

# MAH-SR 11-MAHONING AVENUE TO THE AUSTINTOWN TOWNSHIP LINE

Noise Analysis

PID 106325

Mahoning County, Ohio

*The environmental review, consultation, and other actions required by applicable federal environmental laws for these projects 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

This report describes the noise analysis for MAH-SR 11-Mahoning Avenue to the Austintown Township Line (PID 106325), Mahoning County, Ohio. The noise analysis was initiated by ODOT District 4 in response to local interest in mitigating highway noise along State Route (SR) 11 between Mahoning Avenue and the Austintown Township Line, a distance of approximately 2.7 miles. The analysis was completed following procedures given in the current version of the **ODOT Noise Policy (ODOT 2015), which is ODOT's implementation of the Federal Highway Administration's (FHWA's) rules found in Title 23 of the Code of Federal Regulations (CFR) Part 772** as modified on July 13, 2010, and the procedures contained in current FHWA (2011) guidance.

Nine Noise Sensitive Areas (NSAs) were identified for analysis. Land uses within the NSAs are predominantly residential in all NSAs except NSA 9, which is a mix of non-residential land uses, some noise-sensitive and some not. Receptors were placed within each NSA to represent the residences and other noise-sensitive land uses, and noise modeling was done using existing peak hour traffic volumes to compute noise levels at each receptor. The model was validated by comparing results to measured values. For this Type II analysis all modeling was done using the most current traffic data available.

The analysis identified noise impacts in all NSAs and recommends one noise barrier. The recommended barrier is 16 ft high and runs along the west side of SR 11 from about 800 ft south of Oakcrest Drive north to Mahoning Avenue, allowing a gap for Oakcrest Drive. The barrier would benefit 57 receptors, all 57 of which are Type II eligible. Noise abatement measures are not recommended for other NSAs as none were found to be feasible and reasonable.

Construction noise is not expected to be a problem for this project as it will be temporary and can be minimized using standard noise reduction practices.

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## INTRODUCTION

This report describes the noise analysis for MAH-SR 11-Mahoning Avenue to the Austintown Township Line (PID 106325), Mahoning County, Ohio. The noise analysis was initiated by ODOT District 4 in response to local interest in mitigating highway noise along State Route (SR) 11 between Mahoning Avenue and the Austintown Township Line, a distance of approximately 2.7 miles. The analysis was completed following procedures given in the current version of the **ODOT Noise Policy (ODOT 2015), which is ODOT's implementation of the Federal Highway Administration's (FHWA's) rules found in Title 23 of the Code of Federal Regulations (CFR) Part 772** as modified on July 13, 2010, and the procedures contained in current FHWA (2011) guidance.

This project does not involve highway construction and is considered Type II as defined in the ODOT Noise Policy. The purpose of the analysis is to determine noise levels within the project area, particularly for residential areas that were built before SR 11, and to evaluate the reasonableness and feasibility of potential noise abatement strategies, including barriers. This report is organized as outlined in the ODOT Noise Policy. Tables are located at the end of the text before the appendices. Appendices A through L contain maps with project features overlaid on aerial photos, field data and instrument calibration sheets, traffic data, modeling inputs and outputs, copies of notification letters for fieldwork, noise barrier design tables, addresses of benefited receptors, and a brief description of acoustics and highway noise fundamentals.

## NOISE ANALYSIS OVERVIEW

The primary purpose of this Type II highway noise analysis is to determine noise levels within the project area, particularly in Type II-eligible neighborhoods that were in existence prior to SR 11 being built, and use them to evaluate where noise abatement is warranted. Determining noise levels entails completing the following activities.

- Define the noise analysis area.
- Identify noise sensitive areas (NSAs) within the noise analysis area based on land use and probable noise exposures.
- Identify residences that were built before SR 11.
- Measure current noise levels at locations representative of different NSAs.
- Model existing noise levels under the worst hourly traffic noise conditions.
- Compare noise modeling results against FHWA standards to identify impact areas where noise abatement must be considered.

Where abatement is warranted, the analysis evaluates potential noise abatement strategies for feasibility and reasonableness. Strategies that meet both feasibility and reasonableness tests for Type II-eligible neighborhoods are recommended for the public involvement activities described in the ODOT Noise Policy. Abatement strategies that are determined to be both feasible and reasonable must also be desired by a majority of affected landowners and residents.

Evaluating potential noise abatement strategies focuses primarily on designing noise barriers between the highway and impacted NSAs. In addition, other noise reduction methods are considered, including changing how traffic is managed (speed limits, signals, etc.), altering

highway alignments, acquiring additional property for barrier construction or as a buffer, and noise insulation for some types of structures.

The remainder of this section explains fundamental noise and acoustics principles that may be helpful to some readers; describes regulatory requirements and their applicability to this project; defines the criteria used to determine where noise impacts occur and noise abatement is warranted; describes the noise analysis area and NSAs for this project; and discusses traffic parameters used for this project.

### Noise Fundamentals

Noise is defined as any unwanted sound, and sound is produced by the vibration of air molecules in the form of sound pressure waves. The magnitudes of sound pressure waves, called sound pressure levels, determine the intensity or volume of the sound. Sound pressure levels are usually measured in logarithmic units called decibels, abbreviated dB. The dB expresses the ratio of the measured sound pressure level to a standard reference level that is defined at the typical threshold of human hearing.

An important aspect of sound is duration or how long the sound lasts. For this study, noise levels are expressed as one-hour equivalent sound levels,  $Leq(h)$ . The  $Leq(h)$  is an average of the noise levels experienced over an hour. Highway noise studies like this one focus on  $Leq(h)$  values for the noisiest traffic hour of the day.

Another important characteristic of sound is its frequency or pitch. Highway noise is composed of many frequencies, but the human ear does not respond to all frequencies equally. In order to represent highway noise as closely as possible to the noise levels experienced by people, sounds are measured using a frequency-weighting scheme known as the A-scale. The A-scale provides a weighted total sound level, where mid-range frequencies that people hear well are weighted more and high and low frequencies that people do not hear as well are weighted less. Sound pressure levels on the A-scale are expressed in units of A-weighted decibels (dBA). All **noise levels reported in this study are  $Leq(h)$ 's** in units of dBA unless stated otherwise.

Sounds are produced by a variety of sources, some from nature and some from human activities. Although all noise sources are considered in this analysis, the emphasis is on noise from highway traffic. Traffic noise is produced from tires rolling over pavement, from vehicle engines, and from vehicle exhausts. The volume, frequencies, and duration of noise generated by traffic are **determined by the type of vehicle (car, truck, etc.) as well as the vehicle's speed and acceleration.**

Sound travels or propagates from a source to a location of interest, called a receptor. The sound experienced at the receptor is dependent on the sound emitted from the source (intensity, frequency, and duration), the distance from the source, the presence of intervening terrain or structures between the source and receptor, the type of ground cover between the source and receptor, and meteorological conditions.

These concepts and others are described in more detail in Appendix J.

### REGULATORY APPLICABILITY

As mentioned above, this project does not involve highway construction and is considered Type II. **As described in the ODOT Noise Policy, "Type II projects provide abatement for receptors**

that were in existence prior to the construction of the original highway. A noise analysis is **required for any Type II project.**”

#### NOISE ABATEMENT CRITERIA

Following FWHA and 23 CFR 772 requirements, the ODOT Noise Policy (ODOT 2015) states that a traffic noise impact occurs and noise abatement must be considered when noise levels determined using current year traffic conditions approach (within one dBA) or exceed the Noise Abatement Criteria (NAC) values shown in Table 1 (located at the end of the text). NAC are defined in 23 CFR 772 based on speech interference levels in different land use activity categories. The NAC values should not be considered Federal standards or even desirable noise levels; they are used solely to determine when noise impacts occur and when noise abatement is considered.

In modeling outputs and in tables throughout this report, noise levels are shown to one decimal place. However, for impact determination sound levels are rounded to the nearest whole number for comparison with NAC. Thus, for Category B and C receptors, 65.4 dBA is not an impact, but 65.5 is an impact because it rounds to 66 which is within one of the NAC of 67 dBA.

#### PROJECT LOCATION AND NOISE ANALYSIS AREA

The project is located along SR 11 in Austintown Township as shown on Figure 1. The noise analysis area extends 500 ft. from the edge of the highway from the Austintown township line in the south to Mahoning Avenue in the north. This area is surrounded by a red border on Figures 2 through 8.

According to ODOT records, this section of SR 11 was originally constructed as highway Project 174 of 1966. To determine properties that are Type II-eligible, ODOT identified properties that were constructed by 1968 on Figure A-1 (ODOT 2017). These properties are shaded on Figures 2 through 8.

#### NOISE SENSITIVE AREAS AND RECEPTORS

Land uses within the noise analysis area were identified using aerial photographs and verified and refined during a site visit on September 3 and 4, 2017. Based on these land uses and on the locations of roads and terrain features, the noise analysis area was divided into nine NSAs, each having a similar land use and each expected to experience noise from similar sources. Within each NSA, receptors were designated as where noise levels are computed. Following FHWA and ODOT guidance, receptors were placed primarily in outdoor areas of frequent human use. For residences, receptors are placed in yards or patios facing the highway. At multi-family residential complexes, receptors are located at patios and balconies or at common use areas such as swimming pools. At schools, receptors are placed in playgrounds where available. At restaurants, receptors are placed in patios. No receptors are placed at restaurants or other Category E buildings unless there are outdoor areas of frequent human use.

Land use areas are shown on an aerial map in Appendix A (Figures A-2 through A-5). As shown, most of the land within the noise analysis area is either residential (Category B) or Undeveloped (Category G). In the northern portion of the area near Mahoning Avenue, there are other land uses, including Category C (schools/daycares, non-profit facilities), Category E (offices and a restaurant), and Category F (non-noise-sensitive businesses). No receptors were placed in Category F areas. Receptors were placed in four undeveloped areas in order to provide noise level information to public officials and potential future developers.



NSAs are described below in terms of location, land use, and numbers of receptors. Receptors are numbered sequentially within each NSA. NSAs and receptor locations are shown on aerials on Figures A-6 through A-9.

- NSA 1. Starwick (Figure A-6)—Category B-Residential: 80 receptors were used in the model. All of these represent single-family residences. None of these receptors was constructed before SR 11 and therefore none are considered Type II eligible.
- NSA 2. Kirk (Figure A-6)—Category B-Residential: Four receptors were used in the model, all of which represent single-family residences. Receptors 2-1 and 2-3 are Type II eligible.
- NSA 3. Oak Trace (Figures A-6 and A-7)—Category B-Residential: One hundred and twenty receptors were used in the model, all of which represent single-family residences. Twenty-four receptors are Type II eligible (3-1 through 3-21 and 3-118 through 3-120).
- NSA 4. New (Figure A-7)—Category B-Residential: Three receptors were used in the model, all of which represent single-family residences. All three receptors are Type II eligible.
- NSA 5. Nashua (Figure A-8)—Category B-Residential: Thirty-five receptors were used in the model, all of which represent single-family residences. Ten receptors, (5-26 through 5-35) are Type II eligible.
- NSA 6. Westhampton (Figure A-8)—Category B-Residential: Sixty receptors were used in the model to represent single-family residences and duplexes. Receptors 6-1 and 6-2 are Type II eligible.
- NSA 7. Inglewood (Figure A-9)—Category B-Residential: One hundred and forty receptors were used in the model, all of which represent single-family residences. All but 10 are Type II eligible (7-51 through 7-55 and 7-86 through 7-90).
- NSA 8. Cross (Figure A-9)—Category B-Residential: Thirty-two receptors were used in the model to represent both single- and multi-family residences. One receptor was used for each unit in the multi-residential complex. None of the receptors are Type II eligible.
- NSA 9. Westchester (Figure A-9)—Category C-Noise Sensitive Non-Residential: Seven receptors were used in the model. Receptors 9-1 and 9-5 represent non-profit organizations, 9-2 through 9-4 represent schools and daycare centers, and 9-6 represents a community center. Category E-Restaurant One receptor (9-7) represents the patio of a restaurant. None of the receptors in this NSA are Type II eligible.

### *Roads and Traffic*

For this Type II analysis, only existing traffic volumes were used. Traffic volumes from 2016 were obtained from the ODOT Transportation Data Management traffic web site (<http://odot.ms2soft.com/tcds/tsearch.asp?loc=Odot&mod=> ) for SR 11 (Station 7150), Kirk Road (Station 4655098), New Road (Station 5285098), and Mahoning Avenue (Station 15098). Traffic volumes were also obtained for SR 11 ramps within the noise analysis area (Stations 53650 and 53950).

Oakcrest Drive was also included in the model where it crosses over SR 11 in order to establish elevation and surface type. Traffic counts on Oakcrest Drive were not available, but traffic volumes are low enough that they are not significant noise sources.

Details on the traffic data used in this analysis are given in the traffic section of this report and in Appendix G.

## NOISE MEASUREMENTS

Noise measurements were taken at eight locations on October 3, 2017. Measurements and other related information were documented on data sheets. Copies of the field data sheets are in Appendix B. Noise measurement locations are described and measurements are summarized in Table 2.

Measurement locations were selected in the field as close as possible to the planned locations from the ODOT-approved measurement plan, taking into account accessibility; temporary noise sources such as dogs, lawn mowers, etc.; visual obstructions such as fences, vegetation, and buildings; and other factors. Proposed and actual measurement locations are shown on aerial maps in Appendix A, Figures A-10 through A-18.

All measurements were obtained at a height of 5 ft. above the ground using a Quest Soundpro SE/DL sound level meter (SLM) that met the American National Standards Institute (ANSI) SI.4-1993, TYPE II standards for accuracy (ANSI 1993) and that was capable of automatically computing Leq values and logging values at one-minute intervals during each measurement. Measurement durations were at least 15 minutes in order to adequately capture noise variations over time and obtain an accurate estimate of a one-hour Leq(h). SLM output files are in Appendix B showing Leq values recorded each minute of the measurements as well as cumulative one-minute Leq values computed from the measurements.

SLM calibration was checked using a 114-dB calibrator before and after each measurement, and meter readings were adjusted for instrument error and drift following FHWA procedures (Lee and Fleming 1996). Calibration certification statements for the SLM and the calibrator are in Appendix B.

Meteorological data (wind speed and direction, temperature, and relative humidity) were obtained during measurements from the nearest National Weather Service (NWS) station, located at the Youngstown-Warren Regional Airport, using the NWS cell phone application. On 10/3/2017 when measurements M1 and M3 were taken, average wind speeds were 6 mph, the temperature was 80°F, and the relative humidity was 33 percent. When the remaining measurements were taken on 10/4/2017, average wind speeds ranged from 7 to 12 mph, with gusts of 18 mph during the M9 measurement. The temperature on 10/4/2017 ranged from 63°F to 74°F and relative humidity was 50 to 70 percent.

In order to obtain traffic counts during the measurements, ASC personnel took video of the nearest roads while noise levels were being recorded. Traffic volumes were counted on these videos and tabulated on the field data sheets, copies of which are in Appendix B.

## NOISE MODELING

**Noise modeling was done using the current version of the FHWA's Traffic Noise Model (TNM) version 2.5 (Anderson et al. 1998; Lau et al. 2004).** First, a model of the project area was input

into the TNM computer program, including road alignments and elevations, various terrain and surface features, and existing buildings. This model was then validated by attempting to predict noise values at the measurement locations using the traffic counts obtained during the measurements. Once validated, the model was run using worst-case hourly traffic data to determine where impacts could occur. A separate model runs was made to evaluate noise levels in undeveloped areas. TNM plan views for the model runs are provided in Appendix F.

#### TNM INPUT DATA

Input data requirements by TNM include detailed information about road alignments, elevations, and traffic volumes. In addition, other characteristics of the noise analysis area that may affect noise transmission between the roads and the receptors can be included in the model as necessary, including topography, existing barriers, buildings, trees, and ground surfaces.

##### *Topography*

For this project, terrain features such as hills and embankments that may affect noise transmission between roads and various receptors were represented in the model using the elevations required for roads, building rows, barriers, and receptors. No TNM terrain lines were used. Elevations for TNM data elements were obtained from the United States Geological Survey (USGS) Seamless Dataset, accessed using Maptool 2 on the Zonums Solutions web site (<http://www.zonums.com/gmaps/maptool.php>).

##### *Roads*

The dominant source of traffic noise in this project is SR 11, though other roads are also important at some receptors. Travel lanes on roads and ramps within the noise analysis area for which traffic data were available were included as noise sources in the modeling. Other roads in the area were used in order to set elevations and surface types, but were not modeled as noise sources because traffic volumes were unavailable and the roads were not expected to contribute significantly to noise levels. Road alignments were determined using geo-referenced aerial photography in computer aided drafting (CAD) software.

##### *Traffic*

For each road segment, the TNM model uses as input data the average speed and the number of vehicles per hour for up to five vehicle classes. For this project, posted speed limits were used as the average speeds.

TNM uses five vehicle classes: cars (vehicles with two axles and four tires such as cars, light vans, pickup trucks), medium trucks (vehicles with two axles and six tires), heavy trucks (vehicles with three or more axles), buses, and motorcycles. Traffic counts were broken out into these five categories to the extent that traffic classifications were available. Two TNM vehicle classes (buses and motorcycles) were used in validation and on roads where sufficient classification data were available, but they were not used on roads where they could not be distinguished from cars and trucks in the available traffic data. Hourly traffic volumes in the required vehicle type categories were computed from available traffic data as described in the traffic section of this report and in Appendix G.

### *Other TNM Data Elements*

Other data elements that may be defined in TNM include building rows, tree zones, ground zones, and existing barriers. For this project, building rows were used to represent rows of houses and other small buildings with open spaces between them. No other data elements were required.

### MODEL VALIDATION

The model was used to compute noise levels at the measurement locations using traffic counts obtained during the measurements. If modeled results and measurements agree within 3 dBA, then the model is considered valid (i.e., it represents the actual noise environment reasonably well and non-traffic sources of noise are not significant).

Traffic volumes used for the validation modeling were obtained as described in the Noise Measurements discussion above. The values used for modeling are tabulated in Appendix B.

As shown in Table 2, modeled values match measurements within 3 dBA at all locations. Therefore, the model is considered valid for use in this project.

### MODEL RESULTS/IMPACT ASSESSMENT

As explained previously, in this Type II analysis only an Existing scenario using current traffic volumes were modeled. Modeling results are presented in Table 3 and discussed below for each NSA. A receptor is considered to be impacted if the modeled noise level rounded to the nearest whole number is within one dBA of the NAC for that activity. Receptors are identified by the NSA number and the receptor number separated by a dash. Impacted receptors are highlighted in yellow in Table 3 and indicated using colored symbols on the aerial maps provided in Appendix A (Figures A-6 through A-9). TNM input and output tables are in Appendix C.

- NSA 1. Starwick (Figure A-6)—Category B-Residential: Twenty-one of 80 residential receptors are impacted with noise levels that approach or exceed the NAC. None of the impacted receptors are Type II eligible.
- NSA 2. Kirk (Figure A-6)—Category B-Residential: One of the four residential receptors in this NSA is impacted. That is receptor (2-1), which is Type II eligible.
- NSA 3. Oak Trace (Figures A-6 and A-7)—Category B-Residential: Of the 120 residential receptors in this NSA, 28 are impacted, including two of the 24 Type II eligible receptors (3-1 and 3-2).
- NSA 4. New (Figure A-7)—Category B-Residential: One of the three residential receptors is impacted (4-1). It is Type II eligible.
- NSA 5. Nashua (Figure A-8)—Category B-Residential: Two of 35 residential receptors are impacted. Neither impacted receptor is Type II eligible.
- NSA 6. Westhampton (Figure A-8)—Category B-Residential: In this NSA, seven of the 60 residential receptors are impacted. One impacted receptor (6-2) is Type II eligible.
- NSA 7. Inglewood (Figure A-9)—Category B-Residential: Thirty-five of the 104 residential receptors in this NSA are impacted. All of the impacted receptors are Type II eligible.

- NSA 8. Cross (Figure A-9)—Category B-Residential: Seven of 32 residential receptors are impacted. None of the impacted receptors are Type II eligible.
- NSA 9. Westchester (Figure A-9)—Category C-Noise Sensitive Non-Residential: Two receptors placed at playgrounds at a school/daycare are impacted, neither of which are Type II eligible. No other receptors in this NSA are impacted.

#### TRAFFIC INFORMATION

Traffic volumes were obtained for the most recent year for which data were available, either 2016 or 2017, from the ODOT Transportation Data Management web site (<http://odot.ms2soft.com/tcds/tsearch.asp?loc=Odot&mod=>) for traffic stations within the noise analysis area. The amount of data available varied by station. For some stations, traffic volumes were broken out by hour and by vehicle class. At others, only annual totals were available. Data from stations with vehicle class data were used where possible to estimate volumes in TNM vehicle classes. In some cases, traffic counts obtained during measurements were also used for this purpose. Copies of the web site printouts are in Appendix D along with a spreadsheet table showing what data were available and how they were used to obtain the traffic data for the TNM modeling.

#### NOISE ABATEMENT ALTERNATIVES

23 CFR 772.13(a) requires that noise abatement be considered and evaluated for feasibility and reasonableness when traffic noise impacts are identified. Feasibility is defined as achievement of at least a 5 dBA noise reduction at impacted receptors (772.13(d)(1)(i)) and determination that it is possible to design and construct the noise abatement measure (772.13(d)(1)(ii)). Reasonableness is addressed by considering the viewpoints of the public (772.13(d)(2)(i)), achieving a reasonable cost per receptor (772.13(d)(2)(ii)), and achieving a noise reduction design goal (772.13(d)(2)(iii)).

In this study, impacts were found in all nine NSAs. As discussed below for each NSA, noise abatement options were evaluated, including constructing noise barriers, changing road alignments either vertically or horizontally, implementing traffic management measures such as reduced speed limits or additional signals, acquiring property to serve as noise buffers, obtaining property rights to allow location of barriers, and providing noise insulation for eligible buildings.

Based on the nature of this Type II analysis, traffic management and control measures are not considered an appropriate abatement option. Reducing speed limits or adding other traffic controls on SR 11 would disrupt traffic flow, increase travel times, and potentially increase congestion. Changing alignments on an existing highway would be prohibitively expensive and may simply shift noise impacts from one NSA to another. Property acquisition (to provide buffer zones or to construct/provide noise mitigation) is not necessary or supported by the analysis. Noise insulation of Category D land uses is also not necessary or supported by the noise analysis, since no (interior) noise impacts are anticipated to Category D land uses as a result of the proposed project. Therefore, noise barriers are considered the only form of noise mitigation having the potential to reduce future noise levels at impacted receptor sites.

No barriers are located on structure. Therefore, costs were estimated using ODOT average cost numbers of \$25 per square ft for all barriers. Total cost for each barrier option was divided by

the number of benefited Type II eligible receptors (BRs) for comparison with the ODOT reasonableness criterion of \$35,000 per BR.

In most NSAs, two barrier options were considered: (1) a full-length option that covers the entire length of the NSA, and (2) a reduced length option that focuses on benefiting Type II receptors. For both options, barrier heights of 8 to 16 ft. were evaluated at 1-ft. intervals in attempting to find feasible and reasonable barrier designs. Barriers were placed either at the edge of shoulder (EOS) or at the right-of-way (ROW) depending on terrain elevations. In some areas, the walls transitioned back and forth between the shoulder and ROW in order to stay higher elevations. For NSAs 8 and 9, both EOS and ROW barriers were modeled.

Table 4 summarizes the various barrier options and heights that were evaluated and that are discussed below. The locations of these barriers are shown on aerial maps in Appendix A. Tables in Appendix H list noise benefits at each receptor for the barriers evaluated.

**One barrier covering parts of NSAs 5 and 7 was determined to meet ODOT's reasonable and feasible criteria and is therefore recommended.** TNM barrier description and barrier segment tables for the recommended barrier are in Appendices D and E, respectively. The recommended barrier and benefited receptor locations are shown on an aerial map in Appendix A.

The following sections describe noise barrier evaluations for the impacted NSAs.

#### NSA 1: STARWICK (TABLE H-2, FIGURES A-19 AND A-20)

Eighty residential receptors are located in this NSA located. A 3,181-ft long and 14-ft high barrier located east of SR 11 and south of Kirk Road would benefit the most residences in this NSA and would have the lowest cost per benefited receptor if all receptors were considered. However, none of the houses in this NSA were constructed before SR 11. As a result, the cost per benefited Type 2 receptor cannot be computed and no barrier is recommended.

#### NSA 2: KIRK

This NSA includes 4 residential receptors located west of SR 11 on either side of Kirk Road. Two of these receptors were built before 1966, one on either side of Kirk Road. One additional residence that was built before 1966 is located more than 500 ft from SR 11 and was not modeled. No barrier is recommended for this area because there are too few receptors for a wall to be able to meet economic reasonableness criteria. A minimal barrier to benefit this NSA would be about 900 ft long (extending twice the distance from receptor to barrier in each direction). At a nominal 10-ft height, such a barrier would cost about \$225,000. To be economically reasonable, the barrier would have to benefit at least 7 receptors, which is more than exist in the NSA. In addition, some of the traffic noise experienced by residents in this area is due to traffic on Kirk Road and a wall cannot be built on Kirk Road without blocking driveway access. Therefore, no barrier is recommended.

#### NSA 3: OAK TRACE (TABLE H-3, FIGURES A-21 THROUGH A-23)

This NSA includes 120 residential receptors located east of SR 11 between Kirk Road and New Road. Twenty-four of these residences were built before 1966, represented by receptors 3-1 through 3-21 in the south and receptors 3-118 through 3-120 in the north near New Road. Two wall options were modeled for this area.

The full-length option runs 5,410 from Kirk Road north all the way to New Road and would provide noise reduction for the entire NSA. A 15-ft tall barrier would benefit 98 receptors and have the lowest cost per benefited receptor. However, it would only benefit 12 residences built before 1966 at a cost of nearly \$170,000 per benefited Type II receptor.

The reduced-length option also starts at Kirk Road in the south and extends over 2,000 feet to near the southern end of Oak Trace Street (exact length depends on the wall height modeled). This option is designed to focus on Type II eligible receptors. A 15-ft tall barrier would benefit 16 receptors (11 of which are Type II eligible) and have the lowest cost per benefited receptor. However, the cost does not meet reasonableness criteria, so no barrier is recommended. The barrier does not benefit receptors 3-3 through 3-12 even if the height is increased to 15 feet, due to elevation differences between the road and the receptors in that area. Also, adding a northern section of barrier south of New Road does not benefit the Type II eligible receptors 3-118 through 3-120, even if the height is increased to 16 feet.

#### NSA 4: NEW

This NSA includes 3 residential receptors located west of SR 11 and south of New Road. Two of these receptors were built before 1966. No barrier is recommended for this area because there are too few receptors for a wall to be able to meet economic reasonableness criteria. Given that SR 11 is at a higher elevation than the receptors, the optimal placement for a barrier is along the EOS. A minimal barrier to benefit this NSA would be about 450 ft long (extending twice the distance from receptor to barrier to the south and ending near New Road to the north). At a nominal 10-ft height, such a barrier would cost about \$112,500. To be economically reasonable, the barrier would have to benefit at least 4 receptors, which is more than exist in the NSA. In addition, some of the traffic noise experienced by residents in this area is due to traffic on New Road and a wall cannot be built on New Road without blocking driveway access.

#### NSAS 5 AND 7: NASHUA-INGLEWOOD (TABLE H-4, FIGURES A-25 THROUGH A-27)

Of the 35 residential receptors in NSA 5, modeling shows that 2 are impacted (receptors 5-2 and 5-3), neither of which was built before 1966. The residences in the NSA that were built before 1966 are located to the north near Oakcrest Drive (receptors 5-26 through 5-35), which is near NSA 7. No barrier options were found to be reasonable considering NSA 5 alone, but given the proximity and similarity between NSAs 5 and 7, the two NSAs were combined for the barrier analysis. Four barrier options were evaluated:

- Nashua-Full Length extends 2,000 feet across all of NSA 5. No barrier height was found to be economically reasonable for this option.
- Nashua-Reduced Length extends 900 feet south from Oakcrest Drive in front of the residences built before 1966. Barrier costs were lower than for the Nashua-Full Length option, but still not reasonable.
- Nashua-Inglewood-Full Length adds the Inglewood barrier (3,585 ft between Oakcrest Drive and Mahoning Avenue) to the Nashua-Full Length barrier for a total length of 5,585 feet. For this option, a 16-ft high barrier would benefit 70 receptors, 60 of which are Type II eligible. However, the cost per benefited Type II receptor is higher than economic reasonableness criteria.
- Nashua-Inglewood-Reduced Length adds the Inglewood barrier to the Nashua-Reduced Length barrier for a total length of 4,385 feet. A 16-ft high barrier would

benefit 57 receptors, all 57 of which are Type II eligible. This barrier meets reasonableness and feasibility criteria and is therefore recommended.

TNM barrier description and barrier segment tables for the Nashua-Inglewood-Reduced Length barrier are in Appendices D and E, respectively. Barrier design tables are included in Appendix H and a list of benefited property addresses is in Appendix I.

NSA 6: WESTHAMPTON (TABLE H-5, FIGURE A-24)

There are seven impacted receptors in this area, two of which were built before 1966. A 16-ft high barrier would benefit 23 residences, but only one Type II eligible receptor. The cost per benefited Type II receptor is higher than economic reasonableness criteria, therefore, no barrier is recommended for this area.

NSAS 8 AND 9: CROSS-WESTCHESTER (TABLE H-6, FIGURES A-28 AND A-29)

Both ROW and EOS locations were modeled. At the EOS, a wall height of 14 feet would benefit 32 receptors, including all impacted receptors. However, none of the receptors were constructed before 1966. As a result, the cost per benefited Type 2 receptor cannot be computed and no barrier is recommended.

#### UNDEVELOPED LANDS

To evaluate noise levels in this land, modeling was done at four undeveloped areas using the same traffic and road alignments as the barrier analyses discussed above. Within each area, receptors were placed at 50-ft intervals starting at the ROW. Receptor locations and modeling results are shown on aerial maps in Appendix A (Figures A-30 through A-32).

Future developers and land use planners should be aware that noise levels are predicted to exceed 66 dBA, the impact criterion for residential and other noise-sensitive land uses, at distances of approximately 180 ft from the nearest edge of pavement on SR 11.

#### CONSTRUCTION NOISE

This project does not include any road construction. If the recommended noise barrier is built, noise will occur during barrier construction. However, such noise will be temporary and will be minimized using standard noise reduction practices.

#### CONCLUSION

This noise analysis identified noise impacts in all NSAs and recommends one noise barrier. The recommended barrier is 16 ft high and runs along the west side of SR 11 from about 800 ft south of Oakcrest Drive north to Mahoning Avenue, allowing a gap for Oakcrest Drive. The barrier would benefit 57 receptors, all 57 of which are Type II eligible. The recommended barrier is summarized in Table 5. Noise abatement measures are not recommended for other NSAs as none were found to be feasible and reasonable. Construction noise is not an issue except during wall construction.



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TABLES

Table 1. Noise Abatement Criteria.

Activity Category	L <sub>eq</sub> (h) dBA <sup>a</sup>	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B <sup>b</sup>	67 (Exterior)	Residential
C <sup>b</sup>	67 (Exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios
E <sup>b</sup>	72 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F
F	--	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing
G	--	Undeveloped lands that are not permitted

a Activity Criteria values are for impact determination only and are not design standards for noise abatement measures. (23 CFR 772, Table 1).

b Includes undeveloped lands permitted for this activity category.

Table 2. Noise Measurement Locations and Validation Results.

Site ID	Location	Land Use/ NSA	Elev. (ft)	Dominant Source of Traffic Noise				Noise Levels (dBA)		
				Road Name	Dist. to Road (ft)	Road Elev. (ft)	Functional Class of Road	Meas	Model	Diff.
M1	42 S. Inglewood	Cat. B/ NSA 7	1,132	Ramp: Mahoning to SR 11S	126	1,128	Urban Freeway Expressway	56.7	59.3	2.6
M2	Child First Daycare 116 Westchester, Suites A & B	Cat. C/ NSA 9	1,134	Ramp: SR 11N to Mahoning	58	1,138	Urban Freeway Expressway	67.0	65.7	-1.3
M3	203 Elmwood	Cat. B/ NSA 7	1,142	Ramp: Mahoning to SR 11S	179	1,136	Urban Freeway Expressway	65.7	64.1	-1.6
M4	4970 Quill Court	Cat. B/ NSA 8	1,143	SR 11	116	1,142	Urban Freeway Expressway	65.1	66.2	1.1
M6	1804 Maple Trace Court	Cat. B/ NSA 3	1,145	SR 11	142	1,152	Urban Freeway Expressway	63.5	65.5	2.1
M7	2386 Oak Trace	Cat. B/ NSA 3	1,142	SR 11	188	1,157	Urban Freeway Expressway	63.2	61.6	-1.6
M8	3202 Starwick Court	Cat. B/ NSA 1	1,156	SR 11	124	1,150	Urban Freeway Expressway	62.4	65.4	3.0
M9	3518 Starwick Drive	Cat. B/ NSA 1	1,138	SR 11	213	1,143	Urban Freeway Expressway	60.1	61.0	0.9

NOTE: No measurement was taken at M5 because the property owner denied access to the planned location and no suitable alternate locations could be found.

Table 3. Noise Modeling Results.

Receptor	Description	No. of Receptors	Type II Eligible?	Activity Category	Impact Criterion	Modeled Noise Levels (dBA)
NSA 1: Starwick						
1-1	residence	1	No	B	66	57.6
1-2	residence	1	No	B	66	58.2
1-3	residence	1	No	B	66	60.6
1-4	residence	1	No	B	66	62.6
1-5	residence	1	No	B	66	65.9
1-6	residence	1	No	B	66	68
1-7	residence	1	No	B	66	67.9
1-8	residence	1	No	B	66	67.9
1-9	residence	1	No	B	66	68.3
1-10	residence	1	No	B	66	69.1
1-11	residence	1	No	B	66	69.3
1-12	residence	1	No	B	66	68.4
1-13	residence	1	No	B	66	68.1
1-14	residence	1	No	B	66	66.9
1-15	residence	1	No	B	66	66.3
1-16	residence	1	No	B	66	63.8
1-17	residence	1	No	B	66	62.3
1-18	residence	1	No	B	66	61.7
1-19	residence	1	No	B	66	61.9
1-20	residence	1	No	B	66	62.1
1-21	residence	1	No	B	66	62.1
1-22	residence	1	No	B	66	61.5
1-23	residence	1	No	B	66	61.1
1-24	residence	1	No	B	66	60.7
1-25	residence	1	No	B	66	60
1-26	residence	1	No	B	66	62.2
1-27	residence	1	No	B	66	66.3
1-28	residence	1	No	B	66	67
1-29	residence	1	No	B	66	67.5
1-30	residence	1	No	B	66	66.6
1-31	residence	1	No	B	66	65.1
1-32	residence	1	No	B	66	62.1
1-33	residence	1	No	B	66	60.7
1-34	residence	1	No	B	66	59.3
1-35	residence	1	No	B	66	59.9
1-36	residence	1	No	B	66	63.7
1-37	residence	1	No	B	66	65.3
1-38	residence	1	No	B	66	67.4
1-39	residence	1	No	B	66	68.2
1-40	residence	1	No	B	66	69
1-41	residence	1	No	B	66	68.7
1-42	residence	1	No	B	66	68.6
1-43	residence	1	No	B	66	66.5
1-44	residence	1	No	B	66	63
1-45	residence	1	No	B	66	63

Table 3. Noise Modeling Results.

Receptor	Description	No. of Receptors	Type II Eligible?	Activity Category	Impact Criterion	Modeled Noise Levels (dBA)
1-46	residence	1	No	B	66	61.6
1-47	residence	1	No	B	66	58.6
1-48	residence	1	No	B	66	61.1
1-49	residence	1	No	B	66	59.2
1-50	residence	1	No	B	66	57.5
1-51	residence	1	No	B	66	58.3
1-52	residence	1	No	B	66	56.9
1-53	residence	1	No	B	66	55.7
1-54	residence	1	No	B	66	57.9
1-55	residence	1	No	B	66	55.2
1-56	residence	1	No	B	66	57.6
1-57	residence	1	No	B	66	55.2
1-58	residence	1	No	B	66	57.1
1-59	residence	1	No	B	66	56.7
1-60	residence	1	No	B	66	55.4
1-61	residence	1	No	B	66	54.1
1-62	residence	1	No	B	66	54.2
1-63	residence	1	No	B	66	54.5
1-64	residence	1	No	B	66	55
1-65	residence	1	No	B	66	55
1-66	residence	1	No	B	66	55.2
1-67	residence	1	No	B	66	55.3
1-68	residence	1	No	B	66	55
1-69	residence	1	No	B	66	59.8
1-70	residence	1	No	B	66	57.5
1-71	residence	1	No	B	66	57.3
1-72	residence	1	No	B	66	58.1
1-73	residence	1	No	B	66	58.4
1-74	residence	1	No	B	66	58.6
1-75	residence	1	No	B	66	57.4
1-76	residence	1	No	B	66	57.9
1-77	residence	1	No	B	66	58.1
1-78	residence	1	No	B	66	57.6
1-79	residence	1	No	B	66	58.4
1-80	residence	1	No	B	66	60.8
NSA 2: Kirk						
2-1	residence	1	Yes	B	66	68.4
2-2	residence	1	No	B	66	59.6
2-3	residence	1	Yes	B	66	61
2-4	residence	1	No	B	66	58.9
NSA 3: Oak Trace						
3-1	residence	1	Yes	B	66	69.9
3-2	residence	1	Yes	B	66	66.9
3-3	residence	1	Yes	B	66	62.6
3-4	residence	1	Yes	B	66	61.9
3-5	residence	1	Yes	B	66	62
3-6	residence	1	Yes	B	66	61.4

Table 3. Noise Modeling Results.

Receptor	Description	No. of Receptors	Type II Eligible?	Activity Category	Impact Criterion	Modeled Noise Levels (dBA)
3-7	residence	1	Yes	B	66	58.8
3-8	residence	1	Yes	B	66	58.7
3-9	residence	1	Yes	B	66	58.6
3-10	residence	1	Yes	B	66	58.7
3-11	residence	1	Yes	B	66	58.2
3-12	residence	1	Yes	B	66	58.5
3-13	residence	1	Yes	B	66	58.9
3-14	residence	1	Yes	B	66	59.1
3-15	residence	1	Yes	B	66	59.1
3-16	residence	1	Yes	B	66	59.2
3-17	residence	1	Yes	B	66	59.8
3-18	residence	1	Yes	B	66	59.1
3-19	residence	1	Yes	B	66	57.8
3-20	residence	1	Yes	B	66	57.9
3-21	residence	1	Yes	B	66	58.4
3-22	residence	1	No	B	66	56.1
3-23	residence	1	No	B	66	57.6
3-24	residence	1	No	B	66	58.9
3-25	residence	1	No	B	66	60.4
3-26	residence	1	No	B	66	64
3-27	residence	1	No	B	66	65.3
3-28	residence	1	No	B	66	65.5
3-29	residence	1	No	B	66	66.1
3-30	residence	1	No	B	66	67.1
3-31	residence	1	No	B	66	67.7
3-32	residence	1	No	B	66	67.5
3-33	residence	1	No	B	66	67.6
3-34	residence	1	No	B	66	67.7
3-35	residence	1	No	B	66	67.5
3-36	residence	1	No	B	66	67.7
3-37	residence	1	No	B	66	67.8
3-38	residence	1	No	B	66	68.7
3-39	residence	1	No	B	66	68.8
3-40	residence	1	No	B	66	64.9
3-41	residence	1	No	B	66	62.7
3-42	residence	1	No	B	66	65.5
3-43	residence	1	No	B	66	66.2
3-44	residence	1	No	B	66	67.8
3-45	residence	1	No	B	66	64.4
3-46	residence	1	No	B	66	64.1
3-47	residence	1	No	B	66	67.5
3-48	residence	1	No	B	66	68.9
3-49	residence	1	No	B	66	68.3
3-50	residence	1	No	B	66	64.5
3-51	residence	1	No	B	66	63.4
3-52	residence	1	No	B	66	66.7
3-53	residence	1	No	B	66	67.7

Table 3. Noise Modeling Results.

Receptor	Description	No. of Receptors	Type II Eligible?	Activity Category	Impact Criterion	Modeled Noise Levels (dBA)
3-54	residence	1	No	B	66	64.6
3-55	residence	1	No	B	66	64.7
3-56	residence	1	No	B	66	66.9
3-57	residence	1	No	B	66	68.7
3-58	residence	1	No	B	66	65.6
3-59	residence	1	No	B	66	63.4
3-60	residence	1	No	B	66	67.2
3-61	residence	1	No	B	66	69
3-62	residence	1	No	B	66	66.7
3-63	residence	1	No	B	66	62.8
3-64	residence	1	No	B	66	58
3-65	residence	1	No	B	66	58.3
3-66	residence	1	No	B	66	58.5
3-67	residence	1	No	B	66	59.5
3-68	residence	1	No	B	66	59.8
3-69	residence	1	No	B	66	60.8
3-70	residence	1	No	B	66	60.6
3-71	residence	1	No	B	66	60.2
3-72	residence	1	No	B	66	60.3
3-73	residence	1	No	B	66	59.4
3-74	residence	1	No	B	66	60.3
3-75	residence	1	No	B	66	57.5
3-76	residence	1	No	B	66	58.8
3-77	residence	1	No	B	66	54.7
3-78	residence	1	No	B	66	52.9
3-79	residence	1	No	B	66	51.8
3-80	residence	1	No	B	66	52.6
3-81	residence	1	No	B	66	53.2
3-82	residence	1	No	B	66	53
3-83	residence	1	No	B	66	53.5
3-84	residence	1	No	B	66	54.1
3-85	residence	1	No	B	66	54.1
3-86	residence	1	No	B	66	54.3
3-87	residence	1	No	B	66	55.8
3-88	residence	1	No	B	66	56
3-89	residence	1	No	B	66	56.1
3-90	residence	1	No	B	66	57
3-91	residence	1	No	B	66	57.2
3-92	residence	1	No	B	66	57.9
3-93	residence	1	No	B	66	60.5
3-94	residence	1	No	B	66	57.4
3-95	residence	1	No	B	66	59.5
3-96	residence	1	No	B	66	57.6
3-97	residence	1	No	B	66	55.4
3-98	residence	1	No	B	66	57.8
3-99	residence	1	No	B	66	58.7
3-100	residence	1	No	B	66	61.3



Table 3. Noise Modeling Results.

Receptor	Description	No. of Receptors	Type II Eligible?	Activity Category	Impact Criterion	Modeled Noise Levels (dBA)
3-101	residence	1	No	B	66	58.8
3-102	residence	1	No	B	66	60.3
3-103	residence	1	No	B	66	59.1
3-104	residence	1	No	B	66	57.4
3-105	residence	1	No	B	66	57.3
3-106	residence	1	No	B	66	60.2
3-107	residence	1	No	B	66	58.6
3-108	residence	1	No	B	66	60.3
3-109	residence	1	No	B	66	58.5
3-110	residence	1	No	B	66	56.9
3-111	residence	1	No	B	66	57.7
3-112	residence	1	No	B	66	59.6
3-113	residence	1	No	B	66	57.6
3-114	residence	1	No	B	66	60.4
3-115	residence	1	No	B	66	59.3
3-116	residence	1	No	B	66	59.6
3-117	residence	1	No	B	66	59.7
3-118	residence	1	Yes	B	66	59.1
3-119	residence	1	Yes	B	66	61.5
3-120	residence	1	Yes	B	66	59.6
NSA 4: New						
4-1	residence	1	Yes	B	66	68.3
4-2	residence	1	Yes	B	66	60.1
4-3	residence	1	Yes	B	66	59
NSA 5: Nashua						
5-1	residence	1	No	B	66	64.9
5-2	residence	1	No	B	66	65.6
5-3	residence	1	No	B	66	65.5
5-4	residence	1	No	B	66	65.2
5-5	residence	1	No	B	66	61.4
5-6	residence	1	No	B	66	60.8
5-7	residence	1	No	B	66	61.7
5-8	residence	1	No	B	66	62.6
5-9	residence	1	No	B	66	59.6
5-10	residence	1	No	B	66	58.9
5-11	residence	1	No	B	66	58.7
5-12	residence	1	No	B	66	60.7
5-13	residence	1	No	B	66	60.6
5-14	residence	1	No	B	66	58
5-15	residence	1	No	B	66	57.5
5-16	residence	1	No	B	66	59.5
5-17	residence	1	No	B	66	60.8
5-18	residence	1	No	B	66	63.2
5-19	residence	1	No	B	66	62.4
5-20	residence	1	No	B	66	63.4
5-21	residence	1	No	B	66	63.2
5-22	residence	1	No	B	66	60.8

Table 3. Noise Modeling Results.

Receptor	Description	No. of Receptors	Type II Eligible?	Activity Category	Impact Criterion	Modeled Noise Levels (dBA)
5-23	residence	1	No	B	66	59
5-24	residence	1	No	B	66	58
5-25	residence	1	No	B	66	58.3
5-26	residence	1	Yes	B	66	59
5-27	residence	1	Yes	B	66	62.7
5-28	residence	1	Yes	B	66	63.3
5-29	residence	1	Yes	B	66	63
5-30	residence	1	Yes	B	66	62.4
5-31	residence	1	Yes	B	66	62.2
5-32	residence	1	Yes	B	66	61.1
5-33	residence	1	Yes	B	66	57.6
5-34	residence	1	Yes	B	66	57.5
5-35	residence	1	Yes	B	66	57.3
NSA 6: Westhampton						
6-1	residence	1	Yes	B	66	60.8
6-2	residence	1	Yes	B	66	67.5
6-3	residence	1	No	B	66	65
6-4	residence	1	No	B	66	61.3
6-5	residence	1	No	B	66	59.9
6-6	residence	1	No	B	66	59
6-7	residence	1	No	B	66	68.2
6-8	residence	1	No	B	66	64
6-9	residence	1	No	B	66	60.8
6-10	residence	1	No	B	66	68
6-11	residence	1	No	B	66	64.2
6-12	residence	1	No	B	66	62.2
6-13	residence	1	No	B	66	63.6
6-14	residence	1	No	B	66	65.4
6-15	residence	1	No	B	66	68.5
6-16	residence	1	No	B	66	68.3
6-17	residence	1	No	B	66	67.3
6-18	residence	1	No	B	66	66.7
6-19	residence	1	No	B	66	65.2
6-20	residence	1	No	B	66	64.1
6-21	residence	1	No	B	66	62.7
6-22	residence	1	No	B	66	62.2
6-23	residence	1	No	B	66	61.8
6-24	residence	1	No	B	66	61.9
6-25	residence	1	No	B	66	62
6-26	residence	1	No	B	66	62.1
6-27	residence	1	No	B	66	58.1
6-28	residence	1	No	B	66	54.1
6-29	residence	1	No	B	66	57.7
6-30	residence	1	No	B	66	56.5
6-31	residence	1	No	B	66	55.9
6-32	residence	1	No	B	66	52.8
6-33	residence	1	No	B	66	56

Table 3. Noise Modeling Results.

Receptor	Description	No. of Receptors	Type II Eligible?	Activity Category	Impact Criterion	Modeled Noise Levels (dBA)
6-34	residence	1	No	B	66	52.8
6-35	residence	1	No	B	66	56.4
6-36	residence	1	No	B	66	57.2
6-37	residence	1	No	B	66	57.1
6-38	residence	1	No	B	66	57
6-39	residence	1	No	B	66	55.9
6-40	residence	1	No	B	66	56.4
6-41	residence	1	No	B	66	56.7
6-42	residence	1	No	B	66	56.6
6-43	residence	1	No	B	66	55.2
6-44	residence	1	No	B	66	55.9
6-45	residence	1	No	B	66	55.9
6-46	residence	1	No	B	66	56.3
6-47	residence	1	No	B	66	58
6-48	residence	1	No	B	66	56.9
6-49	residence	1	No	B	66	56.6
6-50	residence	1	No	B	66	56.6
6-51	residence	1	No	B	66	55.9
6-52	residence	1	No	B	66	54.9
6-53	residence	1	No	B	66	56.4
6-54	residence	1	No	B	66	56.9
6-55	residence	1	No	B	66	58.9
6-56	residence	1	No	B	66	60.9
6-57	residence	1	No	B	66	63.7
6-58	residence	1	No	B	66	60.3
6-59	residence	1	No	B	66	58.7
6-60	residence	1	No	B	66	57.9
NSA 7: Inglewood						
7-1	residence	1	Yes	B	66	65.4
7-2	residence	1	Yes	B	66	66.5
7-3	residence	1	Yes	B	66	66.7
7-4	residence	1	Yes	B	66	67.2
7-5	residence	1	Yes	B	66	66.5
7-6	residence	1	Yes	B	66	66.5
7-7	residence	1	Yes	B	66	66.7
7-8	residence	1	Yes	B	66	62
7-9	residence	1	Yes	B	66	66.7
7-10	residence	1	Yes	B	66	66.8
7-11	residence	1	Yes	B	66	67.2
7-12	residence	1	Yes	B	66	62
7-13	residence	1	Yes	B	66	67.7
7-14	residence	1	Yes	B	66	68.1
7-15	residence	1	Yes	B	66	61.8
7-16	residence	1	Yes	B	66	62
7-17	residence	1	Yes	B	66	62.2
7-18	residence	1	Yes	B	66	61.8
7-19	residence	1	Yes	B	66	67.8

Table 3. Noise Modeling Results.

Receptor	Description	No. of Receptors	Type II Eligible?	Activity Category	Impact Criterion	Modeled Noise Levels (dBA)
7-20	residence	1	Yes	B	66	69.5
7-21	residence	1	Yes	B	66	66
7-22	residence	1	Yes	B	66	66.5
7-23	residence	1	Yes	B	66	67.7
7-24	residence	1	Yes	B	66	67.5
7-25	residence	1	Yes	B	66	66.2
7-26	residence	1	Yes	B	66	67
7-27	residence	1	Yes	B	66	66.9
7-28	residence	1	Yes	B	66	66.6
7-29	residence	1	Yes	B	66	66.7
7-30	residence	1	Yes	B	66	67
7-31	residence	1	Yes	B	66	66.4
7-32	residence	1	Yes	B	66	66.1
7-33	residence	1	Yes	B	66	66
7-34	residence	1	Yes	B	66	66.2
7-35	residence	1	Yes	B	66	66.3
7-36	residence	1	Yes	B	66	66.3
7-37	residence	1	Yes	B	66	66.9
7-38	residence	1	Yes	B	66	67.2
7-39	residence	1	Yes	B	66	67.7
7-40	residence	1	Yes	B	66	68.5
7-41	residence	1	Yes	B	66	69.6
7-42	residence	1	Yes	B	66	69.5
7-43	residence	1	Yes	B	66	57.3
7-44	residence	1	Yes	B	66	57.2
7-45	residence	1	Yes	B	66	56.9
7-46	residence	1	Yes	B	66	57
7-47	residence	1	Yes	B	66	57.2
7-48	residence	1	Yes	B	66	57.3
7-49	residence	1	Yes	B	66	57.2
7-50	residence	1	Yes	B	66	57.2
7-51	residence	1	No	B	66	56.7
7-52	residence	1	No	B	66	56.8
7-53	residence	1	No	B	66	56.7
7-54	residence	1	No	B	66	56.7
7-55	residence	1	No	B	66	56.7
7-56	residence	1	No	B	66	57
7-57	residence	1	No	B	66	57.7
7-58	residence	1	Yes	B	66	58.5
7-59	residence	1	Yes	B	66	59.2
7-60	residence	1	Yes	B	66	60.3
7-61	residence	1	Yes	B	66	58.5
7-62	residence	1	Yes	B	66	60.3
7-63	residence	1	Yes	B	66	58.1
7-64	residence	1	Yes	B	66	60.6
7-65	residence	1	Yes	B	66	60.7
7-66	residence	1	Yes	B	66	60.6

Table 3. Noise Modeling Results.

Receptor	Description	No. of Receptors	Type II Eligible?	Activity Category	Impact Criterion	Modeled Noise Levels (dBA)
7-67	residence	1	Yes	B	66	58.1
7-68	residence	1	Yes	B	66	60.3
7-69	residence	1	Yes	B	66	60.1
7-70	residence	1	Yes	B	66	59.8
7-71	residence	1	Yes	B	66	59.5
7-72	residence	1	Yes	B	66	59.1
7-73	residence	1	Yes	B	66	59.5
7-74	residence	1	Yes	B	66	59.6
7-75	residence	1	Yes	B	66	59.3
7-76	residence	1	Yes	B	66	59.1
7-77	residence	1	Yes	B	66	58.3
7-78	residence	1	Yes	B	66	57.3
7-79	residence	1	Yes	B	66	56.8
7-80	residence	1	Yes	B	66	56.5
7-81	residence	1	Yes	B	66	57.2
7-82	residence	1	Yes	B	66	59.6
7-83	residence	1	Yes	B	66	60.3
7-84	residence	1	Yes	B	66	61.8
7-85	residence	1	Yes	B	66	63.6
7-86	residence	1	No	B	66	56.3
7-87	residence	1	No	B	66	54.6
7-88	residence	1	No	B	66	54.2
7-89	residence	1	No	B	66	54.1
7-90	residence	1	No	B	66	54.9
7-91	residence	1	Yes	B	66	55
7-92	residence	1	Yes	B	66	54.3
7-93	residence	1	Yes	B	66	54.1
7-94	residence	1	Yes	B	66	54
7-95	residence	1	Yes	B	66	53.5
7-96	residence	1	Yes	B	66	51.4
7-97	residence	1	Yes	B	66	51.1
7-98	residence	1	Yes	B	66	54.6
7-99	residence	1	Yes	B	66	55.7
7-100	residence	1	Yes	B	66	55.4
7-101	residence	1	No	B	66	51.6
7-102	residence	1	Yes	B	66	52.8
7-103	residence	1	Yes	B	66	53.2
7-104	residence	1	Yes	B	66	54.9
NSA 8: Cross						
8-1	residence	1	No	B	66	62.2
8-2	residence	1	No	B	66	66.5
8-3	residence	1	No	B	66	69.4
8-4	residence	1	No	B	66	67.1
8-5	residence	1	No	B	66	66
8-6	residence	1	No	B	66	68.5
8-7	residence	1	No	B	66	69
8-8	residence	1	No	B	66	66.5

Table 3. Noise Modeling Results.

Receptor	Description	No. of Receptors	Type II Eligible?	Activity Category	Impact Criterion	Modeled Noise Levels (dBA)
8-9	residence	1	No	B	66	62.2
8-10	residence	1	No	B	66	58.6
8-11	residence	1	No	B	66	58.6
8-12	residence	1	No	B	66	59.7
8-13	residence	1	No	B	66	60.3
8-14	residence	1	No	B	66	61.5
8-15	residence	1	No	B	66	61.6
8-16	residence	1	No	B	66	59.3
8-17	residence	1	No	B	66	59.1
8-18	residence	1	No	B	66	57.1
8-19	residence	1	No	B	66	60.3
8-20	residence	1	No	B	66	60.8
8-21	residence	1	No	B	66	61.1
8-22	residence	1	No	B	66	61.2
8-23	residence	1	No	B	66	61.3
8-24	residence	1	No	B	66	61.5
8-25	residence	1	No	B	66	61.4
8-26	residence	1	No	B	66	61.6
8-27	residence	1	No	B	66	61.8
8-28	residence	1	No	B	66	61.7
8-29	residence	1	No	B	66	61.8
8-30	residence	1	No	B	66	61.9
8-31	residence	1	No	B	66	62
8-32	residence	1	No	B	66	61.9
NSA 9: Westchester						
9-1	non-profit	1	No	C	66	60.1
9-2	school playground	1	No	C	66	59.9
9-3	school playground	1	No	C	66	67.5
9-4	school playground	1	No	C	66	66.7
9-5	non-profit	1	No	C	66	59.5
9-6	senior center	1	No	C	66	54.9
9-7	restaurant patio	1	No	E	71	57.8

Table 4. Barrier Evaluation Summary

NSA: Barrier	Barrier Dimensions			Est. Cost	No. of Benefited Type II Receptors <sup>a</sup>	Cost per Benefited Type II Receptor	Meets Design Goal? <sup>b</sup>	Feasible? <sup>c</sup>	Reasonable? <sup>d</sup>	Recommended? <sup>e</sup>
	Ht. (ft)	Length (ft)	Area (sq. ft)							
NSA 1: Starwick	12	3,181	38,167	\$954,200	0	--	Yes	Yes	No	No
	13	3,181	38,167	\$1,033,700	0	--	Yes	Yes	No	No
	14	3,181	44,529	\$1,113,200	0	--	Yes	Yes	No	No
NSA 3: Oak Trace-full length	12	5,410	64,921	\$1,623,000	10	\$162,303	Yes	Yes	No	No
	13	5,410	70,331	\$1,758,300	10	\$175,828	Yes	Yes	No	No
	14	5,410	75,741	\$1,893,500	11	\$172,140	Yes	Yes	No	No
	15	5,410	81,151	\$2,028,800	12	\$169,066	Yes	Yes	No	No
	16	5,410	86,562	\$2,164,000	12	\$180,337	Yes	Yes	No	No
NSA 3: Oak Trace-reduced length	12	2,282	27,383	\$684,600	9	\$76,065	Yes	Yes	No	No
	13	2,132	27,717	\$692,900	10	\$69,292	Yes	Yes	No	No
	14	2,082	29,149	\$728,700	10	\$72,871	Yes	Yes	No	No
	15	2,032	30,481	\$762,000	11	\$69,274	Yes	Yes	No	No
	16	2,032	32,513	\$812,800	11	\$73,892	Yes	Yes	No	No
NSAs 5, 7: Nashua-full length	15	2,000	30,000	\$750,000	4	\$187,497	No	Yes	No	No
	16	2,000	32,000	\$800,000	5	\$159,998	No	Yes	No	No
NSAs 5, 7: Nashua-reduced length	15	900	13,500	\$337,500	3	\$112,500	No	No	No	No
	16	900	14,400	\$360,000	5	\$72,000	No	No	No	No
NSAs 5, 7: Nashua-Inglewood-full length	14	5,585	78,185	\$1,954,600	46	\$42,491	Yes	Yes	No	No
	15	5,585	83,769	\$2,094,200	49	\$42,739	Yes	Yes	No	No
	16	5,585	89,354	\$2,233,800	60	\$37,231	Yes	Yes	No	No
NSAs 5, 7: Nashua-Inglewood-reduced length	13	4,485	58,300	\$1,457,500	37	\$39,392	Yes	Yes	No	No
	14	4,485	62,785	\$1,569,600	46	\$34,122	Yes	Yes	Yes	No
	15	4,485	67,269	\$1,681,700	48	\$35,036	Yes	Yes	No	No
	16	4,385	70,754	\$1,793,800	57	\$30,800	Yes	Yes	Yes	Yes
NSA 6: Westhampton	14	1,900	26,600	\$665,000	1	\$665,004	Yes	Yes	No	No
	15	1,850	27,751	\$693,800	1	\$693,781	Yes	Yes	No	No
	16	1,950	31,200	\$780,000	1	\$780,010	Yes	Yes	No	No
NSAs 8, 9: Cross-EOS	14	3,000	42,000	\$1,050,000	0	--	Yes	Yes	No	No
	15	2,950	44,249	\$1,106,200	0	--	Yes	Yes	No	No
	16	2,950	47,199	\$1,180,000	0	--	Yes	Yes	No	No
NSAs 8, 9: Cross-ROW	13	3,000	39,000	\$975,000	0	--	Yes	Yes	No	No
	15	2,937	44,056	\$1,101,400	0	--	Yes	Yes	No	No
	18	2,937	52,867	\$1,321,700	0	--	Yes	Yes	No	No

- a A Type II receptor was built before SR 11. It is considered to benefit if it receives a noise reduction of at least 4.5 dBA.
- b The design goal is for at least one receptor receives a benefit of 7 dBA or more.
- c To be acoustically feasible, a barrier must provide at least 5 dB reduction for 40% of impacted receptors. It must also meet ODOT safety factors.
- d A cost reasonable barrier does not exceed \$35000 per benefited receptor.

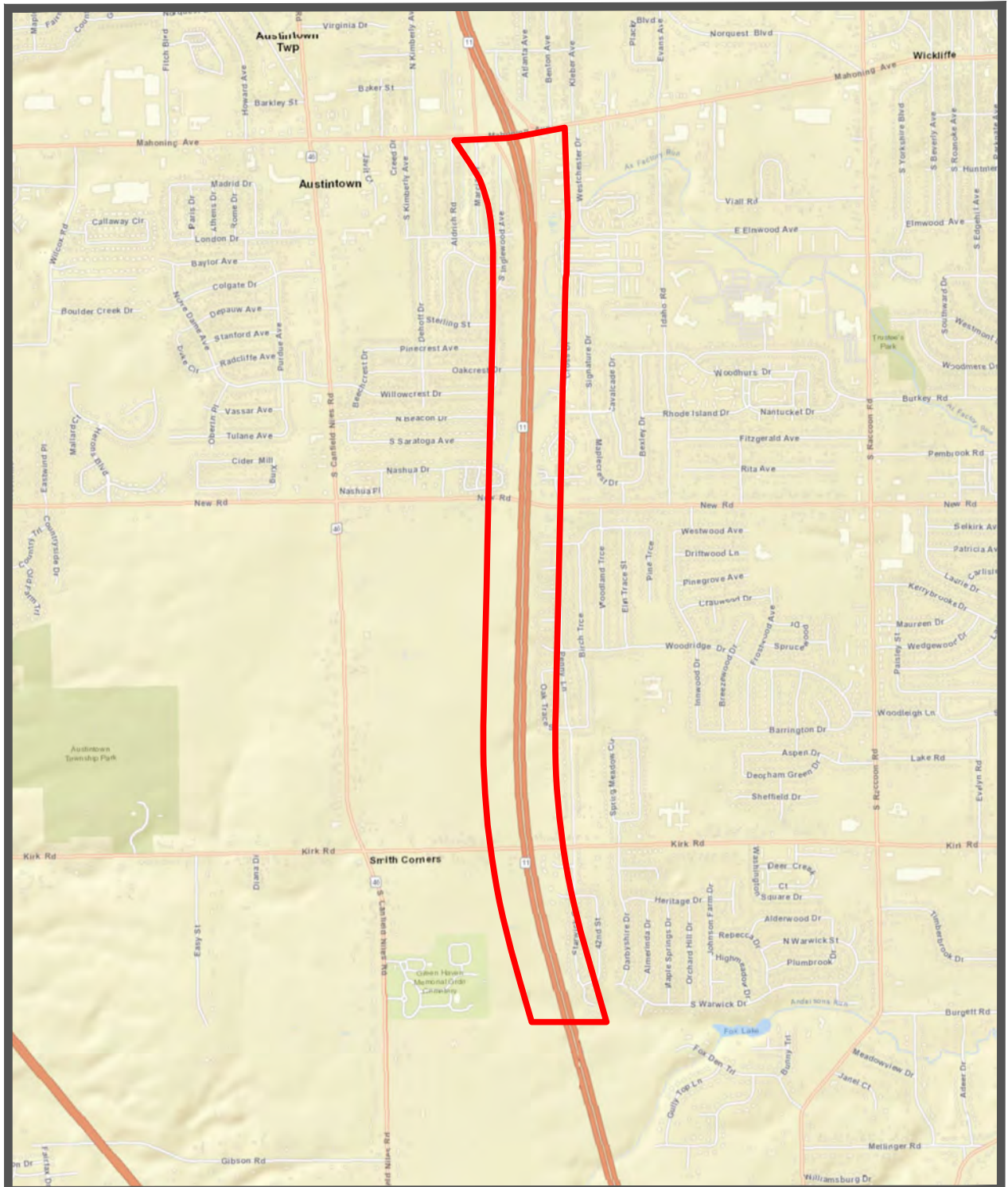
- e To be recommended, a barrier must meet design goals and be both reasonable and feasible. If multiple barrier designs meet these criteria for an NSA, one may be recommended based on comparison of costs, benefits, and other factors.

Table 5. Recommended Barrier

Barrier	Length (ft)	Cost	No. of Benefited Type II Eligible Receptors	Cost per Benefited Receptor
Nashua-Inglewood-Reduced Height Length-16 ft	4,385	\$1,753,800	57	\$30,800



FIGURES



**Scale**

0 500 1000 1500 2000 2500  
Feet

**Legend**

— Noise study area boundary

**North**

Basemap: Esri ArcGIS World Street Map  
([https://services.arcgisonline.com/ArcGIS/rest/services/World\\_Street\\_Map/MapServer](https://services.arcgisonline.com/ArcGIS/rest/services/World_Street_Map/MapServer)).

Figure 1. Noise Study Area Location Map.



Figure 2. Noise Analysis Area for MAH-SR 11 (PID 106325)-Sheet 1 of 7.



Figure 3. Noise Analysis Area for MAH-SR 11 (PID 106325)-Sheet 2 of 7.

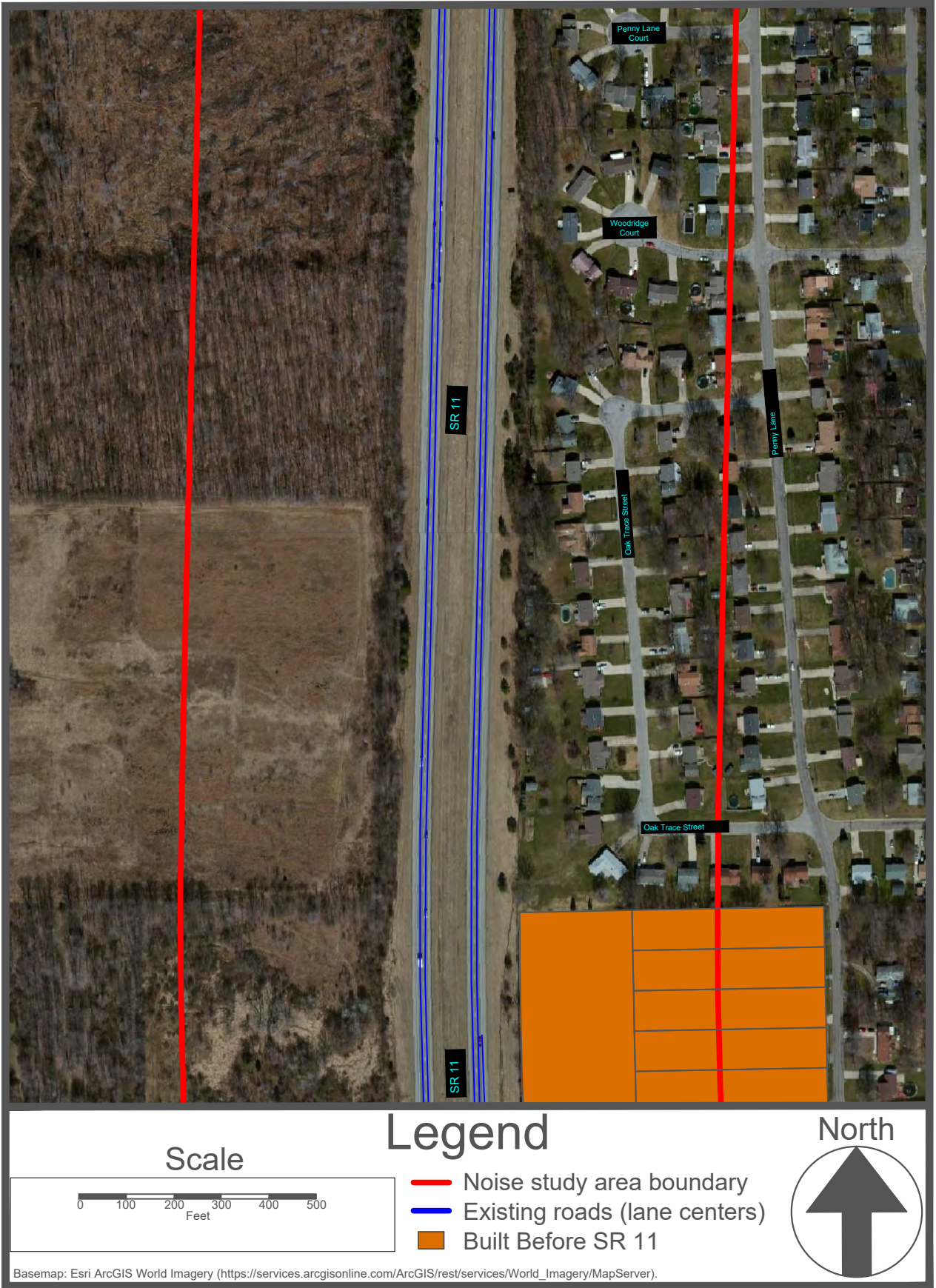


Figure 4. Noise Analysis Area for MAH-SR 11 (PID 106325)-Sheet 3 of 7.

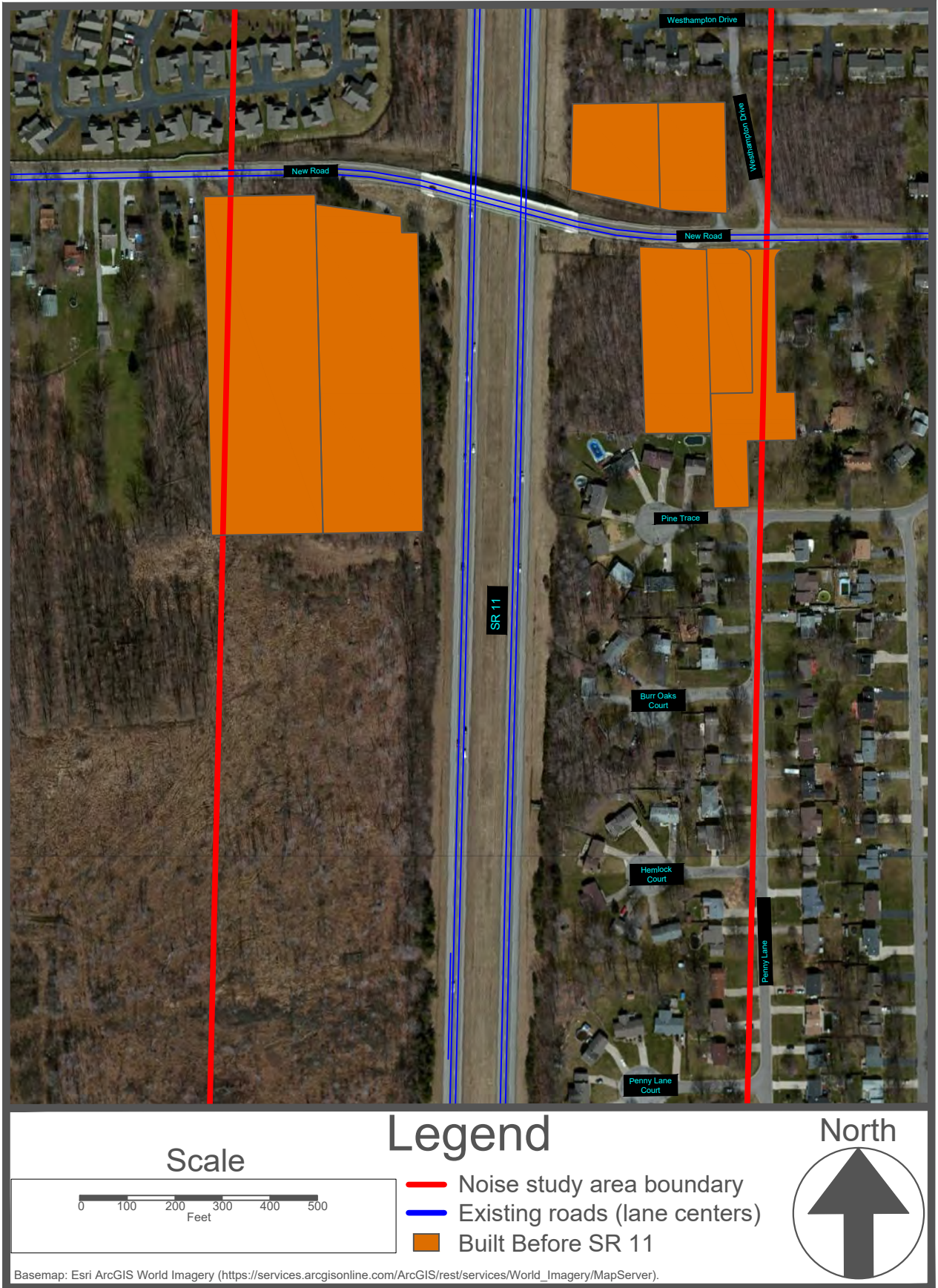


Figure 5. Noise Analysis Area for MAH-SR 11 (PID 106325)-Sheet 4 of 7.

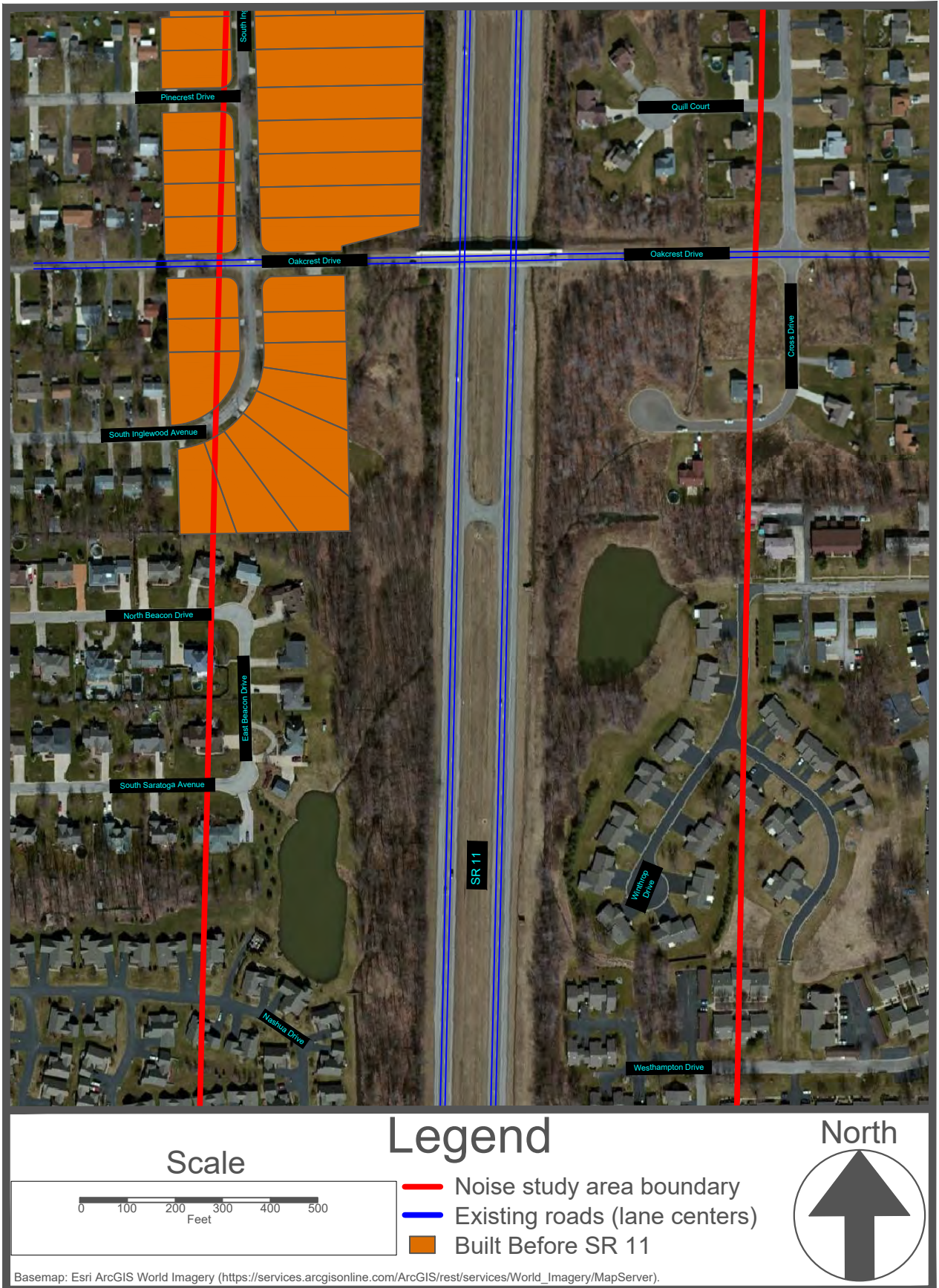


Figure 6. Noise Analysis Area for MAH-SR 11 (PID 106325)-Sheet 5 of 7.



Figure 7. Noise Analysis Area for MAH-SR 11 (PID 106325)-Sheet 6 of 7.



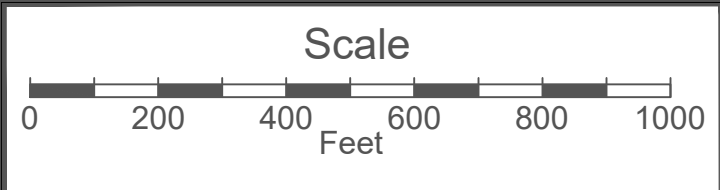
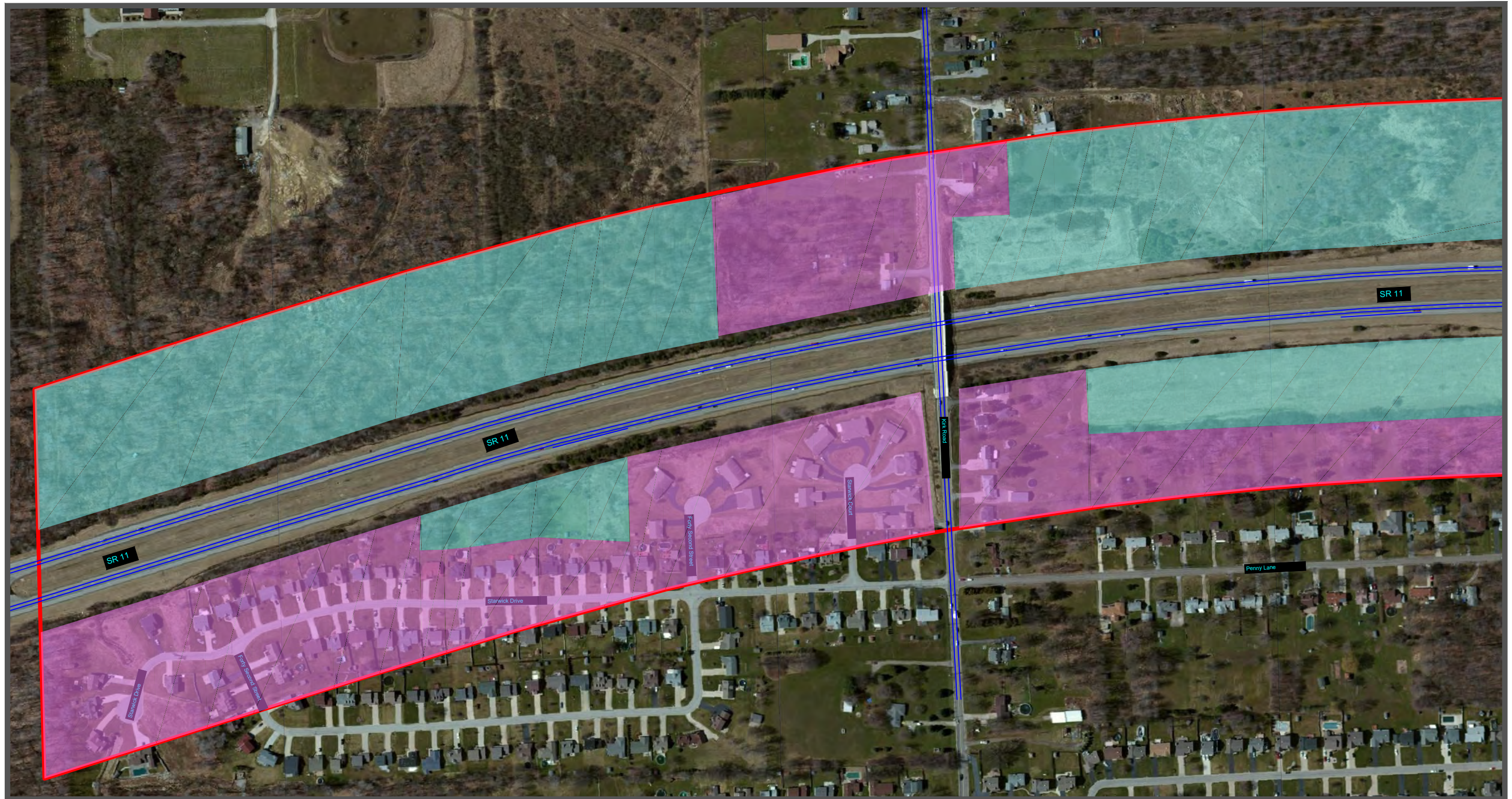


Figure 8. Noise Analysis Area for MAH-SR 11 (PID 106325)-Sheet 7 of 7.

APPENDIX A: AERIAL MAPPING

Includes:

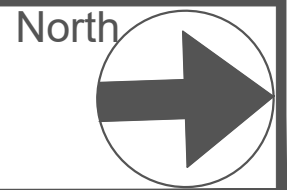
- Figure A-1. MAH-SR 11 Noise Wall Investigation Map
- Figures A-2 through A-5. Land Use Designations
- Figures A-6 through A-9. Noise Sensitive Areas and Receptors
- Figures A-10 through A-18. Measurements
- Figures A-19 through A-29. Barriers
- Figures A-30 through A-32. Undeveloped Areas.



- Noise analysis area boundary
- Existing roads (lane centers)

### Legend

- B-Residential
- C-Sensitive Non-residential
- D-Sensitive Interior
- E-Sensitive Commercial
- F-Non-sensitive
- G-Undeveloped



Basemap: Esri ArcGIS World Imagery ([https://services.arcgisonline.com/ArcGIS/rest/services/World\\_Imagery/MapServer](https://services.arcgisonline.com/ArcGIS/rest/services/World_Imagery/MapServer)).

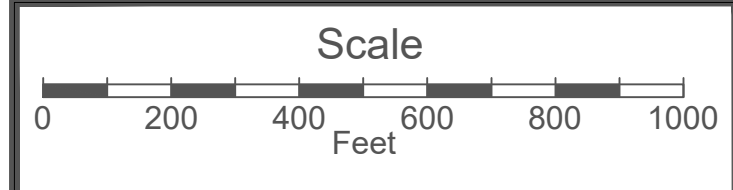
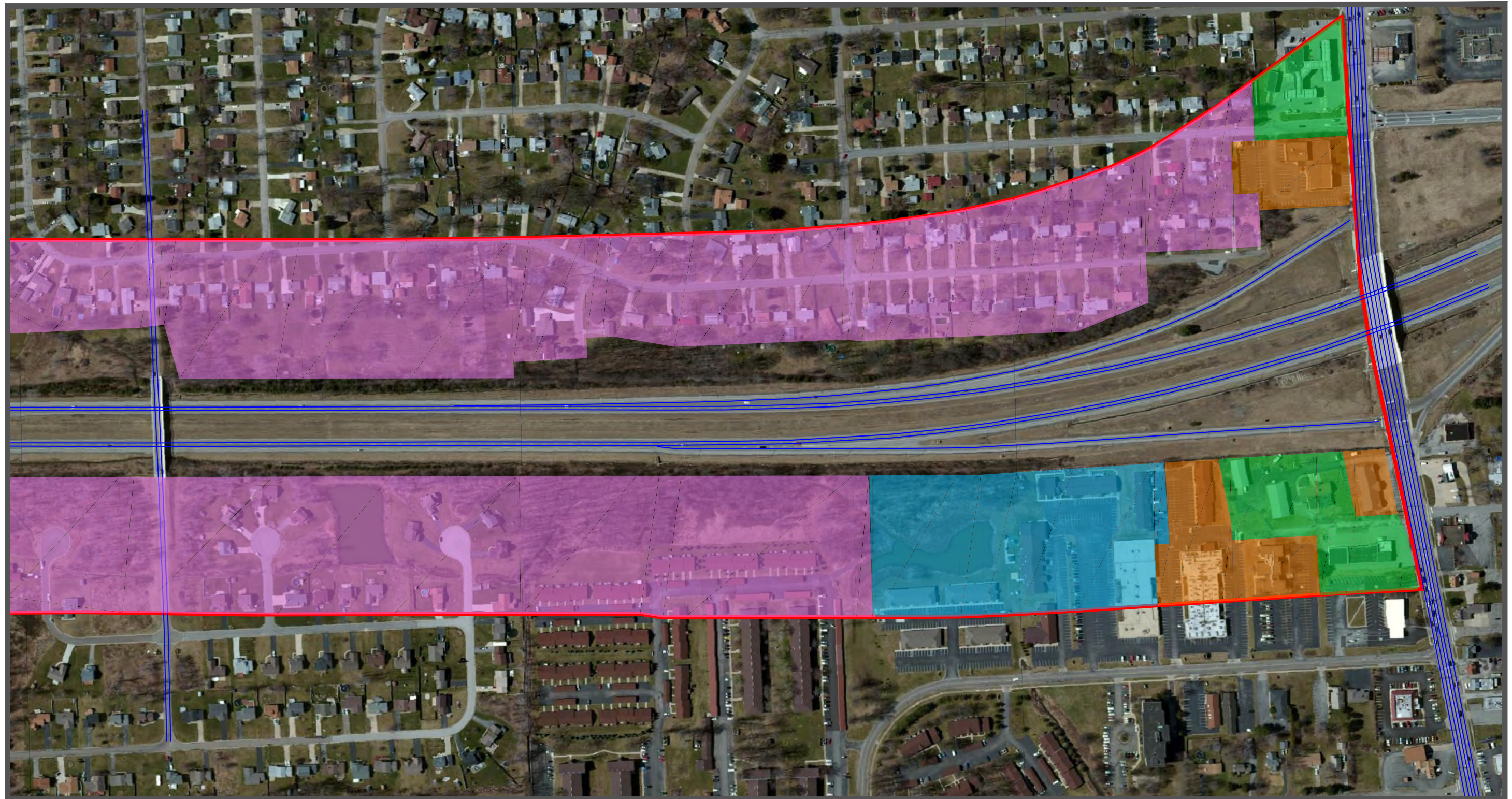
Figure A-2. Land Use for MAH-SR 11 (PID 106325)-Sheet 1 of 4.



Figure A-3. Land Use for MAH-SR 11 (PID 106325)-Sheet 2 of 4.



Figure A-4. Land Use for MAH-SR 11 (PID 106325)-Sheet 3 of 4.



Basemap: Esri ArcGIS World Imagery ([https://services.arcgisonline.com/ArcGIS/rest/services/World\\_Imagery/MapServer](https://services.arcgisonline.com/ArcGIS/rest/services/World_Imagery/MapServer)).

- Noise analysis area boundary
- Existing roads (lane centers)

### Legend

- B-Residential
- C-Sensitive Non-residential
- D-Sensitive Interior
- E-Sensitive Commercial
- F-Non-sensitive
- G-Undeveloped

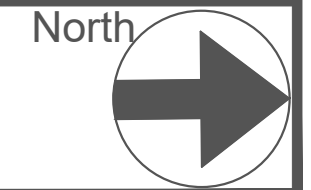


Figure A-5. Land Use for MAH-SR 11 (PID 106325)-Sheet 4 of 4.

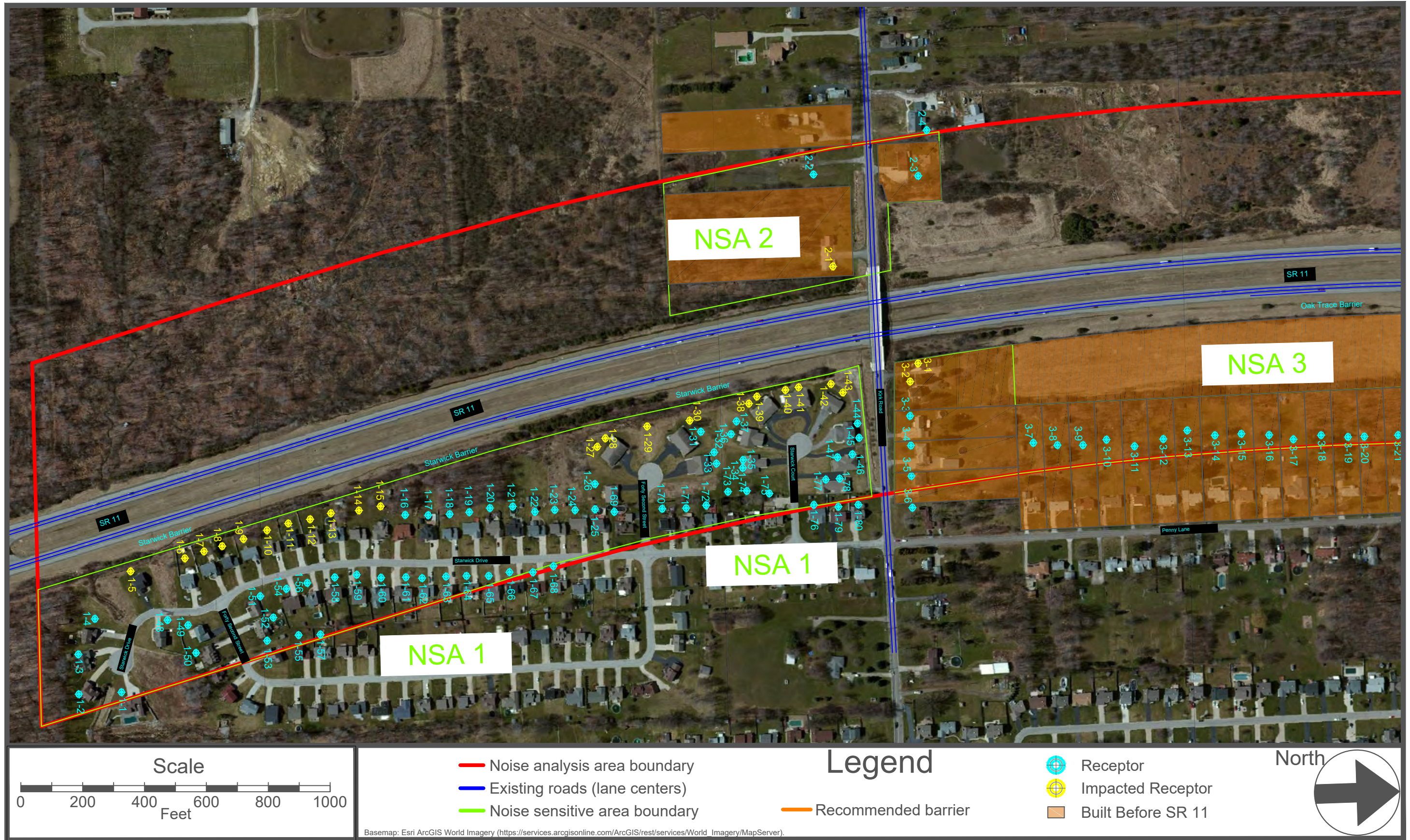


Figure A-6. Receptors in Noise Sensitive Areas 1, 2 and 3.



Figure A-7. Receptors in Noise Sensitive Areas 3 and 4.



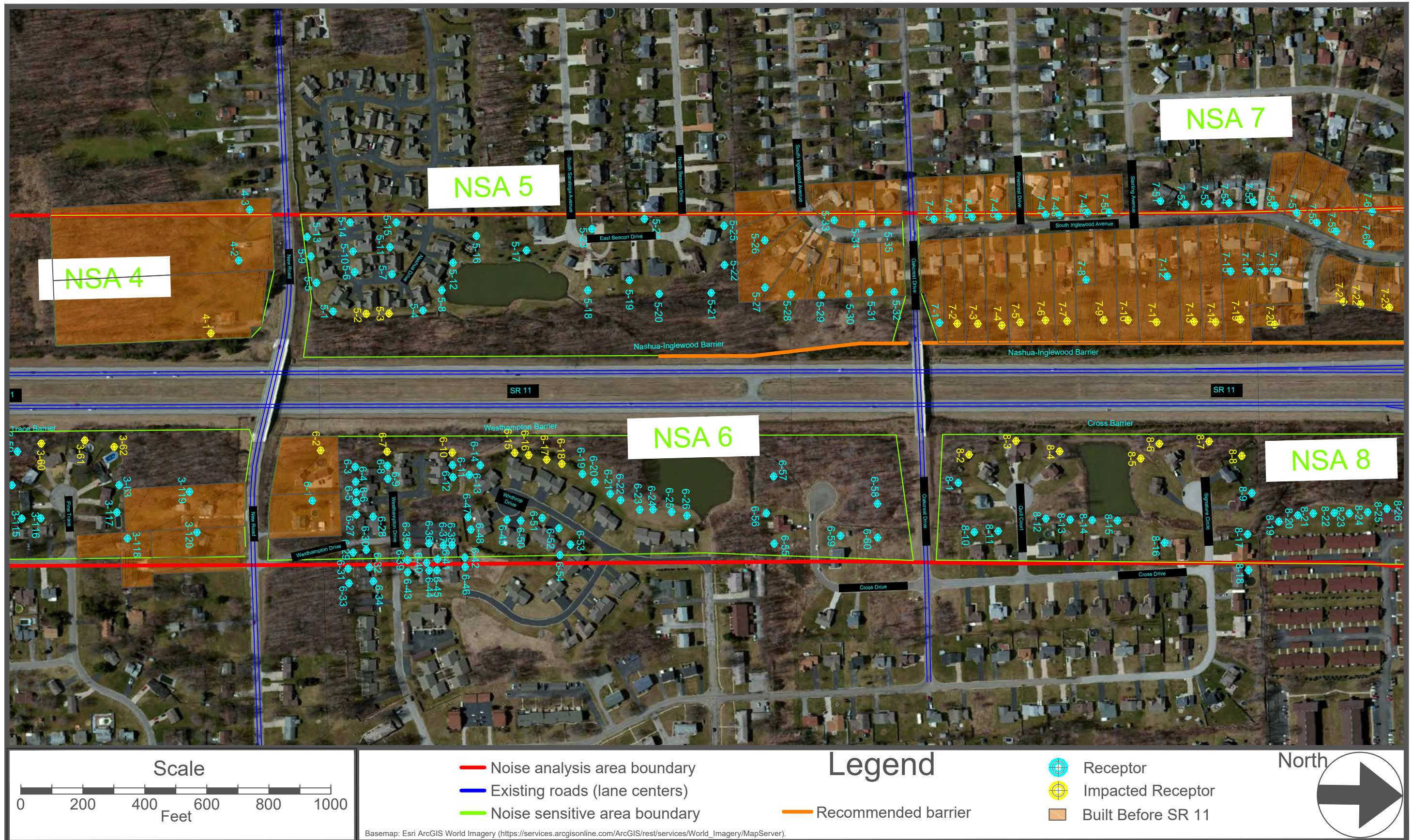


Figure A-8. Receptors in Noise Sensitive Areas 5 and 6.



