Average	
		point417	417	2,242,811.0	509,143.0	1,083.00				Average	
		point418	418	2,242,853.0	509,111.0	1,084.00				Average	
		Lafollette	419	2,242,893.0	508,856.0	1,086.00				Average	
		Baird St	420	2,242,889.0	508,564.0	1,090.00				Average	
		Kipling St	421	2,242,894.0	508,292.0	1,095.00				Average	
		McKinlet A	422	2,242,890.0	508,039.0	1,097.00				Average	
		Corice St.	423	2,242,890.0	507,765.0	1,098.00				Average	
		Morgan Av	424	2,242,891.0	507,497.0	1,102.00				Average	
		Lovers La	425	2,242,908.0	507,225.0	1,104.00					
East Crosiet	20.0	Lafayette	437	2,243,259.0	508,856.0	1,092.00				Average	
		point438	438	2,243,352.0	509,146.0	1,097.00				Average	
		Hammell	439	2,243,767.0	509,150.0	1,100.00				Average	
		Gridley St	440	2,244,108.0	509,157.0	1,099.00				Average	
		Inman St	441	2,244,420.0	509,152.0	1,102.00					
Inman St	20.0	E Crosier	451	2,244,420.0	509,152.0	1,102.00				Average	
		5th Ave	452	2,244,424.0	509,765.0	1,100.00				Average	
		Lumiere S	453	2,244,426.0	510,121.0	1,105.00				Average	
		Bradley Pl	454	2,244,420.0	511,069.0	1,107.00					
South Street	40.0	Grant Stre	472	2,239,511.0	509,844.0	1,035.00				Average	
		Sumner/P	473	2,240,376.0	509,865.0	1,033.00				Average	
		Kling St.	474	2,240,994.0	509,870.0	1,041.00				Average	
		Brown St	475	2,241,781.0	509,888.0	1,047.00				Average	

INPUT: ROADWAYS

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		point476	476	2,242,155.0	509,896.0	1,050.00					
Spicer St	24.0	point500	500	2,242,134.0	510,273.0	1,039.00				Average	
		point501	501	2,242,134.0	510,881.0	1,022.00					
I-76 EB ex thru lane 3	12.0	Meet Exist	243	2,243,058.0	509,790.0	1,089.00				Average	Y
		point238	244	2,243,297.0	509,762.0	1,100.00				Average	Y
		point239	245	2,243,564.0	509,756.0	1,110.00				Average	
		point240	246	2,243,883.0	509,793.0	1,118.00				Average	
		point242	247	2,244,165.0	509,871.0	1,119.00				Average	
		Inman St c	248	2,244,391.0	509,958.0	1,118.00				Average	Y
		point249	249	2,244,457.0	509,984.0	1,120.00				Average	
		point93	254	2,244,841.0	510,164.0	1,133.00				Average	
		ped bridge	255	2,245,394.0	510,376.0	1,136.00				Average	
		point95	256	2,245,645.0	510,442.0	1,135.00				Average	
		point96	257	2,245,993.0	510,504.0	1,123.00				Average	
		point258	258	2,246,321.0	510,523.0	1,116.00				Average	
		Arlington F	259	2,246,986.0	510,531.0	1,090.00					
I-76EB ex thru lane 2	12.0	Meet Exist	237	2,243,058.0	509,778.0	1,089.00				Average	Y
		point238	238	2,243,297.0	509,750.0	1,100.00				Average	Y
		point239	239	2,243,564.0	509,744.0	1,110.00				Average	
		point240	240	2,243,883.0	509,781.0	1,118.00				Average	
		point242	242	2,244,165.0	509,859.0	1,119.00				Average	
		Inman St c	241	2,244,391.0	509,946.0	1,118.00				Average	Y
		point249	250	2,244,457.0	509,972.0	1,120.00				Average	
		point93	251	2,244,841.0	510,152.0	1,133.00				Average	
		ped bridge	252	2,245,394.0	510,364.0	1,136.00				Average	
		point95	253	2,245,645.0	510,430.0	1,135.00				Average	
		point96	265	2,245,993.0	510,492.0	1,123.00				Average	
		point258	266	2,246,321.0	510,511.0	1,116.00				Average	
		Arlington F	267	2,246,986.0	510,519.0	1,090.00					
Ramp I-76 EB to SR8 NB-2	12.0	point572	572	2,243,326.0	511,006.0	1,078.00				Average	
		point295	295	2,243,335.0	511,256.0	1,075.00				Average	
		point296	296	2,243,353.0	511,548.0	1,072.00				Average	
		Beacon St	297	2,243,349.0	512,080.0	1,060.00					
I-76 WB4 -2	12.0	point532	532	2,243,284.0	509,966.0	1,095.00				Average	Y
		point320	320	2,242,916.0	510,006.0	1,105.00				Average	Y
		fill	321	2,242,476.0	510,047.0	1,102.00				Average	
		point323	323	2,242,043.0	510,080.0	1,076.00				Average	
		point322	322	2,241,865.0	510,092.0	1,066.00				Average	Y
		point324	324	2,241,699.0	510,105.0	1,060.00				Average	

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		point74	394	2,241,205.0	510,123.0	1,050.00				Average	
		point75	395	2,240,651.0	510,143.0	1,041.00				Average	
		point76	396	2,240,156.0	510,157.0	1,030.00				Average	
		Grant St o	397	2,239,533.0	510,174.0	1,018.00					
I-76 WB3 -2	12.0	point533	533	2,243,284.0	509,978.0	1,095.00				Average	Y
		point320	344	2,242,916.0	510,018.0	1,105.00				Average	Y
		fill	345	2,242,476.0	510,059.0	1,102.00				Average	
		point323	346	2,242,043.0	510,092.0	1,076.00				Average	
		point322	347	2,241,865.0	510,104.0	1,066.00				Average	Y
		point324	348	2,241,699.0	510,117.0	1,060.00				Average	
		point74	390	2,241,205.0	510,135.0	1,050.00				Average	
		point75	391	2,240,651.0	510,155.0	1,041.00				Average	
		point76	392	2,240,156.0	510,169.0	1,030.00				Average	
		Grant St o	393	2,239,533.0	510,186.0	1,018.00					
SR8 NB1	12.0	point294	371	2,243,338.0	511,006.0	1,078.00				Average	
		point295	372	2,243,347.0	511,256.0	1,075.00				Average	
		point296	373	2,243,365.0	511,548.0	1,072.00				Average	
		Beacon St	374	2,243,361.0	512,080.0	1,060.00					
Voris Street	20.0	at Brown	560	2,241,773.0	510,581.0	1,044.00				Average	
		at King	561	2,241,308.0	510,577.0	1,057.00				Average	
		at Allyn	562	2,240,757.0	510,569.0	1,045.00				Average	
		at Sumner	563	2,240,372.0	510,563.0	1,043.00				Average	
		at Sherma	564	2,239,944.0	510,557.0	1,041.00					
Sumner Street	12.0	at Voria	565	2,240,372.0	510,563.0	1,043.00				Average	
		Smuner S	566	2,240,378.0	510,277.0	1,038.00					
Allyn Street	20.0	at Voris	567	2,240,757.0	510,569.0	1,045.00				Average	
		Allyn Stree	568	2,240,759.0	510,223.0	1,040.00					
King Street/Lampeter street	20.0	at Voris	569	2,241,308.0	510,577.0	1,057.00				Average	
		King Stree	570	2,241,310.0	510,211.0	1,051.00				Average	
		Lampeter	571	2,241,776.0	510,220.0	1,037.00					
SR8 SB thru lane 4-2	12.0	point577	577	2,243,291.0	512,057.0	1,060.20				Average	
		point98	98	2,243,296.0	511,550.0	1,074.20				Average	
		point99	99	2,243,265.0	511,050.0	1,078.20				Average	
		point100	100	2,243,214.0	510,550.0	1,067.20				Average	
		point101	101	2,243,164.0	510,050.0	1,058.20				Average	
		point102	102	2,243,112.0	509,550.0	1,056.20				Average	
		point103	103	2,243,063.0	509,050.0	1,066.20				Average	
		Lafollette c	104	2,243,048.0	508,887.0	1,068.20				Average	
		point105	105	2,243,015.0	508,561.0	1,077.20				Average	

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		point17	106	2,243,003.0	508,038.0	1,090.20				Average	
		point18	107	2,243,007.0	507,761.0	1,093.20				Average	
		Lover's La	108	2,243,030.0	507,258.0	1,086.20					
SR8 SB thru lane 3-2	12.0	point578	578	2,243,279.0	512,048.0	1,060.10				Average	
		point98	115	2,243,284.0	511,550.0	1,074.10				Average	
		point99	116	2,243,253.0	511,050.0	1,078.10				Average	
		point100	117	2,243,202.0	510,550.0	1,067.10				Average	
		point101	118	2,243,152.0	510,050.0	1,058.10				Average	
		point102	119	2,243,100.0	509,550.0	1,056.10				Average	
		point103	120	2,243,051.0	509,050.0	1,066.10				Average	
		Lafollette c	121	2,243,036.0	508,887.0	1,068.10				Average	
		point105	122	2,243,003.0	508,561.0	1,077.10				Average	
		point17	123	2,242,991.0	508,038.0	1,090.10				Average	
		point18	124	2,242,995.0	507,761.0	1,093.10					
SR8 SB1/Ramp SR8 SB to I-76 WB-2	12.0	point579	579	2,243,268.0	512,039.0	1,060.00				Average	
		point63	63	2,243,273.0	511,571.0	1,074.00				Average	
		point64	64	2,243,242.0	511,069.0	1,078.00				Average	
		point65	65	2,243,213.0	510,930.0	1,075.00				Average	
		Johnston S	66	2,243,164.0	510,734.0	1,072.00				Average	
		point67	67	2,243,089.0	510,515.0	1,072.00				Average	
		point68	68	2,242,964.0	510,345.0	1,077.00				Average	
		point69	69	2,242,785.0	510,224.0	1,080.00				Average	
		begin fill	70	2,242,608.0	510,180.0	1,082.00				Average	
		point71	71	2,242,053.0	510,139.0	1,078.00				Average	
		Browm St	72	2,241,864.0	510,137.0	1,066.00				Average	Y
		point73	73	2,241,704.0	510,141.0	1,060.00				Average	
		point74	74	2,241,205.0	510,159.0	1,050.00				Average	
		point75	75	2,240,651.0	510,179.0	1,041.00				Average	
		point76	76	2,240,156.0	510,193.0	1,030.00				Average	
		Grant St o	77	2,239,533.0	510,210.0	1,018.00					
I-76 WB4 -2	12.0	point583	583	2,247,070.0	510,557.0	1,090.00				Average	Y
		point 259	302	2,246,986.0	510,555.0	1,093.00				Average	
		point258	301	2,246,321.0	510,547.0	1,116.00				Average	
		point308	308	2,245,993.0	510,528.0	1,123.00				Average	
		point310	310	2,245,645.0	510,466.0	1,137.00				Average	
		ped bridge	309	2,245,430.0	510,409.0	1,139.00				Average	
		Pro 1	312	2,244,815.0	510,163.0	1,133.00				Average	
		Pro 2	311	2,244,629.0	510,084.0	1,133.00				Average	
		Pro 3 Inma	313	2,244,454.0	510,025.0	1,110.00				Average	Y

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		Pro 4	314	2,244,390.0	510,003.0	1,110.00				Average	
		Pro 5	315	2,244,011.0	509,907.0	1,100.00				Average	
		Pro 6	316	2,243,709.0	509,880.0	1,102.00				Average	
		Por 7	317	2,243,496.0	509,878.0	1,104.00				Average	
		Pro 8	318	2,243,411.0	509,863.0	1,107.00				Average	
		Start Prop	319	2,243,340.0	509,842.0	1,112.00				Average	Y
		Pier 1	545	2,243,260.0	509,809.0	1,115.00				Average	Y
		Pier 2	546	2,243,146.0	509,735.0	1,115.00				Average	Y
		Pier 3	547	2,243,066.0	509,660.0	1,115.00				Average	Y
		Pier 4	548	2,243,009.0	509,582.0	1,110.00				Average	Y
		Pier 5	549	2,242,962.0	509,500.0	1,102.00				Average	Y
		Pier 6	550	2,242,930.0	509,411.0	1,091.00				Average	Y
		End Prop	551	2,242,917.0	509,356.0	1,084.00				Average	
		point552	552	2,242,905.0	509,194.0	1,078.00				Average	
		point553	553	2,242,920.0	509,074.0	1,072.00				Average	
		point554	554	2,242,943.0	508,890.0	1,066.00				Average	
		point555	555	2,242,959.0	508,727.0	1,071.00				Average	
		point556	556	2,242,965.0	508,561.0	1,077.00				Average	
		point557	557	2,242,967.0	508,038.0	1,090.00					
I-76 WB3 -2	12.0	point584	584	2,247,070.0	510,569.0	1,090.00				Average	Y
		point 259	330	2,246,986.0	510,567.0	1,093.00				Average	
		point258	331	2,246,321.0	510,559.0	1,116.00				Average	
		point308	332	2,245,993.0	510,540.0	1,123.00				Average	
		point310	333	2,245,645.0	510,478.0	1,137.00				Average	
		ped bridge	334	2,245,430.0	510,421.0	1,139.00				Average	
		Pro 1	335	2,244,815.0	510,175.0	1,133.00				Average	
		point311	336	2,244,629.0	510,096.0	1,133.00				Average	
		Inman St u	337	2,244,454.0	510,037.0	1,110.00				Average	Y
		point314	338	2,244,392.0	510,015.0	1,110.00				Average	
		Pro 1	339	2,244,004.0	509,943.0	1,100.00				Average	
		Pro2	340	2,243,702.0	509,934.0	1,095.00				Average	
		Pro 3	341	2,243,517.0	509,947.0	1,094.00				Average	
		Meet exist	534	2,243,284.0	509,966.0	1,090.00					
I-76WB2 -2	12.0	point585	585	2,247,070.0	510,581.0	1,090.00				Average	Y
		point 259	354	2,246,986.0	510,579.0	1,093.00				Average	
		point258	355	2,246,321.0	510,571.0	1,116.00				Average	
		point308	356	2,245,993.0	510,552.0	1,123.00				Average	
		point310	357	2,245,645.0	510,490.0	1,137.00				Average	
		ped bridge	358	2,245,430.0	510,433.0	1,139.00				Average	

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		Pro 1	359	2,244,815.0	510,187.0	1,133.00				Average	
		point311	360	2,244,629.0	510,110.0	1,133.00				Average	
		Inman St	361	2,244,454.0	510,049.0	1,110.00				Average	Y
		point314	362	2,244,392.0	510,027.0	1,110.00				Average	
		point363	363	2,244,004.0	509,955.0	1,100.00				Average	
		Pro2	364	2,243,702.0	509,946.0	1,095.00				Average	
		Pro 3	365	2,243,517.0	509,959.0	1,094.00				Average	
		Meet exist	366	2,243,284.0	509,978.0	1,090.00					
I-76 WB1-2	12.0	point586	586	2,247,070.0	510,593.0	1,090.00				Average	Y
		point 259	383	2,246,986.0	510,591.0	1,093.00				Average	
		point258	384	2,246,321.0	510,583.0	1,116.00				Average	
		point308	385	2,245,993.0	510,564.0	1,123.00				Average	
		point310	386	2,245,645.0	510,502.0	1,137.00				Average	
		ped bridge	387	2,245,430.0	510,445.0	1,139.00				Average	
		Pro 1	528	2,244,815.0	510,199.0	1,133.00				Average	
		Pro 2	529	2,244,627.0	510,122.0	1,133.00				Average	
		Pro 3 Inma	530	2,244,456.0	510,063.0	1,110.00				Average	Y
		Pro 4	531	2,244,391.0	510,047.0	1,110.00				Average	
		Pro 5	536	2,244,219.0	510,024.0	1,112.00				Average	
		Pro 6	537	2,244,044.0	510,031.0	1,107.00				Average	
		Pro 7	538	2,243,865.0	510,060.0	1,103.00				Average	
		Pro8	539	2,243,628.0	510,192.0	1,098.00				Average	
		Pro 9	540	2,243,469.0	510,374.0	1,094.00				Average	
		Pro 10	541	2,243,392.0	510,553.0	1,092.00				Average	
		Pro 11	542	2,243,374.0	510,629.0	1,090.00				Average	
		Pro 12	543	2,243,345.0	510,837.0	1,088.00				Average	
		Meet Exist	544	2,243,338.0	511,006.0	1,078.00					
I77 NB1/Ramp I-77NB to I-76EB-2	12.0	point587	587	2,243,097.0	507,259.0	1,086.00				Average	
		point131	177	2,243,080.0	507,750.0	1,093.00				Average	
		point132	178	2,243,081.0	508,250.0	1,084.00				Average	
		point133	179	2,243,087.0	508,423.0	1,080.00				Average	
		point172	180	2,243,117.0	508,687.0	1,073.00				Average	
		point173	181	2,243,171.0	508,951.0	1,071.00				Average	
		point196	196	2,243,329.0	509,286.0	1,078.00				Average	
		point197	197	2,243,474.0	509,443.0	1,088.00				Average	
		point198	198	2,244,000.0	509,726.0	1,111.00				Average	
		Inman St c	199	2,244,394.0	509,919.0	1,118.00				Average	Y
		point92	200	2,244,457.0	509,948.0	1,120.00				Average	
		point93	201	2,244,841.0	510,128.0	1,133.00				Average	

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		ped bridge	202	2,245,394.0	510,340.0	1,136.00				Average	
		point95	203	2,245,645.0	510,418.0	1,135.00					
I-77 NB2/Ramp I-77NB to I-76WB-2	12.0	Lovers La	168	2,243,085.0	507,259.0	1,086.00				Average	
		point131	169	2,243,068.0	507,750.0	1,093.00				Average	
		point132	170	2,243,069.0	508,250.0	1,084.00				Average	
		point133	171	2,243,075.0	508,423.0	1,080.00				Average	
		point172	172	2,243,105.0	508,687.0	1,073.00				Average	
		point173	173	2,243,159.0	508,951.0	1,071.00				Average	
		point182	182	2,243,255.0	509,317.0	1,076.00				Average	
		point183	183	2,243,276.0	509,561.0	1,076.00				Average	
		SR 8 ovrp	184	2,243,203.0	509,812.0	1,076.00				Average	Y
		point185	185	2,243,112.0	509,942.0	1,077.00				Average	
		point186	186	2,242,975.0	510,062.0	1,079.00				Average	
		point187	187	2,242,776.0	510,145.0	1,081.00				Average	
		point188	188	2,242,588.0	510,161.0	1,082.00				Average	
		point71	189	2,242,053.0	510,127.0	1,078.00				Average	
		Browm St	190	2,241,864.0	510,125.0	1,066.00				Average	Y
		point73	191	2,241,704.0	510,129.0	1,060.00				Average	
		point74	192	2,241,205.0	510,147.0	1,050.00				Average	
		point75	193	2,240,651.0	510,167.0	1,041.00				Average	
		point76	194	2,240,156.0	510,181.0	1,030.00				Average	
		Grant St o	195	2,239,533.0	510,198.0	1,018.00					
I-77 NB thru lane 3-2	12.0	Lovers La	150	2,243,073.0	507,259.0	1,086.00				Average	
		point131	151	2,243,056.0	507,750.0	1,093.00				Average	
		point132	152	2,243,057.0	508,250.0	1,084.00				Average	
		point133	153	2,243,063.0	508,423.0	1,080.00				Average	
		Lafollette I	154	2,243,092.0	508,891.0	1,068.00				Average	
		point135	155	2,243,107.0	509,053.0	1,066.00				Average	
		point136	156	2,243,155.0	509,550.0	1,056.00				Average	
		I-76 EB ov	157	2,243,176.0	509,740.0	1,055.00				Average	
		I-76WB ov	158	2,243,202.0	510,012.0	1,058.00				Average	
		point139	159	2,243,256.0	510,550.0	1,067.00				Average	
		point140	160	2,243,306.0	511,050.0	1,078.00				Average	
		point141	161	2,243,341.0	511,548.0	1,072.00				Average	
		Beacon St	162	2,243,337.0	512,080.0	1,060.00					
I-77 NB thru lane 4-2	12.0	Lovers La	130	2,243,061.0	507,259.0	1,086.00				Average	
		point131	131	2,243,044.0	507,750.0	1,093.00				Average	
		point132	132	2,243,045.0	508,250.0	1,084.00				Average	
		point133	133	2,243,051.0	508,423.0	1,080.00				Average	

INPUT: ROADWAYS**SUM-I76 Central Interchange (101402)**

	Lafollette	134	2,243,079.0	508,891.0	1,068.00				Average	
	point135	135	2,243,095.0	509,053.0	1,066.00				Average	
	point136	136	2,243,143.0	509,550.0	1,056.00				Average	
	I-76 EB ov	137	2,243,164.0	509,740.0	1,055.00				Average	
	I-76WB ov	138	2,243,190.0	510,012.0	1,058.00				Average	
	point139	139	2,243,244.0	510,550.0	1,067.00				Average	
	point140	140	2,243,294.0	511,050.0	1,078.00				Average	
	point141	141	2,243,329.0	511,548.0	1,072.00				Average	
	Beacon St	142	2,243,325.0	512,080.0	1,060.00					

INPUT: TRAFFIC FOR LAeq1h Volumes

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.													
CMCox													
INPUT: TRAFFIC FOR LAeq1h Volumes													
PROJECT/CONTRACT:	SUM-I76 Central Interchange (101402)												
RUN:	Design Year 2040 all runs												
Roadway	Points												
Name	Name	No.	Segment										
			Autos		MTrucks		HTrucks		Buses		Motorcycles		
			V	S	V	S	V	S	V	S	V	S	
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	
I-76 EB1/Ramp I-76EB to I-77SB	point1	1	1372	55	40	55	95	55	0	0	0	0	
	point2	2	1372	55	40	55	95	55	0	0	0	0	
	point3	3	1372	55	40	55	95	55	0	0	0	0	
	point4	4	1372	55	40	55	95	55	0	0	0	0	
	Begin Proposed	505	1471	55	49	55	116	55	0	0	0	0	
	point5	5	1471	55	49	55	116	55	0	0	0	0	
	Brown Street 1	6	1471	55	49	55	116	55	0	0	0	0	
	Brown Street 2	7	1920	50	10	50	42	50	0	0	0	0	
	On fill	8	1920	50	10	50	42	50	0	0	0	0	
	Pro 6	9	1920	50	10	50	42	50	0	0	0	0	
	point10	10	1920	50	10	50	42	50	0	0	0	0	
	point11	11	1920	50	10	50	42	50	0	0	0	0	
	point12	12	1920	50	10	50	42	50	0	0	0	0	
	point13	13	1920	50	10	50	42	50	0	0	0	0	
	point14	14	1920	50	10	50	42	50	0	0	0	0	
	Lafollette St. C	15	1920	50	10	50	42	50	0	0	0	0	
	point558	558	1920	50	10	50	42	50	0	0	0	0	
	point16	16	1920	50	10	50	42	50	0	0	0	0	
	point17	17	1920	50	10	50	42	50	0	0	0	0	
	point18	18											
Brown Street	At Kipling	22	0	0	0	0	0	0	0	0	0	0	
	At Baird	23	0	0	0	0	0	0	0	0	0	0	
	At Lofollette S	24	0	0	0	0	0	0	0	0	0	0	