Figure A-9. Receptors in Noise Sensitive Areas 7, 8 and 9.

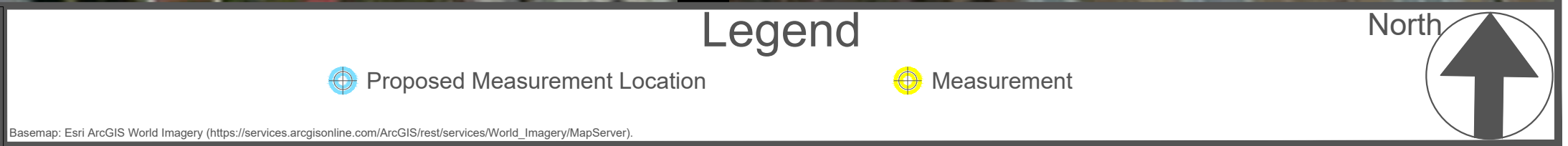


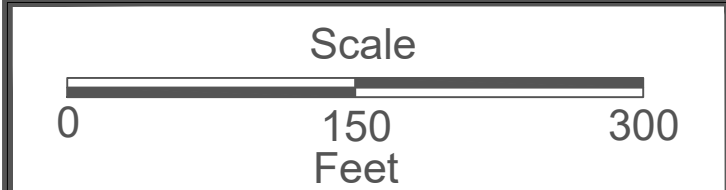
Figure A-10. Measurement Location M1.





SR 11

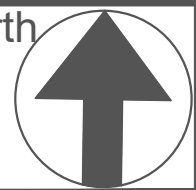
Westchester

**M2**   
Cat. C  
NSA 9  
58 ft to ramp  
**M2**   
Meas: 67.0 dBA  
Model: 65.7 dBA



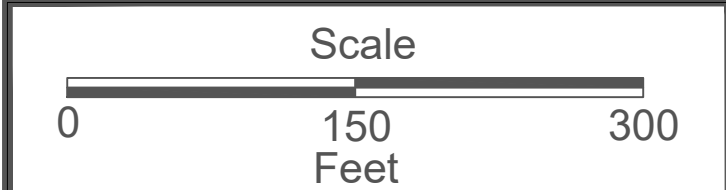
**Legend**

 Proposed Measurement Location       Measurement

North 

Basemap: Esri ArcGIS World Imagery ([https://services.arcgisonline.com/ArcGIS/rest/services/World\\_Imagery/MapServer](https://services.arcgisonline.com/ArcGIS/rest/services/World_Imagery/MapServer)).

Figure A-11. Measurement Location M2.



Legend

⊕ Proposed Measurement Location      ⊕ Measurement

North

Basemap: Esri ArcGIS World Imagery ([https://services.arcgisonline.com/ArcGIS/rest/services/World\\_Imagery/MapServer](https://services.arcgisonline.com/ArcGIS/rest/services/World_Imagery/MapServer)).

Figure A-12. Measurement Location M3.

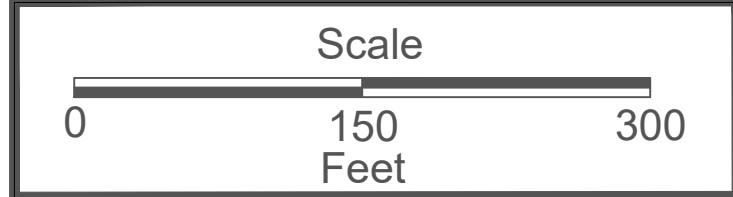
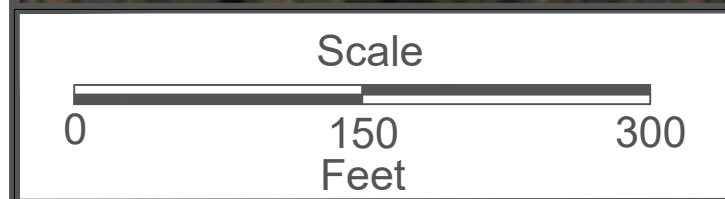


Figure A-13. Measurement Location M4.



Legend

Proposed Measurement Location

Measurement  
No measurement was possible because property owner refused access.

North

Basemap: Esri ArcGIS World Imagery ([https://services.arcgisonline.com/ArcGIS/rest/services/World\\_Imagery/MapServer](https://services.arcgisonline.com/ArcGIS/rest/services/World_Imagery/MapServer)).

Figure A-14. Measurement Location M5.



Legend

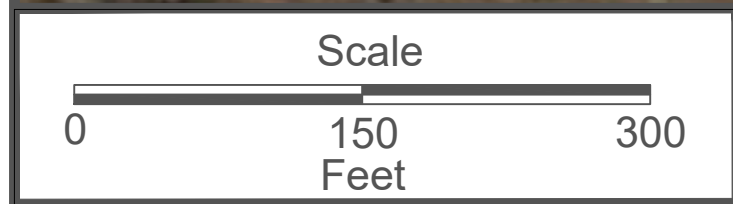
Proposed Measurement Location      Measurement

North



Basemap: Esri ArcGIS World Imagery ([https://services.arcgisonline.com/ArcGIS/rest/services/World\\_Imagery/MapServer](https://services.arcgisonline.com/ArcGIS/rest/services/World_Imagery/MapServer)).

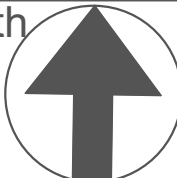
Figure A-15. Measurement Location M6.





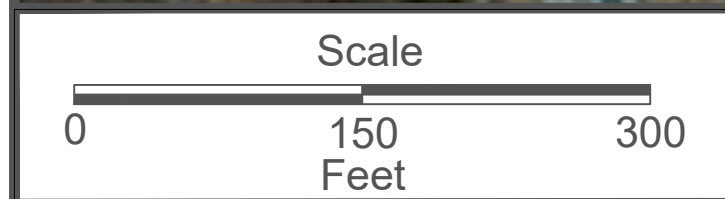
**Legend**

 Proposed Measurement Location	 Measurement
---	---

North 

Basemap: Esri ArcGIS World Imagery ([https://services.arcgisonline.com/ArcGIS/rest/services/World\\_Imagery/MapServer](https://services.arcgisonline.com/ArcGIS/rest/services/World_Imagery/MapServer)).

Figure A-16. Measurement Location M7.



Legend

Proposed Measurement Location

Measurement

North

Basemap: Esri ArcGIS World Imagery ([https://services.arcgisonline.com/ArcGIS/rest/services/World\\_Imagery/MapServer](https://services.arcgisonline.com/ArcGIS/rest/services/World_Imagery/MapServer)).

Figure A-17. Measurement Location M8.

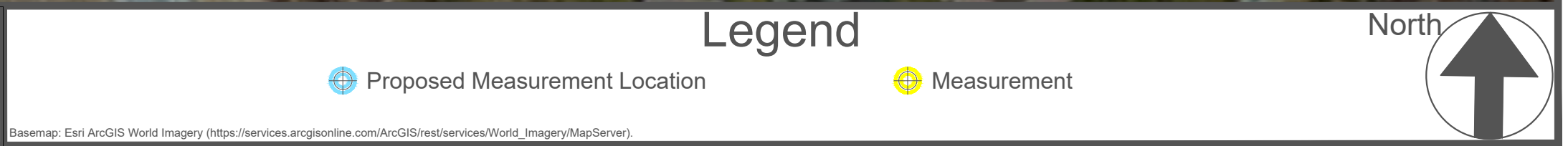


Figure A-18. Measurement Location M9.

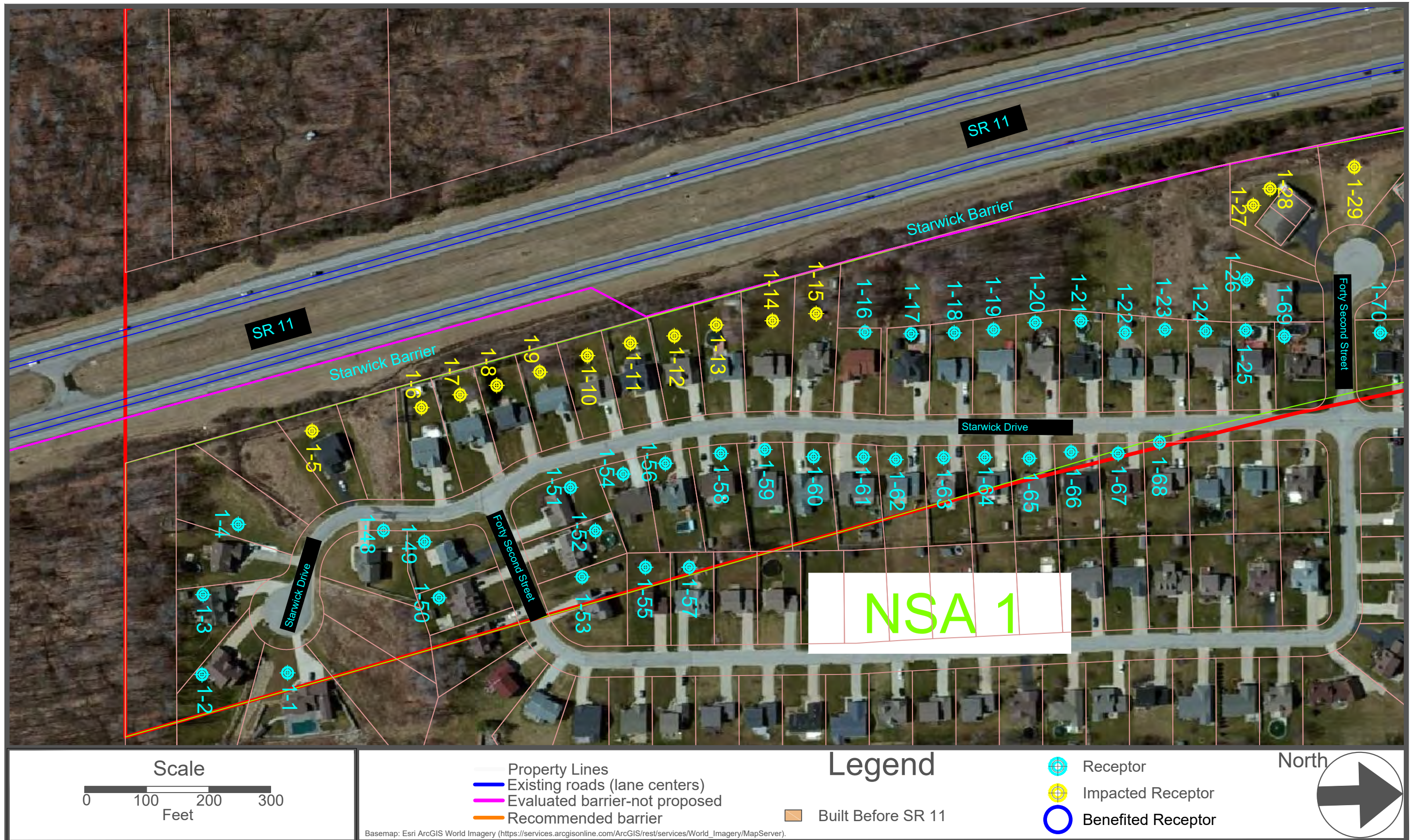


Figure A-19. Starwick Barrier Location-Not Proposed (Sheet 1 of 2).

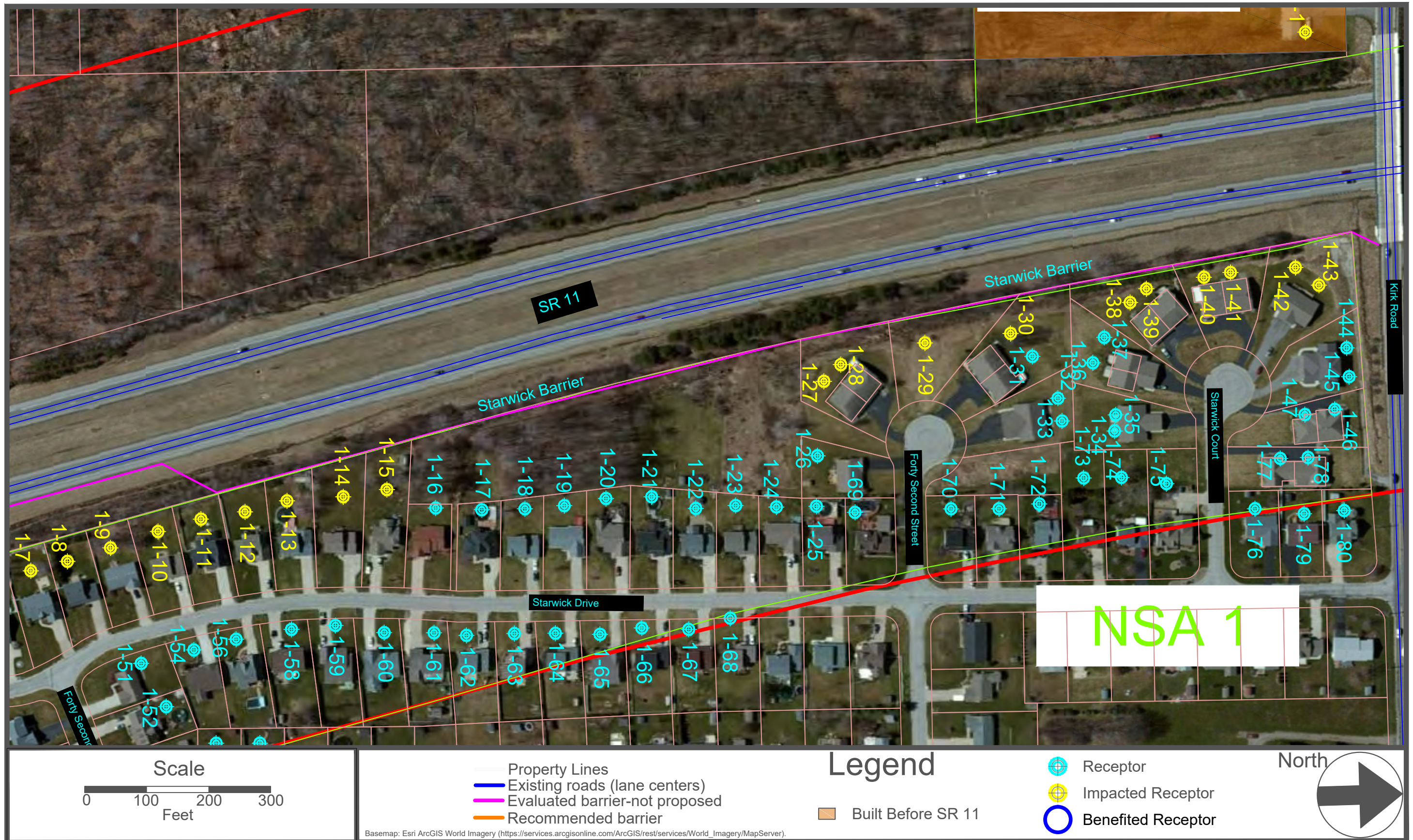


Figure A-20. Starwick Barrier Location-Not Proposed (Sheet 2 of 2).



Figure A-21. Oak Trace Barrier Location-Not Proposed (Sheet 1 of 3).



Figure A-22. Oak Trace Barrier Location-Not Proposed (Sheet 2 of 3).

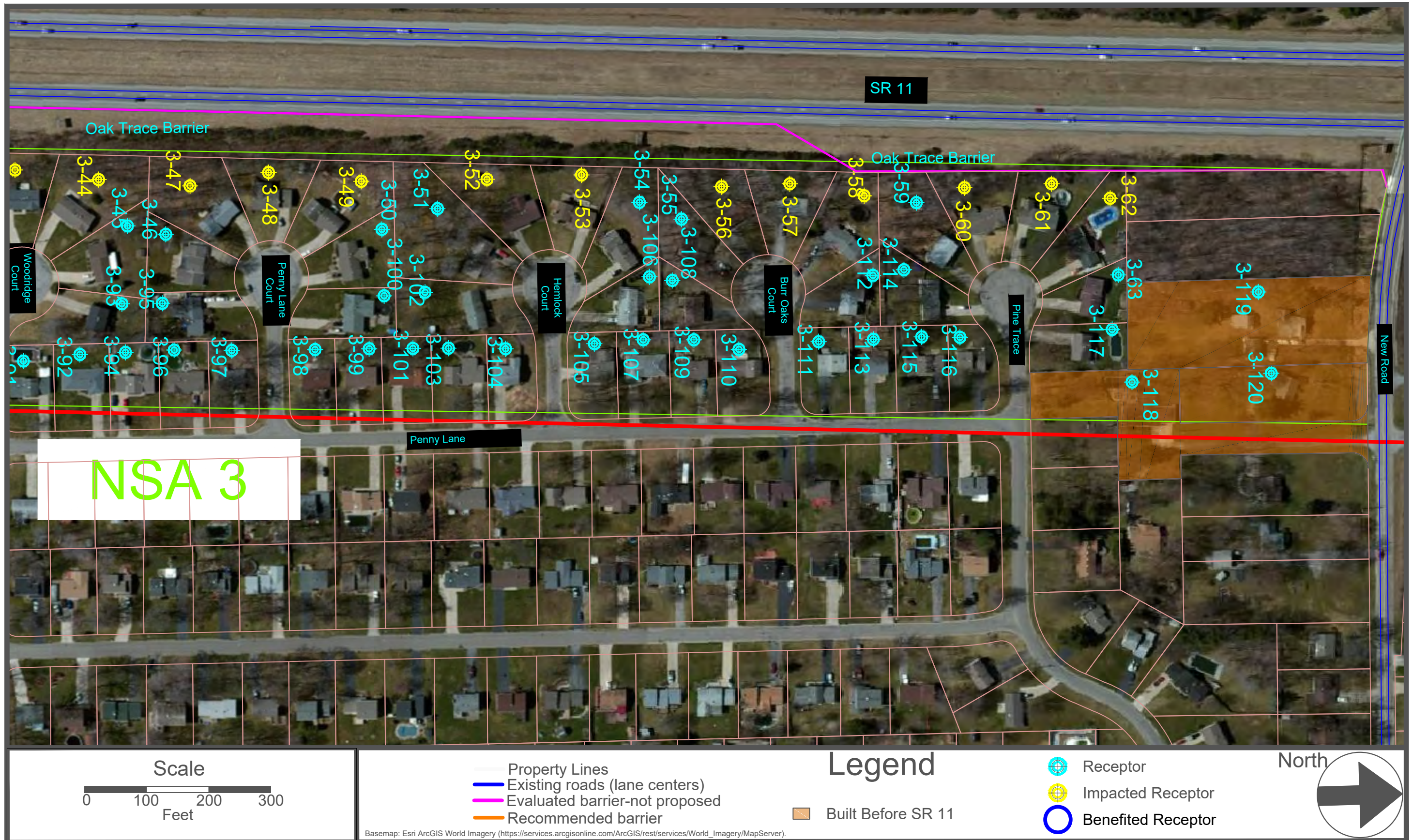


Figure A-23. Oak Trace Barrier Location-Not Proposed (Sheet 3 of 3).



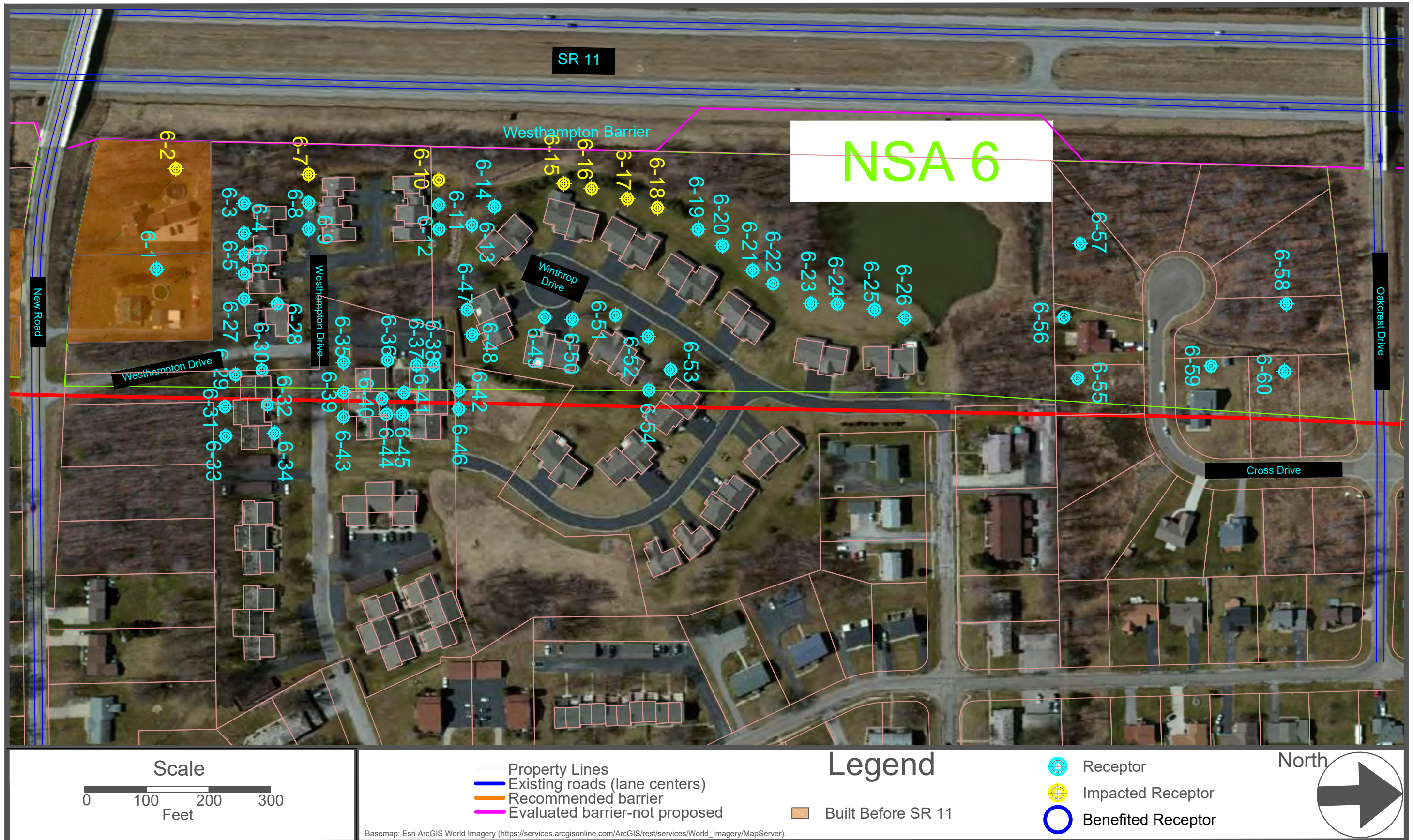


Figure A-24. Westhampton Barrier Location-Not Proposed.

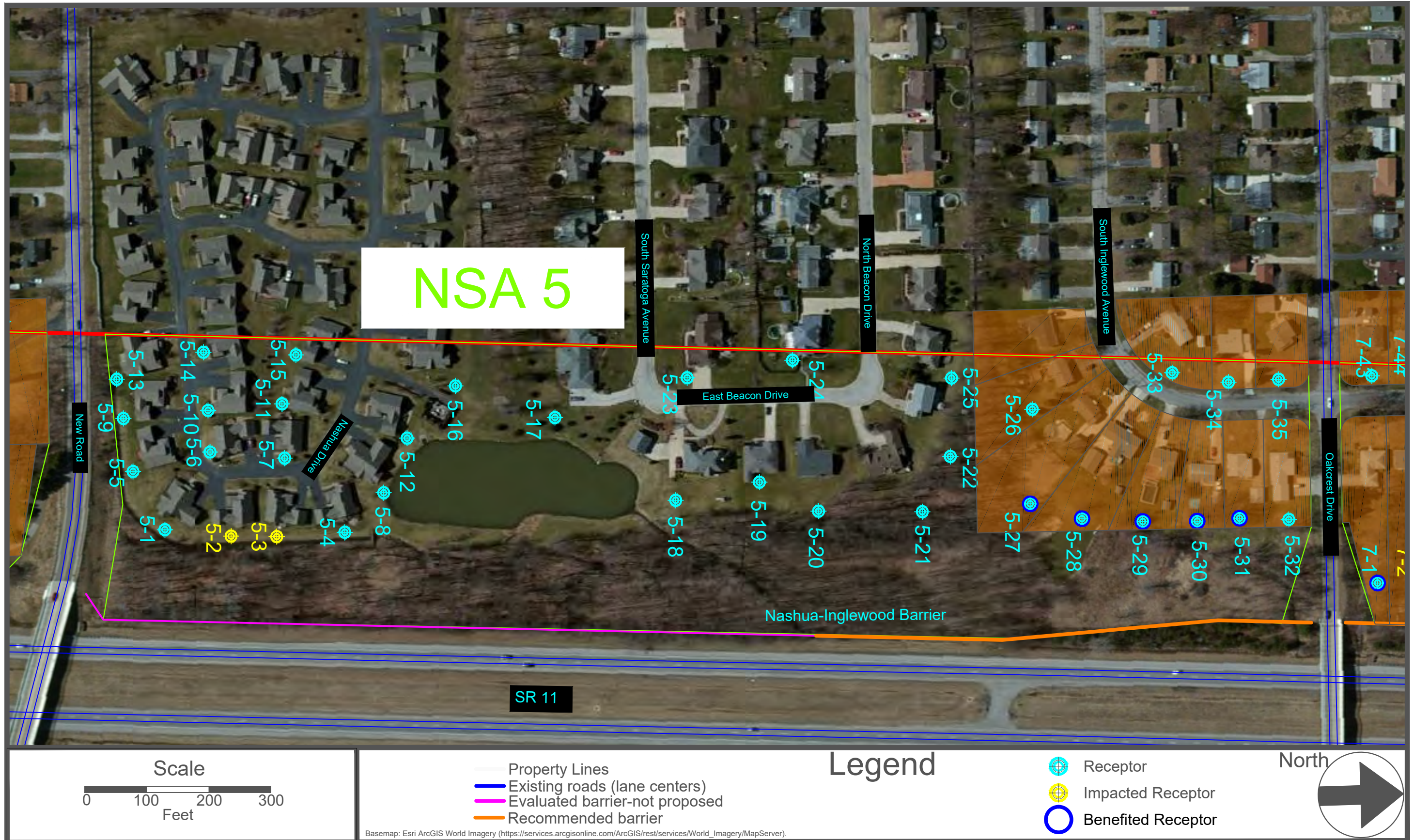


Figure A-25. Proposed Nashua-Inglewood Barrier (Sheet 1 of 3).

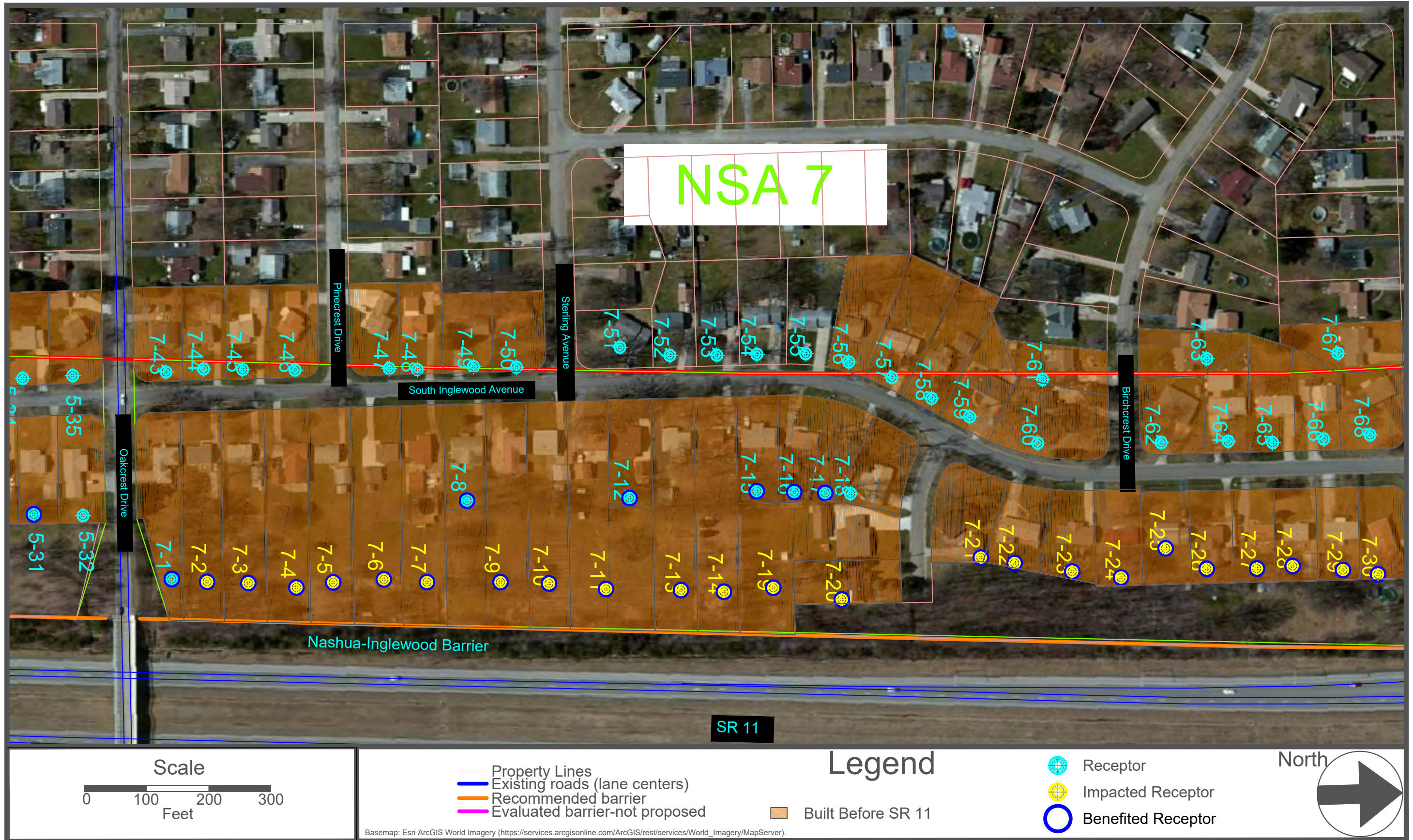


Figure A-26. Proposed Nashua-Inglewood Barrier (Sheet 2 of 3).

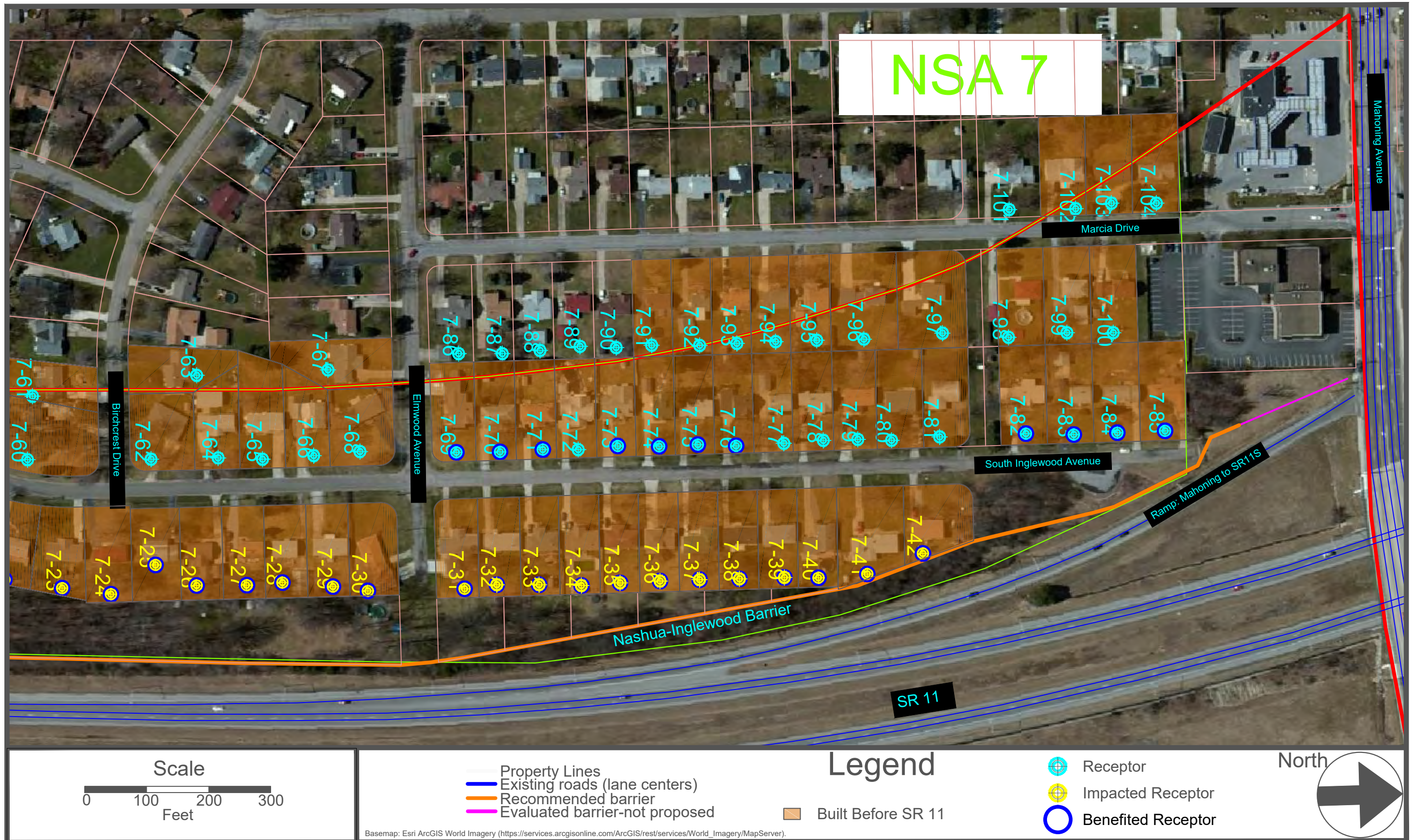


Figure A-27. Proposed Nashua-Inglewood Barrier (Sheet 3 of 3).

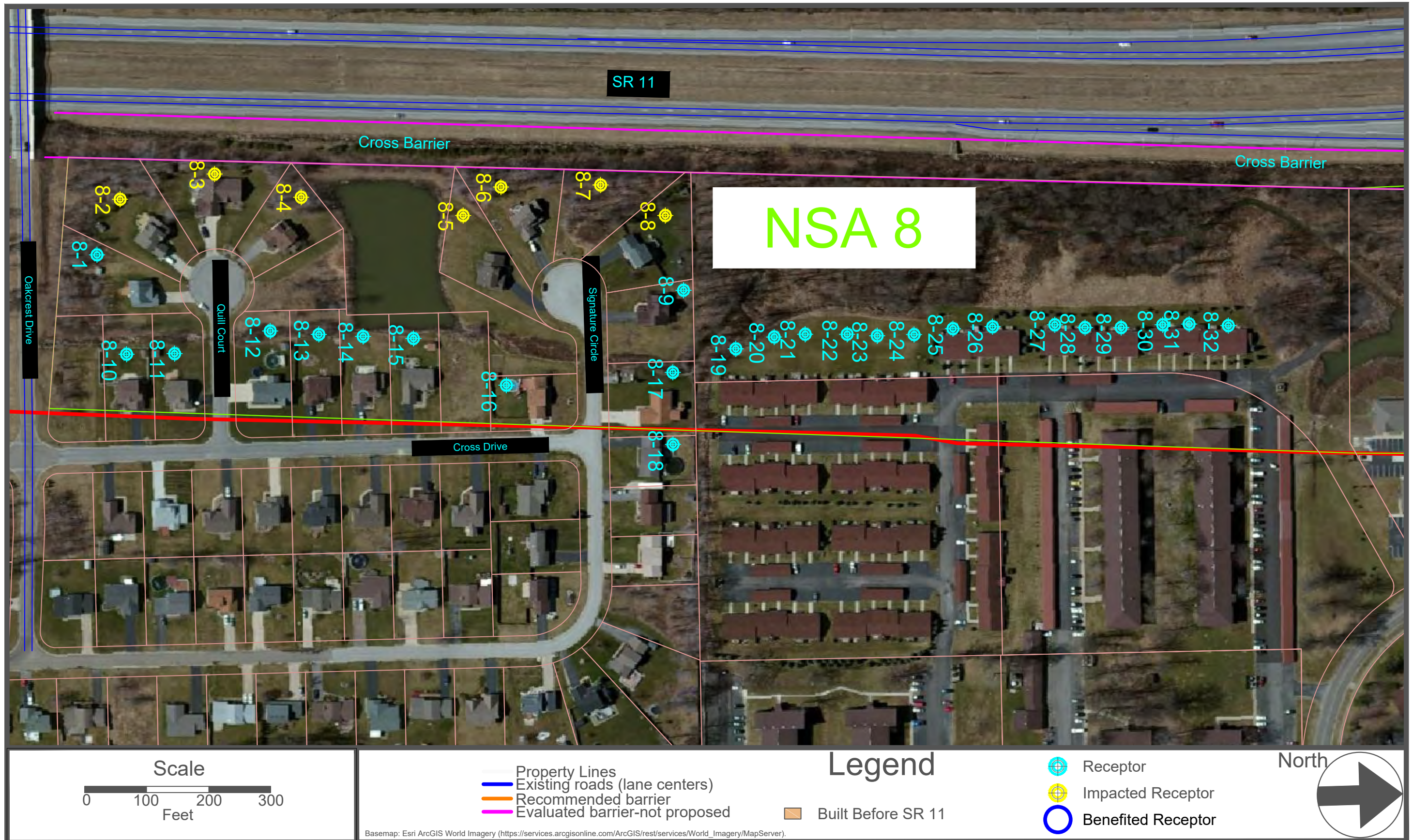


Figure A-28. Cross Barrier Locations-Not Proposed (Sheet 1 of 2).

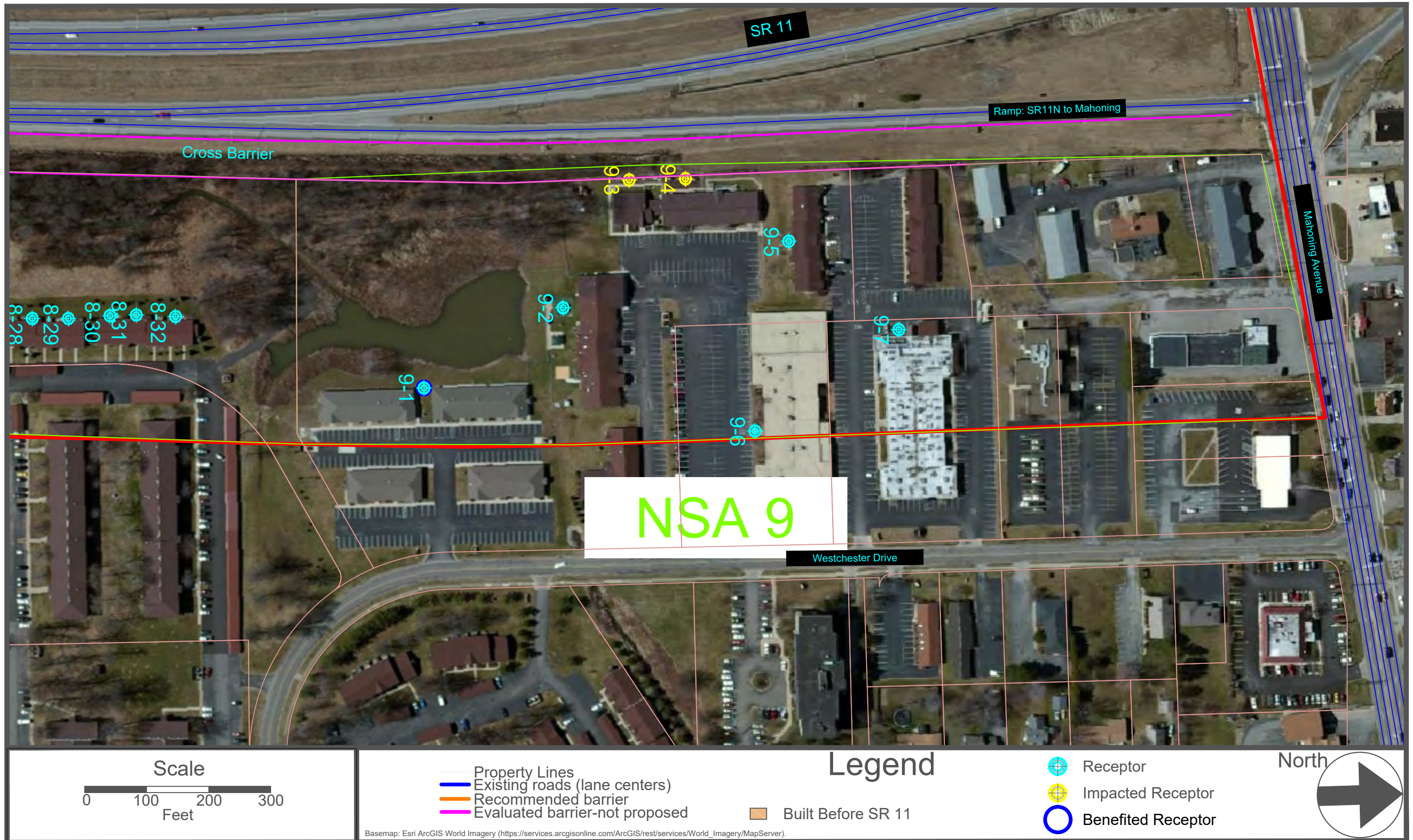


Figure A-29. Cross Barrier Locations-Not Proposed (Sheet 2 of 2).

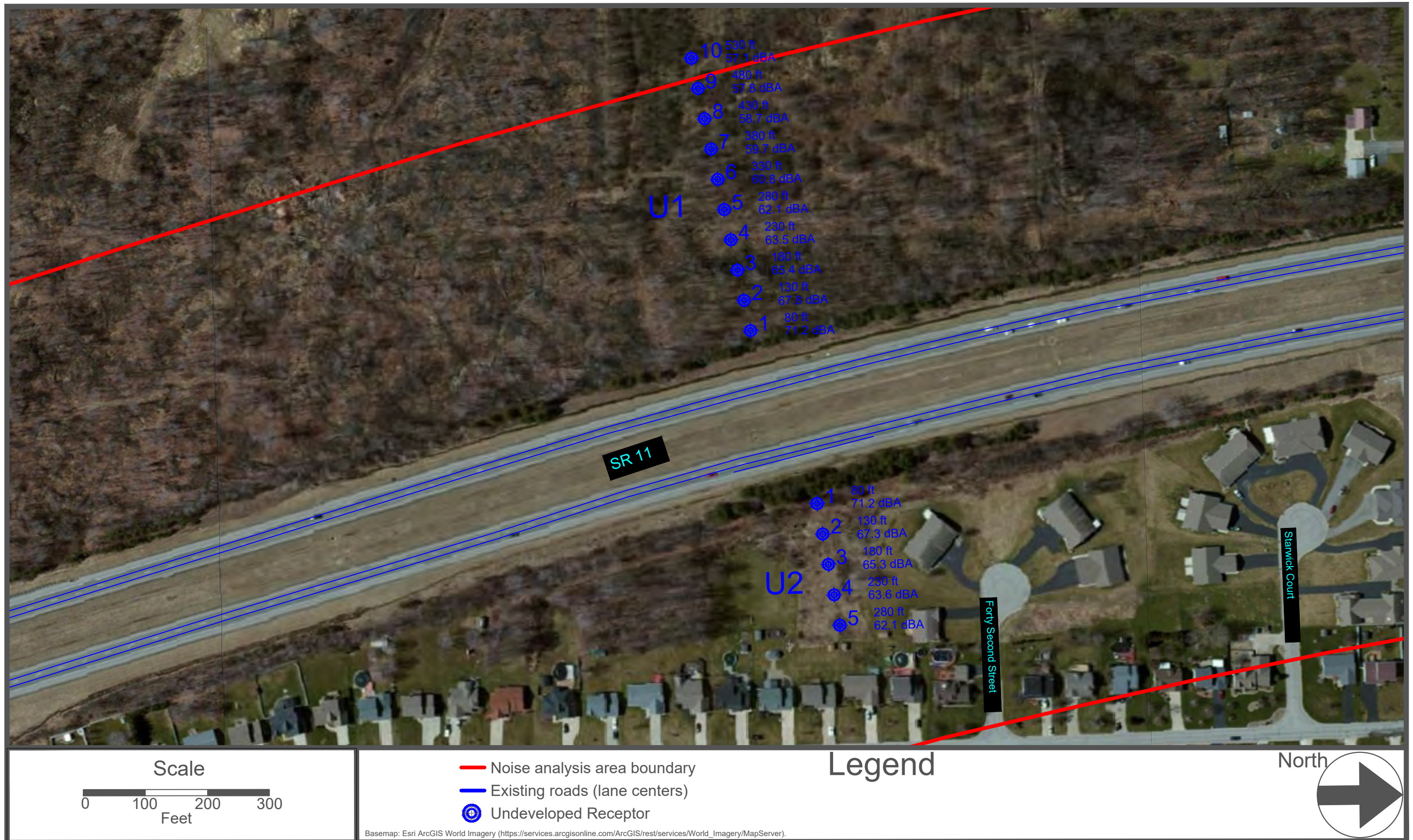
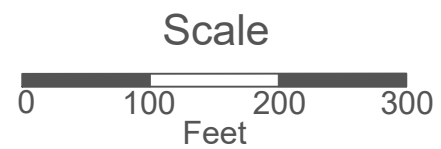
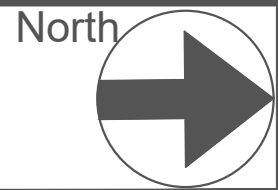


Figure A-30. Undeveloped Areas U1 and U2 Showing Distances to SR 11 and Modeled Noise Levels.



- Legend**
- Noise analysis area boundary
  - Existing roads (lane centers)
  - ⊕ Undeveloped Receptor



Basemap: Esri ArcGIS World Imagery ([https://services.arcgisonline.com/ArcGIS/rest/services/World\\_Imagery/MapServer](https://services.arcgisonline.com/ArcGIS/rest/services/World_Imagery/MapServer)).

Figure A-31. Undeveloped Area U3 Showing Distances to SR 11 and Modeled Noise Levels.





Figure A-32. Undeveloped Area U4 Showing Distances to SR 11 and Modeled Noise Levels.

## APPENDIX B: FIELD DATA

Includes:

- Calibration certification for sound level meter
- Calibration certification for calibrator
- Measurement data sheets
- SLM printouts and one-minute Leq tables
- Summary of traffic counts during measurements
- Traffic data used in validation modeling



7410 Worthington-Galena Road  
Worthington, Ohio 43085  
Phone: (614) 436-4933  
Fax: (614) 436-9144

Industrial Environmental Monitoring Instruments, Inc.

Website: [www.iereents.com](http://www.iereents.com)

### Certificate of Calibration

**Submitted By:** IE Monitoring Instruments  
7410 Worthington-Galena Road  
Worthington, OH 43085

Serial No: QIE120114/ B18371B  
Model: QC-10

Date Received: 10/26/2016  
Date Issued: 10/26/2016  
Valid Until: 10/26/2017

**Test Conditions:**  
Temperature 71.0 F  
Humidity 48.1 %  
Barometric Pressure 29.238" Hg

**Model Conditions:**  
As Received: Fully Functional and In Tolerance  
Final Condition: Fully Functional and In Tolerance

**Test Results:**  
Output: 114.0 dB      Frequency: 0.999352 KHz      VAC: 1.0111

<b>Standards:</b>			
Device	Serial Number	Last Calibration	Date Calibration Due
Quest SoundPro Type I	BKL120001	2/23/2016	2/23/2017
Quest AC-300	AC3000002327	2/23/2016	2/23/2017
Agilent 34401A	MY41002352	10/09/2015	10/09/2017

**Calibrated By: Ryan Taylor, Service Technician      10/26/2016**

This report certifies that all calibration equipment used in the test is traceable to the NIST, and applies only to the unit identified above. All tolerances of accuracy are within the manufactures specifications.



7410 Worthington-Galena Road  
 Worthington, Ohio 43085  
 Phone: (614) 436-4933  
 Fax: (614) 436-9144

Industrial Environmental Monitoring Instruments, Inc.

Website: [www.ierents.com](http://www.ierents.com)

**Certificate of Calibration**

**Submitted By:** IE Monitoring Instruments  
 7410 Worthington-Galena Road  
 Worthington, OH 43085

Serial No:	BIH050001	Date Received: 8/2/2017
Model:	Quest Soundpro DL	Date Issued: 8/2/2017
		Valid Until: 8/2/2018

**Test Conditions:**  
 Temperature 69.5 F  
 Humidity 44.0%  
 Barometric Pressure 28.970”Hg

**Model Conditions:**  
 As Received: Fully Functional and In Tolerance  
 Final Condition: Fully Functional and In Tolerance

<b>Test Results:</b> A & C Weightings +/- 0.5 dB Linearity +/- 0.1 dB	Type II Accuracy: +/- 2 dB Linearity Accuracy: +/- 0.5dB
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**Octave Band Filter Check:**  
 Bandwidth Peak 12.5hz – 20Khz meets manufacturers specifications.  
 Frequency output meets manufacturer’s specifications.

<b>Reference Standards:</b>			
Device	Serial Number	Last Calibration	Date Calibration Due
Quest SoundPro Type I	BKL120001	3/13/2017	3/13/2018
Quest AC-300	AC3000002327	3/13/2017	3/13/2018
Druck DPI740	74001549	11/7/2016	11/7/2017

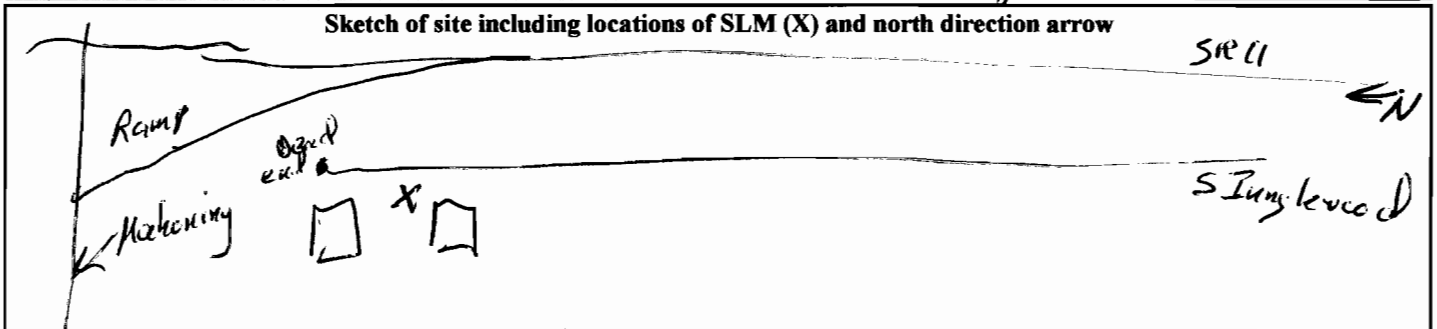
**Calibrated By: Ryan Taylor, Service Technician**      **8/2/2017**

This report certifies that all calibration equipment used in the test is traceable to the NIST, and applies only to the unit identified above. All tolerances of accuracy are within the manufactures specifications.

# Field Data Sheet for Noise Measurements

Project MAH SR11/2386	Personnel M. Stafford	Date 10/17/2017	Location 42 S. Englewood	Site ID M-1
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Temp (F) 80	Rel Hum 33	Wind Dir NW	Avg/Gust (mph) 6	Sky clear	Source of Wind/Temp Data: NWS - Youngstown
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Road 1:	SR11	Speed (mph):	
	Traffic From Left: <u>SB</u> No. of Lanes: <u>2</u>	Traffic From Right: <u>NB</u>	No. of Lanes: <u>2</u>
Cars:	30+32+29+30+32+30+31+32 +33+29	25+30+41+23+25+36+26+14	
Med. Trucks:			
Heavy Trucks:			
Buses:			
Motorcycles:			

Road 2:	Ramp from Mahoning to SR11 SB / Ramp from SR11 to Mahoning			Speed (mph):	
	Traffic From Left: <u>SB</u> No. of Lanes: <u>1</u>	Traffic From Right:	No. of Lanes: <u>1</u>		
Cars:	20+30+20+18	22+20+20+14			
Med. Trucks:					
Heavy Trucks:					
Buses:					
Motorcycles:					

SLM Model:	Serial No.	Cal. Cert. Date	Weight	Response	Height (ft)	Calibrator Model	Serial No.	Cal. Cert. Date
SoundPro DL	BK1200	3/13/17	A	Slow	5	QC-10	QIE120116	10/26/16

Init. Cal.	Cal.	Leg	Lmax	Lmin	Start Time (min)	
114.0	113.9	56.7	66.5	49.1	3:53	15.01

Comments: video of traffic runs 17:01 - starts before noise meas. and ends after it.

wrong SLM Serial No. and Cal. Date was printed on forms. The correct instrument was Serial No. B1M050001, Cal Date: 3/13/17

(Cont)

# Field Data Sheet for Noise Measurements

<b>Project</b> MAH SR11/2386	<b>Personnel</b> M. Stafford	<b>Date</b> <del>10/4/2017</del> 10/3/17	<b>Location</b>	<b>Site ID</b> M-1
---------------------------------	---------------------------------	---	-----------------	-----------------------

<b>Temp (F)</b>	<b>Rel Hum</b>	<b>Wind Dir</b>	<b>Avg/Gust (mph)</b>	<b>Sky</b>	<b>Source of Wind/Temp Data:</b>

Sketch of site including locations of SLM (X) and north direction arrow

<b>Road 1:</b> Mahoning	<b>Speed (mph):</b> 35
Traffic From Left: EB No. of Lanes: 2	Traffic From Right: WB No. of Lanes: 2
<b>Cars:</b> 31+34+24+39+32+22+40+26+25	58+48+21+44+34+21+26
<b>Med. Trucks:</b> III	III
<b>Heavy Trucks:</b>	III
<b>Buses:</b> II	I
<b>Motorcycles:</b> I	I

<b>Road 2:</b>	<b>Speed (mph):</b>
Traffic From Left: _____ No. of Lanes: _____	Traffic From Right: _____ No. of Lanes: _____
<b>Cars:</b>	
<b>Med. Trucks:</b>	
<b>Heavy Trucks:</b>	
<b>Buses:</b>	
<b>Motorcycles:</b>	

SLM Model:	Serial No.	Cal. Cert. Date	Weight	Response	Height (ft)	Calibrator Model	Serial No.	Cal. Cert. Date
SoundPro DL	DKET000	3/13/17	A	Slow	5	QC-10	QIE120116	10/26/16

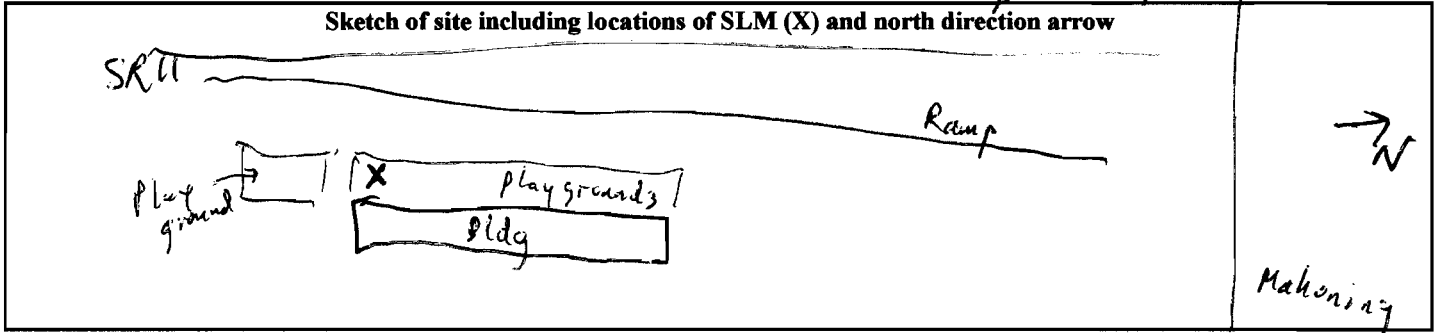
<b>Init. Cal.</b>	<b>Cal.</b>	<b>Leq</b>	<b>Lmax</b>	<b>Lmin</b>	<b>Start Time (min)</b>

**Comments:**

# Field Data Sheet for Noise Measurements

Project MAH SR11/2386	Personnel M. Stafford	Date 10/4/2017	Location Child First Daycare playground	Site ID M-2
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Temp (F) 63	Rel Hum 68	Wind Dir SW	Avg/Gust (mph) 7	Sky overcast	Source of Wind/Temp Data: NWS - Youngstown Airport.
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Road 1:	SR11	Speed (mph):	
	Traffic From Left: NB No. of Lanes: 2	Traffic From Right: SB No. of Lanes: 2	
Cars:	29+23+15+18+22+13	30+20+25+22+12	
Med. Trucks:			
Heavy Trucks:			
Buses:			
Motorcycles:			

Road 2:	Ramp SR11 NB to Mahoning	Speed (mph):	SR11 SB
	Traffic From Left: _____ No. of Lanes: 1	Traffic From Right: _____ No. of Lanes: 1	
Cars:	15+13+13	12+8+15+17	
Med. Trucks:			
Heavy Trucks:			
Buses:			
Motorcycles:		1	

SLM Model:	Serial No.	Cal. Cert. Date	Weight	Response	Height (ft)	Calibrator Model	Serial No.	Cal. Cert. Date
SoundPro DL	BK2100	3/13/17	A	Slow	5	QC-10	QIE120116	10/26/16

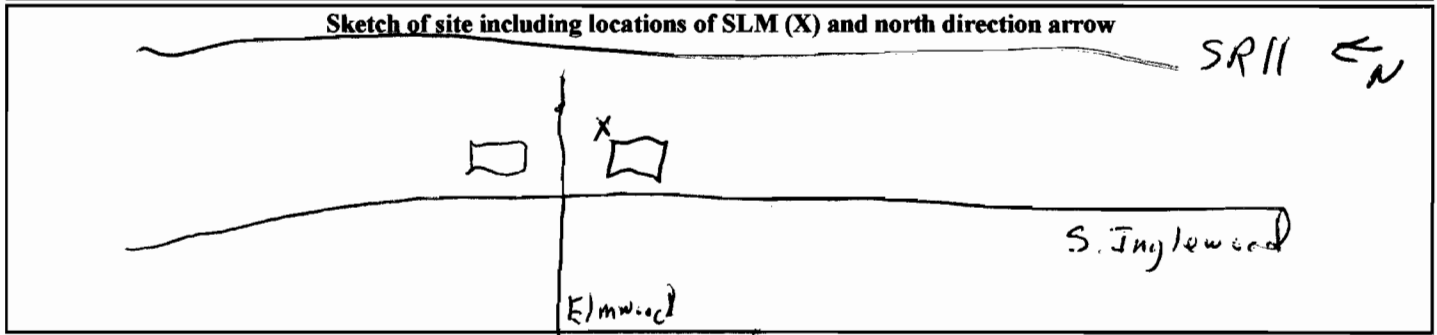
Init. Cal.	Cal.	Leq	Lmax	Lmin	Start Time (min)	
114.0	114.1	66.9	81.8	54.3	9:58	15:08

Comments:

# Field Data Sheet for Noise Measurements

Project MAH SR11/2386	Personnel M. Stafford	Date <sup>10/3</sup> 10/4/2017	Location 203 Elmwood	Site ID M-3
--------------------------	--------------------------	-----------------------------------	-------------------------	----------------

Temp (F) 80	Rel Hum 33	Wind Dir WNW	Avg/Gust (mph) 6	Sky clear	Source of Wind/Temp Data: Nws - Youngstown Regional Airport
----------------	---------------	-----------------	---------------------	--------------	--



Road 1:	SR11	Speed (mph):	
	Traffic From Left: <u>SB</u> No. of Lanes: <u>2</u>	Traffic From Right: <u>NB</u>	No. of Lanes: <u>2</u>
Cars:	30+20+40+32+20+30+30 +28+46+27+30+22+30	38+20+20+23+40+30+18+20+13 +27+20	
Med. Trucks:	<del>    </del>	<del>     </del>	
Heavy Trucks:	<del>     </del>	<del>     </del>	
Buses:			
Motorcycles:			

Road 2:		Speed (mph):	
	Traffic From Left: _____ No. of Lanes: _____	Traffic From Right: _____	No. of Lanes: _____
Cars:			
Med. Trucks:			
Heavy Trucks:			
Buses:			
Motorcycles:			

SLM Model:	Serial No.	Cal. Cert. Date	Weight	Response	Height (ft)	Calibrator Model	Serial No.	Cal. Cert. Date
SoundPro DL	BK-200	3/13/17	A	Slow	5	QC-10	QIE120116	10/26/16

Init. Cal.	Cal.	Leg	Lmax	Lmin	Start Time (min)	
114.0	114.1	65.6	73.9	55.7	4:25	15:02

Comments:



# Field Data Sheet for Noise Measurements

Project MAH SR11/2386	Personnel M. Stafford	Date 10/4/2017	Location 4970 Quill Ct	Site ID M-4
--------------------------	--------------------------	-------------------	---------------------------	----------------

Temp (F) 65	Rel Hum 66	Wind Dir SW	Avg/Gust (mph) 8	Sky overcast	Source of Wind/Temp Data:
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Sketch of site including locations of SLM (X) and north direction arrow

Road 1:		Speed (mph):	
	Traffic From Left: _____ No. of Lanes: _____	Traffic From Right: _____	No. of Lanes: _____
Cars:	25+17+12+13+11+10+24+8+16	9+14+15+23+12+30+16+24+29+9	
Med. Trucks:		<del>    </del>	
Heavy Trucks:			
Buses:			
Motorcycles:			

Road 2:		Speed (mph):	
	Traffic From Left: _____ No. of Lanes: _____	Traffic From Right: _____	No. of Lanes: _____
Cars:			
Med. Trucks:			
Heavy Trucks:			
Buses:			
Motorcycles:			

SLM Model:	Serial No.	Cal. Cert. Date	Weight	Response	Height (ft)	Calibrator Model	Serial No.	Cal. Cert. Date
SoundPro DL	BK2200	3/13/17	A	Slow	5	QC-10	QIE120116	10/26/16

Init. Cal.	Cal.	Leg	Lmax	Lmin	Start Time (min)	
114.0	114.0	65.1	80.3	48.7	10:47	15:15

Comments:

# Field Data Sheet for Noise Measurements

<b>Project</b> MAH SR11/2386	<b>Personnel</b> M. Stafford	<b>Date</b> 10/3/2017	<b>Location</b> 5105 New Road	<b>Site ID</b> M-5
---------------------------------	---------------------------------	-----------------------	----------------------------------	-----------------------

<b>Temp (F)</b>	<b>Rel Hum</b>	<b>Wind Dir</b>	<b>Avg/Gust (mph)</b>	<b>Sky</b>	<b>Source of Wind/Temp Data:</b>

Sketch of site including locations of SLM (X) and north direction arrow

<b>Road 1:</b>		<b>Speed (mph):</b>	
	<b>Traffic From Left:</b> _____ <b>No. of Lanes:</b> _____	<b>Traffic From Right:</b> _____	<b>No. of Lanes:</b> _____
<b>Cars:</b>			
<b>Med. Trucks:</b>			
<b>Heavy Trucks:</b>			
<b>Buses:</b>			
<b>Motorcycles:</b>			

<b>Road 2:</b>		<b>Speed (mph):</b>	
	<b>Traffic From Left:</b> _____ <b>No. of Lanes:</b> _____	<b>Traffic From Right:</b> _____	<b>No. of Lanes:</b> _____
<b>Cars:</b>			
<b>Med. Trucks:</b>			
<b>Heavy Trucks:</b>			
<b>Buses:</b>			
<b>Motorcycles:</b>			

SLM Model:	Serial No.	Cal. Cert. Date	Weight	Response	Height (ft)	Calibrator Model	Serial No.	Cal. Cert. Date
SoundPro DL	BK1200	3/13/17	A	Slow	5	QC-10	QIE120116	10/26/16

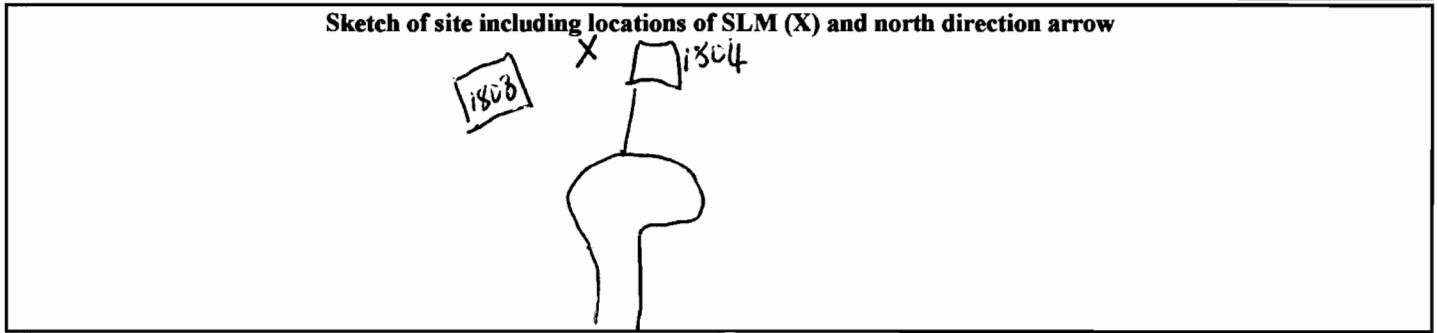
<b>Init. Cal.</b>	<b>Cal.</b>	<b>Leg</b>	<b>Lmax</b>	<b>Lmin</b>	<b>Start Time</b>	<b>(min)</b>
113.9						

**Comments:** Homeowner refused permission to complete measurements.

# Field Data Sheet for Noise Measurements

Project MAH SR11/2386	Personnel M. Stafford	Date 10/4/2017	Location 1504 Maple Trace Ct	Site ID M-6
--------------------------	--------------------------	-------------------	---------------------------------	----------------

Temp (F) 68	Rel Hum 59	Wind Dir SW	Avg/Gust (mph) 10	Sky overcast	Source of Wind/Temp Data:
----------------	---------------	----------------	----------------------	-----------------	---------------------------



Road 1:		Speed (mph):	
	Traffic From Left: _____ No. of Lanes: _____	Traffic From Right: _____	No. of Lanes: _____
Cars:	30+15+15+20+20+15+5+20+15 +20+8	16+30+24+35+34+13+14	
Med. Trucks:	<del>    </del>	<del>    </del>	
Heavy Trucks:	<del>     </del>	<del>     </del>	
Buses:			
Motorcycles:			

Road 2:		Speed (mph):	
	Traffic From Left: _____ No. of Lanes: _____	Traffic From Right: _____	No. of Lanes: _____
Cars:			
Med. Trucks:			
Heavy Trucks:			
Buses:			
Motorcycles:			

SLM Model:	Serial No.	Cal. Cert. Date	Weight	Response	Height (ft)	Calibrator Model	Serial No.	Cal. Cert. Date
SoundPro DL	BK-1200	3/13/17	A	Slow	5	QC-10	QIE120116	10/26/16

Init. Cal.	Cal.	Leq	Lmax	Lmin	Start Time (min)
114.0	113.9	63.5	77.5	47.3	11:28 65:03

Comments:

# Field Data Sheet for Noise Measurements

Project MAH SR11/2386	Personnel M. Stafford	Date 10/4/2017	Location 2386 Oak Trace	Site ID M-7
--------------------------	--------------------------	-------------------	----------------------------	----------------

Temp (F) 71	Rel Hum 55	Wind Dir SW	Avg/Gust (mph) 12	Sky overcast	Source of Wind/Temp Data:
----------------	---------------	----------------	----------------------	-----------------	---------------------------

Sketch of site including locations of SLM (X) and north direction arrow

grass - no trees

Road 1:		Speed (mph):	
	Traffic From Left: _____ No. of Lanes: _____	Traffic From Right: _____	No. of Lanes: _____
Cars:	24+29+23+34+34+17	37+30+16+20+22+20+26	
Med. Trucks:	<del>    </del>	<del>    </del>	
Heavy Trucks:	<del>     </del>	<del>     </del>	
Buses:		1	
Motorcycles:			

Road 2:		Speed (mph):	
	Traffic From Left: _____ No. of Lanes: _____	Traffic From Right: _____	No. of Lanes: _____
Cars:			
Med. Trucks:			
Heavy Trucks:			
Buses:			
Motorcycles:			

SLM Model:	Serial No.	Cal. Cert. Date	Weight	Response	Height (ft)	Calibrator Model	Serial No.	Cal. Cert. Date
SoundPro DL	BK1200	3/13/17	A	Slow	5	QC-10	QIE120116	10/26/16

Init. Cal.	Cal.	Leq	Lmax	Lmin	Start Time (min)
114.0	113.9	63.2	75.8	49.2	12:01

Comments: SR11 ~ 15-20' higher than yard - ROW fence level w/yard - wind picking up

# Field Data Sheet for Noise Measurements

Project MAH SR11/2386	Personnel M. Stafford	Date 10/4/2017	Location 3202 Starwick Ct	Site ID M-8
--------------------------	--------------------------	-------------------	------------------------------	----------------

Temp (F) 71	Rel Hum 55	Wind Dir SW	Avg/Gust (mph) 12	Sky overcast	Source of Wind/Temp Data:
----------------	---------------	----------------	----------------------	-----------------	---------------------------

Sketch of site including locations of SLM (X) and north direction arrow

Road 1:		Speed (mph):	
	Traffic From Left: _____ No. of Lanes: _____	Traffic From Right: _____	No. of Lanes: _____
Cars:	24+20+16+22+32+14+17+10+14 +17	16+20+14+30+12+18+18+20+5	
Med. Trucks:			
Heavy Trucks:			
Buses:			
Motorcycles:			

Road 2:		Speed (mph):	
	Traffic From Left: _____ No. of Lanes: _____	Traffic From Right: _____	No. of Lanes: _____
Cars:			
Med. Trucks:			
Heavy Trucks:			
Buses:			
Motorcycles:			

SLM Model:	Serial No.	Cal. Cert. Date	Weight	Response	Height (ft)	Calibrator Model	Serial No.	Cal. Cert. Date
SoundPro DL	BKL1200 -07	3/13/17	A	Slow	5	QC-10	QIE120116	10/26/16

Init. Cal.	Cal.	Leq	Lmax	Lmin	Start Time	(min)
114.0	114.0	62.5	72.0	51.1	12:36	15:05

Comments:

# Field Data Sheet for Noise Measurements

Project MAH SR11/2386	Personnel M. Stafford	Date 10/4/2017	Location 3518 Starwick Dr.	Site ID M-9
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Temp (F) 74	Rel Hum 52	Wind Dir SW	Avg/Gust (mph) 10/13	Sky overcast	Source of Wind/Temp Data:
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Sketch of site including locations of SLM (X) and north direction arrow

Road 1:	SR 11	Speed (mph):	
	Traffic From Left: _____ No. of Lanes: _____	Traffic From Right: _____	No. of Lanes: _____
Cars:	8+43+46+31+26+29+24	15+20+38+35+17+14+17	20+20
Med. Trucks:	<del>11</del>	<del>11</del>	
Heavy Trucks:	<del>11</del> <del>11</del> <del>11</del> <del>11</del>	<del>11</del> <del>11</del> <del>11</del> <del>11</del>	
Buses:		1	
Motorcycles:			

Road 2:		Speed (mph):	
	Traffic From Left: _____ No. of Lanes: _____	Traffic From Right: _____	No. of Lanes: _____
Cars:			
Med. Trucks:			
Heavy Trucks:			
Buses:			
Motorcycles:			

SLM Model:	Serial No.	Cal. Cert. Date	Weight	Response	Height (ft)	Calibrator Model	Serial No.	Cal. Cert. Date
SoundPro DL	BKL1290	3/13/17	A	Slow	5	QC-10	QIE120116	10/26/16

Init. Cal.	Cal.	Leq	Lmax	Lmin	Start Time	(min)
114.0	113.8	60.2	71.7	48.3	1:07	

Comments:

**S055\_BIH050001\_04102017\_134451: Information Panel**

Description	Value
Location	M1
Start Time	10/3/2017 15:54:35
Run Time	00:15:01
Model Type	SoundPro DL
Serial Number	BIH050001
User Name	M. Stafford
Comments	42 S. Inglewood

**S055\_BIH050001\_04102017\_134451: Calibration History**

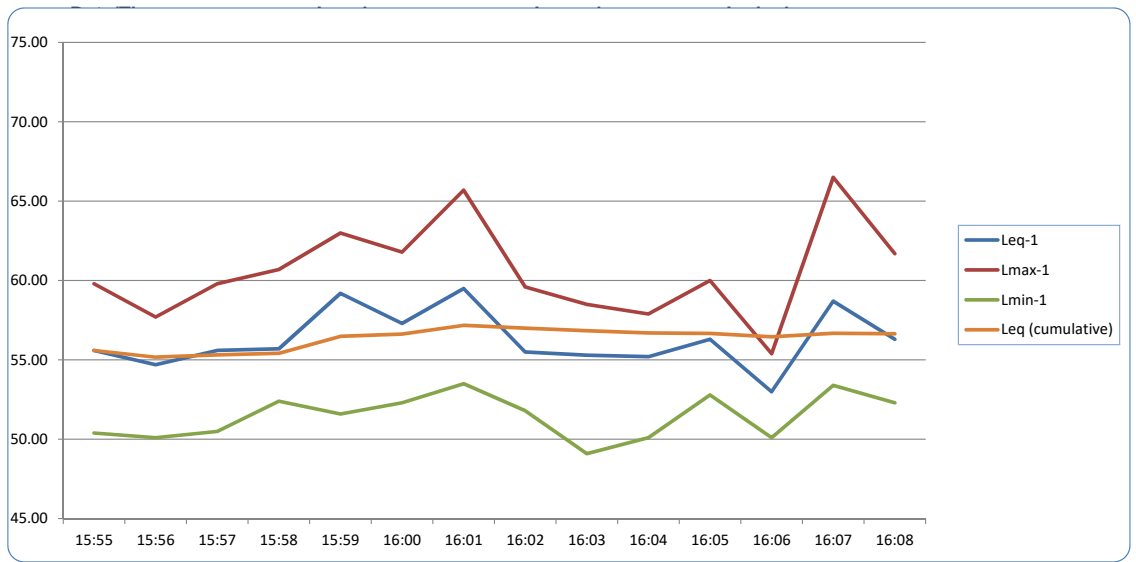
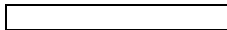
Date	Action	Level	Cal. Model Type	Serial Number	Cert. Due Date
10/3/2017 3:52:27 PM	Calibration	114.0	QC-10	QIE120114/B18371B	10/26/2017
10/3/2017 4:13:29 PM	Verification	113.9	QC-10	QIE120114/B18371B	10/26/2017

**S055\_BIH050001\_04102017\_134451: Summary Data Panel**

Description	Meter/ Sensor	Value
Weighting	1	A
Response	1	SLOW
Rtime	1	00:15:01
Lmin	1	49.1 dB
Mntime	1	10/3/2017 4:02:40 PM
Lmax	1	66.5 dB
Mxtime	1	10/3/2017 4:06:55 PM
Leq	1	56.7 dB

**S055\_BIH050001\_04102017\_134451: Logged Data Table**

Date/Time	Leq-1	Lmax-1	Lmin-1	Leq (cumulat)
10/3/2017 15:55:35	55.60	59.80	50.40	55.6
10/3/2017 15:56:35	54.70	57.70	50.10	55.2
10/3/2017 15:57:35	55.60	59.80	50.50	55.3
10/3/2017 15:58:35	55.70	60.70	52.40	55.4
10/3/2017 15:59:35	59.20	63.00	51.60	56.5
10/3/2017 16:00:35	57.30	61.80	52.30	56.6
10/3/2017 16:01:35	59.50	65.70	53.50	57.2
10/3/2017 16:02:35	55.50	59.60	51.80	57.0
10/3/2017 16:03:35	55.30	58.50	49.10	56.8
10/3/2017 16:04:35	55.20	57.90	50.10	56.7
10/3/2017 16:05:35	56.30	60.00	52.80	56.7
10/3/2017 16:06:35	53.00	55.40	50.10	56.5
10/3/2017 16:07:35	58.70	66.50	53.40	56.7
10/3/2017 16:08:35	56.30	61.70	52.30	56.6
10/3/2017 16:09:35	57.70	65.60	51.20	56.7



**S058\_BIH050001\_04102017\_134455: Information Panel**

Description	Value
Location	M2
Start Time	10/4/2017 9:58:44
Run Time	00:15:08
Model Type	SoundPro DL
Serial Number	BIH050001
User Name	M. Stafford
Comments	6 Westchester, Suites A & B

**S058\_BIH050001\_04102017\_134455: Calibration History**

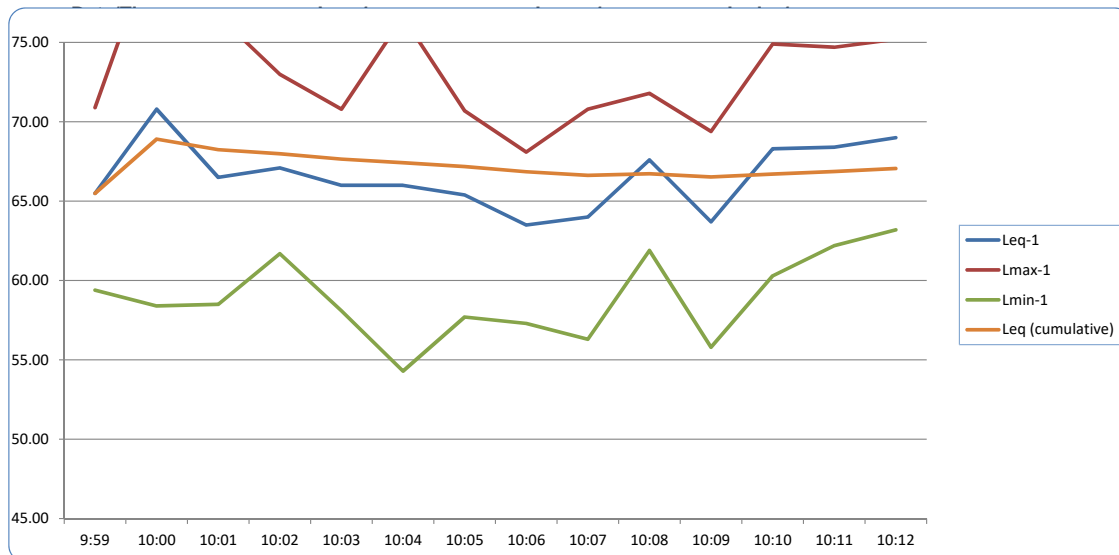
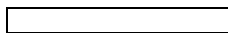
Date	Action	Level	Cal. Model Type	Serial Number	Cert. Due Date
10/4/2017 9:55:49 AM	Calibration	114.0	QC-10	QIE120114/B18371B	10/26/2017
10/4/2017 10:17:39 AM	Verification	114.1	QC-10	QIE120114/B18371B	10/26/2017

**S058\_BIH050001\_04102017\_134455: Summary Data Panel**

Description	Meter/ Sensor	Value
Weighting	1	A
Response	1	SLOW
Rtime	1	00:15:08
Lmin	1	54.3 dB
Mntime	1	10/4/2017 10:04:34 AM
Lmax	1	81.8 dB
Mxtime	1	10/4/2017 10:00:07 AM
Leq	1	66.9 dB

**S058\_BIH050001\_04102017\_134455: Logged Data Table**

Date/Time	Leq-1	Lmax-1	Lmin-1	Leq (cumulat)
10/4/2017 9:59:44	65.50	70.90	59.40	65.5
10/4/2017 10:00:44	70.80	81.80	58.40	68.9
10/4/2017 10:01:44	66.50	76.70	58.50	68.2
10/4/2017 10:02:44	67.10	73.00	61.70	68.0
10/4/2017 10:03:44	66.00	70.80	58.10	67.7
10/4/2017 10:04:44	66.00	76.60	54.30	67.4
10/4/2017 10:05:44	65.40	70.70	57.70	67.2
10/4/2017 10:06:44	63.50	68.10	57.30	66.9
10/4/2017 10:07:44	64.00	70.80	56.30	66.6
10/4/2017 10:08:44	67.60	71.80	61.90	66.7
10/4/2017 10:09:44	63.70	69.40	55.80	66.5
10/4/2017 10:10:44	68.30	74.90	60.30	66.7
10/4/2017 10:11:44	68.40	74.70	62.20	66.9
10/4/2017 10:12:44	69.00	75.20	63.20	67.1
10/4/2017 10:13:44	65.00	70.20	58.20	66.9





**S056\_BIH050001\_04102017\_134453: Information Panel**

Description	Value
Location	M3
Start Time	10/3/2017 16:26:17
Run Time	00:15:02
Model Type	SoundPro DL
Serial Number	BIH050001
User Name	M. Stafford
Comments	203 Elmwood

**S056\_BIH050001\_04102017\_134453: Calibration History**

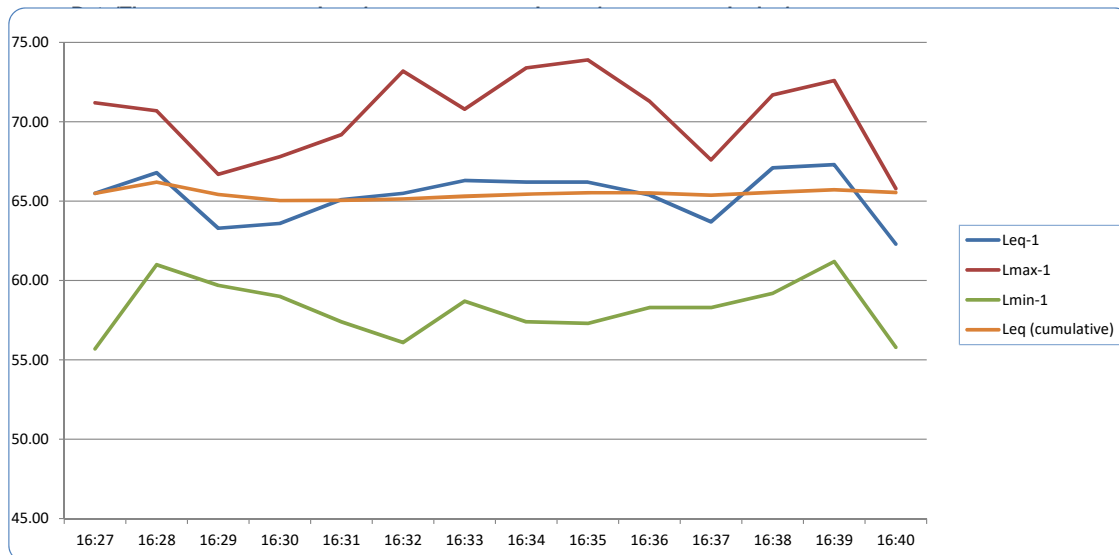
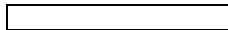
Date	Action	Level	Cal. Model Type	Serial Number	Cert. Due Date
10/3/2017 4:24:48 PM	Calibration	114.0	QC-10	QIE120114/B18371B	10/26/2017
10/3/2017 4:45:02 PM	Verification	114.1	QC-10	QIE120114/B18371B	10/26/2017

**S056\_BIH050001\_04102017\_134453: Summary Data Panel**

Description	Meter/ Sensor	Value
Weighting	1	A
Response	1	SLOW
Rtime	1	00:15:02
Lmin	1	55.7 dB
Mntime	1	10/3/2017 4:26:49 PM
Lmax	1	73.9 dB
Mxtime	1	10/3/2017 4:34:26 PM
Leq	1	65.6 dB

**S056\_BIH050001\_04102017\_134453: Logged Data Table**

Date/Time	Leq-1	Lmax-1	Lmin-1	Leq (cumulat
10/3/2017 16:27:17	65.50	71.20	55.70	65.5
10/3/2017 16:28:17	66.80	70.70	61.00	66.2
10/3/2017 16:29:17	63.30	66.70	59.70	65.4
10/3/2017 16:30:17	63.60	67.80	59.00	65.0
10/3/2017 16:31:17	65.10	69.20	57.40	65.1
10/3/2017 16:32:17	65.50	73.20	56.10	65.1
10/3/2017 16:33:17	66.30	70.80	58.70	65.3
10/3/2017 16:34:17	66.20	73.40	57.40	65.4
10/3/2017 16:35:17	66.20	73.90	57.30	65.5
10/3/2017 16:36:17	65.40	71.30	58.30	65.5
10/3/2017 16:37:17	63.70	67.60	58.30	65.4
10/3/2017 16:38:17	67.10	71.70	59.20	65.6
10/3/2017 16:39:17	67.30	72.60	61.20	65.7
10/3/2017 16:40:17	62.30	65.80	55.80	65.5
10/3/2017 16:41:17	66.80	72.30	62.80	65.6



**S059\_BIH050001\_04102017\_134456: Information Panel**

Description	Value
Location	M4
Start Time	10/4/2017 10:47:02
Run Time	00:15:15
Model Type	SoundPro DL
Serial Number	BIH050001
User Name	M. Stafford
Comments	4970 Quill Court

**S059\_BIH050001\_04102017\_134456: Calibration History**

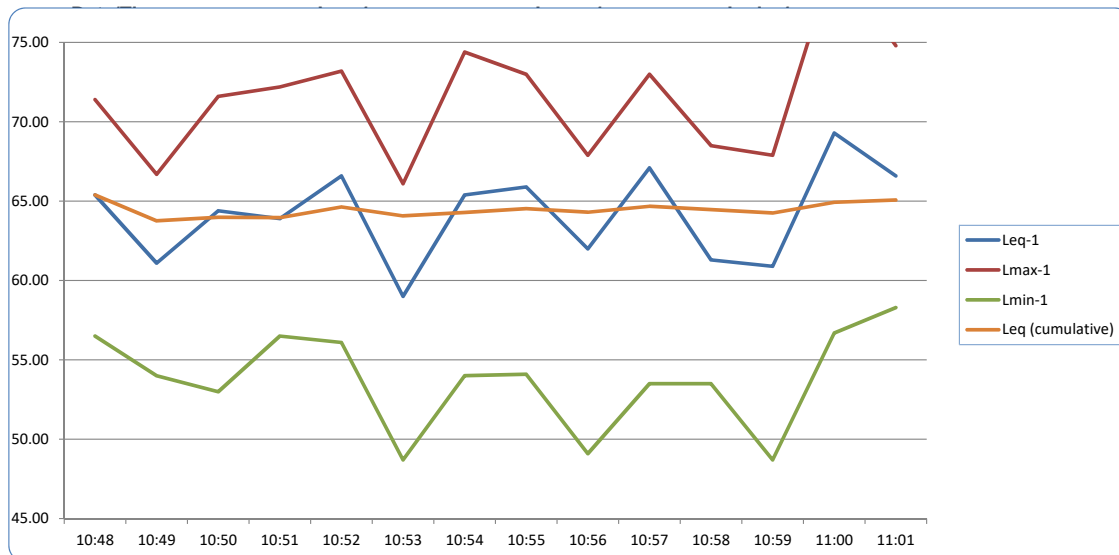
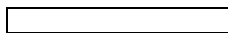
Date	Action	Level	Cal. Model Type	Serial Number	Cert. Due Date
10/4/2017 10:42:45 AM	Calibration	114.0	QC-10	QIE120114/B18371B	10/26/2017
10/4/2017 11:04:50 AM	Verification	114.0	QC-10	QIE120114/B18371B	10/26/2017

**S059\_BIH050001\_04102017\_134456: Summary Data Panel**

Description	Meter/ Sensor	Value
Weighting	1	A
Response	1	SLOW
Rtime	1	00:15:15
Lmin	1	48.7 dB
Mntime	1	10/4/2017 10:58:24 AM
Lmax	1	80.3 dB
Mxtime	1	10/4/2017 10:59:31 AM
Leq	1	65.1 dB

**S059\_BIH050001\_04102017\_134456: Logged Data Table**

Date/Time	Leq-1	Lmax-1	Lmin-1	Leq (cumulat)
10/4/2017 10:48:02	65.40	71.40	56.50	65.4
10/4/2017 10:49:02	61.10	66.70	54.00	63.8
10/4/2017 10:50:02	64.40	71.60	53.00	64.0
10/4/2017 10:51:02	63.90	72.20	56.50	64.0
10/4/2017 10:52:02	66.60	73.20	56.10	64.6
10/4/2017 10:53:02	59.00	66.10	48.70	64.1
10/4/2017 10:54:02	65.40	74.40	54.00	64.3
10/4/2017 10:55:02	65.90	73.00	54.10	64.5
10/4/2017 10:56:02	62.00	67.90	49.10	64.3
10/4/2017 10:57:02	67.10	73.00	53.50	64.7
10/4/2017 10:58:02	61.30	68.50	53.50	64.5
10/4/2017 10:59:02	60.90	67.90	48.70	64.3
10/4/2017 11:00:02	69.30	80.30	56.70	64.9
10/4/2017 11:01:02	66.60	74.80	58.30	65.1
10/4/2017 11:02:02	65.30	71.30	54.40	65.1



**S060\_BIH050001\_04102017\_134458: Information Panel**

Description	Value
Location	M6
Start Time	10/4/2017 11:27:24
Run Time	00:15:03
Model Type	SoundPro DL
Serial Number	BIH050001
User Name	M. Stafford
Comments	1804 Maple Trace Court

**S060\_BIH050001\_04102017\_134458: Calibration History**

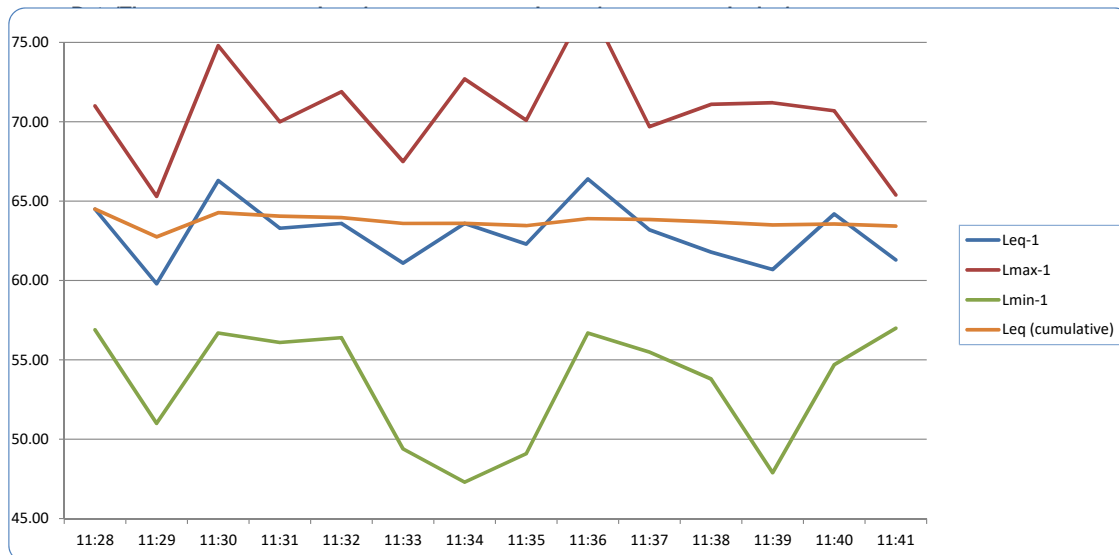
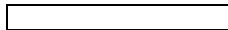
Date	Action	Level	Cal. Model Type	Serial Number	Cert. Due Date
10/4/2017 11:23:57 AM	Calibration	114.0	QC-10	QIE120114/B18371B	10/26/2017
10/4/2017 11:45:21 AM	Verification	113.9	QC-10	QIE120114/B18371B	10/26/2017

**S060\_BIH050001\_04102017\_134458: Summary Data Panel**

Description	Meter/ Sensor	Value
Weighting	1	A
Response	1	SLOW
Rtime	1	00:15:03
Lmin	1	47.3 dB
Mntime	1	10/4/2017 11:33:49 AM
Lmax	1	77.5 dB
Mxtime	1	10/4/2017 11:35:39 AM
Leq	1	63.5 dB

**S060\_BIH050001\_04102017\_134458: Logged Data Table**

Date/Time	Leq-1	Lmax-1	Lmin-1	Leq (cumulat
10/4/2017 11:28:24	64.50	71.00	56.90	64.5
10/4/2017 11:29:24	59.80	65.30	51.00	62.8
10/4/2017 11:30:24	66.30	74.80	56.70	64.3
10/4/2017 11:31:24	63.30	70.00	56.10	64.1
10/4/2017 11:32:24	63.60	71.90	56.40	64.0
10/4/2017 11:33:24	61.10	67.50	49.40	63.6
10/4/2017 11:34:24	63.60	72.70	47.30	63.6
10/4/2017 11:35:24	62.30	70.10	49.10	63.5
10/4/2017 11:36:24	66.40	77.50	56.70	63.9
10/4/2017 11:37:24	63.20	69.70	55.50	63.8
10/4/2017 11:38:24	61.80	71.10	53.80	63.7
10/4/2017 11:39:24	60.70	71.20	47.90	63.5
10/4/2017 11:40:24	64.20	70.70	54.70	63.6
10/4/2017 11:41:24	61.30	65.40	57.00	63.4
10/4/2017 11:42:24	64.80	74.10	55.60	63.5



**S061\_BIH050001\_04102017\_134500: Information Panel**

Description	Value
Location	M7
Start Time	10/4/2017 12:00:33
Run Time	00:15:03
Model Type	SoundPro DL
Serial Number	BIH050001
User Name	M. Stafford
Comments	2386 Oak Trace

**S061\_BIH050001\_04102017\_134500: Calibration History**

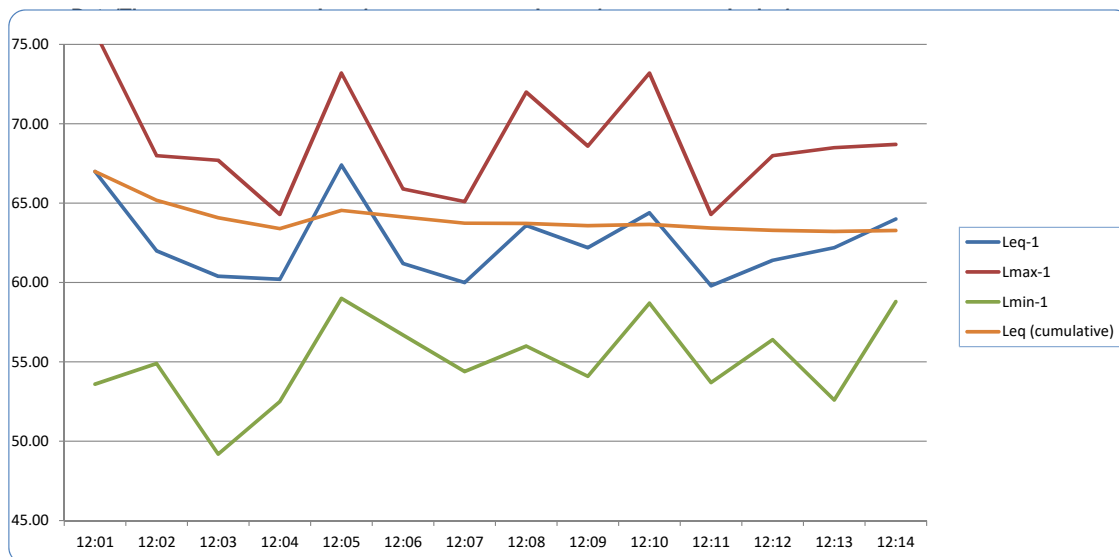
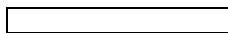
Date	Action	Level	Cal. Model Type	Serial Number	Cert. Due Date
10/4/2017 11:57:12 AM	Calibration	114.0	QC-10	QIE120114/B18371B	10/26/2017
10/4/2017 12:18:04 PM	Verification	113.9	QC-10	QIE120114/B18371B	10/26/2017

**S061\_BIH050001\_04102017\_134500: Summary Data Panel**

Description	Meter/ Sensor	Value
Weighting	1	A
Response	1	SLOW
Rtime	1	00:15:03
Lmin	1	49.2 dB
Mntime	1	10/4/2017 12:03:14 PM
Lmax	1	75.8 dB
Mxtime	1	10/4/2017 12:01:12 PM
Leq	1	63.2 dB

**S061\_BIH050001\_04102017\_134500: Logged Data Table**

Date/Time	Leq-1	Lmax-1	Lmin-1	Leq (cumulat)
10/4/2017 12:01:33	67.00	75.80	53.60	67.0
10/4/2017 12:02:33	62.00	68.00	54.90	65.2
10/4/2017 12:03:33	60.40	67.70	49.20	64.1
10/4/2017 12:04:33	60.20	64.30	52.50	63.4
10/4/2017 12:05:33	67.40	73.20	59.00	64.5
10/4/2017 12:06:33	61.20	65.90	56.70	64.1
10/4/2017 12:07:33	60.00	65.10	54.40	63.7
10/4/2017 12:08:33	63.60	72.00	56.00	63.7
10/4/2017 12:09:33	62.20	68.60	54.10	63.6
10/4/2017 12:10:33	64.40	73.20	58.70	63.7
10/4/2017 12:11:33	59.80	64.30	53.70	63.4
10/4/2017 12:12:33	61.40	68.00	56.40	63.3
10/4/2017 12:13:33	62.20	68.50	52.60	63.2
10/4/2017 12:14:33	64.00	68.70	58.80	63.3
10/4/2017 12:15:33	62.80	72.30	54.10	63.2



**S062\_BIH050001\_04102017\_134503: Information Panel**

Description	Value
Location	M8
Start Time	10/4/2017 12:36:15
Run Time	00:15:05
Model Type	SoundPro DL
Serial Number	BIH050001
User Name	M. Stafford
Comments	3202 Starwick Court

**S062\_BIH050001\_04102017\_134503: Calibration History**

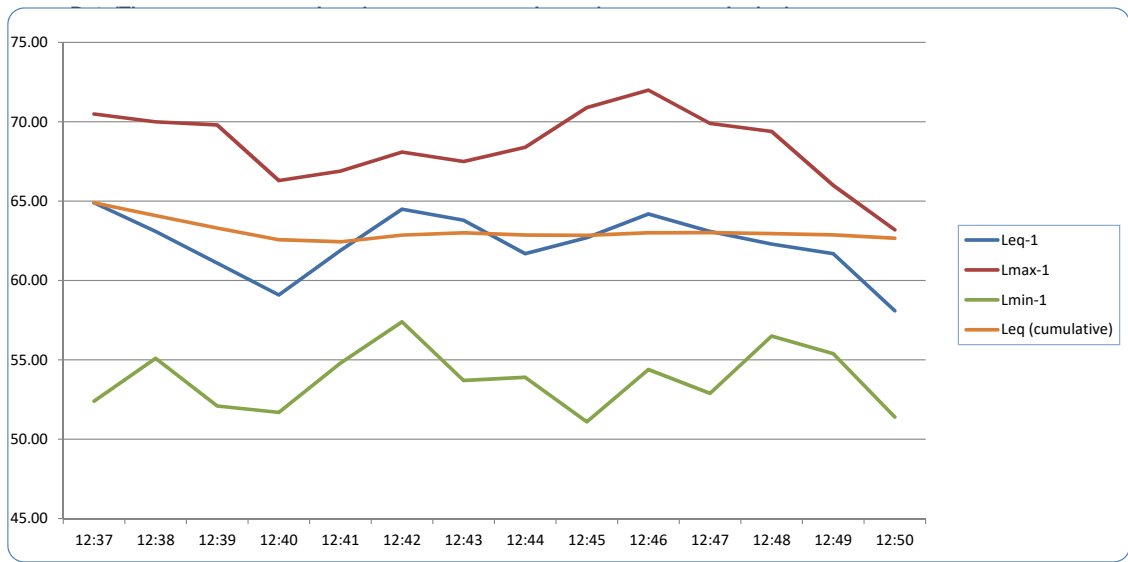
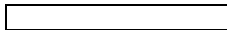
Date	Action	Level	Cal. Model Type	Serial Number	Cert. Due Date
10/4/2017 12:32:53 PM	Calibration	114.0	QC-10	QIE120114/B18371B	10/26/2017
10/4/2017 12:52:57 PM	Verification	114.0	QC-10	QIE120114/B18371B	10/26/2017

**S062\_BIH050001\_04102017\_134503: Summary Data Panel**

Description	Meter/ Sensor	Value
Weighting	1	A
Response	1	SLOW
Rtime	1	00:15:05
Lmin	1	51.1 dB
Mntime	1	10/4/2017 12:44:39 PM
Lmax	1	72 dB
Mxtime	1	10/4/2017 12:45:15 PM
Leq	1	62.4 dB

**S062\_BIH050001\_04102017\_134503: Logged Data Table**

Date/Time	Leq-1	Lmax-1	Lmin-1	Leq (cumulat
10/4/2017 12:37:15	64.90	70.50	52.40	64.9
10/4/2017 12:38:15	63.10	70.00	55.10	64.1
10/4/2017 12:39:15	61.10	69.80	52.10	63.3
10/4/2017 12:40:15	59.10	66.30	51.70	62.6
10/4/2017 12:41:15	61.90	66.90	54.80	62.4
10/4/2017 12:42:15	64.50	68.10	57.40	62.9
10/4/2017 12:43:15	63.80	67.50	53.70	63.0
10/4/2017 12:44:15	61.70	68.40	53.90	62.9
10/4/2017 12:45:15	62.70	70.90	51.10	62.8
10/4/2017 12:46:15	64.20	72.00	54.40	63.0
10/4/2017 12:47:15	63.10	69.90	52.90	63.0
10/4/2017 12:48:15	62.30	69.40	56.50	63.0
10/4/2017 12:49:15	61.70	66.00	55.40	62.9
10/4/2017 12:50:15	58.10	63.20	51.40	62.7
10/4/2017 12:51:15	58.40	62.00	52.60	62.5



**S063\_BIH050001\_04102017\_134506: Information Panel**

Description	Value
Location	M9
Start Time	10/4/2017 13:07:17
Run Time	00:15:04
Model Type	SoundPro DL
Serial Number	BIH050001
User Name	M. Stafford
Comments	3518 Starwick Drive

**S063\_BIH050001\_04102017\_134506: Calibration History**

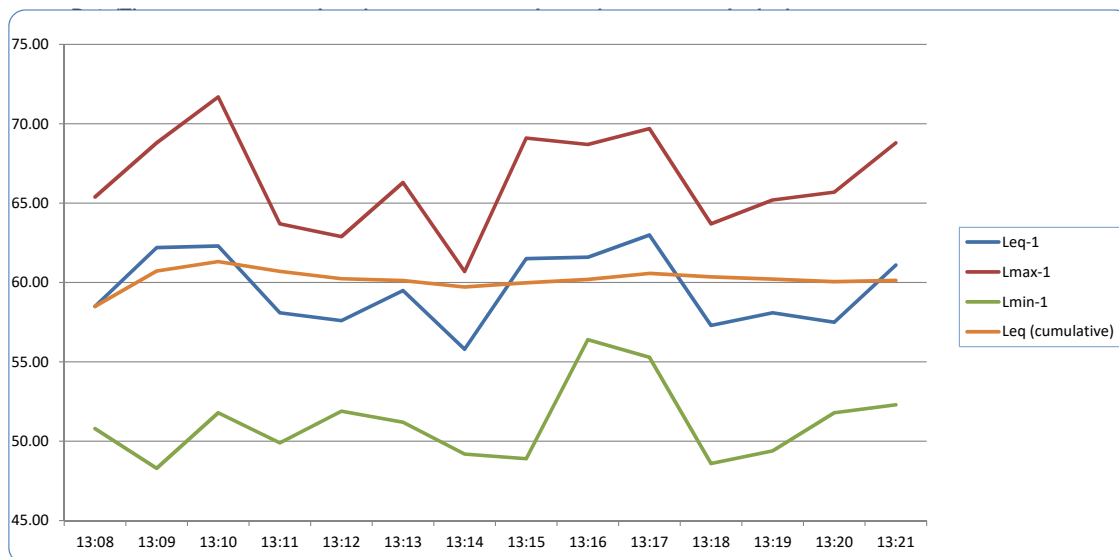
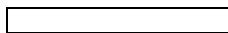
Date	Action	Level	Cal. Model Type	Serial Number	Cert. Due Date
10/4/2017 1:04:09 PM	Calibration	114.0	QC-10	QIE120114/B18371B	10/26/2017
10/4/2017 1:27:10 PM	Verification	113.8	QC-10	QIE120114/B18371B	10/26/2017

**S063\_BIH050001\_04102017\_134506: Summary Data Panel**

Description	Meter/ Sensor	Value
Weighting	1	A
Response	1	SLOW
Rtime	1	00:15:04
Lmin	1	48.3 dB
Mntime	1	10/4/2017 1:09:00 PM
Lmax	1	71.7 dB
Mxtime	1	10/4/2017 1:10:00 PM
Leq	1	60.2 dB

**S063\_BIH050001\_04102017\_134506: Logged Data Table**

Date/Time	Leq-1	Lmax-1	Lmin-1	Leq (cumulat
10/4/2017 13:08:17	58.50	65.40	50.80	58.5
10/4/2017 13:09:17	62.20	68.80	48.30	60.7
10/4/2017 13:10:17	62.30	71.70	51.80	61.3
10/4/2017 13:11:17	58.10	63.70	49.90	60.7
10/4/2017 13:12:17	57.60	62.90	51.90	60.2
10/4/2017 13:13:17	59.50	66.30	51.20	60.1
10/4/2017 13:14:17	55.80	60.70	49.20	59.7
10/4/2017 13:15:17	61.50	69.10	48.90	60.0
10/4/2017 13:16:17	61.60	68.70	56.40	60.2
10/4/2017 13:17:17	63.00	69.70	55.30	60.6
10/4/2017 13:18:17	57.30	63.70	48.60	60.4
10/4/2017 13:19:17	58.10	65.20	49.40	60.2
10/4/2017 13:20:17	57.50	65.70	51.80	60.1
10/4/2017 13:21:42	61.10	68.80	52.30	60.1



## Summary of Traffic Counts During Measurements

Traffic Count Time			Traffic Field Data							
Site ID	Date & Time	Minutes	Road Segment: Direction	Speed (mph)	No. of Lanes	Cars	Med Trucks	Buses	Motorcycles	Heavy Trucks
M1	10/3/2017: 15:54	17.0	SR 11: SB	65	2	308	8	1	3	16
			SR 11: NB	65	2	220	5	1	1	15
			Ramp: Mahoning to SR 11S	65	1	88	0	0	0	1
			Ramp: SR 11N to Mahoning	65	1	76	2	0	0	2
			Mahoning Avenue: EB	35	2	273	3	2	1	0
			Mahoning Avenue: WB	35	2	252	3	1	1	4
M2	10/4/2017: 9:58	15.1	SR 11: NB	65	2	120	9	0	0	25
			SR 11: SB	65	2	109	11	0	0	32
			Ramp: SR 11N to Mahoning	65	1	41	0	0	0	5
			Ramp: Mahoning to SR 11S	65	1	52	3	0	1	3
M3	10/3/2017: 16:26	15.0	SR 11: SB	65	2	385	5	0	0	11
			SR 11: NB	65	2	269	10	0	3	13
M4	10/4/2017: 10:47	15.0	SR 11: NB	65	2	136	3	0	0	25
			SR 11: SB	65	2	181	7	1	0	32
M6	10/4/2017: 11:27	15.1	SR 11: NB	65	2	183	5	0	3	28
			SR 11: SB	65	2	166	7	0	0	24
M7	10/4/2017: 12:0	15.1	SR 11: NB	65	2	161	10	0	0	20
			SR 11: SB	65	2	171	10	1	0	29
M8	10/4/2017: 12:36	15.1	SR 11: NB	65	2	188	13	0	0	30
			SR 11: SB	65	2	153	9	0	0	25
M9	10/4/2017: 13:7	15.1	SR 11: NB	65	2	207	5	0	0	20
			SR 11: SB	65	2	196	7	1	0	17

## Traffic Data Used in Validation Modeling

Site ID	Road Segment: Direction	Speed (mph)	No. of Lanes	Vehicles /Hour/Lane				
				Cars	Med Trucks	Buses	Motorcycles	Heavy Trucks
M1	SR 11: SB	65	2	543	14	2	5	28
	SR 11: NB	65	2	388	9	2	2	26
	Ramp: Mahoning to SR 11S	65	1	310	0	0	0	4
	Ramp: SR 11N to Mahoning	65	1	268	7	0	0	7
	Mahoning Avenue: EB	35	2	481	5	4	2	0
	Mahoning Avenue: WB	35	2	444	5	2	2	7
M2	SR 11: NB	65	2	238	18	0	0	50
	SR 11: SB	65	2	216	22	0	0	63
	Ramp: SR 11N to Mahoning	65	1	163	0	0	0	20
	Ramp: Mahoning to SR 11S	65	1	206	12	0	4	12
M3	SR 11: SB	65	2	768	10	0	0	22
	SR 11: NB	65	2	537	20	0	6	26
M4	SR 11: NB	65	2	271	6	0	0	50
	SR 11: SB	65	2	361	14	2	0	64
M6	SR 11: NB	65	2	365	10	0	6	56
	SR 11: SB	65	2	331	14	0	0	48
M7	SR 11: NB	65	2	321	20	0	0	40
	SR 11: SB	65	2	341	20	2	0	58
M8	SR 11: NB	65	2	374	26	0	0	60
	SR 11: SB	65	2	304	18	0	0	50
M9	SR 11: NB	65	2	412	10	0	0	40
	SR 11: SB	65	2	390	14	2	0	34



### APPENDIX C: TNM INPUT AND OUTPUT TABLES

Includes TNM Roadways, Traffic, Receivers, and Sound Level Results tables for the following model runs:

- Validation runs for measurement locations M1 through M9
- Existing Scenario for NSAs 1 through 9.



INPUT: ROADWAYS

MAH SR11/2386

		26	26	2,450,421.0	523,153.8	1,143.60				Average	
		27	27	2,450,433.5	523,725.3	1,142.00				Average	
		28	28	2,450,442.5	524,118.8	1,140.40				Average	
		29	29	2,450,450.5	524,462.4	1,139.80				Average	
		30	30	2,450,458.0	524,726.5	1,138.90				Average	
		31	31	2,450,461.0	524,942.6	1,138.50				Average	
		32	32	2,450,462.8	525,119.3	1,138.10				Average	
		33	33	2,450,457.0	525,278.1	1,137.30				Average	
		34	34	2,450,453.0	525,427.2	1,137.10				Average	
		35	35	2,450,441.2	525,580.1	1,136.30				Average	
		36	36	2,450,425.5	525,732.6	1,134.50				Average	
		37	37	2,450,399.0	525,926.2	1,131.90				Average	
		38	38	2,450,370.8	526,102.7	1,129.00				Average	
		39	39	2,450,340.0	526,263.2	1,125.70				Average	
		40	40	2,450,290.0	526,482.5	1,120.20				Average	
		41	41	2,450,224.0	526,734.5	1,113.20				Average	
		42	42	2,450,134.5	527,011.3	1,108.00				Average	
		43	43	2,450,046.0	527,245.0	1,106.40					
SR11 NB-2	12.0	1	44	2,451,366.2	511,895.0	1,142.50				Average	
		2	45	2,451,203.0	512,462.0	1,140.90				Average	
		3	46	2,451,035.5	513,062.7	1,142.60				Average	
		4	47	2,450,850.2	513,717.3	1,144.50				Average	
		5	48	2,450,734.0	514,145.3	1,146.30				Average	
		6	49	2,450,672.2	514,356.5	1,147.00				Average	
		7	50	2,450,624.0	514,546.4	1,147.00				Average	
		8	51	2,450,577.2	514,762.3	1,147.50				Average	
		9	52	2,450,537.2	514,944.0	1,148.60				Average	
		10	53	2,450,494.5	515,143.2	1,149.40				Average	
		11	54	2,450,445.5	515,429.4	1,150.40				Average	
		12	55	2,450,408.0	515,668.5	1,149.90				Average	
		13	56	2,450,356.0	516,081.1	1,152.20				Average	
		14	57	2,450,322.5	516,419.1	1,153.20				Average	
		15	58	2,450,306.0	516,682.7	1,153.40				Average	
		16	59	2,450,290.0	516,974.1	1,154.90				Average	
		17	60	2,450,282.2	517,280.9	1,155.70				Average	
		18	61	2,450,282.8	517,597.1	1,156.30				Average	
		19	62	2,450,297.5	518,208.7	1,157.60				Average	
		20	63	2,450,309.5	518,851.9	1,155.90				Average	
		21	64	2,450,328.0	519,671.8	1,154.10				Average	

INPUT: ROADWAYS

MAH SR11/2386

		22	65	2,450,348.2	520,447.3	1,151.70				Average	
		23	66	2,450,361.0	521,077.3	1,149.70				Average	
		24	67	2,450,384.5	522,070.6	1,146.80				Average	
		25	68	2,450,400.0	522,778.2	1,144.80				Average	
		26	69	2,450,410.0	523,153.8	1,143.60				Average	
		27	70	2,450,423.2	523,721.6	1,142.10				Average	
		28	71	2,450,431.5	524,119.3	1,140.40				Average	
		29	72	2,450,440.2	524,462.6	1,139.80				Average	
		30	73	2,450,447.8	524,726.6	1,138.50				Average	
		31	74	2,450,450.5	524,942.4	1,137.10				Average	
		32	75	2,450,452.5	525,119.3	1,138.10				Average	
		33	76	2,450,447.0	525,276.8	1,137.30				Average	
		34	77	2,450,442.2	525,426.6	1,137.10				Average	
		35	78	2,450,431.0	525,580.3	1,135.20				Average	
		36	79	2,450,415.5	525,732.8	1,134.50				Average	
		37	80	2,450,388.8	525,926.3	1,131.90				Average	
		38	81	2,450,360.5	526,102.8	1,129.00				Average	
		39	82	2,450,330.0	526,263.4	1,125.70				Average	
		40	83	2,450,279.2	526,479.7	1,120.20				Average	
		41	84	2,450,213.5	526,731.3	1,113.20				Average	
		42	85	2,450,124.5	527,007.4	1,107.00				Average	
		43	86	2,450,035.5	527,241.1	1,106.40					
SR11 SB-2	12.0	1	87	2,451,271.2	511,869.0	1,142.70				Average	
		2	88	2,451,109.8	512,434.4	1,141.40				Average	
		3	89	2,450,942.2	513,035.0	1,142.70				Average	
		4	90	2,450,758.8	513,689.7	1,144.70				Average	
		5	91	2,450,638.0	514,117.7	1,146.30				Average	
		6	92	2,450,579.2	514,330.9	1,146.90				Average	
		7	93	2,450,533.0	514,518.7	1,147.60				Average	
		8	94	2,450,480.5	514,738.8	1,148.20				Average	
		9	95	2,450,442.5	514,916.6	1,148.80				Average	
		10	96	2,450,401.2	515,120.2	1,149.40				Average	
		11	97	2,450,354.8	515,399.3	1,150.20				Average	
		12	98	2,450,314.0	515,661.3	1,150.90				Average	
		13	99	2,450,261.5	516,051.8	1,152.40				Average	
		14	100	2,450,229.0	516,389.9	1,153.20				Average	
		15	101	2,450,209.5	516,675.9	1,153.90				Average	
		16	102	2,450,193.0	516,960.2	1,155.00				Average	
		17	103	2,450,184.8	517,280.8	1,155.90				Average	

INPUT: ROADWAYS

MAH SR11/2386

		18	104	2,450,186.5	517,595.6	1,156.70				Average	
		19	105	2,450,201.0	518,205.2	1,158.00				Average	
		20	106	2,450,216.0	518,859.0	1,156.30				Average	
		21	107	2,450,234.0	519,666.1	1,154.10				Average	
		22	108	2,450,252.0	520,448.8	1,151.80				Average	
		23	109	2,450,265.0	521,096.4	1,149.70				Average	
		24	110	2,450,288.0	522,068.9	1,146.90				Average	
		25	111	2,450,303.0	522,776.2	1,144.80				Average	
		26	112	2,450,312.8	523,160.7	1,143.70				Average	
		27	113	2,450,326.0	523,720.5	1,142.00				Average	
		28	114	2,450,334.8	524,116.8	1,140.70				Average	
		29	115	2,450,343.0	524,456.8	1,139.90				Average	
		30	116	2,450,350.5	524,720.9	1,139.00				Average	
		31	117	2,450,355.5	524,936.5	1,138.00				Average	
		32	118	2,450,355.2	525,120.6	1,137.20				Average	
		33	119	2,450,353.8	525,270.8	1,136.80				Average	
		34	120	2,450,346.0	525,422.5	1,136.30				Average	
		35	121	2,450,334.8	525,572.9	1,134.90				Average	
		36	122	2,450,319.5	525,726.5	1,133.70				Average	
		37	123	2,450,293.2	525,921.1	1,131.00				Average	
		38	124	2,450,264.5	526,097.6	1,128.10				Average	
		39	125	2,450,232.5	526,257.6	1,124.60				Average	
		40	126	2,450,182.5	526,476.7	1,119.30				Average	
		41	127	2,450,114.8	526,725.6	1,111.80				Average	
		42	128	2,450,025.2	527,001.1	1,106.50				Average	
		43	129	2,449,943.2	527,213.9	1,105.90					
SR11 SB-1	12.0	43	172	2,449,934.0	527,209.2	1,105.90				Average	
		42	171	2,450,015.5	526,997.0	1,106.50				Average	
		41	170	2,450,105.5	526,722.5	1,111.20				Average	
		40	169	2,450,172.8	526,474.0	1,119.30				Average	
		39	168	2,450,222.5	526,257.9	1,124.60				Average	
		38	167	2,450,254.2	526,097.9	1,128.10				Average	
		37	166	2,450,283.0	525,919.0	1,131.00				Average	
		36	165	2,450,309.5	525,724.5	1,133.70				Average	
		35	164	2,450,323.5	525,572.2	1,134.90				Average	
		34	163	2,450,336.0	525,421.5	1,135.70				Average	
		33	162	2,450,343.5	525,270.8	1,136.80				Average	
		32	161	2,450,345.0	525,120.8	1,136.60				Average	
		31	160	2,450,345.0	524,936.7	1,137.50				Average	

INPUT: ROADWAYS

MAH SR11/2386

		30	159	2,450,340.2	524,721.1	1,139.00				Average	
		29	158	2,450,332.8	524,457.1	1,139.60				Average	
		28	157	2,450,324.2	524,116.3	1,140.70				Average	
		27	156	2,450,315.8	523,717.7	1,141.70				Average	
		26	155	2,450,302.5	523,157.9	1,143.50				Average	
		25	154	2,450,293.0	522,773.3	1,144.90				Average	
		24	153	2,450,278.0	522,066.1	1,146.00				Average	
		23	152	2,450,254.8	521,093.5	1,149.70				Average	
		22	151	2,450,242.0	520,445.9	1,151.80				Average	
		21	150	2,450,223.0	519,666.3	1,153.40				Average	
		20	149	2,450,204.0	518,859.9	1,156.40				Average	
		19	148	2,450,189.5	518,205.5	1,158.00				Average	
		18	147	2,450,174.2	517,595.8	1,156.70				Average	
		17	146	2,450,174.2	517,280.5	1,155.90				Average	
		16	145	2,450,182.8	516,957.4	1,155.00				Average	
		15	144	2,450,198.0	516,675.2	1,154.00				Average	
		14	143	2,450,218.0	516,388.5	1,153.20				Average	
		13	142	2,450,250.5	516,050.2	1,152.40				Average	
		12	148	2,450,303.2	515,660.5	1,150.70				Average	
		11	140	2,450,344.5	515,396.4	1,150.20				Average	
		10	139	2,450,391.2	515,117.3	1,148.40				Average	
		9	138	2,450,432.2	514,913.7	1,148.50				Average	
		8	137	2,450,470.5	514,736.0	1,147.80				Average	
		7	136	2,450,522.8	514,515.9	1,147.60				Average	
		6	135	2,450,569.0	514,328.1	1,146.90				Average	
		5	134	2,450,628.0	514,114.9	1,146.30				Average	
		4	133	2,450,748.5	513,686.8	1,144.60				Average	
		3	132	2,450,932.0	513,032.2	1,142.70				Average	
		2	131	2,451,099.5	512,431.5	1,141.00				Average	
		1	130	2,451,262.8	511,864.3	1,142.70					
Kirk EB	12.0	1	173	2,449,260.5	515,679.3	1,164.30				Average	
		2	174	2,449,776.0	515,689.2	1,158.80				Average	
		3	175	2,450,182.5	515,695.2	1,168.60				Average	Y
		4	176	2,450,527.2	515,703.6	1,168.60				Average	
		5	177	2,450,935.8	515,716.3	1,163.50				Average	
		6	178	2,451,437.5	515,731.8	1,176.40					
Kirk WB	12.0	6	184	2,451,437.5	515,743.8	1,176.40				Average	
		5	183	2,450,936.0	515,728.3	1,163.50				Average	
		4	182	2,450,527.5	515,715.6	1,168.60				Average	Y

INPUT: ROADWAYS

MAH SR11/2386

		3	181	2,450,182.5	515,707.2	1,168.60				Average	
		2	180	2,449,776.2	515,701.2	1,158.80				Average	
		1	179	2,449,260.5	515,691.3	1,164.30					
New EB	12.0	1	185	2,449,044.0	521,176.3	1,149.00				Average	
		2	186	2,449,744.8	521,189.4	1,152.90				Average	
		3	187	2,449,882.0	521,191.5	1,157.40				Average	
		4	188	2,449,970.2	521,193.1	1,161.30				Average	
		5	189	2,450,047.5	521,186.9	1,163.90				Average	
		6	190	2,450,149.0	521,169.1	1,166.80				Average	Y
		7	191	2,450,480.8	521,082.0	1,167.50				Average	
		8	192	2,450,564.5	521,064.3	1,165.80				Average	
		9	193	2,450,649.0	521,056.2	1,163.20				Average	
		10	194	2,450,731.5	521,053.5	1,161.00				Average	
		11	195	2,450,871.8	521,053.8	1,158.00				Average	
		12	196	2,451,472.5	521,058.8	1,156.10					
New WB	12.0	12	208	2,451,472.5	521,070.8	1,156.10				Average	
		11	207	2,450,872.0	521,065.8	1,158.00				Average	
		10	206	2,450,731.5	521,065.5	1,159.20				Average	
		9	205	2,450,649.2	521,068.2	1,162.80				Average	
		8	204	2,450,564.5	521,076.3	1,165.80				Average	
		7	203	2,450,480.8	521,094.0	1,166.00				Average	Y
		6	202	2,450,149.0	521,181.1	1,166.80				Average	
		5	201	2,450,047.5	521,198.9	1,163.90				Average	
		4	200	2,449,970.5	521,205.1	1,161.30				Average	
		3	199	2,449,882.0	521,203.5	1,157.40				Average	
		2	198	2,449,745.0	521,201.4	1,152.90				Average	
		1	197	2,449,044.2	521,188.3	1,149.00					
Mahoning EB-1	12.0	1	209	2,448,759.0	526,833.2	1,121.10				Average	
		2	210	2,449,181.2	526,840.6	1,112.50				Average	
		3	211	2,449,486.8	526,846.1	1,114.60				Average	
		4	212	2,449,592.8	526,847.5	1,117.20				Average	
		5	213	2,449,796.5	526,851.0	1,121.50				Average	
		6	214	2,449,944.8	526,859.2	1,125.10				Average	Y
		7	215	2,450,293.0	526,910.7	1,128.50				Average	
		8	216	2,450,383.5	526,927.8	1,128.70				Average	
		9	217	2,450,454.5	526,938.8	1,128.30				Average	
		10	218	2,451,052.0	527,044.7	1,139.30				Average	
		11	219	2,451,194.0	527,069.0	1,139.50				Average	
		12	220	2,451,634.8	527,143.6	1,132.30					

**INPUT: ROADWAYS**

**MAH SR11/2386**

Mahoning EB-2	12.0	1	221	2,448,759.0	526,845.2	1,121.10				Average	
		2	222	2,449,181.2	526,852.6	1,112.50				Average	
		3	223	2,449,486.8	526,858.1	1,114.60				Average	
		4	224	2,449,592.8	526,859.5	1,117.20				Average	
		5	225	2,449,796.5	526,863.0	1,121.50				Average	
		6	226	2,449,942.0	526,870.7	1,125.10				Average	Y
		7	227	2,450,288.8	526,922.6	1,128.50				Average	
		8	228	2,450,381.5	526,940.2	1,128.30				Average	
		9	229	2,450,450.5	526,950.9	1,128.30				Average	
		10	230	2,451,049.8	527,054.7	1,139.30				Average	
		11	231	2,451,192.0	527,079.8	1,139.60				Average	
		12	232	2,451,631.8	527,155.7	1,132.40					
Mahoning WB-center	12.0	1	233	2,448,759.2	526,855.0	1,121.10				Average	
		2	234	2,449,181.5	526,862.4	1,112.50				Average	
		3	235	2,449,487.0	526,867.9	1,114.60				Average	
		4	236	2,449,593.0	526,869.3	1,117.20				Average	
		5	237	2,449,795.5	526,873.9	1,121.50				Average	
		6	238	2,449,938.8	526,882.0	1,125.10				Average	Y
		7	239	2,450,284.0	526,935.7	1,128.20				Average	
		8	240	2,450,382.0	526,952.8	1,128.30				Average	
		9	241	2,450,447.0	526,962.4	1,128.30				Average	
		10	242	2,451,048.2	527,065.2	1,139.30				Average	
		11	243	2,451,189.5	527,089.6	1,139.60				Average	
		12	244	2,451,629.5	527,165.9	1,132.70					
Mahoning WB-2	12.0	12	256	2,451,627.5	527,174.6	1,132.70				Average	
		11	255	2,451,187.5	527,098.5	1,139.60				Average	
		10	254	2,451,048.2	527,073.9	1,139.30				Average	
		9	253	2,450,444.8	526,972.6	1,128.30				Average	
		8	252	2,450,379.0	526,965.6	1,128.70				Average	
		7	251	2,450,279.0	526,947.2	1,128.20				Average	Y
		6	250	2,449,935.2	526,894.7	1,123.60				Average	
		5	249	2,449,791.5	526,884.8	1,120.60				Average	
		4	248	2,449,593.5	526,879.2	1,117.10				Average	
		3	247	2,449,487.5	526,877.7	1,114.50				Average	
		2	246	2,449,182.0	526,872.2	1,112.60				Average	
		1	245	2,448,759.8	526,864.8	1,121.10					
Mahoning WB-1	12.0	12	268	2,451,625.2	527,184.8	1,132.70				Average	
		11	267	2,451,184.5	527,110.5	1,139.60				Average	
		10	266	2,451,046.0	527,085.6	1,139.30				Average	



INPUT: ROADWAYS

MAH SR11/2386

		9	265	2,450,440.5	526,985.9	1,128.30				Average	
		8	264	2,450,375.5	526,978.0	1,128.70				Average	
		7	263	2,450,274.5	526,960.4	1,128.20				Average	Y
		6	262	2,449,931.5	526,906.1	1,123.60				Average	
		5	261	2,449,791.5	526,896.8	1,120.60				Average	
		4	260	2,449,593.2	526,891.2	1,117.10				Average	
		3	259	2,449,487.5	526,889.7	1,114.50				Average	
		2	258	2,449,182.0	526,884.2	1,112.60				Average	
		1	257	2,448,759.8	526,876.8	1,121.10					
Ramp: Mahoning to SR 11S	12.0	22	290	2,449,830.5	526,832.2	1,123.60	Onramp	15.00	100	Average	
		21	289	2,449,891.5	526,734.7	1,126.10				Average	
		20	288	2,449,949.0	526,636.5	1,127.80				Average	
		19	287	2,450,029.5	526,501.5	1,128.20				Average	
		18	286	2,450,073.5	526,419.2	1,128.50				Average	
		17	285	2,450,112.0	526,327.8	1,127.30				Average	
		16	284	2,450,142.0	526,248.3	1,125.50				Average	
		15	283	2,450,175.8	526,143.3	1,127.30				Average	
		14	282	2,450,205.8	526,039.5	1,128.10				Average	
		13	281	2,450,233.0	525,932.0	1,129.50				Average	
		12	280	2,450,257.0	525,827.2	1,131.20				Average	
		11	279	2,450,277.2	525,701.7	1,132.20				Average	
		10	278	2,450,292.2	525,595.9	1,134.50				Average	
		9	277	2,450,303.2	525,497.7	1,135.00				Average	
		8	276	2,450,309.5	525,417.1	1,135.00				Average	
		7	275	2,450,320.2	525,267.3	1,136.30				Average	
		6	274	2,450,326.8	525,124.6	1,136.60				Average	
		5	273	2,450,328.0	525,027.6	1,137.00				Average	
		4	272	2,450,330.0	524,935.9	1,137.50				Average	
		3	271	2,450,329.2	524,720.5	1,139.00				Average	
		2	270	2,450,327.8	524,457.3	1,139.60				Average	
		1	269	2,450,322.8	524,116.3	1,140.70					
Ramp: SR 11N to Mahoning	12.0	1	291	2,450,461.0	524,726.6	1,138.90				Average	
		2	292	2,450,470.0	524,786.7	1,138.80				Average	
		3	293	2,450,472.5	524,942.3	1,138.50				Average	
		4	294	2,450,477.2	525,119.1	1,138.70				Average	
		5	295	2,450,481.8	525,277.6	1,138.30				Average	
		6	296	2,450,484.8	525,426.3	1,137.90				Average	
		7	297	2,450,487.0	525,576.0	1,136.70				Average	
		8	298	2,450,488.5	525,676.4	1,136.00				Average	

**INPUT: ROADWAYS**

**MAH SR11/2386**

		9	299	2,450,485.0	525,772.0	1,136.00				Average	
		10	300	2,450,482.0	525,906.4	1,137.60				Average	
		11	301	2,450,473.5	526,083.0	1,139.30				Average	
		12	302	2,450,456.5	526,452.9	1,139.70				Average	
		13	303	2,450,440.8	526,903.0	1,128.50					
Oakcrest WB	12.0	6	309	2,451,311.2	523,235.6	1,147.10				Average	
		5	308	2,450,966.0	523,236.4	1,145.10				Average	
		4	307	2,450,530.5	523,230.8	1,159.10				Average	Y
		3	306	2,450,196.0	523,223.2	1,159.10				Average	
		2	305	2,449,784.2	523,217.4	1,151.00				Average	
		1	304	2,449,408.0	523,211.2	1,158.50					
Oakcrest EB	12.0	1	310	2,449,408.0	523,199.2	1,158.50				Average	
		2	311	2,449,784.2	523,205.4	1,151.00				Average	
		3	312	2,450,196.0	523,211.2	1,159.10				Average	Y
		4	313	2,450,530.5	523,218.8	1,159.10				Average	
		5	314	2,450,966.0	523,224.4	1,145.00				Average	
		6	315	2,451,311.2	523,223.6	1,147.00					

INPUT: TRAFFIC FOR LAeq1h Volumes

MAH SR11/2386

ASC Group, Inc. mas		5 April 2018 TNM 2.5											
INPUT: TRAFFIC FOR LAeq1h Volumes		MAH SR11/2386											
PROJECT/CONTRACT:		validation-M1											
RUN:													
Roadway	Points												
Name	Name	No.	Segment		MTrucks		HTrucks		Buses		Motorcycles		
			Autos		V	S	V	S	V	S	V	S	
			V	S	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	
SR11 NB-1	1	1	388	65	9	65	26	65	2	65	2	65	
	2	2	388	65	9	65	26	65	2	65	2	65	
	3	3	388	65	9	65	26	65	2	65	2	65	
	4	4	388	65	9	65	26	65	2	65	2	65	
	5	5	388	65	9	65	26	65	2	65	2	65	
	6	6	388	65	9	65	26	65	2	65	2	65	
	7	7	388	65	9	65	26	65	2	65	2	65	
	8	8	388	65	9	65	26	65	2	65	2	65	
	9	9	388	65	9	65	26	65	2	65	2	65	
	10	10	388	65	9	65	26	65	2	65	2	65	
	11	11	388	65	9	65	26	65	2	65	2	65	
	12	12	388	65	9	65	26	65	2	65	2	65	
	13	13	388	65	9	65	26	65	2	65	2	65	
	14	14	388	65	9	65	26	65	2	65	2	65	
	15	15	388	65	9	65	26	65	2	65	2	65	
	16	16	388	65	9	65	26	65	2	65	2	65	
	17	17	388	65	9	65	26	65	2	65	2	65	
	18	18	388	65	9	65	26	65	2	65	2	65	
	19	19	388	65	9	65	26	65	2	65	2	65	
	20	20	388	65	9	65	26	65	2	65	2	65	
	21	21	388	65	9	65	26	65	2	65	2	65	
	22	22	388	65	9	65	26	65	2	65	2	65	
	23	23	388	65	9	65	26	65	2	65	2	65	

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	24	24	388	65	9	65	26	65	2	65	2	65
	25	25	388	65	9	65	26	65	2	65	2	65
	26	26	388	65	9	65	26	65	2	65	2	65
	27	27	388	65	9	65	26	65	2	65	2	65
	28	28	388	65	9	65	26	65	2	65	2	65
	29	29	388	65	9	65	26	65	2	65	2	65
	30	30	388	65	9	65	26	65	2	65	2	65
	31	31	388	65	9	65	26	65	2	65	2	65
	32	32	388	65	9	65	26	65	2	65	2	65
	33	33	388	65	9	65	26	65	2	65	2	65
	34	34	388	65	9	65	26	65	2	65	2	65
	35	35	388	65	9	65	26	65	2	65	2	65
	36	36	388	65	9	65	26	65	2	65	2	65
	37	37	388	65	9	65	26	65	2	65	2	65
	38	38	388	65	9	65	26	65	2	65	2	65
	39	39	388	65	9	65	26	65	2	65	2	65
	40	40	388	65	9	65	26	65	2	65	2	65
	41	41	388	65	9	65	26	65	2	65	2	65
	42	42	388	65	9	65	26	65	2	65	2	65
	43	43										
SR11 NB-2	1	44	388	65	9	65	26	65	2	65	2	65
	2	45	388	65	9	65	26	65	2	65	2	65
	3	46	388	65	9	65	26	65	2	65	2	65
	4	47	388	65	9	65	26	65	2	65	2	65
	5	48	388	65	9	65	26	65	2	65	2	65
	6	49	388	65	9	65	26	65	2	65	2	65
	7	50	388	65	9	65	26	65	2	65	2	65
	8	51	388	65	9	65	26	65	2	65	2	65
	9	52	388	65	9	65	26	65	2	65	2	65
	10	53	388	65	9	65	26	65	2	65	2	65
	11	54	388	65	9	65	26	65	2	65	2	65
	12	55	388	65	9	65	26	65	2	65	2	65
	13	56	388	65	9	65	26	65	2	65	2	65
	14	57	388	65	9	65	26	65	2	65	2	65
	15	58	388	65	9	65	26	65	2	65	2	65
	16	59	388	65	9	65	26	65	2	65	2	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	17	60	388	65	9	65	26	65	2	65	2	65
	18	61	388	65	9	65	26	65	2	65	2	65
	19	62	388	65	9	65	26	65	2	65	2	65
	20	63	388	65	9	65	26	65	2	65	2	65
	21	64	388	65	9	65	26	65	2	65	2	65
	22	65	388	65	9	65	26	65	2	65	2	65
	23	66	388	65	9	65	26	65	2	65	2	65
	24	67	388	65	9	65	26	65	2	65	2	65
	25	68	388	65	9	65	26	65	2	65	2	65
	26	69	388	65	9	65	26	65	2	65	2	65
	27	70	388	65	9	65	26	65	2	65	2	65
	28	71	388	65	9	65	26	65	2	65	2	65
	29	72	388	65	9	65	26	65	2	65	2	65
	30	73	388	65	9	65	26	65	2	65	2	65
	31	74	388	65	9	65	26	65	2	65	2	65
	32	75	388	65	9	65	26	65	2	65	2	65
	33	76	388	65	9	65	26	65	2	65	2	65
	34	77	388	65	9	65	26	65	2	65	2	65
	35	78	388	65	9	65	26	65	2	65	2	65
	36	79	388	65	9	65	26	65	2	65	2	65
	37	80	388	65	9	65	26	65	2	65	2	65
	38	81	388	65	9	65	26	65	2	65	2	65
	39	82	388	65	9	65	26	65	2	65	2	65
	40	83	388	65	9	65	26	65	2	65	2	65
	41	84	388	65	9	65	26	65	2	65	2	65
	42	85	388	65	9	65	26	65	2	65	2	65
	43	86										
SR11 SB-2	1	87	543	65	14	65	28	65	2	65	5	65
	2	88	543	65	14	65	28	65	2	65	5	65
	3	89	543	65	14	65	28	65	2	65	5	65
	4	90	543	65	14	65	28	65	2	65	5	65
	5	91	543	65	14	65	28	65	2	65	5	65
	6	92	543	65	14	65	28	65	2	65	5	65
	7	93	543	65	14	65	28	65	2	65	5	65
	8	94	543	65	14	65	28	65	2	65	5	65
	9	95	543	65	14	65	28	65	2	65	5	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	10	96	543	65	14	65	28	65	2	65	5	65
	11	97	543	65	14	65	28	65	2	65	5	65
	12	98	543	65	14	65	28	65	2	65	5	65
	13	99	543	65	14	65	28	65	2	65	5	65
	14	100	543	65	14	65	28	65	2	65	5	65
	15	101	543	65	14	65	28	65	2	65	5	65
	16	102	543	65	14	65	28	65	2	65	5	65
	17	103	543	65	14	65	28	65	2	65	5	65
	18	104	543	65	14	65	28	65	2	65	5	65
	19	105	543	65	14	65	28	65	2	65	5	65
	20	106	543	65	14	65	28	65	2	65	5	65
	21	107	543	65	14	65	28	65	2	65	5	65
	22	108	543	65	14	65	28	65	2	65	5	65
	23	109	543	65	14	65	28	65	2	65	5	65
	24	110	543	65	14	65	28	65	2	65	5	65
	25	111	543	65	14	65	28	65	2	65	5	65
	26	112	543	65	14	65	28	65	2	65	5	65
	27	113	543	65	14	65	28	65	2	65	5	65
	28	114	543	65	14	65	28	65	2	65	5	65
	29	115	543	65	14	65	28	65	2	65	5	65
	30	116	543	65	14	65	28	65	2	65	5	65
	31	117	543	65	14	65	28	65	2	65	5	65
	32	118	543	65	14	65	28	65	2	65	5	65
	33	119	543	65	14	65	28	65	2	65	5	65
	34	120	543	65	14	65	28	65	2	65	5	65
	35	121	543	65	14	65	28	65	2	65	5	65
	36	122	543	65	14	65	28	65	2	65	5	65
	37	123	543	65	14	65	28	65	2	65	5	65
	38	124	543	65	14	65	28	65	2	65	5	65
	39	125	543	65	14	65	28	65	2	65	5	65
	40	126	543	65	14	65	28	65	2	65	5	65
	41	127	543	65	14	65	28	65	2	65	5	65
	42	128	543	65	14	65	28	65	2	65	5	65
	43	129										
SR11 SB-1	43	172	543	65	14	65	28	65	2	65	5	65
	42	171	543	65	14	65	28	65	2	65	5	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	41	170	543	65	14	65	28	65	2	65	5	65
	40	169	543	65	14	65	28	65	2	65	5	65
	39	168	543	65	14	65	28	65	2	65	5	65
	38	167	543	65	14	65	28	65	2	65	5	65
	37	166	543	65	14	65	28	65	2	65	5	65
	36	165	543	65	14	65	28	65	2	65	5	65
	35	164	543	65	14	65	28	65	2	65	5	65
	34	163	543	65	14	65	28	65	2	65	5	65
	33	162	543	65	14	65	28	65	2	65	5	65
	32	161	543	65	14	65	28	65	2	65	5	65
	31	160	543	65	14	65	28	65	2	65	5	65
	30	159	543	65	14	65	28	65	2	65	5	65
	29	158	543	65	14	65	28	65	2	65	5	65
	28	157	543	65	14	65	28	65	2	65	5	65
	27	156	543	65	14	65	28	65	2	65	5	65
	26	155	543	65	14	65	28	65	2	65	5	65
	25	154	543	65	14	65	28	65	2	65	5	65
	24	153	543	65	14	65	28	65	2	65	5	65
	23	152	543	65	14	65	28	65	2	65	5	65
	22	151	543	65	14	65	28	65	2	65	5	65
	21	150	543	65	14	65	28	65	2	65	5	65
	20	149	543	65	14	65	28	65	2	65	5	65
	19	148	543	65	14	65	28	65	2	65	5	65
	18	147	543	65	14	65	28	65	2	65	5	65
	17	146	543	65	14	65	28	65	2	65	5	65
	16	145	543	65	14	65	28	65	2	65	5	65
	15	144	543	65	14	65	28	65	2	65	5	65
	14	143	543	65	14	65	28	65	2	65	5	65
	13	142	543	65	14	65	28	65	2	65	5	65
	12	141	543	65	14	65	28	65	2	65	5	65
	11	140	543	65	14	65	28	65	2	65	5	65
	10	139	543	65	14	65	28	65	2	65	5	65
	9	138	543	65	14	65	28	65	2	65	5	65
	8	137	543	65	14	65	28	65	2	65	5	65
	7	136	543	65	14	65	28	65	2	65	5	65
	6	135	543	65	14	65	28	65	2	65	5	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	5	134	543	65	14	65	28	65	2	65	5	65
	4	133	543	65	14	65	28	65	2	65	5	65
	3	132	543	65	14	65	28	65	2	65	5	65
	2	131	543	65	14	65	28	65	2	65	5	65
	1	130										
Kirk EB	1	173	0	0	0	0	0	0	0	0	0	0
	2	174	0	0	0	0	0	0	0	0	0	0
	3	175	0	0	0	0	0	0	0	0	0	0
	4	176	0	0	0	0	0	0	0	0	0	0
	5	177	0	0	0	0	0	0	0	0	0	0
	6	178										
Kirk WB	6	184	0	0	0	0	0	0	0	0	0	0
	5	183	0	0	0	0	0	0	0	0	0	0
	4	182	0	0	0	0	0	0	0	0	0	0
	3	181	0	0	0	0	0	0	0	0	0	0
	2	180	0	0	0	0	0	0	0	0	0	0
	1	179										
New EB	1	185	0	0	0	0	0	0	0	0	0	0
	2	186	0	0	0	0	0	0	0	0	0	0
	3	187	0	0	0	0	0	0	0	0	0	0
	4	188	0	0	0	0	0	0	0	0	0	0
	5	189	0	0	0	0	0	0	0	0	0	0
	6	190	0	0	0	0	0	0	0	0	0	0
	7	191	0	0	0	0	0	0	0	0	0	0
	8	192	0	0	0	0	0	0	0	0	0	0
	9	193	0	0	0	0	0	0	0	0	0	0
	10	194	0	0	0	0	0	0	0	0	0	0
	11	195	0	0	0	0	0	0	0	0	0	0
	12	196										
New WB	12	208	0	0	0	0	0	0	0	0	0	0
	11	207	0	0	0	0	0	0	0	0	0	0
	10	206	0	0	0	0	0	0	0	0	0	0
	9	205	0	0	0	0	0	0	0	0	0	0
	8	204	0	0	0	0	0	0	0	0	0	0
	7	203	0	0	0	0	0	0	0	0	0	0
	6	202	0	0	0	0	0	0	0	0	0	0



**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	5	201	0	0	0	0	0	0	0	0	0	0
	4	200	0	0	0	0	0	0	0	0	0	0
	3	199	0	0	0	0	0	0	0	0	0	0
	2	198	0	0	0	0	0	0	0	0	0	0
	1	197										
Mahoning EB-1	1	209	481	35	5	35	0	0	4	35	2	35
	2	210	481	35	5	35	0	0	4	35	2	35
	3	211	481	35	5	35	0	0	4	35	2	35
	4	212	481	35	5	35	0	0	4	35	2	35
	5	213	481	35	5	35	0	0	4	35	2	35
	6	214	481	35	5	35	0	0	4	35	2	35
	7	215	481	35	5	35	0	0	4	35	2	35
	8	216	481	35	5	35	0	0	4	35	2	35
	9	217	481	35	5	35	0	0	4	35	2	35
	10	218	481	35	5	35	0	0	4	35	2	35
	11	219	481	35	5	35	0	0	4	35	2	35
	12	220										
Mahoning EB-2	1	221	481	35	5	35	0	0	4	35	2	35
	2	222	481	35	5	35	0	0	4	35	2	35
	3	223	481	35	5	35	0	0	4	35	2	35
	4	224	481	35	5	35	0	0	4	35	2	35
	5	225	481	35	5	35	0	0	4	35	2	35
	6	226	481	35	5	35	0	0	4	35	2	35
	7	227	481	35	5	35	0	0	4	35	2	35
	8	228	481	35	5	35	0	0	4	35	2	35
	9	229	481	35	5	35	0	0	4	35	2	35
	10	230	481	35	5	35	0	0	4	35	2	35
	11	231	481	35	5	35	0	0	4	35	2	35
	12	232										
Mahoning WB-center	1	233	0	0	0	0	0	0	0	0	0	0
	2	234	0	0	0	0	0	0	0	0	0	0
	3	235	0	0	0	0	0	0	0	0	0	0
	4	236	0	0	0	0	0	0	0	0	0	0
	5	237	0	0	0	0	0	0	0	0	0	0
	6	238	0	0	0	0	0	0	0	0	0	0
	7	239	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	8	240	0	0	0	0	0	0	0	0	0	0
	9	241	0	0	0	0	0	0	0	0	0	0
	10	242	0	0	0	0	0	0	0	0	0	0
	11	243	0	0	0	0	0	0	0	0	0	0
	12	244										
Mahoning WB-2	12	256	444	35	5	35	7	35	2	35	2	35
	11	255	444	35	5	35	7	35	2	35	2	35
	10	254	444	35	5	35	7	35	2	35	2	35
	9	253	444	35	5	35	7	35	2	35	2	35
	8	252	444	35	5	35	7	35	2	35	2	35
	7	251	444	35	5	35	7	35	2	35	2	35
	6	250	444	35	5	35	7	35	2	35	2	35
	5	249	444	35	5	35	7	35	2	35	2	35
	4	248	444	35	5	35	7	35	2	35	2	35
	3	247	444	35	5	35	7	35	2	35	2	35
	2	246	444	35	5	35	7	35	2	35	2	35
	1	245										
Mahoning WB-1	12	268	444	35	5	35	7	35	2	35	2	35
	11	267	444	35	5	35	7	35	2	35	2	35
	10	266	444	35	5	35	7	35	2	35	2	35
	9	265	444	35	5	35	7	35	2	35	2	35
	8	264	444	35	5	35	7	35	2	35	2	35
	7	263	444	35	5	35	7	35	2	35	2	35
	6	262	444	35	5	35	7	35	2	35	2	35
	5	261	444	35	5	35	7	35	2	35	2	35
	4	260	444	35	5	35	7	35	2	35	2	35
	3	259	444	35	5	35	7	35	2	35	2	35
	2	258	444	35	5	35	7	35	2	35	2	35
	1	257										
Ramp: Mahoning to SR 11S	22	290	310	65	0	0	4	65	0	0	0	0
	21	289	310	65	0	0	4	65	0	0	0	0
	20	288	310	65	0	0	4	65	0	0	0	0
	19	287	310	65	0	0	4	65	0	0	0	0
	18	286	310	65	0	0	4	65	0	0	0	0
	17	285	310	65	0	0	4	65	0	0	0	0
	16	284	310	65	0	0	4	65	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	15	283	310	65	0	0	4	65	0	0	0	0
	14	282	310	65	0	0	4	65	0	0	0	0
	13	281	310	65	0	0	4	65	0	0	0	0
	12	280	310	65	0	0	4	65	0	0	0	0
	11	279	310	65	0	0	4	65	0	0	0	0
	10	278	310	65	0	0	4	65	0	0	0	0
	9	277	310	65	0	0	4	65	0	0	0	0
	8	276	310	65	0	0	4	65	0	0	0	0
	7	275	310	65	0	0	4	65	0	0	0	0
	6	274	310	65	0	0	4	65	0	0	0	0
	5	273	310	65	0	0	4	65	0	0	0	0
	4	272	310	65	0	0	4	65	0	0	0	0
	3	271	310	65	0	0	4	65	0	0	0	0
	2	270	310	65	0	0	4	65	0	0	0	0
	1	269										
Ramp: SR 11N to Mahoning	1	291	268	65	7	65	7	65	0	0	0	0
	2	292	268	65	7	65	7	65	0	0	0	0
	3	293	268	65	7	65	7	65	0	0	0	0
	4	294	268	65	7	65	7	65	0	0	0	0
	5	295	268	65	7	65	7	65	0	0	0	0
	6	296	268	65	7	65	7	65	0	0	0	0
	7	297	268	65	7	65	7	65	0	0	0	0
	8	298	268	60	7	60	7	60	0	0	0	0
	9	299	268	50	7	50	7	50	0	0	0	0
	10	300	268	40	7	40	7	40	0	0	0	0
	11	301	268	30	7	30	7	30	0	0	0	0
	12	302	268	20	7	20	7	20	0	0	0	0
	13	303										
Oakcrest WB	6	309	0	0	0	0	0	0	0	0	0	0
	5	308	0	0	0	0	0	0	0	0	0	0
	4	307	0	0	0	0	0	0	0	0	0	0
	3	306	0	0	0	0	0	0	0	0	0	0
	2	305	0	0	0	0	0	0	0	0	0	0
	1	304										
Oakcrest EB	1	310	0	0	0	0	0	0	0	0	0	0
	2	311	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes****MAH SR11/2386**

	3	312	0	0	0	0	0	0	0	0	0	0
	4	313	0	0	0	0	0	0	0	0	0	0
	5	314	0	0	0	0	0	0	0	0	0	0
	6	315										

**INPUT: RECEIVERS**

**MAH SR11/2386**

ASC Group, Inc. mas							5 April 2018 TNM 2.5				
<b>INPUT: RECEIVERS</b>											
<b>PROJECT/CONTRACT:</b>		<b>MAH SR11/2386</b>									
<b>RUN:</b>		<b>validation-M1</b>									
<b>Receiver</b>											
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	
M1	1	0	2,449,878.2	526,486.1	1,131.79	5.00	0.00	66	10.0	8.0	Y
M2	2	0	2,450,546.8	525,906.6	1,133.69	5.00	0.00	66	10.0	8.0	
M3	3	0	2,450,131.8	525,301.2	1,142.29	5.00	0.00	66	10.0	8.0	
M4	4	0	2,450,550.5	523,479.6	1,142.65	5.00	0.00	66	10.0	8.0	
M6	5	0	2,450,506.0	520,458.4	1,145.31	5.00	0.00	66	10.0	8.0	
M7	6	0	2,450,488.2	517,532.1	1,142.26	5.00	0.00	66	10.0	8.0	
M8	7	0	2,450,594.8	515,388.0	1,155.61	5.00	0.00	66	10.0	8.0	
M9	8	0	2,451,175.2	513,420.2	1,138.12	5.00	0.00	66	10.0	8.0	

**RESULTS: SOUND LEVELS**

**MAH SR11/2386**

ASC Group, Inc. mas									5 April 2018 TNM 2.5 Calculated with TNM 2.5				
<b>RESULTS: SOUND LEVELS</b>													
<b>PROJECT/CONTRACT:</b>		<b>MAH SR11/2386</b>											
<b>RUN:</b>		<b>validation-M1</b>											
<b>BARRIER DESIGN:</b>		<b>INPUT HEIGHTS</b>											
<b>ATMOSPHERICS:</b>		<b>68 deg F, 50% RH</b>											
		<b>Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.</b>											

Receiver													
Name	No.	#DUs	Existing	No Barrier	Increase over existing			With Barrier					
			LAeq1h	LAeq1h	Crit'n	Calculated	Crit'n	Type	Calculated	Noise Reduction	Goal	Calculated	
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated	minus
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB	Goal
M1	1	0	0.0	59.3	66	59.3	10	----	59.3	0.0	8	-8.0	
M2	2	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0	
M3	3	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0	
M4	4	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0	
M6	5	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0	
M7	6	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0	
M8	7	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0	
M9	8	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0	
<b>Dwelling Units</b>		<b># DUs</b>	<b>Noise Reduction</b>										
			<b>Min</b>	<b>Avg</b>	<b>Max</b>								
			<b>dB</b>	<b>dB</b>	<b>dB</b>								
All Selected		0	0.0	0.0	0.0								
All Impacted		0	0.0	0.0	0.0								
All that meet NR Goal		0	0.0	0.0	0.0								

ASC Group, Inc. mas					5 April 2018 TNM 2.5					
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INPUT: ROADWAYS  
 PROJECT/CONTRACT: MAH SR11/2386  
 RUN: validation-M2

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

Roadway Name	Width	Points Name	No.	Coordinates (pavement)			Flow Control			Segment	
				X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
SR11 NB-1	12.0	1	1	2,451,374.8	511,900.4	1,142.60				Average	
		2	2	2,451,213.2	512,465.7	1,141.40				Average	
		3	3	2,451,045.8	513,066.4	1,142.80				Average	
		4	4	2,450,860.5	513,721.0	1,144.80				Average	
		5	5	2,450,744.2	514,149.3	1,146.30				Average	
		6	6	2,450,682.2	514,360.0	1,147.00				Average	
		7	7	2,450,634.2	514,550.1	1,147.00				Average	
		8	8	2,450,587.5	514,766.0	1,148.30				Average	
		9	9	2,450,547.5	514,947.7	1,148.60				Average	
		10	10	2,450,504.8	515,146.8	1,149.40				Average	
		11	11	2,450,455.8	515,432.0	1,150.40				Average	
		12	12	2,450,419.2	515,670.0	1,151.10				Average	
		13	13	2,450,366.5	516,083.0	1,152.20				Average	
		14	14	2,450,332.5	516,421.3	1,153.20				Average	
		15	15	2,450,316.5	516,682.7	1,154.10				Average	
		16	16	2,450,300.2	516,977.8	1,154.90				Average	
		17	17	2,450,293.5	517,281.5	1,155.70				Average	
		18	18	2,450,294.2	517,597.8	1,156.70				Average	
		19	19	2,450,308.2	518,208.7	1,157.90				Average	
		20	20	2,450,321.2	518,851.5	1,156.50				Average	
		21	21	2,450,339.0	519,672.9	1,154.10				Average	
		22	22	2,450,358.5	520,451.0	1,151.40				Average	
		23	23	2,450,371.5	521,077.9	1,149.70				Average	
		24	24	2,450,394.8	522,071.0	1,146.80				Average	
		25	25	2,450,410.2	522,781.8	1,144.80				Average	

INPUT: ROADWAYS

MAH SR11/2386

		26	26	2,450,421.0	523,153.8	1,143.60				Average	
		27	27	2,450,433.5	523,725.3	1,142.00				Average	
		28	28	2,450,442.5	524,118.8	1,140.40				Average	
		29	29	2,450,450.5	524,462.4	1,139.80				Average	
		30	30	2,450,458.0	524,726.5	1,138.90				Average	
		31	31	2,450,461.0	524,942.6	1,138.50				Average	
		32	32	2,450,462.8	525,119.3	1,138.10				Average	
		33	33	2,450,457.0	525,278.1	1,137.30				Average	
		34	34	2,450,453.0	525,427.2	1,137.10				Average	
		35	35	2,450,441.2	525,580.1	1,136.30				Average	
		36	36	2,450,425.5	525,732.6	1,134.50				Average	
		37	37	2,450,399.0	525,926.2	1,131.90				Average	
		38	38	2,450,370.8	526,102.7	1,129.00				Average	
		39	39	2,450,340.0	526,263.2	1,125.70				Average	
		40	40	2,450,290.0	526,482.5	1,120.20				Average	
		41	41	2,450,224.0	526,734.5	1,113.20				Average	
		42	42	2,450,134.5	527,011.3	1,108.00				Average	
		43	43	2,450,046.0	527,245.0	1,106.40					
SR11 NB-2	12.0	1	44	2,451,366.2	511,895.0	1,142.50				Average	
		2	45	2,451,203.0	512,462.0	1,140.90				Average	
		3	46	2,451,035.5	513,062.7	1,142.60				Average	
		4	47	2,450,850.2	513,717.3	1,144.50				Average	
		5	48	2,450,734.0	514,145.3	1,146.30				Average	
		6	49	2,450,672.2	514,356.5	1,147.00				Average	
		7	50	2,450,624.0	514,546.4	1,147.00				Average	
		8	51	2,450,577.2	514,762.3	1,147.50				Average	
		9	52	2,450,537.2	514,944.0	1,148.60				Average	
		10	53	2,450,494.5	515,143.2	1,149.40				Average	
		11	54	2,450,445.5	515,429.4	1,150.40				Average	
		12	55	2,450,408.0	515,668.5	1,149.90				Average	
		13	56	2,450,356.0	516,081.1	1,152.20				Average	
		14	57	2,450,322.5	516,419.1	1,153.20				Average	
		15	58	2,450,306.0	516,682.7	1,153.40				Average	
		16	59	2,450,290.0	516,974.1	1,154.90				Average	
		17	60	2,450,282.2	517,280.9	1,155.70				Average	
		18	61	2,450,282.8	517,597.1	1,156.30				Average	
		19	62	2,450,297.5	518,208.7	1,157.60				Average	
		20	63	2,450,309.5	518,851.9	1,155.90				Average	
		21	64	2,450,328.0	519,671.8	1,154.10				Average	



INPUT: ROADWAYS

MAH SR11/2386

		22	65	2,450,348.2	520,447.3	1,151.70				Average	
		23	66	2,450,361.0	521,077.3	1,149.70				Average	
		24	67	2,450,384.5	522,070.6	1,146.80				Average	
		25	68	2,450,400.0	522,778.2	1,144.80				Average	
		26	69	2,450,410.0	523,153.8	1,143.60				Average	
		27	70	2,450,423.2	523,721.6	1,142.10				Average	
		28	71	2,450,431.5	524,119.3	1,140.40				Average	
		29	72	2,450,440.2	524,462.6	1,139.80				Average	
		30	73	2,450,447.8	524,726.6	1,138.50				Average	
		31	74	2,450,450.5	524,942.4	1,137.10				Average	
		32	75	2,450,452.5	525,119.3	1,138.10				Average	
		33	76	2,450,447.0	525,276.8	1,137.30				Average	
		34	77	2,450,442.2	525,426.6	1,137.10				Average	
		35	78	2,450,431.0	525,580.3	1,135.20				Average	
		36	79	2,450,415.5	525,732.8	1,134.50				Average	
		37	80	2,450,388.8	525,926.3	1,131.90				Average	
		38	81	2,450,360.5	526,102.8	1,129.00				Average	
		39	82	2,450,330.0	526,263.4	1,125.70				Average	
		40	83	2,450,279.2	526,479.7	1,120.20				Average	
		41	84	2,450,213.5	526,731.3	1,113.20				Average	
		42	85	2,450,124.5	527,007.4	1,107.00				Average	
		43	86	2,450,035.5	527,241.1	1,106.40					
SR11 SB-2	12.0	1	87	2,451,271.2	511,869.0	1,142.70				Average	
		2	88	2,451,109.8	512,434.4	1,141.40				Average	
		3	89	2,450,942.2	513,035.0	1,142.70				Average	
		4	90	2,450,758.8	513,689.7	1,144.70				Average	
		5	91	2,450,638.0	514,117.7	1,146.30				Average	
		6	92	2,450,579.2	514,330.9	1,146.90				Average	
		7	93	2,450,533.0	514,518.7	1,147.60				Average	
		8	94	2,450,480.5	514,738.8	1,148.20				Average	
		9	95	2,450,442.5	514,916.6	1,148.80				Average	
		10	96	2,450,401.2	515,120.2	1,149.40				Average	
		11	97	2,450,354.8	515,399.3	1,150.20				Average	
		12	98	2,450,314.0	515,661.3	1,150.90				Average	
		13	99	2,450,261.5	516,051.8	1,152.40				Average	
		14	100	2,450,229.0	516,389.9	1,153.20				Average	
		15	101	2,450,209.5	516,675.9	1,153.90				Average	
		16	102	2,450,193.0	516,960.2	1,155.00				Average	
		17	103	2,450,184.8	517,280.8	1,155.90				Average	

INPUT: ROADWAYS

MAH SR11/2386

		18	104	2,450,186.5	517,595.6	1,156.70				Average	
		19	105	2,450,201.0	518,205.2	1,158.00				Average	
		20	106	2,450,216.0	518,859.0	1,156.30				Average	
		21	107	2,450,234.0	519,666.1	1,154.10				Average	
		22	108	2,450,252.0	520,448.8	1,151.80				Average	
		23	109	2,450,265.0	521,096.4	1,149.70				Average	
		24	110	2,450,288.0	522,068.9	1,146.90				Average	
		25	111	2,450,303.0	522,776.2	1,144.80				Average	
		26	112	2,450,312.8	523,160.7	1,143.70				Average	
		27	113	2,450,326.0	523,720.5	1,142.00				Average	
		28	114	2,450,334.8	524,116.8	1,140.70				Average	
		29	115	2,450,343.0	524,456.8	1,139.90				Average	
		30	116	2,450,350.5	524,720.9	1,139.00				Average	
		31	117	2,450,355.5	524,936.5	1,138.00				Average	
		32	118	2,450,355.2	525,120.6	1,137.20				Average	
		33	119	2,450,353.8	525,270.8	1,136.80				Average	
		34	120	2,450,346.0	525,422.5	1,136.30				Average	
		35	121	2,450,334.8	525,572.9	1,134.90				Average	
		36	122	2,450,319.5	525,726.5	1,133.70				Average	
		37	123	2,450,293.2	525,921.1	1,131.00				Average	
		38	124	2,450,264.5	526,097.6	1,128.10				Average	
		39	125	2,450,232.5	526,257.6	1,124.60				Average	
		40	126	2,450,182.5	526,476.7	1,119.30				Average	
		41	127	2,450,114.8	526,725.6	1,111.80				Average	
		42	128	2,450,025.2	527,001.1	1,106.50				Average	
		43	129	2,449,943.2	527,213.9	1,105.90					
SR11 SB-1	12.0	43	172	2,449,934.0	527,209.2	1,105.90				Average	
		42	171	2,450,015.5	526,997.0	1,106.50				Average	
		41	170	2,450,105.5	526,722.5	1,111.20				Average	
		40	169	2,450,172.8	526,474.0	1,119.30				Average	
		39	168	2,450,222.5	526,257.9	1,124.60				Average	
		38	167	2,450,254.2	526,097.9	1,128.10				Average	
		37	166	2,450,283.0	525,919.0	1,131.00				Average	
		36	165	2,450,309.5	525,724.5	1,133.70				Average	
		35	164	2,450,323.5	525,572.2	1,134.90				Average	
		34	163	2,450,336.0	525,421.5	1,135.70				Average	
		33	162	2,450,343.5	525,270.8	1,136.80				Average	
		32	161	2,450,345.0	525,120.8	1,136.60				Average	
		31	160	2,450,345.0	524,936.7	1,137.50				Average	

INPUT: ROADWAYS

MAH SR11/2386

		30	159	2,450,340.2	524,721.1	1,139.00				Average	
		29	158	2,450,332.8	524,457.1	1,139.60				Average	
		28	157	2,450,324.2	524,116.3	1,140.70				Average	
		27	156	2,450,315.8	523,717.7	1,141.70				Average	
		26	155	2,450,302.5	523,157.9	1,143.50				Average	
		25	154	2,450,293.0	522,773.3	1,144.90				Average	
		24	153	2,450,278.0	522,066.1	1,146.00				Average	
		23	152	2,450,254.8	521,093.5	1,149.70				Average	
		22	151	2,450,242.0	520,445.9	1,151.80				Average	
		21	150	2,450,223.0	519,666.3	1,153.40				Average	
		20	149	2,450,204.0	518,859.9	1,156.40				Average	
		19	148	2,450,189.5	518,205.5	1,158.00				Average	
		18	147	2,450,174.2	517,595.8	1,156.70				Average	
		17	146	2,450,174.2	517,280.5	1,155.90				Average	
		16	145	2,450,182.8	516,957.4	1,155.00				Average	
		15	144	2,450,198.0	516,675.2	1,154.00				Average	
		14	143	2,450,218.0	516,388.5	1,153.20				Average	
		13	142	2,450,250.5	516,050.2	1,152.40				Average	
		12	141	2,450,303.2	515,660.5	1,150.70				Average	
		11	140	2,450,344.5	515,396.4	1,150.20				Average	
		10	139	2,450,391.2	515,117.3	1,148.40				Average	
		9	138	2,450,432.2	514,913.7	1,148.50				Average	
		8	137	2,450,470.5	514,736.0	1,147.80				Average	
		7	136	2,450,522.8	514,515.9	1,147.60				Average	
		6	135	2,450,569.0	514,328.1	1,146.90				Average	
		5	134	2,450,628.0	514,114.9	1,146.30				Average	
		4	133	2,450,748.5	513,686.8	1,144.60				Average	
		3	132	2,450,932.0	513,032.2	1,142.70				Average	
		2	131	2,451,099.5	512,431.5	1,141.00				Average	
		1	130	2,451,262.8	511,864.3	1,142.70					
Kirk EB	12.0	1	173	2,449,260.5	515,679.3	1,164.30				Average	
		2	174	2,449,776.0	515,689.2	1,158.80				Average	
		3	175	2,450,182.5	515,695.2	1,168.60				Average	Y
		4	176	2,450,527.2	515,703.6	1,168.60				Average	
		5	177	2,450,935.8	515,716.3	1,163.50				Average	
		6	178	2,451,437.5	515,731.8	1,176.40					
Kirk WB	12.0	6	184	2,451,437.5	515,743.8	1,176.40				Average	
		5	183	2,450,936.0	515,728.3	1,163.50				Average	
		4	182	2,450,527.5	515,715.6	1,168.60				Average	Y

INPUT: ROADWAYS

MAH SR11/2386

		3	181	2,450,182.5	515,707.2	1,168.60				Average	
		2	180	2,449,776.2	515,701.2	1,158.80				Average	
		1	179	2,449,260.5	515,691.3	1,164.30					
New EB	12.0	1	185	2,449,044.0	521,176.3	1,149.00				Average	
		2	186	2,449,744.8	521,189.4	1,152.90				Average	
		3	187	2,449,882.0	521,191.5	1,157.40				Average	
		4	188	2,449,970.2	521,193.1	1,161.30				Average	
		5	189	2,450,047.5	521,186.9	1,163.90				Average	
		6	190	2,450,149.0	521,169.1	1,166.80				Average	Y
		7	191	2,450,480.8	521,082.0	1,167.50				Average	
		8	192	2,450,564.5	521,064.3	1,165.80				Average	
		9	193	2,450,649.0	521,056.2	1,163.20				Average	
		10	194	2,450,731.5	521,053.5	1,161.00				Average	
		11	195	2,450,871.8	521,053.8	1,158.00				Average	
		12	196	2,451,472.5	521,058.8	1,156.10					
New WB	12.0	12	208	2,451,472.5	521,070.8	1,156.10				Average	
		11	207	2,450,872.0	521,065.8	1,158.00				Average	
		10	206	2,450,731.5	521,065.5	1,159.20				Average	
		9	205	2,450,649.2	521,068.2	1,162.80				Average	
		8	204	2,450,564.5	521,076.3	1,165.80				Average	
		7	203	2,450,480.8	521,094.0	1,166.00				Average	Y
		6	202	2,450,149.0	521,181.1	1,166.80				Average	
		5	201	2,450,047.5	521,198.9	1,163.90				Average	
		4	200	2,449,970.5	521,205.1	1,161.30				Average	
		3	199	2,449,882.0	521,203.5	1,157.40				Average	
		2	198	2,449,745.0	521,201.4	1,152.90				Average	
		1	197	2,449,044.2	521,188.3	1,149.00					
Mahoning EB-1	12.0	1	209	2,448,759.0	526,833.2	1,121.10				Average	
		2	210	2,449,181.2	526,840.6	1,112.50				Average	
		3	211	2,449,486.8	526,846.1	1,114.60				Average	
		4	212	2,449,592.8	526,847.5	1,117.20				Average	
		5	213	2,449,796.5	526,851.0	1,121.50				Average	
		6	214	2,449,944.8	526,859.2	1,125.10				Average	Y
		7	215	2,450,293.0	526,910.7	1,128.50				Average	
		8	216	2,450,383.5	526,927.8	1,128.70				Average	
		9	217	2,450,454.5	526,938.8	1,128.30				Average	
		10	218	2,451,052.0	527,044.7	1,139.30				Average	
		11	219	2,451,194.0	527,069.0	1,139.50				Average	
		12	220	2,451,634.8	527,143.6	1,132.30					

**INPUT: ROADWAYS**

**MAH SR11/2386**

Mahoning EB-2	12.0	1	221	2,448,759.0	526,845.2	1,121.10				Average	
		2	222	2,449,181.2	526,852.6	1,112.50				Average	
		3	223	2,449,486.8	526,858.1	1,114.60				Average	
		4	224	2,449,592.8	526,859.5	1,117.20				Average	
		5	225	2,449,796.5	526,863.0	1,121.50				Average	
		6	226	2,449,942.0	526,870.7	1,125.10				Average	Y
		7	227	2,450,288.8	526,922.6	1,128.50				Average	
		8	228	2,450,381.5	526,940.2	1,128.30				Average	
		9	229	2,450,450.5	526,950.9	1,128.30				Average	
		10	230	2,451,049.8	527,054.7	1,139.30				Average	
		11	231	2,451,192.0	527,079.8	1,139.60				Average	
		12	232	2,451,631.8	527,155.7	1,132.40					
Mahoning WB-center	12.0	1	233	2,448,759.2	526,855.0	1,121.10				Average	
		2	234	2,449,181.5	526,862.4	1,112.50				Average	
		3	235	2,449,487.0	526,867.9	1,114.60				Average	
		4	236	2,449,593.0	526,869.3	1,117.20				Average	
		5	237	2,449,795.5	526,873.9	1,121.50				Average	
		6	238	2,449,938.8	526,882.0	1,125.10				Average	Y
		7	239	2,450,284.0	526,935.7	1,128.20				Average	
		8	240	2,450,382.0	526,952.8	1,128.30				Average	
		9	241	2,450,447.0	526,962.4	1,128.30				Average	
		10	242	2,451,048.2	527,065.2	1,139.30				Average	
		11	243	2,451,189.5	527,089.6	1,139.60				Average	
		12	244	2,451,629.5	527,165.9	1,132.70					
Mahoning WB-2	12.0	12	256	2,451,627.5	527,174.6	1,132.70				Average	
		11	255	2,451,187.5	527,098.5	1,139.60				Average	
		10	254	2,451,048.2	527,073.9	1,139.30				Average	
		9	253	2,450,444.8	526,972.6	1,128.30				Average	
		8	252	2,450,379.0	526,965.6	1,128.70				Average	
		7	251	2,450,279.0	526,947.2	1,128.20				Average	Y
		6	250	2,449,935.2	526,894.7	1,123.60				Average	
		5	249	2,449,791.5	526,884.8	1,120.60				Average	
		4	248	2,449,593.5	526,879.2	1,117.10				Average	
		3	247	2,449,487.5	526,877.7	1,114.50				Average	
		2	246	2,449,182.0	526,872.2	1,112.60				Average	
		1	245	2,448,759.8	526,864.8	1,121.10					
Mahoning WB-1	12.0	12	268	2,451,625.2	527,184.8	1,132.70				Average	
		11	267	2,451,184.5	527,110.5	1,139.60				Average	
		10	266	2,451,046.0	527,085.6	1,139.30				Average	

INPUT: ROADWAYS

MAH SR11/2386

		9	265	2,450,440.5	526,985.9	1,128.30				Average	
		8	264	2,450,375.5	526,978.0	1,128.70				Average	
		7	263	2,450,274.5	526,960.4	1,128.20				Average	Y
		6	262	2,449,931.5	526,906.1	1,123.60				Average	
		5	261	2,449,791.5	526,896.8	1,120.60				Average	
		4	260	2,449,593.2	526,891.2	1,117.10				Average	
		3	259	2,449,487.5	526,889.7	1,114.50				Average	
		2	258	2,449,182.0	526,884.2	1,112.60				Average	
		1	257	2,448,759.8	526,876.8	1,121.10					
Ramp: Mahoning to SR 11S	12.0	22	290	2,449,830.5	526,832.2	1,123.60	Onramp	15.00	100	Average	
		21	289	2,449,891.5	526,734.7	1,126.10				Average	
		20	288	2,449,949.0	526,636.5	1,127.80				Average	
		19	287	2,450,029.5	526,501.5	1,128.20				Average	
		18	286	2,450,073.5	526,419.2	1,128.50				Average	
		17	285	2,450,112.0	526,327.8	1,127.30				Average	
		16	284	2,450,142.0	526,248.3	1,125.50				Average	
		15	283	2,450,175.8	526,143.3	1,127.30				Average	
		14	282	2,450,205.8	526,039.5	1,128.10				Average	
		13	281	2,450,233.0	525,932.0	1,129.50				Average	
		12	280	2,450,257.0	525,827.2	1,131.20				Average	
		11	279	2,450,277.2	525,701.7	1,132.20				Average	
		10	278	2,450,292.2	525,595.9	1,134.50				Average	
		9	277	2,450,303.2	525,497.7	1,135.00				Average	
		8	276	2,450,309.5	525,417.1	1,135.00				Average	
		7	275	2,450,320.2	525,267.3	1,136.30				Average	
		6	274	2,450,326.8	525,124.6	1,136.60				Average	
		5	273	2,450,328.0	525,027.6	1,137.00				Average	
		4	272	2,450,330.0	524,935.9	1,137.50				Average	
		3	271	2,450,329.2	524,720.5	1,139.00				Average	
		2	270	2,450,327.8	524,457.3	1,139.60				Average	
		1	269	2,450,322.8	524,116.3	1,140.70					
Ramp: SR 11N to Mahoning	12.0	1	291	2,450,461.0	524,726.6	1,138.90				Average	
		2	292	2,450,470.0	524,786.7	1,138.80				Average	
		3	293	2,450,472.5	524,942.3	1,138.50				Average	
		4	294	2,450,477.2	525,119.1	1,138.70				Average	
		5	295	2,450,481.8	525,277.6	1,138.30				Average	
		6	296	2,450,484.8	525,426.3	1,137.90				Average	
		7	297	2,450,487.0	525,576.0	1,136.70				Average	
		8	298	2,450,488.5	525,676.4	1,136.00				Average	

**INPUT: ROADWAYS**

**MAH SR11/2386**

		9	299	2,450,485.0	525,772.0	1,136.00				Average	
		10	300	2,450,482.0	525,906.4	1,137.60				Average	
		11	301	2,450,473.5	526,083.0	1,139.30				Average	
		12	302	2,450,456.5	526,452.9	1,139.70				Average	
		13	303	2,450,440.8	526,903.0	1,128.50					
Oakcrest WB	12.0	6	309	2,451,311.2	523,235.6	1,147.10				Average	
		5	308	2,450,966.0	523,236.4	1,145.10				Average	
		4	307	2,450,530.5	523,230.8	1,159.10				Average	Y
		3	306	2,450,196.0	523,223.2	1,159.10				Average	
		2	305	2,449,784.2	523,217.4	1,151.00				Average	
		1	304	2,449,408.0	523,211.2	1,158.50					
Oakcrest EB	12.0	1	310	2,449,408.0	523,199.2	1,158.50				Average	
		2	311	2,449,784.2	523,205.4	1,151.00				Average	
		3	312	2,450,196.0	523,211.2	1,159.10				Average	Y
		4	313	2,450,530.5	523,218.8	1,159.10				Average	
		5	314	2,450,966.0	523,224.4	1,145.00				Average	
		6	315	2,451,311.2	523,223.6	1,147.00					

INPUT: TRAFFIC FOR LAeq1h Volumes

MAH SR11/2386

ASC Group, Inc. mas		5 April 2018 TNM 2.5										
INPUT: TRAFFIC FOR LAeq1h Volumes												
PROJECT/CONTRACT:		MAH SR11/2386										
RUN:		validation-M2										
Roadway	Points											
Name	Name	No.	Segment		MTrucks		HTrucks		Buses		Motorcycles	
			Autos		V	S	V	S	V	S	V	S
			V	S	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
SR11 NB-1	1	1	238	65	18	65	50	65	0	0	0	0
	2	2	238	65	18	65	50	65	0	0	0	0
	3	3	238	65	18	65	50	65	0	0	0	0
	4	4	238	65	18	65	50	65	0	0	0	0
	5	5	238	65	18	65	50	65	0	0	0	0
	6	6	238	65	18	65	50	65	0	0	0	0
	7	7	238	65	18	65	50	65	0	0	0	0
	8	8	238	65	18	65	50	65	0	0	0	0
	9	9	238	65	18	65	50	65	0	0	0	0
	10	10	238	65	18	65	50	65	0	0	0	0
	11	11	238	65	18	65	50	65	0	0	0	0
	12	12	238	65	18	65	50	65	0	0	0	0
	13	13	238	65	18	65	50	65	0	0	0	0
	14	14	238	65	18	65	50	65	0	0	0	0
	15	15	238	65	18	65	50	65	0	0	0	0
	16	16	238	65	18	65	50	65	0	0	0	0
	17	17	238	65	18	65	50	65	0	0	0	0
	18	18	238	65	18	65	50	65	0	0	0	0
	19	19	238	65	18	65	50	65	0	0	0	0
	20	20	238	65	18	65	50	65	0	0	0	0
	21	21	238	65	18	65	50	65	0	0	0	0
	22	22	238	65	18	65	50	65	0	0	0	0
	23	23	238	65	18	65	50	65	0	0	0	0



**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	24	24	238	65	18	65	50	65	0	0	0	0
	25	25	238	65	18	65	50	65	0	0	0	0
	26	26	238	65	18	65	50	65	0	0	0	0
	27	27	238	65	18	65	50	65	0	0	0	0
	28	28	238	65	18	65	50	65	0	0	0	0
	29	29	238	65	18	65	50	65	0	0	0	0
	30	30	238	65	18	65	50	65	0	0	0	0
	31	31	238	65	18	65	50	65	0	0	0	0
	32	32	238	65	18	65	50	65	0	0	0	0
	33	33	238	65	18	65	50	65	0	0	0	0
	34	34	238	65	18	65	50	65	0	0	0	0
	35	35	238	65	18	65	50	65	0	0	0	0
	36	36	238	65	18	65	50	65	0	0	0	0
	37	37	238	65	18	65	50	65	0	0	0	0
	38	38	238	65	18	65	50	65	0	0	0	0
	39	39	238	65	18	65	50	65	0	0	0	0
	40	40	238	65	18	65	50	65	0	0	0	0
	41	41	238	65	18	65	50	65	0	0	0	0
	42	42	238	65	18	65	50	65	0	0	0	0
	43	43										
SR11 NB-2	1	44	238	65	18	65	50	65	0	0	0	0
	2	45	238	65	18	65	50	65	0	0	0	0
	3	46	238	65	18	65	50	65	0	0	0	0
	4	47	238	65	18	65	50	65	0	0	0	0
	5	48	238	65	18	65	50	65	0	0	0	0
	6	49	238	65	18	65	50	65	0	0	0	0
	7	50	238	65	18	65	50	65	0	0	0	0
	8	51	238	65	18	65	50	65	0	0	0	0
	9	52	238	65	18	65	50	65	0	0	0	0
	10	53	238	65	18	65	50	65	0	0	0	0
	11	54	238	65	18	65	50	65	0	0	0	0
	12	55	238	65	18	65	50	65	0	0	0	0
	13	56	238	65	18	65	50	65	0	0	0	0
	14	57	238	65	18	65	50	65	0	0	0	0
	15	58	238	65	18	65	50	65	0	0	0	0
	16	59	238	65	18	65	50	65	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	17	60	238	65	18	65	50	65	0	0	0	0
	18	61	238	65	18	65	50	65	0	0	0	0
	19	62	238	65	18	65	50	65	0	0	0	0
	20	63	238	65	18	65	50	65	0	0	0	0
	21	64	238	65	18	65	50	65	0	0	0	0
	22	65	238	65	18	65	50	65	0	0	0	0
	23	66	238	65	18	65	50	65	0	0	0	0
	24	67	238	65	18	65	50	65	0	0	0	0
	25	68	238	65	18	65	50	65	0	0	0	0
	26	69	238	65	18	65	50	65	0	0	0	0
	27	70	238	65	18	65	50	65	0	0	0	0
	28	71	238	65	18	65	50	65	0	0	0	0
	29	72	238	65	18	65	50	65	0	0	0	0
	30	73	238	65	18	65	50	65	0	0	0	0
	31	74	238	65	18	65	50	65	0	0	0	0
	32	75	238	65	18	0	50	65	0	0	0	0
	33	76	238	65	18	65	50	65	0	0	0	0
	34	77	238	65	18	65	50	65	0	0	0	0
	35	78	238	65	18	65	50	65	0	0	0	0
	36	79	238	65	18	65	50	65	0	0	0	0
	37	80	238	65	18	65	50	65	0	0	0	0
	38	81	238	65	18	65	50	65	0	0	0	0
	39	82	238	65	18	65	50	65	0	0	0	0
	40	83	238	65	18	65	50	65	0	0	0	0
	41	84	238	65	18	65	50	65	0	0	0	0
	42	85	238	65	18	65	50	65	0	0	0	0
	43	86										
SR11 SB-2	1	87	216	65	22	65	63	65	0	0	0	0
	2	88	216	65	22	65	63	65	0	0	0	0
	3	89	216	65	22	65	63	65	0	0	0	0
	4	90	216	65	22	65	63	65	0	0	0	0
	5	91	216	65	22	65	63	65	0	0	0	0
	6	92	216	65	22	65	63	65	0	0	0	0
	7	93	216	65	22	65	63	65	0	0	0	0
	8	94	216	65	22	65	63	65	0	0	0	0
	9	95	216	65	22	65	63	65	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	10	96	216	65	22	65	63	65	0	0	0	0
	11	97	216	65	22	65	63	65	0	0	0	0
	12	98	216	65	22	65	63	65	0	0	0	0
	13	99	216	65	22	65	63	65	0	0	0	0
	14	100	216	65	22	65	63	65	0	0	0	0
	15	101	216	65	22	65	63	65	0	0	0	0
	16	102	216	65	22	65	63	65	0	0	0	0
	17	103	216	65	22	65	63	65	0	0	0	0
	18	104	216	65	22	65	63	65	0	0	0	0
	19	105	216	65	22	65	63	65	0	0	0	0
	20	106	216	65	22	65	63	65	0	0	0	0
	21	107	216	65	22	65	63	65	0	0	0	0
	22	108	216	65	22	65	63	65	0	0	0	0
	23	109	216	65	22	65	63	65	0	0	0	0
	24	110	216	65	22	65	63	65	0	0	0	0
	25	111	216	65	22	65	63	65	0	0	0	0
	26	112	216	65	22	65	63	65	0	0	0	0
	27	113	216	65	22	65	63	65	0	0	0	0
	28	114	216	65	22	65	63	65	0	0	0	0
	29	115	216	65	22	65	63	65	0	0	0	0
	30	116	216	65	22	65	63	65	0	0	0	0
	31	117	216	65	22	65	63	65	0	0	0	0
	32	118	216	65	22	65	63	65	0	0	0	0
	33	119	216	65	22	65	63	65	0	0	0	0
	34	120	216	65	22	65	63	65	0	0	0	0
	35	121	216	65	22	65	63	65	0	0	0	0
	36	122	216	65	22	65	63	65	0	0	0	0
	37	123	216	65	22	65	63	65	0	0	0	0
	38	124	216	65	22	65	63	65	0	0	0	0
	39	125	216	65	22	65	63	65	0	0	0	0
	40	126	216	65	22	65	63	65	0	0	0	0
	41	127	216	65	22	65	63	65	0	0	0	0
	42	128	216	65	22	65	63	65	0	0	0	0
	43	129										
SR11 SB-1	43	172	216	65	22	65	63	65	0	0	0	0
	42	171	216	65	22	65	63	65	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	41	170	216	65	22	65	63	65	0	0	0	0
	40	169	216	65	22	65	63	65	0	0	0	0
	39	168	216	65	22	65	63	65	0	0	0	0
	38	167	216	65	22	65	63	65	0	0	0	0
	37	166	216	65	22	65	63	65	0	0	0	0
	36	165	216	65	22	65	63	65	0	0	0	0
	35	164	216	65	22	65	63	65	0	0	0	0
	34	163	216	65	22	65	63	65	0	0	0	0
	33	162	216	65	22	65	63	65	0	0	0	0
	32	161	216	65	22	65	63	65	0	0	0	0
	31	160	216	65	22	65	63	65	0	0	0	0
	30	159	216	65	22	65	63	65	0	0	0	0
	29	158	216	65	22	65	63	65	0	0	0	0
	28	157	216	65	22	65	63	65	0	0	0	0
	27	156	216	65	22	65	63	65	0	0	0	0
	26	155	216	65	22	65	63	65	0	0	0	0
	25	154	216	65	22	65	63	65	0	0	0	0
	24	153	216	65	22	65	63	65	0	0	0	0
	23	152	216	65	22	65	63	65	0	0	0	0
	22	151	216	65	22	65	63	65	0	0	0	0
	21	150	216	65	22	65	63	65	0	0	0	0
	20	149	216	65	22	65	63	65	0	0	0	0
	19	148	216	65	22	65	63	65	0	0	0	0
	18	147	216	65	22	65	63	65	0	0	0	0
	17	146	216	65	22	65	63	65	0	0	0	0
	16	145	216	65	22	65	63	65	0	0	0	0
	15	144	216	65	22	65	63	65	0	0	0	0
	14	143	216	65	22	65	63	65	0	0	0	0
	13	142	216	65	22	65	63	65	0	0	0	0
	12	141	216	65	22	65	63	65	0	0	0	0
	11	140	216	65	22	65	63	65	0	0	0	0
	10	139	216	65	22	65	63	65	0	0	0	0
	9	138	216	65	22	65	63	65	0	0	0	0
	8	137	216	65	22	65	63	65	0	0	0	0
	7	136	216	65	22	65	63	65	0	0	0	0
	6	135	216	65	22	65	63	65	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	5	134	216	65	22	65	63	65	0	0	0	0
	4	133	216	65	22	65	63	65	0	0	0	0
	3	132	216	65	22	65	63	65	0	0	0	0
	2	131	216	65	22	65	63	65	0	0	0	0
	1	130										
Kirk EB	1	173	0	0	0	0	0	0	0	0	0	0
	2	174	0	0	0	0	0	0	0	0	0	0
	3	175	0	0	0	0	0	0	0	0	0	0
	4	176	0	0	0	0	0	0	0	0	0	0
	5	177	0	0	0	0	0	0	0	0	0	0
	6	178										
Kirk WB	6	184	0	0	0	0	0	0	0	0	0	0
	5	183	0	0	0	0	0	0	0	0	0	0
	4	182	0	0	0	0	0	0	0	0	0	0
	3	181	0	0	0	0	0	0	0	0	0	0
	2	180	0	0	0	0	0	0	0	0	0	0
	1	179										
New EB	1	185	0	0	0	0	0	0	0	0	0	0
	2	186	0	0	0	0	0	0	0	0	0	0
	3	187	0	0	0	0	0	0	0	0	0	0
	4	188	0	0	0	0	0	0	0	0	0	0
	5	189	0	0	0	0	0	0	0	0	0	0
	6	190	0	0	0	0	0	0	0	0	0	0
	7	191	0	0	0	0	0	0	0	0	0	0
	8	192	0	0	0	0	0	0	0	0	0	0
	9	193	0	0	0	0	0	0	0	0	0	0
	10	194	0	0	0	0	0	0	0	0	0	0
	11	195	0	0	0	0	0	0	0	0	0	0
	12	196										
New WB	12	208	0	0	0	0	0	0	0	0	0	0
	11	207	0	0	0	0	0	0	0	0	0	0
	10	206	0	0	0	0	0	0	0	0	0	0
	9	205	0	0	0	0	0	0	0	0	0	0
	8	204	0	0	0	0	0	0	0	0	0	0
	7	203	0	0	0	0	0	0	0	0	0	0
	6	202	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	5	201	0	0	0	0	0	0	0	0	0	0
	4	200	0	0	0	0	0	0	0	0	0	0
	3	199	0	0	0	0	0	0	0	0	0	0
	2	198	0	0	0	0	0	0	0	0	0	0
	1	197										
Mahoning EB-1	1	209	0	0	0	0	0	0	0	0	0	0
	2	210	0	0	0	0	0	0	0	0	0	0
	3	211	0	0	0	0	0	0	0	0	0	0
	4	212	0	0	0	0	0	0	0	0	0	0
	5	213	0	0	0	0	0	0	0	0	0	0
	6	214	0	0	0	0	0	0	0	0	0	0
	7	215	0	0	0	0	0	0	0	0	0	0
	8	216	0	0	0	0	0	0	0	0	0	0
	9	217	0	0	0	0	0	0	0	0	0	0
	10	218	0	0	0	0	0	0	0	0	0	0
	11	219	0	0	0	0	0	0	0	0	0	0
	12	220										
Mahoning EB-2	1	221	0	0	0	0	0	0	0	0	0	0
	2	222	0	0	0	0	0	0	0	0	0	0
	3	223	0	0	0	0	0	0	0	0	0	0
	4	224	0	0	0	0	0	0	0	0	0	0
	5	225	0	0	0	0	0	0	0	0	0	0
	6	226	0	0	0	0	0	0	0	0	0	0
	7	227	0	0	0	0	0	0	0	0	0	0
	8	228	0	0	0	0	0	0	0	0	0	0
	9	229	0	0	0	0	0	0	0	0	0	0
	10	230	0	0	0	0	0	0	0	0	0	0
	11	231	0	0	0	0	0	0	0	0	0	0
	12	232										
Mahoning WB-center	1	233	0	0	0	0	0	0	0	0	0	0
	2	234	0	0	0	0	0	0	0	0	0	0
	3	235	0	0	0	0	0	0	0	0	0	0
	4	236	0	0	0	0	0	0	0	0	0	0
	5	237	0	0	0	0	0	0	0	0	0	0
	6	238	0	0	0	0	0	0	0	0	0	0
	7	239	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	8	240	0	0	0	0	0	0	0	0	0	0
	9	241	0	0	0	0	0	0	0	0	0	0
	10	242	0	0	0	0	0	0	0	0	0	0
	11	243	0	0	0	0	0	0	0	0	0	0
	12	244										
Mahoning WB-2	12	256	0	0	0	0	0	0	0	0	0	0
	11	255	0	0	0	0	0	0	0	0	0	0
	10	254	0	0	0	0	0	0	0	0	0	0
	9	253	0	0	0	0	0	0	0	0	0	0
	8	252	0	0	0	0	0	0	0	0	0	0
	7	251	0	0	0	0	0	0	0	0	0	0
	6	250	0	0	0	0	0	0	0	0	0	0
	5	249	0	0	0	0	0	0	0	0	0	0
	4	248	0	0	0	0	0	0	0	0	0	0
	3	247	0	0	0	0	0	0	0	0	0	0
	2	246	0	0	0	0	0	0	0	0	0	0
	1	245										
Mahoning WB-1	12	268	0	0	0	0	0	0	0	0	0	0
	11	267	0	0	0	0	0	0	0	0	0	0
	10	266	0	0	0	0	0	0	0	0	0	0
	9	265	0	0	0	0	0	0	0	0	0	0
	8	264	0	0	0	0	0	0	0	0	0	0
	7	263	0	0	0	0	0	0	0	0	0	0
	6	262	0	0	0	0	0	0	0	0	0	0
	5	261	0	0	0	0	0	0	0	0	0	0
	4	260	0	0	0	0	0	0	0	0	0	0
	3	259	0	0	0	0	0	0	0	0	0	0
	2	258	0	0	0	0	0	0	0	0	0	0
	1	257										
Ramp: Mahoning to SR 11S	22	290	206	65	12	65	12	65	0	0	4	65
	21	289	206	65	12	65	12	65	0	0	4	65
	20	288	206	65	12	65	12	65	0	0	4	65
	19	287	206	65	12	65	12	65	0	0	4	65
	18	286	206	65	12	65	12	65	0	0	4	65
	17	285	206	65	12	65	12	65	0	0	4	65
	16	284	206	65	12	65	12	65	0	0	4	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	15	283	206	65	12	65	12	65	0	0	4	65
	14	282	206	65	12	65	12	65	0	0	4	65
	13	281	206	65	12	65	12	65	0	0	4	65
	12	280	206	65	12	65	12	65	0	0	4	65
	11	279	206	65	12	65	12	65	0	0	4	65
	10	278	206	65	12	65	12	65	0	0	4	65
	9	277	206	65	12	65	12	65	0	0	4	65
	8	276	206	65	12	65	12	65	0	0	4	65
	7	275	206	65	12	65	12	65	0	0	4	65
	6	274	206	65	12	65	12	65	0	0	4	65
	5	273	206	65	12	65	12	65	0	0	4	65
	4	272	206	65	12	65	12	65	0	0	4	65
	3	271	206	65	12	65	12	65	0	0	4	65
	2	270	206	65	12	65	12	65	0	0	4	65
	1	269										
Ramp: SR 11N to Mahoning	1	291	163	65	0	0	20	65	0	0	0	0
	2	292	163	65	0	0	20	65	0	0	0	0
	3	293	163	65	0	0	20	65	0	0	0	0
	4	294	163	65	0	0	20	65	0	0	0	0
	5	295	163	65	0	0	20	65	0	0	0	0
	6	296	163	65	0	0	20	65	0	0	0	0
	7	297	163	65	0	0	20	65	0	0	0	0
	8	298	163	60	0	0	20	60	0	0	0	0
	9	299	163	50	0	0	20	50	0	0	0	0
	10	300	163	40	0	0	20	40	0	0	0	0
	11	301	163	30	0	0	20	30	0	0	0	0
	12	302	163	20	0	0	20	20	0	0	0	0
	13	303										
Oakcrest WB	6	309	0	0	0	0	0	0	0	0	0	0
	5	308	0	0	0	0	0	0	0	0	0	0
	4	307	0	0	0	0	0	0	0	0	0	0
	3	306	0	0	0	0	0	0	0	0	0	0
	2	305	0	0	0	0	0	0	0	0	0	0
	1	304										
Oakcrest EB	1	310	0	0	0	0	0	0	0	0	0	0
	2	311	0	0	0	0	0	0	0	0	0	0