INPUT: TRAFFIC FOR LAeq1h Volumes

SUM-I76 Central Interchange (101402)

	At E Crosier	25	0	0	0	0	0	0	0	0	0	0
	At E South	26	0	0	0	0	0	0	0	0	0	0
	At Lamparter S	27	0	0	0	0	0	0	0	0	0	0
	At E Voris St	28	0	0	0	0	0	0	0	0	0	0
	At Lovisa St	559										
Johnston Street	At Gridley Ave	29	0	0	0	0	0	0	0	0	0	0
	At Hammel St	30	0	0	0	0	0	0	0	0	0	0
	At Lumiere St.	31	0	0	0	0	0	0	0	0	0	0
	point32	32	0	0	0	0	0	0	0	0	0	0
	Wilson St	33	0	0	0	0	0	0	0	0	0	0
	Jonhston Ct	34	0	0	0	0	0	0	0	0	0	0
	Hedden Ave	35	0	0	0	0	0	0	0	0	0	0
	point36	36	0	0	0	0	0	0	0	0	0	0
	Spicer St.	37	0	0	0	0	0	0	0	0	0	0
	point38	38	0	0	0	0	0	0	0	0	0	0
	At Brown Stre	39										
I-76 WB to I-77 SB	point17	54	1320	55	21	55	49	55	0	0	0	0
	point18	55										
Ramp SR8 SB to I76 EB	point78	78	864	50	14	50	32	50	0	0	0	0
	point79	79	864	50	14	50	32	50	0	0	0	0
	Johnston St o	80	864	50	14	50	32	50	0	0	0	0
	point81	81	864	50	14	50	32	50	0	0	0	0
	point82	82	864	50	14	50	32	50	0	0	0	0
	point83	83	864	50	14	50	32	50	0	0	0	0
	I-76 undrpa	84	864	50	14	50	32	50	0	0	0	0
	point85	85	864	50	14	50	32	50	0	0	0	0
	I-76 ovrpa	86	864	50	14	50	32	50	0	0	0	0
	point87	87	864	50	14	50	32	50	0	0	0	0
	point88	88	864	50	14	50	32	50	0	0	0	0
	point89	89	864	50	14	50	32	50	0	0	0	0
	point90	90	864	50	14	50	32	50	0	0	0	0
	Inman St ovrp	91	864	50	14	50	32	50	0	0	0	0
	point92	92	1003	55	41	55	96	55	0	0	0	0
	point93	93	1142	55	47	55	108	55	0	0	0	0
	ped bridge	204	1142	55	47	55	108	55	0	0	0	0
	point95	205	1522	55	63	55	145	55	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

SUM-I76 Central Interchange (101402)

	point96	272	1522	55	63	55	145	55	0	0	0	0
	point258	273	1522	55	63	55	145	55	0	0	0	0
	Arlington Rd	274										
I-76EB thru lane 2	point1	207	1372	55	40	55	95	55	0	0	0	0
	point2	208	1372	55	40	55	95	55	0	0	0	0
	point3	209	1372	55	40	55	95	55	0	0	0	0
	point4	210	1372	55	40	55	95	55	0	0	0	0
	Begin Proposed	504	1471	55	49	55	116	55	0	0	0	0
	point5	211	1471	55	49	55	116	55	0	0	0	0
	Brown Street 1	212	1471	55	49	55	116	55	0	0	0	0
	Brown Street 2	213	1782	55	73	55	170	55	0	0	0	0
	On fill	214	1782	55	73	55	170	55	0	0	0	0
	Pro 6	215	1782	55	73	55	170	55	0	0	0	0
	Pro 7	509	1782	55	73	55	170	55	0	0	0	0
	Pro8	510	1782	55	73	55	170	55	0	0	0	0
	End Prop	514										
I-76EB thru lane 3	point1	217	1372	55	40	55	95	55	0	0	0	0
	point2	218	1372	55	40	55	95	55	0	0	0	0
	point3	219	1372	55	40	55	95	55	0	0	0	0
	point4	220	1372	55	40	55	95	55	0	0	0	0
	Begin Proposed	503	1471	55	49	55	116	55	0	0	0	0
	Pro 2	221	1471	55	49	55	116	55	0	0	0	0
	Brown Street 1	222	1471	55	49	55	116	55	0	0	0	0
	Brown Street 2	223	1782	55	73	55	170	55	0	0	0	0
	Pro 5	224	1782	55	73	55	170	55	0	0	0	0
	Pro 6	225	1782	55	73	55	170	55	0	0	0	0
	Por 7	508	1782	55	73	55	170	55	0	0	0	0
	Pro 8	226	1782	55	73	55	170	55	0	0	0	0
	End Prop	513										
I-76 EB thru lane 4 Prop Ramp EB to NB	point1	227	1372	55	40	55	95	55	0	0	0	0
	point2	228	1372	55	40	55	95	55	0	0	0	0
	point3	229	1372	55	40	55	95	55	0	0	0	0
	point4	230	1372	55	40	55	95	55	0	0	0	0
	Begin Proposed	502	1075	55	14	55	31	55	0	0	0	0
	Prop 2	231	1075	55	14	55	31	55	0	0	0	0
	Brown Street 1	232	1075	55	14	55	31	55	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

SUM-I76 Central Interchange (101402)

	Brown Street 2	233	1075	55	14	55	31	55	0	0	0	0
	On fill	234	1075	55	14	55	31	55	0	0	0	0
	point225	235	1075	55	14	55	31	55	0	0	0	0
	point506	506	1075	45	14	45	31	45	0	0	0	0
	point507	507	1075	45	14	45	31	45	0	0	0	0
	Begin Bridge	236	1075	45	14	45	31	45	0	0	0	0
	Pier 1	515	1075	45	14	45	31	45	0	0	0	0
	Pier 2	516	1075	45	14	45	31	45	0	0	0	0
	Pier 3	517	1075	45	14	45	31	45	0	0	0	0
	Pier 4	518	1075	45	14	45	31	45	0	0	0	0
	Pier 5	519	1075	45	14	45	31	45	0	0	0	0
	Pier 6	520	1075	45	14	45	31	45	0	0	0	0
	Pier 7	521	1075	45	14	45	31	45	0	0	0	0
	Pier 8	522	1075	45	14	45	31	45	0	0	0	0
	End Bridge	523	1075	45	14	45	31	45	0	0	0	0
	point524	524	1075	45	14	45	31	45	0	0	0	0
	point525	525	1075	45	14	45	31	45	0	0	0	0
	end prop ramp	526										
Lafayette Ave	Brown St	398	0	0	0	0	0	0	0	0	0	0
	Burkhardt Ave	399	0	0	0	0	0	0	0	0	0	0
	point400	400	0	0	0	0	0	0	0	0	0	0
	point401	401	0	0	0	0	0	0	0	0	0	0
	East Crosier	402	0	0	0	0	0	0	0	0	0	0
	Hammel St	403										
East Crosier Ave/Burkhardt Ave	Brown St	416	0	0	0	0	0	0	0	0	0	0
	point417	417	0	0	0	0	0	0	0	0	0	0
	point418	418	0	0	0	0	0	0	0	0	0	0
	Lafollette	419	0	0	0	0	0	0	0	0	0	0
	Baird St	420	0	0	0	0	0	0	0	0	0	0
	Kipling St	421	0	0	0	0	0	0	0	0	0	0
	McKinlet Ave	422	0	0	0	0	0	0	0	0	0	0
	Corice St.	423	0	0	0	0	0	0	0	0	0	0
	Morgan Ave	424	0	0	0	0	0	0	0	0	0	0
	Lovers Lane	425										
East Crosiet	Lafayette Ave	437	0	0	0	0	0	0	0	0	0	0
	point438	438	0	0	0	0	0	0	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

SUM-I76 Central Interchange (101402)

	Hammell	439	0	0	0	0	0	0	0	0	0	0
	Gridley St.	440	0	0	0	0	0	0	0	0	0	0
	Inman St	441										
Inman St	E Crosier	451	0	0	0	0	0	0	0	0	0	0
	5th Ave	452	0	0	0	0	0	0	0	0	0	0
	Lumiere St	453	0	0	0	0	0	0	0	0	0	0
	Bradley Pl	454										
South Street	Grant Street	472	0	0	0	0	0	0	0	0	0	0
	Sumner/Ped E	473	0	0	0	0	0	0	0	0	0	0
	Kling St.	474	0	0	0	0	0	0	0	0	0	0
	Brown St	475	0	0	0	0	0	0	0	0	0	0
	point476	476										
Spicer St	point500	500	0	0	0	0	0	0	0	0	0	0
	point501	501										
I-76 EB ex thru lane 3	Meet Existing	243	1782	55	73	55	170	55	0	0	0	0
	point238	244	1782	55	73	55	170	55	0	0	0	0
	point239	245	1782	55	73	55	170	55	0	0	0	0
	point240	246	1782	55	73	55	170	55	0	0	0	0
	point242	247	1782	55	73	55	170	55	0	0	0	0
	Inman St ovrrp	248	1782	55	73	55	170	55	0	0	0	0
	point249	249	1782	55	73	55	170	55	0	0	0	0
	point93	254	1142	55	47	55	108	55	0	0	0	0
	ped bridge	255	1142	55	47	55	108	55	0	0	0	0
	point95	256	1522	55	63	55	145	55	0	0	0	0
	point96	257	1522	55	63	55	145	55	0	0	0	0
	point258	258	1522	55	63	55	145	55	0	0	0	0
	Arlington Rd	259										
I-76EB ex thru lane 2	Meet Existing	237	1782	55	73	55	170	55	0	0	0	0
	point238	238	1782	55	73	55	170	55	0	0	0	0
	point239	239	1782	55	73	55	170	55	0	0	0	0
	point240	240	1782	55	73	55	170	55	0	0	0	0
	point242	242	1782	55	73	55	170	55	0	0	0	0
	Inman St ovrrp	241	1782	55	73	55	170	55	0	0	0	0
	point249	250	1782	55	73	55	170	55	0	0	0	0
	point93	251	1142	55	47	55	108	55	0	0	0	0
	ped bridge	252	1142	55	47	55	108	55	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

SUM-I76 Central Interchange (101402)

	point95	253	1522	55	63	55	145	55	0	0	0	0
	point96	265	1522	55	63	55	145	55	0	0	0	0
	point258	266	1522	55	63	55	145	55	0	0	0	0
	Arlington Rd	267										
Ramp I-76 EB to SR8 NB-2	point572	572	1729	55	27	55	64	55	0	0	0	0
	point295	295	1729	55	27	55	64	55	0	0	0	0
	point296	296	1352	55	21	55	49	55	0	0	0	0
	Beacon St und	297										
I-76 WB4 -2	point532	532	937	55	28	55	65	55	0	0	0	0
	point320	320	937	55	28	55	65	55	0	0	0	0
	fill	321	937	55	28	55	65	55	0	0	0	0
	point323	323	937	55	28	55	65	55	0	0	0	0
	point322	322	937	55	28	55	65	55	0	0	0	0
	point324	324	1026	55	31	55	71	55	0	0	0	0
	point74	394	1026	55	31	55	71	55	0	0	0	0
	point75	395	1026	55	31	55	71	55	0	0	0	0
	point76	396	1026	55	31	55	71	55	0	0	0	0
	Grant St ovrpa	397										
I-76 WB3 -2	point533	533	937	55	28	55	65	55	0	0	0	0
	point320	344	937	55	28	55	65	55	0	0	0	0
	fill	345	937	55	28	55	65	55	0	0	0	0
	point323	346	937	55	28	55	65	55	0	0	0	0
	point322	347	937	55	28	55	65	55	0	0	0	0
	point324	348	1026	55	31	55	71	55	0	0	0	0
	point74	390	1026	55	31	55	71	55	0	0	0	0
	point75	391	1026	55	31	55	71	55	0	0	0	0
	point76	392	1026	55	31	55	71	55	0	0	0	0
	Grant St ovrpa	393										
SR8 NB1	point294	371	892	50	9	50	19	50	0	0	0	0
	point295	372	892	50	9	50	19	50	0	0	0	0
	point296	373	1352	55	21	55	49	55	0	0	0	0
	Beacon St und	374										
Voris Street	at Brown	560	0	0	0	0	0	0	0	0	0	0
	at King	561	0	0	0	0	0	0	0	0	0	0
	at Allyn	562	0	0	0	0	0	0	0	0	0	0
	at Sumner	563	0	0	0	0	0	0	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

SUM-I76 Central Interchange (101402)

	at Sherman	564										
Sumner Street	at Voria	565	0	0	0	0	0	0	0	0	0	0
	Smuner St	566										
Allyn Street	at Voris	567	0	0	0	0	0	0	0	0	0	0
	Allyn Street	568										
King Street/Lampeter street	at Voris	569	0	0	0	0	0	0	0	0	0	0
	King Street	570	0	0	0	0	0	0	0	0	0	0
	Lampeter Stre	571										
SR8 SB thru lane 4-2	point577	577	2337	55	44	55	105	55	0	0	0	0
	point98	98	2337	55	44	55	105	55	0	0	0	0
	point99	99	2372	55	97	55	226	55	0	0	0	0
	point100	100	2372	55	97	55	226	55	0	0	0	0
	point101	101	2372	55	97	55	226	55	0	0	0	0
	point102	102	2372	55	97	55	226	55	0	0	0	0
	point103	103	2372	55	97	55	226	55	0	0	0	0
	Lafollette ovrrp	104	2372	55	97	55	226	55	0	0	0	0
	point105	105	2372	55	97	55	226	55	0	0	0	0
	point17	106	2372	55	97	55	226	55	0	0	0	0
	point18	107	2372	55	97	55	226	55	0	0	0	0
	Lover's Lane C	108										
SR8 SB thru lane 3-2	point578	578	2337	55	44	55	105	55	0	0	0	0
	point98	115	2337	55	44	55	105	55	0	0	0	0
	point99	116	2372	55	97	55	226	55	0	0	0	0
	point100	117	2372	55	97	55	226	55	0	0	0	0
	point101	118	2372	55	97	55	226	55	0	0	0	0
	point102	119	2372	55	97	55	226	55	0	0	0	0
	point103	120	2372	55	97	55	226	55	0	0	0	0
	Lafollette ovrrp	121	2372	55	97	55	226	55	0	0	0	0
	point105	122	2372	55	97	55	226	55	0	0	0	0
	point17	123	2372	55	97	55	226	55	0	0	0	0
	point18	124										
SR8 SB1/Ramp SR8 SB to I-76 WB-2	point579	579	2337	55	44	55	105	55	0	0	0	0
	point63	63	2337	55	44	55	105	55	0	0	0	0
	point64	64	1114	50	14	50	32	50	0	0	0	0
	point65	65	1114	50	14	50	32	50	0	0	0	0
	Johnston St o	66	1114	50	14	50	32	50	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

SUM-I76 Central Interchange (101402)

	point67	67	1114	50	14	50	32	50	0	0	0	0
	point68	68	1114	50	14	50	32	50	0	0	0	0
	point69	69	1114	50	14	50	32	50	0	0	0	0
	begin fill	70	1114	50	14	50	32	50	0	0	0	0
	point71	71	1114	50	14	50	32	50	0	0	0	0
	Browm St und	72	1114	50	14	50	32	50	0	0	0	0
	point73	73	1026	55	31	55	71	55	0	0	0	0
	point74	74	1026	55	31	55	71	55	0	0	0	0
	point75	75	1026	55	31	55	71	55	0	0	0	0
	point76	76	1026	55	31	55	71	55	0	0	0	0
	Grant St ovrpa	77										
I-76 WB4 -2	point583	583	1010	55	34	55	79	55	0	0	0	0
	point 259	302	1010	55	34	55	79	55	0	0	0	0
	point258	301	1010	55	34	55	79	55	0	0	0	0
	point308	308	1010	55	34	55	79	55	0	0	0	0
	point310	310	1010	55	34	55	79	55	0	0	0	0
	ped bridge	309	1010	55	34	55	79	55	0	0	0	0
	Pro 1	312	1010	55	34	55	79	55	0	0	0	0
	Pro 2	311	1320	55	21	55	49	55	0	0	0	0
	Pro 3 Inman S	313	1320	55	21	55	49	55	0	0	0	0
	Pro 4	314	1320	55	21	55	49	55	0	0	0	0
	Pro 5	315	1320	45	21	45	49	45	0	0	0	0
	Pro 6	316	1320	45	21	45	49	45	0	0	0	0
	Por 7	317	1320	45	21	45	49	45	0	0	0	0
	Pro 8	318	1320	45	21	45	49	45	0	0	0	0
	Start Prop brd	319	1320	45	21	45	49	45	0	0	0	0
	Pier 1	545	1320	45	21	45	49	45	0	0	0	0
	Pier 2	546	1320	45	21	45	49	45	0	0	0	0
	Pier 3	547	1320	45	21	45	49	45	0	0	0	0
	Pier 4	548	1320	45	21	45	49	45	0	0	0	0
	Pier 5	549	1320	45	21	45	49	45	0	0	0	0
	Pier 6	550	1320	45	21	45	49	45	0	0	0	0
	End Prop Brdg	551	1320	45	21	45	49	45	0	0	0	0
	point552	552	1320	45	21	45	49	45	0	0	0	0
	point553	553	1320	45	21	45	49	45	0	0	0	0
	point554	554	1320	50	21	50	49	50	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

SUM-I76 Central Interchange (101402)

	point555	555	1320	50	21	50	49	50	0	0	0	0
	point556	556	1320	55	21	55	49	55	0	0	0	0
	point557	557										
I-76 WB3 -2	point584	584	1010	55	34	55	79	55	0	0	0	0
	point 259	330	1010	55	34	55	79	55	0	0	0	0
	point258	331	1010	55	34	55	79	55	0	0	0	0
	point308	332	1010	55	34	55	79	55	0	0	0	0
	point310	333	1010	55	34	55	79	55	0	0	0	0
	ped bridge	334	1010	55	34	55	79	55	0	0	0	0
	Pro 1	335	1010	55	34	55	79	55	0	0	0	0
	point311	336	937	55	28	55	65	55	0	0	0	0
	Inman St undr	337	937	55	28	55	65	55	0	0	0	0
	point314	338	937	55	28	55	65	55	0	0	0	0
	Pro 1	339	937	55	28	55	65	55	0	0	0	0
	Pro2	340	937	55	28	55	65	55	0	0	0	0
	Pro 3	341	937	55	28	55	65	55	0	0	0	0
	Meet exist	534										
I-76WB2 -2	point585	585	1010	55	34	55	79	55	0	0	0	0
	point 259	354	1010	55	34	55	79	55	0	0	0	0
	point258	355	1010	55	34	55	79	55	0	0	0	0
	point308	356	1010	55	34	55	79	55	0	0	0	0
	point310	357	1010	55	34	55	79	55	0	0	0	0
	ped bridge	358	1010	55	34	55	79	55	0	0	0	0
	Pro 1	359	1010	55	34	55	79	55	0	0	0	0
	point311	360	937	55	28	55	65	55	0	0	0	0
	Inman St undr	361	937	55	28	55	65	55	0	0	0	0
	point314	362	937	55	28	55	65	55	0	0	0	0
	point363	363	937	55	28	55	65	55	0	0	0	0
	Pro2	364	937	55	28	55	65	55	0	0	0	0
	Pro 3	365	937	55	28	55	65	55	0	0	0	0
	Meet exist	366										
I-76 WB1-2	point586	586	1010	55	34	55	79	55	0	0	0	0
	point 259	383	1010	55	34	55	79	55	0	0	0	0
	point258	384	1010	55	34	55	79	55	0	0	0	0
	point308	385	1010	55	34	55	79	55	0	0	0	0
	point310	386	1010	55	34	55	79	55	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

SUM-I76 Central Interchange (101402)

	ped bridge	387	1010	55	34	55	79	55	0	0	0	0
	Pro 1	528	1010	55	34	55	79	55	0	0	0	0
	Pro 2	529	900	50	8	50	20	50	0	0	0	0
	Pro 3 Inman B	530	900	50	8	50	20	50	0	0	0	0
	Pro 4	531	900	50	8	50	20	50	0	0	0	0
	Pro 5	536	900	50	8	50	20	50	0	0	0	0
	Pro 6	537	900	50	8	50	20	50	0	0	0	0
	Pro 7	538	900	50	8	50	20	50	0	0	0	0
	Pro8	539	900	50	8	50	20	50	0	0	0	0
	Pro 9	540	900	50	8	50	20	50	0	0	0	0
	Pro 10	541	900	50	8	50	20	50	0	0	0	0
	Pro 11	542	900	50	8	50	20	50	0	0	0	0
	Pro 12	543	900	50	8	50	20	50	0	0	0	0
	Meet Exist	544										
I77 NB1/Ramp I-77NB to I-76EB-2	point587	587	1507	55	19	55	44	55	0	0	0	0
	point131	177	1507	55	19	55	44	55	0	0	0	0
	point132	178	1507	55	19	55	44	55	0	0	0	0
	point133	179	1270	50	24	50	56	50	0	0	0	0
	point172	180	1270	50	24	50	56	50	0	0	0	0
	point173	181	1270	50	24	50	56	50	0	0	0	0
	point196	196	1270	50	24	50	56	50	0	0	0	0
	point197	197	1270	50	24	50	56	50	0	0	0	0
	point198	198	1270	50	24	50	56	50	0	0	0	0
	Inman St ovrrp	199	1270	50	24	50	56	50	0	0	0	0
	point92	200	1270	50	24	50	56	50	0	0	0	0
	point93	201	1142	55	47	55	108	55	0	0	0	0
	ped bridge	202	1142	55	47	55	108	55	0	0	0	0
	point95	203										
I-77 NB2/Ramp I-77NB to I-76WB-2	Lovers Lane	168	1507	55	19	55	44	55	0	0	0	0
	point131	169	1507	55	19	55	44	55	0	0	0	0
	point132	170	1507	55	19	55	44	55	0	0	0	0
	point133	171	1277	50	5	50	8	50	0	0	0	0
	point172	172	1267	50	5	50	8	50	0	0	0	0
	point173	173	1277	50	5	50	8	50	0	0	0	0
	point182	182	1277	50	5	50	8	50	0	0	0	0
	point183	183	1277	50	5	50	8	50	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

SUM-I76 Central Interchange (101402)