**INPUT: RECEIVERS**

**MAH SR11/2386**

ASC Group, Inc. mas							5 April 2018 TNM 2.5				
<b>INPUT: RECEIVERS</b>											
<b>PROJECT/CONTRACT:</b>		<b>MAH SR11/2386</b>									
<b>RUN:</b>		<b>validation-M2</b>									
<b>Receiver</b>											
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	
M1	1	0	2,449,878.2	526,486.1	1,131.79	5.00	0.00	66	10.0	8.0	
M2	2	0	2,450,546.8	525,906.6	1,133.69	5.00	0.00	66	10.0	8.0	Y
M3	3	0	2,450,131.8	525,301.2	1,142.29	5.00	0.00	66	10.0	8.0	
M4	4	0	2,450,550.5	523,479.6	1,142.65	5.00	0.00	66	10.0	8.0	
M6	5	0	2,450,506.0	520,458.4	1,145.31	5.00	0.00	66	10.0	8.0	
M7	6	0	2,450,488.2	517,532.1	1,142.26	5.00	0.00	66	10.0	8.0	
M8	7	0	2,450,594.8	515,388.0	1,155.61	5.00	0.00	66	10.0	8.0	
M9	8	0	2,451,175.2	513,420.2	1,138.12	5.00	0.00	66	10.0	8.0	

**INPUT: TRAFFIC FOR LAeq1h Volumes****MAH SR11/2386**

	3	312	0	0	0	0	0	0	0	0	0	0
	4	313	0	0	0	0	0	0	0	0	0	0
	5	314	0	0	0	0	0	0	0	0	0	0
	6	315										

**RESULTS: SOUND LEVELS**

**MAH SR11/2386**

ASC Group, Inc. mas									5 April 2018 TNM 2.5 Calculated with TNM 2.5				
<b>RESULTS: SOUND LEVELS</b>													
<b>PROJECT/CONTRACT:</b>		<b>MAH SR11/2386</b>											
<b>RUN:</b>		<b>validation-M2</b>											
<b>BARRIER DESIGN:</b>		<b>INPUT HEIGHTS</b>											
<b>ATMOSPHERICS:</b>		<b>68 deg F, 50% RH</b>											
		<b>Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.</b>											

Receiver													
Name	No.	#DUs	Existing	No Barrier	Crit'n	Increase over existing	Type	With Barrier					
			LAeq1h	LAeq1h				Calculated	Calculated	Noise Reduction	Goal	Calculated	
				Calculated		Calculated	Sub'l Inc	Impact	LAeq1h	Calculated	Goal	Calculated	
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	Goal	
M1	1	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0	
M2	2	0	0.0	65.7	66	65.7	10	----	65.7	0.0	8	-8.0	
M3	3	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0	
M4	4	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0	
M6	5	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0	
M7	6	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0	
M8	7	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0	
M9	8	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0	
<b>Dwelling Units</b>		<b># DUs</b>	<b>Noise Reduction</b>										
			<b>Min</b>	<b>Avg</b>	<b>Max</b>								
			<b>dB</b>	<b>dB</b>	<b>dB</b>								
All Selected		0	0.0	0.0	0.0								
All Impacted		0	0.0	0.0	0.0								
All that meet NR Goal		0	0.0	0.0	0.0								



INPUT: ROADWAYS

MAH SR11/2386

		26	26	2,450,421.0	523,153.8	1,143.60				Average	
		27	27	2,450,433.5	523,725.3	1,142.00				Average	
		28	28	2,450,442.5	524,118.8	1,140.40				Average	
		29	29	2,450,450.5	524,462.4	1,139.80				Average	
		30	30	2,450,458.0	524,726.5	1,138.90				Average	
		31	31	2,450,461.0	524,942.6	1,138.50				Average	
		32	32	2,450,462.8	525,119.3	1,138.10				Average	
		33	33	2,450,457.0	525,278.1	1,137.30				Average	
		34	34	2,450,453.0	525,427.2	1,137.10				Average	
		35	35	2,450,441.2	525,580.1	1,136.30				Average	
		36	36	2,450,425.5	525,732.6	1,134.50				Average	
		37	37	2,450,399.0	525,926.2	1,131.90				Average	
		38	38	2,450,370.8	526,102.7	1,129.00				Average	
		39	39	2,450,340.0	526,263.2	1,125.70				Average	
		40	40	2,450,290.0	526,482.5	1,120.20				Average	
		41	41	2,450,224.0	526,734.5	1,113.20				Average	
		42	42	2,450,134.5	527,011.3	1,108.00				Average	
		43	43	2,450,046.0	527,245.0	1,106.40					
SR11 NB-2	12.0	1	44	2,451,366.2	511,895.0	1,142.50				Average	
		2	45	2,451,203.0	512,462.0	1,140.90				Average	
		3	46	2,451,035.5	513,062.7	1,142.60				Average	
		4	47	2,450,850.2	513,717.3	1,144.50				Average	
		5	48	2,450,734.0	514,145.3	1,146.30				Average	
		6	49	2,450,672.2	514,356.5	1,147.00				Average	
		7	50	2,450,624.0	514,546.4	1,147.00				Average	
		8	51	2,450,577.2	514,762.3	1,147.50				Average	
		9	52	2,450,537.2	514,944.0	1,148.60				Average	
		10	53	2,450,494.5	515,143.2	1,149.40				Average	
		11	54	2,450,445.5	515,429.4	1,150.40				Average	
		12	55	2,450,408.0	515,668.5	1,149.90				Average	
		13	56	2,450,356.0	516,081.1	1,152.20				Average	
		14	57	2,450,322.5	516,419.1	1,153.20				Average	
		15	58	2,450,306.0	516,682.7	1,153.40				Average	
		16	59	2,450,290.0	516,974.1	1,154.90				Average	
		17	60	2,450,282.2	517,280.9	1,155.70				Average	
		18	61	2,450,282.8	517,597.1	1,156.30				Average	
		19	62	2,450,297.5	518,208.7	1,157.60				Average	
		20	63	2,450,309.5	518,851.9	1,155.90				Average	
		21	64	2,450,328.0	519,671.8	1,154.10				Average	

INPUT: ROADWAYS

MAH SR11/2386

		22	65	2,450,348.2	520,447.3	1,151.70				Average	
		23	66	2,450,361.0	521,077.3	1,149.70				Average	
		24	67	2,450,384.5	522,070.6	1,146.80				Average	
		25	68	2,450,400.0	522,778.2	1,144.80				Average	
		26	69	2,450,410.0	523,153.8	1,143.60				Average	
		27	70	2,450,423.2	523,721.6	1,142.10				Average	
		28	71	2,450,431.5	524,119.3	1,140.40				Average	
		29	72	2,450,440.2	524,462.6	1,139.80				Average	
		30	73	2,450,447.8	524,726.6	1,138.50				Average	
		31	74	2,450,450.5	524,942.4	1,137.10				Average	
		32	75	2,450,452.5	525,119.3	1,138.10				Average	
		33	76	2,450,447.0	525,276.8	1,137.30				Average	
		34	77	2,450,442.2	525,426.6	1,137.10				Average	
		35	78	2,450,431.0	525,580.3	1,135.20				Average	
		36	79	2,450,415.5	525,732.8	1,134.50				Average	
		37	80	2,450,388.8	525,926.3	1,131.90				Average	
		38	81	2,450,360.5	526,102.8	1,129.00				Average	
		39	82	2,450,330.0	526,263.4	1,125.70				Average	
		40	83	2,450,279.2	526,479.7	1,120.20				Average	
		41	84	2,450,213.5	526,731.3	1,113.20				Average	
		42	85	2,450,124.5	527,007.4	1,107.00				Average	
		43	86	2,450,035.5	527,241.1	1,106.40					
SR11 SB-2	12.0	1	87	2,451,271.2	511,869.0	1,142.70				Average	
		2	88	2,451,109.8	512,434.4	1,141.40				Average	
		3	89	2,450,942.2	513,035.0	1,142.70				Average	
		4	90	2,450,758.8	513,689.7	1,144.70				Average	
		5	91	2,450,638.0	514,117.7	1,146.30				Average	
		6	92	2,450,579.2	514,330.9	1,146.90				Average	
		7	93	2,450,533.0	514,518.7	1,147.60				Average	
		8	94	2,450,480.5	514,738.8	1,148.20				Average	
		9	95	2,450,442.5	514,916.6	1,148.80				Average	
		10	96	2,450,401.2	515,120.2	1,149.40				Average	
		11	97	2,450,354.8	515,399.3	1,150.20				Average	
		12	98	2,450,314.0	515,661.3	1,150.90				Average	
		13	99	2,450,261.5	516,051.8	1,152.40				Average	
		14	100	2,450,229.0	516,389.9	1,153.20				Average	
		15	101	2,450,209.5	516,675.9	1,153.90				Average	
		16	102	2,450,193.0	516,960.2	1,155.00				Average	
		17	103	2,450,184.8	517,280.8	1,155.90				Average	

INPUT: ROADWAYS

MAH SR11/2386

		18	104	2,450,186.5	517,595.6	1,156.70				Average	
		19	105	2,450,201.0	518,205.2	1,158.00				Average	
		20	106	2,450,216.0	518,859.0	1,156.30				Average	
		21	107	2,450,234.0	519,666.1	1,154.10				Average	
		22	108	2,450,252.0	520,448.8	1,151.80				Average	
		23	109	2,450,265.0	521,096.4	1,149.70				Average	
		24	110	2,450,288.0	522,068.9	1,146.90				Average	
		25	111	2,450,303.0	522,776.2	1,144.80				Average	
		26	112	2,450,312.8	523,160.7	1,143.70				Average	
		27	113	2,450,326.0	523,720.5	1,142.00				Average	
		28	114	2,450,334.8	524,116.8	1,140.70				Average	
		29	115	2,450,343.0	524,456.8	1,139.90				Average	
		30	116	2,450,350.5	524,720.9	1,139.00				Average	
		31	117	2,450,355.5	524,936.5	1,138.00				Average	
		32	118	2,450,355.2	525,120.6	1,137.20				Average	
		33	119	2,450,353.8	525,270.8	1,136.80				Average	
		34	120	2,450,346.0	525,422.5	1,136.30				Average	
		35	121	2,450,334.8	525,572.9	1,134.90				Average	
		36	122	2,450,319.5	525,726.5	1,133.70				Average	
		37	123	2,450,293.2	525,921.1	1,131.00				Average	
		38	124	2,450,264.5	526,097.6	1,128.10				Average	
		39	125	2,450,232.5	526,257.6	1,124.60				Average	
		40	126	2,450,182.5	526,476.7	1,119.30				Average	
		41	127	2,450,114.8	526,725.6	1,111.80				Average	
		42	128	2,450,025.2	527,001.1	1,106.50				Average	
		43	129	2,449,943.2	527,213.9	1,105.90					
SR11 SB-1	12.0	43	172	2,449,934.0	527,209.2	1,105.90				Average	
		42	171	2,450,015.5	526,997.0	1,106.50				Average	
		41	170	2,450,105.5	526,722.5	1,111.20				Average	
		40	169	2,450,172.8	526,474.0	1,119.30				Average	
		39	168	2,450,222.5	526,257.9	1,124.60				Average	
		38	167	2,450,254.2	526,097.9	1,128.10				Average	
		37	166	2,450,283.0	525,919.0	1,131.00				Average	
		36	165	2,450,309.5	525,724.5	1,133.70				Average	
		35	164	2,450,323.5	525,572.2	1,134.90				Average	
		34	163	2,450,336.0	525,421.5	1,135.70				Average	
		33	162	2,450,343.5	525,270.8	1,136.80				Average	
		32	161	2,450,345.0	525,120.8	1,136.60				Average	
		31	160	2,450,345.0	524,936.7	1,137.50				Average	

INPUT: ROADWAYS

MAH SR11/2386

		30	159	2,450,340.2	524,721.1	1,139.00				Average	
		29	158	2,450,332.8	524,457.1	1,139.60				Average	
		28	157	2,450,324.2	524,116.3	1,140.70				Average	
		27	156	2,450,315.8	523,717.7	1,141.70				Average	
		26	155	2,450,302.5	523,157.9	1,143.50				Average	
		25	154	2,450,293.0	522,773.3	1,144.90				Average	
		24	153	2,450,278.0	522,066.1	1,146.00				Average	
		23	152	2,450,254.8	521,093.5	1,149.70				Average	
		22	151	2,450,242.0	520,445.9	1,151.80				Average	
		21	150	2,450,223.0	519,666.3	1,153.40				Average	
		20	149	2,450,204.0	518,859.9	1,156.40				Average	
		19	148	2,450,189.5	518,205.5	1,158.00				Average	
		18	147	2,450,174.2	517,595.8	1,156.70				Average	
		17	146	2,450,174.2	517,280.5	1,155.90				Average	
		16	145	2,450,182.8	516,957.4	1,155.00				Average	
		15	144	2,450,198.0	516,675.2	1,154.00				Average	
		14	143	2,450,218.0	516,388.5	1,153.20				Average	
		13	142	2,450,250.5	516,050.2	1,152.40				Average	
		12	141	2,450,303.2	515,660.5	1,150.70				Average	
		11	140	2,450,344.5	515,396.4	1,150.20				Average	
		10	139	2,450,391.2	515,117.3	1,148.40				Average	
		9	138	2,450,432.2	514,913.7	1,148.50				Average	
		8	137	2,450,470.5	514,736.0	1,147.80				Average	
		7	136	2,450,522.8	514,515.9	1,147.60				Average	
		6	135	2,450,569.0	514,328.1	1,146.90				Average	
		5	134	2,450,628.0	514,114.9	1,146.30				Average	
		4	133	2,450,748.5	513,686.8	1,144.60				Average	
		3	132	2,450,932.0	513,032.2	1,142.70				Average	
		2	131	2,451,099.5	512,431.5	1,141.00				Average	
		1	130	2,451,262.8	511,864.3	1,142.70					
Kirk EB	12.0	1	173	2,449,260.5	515,679.3	1,164.30				Average	
		2	174	2,449,776.0	515,689.2	1,158.80				Average	
		3	175	2,450,182.5	515,695.2	1,168.60				Average	Y
		4	176	2,450,527.2	515,703.6	1,168.60				Average	
		5	177	2,450,935.8	515,716.3	1,163.50				Average	
		6	178	2,451,437.5	515,731.8	1,176.40					
Kirk WB	12.0	6	184	2,451,437.5	515,743.8	1,176.40				Average	
		5	183	2,450,936.0	515,728.3	1,163.50				Average	
		4	182	2,450,527.5	515,715.6	1,168.60				Average	Y



INPUT: ROADWAYS

MAH SR11/2386

		3	181	2,450,182.5	515,707.2	1,168.60				Average	
		2	180	2,449,776.2	515,701.2	1,158.80				Average	
		1	179	2,449,260.5	515,691.3	1,164.30					
New EB	12.0	1	185	2,449,044.0	521,176.3	1,149.00				Average	
		2	186	2,449,744.8	521,189.4	1,152.90				Average	
		3	187	2,449,882.0	521,191.5	1,157.40				Average	
		4	188	2,449,970.2	521,193.1	1,161.30				Average	
		5	189	2,450,047.5	521,186.9	1,163.90				Average	
		6	190	2,450,149.0	521,169.1	1,166.80				Average	Y
		7	191	2,450,480.8	521,082.0	1,167.50				Average	
		8	192	2,450,564.5	521,064.3	1,165.80				Average	
		9	193	2,450,649.0	521,056.2	1,163.20				Average	
		10	194	2,450,731.5	521,053.5	1,161.00				Average	
		11	195	2,450,871.8	521,053.8	1,158.00				Average	
		12	196	2,451,472.5	521,058.8	1,156.10					
New WB	12.0	12	208	2,451,472.5	521,070.8	1,156.10				Average	
		11	207	2,450,872.0	521,065.8	1,158.00				Average	
		10	206	2,450,731.5	521,065.5	1,159.20				Average	
		9	205	2,450,649.2	521,068.2	1,162.80				Average	
		8	204	2,450,564.5	521,076.3	1,165.80				Average	
		7	203	2,450,480.8	521,094.0	1,166.00				Average	Y
		6	202	2,450,149.0	521,181.1	1,166.80				Average	
		5	201	2,450,047.5	521,198.9	1,163.90				Average	
		4	200	2,449,970.5	521,205.1	1,161.30				Average	
		3	199	2,449,882.0	521,203.5	1,157.40				Average	
		2	198	2,449,745.0	521,201.4	1,152.90				Average	
		1	197	2,449,044.2	521,188.3	1,149.00					
Mahoning EB-1	12.0	1	209	2,448,759.0	526,833.2	1,121.10				Average	
		2	210	2,449,181.2	526,840.6	1,112.50				Average	
		3	211	2,449,486.8	526,846.1	1,114.60				Average	
		4	212	2,449,592.8	526,847.5	1,117.20				Average	
		5	213	2,449,796.5	526,851.0	1,121.50				Average	
		6	214	2,449,944.8	526,859.2	1,125.10				Average	Y
		7	215	2,450,293.0	526,910.7	1,128.50				Average	
		8	216	2,450,383.5	526,927.8	1,128.70				Average	
		9	217	2,450,454.5	526,938.8	1,128.30				Average	
		10	218	2,451,052.0	527,044.7	1,139.30				Average	
		11	219	2,451,194.0	527,069.0	1,139.50				Average	
		12	220	2,451,634.8	527,143.6	1,132.30					

**INPUT: ROADWAYS**

**MAH SR11/2386**

Mahoning EB-2	12.0	1	221	2,448,759.0	526,845.2	1,121.10				Average	
		2	222	2,449,181.2	526,852.6	1,112.50				Average	
		3	223	2,449,486.8	526,858.1	1,114.60				Average	
		4	224	2,449,592.8	526,859.5	1,117.20				Average	
		5	225	2,449,796.5	526,863.0	1,121.50				Average	
		6	226	2,449,942.0	526,870.7	1,125.10				Average	Y
		7	227	2,450,288.8	526,922.6	1,128.50				Average	
		8	228	2,450,381.5	526,940.2	1,128.30				Average	
		9	229	2,450,450.5	526,950.9	1,128.30				Average	
		10	230	2,451,049.8	527,054.7	1,139.30				Average	
		11	231	2,451,192.0	527,079.8	1,139.60				Average	
		12	232	2,451,631.8	527,155.7	1,132.40					
Mahoning WB-center	12.0	1	233	2,448,759.2	526,855.0	1,121.10				Average	
		2	234	2,449,181.5	526,862.4	1,112.50				Average	
		3	235	2,449,487.0	526,867.9	1,114.60				Average	
		4	236	2,449,593.0	526,869.3	1,117.20				Average	
		5	237	2,449,795.5	526,873.9	1,121.50				Average	
		6	238	2,449,938.8	526,882.0	1,125.10				Average	Y
		7	239	2,450,284.0	526,935.7	1,128.20				Average	
		8	240	2,450,382.0	526,952.8	1,128.30				Average	
		9	241	2,450,447.0	526,962.4	1,128.30				Average	
		10	242	2,451,048.2	527,065.2	1,139.30				Average	
		11	243	2,451,189.5	527,089.6	1,139.60				Average	
		12	244	2,451,629.5	527,165.9	1,132.70					
Mahoning WB-2	12.0	12	256	2,451,627.5	527,174.6	1,132.70				Average	
		11	255	2,451,187.5	527,098.5	1,139.60				Average	
		10	254	2,451,048.2	527,073.9	1,139.30				Average	
		9	253	2,450,444.8	526,972.6	1,128.30				Average	
		8	252	2,450,379.0	526,965.6	1,128.70				Average	
		7	251	2,450,279.0	526,947.2	1,128.20				Average	Y
		6	250	2,449,935.2	526,894.7	1,123.60				Average	
		5	249	2,449,791.5	526,884.8	1,120.60				Average	
		4	248	2,449,593.5	526,879.2	1,117.10				Average	
		3	247	2,449,487.5	526,877.7	1,114.50				Average	
		2	246	2,449,182.0	526,872.2	1,112.60				Average	
		1	245	2,448,759.8	526,864.8	1,121.10					
Mahoning WB-1	12.0	12	268	2,451,625.2	527,184.8	1,132.70				Average	
		11	267	2,451,184.5	527,110.5	1,139.60				Average	
		10	266	2,451,046.0	527,085.6	1,139.30				Average	

INPUT: ROADWAYS

MAH SR11/2386

		9	265	2,450,440.5	526,985.9	1,128.30				Average	
		8	264	2,450,375.5	526,978.0	1,128.70				Average	
		7	263	2,450,274.5	526,960.4	1,128.20				Average	Y
		6	262	2,449,931.5	526,906.1	1,123.60				Average	
		5	261	2,449,791.5	526,896.8	1,120.60				Average	
		4	260	2,449,593.2	526,891.2	1,117.10				Average	
		3	259	2,449,487.5	526,889.7	1,114.50				Average	
		2	258	2,449,182.0	526,884.2	1,112.60				Average	
		1	257	2,448,759.8	526,876.8	1,121.10					
Ramp: Mahoning to SR 11S	12.0	22	290	2,449,830.5	526,832.2	1,123.60	Onramp	15.00	100	Average	
		21	289	2,449,891.5	526,734.7	1,126.10				Average	
		20	288	2,449,949.0	526,636.5	1,127.80				Average	
		19	287	2,450,029.5	526,501.5	1,128.20				Average	
		18	286	2,450,073.5	526,419.2	1,128.50				Average	
		17	285	2,450,112.0	526,327.8	1,127.30				Average	
		16	284	2,450,142.0	526,248.3	1,125.50				Average	
		15	283	2,450,175.8	526,143.3	1,127.30				Average	
		14	282	2,450,205.8	526,039.5	1,128.10				Average	
		13	281	2,450,233.0	525,932.0	1,129.50				Average	
		12	280	2,450,257.0	525,827.2	1,131.20				Average	
		11	279	2,450,277.2	525,701.7	1,132.20				Average	
		10	278	2,450,292.2	525,595.9	1,134.50				Average	
		9	277	2,450,303.2	525,497.7	1,135.00				Average	
		8	276	2,450,309.5	525,417.1	1,135.00				Average	
		7	275	2,450,320.2	525,267.3	1,136.30				Average	
		6	274	2,450,326.8	525,124.6	1,136.60				Average	
		5	273	2,450,328.0	525,027.6	1,137.00				Average	
		4	272	2,450,330.0	524,935.9	1,137.50				Average	
		3	271	2,450,329.2	524,720.5	1,139.00				Average	
		2	270	2,450,327.8	524,457.3	1,139.60				Average	
		1	269	2,450,322.8	524,116.3	1,140.70					
Ramp: SR 11N to Mahoning	12.0	1	291	2,450,461.0	524,726.6	1,138.90				Average	
		2	292	2,450,470.0	524,786.7	1,138.80				Average	
		3	293	2,450,472.5	524,942.3	1,138.50				Average	
		4	294	2,450,477.2	525,119.1	1,138.70				Average	
		5	295	2,450,481.8	525,277.6	1,138.30				Average	
		6	296	2,450,484.8	525,426.3	1,137.90				Average	
		7	297	2,450,487.0	525,576.0	1,136.70				Average	
		8	298	2,450,488.5	525,676.4	1,136.00				Average	

**INPUT: ROADWAYS**

**MAH SR11/2386**

		9	299	2,450,485.0	525,772.0	1,136.00				Average	
		10	300	2,450,482.0	525,906.4	1,137.60				Average	
		11	301	2,450,473.5	526,083.0	1,139.30				Average	
		12	302	2,450,456.5	526,452.9	1,139.70				Average	
		13	303	2,450,440.8	526,903.0	1,128.50					
Oakcrest WB	12.0	6	309	2,451,311.2	523,235.6	1,147.10				Average	
		5	308	2,450,966.0	523,236.4	1,145.10				Average	
		4	307	2,450,530.5	523,230.8	1,159.10				Average	Y
		3	306	2,450,196.0	523,223.2	1,159.10				Average	
		2	305	2,449,784.2	523,217.4	1,151.00				Average	
		1	304	2,449,408.0	523,211.2	1,158.50					
Oakcrest EB	12.0	1	310	2,449,408.0	523,199.2	1,158.50				Average	
		2	311	2,449,784.2	523,205.4	1,151.00				Average	
		3	312	2,450,196.0	523,211.2	1,159.10				Average	Y
		4	313	2,450,530.5	523,218.8	1,159.10				Average	
		5	314	2,450,966.0	523,224.4	1,145.00				Average	
		6	315	2,451,311.2	523,223.6	1,147.00					

INPUT: TRAFFIC FOR LAeq1h Volumes

MAH SR11/2386

ASC Group, Inc. mas		5 April 2018 TNM 2.5										
INPUT: TRAFFIC FOR LAeq1h Volumes												
PROJECT/CONTRACT:		MAH SR11/2386										
RUN:		validation-M3										
Roadway	Points											
Name	Name	No.	Segment		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
SR11 NB-1	1	1	537	65	20	65	26	65	0	0	6	65
	2	2	537	65	20	65	26	65	0	0	6	65
	3	3	537	65	20	65	26	65	0	0	6	65
	4	4	537	65	20	65	26	65	0	0	6	65
	5	5	537	65	20	65	26	65	0	0	6	65
	6	6	537	65	20	65	26	65	0	0	6	65
	7	7	537	65	20	65	26	65	0	0	6	65
	8	8	537	65	20	65	26	65	0	0	6	65
	9	9	537	65	20	65	26	65	0	0	6	65
	10	10	537	65	20	65	26	65	0	0	6	65
	11	11	537	65	20	65	26	65	0	0	6	65
	12	12	537	65	20	65	26	65	0	0	6	65
	13	13	537	65	20	65	26	65	0	0	6	65
	14	14	537	65	20	65	26	65	0	0	6	65
	15	15	537	65	20	65	26	65	0	0	6	65
	16	16	537	65	20	65	26	65	0	0	6	65
	17	17	537	65	20	65	26	65	0	0	6	65
	18	18	537	65	20	65	26	65	0	0	6	65
	19	19	537	65	20	65	26	65	0	0	6	65
	20	20	537	65	20	65	26	65	0	0	6	65
	21	21	537	65	20	65	26	65	0	0	6	65
	22	22	537	65	20	65	26	65	0	0	6	65
	23	23	537	65	20	65	26	65	0	0	6	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	24	24	537	65	20	65	26	65	0	0	6	65
	25	25	537	65	20	65	26	65	0	0	6	65
	26	26	537	65	20	65	26	65	0	0	6	65
	27	27	537	65	20	65	26	65	0	0	6	65
	28	28	537	65	20	65	26	65	0	0	6	65
	29	29	537	65	20	65	26	65	0	0	6	65
	30	30	537	65	20	65	26	65	0	0	6	65
	31	31	537	65	20	65	26	65	0	0	6	65
	32	32	537	65	20	65	26	65	0	0	6	65
	33	33	537	65	20	65	26	65	0	0	6	65
	34	34	537	65	20	65	26	65	0	0	6	65
	35	35	537	65	20	65	26	65	0	0	6	65
	36	36	537	65	20	65	26	65	0	0	6	65
	37	37	537	65	20	65	26	65	0	0	6	65
	38	38	537	65	20	65	26	65	0	0	6	65
	39	39	537	65	20	65	26	65	0	0	6	65
	40	40	537	65	20	65	26	65	0	0	6	65
	41	41	537	65	20	65	26	65	0	0	6	65
	42	42	537	65	20	65	26	65	0	0	6	65
	43	43										
SR11 NB-2	1	44	537	65	20	65	26	65	0	0	6	65
	2	45	537	65	20	65	26	65	0	0	6	65
	3	46	537	65	20	65	26	65	0	0	6	65
	4	47	537	65	20	65	26	65	0	0	6	65
	5	48	537	65	20	65	26	65	0	0	6	65
	6	49	537	65	20	65	26	65	0	0	6	65
	7	50	537	65	20	65	26	65	0	0	6	65
	8	51	537	65	20	65	26	65	0	0	6	65
	9	52	537	65	20	65	26	65	0	0	6	65
	10	53	537	65	20	65	26	65	0	0	6	65
	11	54	537	65	20	65	26	65	0	0	6	65
	12	55	537	65	20	65	26	65	0	0	6	65
	13	56	537	65	20	65	26	65	0	0	6	65
	14	57	537	65	20	65	26	65	0	0	6	65
	15	58	537	65	20	65	26	65	0	0	6	65
	16	59	537	65	20	65	26	65	0	0	6	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	17	60	537	65	20	65	26	65	0	0	6	65
	18	61	537	65	20	65	0	65	0	0	6	65
	19	62	537	65	20	65	26	65	0	0	6	65
	20	63	537	65	20	65	26	65	0	0	6	65
	21	64	537	65	20	65	26	65	0	0	6	65
	22	65	537	65	20	65	26	65	0	0	6	65
	23	66	537	65	20	65	26	65	0	0	6	65
	24	67	537	65	20	65	26	65	0	0	6	65
	25	68	537	65	20	65	26	65	0	0	6	65
	26	69	537	65	20	65	26	65	0	0	6	65
	27	70	537	65	20	65	26	65	0	0	6	65
	28	71	537	65	20	65	26	65	0	0	6	65
	29	72	537	65	20	65	26	65	0	0	6	65
	30	73	537	65	20	65	26	65	0	0	6	65
	31	74	537	65	20	65	26	65	0	0	6	65
	32	75	537	65	20	65	26	65	0	0	6	65
	33	76	537	65	20	65	26	65	0	0	6	65
	34	77	537	65	20	65	26	65	0	0	6	65
	35	78	537	65	20	65	26	65	0	0	6	65
	36	79	537	65	20	65	26	65	0	0	6	65
	37	80	537	65	20	65	26	65	0	0	6	65
	38	81	537	65	20	65	26	65	0	0	6	65
	39	82	537	65	20	65	26	65	0	0	6	65
	40	83	537	65	20	65	26	65	0	0	6	65
	41	84	537	65	20	65	26	65	0	0	6	65
	42	85	537	65	20	65	26	65	0	0	6	65
	43	86										
SR11 SB-2	1	87	768	65	10	65	22	65	0	0	0	0
	2	88	768	65	10	65	22	65	0	0	0	0
	3	89	768	65	10	65	22	65	0	0	0	0
	4	90	768	65	10	65	22	65	0	0	0	0
	5	91	768	65	10	65	22	65	0	0	0	0
	6	92	768	65	10	65	22	65	0	0	0	0
	7	93	768	65	10	65	22	65	0	0	0	0
	8	94	768	65	10	65	22	65	0	0	0	0
	9	95	768	65	10	65	22	65	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	10	96	768	65	10	65	22	65	0	0	0	0
	11	97	768	65	10	65	22	65	0	0	0	0
	12	98	768	65	10	65	22	65	0	0	0	0
	13	99	768	65	10	65	22	65	0	0	0	0
	14	100	768	65	10	65	22	65	0	0	0	0
	15	101	768	65	10	65	22	65	0	0	0	0
	16	102	768	65	10	65	22	65	0	0	0	0
	17	103	768	65	10	65	22	65	0	0	0	0
	18	104	768	65	10	65	22	65	0	0	0	0
	19	105	768	65	10	65	22	65	0	0	0	0
	20	106	768	65	10	65	22	65	0	0	0	0
	21	107	768	65	10	65	22	65	0	0	0	0
	22	108	768	65	10	65	22	65	0	0	0	0
	23	109	768	65	10	65	22	65	0	0	0	0
	24	110	768	65	10	65	22	65	0	0	0	0
	25	111	768	65	10	65	22	65	0	0	0	0
	26	112	768	65	10	65	22	65	0	0	0	0
	27	113	768	65	10	65	22	65	0	0	0	0
	28	114	768	65	10	65	22	65	0	0	0	0
	29	115	768	65	10	65	22	65	0	0	0	0
	30	116	768	65	10	65	22	65	0	0	0	0
	31	117	768	65	10	65	22	65	0	0	0	0
	32	118	768	65	10	65	22	65	0	0	0	0
	33	119	768	65	10	65	22	65	0	0	0	0
	34	120	768	65	10	65	22	65	0	0	0	0
	35	121	768	65	10	65	22	65	0	0	0	0
	36	122	768	65	10	65	22	65	0	0	0	0
	37	123	768	65	10	65	22	65	0	0	0	0
	38	124	768	65	10	65	22	65	0	0	0	0
	39	125	768	65	10	65	22	65	0	0	0	0
	40	126	768	65	10	65	22	65	0	0	0	0
	41	127	768	65	10	65	22	65	0	0	0	0
	42	128	768	65	10	65	22	65	0	0	0	0
	43	129										
SR11 SB-1	43	172	768	65	10	65	22	65	0	0	0	0
	42	171	768	65	10	65	22	65	0	0	0	0



**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	41	170	768	65	10	65	22	65	0	0	0	0
	40	169	768	65	10	65	22	65	0	0	0	0
	39	168	768	65	10	65	22	65	0	0	0	0
	38	167	768	65	10	65	22	65	0	0	0	0
	37	166	768	65	10	65	22	65	0	0	0	0
	36	165	768	65	10	65	22	65	0	0	0	0
	35	164	768	65	10	65	22	65	0	0	0	0
	34	163	768	65	10	65	22	65	0	0	0	0
	33	162	768	65	10	65	22	65	0	0	0	0
	32	161	768	65	10	65	22	65	0	0	0	0
	31	160	768	65	10	65	22	65	0	0	0	0
	30	159	768	65	10	65	22	65	0	0	0	0
	29	158	768	65	10	65	22	65	0	0	0	0
	28	157	768	65	10	65	22	65	0	0	0	0
	27	156	768	65	10	65	22	65	0	0	0	0
	26	155	768	65	10	65	22	65	0	0	0	0
	25	154	768	65	10	65	22	65	0	0	0	0
	24	153	768	65	10	65	22	65	0	0	0	0
	23	152	768	65	10	65	22	65	0	0	0	0
	22	151	768	65	10	65	22	65	0	0	0	0
	21	150	768	65	10	65	22	65	0	0	0	0
	20	149	768	65	10	65	22	65	0	0	0	0
	19	148	768	65	10	65	22	65	0	0	0	0
	18	147	768	65	10	65	22	65	0	0	0	0
	17	146	768	65	10	65	22	65	0	0	0	0
	16	145	768	65	10	65	22	65	0	0	0	0
	15	144	768	65	10	65	22	65	0	0	0	0
	14	143	768	65	10	65	22	65	0	0	0	0
	13	142	768	65	10	65	22	65	0	0	0	0
	12	141	768	65	10	65	22	65	0	0	0	0
	11	140	768	65	10	65	22	65	0	0	0	0
	10	139	768	65	10	65	22	65	0	0	0	0
	9	138	768	65	10	65	22	65	0	0	0	0
	8	137	768	65	10	65	22	65	0	0	0	0
	7	136	768	65	10	65	22	65	0	0	0	0
	6	135	768	65	10	65	22	65	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	5	134	768	65	10	65	22	65	0	0	0	0
	4	133	768	65	10	65	22	65	0	0	0	0
	3	132	768	65	10	65	22	65	0	0	0	0
	2	131	768	65	10	65	22	65	0	0	0	0
	1	130										
Kirk EB	1	173	0	0	0	0	0	0	0	0	0	0
	2	174	0	0	0	0	0	0	0	0	0	0
	3	175	0	0	0	0	0	0	0	0	0	0
	4	176	0	0	0	0	0	0	0	0	0	0
	5	177	0	0	0	0	0	0	0	0	0	0
	6	178										
Kirk WB	6	184	0	0	0	0	0	0	0	0	0	0
	5	183	0	0	0	0	0	0	0	0	0	0
	4	182	0	0	0	0	0	0	0	0	0	0
	3	181	0	0	0	0	0	0	0	0	0	0
	2	180	0	0	0	0	0	0	0	0	0	0
	1	179										
New EB	1	185	0	0	0	0	0	0	0	0	0	0
	2	186	0	0	0	0	0	0	0	0	0	0
	3	187	0	0	0	0	0	0	0	0	0	0
	4	188	0	0	0	0	0	0	0	0	0	0
	5	189	0	0	0	0	0	0	0	0	0	0
	6	190	0	0	0	0	0	0	0	0	0	0
	7	191	0	0	0	0	0	0	0	0	0	0
	8	192	0	0	0	0	0	0	0	0	0	0
	9	193	0	0	0	0	0	0	0	0	0	0
	10	194	0	0	0	0	0	0	0	0	0	0
	11	195	0	0	0	0	0	0	0	0	0	0
	12	196										
New WB	12	208	0	0	0	0	0	0	0	0	0	0
	11	207	0	0	0	0	0	0	0	0	0	0
	10	206	0	0	0	0	0	0	0	0	0	0
	9	205	0	0	0	0	0	0	0	0	0	0
	8	204	0	0	0	0	0	0	0	0	0	0
	7	203	0	0	0	0	0	0	0	0	0	0
	6	202	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	5	201	0	0	0	0	0	0	0	0	0	0
	4	200	0	0	0	0	0	0	0	0	0	0
	3	199	0	0	0	0	0	0	0	0	0	0
	2	198	0	0	0	0	0	0	0	0	0	0
	1	197										
Mahoning EB-1	1	209	0	0	0	0	0	0	0	0	0	0
	2	210	0	0	0	0	0	0	0	0	0	0
	3	211	0	0	0	0	0	0	0	0	0	0
	4	212	0	0	0	0	0	0	0	0	0	0
	5	213	0	0	0	0	0	0	0	0	0	0
	6	214	0	0	0	0	0	0	0	0	0	0
	7	215	0	0	0	0	0	0	0	0	0	0
	8	216	0	0	0	0	0	0	0	0	0	0
	9	217	0	0	0	0	0	0	0	0	0	0
	10	218	0	0	0	0	0	0	0	0	0	0
	11	219	0	0	0	0	0	0	0	0	0	0
	12	220										
Mahoning EB-2	1	221	0	0	0	0	0	0	0	0	0	0
	2	222	0	0	0	0	0	0	0	0	0	0
	3	223	0	0	0	0	0	0	0	0	0	0
	4	224	0	0	0	0	0	0	0	0	0	0
	5	225	0	0	0	0	0	0	0	0	0	0
	6	226	0	0	0	0	0	0	0	0	0	0
	7	227	0	0	0	0	0	0	0	0	0	0
	8	228	0	0	0	0	0	0	0	0	0	0
	9	229	0	0	0	0	0	0	0	0	0	0
	10	230	0	0	0	0	0	0	0	0	0	0
	11	231	0	0	0	0	0	0	0	0	0	0
	12	232										
Mahoning WB-center	1	233	0	0	0	0	0	0	0	0	0	0
	2	234	0	0	0	0	0	0	0	0	0	0
	3	235	0	0	0	0	0	0	0	0	0	0
	4	236	0	0	0	0	0	0	0	0	0	0
	5	237	0	0	0	0	0	0	0	0	0	0
	6	238	0	0	0	0	0	0	0	0	0	0
	7	239	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	8	240	0	0	0	0	0	0	0	0	0	0
	9	241	0	0	0	0	0	0	0	0	0	0
	10	242	0	0	0	0	0	0	0	0	0	0
	11	243	0	0	0	0	0	0	0	0	0	0
	12	244										
Mahoning WB-2	12	256	0	0	0	0	0	0	0	0	0	0
	11	255	0	0	0	0	0	0	0	0	0	0
	10	254	0	0	0	0	0	0	0	0	0	0
	9	253	0	0	0	0	0	0	0	0	0	0
	8	252	0	0	0	0	0	0	0	0	0	0
	7	251	0	0	0	0	0	0	0	0	0	0
	6	250	0	0	0	0	0	0	0	0	0	0
	5	249	0	0	0	0	0	0	0	0	0	0
	4	248	0	0	0	0	0	0	0	0	0	0
	3	247	0	0	0	0	0	0	0	0	0	0
	2	246	0	0	0	0	0	0	0	0	0	0
	1	245										
Mahoning WB-1	12	268	0	0	0	0	0	0	0	0	0	0
	11	267	0	0	0	0	0	0	0	0	0	0
	10	266	0	0	0	0	0	0	0	0	0	0
	9	265	0	0	0	0	0	0	0	0	0	0
	8	264	0	0	0	0	0	0	0	0	0	0
	7	263	0	0	0	0	0	0	0	0	0	0
	6	262	0	0	0	0	0	0	0	0	0	0
	5	261	0	0	0	0	0	0	0	0	0	0
	4	260	0	0	0	0	0	0	0	0	0	0
	3	259	0	0	0	0	0	0	0	0	0	0
	2	258	0	0	0	0	0	0	0	0	0	0
	1	257										
Ramp: Mahoning to SR 11S	22	290	0	0	0	0	0	0	0	0	0	0
	21	289	0	0	0	0	0	0	0	0	0	0
	20	288	0	0	0	0	0	0	0	0	0	0
	19	287	0	0	0	0	0	0	0	0	0	0
	18	286	0	0	0	0	0	0	0	0	0	0
	17	285	0	0	0	0	0	0	0	0	0	0
	16	284	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	15	283	0	0	0	0	0	0	0	0	0	0
	14	282	0	0	0	0	0	0	0	0	0	0
	13	281	0	0	0	0	0	0	0	0	0	0
	12	280	0	0	0	0	0	0	0	0	0	0
	11	279	0	0	0	0	0	0	0	0	0	0
	10	278	0	0	0	0	0	0	0	0	0	0
	9	277	0	0	0	0	0	0	0	0	0	0
	8	276	0	0	0	0	0	0	0	0	0	0
	7	275	0	0	0	0	0	0	0	0	0	0
	6	274	0	0	0	0	0	0	0	0	0	0
	5	273	0	0	0	0	0	0	0	0	0	0
	4	272	0	0	0	0	0	0	0	0	0	0
	3	271	0	0	0	0	0	0	0	0	0	0
	2	270	0	0	0	0	0	0	0	0	0	0
	1	269										
Ramp: SR 11N to Mahoning	1	291	0	0	0	0	0	0	0	0	0	0
	2	292	0	0	0	0	0	0	0	0	0	0
	3	293	0	0	0	0	0	0	0	0	0	0
	4	294	0	0	0	0	0	0	0	0	0	0
	5	295	0	0	0	0	0	0	0	0	0	0
	6	296	0	0	0	0	0	0	0	0	0	0
	7	297	0	0	0	0	0	0	0	0	0	0
	8	298	0	0	0	0	0	0	0	0	0	0
	9	299	0	0	0	0	0	0	0	0	0	0
	10	300	0	0	0	0	0	0	0	0	0	0
	11	301	0	0	0	0	0	0	0	0	0	0
	12	302	0	0	0	0	0	0	0	0	0	0
	13	303										
Oakcrest WB	6	309	0	0	0	0	0	0	0	0	0	0
	5	308	0	0	0	0	0	0	0	0	0	0
	4	307	0	0	0	0	0	0	0	0	0	0
	3	306	0	0	0	0	0	0	0	0	0	0
	2	305	0	0	0	0	0	0	0	0	0	0
	1	304										
Oakcrest EB	1	310	0	0	0	0	0	0	0	0	0	0
	2	311	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes****MAH SR11/2386**

	3	312	0	0	0	0	0	0	0	0	0	0
	4	313	0	0	0	0	0	0	0	0	0	0
	5	314	0	0	0	0	0	0	0	0	0	0
	6	315										

**INPUT: RECEIVERS**

**MAH SR11/2386**

ASC Group, Inc. mas							5 April 2018 TNM 2.5				
<b>INPUT: RECEIVERS</b>											
<b>PROJECT/CONTRACT:</b>		<b>MAH SR11/2386</b>									
<b>RUN:</b>		<b>validation-M3</b>									
<b>Receiver</b>											
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	
M1	1	0	2,449,878.2	526,486.1	1,131.79	5.00	0.00	66	10.0	8.0	
M2	2	0	2,450,546.8	525,906.6	1,133.69	5.00	0.00	66	10.0	8.0	
M3	3	0	2,450,131.8	525,301.2	1,142.29	5.00	0.00	66	10.0	8.0	Y
M4	4	0	2,450,550.5	523,479.6	1,142.65	5.00	0.00	66	10.0	8.0	
M6	5	0	2,450,506.0	520,458.4	1,145.31	5.00	0.00	66	10.0	8.0	
M7	6	0	2,450,488.2	517,532.1	1,142.26	5.00	0.00	66	10.0	8.0	
M8	7	0	2,450,594.8	515,388.0	1,155.61	5.00	0.00	66	10.0	8.0	
M9	8	0	2,451,175.2	513,420.2	1,138.12	5.00	0.00	66	10.0	8.0	

**RESULTS: SOUND LEVELS**

**MAH SR11/2386**

ASC Group, Inc. mas			5 April 2018 TNM 2.5 Calculated with TNM 2.5		
<b>RESULTS: SOUND LEVELS</b>					
<b>PROJECT/CONTRACT:</b>			MAH SR11/2386		
<b>RUN:</b>			validation-M3		
<b>BARRIER DESIGN:</b>			INPUT HEIGHTS		
<b>ATMOSPHERICS:</b>			68 deg F, 50% RH		
			Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.		

Receiver												
Name	No.	#DUs	Existing	No Barrier	Crit'n	Increase over existing	Type	With Barrier				
			LAeq1h	LAeq1h				Crit'n	Calculated	Noise Reduction	Calculated	Goal
				Calculated		Calculated	Sub'l Inc	Impact	LAeq1h	Calculated	Goal	Calculated
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
M1	1	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
M2	2	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
M3	3	0	0.0	64.1	66	64.1	10	----	64.1	0.0	8	-8.0
M4	4	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
M6	5	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
M7	6	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
M8	7	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
M9	8	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		0	0.0	0.0	0.0							
All Impacted		0	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							



INPUT: ROADWAYS

MAH SR11/2386

ASC Group, Inc. mas					5 April 2018 TNM 2.5						
INPUT: ROADWAYS PROJECT/CONTRACT: RUN:	MAH SR11/2386 validation-M4						Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA				

Roadway Name	Width	Points			Coordinates (pavement)			Flow Control			Segment	
		Name	No.		X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft				ft	ft	ft		mph	%		
SR11 NB-1	12.0	1	1		2,451,374.8	511,900.4	1,142.60				Average	
		2	2		2,451,213.2	512,465.7	1,141.40				Average	
		3	3		2,451,045.8	513,066.4	1,142.80				Average	
		4	4		2,450,860.5	513,721.0	1,144.80				Average	
		5	5		2,450,744.2	514,149.3	1,146.30				Average	
		6	6		2,450,682.2	514,360.0	1,147.00				Average	
		7	7		2,450,634.2	514,550.1	1,147.00				Average	
		8	8		2,450,587.5	514,766.0	1,148.30				Average	
		9	9		2,450,547.5	514,947.7	1,148.60				Average	
		10	10		2,450,504.8	515,146.8	1,149.40				Average	
		11	11		2,450,455.8	515,432.0	1,150.40				Average	
		12	12		2,450,419.2	515,670.0	1,151.10				Average	
		13	13		2,450,366.5	516,083.0	1,152.20				Average	
		14	14		2,450,332.5	516,421.3	1,153.20				Average	
		15	15		2,450,316.5	516,682.7	1,154.10				Average	
		16	16		2,450,300.2	516,977.8	1,154.90				Average	
		17	17		2,450,293.5	517,281.5	1,155.70				Average	
		18	18		2,450,294.2	517,597.8	1,156.70				Average	
		19	19		2,450,308.2	518,208.7	1,157.90				Average	
		20	20		2,450,321.2	518,851.5	1,156.50				Average	
		21	21		2,450,339.0	519,672.9	1,154.10				Average	
		22	22		2,450,358.5	520,451.0	1,151.40				Average	
		23	23		2,450,371.5	521,077.9	1,149.70				Average	
		24	24		2,450,394.8	522,071.0	1,146.80				Average	
		25	25		2,450,410.2	522,781.8	1,144.80				Average	

INPUT: ROADWAYS

MAH SR11/2386

		26	26	2,450,421.0	523,153.8	1,143.60				Average	
		27	27	2,450,433.5	523,725.3	1,142.00				Average	
		28	28	2,450,442.5	524,118.8	1,140.40				Average	
		29	29	2,450,450.5	524,462.4	1,139.80				Average	
		30	30	2,450,458.0	524,726.5	1,138.90				Average	
		31	31	2,450,461.0	524,942.6	1,138.50				Average	
		32	32	2,450,462.8	525,119.3	1,138.10				Average	
		33	33	2,450,457.0	525,278.1	1,137.30				Average	
		34	34	2,450,453.0	525,427.2	1,137.10				Average	
		35	35	2,450,441.2	525,580.1	1,136.30				Average	
		36	36	2,450,425.5	525,732.6	1,134.50				Average	
		37	37	2,450,399.0	525,926.2	1,131.90				Average	
		38	38	2,450,370.8	526,102.7	1,129.00				Average	
		39	39	2,450,340.0	526,263.2	1,125.70				Average	
		40	40	2,450,290.0	526,482.5	1,120.20				Average	
		41	41	2,450,224.0	526,734.5	1,113.20				Average	
		42	42	2,450,134.5	527,011.3	1,108.00				Average	
		43	43	2,450,046.0	527,245.0	1,106.40					
SR11 NB-2	12.0	1	44	2,451,366.2	511,895.0	1,142.50				Average	
		2	45	2,451,203.0	512,462.0	1,140.90				Average	
		3	46	2,451,035.5	513,062.7	1,142.60				Average	
		4	47	2,450,850.2	513,717.3	1,144.50				Average	
		5	48	2,450,734.0	514,145.3	1,146.30				Average	
		6	49	2,450,672.2	514,356.5	1,147.00				Average	
		7	50	2,450,624.0	514,546.4	1,147.00				Average	
		8	51	2,450,577.2	514,762.3	1,147.50				Average	
		9	52	2,450,537.2	514,944.0	1,148.60				Average	
		10	53	2,450,494.5	515,143.2	1,149.40				Average	
		11	54	2,450,445.5	515,429.4	1,150.40				Average	
		12	55	2,450,408.0	515,668.5	1,149.90				Average	
		13	56	2,450,356.0	516,081.1	1,152.20				Average	
		14	57	2,450,322.5	516,419.1	1,153.20				Average	
		15	58	2,450,306.0	516,682.7	1,153.40				Average	
		16	59	2,450,290.0	516,974.1	1,154.90				Average	
		17	60	2,450,282.2	517,280.9	1,155.70				Average	
		18	61	2,450,282.8	517,597.1	1,156.30				Average	
		19	62	2,450,297.5	518,208.7	1,157.60				Average	
		20	63	2,450,309.5	518,851.9	1,155.90				Average	
		21	64	2,450,328.0	519,671.8	1,154.10				Average	

INPUT: ROADWAYS

MAH SR11/2386

		22	65	2,450,348.2	520,447.3	1,151.70				Average	
		23	66	2,450,361.0	521,077.3	1,149.70				Average	
		24	67	2,450,384.5	522,070.6	1,146.80				Average	
		25	68	2,450,400.0	522,778.2	1,144.80				Average	
		26	69	2,450,410.0	523,153.8	1,143.60				Average	
		27	70	2,450,423.2	523,721.6	1,142.10				Average	
		28	71	2,450,431.5	524,119.3	1,140.40				Average	
		29	72	2,450,440.2	524,462.6	1,139.80				Average	
		30	73	2,450,447.8	524,726.6	1,138.50				Average	
		31	74	2,450,450.5	524,942.4	1,137.10				Average	
		32	75	2,450,452.5	525,119.3	1,138.10				Average	
		33	76	2,450,447.0	525,276.8	1,137.30				Average	
		34	77	2,450,442.2	525,426.6	1,137.10				Average	
		35	78	2,450,431.0	525,580.3	1,135.20				Average	
		36	79	2,450,415.5	525,732.8	1,134.50				Average	
		37	80	2,450,388.8	525,926.3	1,131.90				Average	
		38	81	2,450,360.5	526,102.8	1,129.00				Average	
		39	82	2,450,330.0	526,263.4	1,125.70				Average	
		40	83	2,450,279.2	526,479.7	1,120.20				Average	
		41	84	2,450,213.5	526,731.3	1,113.20				Average	
		42	85	2,450,124.5	527,007.4	1,107.00				Average	
		43	86	2,450,035.5	527,241.1	1,106.40					
SR11 SB-2	12.0	1	87	2,451,271.2	511,869.0	1,142.70				Average	
		2	88	2,451,109.8	512,434.4	1,141.40				Average	
		3	89	2,450,942.2	513,035.0	1,142.70				Average	
		4	90	2,450,758.8	513,689.7	1,144.70				Average	
		5	91	2,450,638.0	514,117.7	1,146.30				Average	
		6	92	2,450,579.2	514,330.9	1,146.90				Average	
		7	93	2,450,533.0	514,518.7	1,147.60				Average	
		8	94	2,450,480.5	514,738.8	1,148.20				Average	
		9	95	2,450,442.5	514,916.6	1,148.80				Average	
		10	96	2,450,401.2	515,120.2	1,149.40				Average	
		11	97	2,450,354.8	515,399.3	1,150.20				Average	
		12	98	2,450,314.0	515,661.3	1,150.90				Average	
		13	99	2,450,261.5	516,051.8	1,152.40				Average	
		14	100	2,450,229.0	516,389.9	1,153.20				Average	
		15	101	2,450,209.5	516,675.9	1,153.90				Average	
		16	102	2,450,193.0	516,960.2	1,155.00				Average	
		17	103	2,450,184.8	517,280.8	1,155.90				Average	

INPUT: ROADWAYS

MAH SR11/2386

		18	104	2,450,186.5	517,595.6	1,156.70				Average	
		19	105	2,450,201.0	518,205.2	1,158.00				Average	
		20	106	2,450,216.0	518,859.0	1,156.30				Average	
		21	107	2,450,234.0	519,666.1	1,154.10				Average	
		22	108	2,450,252.0	520,448.8	1,151.80				Average	
		23	109	2,450,265.0	521,096.4	1,149.70				Average	
		24	110	2,450,288.0	522,068.9	1,146.90				Average	
		25	111	2,450,303.0	522,776.2	1,144.80				Average	
		26	112	2,450,312.8	523,160.7	1,143.70				Average	
		27	113	2,450,326.0	523,720.5	1,142.00				Average	
		28	114	2,450,334.8	524,116.8	1,140.70				Average	
		29	115	2,450,343.0	524,456.8	1,139.90				Average	
		30	116	2,450,350.5	524,720.9	1,139.00				Average	
		31	117	2,450,355.5	524,936.5	1,138.00				Average	
		32	118	2,450,355.2	525,120.6	1,137.20				Average	
		33	119	2,450,353.8	525,270.8	1,136.80				Average	
		34	120	2,450,346.0	525,422.5	1,136.30				Average	
		35	121	2,450,334.8	525,572.9	1,134.90				Average	
		36	122	2,450,319.5	525,726.5	1,133.70				Average	
		37	123	2,450,293.2	525,921.1	1,131.00				Average	
		38	124	2,450,264.5	526,097.6	1,128.10				Average	
		39	125	2,450,232.5	526,257.6	1,124.60				Average	
		40	126	2,450,182.5	526,476.7	1,119.30				Average	
		41	127	2,450,114.8	526,725.6	1,111.80				Average	
		42	128	2,450,025.2	527,001.1	1,106.50				Average	
		43	129	2,449,943.2	527,213.9	1,105.90					
SR11 SB-1	12.0	43	172	2,449,934.0	527,209.2	1,105.90				Average	
		42	171	2,450,015.5	526,997.0	1,106.50				Average	
		41	170	2,450,105.5	526,722.5	1,111.20				Average	
		40	169	2,450,172.8	526,474.0	1,119.30				Average	
		39	168	2,450,222.5	526,257.9	1,124.60				Average	
		38	167	2,450,254.2	526,097.9	1,128.10				Average	
		37	166	2,450,283.0	525,919.0	1,131.00				Average	
		36	165	2,450,309.5	525,724.5	1,133.70				Average	
		35	164	2,450,323.5	525,572.2	1,134.90				Average	
		34	163	2,450,336.0	525,421.5	1,135.70				Average	
		33	162	2,450,343.5	525,270.8	1,136.80				Average	
		32	161	2,450,345.0	525,120.8	1,136.60				Average	
		31	160	2,450,345.0	524,936.7	1,137.50				Average	

INPUT: ROADWAYS

MAH SR11/2386

		30	159	2,450,340.2	524,721.1	1,139.00				Average	
		29	158	2,450,332.8	524,457.1	1,139.60				Average	
		28	157	2,450,324.2	524,116.3	1,140.70				Average	
		27	156	2,450,315.8	523,717.7	1,141.70				Average	
		26	155	2,450,302.5	523,157.9	1,143.50				Average	
		25	154	2,450,293.0	522,773.3	1,144.90				Average	
		24	153	2,450,278.0	522,066.1	1,146.00				Average	
		23	152	2,450,254.8	521,093.5	1,149.70				Average	
		22	151	2,450,242.0	520,445.9	1,151.80				Average	
		21	150	2,450,223.0	519,666.3	1,153.40				Average	
		20	149	2,450,204.0	518,859.9	1,156.40				Average	
		19	148	2,450,189.5	518,205.5	1,158.00				Average	
		18	147	2,450,174.2	517,595.8	1,156.70				Average	
		17	146	2,450,174.2	517,280.5	1,155.90				Average	
		16	145	2,450,182.8	516,957.4	1,155.00				Average	
		15	144	2,450,198.0	516,675.2	1,154.00				Average	
		14	143	2,450,218.0	516,388.5	1,153.20				Average	
		13	142	2,450,250.5	516,050.2	1,152.40				Average	
		12	141	2,450,303.2	515,660.5	1,150.70				Average	
		11	140	2,450,344.5	515,396.4	1,150.20				Average	
		10	139	2,450,391.2	515,117.3	1,148.40				Average	
		9	138	2,450,432.2	514,913.7	1,148.50				Average	
		8	137	2,450,470.5	514,736.0	1,147.80				Average	
		7	136	2,450,522.8	514,515.9	1,147.60				Average	
		6	135	2,450,569.0	514,328.1	1,146.90				Average	
		5	134	2,450,628.0	514,114.9	1,146.30				Average	
		4	133	2,450,748.5	513,686.8	1,144.60				Average	
		3	132	2,450,932.0	513,032.2	1,142.70				Average	
		2	131	2,451,099.5	512,431.5	1,141.00				Average	
		1	130	2,451,262.8	511,864.3	1,142.70					
Kirk EB	12.0	1	173	2,449,260.5	515,679.3	1,164.30				Average	
		2	174	2,449,776.0	515,689.2	1,158.80				Average	
		3	175	2,450,182.5	515,695.2	1,168.60				Average	Y
		4	176	2,450,527.2	515,703.6	1,168.60				Average	
		5	177	2,450,935.8	515,716.3	1,163.50				Average	
		6	178	2,451,437.5	515,731.8	1,176.40					
Kirk WB	12.0	6	184	2,451,437.5	515,743.8	1,176.40				Average	
		5	183	2,450,936.0	515,728.3	1,163.50				Average	
		4	182	2,450,527.5	515,715.6	1,168.60				Average	Y

INPUT: ROADWAYS

MAH SR11/2386

		3	181	2,450,182.5	515,707.2	1,168.60				Average	
		2	180	2,449,776.2	515,701.2	1,158.80				Average	
		1	179	2,449,260.5	515,691.3	1,164.30					
New EB	12.0	1	185	2,449,044.0	521,176.3	1,149.00				Average	
		2	186	2,449,744.8	521,189.4	1,152.90				Average	
		3	187	2,449,882.0	521,191.5	1,157.40				Average	
		4	188	2,449,970.2	521,193.1	1,161.30				Average	
		5	189	2,450,047.5	521,186.9	1,163.90				Average	
		6	190	2,450,149.0	521,169.1	1,166.80				Average	Y
		7	191	2,450,480.8	521,082.0	1,167.50				Average	
		8	192	2,450,564.5	521,064.3	1,165.80				Average	
		9	193	2,450,649.0	521,056.2	1,163.20				Average	
		10	194	2,450,731.5	521,053.5	1,161.00				Average	
		11	195	2,450,871.8	521,053.8	1,158.00				Average	
		12	196	2,451,472.5	521,058.8	1,156.10					
New WB	12.0	12	208	2,451,472.5	521,070.8	1,156.10				Average	
		11	207	2,450,872.0	521,065.8	1,158.00				Average	
		10	206	2,450,731.5	521,065.5	1,159.20				Average	
		9	205	2,450,649.2	521,068.2	1,162.80				Average	
		8	204	2,450,564.5	521,076.3	1,165.80				Average	
		7	203	2,450,480.8	521,094.0	1,166.00				Average	Y
		6	202	2,450,149.0	521,181.1	1,166.80				Average	
		5	201	2,450,047.5	521,198.9	1,163.90				Average	
		4	200	2,449,970.5	521,205.1	1,161.30				Average	
		3	199	2,449,882.0	521,203.5	1,157.40				Average	
		2	198	2,449,745.0	521,201.4	1,152.90				Average	
		1	197	2,449,044.2	521,188.3	1,149.00					
Mahoning EB-1	12.0	1	209	2,448,759.0	526,833.2	1,121.10				Average	
		2	210	2,449,181.2	526,840.6	1,112.50				Average	
		3	211	2,449,486.8	526,846.1	1,114.60				Average	
		4	212	2,449,592.8	526,847.5	1,117.20				Average	
		5	213	2,449,796.5	526,851.0	1,121.50				Average	
		6	214	2,449,944.8	526,859.2	1,125.10				Average	Y
		7	215	2,450,293.0	526,910.7	1,128.50				Average	
		8	216	2,450,383.5	526,927.8	1,128.70				Average	
		9	217	2,450,454.5	526,938.8	1,128.30				Average	
		10	218	2,451,052.0	527,044.7	1,139.30				Average	
		11	219	2,451,194.0	527,069.0	1,139.50				Average	
		12	220	2,451,634.8	527,143.6	1,132.30					

**INPUT: ROADWAYS**

**MAH SR11/2386**

Mahoning EB-2	12.0	1	221	2,448,759.0	526,845.2	1,121.10				Average	
		2	222	2,449,181.2	526,852.6	1,112.50				Average	
		3	223	2,449,486.8	526,858.1	1,114.60				Average	
		4	224	2,449,592.8	526,859.5	1,117.20				Average	
		5	225	2,449,796.5	526,863.0	1,121.50				Average	
		6	226	2,449,942.0	526,870.7	1,125.10				Average	Y
		7	227	2,450,288.8	526,922.6	1,128.50				Average	
		8	228	2,450,381.5	526,940.2	1,128.30				Average	
		9	229	2,450,450.5	526,950.9	1,128.30				Average	
		10	230	2,451,049.8	527,054.7	1,139.30				Average	
		11	231	2,451,192.0	527,079.8	1,139.60				Average	
		12	232	2,451,631.8	527,155.7	1,132.40					
Mahoning WB-center	12.0	1	233	2,448,759.2	526,855.0	1,121.10				Average	
		2	234	2,449,181.5	526,862.4	1,112.50				Average	
		3	235	2,449,487.0	526,867.9	1,114.60				Average	
		4	236	2,449,593.0	526,869.3	1,117.20				Average	
		5	237	2,449,795.5	526,873.9	1,121.50				Average	
		6	238	2,449,938.8	526,882.0	1,125.10				Average	Y
		7	239	2,450,284.0	526,935.7	1,128.20				Average	
		8	240	2,450,382.0	526,952.8	1,128.30				Average	
		9	241	2,450,447.0	526,962.4	1,128.30				Average	
		10	242	2,451,048.2	527,065.2	1,139.30				Average	
		11	243	2,451,189.5	527,089.6	1,139.60				Average	
		12	244	2,451,629.5	527,165.9	1,132.70					
Mahoning WB-2	12.0	12	256	2,451,627.5	527,174.6	1,132.70				Average	
		11	255	2,451,187.5	527,098.5	1,139.60				Average	
		10	254	2,451,048.2	527,073.9	1,139.30				Average	
		9	253	2,450,444.8	526,972.6	1,128.30				Average	
		8	252	2,450,379.0	526,965.6	1,128.70				Average	
		7	251	2,450,279.0	526,947.2	1,128.20				Average	Y
		6	250	2,449,935.2	526,894.7	1,123.60				Average	
		5	249	2,449,791.5	526,884.8	1,120.60				Average	
		4	248	2,449,593.5	526,879.2	1,117.10				Average	
		3	247	2,449,487.5	526,877.7	1,114.50				Average	
		2	246	2,449,182.0	526,872.2	1,112.60				Average	
		1	245	2,448,759.8	526,864.8	1,121.10					
Mahoning WB-1	12.0	12	268	2,451,625.2	527,184.8	1,132.70				Average	
		11	267	2,451,184.5	527,110.5	1,139.60				Average	
		10	266	2,451,046.0	527,085.6	1,139.30				Average	

INPUT: ROADWAYS

MAH SR11/2386

		9	265	2,450,440.5	526,985.9	1,128.30				Average	
		8	264	2,450,375.5	526,978.0	1,128.70				Average	
		7	263	2,450,274.5	526,960.4	1,128.20				Average	Y
		6	262	2,449,931.5	526,906.1	1,123.60				Average	
		5	261	2,449,791.5	526,896.8	1,120.60				Average	
		4	260	2,449,593.2	526,891.2	1,117.10				Average	
		3	259	2,449,487.5	526,889.7	1,114.50				Average	
		2	258	2,449,182.0	526,884.2	1,112.60				Average	
		1	257	2,448,759.8	526,876.8	1,121.10					
Ramp: Mahoning to SR 11S	12.0	22	290	2,449,830.5	526,832.2	1,123.60	Onramp	15.00	100	Average	
		21	289	2,449,891.5	526,734.7	1,126.10				Average	
		20	288	2,449,949.0	526,636.5	1,127.80				Average	
		19	287	2,450,029.5	526,501.5	1,128.20				Average	
		18	286	2,450,073.5	526,419.2	1,128.50				Average	
		17	285	2,450,112.0	526,327.8	1,127.30				Average	
		16	284	2,450,142.0	526,248.3	1,125.50				Average	
		15	283	2,450,175.8	526,143.3	1,127.30				Average	
		14	282	2,450,205.8	526,039.5	1,128.10				Average	
		13	281	2,450,233.0	525,932.0	1,129.50				Average	
		12	280	2,450,257.0	525,827.2	1,131.20				Average	
		11	279	2,450,277.2	525,701.7	1,132.20				Average	
		10	278	2,450,292.2	525,595.9	1,134.50				Average	
		9	277	2,450,303.2	525,497.7	1,135.00				Average	
		8	276	2,450,309.5	525,417.1	1,135.00				Average	
		7	275	2,450,320.2	525,267.3	1,136.30				Average	
		6	274	2,450,326.8	525,124.6	1,136.60				Average	
		5	273	2,450,328.0	525,027.6	1,137.00				Average	
		4	272	2,450,330.0	524,935.9	1,137.50				Average	
		3	271	2,450,329.2	524,720.5	1,139.00				Average	
		2	270	2,450,327.8	524,457.3	1,139.60				Average	
		1	269	2,450,322.8	524,116.3	1,140.70					
Ramp: SR 11N to Mahoning	12.0	1	291	2,450,461.0	524,726.6	1,138.90				Average	
		2	292	2,450,470.0	524,786.7	1,138.80				Average	
		3	293	2,450,472.5	524,942.3	1,138.50				Average	
		4	294	2,450,477.2	525,119.1	1,138.70				Average	
		5	295	2,450,481.8	525,277.6	1,138.30				Average	
		6	296	2,450,484.8	525,426.3	1,137.90				Average	
		7	297	2,450,487.0	525,576.0	1,136.70				Average	
		8	298	2,450,488.5	525,676.4	1,136.00				Average	



**INPUT: ROADWAYS**

**MAH SR11/2386**

		9	299	2,450,485.0	525,772.0	1,136.00				Average	
		10	300	2,450,482.0	525,906.4	1,137.60				Average	
		11	301	2,450,473.5	526,083.0	1,139.30				Average	
		12	302	2,450,456.5	526,452.9	1,139.70				Average	
		13	303	2,450,440.8	526,903.0	1,128.50					
Oakcrest WB	12.0	6	309	2,451,311.2	523,235.6	1,147.10				Average	
		5	308	2,450,966.0	523,236.4	1,145.10				Average	
		4	307	2,450,530.5	523,230.8	1,159.10				Average	Y
		3	306	2,450,196.0	523,223.2	1,159.10				Average	
		2	305	2,449,784.2	523,217.4	1,151.00				Average	
		1	304	2,449,408.0	523,211.2	1,158.50					
Oakcrest EB	12.0	1	310	2,449,408.0	523,199.2	1,158.50				Average	
		2	311	2,449,784.2	523,205.4	1,151.00				Average	
		3	312	2,450,196.0	523,211.2	1,159.10				Average	Y
		4	313	2,450,530.5	523,218.8	1,159.10				Average	
		5	314	2,450,966.0	523,224.4	1,145.00				Average	
		6	315	2,451,311.2	523,223.6	1,147.00					

INPUT: TRAFFIC FOR LAeq1h Volumes

MAH SR11/2386

ASC Group, Inc. mas		5 April 2018 TNM 2.5											
INPUT: TRAFFIC FOR LAeq1h Volumes													
PROJECT/CONTRACT:		MAH SR11/2386											
RUN:		validation-M4											
Roadway	Points												
Name	Name	No.	Segment		MTrucks		HTrucks		Buses		Motorcycles		
			Autos		V	S	V	S	V	S	V	S	
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	
SR11 NB-1	1	1	271	65	6	65	50	65	0	0	0	0	
	2	2	271	65	6	65	50	65	0	0	0	0	
	3	3	271	65	6	65	50	65	0	0	0	0	
	4	4	271	65	6	65	50	65	0	0	0	0	
	5	5	271	65	6	65	50	65	0	0	0	0	
	6	6	271	65	6	65	50	65	0	0	0	0	
	7	7	271	65	6	65	50	65	0	0	0	0	
	8	8	271	65	6	65	50	65	0	0	0	0	
	9	9	271	65	6	65	50	65	0	0	0	0	
	10	10	271	65	6	65	50	65	0	0	0	0	
	11	11	271	65	6	65	50	65	0	0	0	0	
	12	12	271	65	6	65	50	65	0	0	0	0	
	13	13	271	65	6	65	50	65	0	0	0	0	
	14	14	271	65	6	65	50	65	0	0	0	0	
	15	15	271	65	6	65	50	65	0	0	0	0	
	16	16	271	65	6	65	50	65	0	0	0	0	
	17	17	271	65	6	65	50	65	0	0	0	0	
	18	18	271	65	6	65	50	65	0	0	0	0	
	19	19	271	65	6	65	50	65	0	0	0	0	
	20	20	271	65	6	65	50	65	0	0	0	0	
	21	21	271	65	6	65	50	65	0	0	0	0	
	22	22	271	65	6	65	50	65	0	0	0	0	
	23	23	271	65	6	65	50	65	0	0	0	0	

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	24	24	271	65	6	65	50	65	0	0	0	0
	25	25	271	65	6	65	50	65	0	0	0	0
	26	26	271	65	6	65	50	65	0	0	0	0
	27	27	271	65	6	65	50	65	0	0	0	0
	28	28	271	65	6	65	50	65	0	0	0	0
	29	29	271	65	6	65	50	65	0	0	0	0
	30	30	271	65	6	65	50	65	0	0	0	0
	31	31	271	65	6	65	50	65	0	0	0	0
	32	32	271	65	6	65	50	65	0	0	0	0
	33	33	271	65	6	65	50	65	0	0	0	0
	34	34	271	65	6	65	50	65	0	0	0	0
	35	35	271	65	6	65	50	65	0	0	0	0
	36	36	271	65	6	65	50	65	0	0	0	0
	37	37	271	65	6	65	50	65	0	0	0	0
	38	38	271	65	6	65	50	65	0	0	0	0
	39	39	271	65	6	65	50	65	0	0	0	0
	40	40	271	65	6	65	50	65	0	0	0	0
	41	41	271	65	6	65	50	65	0	0	0	0
	42	42	271	65	6	65	50	65	0	0	0	0
	43	43										
SR11 NB-2	1	44	271	65	6	65	50	65	0	0	0	0
	2	45	271	65	6	65	50	65	0	0	0	0
	3	46	271	65	6	65	50	65	0	0	0	0
	4	47	271	65	6	65	50	65	0	0	0	0
	5	48	271	65	6	65	50	65	0	0	0	0
	6	49	271	65	6	65	50	65	0	0	0	0
	7	50	271	65	6	65	50	65	0	0	0	0
	8	51	271	65	6	65	50	65	0	0	0	0
	9	52	271	65	6	65	50	65	0	0	0	0
	10	53	271	65	6	65	50	65	0	0	0	0
	11	54	271	65	6	65	50	65	0	0	0	0
	12	55	271	65	6	65	50	65	0	0	0	0
	13	56	271	65	6	65	50	65	0	0	0	0
	14	57	271	65	6	65	50	65	0	0	0	0
	15	58	271	65	6	65	50	65	0	0	0	0
	16	59	271	65	6	65	50	65	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	17	60	271	65	6	65	50	65	0	0	0	0
	18	61	271	65	6	65	50	65	0	0	0	0
	19	62	271	65	6	65	50	65	0	0	0	0
	20	63	271	65	6	65	50	65	0	0	0	0
	21	64	271	65	6	65	50	65	0	0	0	0
	22	65	271	65	6	65	50	65	0	0	0	0
	23	66	271	65	6	65	50	65	0	0	0	0
	24	67	271	65	6	65	50	65	0	0	0	0
	25	68	271	65	6	65	50	65	0	0	0	0
	26	69	271	65	6	65	50	65	0	0	0	0
	27	70	271	65	6	65	50	65	0	0	0	0
	28	71	271	65	6	65	50	65	0	0	0	0
	29	72	271	65	6	65	50	65	0	0	0	0
	30	73	271	65	6	65	50	65	0	0	0	0
	31	74	271	65	6	65	50	65	0	0	0	0
	32	75	271	65	6	65	50	65	0	0	0	0
	33	76	271	65	6	65	50	65	0	0	0	0
	34	77	271	65	6	65	50	65	0	0	0	0
	35	78	271	65	6	65	50	65	0	0	0	0
	36	79	271	65	6	65	50	65	0	0	0	0
	37	80	271	65	6	65	50	65	0	0	0	0
	38	81	271	65	6	65	50	65	0	0	0	0
	39	82	271	65	6	65	50	65	0	0	0	0
	40	83	271	65	6	65	50	65	0	0	0	0
	41	84	271	65	6	65	50	65	0	0	0	0
	42	85	271	65	6	65	50	65	0	0	0	0
	43	86										
SR11 SB-2	1	87	361	65	14	65	64	65	2	65	0	0
	2	88	361	65	14	65	64	65	2	65	0	0
	3	89	361	65	14	65	64	65	2	65	0	0
	4	90	361	65	14	65	64	65	2	65	0	0
	5	91	361	65	14	65	64	65	2	65	0	0
	6	92	361	65	14	65	64	65	2	65	0	0
	7	93	361	65	14	65	64	65	2	65	0	0
	8	94	361	65	14	65	64	65	2	65	0	0
	9	95	361	65	14	65	64	65	2	65	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	10	96	361	65	14	65	64	65	2	65	0	0
	11	97	361	65	14	65	64	65	2	65	0	0
	12	98	361	65	14	65	64	65	2	65	0	0
	13	99	361	65	14	65	64	65	2	65	0	0
	14	100	361	65	14	65	64	65	2	65	0	0
	15	101	361	65	14	65	64	65	2	65	0	0
	16	102	361	65	14	65	64	65	2	65	0	0
	17	103	361	65	14	65	64	65	2	65	0	0
	18	104	361	65	14	65	64	65	2	65	0	0
	19	105	361	65	14	65	64	65	2	65	0	0
	20	106	361	65	14	65	64	65	2	65	0	0
	21	107	361	65	14	65	64	65	2	65	0	0
	22	108	361	65	14	65	64	65	2	65	0	0
	23	109	361	65	14	65	64	65	2	65	0	0
	24	110	361	65	14	65	64	65	2	65	0	0
	25	111	361	65	14	65	64	65	2	65	0	0
	26	112	361	65	14	65	64	65	2	65	0	0
	27	113	361	65	14	65	64	65	2	65	0	0
	28	114	361	65	14	65	64	65	2	65	0	0
	29	115	361	65	14	65	64	65	2	65	0	0
	30	116	361	65	14	65	64	65	2	65	0	0
	31	117	361	65	14	65	64	65	2	65	0	0
	32	118	361	65	14	65	64	65	2	65	0	0
	33	119	361	65	14	65	64	65	2	65	0	0
	34	120	361	65	14	65	64	65	2	65	0	0
	35	121	361	65	14	65	64	65	2	65	0	0
	36	122	361	65	14	65	64	65	2	65	0	0
	37	123	361	65	14	65	64	65	2	65	0	0
	38	124	361	65	14	65	64	65	2	65	0	0
	39	125	361	65	14	65	64	65	2	65	0	0
	40	126	361	65	14	65	64	65	2	65	0	0
	41	127	361	65	14	65	64	65	2	65	0	0
	42	128	361	65	14	65	64	65	2	65	0	0
	43	129										
SR11 SB-1	43	172	361	65	14	65	64	65	2	65	0	0
	42	171	361	65	14	65	64	65	2	65	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	41	170	361	65	14	65	64	65	2	65	0	0
	40	169	361	65	14	65	64	65	2	65	0	0
	39	168	361	65	14	65	64	65	2	65	0	0
	38	167	361	65	14	65	64	65	2	65	0	0
	37	166	361	65	14	65	64	65	2	65	0	0
	36	165	361	65	14	65	64	65	2	65	0	0
	35	164	361	65	14	65	64	65	2	65	0	0
	34	163	361	65	14	65	64	65	2	65	0	0
	33	162	361	65	14	65	64	65	2	65	0	0
	32	161	361	65	14	65	64	65	2	65	0	0
	31	160	361	65	14	65	64	65	2	65	0	0
	30	159	361	65	14	65	64	65	2	65	0	0
	29	158	361	65	14	65	64	65	2	65	0	0
	28	157	361	65	14	65	64	65	2	65	0	0
	27	156	361	65	14	65	64	65	2	65	0	0
	26	155	361	65	14	65	64	65	2	65	0	0
	25	154	361	65	14	65	64	65	2	65	0	0
	24	153	361	65	14	65	64	65	2	65	0	0
	23	152	361	65	14	65	64	65	2	65	0	0
	22	151	361	65	14	65	64	65	2	65	0	0
	21	150	361	65	14	65	64	65	2	65	0	0
	20	149	361	65	14	65	64	65	2	65	0	0
	19	148	361	65	14	65	64	65	2	65	0	0
	18	147	361	65	14	65	64	65	2	65	0	0
	17	146	361	65	14	65	64	65	2	65	0	0
	16	145	361	65	14	65	64	65	2	65	0	0
	15	144	361	65	14	65	64	65	2	65	0	0
	14	143	361	65	14	65	64	65	2	65	0	0
	13	142	361	65	14	65	64	65	2	65	0	0
	12	141	361	65	14	65	64	65	2	65	0	0
	11	140	361	65	14	65	64	65	2	65	0	0
	10	139	361	65	14	65	64	65	2	65	0	0
	9	138	361	65	14	65	64	65	2	65	0	0
	8	137	361	65	14	65	64	65	2	65	0	0
	7	136	361	65	14	65	64	65	2	65	0	0
	6	135	361	65	14	65	64	65	2	65	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	5	134	361	65	14	65	64	65	2	65	0	0
	4	133	361	65	14	65	64	65	2	65	0	0
	3	132	361	65	14	65	64	65	2	65	0	0
	2	131	361	65	14	65	64	65	2	65	0	0
	1	130										
Kirk EB	1	173	0	0	0	0	0	0	0	0	0	0
	2	174	0	0	0	0	0	0	0	0	0	0
	3	175	0	0	0	0	0	0	0	0	0	0
	4	176	0	0	0	0	0	0	0	0	0	0
	5	177	0	0	0	0	0	0	0	0	0	0
	6	178										
Kirk WB	6	184	0	0	0	0	0	0	0	0	0	0
	5	183	0	0	0	0	0	0	0	0	0	0
	4	182	0	0	0	0	0	0	0	0	0	0
	3	181	0	0	0	0	0	0	0	0	0	0
	2	180	0	0	0	0	0	0	0	0	0	0
	1	179										
New EB	1	185	0	0	0	0	0	0	0	0	0	0
	2	186	0	0	0	0	0	0	0	0	0	0
	3	187	0	0	0	0	0	0	0	0	0	0
	4	188	0	0	0	0	0	0	0	0	0	0
	5	189	0	0	0	0	0	0	0	0	0	0
	6	190	0	0	0	0	0	0	0	0	0	0
	7	191	0	0	0	0	0	0	0	0	0	0
	8	192	0	0	0	0	0	0	0	0	0	0
	9	193	0	0	0	0	0	0	0	0	0	0
	10	194	0	0	0	0	0	0	0	0	0	0
	11	195	0	0	0	0	0	0	0	0	0	0
	12	196										
New WB	12	208	0	0	0	0	0	0	0	0	0	0
	11	207	0	0	0	0	0	0	0	0	0	0
	10	206	0	0	0	0	0	0	0	0	0	0
	9	205	0	0	0	1	0	0	0	0	0	0
	8	204	0	0	0	0	0	0	0	0	0	0
	7	203	0	0	0	0	0	0	0	0	0	0
	6	202	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	5	201	0	0	0	0	0	0	0	0	0	0
	4	200	0	0	0	0	0	0	0	0	0	0
	3	199	0	0	0	0	0	0	0	0	0	0
	2	198	0	0	0	0	0	0	0	0	0	0
	1	197										
Mahoning EB-1	1	209	0	0	0	0	0	0	0	0	0	0
	2	210	0	0	0	0	0	0	0	0	0	0
	3	211	0	0	0	0	0	0	0	0	0	0
	4	212	0	0	0	0	0	0	0	0	0	0
	5	213	0	0	0	0	0	0	0	0	0	0
	6	214	0	0	0	0	0	0	0	0	0	0
	7	215	0	0	0	0	0	0	0	0	0	0
	8	216	0	0	0	0	0	0	0	0	0	0
	9	217	0	0	0	0	0	0	0	0	0	0
	10	218	0	0	0	0	0	0	0	0	0	0
	11	219	0	0	0	0	0	0	0	0	0	0
	12	220										
Mahoning EB-2	1	221	0	0	0	0	0	0	0	0	0	0
	2	222	0	0	0	0	0	0	0	0	0	0
	3	223	0	0	0	0	0	0	0	0	0	0
	4	224	0	0	0	0	0	0	0	0	0	0
	5	225	0	0	0	0	0	0	0	0	0	0
	6	226	0	0	0	0	0	0	0	0	0	0
	7	227	0	0	0	0	0	0	0	0	0	0
	8	228	0	0	0	0	0	0	0	0	0	0
	9	229	0	0	0	0	0	0	0	0	0	0
	10	230	0	0	0	0	0	0	0	0	0	0
	11	231	0	0	0	0	0	0	0	0	0	0
	12	232										
Mahoning WB-center	1	233	0	0	0	0	0	0	0	0	0	0
	2	234	0	0	0	0	0	0	0	0	0	0
	3	235	0	0	0	0	0	0	0	0	0	0
	4	236	0	0	0	0	0	0	0	0	0	0
	5	237	0	0	0	0	0	0	0	0	0	0
	6	238	0	0	0	0	0	0	0	0	0	0
	7	239	0	0	0	0	0	0	0	0	0	0



**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	8	240	0	0	0	0	0	0	0	0	0	0
	9	241	0	0	0	0	0	0	0	0	0	0
	10	242	0	0	0	0	0	0	0	0	0	0
	11	243	0	0	0	0	0	0	0	0	0	0
	12	244										
Mahoning WB-2	12	256	0	0	0	0	0	0	0	0	0	0
	11	255	0	0	0	0	0	0	0	0	0	0
	10	254	0	0	0	0	0	0	0	0	0	0
	9	253	0	0	0	0	0	0	0	0	0	0
	8	252	0	0	0	0	0	0	0	0	0	0
	7	251	0	0	0	0	0	0	0	0	0	0
	6	250	0	0	0	0	0	0	0	0	0	0
	5	249	0	0	0	0	0	0	0	0	0	0
	4	248	0	0	0	0	0	0	0	0	0	0
	3	247	0	0	0	0	0	0	0	0	0	0
	2	246	0	0	0	0	0	0	0	0	0	0
	1	245										
Mahoning WB-1	12	268	0	0	0	0	0	0	0	0	0	0
	11	267	0	0	0	0	0	0	0	0	0	0
	10	266	0	0	0	0	0	0	0	0	0	0
	9	265	0	0	0	0	0	0	0	0	0	0
	8	264	0	0	0	0	0	0	0	0	0	0
	7	263	0	0	0	0	0	0	0	0	0	0
	6	262	0	0	0	0	0	0	0	0	0	0
	5	261	0	0	0	0	0	0	0	0	0	0
	4	260	0	0	0	0	0	0	0	0	0	0
	3	259	0	0	0	0	0	0	0	0	0	0
	2	258	0	0	0	0	0	0	0	0	0	0
	1	257										
Ramp: Mahoning to SR 11S	22	290	0	0	0	0	0	0	0	0	0	0
	21	289	0	0	0	0	0	0	0	0	0	0
	20	288	0	0	0	0	0	0	0	0	0	0
	19	287	0	0	0	0	0	0	0	0	0	0
	18	286	0	0	0	0	0	0	0	0	0	0
	17	285	0	0	0	0	0	0	0	0	0	0
	16	284	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	15	283	0	0	0	0	0	0	0	0	0	0
	14	282	0	0	0	0	0	0	0	0	0	0
	13	281	0	0	0	0	0	0	0	0	0	0
	12	280	0	0	0	0	0	0	0	0	0	0
	11	279	0	0	0	0	0	0	0	0	0	0
	10	278	0	0	0	0	0	0	0	0	0	0
	9	277	0	0	0	0	0	0	0	0	0	0
	8	276	0	0	0	0	0	0	0	0	0	0
	7	275	0	0	0	0	0	0	0	0	0	0
	6	274	0	0	0	0	0	0	0	0	0	0
	5	273	0	0	0	0	0	0	0	0	0	0
	4	272	0	0	0	0	0	0	0	0	0	0
	3	271	0	0	0	0	0	0	0	0	0	0
	2	270	0	0	0	0	0	0	0	0	0	0
	1	269										
Ramp: SR 11N to Mahoning	1	291	0	0	0	0	0	0	0	0	0	0
	2	292	0	0	0	0	0	0	0	0	0	0
	3	293	0	0	0	0	0	0	0	0	0	0
	4	294	0	0	0	0	0	0	0	0	0	0
	5	295	0	0	0	0	0	0	0	0	0	0
	6	296	0	0	0	0	0	0	0	0	0	0
	7	297	0	0	0	0	0	0	0	0	0	0
	8	298	0	0	0	0	0	0	0	0	0	0
	9	299	0	0	0	0	0	0	0	0	0	0
	10	300	0	0	0	0	0	0	0	0	0	0
	11	301	0	0	0	0	0	0	0	0	0	0
	12	302	0	0	0	0	0	0	0	0	0	0
	13	303										
Oakcrest WB	6	309	0	0	0	0	0	0	0	0	0	0
	5	308	0	0	0	0	0	0	0	0	0	0
	4	307	0	0	0	0	0	0	0	0	0	0
	3	306	0	0	0	0	0	0	0	0	0	0
	2	305	0	0	0	0	0	0	0	0	0	0
	1	304										
Oakcrest EB	1	310	0	0	0	0	0	0	0	0	0	0
	2	311	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes****MAH SR11/2386**

	3	312	0	0	0	0	0	0	0	0	0	0
	4	313	0	0	0	0	0	0	0	0	0	0
	5	314	0	0	0	0	0	0	0	0	0	0
	6	315										

**INPUT: RECEIVERS**

**MAH SR11/2386**

ASC Group, Inc. mas							5 April 2018 TNM 2.5				
<b>INPUT: RECEIVERS</b>											
<b>PROJECT/CONTRACT:</b>		<b>MAH SR11/2386</b>									
<b>RUN:</b>		<b>validation-M4</b>									
<b>Receiver</b>											
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	dB	dB	dB	dB	
M1	1	0	2,449,878.2	526,486.1	1,131.79	5.00	0.00	66	10.0	8.0	
M2	2	0	2,450,546.8	525,906.6	1,133.69	5.00	0.00	66	10.0	8.0	
M3	3	0	2,450,131.8	525,301.2	1,142.29	5.00	0.00	66	10.0	8.0	
M4	4	0	2,450,550.5	523,479.6	1,142.65	5.00	0.00	66	10.0	8.0	Y
M6	5	0	2,450,506.0	520,458.4	1,145.31	5.00	0.00	66	10.0	8.0	
M7	6	0	2,450,488.2	517,532.1	1,142.26	5.00	0.00	66	10.0	8.0	
M8	7	0	2,450,594.8	515,388.0	1,155.61	5.00	0.00	66	10.0	8.0	
M9	8	0	2,451,175.2	513,420.2	1,138.12	5.00	0.00	66	10.0	8.0	

**RESULTS: SOUND LEVELS**

**MAH SR11/2386**

ASC Group, Inc. mas									5 April 2018 TNM 2.5 Calculated with TNM 2.5				
<b>RESULTS: SOUND LEVELS</b>													
<b>PROJECT/CONTRACT:</b>		<b>MAH SR11/2386</b>											
<b>RUN:</b>		<b>validation-M4</b>											
<b>BARRIER DESIGN:</b>		<b>INPUT HEIGHTS</b>											
<b>ATMOSPHERICS:</b>		<b>68 deg F, 50% RH</b>											
		<b>Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.</b>											

Receiver														
Name	No.	#DUs	Existing	No Barrier	Increase over existing			With Barrier						
			LAeq1h	LAeq1h	Crit'n	Calculated	Crit'n	Type	Calculated	Noise Reduction	Goal	Calculated		
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated	minus	
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB	Goal	
M1	1	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0		
M2	2	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0		
M3	3	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0		
M4	4	0	0.0	66.2	66	66.2	10	Snd Lvl	66.2	0.0	8	-8.0		
M6	5	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0		
M7	6	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0		
M8	7	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0		
M9	8	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0		
<b>Dwelling Units</b>		# DUs	<b>Noise Reduction</b>											
			Min	Avg	Max									
			dB	dB	dB									
All Selected		0	0.0	0.0	0.0									
All Impacted		0	0.0	0.0	0.0									
All that meet NR Goal		0	0.0	0.0	0.0									

INPUT: ROADWAYS

MAH SR11/2386

ASC Group, Inc. mas					5 April 2018 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:		MAH SR11/2386							
RUN:		validation-M6							

Roadway Name	Width	Points			Coordinates (pavement)			Flow Control			Segment	
		Name	No.		X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected		Pvmt Type
	ft				ft	ft	ft		mph	%		
SR11 NB-1	12.0	1	1		2,451,374.8	511,900.4	1,142.60				Average	
		2	2		2,451,213.2	512,465.7	1,141.40				Average	
		3	3		2,451,045.8	513,066.4	1,142.80				Average	
		4	4		2,450,860.5	513,721.0	1,144.80				Average	
		5	5		2,450,744.2	514,149.3	1,146.30				Average	
		6	6		2,450,682.2	514,360.0	1,147.00				Average	
		7	7		2,450,634.2	514,550.1	1,147.00				Average	
		8	8		2,450,587.5	514,766.0	1,148.30				Average	
		9	9		2,450,547.5	514,947.7	1,148.60				Average	
		10	10		2,450,504.8	515,146.8	1,149.40				Average	
		11	11		2,450,455.8	515,432.0	1,150.40				Average	
		12	12		2,450,419.2	515,670.0	1,151.10				Average	
		13	13		2,450,366.5	516,083.0	1,152.20				Average	
		14	14		2,450,332.5	516,421.3	1,153.20				Average	
		15	15		2,450,316.5	516,682.7	1,154.10				Average	
		16	16		2,450,300.2	516,977.8	1,154.90				Average	
		17	17		2,450,293.5	517,281.5	1,155.70				Average	
		18	18		2,450,294.2	517,597.8	1,156.70				Average	
		19	19		2,450,308.2	518,208.7	1,157.90				Average	
		20	20		2,450,321.2	518,851.5	1,156.50				Average	
		21	21		2,450,339.0	519,672.9	1,154.10				Average	
		22	22		2,450,358.5	520,451.0	1,151.40				Average	
		23	23		2,450,371.5	521,077.9	1,149.70				Average	
		24	24		2,450,394.8	522,071.0	1,146.80				Average	
		25	25		2,450,410.2	522,781.8	1,144.80				Average	

INPUT: ROADWAYS

MAH SR11/2386

		26	26	2,450,421.0	523,153.8	1,143.60				Average	
		27	27	2,450,433.5	523,725.3	1,142.00				Average	
		28	28	2,450,442.5	524,118.8	1,140.40				Average	
		29	29	2,450,450.5	524,462.4	1,139.80				Average	
		30	30	2,450,458.0	524,726.5	1,138.90				Average	
		31	31	2,450,461.0	524,942.6	1,138.50				Average	
		32	32	2,450,462.8	525,119.3	1,138.10				Average	
		33	33	2,450,457.0	525,278.1	1,137.30				Average	
		34	34	2,450,453.0	525,427.2	1,137.10				Average	
		35	35	2,450,441.2	525,580.1	1,136.30				Average	
		36	36	2,450,425.5	525,732.6	1,134.50				Average	
		37	37	2,450,399.0	525,926.2	1,131.90				Average	
		38	38	2,450,370.8	526,102.7	1,129.00				Average	
		39	39	2,450,340.0	526,263.2	1,125.70				Average	
		40	40	2,450,290.0	526,482.5	1,120.20				Average	
		41	41	2,450,224.0	526,734.5	1,113.20				Average	
		42	42	2,450,134.5	527,011.3	1,108.00				Average	
		43	43	2,450,046.0	527,245.0	1,106.40					
SR11 NB-2	12.0	1	44	2,451,366.2	511,895.0	1,142.50				Average	
		2	45	2,451,203.0	512,462.0	1,140.90				Average	
		3	46	2,451,035.5	513,062.7	1,142.60				Average	
		4	47	2,450,850.2	513,717.3	1,144.50				Average	
		5	48	2,450,734.0	514,145.3	1,146.30				Average	
		6	49	2,450,672.2	514,356.5	1,147.00				Average	
		7	50	2,450,624.0	514,546.4	1,147.00				Average	
		8	51	2,450,577.2	514,762.3	1,147.50				Average	
		9	52	2,450,537.2	514,944.0	1,148.60				Average	
		10	53	2,450,494.5	515,143.2	1,149.40				Average	
		11	54	2,450,445.5	515,429.4	1,150.40				Average	
		12	55	2,450,408.0	515,668.5	1,149.90				Average	
		13	56	2,450,356.0	516,081.1	1,152.20				Average	
		14	57	2,450,322.5	516,419.1	1,153.20				Average	
		15	58	2,450,306.0	516,682.7	1,153.40				Average	
		16	59	2,450,290.0	516,974.1	1,154.90				Average	
		17	60	2,450,282.2	517,280.9	1,155.70				Average	
		18	61	2,450,282.8	517,597.1	1,156.30				Average	
		19	62	2,450,297.5	518,208.7	1,157.60				Average	
		20	63	2,450,309.5	518,851.9	1,155.90				Average	
		21	64	2,450,328.0	519,671.8	1,154.10				Average	

INPUT: ROADWAYS

MAH SR11/2386

		22	65	2,450,348.2	520,447.3	1,151.70				Average	
		23	66	2,450,361.0	521,077.3	1,149.70				Average	
		24	67	2,450,384.5	522,070.6	1,146.80				Average	
		25	68	2,450,400.0	522,778.2	1,144.80				Average	
		26	69	2,450,410.0	523,153.8	1,143.60				Average	
		27	70	2,450,423.2	523,721.6	1,142.10				Average	
		28	71	2,450,431.5	524,119.3	1,140.40				Average	
		29	72	2,450,440.2	524,462.6	1,139.80				Average	
		30	73	2,450,447.8	524,726.6	1,138.50				Average	
		31	74	2,450,450.5	524,942.4	1,137.10				Average	
		32	75	2,450,452.5	525,119.3	1,138.10				Average	
		33	76	2,450,447.0	525,276.8	1,137.30				Average	
		34	77	2,450,442.2	525,426.6	1,137.10				Average	
		35	78	2,450,431.0	525,580.3	1,135.20				Average	
		36	79	2,450,415.5	525,732.8	1,134.50				Average	
		37	80	2,450,388.8	525,926.3	1,131.90				Average	
		38	81	2,450,360.5	526,102.8	1,129.00				Average	
		39	82	2,450,330.0	526,263.4	1,125.70				Average	
		40	83	2,450,279.2	526,479.7	1,120.20				Average	
		41	84	2,450,213.5	526,731.3	1,113.20				Average	
		42	85	2,450,124.5	527,007.4	1,107.00				Average	
		43	86	2,450,035.5	527,241.1	1,106.40					
SR11 SB-2	12.0	1	87	2,451,271.2	511,869.0	1,142.70				Average	
		2	88	2,451,109.8	512,434.4	1,141.40				Average	
		3	89	2,450,942.2	513,035.0	1,142.70				Average	
		4	90	2,450,758.8	513,689.7	1,144.70				Average	
		5	91	2,450,638.0	514,117.7	1,146.30				Average	
		6	92	2,450,579.2	514,330.9	1,146.90				Average	
		7	93	2,450,533.0	514,518.7	1,147.60				Average	
		8	94	2,450,480.5	514,738.8	1,148.20				Average	
		9	95	2,450,442.5	514,916.6	1,148.80				Average	
		10	96	2,450,401.2	515,120.2	1,149.40				Average	
		11	97	2,450,354.8	515,399.3	1,150.20				Average	
		12	98	2,450,314.0	515,661.3	1,150.90				Average	
		13	99	2,450,261.5	516,051.8	1,152.40				Average	
		14	100	2,450,229.0	516,389.9	1,153.20				Average	
		15	101	2,450,209.5	516,675.9	1,153.90				Average	
		16	102	2,450,193.0	516,960.2	1,155.00				Average	
		17	103	2,450,184.8	517,280.8	1,155.90				Average	



INPUT: ROADWAYS

MAH SR11/2386

		18	104	2,450,186.5	517,595.6	1,156.70				Average	
		19	105	2,450,201.0	518,205.2	1,158.00				Average	
		20	106	2,450,216.0	518,859.0	1,156.30				Average	
		21	107	2,450,234.0	519,666.1	1,154.10				Average	
		22	108	2,450,252.0	520,448.8	1,151.80				Average	
		23	109	2,450,265.0	521,096.4	1,149.70				Average	
		24	110	2,450,288.0	522,068.9	1,146.90				Average	
		25	111	2,450,303.0	522,776.2	1,144.80				Average	
		26	112	2,450,312.8	523,160.7	1,143.70				Average	
		27	113	2,450,326.0	523,720.5	1,142.00				Average	
		28	114	2,450,334.8	524,116.8	1,140.70				Average	
		29	115	2,450,343.0	524,456.8	1,139.90				Average	
		30	116	2,450,350.5	524,720.9	1,139.00				Average	
		31	117	2,450,355.5	524,936.5	1,138.00				Average	
		32	118	2,450,355.2	525,120.6	1,137.20				Average	
		33	119	2,450,353.8	525,270.8	1,136.80				Average	
		34	120	2,450,346.0	525,422.5	1,136.30				Average	
		35	121	2,450,334.8	525,572.9	1,134.90				Average	
		36	122	2,450,319.5	525,726.5	1,133.70				Average	
		37	123	2,450,293.2	525,921.1	1,131.00				Average	
		38	124	2,450,264.5	526,097.6	1,128.10				Average	
		39	125	2,450,232.5	526,257.6	1,124.60				Average	
		40	126	2,450,182.5	526,476.7	1,119.30				Average	
		41	127	2,450,114.8	526,725.6	1,111.80				Average	
		42	128	2,450,025.2	527,001.1	1,106.50				Average	
		43	129	2,449,943.2	527,213.9	1,105.90					
SR11 SB-1	12.0	43	172	2,449,934.0	527,209.2	1,105.90				Average	
		42	171	2,450,015.5	526,997.0	1,106.50				Average	
		41	170	2,450,105.5	526,722.5	1,111.20				Average	
		40	169	2,450,172.8	526,474.0	1,119.30				Average	
		39	168	2,450,222.5	526,257.9	1,124.60				Average	
		38	167	2,450,254.2	526,097.9	1,128.10				Average	
		37	166	2,450,283.0	525,919.0	1,131.00				Average	
		36	165	2,450,309.5	525,724.5	1,133.70				Average	
		35	164	2,450,323.5	525,572.2	1,134.90				Average	
		34	163	2,450,336.0	525,421.5	1,135.70				Average	
		33	162	2,450,343.5	525,270.8	1,136.80				Average	
		32	161	2,450,345.0	525,120.8	1,136.60				Average	
		31	160	2,450,345.0	524,936.7	1,137.50				Average	

INPUT: ROADWAYS

MAH SR11/2386

		30	159	2,450,340.2	524,721.1	1,139.00				Average	
		29	158	2,450,332.8	524,457.1	1,139.60				Average	
		28	157	2,450,324.2	524,116.3	1,140.70				Average	
		27	156	2,450,315.8	523,717.7	1,141.70				Average	
		26	155	2,450,302.5	523,157.9	1,143.50				Average	
		25	154	2,450,293.0	522,773.3	1,144.90				Average	
		24	153	2,450,278.0	522,066.1	1,146.00				Average	
		23	152	2,450,254.8	521,093.5	1,149.70				Average	
		22	151	2,450,242.0	520,445.9	1,151.80				Average	
		21	150	2,450,223.0	519,666.3	1,153.40				Average	
		20	149	2,450,204.0	518,859.9	1,156.40				Average	
		19	148	2,450,189.5	518,205.5	1,158.00				Average	
		18	147	2,450,174.2	517,595.8	1,156.70				Average	
		17	146	2,450,174.2	517,280.5	1,155.90				Average	
		16	145	2,450,182.8	516,957.4	1,155.00				Average	
		15	144	2,450,198.0	516,675.2	1,154.00				Average	
		14	143	2,450,218.0	516,388.5	1,153.20				Average	
		13	142	2,450,250.5	516,050.2	1,152.40				Average	
		12	141	2,450,303.2	515,660.5	1,150.70				Average	
		11	140	2,450,344.5	515,396.4	1,150.20				Average	
		10	139	2,450,391.2	515,117.3	1,148.40				Average	
		9	138	2,450,432.2	514,913.7	1,148.50				Average	
		8	137	2,450,470.5	514,736.0	1,147.80				Average	
		7	136	2,450,522.8	514,515.9	1,147.60				Average	
		6	135	2,450,569.0	514,328.1	1,146.90				Average	
		5	134	2,450,628.0	514,114.9	1,146.30				Average	
		4	133	2,450,748.5	513,686.8	1,144.60				Average	
		3	132	2,450,932.0	513,032.2	1,142.70				Average	
		2	131	2,451,099.5	512,431.5	1,141.00				Average	
		1	130	2,451,262.8	511,864.3	1,142.70					
Kirk EB	12.0	1	173	2,449,260.5	515,679.3	1,164.30				Average	
		2	174	2,449,776.0	515,689.2	1,158.80				Average	
		3	175	2,450,182.5	515,695.2	1,168.60				Average	Y
		4	176	2,450,527.2	515,703.6	1,168.60				Average	
		5	177	2,450,935.8	515,716.3	1,163.50				Average	
		6	148	2,451,437.5	515,731.8	1,176.40					
Kirk WB	12.0	6	184	2,451,437.5	515,743.8	1,176.40				Average	
		5	183	2,450,936.0	515,728.3	1,163.50				Average	
		4	182	2,450,527.5	515,715.6	1,168.60				Average	Y

INPUT: ROADWAYS

MAH SR11/2386

		3	181	2,450,182.5	515,707.2	1,168.60				Average	
		2	180	2,449,776.2	515,701.2	1,158.80				Average	
		1	179	2,449,260.5	515,691.3	1,164.30					
New EB	12.0	1	185	2,449,044.0	521,176.3	1,149.00				Average	
		2	186	2,449,744.8	521,189.4	1,152.90				Average	
		3	187	2,449,882.0	521,191.5	1,157.40				Average	
		4	188	2,449,970.2	521,193.1	1,161.30				Average	
		5	189	2,450,047.5	521,186.9	1,163.90				Average	
		6	190	2,450,149.0	521,169.1	1,166.80				Average	Y
		7	191	2,450,480.8	521,082.0	1,167.50				Average	
		8	192	2,450,564.5	521,064.3	1,165.80				Average	
		9	193	2,450,649.0	521,056.2	1,163.20				Average	
		10	194	2,450,731.5	521,053.5	1,161.00				Average	
		11	195	2,450,871.8	521,053.8	1,158.00				Average	
		12	196	2,451,472.5	521,058.8	1,156.10					
New WB	12.0	12	208	2,451,472.5	521,070.8	1,156.10				Average	
		11	207	2,450,872.0	521,065.8	1,158.00				Average	
		10	206	2,450,731.5	521,065.5	1,159.20				Average	
		9	205	2,450,649.2	521,068.2	1,162.80				Average	
		8	204	2,450,564.5	521,076.3	1,165.80				Average	
		7	203	2,450,480.8	521,094.0	1,166.00				Average	Y
		6	202	2,450,149.0	521,181.1	1,166.80				Average	
		5	201	2,450,047.5	521,198.9	1,163.90				Average	
		4	200	2,449,970.5	521,205.1	1,161.30				Average	
		3	199	2,449,882.0	521,203.5	1,157.40				Average	
		2	198	2,449,745.0	521,201.4	1,152.90				Average	
		1	197	2,449,044.2	521,188.3	1,149.00					
Mahoning EB-1	12.0	1	209	2,448,759.0	526,833.2	1,121.10				Average	
		2	210	2,449,181.2	526,840.6	1,112.50				Average	
		3	211	2,449,486.8	526,846.1	1,114.60				Average	
		4	212	2,449,592.8	526,847.5	1,117.20				Average	
		5	213	2,449,796.5	526,851.0	1,121.50				Average	
		6	214	2,449,944.8	526,859.2	1,125.10				Average	Y
		7	215	2,450,293.0	526,910.7	1,128.50				Average	
		8	216	2,450,383.5	526,927.8	1,128.70				Average	
		9	217	2,450,454.5	526,938.8	1,128.30				Average	
		10	218	2,451,052.0	527,044.7	1,139.30				Average	
		11	219	2,451,194.0	527,069.0	1,139.50				Average	
		12	220	2,451,634.8	527,143.6	1,132.30					

**INPUT: ROADWAYS**

**MAH SR11/2386**

Mahoning EB-2	12.0	1	221	2,448,759.0	526,845.2	1,121.10				Average	
		2	222	2,449,181.2	526,852.6	1,112.50				Average	
		3	223	2,449,486.8	526,858.1	1,114.60				Average	
		4	224	2,449,592.8	526,859.5	1,117.20				Average	
		5	225	2,449,796.5	526,863.0	1,121.50				Average	
		6	226	2,449,942.0	526,870.7	1,125.10				Average	Y
		7	227	2,450,288.8	526,922.6	1,128.50				Average	
		8	228	2,450,381.5	526,940.2	1,128.30				Average	
		9	229	2,450,450.5	526,950.9	1,128.30				Average	
		10	230	2,451,049.8	527,054.7	1,139.30				Average	
		11	231	2,451,192.0	527,079.8	1,139.60				Average	
		12	232	2,451,631.8	527,155.7	1,132.40					
Mahoning WB-center	12.0	1	233	2,448,759.2	526,855.0	1,121.10				Average	
		2	234	2,449,181.5	526,862.4	1,112.50				Average	
		3	235	2,449,487.0	526,867.9	1,114.60				Average	
		4	236	2,449,593.0	526,869.3	1,117.20				Average	
		5	237	2,449,795.5	526,873.9	1,121.50				Average	
		6	238	2,449,938.8	526,882.0	1,125.10				Average	Y
		7	239	2,450,284.0	526,935.7	1,128.20				Average	
		8	240	2,450,382.0	526,952.8	1,128.30				Average	
		9	241	2,450,447.0	526,962.4	1,128.30				Average	
		10	242	2,451,048.2	527,065.2	1,139.30				Average	
		11	243	2,451,189.5	527,089.6	1,139.60				Average	
		12	244	2,451,629.5	527,165.9	1,132.70					
Mahoning WB-2	12.0	12	256	2,451,627.5	527,174.6	1,132.70				Average	
		11	255	2,451,187.5	527,098.5	1,139.60				Average	
		10	254	2,451,048.2	527,073.9	1,139.30				Average	
		9	253	2,450,444.8	526,972.6	1,128.30				Average	
		8	252	2,450,379.0	526,965.6	1,128.70				Average	
		7	251	2,450,279.0	526,947.2	1,128.20				Average	Y
		6	250	2,449,935.2	526,894.7	1,123.60				Average	
		5	249	2,449,791.5	526,884.8	1,120.60				Average	
		4	248	2,449,593.5	526,879.2	1,117.10				Average	
		3	247	2,449,487.5	526,877.7	1,114.50				Average	
		2	246	2,449,182.0	526,872.2	1,112.60				Average	
		1	245	2,448,759.8	526,864.8	1,121.10					
Mahoning WB-1	12.0	12	268	2,451,625.2	527,184.8	1,132.70				Average	
		11	267	2,451,184.5	527,110.5	1,139.60				Average	
		10	266	2,451,046.0	527,085.6	1,139.30				Average	

INPUT: ROADWAYS

MAH SR11/2386

		9	265	2,450,440.5	526,985.9	1,128.30				Average	
		8	264	2,450,375.5	526,978.0	1,128.70				Average	
		7	263	2,450,274.5	526,960.4	1,128.20				Average	Y
		6	262	2,449,931.5	526,906.1	1,123.60				Average	
		5	261	2,449,791.5	526,896.8	1,120.60				Average	
		4	260	2,449,593.2	526,891.2	1,117.10				Average	
		3	259	2,449,487.5	526,889.7	1,114.50				Average	
		2	258	2,449,182.0	526,884.2	1,112.60				Average	
		1	257	2,448,759.8	526,876.8	1,121.10					
Ramp: Mahoning to SR 11S	12.0	22	290	2,449,830.5	526,832.2	1,123.60	Onramp	15.00	100	Average	
		21	289	2,449,891.5	526,734.7	1,126.10				Average	
		20	288	2,449,949.0	526,636.5	1,127.80				Average	
		19	287	2,450,029.5	526,501.5	1,128.20				Average	
		18	286	2,450,073.5	526,419.2	1,128.50				Average	
		17	285	2,450,112.0	526,327.8	1,127.30				Average	
		16	284	2,450,142.0	526,248.3	1,125.50				Average	
		15	283	2,450,175.8	526,143.3	1,127.30				Average	
		14	282	2,450,205.8	526,039.5	1,128.10				Average	
		13	281	2,450,233.0	525,932.0	1,129.50				Average	
		12	280	2,450,257.0	525,827.2	1,131.20				Average	
		11	279	2,450,277.2	525,701.7	1,132.20				Average	
		10	278	2,450,292.2	525,595.9	1,134.50				Average	
		9	277	2,450,303.2	525,497.7	1,135.00				Average	
		8	276	2,450,309.5	525,417.1	1,135.00				Average	
		7	275	2,450,320.2	525,267.3	1,136.30				Average	
		6	274	2,450,326.8	525,124.6	1,136.60				Average	
		5	273	2,450,328.0	525,027.6	1,137.00				Average	
		4	272	2,450,330.0	524,935.9	1,137.50				Average	
		3	271	2,450,329.2	524,720.5	1,139.00				Average	
		2	270	2,450,327.8	524,457.3	1,139.60				Average	
		1	269	2,450,322.8	524,116.3	1,140.70					
Ramp: SR 11N to Mahoning	12.0	1	291	2,450,461.0	524,726.6	1,138.90				Average	
		2	292	2,450,470.0	524,786.7	1,138.80				Average	
		3	293	2,450,472.5	524,942.3	1,138.50				Average	
		4	294	2,450,477.2	525,119.1	1,138.70				Average	
		5	295	2,450,481.8	525,277.6	1,138.30				Average	
		6	296	2,450,484.8	525,426.3	1,137.90				Average	
		7	297	2,450,487.0	525,576.0	1,136.70				Average	
		8	298	2,450,488.5	525,676.4	1,136.00				Average	

**INPUT: ROADWAYS**

**MAH SR11/2386**

		9	299	2,450,485.0	525,772.0	1,136.00				Average	
		10	300	2,450,482.0	525,906.4	1,137.60				Average	
		11	301	2,450,473.5	526,083.0	1,139.30				Average	
		12	302	2,450,456.5	526,452.9	1,139.70				Average	
		13	303	2,450,440.8	526,903.0	1,128.50					
Oakcrest WB	12.0	6	309	2,451,311.2	523,235.6	1,147.10				Average	
		5	308	2,450,966.0	523,236.4	1,145.10				Average	
		4	307	2,450,530.5	523,230.8	1,159.10				Average	Y
		3	306	2,450,196.0	523,223.2	1,159.10				Average	
		2	305	2,449,784.2	523,217.4	1,151.00				Average	
		1	304	2,449,408.0	523,211.2	1,158.50					
Oakcrest EB	12.0	1	310	2,449,408.0	523,199.2	1,158.50				Average	
		2	311	2,449,784.2	523,205.4	1,151.00				Average	
		3	312	2,450,196.0	523,211.2	1,159.10				Average	Y
		4	313	2,450,530.5	523,218.8	1,159.10				Average	
		5	314	2,450,966.0	523,224.4	1,145.00				Average	
		6	315	2,451,311.2	523,223.6	1,147.00					

INPUT: TRAFFIC FOR LAeq1h Volumes

MAH SR11/2386

ASC Group, Inc. mas		5 April 2018 TNM 2.5										
INPUT: TRAFFIC FOR LAeq1h Volumes PROJECT/CONTRACT: RUN:		MAH SR11/2386 validation-M6										
Roadway	Points											
Name	Name	No.	Segment		MTrucks		HTrucks		Buses		Motorcycles	
			Autos		V	S	V	S	V	S	V	S
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
SR11 NB-1	1	1	365	65	10	65	56	65	0	0	6	65
	2	2	365	65	10	65	56	65	0	0	6	65
	3	3	365	65	10	65	56	65	0	0	6	65
	4	4	365	65	10	65	56	65	0	0	6	65
	5	5	365	65	10	65	56	65	0	0	6	65
	6	6	365	65	10	65	56	65	0	0	6	65
	7	7	365	65	10	65	56	65	0	0	6	65
	8	8	365	65	10	65	56	65	0	0	6	65
	9	9	365	65	10	65	56	65	0	0	6	65
	10	10	365	65	10	65	56	65	0	0	6	65
	11	11	365	65	10	65	56	65	0	0	6	65
	12	12	365	65	10	65	56	65	0	0	6	65
	13	13	365	65	10	65	56	65	0	0	6	65
	14	14	365	65	10	65	56	65	0	0	6	65
	15	15	365	65	10	65	56	65	0	0	6	65
	16	16	365	65	10	65	56	65	0	0	6	65
	17	17	365	65	10	65	56	65	0	0	6	65
	18	18	365	65	10	65	56	65	0	0	6	65
	19	19	365	65	10	65	56	65	0	0	6	65
	20	20	365	65	10	65	56	65	0	0	6	65
	21	21	365	65	10	65	56	65	0	0	6	65
	22	22	365	65	10	65	56	65	0	0	6	65
	23	23	365	65	10	65	56	65	0	0	6	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	24	24	365	65	10	65	56	65	0	0	6	65
	25	25	365	65	10	65	56	65	0	0	6	65
	26	26	365	65	10	65	56	65	0	0	6	65
	27	27	365	65	10	65	56	65	0	0	6	65
	28	28	365	65	10	65	56	65	0	0	6	65
	29	29	365	65	10	65	56	65	0	0	6	65
	30	30	365	65	10	65	56	65	0	0	6	65
	31	31	365	65	10	65	56	65	0	0	6	65
	32	32	365	65	10	65	56	65	0	0	6	65
	33	33	365	65	10	65	56	65	0	0	6	65
	34	34	365	65	10	65	56	65	0	0	6	65
	35	35	365	65	10	65	56	65	0	0	6	65
	36	36	365	65	10	65	56	65	0	0	6	65
	37	37	365	65	10	65	56	65	0	0	6	65
	38	38	365	65	10	65	56	65	0	0	6	65
	39	39	365	65	10	65	56	65	0	0	6	65
	40	40	365	65	10	65	56	65	0	0	6	65
	41	41	365	65	10	65	56	65	0	0	6	65
	42	42	365	65	10	65	56	65	0	0	6	65
	43	43										
SR11 NB-2	1	44	365	65	10	65	56	65	0	0	6	65
	2	45	365	65	10	65	56	65	0	0	6	65
	3	46	365	65	10	65	56	65	0	0	6	65
	4	47	365	65	10	65	56	65	0	0	6	65
	5	48	365	65	10	65	56	65	0	0	6	65
	6	49	365	65	10	65	56	65	0	0	6	65
	7	50	365	65	10	65	56	65	0	0	6	65
	8	51	365	65	10	65	56	65	0	0	6	65
	9	52	365	65	10	65	56	65	0	0	6	65
	10	53	365	65	10	65	56	65	0	0	6	65
	11	54	365	65	10	65	56	65	0	0	6	65
	12	55	365	65	10	65	56	65	0	0	6	65
	13	56	365	65	10	65	56	65	0	0	6	65
	14	57	365	65	10	65	56	65	0	0	6	65
	15	58	365	65	10	65	56	65	0	0	6	65
	16	59	365	65	10	65	56	65	0	0	6	65



**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	17	60	365	65	10	65	56	65	0	0	6	65
	18	61	365	65	10	65	56	65	0	0	6	65
	19	62	365	65	10	65	56	65	0	0	6	65
	20	63	365	65	10	65	56	65	0	0	6	65
	21	64	365	65	10	65	56	65	0	0	6	65
	22	65	365	65	10	65	56	65	0	0	6	65
	23	66	365	65	10	65	56	65	0	0	6	65
	24	67	365	65	10	65	56	65	0	0	6	65
	25	68	365	65	10	65	56	65	0	0	6	65
	26	69	365	65	10	65	56	65	0	0	6	65
	27	70	365	65	10	65	56	65	0	0	6	65
	28	71	365	65	10	65	56	65	0	0	6	65
	29	72	365	65	10	65	56	65	0	0	6	65
	30	73	365	65	10	65	56	65	0	0	6	65
	31	74	365	65	10	65	56	65	0	0	6	65
	32	75	365	65	10	65	56	65	0	0	6	65
	33	76	365	65	10	65	56	65	0	0	6	65
	34	77	365	65	10	65	56	65	0	0	6	65
	35	78	365	65	10	65	56	65	0	0	6	65
	36	79	365	65	10	65	56	65	0	0	6	65
	37	80	365	65	10	65	56	65	0	0	6	65
	38	81	365	65	10	65	56	65	0	0	6	65
	39	82	365	65	10	65	56	65	0	0	6	65
	40	83	365	65	10	65	56	65	0	0	6	65
	41	84	365	65	10	65	56	65	0	0	6	65
	42	85	365	65	10	65	56	65	0	0	6	65
	43	86										
SR11 SB-2	1	87	331	65	14	65	48	65	0	0	0	0
	2	88	331	65	14	65	48	65	0	0	0	0
	3	89	331	65	14	65	48	65	0	0	0	0
	4	90	331	65	14	65	48	65	0	0	0	0
	5	91	331	65	14	65	48	65	0	0	0	0
	6	92	331	65	14	65	48	65	0	0	0	0
	7	93	331	65	14	65	48	65	0	0	0	0
	8	94	331	65	14	65	48	65	0	0	0	0
	9	95	331	65	14	65	48	65	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	10	96	331	65	14	65	48	65	0	0	0	0
	11	97	331	65	14	65	48	65	0	0	0	0
	12	98	331	65	14	65	48	65	0	0	0	0
	13	99	331	65	14	65	48	65	0	0	0	0
	14	100	331	65	14	65	48	65	0	0	0	0
	15	101	331	65	14	65	48	65	0	0	0	0
	16	102	331	65	14	65	48	65	0	0	0	0
	17	103	331	65	14	65	48	65	0	0	0	0
	18	104	331	65	14	65	48	65	0	0	0	0
	19	105	331	65	14	65	48	65	0	0	0	0
	20	106	331	65	14	65	48	65	0	0	0	0
	21	107	331	65	14	65	48	65	0	0	0	0
	22	108	331	65	14	65	48	65	0	0	0	0
	23	109	331	65	14	65	48	65	0	0	0	0
	24	110	331	65	14	65	48	65	0	0	0	0
	25	111	331	65	14	65	48	65	0	0	0	0
	26	112	331	65	14	65	48	65	0	0	0	0
	27	113	331	65	14	65	48	65	0	0	0	0
	28	114	331	65	14	65	48	65	0	0	0	0
	29	115	331	65	14	65	48	65	0	0	0	0
	30	116	331	65	14	65	48	65	0	0	0	0
	31	117	331	65	14	65	48	65	0	0	0	0
	32	118	331	65	14	65	48	65	0	0	0	0
	33	119	331	65	14	65	48	65	0	0	0	0
	34	120	331	65	14	65	48	65	0	0	0	0
	35	121	331	65	14	65	48	65	0	0	0	0
	36	122	331	65	14	65	48	65	0	0	0	0
	37	123	331	65	14	65	48	65	0	0	0	0
	38	124	331	65	14	65	48	65	0	0	0	0
	39	125	331	65	14	65	48	65	0	0	0	0
	40	126	331	65	14	65	48	65	0	0	0	0
	41	127	331	65	14	65	48	65	0	0	0	0
	42	128	331	65	14	65	48	65	0	0	0	0
	43	129										
SR11 SB-1	43	172	331	65	14	65	48	65	0	0	0	0
	42	171	331	65	14	65	48	65	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	41	170	331	65	14	65	48	65	0	0	0	0
	40	169	331	65	14	65	48	65	0	0	0	0
	39	168	331	65	14	65	48	65	0	0	0	0
	38	167	331	65	14	65	48	65	0	0	0	0
	37	166	331	65	14	65	48	65	0	0	0	0
	36	165	331	65	14	65	48	65	0	0	0	0
	35	164	331	65	14	65	48	65	0	0	0	0
	34	163	331	65	14	65	48	65	0	0	0	0
	33	162	331	65	14	65	48	65	0	0	0	0
	32	161	331	65	14	65	48	65	0	0	0	0
	31	160	331	65	14	65	48	65	0	0	0	0
	30	159	331	65	14	65	48	65	0	0	0	0
	29	158	331	65	14	65	48	65	0	0	0	0
	28	157	331	65	14	65	48	65	0	0	0	0
	27	156	331	65	14	65	48	65	0	0	0	0
	26	155	331	65	14	65	48	65	0	0	0	0
	25	154	331	65	14	65	48	65	0	0	0	0
	24	153	331	65	14	65	48	65	0	0	0	0
	23	152	331	65	14	65	48	65	0	0	0	0
	22	151	331	65	14	65	48	65	0	0	0	0
	21	150	331	65	14	65	48	65	0	0	0	0
	20	149	331	65	14	65	48	65	0	0	0	0
	19	148	331	65	14	65	48	65	0	0	0	0
	18	147	331	65	14	65	48	65	0	0	0	0
	17	146	331	65	14	65	48	65	0	0	0	0
	16	145	331	65	14	65	48	65	0	0	0	0
	15	144	331	65	14	65	48	65	0	0	0	0
	14	143	331	65	14	65	48	65	0	0	0	0
	13	142	331	65	14	65	48	65	0	0	0	0
	12	141	331	65	14	65	48	65	0	0	0	0
	11	140	331	65	14	65	48	65	0	0	0	0
	10	139	331	65	14	65	48	65	0	0	0	0
	9	138	331	65	14	65	48	65	0	0	0	0
	8	137	331	65	14	65	48	65	0	0	0	0
	7	136	331	65	14	65	48	65	0	0	0	0
	6	135	331	65	14	65	48	65	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	5	134	331	65	14	65	48	65	0	0	0	0
	4	133	331	65	14	65	48	65	0	0	0	0
	3	132	331	65	14	65	48	65	0	0	0	0
	2	131	331	65	14	65	48	65	0	0	0	0
	1	130										
Kirk EB	1	173	0	0	0	0	0	0	0	0	0	0
	2	174	0	0	0	0	0	0	0	0	0	0
	3	175	0	0	0	0	0	0	0	0	0	0
	4	176	0	0	0	0	0	0	0	0	0	0
	5	177	0	0	0	0	0	0	0	0	0	0
	6	178										
Kirk WB	6	184	0	0	0	0	0	0	0	0	0	0
	5	183	0	0	0	0	0	0	0	0	0	0
	4	182	0	0	0	0	0	0	0	0	0	0
	3	181	0	0	0	0	0	0	0	0	0	0
	2	180	0	0	0	0	0	0	0	0	0	0
	1	179										
New EB	1	185	0	0	0	0	0	0	0	0	0	0
	2	186	0	0	0	0	0	0	0	0	0	0
	3	187	0	0	0	0	0	0	0	0	0	0
	4	188	0	0	0	0	0	0	0	0	0	0
	5	189	0	0	0	0	0	0	0	0	0	0
	6	190	0	0	0	0	0	0	0	0	0	0
	7	191	0	0	0	0	0	0	0	0	0	0
	8	192	0	0	0	0	0	0	0	0	0	0
	9	193	0	0	0	0	0	0	0	0	0	0
	10	194	0	0	0	0	0	0	0	0	0	0
	11	195	0	0	0	0	0	0	0	0	0	0
	12	196										
New WB	12	208	0	0	0	0	0	0	0	0	0	0
	11	207	0	0	0	0	0	0	0	0	0	0
	10	206	0	0	0	0	0	0	0	0	0	0
	9	205	0	0	0	0	0	0	0	0	0	0
	8	204	0	0	0	0	0	0	0	0	0	0
	7	203	0	0	0	0	0	0	0	0	0	0
	6	202	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	5	201	0	0	0	0	0	0	0	0	0	0
	4	200	0	0	0	0	0	0	0	0	0	0
	3	199	0	0	0	0	0	0	0	0	0	0
	2	198	0	0	0	0	0	0	0	0	0	0
	1	197										
Mahoning EB-1	1	209	0	0	0	0	0	0	0	0	0	0
	2	210	0	0	0	0	0	0	0	0	0	0
	3	211	0	0	0	0	0	0	0	0	0	0
	4	212	0	0	0	0	0	0	0	0	0	0
	5	213	0	0	0	0	0	0	0	0	0	0
	6	214	0	0	0	0	0	0	0	0	0	0
	7	215	0	0	0	0	0	0	0	0	0	0
	8	216	0	0	0	0	0	0	0	0	0	0
	9	217	0	0	0	0	0	0	0	0	0	0
	10	218	0	0	0	0	0	0	0	0	0	0
	11	219	0	0	0	0	0	0	0	0	0	0
	12	220										
Mahoning EB-2	1	221	0	0	0	0	0	0	0	0	0	0
	2	222	0	0	0	0	0	0	0	0	0	0
	3	223	0	0	0	0	0	0	0	0	0	0
	4	224	0	0	0	0	0	0	0	0	0	0
	5	225	0	0	0	0	0	0	0	0	0	0
	6	226	0	0	0	0	0	0	0	0	0	0
	7	227	0	0	0	0	0	0	0	0	0	0
	8	228	0	0	0	0	0	0	0	0	0	0
	9	229	0	0	0	0	0	0	0	0	0	0
	10	230	0	0	0	0	0	0	0	0	0	0
	11	231	0	0	0	0	0	0	0	0	0	0
	12	232										
Mahoning WB-center	1	233	0	0	0	0	0	0	0	0	0	0
	2	234	0	0	0	0	0	0	0	0	0	0
	3	235	0	0	0	0	0	0	0	0	0	0
	4	236	0	0	0	0	0	0	0	0	0	0
	5	237	0	0	0	0	0	0	0	0	0	0
	6	238	0	0	0	0	0	0	0	0	0	0
	7	239	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	8	240	0	0	0	0	0	0	0	0	0	0
	9	241	0	0	0	0	0	0	0	0	0	0
	10	242	0	0	0	0	0	0	0	0	0	0
	11	243	0	0	0	0	0	0	0	0	0	0
	12	244										
Mahoning WB-2	12	256	0	0	0	0	0	0	0	0	0	0
	11	255	0	0	0	0	0	0	0	0	0	0
	10	254	0	0	0	0	0	0	0	0	0	0
	9	253	0	0	0	0	0	0	0	0	0	0
	8	252	0	0	0	0	0	0	0	0	0	0
	7	251	0	0	0	0	0	0	0	0	0	0
	6	250	0	0	0	0	0	0	0	0	0	0
	5	249	0	0	0	0	0	0	0	0	0	0
	4	248	0	0	0	0	0	0	0	0	0	0
	3	247	0	0	0	0	0	0	0	0	0	0
	2	246	0	0	0	0	0	0	0	0	0	0
	1	245										
Mahoning WB-1	12	268	0	0	0	0	0	0	0	0	0	0
	11	267	0	0	0	0	0	0	0	0	0	0
	10	266	0	0	0	0	0	0	0	0	0	0
	9	265	0	0	0	0	0	0	0	0	0	0
	8	264	0	0	0	0	0	0	0	0	0	0
	7	263	0	0	0	0	0	0	0	0	0	0
	6	262	0	0	0	0	0	0	0	0	0	0
	5	261	0	0	0	0	0	0	0	0	0	0
	4	260	0	0	0	0	0	0	0	0	0	0
	3	259	0	0	0	0	0	0	0	0	0	0
	2	258	0	0	0	0	0	0	0	0	0	0
	1	257										
Ramp: Mahoning to SR 11S	22	290	0	0	0	0	0	0	0	0	0	0
	21	289	0	0	0	0	0	0	0	0	0	0
	20	288	0	0	0	0	0	0	0	0	0	0
	19	287	0	0	0	0	0	0	0	0	0	0
	18	286	0	0	0	0	0	0	0	0	0	0
	17	285	0	0	0	0	0	0	0	0	0	0
	16	284	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	15	283	0	0	0	0	0	0	0	0	0	0
	14	282	0	0	0	0	0	0	0	0	0	0
	13	281	0	0	0	0	0	0	0	0	0	0
	12	280	0	0	0	0	0	0	0	0	0	0
	11	279	0	0	0	0	0	0	0	0	0	0
	10	278	0	0	0	0	0	0	0	0	0	0
	9	277	0	0	0	0	0	0	0	0	0	0
	8	276	0	0	0	0	0	0	0	0	0	0
	7	275	0	0	0	0	0	0	0	0	0	0
	6	274	0	0	0	0	0	0	0	0	0	0
	5	273	0	0	0	0	0	0	0	0	0	0
	4	272	0	0	0	0	0	0	0	0	0	0
	3	271	0	0	0	0	0	0	0	0	0	0
	2	270	0	0	0	0	0	0	0	0	0	0
	1	269										
Ramp: SR 11N to Mahoning	1	291	0	0	0	0	0	0	0	0	0	0
	2	292	0	0	0	0	0	0	0	0	0	0
	3	293	0	0	0	0	0	0	0	0	0	0
	4	294	0	0	0	0	0	0	0	0	0	0
	5	295	0	0	0	0	0	0	0	0	0	0
	6	296	0	0	0	0	0	0	0	0	0	0
	7	297	0	0	0	0	0	0	0	0	0	0
	8	298	0	0	0	0	0	0	0	0	0	0
	9	299	0	0	0	0	0	0	0	0	0	0
	10	300	0	0	0	0	0	0	0	0	0	0
	11	301	0	0	0	0	0	0	0	0	0	0
	12	302	0	0	0	0	0	0	0	0	0	0
	13	303										
Oakcrest WB	6	309	0	0	0	0	0	0	0	0	0	0
	5	308	0	0	0	0	0	0	0	0	0	0
	4	307	0	0	0	0	0	0	0	0	0	0
	3	306	0	0	0	0	0	0	0	0	0	0
	2	305	0	0	0	0	0	0	0	0	0	0
	1	304										
Oakcrest EB	1	310	0	0	0	0	0	0	0	0	0	0
	2	311	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes****MAH SR11/2386**

	3	312	0	0	0	0	0	0	0	0	0	0
	4	313	0	0	0	0	0	0	0	0	0	0
	5	314	0	0	0	0	0	0	0	0	0	0
	6	315										



**INPUT: RECEIVERS**

**MAH SR11/2386**

ASC Group, Inc. mas							5 April 2018 TNM 2.5				
<b>INPUT: RECEIVERS</b>											
<b>PROJECT/CONTRACT:</b>		<b>MAH SR11/2386</b>									
<b>RUN:</b>		<b>validation-M6</b>									
<b>Receiver</b>											
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	dB	dB	dB	dB	
M1	1	0	2,449,878.2	526,486.1	1,131.79	5.00	0.00	66	10.0	8.0	
M2	2	0	2,450,546.8	525,906.6	1,133.69	5.00	0.00	66	10.0	8.0	
M3	3	0	2,450,131.8	525,301.2	1,142.29	5.00	0.00	66	10.0	8.0	
M4	4	0	2,450,550.5	523,479.6	1,142.65	5.00	0.00	66	10.0	8.0	
M6	5	0	2,450,506.0	520,458.4	1,145.31	5.00	0.00	66	10.0	8.0	Y
M7	6	0	2,450,488.2	517,532.1	1,142.26	5.00	0.00	66	10.0	8.0	
M8	7	0	2,450,594.8	515,388.0	1,155.61	5.00	0.00	66	10.0	8.0	
M9	8	0	2,451,175.2	513,420.2	1,138.12	5.00	0.00	66	10.0	8.0	

**RESULTS: SOUND LEVELS**

**MAH SR11/2386**

ASC Group, Inc. mas									5 April 2018 TNM 2.5 Calculated with TNM 2.5				
<b>RESULTS: SOUND LEVELS</b>													
<b>PROJECT/CONTRACT:</b>		<b>MAH SR11/2386</b>											
<b>RUN:</b>		<b>validation-M6</b>											
<b>BARRIER DESIGN:</b>		<b>INPUT HEIGHTS</b>											
<b>ATMOSPHERICS:</b>		<b>68 deg F, 50% RH</b>											
<b>Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.</b>													

<b>Receiver</b>														
<b>Name</b>	<b>No.</b>	<b>#DUs</b>	<b>Existing</b>	<b>No Barrier</b>	<b>Crit'n</b>	<b>Increase over existing</b>		<b>Type Impact</b>	<b>With Barrier</b>					
			<b>LAeq1h</b>	<b>LAeq1h</b>		<b>Calculated</b>	<b>Crit'n</b>		<b>Calculated</b>	<b>Noise Reduction</b>	<b>Goal</b>	<b>Calculated</b>		
			<b>Calculated</b>	<b>Calculated</b>	<b>Sub'l Inc</b>	<b>Calculated</b>	<b>Calculated</b>	<b>Goal</b>	<b>Calculated</b>	<b>Calculated</b>	<b>Goal</b>	<b>Calculated</b>	<b>Goal</b>	
			<b>dBA</b>	<b>dBA</b>	<b>dBA</b>	<b>dB</b>	<b>dB</b>		<b>dBA</b>	<b>dB</b>	<b>dB</b>	<b>dB</b>	<b>dB</b>	
M1	1	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0		
M2	2	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0		
M3	3	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0		
M4	4	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0		
M6	5	0	0.0	65.5	66	65.5	10	----	65.5	0.0	8	-8.0		
M7	6	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0		
M8	7	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0		
M9	8	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0		
<b>Dwelling Units</b>		<b># DUs</b>	<b>Noise Reduction</b>											
			<b>Min</b>	<b>Avg</b>	<b>Max</b>									
			<b>dB</b>	<b>dB</b>	<b>dB</b>									
All Selected		0	0.0	0.0	0.0									
All Impacted		0	0.0	0.0	0.0									
All that meet NR Goal		0	0.0	0.0	0.0									



INPUT: ROADWAYS

MAH SR11/2386

		26	26	2,450,421.0	523,153.8	1,143.60				Average	
		27	27	2,450,433.5	523,725.3	1,142.00				Average	
		28	28	2,450,442.5	524,118.8	1,140.40				Average	
		29	29	2,450,450.5	524,462.4	1,139.80				Average	
		30	30	2,450,458.0	524,726.5	1,138.90				Average	
		31	31	2,450,461.0	524,942.6	1,138.50				Average	
		32	32	2,450,462.8	525,119.3	1,138.10				Average	
		33	33	2,450,457.0	525,278.1	1,137.30				Average	
		34	34	2,450,453.0	525,427.2	1,137.10				Average	
		35	35	2,450,441.2	525,580.1	1,136.30				Average	
		36	36	2,450,425.5	525,732.6	1,134.50				Average	
		37	37	2,450,399.0	525,926.2	1,131.90				Average	
		38	38	2,450,370.8	526,102.7	1,129.00				Average	
		39	39	2,450,340.0	526,263.2	1,125.70				Average	
		40	40	2,450,290.0	526,482.5	1,120.20				Average	
		41	41	2,450,224.0	526,734.5	1,113.20				Average	
		42	42	2,450,134.5	527,011.3	1,108.00				Average	
		43	43	2,450,046.0	527,245.0	1,106.40					
SR11 NB-2	12.0	1	44	2,451,366.2	511,895.0	1,142.50				Average	
		2	45	2,451,203.0	512,462.0	1,140.90				Average	
		3	46	2,451,035.5	513,062.7	1,142.60				Average	
		4	47	2,450,850.2	513,717.3	1,144.50				Average	
		5	48	2,450,734.0	514,145.3	1,146.30				Average	
		6	49	2,450,672.2	514,356.5	1,147.00				Average	
		7	50	2,450,624.0	514,546.4	1,147.00				Average	
		8	51	2,450,577.2	514,762.3	1,147.50				Average	
		9	52	2,450,537.2	514,944.0	1,148.60				Average	
		10	53	2,450,494.5	515,143.2	1,149.40				Average	
		11	54	2,450,445.5	515,429.4	1,150.40				Average	
		12	55	2,450,408.0	515,668.5	1,149.90				Average	
		13	56	2,450,356.0	516,081.1	1,152.20				Average	
		14	57	2,450,322.5	516,419.1	1,153.20				Average	
		15	58	2,450,306.0	516,682.7	1,153.40				Average	
		16	59	2,450,290.0	516,974.1	1,154.90				Average	
		17	60	2,450,282.2	517,280.9	1,155.70				Average	
		18	61	2,450,282.8	517,597.1	1,156.30				Average	
		19	62	2,450,297.5	518,208.7	1,157.60				Average	
		20	63	2,450,309.5	518,851.9	1,155.90				Average	
		21	64	2,450,328.0	519,671.8	1,154.10				Average	

INPUT: ROADWAYS

MAH SR11/2386

		22	65	2,450,348.2	520,447.3	1,151.70				Average	
		23	66	2,450,361.0	521,077.3	1,149.70				Average	
		24	67	2,450,384.5	522,070.6	1,146.80				Average	
		25	68	2,450,400.0	522,778.2	1,144.80				Average	
		26	69	2,450,410.0	523,153.8	1,143.60				Average	
		27	70	2,450,423.2	523,721.6	1,142.10				Average	
		28	71	2,450,431.5	524,119.3	1,140.40				Average	
		29	72	2,450,440.2	524,462.6	1,139.80				Average	
		30	73	2,450,447.8	524,726.6	1,138.50				Average	
		31	74	2,450,450.5	524,942.4	1,137.10				Average	
		32	75	2,450,452.5	525,119.3	1,138.10				Average	
		33	76	2,450,447.0	525,276.8	1,137.30				Average	
		34	77	2,450,442.2	525,426.6	1,137.10				Average	
		35	78	2,450,431.0	525,580.3	1,135.20				Average	
		36	79	2,450,415.5	525,732.8	1,134.50				Average	
		37	80	2,450,388.8	525,926.3	1,131.90				Average	
		38	81	2,450,360.5	526,102.8	1,129.00				Average	
		39	82	2,450,330.0	526,263.4	1,125.70				Average	
		40	83	2,450,279.2	526,479.7	1,120.20				Average	
		41	84	2,450,213.5	526,731.3	1,113.20				Average	
		42	85	2,450,124.5	527,007.4	1,107.00				Average	
		43	86	2,450,035.5	527,241.1	1,106.40					
SR11 SB-2	12.0	1	87	2,451,271.2	511,869.0	1,142.70				Average	
		2	88	2,451,109.8	512,434.4	1,141.40				Average	
		3	89	2,450,942.2	513,035.0	1,142.70				Average	
		4	90	2,450,758.8	513,689.7	1,144.70				Average	
		5	91	2,450,638.0	514,117.7	1,146.30				Average	
		6	92	2,450,579.2	514,330.9	1,146.90				Average	
		7	93	2,450,533.0	514,518.7	1,147.60				Average	
		8	94	2,450,480.5	514,738.8	1,148.20				Average	
		9	95	2,450,442.5	514,916.6	1,148.80				Average	
		10	96	2,450,401.2	515,120.2	1,149.40				Average	
		11	97	2,450,354.8	515,399.3	1,150.20				Average	
		12	98	2,450,314.0	515,661.3	1,150.90				Average	
		13	99	2,450,261.5	516,051.8	1,152.40				Average	
		14	100	2,450,229.0	516,389.9	1,153.20				Average	
		15	101	2,450,209.5	516,675.9	1,153.90				Average	
		16	102	2,450,193.0	516,960.2	1,155.00				Average	
		17	103	2,450,184.8	517,280.8	1,155.90				Average	

INPUT: ROADWAYS

MAH SR11/2386

		18	104	2,450,186.5	517,595.6	1,156.70				Average	
		19	105	2,450,201.0	518,205.2	1,158.00				Average	
		20	106	2,450,216.0	518,859.0	1,156.30				Average	
		21	107	2,450,234.0	519,666.1	1,154.10				Average	
		22	108	2,450,252.0	520,448.8	1,151.80				Average	
		23	109	2,450,265.0	521,096.4	1,149.70				Average	
		24	110	2,450,288.0	522,068.9	1,146.90				Average	
		25	111	2,450,303.0	522,776.2	1,144.80				Average	
		26	112	2,450,312.8	523,160.7	1,143.70				Average	
		27	113	2,450,326.0	523,720.5	1,142.00				Average	
		28	114	2,450,334.8	524,116.8	1,140.70				Average	
		29	115	2,450,343.0	524,456.8	1,139.90				Average	
		30	116	2,450,350.5	524,720.9	1,139.00				Average	
		31	117	2,450,355.5	524,936.5	1,138.00				Average	
		32	118	2,450,355.2	525,120.6	1,137.20				Average	
		33	119	2,450,353.8	525,270.8	1,136.80				Average	
		34	120	2,450,346.0	525,422.5	1,136.30				Average	
		35	121	2,450,334.8	525,572.9	1,134.90				Average	
		36	122	2,450,319.5	525,726.5	1,133.70				Average	
		37	123	2,450,293.2	525,921.1	1,131.00				Average	
		38	124	2,450,264.5	526,097.6	1,128.10				Average	
		39	125	2,450,232.5	526,257.6	1,124.60				Average	
		40	126	2,450,182.5	526,476.7	1,119.30				Average	
		41	127	2,450,114.8	526,725.6	1,111.80				Average	
		42	128	2,450,025.2	527,001.1	1,106.50				Average	
		43	129	2,449,943.2	527,213.9	1,105.90					
SR11 SB-1	12.0	43	172	2,449,934.0	527,209.2	1,105.90				Average	
		42	171	2,450,015.5	526,997.0	1,106.50				Average	
		41	170	2,450,105.5	526,722.5	1,111.20				Average	
		40	169	2,450,172.8	526,474.0	1,119.30				Average	
		39	168	2,450,222.5	526,257.9	1,124.60				Average	
		38	167	2,450,254.2	526,097.9	1,128.10				Average	
		37	166	2,450,283.0	525,919.0	1,131.00				Average	
		36	165	2,450,309.5	525,724.5	1,133.70				Average	
		35	164	2,450,323.5	525,572.2	1,134.90				Average	
		34	163	2,450,336.0	525,421.5	1,135.70				Average	
		33	162	2,450,343.5	525,270.8	1,136.80				Average	
		32	161	2,450,345.0	525,120.8	1,136.60				Average	
		31	160	2,450,345.0	524,936.7	1,137.50				Average	

INPUT: ROADWAYS

MAH SR11/2386

		30	159	2,450,340.2	524,721.1	1,139.00				Average	
		29	158	2,450,332.8	524,457.1	1,139.60				Average	
		28	157	2,450,324.2	524,116.3	1,140.70				Average	
		27	156	2,450,315.8	523,717.7	1,141.70				Average	
		26	155	2,450,302.5	523,157.9	1,143.50				Average	
		25	154	2,450,293.0	522,773.3	1,144.90				Average	
		24	153	2,450,278.0	522,066.1	1,146.00				Average	
		23	152	2,450,254.8	521,093.5	1,149.70				Average	
		22	151	2,450,242.0	520,445.9	1,151.80				Average	
		21	150	2,450,223.0	519,666.3	1,153.40				Average	
		20	149	2,450,204.0	518,859.9	1,156.40				Average	
		19	148	2,450,189.5	518,205.5	1,158.00				Average	
		18	147	2,450,174.2	517,595.8	1,156.70				Average	
		17	146	2,450,174.2	517,280.5	1,155.90				Average	
		16	145	2,450,182.8	516,957.4	1,155.00				Average	
		15	144	2,450,198.0	516,675.2	1,154.00				Average	
		14	143	2,450,218.0	516,388.5	1,153.20				Average	
		13	142	2,450,250.5	516,050.2	1,152.40				Average	
		12	141	2,450,303.2	515,660.5	1,150.70				Average	
		11	140	2,450,344.5	515,396.4	1,150.20				Average	
		10	139	2,450,391.2	515,117.3	1,148.40				Average	
		9	138	2,450,432.2	514,913.7	1,148.50				Average	
		8	137	2,450,470.5	514,736.0	1,147.80				Average	
		7	136	2,450,522.8	514,515.9	1,147.60				Average	
		6	135	2,450,569.0	514,328.1	1,146.90				Average	
		5	134	2,450,628.0	514,114.9	1,146.30				Average	
		4	133	2,450,748.5	513,686.8	1,144.60				Average	
		3	132	2,450,932.0	513,032.2	1,142.70				Average	
		2	131	2,451,099.5	512,431.5	1,141.00				Average	
		1	130	2,451,262.8	511,864.3	1,142.70					
Kirk EB	12.0	1	173	2,449,260.5	515,679.3	1,164.30				Average	
		2	174	2,449,776.0	515,689.2	1,158.80				Average	
		3	175	2,450,182.5	515,695.2	1,168.60				Average	Y
		4	176	2,450,527.2	515,703.6	1,168.60				Average	
		5	177	2,450,935.8	515,716.3	1,163.50				Average	
		6	178	2,451,437.5	515,731.8	1,176.40					
Kirk WB	12.0	6	184	2,451,437.5	515,743.8	1,176.40				Average	
		5	183	2,450,936.0	515,728.3	1,163.50				Average	
		4	182	2,450,527.5	515,715.6	1,168.60				Average	Y

INPUT: ROADWAYS

MAH SR11/2386

		3	181	2,450,182.5	515,707.2	1,168.60				Average	
		2	180	2,449,776.2	515,701.2	1,158.80				Average	
		1	179	2,449,260.5	515,691.3	1,164.30					
New EB	12.0	1	185	2,449,044.0	521,176.3	1,149.00				Average	
		2	186	2,449,744.8	521,189.4	1,152.90				Average	
		3	187	2,449,882.0	521,191.5	1,157.40				Average	
		4	188	2,449,970.2	521,193.1	1,161.30				Average	
		5	189	2,450,047.5	521,186.9	1,163.90				Average	
		6	190	2,450,149.0	521,169.1	1,166.80				Average	Y
		7	191	2,450,480.8	521,082.0	1,167.50				Average	
		8	192	2,450,564.5	521,064.3	1,165.80				Average	
		9	193	2,450,649.0	521,056.2	1,163.20				Average	
		10	194	2,450,731.5	521,053.5	1,161.00				Average	
		11	195	2,450,871.8	521,053.8	1,158.00				Average	
		12	196	2,451,472.5	521,058.8	1,156.10					
New WB	12.0	12	208	2,451,472.5	521,070.8	1,156.10				Average	
		11	207	2,450,872.0	521,065.8	1,158.00				Average	
		10	206	2,450,731.5	521,065.5	1,159.20				Average	
		9	205	2,450,649.2	521,068.2	1,162.80				Average	
		8	204	2,450,564.5	521,076.3	1,165.80				Average	
		7	203	2,450,480.8	521,094.0	1,166.00				Average	Y
		6	202	2,450,149.0	521,181.1	1,166.80				Average	
		5	201	2,450,047.5	521,198.9	1,163.90				Average	
		4	200	2,449,970.5	521,205.1	1,161.30				Average	
		3	199	2,449,882.0	521,203.5	1,157.40				Average	
		2	198	2,449,745.0	521,201.4	1,152.90				Average	
		1	197	2,449,044.2	521,188.3	1,149.00					
Mahoning EB-1	12.0	1	209	2,448,759.0	526,833.2	1,121.10				Average	
		2	210	2,449,181.2	526,840.6	1,112.50				Average	
		3	211	2,449,486.8	526,846.1	1,114.60				Average	
		4	212	2,449,592.8	526,847.5	1,117.20				Average	
		5	213	2,449,796.5	526,851.0	1,121.50				Average	
		6	214	2,449,944.8	526,859.2	1,125.10				Average	Y
		7	215	2,450,293.0	526,910.7	1,128.50				Average	
		8	216	2,450,383.5	526,927.8	1,128.70				Average	
		9	217	2,450,454.5	526,938.8	1,128.30				Average	
		10	218	2,451,052.0	527,044.7	1,139.30				Average	
		11	219	2,451,194.0	527,069.0	1,139.50				Average	
		12	220	2,451,634.8	527,143.6	1,132.30					



**INPUT: ROADWAYS**

**MAH SR11/2386**

Mahoning EB-2	12.0	1	221	2,448,759.0	526,845.2	1,121.10				Average	
		2	222	2,449,181.2	526,852.6	1,112.50				Average	
		3	223	2,449,486.8	526,858.1	1,114.60				Average	
		4	224	2,449,592.8	526,859.5	1,117.20				Average	
		5	225	2,449,796.5	526,863.0	1,121.50				Average	
		6	226	2,449,942.0	526,870.7	1,125.10				Average	Y
		7	227	2,450,288.8	526,922.6	1,128.50				Average	
		8	228	2,450,381.5	526,940.2	1,128.30				Average	
		9	229	2,450,450.5	526,950.9	1,128.30				Average	
		10	230	2,451,049.8	527,054.7	1,139.30				Average	
		11	231	2,451,192.0	527,079.8	1,139.60				Average	
		12	232	2,451,631.8	527,155.7	1,132.40					
Mahoning WB-center	12.0	1	233	2,448,759.2	526,855.0	1,121.10				Average	
		2	234	2,449,181.5	526,862.4	1,112.50				Average	
		3	235	2,449,487.0	526,867.9	1,114.60				Average	
		4	236	2,449,593.0	526,869.3	1,117.20				Average	
		5	237	2,449,795.5	526,873.9	1,121.50				Average	
		6	238	2,449,938.8	526,882.0	1,125.10				Average	Y
		7	239	2,450,284.0	526,935.7	1,128.20				Average	
		8	240	2,450,382.0	526,952.8	1,128.30				Average	
		9	241	2,450,447.0	526,962.4	1,128.30				Average	
		10	242	2,451,048.2	527,065.2	1,139.30				Average	
		11	243	2,451,189.5	527,089.6	1,139.60				Average	
		12	244	2,451,629.5	527,165.9	1,132.70					
Mahoning WB-2	12.0	12	256	2,451,627.5	527,174.6	1,132.70				Average	
		11	255	2,451,187.5	527,098.5	1,139.60				Average	
		10	254	2,451,048.2	527,073.9	1,139.30				Average	
		9	253	2,450,444.8	526,972.6	1,128.30				Average	
		8	252	2,450,379.0	526,965.6	1,128.70				Average	
		7	251	2,450,279.0	526,947.2	1,128.20				Average	Y
		6	250	2,449,935.2	526,894.7	1,123.60				Average	
		5	249	2,449,791.5	526,884.8	1,120.60				Average	
		4	248	2,449,593.5	526,879.2	1,117.10				Average	
		3	247	2,449,487.5	526,877.7	1,114.50				Average	
		2	246	2,449,182.0	526,872.2	1,112.60				Average	
		1	245	2,448,759.8	526,864.8	1,121.10					
Mahoning WB-1	12.0	12	268	2,451,625.2	527,184.8	1,132.70				Average	
		11	267	2,451,184.5	527,110.5	1,139.60				Average	
		10	266	2,451,046.0	527,085.6	1,139.30				Average	

INPUT: ROADWAYS

MAH SR11/2386

		9	265	2,450,440.5	526,985.9	1,128.30				Average	
		8	264	2,450,375.5	526,978.0	1,128.70				Average	
		7	263	2,450,274.5	526,960.4	1,128.20				Average	Y
		6	262	2,449,931.5	526,906.1	1,123.60				Average	
		5	261	2,449,791.5	526,896.8	1,120.60				Average	
		4	260	2,449,593.2	526,891.2	1,117.10				Average	
		3	259	2,449,487.5	526,889.7	1,114.50				Average	
		2	258	2,449,182.0	526,884.2	1,112.60				Average	
		1	257	2,448,759.8	526,876.8	1,121.10					
Ramp: Mahoning to SR 11S	12.0	22	290	2,449,830.5	526,832.2	1,123.60	Onramp	15.00	100	Average	
		21	289	2,449,891.5	526,734.7	1,126.10				Average	
		20	288	2,449,949.0	526,636.5	1,127.80				Average	
		19	287	2,450,029.5	526,501.5	1,128.20				Average	
		18	286	2,450,073.5	526,419.2	1,128.50				Average	
		17	285	2,450,112.0	526,327.8	1,127.30				Average	
		16	284	2,450,142.0	526,248.3	1,125.50				Average	
		15	283	2,450,175.8	526,143.3	1,127.30				Average	
		14	282	2,450,205.8	526,039.5	1,128.10				Average	
		13	281	2,450,233.0	525,932.0	1,129.50				Average	
		12	280	2,450,257.0	525,827.2	1,131.20				Average	
		11	279	2,450,277.2	525,701.7	1,132.20				Average	
		10	278	2,450,292.2	525,595.9	1,134.50				Average	
		9	277	2,450,303.2	525,497.7	1,135.00				Average	
		8	276	2,450,309.5	525,417.1	1,135.00				Average	
		7	275	2,450,320.2	525,267.3	1,136.30				Average	
		6	274	2,450,326.8	525,124.6	1,136.60				Average	
		5	273	2,450,328.0	525,027.6	1,137.00				Average	
		4	272	2,450,330.0	524,935.9	1,137.50				Average	
		3	271	2,450,329.2	524,720.5	1,139.00				Average	
		2	270	2,450,327.8	524,457.3	1,139.60				Average	
		1	269	2,450,322.8	524,116.3	1,140.70					
Ramp: SR 11N to Mahoning	12.0	1	291	2,450,461.0	524,726.6	1,138.90				Average	
		2	292	2,450,470.0	524,786.7	1,138.80				Average	
		3	293	2,450,472.5	524,942.3	1,138.50				Average	
		4	294	2,450,477.2	525,119.1	1,138.70				Average	
		5	295	2,450,481.8	525,277.6	1,138.30				Average	
		6	296	2,450,484.8	525,426.3	1,137.90				Average	
		7	297	2,450,487.0	525,576.0	1,136.70				Average	
		8	298	2,450,488.5	525,676.4	1,136.00				Average	

**INPUT: ROADWAYS**

**MAH SR11/2386**

		9	299	2,450,485.0	525,772.0	1,136.00				Average	
		10	300	2,450,482.0	525,906.4	1,137.60				Average	
		11	301	2,450,473.5	526,083.0	1,139.30				Average	
		12	302	2,450,456.5	526,452.9	1,139.70				Average	
		13	303	2,450,440.8	526,903.0	1,128.50					
Oakcrest WB	12.0	6	309	2,451,311.2	523,235.6	1,147.10				Average	
		5	308	2,450,966.0	523,236.4	1,145.10				Average	
		4	307	2,450,530.5	523,230.8	1,159.10				Average	Y
		3	306	2,450,196.0	523,223.2	1,159.10				Average	
		2	305	2,449,784.2	523,217.4	1,151.00				Average	
		1	304	2,449,408.0	523,211.2	1,158.50					
Oakcrest EB	12.0	1	310	2,449,408.0	523,199.2	1,158.50				Average	
		2	311	2,449,784.2	523,205.4	1,151.00				Average	
		3	312	2,450,196.0	523,211.2	1,159.10				Average	Y
		4	313	2,450,530.5	523,218.8	1,159.10				Average	
		5	314	2,450,966.0	523,224.4	1,145.00				Average	
		6	315	2,451,311.2	523,223.6	1,147.00					

INPUT: TRAFFIC FOR LAeq1h Volumes

MAH SR11/2386

ASC Group, Inc. mas		5 April 2018 TNM 2.5											
INPUT: TRAFFIC FOR LAeq1h Volumes PROJECT/CONTRACT: RUN:		MAH SR11/2386 validation-M7											
Roadway	Points												
Name	Name	No.	Segment		MTrucks		HTrucks		Buses		Motorcycles		
			Autos		V	S	V	S	V	S	V	S	
			V	S	V	S	V	S	V	S			
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph			
SR11 NB-1	1	1	321	65	20	65	40	65	0	0	0	0	
	2	2	321	65	20	65	40	65	0	0	0	0	
	3	3	321	65	20	65	40	65	0	0	0	0	
	4	4	321	65	20	65	40	65	0	0	0	0	
	5	5	321	65	20	65	40	65	0	0	0	0	
	6	6	321	65	20	65	40	65	0	0	0	0	
	7	7	321	65	20	65	40	65	0	0	0	0	
	8	8	321	65	20	65	40	65	0	0	0	0	
	9	9	321	65	20	65	40	65	0	0	0	0	
	10	10	321	65	20	65	40	65	0	0	0	0	
	11	11	321	65	20	65	40	65	0	0	0	0	
	12	12	321	65	20	65	40	65	0	0	0	0	
	13	13	321	65	20	65	40	65	0	0	0	0	
	14	14	321	65	20	65	40	65	0	0	0	0	
	15	15	321	65	20	65	40	65	0	0	0	0	
	16	16	321	65	20	65	40	65	0	0	0	0	
	17	17	321	65	20	65	40	65	0	0	0	0	
	18	18	321	65	20	65	40	65	0	0	0	0	
	19	19	321	65	20	65	40	65	0	0	0	0	
	20	20	321	65	20	65	40	65	0	0	0	0	
	21	21	321	65	20	65	40	65	0	0	0	0	
	22	22	321	65	20	65	40	65	0	0	0	0	
	23	23	321	65	20	65	40	65	0	0	0	0	

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	24	24	321	65	20	65	40	65	0	0	0	0
	25	25	321	65	20	65	40	65	0	0	0	0
	26	26	321	65	20	65	40	65	0	0	0	0
	27	27	321	65	20	65	40	65	0	0	0	0
	28	28	321	65	20	65	40	65	0	0	0	0
	29	29	321	65	20	65	40	65	0	0	0	0
	30	30	321	65	20	65	40	65	0	0	0	0
	31	31	321	65	20	65	40	65	0	0	0	0
	32	32	321	65	20	65	40	65	0	0	0	0
	33	33	321	65	20	65	40	65	0	0	0	0
	34	34	321	65	20	65	40	65	0	0	0	0
	35	35	321	65	20	65	40	65	0	0	0	0
	36	36	321	65	20	65	40	65	0	0	0	0
	37	37	321	65	20	65	40	65	0	0	0	0
	38	38	321	65	20	65	40	65	0	0	0	0
	39	39	321	65	20	65	40	65	0	0	0	0
	40	40	321	65	20	65	40	65	0	0	0	0
	41	41	321	65	20	65	40	65	0	0	0	0
	42	42	321	65	20	65	40	65	0	0	0	0
	43	43										
SR11 NB-2	1	44	321	65	20	65	40	65	0	0	0	0
	2	45	321	65	20	65	40	65	0	0	0	0
	3	46	321	65	20	65	40	65	0	0	0	0
	4	47	321	65	20	65	40	65	0	0	0	0
	5	48	321	65	20	65	40	65	0	0	0	0
	6	49	321	65	20	65	40	65	0	0	0	0
	7	50	321	65	20	65	40	65	0	0	0	0
	8	51	321	65	20	65	40	65	0	0	0	0
	9	52	321	65	20	65	40	65	0	0	0	0
	10	53	321	65	20	65	40	65	0	0	0	0
	11	54	321	65	20	65	40	65	0	0	0	0
	12	55	321	65	20	65	40	65	0	0	0	0
	13	56	321	65	20	65	40	65	0	0	0	0
	14	57	321	65	20	65	40	65	0	0	0	0
	15	58	321	65	20	65	40	65	0	0	0	0
	16	59	321	65	20	65	40	65	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	17	60	321	65	20	65	40	65	0	0	0	0
	18	61	321	65	20	65	40	65	0	0	0	0
	19	62	321	65	20	65	40	65	0	0	0	0
	20	63	321	65	20	65	40	65	0	0	0	0
	21	64	321	65	20	65	40	65	0	0	0	0
	22	65	321	65	20	65	40	65	0	0	0	0
	23	66	321	65	20	65	40	0	0	0	0	0
	24	67	321	65	20	65	40	65	0	0	0	0
	25	68	321	65	20	65	40	65	0	0	0	0
	26	69	321	65	20	65	40	65	0	0	0	0
	27	70	321	65	20	65	40	65	0	0	0	0
	28	71	321	65	20	65	40	65	0	0	0	0
	29	72	321	65	20	65	40	65	0	0	0	0
	30	73	321	65	20	65	40	65	0	0	0	0
	31	74	321	65	20	65	40	65	0	0	0	0
	32	75	321	65	20	65	40	65	0	0	0	0
	33	76	321	65	20	65	40	65	0	0	0	0
	34	77	321	65	20	65	40	65	0	0	0	0
	35	78	321	65	20	65	40	65	0	0	0	0
	36	79	321	65	20	65	40	65	0	0	0	0
	37	80	321	65	20	65	40	65	0	0	0	0
	38	81	321	65	20	65	40	65	0	0	0	0
	39	82	321	65	20	65	40	65	0	0	0	0
	40	83	321	65	20	65	40	65	0	0	0	0
	41	84	321	65	20	65	40	65	0	0	0	0
	42	85	321	65	20	65	40	65	0	0	0	0
	43	86										
SR11 SB-2	1	87	341	65	20	65	58	65	2	65	0	0
	2	88	341	65	20	65	58	65	2	65	0	0
	3	89	341	65	20	65	58	65	2	65	0	0
	4	90	341	65	20	65	58	65	2	65	0	0
	5	91	341	65	20	65	58	65	2	65	0	0
	6	92	341	65	20	65	58	65	2	65	0	0
	7	93	341	65	20	65	58	65	2	65	0	0
	8	94	341	65	20	65	58	65	2	65	0	0
	9	95	341	65	20	65	58	65	2	65	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	10	96	341	65	20	65	58	65	2	65	0	0
	11	97	341	65	20	65	58	65	2	65	0	0
	12	98	341	65	20	65	58	65	2	65	0	0
	13	99	341	65	20	65	58	65	2	65	0	0
	14	100	341	65	20	65	58	65	2	65	0	0
	15	101	341	65	20	65	58	65	2	65	0	0
	16	102	341	65	20	65	58	65	2	65	0	0
	17	103	341	65	20	65	58	65	2	65	0	0
	18	104	341	65	20	65	58	65	2	65	0	0
	19	105	341	65	20	65	58	65	2	65	0	0
	20	106	341	65	20	65	58	65	2	65	0	0
	21	107	341	65	20	65	58	65	2	65	0	0
	22	108	341	65	20	65	58	65	2	65	0	0
	23	109	341	65	20	65	58	65	2	65	0	0
	24	110	341	65	20	65	58	65	2	65	0	0
	25	111	341	65	20	65	58	65	2	65	0	0
	26	112	341	65	20	65	58	65	2	65	0	0
	27	113	341	65	20	65	58	65	2	65	0	0
	28	114	341	65	20	65	58	65	2	65	0	0
	29	115	341	65	20	65	58	65	2	65	0	0
	30	116	341	65	20	65	58	65	2	65	0	0
	31	117	341	65	20	65	58	65	2	65	0	0
	32	118	341	65	20	65	58	65	2	65	0	0
	33	119	341	65	20	65	58	65	2	65	0	0
	34	120	341	65	20	65	58	65	2	65	0	0
	35	121	341	65	20	65	58	65	2	65	0	0
	36	122	341	65	20	65	58	65	2	65	0	0
	37	123	341	65	20	65	58	65	2	65	0	0
	38	124	341	65	20	65	58	65	2	65	0	0
	39	125	341	65	20	65	58	65	2	65	0	0
	40	126	341	65	20	65	58	65	2	65	0	0
	41	127	341	65	20	65	58	65	2	65	0	0
	42	128	341	65	20	65	58	65	2	65	0	0
	43	129										
SR11 SB-1	43	172	341	65	20	65	58	65	2	65	0	0
	42	171	341	65	20	65	58	65	2	65	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	41	170	341	65	20	65	58	65	2	65	0	0
	40	169	341	65	20	65	58	65	2	65	0	0
	39	168	341	65	20	65	58	65	2	65	0	0
	38	167	341	65	20	65	58	65	2	65	0	0
	37	166	341	65	20	65	58	65	2	65	0	0
	36	165	341	65	20	65	58	65	2	65	0	0
	35	164	341	65	20	65	58	65	2	65	0	0
	34	163	341	65	20	65	58	65	2	65	0	0
	33	162	341	65	20	65	58	65	2	65	0	0
	32	161	341	65	20	65	58	65	2	65	0	0
	31	160	341	65	20	65	58	65	2	65	0	0
	30	159	341	65	20	65	58	65	2	65	0	0
	29	158	341	65	20	65	58	65	2	65	0	0
	28	157	341	65	20	65	58	65	2	65	0	0
	27	156	341	65	20	65	58	65	2	65	0	0
	26	155	341	65	20	65	58	65	2	65	0	0
	25	154	341	65	20	65	58	65	2	65	0	0
	24	153	341	65	20	65	58	65	2	65	0	0
	23	152	341	65	20	65	58	65	2	65	0	0
	22	151	341	65	20	65	58	65	2	65	0	0
	21	150	341	65	20	65	58	65	2	65	0	0
	20	149	341	65	20	65	58	65	2	65	0	0
	19	148	341	65	20	65	58	65	2	65	0	0
	18	147	341	65	20	65	58	65	2	65	0	0
	17	146	341	65	20	65	58	65	2	65	0	0
	16	145	341	65	20	65	58	65	2	65	0	0
	15	144	341	65	20	65	58	65	2	65	0	0
	14	143	341	65	20	65	58	65	2	65	0	0
	13	142	341	65	20	65	58	65	2	65	0	0
	12	141	341	65	20	65	58	65	2	65	0	0
	11	140	341	65	20	65	58	65	2	65	0	0
	10	139	341	65	20	65	58	65	2	65	0	0
	9	138	341	65	20	65	58	65	2	65	0	0
	8	137	341	65	20	65	58	65	2	65	0	0
	7	136	341	65	20	65	58	65	2	65	0	0
	6	135	341	65	20	65	58	65	2	65	0	0



**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	5	134	341	65	20	65	58	65	2	65	0	0
	4	133	341	65	20	65	58	65	2	65	0	0
	3	132	341	65	20	65	58	65	2	65	0	0
	2	131	341	65	20	65	58	65	2	65	0	0
	1	130										
Kirk EB	1	173	0	0	0	0	0	0	0	0	0	0
	2	174	0	0	0	0	0	0	0	0	0	0
	3	175	0	0	0	0	0	0	0	0	0	0
	4	176	0	0	0	0	0	0	0	0	0	0
	5	177	0	0	0	0	0	0	0	0	0	0
	6	178										
Kirk WB	6	184	0	0	0	0	0	0	0	0	0	0
	5	183	0	0	0	0	0	0	0	0	0	0
	4	182	0	0	0	0	0	0	0	0	0	0
	3	181	0	0	0	0	0	0	0	0	0	0
	2	180	0	0	0	0	0	0	0	0	0	0
	1	179										
New EB	1	185	0	0	0	0	0	0	0	0	0	0
	2	186	0	0	0	0	0	0	0	0	0	0
	3	187	0	0	0	0	0	0	0	0	0	0
	4	188	0	0	0	0	0	0	0	0	0	0
	5	189	0	0	0	0	0	0	0	0	0	0
	6	190	0	0	0	0	0	0	0	0	0	0
	7	191	0	0	0	0	0	0	0	0	0	0
	8	192	0	0	0	0	0	0	0	0	1	0
	9	193	0	0	0	0	0	0	0	0	0	0
	10	194	0	0	0	0	0	0	0	0	0	0
	11	195	0	0	0	0	0	0	0	0	0	0
	12	196										
New WB	12	208	0	0	0	0	0	0	0	0	0	0
	11	207	0	0	0	0	0	0	0	0	0	0
	10	206	0	0	0	0	0	0	0	0	0	0
	9	205	0	0	0	0	0	0	0	0	0	0
	8	204	0	0	0	0	0	0	0	0	0	0
	7	203	0	0	0	0	0	0	0	0	0	0
	6	202	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	5	201	0	0	0	0	0	0	0	0	0	0
	4	200	0	0	0	0	0	0	0	0	0	0
	3	199	0	0	0	0	0	0	0	0	0	0
	2	198	0	0	0	0	0	0	0	0	0	0
	1	197										
Mahoning EB-1	1	209	0	0	0	0	0	0	0	0	0	0
	2	210	0	0	0	0	0	0	0	0	0	0
	3	211	0	0	0	0	0	0	0	0	0	0
	4	212	0	0	0	0	0	0	0	0	0	0
	5	213	0	0	0	0	0	0	0	0	0	0
	6	214	0	0	0	0	0	0	0	0	0	0
	7	215	0	0	0	0	0	0	0	0	0	0
	8	216	0	0	0	0	0	0	0	0	0	0
	9	217	0	0	0	0	0	0	0	0	0	0
	10	218	0	0	0	0	0	0	0	0	0	0
	11	219	0	0	0	0	0	0	0	0	0	0
	12	220										
Mahoning EB-2	1	221	0	0	0	0	0	0	0	0	0	0
	2	222	0	0	0	0	0	0	0	0	0	0
	3	223	0	0	0	0	0	0	0	0	0	0
	4	224	0	0	0	0	0	0	0	0	0	0
	5	225	0	0	0	0	0	0	0	0	0	0
	6	226	0	0	0	0	0	0	0	0	0	0
	7	227	0	0	0	0	0	0	0	0	0	0
	8	228	0	0	0	0	0	0	0	0	0	0
	9	229	0	0	0	0	0	0	0	0	0	0
	10	230	0	0	0	0	0	0	0	0	0	0
	11	231	0	0	0	0	0	0	0	0	0	0
	12	232										
Mahoning WB-center	1	233	0	0	0	0	0	0	0	0	0	0
	2	234	0	0	0	0	0	0	0	0	0	0
	3	235	0	0	0	0	0	0	0	0	0	0
	4	236	0	0	0	0	0	0	0	0	0	0
	5	237	0	0	0	0	0	0	0	0	0	0
	6	238	0	0	0	0	0	0	0	0	0	0
	7	239	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	8	240	0	0	0	0	0	0	0	0	0	0
	9	241	0	0	0	0	0	0	0	0	0	0
	10	242	0	0	0	0	0	0	0	0	0	0
	11	243	0	0	0	0	0	0	0	0	0	0
	12	244										
Mahoning WB-2	12	256	0	0	0	0	0	0	0	0	0	0
	11	255	0	0	0	0	0	0	0	0	0	0
	10	254	0	0	0	0	0	0	0	0	0	0
	9	253	0	0	0	0	0	0	0	0	0	0
	8	252	0	0	0	0	0	0	0	0	0	0
	7	251	0	0	0	0	0	0	0	0	0	0
	6	250	0	0	0	0	0	0	0	0	0	0
	5	249	0	0	0	0	0	0	0	0	0	0
	4	248	0	0	0	0	0	0	0	0	0	0
	3	247	0	0	0	0	0	0	0	0	0	0
	2	246	0	0	0	0	0	0	0	0	0	0
	1	245										
Mahoning WB-1	12	268	0	0	0	0	0	0	0	0	0	0
	11	267	0	0	0	0	0	0	0	0	0	0
	10	266	0	0	0	0	0	0	0	0	0	0
	9	265	0	0	0	0	0	0	0	0	0	0
	8	264	0	0	0	0	0	0	0	0	0	0
	7	263	0	0	0	0	0	0	0	0	0	0
	6	262	0	0	0	0	0	0	0	0	0	0
	5	261	0	0	0	0	0	0	0	0	0	0
	4	260	0	0	0	0	0	0	0	0	0	0
	3	259	0	0	0	0	0	0	0	0	0	0
	2	258	0	0	0	0	0	0	0	0	0	0
	1	257										
Ramp: Mahoning to SR 11S	22	290	0	0	0	0	0	0	0	0	0	0
	21	289	0	0	0	0	0	0	0	0	0	0
	20	288	0	0	0	0	0	0	0	0	0	0
	19	287	0	0	0	0	0	0	0	0	0	0
	18	286	0	0	0	0	0	0	0	0	0	0
	17	285	0	0	0	0	0	0	0	0	0	0
	16	284	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	15	283	0	0	0	0	0	0	0	0	0	0
	14	282	0	0	0	0	0	0	0	0	0	0
	13	281	0	0	0	0	0	0	0	0	0	0
	12	280	0	0	0	0	0	0	0	0	0	0
	11	279	0	0	0	0	0	0	0	0	0	0
	10	278	0	0	0	0	0	0	0	0	0	0
	9	277	0	0	0	0	0	0	0	0	0	0
	8	276	0	0	0	0	0	0	0	0	0	0
	7	275	0	0	0	0	0	0	0	0	0	0
	6	274	0	0	0	0	0	0	0	0	0	0
	5	273	0	0	0	0	0	0	0	0	0	0
	4	272	0	0	0	0	0	0	0	0	0	0
	3	271	0	0	0	0	0	0	0	0	0	0
	2	270	0	0	0	0	0	0	0	0	0	0
	1	269										
Ramp: SR 11N to Mahoning	1	291	0	0	0	0	0	0	0	0	0	0
	2	292	0	0	0	0	0	0	0	0	0	0
	3	293	0	0	0	0	0	0	0	0	0	0
	4	294	0	0	0	0	0	0	0	0	0	0
	5	295	0	0	0	0	0	0	0	0	0	0
	6	296	0	0	0	0	0	0	0	0	0	0
	7	297	0	0	0	0	0	0	0	0	0	0
	8	298	0	0	0	0	0	0	0	0	0	0
	9	299	0	0	0	0	0	0	0	0	0	0
	10	300	0	0	0	0	0	0	0	0	0	0
	11	301	0	0	0	0	0	0	0	0	0	0
	12	302	0	0	0	0	0	0	0	0	0	0
	13	303										
Oakcrest WB	6	309	0	0	0	0	0	0	0	0	0	0
	5	308	0	0	0	0	0	0	0	0	0	0
	4	307	0	0	0	0	0	0	0	0	0	0
	3	306	0	0	0	0	0	0	0	0	0	0
	2	305	0	0	0	0	0	0	0	0	0	0
	1	304										
Oakcrest EB	1	310	0	0	0	0	0	0	0	0	0	0
	2	311	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes****MAH SR11/2386**

	3	312	0	0	0	0	0	0	0	0	0	0
	4	313	0	0	0	0	0	0	0	0	0	0
	5	314	0	0	0	0	0	0	0	0	0	0
	6	315										

**INPUT: RECEIVERS**

**MAH SR11/2386**

ASC Group, Inc. mas							5 April 2018 TNM 2.5				
<b>INPUT: RECEIVERS</b>											
<b>PROJECT/CONTRACT:</b>		<b>MAH SR11/2386</b>									
<b>RUN:</b>		<b>validation-M7</b>									
<b>Receiver</b>											
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	dB	dB	dB	dB	
M1	1	0	2,449,878.2	526,486.1	1,131.79	5.00	0.00	66	10.0	8.0	
M2	2	0	2,450,546.8	525,906.6	1,133.69	5.00	0.00	66	10.0	8.0	
M3	3	0	2,450,131.8	525,301.2	1,142.29	5.00	0.00	66	10.0	8.0	
M4	4	0	2,450,550.5	523,479.6	1,142.65	5.00	0.00	66	10.0	8.0	
M6	5	0	2,450,506.0	520,458.4	1,145.31	5.00	0.00	66	10.0	8.0	
M7	6	0	2,450,488.2	517,532.1	1,142.26	5.00	0.00	66	10.0	8.0	Y
M8	7	0	2,450,594.8	515,388.0	1,155.61	5.00	0.00	66	10.0	8.0	
M9	8	0	2,451,175.2	513,420.2	1,138.12	5.00	0.00	66	10.0	8.0	

**RESULTS: SOUND LEVELS**

**MAH SR11/2386**

ASC Group, Inc. mas									5 April 2018 TNM 2.5 Calculated with TNM 2.5				
<b>RESULTS: SOUND LEVELS</b>													
<b>PROJECT/CONTRACT:</b>		<b>MAH SR11/2386</b>											
<b>RUN:</b>		<b>validation-M7</b>											
<b>BARRIER DESIGN:</b>		<b>INPUT HEIGHTS</b>											
<b>ATMOSPHERICS:</b>		<b>68 deg F, 50% RH</b>											
		<b>Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.</b>											

Receiver												
Name	No.	#DUs	Existing	No Barrier	Increase over existing			With Barrier				
			LAeq1h	LAeq1h	Crit'n	Calculated	Crit'n	Type	Calculated	Noise Reduction		Calculated
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	Goal
												minus
												Goal
M1	1	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
M2	2	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
M3	3	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
M4	4	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
M6	5	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
M7	6	0	0.0	61.6	66	61.6	10	----	61.6	0.0	8	-8.0
M8	7	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
M9	8	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
<b>Dwelling Units</b>		<b># DUs</b>	<b>Noise Reduction</b>									
			<b>Min</b>	<b>Avg</b>	<b>Max</b>							
			<b>dB</b>	<b>dB</b>	<b>dB</b>							
All Selected		0	0.0	0.0	0.0							
All Impacted		0	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							





INPUT: ROADWAYS

MAH SR11/2386

		26	26	2,450,421.0	523,153.8	1,143.60				Average	
		27	27	2,450,433.5	523,725.3	1,142.00				Average	
		28	28	2,450,442.5	524,118.8	1,140.40				Average	
		29	29	2,450,450.5	524,462.4	1,139.80				Average	
		30	30	2,450,458.0	524,726.5	1,138.90				Average	
		31	31	2,450,461.0	524,942.6	1,138.50				Average	
		32	32	2,450,462.8	525,119.3	1,138.10				Average	
		33	33	2,450,457.0	525,278.1	1,137.30				Average	
		34	34	2,450,453.0	525,427.2	1,137.10				Average	
		35	35	2,450,441.2	525,580.1	1,136.30				Average	
		36	36	2,450,425.5	525,732.6	1,134.50				Average	
		37	37	2,450,399.0	525,926.2	1,131.90				Average	
		38	38	2,450,370.8	526,102.7	1,129.00				Average	
		39	39	2,450,340.0	526,263.2	1,125.70				Average	
		40	40	2,450,290.0	526,482.5	1,120.20				Average	
		41	41	2,450,224.0	526,734.5	1,113.20				Average	
		42	42	2,450,134.5	527,011.3	1,108.00				Average	
		43	43	2,450,046.0	527,245.0	1,106.40					
SR11 NB-2	12.0	1	44	2,451,366.2	511,895.0	1,142.50				Average	
		2	45	2,451,203.0	512,462.0	1,140.90				Average	
		3	46	2,451,035.5	513,062.7	1,142.60				Average	
		4	47	2,450,850.2	513,717.3	1,144.50				Average	
		5	48	2,450,734.0	514,145.3	1,146.30				Average	
		6	49	2,450,672.2	514,356.5	1,147.00				Average	
		7	50	2,450,624.0	514,546.4	1,147.00				Average	
		8	51	2,450,577.2	514,762.3	1,147.50				Average	
		9	52	2,450,537.2	514,944.0	1,148.60				Average	
		10	53	2,450,494.5	515,143.2	1,149.40				Average	
		11	54	2,450,445.5	515,429.4	1,150.40				Average	
		12	55	2,450,408.0	515,668.5	1,149.90				Average	
		13	56	2,450,356.0	516,081.1	1,152.20				Average	
		14	57	2,450,322.5	516,419.1	1,153.20				Average	
		15	58	2,450,306.0	516,682.7	1,153.40				Average	
		16	59	2,450,290.0	516,974.1	1,154.90				Average	
		17	60	2,450,282.2	517,280.9	1,155.70				Average	
		18	61	2,450,282.8	517,597.1	1,156.30				Average	
		19	62	2,450,297.5	518,208.7	1,157.60				Average	
		20	63	2,450,309.5	518,851.9	1,155.90				Average	
		21	64	2,450,328.0	519,671.8	1,154.10				Average	

INPUT: ROADWAYS

MAH SR11/2386

		22	65	2,450,348.2	520,447.3	1,151.70				Average	
		23	66	2,450,361.0	521,077.3	1,149.70				Average	
		24	67	2,450,384.5	522,070.6	1,146.80				Average	
		25	68	2,450,400.0	522,778.2	1,144.80				Average	
		26	69	2,450,410.0	523,153.8	1,143.60				Average	
		27	70	2,450,423.2	523,721.6	1,142.10				Average	
		28	71	2,450,431.5	524,119.3	1,140.40				Average	
		29	72	2,450,440.2	524,462.6	1,139.80				Average	
		30	73	2,450,447.8	524,726.6	1,138.50				Average	
		31	74	2,450,450.5	524,942.4	1,137.10				Average	
		32	75	2,450,452.5	525,119.3	1,138.10				Average	
		33	76	2,450,447.0	525,276.8	1,137.30				Average	
		34	77	2,450,442.2	525,426.6	1,137.10				Average	
		35	78	2,450,431.0	525,580.3	1,135.20				Average	
		36	79	2,450,415.5	525,732.8	1,134.50				Average	
		37	80	2,450,388.8	525,926.3	1,131.90				Average	
		38	81	2,450,360.5	526,102.8	1,129.00				Average	
		39	82	2,450,330.0	526,263.4	1,125.70				Average	
		40	83	2,450,279.2	526,479.7	1,120.20				Average	
		41	84	2,450,213.5	526,731.3	1,113.20				Average	
		42	85	2,450,124.5	527,007.4	1,107.00				Average	
		43	86	2,450,035.5	527,241.1	1,106.40					
SR11 SB-2	12.0	1	87	2,451,271.2	511,869.0	1,142.70				Average	
		2	88	2,451,109.8	512,434.4	1,141.40				Average	
		3	89	2,450,942.2	513,035.0	1,142.70				Average	
		4	90	2,450,758.8	513,689.7	1,144.70				Average	
		5	91	2,450,638.0	514,117.7	1,146.30				Average	
		6	92	2,450,579.2	514,330.9	1,146.90				Average	
		7	93	2,450,533.0	514,518.7	1,147.60				Average	
		8	94	2,450,480.5	514,738.8	1,148.20				Average	
		9	95	2,450,442.5	514,916.6	1,148.80				Average	
		10	96	2,450,401.2	515,120.2	1,149.40				Average	
		11	97	2,450,354.8	515,399.3	1,150.20				Average	
		12	98	2,450,314.0	515,661.3	1,150.90				Average	
		13	99	2,450,261.5	516,051.8	1,152.40				Average	
		14	100	2,450,229.0	516,389.9	1,153.20				Average	
		15	101	2,450,209.5	516,675.9	1,153.90				Average	
		16	102	2,450,193.0	516,960.2	1,155.00				Average	
		17	103	2,450,184.8	517,280.8	1,155.90				Average	