	SR 8 ovrpa	184	1277	50	5	50	8	50	0	0	0	0
	point185	185	1277	50	5	50	8	50	0	0	0	0
	point186	186	1277	50	5	50	8	50	0	0	0	0
	point187	187	1277	50	5	50	8	50	0	0	0	0
	point188	188	1277	50	5	50	8	50	0	0	0	0
	point71	189	1277	50	5	50	8	50	0	0	0	0
	Browm St und	190	1277	50	5	50	8	50	0	0	0	0
	point73	191	1026	55	31	55	71	55	0	0	0	0
	point74	192	1026	55	31	55	71	55	0	0	0	0
	point75	193	1026	55	31	55	71	55	0	0	0	0
	point76	194	1026	55	31	55	71	55	0	0	0	0
	Grant St ovrpa	195										
I-77 NB thru lane 3-2	Lovers Lane	150	1507	55	19	55	44	55	0	0	0	0
	point131	151	1507	55	19	55	44	55	0	0	0	0
	point132	152	1507	55	19	55	44	55	0	0	0	0
	point133	153	1729	55	27	55	64	55	0	0	0	0
	Lafollette Rd c	154	1729	55	27	55	64	55	0	0	0	0
	point135	155	1729	55	27	55	64	55	0	0	0	0
	point136	156	1729	55	27	55	64	55	0	0	0	0
	I-76 EB ovrpa	157	1729	55	27	55	64	55	0	0	0	0
	I-76WB ovrpa	158	1729	55	27	55	64	55	0	0	0	0
	point139	159	1729	55	27	55	64	55	0	0	0	0
	point140	160	1729	55	27	55	64	55	0	0	0	0
	point141	161	1352	55	21	55	49	55	0	0	0	0
	Beacon St und	162										
I-77 NB thru lane 4-2	Lovers Lane	130	1507	55	19	55	44	55	0	0	0	0
	point131	131	1507	55	19	55	44	55	0	0	0	0
	point132	132	1507	55	19	55	44	55	0	0	0	0
	point133	133	1729	55	27	55	64	55	0	0	0	0
	Lafollette Rd c	134	1729	55	27	55	64	55	0	0	0	0
	point135	135	1729	55	27	55	64	55	0	0	0	0
	point136	136	1729	55	27	55	64	55	0	0	0	0
	I-76 EB ovrpa	137	1729	55	27	55	64	55	0	0	0	0
	I-76WB ovrpa	138	1729	55	27	55	64	55	0	0	0	0
	point139	139	1729	55	27	55	64	55	0	0	0	0
	point140	140	1729	55	27	55	64	55	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes**SUM-I76 Central Interchange (101402)**

	point141	141	1352	55	21	55	49	55	0	0	0	0
	Beacon St unc	142										

INPUT: TERRAIN LINES

SUM-I76 Centra

Lawhon & Assoc.			1 August 2017	
CMCox			TNM 2.5	
INPUT: TERRAIN LINES				
PROJECT/CONTRACT:		SUM-I76 Central Interchange (101402)		
RUN:		Design Year 2040 all runs		
Terrain Line	Points			
Name	No.	Coordinates (ground)		
		X	Y	Z
		ft	ft	ft
ROW South 1	1	2,239,528.0	509,978.0	1,035.00
	2	2,239,829.0	510,001.0	1,040.00
	3	2,239,988.0	509,998.0	1,040.00
	4	2,240,230.0	510,045.0	1,038.00
	5	2,240,390.0	510,046.0	1,036.00
	6	2,240,399.0	510,024.0	1,034.00
	7	2,240,687.0	510,030.0	1,036.00
	8	2,241,011.0	510,026.0	1,040.00
	9	2,241,214.0	510,001.0	1,046.00
	10	2,241,450.0	510,002.0	1,046.00
	11	2,241,565.0	509,982.0	1,046.00
	12	2,241,748.0	509,968.0	1,046.00
	13	2,241,743.0	509,998.0	1,048.00
Terrain Line2	14	2,241,844.2	509,981.0	1,048.00
	15	2,241,845.5	509,958.1	1,048.00
	16	2,241,974.2	509,954.2	1,048.00
	17	2,242,112.8	509,933.0	1,050.00
	18	2,242,290.2	509,888.0	1,055.00
	19	2,242,453.0	509,839.8	1,060.00
	20	2,242,639.8	509,758.6	1,066.00
	21	2,242,645.8	509,677.3	1,068.00
	22	2,242,639.8	509,549.7	1,070.00
	23	2,242,706.0	509,399.2	1,072.00
	24	2,242,763.0	509,317.9	1,080.00
Terrain Line5	34	2,242,912.8	508,830.4	1,086.00
	35	2,242,915.2	508,566.8	1,088.00
	36	2,242,920.2	508,288.0	1,094.00
	37	2,242,917.8	508,039.2	1,096.00
	38	2,242,912.8	507,766.0	1,097.00
	39	2,242,915.2	507,502.4	1,100.00
	40	2,242,928.0	507,272.3	1,101.00
	41	2,242,958.5	507,254.6	1,102.00
Terrain Line8	49	2,242,929.2	508,829.3	1,068.00
	50	2,242,944.2	508,571.9	1,076.00
	51	2,242,945.2	508,299.7	1,083.00
	52	2,242,948.2	508,040.2	1,089.00
	53	2,242,943.2	507,764.5	1,092.00

INPUT: TERRAIN LINES

SUM-I76 Centra

	54	2,242,955.8	507,483.7	1,090.00
	55	2,242,968.5	507,275.9	1,086.00
Terrain Line14	77	2,243,128.0	507,257.8	1,085.00
	78	2,243,120.0	507,488.3	1,090.00
	79	2,243,120.0	507,757.9	1,092.00
	80	2,243,124.8	508,031.0	1,090.00
	81	2,243,128.0	508,282.3	1,084.00
	82	2,243,136.0	508,601.2	1,080.00
	83	2,243,161.2	508,822.8	1,070.00
Terrain Line15	84	2,243,172.2	507,258.2	1,110.00
	85	2,243,173.8	507,495.0	1,108.00
	86	2,243,180.0	507,766.5	1,106.00
	87	2,243,180.0	508,042.7	1,104.00
	88	2,243,181.8	508,288.9	1,102.00
	89	2,243,180.0	508,816.5	1,096.00
Terrain Line16	90	2,243,175.2	508,883.4	1,071.00
	91	2,243,210.0	508,998.6	1,072.00
	92	2,243,341.0	509,274.8	1,077.00
	93	2,243,483.0	509,432.7	1,086.00
	94	2,243,779.8	509,600.0	1,101.00
	95	2,244,065.5	509,742.1	1,110.00
	96	2,244,214.0	509,813.8	1,116.00
	97	2,244,394.0	509,895.8	1,116.00
Terrain Line17	98	2,243,219.5	508,880.9	1,094.00
	99	2,243,330.0	509,172.9	1,096.00
	100	2,243,372.5	509,256.5	1,097.00
	101	2,243,513.0	509,412.8	1,100.00
	102	2,243,790.8	509,584.9	1,099.00
	103	2,244,040.2	509,714.3	1,098.00
	104	2,244,210.8	509,791.7	1,099.00
	105	2,244,362.2	509,856.4	1,110.00
	106	2,244,405.0	509,876.9	1,100.00
	107	2,244,406.5	509,905.3	1,100.00
Terrain Line18	108	2,244,466.8	509,931.1	1,120.00
	109	2,244,849.8	510,111.3	1,132.00
Terrain Line19	115	2,244,470.0	509,915.0	1,100.00
	116	2,244,476.5	509,895.7	1,100.00
	117	2,244,727.5	510,030.9	1,106.00
	118	2,245,117.0	510,195.1	1,122.00
	119	2,245,387.5	510,292.9	1,159.00
Terrain Line22-2	146	2,245,836.0	510,887.0	1,132.00
	145	2,245,657.0	510,890.0	1,114.00
	144	2,245,499.0	510,893.0	1,100.00
	143	2,245,215.0	510,564.0	1,100.00
	141	2,244,986.0	510,385.0	1,105.00
	139	2,244,826.0	510,307.0	1,104.00
	140	2,244,471.2	510,169.7	1,103.00
Terrain Line21-2	154	2,245,398.2	510,455.2	1,138.00

INPUT: TERRAIN LINES

SUM-I76 Centra

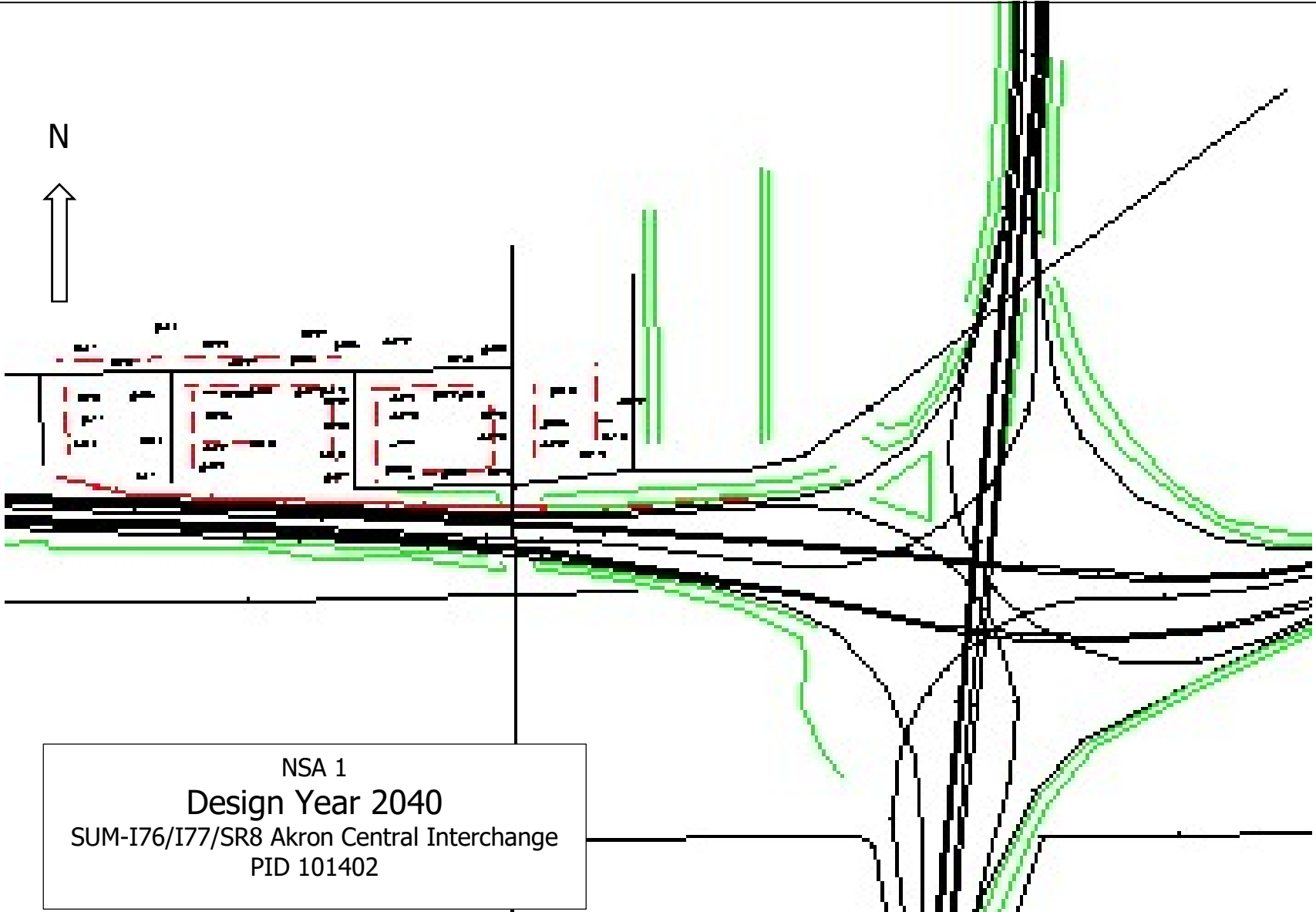
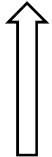
	130	2,244,992.5	510,329.1	1,121.00
	131	2,244,464.8	510,146.0	1,105.00
Terrain Line27	155	2,244,388.2	510,062.1	1,117.00
	156	2,244,224.2	510,043.4	1,111.00
	157	2,244,051.2	510,044.0	1,105.00
	158	2,243,888.8	510,094.9	1,104.00
	159	2,243,745.0	510,190.7	1,101.00
	160	2,243,589.2	510,329.5	1,098.00
	161	2,243,486.2	510,473.2	1,089.00
	162	2,243,409.8	510,648.9	1,081.00
	163	2,243,364.2	510,842.9	1,076.00
Terrain Line28	164	2,244,396.2	510,067.6	1,098.00
	165	2,244,389.0	510,086.7	1,098.00
	166	2,244,109.0	510,074.8	1,095.00
	167	2,243,898.2	510,120.2	1,093.00
	168	2,243,745.0	510,223.2	1,091.00
	169	2,243,615.8	510,371.7	1,089.00
	170	2,243,486.2	510,572.8	1,094.00
	171	2,243,438.5	510,693.0	1,096.00
	172	2,243,397.8	510,843.8	1,098.00
	173	2,243,381.0	510,858.2	1,098.00
Terrain Line18-2	181	2,244,849.8	510,111.3	1,132.00
	110	2,245,389.5	510,321.1	1,135.00
Terrain Line38	198	2,243,354.0	510,993.5	1,077.00
	199	2,243,363.0	511,249.6	1,077.00
	200	2,243,380.0	511,543.8	1,071.00
Terrain Line39	201	2,243,392.2	510,966.6	1,100.00
	202	2,243,384.0	511,004.8	1,100.00
	203	2,243,395.0	511,240.6	1,100.00
	204	2,243,412.0	511,530.3	1,110.00
Terrain Line40	205	2,242,839.5	510,182.2	1,069.00
	206	2,243,017.0	510,112.5	1,074.00
	207	2,243,017.0	510,328.2	1,072.00
	208	2,242,853.0	510,202.4	1,069.00
Terrain Line41	209	2,243,253.0	512,036.7	1,059.00
	210	2,243,258.0	511,582.9	1,073.00
	211	2,243,226.0	511,084.7	1,077.00
	212	2,243,149.0	510,740.6	1,071.00
Terrain Line42	213	2,243,213.0	512,025.4	1,092.00
	214	2,243,223.0	511,587.4	1,094.00
	215	2,243,191.0	511,081.1	1,094.00
	216	2,243,131.5	510,778.8	1,100.00
Terrain Line43	217	2,243,124.8	510,661.1	1,071.00
	218	2,243,074.0	510,539.8	1,071.00
	219	2,242,954.0	510,366.8	1,076.00
	220	2,242,880.0	510,335.3	1,076.00
	221	2,242,812.5	510,378.0	1,076.00
Terrain Line44	222	2,243,084.2	510,638.6	1,087.00

INPUT: TERRAIN LINES

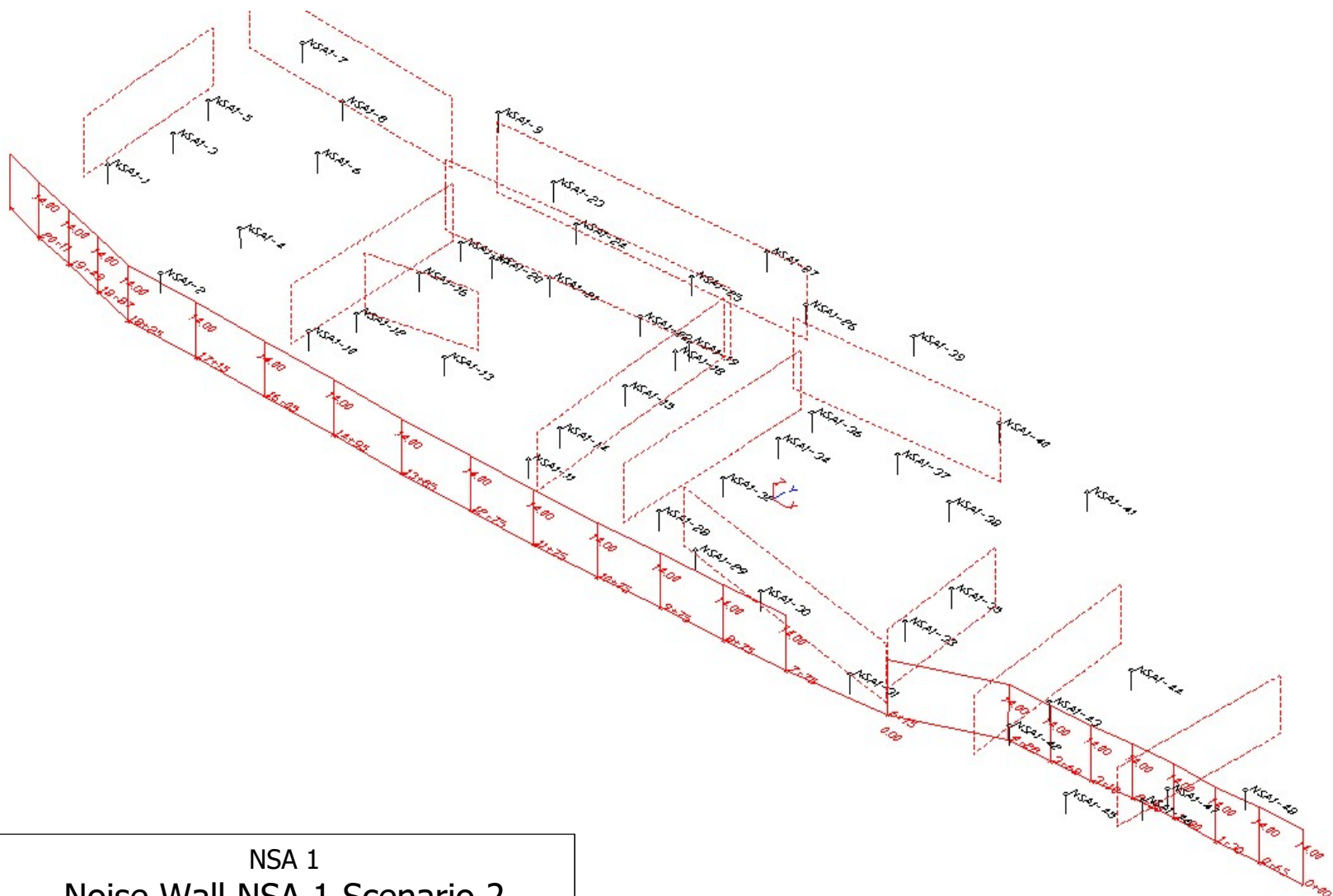
SUM-I76 Centra

	223	2,243,048.5	510,555.5	1,086.00
	224	2,242,947.2	510,414.0	1,084.00
	225	2,242,884.5	510,398.2	1,082.00
	226	2,242,850.8	510,425.2	1,082.00
Terrain Line45	227	2,242,776.8	510,239.0	1,079.00
	228	2,242,606.0	510,198.0	1,081.00
	229	2,242,051.2	510,159.5	1,077.00
	230	2,241,868.5	510,157.0	1,065.00
Terrain Line46	231	2,242,729.5	510,284.0	1,068.00
	232	2,242,592.5	510,240.0	1,058.00
	233	2,242,055.8	510,206.8	1,043.00
	234	2,241,873.8	510,195.6	1,040.00
	235	2,241,855.8	510,173.2	1,038.00
Terrain Line47	236	2,242,518.2	510,356.6	1,060.00
	237	2,242,518.2	511,212.3	1,060.00
Terrain Line48	238	2,242,539.0	510,369.0	1,074.00
	239	2,242,539.0	511,195.7	1,070.00
Terrain Line49	240	2,241,736.0	510,167.7	1,040.00
	241	2,241,719.0	510,204.3	1,040.00
	242	2,241,423.0	510,202.1	1,054.00
Terrain Line51	245	2,240,975.5	510,047.0	1,045.00
	262	2,241,151.0	510,038.0	1,048.00
	261	2,241,531.0	510,016.9	1,057.00
	247	2,241,704.0	510,003.0	1,061.00
Terrain Line52	248	2,241,862.0	509,981.0	1,069.00
	249	2,241,971.2	509,969.0	1,078.00
	250	2,242,352.0	509,909.4	1,083.00
	251	2,242,583.0	509,837.4	1,082.00
	252	2,242,694.5	509,774.7	1,079.00
Terrain Line54	257	2,242,178.5	510,352.6	1,040.00
	258	2,242,170.5	511,076.2	1,020.00
Terrain Line55	259	2,242,206.2	510,360.6	1,048.00
	260	2,242,194.2	511,076.2	1,034.00
Terrain Line36-2	264	2,243,251.2	510,354.8	1,066.00
	194	2,243,296.0	510,808.8	1,071.00

N



NSA 1
Design Year 2040
SUM-I76/I77/SR8 Akron Central Interchange
PID 101402



NSA 1
 Noise Wall NSA 1 Scenario 2
 SUM-I76/I77/SR8 Akron Central Interchange
 PID 101402

RESULTS: SOUND LEVELS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc. CMCox										1 August 2017 TNM 2.5 Calculated with TNM 2.5		
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT: SUM-I76 Central Interchange (101402)												
RUN: Design Year 2040 NSA 1												
BARRIER DESIGN: NSA 1 Scenario 2 45 @14873										Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.		
ATMOSPHERICS: 68 deg F, 50% RH												
Receiver												
Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h	Increase over existing		Type	With Barrier		Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n	Impact	Calculated LAeq1h	Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
NSA1-1	1	1	72.1	72.3	66	0.2	10	Snd Lvl	67.6	4.7	4	0.2
NSA1-2	2	1	76.6	76.9	66	0.3	10	Snd Lvl	64.9	12.0	4	7.5
NSA1-3	3	2	68.6	69.0	66	0.4	10	Snd Lvl	64.6	4.4	4	-0.1
NSA1-4	4	1	71.5	71.6	66	0.1	10	Snd Lvl	63.6	8.0	4	3.5
NSA1-5	5	2	66.2	66.7	66	0.5	10	Snd Lvl	63.1	3.6	4	-0.9
NSA1-6	6	2	66.8	66.8	66	0.0	10	Snd Lvl	61.6	5.2	4	0.7
NSA1-7	7	2	59.7	59.6	66	-0.1	10	----	57.6	2.0	4	-2.5
NSA1-8	8	3	63.8	63.1	66	-0.7	10	----	59.3	3.8	4	-0.7
NSA1-9	9	2	59.8	59.3	66	-0.5	10	----	56.2	3.1	4	-1.4
NSA1-10	10	1	74.2	74.1	66	-0.1	10	Snd Lvl	63.6	10.5	4	6.0
NSA1-11	11	1	75.0	75.3	66	0.3	10	Snd Lvl	65.0	10.3	4	5.8
NSA1-12	12	1	70.7	70.6	66	-0.1	10	Snd Lvl	62.0	8.6	4	4.1
NSA1-13	13	4	70.9	70.8	66	-0.1	10	Snd Lvl	62.2	8.6	4	4.1
NSA1-14	14	2	71.4	71.7	66	0.3	10	Snd Lvl	63.0	8.7	4	4.2
NSA1-15	15	2	67.4	67.9	66	0.5	10	Snd Lvl	61.0	6.9	4	2.4
NSA1-16	16	2	65.0	65.6	66	0.6	10	----	60.2	5.4	4	0.9
NSA1-17	17	2	63.9	64.2	66	0.3	10	----	59.5	4.7	4	0.2
NSA1-18	18	2	65.2	65.7	66	0.5	10	----	59.8	5.9	4	1.4
NSA1-19	19	1	64.4	64.8	66	0.4	10	----	59.3	5.5	4	1.0
NSA1-20	20	2	64.1	64.4	66	0.3	10	----	59.4	5.0	4	0.5
NSA1-21	21	2	64.4	64.8	66	0.4	10	----	59.6	5.2	4	0.7
NSA1-22	22	2	65.2	65.5	66	0.3	10	----	59.9	5.6	4	1.1
NSA1-23	23	2	57.7	57.7	66	0.0	10	----	54.9	2.8	4	-1.7
NSA1-24	24	3	60.5	60.7	66	0.2	10	----	57.4	3.3	4	-1.2