INPUT: ROADWAYS

MAH SR11/2386

		18	104	2,450,186.5	517,595.6	1,156.70				Average	
		19	105	2,450,201.0	518,205.2	1,158.00				Average	
		20	106	2,450,216.0	518,859.0	1,156.30				Average	
		21	107	2,450,234.0	519,666.1	1,154.10				Average	
		22	108	2,450,252.0	520,448.8	1,151.80				Average	
		23	109	2,450,265.0	521,096.4	1,149.70				Average	
		24	110	2,450,288.0	522,068.9	1,146.90				Average	
		25	111	2,450,303.0	522,776.2	1,144.80				Average	
		26	112	2,450,312.8	523,160.7	1,143.70				Average	
		27	113	2,450,326.0	523,720.5	1,142.00				Average	
		28	114	2,450,334.8	524,116.8	1,140.70				Average	
		29	115	2,450,343.0	524,456.8	1,139.90				Average	
		30	116	2,450,350.5	524,720.9	1,139.00				Average	
		31	117	2,450,355.5	524,936.5	1,138.00				Average	
		32	118	2,450,355.2	525,120.6	1,137.20				Average	
		33	119	2,450,353.8	525,270.8	1,136.80				Average	
		34	120	2,450,346.0	525,422.5	1,136.30				Average	
		35	121	2,450,334.8	525,572.9	1,134.90				Average	
		36	122	2,450,319.5	525,726.5	1,133.70				Average	
		37	123	2,450,293.2	525,921.1	1,131.00				Average	
		38	124	2,450,264.5	526,097.6	1,128.10				Average	
		39	125	2,450,232.5	526,257.6	1,124.60				Average	
		40	126	2,450,182.5	526,476.7	1,119.30				Average	
		41	127	2,450,114.8	526,725.6	1,111.80				Average	
		42	128	2,450,025.2	527,001.1	1,106.50				Average	
		43	129	2,449,943.2	527,213.9	1,105.90					
SR11 SB-1	12.0	43	172	2,449,934.0	527,209.2	1,105.90				Average	
		42	171	2,450,015.5	526,997.0	1,106.50				Average	
		41	170	2,450,105.5	526,722.5	1,111.20				Average	
		40	169	2,450,172.8	526,474.0	1,119.30				Average	
		39	168	2,450,222.5	526,257.9	1,124.60				Average	
		38	167	2,450,254.2	526,097.9	1,128.10				Average	
		37	166	2,450,283.0	525,919.0	1,131.00				Average	
		36	165	2,450,309.5	525,724.5	1,133.70				Average	
		35	164	2,450,323.5	525,572.2	1,134.90				Average	
		34	163	2,450,336.0	525,421.5	1,135.70				Average	
		33	162	2,450,343.5	525,270.8	1,136.80				Average	
		32	161	2,450,345.0	525,120.8	1,136.60				Average	
		31	160	2,450,345.0	524,936.7	1,137.50				Average	

INPUT: ROADWAYS

MAH SR11/2386

		30	159	2,450,340.2	524,721.1	1,139.00				Average	
		29	158	2,450,332.8	524,457.1	1,139.60				Average	
		28	157	2,450,324.2	524,116.3	1,140.70				Average	
		27	156	2,450,315.8	523,717.7	1,141.70				Average	
		26	155	2,450,302.5	523,157.9	1,143.50				Average	
		25	148	2,450,293.0	522,773.3	1,144.90				Average	
		24	153	2,450,278.0	522,066.1	1,146.00				Average	
		23	152	2,450,254.8	521,093.5	1,149.70				Average	
		22	151	2,450,242.0	520,445.9	1,151.80				Average	
		21	150	2,450,223.0	519,666.3	1,153.40				Average	
		20	149	2,450,204.0	518,859.9	1,156.40				Average	
		19	148	2,450,189.5	518,205.5	1,158.00				Average	
		18	147	2,450,174.2	517,595.8	1,156.70				Average	
		17	146	2,450,174.2	517,280.5	1,155.90				Average	
		16	145	2,450,182.8	516,957.4	1,155.00				Average	
		15	144	2,450,198.0	516,675.2	1,154.00				Average	
		14	143	2,450,218.0	516,388.5	1,153.20				Average	
		13	142	2,450,250.5	516,050.2	1,152.40				Average	
		12	141	2,450,303.2	515,660.5	1,150.70				Average	
		11	140	2,450,344.5	515,396.4	1,150.20				Average	
		10	139	2,450,391.2	515,117.3	1,148.40				Average	
		9	138	2,450,432.2	514,913.7	1,148.50				Average	
		8	137	2,450,470.5	514,736.0	1,147.80				Average	
		7	136	2,450,522.8	514,515.9	1,147.60				Average	
		6	135	2,450,569.0	514,328.1	1,146.90				Average	
		5	134	2,450,628.0	514,114.9	1,146.30				Average	
		4	133	2,450,748.5	513,686.8	1,144.60				Average	
		3	132	2,450,932.0	513,032.2	1,142.70				Average	
		2	131	2,451,099.5	512,431.5	1,141.00				Average	
		1	130	2,451,262.8	511,864.3	1,142.70					
Kirk EB	12.0	1	173	2,449,260.5	515,679.3	1,164.30				Average	
		2	174	2,449,776.0	515,689.2	1,158.80				Average	
		3	175	2,450,182.5	515,695.2	1,168.60				Average	Y
		4	176	2,450,527.2	515,703.6	1,168.60				Average	
		5	177	2,450,935.8	515,716.3	1,163.50				Average	
		6	178	2,451,437.5	515,731.8	1,176.40					
Kirk WB	12.0	6	184	2,451,437.5	515,743.8	1,176.40				Average	
		5	183	2,450,936.0	515,728.3	1,163.50				Average	
		4	182	2,450,527.5	515,715.6	1,168.60				Average	Y

INPUT: ROADWAYS

MAH SR11/2386

		3	181	2,450,182.5	515,707.2	1,168.60				Average	
		2	180	2,449,776.2	515,701.2	1,158.80				Average	
		1	179	2,449,260.5	515,691.3	1,164.30					
New EB	12.0	1	185	2,449,044.0	521,176.3	1,149.00				Average	
		2	186	2,449,744.8	521,189.4	1,152.90				Average	
		3	187	2,449,882.0	521,191.5	1,157.40				Average	
		4	188	2,449,970.2	521,193.1	1,161.30				Average	
		5	189	2,450,047.5	521,186.9	1,163.90				Average	
		6	190	2,450,149.0	521,169.1	1,166.80				Average	Y
		7	191	2,450,480.8	521,082.0	1,167.50				Average	
		8	192	2,450,564.5	521,064.3	1,165.80				Average	
		9	193	2,450,649.0	521,056.2	1,163.20				Average	
		10	194	2,450,731.5	521,053.5	1,161.00				Average	
		11	195	2,450,871.8	521,053.8	1,158.00				Average	
		12	196	2,451,472.5	521,058.8	1,156.10					
New WB	12.0	12	208	2,451,472.5	521,070.8	1,156.10				Average	
		11	207	2,450,872.0	521,065.8	1,158.00				Average	
		10	206	2,450,731.5	521,065.5	1,159.20				Average	
		9	205	2,450,649.2	521,068.2	1,162.80				Average	
		8	204	2,450,564.5	521,076.3	1,165.80				Average	
		7	203	2,450,480.8	521,094.0	1,166.00				Average	Y
		6	202	2,450,149.0	521,181.1	1,166.80				Average	
		5	201	2,450,047.5	521,198.9	1,163.90				Average	
		4	200	2,449,970.5	521,205.1	1,161.30				Average	
		3	199	2,449,882.0	521,203.5	1,157.40				Average	
		2	198	2,449,745.0	521,201.4	1,152.90				Average	
		1	197	2,449,044.2	521,188.3	1,149.00					
Mahoning EB-1	12.0	1	209	2,448,759.0	526,833.2	1,121.10				Average	
		2	210	2,449,181.2	526,840.6	1,112.50				Average	
		3	211	2,449,486.8	526,846.1	1,114.60				Average	
		4	212	2,449,592.8	526,847.5	1,117.20				Average	
		5	213	2,449,796.5	526,851.0	1,121.50				Average	
		6	214	2,449,944.8	526,859.2	1,125.10				Average	Y
		7	215	2,450,293.0	526,910.7	1,128.50				Average	
		8	216	2,450,383.5	526,927.8	1,128.70				Average	
		9	217	2,450,454.5	526,938.8	1,128.30				Average	
		10	218	2,451,052.0	527,044.7	1,139.30				Average	
		11	219	2,451,194.0	527,069.0	1,139.50				Average	
		12	220	2,451,634.8	527,143.6	1,132.30					

**INPUT: ROADWAYS**

**MAH SR11/2386**

Mahoning EB-2	12.0	1	221	2,448,759.0	526,845.2	1,121.10				Average	
		2	222	2,449,181.2	526,852.6	1,112.50				Average	
		3	223	2,449,486.8	526,858.1	1,114.60				Average	
		4	224	2,449,592.8	526,859.5	1,117.20				Average	
		5	225	2,449,796.5	526,863.0	1,121.50				Average	
		6	226	2,449,942.0	526,870.7	1,125.10				Average	Y
		7	227	2,450,288.8	526,922.6	1,128.50				Average	
		8	228	2,450,381.5	526,940.2	1,128.30				Average	
		9	229	2,450,450.5	526,950.9	1,128.30				Average	
		10	230	2,451,049.8	527,054.7	1,139.30				Average	
		11	231	2,451,192.0	527,079.8	1,139.60				Average	
		12	232	2,451,631.8	527,155.7	1,132.40					
Mahoning WB-center	12.0	1	233	2,448,759.2	526,855.0	1,121.10				Average	
		2	234	2,449,181.5	526,862.4	1,112.50				Average	
		3	235	2,449,487.0	526,867.9	1,114.60				Average	
		4	236	2,449,593.0	526,869.3	1,117.20				Average	
		5	237	2,449,795.5	526,873.9	1,121.50				Average	
		6	238	2,449,938.8	526,882.0	1,125.10				Average	Y
		7	239	2,450,284.0	526,935.7	1,128.20				Average	
		8	240	2,450,382.0	526,952.8	1,128.30				Average	
		9	241	2,450,447.0	526,962.4	1,128.30				Average	
		10	242	2,451,048.2	527,065.2	1,139.30				Average	
		11	243	2,451,189.5	527,089.6	1,139.60				Average	
		12	244	2,451,629.5	527,165.9	1,132.70					
Mahoning WB-2	12.0	12	256	2,451,627.5	527,174.6	1,132.70				Average	
		11	255	2,451,187.5	527,098.5	1,139.60				Average	
		10	254	2,451,048.2	527,073.9	1,139.30				Average	
		9	253	2,450,444.8	526,972.6	1,128.30				Average	
		8	252	2,450,379.0	526,965.6	1,128.70				Average	
		7	251	2,450,279.0	526,947.2	1,128.20				Average	Y
		6	250	2,449,935.2	526,894.7	1,123.60				Average	
		5	249	2,449,791.5	526,884.8	1,120.60				Average	
		4	248	2,449,593.5	526,879.2	1,117.10				Average	
		3	247	2,449,487.5	526,877.7	1,114.50				Average	
		2	246	2,449,182.0	526,872.2	1,112.60				Average	
		1	245	2,448,759.8	526,864.8	1,121.10					
Mahoning WB-1	12.0	12	268	2,451,625.2	527,184.8	1,132.70				Average	
		11	267	2,451,184.5	527,110.5	1,139.60				Average	
		10	266	2,451,046.0	527,085.6	1,139.30				Average	

INPUT: ROADWAYS

MAH SR11/2386

		9	265	2,450,440.5	526,985.9	1,128.30				Average	
		8	264	2,450,375.5	526,978.0	1,128.70				Average	
		7	263	2,450,274.5	526,960.4	1,128.20				Average	Y
		6	262	2,449,931.5	526,906.1	1,123.60				Average	
		5	261	2,449,791.5	526,896.8	1,120.60				Average	
		4	260	2,449,593.2	526,891.2	1,117.10				Average	
		3	259	2,449,487.5	526,889.7	1,114.50				Average	
		2	258	2,449,182.0	526,884.2	1,112.60				Average	
		1	257	2,448,759.8	526,876.8	1,121.10					
Ramp: Mahoning to SR 11S	12.0	22	290	2,449,830.5	526,832.2	1,123.60	Onramp	15.00	100	Average	
		21	289	2,449,891.5	526,734.7	1,126.10				Average	
		20	288	2,449,949.0	526,636.5	1,127.80				Average	
		19	287	2,450,029.5	526,501.5	1,128.20				Average	
		18	286	2,450,073.5	526,419.2	1,128.50				Average	
		17	285	2,450,112.0	526,327.8	1,127.30				Average	
		16	284	2,450,142.0	526,248.3	1,125.50				Average	
		15	283	2,450,175.8	526,143.3	1,127.30				Average	
		14	282	2,450,205.8	526,039.5	1,128.10				Average	
		13	281	2,450,233.0	525,932.0	1,129.50				Average	
		12	280	2,450,257.0	525,827.2	1,131.20				Average	
		11	279	2,450,277.2	525,701.7	1,132.20				Average	
		10	278	2,450,292.2	525,595.9	1,134.50				Average	
		9	277	2,450,303.2	525,497.7	1,135.00				Average	
		8	276	2,450,309.5	525,417.1	1,135.00				Average	
		7	275	2,450,320.2	525,267.3	1,136.30				Average	
		6	274	2,450,326.8	525,124.6	1,136.60				Average	
		5	273	2,450,328.0	525,027.6	1,137.00				Average	
		4	272	2,450,330.0	524,935.9	1,137.50				Average	
		3	271	2,450,329.2	524,720.5	1,139.00				Average	
		2	270	2,450,327.8	524,457.3	1,139.60				Average	
		1	269	2,450,322.8	524,116.3	1,140.70					
Ramp: SR 11N to Mahoning	12.0	1	291	2,450,461.0	524,726.6	1,138.90				Average	
		2	292	2,450,470.0	524,786.7	1,138.80				Average	
		3	293	2,450,472.5	524,942.3	1,138.50				Average	
		4	294	2,450,477.2	525,119.1	1,138.70				Average	
		5	295	2,450,481.8	525,277.6	1,138.30				Average	
		6	296	2,450,484.8	525,426.3	1,137.90				Average	
		7	297	2,450,487.0	525,576.0	1,136.70				Average	
		8	298	2,450,488.5	525,676.4	1,136.00				Average	

**INPUT: ROADWAYS**

**MAH SR11/2386**

		9	299	2,450,485.0	525,772.0	1,136.00				Average	
		10	300	2,450,482.0	525,906.4	1,137.60				Average	
		11	301	2,450,473.5	526,083.0	1,139.30				Average	
		12	302	2,450,456.5	526,452.9	1,139.70				Average	
		13	303	2,450,440.8	526,903.0	1,128.50					
Oakcrest WB	12.0	6	309	2,451,311.2	523,235.6	1,147.10				Average	
		5	308	2,450,966.0	523,236.4	1,145.10				Average	
		4	307	2,450,530.5	523,230.8	1,159.10				Average	Y
		3	306	2,450,196.0	523,223.2	1,159.10				Average	
		2	305	2,449,784.2	523,217.4	1,151.00				Average	
		1	304	2,449,408.0	523,211.2	1,158.50					
Oakcrest EB	12.0	1	310	2,449,408.0	523,199.2	1,158.50				Average	
		2	311	2,449,784.2	523,205.4	1,151.00				Average	
		3	312	2,450,196.0	523,211.2	1,159.10				Average	Y
		4	313	2,450,530.5	523,218.8	1,159.10				Average	
		5	314	2,450,966.0	523,224.4	1,145.00				Average	
		6	315	2,451,311.2	523,223.6	1,147.00					



INPUT: TRAFFIC FOR LAeq1h Volumes

MAH SR11/2386

ASC Group, Inc. mas		5 April 2018 TNM 2.5											
INPUT: TRAFFIC FOR LAeq1h Volumes													
PROJECT/CONTRACT:		MAH SR11/2386											
RUN:		validation-M8											
Roadway	Points												
Name	Name	No.	Segment		MTrucks		HTrucks		Buses		Motorcycles		
			Autos		V	S	V	S	V	S	V	S	
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	
SR11 NB-1	1	1	374	65	26	65	60	65	0	0	0	0	
	2	2	374	65	26	65	60	65	0	0	0	0	
	3	3	374	65	26	65	60	65	0	0	0	0	
	4	4	374	65	26	65	60	65	0	0	0	0	
	5	5	374	65	26	65	60	65	0	0	0	0	
	6	6	374	65	26	65	60	65	0	0	0	0	
	7	7	374	65	26	65	60	65	0	0	0	0	
	8	8	374	65	26	65	60	65	0	0	0	0	
	9	9	374	65	26	65	60	65	0	0	0	0	
	10	10	374	65	26	65	60	65	0	0	0	0	
	11	11	374	65	26	65	60	65	0	0	0	0	
	12	12	374	65	26	65	60	65	0	0	0	0	
	13	13	374	65	26	65	60	65	0	0	0	0	
	14	14	374	65	26	65	60	65	0	0	0	0	
	15	15	374	65	26	65	60	65	0	0	0	0	
	16	16	374	65	26	65	60	65	0	0	0	0	
	17	17	374	65	26	65	60	65	0	0	0	0	
	18	18	374	65	26	65	60	65	0	0	0	0	
	19	19	374	65	26	65	60	65	0	0	0	0	
	20	20	374	65	26	65	60	65	0	0	0	0	
	21	21	374	65	26	65	60	65	0	0	0	0	
	22	22	374	65	26	65	60	65	0	0	0	0	
	23	23	374	65	26	65	60	65	0	0	0	0	

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	24	24	374	65	26	65	60	65	0	0	0	0
	25	25	374	65	26	65	60	65	0	0	0	0
	26	26	374	65	26	65	60	65	0	0	0	0
	27	27	374	65	26	65	60	65	0	0	0	0
	28	28	374	65	26	65	60	65	0	0	0	0
	29	29	374	65	26	65	60	65	0	0	0	0
	30	30	374	65	26	65	60	65	0	0	0	0
	31	31	374	65	26	65	60	65	0	0	0	0
	32	32	374	65	26	65	60	65	0	0	0	0
	33	33	374	65	26	65	60	65	0	0	0	0
	34	34	374	65	26	65	60	65	0	0	0	0
	35	35	374	65	26	65	60	65	0	0	0	0
	36	36	374	65	26	65	60	65	0	0	0	0
	37	37	374	65	26	65	60	65	0	0	0	0
	38	38	374	65	26	65	60	65	0	0	0	0
	39	39	374	65	26	65	60	65	0	0	0	0
	40	40	374	65	26	65	60	65	0	0	0	0
	41	41	374	65	26	65	60	65	0	0	0	0
	42	42	374	65	26	65	60	65	0	0	0	0
	43	43										
SR11 NB-2	1	44	374	65	26	65	60	65	0	0	0	0
	2	45	374	65	26	65	60	65	0	0	0	0
	3	46	374	65	26	65	60	65	0	0	0	0
	4	47	374	65	26	65	60	65	0	0	0	0
	5	48	374	65	26	65	60	65	0	0	0	0
	6	49	374	65	26	65	60	65	0	0	0	0
	7	50	374	65	26	65	60	65	0	0	0	0
	8	51	374	65	26	65	60	65	0	0	0	0
	9	52	374	65	26	65	60	65	0	0	0	0
	10	53	374	65	26	65	60	65	0	0	0	0
	11	54	374	65	26	65	60	65	0	0	0	0
	12	55	374	65	26	65	60	65	0	0	0	0
	13	56	374	65	26	65	60	65	0	0	0	0
	14	57	374	65	26	65	60	65	0	0	0	0
	15	58	374	65	26	65	60	65	0	0	0	0
	16	59	374	65	26	65	60	65	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	17	60	374	65	26	65	60	65	0	0	0	0
	18	61	374	65	26	65	60	65	0	0	0	0
	19	62	374	65	26	65	60	65	0	0	0	0
	20	63	374	65	26	65	60	65	0	0	0	0
	21	64	374	65	26	65	60	65	0	0	0	0
	22	65	374	65	26	65	60	65	0	0	0	0
	23	66	374	65	26	65	60	65	0	0	0	0
	24	67	374	65	26	65	60	65	0	0	0	0
	25	68	374	65	26	65	60	65	0	0	0	0
	26	69	374	0	26	65	60	65	0	0	0	0
	27	70	374	65	26	65	60	65	0	0	0	0
	28	71	374	65	26	65	60	65	0	0	0	0
	29	72	374	65	26	65	60	65	0	0	0	0
	30	73	374	65	26	65	60	65	0	0	0	0
	31	74	374	65	26	65	60	65	0	0	0	0
	32	75	374	65	26	65	60	65	0	0	0	0
	33	76	374	65	26	65	60	65	0	0	0	0
	34	77	374	65	26	65	60	65	0	0	0	0
	35	78	374	65	26	65	60	65	0	0	0	0
	36	79	374	65	26	65	60	65	0	0	0	0
	37	80	374	65	26	65	60	65	0	0	0	0
	38	81	374	65	26	65	60	65	0	0	0	0
	39	82	374	65	26	65	60	65	0	0	0	0
	40	83	374	65	26	65	60	65	0	0	0	0
	41	84	374	65	26	65	60	65	0	0	0	0
	42	85	374	65	26	65	60	65	0	0	0	0
	43	86										
SR11 SB-2	1	87	304	65	18	65	50	65	0	0	0	0
	2	88	304	65	18	65	50	65	0	0	0	0
	3	89	304	65	18	65	50	65	0	0	0	0
	4	90	304	65	18	65	50	65	0	0	0	0
	5	91	304	65	18	65	50	65	0	0	0	0
	6	92	304	65	18	65	50	65	0	0	0	0
	7	93	304	65	18	65	50	65	0	0	0	0
	8	94	304	65	18	65	50	65	0	0	0	0
	9	95	304	65	18	65	50	65	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	10	96	304	65	18	65	50	65	0	0	0	0
	11	97	304	65	18	65	50	65	0	0	0	0
	12	98	304	65	18	65	50	65	0	0	0	0
	13	99	304	65	18	65	50	65	0	0	0	0
	14	100	304	65	18	65	50	65	0	0	0	0
	15	101	304	65	18	65	50	65	0	0	0	0
	16	102	304	65	18	65	50	65	0	0	0	0
	17	103	304	65	18	65	50	65	0	0	0	0
	18	104	304	65	18	65	50	65	0	0	0	0
	19	105	304	65	18	65	50	65	0	0	0	0
	20	106	304	65	18	65	50	65	0	0	0	0
	21	107	304	65	18	65	50	65	0	0	0	0
	22	108	304	65	18	65	50	65	0	0	0	0
	23	109	304	65	18	65	50	65	0	0	0	0
	24	110	304	65	18	65	50	65	0	0	0	0
	25	111	304	65	18	65	50	65	0	0	0	0
	26	112	304	65	18	65	50	65	0	0	0	0
	27	113	304	65	18	65	50	65	0	0	0	0
	28	114	304	65	18	65	50	65	0	0	0	0
	29	115	304	65	18	65	50	65	0	0	0	0
	30	116	304	65	18	65	50	65	0	0	0	0
	31	117	304	65	18	65	50	65	0	0	0	0
	32	118	304	65	18	65	50	65	0	0	0	0
	33	119	304	65	18	65	50	65	0	0	0	0
	34	120	304	65	18	65	50	65	0	0	0	0
	35	121	304	65	18	65	50	65	0	0	0	0
	36	122	304	65	18	65	50	65	0	0	0	0
	37	123	304	65	18	65	50	65	0	0	0	0
	38	124	304	65	18	65	50	65	0	0	0	0
	39	125	304	65	18	65	50	65	0	0	0	0
	40	126	304	65	18	65	50	65	0	0	0	0
	41	127	304	65	18	65	50	65	0	0	0	0
	42	128	304	65	18	65	50	65	0	0	0	0
	43	129										
SR11 SB-1	43	172	304	65	18	65	50	65	0	0	0	0
	42	171	304	65	18	65	50	65	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	41	170	304	65	18	65	50	65	0	0	0	0
	40	169	304	65	18	65	50	65	0	0	0	0
	39	168	304	65	18	65	50	65	0	0	0	0
	38	167	304	65	18	65	50	65	0	0	0	0
	37	166	304	65	18	65	50	65	0	0	0	0
	36	165	304	65	18	65	50	65	0	0	0	0
	35	164	304	65	18	65	50	65	0	0	0	0
	34	163	304	65	18	65	50	65	0	0	0	0
	33	162	304	65	18	65	50	65	0	0	0	0
	32	161	304	65	18	65	50	65	0	0	0	0
	31	160	304	65	18	65	50	65	0	0	0	0
	30	159	304	65	18	65	50	65	0	0	0	0
	29	158	304	65	18	65	50	65	0	0	0	0
	28	157	304	65	18	65	50	65	0	0	0	0
	27	156	304	65	18	65	50	65	0	0	0	0
	26	155	304	65	18	65	50	65	0	0	0	0
	25	154	304	65	18	65	50	65	0	0	0	0
	24	153	304	65	18	65	50	65	0	0	0	0
	23	152	304	65	18	65	50	65	0	0	0	0
	22	151	304	65	18	65	50	65	0	0	0	0
	21	150	304	65	18	65	50	65	0	0	0	0
	20	149	304	65	18	65	50	65	0	0	0	0
	19	148	304	65	18	65	50	65	0	0	0	0
	18	147	304	65	18	65	50	65	0	0	0	0
	17	146	304	65	18	65	50	65	0	0	0	0
	16	145	304	65	18	65	50	65	0	0	0	0
	15	144	304	65	18	65	50	65	0	0	0	0
	14	143	304	65	18	65	50	65	0	0	0	0
	13	142	304	65	18	65	50	65	0	0	0	0
	12	141	304	65	18	65	50	65	0	0	0	0
	11	140	304	65	18	65	50	65	0	0	0	0
	10	139	304	65	18	65	50	65	0	0	0	0
	9	138	304	65	18	65	50	65	0	0	0	0
	8	137	304	65	18	65	50	65	0	0	0	0
	7	136	304	65	18	65	50	65	0	0	0	0
	6	135	304	65	18	65	50	65	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	5	134	304	65	18	65	50	65	0	0	0	0
	4	133	304	65	18	65	50	65	0	0	0	0
	3	132	304	65	18	65	50	65	0	0	0	0
	2	131	304	65	18	65	50	65	0	0	0	0
	1	130										
Kirk EB	1	173	0	0	0	0	0	0	0	0	0	0
	2	174	0	0	0	0	0	0	0	0	0	0
	3	175	0	0	0	0	0	0	0	0	0	0
	4	176	0	0	0	0	0	0	0	0	0	0
	5	177	0	0	0	0	0	0	0	0	0	0
	6	178										
Kirk WB	6	184	0	0	0	0	0	0	0	0	0	0
	5	183	0	0	0	0	0	0	0	0	0	0
	4	182	0	0	0	0	0	0	0	0	0	0
	3	181	0	0	0	0	0	0	0	0	0	0
	2	180	0	0	0	0	0	0	0	0	0	0
	1	179										
New EB	1	185	0	0	0	0	0	0	0	0	0	0
	2	186	0	0	0	0	0	0	0	0	0	0
	3	187	0	0	0	0	0	0	0	0	0	0
	4	188	0	0	0	0	0	0	0	0	0	0
	5	189	0	0	0	0	0	0	0	0	0	0
	6	190	0	0	0	0	0	0	0	0	0	0
	7	178	0	0	0	0	0	0	0	0	0	0
	8	192	0	0	0	0	0	0	0	0	0	0
	9	193	0	0	0	0	0	0	0	0	0	0
	10	194	0	0	0	0	0	0	0	0	0	0
	11	195	0	0	0	0	0	0	0	0	0	0
	12	196										
New WB	12	208	0	0	0	0	0	0	0	0	0	0
	11	207	0	0	0	0	0	0	0	0	0	0
	10	206	0	0	0	0	0	0	0	0	0	0
	9	205	0	0	0	0	0	0	0	0	0	0
	8	204	0	0	0	0	0	0	0	0	0	0
	7	203	0	0	0	0	0	0	0	0	0	0
	6	202	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	5	201	0	0	0	0	0	0	0	0	0	0
	4	200	0	0	0	0	0	0	0	0	0	0
	3	199	0	0	0	0	0	0	0	0	0	0
	2	198	0	0	0	0	0	0	0	0	0	0
	1	197										
Mahoning EB-1	1	209	0	0	0	0	0	0	0	0	0	0
	2	210	0	0	0	0	0	0	0	0	0	0
	3	211	0	0	0	0	0	0	0	0	0	0
	4	212	0	0	0	0	0	0	0	0	0	0
	5	213	0	0	0	0	0	0	0	0	0	0
	6	214	0	0	0	0	0	0	0	0	0	0
	7	215	0	0	0	0	0	0	0	0	0	0
	8	216	0	0	0	0	0	0	0	0	0	0
	9	217	0	0	0	0	0	0	0	0	0	0
	10	218	0	0	0	0	0	0	0	0	0	0
	11	219	0	0	0	0	0	0	0	0	0	0
	12	220										
Mahoning EB-2	1	221	0	0	0	0	0	0	0	0	0	0
	2	222	0	0	0	0	0	0	0	0	0	0
	3	223	0	0	0	0	0	0	0	0	0	0
	4	224	0	0	0	0	0	0	0	0	0	0
	5	225	0	0	0	0	0	0	0	0	0	0
	6	226	0	0	0	0	0	0	0	0	0	0
	7	227	0	0	0	0	0	0	0	0	0	0
	8	228	0	0	0	0	0	0	0	0	0	0
	9	229	0	0	0	0	0	0	0	0	0	0
	10	230	0	0	0	0	0	0	0	0	0	0
	11	231	0	0	0	0	0	0	0	0	0	0
	12	232										
Mahoning WB-center	1	233	0	0	0	0	0	0	0	0	0	0
	2	234	0	0	0	0	0	0	0	0	0	0
	3	235	0	0	0	0	0	0	0	0	0	0
	4	236	0	0	0	0	0	0	0	0	0	0
	5	237	0	0	0	0	0	0	0	0	0	0
	6	238	0	0	0	0	0	0	0	0	0	0
	7	239	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	8	240	0	0	0	0	0	0	0	0	0	0
	9	241	0	0	0	0	0	0	0	0	0	0
	10	242	0	0	0	0	0	0	0	0	0	0
	11	243	0	0	0	0	0	0	0	0	0	0
	12	244										
Mahoning WB-2	12	256	0	0	0	0	0	0	0	0	0	0
	11	255	0	0	0	0	0	0	0	0	0	0
	10	254	0	0	0	0	0	0	0	0	0	0
	9	253	0	0	0	0	0	0	0	0	0	0
	8	252	0	0	0	0	0	0	0	0	0	0
	7	251	0	0	0	0	0	0	0	0	0	0
	6	250	0	0	0	0	0	0	0	0	0	0
	5	249	0	0	0	0	0	0	0	0	0	0
	4	248	0	0	0	0	0	0	0	0	0	0
	3	247	0	0	0	0	0	0	0	0	0	0
	2	246	0	0	0	0	0	0	0	0	0	0
	1	245										
Mahoning WB-1	12	268	0	0	0	0	0	0	0	0	0	0
	11	267	0	0	0	0	0	0	0	0	0	0
	10	266	0	0	0	0	0	0	0	0	0	0
	9	265	0	0	0	0	0	0	0	0	0	0
	8	264	0	0	0	0	0	0	0	0	0	0
	7	263	0	0	0	0	0	0	0	0	0	0
	6	262	0	0	0	0	0	0	0	0	0	0
	5	261	0	0	0	0	0	0	0	0	0	0
	4	260	0	0	0	0	0	0	0	0	0	0
	3	259	0	0	0	0	0	0	0	0	0	0
	2	258	0	0	0	0	0	0	0	0	0	0
	1	257										
Ramp: Mahoning to SR 11S	22	290	0	0	0	0	0	0	0	0	0	0
	21	289	0	0	0	0	0	0	0	0	0	0
	20	288	0	0	0	0	0	0	0	0	0	0
	19	287	0	0	0	0	0	0	0	0	0	0
	18	286	0	0	0	0	0	0	0	0	0	0
	17	285	0	0	0	0	0	0	0	0	0	0
	16	284	0	0	0	0	0	0	0	0	0	0



**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	15	283	0	0	0	0	0	0	0	0	0	0
	14	282	0	0	0	0	0	0	0	0	0	0
	13	281	0	0	0	0	0	0	0	0	0	0
	12	280	0	0	0	0	0	0	0	0	0	0
	11	279	0	0	0	0	0	0	0	0	0	0
	10	278	0	0	0	0	0	0	0	0	0	0
	9	277	0	0	0	0	0	0	0	0	0	0
	8	276	0	0	0	0	0	0	0	0	0	0
	7	275	0	0	0	0	0	0	0	0	0	0
	6	274	0	0	0	0	0	0	0	0	0	0
	5	273	0	0	0	0	0	0	0	0	0	0
	4	272	0	0	0	0	0	0	0	0	0	0
	3	271	0	0	0	0	0	0	0	0	0	0
	2	270	0	0	0	0	0	0	0	0	0	0
	1	269										
Ramp: SR 11N to Mahoning	1	291	0	0	0	0	0	0	0	0	0	0
	2	292	0	0	0	0	0	0	0	0	0	0
	3	293	0	0	0	0	0	0	0	0	0	0
	4	294	0	0	0	0	0	0	0	0	0	0
	5	295	0	0	0	0	0	0	0	0	0	0
	6	296	0	0	0	0	0	0	0	0	0	0
	7	297	0	0	0	0	0	0	0	0	0	0
	8	298	0	0	0	0	0	0	0	0	0	0
	9	299	0	0	0	0	0	0	0	0	0	0
	10	300	0	0	0	0	0	0	0	0	0	0
	11	301	0	0	0	0	0	0	0	0	0	0
	12	302	0	0	0	0	0	0	0	0	0	0
	13	303										
Oakcrest WB	6	309	0	0	0	0	0	0	0	0	0	0
	5	308	0	0	0	0	0	0	0	0	0	0
	4	307	0	0	0	0	0	0	0	0	0	0
	3	306	0	0	0	0	0	0	0	0	0	0
	2	305	0	0	0	0	0	0	0	0	0	0
	1	304										
Oakcrest EB	1	310	0	0	0	0	0	0	0	0	0	0
	2	311	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes****MAH SR11/2386**

	3	312	0	0	0	0	0	0	0	0	0	0
	4	313	0	0	0	0	0	0	0	0	0	0
	5	314	0	0	0	0	0	0	0	0	0	0
	6	315										



INPUT: ROADWAYS

MAH SR11/2386

		26	26	2,450,421.0	523,153.8	1,143.60				Average	
		27	27	2,450,433.5	523,725.3	1,142.00				Average	
		28	28	2,450,442.5	524,118.8	1,140.40				Average	
		29	29	2,450,450.5	524,462.4	1,139.80				Average	
		30	30	2,450,458.0	524,726.5	1,138.90				Average	
		31	31	2,450,461.0	524,942.6	1,138.50				Average	
		32	32	2,450,462.8	525,119.3	1,138.10				Average	
		33	33	2,450,457.0	525,278.1	1,137.30				Average	
		34	34	2,450,453.0	525,427.2	1,137.10				Average	
		35	35	2,450,441.2	525,580.1	1,136.30				Average	
		36	36	2,450,425.5	525,732.6	1,134.50				Average	
		37	37	2,450,399.0	525,926.2	1,131.90				Average	
		38	38	2,450,370.8	526,102.7	1,129.00				Average	
		39	39	2,450,340.0	526,263.2	1,125.70				Average	
		40	40	2,450,290.0	526,482.5	1,120.20				Average	
		41	41	2,450,224.0	526,734.5	1,113.20				Average	
		42	42	2,450,134.5	527,011.3	1,108.00				Average	
		43	43	2,450,046.0	527,245.0	1,106.40					
SR11 NB-2	12.0	1	44	2,451,366.2	511,895.0	1,142.50				Average	
		2	45	2,451,203.0	512,462.0	1,140.90				Average	
		3	46	2,451,035.5	513,062.7	1,142.60				Average	
		4	47	2,450,850.2	513,717.3	1,144.50				Average	
		5	48	2,450,734.0	514,145.3	1,146.30				Average	
		6	49	2,450,672.2	514,356.5	1,147.00				Average	
		7	50	2,450,624.0	514,546.4	1,147.00				Average	
		8	51	2,450,577.2	514,762.3	1,147.50				Average	
		9	52	2,450,537.2	514,944.0	1,148.60				Average	
		10	53	2,450,494.5	515,143.2	1,149.40				Average	
		11	54	2,450,445.5	515,429.4	1,150.40				Average	
		12	55	2,450,408.0	515,668.5	1,149.90				Average	
		13	56	2,450,356.0	516,081.1	1,152.20				Average	
		14	57	2,450,322.5	516,419.1	1,153.20				Average	
		15	58	2,450,306.0	516,682.7	1,153.40				Average	
		16	59	2,450,290.0	516,974.1	1,154.90				Average	
		17	60	2,450,282.2	517,280.9	1,155.70				Average	
		18	61	2,450,282.8	517,597.1	1,156.30				Average	
		19	62	2,450,297.5	518,208.7	1,157.60				Average	
		20	63	2,450,309.5	518,851.9	1,155.90				Average	
		21	64	2,450,328.0	519,671.8	1,154.10				Average	

INPUT: ROADWAYS

MAH SR11/2386

		22	65	2,450,348.2	520,447.3	1,151.70				Average	
		23	66	2,450,361.0	521,077.3	1,149.70				Average	
		24	67	2,450,384.5	522,070.6	1,146.80				Average	
		25	68	2,450,400.0	522,778.2	1,144.80				Average	
		26	69	2,450,410.0	523,153.8	1,143.60				Average	
		27	70	2,450,423.2	523,721.6	1,142.10				Average	
		28	71	2,450,431.5	524,119.3	1,140.40				Average	
		29	72	2,450,440.2	524,462.6	1,139.80				Average	
		30	73	2,450,447.8	524,726.6	1,138.50				Average	
		31	74	2,450,450.5	524,942.4	1,137.10				Average	
		32	75	2,450,452.5	525,119.3	1,138.10				Average	
		33	76	2,450,447.0	525,276.8	1,137.30				Average	
		34	77	2,450,442.2	525,426.6	1,137.10				Average	
		35	78	2,450,431.0	525,580.3	1,135.20				Average	
		36	79	2,450,415.5	525,732.8	1,134.50				Average	
		37	80	2,450,388.8	525,926.3	1,131.90				Average	
		38	81	2,450,360.5	526,102.8	1,129.00				Average	
		39	82	2,450,330.0	526,263.4	1,125.70				Average	
		40	83	2,450,279.2	526,479.7	1,120.20				Average	
		41	84	2,450,213.5	526,731.3	1,113.20				Average	
		42	85	2,450,124.5	527,007.4	1,107.00				Average	
		43	86	2,450,035.5	527,241.1	1,106.40					
SR11 SB-2	12.0	1	87	2,451,271.2	511,869.0	1,142.70				Average	
		2	88	2,451,109.8	512,434.4	1,141.40				Average	
		3	89	2,450,942.2	513,035.0	1,142.70				Average	
		4	90	2,450,758.8	513,689.7	1,144.70				Average	
		5	91	2,450,638.0	514,117.7	1,146.30				Average	
		6	92	2,450,579.2	514,330.9	1,146.90				Average	
		7	93	2,450,533.0	514,518.7	1,147.60				Average	
		8	94	2,450,480.5	514,738.8	1,148.20				Average	
		9	95	2,450,442.5	514,916.6	1,148.80				Average	
		10	96	2,450,401.2	515,120.2	1,149.40				Average	
		11	97	2,450,354.8	515,399.3	1,150.20				Average	
		12	98	2,450,314.0	515,661.3	1,150.90				Average	
		13	99	2,450,261.5	516,051.8	1,152.40				Average	
		14	100	2,450,229.0	516,389.9	1,153.20				Average	
		15	101	2,450,209.5	516,675.9	1,153.90				Average	
		16	102	2,450,193.0	516,960.2	1,155.00				Average	
		17	103	2,450,184.8	517,280.8	1,155.90				Average	

INPUT: ROADWAYS

MAH SR11/2386

		18	104	2,450,186.5	517,595.6	1,156.70				Average	
		19	105	2,450,201.0	518,205.2	1,158.00				Average	
		20	106	2,450,216.0	518,859.0	1,156.30				Average	
		21	107	2,450,234.0	519,666.1	1,154.10				Average	
		22	108	2,450,252.0	520,448.8	1,151.80				Average	
		23	109	2,450,265.0	521,096.4	1,149.70				Average	
		24	110	2,450,288.0	522,068.9	1,146.90				Average	
		25	111	2,450,303.0	522,776.2	1,144.80				Average	
		26	112	2,450,312.8	523,160.7	1,143.70				Average	
		27	113	2,450,326.0	523,720.5	1,142.00				Average	
		28	114	2,450,334.8	524,116.8	1,140.70				Average	
		29	115	2,450,343.0	524,456.8	1,139.90				Average	
		30	116	2,450,350.5	524,720.9	1,139.00				Average	
		31	117	2,450,355.5	524,936.5	1,138.00				Average	
		32	118	2,450,355.2	525,120.6	1,137.20				Average	
		33	119	2,450,353.8	525,270.8	1,136.80				Average	
		34	120	2,450,346.0	525,422.5	1,136.30				Average	
		35	121	2,450,334.8	525,572.9	1,134.90				Average	
		36	122	2,450,319.5	525,726.5	1,133.70				Average	
		37	123	2,450,293.2	525,921.1	1,131.00				Average	
		38	124	2,450,264.5	526,097.6	1,128.10				Average	
		39	125	2,450,232.5	526,257.6	1,124.60				Average	
		40	126	2,450,182.5	526,476.7	1,119.30				Average	
		41	127	2,450,114.8	526,725.6	1,111.80				Average	
		42	128	2,450,025.2	527,001.1	1,106.50				Average	
		43	129	2,449,943.2	527,213.9	1,105.90					
SR11 SB-1	12.0	43	172	2,449,934.0	527,209.2	1,105.90				Average	
		42	171	2,450,015.5	526,997.0	1,106.50				Average	
		41	170	2,450,105.5	526,722.5	1,111.20				Average	
		40	169	2,450,172.8	526,474.0	1,119.30				Average	
		39	168	2,450,222.5	526,257.9	1,124.60				Average	
		38	167	2,450,254.2	526,097.9	1,128.10				Average	
		37	166	2,450,283.0	525,919.0	1,131.00				Average	
		36	165	2,450,309.5	525,724.5	1,133.70				Average	
		35	164	2,450,323.5	525,572.2	1,134.90				Average	
		34	163	2,450,336.0	525,421.5	1,135.70				Average	
		33	162	2,450,343.5	525,270.8	1,136.80				Average	
		32	161	2,450,345.0	525,120.8	1,136.60				Average	
		31	160	2,450,345.0	524,936.7	1,137.50				Average	

INPUT: ROADWAYS

MAH SR11/2386

		30	159	2,450,340.2	524,721.1	1,139.00				Average	
		29	158	2,450,332.8	524,457.1	1,139.60				Average	
		28	157	2,450,324.2	524,116.3	1,140.70				Average	
		27	156	2,450,315.8	523,717.7	1,141.70				Average	
		26	155	2,450,302.5	523,157.9	1,143.50				Average	
		25	154	2,450,293.0	522,773.3	1,144.90				Average	
		24	153	2,450,278.0	522,066.1	1,146.00				Average	
		23	152	2,450,254.8	521,093.5	1,149.70				Average	
		22	151	2,450,242.0	520,445.9	1,151.80				Average	
		21	150	2,450,223.0	519,666.3	1,153.40				Average	
		20	149	2,450,204.0	518,859.9	1,156.40				Average	
		19	148	2,450,189.5	518,205.5	1,158.00				Average	
		18	147	2,450,174.2	517,595.8	1,156.70				Average	
		17	146	2,450,174.2	517,280.5	1,155.90				Average	
		16	145	2,450,182.8	516,957.4	1,155.00				Average	
		15	144	2,450,198.0	516,675.2	1,154.00				Average	
		14	143	2,450,218.0	516,388.5	1,153.20				Average	
		13	142	2,450,250.5	516,050.2	1,152.40				Average	
		12	141	2,450,303.2	515,660.5	1,150.70				Average	
		11	140	2,450,344.5	515,396.4	1,150.20				Average	
		10	139	2,450,391.2	515,117.3	1,148.40				Average	
		9	138	2,450,432.2	514,913.7	1,148.50				Average	
		8	137	2,450,470.5	514,736.0	1,147.80				Average	
		7	136	2,450,522.8	514,515.9	1,147.60				Average	
		6	135	2,450,569.0	514,328.1	1,146.90				Average	
		5	134	2,450,628.0	514,114.9	1,146.30				Average	
		4	133	2,450,748.5	513,686.8	1,144.60				Average	
		3	132	2,450,932.0	513,032.2	1,142.70				Average	
		2	131	2,451,099.5	512,431.5	1,141.00				Average	
		1	130	2,451,262.8	511,864.3	1,142.70					
Kirk EB	12.0	1	173	2,449,260.5	515,679.3	1,164.30				Average	
		2	174	2,449,776.0	515,689.2	1,158.80				Average	
		3	175	2,450,182.5	515,695.2	1,168.60				Average	Y
		4	176	2,450,527.2	515,703.6	1,168.60				Average	
		5	177	2,450,935.8	515,716.3	1,163.50				Average	
		6	178	2,451,437.5	515,731.8	1,176.40					
Kirk WB	12.0	6	184	2,451,437.5	515,743.8	1,176.40				Average	
		5	183	2,450,936.0	515,728.3	1,163.50				Average	
		4	182	2,450,527.5	515,715.6	1,168.60				Average	Y

INPUT: ROADWAYS

MAH SR11/2386

		3	181	2,450,182.5	515,707.2	1,168.60				Average	
		2	180	2,449,776.2	515,701.2	1,158.80				Average	
		1	179	2,449,260.5	515,691.3	1,164.30					
New EB	12.0	1	185	2,449,044.0	521,176.3	1,149.00				Average	
		2	186	2,449,744.8	521,189.4	1,152.90				Average	
		3	187	2,449,882.0	521,191.5	1,157.40				Average	
		4	188	2,449,970.2	521,193.1	1,161.30				Average	
		5	189	2,450,047.5	521,186.9	1,163.90				Average	
		6	190	2,450,149.0	521,169.1	1,166.80				Average	Y
		7	191	2,450,480.8	521,082.0	1,167.50				Average	
		8	192	2,450,564.5	521,064.3	1,165.80				Average	
		9	193	2,450,649.0	521,056.2	1,163.20				Average	
		10	194	2,450,731.5	521,053.5	1,161.00				Average	
		11	195	2,450,871.8	521,053.8	1,158.00				Average	
		12	196	2,451,472.5	521,058.8	1,156.10					
New WB	12.0	12	208	2,451,472.5	521,070.8	1,156.10				Average	
		11	207	2,450,872.0	521,065.8	1,158.00				Average	
		10	206	2,450,731.5	521,065.5	1,159.20				Average	
		9	205	2,450,649.2	521,068.2	1,162.80				Average	
		8	204	2,450,564.5	521,076.3	1,165.80				Average	
		7	203	2,450,480.8	521,094.0	1,166.00				Average	Y
		6	202	2,450,149.0	521,181.1	1,166.80				Average	
		5	201	2,450,047.5	521,198.9	1,163.90				Average	
		4	200	2,449,970.5	521,205.1	1,161.30				Average	
		3	199	2,449,882.0	521,203.5	1,157.40				Average	
		2	198	2,449,745.0	521,201.4	1,152.90				Average	
		1	197	2,449,044.2	521,188.3	1,149.00					
Mahoning EB-1	12.0	1	209	2,448,759.0	526,833.2	1,121.10				Average	
		2	210	2,449,181.2	526,840.6	1,112.50				Average	
		3	211	2,449,486.8	526,846.1	1,114.60				Average	
		4	212	2,449,592.8	526,847.5	1,117.20				Average	
		5	213	2,449,796.5	526,851.0	1,121.50				Average	
		6	214	2,449,944.8	526,859.2	1,125.10				Average	Y
		7	215	2,450,293.0	526,910.7	1,128.50				Average	
		8	216	2,450,383.5	526,927.8	1,128.70				Average	
		9	217	2,450,454.5	526,938.8	1,128.30				Average	
		10	218	2,451,052.0	527,044.7	1,139.30				Average	
		11	219	2,451,194.0	527,069.0	1,139.50				Average	
		12	220	2,451,634.8	527,143.6	1,132.30					



**INPUT: ROADWAYS**

**MAH SR11/2386**

Mahoning EB-2	12.0	1	221	2,448,759.0	526,845.2	1,121.10				Average	
		2	222	2,449,181.2	526,852.6	1,112.50				Average	
		3	223	2,449,486.8	526,858.1	1,114.60				Average	
		4	224	2,449,592.8	526,859.5	1,117.20				Average	
		5	225	2,449,796.5	526,863.0	1,121.50				Average	
		6	226	2,449,942.0	526,870.7	1,125.10				Average	Y
		7	227	2,450,288.8	526,922.6	1,128.50				Average	
		8	228	2,450,381.5	526,940.2	1,128.30				Average	
		9	229	2,450,450.5	526,950.9	1,128.30				Average	
		10	230	2,451,049.8	527,054.7	1,139.30				Average	
		11	231	2,451,192.0	527,079.8	1,139.60				Average	
		12	232	2,451,631.8	527,155.7	1,132.40					
Mahoning WB-center	12.0	1	233	2,448,759.2	526,855.0	1,121.10				Average	
		2	234	2,449,181.5	526,862.4	1,112.50				Average	
		3	235	2,449,487.0	526,867.9	1,114.60				Average	
		4	236	2,449,593.0	526,869.3	1,117.20				Average	
		5	237	2,449,795.5	526,873.9	1,121.50				Average	
		6	238	2,449,938.8	526,882.0	1,125.10				Average	Y
		7	239	2,450,284.0	526,935.7	1,128.20				Average	
		8	240	2,450,382.0	526,952.8	1,128.30				Average	
		9	241	2,450,447.0	526,962.4	1,128.30				Average	
		10	242	2,451,048.2	527,065.2	1,139.30				Average	
		11	243	2,451,189.5	527,089.6	1,139.60				Average	
		12	244	2,451,629.5	527,165.9	1,132.70					
Mahoning WB-2	12.0	12	256	2,451,627.5	527,174.6	1,132.70				Average	
		11	255	2,451,187.5	527,098.5	1,139.60				Average	
		10	254	2,451,048.2	527,073.9	1,139.30				Average	
		9	253	2,450,444.8	526,972.6	1,128.30				Average	
		8	252	2,450,379.0	526,965.6	1,128.70				Average	
		7	251	2,450,279.0	526,947.2	1,128.20				Average	Y
		6	250	2,449,935.2	526,894.7	1,123.60				Average	
		5	249	2,449,791.5	526,884.8	1,120.60				Average	
		4	248	2,449,593.5	526,879.2	1,117.10				Average	
		3	247	2,449,487.5	526,877.7	1,114.50				Average	
		2	246	2,449,182.0	526,872.2	1,112.60				Average	
		1	245	2,448,759.8	526,864.8	1,121.10					
Mahoning WB-1	12.0	12	268	2,451,625.2	527,184.8	1,132.70				Average	
		11	267	2,451,184.5	527,110.5	1,139.60				Average	
		10	266	2,451,046.0	527,085.6	1,139.30				Average	

INPUT: ROADWAYS

MAH SR11/2386

		9	265	2,450,440.5	526,985.9	1,128.30				Average	
		8	264	2,450,375.5	526,978.0	1,128.70				Average	
		7	263	2,450,274.5	526,960.4	1,128.20				Average	Y
		6	262	2,449,931.5	526,906.1	1,123.60				Average	
		5	261	2,449,791.5	526,896.8	1,120.60				Average	
		4	260	2,449,593.2	526,891.2	1,117.10				Average	
		3	259	2,449,487.5	526,889.7	1,114.50				Average	
		2	258	2,449,182.0	526,884.2	1,112.60				Average	
		1	257	2,448,759.8	526,876.8	1,121.10					
Ramp: Mahoning to SR 11S	12.0	22	290	2,449,830.5	526,832.2	1,123.60	Onramp	15.00	100	Average	
		21	289	2,449,891.5	526,734.7	1,126.10				Average	
		20	288	2,449,949.0	526,636.5	1,127.80				Average	
		19	287	2,450,029.5	526,501.5	1,128.20				Average	
		18	286	2,450,073.5	526,419.2	1,128.50				Average	
		17	285	2,450,112.0	526,327.8	1,127.30				Average	
		16	284	2,450,142.0	526,248.3	1,125.50				Average	
		15	283	2,450,175.8	526,143.3	1,127.30				Average	
		14	282	2,450,205.8	526,039.5	1,128.10				Average	
		13	281	2,450,233.0	525,932.0	1,129.50				Average	
		12	280	2,450,257.0	525,827.2	1,131.20				Average	
		11	279	2,450,277.2	525,701.7	1,132.20				Average	
		10	278	2,450,292.2	525,595.9	1,134.50				Average	
		9	277	2,450,303.2	525,497.7	1,135.00				Average	
		8	276	2,450,309.5	525,417.1	1,135.00				Average	
		7	275	2,450,320.2	525,267.3	1,136.30				Average	
		6	274	2,450,326.8	525,124.6	1,136.60				Average	
		5	273	2,450,328.0	525,027.6	1,137.00				Average	
		4	272	2,450,330.0	524,935.9	1,137.50				Average	
		3	271	2,450,329.2	524,720.5	1,139.00				Average	
		2	270	2,450,327.8	524,457.3	1,139.60				Average	
		1	269	2,450,322.8	524,116.3	1,140.70					
Ramp: SR 11N to Mahoning	12.0	1	291	2,450,461.0	524,726.6	1,138.90				Average	
		2	292	2,450,470.0	524,786.7	1,138.80				Average	
		3	293	2,450,472.5	524,942.3	1,138.50				Average	
		4	294	2,450,477.2	525,119.1	1,138.70				Average	
		5	295	2,450,481.8	525,277.6	1,138.30				Average	
		6	296	2,450,484.8	525,426.3	1,137.90				Average	
		7	297	2,450,487.0	525,576.0	1,136.70				Average	
		8	298	2,450,488.5	525,676.4	1,136.00				Average	

**INPUT: ROADWAYS**

**MAH SR11/2386**

		9	299	2,450,485.0	525,772.0	1,136.00				Average	
		10	300	2,450,482.0	525,906.4	1,137.60				Average	
		11	301	2,450,473.5	526,083.0	1,139.30				Average	
		12	302	2,450,456.5	526,452.9	1,139.70				Average	
		13	303	2,450,440.8	526,903.0	1,128.50					
Oakcrest WB	12.0	6	309	2,451,311.2	523,235.6	1,147.10				Average	
		5	308	2,450,966.0	523,236.4	1,145.10				Average	
		4	307	2,450,530.5	523,230.8	1,159.10				Average	Y
		3	306	2,450,196.0	523,223.2	1,159.10				Average	
		2	305	2,449,784.2	523,217.4	1,151.00				Average	
		1	304	2,449,408.0	523,211.2	1,158.50					
Oakcrest EB	12.0	1	310	2,449,408.0	523,199.2	1,158.50				Average	
		2	311	2,449,784.2	523,205.4	1,151.00				Average	
		3	312	2,450,196.0	523,211.2	1,159.10				Average	Y
		4	313	2,450,530.5	523,218.8	1,159.10				Average	
		5	314	2,450,966.0	523,224.4	1,145.00				Average	
		6	315	2,451,311.2	523,223.6	1,147.00					

**INPUT: RECEIVERS**

**MAH SR11/2386**

ASC Group, Inc. mas							5 April 2018 TNM 2.5				
<b>INPUT: RECEIVERS</b>											
<b>PROJECT/CONTRACT:</b>		<b>MAH SR11/2386</b>									
<b>RUN:</b>		<b>validation-M9</b>									
<b>Receiver</b>											
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	
M1	1	0	2,449,878.2	526,486.1	1,131.79	5.00	0.00	66	10.0	8.0	
M2	2	0	2,450,546.8	525,906.6	1,133.69	5.00	0.00	66	10.0	8.0	
M3	3	0	2,450,131.8	525,301.2	1,142.29	5.00	0.00	66	10.0	8.0	
M4	4	0	2,450,550.5	523,479.6	1,142.65	5.00	0.00	66	10.0	8.0	
M6	5	0	2,450,506.0	520,458.4	1,145.31	5.00	0.00	66	10.0	8.0	
M7	6	0	2,450,488.2	517,532.1	1,142.26	5.00	0.00	66	10.0	8.0	
M8	7	0	2,450,612.0	515,389.6	1,155.61	5.00	0.00	66	10.0	8.0	
M9	8	0	2,451,175.2	513,420.2	1,138.12	5.00	0.00	66	10.0	8.0	Y

**RESULTS: SOUND LEVELS**

**MAH SR11/2386**

ASC Group, Inc. mas									5 April 2018 TNM 2.5 Calculated with TNM 2.5				
<b>RESULTS: SOUND LEVELS</b>													
<b>PROJECT/CONTRACT:</b>		<b>MAH SR11/2386</b>											
<b>RUN:</b>		<b>validation-M9</b>											
<b>BARRIER DESIGN:</b>		<b>INPUT HEIGHTS</b>											
<b>ATMOSPHERICS:</b>		<b>68 deg F, 50% RH</b>											
<b>Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.</b>													

Receiver													
Name	No.	#DUs	Existing	No Barrier	Increase over existing				With Barrier				
			LAeq1h	LAeq1h	Crit'n	Calculated	Crit'n	Type	Calculated	Noise Reduction	Goal	Calculated	
				Calculated				Sub'l Inc	Impact	LAeq1h	Calculated	Goal	Calculated
			dBA	dBA	dBA					dBA			
													Goal
M1	1	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0	
M2	2	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0	
M3	3	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0	
M4	4	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0	
M6	5	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0	
M7	6	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0	
M8	7	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0	
M9	8	0	0.0	61.0	66	61.0	10	----	61.0	0.0	8	-8.0	
<b>Dwelling Units</b>		<b># DUs</b>	<b>Noise Reduction</b>										
			<b>Min</b>	<b>Avg</b>	<b>Max</b>								
			<b>dB</b>	<b>dB</b>	<b>dB</b>								
All Selected		0	0.0	0.0	0.0								
All Impacted		0	0.0	0.0	0.0								
All that meet NR Goal		0	0.0	0.0	0.0								

INPUT: TRAFFIC FOR LAeq1h Volumes

MAH SR11/2386

ASC Group, Inc. mas		5 April 2018 TNM 2.5											
INPUT: TRAFFIC FOR LAeq1h Volumes													
PROJECT/CONTRACT:		MAH SR11/2386											
RUN:		validation-M9											
Roadway	Points												
Name	Name	No.	Segment		MTrucks		HTrucks		Buses		Motorcycles		
			Autos		V	S	V	S	V	S	V	S	
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	
SR11 NB-1	1	1	412	65	10	65	40	65	0	0	0	0	
	2	2	412	65	10	65	40	65	0	0	0	0	
	3	3	412	65	10	65	40	65	0	0	0	0	
	4	4	412	65	10	65	40	65	0	0	0	0	
	5	5	412	65	10	65	40	65	0	0	0	0	
	6	6	412	65	10	65	40	65	0	0	0	0	
	7	7	412	65	10	65	40	65	0	0	0	0	
	8	8	412	65	10	65	40	65	0	0	0	0	
	9	9	412	65	10	65	40	65	0	0	0	0	
	10	10	412	65	10	65	40	65	0	0	0	0	
	11	11	412	65	10	65	40	65	0	0	0	0	
	12	12	412	65	10	65	40	65	0	0	0	0	
	13	13	412	65	10	65	40	65	0	0	0	0	
	14	14	412	65	10	65	40	65	0	0	0	0	
	15	15	412	65	10	65	40	65	0	0	0	0	
	16	16	412	65	10	65	40	65	0	0	0	0	
	17	17	412	65	10	65	40	65	0	0	0	0	
	18	18	412	65	10	65	40	65	0	0	0	0	
	19	19	412	65	10	65	40	65	0	0	0	0	
	20	20	412	65	10	65	40	65	0	0	0	0	
	21	21	412	65	10	65	40	65	0	0	0	0	
	22	22	412	65	10	65	40	65	0	0	0	0	
	23	23	412	65	10	65	40	65	0	0	0	0	

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	24	24	412	65	10	65	40	65	0	0	0	0
	25	25	412	65	10	65	40	65	0	0	0	0
	26	26	412	65	10	65	40	65	0	0	0	0
	27	27	412	65	10	65	40	65	0	0	0	0
	28	28	412	65	10	65	40	65	0	0	0	0
	29	29	412	65	10	65	40	65	0	0	0	0
	30	30	412	65	10	65	40	65	0	0	0	0
	31	31	412	65	10	65	40	65	0	0	0	0
	32	32	412	65	10	65	40	65	0	0	0	0
	33	33	412	65	10	65	40	65	0	0	0	0
	34	34	412	65	10	65	40	65	0	0	0	0
	35	35	412	65	10	65	40	65	0	0	0	0
	36	36	412	65	10	65	40	65	0	0	0	0
	37	37	412	65	10	65	40	65	0	0	0	0
	38	38	412	65	10	65	40	65	0	0	0	0
	39	39	412	65	10	65	40	65	0	0	0	0
	40	40	412	65	10	65	40	65	0	0	0	0
	41	41	412	65	10	65	40	65	0	0	0	0
	42	42	412	65	10	65	40	65	0	0	0	0
	43	43										
SR11 NB-2	1	44	412	65	10	65	40	65	0	0	0	0
	2	45	412	65	10	65	40	65	0	0	0	0
	3	46	412	65	10	65	40	65	0	0	0	0
	4	47	412	65	10	65	40	65	0	0	0	0
	5	48	412	65	10	65	40	65	0	0	0	0
	6	49	412	65	10	65	40	65	0	0	0	0
	7	50	412	65	10	65	40	65	0	0	0	0
	8	51	412	65	10	65	40	65	0	0	0	0
	9	52	412	65	10	65	40	65	0	0	0	0
	10	53	412	65	10	65	40	65	0	0	0	0
	11	54	412	65	10	65	40	65	0	0	0	0
	12	55	412	65	10	65	40	65	0	0	0	0
	13	56	412	65	10	65	40	65	0	0	0	0
	14	57	412	65	10	65	40	65	0	0	0	0
	15	58	412	65	10	65	40	65	0	0	0	0
	16	59	412	65	10	65	40	65	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	17	60	412	65	10	65	40	65	0	0	0	0
	18	61	0	65	10	65	40	65	0	0	0	0
	19	62	412	65	10	65	40	65	0	0	0	0
	20	63	412	65	10	65	40	65	0	0	0	0
	21	64	412	65	10	65	40	65	0	0	0	0
	22	65	412	65	10	65	40	65	0	0	0	0
	23	66	412	65	10	65	40	65	0	0	0	0
	24	67	412	65	10	65	40	65	0	0	0	0
	25	68	412	65	10	65	40	65	0	0	0	0
	26	69	412	65	10	65	40	65	0	0	0	0
	27	70	412	65	10	65	40	65	0	0	0	0
	28	71	412	65	10	65	40	65	0	0	0	0
	29	72	412	65	10	65	40	65	0	0	0	0
	30	73	412	65	10	65	40	65	0	0	0	0
	31	74	412	65	10	65	40	65	0	0	0	0
	32	75	412	65	10	65	40	65	0	0	0	0
	33	76	412	65	10	65	40	65	0	0	0	0
	34	77	412	65	10	65	40	65	0	0	0	0
	35	78	412	65	10	65	40	65	0	0	0	0
	36	79	412	65	10	65	40	65	0	0	0	0
	37	80	412	65	10	65	40	65	0	0	0	0
	38	81	412	65	10	65	40	65	0	0	0	0
	39	82	412	65	10	65	40	65	0	0	0	0
	40	83	412	65	10	65	40	65	0	0	0	0
	41	84	412	65	10	65	40	65	0	0	0	0
	42	85	412	65	10	65	40	65	0	0	0	0
	43	86										
SR11 SB-2	1	87	390	65	14	65	34	65	2	65	0	0
	2	88	390	65	14	65	34	65	2	65	0	0
	3	89	390	65	14	65	34	65	2	65	0	0
	4	90	390	65	14	65	34	65	2	65	0	0
	5	91	390	65	14	65	34	65	2	65	0	0
	6	92	390	65	14	65	34	65	2	65	0	0
	7	93	390	65	14	65	34	65	2	65	0	0
	8	94	390	65	14	65	34	65	2	65	0	0
	9	95	390	65	14	65	34	65	2	65	0	0



**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	10	96	390	65	14	65	34	65	2	65	0	0
	11	97	390	65	14	65	34	65	2	65	0	0
	12	98	390	65	14	65	34	65	2	65	0	0
	13	99	390	65	14	65	34	65	2	65	0	0
	14	100	390	65	14	65	34	65	2	65	0	0
	15	101	390	65	14	65	34	65	2	65	0	0
	16	102	390	65	14	65	34	65	2	65	0	0
	17	103	390	65	14	65	34	65	2	65	0	0
	18	104	390	65	14	65	34	65	2	65	0	0
	19	105	390	65	14	65	34	65	2	65	0	0
	20	106	390	65	14	65	34	65	2	65	0	0
	21	107	390	65	14	65	34	65	2	65	0	0
	22	108	390	65	14	65	34	65	2	65	0	0
	23	109	390	65	14	65	34	65	2	65	0	0
	24	110	390	65	14	65	34	65	2	65	0	0
	25	111	390	65	14	65	34	65	2	65	0	0
	26	112	390	65	14	65	34	65	2	65	0	0
	27	113	390	65	14	65	34	65	2	65	0	0
	28	114	390	65	14	65	34	65	2	65	0	0
	29	115	390	65	14	65	34	65	2	65	0	0
	30	116	390	65	14	65	34	65	2	65	0	0
	31	117	390	65	14	65	34	65	2	65	0	0
	32	118	390	65	14	65	34	65	2	65	0	0
	33	119	390	65	14	65	34	65	2	65	0	0
	34	120	390	65	14	65	34	65	2	65	0	0
	35	121	390	65	14	65	34	65	2	65	0	0
	36	122	390	65	14	65	34	65	2	65	0	0
	37	123	390	65	14	65	34	65	2	65	0	0
	38	124	390	65	14	65	34	65	2	65	0	0
	39	125	390	65	14	65	34	65	2	65	0	0
	40	126	390	65	14	65	34	65	2	65	0	0
	41	127	390	65	14	65	34	65	2	65	0	0
	42	128	390	65	14	65	34	65	2	65	0	0
	43	129										
SR11 SB-1	43	172	390	65	14	65	34	65	2	65	0	0
	42	171	390	65	14	65	34	65	2	65	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	41	170	390	65	14	65	34	65	2	65	0	0
	40	169	390	65	14	65	34	65	2	65	0	0
	39	168	390	65	14	65	34	65	2	65	0	0
	38	167	390	65	14	65	34	65	2	65	0	0
	37	166	390	65	14	65	34	65	2	65	0	0
	36	165	390	65	14	65	34	65	2	65	0	0
	35	164	390	65	14	65	34	65	2	65	0	0
	34	163	390	65	14	65	34	65	2	65	0	0
	33	162	390	65	14	65	34	65	2	65	0	0
	32	161	390	65	14	65	34	65	2	65	0	0
	31	160	390	65	14	65	34	65	2	65	0	0
	30	159	390	65	14	65	34	65	2	65	0	0
	29	158	390	65	14	65	34	65	2	65	0	0
	28	157	390	65	14	65	34	65	2	65	0	0
	27	156	390	65	14	65	34	65	2	65	0	0
	26	155	390	65	14	65	34	65	2	65	0	0
	25	154	390	65	14	65	34	65	2	65	0	0
	24	153	390	65	14	65	34	65	2	65	0	0
	23	152	390	65	14	65	34	65	2	65	0	0
	22	151	390	65	14	65	34	65	2	65	0	0
	21	150	390	65	14	65	34	65	2	65	0	0
	20	149	390	65	14	65	34	65	2	65	0	0
	19	148	390	65	14	65	34	65	2	65	0	0
	18	147	390	65	14	65	34	65	2	65	0	0
	17	146	390	65	14	65	34	65	2	65	0	0
	16	145	390	65	14	65	34	65	2	65	0	0
	15	144	390	65	14	65	34	65	2	65	0	0
	14	143	390	65	14	65	34	65	2	65	0	0
	13	142	390	65	14	65	34	65	2	65	0	0
	12	141	390	65	14	65	34	65	2	65	0	0
	11	140	390	65	14	65	34	65	2	65	0	0
	10	139	390	65	14	65	34	65	2	65	0	0
	9	138	390	65	14	65	34	65	2	65	0	0
	8	137	390	65	14	65	34	65	2	65	0	0
	7	136	390	65	14	65	34	65	2	65	0	0
	6	135	390	65	14	65	34	65	2	65	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	5	134	390	65	14	65	34	65	2	65	0	0
	4	133	390	65	14	65	34	65	2	65	0	0
	3	132	390	65	14	65	34	65	2	65	0	0
	2	131	390	65	14	65	34	65	2	65	0	0
	1	130										
Kirk EB	1	173	0	0	0	0	0	0	0	0	0	0
	2	174	0	0	0	0	0	0	0	0	0	0
	3	175	0	0	0	0	0	0	0	0	0	0
	4	176	0	0	0	0	0	0	0	0	0	0
	5	177	0	0	0	0	0	0	0	0	0	0
	6	178										
Kirk WB	6	184	0	0	0	0	0	0	0	0	0	0
	5	183	0	0	0	0	0	0	0	0	0	0
	4	182	0	0	0	0	0	0	0	0	0	0
	3	181	0	0	0	0	0	0	0	0	0	0
	2	180	0	0	0	0	0	0	0	0	0	0
	1	179										
New EB	1	185	0	0	0	0	0	0	0	0	0	0
	2	186	0	0	0	0	0	0	0	0	0	0
	3	187	0	0	0	0	0	0	0	0	0	0
	4	188	0	0	0	0	0	0	0	0	0	0
	5	189	0	0	0	0	0	0	0	0	0	0
	6	190	0	0	0	0	0	0	0	0	0	0
	7	191	0	0	0	0	0	0	0	0	0	0
	8	192	0	0	0	0	0	0	0	0	0	0
	9	193	0	0	0	0	0	0	0	0	0	0
	10	194	0	0	0	0	0	0	0	0	0	0
	11	195	0	0	0	0	0	0	0	0	0	0
	12	196										
New WB	12	208	0	0	0	0	1	0	0	0	0	0
	11	207	0	0	0	0	0	0	0	0	0	0
	10	206	0	0	0	0	0	0	0	0	0	0
	9	205	0	0	0	0	0	0	0	0	0	0
	8	204	0	0	0	0	0	0	0	0	0	0
	7	203	0	0	0	0	0	0	0	0	0	0
	6	202	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	5	201	0	0	0	0	0	0	0	0	0	0
	4	200	0	0	0	0	0	0	0	0	0	0
	3	199	0	0	0	0	0	0	0	0	0	0
	2	198	0	0	0	0	0	0	0	0	0	0
	1	197										
Mahoning EB-1	1	209	0	0	0	0	0	0	0	0	0	0
	2	210	0	0	0	0	0	0	0	0	0	0
	3	211	0	0	0	0	0	0	0	0	0	0
	4	212	0	0	0	0	0	0	0	0	0	0
	5	213	0	0	0	0	0	0	0	0	0	0
	6	214	0	0	0	0	0	0	0	0	0	0
	7	215	0	0	0	0	0	0	0	0	0	0
	8	216	0	0	0	0	0	0	0	0	0	0
	9	217	0	0	0	0	0	0	0	0	0	0
	10	218	0	0	0	0	0	0	0	0	0	0
	11	219	0	0	0	0	0	0	0	0	0	0
	12	220										
Mahoning EB-2	1	221	0	0	0	0	0	0	0	0	0	0
	2	222	0	0	0	0	0	0	0	0	0	0
	3	223	0	0	0	0	0	0	0	0	0	0
	4	224	0	0	0	0	0	0	0	0	0	0
	5	225	0	0	0	0	0	0	0	0	0	0
	6	226	0	0	0	0	0	0	0	0	0	0
	7	227	0	0	0	0	0	0	0	0	0	0
	8	228	0	0	0	0	0	0	0	0	0	0
	9	229	0	0	0	0	0	0	0	0	0	0
	10	230	0	0	0	0	0	0	0	0	0	0
	11	231	0	0	0	0	0	0	0	0	0	0
	12	232										
Mahoning WB-center	1	233	0	0	0	0	0	0	0	0	0	0
	2	234	0	0	0	0	0	0	0	0	0	0
	3	235	0	0	0	0	0	0	0	0	0	0
	4	236	0	0	0	0	0	0	0	0	0	0
	5	237	0	0	0	0	0	0	0	0	0	0
	6	238	0	0	0	0	0	0	0	0	0	0
	7	239	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	8	240	0	0	0	0	0	0	0	0	0	0
	9	241	0	0	0	0	0	0	0	0	0	0
	10	242	0	0	0	0	0	0	0	0	0	0
	11	243	0	0	0	0	0	0	0	0	0	0
	12	244										
Mahoning WB-2	12	256	0	0	0	0	0	0	0	0	0	0
	11	255	0	0	0	0	0	0	0	0	0	0
	10	254	0	0	0	0	0	0	0	0	0	0
	9	253	0	0	0	0	0	0	0	0	0	0
	8	252	0	0	0	0	0	0	0	0	0	0
	7	251	0	0	0	0	0	0	0	0	0	0
	6	250	0	0	0	0	0	0	0	0	0	0
	5	249	0	0	0	0	0	0	0	0	0	0
	4	248	0	0	0	0	0	0	0	0	0	0
	3	247	0	0	0	0	0	0	0	0	0	0
	2	246	0	0	0	0	0	0	0	0	0	0
	1	245										
Mahoning WB-1	12	268	0	0	0	0	0	0	0	0	0	0
	11	267	0	0	0	0	0	0	0	0	0	0
	10	266	0	0	0	0	0	0	0	0	0	0
	9	265	0	0	0	0	0	0	0	0	0	0
	8	264	0	0	0	0	0	0	0	0	0	0
	7	263	0	0	0	0	0	0	0	0	0	0
	6	262	0	0	0	0	0	0	0	0	0	0
	5	261	0	0	0	0	0	0	0	0	0	0
	4	260	0	0	0	0	0	0	0	0	0	0
	3	259	0	0	0	0	0	0	0	0	0	0
	2	258	0	0	0	0	0	0	0	0	0	0
	1	257										
Ramp: Mahoning to SR 11S	22	290	0	0	0	0	0	0	0	0	0	0
	21	289	0	0	0	0	0	0	0	0	0	0
	20	288	0	0	0	0	0	0	0	0	0	0
	19	287	0	0	0	0	0	0	0	0	0	0
	18	286	0	0	0	0	0	0	0	0	0	0
	17	285	0	0	0	0	0	0	0	0	0	0
	16	284	0	0	0	0	0	0	0	0	0	0

**INPUT: RECEIVERS**

**MAH SR11/2386**

ASC Group, Inc. mas							5 April 2018 TNM 2.5				
<b>INPUT: RECEIVERS</b>											
<b>PROJECT/CONTRACT:</b>		<b>MAH SR11/2386</b>									
<b>RUN:</b>		<b>validation-M8</b>									
<b>Receiver</b>											
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	dB	dB	dB	dB	
M1	1	0	2,449,878.2	526,486.1	1,131.79	5.00	0.00	66	10.0	8.0	
M2	2	0	2,450,546.8	525,906.6	1,133.69	5.00	0.00	66	10.0	8.0	
M3	3	0	2,450,131.8	525,301.2	1,142.29	5.00	0.00	66	10.0	8.0	
M4	4	0	2,450,550.5	523,479.6	1,142.65	5.00	0.00	66	10.0	8.0	
M6	5	0	2,450,506.0	520,458.4	1,145.31	5.00	0.00	66	10.0	8.0	
M7	6	0	2,450,488.2	517,532.1	1,142.26	5.00	0.00	66	10.0	8.0	
M8	7	0	2,450,612.0	515,389.6	1,155.61	5.00	0.00	66	10.0	8.0	Y
M9	8	0	2,451,175.2	513,420.2	1,138.12	5.00	0.00	66	10.0	8.0	

RESULTS: SOUND LEVELS

MAH SR11/2386

ASC Group, Inc. mas									5 April 2018 TNM 2.5 Calculated with TNM 2.5					
RESULTS: SOUND LEVELS PROJECT/CONTRACT: RUN: BARRIER DESIGN: ATMOSPHERICS:			MAH SR11/2386 validation-M8 INPUT HEIGHTS 68 deg F, 50% RH								Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.			

Receiver												
Name	No.	#DUs	Existing	No Barrier	Increase over existing			With Barrier				
			LAeq1h	LAeq1h	Crit'n	Calculated	Crit'n	Type	Calculated	Noise Reduction		Calculated
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	Goal
M1	1	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
M2	2	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
M3	3	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
M4	4	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
M6	5	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
M7	6	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
M8	7	0	0.0	65.4	66	65.4	10	----	65.4	0.0	8	-8.0
M9	8	0	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		0	0.0	0.0	0.0							
All Impacted		0	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	15	283	0	0	0	0	0	0	0	0	0	0
	14	282	0	0	0	0	0	0	0	0	0	0
	13	281	0	0	0	0	0	0	0	0	0	0
	12	280	0	0	0	0	0	0	0	0	0	0
	11	279	0	0	0	0	0	0	0	0	0	0
	10	278	0	0	0	0	0	0	0	0	0	0
	9	277	0	0	0	0	0	0	0	0	0	0
	8	276	0	0	0	0	0	0	0	0	0	0
	7	275	0	0	0	0	0	0	0	0	0	0
	6	274	0	0	0	0	0	0	0	0	0	0
	5	273	0	0	0	0	0	0	0	0	0	0
	4	272	0	0	0	0	0	0	0	0	0	0
	3	271	0	0	0	0	0	0	0	0	0	0
	2	270	0	0	0	0	0	0	0	0	0	0
	1	269										
Ramp: SR 11N to Mahoning	1	291	0	0	0	0	0	0	0	0	0	0
	2	292	0	0	0	0	0	0	0	0	0	0
	3	293	0	0	0	0	0	0	0	0	0	0
	4	294	0	0	0	0	0	0	0	0	0	0
	5	295	0	0	0	0	0	0	0	0	0	0
	6	296	0	0	0	0	0	0	0	0	0	0
	7	297	0	0	0	0	0	0	0	0	0	0
	8	298	0	0	0	0	0	0	0	0	0	0
	9	299	0	0	0	0	0	0	0	0	0	0
	10	300	0	0	0	0	0	0	0	0	0	0
	11	301	0	0	0	0	0	0	0	0	0	0
	12	302	0	0	0	0	0	0	0	0	0	0
	13	303										
Oakcrest WB	6	309	0	0	0	0	0	0	0	0	0	0
	5	308	0	0	0	0	0	0	0	0	0	0
	4	307	0	0	0	0	0	0	0	0	0	0
	3	306	0	0	0	0	0	0	0	0	0	0
	2	305	0	0	0	0	0	0	0	0	0	0
	1	304										
Oakcrest EB	1	310	0	0	0	0	0	0	0	0	0	0
	2	311	0	0	0	0	0	0	0	0	0	0



**INPUT: TRAFFIC FOR LAeq1h Volumes****MAH SR11/2386**

	3	312	0	0	0	0	0	0	0	0	0	0
	4	313	0	0	0	0	0	0	0	0	0	0
	5	314	0	0	0	0	0	0	0	0	0	0
	6	315										

INPUT: ROADWAYS

MAH SR11/2386

ASC Group, Inc. mas					5 April 2018 TNM 2.5					
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INPUT: ROADWAYS  
 PROJECT/CONTRACT: MAH SR11/2386  
 RUN: existing NSA1 Starwick

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

Roadway Name	Width	Points			Coordinates (pavement)			Flow Control			Segment	
		Name	No.		X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected		Pvmt Type
	ft				ft	ft	ft		mph	%		
SR11 NB-1	12.0	1	1		2,451,374.8	511,900.4	1,142.60				Average	
		2	2		2,451,213.2	512,465.7	1,141.40				Average	
		3	3		2,451,045.8	513,066.4	1,142.80				Average	
		4	4		2,450,860.5	513,721.0	1,144.80				Average	
		5	5		2,450,744.2	514,149.3	1,146.30				Average	
		6	6		2,450,682.2	514,360.0	1,147.00				Average	
		7	7		2,450,634.2	514,550.1	1,147.00				Average	
		8	8		2,450,587.5	514,766.0	1,148.30				Average	
		9	9		2,450,547.5	514,947.7	1,148.60				Average	
		10	10		2,450,504.8	515,146.8	1,149.40				Average	
		11	11		2,450,455.8	515,432.0	1,150.40				Average	
		12	12		2,450,419.2	515,670.0	1,151.10				Average	
		13	13		2,450,366.5	516,083.0	1,152.20				Average	
		14	14		2,450,332.5	516,421.3	1,153.20				Average	
		15	15		2,450,316.5	516,682.7	1,154.10				Average	
		16	16		2,450,300.2	516,977.8	1,154.90				Average	
		17	17		2,450,293.5	517,281.5	1,155.70				Average	
		18	18		2,450,294.2	517,597.8	1,156.70				Average	
		19	19		2,450,308.2	518,208.7	1,157.90				Average	
		20	20		2,450,321.2	518,851.5	1,156.50				Average	
		21	21		2,450,339.0	519,672.9	1,154.10				Average	
		22	22		2,450,358.5	520,451.0	1,151.40				Average	
		23	23		2,450,371.5	521,077.9	1,149.70				Average	
		24	24		2,450,394.8	522,071.0	1,146.80				Average	
		25	25		2,450,410.2	522,781.8	1,144.80				Average	

INPUT: ROADWAYS

MAH SR11/2386

		26	26	2,450,421.0	523,153.8	1,143.60				Average	
		27	27	2,450,433.5	523,725.3	1,142.00				Average	
		28	28	2,450,442.5	524,118.8	1,140.40				Average	
		29	29	2,450,450.5	524,462.4	1,139.80				Average	
		30	30	2,450,458.0	524,726.5	1,138.90				Average	
		31	31	2,450,461.0	524,942.6	1,138.50				Average	
		32	32	2,450,462.8	525,119.3	1,138.10				Average	
		33	33	2,450,457.0	525,278.1	1,137.30				Average	
		34	34	2,450,453.0	525,427.2	1,137.10				Average	
		35	35	2,450,441.2	525,580.1	1,136.30				Average	
		36	36	2,450,425.5	525,732.6	1,134.50				Average	
		37	37	2,450,399.0	525,926.2	1,131.90				Average	
		38	38	2,450,370.8	526,102.7	1,129.00				Average	
		39	39	2,450,340.0	526,263.2	1,125.70				Average	
		40	40	2,450,290.0	526,482.5	1,120.20				Average	
		41	41	2,450,224.0	526,734.5	1,113.20				Average	
		42	42	2,450,134.5	527,011.3	1,108.00				Average	
		43	43	2,450,046.0	527,245.0	1,106.40					
SR11 NB-2	12.0	1	44	2,451,366.2	511,895.0	1,142.50				Average	
		2	45	2,451,203.0	512,462.0	1,140.90				Average	
		3	46	2,451,035.5	513,062.7	1,142.60				Average	
		4	47	2,450,850.2	513,717.3	1,144.50				Average	
		5	48	2,450,734.0	514,145.3	1,146.30				Average	
		6	49	2,450,672.2	514,356.5	1,147.00				Average	
		7	50	2,450,624.0	514,546.4	1,147.00				Average	
		8	51	2,450,577.2	514,762.3	1,147.50				Average	
		9	52	2,450,537.2	514,944.0	1,148.60				Average	
		10	53	2,450,494.5	515,143.2	1,149.40				Average	
		11	54	2,450,445.5	515,429.4	1,150.40				Average	
		12	55	2,450,408.0	515,668.5	1,149.90				Average	
		13	56	2,450,356.0	516,081.1	1,152.20				Average	
		14	57	2,450,322.5	516,419.1	1,153.20				Average	
		15	58	2,450,306.0	516,682.7	1,153.40				Average	
		16	59	2,450,290.0	516,974.1	1,154.90				Average	
		17	60	2,450,282.2	517,280.9	1,155.70				Average	
		18	61	2,450,282.8	517,597.1	1,156.30				Average	
		19	62	2,450,297.5	518,208.7	1,157.60				Average	
		20	63	2,450,309.5	518,851.9	1,155.90				Average	
		21	64	2,450,328.0	519,671.8	1,154.10				Average	

INPUT: ROADWAYS

MAH SR11/2386

		22	65	2,450,348.2	520,447.3	1,151.70				Average	
		23	66	2,450,361.0	521,077.3	1,149.70				Average	
		24	67	2,450,384.5	522,070.6	1,146.80				Average	
		25	68	2,450,400.0	522,778.2	1,144.80				Average	
		26	69	2,450,410.0	523,153.8	1,143.60				Average	
		27	70	2,450,423.2	523,721.6	1,142.10				Average	
		28	71	2,450,431.5	524,119.3	1,140.40				Average	
		29	72	2,450,440.2	524,462.6	1,139.80				Average	
		30	73	2,450,447.8	524,726.6	1,138.50				Average	
		31	74	2,450,450.5	524,942.4	1,137.10				Average	
		32	75	2,450,452.5	525,119.3	1,138.10				Average	
		33	76	2,450,447.0	525,276.8	1,137.30				Average	
		34	77	2,450,442.2	525,426.6	1,137.10				Average	
		35	78	2,450,431.0	525,580.3	1,135.20				Average	
		36	79	2,450,415.5	525,732.8	1,134.50				Average	
		37	80	2,450,388.8	525,926.3	1,131.90				Average	
		38	81	2,450,360.5	526,102.8	1,129.00				Average	
		39	82	2,450,330.0	526,263.4	1,125.70				Average	
		40	83	2,450,279.2	526,479.7	1,120.20				Average	
		41	84	2,450,213.5	526,731.3	1,113.20				Average	
		42	85	2,450,124.5	527,007.4	1,107.00				Average	
		43	86	2,450,035.5	527,241.1	1,106.40					
SR11 SB-2	12.0	1	87	2,451,271.2	511,869.0	1,142.70				Average	
		2	88	2,451,109.8	512,434.4	1,141.40				Average	
		3	89	2,450,942.2	513,035.0	1,142.70				Average	
		4	90	2,450,758.8	513,689.7	1,144.70				Average	
		5	91	2,450,638.0	514,117.7	1,146.30				Average	
		6	92	2,450,579.2	514,330.9	1,146.90				Average	
		7	93	2,450,533.0	514,518.7	1,147.60				Average	
		8	94	2,450,480.5	514,738.8	1,148.20				Average	
		9	95	2,450,442.5	514,916.6	1,148.80				Average	
		10	96	2,450,401.2	515,120.2	1,149.40				Average	
		11	97	2,450,354.8	515,399.3	1,150.20				Average	
		12	98	2,450,314.0	515,661.3	1,150.90				Average	
		13	99	2,450,261.5	516,051.8	1,152.40				Average	
		14	100	2,450,229.0	516,389.9	1,153.20				Average	
		15	101	2,450,209.5	516,675.9	1,153.90				Average	
		16	102	2,450,193.0	516,960.2	1,155.00				Average	
		17	103	2,450,184.8	517,280.8	1,155.90				Average	

INPUT: ROADWAYS

MAH SR11/2386

		18	104	2,450,186.5	517,595.6	1,156.70				Average	
		19	105	2,450,201.0	518,205.2	1,158.00				Average	
		20	106	2,450,216.0	518,859.0	1,156.30				Average	
		21	107	2,450,234.0	519,666.1	1,154.10				Average	
		22	108	2,450,252.0	520,448.8	1,151.80				Average	
		23	109	2,450,265.0	521,096.4	1,149.70				Average	
		24	110	2,450,288.0	522,068.9	1,146.90				Average	
		25	111	2,450,303.0	522,776.2	1,144.80				Average	
		26	112	2,450,312.8	523,160.7	1,143.70				Average	
		27	113	2,450,326.0	523,720.5	1,142.00				Average	
		28	114	2,450,334.8	524,116.8	1,140.70				Average	
		29	115	2,450,343.0	524,456.8	1,139.90				Average	
		30	116	2,450,350.5	524,720.9	1,139.00				Average	
		31	117	2,450,355.5	524,936.5	1,138.00				Average	
		32	118	2,450,355.2	525,120.6	1,137.20				Average	
		33	119	2,450,353.8	525,270.8	1,136.80				Average	
		34	120	2,450,346.0	525,422.5	1,136.30				Average	
		35	121	2,450,334.8	525,572.9	1,134.90				Average	
		36	122	2,450,319.5	525,726.5	1,133.70				Average	
		37	123	2,450,293.2	525,921.1	1,131.00				Average	
		38	124	2,450,264.5	526,097.6	1,128.10				Average	
		39	125	2,450,232.5	526,257.6	1,124.60				Average	
		40	126	2,450,182.5	526,476.7	1,119.30				Average	
		41	127	2,450,114.8	526,725.6	1,111.80				Average	
		42	128	2,450,025.2	527,001.1	1,106.50				Average	
		43	129	2,449,943.2	527,213.9	1,105.90					
SR11 SB-1	12.0	43	172	2,449,934.0	527,209.2	1,105.90				Average	
		42	171	2,450,015.5	526,997.0	1,106.50				Average	
		41	170	2,450,105.5	526,722.5	1,111.20				Average	
		40	169	2,450,172.8	526,474.0	1,119.30				Average	
		39	168	2,450,222.5	526,257.9	1,124.60				Average	
		38	167	2,450,254.2	526,097.9	1,128.10				Average	
		37	166	2,450,283.0	525,919.0	1,131.00				Average	
		36	165	2,450,309.5	525,724.5	1,133.70				Average	
		35	164	2,450,323.5	525,572.2	1,134.90				Average	
		34	163	2,450,336.0	525,421.5	1,135.70				Average	
		33	162	2,450,343.5	525,270.8	1,136.80				Average	
		32	161	2,450,345.0	525,120.8	1,136.60				Average	
		31	160	2,450,345.0	524,936.7	1,137.50				Average	

INPUT: ROADWAYS

MAH SR11/2386

		30	159	2,450,340.2	524,721.1	1,139.00				Average	
		29	158	2,450,332.8	524,457.1	1,139.60				Average	
		28	157	2,450,324.2	524,116.3	1,140.70				Average	
		27	156	2,450,315.8	523,717.7	1,141.70				Average	
		26	155	2,450,302.5	523,157.9	1,143.50				Average	
		25	154	2,450,293.0	522,773.3	1,144.90				Average	
		24	153	2,450,278.0	522,066.1	1,146.00				Average	
		23	152	2,450,254.8	521,093.5	1,149.70				Average	
		22	151	2,450,242.0	520,445.9	1,151.80				Average	
		21	150	2,450,223.0	519,666.3	1,153.40				Average	
		20	149	2,450,204.0	518,859.9	1,156.40				Average	
		19	148	2,450,189.5	518,205.5	1,158.00				Average	
		18	147	2,450,174.2	517,595.8	1,156.70				Average	
		17	146	2,450,174.2	517,280.5	1,155.90				Average	
		16	145	2,450,182.8	516,957.4	1,155.00				Average	
		15	144	2,450,198.0	516,675.2	1,154.00				Average	
		14	143	2,450,218.0	516,388.5	1,153.20				Average	
		13	142	2,450,250.5	516,050.2	1,152.40				Average	
		12	141	2,450,303.2	515,660.5	1,150.70				Average	
		11	140	2,450,344.5	515,396.4	1,150.20				Average	
		10	139	2,450,391.2	515,117.3	1,148.40				Average	
		9	138	2,450,432.2	514,913.7	1,148.50				Average	
		8	137	2,450,470.5	514,736.0	1,147.80				Average	
		7	136	2,450,522.8	514,515.9	1,147.60				Average	
		6	135	2,450,569.0	514,328.1	1,146.90				Average	
		5	134	2,450,628.0	514,114.9	1,146.30				Average	
		4	133	2,450,748.5	513,686.8	1,144.60				Average	
		3	132	2,450,932.0	513,032.2	1,142.70				Average	
		2	131	2,451,099.5	512,431.5	1,141.00				Average	
		1	130	2,451,262.8	511,864.3	1,142.70					
Kirk EB	12.0	1	173	2,449,260.5	515,679.3	1,164.30				Average	
		2	174	2,449,776.0	515,689.2	1,158.80				Average	
		3	175	2,450,182.5	515,695.2	1,168.60				Average	Y
		4	176	2,450,527.2	515,703.6	1,168.60				Average	
		5	177	2,450,935.8	515,716.3	1,163.50				Average	
		6	178	2,451,437.5	515,731.8	1,176.40					
Kirk WB	12.0	6	184	2,451,437.5	515,743.8	1,176.40				Average	
		5	183	2,450,936.0	515,728.3	1,163.50				Average	
		4	182	2,450,527.5	515,715.6	1,168.60				Average	Y

**INPUT: ROADWAYS**

**MAH SR11/2386**

		3	181	2,450,182.5	515,707.2	1,168.60				Average	
		2	180	2,449,776.2	515,701.2	1,158.80				Average	
		1	179	2,449,260.5	515,691.3	1,164.30					