RESULTS: SOUND LEVELS

SUM-I76 Central Interchange (101402)

NSA1-25	25	4	61.1	61.2	66	0.1	10	----	57.8	3.4	4	-1.1
NSA1-26	26	2	59.2	59.7	66	0.5	10	----	57.2	2.5	4	-2.0
NSA1-27	27	2	59.1	59.4	66	0.3	10	----	56.6	2.8	4	-1.7
NSA1-28	28	2	73.7	73.9	66	0.2	10	Snd Lvl	64.3	9.6	4	5.1
NSA1-29	29	2	74.6	75.1	66	0.5	10	Snd Lvl	64.7	10.4	4	5.9
NSA1-30	30	3	74.4	74.9	66	0.5	10	Snd Lvl	65.5	9.4	4	4.9
NSA1-31	31	2	70.5	70.2	66	-0.3	10	Snd Lvl	67.5	2.7	4	-1.8
NSA1-32	32	2	69.9	70.7	66	0.8	10	Snd Lvl	63.5	7.2	4	2.7
NSA1-33	33	2	65.4	67.5	66	2.1	10	Snd Lvl	63.8	3.7	4	-0.8
NSA1-34	34	2	68.1	68.8	66	0.7	10	Snd Lvl	63.1	5.7	4	1.2
NSA1-35	35	2	64.8	66.7	66	1.9	10	Snd Lvl	62.8	3.9	4	-0.6
NSA1-36	36	3	67.0	67.7	66	0.7	10	Snd Lvl	62.6	5.1	4	0.6
NSA1-37	37	2	67.2	67.9	66	0.7	10	Snd Lvl	63.2	4.7	4	0.2
NSA1-38	38	2	66.8	67.5	66	0.7	10	Snd Lvl	63.3	4.2	4	-0.3
NSA1-39	39	2	62.7	62.7	66	0.0	10	----	59.4	3.3	4	-1.2
NSA1-40	40	3	61.7	62.4	66	0.7	10	----	59.5	2.9	4	-1.6
NSA1-41	41	1	62.2	63.3	66	1.1	10	----	60.1	3.2	4	-1.3
NSA1-42	42	2	65.6	66.2	66	0.6	10	Snd Lvl	63.8	2.4	4	-2.1
NSA1-43	43	3	64.3	65.1	66	0.8	10	----	62.3	2.8	4	-1.7
NSA1-44	44	2	63.6	64.1	66	0.5	10	----	60.8	3.3	4	-1.2
NSA1-45	45	1	65.1	64.8	66	-0.3	10	----	61.6	3.2	4	-1.3
NSA1-46	46	1	63.8	63.8	66	0.0	10	----	59.8	4.0	4	-0.5
NSA1-47	47	2	62.4	62.7	66	0.3	10	----	58.5	4.2	4	-0.3
NSA1-48	48	3	62.5	62.7	66	0.2	10	----	58.8	3.9	4	-0.6
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		97	2.0	5.3	12.0							
All Impacted		46	2.4	6.7	12.0							
All that meet NR Goal		45	4.7	7.2	12.0							

RESULTS: BARRIER DESCRIPTIONS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.				1 August 2017					
CMCox				TNM 2.5					

RESULTS: BARRIER DESCRIPTIONS

PROJECT/CONTRACT:	SUM-I76 Central Interchange (101402)								
RUN:	Design Year 2040 NSA 1								
BARRIER DESIGN:	NSA 1 Scenario 2 45 @14873								

Barriers										
Name	Type	Heights along Barrier			Length	If Wall		If Berm		Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	\$
NSA 1 Barrier 1	W	14.00	14.00	14.00	1912	26773				669323
									Total Cost:	669323

INPUT: RECEIVERS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.							1 August 2017				
CMCox							TNM 2.5				
INPUT: RECEIVERS											
PROJECT/CONTRACT:		SUM-I76 Central Interchange (101402)									
RUN:		Design Year 2040 NSA 1									
Receiver											
Name	No.	#DUs	Coordinates (ground)			Height above Ground	Input Sound Levels and Criteria				Active in Calc.
			X	Y	Z		Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	
			ft	ft	ft	ft	dBA	dBA	dB	dB	
NSA1-1	1	1	2,240,478.0	510,337.0	1,044.00	4.92	72.10	66	10.0	4.5	Y
NSA1-2	2	1	2,240,653.0	510,244.0	1,043.00	4.92	76.60	66	10.0	4.5	Y
NSA1-3	3	2	2,240,499.0	510,417.0	1,046.00	4.92	68.60	66	10.0	4.5	Y
NSA1-4	4	1	2,240,672.0	510,348.0	1,046.00	4.92	71.50	66	10.0	4.5	Y
NSA1-5	5	2	2,240,484.0	510,486.0	1,046.00	4.92	66.20	66	10.0	4.5	Y
NSA1-6	6	2	2,240,646.0	510,493.0	1,048.00	4.92	66.80	66	10.0	4.5	Y
NSA1-7	7	2	2,240,478.0	510,637.0	1,045.00	4.92	59.70	66	10.0	4.5	Y
NSA1-8	8	3	2,240,584.0	510,594.0	1,045.00	4.92	63.80	66	10.0	4.5	Y
NSA1-9	9	2	2,240,718.0	510,700.0	1,045.00	4.92	59.80	66	10.0	4.5	Y
NSA1-10	10	1	2,240,851.0	510,274.0	1,045.00	4.92	74.20	66	10.0	4.5	Y
NSA1-11	11	1	2,241,224.0	510,241.0	1,053.00	4.92	75.00	66	10.0	4.5	Y
NSA1-12	12	1	2,240,865.0	510,334.0	1,045.00	4.92	70.70	66	10.0	4.5	Y
NSA1-13	13	4	2,240,999.0	510,337.0	1,047.00	4.92	70.90	66	10.0	4.5	Y
NSA1-14	14	2	2,241,209.0	510,304.0	1,053.00	4.92	71.40	66	10.0	4.5	Y
NSA1-15	15	2	2,241,216.0	510,399.0	1,055.00	4.92	67.40	66	10.0	4.5	Y
NSA1-16	16	2	2,240,867.0	510,430.0	1,046.00	4.92	65.00	66	10.0	4.5	Y
NSA1-17	17	2	2,240,860.0	510,500.0	1,046.00	4.92	63.90	66	10.0	4.5	Y
NSA1-18	18	2	2,241,215.0	510,477.0	1,056.00	4.92	65.20	66	10.0	4.5	Y
NSA1-19	19	1	2,241,209.0	510,504.0	1,055.00	4.92	64.40	66	10.0	4.5	Y
NSA1-20	20	2	2,240,910.0	510,499.0	1,047.00	4.92	64.10	66	10.0	4.5	Y
NSA1-21	21	2	2,240,994.0	510,504.0	1,050.00	4.92	64.40	66	10.0	4.5	Y
NSA1-22	22	2	2,241,134.0	510,504.0	1,054.00	4.92	65.20	66	10.0	4.5	Y

INPUT: RECEIVERS**SUM-I76 Central Interchange (101402)**

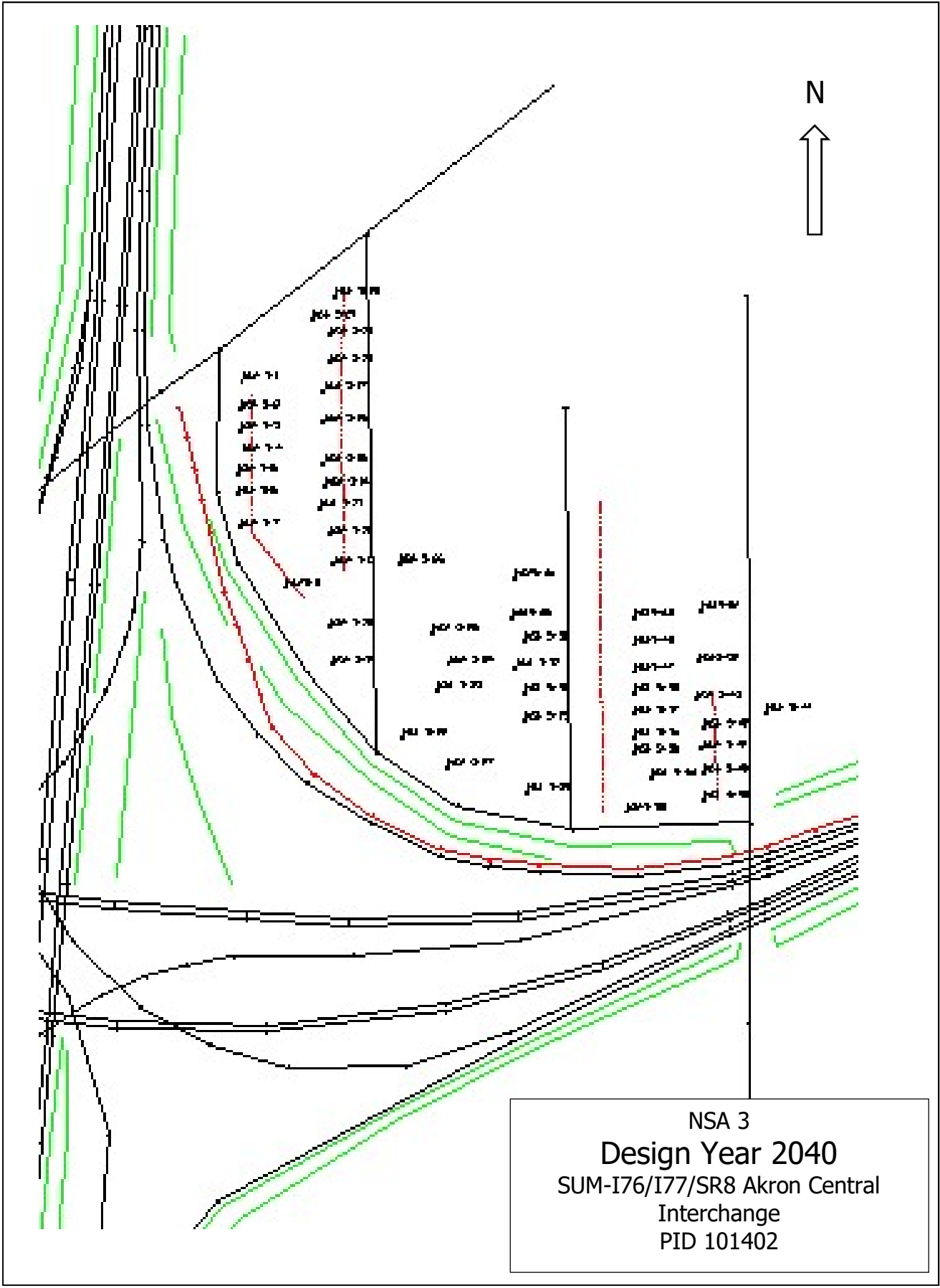
NSA1-23	23	2	2,240,855.0	510,648.0	1,046.00	4.92	57.70	66	10.0	4.5	Y
NSA1-24	24	3	2,240,941.0	510,597.0	1,049.00	4.92	60.50	66	10.0	4.5	Y
NSA1-25	25	4	2,241,117.0	510,600.0	1,053.00	4.92	61.10	66	10.0	4.5	Y
NSA1-26	26	2	2,241,247.0	510,647.0	1,054.00	4.92	59.20	66	10.0	4.5	Y
NSA1-27	27	2	2,241,149.0	510,684.0	1,054.00	4.92	59.10	66	10.0	4.5	Y
NSA1-28	28	2	2,241,401.0	510,265.0	1,055.00	4.92	73.70	66	10.0	4.5	Y
NSA1-29	29	2	2,241,474.0	510,249.0	1,054.00	4.92	74.60	66	10.0	4.5	Y
NSA1-30	30	3	2,241,572.0	510,251.0	1,053.00	4.92	74.40	66	10.0	4.5	Y
NSA1-31	31	2	2,241,707.0	510,255.0	1,045.00	4.92	70.50	66	10.0	4.5	Y
NSA1-32	32	2	2,241,418.0	510,347.0	1,057.00	4.92	69.90	66	10.0	4.5	Y
NSA1-33	33	2	2,241,682.0	510,365.0	1,045.00	4.92	65.40	66	10.0	4.5	Y
NSA1-34	34	2	2,241,421.0	510,430.0	1,059.00	4.92	68.10	66	10.0	4.5	Y
NSA1-35	35	2	2,241,686.0	510,432.0	1,047.00	4.92	64.80	66	10.0	4.5	Y
NSA1-36	36	3	2,241,418.0	510,484.0	1,060.00	4.92	67.00	66	10.0	4.5	Y
NSA1-37	37	2	2,241,543.0	510,492.0	1,061.00	4.92	67.20	66	10.0	4.5	Y
NSA1-38	38	2	2,241,624.0	510,491.0	1,057.00	4.92	66.80	66	10.0	4.5	Y
NSA1-39	39	2	2,241,399.0	510,660.0	1,060.00	4.92	62.70	66	10.0	4.5	Y
NSA1-40	40	3	2,241,587.0	510,605.0	1,062.00	4.92	61.70	66	10.0	4.5	Y
NSA1-41	41	1	2,241,692.0	510,635.0	1,052.00	4.92	62.20	66	10.0	4.5	Y
NSA1-42	42	2	2,241,866.0	510,342.0	1,039.00	4.92	65.60	66	10.0	4.5	Y
NSA1-43	43	3	2,241,866.0	510,403.0	1,039.00	4.92	64.30	66	10.0	4.5	Y
NSA1-44	44	2	2,241,894.0	510,502.0	1,040.00	4.92	63.60	66	10.0	4.5	Y
NSA1-45	45	1	2,241,981.0	510,313.0	1,036.00	4.92	65.10	66	10.0	4.5	Y
NSA1-46	46	1	2,242,048.0	510,364.0	1,036.00	4.92	63.80	66	10.0	4.5	Y
NSA1-47	47	2	2,242,038.0	510,413.0	1,033.00	4.92	62.40	66	10.0	4.5	Y
NSA1-48	48	3	2,242,095.0	510,477.0	1,032.00	4.92	62.50	66	10.0	4.5	Y

NSA 2

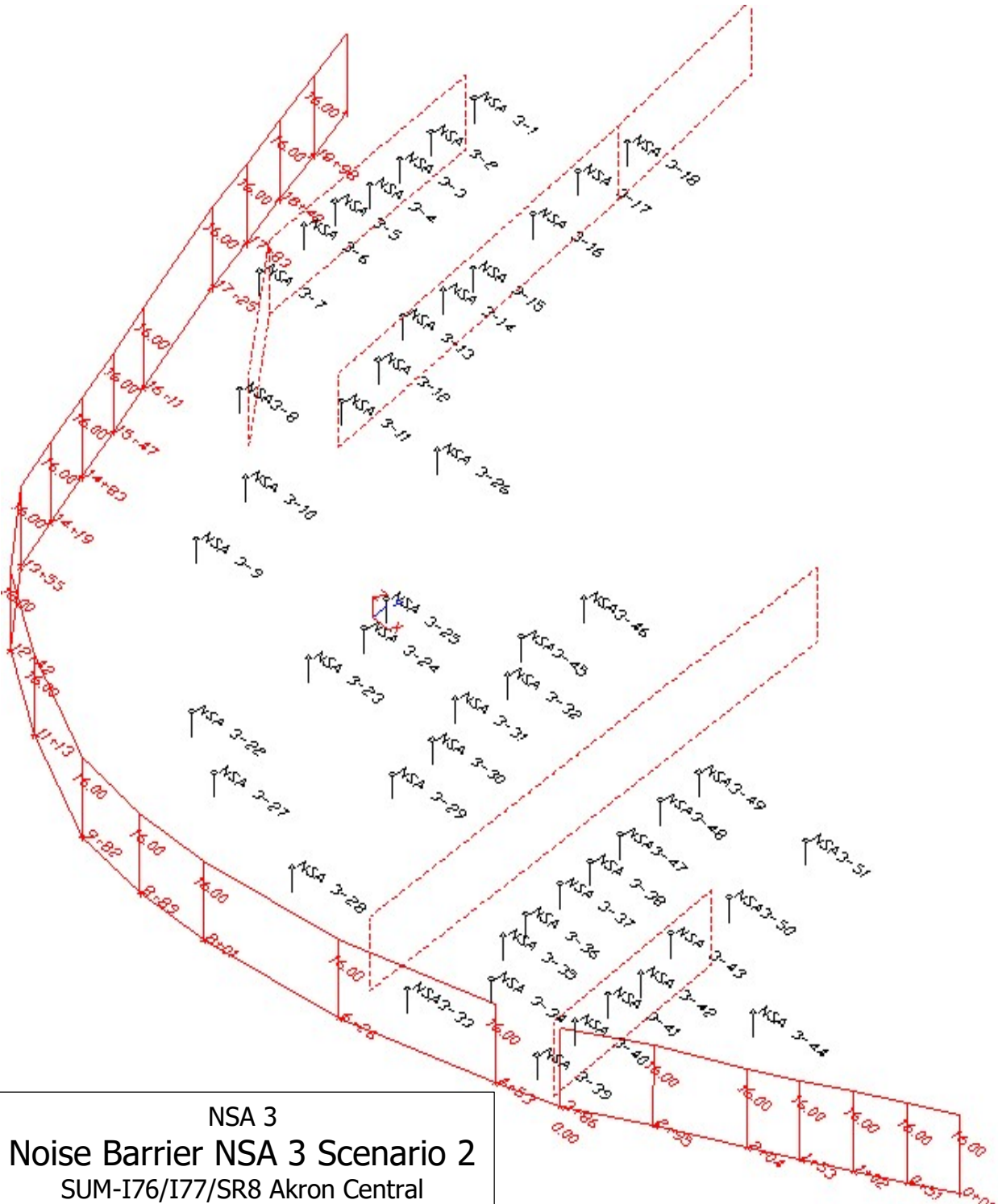
No Noise Barrier Wall Recommended

NSA 3

Noise Barrier Wall NSA 3 Scenario 2



NSA 3
 Design Year 2040
 SUM-I76/I77/SR8 Akron Central
 Interchange
 PID 101402



NSA 3
 Noise Barrier NSA 3 Scenario 2
 SUM-I76/I77/SR8 Akron Central
 Interchange
 PID 101402

RESULTS: SOUND LEVELS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc. CMCox										1 August 2017 TNM 2.5 Calculated with TNM 2.5		
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT: SUM-I76 Central Interchange (101402)												
RUN: NSA 3 Design Year 2040												
BARRIER DESIGN: NSA 3 Scenario 2 Rec										Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.		
ATMOSPHERICS: 68 deg F, 50% RH												
Receiver												
Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h	Increase over existing		Type	With Barrier		Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n	Impact	Calculated LAeq1h	Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
NSA 3-1	1	1	65.3	67.1	66	1.8	10	Snd Lvl	65.0	2.1	4	-2.4
NSA 3-2	2	1	65.3	67.1	66	1.8	10	Snd Lvl	63.6	3.5	4	-1.0
NSA 3-3	3	1	65.3	67.1	66	1.8	10	Snd Lvl	62.6	4.5	4	0.0
NSA 3-4	4	1	65.8	67.6	66	1.8	10	Snd Lvl	62.0	5.6	4	1.1
NSA 3-5	5	1	66.8	68.5	66	1.7	10	Snd Lvl	62.2	6.3	4	1.8
NSA 3-6	6	1	67.4	68.9	66	1.5	10	Snd Lvl	62.0	6.9	4	2.4
NSA 3-7	7	1	67.5	68.6	66	1.1	10	Snd Lvl	61.8	6.8	4	2.3
NSA3-8	8	1	65.6	65.9	66	0.3	10	----	60.5	5.4	4	0.9
NSA 3-9	9	1	65.8	65.3	66	-0.5	10	----	59.7	5.6	4	1.1
NSA 3-10	10	1	65.3	65.6	66	0.3	10	----	60.4	5.2	4	0.7
NSA 3-11	11	1	62.3	64.1	66	1.8	10	----	60.3	3.8	4	-0.7
NSA 3-12	12	1	61.8	63.9	66	2.1	10	----	60.6	3.3	4	-1.2
NSA 3-13	13	1	62.0	64.1	66	2.1	10	----	61.0	3.1	4	-1.4
NSA 3-14	14	1	61.9	64.0	66	2.1	10	----	61.3	2.7	4	-1.8
NSA 3-15	15	2	61.4	63.4	66	2.0	10	----	60.9	2.5	4	-2.0
NSA 3-16	16	1	61.3	63.3	66	2.0	10	----	61.1	2.2	4	-2.3
NSA 3-17	17	1	61.6	63.5	66	1.9	10	----	61.6	1.9	4	-2.6
NSA 3-18	18	1	61.6	63.2	66	1.6	10	----	61.7	1.5	4	-3.0
NSA 3-22	22	1	65.6	64.4	66	-1.2	10	----	59.0	5.4	4	0.9
NSA 3-23	23	1	65.0	65.9	66	0.9	10	----	60.2	5.7	4	1.2
NSA 3-24	24	1	64.8	65.8	66	1.0	10	----	60.7	5.1	4	0.6
NSA 3-25	25	1	63.7	64.4	66	0.7	10	----	59.6	4.8	4	0.3
NSA 3-26	26	1	63.5	64.7	66	1.2	10	----	61.5	3.2	4	-1.3
NSA 3-27	27	1	66.9	66.3	66	-0.6	10	Snd Lvl	60.0	6.3	4	1.8

RESULTS: SOUND LEVELS

SUM-I76 Central Interchange (101402)