INPUT: TRAFFIC FOR LAeq1h Volumes

MAH SR11/2386

ASC Group, Inc. mas		5 April 2018 TNM 2.5										
INPUT: TRAFFIC FOR LAeq1h Volumes												
PROJECT/CONTRACT:		MAH SR11/2386										
RUN:		existing NSA1 Starwick										
Roadway	Points											
Name	Name	No.	Segment		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
SR11 NB-1	1	1	820	65	7	65	62	65	10	65	8	65
	2	2	820	65	7	65	62	65	10	65	8	65
	3	3	820	65	7	65	62	65	10	65	8	65
	4	4	820	65	7	65	62	65	10	65	8	65
	5	5	820	65	7	65	62	65	10	65	8	65
	6	6	820	65	7	65	62	65	10	65	8	65
	7	7	820	65	7	65	62	65	10	65	8	65
	8	8	820	65	7	65	62	65	10	65	8	65
	9	9	820	65	7	65	62	65	10	65	8	65
	10	10	820	65	7	65	62	65	10	65	8	65
	11	11	820	65	7	65	62	65	10	65	8	65
	12	12	820	65	7	65	62	65	10	65	8	65
	13	13	820	65	7	65	62	65	10	65	8	65
	14	14	820	65	7	65	62	65	10	65	8	65
	15	15	820	65	7	65	62	65	10	65	8	65
	16	16	820	65	7	65	62	65	10	65	8	65
	17	17	820	65	7	65	62	65	10	65	8	65
	18	18	820	65	7	65	62	65	10	65	8	65
	19	19	820	65	7	65	62	65	10	65	8	65
	20	20	820	65	7	65	62	65	10	65	8	65
	21	21	820	65	7	65	62	65	10	65	8	65
	22	22	820	65	7	65	62	65	10	65	8	65
	23	23	820	65	7	65	62	65	10	65	8	65



**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	24	24	820	65	7	65	62	65	10	65	8	65
	25	25	820	65	7	65	62	65	10	65	8	65
	26	26	820	65	7	65	62	65	10	65	8	65
	27	27	820	65	7	65	62	65	10	65	8	65
	28	28	820	65	7	65	62	65	10	65	8	65
	29	29	820	65	7	65	62	65	10	65	8	65
	30	30	820	65	7	65	62	65	10	65	8	65
	31	31	820	65	7	65	62	65	10	65	8	65
	32	32	820	65	7	65	62	65	10	65	8	65
	33	33	820	65	7	65	62	65	10	65	8	65
	34	34	820	65	7	65	62	65	10	65	8	65
	35	35	820	65	7	65	62	65	10	65	8	65
	36	36	820	65	7	65	62	65	10	65	8	65
	37	37	820	65	7	65	62	65	10	65	8	65
	38	38	820	65	7	65	62	65	10	65	8	65
	39	39	820	65	7	65	62	65	10	65	8	65
	40	40	820	65	7	65	62	65	10	65	8	65
	41	41	820	65	7	65	62	65	10	65	8	65
	42	42	820	65	7	65	62	65	10	65	8	65
	43	43										
SR11 NB-2	1	44	820	65	7	65	62	65	10	65	8	65
	2	45	820	65	7	65	62	65	10	65	8	65
	3	46	820	65	7	65	62	65	10	65	8	65
	4	47	820	65	7	65	62	65	10	65	8	65
	5	48	820	65	7	65	62	65	10	65	8	65
	6	49	820	65	7	65	62	65	10	65	8	65
	7	50	820	65	7	65	62	65	10	65	8	65
	8	51	820	65	7	65	62	65	10	65	8	65
	9	52	820	65	7	65	62	65	10	65	8	65
	10	53	820	65	7	65	62	65	10	65	8	65
	11	54	820	65	7	65	62	65	10	65	8	65
	12	55	820	65	7	65	62	65	10	65	8	65
	13	56	820	65	7	65	62	65	10	65	8	65
	14	57	820	65	7	65	62	65	10	65	8	65
	15	58	820	65	7	65	62	65	10	65	8	65
	16	59	820	65	7	65	62	65	10	65	8	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	17	60	820	65	7	65	62	65	10	65	8	65
	18	61	820	65	7	65	62	65	10	65	8	65
	19	62	820	65	7	65	62	65	10	65	8	65
	20	63	820	65	7	65	62	65	10	65	8	65
	21	64	820	65	7	65	62	65	10	65	8	65
	22	65	820	65	7	65	62	65	10	65	8	65
	23	66	820	65	7	65	62	65	10	65	8	65
	24	67	820	65	7	65	62	65	10	65	8	65
	25	68	820	65	7	65	62	65	10	65	8	65
	26	69	820	65	7	65	62	65	10	65	8	65
	27	70	820	65	7	65	62	65	10	65	8	65
	28	71	820	65	7	65	62	65	10	65	8	65
	29	72	820	65	7	65	62	65	10	65	8	65
	30	73	820	65	7	65	62	65	10	10	8	65
	31	74	820	65	7	65	62	65	10	65	8	65
	32	75	820	65	7	65	62	65	10	65	8	65
	33	76	820	65	7	65	62	65	10	65	8	65
	34	77	820	65	7	65	62	65	10	65	8	65
	35	78	820	65	7	65	62	65	10	65	8	65
	36	79	820	65	7	65	62	65	10	65	8	65
	37	80	820	65	7	65	62	65	10	65	8	65
	38	81	820	65	7	65	62	65	10	65	8	65
	39	82	820	65	7	65	62	65	10	65	8	65
	40	83	820	65	7	65	62	65	10	65	8	65
	41	84	820	65	7	65	62	65	10	65	8	65
	42	85	820	65	7	65	62	65	10	65	8	65
	43	86										
SR11 SB-2	1	87	803	65	6	65	58	65	9	65	4	65
	2	88	803	65	6	65	58	65	9	65	4	65
	3	89	803	65	6	65	58	65	9	65	4	65
	4	90	803	65	6	65	58	65	9	65	4	65
	5	91	803	65	6	65	58	65	9	65	4	65
	6	92	803	65	6	65	58	65	9	65	4	65
	7	93	803	65	6	65	58	65	9	65	4	65
	8	94	803	65	6	65	58	65	9	65	4	65
	9	95	803	65	6	65	58	65	9	65	4	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	10	96	803	65	6	65	58	65	9	65	4	65
	11	97	803	65	6	65	58	65	9	65	4	65
	12	98	803	65	6	65	58	65	9	65	4	65
	13	99	803	65	6	65	58	65	9	65	4	65
	14	100	803	65	6	65	58	65	9	65	4	65
	15	101	803	65	6	65	58	65	9	65	4	65
	16	102	803	65	6	65	58	65	9	65	4	65
	17	103	803	65	6	65	58	65	9	65	4	65
	18	104	803	65	6	65	58	65	9	65	4	65
	19	105	803	65	6	65	58	65	9	65	4	65
	20	106	803	65	6	65	58	65	9	65	4	65
	21	107	803	65	6	65	58	65	9	65	4	65
	22	108	803	65	6	65	58	65	9	65	4	65
	23	109	803	65	6	65	58	65	9	65	4	65
	24	110	803	65	6	65	58	65	9	65	4	65
	25	111	803	65	6	65	58	65	9	65	4	65
	26	112	803	65	6	65	58	65	9	65	4	65
	27	113	803	65	6	65	58	65	9	65	4	65
	28	114	803	65	6	65	58	65	9	65	4	65
	29	115	803	65	6	65	58	65	9	65	4	65
	30	116	803	65	6	65	58	65	9	65	4	65
	31	117	803	65	6	65	58	65	9	65	4	65
	32	118	803	65	6	65	58	65	9	65	4	65
	33	119	803	65	6	65	58	65	9	65	4	65
	34	120	803	65	6	65	58	65	9	65	4	65
	35	121	803	65	6	65	58	65	9	65	4	65
	36	122	803	65	6	65	58	65	9	65	4	65
	37	123	803	65	6	65	58	65	9	65	4	65
	38	124	803	65	6	65	58	65	9	65	4	65
	39	125	803	65	6	65	58	65	9	65	4	65
	40	126	803	65	6	65	58	65	9	65	4	65
	41	127	803	65	6	65	58	65	9	65	4	65
	42	128	803	65	6	65	58	65	9	65	4	65
	43	129										
SR11 SB-1	43	172	803	65	6	65	58	65	9	65	4	65
	42	171	803	65	6	65	58	65	9	65	4	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	41	170	803	65	6	65	58	65	9	65	4	65
	40	169	803	65	6	65	58	65	9	65	4	65
	39	168	803	65	6	65	58	65	9	65	4	65
	38	167	803	65	6	65	58	65	9	65	4	65
	37	166	803	65	6	65	58	65	9	65	4	65
	36	165	803	65	6	65	58	65	9	65	4	65
	35	164	803	65	6	65	58	65	9	65	4	65
	34	163	803	65	6	65	58	65	9	65	4	65
	33	162	803	65	6	65	58	65	9	65	4	65
	32	161	803	65	6	65	58	65	9	65	4	65
	31	160	803	65	6	65	58	65	9	65	4	65
	30	159	803	65	6	65	58	65	9	65	4	65
	29	158	803	65	6	65	58	65	9	65	4	65
	28	157	803	65	6	65	58	65	9	65	4	65
	27	156	803	65	6	65	58	65	9	65	4	65
	26	155	803	65	6	65	58	65	9	65	4	65
	25	154	803	65	6	65	58	65	9	65	4	65
	24	153	803	65	6	65	58	65	9	65	4	65
	23	152	803	65	6	65	58	65	9	65	4	65
	22	151	803	65	6	65	58	65	9	65	4	65
	21	150	803	65	6	65	58	65	9	65	4	65
	20	149	803	65	6	65	58	65	9	65	4	65
	19	148	803	65	6	65	58	65	9	65	4	65
	18	147	803	65	6	65	58	65	9	65	4	65
	17	146	803	65	6	65	58	65	9	65	4	65
	16	145	803	65	6	65	58	65	9	65	4	65
	15	144	803	65	6	65	58	65	9	65	4	65
	14	143	803	65	6	65	58	65	9	65	4	65
	13	142	803	65	6	65	58	65	9	65	4	65
	12	141	803	65	6	65	58	65	9	65	4	65
	11	140	803	65	6	65	58	65	9	65	4	65
	10	139	803	65	6	65	58	65	9	65	4	65
	9	138	803	65	6	65	58	65	9	65	4	65
	8	137	803	65	6	65	58	65	9	65	4	65
	7	136	803	65	6	65	58	65	9	65	4	65
	6	135	803	65	6	65	58	65	9	65	4	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	5	134	803	65	6	65	58	65	9	65	4	65
	4	133	803	65	6	65	58	65	9	65	4	65
	3	132	803	65	6	65	58	65	9	65	4	65
	2	131	803	65	6	65	58	65	9	65	4	65
	1	130										
Kirk EB	1	173	455	35	2	35	10	35	1	35	1	35
	2	174	455	35	2	35	10	35	1	35	1	35
	3	175	455	35	2	35	10	35	1	35	1	35
	4	176	455	35	2	35	10	35	1	35	1	35
	5	177	455	35	2	35	10	35	1	35	1	35
	6	178										
Kirk WB	6	184	455	35	2	35	10	35	1	35	1	35
	5	183	455	35	2	35	10	35	1	35	1	35
	4	182	455	35	2	35	10	35	1	35	1	35
	3	181	455	35	2	35	10	35	1	35	1	35
	2	180	455	35	2	35	10	35	1	35	1	35
	1	179										



**INPUT: RECEIVERS**

**MAH SR11/2386**

1-23	24	1	2,450,948.5	514,651.7	1,159.65	5.00	0.00	66	10.0	8.0	Y
1-24	25	1	2,450,951.0	514,717.4	1,160.43	5.00	0.00	66	10.0	8.0	Y
1-25	26	1	2,450,949.8	514,781.9	1,160.37	5.00	0.00	66	10.0	8.0	Y
1-26	27	1	2,450,868.2	514,783.7	1,158.86	5.00	0.00	66	10.0	8.0	Y
1-27	28	1	2,450,748.0	514,794.0	1,157.71	5.00	0.00	66	10.0	8.0	Y
1-28	29	1	2,450,721.2	514,821.3	1,155.45	5.00	0.00	66	10.0	8.0	Y
1-29	30	1	2,450,686.2	514,957.1	1,156.73	5.00	0.00	66	10.0	8.0	Y
1-30	31	1	2,450,671.0	515,095.3	1,155.38	5.00	0.00	66	10.0	8.0	Y
1-31	32	1	2,450,708.0	515,130.5	1,156.50	5.00	0.00	66	10.0	8.0	Y
1-32	33	1	2,450,775.5	515,171.8	1,158.10	5.00	0.00	66	10.0	8.0	Y
1-33	34	1	2,450,812.2	515,178.4	1,158.73	5.00	0.00	66	10.0	8.0	Y
1-34	35	1	2,450,828.2	515,263.2	1,159.68	5.00	0.00	66	10.0	8.0	Y
1-35	36	1	2,450,802.2	515,264.9	1,158.83	5.00	0.00	66	10.0	8.0	Y
1-36	37	1	2,450,718.2	515,228.1	1,156.17	5.00	0.00	66	10.0	8.0	Y
1-37	38	1	2,450,677.2	515,246.4	1,156.66	5.00	0.00	66	10.0	8.0	Y
1-38	39	1	2,450,620.8	515,288.2	1,155.87	5.00	0.00	66	10.0	8.0	Y
1-39	40	1	2,450,598.8	515,314.6	1,155.09	5.00	0.00	66	10.0	8.0	Y
1-40	41	1	2,450,580.0	515,407.4	1,156.37	5.00	0.00	66	10.0	8.0	Y
1-41	42	1	2,450,572.2	515,450.2	1,156.17	5.00	0.00	66	10.0	8.0	Y
1-42	43	1	2,450,564.2	515,555.1	1,156.46	5.00	0.00	66	10.0	8.0	Y
1-43	44	1	2,450,593.0	515,592.9	1,157.02	5.00	0.00	66	10.0	8.0	Y
1-44	45	1	2,450,694.0	515,637.8	1,159.22	5.00	0.00	66	10.0	8.0	Y
1-45	46	1	2,450,740.5	515,641.8	1,159.91	5.00	0.00	66	10.0	8.0	Y
1-46	47	1	2,450,793.2	515,618.5	1,163.16	5.00	0.00	66	10.0	8.0	Y
1-47	48	1	2,450,801.8	515,570.3	1,162.30	5.00	0.00	66	10.0	8.0	Y
1-48	49	1	2,451,273.0	513,390.4	1,133.50	5.00	0.00	66	10.0	8.0	Y
1-49	50	1	2,451,291.2	513,456.4	1,137.34	5.00	0.00	66	10.0	8.0	Y
1-50	51	1	2,451,381.5	513,479.9	1,138.45	5.00	0.00	66	10.0	8.0	Y
1-51	52	1	2,451,203.5	513,692.2	1,145.21	5.00	0.00	66	10.0	8.0	Y
1-52	53	1	2,451,273.2	513,732.5	1,143.77	5.00	0.00	66	10.0	8.0	Y
1-53	54	1	2,451,347.8	513,710.8	1,141.14	5.00	0.00	66	10.0	8.0	Y
1-54	55	1	2,451,181.8	513,777.2	1,146.03	5.00	0.00	66	10.0	8.0	Y
1-55	56	1	2,451,332.2	513,813.2	1,142.68	5.00	0.00	66	10.0	8.0	Y
1-56	57	1	2,451,164.5	513,845.4	1,146.88	5.00	0.00	66	10.0	8.0	Y
1-57	58	1	2,451,332.2	513,883.7	1,145.31	5.00	0.00	66	10.0	8.0	Y
1-58	59	1	2,451,148.5	513,934.7	1,147.18	5.00	0.00	66	10.0	8.0	Y

**INPUT: RECEIVERS**

**MAH SR11/2386**

1-59	60	1	2,451,142.2	514,005.8	1,147.51	5.00	0.00	66	10.0	8.0	Y
1-60	61	1	2,451,153.8	514,084.4	1,146.95	5.00	0.00	66	10.0	8.0	Y
1-61	62	1	2,451,154.0	514,164.9	1,147.01	5.00	0.00	66	10.0	8.0	Y
1-62	63	1	2,451,158.2	514,217.1	1,148.10	5.00	0.00	66	10.0	8.0	Y
1-63	64	1	2,451,155.2	514,294.5	1,150.59	5.00	0.00	66	10.0	8.0	Y
1-64	65	1	2,451,154.8	514,360.8	1,153.35	5.00	0.00	66	10.0	8.0	Y
1-65	66	1	2,451,156.5	514,432.7	1,154.95	5.00	0.00	66	10.0	8.0	Y
1-66	67	1	2,451,146.2	514,500.1	1,157.15	5.00	0.00	66	10.0	8.0	Y
1-67	68	1	2,451,148.5	514,576.0	1,159.38	5.00	0.00	66	10.0	8.0	Y
1-68	69	1	2,451,130.5	514,642.9	1,159.84	5.00	0.00	66	10.0	8.0	Y
1-69	70	1	2,450,959.5	514,844.2	1,164.40	5.00	0.00	66	10.0	8.0	Y
1-70	71	1	2,450,954.0	514,999.2	1,162.04	5.00	0.00	66	10.0	8.0	Y
1-71	72	1	2,450,953.8	515,076.6	1,161.84	5.00	0.00	66	10.0	8.0	Y
1-72	73	1	2,450,946.0	515,141.7	1,162.70	5.00	0.00	66	10.0	8.0	Y
1-73	74	1	2,450,904.0	515,213.3	1,160.86	5.00	0.00	66	10.0	8.0	Y
1-74	75	1	2,450,903.2	515,274.2	1,161.84	5.00	0.00	66	10.0	8.0	Y
1-75	76	1	2,450,913.2	515,346.9	1,162.14	5.00	0.00	66	10.0	8.0	Y
1-76	77	1	2,450,953.8	515,489.8	1,167.06	5.00	0.00	66	10.0	8.0	Y
1-77	78	1	2,450,872.8	515,530.6	1,164.60	5.00	0.00	66	10.0	8.0	Y
1-78	79	1	2,450,871.0	515,575.4	1,164.37	5.00	0.00	66	10.0	8.0	Y
1-79	80	1	2,450,961.8	515,569.1	1,166.21	5.00	0.00	66	10.0	8.0	Y
1-80	81	1	2,450,956.8	515,633.7	1,165.19	5.00	0.00	66	10.0	8.0	Y
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**INPUT: RECEIVERS**

**MAH SR11/2386**

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**INPUT: RECEIVERS**

**MAH SR11/2386**

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RESULTS: SOUND LEVELS

MAH SR11/2386

ASC Group, Inc. mas									5 April 2018 TNM 2.5 Calculated with TNM 2.5					
RESULTS: SOUND LEVELS PROJECT/CONTRACT: RUN: BARRIER DESIGN: ATMOSPHERICS:			MAH SR11/2386 existing NSA1 Starwick INPUT HEIGHTS 68 deg F, 50% RH								Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.			

Receiver													
Name	No.	#DUs	Existing	No Barrier	Increase over existing			With Barrier					
			LAeq1h	LAeq1h	Crit'n	Calculated	Crit'n	Type	Calculated	Noise Reduction	Goal	Calculated	
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated	Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB	dB
1-1	1	1	0.0	57.6	66	57.6	10	----	55.6	2.0	8	-6.0	
1-2	2	1	0.0	58.2	66	58.2	10	----	56.3	1.9	8	-6.1	
1-3	3	1	0.0	60.6	66	60.6	10	----	58.5	2.1	8	-5.9	
1-4	4	1	0.0	62.6	66	62.6	10	----	60.6	2.0	8	-6.0	
1-5	5	1	0.0	65.9	66	65.9	10	----	62.7	3.2	8	-4.8	
1-6	6	1	0.0	68.0	66	68.0	10	Snd Lvl	64.1	3.9	8	-4.1	
1-7	7	1	0.0	67.9	66	67.9	10	Snd Lvl	64.4	3.5	8	-4.5	
1-8	8	1	0.0	67.9	66	67.9	10	Snd Lvl	64.7	3.2	8	-4.8	
1-9	10	1	0.0	68.3	66	68.3	10	Snd Lvl	66.1	2.2	8	-5.8	
1-10	11	1	0.0	69.1	66	69.1	10	Snd Lvl	67.5	1.6	8	-6.4	
1-11	12	1	0.0	69.3	66	69.3	10	Snd Lvl	68.0	1.3	8	-6.7	
1-12	13	1	0.0	68.4	66	68.4	10	Snd Lvl	65.6	2.8	8	-5.2	
1-13	14	1	0.0	68.1	66	68.1	10	Snd Lvl	63.2	4.9	8	-3.1	
1-14	15	1	0.0	66.9	66	66.9	10	Snd Lvl	62.2	4.7	8	-3.3	
1-15	16	1	0.0	66.3	66	66.3	10	Snd Lvl	61.5	4.8	8	-3.2	
1-16	17	1	0.0	63.8	66	63.8	10	----	60.0	3.8	8	-4.2	
1-17	18	1	0.0	62.3	66	62.3	10	----	58.7	3.6	8	-4.4	
1-18	19	1	0.0	61.7	66	61.7	10	----	58.1	3.6	8	-4.4	
1-19	20	1	0.0	61.9	66	61.9	10	----	58.3	3.6	8	-4.4	
1-20	21	1	0.0	62.1	66	62.1	10	----	58.4	3.7	8	-4.3	
1-21	22	1	0.0	62.1	66	62.1	10	----	58.7	3.4	8	-4.6	
1-22	23	1	0.0	61.5	66	61.5	10	----	59.2	2.3	8	-5.7	
1-23	24	1	0.0	61.1	66	61.1	10	----	58.7	2.4	8	-5.6	
1-24	25	1	0.0	60.7	66	60.7	10	----	58.2	2.5	8	-5.5	

**RESULTS: SOUND LEVELS**

**MAH SR11/2386**

1-25	26	1	0.0	60.0	66	60.0	10	----	57.5	2.5	8	-5.5
1-26	27	1	0.0	62.2	66	62.2	10	----	58.8	3.4	8	-4.6
1-27	28	1	0.0	66.3	66	66.3	10	Snd Lvl	61.7	4.6	8	-3.4
1-28	29	1	0.0	67.0	66	67.0	10	Snd Lvl	61.2	5.8	8	-2.2
1-29	30	1	0.0	67.5	66	67.5	10	Snd Lvl	61.9	5.6	8	-2.4
1-30	31	1	0.0	66.6	66	66.6	10	Snd Lvl	60.8	5.8	8	-2.2
1-31	32	1	0.0	65.1	66	65.1	10	----	60.1	5.0	8	-3.0
1-32	33	1	0.0	62.1	66	62.1	10	----	58.4	3.7	8	-4.3
1-33	34	1	0.0	60.7	66	60.7	10	----	57.6	3.1	8	-4.9
1-34	35	1	0.0	59.3	66	59.3	10	----	56.5	2.8	8	-5.2
1-35	36	1	0.0	59.9	66	59.9	10	----	56.8	3.1	8	-4.9
1-36	37	1	0.0	63.7	66	63.7	10	----	59.1	4.6	8	-3.4
1-37	38	1	0.0	65.3	66	65.3	10	----	60.6	4.7	8	-3.3
1-38	39	1	0.0	67.4	66	67.4	10	Snd Lvl	61.8	5.6	8	-2.4
1-39	40	1	0.0	68.2	66	68.2	10	Snd Lvl	61.6	6.6	8	-1.4
1-40	41	1	0.0	69.0	66	69.0	10	Snd Lvl	62.6	6.4	8	-1.6
1-41	42	1	0.0	68.7	66	68.7	10	Snd Lvl	62.1	6.6	8	-1.4
1-42	43	1	0.0	68.6	66	68.6	10	Snd Lvl	63.0	5.6	8	-2.4
1-43	44	1	0.0	66.5	66	66.5	10	Snd Lvl	62.3	4.2	8	-3.8
1-44	45	1	0.0	63.0	66	63.0	10	----	61.4	1.6	8	-6.4
1-45	46	1	0.0	63.0	66	63.0	10	----	62.3	0.7	8	-7.3
1-46	47	1	0.0	61.6	66	61.6	10	----	61.2	0.4	8	-7.6
1-47	48	1	0.0	58.6	66	58.6	10	----	57.0	1.6	8	-6.4
1-48	49	1	0.0	61.1	66	61.1	10	----	58.9	2.2	8	-5.8
1-49	50	1	0.0	59.2	66	59.2	10	----	58.3	0.9	8	-7.1
1-50	51	1	0.0	57.5	66	57.5	10	----	56.8	0.7	8	-7.3
1-51	52	1	0.0	58.3	66	58.3	10	----	58.0	0.3	8	-7.7
1-52	53	1	0.0	56.9	66	56.9	10	----	56.8	0.1	8	-7.9
1-53	54	1	0.0	55.7	66	55.7	10	----	55.6	0.1	8	-7.9
1-54	55	1	0.0	57.9	66	57.9	10	----	58.1	-0.2	8	-8.2
1-55	56	1	0.0	55.2	66	55.2	10	----	55.3	-0.1	8	-8.1
1-56	57	1	0.0	57.6	66	57.6	10	----	58.0	-0.4	8	-8.4
1-57	58	1	0.0	55.2	66	55.2	10	----	55.2	0.0	8	-8.0
1-58	59	1	0.0	57.1	66	57.1	10	----	57.5	-0.4	8	-8.4
1-59	60	1	0.0	56.7	66	56.7	10	----	57.0	-0.3	8	-8.3
1-60	61	1	0.0	55.4	66	55.4	10	----	56.0	-0.6	8	-8.6
1-61	62	1	0.0	54.1	66	54.1	10	----	55.2	-1.1	8	-9.1
1-62	63	1	0.0	54.2	66	54.2	10	----	54.9	-0.7	8	-8.7
1-63	64	1	0.0	54.5	66	54.5	10	----	55.0	-0.5	8	-8.5
1-64	65	1	0.0	55.0	66	55.0	10	----	55.3	-0.3	8	-8.3
1-65	66	1	0.0	55.0	66	55.0	10	----	55.3	-0.3	8	-8.3

**RESULTS: SOUND LEVELS**

**MAH SR11/2386**

1-66	67	1	0.0	55.2	66	55.2	10	----	55.3	-0.1	8	-8.1
1-67	68	1	0.0	55.3	66	55.3	10	----	55.3	0.0	8	-8.0
1-68	69	1	0.0	55.0	66	55.0	10	----	55.3	-0.3	8	-8.3
1-69	70	1	0.0	59.8	66	59.8	10	----	57.9	1.9	8	-6.1
1-70	71	1	0.0	57.5	66	57.5	10	----	55.5	2.0	8	-6.0
1-71	72	1	0.0	57.3	66	57.3	10	----	55.8	1.5	8	-6.5
1-72	73	1	0.0	58.1	66	58.1	10	----	56.3	1.8	8	-6.2
1-73	74	1	0.0	58.4	66	58.4	10	----	56.4	2.0	8	-6.0
1-74	75	1	0.0	58.6	66	58.6	10	----	56.8	1.8	8	-6.2
1-75	76	1	0.0	57.4	66	57.4	10	----	56.1	1.3	8	-6.7
1-76	77	1	0.0	57.9	66	57.9	10	----	56.8	1.1	8	-6.9
1-77	78	1	0.0	58.1	66	58.1	10	----	56.7	1.4	8	-6.6
1-78	79	1	0.0	57.6	66	57.6	10	----	56.2	1.4	8	-6.6
1-79	80	1	0.0	58.4	66	58.4	10	----	57.7	0.7	8	-7.3
1-80	81	1	0.0	60.8	66	60.8	10	----	60.5	0.3	8	-7.7
<b>Dwelling Units</b>		<b># DUs</b>	<b>Noise Reduction</b>									
			<b>Min</b>	<b>Avg</b>	<b>Max</b>							
			<b>dB</b>	<b>dB</b>	<b>dB</b>							
All Selected		80	-1.1	2.3	6.6							
All Impacted		20	1.3	4.5	6.6							
All that meet NR Goal		0	0.0	0.0	0.0							



INPUT: ROADWAYS

MAH SR11/2386

		26	26	2,450,421.0	523,153.8	1,143.60				Average	
		27	27	2,450,433.5	523,725.3	1,142.00				Average	
		28	28	2,450,442.5	524,118.8	1,140.40				Average	
		29	29	2,450,450.5	524,462.4	1,139.80				Average	
		30	30	2,450,458.0	524,726.5	1,138.90				Average	
		31	31	2,450,461.0	524,942.6	1,138.50				Average	
		32	32	2,450,462.8	525,119.3	1,138.10				Average	
		33	33	2,450,457.0	525,278.1	1,137.30				Average	
		34	34	2,450,453.0	525,427.2	1,137.10				Average	
		35	35	2,450,441.2	525,580.1	1,136.30				Average	
		36	36	2,450,425.5	525,732.6	1,134.50				Average	
		37	37	2,450,399.0	525,926.2	1,131.90				Average	
		38	38	2,450,370.8	526,102.7	1,129.00				Average	
		39	39	2,450,340.0	526,263.2	1,125.70				Average	
		40	40	2,450,290.0	526,482.5	1,120.20				Average	
		41	41	2,450,224.0	526,734.5	1,113.20				Average	
		42	42	2,450,134.5	527,011.3	1,108.00				Average	
		43	43	2,450,046.0	527,245.0	1,106.40					
SR11 NB-2	12.0	1	44	2,451,366.2	511,895.0	1,142.50				Average	
		2	45	2,451,203.0	512,462.0	1,140.90				Average	
		3	46	2,451,035.5	513,062.7	1,142.60				Average	
		4	47	2,450,850.2	513,717.3	1,144.50				Average	
		5	48	2,450,734.0	514,145.3	1,146.30				Average	
		6	49	2,450,672.2	514,356.5	1,147.00				Average	
		7	50	2,450,624.0	514,546.4	1,147.00				Average	
		8	51	2,450,577.2	514,762.3	1,147.50				Average	
		9	52	2,450,537.2	514,944.0	1,148.60				Average	
		10	53	2,450,494.5	515,143.2	1,149.40				Average	
		11	54	2,450,445.5	515,429.4	1,150.40				Average	
		12	55	2,450,408.0	515,668.5	1,149.90				Average	
		13	56	2,450,356.0	516,081.1	1,152.20				Average	
		14	57	2,450,322.5	516,419.1	1,153.20				Average	
		15	58	2,450,306.0	516,682.7	1,153.40				Average	
		16	59	2,450,290.0	516,974.1	1,154.90				Average	
		17	60	2,450,282.2	517,280.9	1,155.70				Average	
		18	61	2,450,282.8	517,597.1	1,156.30				Average	
		19	62	2,450,297.5	518,208.7	1,157.60				Average	
		20	63	2,450,309.5	518,851.9	1,155.90				Average	
		21	64	2,450,328.0	519,671.8	1,154.10				Average	

INPUT: ROADWAYS

MAH SR11/2386

		22	65	2,450,348.2	520,447.3	1,151.70				Average	
		23	66	2,450,361.0	521,077.3	1,149.70				Average	
		24	67	2,450,384.5	522,070.6	1,146.80				Average	
		25	68	2,450,400.0	522,778.2	1,144.80				Average	
		26	69	2,450,410.0	523,153.8	1,143.60				Average	
		27	70	2,450,423.2	523,721.6	1,142.10				Average	
		28	71	2,450,431.5	524,119.3	1,140.40				Average	
		29	72	2,450,440.2	524,462.6	1,139.80				Average	
		30	73	2,450,447.8	524,726.6	1,138.50				Average	
		31	74	2,450,450.5	524,942.4	1,137.10				Average	
		32	75	2,450,452.5	525,119.3	1,138.10				Average	
		33	76	2,450,447.0	525,276.8	1,137.30				Average	
		34	77	2,450,442.2	525,426.6	1,137.10				Average	
		35	78	2,450,431.0	525,580.3	1,135.20				Average	
		36	79	2,450,415.5	525,732.8	1,134.50				Average	
		37	80	2,450,388.8	525,926.3	1,131.90				Average	
		38	81	2,450,360.5	526,102.8	1,129.00				Average	
		39	82	2,450,330.0	526,263.4	1,125.70				Average	
		40	83	2,450,279.2	526,479.7	1,120.20				Average	
		41	84	2,450,213.5	526,731.3	1,113.20				Average	
		42	85	2,450,124.5	527,007.4	1,107.00				Average	
		43	86	2,450,035.5	527,241.1	1,106.40					
SR11 SB-2	12.0	1	87	2,451,271.2	511,869.0	1,142.70				Average	
		2	88	2,451,109.8	512,434.4	1,141.40				Average	
		3	89	2,450,942.2	513,035.0	1,142.70				Average	
		4	90	2,450,758.8	513,689.7	1,144.70				Average	
		5	91	2,450,638.0	514,117.7	1,146.30				Average	
		6	92	2,450,579.2	514,330.9	1,146.90				Average	
		7	93	2,450,533.0	514,518.7	1,147.60				Average	
		8	94	2,450,480.5	514,738.8	1,148.20				Average	
		9	95	2,450,442.5	514,916.6	1,148.80				Average	
		10	96	2,450,401.2	515,120.2	1,149.40				Average	
		11	97	2,450,354.8	515,399.3	1,150.20				Average	
		12	98	2,450,314.0	515,661.3	1,150.90				Average	
		13	99	2,450,261.5	516,051.8	1,152.40				Average	
		14	100	2,450,229.0	516,389.9	1,153.20				Average	
		15	101	2,450,209.5	516,675.9	1,153.90				Average	
		16	102	2,450,193.0	516,960.2	1,155.00				Average	
		17	103	2,450,184.8	517,280.8	1,155.90				Average	



INPUT: ROADWAYS

MAH SR11/2386

		18	104	2,450,186.5	517,595.6	1,156.70				Average	
		19	105	2,450,201.0	518,205.2	1,158.00				Average	
		20	106	2,450,216.0	518,859.0	1,156.30				Average	
		21	107	2,450,234.0	519,666.1	1,154.10				Average	
		22	108	2,450,252.0	520,448.8	1,151.80				Average	
		23	109	2,450,265.0	521,096.4	1,149.70				Average	
		24	110	2,450,288.0	522,068.9	1,146.90				Average	
		25	111	2,450,303.0	522,776.2	1,144.80				Average	
		26	112	2,450,312.8	523,160.7	1,143.70				Average	
		27	113	2,450,326.0	523,720.5	1,142.00				Average	
		28	114	2,450,334.8	524,116.8	1,140.70				Average	
		29	115	2,450,343.0	524,456.8	1,139.90				Average	
		30	116	2,450,350.5	524,720.9	1,139.00				Average	
		31	117	2,450,355.5	524,936.5	1,138.00				Average	
		32	118	2,450,355.2	525,120.6	1,137.20				Average	
		33	119	2,450,353.8	525,270.8	1,136.80				Average	
		34	120	2,450,346.0	525,422.5	1,136.30				Average	
		35	121	2,450,334.8	525,572.9	1,134.90				Average	
		36	122	2,450,319.5	525,726.5	1,133.70				Average	
		37	123	2,450,293.2	525,921.1	1,131.00				Average	
		38	124	2,450,264.5	526,097.6	1,128.10				Average	
		39	125	2,450,232.5	526,257.6	1,124.60				Average	
		40	126	2,450,182.5	526,476.7	1,119.30				Average	
		41	127	2,450,114.8	526,725.6	1,111.80				Average	
		42	128	2,450,025.2	527,001.1	1,106.50				Average	
		43	129	2,449,943.2	527,213.9	1,105.90					
SR11 SB-1	12.0	43	172	2,449,934.0	527,209.2	1,105.90				Average	
		42	171	2,450,015.5	526,997.0	1,106.50				Average	
		41	170	2,450,105.5	526,722.5	1,111.20				Average	
		40	169	2,450,172.8	526,474.0	1,119.30				Average	
		39	168	2,450,222.5	526,257.9	1,124.60				Average	
		38	167	2,450,254.2	526,097.9	1,128.10				Average	
		37	166	2,450,283.0	525,919.0	1,131.00				Average	
		36	165	2,450,309.5	525,724.5	1,133.70				Average	
		35	164	2,450,323.5	525,572.2	1,134.90				Average	
		34	163	2,450,336.0	525,421.5	1,135.70				Average	
		33	162	2,450,343.5	525,270.8	1,136.80				Average	
		32	161	2,450,345.0	525,120.8	1,136.60				Average	
		31	160	2,450,345.0	524,936.7	1,137.50				Average	

INPUT: ROADWAYS

MAH SR11/2386

		30	159	2,450,340.2	524,721.1	1,139.00				Average	
		29	158	2,450,332.8	524,457.1	1,139.60				Average	
		28	157	2,450,324.2	524,116.3	1,140.70				Average	
		27	156	2,450,315.8	523,717.7	1,141.70				Average	
		26	155	2,450,302.5	523,157.9	1,143.50				Average	
		25	154	2,450,293.0	522,773.3	1,144.90				Average	
		24	153	2,450,278.0	522,066.1	1,146.00				Average	
		23	152	2,450,254.8	521,093.5	1,149.70				Average	
		22	151	2,450,242.0	520,445.9	1,151.80				Average	
		21	150	2,450,223.0	519,666.3	1,153.40				Average	
		20	149	2,450,204.0	518,859.9	1,156.40				Average	
		19	148	2,450,189.5	518,205.5	1,158.00				Average	
		18	147	2,450,174.2	517,595.8	1,156.70				Average	
		17	146	2,450,174.2	517,280.5	1,155.90				Average	
		16	145	2,450,182.8	516,957.4	1,155.00				Average	
		15	144	2,450,198.0	516,675.2	1,154.00				Average	
		14	143	2,450,218.0	516,388.5	1,153.20				Average	
		13	142	2,450,250.5	516,050.2	1,152.40				Average	
		12	141	2,450,303.2	515,660.5	1,150.70				Average	
		11	140	2,450,344.5	515,396.4	1,150.20				Average	
		10	139	2,450,391.2	515,117.3	1,148.40				Average	
		9	138	2,450,432.2	514,913.7	1,148.50				Average	
		8	137	2,450,470.5	514,736.0	1,147.80				Average	
		7	136	2,450,522.8	514,515.9	1,147.60				Average	
		6	135	2,450,569.0	514,328.1	1,146.90				Average	
		5	134	2,450,628.0	514,114.9	1,146.30				Average	
		4	133	2,450,748.5	513,686.8	1,144.60				Average	
		3	132	2,450,932.0	513,032.2	1,142.70				Average	
		2	131	2,451,099.5	512,431.5	1,141.00				Average	
		1	130	2,451,262.8	511,864.3	1,142.70					
Kirk EB	12.0	1	173	2,449,260.5	515,679.3	1,164.30				Average	
		2	174	2,449,776.0	515,689.2	1,158.80				Average	
		3	175	2,450,182.5	515,695.2	1,168.60				Average	Y
		4	176	2,450,527.2	515,703.6	1,168.60				Average	
		5	177	2,450,935.8	515,716.3	1,163.50				Average	
		6	178	2,451,437.5	515,731.8	1,176.40					
Kirk WB	12.0	6	184	2,451,437.5	515,743.8	1,176.40				Average	
		5	183	2,450,936.0	515,728.3	1,163.50				Average	
		4	182	2,450,527.5	515,715.6	1,168.60				Average	Y

INPUT: ROADWAYS

MAH SR11/2386

		3	181	2,450,182.5	515,707.2	1,168.60				Average	
		2	180	2,449,776.2	515,701.2	1,158.80				Average	
		1	179	2,449,260.5	515,691.3	1,164.30					
New EB	12.0	1	185	2,449,044.0	521,176.3	1,149.00				Average	
		2	186	2,449,744.8	521,189.4	1,152.90				Average	
		3	187	2,449,882.0	521,191.5	1,157.40				Average	
		4	188	2,449,970.2	521,193.1	1,161.30				Average	
		5	189	2,450,047.5	521,186.9	1,163.90				Average	
		6	190	2,450,149.0	521,169.1	1,166.80				Average	Y
		7	191	2,450,480.8	521,082.0	1,167.50				Average	
		8	192	2,450,564.5	521,064.3	1,165.80				Average	
		9	193	2,450,649.0	521,056.2	1,163.20				Average	
		10	194	2,450,731.5	521,053.5	1,161.00				Average	
		11	195	2,450,871.8	521,053.8	1,158.00				Average	
		12	196	2,451,472.5	521,058.8	1,156.10					
New WB	12.0	12	208	2,451,472.5	521,070.8	1,156.10				Average	
		11	207	2,450,872.0	521,065.8	1,158.00				Average	
		10	206	2,450,731.5	521,065.5	1,159.20				Average	
		9	205	2,450,649.2	521,068.2	1,162.80				Average	
		8	204	2,450,564.5	521,076.3	1,165.80				Average	
		7	203	2,450,480.8	521,094.0	1,166.00				Average	Y
		6	202	2,450,149.0	521,181.1	1,166.80				Average	
		5	201	2,450,047.5	521,198.9	1,163.90				Average	
		4	200	2,449,970.5	521,205.1	1,161.30				Average	
		3	199	2,449,882.0	521,203.5	1,157.40				Average	
		2	198	2,449,745.0	521,201.4	1,152.90				Average	
		1	197	2,449,044.2	521,188.3	1,149.00					

INPUT: TRAFFIC FOR LAeq1h Volumes

MAH SR11/2386

ASC Group, Inc. mas		5 April 2018 TNM 2.5										
INPUT: TRAFFIC FOR LAeq1h Volumes												
PROJECT/CONTRACT:		MAH SR11/2386										
RUN:		existing-NSAs 2 and 4										
Roadway	Points											
Name	Name	No.	Segment		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
SR11 NB-1	1	1	820	65	7	65	62	65	10	65	8	65
	2	2	820	65	7	65	62	65	10	65	8	65
	3	3	820	65	7	65	62	65	10	65	8	65
	4	4	820	65	7	65	62	65	10	65	8	65
	5	5	820	65	7	65	62	65	10	65	8	65
	6	6	820	65	7	65	62	65	10	65	8	65
	7	7	820	65	7	65	62	65	10	65	8	65
	8	8	820	65	7	65	62	65	10	65	8	65
	9	9	820	65	7	65	62	65	10	65	8	65
	10	10	820	65	7	65	62	65	10	65	8	65
	11	11	820	65	7	65	62	65	10	65	8	65
	12	12	820	65	7	65	62	65	10	65	8	65
	13	13	820	65	7	65	62	65	10	65	8	65
	14	14	820	65	7	65	62	65	10	65	8	65
	15	15	820	65	7	65	62	65	10	65	8	65
	16	16	820	65	7	65	62	65	10	65	8	65
	17	17	820	65	7	65	62	65	10	65	8	65
	18	18	820	65	7	65	62	65	10	65	8	65
	19	19	820	65	7	65	62	65	10	65	8	65
	20	20	820	65	7	65	62	65	10	65	8	65
	21	21	820	65	7	65	62	65	10	65	8	65
	22	22	820	65	7	65	62	65	10	65	8	65
	23	23	820	65	7	65	62	65	10	65	8	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	24	24	820	65	7	65	62	65	10	65	8	65
	25	25	820	65	7	65	62	65	10	65	8	65
	26	26	820	65	7	65	62	65	10	65	8	65
	27	27	820	65	7	65	62	65	10	65	8	65
	28	28	820	65	7	65	62	65	10	65	8	65
	29	29	820	65	7	65	62	65	10	65	8	65
	30	30	820	65	7	65	62	65	10	65	8	65
	31	31	820	65	7	65	62	65	10	65	8	65
	32	32	820	65	7	65	62	65	10	65	8	65
	33	33	820	65	7	65	62	65	10	65	8	65
	34	34	820	65	7	65	62	65	10	65	8	65
	35	35	820	65	7	65	62	65	10	65	8	65
	36	36	820	65	7	65	62	65	10	65	8	65
	37	37	820	65	7	65	62	65	10	65	8	65
	38	38	820	65	7	65	62	65	10	65	8	65
	39	39	820	65	7	65	62	65	10	65	8	65
	40	40	820	65	7	65	62	65	10	65	8	65
	41	41	820	65	7	65	62	65	10	65	8	65
	42	42	820	65	7	65	62	65	10	65	8	65
	43	43										
SR11 NB-2	1	44	820	65	7	65	62	65	10	65	8	65
	2	45	820	65	7	65	62	65	10	65	8	65
	3	46	820	65	7	65	62	65	10	65	8	65
	4	47	820	65	7	65	62	65	10	65	8	65
	5	48	820	65	7	65	62	65	10	65	8	65
	6	49	820	65	7	65	62	65	10	65	8	65
	7	50	820	65	7	65	62	65	10	65	8	65
	8	51	820	65	7	65	62	65	10	65	8	65
	9	52	820	65	7	65	62	65	10	65	8	65
	10	53	820	65	7	65	62	65	10	65	8	65
	11	54	820	65	7	65	62	65	10	65	8	65
	12	55	820	65	7	65	62	65	10	65	8	65
	13	56	820	65	7	65	62	65	10	65	8	65
	14	57	820	65	7	65	62	65	10	65	8	65
	15	58	820	65	7	65	62	65	10	65	8	65
	16	59	820	65	7	65	62	65	10	65	8	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	17	60	820	65	7	65	62	65	10	65	8	65
	18	61	820	65	7	65	62	65	10	65	8	65
	19	62	820	65	7	65	62	65	10	65	8	65
	20	63	820	65	7	65	62	65	10	65	8	65
	21	64	820	65	7	65	62	65	10	65	8	65
	22	65	820	65	7	65	62	65	10	65	8	65
	23	66	820	65	7	65	62	65	10	65	8	65
	24	67	820	65	7	65	62	65	10	65	8	65
	25	68	820	65	7	65	62	65	10	65	8	65
	26	69	820	65	7	65	62	65	10	65	8	65
	27	70	820	65	7	65	62	65	10	65	8	65
	28	71	820	65	7	65	62	65	10	65	8	65
	29	72	820	65	7	65	62	65	10	65	8	65
	30	73	820	65	7	65	62	65	10	65	8	65
	31	74	820	65	7	65	62	65	10	65	8	65
	32	75	820	65	7	65	62	65	10	65	8	65
	33	76	820	65	7	65	62	65	10	65	8	65
	34	77	820	65	7	65	62	65	10	65	8	65
	35	78	820	65	7	65	62	65	10	65	8	65
	36	79	820	65	7	65	62	65	10	65	8	65
	37	80	820	65	7	65	62	65	10	65	8	65
	38	81	820	65	7	65	62	65	10	65	8	65
	39	82	820	65	7	65	62	65	10	65	8	65
	40	83	820	65	7	65	62	65	10	65	8	65
	41	84	820	65	7	65	62	65	10	65	8	65
	42	85	820	65	7	65	62	65	10	65	8	65
	43	86										
SR11 SB-2	1	87	803	65	6	65	58	65	9	65	4	65
	2	88	10	65	6	65	58	65	9	65	4	65
	3	89	803	65	6	65	58	65	9	65	4	65
	4	90	803	65	6	65	58	65	9	65	4	65
	5	91	803	65	6	65	58	65	9	65	4	65
	6	92	803	65	6	65	58	65	9	65	4	65
	7	93	803	65	6	65	58	65	9	65	4	65
	8	94	803	65	6	65	58	65	9	65	4	65
	9	95	803	65	6	65	58	65	9	65	4	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	10	96	803	65	6	65	58	65	9	65	4	65
	11	97	803	65	6	65	58	65	9	65	4	65
	12	98	803	65	6	65	58	65	9	65	4	65
	13	99	803	65	6	65	58	65	9	65	4	65
	14	100	803	65	6	65	58	65	9	65	4	65
	15	101	803	65	6	65	58	65	9	65	4	65
	16	102	803	65	6	65	58	65	9	65	4	65
	17	103	803	65	6	65	58	65	9	65	4	65
	18	104	803	65	6	65	58	65	9	65	4	65
	19	105	803	65	6	65	58	65	9	65	4	65
	20	106	803	65	6	65	58	65	9	65	4	65
	21	107	803	65	6	65	58	65	9	65	4	65
	22	108	803	65	6	65	58	65	9	65	4	65
	23	109	803	65	6	65	58	65	9	65	4	65
	24	110	803	65	6	65	58	65	9	65	4	65
	25	111	803	65	6	65	58	65	9	65	4	65
	26	112	803	65	6	65	58	65	9	65	4	65
	27	113	803	65	6	65	58	65	9	65	4	65
	28	114	803	65	6	65	58	65	9	65	4	65
	29	115	803	65	6	65	58	65	9	65	4	65
	30	116	803	65	6	65	58	65	9	65	4	65
	31	117	803	65	6	65	58	65	9	65	4	65
	32	118	803	65	6	65	58	65	9	65	4	65
	33	119	803	65	6	65	58	65	9	65	4	65
	34	120	803	65	6	65	58	65	9	65	4	65
	35	121	803	65	6	65	58	65	9	65	4	65
	36	122	803	65	6	65	58	65	9	65	4	65
	37	123	803	65	6	65	58	65	9	65	4	65
	38	124	803	65	6	65	58	65	9	65	4	65
	39	125	803	65	6	65	58	65	9	65	4	65
	40	126	803	65	6	65	58	65	9	65	4	65
	41	127	803	65	6	65	58	65	9	65	4	65
	42	128	803	65	6	65	58	65	9	65	4	65
	43	129										
SR11 SB-1	43	172	803	65	6	65	58	65	9	65	4	65
	42	171	803	65	6	65	58	65	9	65	4	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	41	170	803	65	6	65	58	65	9	65	4	65
	40	169	803	65	6	65	58	65	9	65	4	65
	39	168	803	65	6	65	58	65	9	65	4	65
	38	167	803	65	6	65	58	65	9	65	4	65
	37	166	803	65	6	65	58	65	9	65	4	65
	36	165	803	65	6	65	58	65	9	65	4	65
	35	164	803	65	6	65	58	65	9	65	4	65
	34	163	803	65	6	65	58	65	9	65	4	65
	33	162	803	65	6	65	58	65	9	65	4	65
	32	161	803	65	6	65	58	65	9	65	4	65
	31	160	803	65	6	65	58	65	9	65	4	65
	30	159	803	65	6	65	58	65	9	65	4	65
	29	158	803	65	6	65	58	65	9	65	4	65
	28	157	803	65	6	65	58	65	9	65	4	65
	27	156	803	65	6	65	58	65	9	65	4	65
	26	155	803	65	6	65	58	65	9	65	4	65
	25	154	803	65	6	65	58	65	9	65	4	65
	24	153	803	65	6	65	58	65	9	65	4	65
	23	152	803	65	6	65	58	65	9	65	4	65
	22	151	803	65	6	65	58	65	9	65	4	65
	21	150	803	65	6	65	58	65	9	65	4	65
	20	149	803	65	6	65	58	65	9	65	4	65
	19	148	803	65	6	65	58	65	9	65	4	65
	18	147	803	65	6	65	58	65	9	65	4	65
	17	146	803	65	6	65	58	65	9	65	4	65
	16	145	803	65	6	65	58	65	9	65	4	65
	15	144	803	65	6	65	58	65	9	65	4	65
	14	143	803	65	6	65	58	65	9	65	4	65
	13	142	803	65	6	65	58	65	9	65	4	65
	12	141	803	65	6	65	58	65	9	65	4	65
	11	140	803	65	6	65	58	65	9	65	4	65
	10	139	803	65	6	65	58	65	9	65	4	65
	9	138	803	65	6	65	58	65	9	65	4	65
	8	137	803	65	6	65	58	65	9	65	4	65
	7	136	803	65	6	65	58	65	9	65	4	65
	6	135	803	65	6	65	58	65	9	65	4	65



**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	5	134	803	65	6	65	58	65	9	65	4	65
	4	133	803	65	6	65	58	65	9	65	4	65
	3	132	803	65	6	65	58	65	9	65	4	65
	2	131	803	65	6	65	58	65	9	65	4	65
	1	130										
Kirk EB	1	173	455	35	2	35	10	35	1	35	1	35
	2	174	455	35	2	35	10	35	1	35	1	35
	3	175	455	35	2	35	10	35	1	35	1	35
	4	176	455	35	2	35	10	35	1	35	1	35
	5	177	455	35	2	35	10	35	1	35	1	35
	6	178										
Kirk WB	6	184	455	35	2	35	10	35	1	35	1	35
	5	183	455	35	2	35	10	35	1	35	1	35
	4	182	455	35	2	35	10	35	1	35	1	35
	3	181	455	35	2	35	10	35	1	35	1	35
	2	180	455	35	2	35	10	35	1	35	1	35
	1	179										
New EB	1	185	303	35	1	35	7	35	1	35	1	35
	2	186	303	35	1	35	7	35	1	35	1	35
	3	187	303	35	1	35	7	35	1	35	1	35
	4	188	303	35	1	35	7	35	1	35	1	35
	5	189	303	35	1	35	7	35	1	35	1	35
	6	190	303	35	1	35	7	35	1	35	1	35
	7	191	303	35	1	35	7	35	1	35	1	35
	8	192	303	35	1	35	7	35	1	35	1	35
	9	193	303	35	1	35	7	35	1	35	1	35
	10	194	303	35	1	35	7	35	1	35	1	35
	11	195	303	35	1	35	7	35	1	35	1	35
	12	196										
New WB	12	208	303	35	1	35	7	35	1	35	1	35
	11	207	303	35	1	35	7	35	1	35	1	35
	10	206	303	35	1	35	7	35	1	35	1	35
	9	205	303	35	1	35	7	35	1	35	1	35
	8	204	303	35	1	35	7	35	1	35	1	35
	7	203	303	35	1	35	7	35	1	35	1	35
	6	202	303	35	1	35	7	35	1	35	1	35

**INPUT: TRAFFIC FOR LAeq1h Volumes****MAH SR11/2386**

	5	201	303	35	1	35	7	35	1	35	1	35
	4	200	303	35	1	35	7	35	1	35	1	35
	3	199	303	35	1	35	7	35	1	35	1	35
	2	198	303	35	1	35	7	35	1	35	1	35
	1	197										



RESULTS: SOUND LEVELS

MAH SR11/2386

ASC Group, Inc. mas								5 April 2018 TNM 2.5 Calculated with TNM 2.5				
RESULTS: SOUND LEVELS PROJECT/CONTRACT: RUN: BARRIER DESIGN: ATMOSPHERICS:			MAH SR11/2386 existing-NSAs 2 and 4 INPUT HEIGHTS 68 deg F, 50% RH									Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver												
Name	No.	#DUs	Existing	No Barrier	Increase over existing			With Barrier				
			LAeq1h	LAeq1h	Crit'n	Calculated	Crit'n	Type	Calculated	Noise Reduction		Calculated
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	minus Goal
2-1	1	1	0.0	68.4	66	68.4	10	Snd Lvl	68.4	0.0	8	-8.0
2-2	2	1	0.0	59.6	66	59.6	10	----	59.6	0.0	8	-8.0
2-3	3	1	0.0	61.0	66	61.0	10	----	61.0	0.0	8	-8.0
2-4	4	1	0.0	58.9	66	58.9	10	----	58.9	0.0	8	-8.0
4-1	5	1	0.0	68.3	66	68.3	10	Snd Lvl	68.3	0.0	8	-8.0
4-2	6	1	0.0	60.1	66	60.1	10	----	60.1	0.0	8	-8.0
4-3	7	1	0.0	59.0	66	59.0	10	----	59.0	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	7	0.0	0.0	0.0
All Impacted	2	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

INPUT: ROADWAYS

MAH SR11/2386

ASC Group, Inc. mas					5 April 2018 TNM 2.5					
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INPUT: ROADWAYS PROJECT/CONTRACT: RUN:	MAH SR11/2386 existing-NSA 3 Oak Trace Barrier	Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA
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Roadway Name	Width	Points			Coordinates (pavement)			Flow Control			Segment		
		Name	No.		X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?	
	ft				ft	ft	ft		mph	%			
SR11 NB-1	12.0	1	1		2,451,374.8	511,900.4	1,142.60					Average	
		2	2		2,451,213.2	512,465.7	1,141.40					Average	
		3	3		2,451,045.8	513,066.4	1,142.80					Average	
		4	4		2,450,860.5	513,721.0	1,144.80					Average	
		5	5		2,450,744.2	514,149.3	1,146.30					Average	
		6	6		2,450,682.2	514,360.0	1,147.00					Average	
		7	7		2,450,634.2	514,550.1	1,147.00					Average	
		8	8		2,450,587.5	514,766.0	1,148.30					Average	
		9	9		2,450,547.5	514,947.7	1,148.60					Average	
		10	10		2,450,504.8	515,146.8	1,149.40					Average	
		11	11		2,450,455.8	515,432.0	1,150.40					Average	
		12	12		2,450,419.2	515,670.0	1,151.10					Average	
		13	13		2,450,366.5	516,083.0	1,152.20					Average	
		14	14		2,450,332.5	516,421.3	1,153.20					Average	
		15	15		2,450,316.5	516,682.7	1,154.10					Average	
		16	16		2,450,300.2	516,977.8	1,154.90					Average	
		17	17		2,450,293.5	517,281.5	1,155.70					Average	
		18	18		2,450,294.2	517,597.8	1,156.70					Average	
		19	19		2,450,308.2	518,208.7	1,157.90					Average	
		20	20		2,450,321.2	518,851.5	1,156.50					Average	
		21	21		2,450,339.0	519,672.9	1,154.10					Average	
		22	22		2,450,358.5	520,451.0	1,151.40					Average	
		23	23		2,450,371.5	521,077.9	1,149.70					Average	
		24	24		2,450,394.8	522,071.0	1,146.80					Average	
		25	25		2,450,410.2	522,781.8	1,144.80					Average	

INPUT: ROADWAYS

MAH SR11/2386

		26	26	2,450,421.0	523,153.8	1,143.60				Average	
		27	27	2,450,433.5	523,725.3	1,142.00				Average	
		28	28	2,450,442.5	524,118.8	1,140.40				Average	
		29	29	2,450,450.5	524,462.4	1,139.80				Average	
		30	30	2,450,458.0	524,726.5	1,138.90				Average	
		31	31	2,450,461.0	524,942.6	1,138.50				Average	
		32	32	2,450,462.8	525,119.3	1,138.10				Average	
		33	33	2,450,457.0	525,278.1	1,137.30				Average	
		34	34	2,450,453.0	525,427.2	1,137.10				Average	
		35	35	2,450,441.2	525,580.1	1,136.30				Average	
		36	36	2,450,425.5	525,732.6	1,134.50				Average	
		37	37	2,450,399.0	525,926.2	1,131.90				Average	
		38	38	2,450,370.8	526,102.7	1,129.00				Average	
		39	39	2,450,340.0	526,263.2	1,125.70				Average	
		40	40	2,450,290.0	526,482.5	1,120.20				Average	
		41	41	2,450,224.0	526,734.5	1,113.20				Average	
		42	42	2,450,134.5	527,011.3	1,108.00				Average	
		43	43	2,450,046.0	527,245.0	1,106.40					
SR11 NB-2	12.0	1	44	2,451,366.2	511,895.0	1,142.50				Average	
		2	45	2,451,203.0	512,462.0	1,140.90				Average	
		3	46	2,451,035.5	513,062.7	1,142.60				Average	
		4	47	2,450,850.2	513,717.3	1,144.50				Average	
		5	48	2,450,734.0	514,145.3	1,146.30				Average	
		6	49	2,450,672.2	514,356.5	1,147.00				Average	
		7	50	2,450,624.0	514,546.4	1,147.00				Average	
		8	51	2,450,577.2	514,762.3	1,147.50				Average	
		9	52	2,450,537.2	514,944.0	1,148.60				Average	
		10	53	2,450,494.5	515,143.2	1,149.40				Average	
		11	54	2,450,445.5	515,429.4	1,150.40				Average	
		12	55	2,450,408.0	515,668.5	1,149.90				Average	
		13	56	2,450,356.0	516,081.1	1,152.20				Average	
		14	57	2,450,322.5	516,419.1	1,153.20				Average	
		15	58	2,450,306.0	516,682.7	1,153.40				Average	
		16	59	2,450,290.0	516,974.1	1,154.90				Average	
		17	60	2,450,282.2	517,280.9	1,155.70				Average	
		18	61	2,450,282.8	517,597.1	1,156.30				Average	
		19	62	2,450,297.5	518,208.7	1,157.60				Average	
		20	63	2,450,309.5	518,851.9	1,155.90				Average	
		21	64	2,450,328.0	519,671.8	1,154.10				Average	

INPUT: ROADWAYS

MAH SR11/2386

		22	65	2,450,348.2	520,447.3	1,151.70				Average	
		23	66	2,450,361.0	521,077.3	1,149.70				Average	
		24	67	2,450,384.5	522,070.6	1,146.80				Average	
		25	68	2,450,400.0	522,778.2	1,144.80				Average	
		26	69	2,450,410.0	523,153.8	1,143.60				Average	
		27	70	2,450,423.2	523,721.6	1,142.10				Average	
		28	71	2,450,431.5	524,119.3	1,140.40				Average	
		29	72	2,450,440.2	524,462.6	1,139.80				Average	
		30	73	2,450,447.8	524,726.6	1,138.50				Average	
		31	74	2,450,450.5	524,942.4	1,137.10				Average	
		32	75	2,450,452.5	525,119.3	1,138.10				Average	
		33	76	2,450,447.0	525,276.8	1,137.30				Average	
		34	77	2,450,442.2	525,426.6	1,137.10				Average	
		35	78	2,450,431.0	525,580.3	1,135.20				Average	
		36	79	2,450,415.5	525,732.8	1,134.50				Average	
		37	80	2,450,388.8	525,926.3	1,131.90				Average	
		38	81	2,450,360.5	526,102.8	1,129.00				Average	
		39	82	2,450,330.0	526,263.4	1,125.70				Average	
		40	83	2,450,279.2	526,479.7	1,120.20				Average	
		41	84	2,450,213.5	526,731.3	1,113.20				Average	
		42	85	2,450,124.5	527,007.4	1,107.00				Average	
		43	86	2,450,035.5	527,241.1	1,106.40					
SR11 SB-2	12.0	1	87	2,451,271.2	511,869.0	1,142.70				Average	
		2	88	2,451,109.8	512,434.4	1,141.40				Average	
		3	89	2,450,942.2	513,035.0	1,142.70				Average	
		4	90	2,450,758.8	513,689.7	1,144.70				Average	
		5	91	2,450,638.0	514,117.7	1,146.30				Average	
		6	92	2,450,579.2	514,330.9	1,146.90				Average	
		7	93	2,450,533.0	514,518.7	1,147.60				Average	
		8	94	2,450,480.5	514,738.8	1,148.20				Average	
		9	95	2,450,442.5	514,916.6	1,148.80				Average	
		10	96	2,450,401.2	515,120.2	1,149.40				Average	
		11	97	2,450,354.8	515,399.3	1,150.20				Average	
		12	98	2,450,314.0	515,661.3	1,150.90				Average	
		13	99	2,450,261.5	516,051.8	1,152.40				Average	
		14	100	2,450,229.0	516,389.9	1,153.20				Average	
		15	101	2,450,209.5	516,675.9	1,153.90				Average	
		16	102	2,450,193.0	516,960.2	1,155.00				Average	
		17	103	2,450,184.8	517,280.8	1,155.90				Average	

INPUT: ROADWAYS

MAH SR11/2386

		18	104	2,450,186.5	517,595.6	1,156.70				Average	
		19	105	2,450,201.0	518,205.2	1,158.00				Average	
		20	106	2,450,216.0	518,859.0	1,156.30				Average	
		21	107	2,450,234.0	519,666.1	1,154.10				Average	
		22	108	2,450,252.0	520,448.8	1,151.80				Average	
		23	109	2,450,265.0	521,096.4	1,149.70				Average	
		24	110	2,450,288.0	522,068.9	1,146.90				Average	
		25	111	2,450,303.0	522,776.2	1,144.80				Average	
		26	112	2,450,312.8	523,160.7	1,143.70				Average	
		27	113	2,450,326.0	523,720.5	1,142.00				Average	
		28	114	2,450,334.8	524,116.8	1,140.70				Average	
		29	115	2,450,343.0	524,456.8	1,139.90				Average	
		30	116	2,450,350.5	524,720.9	1,139.00				Average	
		31	117	2,450,355.5	524,936.5	1,138.00				Average	
		32	118	2,450,355.2	525,120.6	1,137.20				Average	
		33	119	2,450,353.8	525,270.8	1,136.80				Average	
		34	120	2,450,346.0	525,422.5	1,136.30				Average	
		35	121	2,450,334.8	525,572.9	1,134.90				Average	
		36	122	2,450,319.5	525,726.5	1,133.70				Average	
		37	123	2,450,293.2	525,921.1	1,131.00				Average	
		38	124	2,450,264.5	526,097.6	1,128.10				Average	
		39	125	2,450,232.5	526,257.6	1,124.60				Average	
		40	126	2,450,182.5	526,476.7	1,119.30				Average	
		41	127	2,450,114.8	526,725.6	1,111.80				Average	
		42	128	2,450,025.2	527,001.1	1,106.50				Average	
		43	129	2,449,943.2	527,213.9	1,105.90					
SR11 SB-1	12.0	43	172	2,449,934.0	527,209.2	1,105.90				Average	
		42	171	2,450,015.5	526,997.0	1,106.50				Average	
		41	170	2,450,105.5	526,722.5	1,111.20				Average	
		40	169	2,450,172.8	526,474.0	1,119.30				Average	
		39	168	2,450,222.5	526,257.9	1,124.60				Average	
		38	167	2,450,254.2	526,097.9	1,128.10				Average	
		37	166	2,450,283.0	525,919.0	1,131.00				Average	
		36	165	2,450,309.5	525,724.5	1,133.70				Average	
		35	164	2,450,323.5	525,572.2	1,134.90				Average	
		34	163	2,450,336.0	525,421.5	1,135.70				Average	
		33	162	2,450,343.5	525,270.8	1,136.80				Average	
		32	161	2,450,345.0	525,120.8	1,136.60				Average	
		31	160	2,450,345.0	524,936.7	1,137.50				Average	



INPUT: ROADWAYS

MAH SR11/2386

		30	159	2,450,340.2	524,721.1	1,139.00				Average	
		29	158	2,450,332.8	524,457.1	1,139.60				Average	
		28	157	2,450,324.2	524,116.3	1,140.70				Average	
		27	156	2,450,315.8	523,717.7	1,141.70				Average	
		26	155	2,450,302.5	523,157.9	1,143.50				Average	
		25	154	2,450,293.0	522,773.3	1,144.90				Average	
		24	153	2,450,278.0	522,066.1	1,146.00				Average	
		23	152	2,450,254.8	521,093.5	1,149.70				Average	
		22	151	2,450,242.0	520,445.9	1,151.80				Average	
		21	150	2,450,223.0	519,666.3	1,153.40				Average	
		20	149	2,450,204.0	518,859.9	1,156.40				Average	
		19	148	2,450,189.5	518,205.5	1,158.00				Average	
		18	147	2,450,174.2	517,595.8	1,156.70				Average	
		17	146	2,450,174.2	517,280.5	1,155.90				Average	
		16	145	2,450,182.8	516,957.4	1,155.00				Average	
		15	144	2,450,198.0	516,675.2	1,154.00				Average	
		14	143	2,450,218.0	516,388.5	1,153.20				Average	
		13	142	2,450,250.5	516,050.2	1,152.40				Average	
		12	141	2,450,303.2	515,660.5	1,150.70				Average	
		11	140	2,450,344.5	515,396.4	1,150.20				Average	
		10	139	2,450,391.2	515,117.3	1,148.40				Average	
		9	138	2,450,432.2	514,913.7	1,148.50				Average	
		8	137	2,450,470.5	514,736.0	1,147.80				Average	
		7	136	2,450,522.8	514,515.9	1,147.60				Average	
		6	135	2,450,569.0	514,328.1	1,146.90				Average	
		5	134	2,450,628.0	514,114.9	1,146.30				Average	
		4	133	2,450,748.5	513,686.8	1,144.60				Average	
		3	132	2,450,932.0	513,032.2	1,142.70				Average	
		2	131	2,451,099.5	512,431.5	1,141.00				Average	
		1	130	2,451,262.8	511,864.3	1,142.70					
Kirk EB	12.0	1	173	2,449,260.5	515,679.3	1,164.30				Average	
		2	174	2,449,776.0	515,689.2	1,158.80				Average	
		3	175	2,450,182.5	515,695.2	1,168.60				Average	Y
		4	176	2,450,527.2	515,703.6	1,168.60				Average	
		5	177	2,450,935.8	515,716.3	1,163.50				Average	
		6	178	2,451,437.5	515,731.8	1,176.40					
Kirk WB	12.0	6	184	2,451,437.5	515,743.8	1,176.40				Average	
		5	183	2,450,936.0	515,728.3	1,163.50				Average	
		4	182	2,450,527.5	515,715.6	1,168.60				Average	Y

INPUT: ROADWAYS

MAH SR11/2386

		3	181	2,450,182.5	515,707.2	1,168.60				Average	
		2	180	2,449,776.2	515,701.2	1,158.80				Average	
		1	179	2,449,260.5	515,691.3	1,164.30					
New EB	12.0	1	185	2,449,044.0	521,176.3	1,149.00				Average	
		2	186	2,449,744.8	521,189.4	1,152.90				Average	
		3	187	2,449,882.0	521,191.5	1,157.40				Average	
		4	188	2,449,970.2	521,193.1	1,161.30				Average	
		5	189	2,450,047.5	521,186.9	1,163.90				Average	
		6	190	2,450,149.0	521,169.1	1,166.80				Average	Y
		7	191	2,450,480.8	521,082.0	1,167.50				Average	
		8	192	2,450,564.5	521,064.3	1,165.80				Average	
		9	193	2,450,649.0	521,056.2	1,163.20				Average	
		10	194	2,450,731.5	521,053.5	1,161.00				Average	
		11	195	2,450,871.8	521,053.8	1,158.00				Average	
		12	196	2,451,472.5	521,058.8	1,156.10					
New WB	12.0	12	208	2,451,472.5	521,070.8	1,156.10				Average	
		11	207	2,450,872.0	521,065.8	1,158.00				Average	
		10	206	2,450,731.5	521,065.5	1,159.20				Average	
		9	205	2,450,649.2	521,068.2	1,162.80				Average	
		8	204	2,450,564.5	521,076.3	1,165.80				Average	
		7	203	2,450,480.8	521,094.0	1,166.00				Average	Y
		6	202	2,450,149.0	521,181.1	1,166.80				Average	
		5	201	2,450,047.5	521,198.9	1,163.90				Average	
		4	200	2,449,970.5	521,205.1	1,161.30				Average	
		3	199	2,449,882.0	521,203.5	1,157.40				Average	
		2	198	2,449,745.0	521,201.4	1,152.90				Average	
		1	197	2,449,044.2	521,188.3	1,149.00					

INPUT: TRAFFIC FOR LAeq1h Volumes

MAH SR11/2386

ASC Group, Inc. mas		5 April 2018 TNM 2.5										
INPUT: TRAFFIC FOR LAeq1h Volumes												
PROJECT/CONTRACT:		MAH SR11/2386										
RUN:		existing-NSA 3 Oak Trace Barrier										
Roadway	Points											
Name	Name	No.	Segment		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
SR11 NB-1	1	1	820	65	7	65	62	65	10	65	8	65
	2	2	820	65	7	65	62	65	10	65	8	65
	3	3	820	65	7	65	62	65	10	65	8	65
	4	4	820	65	7	65	62	65	10	65	8	65
	5	5	820	65	7	65	62	65	10	65	8	65
	6	6	820	65	7	65	62	65	10	65	8	65
	7	7	820	65	7	65	62	65	10	65	8	65
	8	8	820	65	7	65	62	65	10	65	8	65
	9	9	820	65	7	65	62	65	10	65	8	65
	10	10	820	65	7	65	62	65	10	65	8	65
	11	11	820	65	7	65	62	65	10	65	8	65
	12	12	820	65	7	65	62	65	10	65	8	65
	13	13	820	65	7	65	62	65	10	65	8	65
	14	14	820	65	7	65	62	65	10	65	8	65
	15	15	820	65	7	65	62	65	10	65	8	65
	16	16	820	65	7	65	62	65	10	65	8	65
	17	17	820	65	7	65	62	65	10	65	8	65
	18	18	820	65	7	65	62	65	10	65	8	65
	19	19	820	65	7	65	62	65	10	65	8	65
	20	20	820	65	7	65	62	65	10	65	8	65
	21	21	820	65	7	65	62	65	10	65	8	65
	22	22	820	65	7	65	62	65	10	65	8	65
	23	23	820	65	7	65	62	65	10	65	8	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	24	24	820	65	7	65	62	65	10	65	8	65
	25	25	820	65	7	65	62	65	10	65	8	65
	26	26	820	65	7	65	62	65	10	65	8	65
	27	27	820	65	7	65	62	65	10	65	8	65
	28	28	820	65	7	65	62	65	10	65	8	65
	29	29	820	65	7	65	62	65	10	65	8	65
	30	30	820	65	7	65	62	65	10	65	8	65
	31	31	820	65	7	65	62	65	10	65	8	65
	32	32	820	65	7	65	62	65	10	65	8	65
	33	33	820	65	7	65	62	65	10	65	8	65
	34	34	820	65	7	65	62	65	10	65	8	65
	35	35	820	65	7	65	62	65	10	65	8	65
	36	36	820	65	7	65	62	65	10	65	8	65
	37	37	820	65	7	65	62	65	10	65	8	65
	38	38	820	65	7	65	62	65	10	65	8	65
	39	39	820	65	7	65	62	65	10	65	8	65
	40	40	820	65	7	65	62	65	10	65	8	65
	41	41	820	65	7	65	62	65	10	65	8	65
	42	42	820	65	7	65	62	65	10	65	8	65
	43	43										
SR11 NB-2	1	44	820	65	7	65	62	65	10	65	8	65
	2	45	820	65	7	65	62	65	10	65	8	65
	3	46	820	65	7	65	62	65	10	65	8	65
	4	47	820	65	7	65	62	65	10	65	8	65
	5	48	820	65	7	65	62	65	10	65	8	65
	6	49	820	65	7	65	62	65	10	65	8	65
	7	50	820	65	7	65	62	65	10	65	8	65
	8	51	820	65	7	65	62	65	10	65	8	65
	9	52	820	65	7	65	62	65	10	65	8	65
	10	53	820	65	7	65	62	65	10	65	8	65
	11	54	820	65	7	65	62	65	10	65	8	65
	12	55	820	65	7	65	62	65	10	65	8	65
	13	56	820	65	7	65	62	65	10	65	8	65
	14	57	820	65	7	65	62	65	10	65	8	65
	15	58	820	65	7	65	62	65	10	65	8	65
	16	59	820	65	7	65	62	65	10	65	8	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	17	60	820	65	7	65	62	65	10	65	8	65
	18	61	820	65	7	65	62	65	10	65	8	65
	19	62	820	65	7	65	62	65	10	65	8	65
	20	63	820	65	7	65	62	65	10	65	8	65
	21	64	820	65	7	65	62	65	10	65	8	65
	22	65	820	65	7	65	62	65	10	65	8	65
	23	66	820	65	7	65	62	65	10	65	8	65
	24	67	820	65	7	65	62	65	10	65	8	65
	25	68	820	65	7	65	62	65	10	65	8	65
	26	69	820	65	7	65	62	65	10	65	8	65
	27	70	820	65	7	65	62	65	10	65	8	65
	28	71	820	65	7	65	62	65	10	65	8	65
	29	72	820	65	7	65	62	65	10	65	8	65
	30	73	820	65	7	65	62	65	10	65	8	65
	31	74	820	65	7	65	62	65	10	65	8	65
	32	75	820	65	7	65	62	65	10	65	8	65
	33	76	820	65	7	65	62	65	10	65	8	65
	34	77	820	65	7	65	62	65	10	65	8	65
	35	78	820	65	7	65	62	65	10	65	8	65
	36	79	820	65	7	65	62	65	10	65	8	65
	37	80	820	65	7	65	62	65	10	65	8	65
	38	81	820	65	7	65	62	65	10	65	8	65
	39	82	820	65	7	65	62	65	10	65	8	65
	40	83	820	65	7	65	62	65	10	65	8	65
	41	84	820	65	7	65	62	65	10	65	8	65
	42	85	820	65	7	65	62	65	10	65	8	65
	43	86										
SR11 SB-2	1	87	803	65	6	65	58	65	9	65	4	65
	2	88	803	65	6	65	58	65	9	65	4	65
	3	89	803	65	6	65	58	65	9	65	4	65
	4	90	803	65	6	65	58	65	9	65	4	65
	5	91	803	65	6	65	58	65	9	65	4	65
	6	92	803	65	6	65	58	65	9	65	4	65
	7	93	803	65	6	65	58	65	9	65	4	65
	8	94	803	65	6	65	58	65	9	65	4	65
	9	95	803	65	6	65	58	65	9	65	4	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	10	96	803	65	6	65	58	65	9	65	4	65
	11	97	803	65	6	65	58	65	9	65	4	65
	12	98	803	65	6	65	58	65	9	65	4	65
	13	99	803	65	6	65	58	65	9	65	4	65
	14	100	803	65	6	65	58	65	9	65	4	65
	15	101	803	65	6	65	58	65	9	65	4	65
	16	102	803	65	6	65	58	65	9	65	4	65
	17	103	803	65	6	65	58	65	9	65	4	65
	18	104	803	65	6	65	58	65	9	65	4	65
	19	105	803	65	6	65	58	65	9	65	4	65
	20	106	803	65	6	65	58	65	9	65	4	65
	21	107	803	65	6	65	58	65	9	65	4	65
	22	108	803	65	6	65	58	65	9	65	4	65
	23	109	803	65	6	65	58	65	9	65	4	65
	24	110	803	65	6	65	58	65	9	65	4	65
	25	111	803	65	6	65	58	65	9	65	4	65
	26	112	803	65	6	65	58	65	9	65	4	65
	27	113	803	65	6	65	58	65	9	65	4	65
	28	114	803	65	6	65	58	65	9	65	4	65
	29	115	803	65	6	65	58	65	9	65	4	65
	30	116	803	65	6	65	58	65	9	65	4	65
	31	117	803	65	6	65	58	65	9	65	4	65
	32	118	803	65	6	65	58	65	9	65	4	65
	33	119	803	65	6	65	58	65	9	65	4	65
	34	120	803	65	6	65	58	65	9	65	4	65
	35	121	803	65	6	65	58	65	9	65	4	65
	36	122	803	65	6	65	58	65	9	65	4	65
	37	123	803	65	6	65	58	65	9	65	4	65
	38	124	803	65	6	65	58	65	9	65	4	65
	39	125	803	65	6	65	58	65	9	65	4	65
	40	126	803	65	6	65	58	65	9	65	4	65
	41	127	803	65	6	65	58	65	9	65	4	65
	42	128	803	65	6	65	58	65	9	65	4	65
	43	129										
SR11 SB-1	43	172	803	65	6	65	58	65	9	65	4	65
	42	171	803	65	6	65	58	65	9	65	4	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	41	170	803	65	6	65	58	65	9	65	4	65
	40	169	803	65	6	65	58	65	9	65	4	65
	39	168	803	65	6	65	58	65	9	65	4	65
	38	167	803	65	6	65	58	65	9	65	4	65
	37	166	803	65	6	65	58	65	9	65	4	65
	36	165	803	65	6	65	58	65	9	65	4	65
	35	164	803	65	6	65	58	65	9	65	4	65
	34	163	803	65	6	65	58	65	9	65	4	65
	33	162	803	65	6	65	58	65	9	65	4	65
	32	161	803	65	6	65	58	65	9	65	4	65
	31	160	803	65	6	65	58	65	9	65	4	65
	30	159	803	65	6	65	58	65	9	65	4	65
	29	158	803	65	6	65	58	65	9	65	4	65
	28	157	803	65	6	65	58	65	9	65	4	65
	27	156	803	65	6	65	58	65	9	65	4	65
	26	155	803	65	6	65	58	65	9	65	4	65
	25	154	803	65	6	65	58	65	9	65	4	65
	24	153	803	65	6	65	58	65	9	65	4	65
	23	152	803	65	6	65	58	65	9	65	4	65
	22	151	803	65	6	65	58	65	9	65	4	65
	21	150	803	65	6	65	58	65	9	65	4	65
	20	149	803	65	6	65	58	65	9	65	4	65
	19	148	803	65	6	65	58	65	9	65	4	65
	18	147	803	65	6	65	58	65	9	65	4	65
	17	146	803	65	6	65	58	65	9	65	4	65
	16	145	803	65	6	65	58	65	9	65	4	65
	15	144	803	65	6	65	58	65	9	65	4	65
	14	143	803	65	6	65	58	65	9	65	4	65
	13	142	803	65	6	65	58	65	9	65	4	65
	12	141	803	65	6	65	58	65	9	65	4	65
	11	140	803	65	6	65	58	65	9	65	4	65
	10	139	803	65	6	65	58	65	9	65	4	65
	9	138	803	65	6	65	58	65	9	65	4	65
	8	137	803	65	6	65	58	65	9	65	4	65
	7	136	803	65	6	65	58	65	9	65	4	65
	6	135	803	65	6	65	58	65	9	65	4	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	5	134	803	65	6	65	58	65	9	65	4	65
	4	133	803	65	6	65	58	65	9	65	4	65
	3	132	803	65	6	65	58	65	9	65	4	65
	2	131	803	65	6	65	58	65	9	65	4	65
	1	130										
Kirk EB	1	173	455	35	2	35	10	35	1	35	1	35
	2	174	455	35	2	35	10	35	1	35	1	35
	3	175	455	35	2	35	10	35	1	35	1	35
	4	176	455	35	2	35	10	35	1	35	1	35
	5	177	455	35	2	35	10	35	1	35	1	35
	6	178										
Kirk WB	6	184	455	35	2	35	10	35	1	35	1	35
	5	183	455	35	2	35	10	35	1	35	1	35
	4	182	455	35	2	35	10	35	1	35	1	35
	3	181	455	35	2	35	10	35	1	35	1	35
	2	180	455	35	2	35	10	35	1	35	1	35
	1	179										
New EB	1	185	303	35	1	35	7	35	1	35	1	35
	2	186	303	35	1	35	7	35	1	35	1	35
	3	187	303	35	1	35	7	35	1	35	1	35
	4	188	303	35	1	35	7	35	1	35	1	35
	5	189	303	35	1	35	7	35	1	35	1	35
	6	190	303	35	1	35	7	35	1	35	1	35
	7	191	303	35	1	35	7	35	1	35	1	35
	8	192	303	17	1	35	7	35	1	35	1	35
	9	193	303	35	1	35	7	35	1	35	1	35
	10	194	303	35	1	35	7	35	1	35	1	35
	11	195	303	35	1	35	7	35	1	35	1	35
	12	196										
New WB	12	208	303	35	1	35	7	35	1	35	1	35
	11	207	303	35	1	35	7	35	1	35	1	35
	10	206	303	35	1	35	7	35	1	35	1	35
	9	205	303	35	1	35	7	35	1	35	1	35
	8	204	303	35	1	35	7	35	1	35	1	35
	7	203	303	35	1	35	7	35	1	35	1	35
	6	202	303	35	1	35	7	35	1	35	1	35



**INPUT: TRAFFIC FOR LAeq1h Volumes****MAH SR11/2386**

	5	201	303	35	1	35	7	35	1	35	1	35
	4	200	303	35	1	35	7	35	1	35	1	35
	3	199	303	35	1	35	7	35	1	35	1	35
	2	198	303	35	1	35	7	35	1	35	1	35
	1	197										



**INPUT: RECEIVERS**

**MAH SR11/2386**

3-23	25	1	2,450,790.8	517,451.1	1,141.47	5.00	0.00	66	10.0	8.0	Y
3-24	26	1	2,450,718.0	517,452.4	1,143.05	5.00	0.00	66	10.0	8.0	Y
3-25	27	1	2,450,632.2	517,450.8	1,142.78	5.00	0.00	66	10.0	8.0	Y
3-26	28	1	2,450,485.0	517,469.9	1,141.80	5.00	0.00	66	10.0	8.0	Y
3-27	29	1	2,450,444.8	517,571.7	1,143.57	5.00	0.00	66	10.0	8.0	Y
3-28	30	1	2,450,454.8	517,657.7	1,146.13	5.00	0.00	66	10.0	8.0	Y
3-29	31	1	2,450,453.5	517,741.1	1,147.80	5.00	0.00	66	10.0	8.0	Y
3-30	32	1	2,450,443.5	517,822.9	1,150.33	5.00	0.00	66	10.0	8.0	Y
3-31	33	1	2,450,433.2	517,886.9	1,152.53	5.00	0.00	66	10.0	8.0	Y
3-32	34	1	2,450,437.8	517,965.4	1,152.99	5.00	0.00	66	10.0	8.0	Y
3-33	35	1	2,450,439.0	518,038.8	1,153.74	5.00	0.00	66	10.0	8.0	Y
3-34	36	1	2,450,438.2	518,124.9	1,154.10	5.00	0.00	66	10.0	8.0	Y
3-35	37	1	2,450,444.8	518,199.6	1,154.63	5.00	0.00	66	10.0	8.0	Y
3-36	38	1	2,450,442.8	518,276.0	1,154.40	5.00	0.00	66	10.0	8.0	Y
3-37	39	1	2,450,444.0	518,344.4	1,154.72	5.00	0.00	66	10.0	8.0	Y
3-38	40	1	2,450,429.5	518,447.9	1,154.00	5.00	0.00	66	10.0	8.0	Y
3-39	41	1	2,450,429.5	518,570.1	1,152.76	5.00	0.00	66	10.0	8.0	Y
3-40	42	1	2,450,493.5	518,616.0	1,148.46	5.00	0.00	66	10.0	8.0	Y
3-41	43	1	2,450,555.0	518,696.9	1,145.70	5.00	0.00	66	10.0	8.0	Y
3-42	44	1	2,450,455.5	518,742.6	1,144.69	5.00	0.00	66	10.0	8.0	Y
3-43	45	1	2,450,441.2	518,852.4	1,144.69	5.00	0.00	66	10.0	8.0	Y
3-44	46	1	2,450,456.8	518,987.3	1,152.59	5.00	0.00	66	10.0	8.0	Y
3-45	47	1	2,450,531.5	519,033.8	1,151.48	5.00	0.00	66	10.0	8.0	Y
3-46	48	1	2,450,545.0	519,095.8	1,150.82	5.00	0.00	66	10.0	8.0	Y
3-47	49	1	2,450,466.8	519,134.8	1,152.79	5.00	0.00	66	10.0	8.0	Y
3-48	50	1	2,450,445.2	519,261.6	1,153.08	5.00	0.00	66	10.0	8.0	Y
3-49	51	1	2,450,459.5	519,411.2	1,155.18	5.00	0.00	66	10.0	8.0	Y
3-50	52	1	2,450,537.0	519,444.5	1,151.21	5.00	0.00	66	10.0	8.0	Y
3-51	53	1	2,450,570.2	519,577.5	1,152.92	5.00	0.00	66	10.0	8.0	Y
3-52	54	1	2,450,494.5	519,641.1	1,153.84	5.00	0.00	66	10.0	8.0	Y
3-53	55	1	2,450,479.2	519,755.0	1,155.09	5.00	0.00	66	10.0	8.0	Y
3-54	56	1	2,450,546.0	519,840.0	1,153.48	5.00	0.00	66	10.0	8.0	Y
3-55	57	1	2,450,547.0	519,927.8	1,153.84	5.00	0.00	66	10.0	8.0	Y
3-56	58	1	2,450,500.8	519,999.8	1,155.18	5.00	0.00	66	10.0	8.0	Y
3-57	59	1	2,450,476.0	520,102.8	1,156.23	5.00	0.00	66	10.0	8.0	Y
3-58	60	1	2,450,530.0	520,207.8	1,154.72	5.00	0.00	66	10.0	8.0	Y

**INPUT: RECEIVERS**

**MAH SR11/2386**

3-59	61	1	2,450,556.2	520,320.8	1,147.15	5.00	0.00	66	10.0	8.0	Y
3-60	62	1	2,450,488.8	520,411.7	1,147.11	5.00	0.00	66	10.0	8.0	Y
3-61	63	1	2,450,483.0	520,525.3	1,145.21	5.00	0.00	66	10.0	8.0	Y
3-62	64	1	2,450,521.2	520,599.1	1,146.79	5.00	0.00	66	10.0	8.0	Y
3-63	65	1	2,450,624.0	520,619.9	1,148.59	5.00	0.00	66	10.0	8.0	Y
3-64	66	1	2,450,731.2	517,659.6	1,136.65	5.00	0.00	66	10.0	8.0	Y
3-65	67	1	2,450,723.2	517,736.7	1,139.60	5.00	0.00	66	10.0	8.0	Y
3-66	68	1	2,450,718.8	517,817.5	1,141.31	5.00	0.00	66	10.0	8.0	Y
3-67	69	1	2,450,708.8	517,897.0	1,145.60	5.00	0.00	66	10.0	8.0	Y
3-68	70	1	2,450,700.0	517,986.9	1,147.31	5.00	0.00	66	10.0	8.0	Y
3-69	71	1	2,450,699.0	518,076.3	1,149.28	5.00	0.00	66	10.0	8.0	Y
3-70	72	1	2,450,690.0	518,157.9	1,148.66	5.00	0.00	66	10.0	8.0	Y
3-71	73	1	2,450,686.0	518,249.6	1,147.87	5.00	0.00	66	10.0	8.0	Y
3-72	74	1	2,450,677.0	518,322.9	1,146.69	5.00	0.00	66	10.0	8.0	Y
3-73	75	1	2,450,669.2	518,416.5	1,144.78	5.00	0.00	66	10.0	8.0	Y
3-74	76	1	2,450,612.2	518,613.0	1,143.11	5.00	0.00	66	10.0	8.0	Y
3-75	77	1	2,450,696.2	518,610.0	1,139.04	5.00	0.00	66	10.0	8.0	Y
3-76	78	1	2,450,676.2	518,694.1	1,141.70	5.00	0.00	66	10.0	8.0	Y
3-77	79	1	2,450,840.8	517,666.5	1,134.15	5.00	0.00	66	10.0	8.0	Y
3-78	80	1	2,450,832.5	517,741.9	1,134.09	5.00	0.00	66	10.0	8.0	Y
3-79	81	1	2,450,825.5	517,808.4	1,134.25	5.00	0.00	66	10.0	8.0	Y
3-80	82	1	2,450,825.5	517,888.4	1,137.24	5.00	0.00	66	10.0	8.0	Y
3-81	83	1	2,450,827.8	517,964.9	1,139.99	5.00	0.00	66	10.0	8.0	Y
3-82	84	1	2,450,820.2	518,047.2	1,140.49	5.00	0.00	66	10.0	8.0	Y
3-83	85	1	2,450,815.5	518,120.5	1,141.21	5.00	0.00	66	10.0	8.0	Y
3-84	86	1	2,450,812.8	518,198.2	1,141.11	5.00	0.00	66	10.0	8.0	Y
3-85	87	1	2,450,805.0	518,272.9	1,139.76	5.00	0.00	66	10.0	8.0	Y
3-86	88	1	2,450,798.8	518,337.5	1,139.47	5.00	0.00	66	10.0	8.0	Y
3-87	89	1	2,450,795.2	518,415.2	1,139.21	5.00	0.00	66	10.0	8.0	Y
3-88	90	1	2,450,778.5	518,545.9	1,136.22	5.00	0.00	66	10.0	8.0	Y
3-89	91	1	2,450,771.5	518,640.0	1,135.47	5.00	0.00	66	10.0	8.0	Y
3-90	92	1	2,450,760.5	518,741.2	1,135.86	5.00	0.00	66	10.0	8.0	Y
3-91	93	1	2,450,749.5	518,865.9	1,137.07	5.00	0.00	66	10.0	8.0	Y
3-92	94	1	2,450,751.5	518,957.1	1,139.11	5.00	0.00	66	10.0	8.0	Y
3-93	95	1	2,450,667.0	519,011.9	1,146.92	5.00	0.00	66	10.0	8.0	Y
3-94	96	1	2,450,757.5	519,034.3	1,139.24	5.00	0.00	66	10.0	8.0	Y

**INPUT: RECEIVERS**

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3-95	97	1	2,450,673.2	519,105.3	1,143.41	5.00	0.00	66	10.0	8.0	Y
3-96	98	1	2,450,745.5	519,118.4	1,140.98	5.00	0.00	66	10.0	8.0	Y
3-97	99	1	2,450,752.2	519,202.3	1,140.52	5.00	0.00	66	10.0	8.0	Y
3-98	100	1	2,450,754.0	519,338.9	1,143.37	5.00	0.00	66	10.0	8.0	Y
3-99	101	1	2,450,747.8	519,407.1	1,144.39	5.00	0.00	66	10.0	8.0	Y
3-100	102	1	2,450,656.8	519,448.1	1,148.03	5.00	0.00	66	10.0	8.0	Y
3-101	103	1	2,450,754.8	519,484.7	1,146.19	5.00	0.00	66	10.0	8.0	Y
3-102	104	1	2,450,661.2	519,563.6	1,149.05	5.00	0.00	66	10.0	8.0	Y
3-103	105	1	2,450,739.5	519,573.1	1,146.92	5.00	0.00	66	10.0	8.0	Y
3-104	106	1	2,450,729.8	519,644.2	1,148.10	5.00	0.00	66	10.0	8.0	Y
3-105	107	1	2,450,721.8	519,787.5	1,148.82	5.00	0.00	66	10.0	8.0	Y
3-106	108	1	2,450,651.0	519,865.2	1,151.35	5.00	0.00	66	10.0	8.0	Y
3-107	109	1	2,450,727.8	519,866.2	1,148.49	5.00	0.00	66	10.0	8.0	Y
3-108	110	1	2,450,652.0	519,915.7	1,150.98	5.00	0.00	66	10.0	8.0	Y
3-109	111	1	2,450,727.8	519,948.0	1,148.43	5.00	0.00	66	10.0	8.0	Y
3-110	112	1	2,450,730.8	520,020.7	1,146.03	5.00	0.00	66	10.0	8.0	Y
3-111	113	1	2,450,734.2	520,167.7	1,144.98	5.00	0.00	66	10.0	8.0	Y
3-112	114	1	2,450,651.8	520,227.5	1,148.75	5.00	0.00	66	10.0	8.0	Y
3-113	115	1	2,450,733.8	520,237.7	1,144.36	5.00	0.00	66	10.0	8.0	Y
3-114	116	1	2,450,642.8	520,305.5	1,148.13	5.00	0.00	66	10.0	8.0	Y
3-115	117	1	2,450,731.8	520,315.7	1,144.72	5.00	0.00	66	10.0	8.0	Y
3-116	118	1	2,450,728.8	520,390.7	1,146.29	5.00	0.00	66	10.0	8.0	Y
3-117	119	1	2,450,724.2	520,613.7	1,150.72	5.00	0.00	66	10.0	8.0	Y
3-118	120	1	2,450,783.5	520,655.2	1,151.54	5.00	0.00	66	10.0	8.0	Y
3-119	121	1	2,450,679.5	520,878.0	1,152.03	5.00	0.00	66	10.0	8.0	Y
3-120	122	1	2,450,769.5	520,879.9	1,152.82	5.00	0.00	66	10.0	8.0	Y
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**INPUT: RECEIVERS**

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**RESULTS: SOUND LEVELS**

**MAH SR11/2386**

ASC Group, Inc. mas									5 April 2018 TNM 2.5 Calculated with TNM 2.5				
<b>RESULTS: SOUND LEVELS</b>													
<b>PROJECT/CONTRACT:</b>		<b>MAH SR11/2386</b>											
<b>RUN:</b>		existing-NSA 3 Oak Trace Barrier											
<b>BARRIER DESIGN:</b>		INPUT HEIGHTS											
<b>ATMOSPHERICS:</b>		68 deg F, 50% RH											
		Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.											