NSA 3-28	28	1	72.9	68.3	66	-4.6	10	Snd Lvl	60.8	7.5	4	3.0
NSA 3-29	29	1	65.9	66.9	66	1.0	10	Snd Lvl	60.8	6.1	4	1.6
NSA 3-30	30	1	65.0	66.4	66	1.4	10	Snd Lvl	60.8	5.6	4	1.1
NSA 3-31	31	1	65.0	66.1	66	1.1	10	Snd Lvl	60.8	5.3	4	0.8
NSA 3-32	32	1	64.5	65.6	66	1.1	10	----	60.8	4.8	4	0.3
NSA3-33	33	1	69.0	69.0	66	0.0	10	Snd Lvl	62.4	6.6	4	2.1
NSA 3-34	34	1	67.8	68.1	66	0.3	10	Snd Lvl	62.4	5.7	4	1.2
NSA 3-35	35	1	64.8	67.3	66	2.5	10	Snd Lvl	61.7	5.6	4	1.1
NSA 3-36	36	1	64.3	67.1	66	2.8	10	Snd Lvl	61.6	5.5	4	1.0
NSA 3-37	37	1	64.0	66.7	66	2.7	10	Snd Lvl	61.5	5.2	4	0.7
NSA 3-38	38	1	63.4	66.2	66	2.8	10	Snd Lvl	61.2	5.0	4	0.5
NSA 3-39	49	1	69.2	69.3	66	0.1	10	Snd Lvl	65.0	4.3	4	-0.2
NSA 3-40	50	1	67.6	68.5	66	0.9	10	Snd Lvl	63.8	4.7	4	0.2
NSA 3-41	51	1	66.6	67.5	66	0.9	10	Snd Lvl	62.7	4.8	4	0.3
NSA 3-42	52	1	65.7	66.7	66	1.0	10	Snd Lvl	61.8	4.9	4	0.4
NSA 3-43	53	1	65.4	66.2	66	0.8	10	Snd Lvl	61.0	5.2	4	0.7
NSA 3-44	54	1	67.3	67.6	66	0.3	10	Snd Lvl	63.1	4.5	4	0.0
NSA3-45	55	1	64.0	65.1	66	1.1	10	----	60.7	4.4	4	-0.1
NSA3-46	56	1	63.1	64.2	66	1.1	10	----	60.3	3.9	4	-0.6
NSA3-47	57	1	65.4	66.0	66	0.6	10	Snd Lvl	61.0	5.0	4	0.5
NSA3-48	58	1	64.9	65.5	66	0.6	10	----	60.7	4.8	4	0.3
NSA3-49	59	1	64.1	64.7	66	0.6	10	----	60.3	4.4	4	-0.1
NSA3-50	60	1	65.0	65.3	66	0.3	10	----	60.7	4.6	4	0.1
NSA3-51	61	1	63.8	64.2	66	0.4	10	----	59.9	4.3	4	-0.2
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		49	1.5	4.7	7.5							
All Impacted		25	2.1	5.3	7.5							
All that meet NR Goal		32	4.5	5.5	7.5							

RESULTS: BARRIER DESCRIPTIONS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.				1 August 2017					
CMCox				TNM 2.5					

RESULTS: BARRIER DESCRIPTIONS

PROJECT/CONTRACT:	SUM-I76 Central Interchange (101402)								
RUN:	NSA 3 Design Year 2040								
BARRIER DESIGN:	INPUT HEIGHTS								

Barriers										
Name	Type	Heights along Barrier			Length	If Wall		If Berm		Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	\$
NSA 3 Barrier 1	W	16.00	16.00	16.00	1954	31260				781489
									Total Cost:	781489

INPUT: RECEIVERS

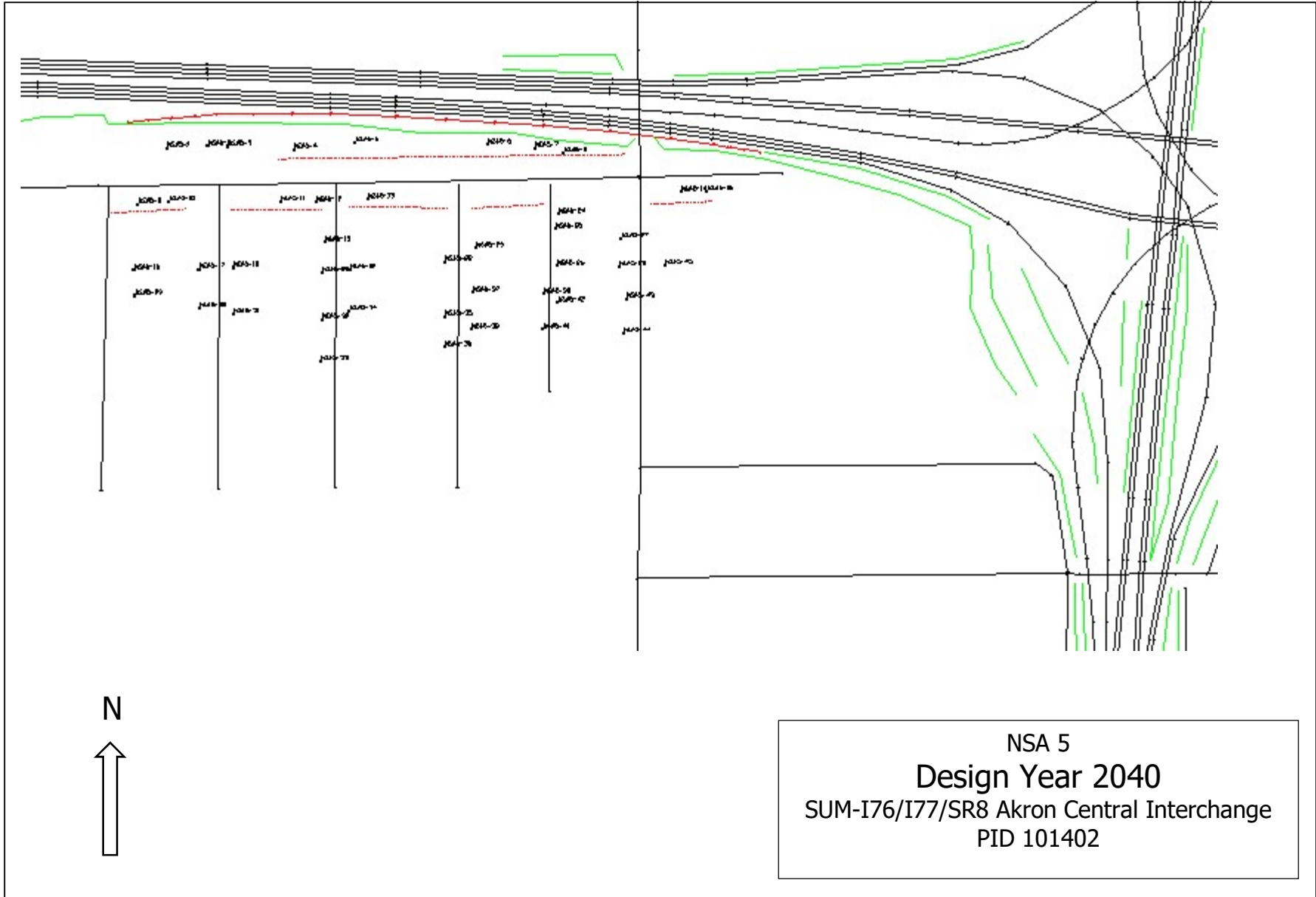
SUM-I76 Central Interchange (101402)

Lawhon & Assoc.							1 August 2017				
CMCox							TNM 2.5				
INPUT: RECEIVERS											
PROJECT/CONTRACT:		SUM-I76 Central Interchange (101402)									
RUN:		NSA 3 Design Year 2040									
Receiver											
Name	No.	#DUs	Coordinates (ground)			Height above Ground	Input Sound Levels and Criteria				Active in Calc.
			X	Y	Z		Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	
			ft	ft	ft	ft	dBA	dBA	dB	dB	
NSA 3-1	1	1	2,243,514.0	510,911.0	1,104.00	4.92	65.30	66	10.0	4.5	
NSA 3-2	2	1	2,243,511.0	510,860.0	1,103.00	4.92	65.30	66	10.0	4.5	
NSA 3-3	3	1	2,243,511.0	510,822.0	1,102.00	4.92	65.30	66	10.0	4.5	
NSA 3-4	4	1	2,243,514.0	510,782.0	1,102.00	4.92	65.80	66	10.0	4.5	
NSA 3-5	5	1	2,243,506.0	510,746.0	1,102.00	4.92	66.80	66	10.0	4.5	
NSA 3-6	6	1	2,243,507.0	510,707.0	1,102.00	4.92	67.40	66	10.0	4.5	
NSA 3-7	7	1	2,243,510.0	510,649.0	1,100.00	4.92	67.50	66	10.0	4.5	
NSA3-8	8	1	2,243,593.0	510,541.0	1,099.00	4.92	65.60	66	10.0	4.5	
NSA 3-9	9	1	2,243,676.0	510,404.0	1,095.00	4.92	65.80	66	10.0	4.5	
NSA 3-10	10	1	2,243,671.0	510,470.0	1,099.00	4.92	65.30	66	10.0	4.5	
NSA 3-11	11	1	2,243,679.0	510,582.0	1,102.00	4.92	62.30	66	10.0	4.5	
NSA 3-12	12	1	2,243,671.0	510,635.0	1,103.00	4.92	61.80	66	10.0	4.5	
NSA 3-13	13	1	2,243,653.0	510,683.0	1,104.00	4.92	62.00	66	10.0	4.5	
NSA 3-14	14	1	2,243,665.0	510,722.0	1,106.00	4.92	61.90	66	10.0	4.5	
NSA 3-15	15	2	2,243,661.0	510,763.0	1,105.00	4.92	61.40	66	10.0	4.5	
NSA 3-16	16	1	2,243,661.0	510,837.0	1,107.00	4.92	61.30	66	10.0	4.5	
NSA 3-17	17	1	2,243,661.0	510,893.0	1,109.00	4.92	61.60	66	10.0	4.5	
NSA 3-18	18	1	2,243,671.0	510,944.0	1,110.00	4.92	61.60	66	10.0	4.5	
NSA 3-19	19	1	2,243,672.0	510,993.0	1,113.00	4.92	62.40	66	10.0	4.5	
NSA 3-20	20	1	2,243,682.0	511,063.0	1,116.00	4.92	62.80	66	10.0	4.5	
NSA 3-21	21	1	2,243,641.0	511,021.0	1,113.00	4.92	63.30	66	10.0	4.5	
NSA 3-22	22	1	2,243,802.0	510,272.0	1,091.00	4.92	65.60	66	10.0	4.5	

INPUT: RECEIVERS

SUM-I76 Central Interchange (101402)

NSA 3-23	23	1	2,243,863.0	510,357.0	1,099.00	4.92	65.00	66	10.0	4.5	
NSA 3-24	24	1	2,243,885.0	510,404.0	1,102.00	4.92	64.80	66	10.0	4.5	
NSA 3-25	25	1	2,243,857.0	510,459.0	1,098.00	4.92	63.70	66	10.0	4.5	
NSA 3-26	26	1	2,243,796.0	510,583.0	1,106.00	4.92	63.50	66	10.0	4.5	
NSA 3-27	27	1	2,243,884.0	510,218.0	1,095.00	4.92	66.90	66	10.0	4.5	
NSA 3-28	28	1	2,244,025.0	510,174.0	1,098.00	4.92	72.90	66	10.0	4.5	
NSA 3-29	29	1	2,244,021.0	510,302.0	1,101.00	4.92	65.90	66	10.0	4.5	
NSA 3-30	30	1	2,244,021.0	510,352.0	1,102.00	4.92	65.00	66	10.0	4.5	
NSA 3-31	31	1	2,244,005.0	510,397.0	1,103.00	4.92	65.00	66	10.0	4.5	
NSA 3-32	32	1	2,244,021.0	510,445.0	1,104.00	4.92	64.50	66	10.0	4.5	
NSA3-33	33	1	2,244,203.0	510,139.0	1,099.00	4.92	69.00	66	10.0	4.5	
NSA 3-34	34	1	2,244,247.0	510,200.0	1,099.00	4.92	67.80	66	10.0	4.5	
NSA 3-35	35	1	2,244,217.5	510,243.6	1,099.00	4.92	64.80	66	10.0	4.5	Y
NSA 3-36	36	1	2,244,217.5	510,272.0	1,100.00	4.92	64.30	66	10.0	4.5	Y
NSA 3-37	37	1	2,244,217.5	510,314.0	1,101.00	4.92	64.00	66	10.0	4.5	Y
NSA 3-38	38	1	2,244,217.5	510,352.0	1,101.00	4.92	63.40	66	10.0	4.5	Y
NSA 3-39	49	1	2,244,343.0	510,160.0	1,100.00	4.92	69.20	66	10.0	4.5	Y
NSA 3-40	50	1	2,244,342.0	510,208.0	1,101.00	4.92	67.60	66	10.0	4.5	Y
NSA 3-41	51	1	2,244,340.0	510,251.0	1,101.00	4.92	66.60	66	10.0	4.5	Y
NSA 3-42	52	1	2,244,343.0	510,289.0	1,101.00	4.92	65.70	66	10.0	4.5	Y
NSA 3-43	53	1	2,244,328.0	510,341.0	1,101.00	4.92	65.40	66	10.0	4.5	Y
NSA 3-44	54	1	2,244,454.0	510,317.0	1,103.00	4.92	67.30	66	10.0	4.5	Y
NSA3-45	55	1	2,243,998.0	510,486.0	1,104.00	4.92	64.00	66	10.0	4.5	Y
NSA3-46	56	1	2,244,004.0	510,557.0	1,104.00	4.92	63.10	66	10.0	4.5	Y
NSA3-47	57	1	2,244,217.5	510,389.0	1,102.00	4.92	65.40	66	10.0	4.5	Y
NSA3-48	58	1	2,244,217.5	510,438.0	1,103.00	4.92	64.90	66	10.0	4.5	Y
NSA3-49	59	1	2,244,217.5	510,486.0	1,103.00	4.92	64.10	66	10.0	4.5	Y
NSA3-50	60	1	2,244,334.0	510,408.0	1,101.00	4.92	65.00	66	10.0	4.5	Y
NSA3-51	61	1	2,244,338.0	510,499.0	1,102.00	4.92	63.80	66	10.0	4.5	Y



RESULTS: SOUND LEVELS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc. CMCox													1 August 2017 TNM 2.5 Calculated with TNM 2.5																																																																																																																																																																																																																																																																																																										
RESULTS: SOUND LEVELS																																																																																																																																																																																																																																																																																																																							
PROJECT/CONTRACT: SUM-I76 Central Interchange (101402)																																																																																																																																																																																																																																																																																																																							
RUN: Noise Barrier NSA 5 Scenario 1																																																																																																																																																																																																																																																																																																																							
BARRIER DESIGN: final 14 ft 69@10832													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		With Barrier																																																																																																																																																																																																																																																																																																		
															LAeq1h		LAeq1h		Increase over existing		Type		Calculated		Noise Reduction																																																																																																																																																																																																																																																																																														
																	Calculated		Crit'n		Calculated		Crit'n		Impact		LAeq1h		Calculated		Goal		Calculated																																																																																																																																																																																																																																																																																						
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NSA5-1	1	1	73.4	73.6	66	0.2	10	Snd Lvl	64.7	8.9	4	4.4	NSA5-2	2	1	74.0	74.0	66	0.0	10	Snd Lvl	63.3	10.7	4	6.2	NSA5-3	3	1	74.0	74.3	66	0.3	10	Snd Lvl	63.3	11.0	4	6.5	NSA5-4	4	2	71.8	72.8	66	1.0	10	Snd Lvl	63.0	9.8	4	5.3	NSA5-5	5	2	73.9	75.0	66	1.1	10	Snd Lvl	63.8	11.2	4	6.7	NSA5-6	6	2	73.5	73.4	66	-0.1	10	Snd Lvl	63.6	9.8	4	5.3	NSA5-7	7	2	72.6	72.2	66	-0.4	10	Snd Lvl	63.9	8.3	4	3.8	NSA5-8	8	1	71.4	71.8	66	0.4	10	Snd Lvl	64.4	7.4	4	2.9	NSA5-9	9	1	67.3	67.5	66	0.2	10	Snd Lvl	63.7	3.8	4	-0.7	NSA5-10	10	3	67.9	68.2	66	0.3	10	Snd Lvl	63.1	5.1	4	0.6	NSA5-11	11	3	68.1	68.2	66	0.1	10	Snd Lvl	60.9	7.3	4	2.8	NSA5-12	12	4	67.2	67.6	66	0.4	10	Snd Lvl	60.6	7.0	4	2.5	NSA5-13	13	2	67.2	67.5	66	0.3	10	Snd Lvl	60.6	6.9	4	2.4	NSA5-14	14	2	69.1	69.8	66	0.7	10	Snd Lvl	64.8	5.0	4	0.5	NSA5-15	15	2	69.0	69.7	66	0.7	10	Snd Lvl	65.1	4.6	4	0.1	NSA5-16	16	2	63.7	63.8	66	0.1	10	----	60.1	3.7	4	-0.8	NSA5-17	17	2	64.6	64.8	66	0.2	10	----	60.1	4.7	4	0.2	NSA5-18	18	3	65.3	65.4	66	0.1	10	----	59.7	5.7	4	1.2	NSA5-19	19	2	66.4	66.6	66	0.2	10	Snd Lvl	59.3	7.3	4	2.8	NSA5-20	20	2	65.7	65.3	66	-0.4	10	----	58.9	6.4	4	1.9	NSA5-21	21	2	65.1	65.1	66	0.0	10	----	58.6	6.5	4	2.0	NSA5-22	22	3	65.0	65.6	66	0.6	10	----	59.1	6.5	4	2.0	NSA5-23	23	1	66.1	66.0	66	-0.1	10	Snd Lvl	59.8	6.2	4	1.7	NSA5-24	24	1	68.3	68.2	66	-0.1	10	Snd Lvl	62.0	6.2	4	1.7

RESULTS: SOUND LEVELS

SUM-I76 Central Interchange (101402)

NSA5-25	25	1	67.4	67.3	66	-0.1	10	Snd Lvl	61.5	5.8	4	1.3
NSA5-26	26	2	65.9	66.4	66	0.5	10	Snd Lvl	60.7	5.7	4	1.2
NSA5-27	27	1	68.4	68.7	66	0.3	10	Snd Lvl	63.0	5.7	4	1.2
NSA5-28	28	2	66.9	67.4	66	0.5	10	Snd Lvl	62.0	5.4	4	0.9
NSA5-29	29	1	62.7	62.9	66	0.2	10	----	59.3	3.6	4	-0.9
NSA5-30	30	2	62.9	63.0	66	0.1	10	----	58.9	4.1	4	-0.4
NSA5-31	31	1	64.6	64.9	66	0.3	10	----	60.3	4.6	4	0.1
NSA5-32	32	2	64.2	64.5	66	0.3	10	----	59.5	5.0	4	0.5
NSA5-33	33	3	63.3	63.6	66	0.3	10	----	59.4	4.2	4	-0.3
NSA5-34	34	3	63.7	63.8	66	0.1	10	----	58.3	5.5	4	1.0
NSA5-35	35	2	64.1	64.1	66	0.0	10	----	58.7	5.4	4	0.9
NSA5-36	36	2	63.7	63.9	66	0.2	10	----	59.2	4.7	4	0.2
NSA5-37	37	1	64.6	64.7	66	0.1	10	----	59.1	5.6	4	1.1
NSA5-38	38	2	63.7	63.7	66	0.0	10	----	58.8	4.9	4	0.4
NSA5-39	39	1	64.6	64.6	66	0.0	10	----	59.3	5.3	4	0.8
NSA5-40	40	2	63.7	63.0	66	-0.7	10	----	58.4	4.6	4	0.1
NSA5-42	41	1	64.9	64.9	66	0.0	10	----	59.9	5.0	4	0.5
NSA5-43	42	2	65.3	65.7	66	0.4	10	----	61.1	4.6	4	0.1
NSA5-44	43	1	64.1	64.3	66	0.2	10	----	60.2	4.1	4	-0.4
NSA5-45	44	1	66.8	67.1	66	0.3	10	Snd Lvl	62.7	4.4	4	-0.1
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		80	3.6	6.1	11.2							
All Impacted		40	3.8	7.1	11.2							
All that meet NR Goal		69	4.6	6.5	11.2							

RESULTS: BARRIER DESCRIPTIONS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.				1 August 2017					
CMCox				TNM 2.5					

RESULTS: BARRIER DESCRIPTIONS

PROJECT/CONTRACT:	SUM-I76 Central Interchange (101402)								
RUN:	Noise Barrier NSA 5 Scenario 1								
BARRIER DESIGN:	final 14 ft 69@10832								

Barriers										
Name	Type	Heights along Barrier			Length	If Wall		If Berm		Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	\$
NSA 5 Barrier 1	W	14.00	14.00	14.00	1656	23178				579460
									Total Cost:	579460

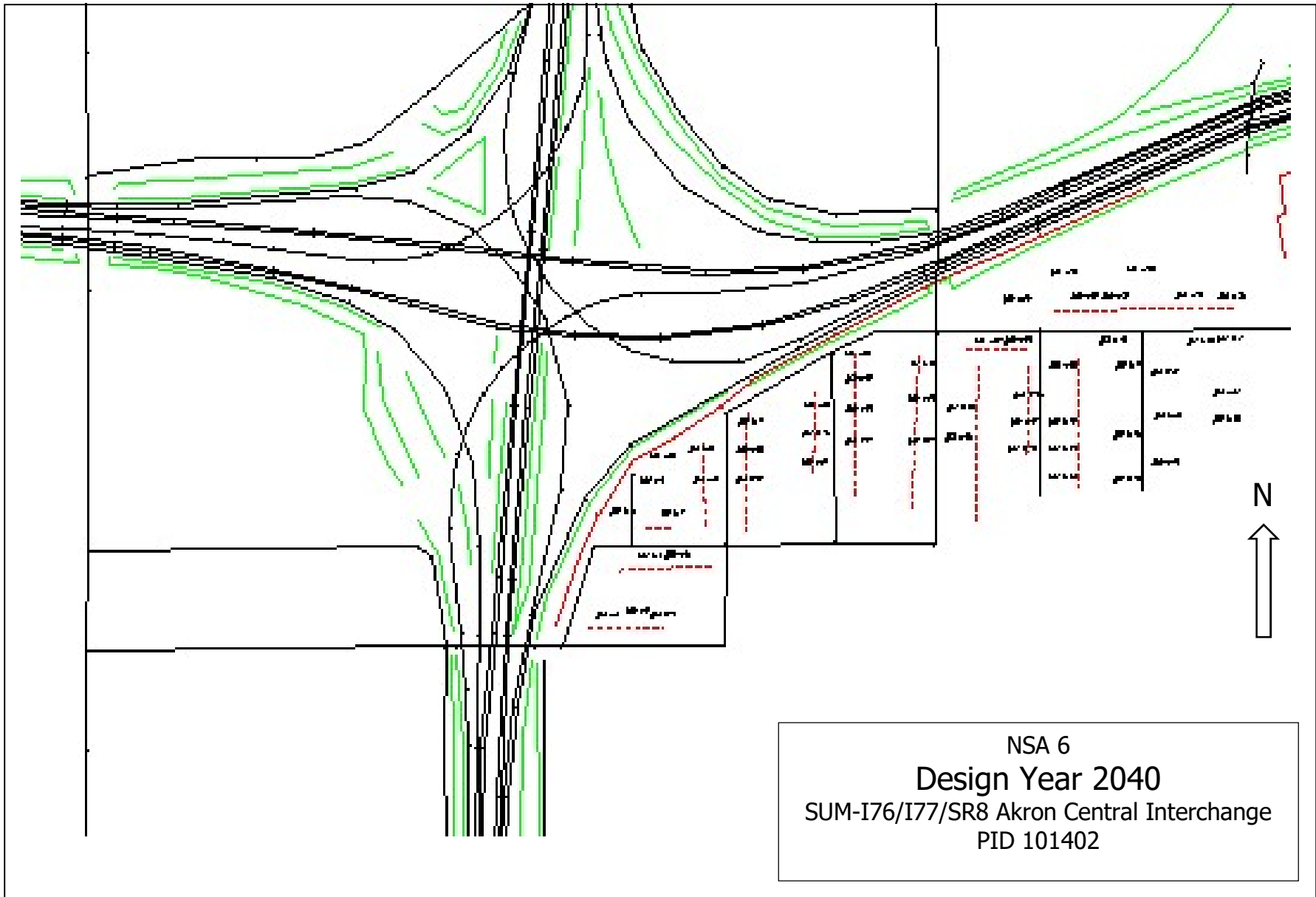
INPUT: RECEIVERS

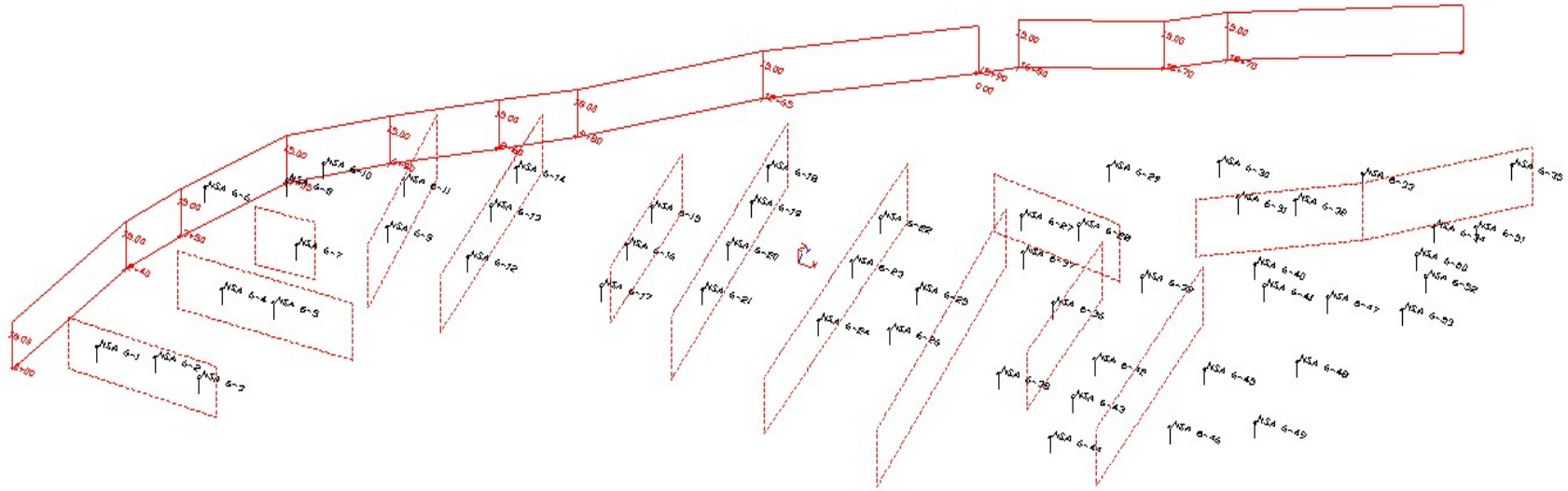
SUM-I76 Central Interchange (101402)

Lawhon & Assoc.							1 August 2017				
CMCox							TNM 2.5				
INPUT: RECEIVERS											
PROJECT/CONTRACT:		SUM-I76 Central Interchange (101402)									
RUN:		Noise Barrier NSA 5 Scenario 1									
Receiver											
Name	No.	#DUs	Coordinates (ground)			Height above Ground	Input Sound Levels and Criteria				Active in Calc.
			X	Y	Z		Existing LAeq1h	Impact LAeq1h	Criteria Sub'l	NR Goal	
			ft	ft	ft	ft	dBA	dBA	dB	dB	
NSA5-1	1	1	2,240,552.0	509,963.0	1,034.00	4.92	73.40	66	10.0	4.5	Y
NSA5-2	2	1	2,240,657.0	509,968.0	1,035.00	4.92	74.00	66	10.0	4.5	Y
NSA5-3	3	1	2,240,710.0	509,967.0	1,036.00	4.92	74.00	66	10.0	4.5	Y
NSA5-4	4	2	2,240,880.0	509,959.0	1,036.00	4.92	71.80	66	10.0	4.5	Y
NSA5-5	5	2	2,241,041.0	509,977.0	1,040.00	4.92	73.90	66	10.0	4.5	Y
NSA5-6	6	2	2,241,385.0	509,972.0	1,044.00	4.92	73.50	66	10.0	4.5	Y
NSA5-7	7	2	2,241,507.0	509,963.0	1,046.00	4.92	72.60	66	10.0	4.5	Y
NSA5-8	8	1	2,241,582.0	509,950.0	1,046.00	4.92	71.40	66	10.0	4.5	Y
NSA5-9	9	1	2,240,476.0	509,817.0	1,034.00	4.92	67.30	66	10.0	4.5	Y
NSA5-10	10	3	2,240,557.0	509,824.0	1,035.00	4.92	67.90	66	10.0	4.5	Y
NSA5-11	11	3	2,240,846.0	509,824.0	1,037.00	4.92	68.10	66	10.0	4.5	Y
NSA5-12	12	4	2,240,938.0	509,822.0	1,037.00	4.92	67.20	66	10.0	4.5	Y
NSA5-13	13	2	2,241,074.0	509,830.0	1,037.00	4.92	67.20	66	10.0	4.5	Y
NSA5-14	14	2	2,241,887.0	509,849.0	1,050.00	4.92	69.10	66	10.0	4.5	Y
NSA5-15	15	2	2,241,955.0	509,850.0	1,052.00	4.92	69.00	66	10.0	4.5	Y
NSA5-16	16	2	2,240,465.0	509,645.0	1,036.00	4.92	63.70	66	10.0	4.5	Y
NSA5-17	17	2	2,240,634.0	509,648.0	1,039.00	4.92	64.60	66	10.0	4.5	Y
NSA5-18	18	3	2,240,723.0	509,652.0	1,041.00	4.92	65.30	66	10.0	4.5	Y
NSA5-19	19	2	2,240,961.0	509,719.0	1,040.00	4.92	66.40	66	10.0	4.5	Y
NSA5-20	20	2	2,240,955.0	509,639.0	1,042.00	4.92	65.70	66	10.0	4.5	Y
NSA5-21	21	2	2,241,026.0	509,647.0	1,040.00	4.92	65.10	66	10.0	4.5	Y
NSA5-22	22	3	2,241,274.0	509,667.0	1,043.00	4.92	65.00	66	10.0	4.5	Y

INPUT: RECEIVERS**SUM-I76 Central Interchange (101402)**

NSA5-23	23	1	2,241,355.0	509,703.0	1,043.00	4.92	66.10	66	10.0	4.5	Y
NSA5-24	24	1	2,241,568.0	509,791.0	1,046.00	4.92	68.30	66	10.0	4.5	Y
NSA5-25	25	1	2,241,560.0	509,752.0	1,046.00	4.92	67.40	66	10.0	4.5	Y
NSA5-26	26	2	2,241,565.0	509,656.0	1,048.00	4.92	65.90	66	10.0	4.5	Y
NSA5-27	27	1	2,241,732.0	509,728.0	1,053.00	4.92	68.40	66	10.0	4.5	Y
NSA5-28	28	2	2,241,726.0	509,655.0	1,054.00	4.92	66.90	66	10.0	4.5	Y
NSA5-29	29	1	2,240,468.0	509,579.0	1,036.00	4.92	62.70	66	10.0	4.5	Y
NSA5-30	30	2	2,240,635.0	509,546.5	1,041.00	4.92	62.90	66	10.0	4.5	Y
NSA5-31	31	1	2,240,724.0	509,531.0	1,050.00	4.92	64.60	66	10.0	4.5	Y
NSA5-32	32	2	2,240,954.0	509,517.0	1,050.00	4.92	64.20	66	10.0	4.5	Y
NSA5-33	33	3	2,240,951.0	509,409.0	1,056.00	4.92	63.30	66	10.0	4.5	Y
NSA5-34	34	3	2,241,025.0	509,540.0	1,043.00	4.92	63.70	66	10.0	4.5	Y
NSA5-35	35	2	2,241,274.0	509,525.0	1,048.00	4.92	64.10	66	10.0	4.5	Y
NSA5-36	36	2	2,241,272.0	509,446.0	1,054.00	4.92	63.70	66	10.0	4.5	Y
NSA5-37	37	1	2,241,345.0	509,587.0	1,045.00	4.92	64.60	66	10.0	4.5	Y
NSA5-38	38	2	2,241,343.0	509,491.0	1,048.00	4.92	63.70	66	10.0	4.5	Y
NSA5-39	39	1	2,241,530.0	509,583.0	1,046.00	4.92	64.60	66	10.0	4.5	Y
NSA5-40	40	2	2,241,528.0	509,491.0	1,046.00	4.92	63.70	66	10.0	4.5	Y
NSA5-42	41	1	2,241,567.0	509,561.0	1,049.00	4.92	64.90	66	10.0	4.5	Y
NSA5-43	42	2	2,241,746.0	509,571.0	1,054.00	4.92	65.30	66	10.0	4.5	Y
NSA5-44	43	1	2,241,737.0	509,482.0	1,055.00	4.92	64.10	66	10.0	4.5	Y
NSA5-45	44	1	2,241,846.0	509,659.0	1,055.00	4.92	66.80	66	10.0	4.5	Y





NSA 6
 Noise Barrier NSA 6 Scenario 2
 SUM-I76/I77/SR8 Akron Central Interchange
 PID 101402

RESULTS: SOUND LEVELS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc. CMCox													1 August 2017 TNM 2.5 Calculated with TNM 2.5																							
RESULTS: SOUND LEVELS																																				
PROJECT/CONTRACT: SUM-I76 Central Interchange (101402)																																				
RUN: Noise Barrier NSA 6 Scenario 2																																				
BARRIER DESIGN: NSA 6 Scenario 2 without bridge													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		With Barrier											
															L_{Aeq}1h		L_{Aeq}1h		Calculated		Crit'n		Calculated		Crit'n		Impact		Calculated		Noise Reduction					
																	Calculated		Crit'n		Calculated		Sub'l Inc				L_{Aeq}1h		Calculated		Goal		Calculated			
															dBA		dBA		dBA		dB		dB				dBA		dB		dB		dB			
NSA 6-1													2		2		65.8		68.2		66		2.4		10		Snd Lvl		64.2		4.0		4		-0.5	
NSA 6-2													3		2		62.9		64.7		66		1.8		10		----		61.2		3.5		4		-1.0	
NSA 6-3													4		2		61.6		63.1		66		1.5		10		----		60.1		3.0		4		-1.5	
NSA 6-4													5		2		63.5		65.3		66		1.8		10		----		61.2		4.1		4		-0.4	
NSA 6-5													6		2		62.0		63.5		66		1.5		10		----		60.5		3.0		4		-1.5	
NSA 6-6													7		2		71.4		73.0		66		1.6		10		Snd Lvl		68.7		4.3		4		-0.2	
NSA 6-7													8		3		64.0		65.6		66		1.6		10		----		61.0		4.6		4		0.1	
NSA 6-8													9		2		67.8		69.7		66		1.9		10		Snd Lvl		62.7		7.0		4		2.5	
NSA 6-9													10		2		63.5		65.1		66		1.6		10		----		59.6		5.5		4		1.0	
NSA 6-10													11		1		69.2		71.4		66		2.2		10		Snd Lvl		60.8		10.6		4		6.1	
NSA 6-11													12		2		66.4		67.9		66		1.5		10		Snd Lvl		60.7		7.2		4		2.7	
NSA 6-12													13		2		61.1		62.8		66		1.7		10		----		59.6		3.2		4		-1.3	
NSA 6-13													14		2		64.3		66.0		66		1.7		10		Snd Lvl		62.5		3.5		4		-1.0	
NSA 6-14													15		2		67.0		68.4		66		1.4		10		Snd Lvl		61.8		6.6		4		2.1	
NSA 6-15													16		2		65.8		67.4		66		1.6		10		Snd Lvl		60.4		7.0		4		2.5	
NSA 6-16													17		3		63.5		65.4		66		1.9		10		----		60.3		5.1		4		0.6	
NSA 6-17													18		1		61.7		63.6		66		1.9		10		----		60.4		3.2		4		-1.3	
NSA 6-18													19		1		68.0		70.4		66		2.4		10		Snd Lvl		61.3		9.1		4		4.6	
NSA 6-19													20		2		65.7		67.6		66		1.9		10		Snd Lvl		59.9		7.7		4		3.2	
NSA 6-20													21		2		63.8		65.6		66		1.8		10		----		59.3		6.3		4		1.8	
NSA 6-21													22		3		62.2		63.9		66		1.7		10		----		59.2		4.7		4		0.2	
NSA 6-22													23		2		65.9		67.6		66		1.7		10		Snd Lvl		61.3		6.3		4		1.8	
NSA 6-23													24		3		64.9		66.3		66		1.4		10		Snd Lvl		60.0		6.3		4		1.8	
NSA 6-24													25		1		63.3		64.1		66		0.8		10		----		58.9		5.2		4		0.7	

RESULTS: SOUND LEVELS

SUM-I76 Central Interchange (101402)

NSA 6-25	26	2	64.8	65.9	66	1.1	10	----	59.9	6.0	4	1.5
NSA 6-26	27	2	63.8	64.5	66	0.7	10	----	59.3	5.2	4	0.7
NSA 6-27	28	2	67.2	68.3	66	1.1	10	Snd Lvl	62.7	5.6	4	1.1
NSA 6-28	29	3	67.1	68.3	66	1.2	10	Snd Lvl	61.8	6.5	4	2.0
NSA 6-29	30	3	69.4	70.2	66	0.8	10	Snd Lvl	63.0	7.2	4	2.7
NSA 6-30	31	1	68.9	70.2	66	1.3	10	Snd Lvl	62.0	8.2	4	3.7
NSA 6-31	32	3	67.7	68.9	66	1.2	10	Snd Lvl	61.4	7.5	4	3.0
NSA 6-32	33	2	67.5	68.3	66	0.8	10	Snd Lvl	62.0	6.3	4	1.8
NSA 6-33	34	1	67.8	69.2	66	1.4	10	Snd Lvl	63.2	6.0	4	1.5
NSA 6-34	35	3	64.5	66.3	66	1.8	10	Snd Lvl	62.5	3.8	4	-0.7
NSA 6-35	36	2	64.8	65.7	66	0.9	10	----	63.8	1.9	4	-2.6
NSA 6-36	37	2	65.2	65.9	66	0.7	10	----	59.8	6.1	4	1.6
NSA 6-37	38	2	66.4	67.7	66	1.3	10	Snd Lvl	63.5	4.2	4	-0.3
NSA 6-38	49	2	63.2	63.7	66	0.5	10	----	58.4	5.3	4	0.8
NSA 6-39	50	3	66.0	66.8	66	0.8	10	Snd Lvl	60.4	6.4	4	1.9
NSA 6-40	51	1	65.5	66.3	66	0.8	10	Snd Lvl	60.3	6.0	4	1.5
NSA 6-41	52	2	65.3	66.5	66	1.2	10	Snd Lvl	61.1	5.4	4	0.9
NSA 6-42	53	2	63.2	63.5	66	0.3	10	----	58.0	5.5	4	1.0
NSA 6-43	54	2	62.2	62.2	66	0.0	10	----	57.4	4.8	4	0.3
NSA 6-44	55	2	61.0	61.4	66	0.4	10	----	57.1	4.3	4	-0.2
NSA 6-45	56	4	63.3	64.6	66	1.3	10	----	59.8	4.8	4	0.3
NSA 6-46	57	1	61.9	63.1	66	1.2	10	----	58.9	4.2	4	-0.3
NSA 6-47	58	1	63.9	65.2	66	1.3	10	----	60.6	4.6	4	0.1
NSA 6-48	59	3	62.3	63.5	66	1.2	10	----	59.3	4.2	4	-0.3
NSA 6-49	60	2	60.9	62.0	66	1.1	10	----	58.5	3.5	4	-1.0
NSA 6-50	61	1	63.6	64.5	66	0.9	10	----	60.8	3.7	4	-0.8
NSA 6-51	62	2	63.5	64.6	66	1.1	10	----	61.7	2.9	4	-1.6
NSA 6-52	63	2	63.7	64.3	66	0.6	10	----	61.5	2.8	4	-1.7
NSA 6-53	64	2	62.3	63.8	66	1.5	10	----	60.9	2.9	4	-1.6
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		108	1.9	5.2	10.6							
All Impacted		49	3.5	6.4	10.6							
All that meet NR Goal		69	4.6	6.3	10.6							

RESULTS: BARRIER DESCRIPTIONS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.				1 August 2017					
CMCox				TNM 2.5					

RESULTS: BARRIER DESCRIPTIONS

PROJECT/CONTRACT:	SUM-I76 Central Interchange (101402)								
RUN:	Noise Barrier NSA 6 Scenario 2								
BARRIER DESIGN:	NSA 6 Scenario 2 without bridge								

Barriers										
Name	Type	Heights along Barrier			Length	If Wall		If Berm		Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	\$
NSA 6 Barrier 1	W	15.00	15.00	15.00	2264	33962				849056
									Total Cost:	849056

Lawhon & Assoc.	1 August 2017
CMCox	TNM 2.5

INPUT: BARRIERS

PROJECT/CONTRACT: SUM-I76 Central Interchange (101402)
 RUN: Noise Barrier NSA 6 Scenario 2

Barrier									Points										
Name	Type	Height		If Wall	If Berm	Run:Rise		Add'tnl	Name	No.	Coordinates (bottom)			Height	Segment			On	Important
		Min	Max	\$ per Unit Area	\$ per Unit Vol.	Top Width	ft:ft	\$ per Unit Length			X	Y	Z	at Point	Seg Ht	Perturbs	Struct?		
		ft	ft	\$/sq ft	\$/cu yd	ft	ft:ft	\$/ft			ft	ft	ft	ft	ft				
NSA 6 Barrier 1	W	4.00	99.99	25.00				0.00	0+00	1	2,243,236.0	508,915.0	1,093.00	15.00	1.00	3	1		
									2+40	2	2,243,321.0	509,141.0	1,096.00	15.00	1.00	3	1		
									3+50	3	2,243,368.0	509,238.0	1,095.00	15.00	1.00	3	1		
									5+35	4	2,243,475.0	509,389.0	1,096.00	15.00	1.00	3	1		
									6+90	5	2,243,612.0	509,466.0	1,100.00	15.00	1.00	3	1		
									8-60	6	2,243,754.0	509,552.0	1,102.00	15.00	1.00	3	1		
									9+80	7	2,243,851.0	509,627.0	1,101.00	15.00	1.00	3	1		
									12+65	8	2,244,102.0	509,757.0	1,111.00	15.00	1.00	3	1		
									15+90	9	2,244,395.0	509,901.0	1,118.00	15.00	1.00	3	1	Y	
									16+50	10	2,244,452.0	509,925.0	1,120.00	15.00	1.00	3	1		
									18+70	11	2,244,658.0	510,006.0	1,122.00	15.00	1.00	3	1		
									19+70	12	2,244,746.0	510,045.0	1,125.00	15.00	1.00	3	1		
									23+25	13	2,245,076.0	510,182.0	1,130.00	15.00					
Hoban High School	W	0.00	99.99	0.00				0.00	point23	14	2,245,509.0	509,985.0	1,163.00	30.00	0.00	0	0		
									point24	15	2,245,486.0	510,101.0	1,164.00	30.00	0.00	0	0		
									point25	16	2,245,507.0	510,109.0	1,165.00	30.00	0.00	0	0		
									point26	17	2,245,494.0	510,220.0	1,165.00	30.00	0.00	0	0		
									point27	18	2,245,579.0	510,231.0	1,167.00	30.00	0.00	0	0		
									point28	19	2,245,577.0	510,266.0	1,167.00	30.00	0.00	0	0		
									point29	20	2,245,905.0	510,300.0	1,166.00	30.00	0.00	0	0		
									point30	21	2,245,912.0	510,268.0	1,166.00	30.00	0.00	0	0		
									point31	22	2,245,969.0	510,272.0	1,163.00	30.00	0.00	0	0		
									point32	23	2,245,993.0	510,056.0	1,163.00	30.00					

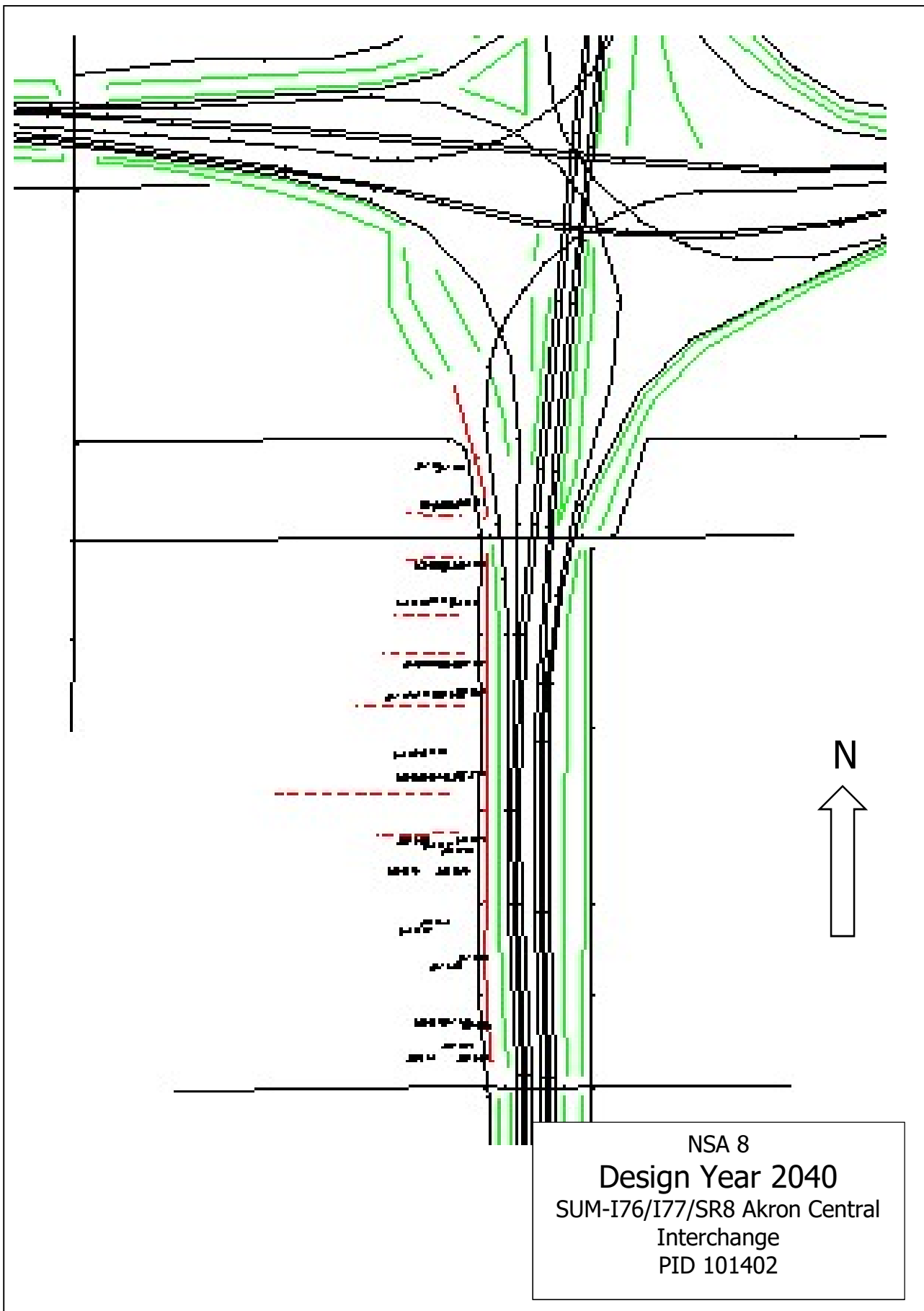
INPUT: RECEIVERS

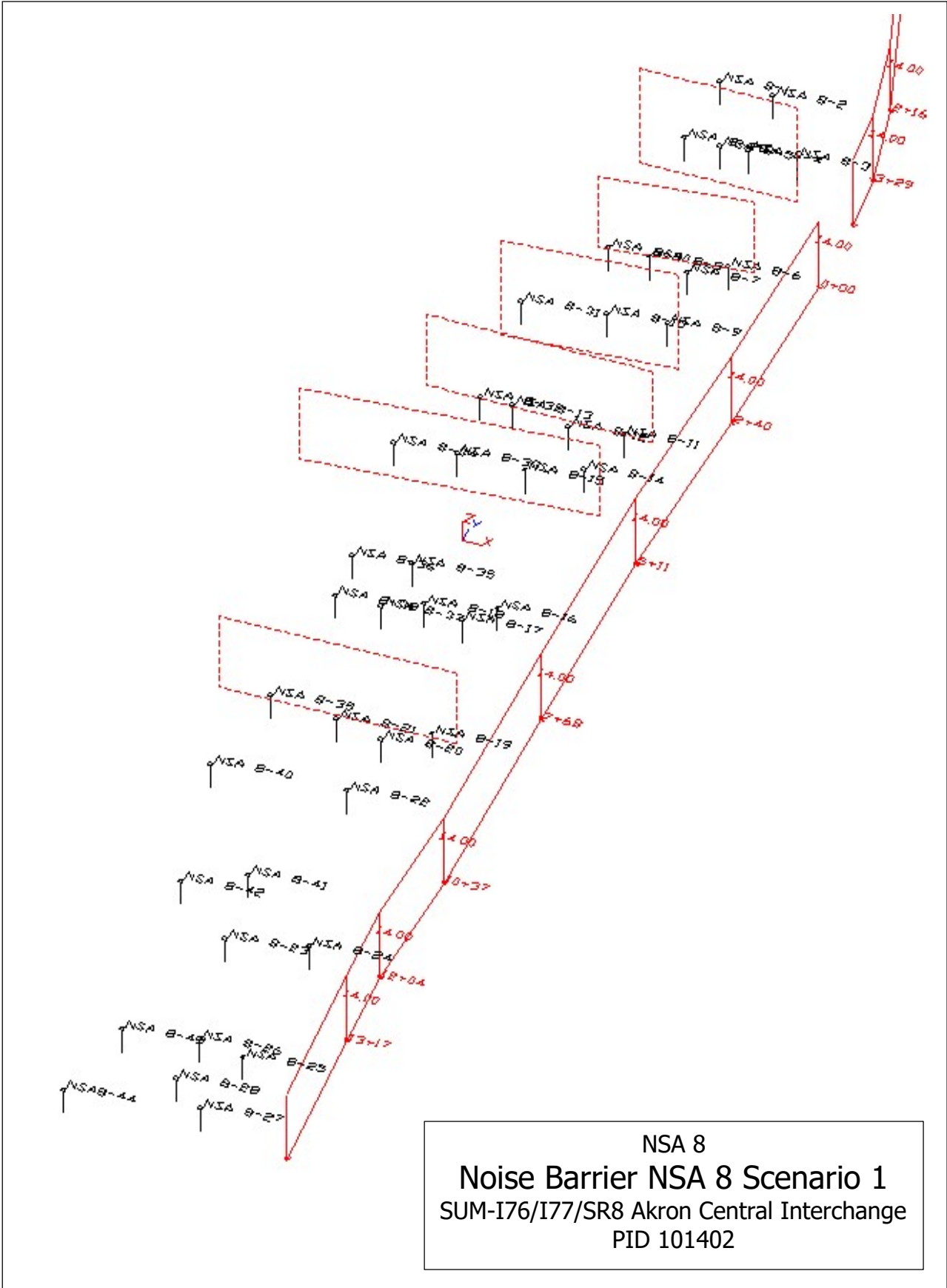
SUM-I76 Central Interchange (101402)

Lawhon & Assoc.							1 August 2017				
CMCox							TNM 2.5				
INPUT: RECEIVERS											
PROJECT/CONTRACT:		SUM-I76 Central Interchange (101402)									
RUN:		Noise Barrier NSA 6 Scenario 2									
Receiver											
Name	No.	#DUs	Coordinates (ground)			Height above Ground	Input Sound Levels and Criteria				Active in Calc.
			X	Y	Z		Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	
			ft	ft	ft	ft	dBA	dBA	dB	dB	
NSA 6-1	2	2	2,243,367.0	508,939.0	1,101.00	4.92	65.80	66	10.0	4.5	
NSA 6-2	3	2	2,243,458.0	508,953.0	1,102.00	4.92	62.90	66	10.0	4.5	
NSA 6-3	4	2	2,243,537.0	508,942.0	1,103.00	4.92	61.60	66	10.0	4.5	
NSA 6-4	5	2	2,243,496.0	509,111.0	1,102.00	4.92	63.50	66	10.0	4.5	
NSA 6-5	6	2	2,243,581.0	509,115.0	1,103.00	4.92	62.00	66	10.0	4.5	
NSA 6-6	7	2	2,243,408.0	509,240.0	1,108.00	4.92	71.40	66	10.0	4.5	
NSA 6-7	8	3	2,243,564.0	509,234.0	1,102.00	4.92	64.00	66	10.0	4.5	
NSA 6-8	9	2	2,243,503.0	509,330.0	1,103.00	4.92	67.80	66	10.0	4.5	
NSA 6-9	10	2	2,243,670.0	509,332.0	1,100.00	4.92	63.50	66	10.0	4.5	
NSA 6-10	11	1	2,243,532.0	509,398.0	1,100.00	4.92	69.20	66	10.0	4.5	
NSA 6-11	12	2	2,243,656.0	509,422.0	1,100.00	4.92	66.40	66	10.0	4.5	
NSA 6-12	13	2	2,243,804.0	509,334.0	1,100.00	4.92	61.10	66	10.0	4.5	
NSA 6-13	14	2	2,243,804.0	509,419.0	1,103.00	4.92	64.30	66	10.0	4.5	
NSA 6-14	15	2	2,243,808.0	509,499.0	1,103.00	4.92	67.00	66	10.0	4.5	
NSA 6-15	16	2	2,244,013.0	509,547.0	1,098.00	4.92	65.80	66	10.0	4.5	
NSA 6-16	17	3	2,244,008.0	509,467.0	1,098.00	4.92	63.50	66	10.0	4.5	
NSA 6-17	18	1	2,244,006.0	509,382.0	1,098.00	4.92	61.70	66	10.0	4.5	
NSA 6-18	19	1	2,244,139.0	509,695.0	1,097.00	4.92	68.00	66	10.0	4.5	
NSA 6-19	20	2	2,244,144.0	509,625.0	1,097.00	4.92	65.70	66	10.0	4.5	
NSA 6-20	21	2	2,244,145.0	509,538.0	1,097.00	4.92	63.80	66	10.0	4.5	
NSA 6-21	22	3	2,244,145.0	509,446.0	1,097.00	4.92	62.20	66	10.0	4.5	
NSA 6-22	23	2	2,244,341.0	509,665.0	1,100.00	4.92	65.90	66	10.0	4.5	

INPUT: RECEIVERS**SUM-I76 Central Interchange (101402)**

NSA 6-23	24	3	2,244,339.0	509,567.0	1,101.00	4.92	64.90	66	10.0	4.5
NSA 6-24	25	1	2,244,339.0	509,447.0	1,101.00	4.92	63.30	66	10.0	4.5
NSA 6-25	26	2	2,244,460.0	509,541.0	1,105.00	4.92	64.80	66	10.0	4.5
NSA 6-26	27	2	2,244,454.0	509,455.0	1,105.00	4.92	63.80	66	10.0	4.5
NSA 6-27	28	2	2,244,546.0	509,732.0	1,105.00	4.92	67.20	66	10.0	4.5
NSA 6-28	29	3	2,244,640.0	509,737.0	1,108.00	4.92	67.10	66	10.0	4.5
NSA 6-29	30	3	2,244,635.0	509,855.0	1,108.00	4.92	69.40	66	10.0	4.5
NSA 6-30	31	1	2,244,783.0	509,933.0	1,108.00	4.92	68.90	66	10.0	4.5
NSA 6-31	32	3	2,244,847.0	509,863.0	1,112.00	4.92	67.70	66	10.0	4.5
NSA 6-32	33	2	2,244,943.0	509,864.0	1,118.00	4.92	67.50	66	10.0	4.5
NSA 6-33	34	1	2,245,020.0	509,940.0	1,120.00	4.92	67.80	66	10.0	4.5
NSA 6-34	35	3	2,245,174.0	509,865.0	1,126.00	4.92	64.50	66	10.0	4.5
NSA 6-35	36	2	2,245,305.0	509,864.0	1,155.00	4.92	64.80	66	10.0	4.5
NSA 6-36	37	2	2,244,671.0	509,578.0	1,110.00	4.92	65.20	66	10.0	4.5
NSA 6-37	38	2	2,244,657.0	509,499.0	1,137.00	4.92	66.40	66	10.0	4.5
NSA 6-38	49	2	2,244,651.0	509,424.0	1,110.00	4.92	63.20	66	10.0	4.5
NSA 6-39	50	3	2,244,780.0	509,663.0	1,113.00	4.92	66.00	66	10.0	4.5
NSA 6-40	51	1	2,244,935.0	509,736.0	1,117.00	4.92	65.50	66	10.0	4.5
NSA 6-41	52	2	2,244,985.0	509,662.0	1,125.00	4.92	65.30	66	10.0	4.5
NSA 6-42	53	2	2,244,777.0	509,499.0	1,112.00	4.92	63.20	66	10.0	4.5
NSA 6-43	54	2	2,244,777.0	509,422.0	1,112.00	4.92	62.20	66	10.0	4.5
NSA 6-44	55	2	2,244,777.0	509,339.0	1,112.00	4.92	61.00	66	10.0	4.5
NSA 6-45	56	4	2,244,978.0	509,462.0	1,129.00	4.92	63.30	66	10.0	4.5
NSA 6-46	57	1	2,244,979.0	509,336.0	1,130.00	4.92	61.90	66	10.0	4.5
NSA 6-47	58	1	2,245,098.0	509,646.0	1,132.00	4.92	63.90	66	10.0	4.5
NSA 6-48	59	3	2,245,107.0	509,518.0	1,132.00	4.92	62.30	66	10.0	4.5
NSA 6-49	60	2	2,245,099.0	509,383.0	1,133.00	4.92	60.90	66	10.0	4.5
NSA 6-50	61	1	2,245,208.0	509,732.0	1,140.00	4.92	63.60	66	10.0	4.5
NSA 6-51	62	2	2,245,302.0	509,741.0	1,154.00	4.92	63.50	66	10.0	4.5
NSA 6-52	63	2	2,245,292.0	509,583.0	1,162.00	4.92	63.70	66	10.0	4.5
NSA 6-53	64	2	2,245,288.0	509,507.0	1,163.00	4.92	62.30	66	10.0	4.5





NSA 8
 Noise Barrier NSA 8 Scenario 1
 SUM-I76/I77/SR8 Akron Central Interchange
 PID 101402

RESULTS: SOUND LEVELS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc. CMCox													1 August 2017 TNM 2.5 Calculated with TNM 2.5	
RESULTS: SOUND LEVELS														
PROJECT/CONTRACT: SUM-I76 Central Interchange (101402)														
RUN: Noise Barrier NSA 8 Scenario 1														
BARRIER DESIGN: final 14' 22@24048													Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.	
ATMOSPHERICS: 68 deg F, 50% RH														
Receiver														
Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h	Increase over existing		Type	With Barrier		Noise Reduction				
				Calculated	Crit'n	Calculated	Crit'n	Impact	Calculated LAeq1h	Calculated	Goal	Calculated minus Goal		
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB		
NSA 8-1	7	1	62.9	64.4	66	1.5	10	----	61.7	2.7	4	-1.8		
NSA 8-2	8	1	64.6	66.1	66	1.5	10	Snd Lvl	62.4	3.7	4	-0.8		
NSA 8-3	9	1	69.0	70.6	66	1.6	10	Snd Lvl	66.4	4.2	4	-0.3		
NSA 8-4	10	1	65.3	67.4	66	2.1	10	Snd Lvl	63.3	4.1	4	-0.4		
NSA 8-5	11	1	64.4	66.0	66	1.6	10	Snd Lvl	62.7	3.3	4	-1.2		
NSA 8-6	12	1	68.1	70.2	66	2.1	10	Snd Lvl	65.8	4.4	4	-0.1		
NSA 8-7	13	1	64.5	65.8	66	1.3	10	----	61.8	4.0	4	-0.5		
NSA 8-8	14	1	63.2	64.6	66	1.4	10	----	61.0	3.6	4	-0.9		
NSA 8-9	15	1	67.6	69.0	66	1.4	10	Snd Lvl	62.7	6.3	4	1.8		
NSA 8-10	16	1	63.4	64.8	66	1.4	10	----	61.3	3.5	4	-1.0		
NSA 8-11	17	1	68.5	69.5	66	1.0	10	Snd Lvl	61.6	7.9	4	3.4		
NSA 8-12	18	1	65.3	66.1	66	0.8	10	Snd Lvl	60.6	5.5	4	1.0		
NSA 8-13	19	1	63.2	64.1	66	0.9	10	----	59.7	4.4	4	-0.1		
NSA 8-14	20	1	69.2	70.5	66	1.3	10	Snd Lvl	62.3	8.2	4	3.7		
NSA 8-15	21	1	64.8	65.8	66	1.0	10	----	60.6	5.2	4	0.7		
NSA 8-16	22	1	69.8	71.5	66	1.7	10	Snd Lvl	62.5	9.0	4	4.5		
NSA 8-17	23	1	67.4	69.1	66	1.7	10	Snd Lvl	61.6	7.5	4	3.0		
NSA 8-18	24	1	65.5	67.0	66	1.5	10	Snd Lvl	60.8	6.2	4	1.7		
NSA 8-19	25	1	70.4	72.0	66	1.6	10	Snd Lvl	62.2	9.8	4	5.3		
NSA 8-20	26	1	68.3	69.7	66	1.4	10	Snd Lvl	61.9	7.8	4	3.3		
NSA 8-21	27	1	65.8	67.3	66	1.5	10	Snd Lvl	60.6	6.7	4	2.2		
NSA 8-22	28	1	66.8	68.1	66	1.3	10	Snd Lvl	61.1	7.0	4	2.5		
NSA 8-23	29	1	65.1	67.0	66	1.9	10	Snd Lvl	60.8	6.2	4	1.7		
NSA 8-24	30	1	69.0	70.6	66	1.6	10	Snd Lvl	62.1	8.5	4	4.0		

RESULTS: SOUND LEVELS

SUM-I76 Central Interchange (101402)

NSA 8-25	31	1	68.5	69.9	66	1.4	10	Snd Lvl	62.5	7.4	4	2.9
NSA 8-26	32	1	66.0	67.3	66	1.3	10	Snd Lvl	61.8	5.5	4	1.0
NSA 8-27	33	1	68.3	69.6	66	1.3	10	Snd Lvl	65.5	4.1	4	-0.4
NSA 8-28	34	1	65.8	67.2	66	1.4	10	Snd Lvl	62.7	4.5	4	0.0
NSA 8-29	35	1	63.2	64.9	66	1.7	10	----	62.8	2.1	4	-2.4
NSA 8-30	36	1	61.9	63.3	66	1.4	10	----	60.3	3.0	4	-1.5
NSA 8-31	37	1	61.3	62.8	66	1.5	10	----	60.7	2.1	4	-2.4
NSA 8-32	38	1	62.3	63.1	66	0.8	10	----	59.1	4.0	4	-0.5
NSA 8-33	39	1	62.5	63.6	66	1.1	10	----	59.7	3.9	4	-0.6
NSA 8-34	40	1	61.0	62.0	66	1.0	10	----	59.1	2.9	4	-1.6
NSA 8-35	41	1	63.5	64.7	66	1.2	10	----	59.7	5.0	4	0.5
NSA 8-36	42	1	62.0	63.3	66	1.3	10	----	59.0	4.3	4	-0.2
NSA 8-37	43	1	63.6	65.0	66	1.4	10	----	59.7	5.3	4	0.8
NSA 8-38	44	1	62.0	63.5	66	1.5	10	----	58.9	4.6	4	0.1
NSA 8-39	45	1	63.5	65.0	66	1.5	10	----	59.2	5.8	4	1.3
NSA 8-40	46	1	61.0	62.7	66	1.7	10	----	58.3	4.4	4	-0.1
NSA 8-41	47	1	64.1	65.6	66	1.5	10	----	59.9	5.7	4	1.2
NSA 8-42	48	1	61.0	62.7	66	1.7	10	----	58.6	4.1	4	-0.4
NSA 8-43	49	1	62.8	64.2	66	1.4	10	----	60.2	4.0	4	-0.5
NSA8-44	50	1	62.8	64.0	66	1.2	10	----	61.3	2.7	4	-1.8
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		44	2.1	5.1	9.8							
All Impacted		22	3.3	6.3	9.8							
All that meet NR Goal		21	4.6	6.7	9.8							

RESULTS: BARRIER DESCRIPTIONS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.				1 August 2017					
CMCox				TNM 2.5					

RESULTS: BARRIER DESCRIPTIONS

PROJECT/CONTRACT:	SUM-I76 Central Interchange (101402)								
RUN:	Noise Barrier NSA 8 Scenario 1								
BARRIER DESIGN:	final 14' 22@24048								

Barriers										
Name	Type	Heights along Barrier			Length	If Wall		If Berm		Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	\$
NSA 8 Barrier 1 south	W	14.00	14.00	14.00	1512	21162				529061
NSA 8 Barrier 1 north	W	14.00	14.00	14.00	401	5611				140275
									Total Cost:	669336

INPUT: BARRIERS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.					1 August 2017														
CMCox					TNM 2.5														

INPUT: BARRIERS

PROJECT/CONTRACT: SUM-I76 Central Interchange (101402)

RUN: Noise Barrier NSA 8 Scenario 1

Barrier									Points									
Name	Type	Height		If Wall	If Berm		Add'tnl	Name	No.	Coordinates (bottom)			Height	Segment			On	Important
		Min	Max	\$ per Unit Area	\$ per Unit Vol.	Top Width	Run:Rise	\$ per Unit Length		X	Y	Z	at Point	Seg Ht	Perturbs	Struc?		
		ft	ft	\$/sq ft	\$/cu yd	ft	ft:ft	\$/ft		ft	ft	ft	ft	ft				
NSA 8 Barrier 1 north	W	5.00	99.99	25.00				0.00	0+00	5	2,242,818.0	509,297.0	1,080.00	12.00	1.00	5	2	
									2+16	6	2,242,881.0	509,090.0	1,084.00	12.00	1.00	5	2	
									3+29	7	2,242,903.0	508,979.0	1,085.00	12.00	1.00	5	2	
									4+00	8	2,242,909.0	508,908.0	1,085.00	12.00				
NSA 8 Barrier 1 south	W	5.00	99.99	25.00				0.00	0+00	9	2,242,912.0	508,805.0	1,086.00	12.00	1.00	5	2	
									2+40	10	2,242,911.0	508,565.0	1,089.00	12.00	1.00	5	2	
									5+11	11	2,242,912.0	508,294.0	1,095.00	12.00	1.00	5	2	
									7+68	12	2,242,910.0	508,037.0	1,096.00	12.00	1.00	5	2	
									10+37	13	2,242,909.0	507,768.0	1,097.00	12.00	1.00	5	2	
									12+04	14	2,242,905.0	507,601.0	1,099.00	12.00	1.00	5	2	
									13+17	15	2,242,913.0	507,488.0	1,101.00	12.00	1.00	5	2	
									15+11	16	2,242,923.0	507,294.0	1,102.00	12.00				

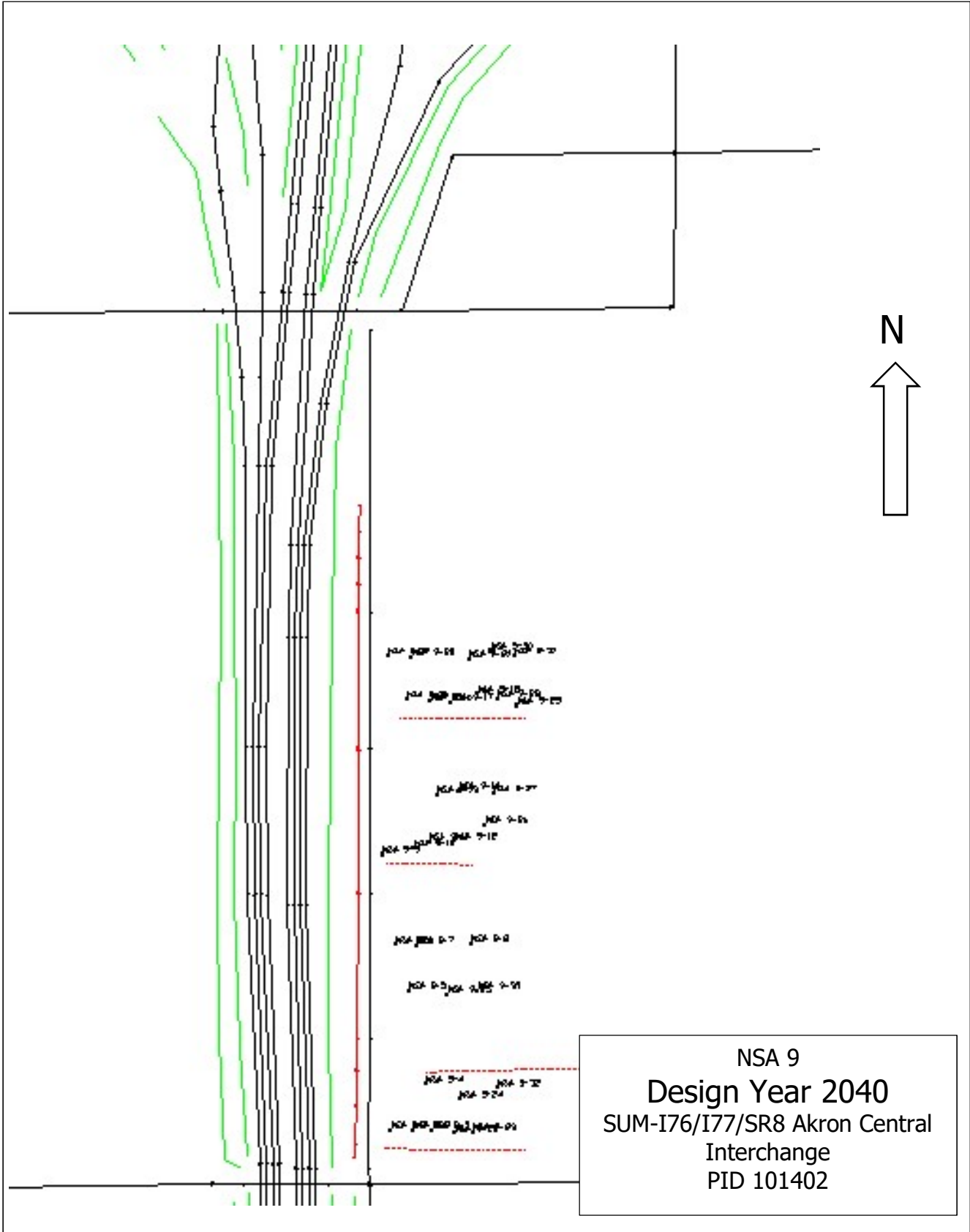
INPUT: RECEIVERS

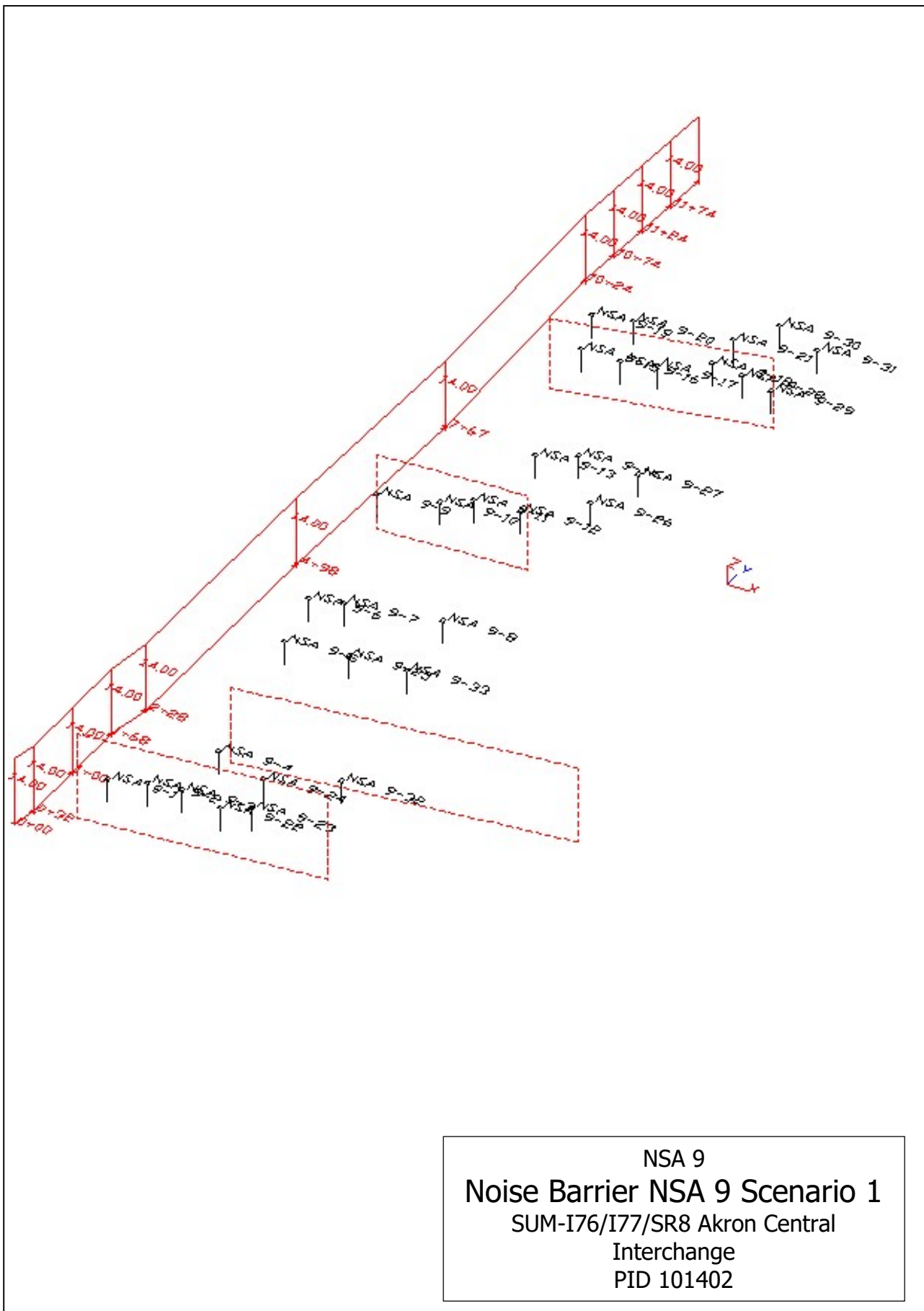
SUM-I76 Central Interchange (101402)

Lawhon & Assoc.							1 August 2017				
CMCox							TNM 2.5				
INPUT: RECEIVERS											
PROJECT/CONTRACT:		SUM-I76 Central Interchange (101402)									
RUN:		Noise Barrier NSA 8 Scenario 1									
Receiver											
Name	No.	#DUs	Coordinates (ground)			Height above Ground	Input Sound Levels and Criteria				Active in Calc.
			X	Y	Z		Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	
			ft	ft	ft	ft	dBA	dBA	dB	dB	
NSA 8-1	7	1	2,242,720.0	509,058.0	1,082.00	4.92	62.90	66	10.0	4.5	
NSA 8-2	8	1	2,242,777.0	509,049.0	1,083.00	4.92	64.60	66	10.0	4.5	
NSA 8-3	9	1	2,242,837.0	508,950.0	1,086.00	4.92	69.00	66	10.0	4.5	
NSA 8-4	10	1	2,242,791.0	508,943.0	1,086.00	4.92	65.30	66	10.0	4.5	
NSA 8-5	11	1	2,242,763.0	508,940.0	1,086.00	4.92	64.40	66	10.0	4.5	
NSA 8-6	12	1	2,242,834.0	508,766.0	1,087.00	4.92	68.10	66	10.0	4.5	
NSA 8-7	13	1	2,242,795.0	508,758.0	1,085.00	4.92	64.50	66	10.0	4.5	
NSA 8-8	14	1	2,242,756.0	508,761.0	1,086.00	4.92	63.20	66	10.0	4.5	
NSA 8-9	15	1	2,242,814.0	508,653.0	1,089.00	4.92	67.60	66	10.0	4.5	
NSA 8-10	16	1	2,242,750.0	508,660.0	1,087.00	4.92	63.40	66	10.0	4.5	
NSA 8-11	17	1	2,242,834.0	508,475.0	1,090.00	4.92	68.50	66	10.0	4.5	
NSA 8-12	18	1	2,242,781.0	508,468.0	1,090.00	4.92	65.30	66	10.0	4.5	
NSA 8-13	19	1	2,242,722.0	508,474.0	1,091.00	4.92	63.20	66	10.0	4.5	
NSA 8-14	20	1	2,242,827.0	508,386.0	1,094.00	4.92	69.20	66	10.0	4.5	
NSA 8-15	21	1	2,242,769.0	508,379.0	1,092.00	4.92	64.80	66	10.0	4.5	
NSA 8-16	22	1	2,242,825.0	508,149.0	1,096.00	4.92	69.80	66	10.0	4.5	
NSA 8-17	23	1	2,242,797.0	508,128.0	1,095.00	4.92	67.40	66	10.0	4.5	
NSA 8-18	24	1	2,242,755.0	508,138.0	1,095.00	4.92	65.50	66	10.0	4.5	
NSA 8-19	25	1	2,242,831.0	507,950.0	1,096.00	4.92	70.40	66	10.0	4.5	
NSA 8-20	26	1	2,242,791.0	507,919.0	1,097.00	4.92	68.30	66	10.0	4.5	
NSA 8-21	27	1	2,242,741.0	507,934.0	1,097.00	4.92	65.80	66	10.0	4.5	
NSA 8-22	28	1	2,242,779.0	507,856.0	1,094.00	4.92	66.80	66	10.0	4.5	

INPUT: RECEIVERS**SUM-I76 Central Interchange (101402)**

NSA 8-23	29	1	2,242,759.0	507,574.0	1,099.00	4.92	65.10	66	10.0	4.5	
NSA 8-24	30	1	2,242,835.0	507,598.0	1,098.00	4.92	69.00	66	10.0	4.5	
NSA 8-25	31	1	2,242,840.0	507,400.0	1,101.00	4.92	68.50	66	10.0	4.5	
NSA 8-26	32	1	2,242,792.0	507,411.0	1,101.00	4.92	66.00	66	10.0	4.5	
NSA 8-27	33	1	2,242,833.0	507,301.0	1,103.00	4.92	68.30	66	10.0	4.5	
NSA 8-28	34	1	2,242,794.0	507,341.0	1,102.00	4.92	65.80	66	10.0	4.5	
NSA 8-29	35	1	2,242,726.0	508,941.0	1,086.00	4.92	63.20	66	10.0	4.5	Y
NSA 8-30	36	1	2,242,715.0	508,761.0	1,086.00	4.92	61.90	66	10.0	4.5	Y
NSA 8-31	37	1	2,242,667.0	508,649.0	1,087.00	4.92	61.30	66	10.0	4.5	Y
NSA 8-32	38	1	2,242,689.0	508,475.0	1,091.00	4.92	62.30	66	10.0	4.5	Y
NSA 8-33	39	1	2,242,700.0	508,381.0	1,092.00	4.92	62.50	66	10.0	4.5	Y
NSA 8-34	40	1	2,242,638.0	508,375.0	1,092.00	4.92	61.00	66	10.0	4.5	Y
NSA 8-35	41	1	2,242,716.0	508,211.0	1,092.00	4.92	63.50	66	10.0	4.5	Y
NSA 8-36	42	1	2,242,659.0	508,203.0	1,092.00	4.92	62.00	66	10.0	4.5	Y
NSA 8-37	43	1	2,242,715.0	508,127.0	1,094.00	4.92	63.60	66	10.0	4.5	Y
NSA 8-38	44	1	2,242,666.0	508,134.0	1,093.00	4.92	62.00	66	10.0	4.5	Y
NSA 8-39	45	1	2,242,670.0	507,946.0	1,097.00	4.92	63.50	66	10.0	4.5	Y
NSA 8-40	46	1	2,242,642.0	507,856.0	1,093.00	4.92	61.00	66	10.0	4.5	Y
NSA 8-41	47	1	2,242,734.0	507,705.0	1,094.00	4.92	64.10	66	10.0	4.5	Y
NSA 8-42	48	1	2,242,675.0	507,681.0	1,093.00	4.92	61.00	66	10.0	4.5	Y
NSA 8-43	49	1	2,242,715.0	507,407.0	1,100.00	4.92	62.80	66	10.0	4.5	Y
NSA8-44	50	1	2,242,694.0	507,302.0	1,100.00	4.92	62.80	66	10.0	4.5	Y





NSA 9
Noise Barrier NSA 9 Scenario 1
 SUM-I76/I77/SR8 Akron Central
 Interchange
 PID 101402

RESULTS: SOUND LEVELS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.													2 August 2017																							
CMCox													TNM 2.5																							
													Calculated with TNM 2.5																							
RESULTS: SOUND LEVELS																																				
PROJECT/CONTRACT:													SUM-I76 Central Interchange (101402)																							
RUN:													NSA 9 Design Year 2040																							
BARRIER DESIGN:													NSA 9 Scenario 1																							
													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		With Barrier															
															LAeq1h		LAeq1h		Increase over existing		Type		Calculated		Noise Reduction											
																	Calculated		Crit'n		Calculated		Crit'n		Impact		LAeq1h		Calculated		Goal		Calculated			
																							Sub'l Inc								minus					
															dBA		dBA		dBA		dB		dB				dBA		dB		dB		dB			
NSA 9-1													2		1		70.7		71.6		66		0.9		10		Snd Lvl		65.4		6.2		4		1.7	
NSA 9-2													3		1		67.3		68.5		66		1.2		10		Snd Lvl		62.8		5.7		4		1.2	
NSA 9-3													4		1		65.8		66.5		66		0.7		10		Snd Lvl		61.4		5.1		4		0.6	
NSA 9-4													5		1		65.8		66.8		66		1.0		10		Snd Lvl		61.2		5.6		4		1.1	
NSA 9-5													6		1		69.6		70.5		66		0.9		10		Snd Lvl		62.7		7.8		4		3.3	
NSA 9-6													7		1		70.3		71.6		66		1.3		10		Snd Lvl		62.6		9.0		4		4.5	
NSA 9-7													8		1		68.5		69.3		66		0.8		10		Snd Lvl		62.1		7.2		4		2.7	
NSA 9-8													9		1		65.6		64.7		66		-0.9		10		----		60.0		4.7		4		0.2	
NSA 9-9													10		1		73.6		74.2		66		0.6		10		Snd Lvl		64.2		10.0		4		5.5	
NSA 9-10													11		1		68.9		69.9		66		1.0		10		Snd Lvl		62.0		7.9		4		3.4	
NSA 9-11													12		1		67.6		68.6		66		1.0		10		Snd Lvl		61.6		7.0		4		2.5	
NSA 9-12													13		1		65.0		66.3		66		1.3		10		Snd Lvl		60.7		5.6		4		1.1	
NSA 9-13													14		1		67.2		68.4		66		1.2		10		Snd Lvl		61.8		6.6		4		2.1	
NSA 9-14													15		1		65.7		66.9		66		1.2		10		Snd Lvl		61.2		5.7		4		1.2	
NSA 9-15													16		1		70.4		71.4		66		1.0		10		Snd Lvl		63.2		8.2		4		3.7	
NSA 9-16													17		1		67.1		68.2		66		1.1		10		Snd Lvl		61.9		6.3		4		1.8	
NSA 9-17													18		1		65.5		66.7		66		1.2		10		Snd Lvl		61.4		5.3		4		0.8	
NSA 9-18													19		1		64.0		65.3		66		1.3		10		----		61.1		4.2		4		-0.3	
NSA 9-19													20		1		71.1		71.9		66		0.8		10		Snd Lvl		63.0		8.9		4		4.4	
NSA 9-20													21		1		68.6		69.5		66		0.9		10		Snd Lvl		62.6		6.9		4		2.4	
NSA 9-21													22		1		63.6		65.4		66		1.8		10		----		61.2		4.2		4		-0.3	
NSA 9-22													61		1		63.5		64.0		66		0.5		10		----		60.0		4.0		4		-0.5	
NSA 9-23													62		1		62.4		63.0		66		0.6		10		----		59.6		3.4		4		-1.1	
NSA 9-24													63		1		63.0		63.4		66		0.4		10		----		59.4		4.0		4		-0.5	

RESULTS: SOUND LEVELS

SUM-I76 Central Interchange (101402)

NSA 9-25	64	1	65.9	66.7	66	0.8	10	Snd Lvl	61.0	5.7	4	1.2
NSA 9-26	66	1	63.2	64.8	66	1.6	10	----	60.2	4.6	4	0.1
NSA 9-27	67	1	62.7	64.5	66	1.8	10	----	60.2	4.3	4	-0.2
NSA 9-28	68	1	62.7	64.2	66	1.5	10	----	60.6	3.6	4	-0.9
NSA 9-29	69	1	61.5	63.1	66	1.6	10	----	60.1	3.0	4	-1.5
NSA 9-30	70	1	63.5	64.7	66	1.2	10	----	61.2	3.5	4	-1.0
NSA 9-31	71	1	61.7	63.1	66	1.4	10	----	60.6	2.5	4	-2.0
NSA 9-32	72	1	60.7	61.1	66	0.4	10	----	58.2	2.9	4	-1.6
NSA 9-33	73	1	63.3	63.9	66	0.6	10	----	59.7	4.2	4	-0.3
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		33	2.5	5.6	10.0							
All Impacted		19	5.1	6.9	10.0							
All that meet NR Goal		21	4.6	6.7	10.0							

RESULTS: BARRIER DESCRIPTIONS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.				2 August 2017					
CMCox				TNM 2.5					

RESULTS: BARRIER DESCRIPTIONS

PROJECT/CONTRACT:	SUM-I76 Central Interchange (101402)								
RUN:	NSA 9 Design Year 2040								
BARRIER DESIGN:	NSA 9 Scenario 1								

Barriers										
Name	Type	Heights along Barrier			Length	If Wall		If Berm		Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	\$
Barrier 1	W	14.00	14.00	14.00	1224	17138				428450
									Total Cost:	428450

INPUT: BARRIERS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.	2 August 2017
CMCox	TNM 2.5

INPUT: BARRIERS

PROJECT/CONTRACT: SUM-I76 Central Interchange (101402)
 RUN: NSA 9 Design Year 2040

Barrier									Points										
Name	Type	Height		If Wall	If Berm		Add'tnl		Name	No.	Coordinates (bottom)			Height	Segment				Important
		Min	Max	\$ per Unit Area	\$ per Unit Vol.	Top Width	Run:Rise	\$ per Unit Length			X	Y	Z	at Point	Seg Incre-	Ht	Perturbs	On	
		ft	ft	\$/sq ft	\$/cu yd	ft	ft:ft	\$/ft			ft	ft	ft	ft	ft			Struct?	tions?
Barrier 1	W	5.00	99.99	25.00				0.00	0+00	9	2,243,169.0	507,273.0	1,110.00	14.00	1.00	2	0		
									0+32	10	2,243,171.0	507,305.0	1,109.00	14.00	1.00	2	0		
									1+00	20	2,243,172.0	507,373.0	1,109.00	14.00	1.00	2	0		
									1+68	11	2,243,173.0	507,441.0	1,109.00	14.00	1.00	2	0		
									2+28	12	2,243,175.0	507,501.0	1,107.00	14.00	1.00	2	0		
									4+98	13	2,243,177.0	507,771.0	1,105.50	14.00	1.00	2	0		
									7+67	14	2,243,177.0	508,040.0	1,102.00	14.00	1.00	2	0		
									10+24	15	2,243,176.0	508,297.0	1,102.00	14.00	1.00	2	0		
									10+74	17	2,243,176.8	508,347.0	1,101.25	14.00	1.00	2	0		
									11+24	18	2,243,177.5	508,397.0	1,100.50	14.00	1.00	2	0		
									11+74	19	2,243,178.2	508,447.0	1,099.75	14.00	1.00	2	0		
									12+24	16	2,243,179.0	508,497.0	1,099.00	14.00					

INPUT: RECEIVERS

SUM-I76 Central Interchange (101402)

Lawhon & Assoc.							2 August 2017				
CMCox							TNM 2.5				
INPUT: RECEIVERS											
PROJECT/CONTRACT:		SUM-I76 Central Interchange (101402)									
RUN:		NSA 9 Design Year 2040									
Receiver											
Name	No.	#DUs	Coordinates (ground)			Height above Ground	Input Sound Levels and Criteria				Active in Calc.
			X	Y	Z		Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	
			ft	ft	ft	ft	dBA	dBA	dB	dB	
NSA 9-1	2	1	2,243,236.0	507,326.0	1,113.00	4.92	70.70	66	10.0	4.5	
NSA 9-2	3	1	2,243,277.0	507,327.0	1,115.00	4.92	67.30	66	10.0	4.5	
NSA 9-3	4	1	2,243,313.0	507,327.0	1,116.00	4.92	65.80	66	10.0	4.5	
NSA 9-4	5	1	2,243,302.0	507,413.0	1,113.00	4.92	65.80	66	10.0	4.5	
NSA 9-5	6	1	2,243,270.0	507,587.0	1,113.00	4.92	69.60	66	10.0	4.5	
NSA 9-6	7	1	2,243,246.0	507,673.0	1,110.00	4.92	70.30	66	10.0	4.5	
NSA 9-7	8	1	2,243,284.0	507,671.0	1,112.00	4.92	68.50	66	10.0	4.5	
NSA 9-8	9	1	2,243,386.0	507,674.0	1,115.00	4.92	65.60	66	10.0	4.5	
NSA 9-9	10	1	2,243,220.0	507,841.0	1,110.00	4.92	73.60	66	10.0	4.5	
NSA 9-10	11	1	2,243,279.0	507,853.0	1,111.00	4.92	68.90	66	10.0	4.5	
NSA 9-11	12	1	2,243,307.0	507,865.0	1,112.00	4.92	67.60	66	10.0	4.5	
NSA 9-12	13	1	2,243,356.0	507,866.0	1,113.00	4.92	65.00	66	10.0	4.5	
NSA 9-13	14	1	2,243,322.0	507,952.0	1,112.00	4.92	67.20	66	10.0	4.5	
NSA 9-14	15	1	2,243,363.0	507,959.0	1,114.00	4.92	65.70	66	10.0	4.5	
NSA 9-15	16	1	2,243,266.0	508,131.0	1,109.00	4.92	70.40	66	10.0	4.5	
NSA 9-16	17	1	2,243,310.0	508,127.0	1,110.00	4.92	67.10	66	10.0	4.5	
NSA 9-17	18	1	2,243,349.0	508,125.0	1,112.00	4.92	65.50	66	10.0	4.5	
NSA 9-18	19	1	2,243,398.0	508,141.0	1,114.00	4.92	64.00	66	10.0	4.5	
NSA 9-19	20	1	2,243,231.0	508,212.0	1,104.00	4.92	71.10	66	10.0	4.5	
NSA 9-20	21	1	2,243,275.0	508,210.0	1,106.00	4.92	68.60	66	10.0	4.5	
NSA 9-21	22	1	2,243,382.0	508,206.0	1,110.00	4.92	63.60	66	10.0	4.5	
NSA 9-22	61	1	2,243,356.0	507,321.0	1,116.00	4.92	63.50	66	10.0	4.5	Y

INPUT: RECEIVERS**SUM-I76 Central Interchange (101402)**

NSA 9-23	62	1	2,243,389.0	507,323.0	1,118.00	4.92	62.40	66	10.0	4.5	Y
NSA 9-24	63	1	2,243,365.0	507,384.0	1,115.00	4.92	63.00	66	10.0	4.5	Y
NSA 9-25	64	1	2,243,342.0	507,579.0	1,116.00	4.92	65.90	66	10.0	4.5	Y
NSA 9-26	66	1	2,243,412.0	507,896.0	1,115.00	4.92	63.20	66	10.0	4.5	Y
NSA 9-27	67	1	2,243,428.0	507,955.0	1,115.00	4.92	62.70	66	10.0	4.5	Y
NSA 9-28	68	1	2,243,434.0	508,132.0	1,115.00	4.92	62.70	66	10.0	4.5	Y
NSA 9-29	69	1	2,243,472.0	508,119.0	1,116.00	4.92	61.50	66	10.0	4.5	Y
NSA 9-30	70	1	2,243,422.0	508,221.0	1,114.00	4.92	63.50	66	10.0	4.5	Y
NSA 9-31	71	1	2,243,467.0	508,212.0	1,113.00	4.92	61.70	66	10.0	4.5	Y
NSA 9-32	72	1	2,243,435.0	507,405.0	1,117.00	4.92	60.70	66	10.0	4.5	Y
NSA 9-33	73	1	2,243,398.0	507,586.0	1,116.00	4.92	63.30	66	10.0	4.5	Y