Receiver												
Name	No.	#DUs	Existing	No Barrier	With Barrier							
			LAeq1h	LAeq1h	Increase over existing	Type	Calculated	Noise Reduction	Goal	Calculated		
			Calculated	Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	Goal
3-1	1	1	0.0	69.9	66	69.9	10	Snd Lvl	62.4	7.5	8	-0.5
3-2	2	1	0.0	66.9	66	66.9	10	Snd Lvl	63.8	3.1	8	-4.9
3-3	3	1	0.0	62.6	66	62.6	10	----	61.2	1.4	8	-6.6
3-4	4	1	0.0	61.9	66	61.9	10	----	61.3	0.6	8	-7.4
3-5	5	1	0.0	62.0	66	62.0	10	----	61.7	0.3	8	-7.7
3-6	6	1	0.0	61.4	66	61.4	10	----	61.2	0.2	8	-7.8
3-7	7	1	0.0	58.8	66	58.8	10	----	57.7	1.1	8	-6.9
3-8	8	1	0.0	58.7	66	58.7	10	----	57.7	1.0	8	-7.0
3-9	11	1	0.0	58.6	66	58.6	10	----	57.8	0.8	8	-7.2
3-10	12	1	0.0	58.7	66	58.7	10	----	57.9	0.8	8	-7.2
3-11	13	1	0.0	58.2	66	58.2	10	----	57.5	0.7	8	-7.3
3-12	14	1	0.0	58.5	66	58.5	10	----	57.7	0.8	8	-7.2
3-13	15	1	0.0	58.9	66	58.9	10	----	57.9	1.0	8	-7.0
3-14	16	1	0.0	59.1	66	59.1	10	----	57.3	1.8	8	-6.2
3-15	17	1	0.0	59.1	66	59.1	10	----	56.6	2.5	8	-5.5
3-16	18	1	0.0	59.2	66	59.2	10	----	56.5	2.7	8	-5.3
3-17	19	1	0.0	59.8	66	59.8	10	----	56.7	3.1	8	-4.9
3-18	20	1	0.0	59.1	66	59.1	10	----	56.4	2.7	8	-5.3
3-19	21	1	0.0	57.8	66	57.8	10	----	55.7	2.1	8	-5.9
3-20	22	1	0.0	57.9	66	57.9	10	----	55.8	2.1	8	-5.9
3-21	23	1	0.0	58.4	66	58.4	10	----	56.1	2.3	8	-5.7
3-22	24	1	0.0	56.1	66	56.1	10	----	53.8	2.3	8	-5.7
3-23	25	1	0.0	57.6	66	57.6	10	----	55.3	2.3	8	-5.7
3-24	26	1	0.0	58.9	66	58.9	10	----	56.5	2.4	8	-5.6

RESULTS: SOUND LEVELS

MAH SR11/2386

3-25	27	1	0.0	60.4	66	60.4	10	----	58.2	2.2	8	-5.8
3-26	28	1	0.0	64.0	66	64.0	10	----	61.6	2.4	8	-5.6
3-27	29	1	0.0	65.3	66	65.3	10	----	62.6	2.7	8	-5.3
3-28	30	1	0.0	65.5	66	65.5	10	----	62.8	2.7	8	-5.3
3-29	31	1	0.0	66.1	66	66.1	10	Snd Lvl	63.0	3.1	8	-4.9
3-30	32	1	0.0	67.1	66	67.1	10	Snd Lvl	63.6	3.5	8	-4.5
3-31	33	1	0.0	67.7	66	67.7	10	Snd Lvl	64.1	3.6	8	-4.4
3-32	34	1	0.0	67.5	66	67.5	10	Snd Lvl	64.0	3.5	8	-4.5
3-33	35	1	0.0	67.6	66	67.6	10	Snd Lvl	64.0	3.6	8	-4.4
3-34	36	1	0.0	67.7	66	67.7	10	Snd Lvl	64.1	3.6	8	-4.4
3-35	37	1	0.0	67.5	66	67.5	10	Snd Lvl	64.0	3.5	8	-4.5
3-36	38	1	0.0	67.7	66	67.7	10	Snd Lvl	64.1	3.6	8	-4.4
3-37	39	1	0.0	67.8	66	67.8	10	Snd Lvl	64.2	3.6	8	-4.4
3-38	40	1	0.0	68.7	66	68.7	10	Snd Lvl	64.7	4.0	8	-4.0
3-39	41	1	0.0	68.8	66	68.8	10	Snd Lvl	64.7	4.1	8	-3.9
3-40	42	1	0.0	64.9	66	64.9	10	----	62.3	2.6	8	-5.4
3-41	43	1	0.0	62.7	66	62.7	10	----	60.6	2.1	8	-5.9
3-42	44	1	0.0	65.5	66	65.5	10	----	62.4	3.1	8	-4.9
3-43	45	1	0.0	66.2	66	66.2	10	Snd Lvl	62.9	3.3	8	-4.7
3-44	46	1	0.0	67.8	66	67.8	10	Snd Lvl	64.2	3.6	8	-4.4
3-45	47	1	0.0	64.4	66	64.4	10	----	62.2	2.2	8	-5.8
3-46	48	1	0.0	64.1	66	64.1	10	----	61.7	2.4	8	-5.6
3-47	49	1	0.0	67.5	66	67.5	10	Snd Lvl	64.1	3.4	8	-4.6
3-48	50	1	0.0	68.9	66	68.9	10	Snd Lvl	65.0	3.9	8	-4.1
3-49	51	1	0.0	68.3	66	68.3	10	Snd Lvl	65.3	3.0	8	-5.0
3-50	52	1	0.0	64.5	66	64.5	10	----	62.2	2.3	8	-5.7
3-51	53	1	0.0	63.4	66	63.4	10	----	62.0	1.4	8	-6.6
3-52	54	1	0.0	66.7	66	66.7	10	Snd Lvl	64.4	2.3	8	-5.7
3-53	55	1	0.0	67.7	66	67.7	10	Snd Lvl	65.3	2.4	8	-5.6
3-54	56	1	0.0	64.6	66	64.6	10	----	63.1	1.5	8	-6.5
3-55	57	1	0.0	64.7	66	64.7	10	----	63.1	1.6	8	-6.4
3-56	58	1	0.0	66.9	66	66.9	10	Snd Lvl	64.9	2.0	8	-6.0
3-57	59	1	0.0	68.7	66	68.7	10	Snd Lvl	66.2	2.5	8	-5.5
3-58	60	1	0.0	65.6	66	65.6	10	----	63.1	2.5	8	-5.5
3-59	61	1	0.0	63.4	66	63.4	10	----	60.9	2.5	8	-5.5
3-60	62	1	0.0	67.2	66	67.2	10	Snd Lvl	62.5	4.7	8	-3.3
3-61	63	1	0.0	69.0	66	69.0	10	Snd Lvl	63.0	6.0	8	-2.0
3-62	64	1	0.0	66.7	66	66.7	10	Snd Lvl	64.8	1.9	8	-6.1
3-63	65	1	0.0	62.8	66	62.8	10	----	62.5	0.3	8	-7.7
3-64	66	1	0.0	58.0	66	58.0	10	----	56.5	1.5	8	-6.5
3-65	67	1	0.0	58.3	66	58.3	10	----	56.5	1.8	8	-6.2

**RESULTS: SOUND LEVELS**

**MAH SR11/2386**

3-66	68	1	0.0	58.5	66	58.5	10	----	56.7	1.8	8	-6.2
3-67	69	1	0.0	59.5	66	59.5	10	----	57.4	2.1	8	-5.9
3-68	70	1	0.0	59.8	66	59.8	10	----	57.3	2.5	8	-5.5
3-69	71	1	0.0	60.8	66	60.8	10	----	57.9	2.9	8	-5.1
3-70	72	1	0.0	60.6	66	60.6	10	----	57.7	2.9	8	-5.1
3-71	73	1	0.0	60.2	66	60.2	10	----	57.6	2.6	8	-5.4
3-72	74	1	0.0	60.3	66	60.3	10	----	58.5	1.8	8	-6.2
3-73	75	1	0.0	59.4	66	59.4	10	----	57.3	2.1	8	-5.9
3-74	76	1	0.0	60.3	66	60.3	10	----	58.4	1.9	8	-6.1
3-75	77	1	0.0	57.5	66	57.5	10	----	56.0	1.5	8	-6.5
3-76	78	1	0.0	58.8	66	58.8	10	----	56.9	1.9	8	-6.1
3-77	79	1	0.0	54.7	66	54.7	10	----	53.0	1.7	8	-6.3
3-78	80	1	0.0	52.9	66	52.9	10	----	51.4	1.5	8	-6.5
3-79	81	1	0.0	51.8	66	51.8	10	----	50.3	1.5	8	-6.5
3-80	82	1	0.0	52.6	66	52.6	10	----	50.5	2.1	8	-5.9
3-81	83	1	0.0	53.2	66	53.2	10	----	51.3	1.9	8	-6.1
3-82	84	1	0.0	53.0	66	53.0	10	----	51.3	1.7	8	-6.3
3-83	85	1	0.0	53.5	66	53.5	10	----	51.6	1.9	8	-6.1
3-84	86	1	0.0	54.1	66	54.1	10	----	52.0	2.1	8	-5.9
3-85	87	1	0.0	54.1	66	54.1	10	----	51.9	2.2	8	-5.8
3-86	88	1	0.0	54.3	66	54.3	10	----	52.3	2.0	8	-6.0
3-87	89	1	0.0	55.8	66	55.8	10	----	53.6	2.2	8	-5.8
3-88	90	1	0.0	56.0	66	56.0	10	----	55.1	0.9	8	-7.1
3-89	91	1	0.0	56.1	66	56.1	10	----	54.9	1.2	8	-6.8
3-90	92	1	0.0	57.0	66	57.0	10	----	55.9	1.1	8	-6.9
3-91	93	1	0.0	57.2	66	57.2	10	----	55.9	1.3	8	-6.7
3-92	94	1	0.0	57.9	66	57.9	10	----	56.0	1.9	8	-6.1
3-93	95	1	0.0	60.5	66	60.5	10	----	58.0	2.5	8	-5.5
3-94	96	1	0.0	57.4	66	57.4	10	----	55.5	1.9	8	-6.1
3-95	97	1	0.0	59.5	66	59.5	10	----	57.1	2.4	8	-5.6
3-96	98	1	0.0	57.6	66	57.6	10	----	55.8	1.8	8	-6.2
3-97	99	1	0.0	55.4	66	55.4	10	----	55.1	0.3	8	-7.7
3-98	100	1	0.0	57.8	66	57.8	10	----	56.2	1.6	8	-6.4
3-99	101	1	0.0	58.7	66	58.7	10	----	56.5	2.2	8	-5.8
3-100	102	1	0.0	61.3	66	61.3	10	----	58.6	2.7	8	-5.3
3-101	103	1	0.0	58.8	66	58.8	10	----	56.7	2.1	8	-5.9
3-102	104	1	0.0	60.3	66	60.3	10	----	58.6	1.7	8	-6.3
3-103	105	1	0.0	59.1	66	59.1	10	----	57.1	2.0	8	-6.0
3-104	106	1	0.0	57.4	66	57.4	10	----	56.6	0.8	8	-7.2
3-105	107	1	0.0	57.3	66	57.3	10	----	57.0	0.3	8	-7.7
3-106	108	1	0.0	60.2	66	60.2	10	----	59.1	1.1	8	-6.9

**RESULTS: SOUND LEVELS**

**MAH SR11/2386**

3-107	109	1	0.0	58.6	66	58.6	10	----	57.2	1.4	8	-6.6
3-108	110	1	0.0	60.3	66	60.3	10	----	59.2	1.1	8	-6.9
3-109	111	1	0.0	58.5	66	58.5	10	----	57.5	1.0	8	-7.0
3-110	112	1	0.0	56.9	66	56.9	10	----	56.1	0.8	8	-7.2
3-111	113	1	0.0	57.7	66	57.7	10	----	56.6	1.1	8	-6.9
3-112	114	1	0.0	59.6	66	59.6	10	----	58.2	1.4	8	-6.6
3-113	115	1	0.0	57.6	66	57.6	10	----	56.4	1.2	8	-6.8
3-114	116	1	0.0	60.4	66	60.4	10	----	58.8	1.6	8	-6.4
3-115	117	1	0.0	59.3	66	59.3	10	----	57.2	2.1	8	-5.9
3-116	118	1	0.0	59.6	66	59.6	10	----	57.9	1.7	8	-6.3
3-117	119	1	0.0	59.7	66	59.7	10	----	59.7	0.0	8	-8.0
3-118	120	1	0.0	59.1	66	59.1	10	----	58.9	0.2	8	-7.8
3-119	121	1	0.0	61.5	66	61.5	10	----	61.4	0.1	8	-7.9
3-120	122	1	0.0	59.6	66	59.6	10	----	59.5	0.1	8	-7.9
<b>Dwelling Units</b>		<b># DUs</b>	<b>Noise Reduction</b>									
			<b>Min</b>	<b>Avg</b>	<b>Max</b>							
			<b>dB</b>	<b>dB</b>	<b>dB</b>							
All Selected		120	0.0	2.1	7.5							
All Impacted		25	1.9	3.6	7.5							
All that meet NR Goal		0	0.0	0.0	0.0							

**INPUT: ROADWAYS**

**MAH SR11/2386**

ASC Group, Inc. mas					5 April 2018 TNM 2.5					
<b>INPUT: ROADWAYS</b>										
<b>PROJECT/CONTRACT:</b>	<b>MAH SR11/2386</b>				<b>Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA</b>					
<b>RUN:</b>	<b>existing-NSA5, 7 Nashua-Inglewood</b>									

Roadway Name	Width	Points			Coordinates (pavement)			Flow Control			Segment	
		Name	No.		X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft				ft	ft	ft		mph	%		
SR11 NB-1	12.0	1	1		2,451,374.8	511,900.4	1,142.60				Average	
		2	2		2,451,213.2	512,465.7	1,141.40				Average	
		3	3		2,451,045.8	513,066.4	1,142.80				Average	
		4	4		2,450,860.5	513,721.0	1,144.80				Average	
		5	5		2,450,744.2	514,149.3	1,146.30				Average	
		6	6		2,450,682.2	514,360.0	1,147.00				Average	
		7	7		2,450,634.2	514,550.1	1,147.00				Average	
		8	8		2,450,587.5	514,766.0	1,148.30				Average	
		9	9		2,450,547.5	514,947.7	1,148.60				Average	
		10	10		2,450,504.8	515,146.8	1,149.40				Average	
		11	11		2,450,455.8	515,432.0	1,150.40				Average	
		12	12		2,450,419.2	515,670.0	1,151.10				Average	
		13	13		2,450,366.5	516,083.0	1,152.20				Average	
		14	14		2,450,332.5	516,421.3	1,153.20				Average	
		15	15		2,450,316.5	516,682.7	1,154.10				Average	
		16	16		2,450,300.2	516,977.8	1,154.90				Average	
		17	17		2,450,293.5	517,281.5	1,155.70				Average	
		18	18		2,450,294.2	517,597.8	1,156.70				Average	
		19	19		2,450,308.2	518,208.7	1,157.90				Average	
		20	20		2,450,321.2	518,851.5	1,156.50				Average	
		21	21		2,450,339.0	519,672.9	1,154.10				Average	
		22	22		2,450,358.5	520,451.0	1,151.40				Average	
		23	23		2,450,371.5	521,077.9	1,149.70				Average	
		24	24		2,450,394.8	522,071.0	1,146.80				Average	
		25	25		2,450,410.2	522,781.8	1,144.80				Average	

INPUT: ROADWAYS

MAH SR11/2386

		26	26	2,450,421.0	523,153.8	1,143.60				Average	
		27	27	2,450,433.5	523,725.3	1,142.00				Average	
		28	28	2,450,442.5	524,118.8	1,140.40				Average	
		29	29	2,450,450.5	524,462.4	1,139.80				Average	
		30	30	2,450,458.0	524,726.5	1,138.90				Average	
		31	31	2,450,461.0	524,942.6	1,138.50				Average	
		32	32	2,450,462.8	525,119.3	1,138.10				Average	
		33	33	2,450,457.0	525,278.1	1,137.30				Average	
		34	34	2,450,453.0	525,427.2	1,137.10				Average	
		35	35	2,450,441.2	525,580.1	1,136.30				Average	
		36	36	2,450,425.5	525,732.6	1,134.50				Average	
		37	37	2,450,399.0	525,926.2	1,131.90				Average	
		38	38	2,450,370.8	526,102.7	1,129.00				Average	
		39	39	2,450,340.0	526,263.2	1,125.70				Average	
		40	40	2,450,290.0	526,482.5	1,120.20				Average	
		41	41	2,450,224.0	526,734.5	1,113.20				Average	
		42	42	2,450,134.5	527,011.3	1,108.00				Average	
		43	43	2,450,046.0	527,245.0	1,106.40					
SR11 NB-2	12.0	1	44	2,451,366.2	511,895.0	1,142.50				Average	
		2	45	2,451,203.0	512,462.0	1,140.90				Average	
		3	46	2,451,035.5	513,062.7	1,142.60				Average	
		4	47	2,450,850.2	513,717.3	1,144.50				Average	
		5	48	2,450,734.0	514,145.3	1,146.30				Average	
		6	49	2,450,672.2	514,356.5	1,147.00				Average	
		7	50	2,450,624.0	514,546.4	1,147.00				Average	
		8	51	2,450,577.2	514,762.3	1,147.50				Average	
		9	52	2,450,537.2	514,944.0	1,148.60				Average	
		10	53	2,450,494.5	515,143.2	1,149.40				Average	
		11	54	2,450,445.5	515,429.4	1,150.40				Average	
		12	55	2,450,408.0	515,668.5	1,149.90				Average	
		13	56	2,450,356.0	516,081.1	1,152.20				Average	
		14	57	2,450,322.5	516,419.1	1,153.20				Average	
		15	58	2,450,306.0	516,682.7	1,153.40				Average	
		16	59	2,450,290.0	516,974.1	1,154.90				Average	
		17	60	2,450,282.2	517,280.9	1,155.70				Average	
		18	61	2,450,282.8	517,597.1	1,156.30				Average	
		19	62	2,450,297.5	518,208.7	1,157.60				Average	
		20	63	2,450,309.5	518,851.9	1,155.90				Average	
		21	64	2,450,328.0	519,671.8	1,154.10				Average	

INPUT: ROADWAYS

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		22	65	2,450,348.2	520,447.3	1,151.70				Average	
		23	66	2,450,361.0	521,077.3	1,149.70				Average	
		24	67	2,450,384.5	522,070.6	1,146.80				Average	
		25	68	2,450,400.0	522,778.2	1,144.80				Average	
		26	69	2,450,410.0	523,153.8	1,143.60				Average	
		27	70	2,450,423.2	523,721.6	1,142.10				Average	
		28	71	2,450,431.5	524,119.3	1,140.40				Average	
		29	72	2,450,440.2	524,462.6	1,139.80				Average	
		30	73	2,450,447.8	524,726.6	1,138.50				Average	
		31	74	2,450,450.5	524,942.4	1,137.10				Average	
		32	75	2,450,452.5	525,119.3	1,138.10				Average	
		33	76	2,450,447.0	525,276.8	1,137.30				Average	
		34	77	2,450,442.2	525,426.6	1,137.10				Average	
		35	78	2,450,431.0	525,580.3	1,135.20				Average	
		36	79	2,450,415.5	525,732.8	1,134.50				Average	
		37	80	2,450,388.8	525,926.3	1,131.90				Average	
		38	81	2,450,360.5	526,102.8	1,129.00				Average	
		39	82	2,450,330.0	526,263.4	1,125.70				Average	
		40	83	2,450,279.2	526,479.7	1,120.20				Average	
		41	84	2,450,213.5	526,731.3	1,113.20				Average	
		42	85	2,450,124.5	527,007.4	1,107.00				Average	
		43	86	2,450,035.5	527,241.1	1,106.40					
SR11 SB-2	12.0	1	87	2,451,271.2	511,869.0	1,142.70				Average	
		2	88	2,451,109.8	512,434.4	1,141.40				Average	
		3	89	2,450,942.2	513,035.0	1,142.70				Average	
		4	90	2,450,758.8	513,689.7	1,144.70				Average	
		5	91	2,450,638.0	514,117.7	1,146.30				Average	
		6	92	2,450,579.2	514,330.9	1,146.90				Average	
		7	93	2,450,533.0	514,518.7	1,147.60				Average	
		8	94	2,450,480.5	514,738.8	1,148.20				Average	
		9	95	2,450,442.5	514,916.6	1,148.80				Average	
		10	96	2,450,401.2	515,120.2	1,149.40				Average	
		11	97	2,450,354.8	515,399.3	1,150.20				Average	
		12	98	2,450,314.0	515,661.3	1,150.90				Average	
		13	99	2,450,261.5	516,051.8	1,152.40				Average	
		14	100	2,450,229.0	516,389.9	1,153.20				Average	
		15	101	2,450,209.5	516,675.9	1,153.90				Average	
		16	102	2,450,193.0	516,960.2	1,155.00				Average	
		17	103	2,450,184.8	517,280.8	1,155.90				Average	



INPUT: ROADWAYS

MAH SR11/2386

		18	104	2,450,186.5	517,595.6	1,156.70				Average	
		19	105	2,450,201.0	518,205.2	1,158.00				Average	
		20	106	2,450,216.0	518,859.0	1,156.30				Average	
		21	107	2,450,234.0	519,666.1	1,154.10				Average	
		22	108	2,450,252.0	520,448.8	1,151.80				Average	
		23	109	2,450,265.0	521,096.4	1,149.70				Average	
		24	110	2,450,288.0	522,068.9	1,146.90				Average	
		25	111	2,450,303.0	522,776.2	1,144.80				Average	
		26	112	2,450,312.8	523,160.7	1,143.70				Average	
		27	113	2,450,326.0	523,720.5	1,142.00				Average	
		28	114	2,450,334.8	524,116.8	1,140.70				Average	
		29	115	2,450,343.0	524,456.8	1,139.90				Average	
		30	116	2,450,350.5	524,720.9	1,139.00				Average	
		31	117	2,450,355.5	524,936.5	1,138.00				Average	
		32	118	2,450,355.2	525,120.6	1,137.20				Average	
		33	119	2,450,353.8	525,270.8	1,136.80				Average	
		34	120	2,450,346.0	525,422.5	1,136.30				Average	
		35	121	2,450,334.8	525,572.9	1,134.90				Average	
		36	122	2,450,319.5	525,726.5	1,133.70				Average	
		37	123	2,450,293.2	525,921.1	1,131.00				Average	
		38	124	2,450,264.5	526,097.6	1,128.10				Average	
		39	125	2,450,232.5	526,257.6	1,124.60				Average	
		40	126	2,450,182.5	526,476.7	1,119.30				Average	
		41	127	2,450,114.8	526,725.6	1,111.80				Average	
		42	128	2,450,025.2	527,001.1	1,106.50				Average	
		43	129	2,449,943.2	527,213.9	1,105.90					
SR11 SB-1	12.0	43	172	2,449,934.0	527,209.2	1,105.90				Average	
		42	171	2,450,015.5	526,997.0	1,106.50				Average	
		41	170	2,450,105.5	526,722.5	1,111.20				Average	
		40	169	2,450,172.8	526,474.0	1,119.30				Average	
		39	168	2,450,222.5	526,257.9	1,124.60				Average	
		38	167	2,450,254.2	526,097.9	1,128.10				Average	
		37	166	2,450,283.0	525,919.0	1,131.00				Average	
		36	165	2,450,309.5	525,724.5	1,133.70				Average	
		35	164	2,450,323.5	525,572.2	1,134.90				Average	
		34	163	2,450,336.0	525,421.5	1,135.70				Average	
		33	162	2,450,343.5	525,270.8	1,136.80				Average	
		32	161	2,450,345.0	525,120.8	1,136.60				Average	
		31	160	2,450,345.0	524,936.7	1,137.50				Average	

INPUT: ROADWAYS

MAH SR11/2386

		30	159	2,450,340.2	524,721.1	1,139.00				Average	
		29	158	2,450,332.8	524,457.1	1,139.60				Average	
		28	157	2,450,324.2	524,116.3	1,140.70				Average	
		27	156	2,450,315.8	523,717.7	1,141.70				Average	
		26	155	2,450,302.5	523,157.9	1,143.50				Average	
		25	154	2,450,293.0	522,773.3	1,144.90				Average	
		24	153	2,450,278.0	522,066.1	1,146.00				Average	
		23	152	2,450,254.8	521,093.5	1,149.70				Average	
		22	151	2,450,242.0	520,445.9	1,151.80				Average	
		21	150	2,450,223.0	519,666.3	1,153.40				Average	
		20	149	2,450,204.0	518,859.9	1,156.40				Average	
		19	148	2,450,189.5	518,205.5	1,158.00				Average	
		18	147	2,450,174.2	517,595.8	1,156.70				Average	
		17	146	2,450,174.2	517,280.5	1,155.90				Average	
		16	145	2,450,182.8	516,957.4	1,155.00				Average	
		15	144	2,450,198.0	516,675.2	1,154.00				Average	
		14	143	2,450,218.0	516,388.5	1,153.20				Average	
		13	142	2,450,250.5	516,050.2	1,152.40				Average	
		12	141	2,450,303.2	515,660.5	1,150.70				Average	
		11	140	2,450,344.5	515,396.4	1,150.20				Average	
		10	139	2,450,391.2	515,117.3	1,148.40				Average	
		9	138	2,450,432.2	514,913.7	1,148.50				Average	
		8	137	2,450,470.5	514,736.0	1,147.80				Average	
		7	136	2,450,522.8	514,515.9	1,147.60				Average	
		6	135	2,450,569.0	514,328.1	1,146.90				Average	
		5	134	2,450,628.0	514,114.9	1,146.30				Average	
		4	133	2,450,748.5	513,686.8	1,144.60				Average	
		3	132	2,450,932.0	513,032.2	1,142.70				Average	
		2	131	2,451,099.5	512,431.5	1,141.00				Average	
		1	130	2,451,262.8	511,864.3	1,142.70					
Mahoning EB-1	12.0	1	209	2,448,759.0	526,833.2	1,121.10				Average	
		2	210	2,449,181.2	526,840.6	1,112.50				Average	
		3	211	2,449,486.8	526,846.1	1,114.60				Average	
		4	212	2,449,592.8	526,847.5	1,117.20				Average	
		5	213	2,449,796.5	526,851.0	1,121.50				Average	
		6	214	2,449,944.8	526,859.2	1,125.10				Average	Y
		7	215	2,450,293.0	526,910.7	1,128.50				Average	
		8	216	2,450,383.5	526,927.8	1,128.70				Average	
		9	217	2,450,454.5	526,938.8	1,128.30				Average	

INPUT: ROADWAYS

MAH SR11/2386

		10	218	2,451,052.0	527,044.7	1,139.30				Average	
		11	219	2,451,194.0	527,069.0	1,139.50				Average	
		12	220	2,451,634.8	527,143.6	1,132.30					
Mahoning EB-2	12.0	1	221	2,448,759.0	526,845.2	1,121.10				Average	
		2	222	2,449,181.2	526,852.6	1,112.50				Average	
		3	223	2,449,486.8	526,858.1	1,114.60				Average	
		4	224	2,449,592.8	526,859.5	1,117.20				Average	
		5	225	2,449,796.5	526,863.0	1,121.50				Average	
		6	226	2,449,942.0	526,870.7	1,125.10				Average	Y
		7	227	2,450,288.8	526,922.6	1,128.50				Average	
		8	228	2,450,381.5	526,940.2	1,128.30				Average	
		9	229	2,450,450.5	526,950.9	1,128.30				Average	
		10	230	2,451,049.8	527,054.7	1,139.30				Average	
		11	231	2,451,192.0	527,079.8	1,139.60				Average	
		12	232	2,451,631.8	527,155.7	1,132.40					
Mahoning WB-center	12.0	1	233	2,448,759.2	526,855.0	1,121.10				Average	
		2	234	2,449,181.5	526,862.4	1,112.50				Average	
		3	235	2,449,487.0	526,867.9	1,114.60				Average	
		4	236	2,449,593.0	526,869.3	1,117.20				Average	
		5	237	2,449,795.5	526,873.9	1,121.50				Average	
		6	238	2,449,938.8	526,882.0	1,125.10				Average	Y
		7	239	2,450,284.0	526,935.7	1,128.20				Average	
		8	240	2,450,382.0	526,952.8	1,128.30				Average	
		9	241	2,450,447.0	526,962.4	1,128.30				Average	
		10	242	2,451,048.2	527,065.2	1,139.30				Average	
		11	243	2,451,189.5	527,089.6	1,139.60				Average	
		12	244	2,451,629.5	527,165.9	1,132.70					
Mahoning WB-2	12.0	12	256	2,451,627.5	527,174.6	1,132.70				Average	
		11	255	2,451,187.5	527,098.5	1,139.60				Average	
		10	254	2,451,048.2	527,073.9	1,139.30				Average	
		9	253	2,450,444.8	526,972.6	1,128.30				Average	
		8	252	2,450,379.0	526,965.6	1,128.70				Average	
		7	251	2,450,279.0	526,947.2	1,128.20				Average	Y
		6	250	2,449,935.2	526,894.7	1,123.60				Average	
		5	249	2,449,791.5	526,884.8	1,120.60				Average	
		4	248	2,449,593.5	526,879.2	1,117.10				Average	
		3	247	2,449,487.5	526,877.7	1,114.50				Average	
		2	246	2,449,182.0	526,872.2	1,112.60				Average	
		1	245	2,448,759.8	526,864.8	1,121.10					

**INPUT: ROADWAYS**

**MAH SR11/2386**

Mahoning WB-1	12.0	12	268	2,451,625.2	527,184.8	1,132.70				Average	
		11	267	2,451,184.5	527,110.5	1,139.60				Average	
		10	266	2,451,046.0	527,085.6	1,139.30				Average	
		9	265	2,450,440.5	526,985.9	1,128.30				Average	
		8	264	2,450,375.5	526,978.0	1,128.70				Average	
		7	263	2,450,274.5	526,960.4	1,128.20				Average	Y
		6	262	2,449,931.5	526,906.1	1,123.60				Average	
		5	261	2,449,791.5	526,896.8	1,120.60				Average	
		4	260	2,449,593.2	526,891.2	1,117.10				Average	
		3	259	2,449,487.5	526,889.7	1,114.50				Average	
		2	258	2,449,182.0	526,884.2	1,112.60				Average	
		1	257	2,448,759.8	526,876.8	1,121.10					
Ramp: Mahoning to SR 11S	12.0	22	290	2,449,830.5	526,832.2	1,123.60	Onramp	15.00	100	Average	
		21	289	2,449,891.5	526,734.7	1,126.10				Average	
		20	288	2,449,949.0	526,636.5	1,127.80				Average	
		19	287	2,450,029.5	526,501.5	1,128.20				Average	
		18	286	2,450,073.5	526,419.2	1,128.50				Average	
		17	285	2,450,112.0	526,327.8	1,127.30				Average	
		16	284	2,450,142.0	526,248.3	1,125.50				Average	
		15	283	2,450,175.8	526,143.3	1,127.30				Average	
		14	282	2,450,205.8	526,039.5	1,128.10				Average	
		13	281	2,450,233.0	525,932.0	1,129.50				Average	
		12	280	2,450,257.0	525,827.2	1,131.20				Average	
		11	279	2,450,277.2	525,701.7	1,132.20				Average	
		10	278	2,450,292.2	525,595.9	1,134.50				Average	
		9	277	2,450,303.2	525,497.7	1,135.00				Average	
		8	276	2,450,309.5	525,417.1	1,135.00				Average	
		7	275	2,450,320.2	525,267.3	1,136.30				Average	
		6	274	2,450,326.8	525,124.6	1,136.60				Average	
		5	273	2,450,328.0	525,027.6	1,137.00				Average	
		4	272	2,450,330.0	524,935.9	1,137.50				Average	
		3	271	2,450,329.2	524,720.5	1,139.00				Average	
		2	270	2,450,327.8	524,457.3	1,139.60				Average	
		1	269	2,450,322.8	524,116.3	1,140.70					
Ramp: SR 11N to Mahoning	12.0	1	291	2,450,461.0	524,726.6	1,138.90				Average	
		2	292	2,450,470.0	524,786.7	1,138.80				Average	
		3	293	2,450,472.5	524,942.3	1,138.50				Average	
		4	294	2,450,477.2	525,119.1	1,138.70				Average	
		5	295	2,450,481.8	525,277.6	1,138.30				Average	

INPUT: ROADWAYS

MAH SR11/2386

		6	296	2,450,484.8	525,426.3	1,137.90				Average	
		7	297	2,450,487.0	525,576.0	1,136.70				Average	
		8	298	2,450,488.5	525,676.4	1,136.00				Average	
		9	299	2,450,485.0	525,772.0	1,136.00				Average	
		10	300	2,450,482.0	525,906.4	1,137.60				Average	
		11	301	2,450,473.5	526,083.0	1,139.30				Average	
		12	302	2,450,456.5	526,452.9	1,139.70				Average	
		13	303	2,450,440.8	526,903.0	1,128.50					
Oakcrest WB	12.0	6	309	2,451,311.2	523,235.6	1,147.10				Average	
		5	308	2,450,966.0	523,236.4	1,145.10				Average	
		4	307	2,450,530.5	523,230.8	1,159.10				Average	Y
		3	306	2,450,196.0	523,223.2	1,159.10				Average	
		2	305	2,449,784.2	523,217.4	1,151.00				Average	
		1	304	2,449,408.0	523,211.2	1,158.50					
Oakcrest EB	12.0	1	310	2,449,408.0	523,199.2	1,158.50				Average	
		2	311	2,449,784.2	523,205.4	1,151.00				Average	
		3	312	2,450,196.0	523,211.2	1,159.10				Average	Y
		4	313	2,450,530.5	523,218.8	1,159.10				Average	
		5	314	2,450,966.0	523,224.4	1,145.00				Average	
		6	315	2,451,311.2	523,223.6	1,147.00					
New EB	12.0	1	316	2,449,044.0	521,176.3	1,149.00				Average	
		2	317	2,449,744.8	521,189.4	1,152.90				Average	
		3	318	2,449,882.0	521,191.5	1,157.40				Average	
		4	319	2,449,970.2	521,193.1	1,161.30				Average	
		5	320	2,450,047.5	521,186.9	1,163.90				Average	
		6	321	2,450,149.0	521,169.1	1,166.80				Average	Y
		7	322	2,450,480.8	521,082.0	1,167.50				Average	
		8	323	2,450,564.5	521,064.3	1,165.80				Average	
		9	324	2,450,649.0	521,056.2	1,163.20				Average	
		10	325	2,450,731.5	521,053.5	1,161.00				Average	
		11	326	2,450,871.8	521,053.8	1,158.00				Average	
		12	327	2,451,472.5	521,058.8	1,156.10					
New WB	12.0	12	328	2,451,472.5	521,070.8	1,156.10				Average	
		11	329	2,450,872.0	521,065.8	1,158.00				Average	
		10	330	2,450,731.5	521,065.5	1,159.20				Average	
		9	331	2,450,649.2	521,068.2	1,162.80				Average	
		8	332	2,450,564.5	521,076.3	1,165.80				Average	
		7	333	2,450,480.8	521,094.0	1,166.00				Average	Y
		6	334	2,450,149.0	521,181.1	1,166.80				Average	

**INPUT: ROADWAYS**

**MAH SR11/2386**

		5	335	2,450,047.5	521,198.9	1,163.90				Average	
		4	336	2,449,970.5	521,205.1	1,161.30				Average	
		3	337	2,449,882.0	521,203.5	1,157.40				Average	
		2	338	2,449,745.0	521,201.4	1,152.90				Average	
		1	339	2,449,044.2	521,188.3	1,149.00					

INPUT: TRAFFIC FOR LAeq1h Volumes

MAH SR11/2386

ASC Group, Inc. mas		5 April 2018 TNM 2.5										
INPUT: TRAFFIC FOR LAeq1h Volumes		MAH SR11/2386										
PROJECT/CONTRACT:		existing-NSA5, 7 Nashua-Inglewood										
RUN:												
Roadway	Points											
Name	Name	No.	Segment		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
SR11 NB-1	1	1	820	65	7	65	62	65	10	65	8	65
	2	2	820	65	7	65	62	65	10	65	8	65
	3	3	820	65	7	65	62	65	10	65	8	65
	4	4	820	65	7	65	62	65	10	65	8	65
	5	5	820	65	7	65	62	65	10	65	8	65
	6	6	820	65	7	65	62	65	10	65	8	65
	7	7	820	65	7	65	62	65	10	65	8	65
	8	8	820	65	7	65	62	65	10	65	8	65
	9	9	820	65	7	65	62	65	10	65	8	65
	10	10	820	65	7	65	62	65	10	65	8	65
	11	11	820	65	7	65	62	65	10	65	8	65
	12	12	820	65	7	65	62	65	10	65	8	65
	13	13	820	65	7	65	62	65	10	65	8	65
	14	14	820	65	7	65	62	65	10	65	8	65
	15	15	820	65	7	65	62	65	10	65	8	65
	16	16	820	65	7	65	62	65	10	65	8	65
	17	17	820	65	7	65	62	65	10	65	8	65
	18	18	820	65	7	65	62	65	10	65	8	65
	19	19	820	65	7	65	62	65	10	65	8	65
	20	20	820	65	7	65	62	65	10	65	8	65
	21	21	820	65	7	65	62	65	10	65	8	65
	22	22	820	65	7	65	62	65	10	65	8	65
	23	23	820	65	7	65	62	65	10	65	8	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	24	24	820	65	7	65	62	65	10	65	8	65
	25	25	820	65	7	65	62	65	10	65	8	65
	26	26	820	65	7	65	62	65	10	65	8	65
	27	27	820	65	7	65	62	65	10	65	8	65
	28	28	820	65	7	65	62	65	10	65	8	65
	29	29	820	65	7	65	62	65	10	65	8	65
	30	30	820	65	7	65	62	65	10	65	8	65
	31	31	820	65	7	65	62	65	10	65	8	65
	32	32	820	65	7	65	62	65	10	65	8	65
	33	33	820	65	7	65	62	65	10	65	8	65
	34	34	820	65	7	65	62	65	10	65	8	65
	35	35	820	65	7	65	62	65	10	65	8	65
	36	36	820	65	7	65	62	65	10	65	8	65
	37	37	820	65	7	65	62	65	10	65	8	65
	38	38	820	65	7	65	62	65	10	65	8	65
	39	39	820	65	7	65	62	65	10	65	8	65
	40	40	820	65	7	65	62	65	10	65	8	65
	41	41	820	65	7	65	62	65	10	65	8	65
	42	42	820	65	7	65	62	65	10	65	8	65
	43	43										
SR11 NB-2	1	44	820	65	7	65	62	65	10	65	8	65
	2	45	820	65	7	65	62	65	10	65	8	65
	3	46	820	65	7	65	62	65	10	65	8	65
	4	47	820	65	7	65	62	65	10	65	8	65
	5	48	820	65	7	65	62	65	10	65	8	65
	6	49	820	65	7	65	62	65	10	65	8	65
	7	50	820	65	7	65	62	65	10	65	8	65
	8	51	820	65	7	65	62	65	10	65	8	65
	9	52	820	65	7	65	62	65	10	65	8	65
	10	53	820	65	7	65	62	65	10	65	8	65
	11	54	820	65	7	65	62	65	10	65	8	65
	12	55	820	65	7	65	62	65	10	65	8	65
	13	56	820	65	7	65	62	65	10	65	8	65
	14	57	820	65	7	65	62	65	10	65	8	65
	15	58	820	65	7	65	62	65	10	65	8	65
	16	59	820	65	7	65	62	65	10	65	8	65



**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	17	60	820	65	7	65	62	65	10	65	8	65
	18	61	820	65	7	65	62	65	10	65	8	65
	19	62	820	65	7	65	62	65	10	65	8	65
	20	63	820	65	7	65	62	65	10	65	8	65
	21	64	820	65	7	65	62	65	10	65	8	65
	22	65	820	65	7	65	62	65	10	65	8	65
	23	66	820	65	7	65	62	65	10	65	8	65
	24	67	820	65	7	65	62	65	10	65	8	65
	25	68	820	65	7	65	62	65	10	65	8	65
	26	69	820	65	7	65	62	65	10	65	8	65
	27	70	820	65	7	65	62	65	10	65	8	65
	28	71	820	65	7	65	62	65	10	65	8	65
	29	72	820	65	7	65	62	65	10	65	8	65
	30	73	820	65	7	65	62	65	10	65	8	65
	31	74	820	65	7	65	62	65	10	65	8	65
	32	75	820	65	7	65	62	65	10	65	8	65
	33	76	820	65	7	65	62	65	10	65	8	65
	34	77	820	65	7	65	62	65	10	65	8	65
	35	78	820	65	7	65	62	65	10	65	8	65
	36	79	820	65	7	65	62	65	10	65	8	65
	37	80	820	65	7	65	62	65	10	65	8	65
	38	81	820	65	7	65	62	65	10	65	8	65
	39	82	820	65	7	65	62	65	10	65	8	65
	40	83	820	65	7	65	62	65	10	65	8	65
	41	84	820	65	7	65	62	65	10	65	8	65
	42	85	820	65	7	65	62	65	10	65	8	65
	43	86										
SR11 SB-2	1	87	803	65	6	65	58	65	9	65	4	65
	2	88	803	65	6	65	58	65	9	65	4	65
	3	89	803	65	6	65	58	65	9	65	4	65
	4	90	803	65	6	65	58	65	9	65	4	65
	5	91	803	65	6	65	58	65	9	65	4	65
	6	92	803	65	6	65	58	65	9	65	4	65
	7	93	803	65	6	65	58	65	9	65	4	65
	8	94	803	65	6	65	58	65	9	65	4	65
	9	95	803	65	6	65	58	65	9	65	4	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	10	96	803	65	6	65	58	65	9	65	4	65
	11	97	803	65	6	65	58	65	9	65	4	65
	12	98	803	65	6	65	58	65	9	65	4	65
	13	99	803	65	6	65	58	65	9	65	4	65
	14	100	803	65	6	65	58	65	9	65	4	65
	15	101	803	65	6	65	58	65	9	65	4	65
	16	102	803	65	6	65	58	65	9	65	4	65
	17	103	803	65	6	65	58	65	9	65	4	65
	18	104	803	65	6	65	58	65	9	65	4	65
	19	105	803	65	6	65	58	65	9	65	4	65
	20	106	803	65	6	65	58	65	9	65	4	65
	21	107	803	65	6	65	58	65	9	65	4	65
	22	108	803	65	6	65	58	65	9	65	4	65
	23	109	803	65	6	65	58	65	9	65	4	65
	24	110	803	65	6	65	58	65	9	65	4	65
	25	111	803	65	6	65	58	65	9	65	4	65
	26	112	803	65	6	65	58	65	9	65	4	65
	27	113	803	65	6	65	58	65	9	65	4	65
	28	114	803	65	6	65	58	65	9	65	4	65
	29	115	803	65	6	65	58	65	9	65	4	65
	30	116	803	65	6	65	58	65	9	65	4	65
	31	117	803	65	6	65	58	65	9	65	4	65
	32	118	803	65	6	65	58	65	9	65	4	65
	33	119	803	65	6	65	58	65	9	65	4	65
	34	120	803	65	6	65	58	65	9	65	4	65
	35	121	803	65	6	65	58	65	9	65	4	65
	36	122	803	65	6	65	58	65	9	65	4	65
	37	123	803	65	6	65	58	65	9	65	4	65
	38	124	803	65	6	65	58	65	9	65	4	65
	39	125	803	65	6	65	58	65	9	65	4	65
	40	126	803	65	6	65	58	65	9	65	4	65
	41	127	803	65	6	65	58	65	9	65	4	65
	42	128	803	65	6	65	58	65	9	65	4	65
	43	129										
SR11 SB-1	43	172	803	65	6	65	58	65	9	65	4	65
	42	171	803	65	6	65	58	65	9	65	4	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	41	170	803	65	6	65	58	65	9	65	4	65
	40	169	803	65	6	65	58	65	9	65	4	65
	39	168	803	65	6	65	58	65	9	65	4	65
	38	167	803	65	6	65	58	65	9	65	4	65
	37	166	803	65	6	65	58	65	9	65	4	65
	36	165	803	65	6	65	58	65	9	65	4	65
	35	164	803	65	6	65	58	65	9	65	4	65
	34	163	803	65	6	65	58	65	9	65	4	65
	33	162	803	65	6	65	58	65	9	65	4	65
	32	161	803	65	6	65	58	65	9	65	4	65
	31	160	803	65	6	65	58	65	9	65	4	65
	30	159	803	65	6	65	58	65	9	65	4	65
	29	158	803	65	6	65	58	65	9	65	4	65
	28	157	803	65	6	65	58	65	9	65	4	65
	27	156	803	65	6	65	58	65	9	65	4	65
	26	155	803	65	6	65	58	65	9	65	4	65
	25	154	803	65	6	65	58	65	9	65	4	65
	24	153	803	65	6	65	58	65	9	65	4	65
	23	152	803	65	6	65	58	65	9	65	4	65
	22	151	803	65	6	65	58	65	9	65	4	65
	21	150	803	65	6	65	58	65	9	65	4	65
	20	149	803	65	6	65	58	65	9	65	4	65
	19	148	803	65	6	65	58	65	9	65	4	65
	18	147	803	65	6	65	58	65	9	65	4	65
	17	146	803	65	6	65	58	65	9	65	4	65
	16	145	803	65	6	65	58	65	9	65	4	65
	15	144	803	65	6	65	58	65	9	65	4	65
	14	143	803	65	6	65	58	65	9	65	4	65
	13	142	803	65	6	65	58	65	9	65	4	65
	12	141	803	65	6	65	58	65	9	65	4	65
	11	140	803	65	6	65	58	65	9	65	4	65
	10	139	803	65	6	65	58	65	9	65	4	65
	9	138	803	65	6	65	58	65	9	65	4	65
	8	137	803	65	6	65	9	65	9	65	4	65
	7	136	803	65	6	65	58	65	9	65	4	65
	6	135	803	65	6	65	58	65	9	65	4	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	5	134	803	65	6	65	58	65	9	65	4	65
	4	133	803	65	6	65	58	65	9	65	4	65
	3	132	803	65	6	65	58	65	9	65	4	65
	2	131	803	65	6	65	58	65	9	65	4	65
	1	130										
Mahoning EB-1	1	209	663	35	3	35	15	35	2	35	2	35
	2	210	663	35	3	35	15	35	2	35	2	35
	3	211	663	35	3	35	15	35	2	35	2	35
	4	212	663	35	3	35	15	35	2	35	2	35
	5	213	663	35	3	35	15	35	2	35	2	35
	6	214	663	35	3	35	15	35	2	35	2	35
	7	215	663	35	3	35	15	35	2	35	2	35
	8	216	663	35	3	35	15	35	2	35	2	35
	9	217	663	35	3	35	15	35	2	35	2	35
	10	218	663	35	3	35	15	35	2	35	2	35
	11	219	663	35	3	35	15	35	2	35	2	35
	12	220										
Mahoning EB-2	1	221	663	35	3	35	15	35	2	35	2	35
	2	222	663	35	3	35	15	35	2	35	2	35
	3	223	663	35	3	35	15	35	2	35	2	35
	4	224	663	35	3	35	15	35	2	35	2	35
	5	225	663	35	3	35	15	35	2	35	2	35
	6	226	663	35	3	35	15	35	2	35	2	35
	7	227	663	35	3	35	15	35	2	35	2	35
	8	228	663	35	3	35	15	35	2	35	2	35
	9	229	663	35	3	35	15	35	2	35	2	35
	10	230	663	35	3	35	15	35	2	35	2	35
	11	231	663	35	3	35	15	35	2	35	2	35
	12	232										
Mahoning WB-center	1	233	0	0	0	0	0	0	0	0	0	0
	2	234	0	0	0	0	0	0	0	0	0	0
	3	235	0	0	0	0	0	0	0	0	0	0
	4	236	0	0	0	0	0	0	0	0	0	0
	5	237	0	0	0	0	0	0	0	0	0	0
	6	238	0	0	0	0	0	0	0	0	0	0
	7	239	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	8	240	0	0	0	0	0	0	0	0	0	0
	9	241	0	0	0	0	0	0	0	0	0	0
	10	242	0	0	0	0	0	0	0	0	0	0
	11	243	0	0	0	0	0	0	0	0	0	0
	12	244										
Mahoning WB-2	12	256	663	35	3	35	15	35	2	35	2	35
	11	255	663	35	3	35	15	35	2	35	2	35
	10	254	663	35	3	35	15	35	2	35	2	35
	9	253	663	35	3	35	15	35	2	35	2	35
	8	252	663	35	3	35	15	35	2	35	2	35
	7	251	663	35	3	35	15	35	2	35	2	35
	6	250	663	35	3	35	15	35	2	35	2	35
	5	249	663	35	3	35	15	35	2	35	2	35
	4	248	663	35	3	35	15	35	2	35	2	35
	3	247	663	35	3	35	15	35	2	35	2	35
	2	246	663	35	3	35	15	35	2	35	2	35
	1	245										
Mahoning WB-1	12	268	663	35	3	35	15	35	2	35	2	35
	11	267	663	35	3	35	15	35	2	35	2	35
	10	266	663	35	3	35	15	35	2	35	2	35
	9	265	663	35	3	35	15	35	2	35	2	35
	8	264	663	35	3	35	15	35	2	35	2	35
	7	263	663	35	3	35	15	35	2	35	2	35
	6	262	663	35	3	35	15	35	2	35	2	35
	5	261	663	35	3	35	15	35	2	35	2	35
	4	260	663	35	3	35	15	35	2	35	2	35
	3	259	663	35	3	35	15	35	2	35	2	35
	2	258	663	35	3	35	15	35	2	35	2	35
	1	257										
Ramp: Mahoning to SR 11S	22	290	304	65	1	65	6	65	1	65	0	0
	21	289	304	65	1	65	6	65	1	65	0	0
	20	288	304	65	1	65	6	65	1	65	0	0
	19	287	304	65	1	65	6	65	1	65	0	0
	18	286	304	65	1	65	6	65	1	65	0	0
	17	285	304	65	1	65	6	65	1	65	0	0
	16	284	304	65	1	65	6	65	1	65	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	15	283	304	65	1	65	6	65	1	65	0	0
	14	282	304	65	1	65	6	65	1	65	0	0
	13	281	304	65	1	65	6	65	1	65	0	0
	12	280	304	65	1	65	6	65	1	65	0	0
	11	279	304	65	1	65	6	65	1	65	0	0
	10	278	304	65	1	65	6	65	1	65	0	0
	9	277	304	65	1	65	6	65	1	65	0	0
	8	276	304	65	1	65	6	65	1	65	0	0
	7	275	304	65	1	65	6	65	1	65	0	0
	6	274	304	65	1	65	6	65	1	65	0	0
	5	273	304	65	1	65	6	65	1	65	0	0
	4	272	304	65	1	65	6	65	1	65	0	0
	3	271	304	65	1	65	6	65	1	65	0	0
	2	270	304	65	1	65	6	65	1	65	0	0
	1	269										
Ramp: SR 11N to Mahoning	1	291	319	65	2	65	7	65	1	65	1	65
	2	292	319	65	2	65	7	65	1	65	1	65
	3	293	319	65	2	65	7	65	1	65	1	65
	4	294	319	65	2	65	7	65	1	65	1	65
	5	295	319	65	2	65	7	65	1	65	1	65
	6	296	319	65	2	65	7	65	1	65	1	65
	7	297	319	65	2	65	7	65	1	65	1	65
	8	298	319	60	2	60	7	60	1	60	1	60
	9	299	319	50	2	50	7	50	1	50	1	50
	10	300	319	40	2	40	7	40	1	40	1	40
	11	301	319	30	2	30	7	30	1	30	1	30
	12	302	319	20	2	20	7	20	1	20	1	20
	13	303										
Oakcrest WB	6	309	0	0	0	0	0	0	0	0	0	0
	5	308	0	0	0	0	0	0	0	0	0	0
	4	307	0	0	0	0	0	0	0	0	0	0
	3	306	0	0	0	0	0	0	0	0	0	0
	2	305	0	0	0	0	0	0	0	0	0	0
	1	304										
Oakcrest EB	1	310	0	0	0	0	0	0	0	0	0	0
	2	311	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	3	312	0	0	0	0	0	0	0	0	0	0
	4	313	0	0	0	0	0	0	0	0	0	0
	5	314	0	0	0	0	0	0	0	0	0	0
	6	315										
New EB	1	316	303	35	1	35	7	35	1	35	1	35
	2	317	303	35	1	35	7	35	1	35	1	35
	3	318	303	35	1	35	7	35	1	35	1	35
	4	319	303	35	1	35	7	35	1	35	1	35
	5	320	303	35	1	35	7	35	1	35	1	35
	6	321	303	35	1	35	7	35	1	35	1	35
	7	322	303	35	1	35	7	35	1	35	1	35
	8	323	303	35	1	35	7	35	1	35	1	35
	9	324	303	35	1	35	7	35	1	35	1	35
	10	325	303	35	1	35	7	35	1	35	1	35
	11	326	303	35	1	35	7	35	1	35	1	35
	12	327										
New WB	12	328	303	35	1	35	7	35	1	35	1	35
	11	329	303	35	1	35	7	35	1	35	1	35
	10	330	303	35	1	35	7	35	1	35	1	35
	9	331	303	35	1	35	7	35	1	35	1	35
	8	332	303	35	1	35	7	35	1	35	1	35
	7	333	303	35	1	35	7	35	1	35	1	35
	6	334	303	35	1	35	7	35	1	35	1	35
	5	335	303	35	1	35	7	35	1	35	1	35
	4	336	303	35	1	35	7	35	1	35	1	35
	3	337	303	35	1	35	7	35	1	35	1	35
	2	338	303	35	1	35	7	35	1	35	1	35
	1	339										

**INPUT: RECEIVERS**

**MAH SR11/2386**

ASC Group, Inc.						5 April 2018					
mas						TNM 2.5					

**INPUT: RECEIVERS**

**PROJECT/CONTRACT:** MAH SR11/2386  
**RUN:** existing-NSA5, 7 Nashua-Inglewood

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	
7-1	1	1	2,450,153.8	523,292.9	1,147.97	5.00	0.00	66	10.0	8.0	Y
7-2	2	1	2,450,158.2	523,350.1	1,148.62	5.00	0.00	66	10.0	8.0	Y
7-3	3	1	2,450,160.2	523,416.6	1,147.61	5.00	0.00	66	10.0	8.0	Y
7-4	4	1	2,450,167.2	523,494.2	1,146.46	5.00	0.00	66	10.0	8.0	Y
7-5	5	1	2,450,159.2	523,553.5	1,145.51	5.00	0.00	66	10.0	8.0	Y
7-6	6	1	2,450,154.5	523,635.2	1,145.80	5.00	0.00	66	10.0	8.0	Y
7-7	7	1	2,450,158.8	523,704.9	1,144.92	5.00	0.00	66	10.0	8.0	Y
7-8	8	1	2,450,027.2	523,769.4	1,145.64	5.00	0.00	66	10.0	8.0	Y
7-9	10	1	2,450,158.8	523,823.4	1,143.96	5.00	0.00	66	10.0	8.0	Y
7-10	11	1	2,450,161.0	523,901.8	1,143.05	5.00	0.00	66	10.0	8.0	Y
7-11	12	1	2,450,169.8	523,993.7	1,141.47	5.00	0.00	66	10.0	8.0	Y
7-12	13	1	2,450,023.0	524,031.8	1,143.11	5.00	0.00	66	10.0	8.0	Y
7-13	14	1	2,450,171.5	524,114.8	1,140.22	5.00	0.00	66	10.0	8.0	Y
7-14	15	1	2,450,174.2	524,184.1	1,140.06	5.00	0.00	66	10.0	8.0	Y
7-15	16	1	2,450,012.0	524,237.1	1,141.60	5.00	0.00	66	10.0	8.0	Y
7-16	17	1	2,450,013.5	524,297.6	1,141.93	5.00	0.00	66	10.0	8.0	Y
7-17	18	1	2,450,014.8	524,347.6	1,142.16	5.00	0.00	66	10.0	8.0	Y
7-18	19	1	2,450,015.8	524,388.4	1,143.44	5.00	0.00	66	10.0	8.0	Y
7-19	20	1	2,450,167.8	524,263.8	1,139.53	5.00	0.00	66	10.0	8.0	Y
7-20	21	1	2,450,187.0	524,374.4	1,141.80	5.00	0.00	66	10.0	8.0	Y
7-21	22	1	2,450,119.0	524,598.7	1,142.13	5.00	0.00	66	10.0	8.0	Y
7-22	23	1	2,450,128.0	524,653.3	1,141.67	5.00	0.00	66	10.0	8.0	Y



**INPUT: RECEIVERS**

**MAH SR11/2386**

7-23	24	1	2,450,141.8	524,746.2	1,144.00	5.00	0.00	66	10.0	8.0	Y
7-24	25	1	2,450,151.2	524,824.9	1,139.63	5.00	0.00	66	10.0	8.0	Y
7-25	26	1	2,450,104.2	524,897.0	1,144.29	5.00	0.00	66	10.0	8.0	Y
7-26	27	1	2,450,137.2	524,963.4	1,140.32	5.00	0.00	66	10.0	8.0	Y
7-27	28	1	2,450,136.8	525,043.8	1,139.76	5.00	0.00	66	10.0	8.0	Y
7-28	29	1	2,450,132.8	525,101.9	1,139.73	5.00	0.00	66	10.0	8.0	Y
7-29	30	1	2,450,139.2	525,183.2	1,139.70	5.00	0.00	66	10.0	8.0	Y
7-30	31	1	2,450,146.2	525,239.6	1,141.04	5.00	0.00	66	10.0	8.0	Y
7-31	32	1	2,450,142.8	525,395.8	1,138.48	5.00	0.00	66	10.0	8.0	Y
7-32	33	1	2,450,136.0	525,447.9	1,137.96	5.00	0.00	66	10.0	8.0	Y
7-33	34	1	2,450,136.0	525,516.1	1,138.06	5.00	0.00	66	10.0	8.0	Y
7-34	35	1	2,450,137.5	525,584.3	1,138.58	5.00	0.00	66	10.0	8.0	Y
7-35	36	1	2,450,133.0	525,646.7	1,139.63	5.00	0.00	66	10.0	8.0	Y
7-36	37	1	2,450,130.2	525,711.2	1,139.76	5.00	0.00	66	10.0	8.0	Y
7-37	38	1	2,450,128.0	525,775.1	1,141.37	5.00	0.00	66	10.0	8.0	Y
7-38	39	1	2,450,126.8	525,839.4	1,141.47	5.00	0.00	66	10.0	8.0	Y
7-39	40	1	2,450,124.2	525,912.0	1,142.16	5.00	0.00	66	10.0	8.0	Y
7-40	41	1	2,450,124.8	525,966.9	1,142.95	5.00	0.00	66	10.0	8.0	Y
7-41	42	1	2,450,118.8	526,045.8	1,144.65	5.00	0.00	66	10.0	8.0	Y
7-42	43	1	2,450,085.8	526,135.4	1,143.60	5.00	0.00	66	10.0	8.0	Y
7-43	44	1	2,449,819.5	523,283.7	1,151.84	5.00	0.00	66	10.0	8.0	Y
7-44	45	1	2,449,814.8	523,344.3	1,151.05	5.00	0.00	66	10.0	8.0	Y
7-45	46	1	2,449,815.5	523,407.3	1,149.97	5.00	0.00	66	10.0	8.0	Y
7-46	47	1	2,449,816.5	523,491.9	1,147.74	5.00	0.00	66	10.0	8.0	Y
7-47	48	1	2,449,814.0	523,644.1	1,146.33	5.00	0.00	66	10.0	8.0	Y
7-48	49	1	2,449,815.8	523,689.2	1,145.70	5.00	0.00	66	10.0	8.0	Y
7-49	50	1	2,449,810.5	523,779.8	1,145.08	5.00	0.00	66	10.0	8.0	Y
7-50	51	1	2,449,811.8	523,849.2	1,144.65	5.00	0.00	66	10.0	8.0	Y
7-51	52	1	2,449,779.5	524,016.3	1,147.44	5.00	0.00	66	10.0	8.0	Y
7-52	53	1	2,449,792.8	524,096.9	1,144.78	5.00	0.00	66	10.0	8.0	Y
7-53	54	1	2,449,792.2	524,172.7	1,144.62	5.00	0.00	66	10.0	8.0	Y
7-54	55	1	2,449,791.0	524,237.3	1,144.69	5.00	0.00	66	10.0	8.0	Y
7-55	56	1	2,449,790.0	524,316.2	1,144.55	5.00	0.00	66	10.0	8.0	Y
7-56	57	1	2,449,803.2	524,385.6	1,144.36	5.00	0.00	66	10.0	8.0	Y
7-57	58	1	2,449,828.5	524,455.2	1,144.75	5.00	0.00	66	10.0	8.0	Y
7-58	59	1	2,449,862.0	524,519.2	1,145.01	5.00	0.00	66	10.0	8.0	Y

**INPUT: RECEIVERS**

**MAH SR11/2386**

7-59	60	1	2,449,891.8	524,580.7	1,144.88	5.00	0.00	66	10.0	8.0	Y
7-60	61	1	2,449,934.2	524,690.5	1,145.87	5.00	0.00	66	10.0	8.0	Y
7-61	62	1	2,449,831.8	524,698.5	1,148.72	5.00	0.00	66	10.0	8.0	Y
7-62	63	1	2,449,933.5	524,889.8	1,146.00	5.00	0.00	66	10.0	8.0	Y
7-63	64	1	2,449,798.0	524,963.4	1,149.64	5.00	0.00	66	10.0	8.0	Y
7-64	65	1	2,449,931.2	524,998.0	1,146.46	5.00	0.00	66	10.0	8.0	Y
7-65	66	1	2,449,933.5	525,069.7	1,146.52	5.00	0.00	66	10.0	8.0	Y
7-66	67	1	2,449,927.8	525,152.3	1,146.10	5.00	0.00	66	10.0	8.0	Y
7-67	68	1	2,449,789.2	525,175.3	1,149.41	5.00	0.00	66	10.0	8.0	Y
7-68	69	1	2,449,921.0	525,226.9	1,145.57	5.00	0.00	66	10.0	8.0	Y
7-69	70	1	2,449,922.2	525,382.6	1,142.49	5.00	0.00	66	10.0	8.0	Y
7-70	71	1	2,449,921.8	525,453.0	1,141.47	5.00	0.00	66	10.0	8.0	Y
7-71	72	1	2,449,918.0	525,521.9	1,140.85	5.00	0.00	66	10.0	8.0	Y
7-72	73	1	2,449,918.0	525,579.2	1,140.55	5.00	0.00	66	10.0	8.0	Y
7-73	74	1	2,449,912.0	525,643.0	1,142.26	5.00	0.00	66	10.0	8.0	Y
7-74	75	1	2,449,912.8	525,709.8	1,143.31	5.00	0.00	66	10.0	8.0	Y
7-75	76	1	2,449,910.0	525,772.2	1,143.37	5.00	0.00	66	10.0	8.0	Y
7-76	77	1	2,449,911.8	525,834.0	1,143.11	5.00	0.00	66	10.0	8.0	Y
7-77	78	1	2,449,907.8	525,911.1	1,142.19	5.00	0.00	66	10.0	8.0	Y
7-78	79	1	2,449,903.2	525,974.8	1,140.98	5.00	0.00	66	10.0	8.0	Y
7-79	80	1	2,449,901.5	526,030.5	1,140.19	5.00	0.00	66	10.0	8.0	Y
7-80	81	1	2,449,903.0	526,085.0	1,139.21	5.00	0.00	66	10.0	8.0	Y
7-81	82	1	2,449,897.2	526,162.6	1,138.62	5.00	0.00	66	10.0	8.0	Y
7-82	83	1	2,449,892.2	526,301.8	1,136.39	5.00	0.00	66	10.0	8.0	Y
7-83	84	1	2,449,893.8	526,379.1	1,133.86	5.00	0.00	66	10.0	8.0	Y
7-84	85	1	2,449,890.8	526,449.4	1,132.97	5.00	0.00	66	10.0	8.0	Y
7-85	86	1	2,449,887.8	526,526.3	1,131.73	5.00	0.00	66	10.0	8.0	Y
7-86	87	1	2,449,763.0	525,386.2	1,144.65	5.00	0.00	66	10.0	8.0	Y
7-87	88	1	2,449,763.0	525,456.6	1,141.83	5.00	0.00	66	10.0	8.0	Y
7-88	89	1	2,449,758.0	525,517.6	1,141.40	5.00	0.00	66	10.0	8.0	Y
7-89	90	1	2,449,751.2	525,582.1	1,141.31	5.00	0.00	66	10.0	8.0	Y
7-90	91	1	2,449,753.2	525,640.5	1,142.98	5.00	0.00	66	10.0	8.0	Y
7-91	92	1	2,449,749.5	525,697.8	1,143.70	5.00	0.00	66	10.0	8.0	Y
7-92	93	1	2,449,749.8	525,775.1	1,141.57	5.00	0.00	66	10.0	8.0	Y
7-93	94	1	2,449,746.5	525,835.2	1,140.62	5.00	0.00	66	10.0	8.0	Y
7-94	95	1	2,449,743.8	525,897.9	1,139.99	5.00	0.00	66	10.0	8.0	Y

**INPUT: RECEIVERS**

**MAH SR11/2386**

7-95	96	1	2,449,741.5	525,964.2	1,138.32	5.00	0.00	66	10.0	8.0	Y
7-96	97	1	2,449,739.5	526,040.3	1,133.56	5.00	0.00	66	10.0	8.0	Y
7-97	98	1	2,449,730.0	526,167.1	1,130.15	5.00	0.00	66	10.0	8.0	Y
7-98	99	1	2,449,736.8	526,273.7	1,131.50	5.00	0.00	66	10.0	8.0	Y
7-99	100	1	2,449,729.2	526,367.9	1,129.63	5.00	0.00	66	10.0	8.0	Y
7-100	101	1	2,449,729.2	526,442.7	1,126.25	5.00	0.00	66	10.0	8.0	Y
7-101	102	1	2,449,507.0	526,283.5	1,124.11	5.00	0.00	66	10.0	8.0	Y
7-102	103	1	2,449,505.8	526,359.4	1,123.56	5.00	0.00	66	10.0	8.0	Y
7-103	104	1	2,449,493.0	526,442.0	1,118.54	5.00	0.00	66	10.0	8.0	Y
7-104	105	1	2,449,493.8	526,521.4	1,118.14	5.00	0.00	66	10.0	8.0	Y
5-1	107	1	2,450,067.8	521,337.2	1,145.80	5.00	0.00	66	10.0	8.0	Y
5-2	108	1	2,450,078.0	521,444.0	1,146.98	5.00	0.00	66	10.0	8.0	Y
5-3	109	1	2,450,079.0	521,517.6	1,146.39	5.00	0.00	66	10.0	8.0	Y
5-4	110	1	2,450,072.0	521,627.3	1,146.39	5.00	0.00	66	10.0	8.0	Y
5-5	111	1	2,449,974.0	521,285.8	1,148.49	5.00	0.00	66	10.0	8.0	Y
5-6	112	1	2,449,942.5	521,410.0	1,146.85	5.00	0.00	66	10.0	8.0	Y
5-7	113	1	2,449,952.2	521,530.4	1,147.77	5.00	0.00	66	10.0	8.0	Y
5-8	114	1	2,450,008.2	521,690.2	1,144.82	5.00	0.00	66	10.0	8.0	Y
5-9	115	1	2,449,888.5	521,270.3	1,145.05	5.00	0.00	66	10.0	8.0	Y
5-10	116	1	2,449,875.5	521,406.8	1,148.56	5.00	0.00	66	10.0	8.0	Y
5-11	117	1	2,449,864.8	521,526.1	1,148.59	5.00	0.00	66	10.0	8.0	Y
5-12	118	1	2,449,920.2	521,727.8	1,145.57	5.00	0.00	66	10.0	8.0	Y
5-13	119	1	2,449,825.2	521,259.6	1,147.70	5.00	0.00	66	10.0	8.0	Y
5-14	120	1	2,449,781.5	521,399.3	1,148.36	5.00	0.00	66	10.0	8.0	Y
5-15	121	1	2,449,786.0	521,548.5	1,148.16	5.00	0.00	66	10.0	8.0	Y
5-16	122	1	2,449,835.8	521,805.8	1,149.21	5.00	0.00	66	10.0	8.0	Y
5-17	123	1	2,449,886.8	521,966.3	1,147.31	5.00	0.00	66	10.0	8.0	Y
5-18	124	1	2,450,020.2	522,161.0	1,144.92	5.00	0.00	66	10.0	8.0	Y
5-19	125	1	2,449,991.2	522,295.9	1,146.56	5.00	0.00	66	10.0	8.0	Y
5-20	126	1	2,450,038.0	522,391.3	1,143.70	5.00	0.00	66	10.0	8.0	Y
5-21	127	1	2,450,038.8	522,558.8	1,144.42	5.00	0.00	66	10.0	8.0	Y
5-22	128	1	2,449,949.8	522,603.9	1,146.03	5.00	0.00	66	10.0	8.0	Y
5-23	129	1	2,449,822.8	522,179.5	1,148.98	5.00	0.00	66	10.0	8.0	Y
5-24	130	1	2,449,794.5	522,349.4	1,148.20	5.00	0.00	66	10.0	8.0	Y
5-25	131	1	2,449,823.2	522,605.8	1,149.15	5.00	0.00	66	10.0	8.0	Y
5-26	132	1	2,449,873.8	522,736.1	1,148.66	5.00	0.00	66	10.0	8.0	Y

**INPUT: RECEIVERS**

**MAH SR11/2386**

5-27	133	1	2,450,026.0	522,732.8	1,147.97	5.00	0.00	66	10.0	8.0	Y
5-28	134	1	2,450,050.0	522,816.2	1,149.02	5.00	0.00	66	10.0	8.0	Y
5-29	135	1	2,450,054.5	522,914.2	1,148.29	5.00	0.00	66	10.0	8.0	Y
5-30	136	1	2,450,054.0	523,002.1	1,147.38	5.00	0.00	66	10.0	8.0	Y
5-31	137	1	2,450,049.2	523,070.3	1,149.71	5.00	0.00	66	10.0	8.0	Y
5-32	138	1	2,450,051.2	523,149.8	1,148.85	5.00	0.00	66	10.0	8.0	Y
5-33	139	1	2,449,814.8	522,961.7	1,151.12	5.00	0.00	66	10.0	8.0	Y
5-34	140	1	2,449,830.0	523,052.4	1,150.39	5.00	0.00	66	10.0	8.0	Y
5-35	141	1	2,449,825.2	523,133.2	1,150.72	5.00	0.00	66	10.0	8.0	Y
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**MAH SR11/2386**

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**MAH SR11/2386**

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**INPUT: RECEIVERS****MAH SR11/2386**

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7-104 residence											

RESULTS: SOUND LEVELS

MAH SR11/2386

ASC Group, Inc. mas									5 April 2018 TNM 2.5 Calculated with TNM 2.5			
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:	MAH SR11/2386											
RUN:	existing-NSA5, 7 Nashua-Inglewood											
BARRIER DESIGN:	INPUT HEIGHTS											
ATMOSPHERICS:	68 deg F, 50% RH											
	Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.											

Receiver												
Name	No.	#DUs	Existing LAeq1h	No Barrier				With Barrier				
				LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n	Type Impact	Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
7-1	1	1	0.0	65.4	66	65.4	10	----	61.8	3.6	8	-4.4
7-2	2	1	0.0	66.5	66	66.5	10	Snd Lvl	62.2	4.3	8	-3.7
7-3	3	1	0.0	66.7	66	66.7	10	Snd Lvl	62.0	4.7	8	-3.3
7-4	4	1	0.0	67.2	66	67.2	10	Snd Lvl	62.2	5.0	8	-3.0
7-5	5	1	0.0	66.5	66	66.5	10	Snd Lvl	61.8	4.7	8	-3.3
7-6	6	1	0.0	66.5	66	66.5	10	Snd Lvl	62.6	3.9	8	-4.1
7-7	7	1	0.0	66.7	66	66.7	10	Snd Lvl	62.7	4.0	8	-4.0
7-8	8	1	0.0	62.0	66	62.0	10	----	61.0	1.0	8	-7.0
7-9	10	1	0.0	66.7	66	66.7	10	Snd Lvl	62.7	4.0	8	-4.0
7-10	11	1	0.0	66.8	66	66.8	10	Snd Lvl	62.9	3.9	8	-4.1
7-11	12	1	0.0	67.2	66	67.2	10	Snd Lvl	63.3	3.9	8	-4.1
7-12	13	1	0.0	62.0	66	62.0	10	----	61.2	0.8	8	-7.2
7-13	14	1	0.0	67.7	66	67.7	10	Snd Lvl	63.0	4.7	8	-3.3
7-14	15	1	0.0	68.1	66	68.1	10	Snd Lvl	63.7	4.4	8	-3.6
7-15	16	1	0.0	61.8	66	61.8	10	----	61.1	0.7	8	-7.3
7-16	17	1	0.0	62.0	66	62.0	10	----	61.2	0.8	8	-7.2
7-17	18	1	0.0	62.2	66	62.2	10	----	61.3	0.9	8	-7.1
7-18	19	1	0.0	61.8	66	61.8	10	----	62.0	-0.2	8	-8.2
7-19	20	1	0.0	67.8	66	67.8	10	Snd Lvl	64.0	3.8	8	-4.2
7-20	21	1	0.0	69.5	66	69.5	10	Snd Lvl	65.9	3.6	8	-4.4
7-21	22	1	0.0	66.0	66	66.0	10	Snd Lvl	64.2	1.8	8	-6.2
7-22	23	1	0.0	66.5	66	66.5	10	Snd Lvl	64.5	2.0	8	-6.0
7-23	24	1	0.0	67.7	66	67.7	10	Snd Lvl	66.3	1.4	8	-6.6
7-24	25	1	0.0	67.5	66	67.5	10	Snd Lvl	65.0	2.5	8	-5.5



**RESULTS: SOUND LEVELS**

**MAH SR11/2386**

7-25	26	1	0.0	66.2	66	66.2	10	Snd Lvl	65.2	1.0	8	-7.0
7-26	27	1	0.0	67.0	66	67.0	10	Snd Lvl	64.9	2.1	8	-5.9
7-27	28	1	0.0	66.9	66	66.9	10	Snd Lvl	64.7	2.2	8	-5.8
7-28	29	1	0.0	66.6	66	66.6	10	Snd Lvl	64.6	2.0	8	-6.0
7-29	30	1	0.0	66.7	66	66.7	10	Snd Lvl	64.8	1.9	8	-6.1
7-30	31	1	0.0	67.0	66	67.0	10	Snd Lvl	65.7	1.3	8	-6.7
7-31	32	1	0.0	66.4	66	66.4	10	Snd Lvl	64.5	1.9	8	-6.1
7-32	33	1	0.0	66.1	66	66.1	10	Snd Lvl	63.9	2.2	8	-5.8
7-33	34	1	0.0	66.0	66	66.0	10	Snd Lvl	63.4	2.6	8	-5.4
7-34	35	1	0.0	66.2	66	66.2	10	Snd Lvl	62.8	3.4	8	-4.6
7-35	36	1	0.0	66.3	66	66.3	10	Snd Lvl	62.5	3.8	8	-4.2
7-36	37	1	0.0	66.3	66	66.3	10	Snd Lvl	61.8	4.5	8	-3.5
7-37	38	1	0.0	66.9	66	66.9	10	Snd Lvl	61.9	5.0	8	-3.0
7-38	39	1	0.0	67.2	66	67.2	10	Snd Lvl	61.4	5.8	8	-2.2
7-39	40	1	0.0	67.7	66	67.7	10	Snd Lvl	61.2	6.5	8	-1.5
7-40	41	1	0.0	68.5	66	68.5	10	Snd Lvl	60.8	7.7	8	-0.3
7-41	42	1	0.0	69.6	66	69.6	10	Snd Lvl	61.0	8.6	8	0.6
7-42	43	1	0.0	69.5	66	69.5	10	Snd Lvl	65.1	4.4	8	-3.6
7-43	44	1	0.0	57.3	66	57.3	10	----	58.0	-0.7	8	-8.7
7-44	45	1	0.0	57.2	66	57.2	10	----	56.7	0.5	8	-7.5
7-45	46	1	0.0	56.9	66	56.9	10	----	56.6	0.3	8	-7.7
7-46	47	1	0.0	57.0	66	57.0	10	----	56.4	0.6	8	-7.4
7-47	48	1	0.0	57.2	66	57.2	10	----	56.7	0.5	8	-7.5
7-48	49	1	0.0	57.3	66	57.3	10	----	56.8	0.5	8	-7.5
7-49	50	1	0.0	57.2	66	57.2	10	----	56.8	0.4	8	-7.6
7-50	51	1	0.0	57.2	66	57.2	10	----	56.9	0.3	8	-7.7
7-51	52	1	0.0	56.7	66	56.7	10	----	56.9	-0.2	8	-8.2
7-52	53	1	0.0	56.8	66	56.8	10	----	56.9	-0.1	8	-8.1
7-53	54	1	0.0	56.7	66	56.7	10	----	57.0	-0.3	8	-8.3
7-54	55	1	0.0	56.7	66	56.7	10	----	57.0	-0.3	8	-8.3
7-55	56	1	0.0	56.7	66	56.7	10	----	57.0	-0.3	8	-8.3
7-56	57	1	0.0	57.0	66	57.0	10	----	57.3	-0.3	8	-8.3
7-57	58	1	0.0	57.7	66	57.7	10	----	57.8	-0.1	8	-8.1
7-58	59	1	0.0	58.5	66	58.5	10	----	58.4	0.1	8	-7.9
7-59	60	1	0.0	59.2	66	59.2	10	----	58.8	0.4	8	-7.6
7-60	61	1	0.0	60.3	66	60.3	10	----	60.0	0.3	8	-7.7
7-61	62	1	0.0	58.5	66	58.5	10	----	58.2	0.3	8	-7.7
7-62	63	1	0.0	60.3	66	60.3	10	----	60.1	0.2	8	-7.8
7-63	64	1	0.0	58.1	66	58.1	10	----	57.7	0.4	8	-7.6
7-64	65	1	0.0	60.6	66	60.6	10	----	60.2	0.4	8	-7.6
7-65	66	1	0.0	60.7	66	60.7	10	----	60.3	0.4	8	-7.6

**RESULTS: SOUND LEVELS**

**MAH SR11/2386**

7-66	67	1	0.0	60.6	66	60.6	10	----	60.1	0.5	8	-7.5
7-67	68	1	0.0	58.1	66	58.1	10	----	57.5	0.6	8	-7.4
7-68	69	1	0.0	60.3	66	60.3	10	----	59.9	0.4	8	-7.6
7-69	70	1	0.0	60.1	66	60.1	10	----	59.3	0.8	8	-7.2
7-70	71	1	0.0	59.8	66	59.8	10	----	58.8	1.0	8	-7.0
7-71	72	1	0.0	59.5	66	59.5	10	----	58.4	1.1	8	-6.9
7-72	73	1	0.0	59.1	66	59.1	10	----	58.0	1.1	8	-6.9
7-73	74	1	0.0	59.5	66	59.5	10	----	57.9	1.6	8	-6.4
7-74	75	1	0.0	59.6	66	59.6	10	----	57.8	1.8	8	-6.2
7-75	76	1	0.0	59.3	66	59.3	10	----	57.4	1.9	8	-6.1
7-76	77	1	0.0	59.1	66	59.1	10	----	57.0	2.1	8	-5.9
7-77	78	1	0.0	58.3	66	58.3	10	----	56.4	1.9	8	-6.1
7-78	79	1	0.0	57.3	66	57.3	10	----	55.9	1.4	8	-6.6
7-79	80	1	0.0	56.8	66	56.8	10	----	55.8	1.0	8	-7.0
7-80	81	1	0.0	56.5	66	56.5	10	----	55.8	0.7	8	-7.3
7-81	82	1	0.0	57.2	66	57.2	10	----	56.0	1.2	8	-6.8
7-82	83	1	0.0	59.6	66	59.6	10	----	56.8	2.8	8	-5.2
7-83	84	1	0.0	60.3	66	60.3	10	----	57.0	3.3	8	-4.7
7-84	85	1	0.0	61.8	66	61.8	10	----	57.8	4.0	8	-4.0
7-85	86	1	0.0	63.6	66	63.6	10	----	58.4	5.2	8	-2.8
7-86	87	1	0.0	56.3	66	56.3	10	----	56.1	0.2	8	-7.8
7-87	88	1	0.0	54.6	66	54.6	10	----	55.1	-0.5	8	-8.5
7-88	89	1	0.0	54.2	66	54.2	10	----	54.8	-0.6	8	-8.6
7-89	90	1	0.0	54.1	66	54.1	10	----	54.5	-0.4	8	-8.4
7-90	91	1	0.0	54.9	66	54.9	10	----	55.0	-0.1	8	-8.1
7-91	92	1	0.0	55.0	66	55.0	10	----	54.7	0.3	8	-7.7
7-92	93	1	0.0	54.3	66	54.3	10	----	54.3	0.0	8	-8.0
7-93	94	1	0.0	54.1	66	54.1	10	----	54.1	0.0	8	-8.0
7-94	95	1	0.0	54.0	66	54.0	10	----	53.8	0.2	8	-7.8
7-95	96	1	0.0	53.5	66	53.5	10	----	53.5	0.0	8	-8.0
7-96	97	1	0.0	51.4	66	51.4	10	----	51.2	0.2	8	-7.8
7-97	98	1	0.0	51.1	66	51.1	10	----	51.4	-0.3	8	-8.3
7-98	99	1	0.0	54.6	66	54.6	10	----	53.2	1.4	8	-6.6
7-99	100	1	0.0	55.7	66	55.7	10	----	53.7	2.0	8	-6.0
7-100	101	1	0.0	55.4	66	55.4	10	----	54.1	1.3	8	-6.7
7-101	102	1	0.0	51.6	66	51.6	10	----	50.9	0.7	8	-7.3
7-102	103	1	0.0	52.8	66	52.8	10	----	52.0	0.8	8	-7.2
7-103	104	1	0.0	53.2	66	53.2	10	----	53.1	0.1	8	-7.9
7-104	105	1	0.0	54.9	66	54.9	10	----	54.7	0.2	8	-7.8
5-1	107	1	0.0	64.9	66	64.9	10	----	63.7	1.2	8	-6.8
5-2	108	1	0.0	65.6	66	65.6	10	----	64.4	1.2	8	-6.8

**RESULTS: SOUND LEVELS**

**MAH SR11/2386**

5-3	109	1	0.0	65.5	66	65.5	10	----	64.4	1.1	8	-6.9
5-4	110	1	0.0	65.2	66	65.2	10	----	64.4	0.8	8	-7.2
5-5	111	1	0.0	61.4	66	61.4	10	----	61.0	0.4	8	-7.6
5-6	112	1	0.0	60.8	66	60.8	10	----	60.2	0.6	8	-7.4
5-7	113	1	0.0	61.7	66	61.7	10	----	61.2	0.5	8	-7.5
5-8	114	1	0.0	62.6	66	62.6	10	----	62.2	0.4	8	-7.6
5-9	115	1	0.0	59.6	66	59.6	10	----	59.5	0.1	8	-7.9
5-10	116	1	0.0	58.9	66	58.9	10	----	58.5	0.4	8	-7.6
5-11	117	1	0.0	58.7	66	58.7	10	----	58.5	0.2	8	-7.8
5-12	118	1	0.0	60.7	66	60.7	10	----	60.7	0.0	8	-8.0
5-13	119	1	0.0	60.6	66	60.6	10	----	60.6	0.0	8	-8.0
5-14	120	1	0.0	58.0	66	58.0	10	----	57.8	0.2	8	-7.8
5-15	121	1	0.0	57.5	66	57.5	10	----	57.7	-0.2	8	-8.2
5-16	122	1	0.0	59.5	66	59.5	10	----	59.7	-0.2	8	-8.2
5-17	123	1	0.0	60.8	66	60.8	10	----	61.0	-0.2	8	-8.2
5-18	124	1	0.0	63.2	66	63.2	10	----	63.3	-0.1	8	-8.1
5-19	125	1	0.0	62.4	66	62.4	10	----	62.6	-0.2	8	-8.2
5-20	126	1	0.0	63.4	66	63.4	10	----	63.2	0.2	8	-7.8
5-21	127	1	0.0	63.2	66	63.2	10	----	62.7	0.5	8	-7.5
5-22	128	1	0.0	60.8	66	60.8	10	----	60.5	0.3	8	-7.7
5-23	129	1	0.0	59.0	66	59.0	10	----	59.5	-0.5	8	-8.5
5-24	130	1	0.0	58.0	66	58.0	10	----	58.4	-0.4	8	-8.4
5-25	131	1	0.0	58.3	66	58.3	10	----	58.5	-0.2	8	-8.2
5-26	132	1	0.0	59.0	66	59.0	10	----	58.7	0.3	8	-7.7
5-27	133	1	0.0	62.7	66	62.7	10	----	62.1	0.6	8	-7.4
5-28	134	1	0.0	63.3	66	63.3	10	----	62.4	0.9	8	-7.1
5-29	135	1	0.0	63.0	66	63.0	10	----	61.4	1.6	8	-6.4
5-30	136	1	0.0	62.4	66	62.4	10	----	60.4	2.0	8	-6.0
5-31	137	1	0.0	62.2	66	62.2	10	----	61.2	1.0	8	-7.0
5-32	138	1	0.0	61.1	66	61.1	10	----	59.8	1.3	8	-6.7
5-33	139	1	0.0	57.6	66	57.6	10	----	57.6	0.0	8	-8.0
5-34	140	1	0.0	57.5	66	57.5	10	----	57.3	0.2	8	-7.8
5-35	141	1	0.0	57.3	66	57.3	10	----	57.2	0.1	8	-7.9
<b>Dwelling Units</b>		<b># DUs</b>	<b>Noise Reduction</b>									
			<b>Min</b>	<b>Avg</b>	<b>Max</b>							
			<b>dB</b>	<b>dB</b>	<b>dB</b>							
All Selected		139	-0.7	1.4	8.6							
All Impacted		35	1.0	3.7	8.6							
All that meet NR Goal		1	8.6	8.6	8.6							

INPUT: ROADWAYS

MAH SR11/2386

ASC Group, Inc. mas					5 April 2018 TNM 2.5					
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INPUT: ROADWAYS  
 PROJECT/CONTRACT: MAH SR11/2386  
 RUN: existing-NSA6 Westhampton

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

Roadway Name	Width	Points			Coordinates (pavement)			Flow Control		Segment		
		Name	No.		X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft				ft	ft	ft		mph	%		
SR11 NB-1	12.0	1	1		2,451,374.8	511,900.4	1,142.60				Average	
		2	2		2,451,213.2	512,465.7	1,141.40				Average	
		3	3		2,451,045.8	513,066.4	1,142.80				Average	
		4	4		2,450,860.5	513,721.0	1,144.80				Average	
		5	5		2,450,744.2	514,149.3	1,146.30				Average	
		6	6		2,450,682.2	514,360.0	1,147.00				Average	
		7	7		2,450,634.2	514,550.1	1,147.00				Average	
		8	8		2,450,587.5	514,766.0	1,148.30				Average	
		9	9		2,450,547.5	514,947.7	1,148.60				Average	
		10	10		2,450,504.8	515,146.8	1,149.40				Average	
		11	11		2,450,455.8	515,432.0	1,150.40				Average	
		12	12		2,450,419.2	515,670.0	1,151.10				Average	
		13	13		2,450,366.5	516,083.0	1,152.20				Average	
		14	14		2,450,332.5	516,421.3	1,153.20				Average	
		15	15		2,450,316.5	516,682.7	1,154.10				Average	
		16	16		2,450,300.2	516,977.8	1,154.90				Average	
		17	17		2,450,293.5	517,281.5	1,155.70				Average	
		18	18		2,450,294.2	517,597.8	1,156.70				Average	
		19	19		2,450,308.2	518,208.7	1,157.90				Average	
		20	20		2,450,321.2	518,851.5	1,156.50				Average	
		21	21		2,450,339.0	519,672.9	1,154.10				Average	
		22	22		2,450,358.5	520,451.0	1,151.40				Average	
		23	23		2,450,371.5	521,077.9	1,149.70				Average	
		24	24		2,450,394.8	522,071.0	1,146.80				Average	
		25	25		2,450,410.2	522,781.8	1,144.80				Average	

INPUT: ROADWAYS

MAH SR11/2386

		26	26	2,450,421.0	523,153.8	1,143.60				Average	
		27	27	2,450,433.5	523,725.3	1,142.00				Average	
		28	28	2,450,442.5	524,118.8	1,140.40				Average	
		29	29	2,450,450.5	524,462.4	1,139.80				Average	
		30	30	2,450,458.0	524,726.5	1,138.90				Average	
		31	31	2,450,461.0	524,942.6	1,138.50				Average	
		32	32	2,450,462.8	525,119.3	1,138.10				Average	
		33	33	2,450,457.0	525,278.1	1,137.30				Average	
		34	34	2,450,453.0	525,427.2	1,137.10				Average	
		35	35	2,450,441.2	525,580.1	1,136.30				Average	
		36	36	2,450,425.5	525,732.6	1,134.50				Average	
		37	37	2,450,399.0	525,926.2	1,131.90				Average	
		38	38	2,450,370.8	526,102.7	1,129.00				Average	
		39	39	2,450,340.0	526,263.2	1,125.70				Average	
		40	40	2,450,290.0	526,482.5	1,120.20				Average	
		41	41	2,450,224.0	526,734.5	1,113.20				Average	
		42	42	2,450,134.5	527,011.3	1,108.00				Average	
		43	43	2,450,046.0	527,245.0	1,106.40					
SR11 NB-2	12.0	1	44	2,451,366.2	511,895.0	1,142.50				Average	
		2	45	2,451,203.0	512,462.0	1,140.90				Average	
		3	46	2,451,035.5	513,062.7	1,142.60				Average	
		4	47	2,450,850.2	513,717.3	1,144.50				Average	
		5	48	2,450,734.0	514,145.3	1,146.30				Average	
		6	49	2,450,672.2	514,356.5	1,147.00				Average	
		7	50	2,450,624.0	514,546.4	1,147.00				Average	
		8	51	2,450,577.2	514,762.3	1,147.50				Average	
		9	52	2,450,537.2	514,944.0	1,148.60				Average	
		10	53	2,450,494.5	515,143.2	1,149.40				Average	
		11	54	2,450,445.5	515,429.4	1,150.40				Average	
		12	55	2,450,408.0	515,668.5	1,149.90				Average	
		13	56	2,450,356.0	516,081.1	1,152.20				Average	
		14	57	2,450,322.5	516,419.1	1,153.20				Average	
		15	58	2,450,306.0	516,682.7	1,153.40				Average	
		16	59	2,450,290.0	516,974.1	1,154.90				Average	
		17	60	2,450,282.2	517,280.9	1,155.70				Average	
		18	61	2,450,282.8	517,597.1	1,156.30				Average	
		19	62	2,450,297.5	518,208.7	1,157.60				Average	
		20	63	2,450,309.5	518,851.9	1,155.90				Average	
		21	64	2,450,328.0	519,671.8	1,154.10				Average	

INPUT: ROADWAYS

MAH SR11/2386

		22	65	2,450,348.2	520,447.3	1,151.70				Average	
		23	66	2,450,361.0	521,077.3	1,149.70				Average	
		24	67	2,450,384.5	522,070.6	1,146.80				Average	
		25	68	2,450,400.0	522,778.2	1,144.80				Average	
		26	69	2,450,410.0	523,153.8	1,143.60				Average	
		27	70	2,450,423.2	523,721.6	1,142.10				Average	
		28	71	2,450,431.5	524,119.3	1,140.40				Average	
		29	72	2,450,440.2	524,462.6	1,139.80				Average	
		30	73	2,450,447.8	524,726.6	1,138.50				Average	
		31	74	2,450,450.5	524,942.4	1,137.10				Average	
		32	75	2,450,452.5	525,119.3	1,138.10				Average	
		33	76	2,450,447.0	525,276.8	1,137.30				Average	
		34	77	2,450,442.2	525,426.6	1,137.10				Average	
		35	78	2,450,431.0	525,580.3	1,135.20				Average	
		36	79	2,450,415.5	525,732.8	1,134.50				Average	
		37	80	2,450,388.8	525,926.3	1,131.90				Average	
		38	81	2,450,360.5	526,102.8	1,129.00				Average	
		39	82	2,450,330.0	526,263.4	1,125.70				Average	
		40	83	2,450,279.2	526,479.7	1,120.20				Average	
		41	84	2,450,213.5	526,731.3	1,113.20				Average	
		42	85	2,450,124.5	527,007.4	1,107.00				Average	
		43	86	2,450,035.5	527,241.1	1,106.40					
SR11 SB-2	12.0	1	87	2,451,271.2	511,869.0	1,142.70				Average	
		2	88	2,451,109.8	512,434.4	1,141.40				Average	
		3	89	2,450,942.2	513,035.0	1,142.70				Average	
		4	90	2,450,758.8	513,689.7	1,144.70				Average	
		5	91	2,450,638.0	514,117.7	1,146.30				Average	
		6	92	2,450,579.2	514,330.9	1,146.90				Average	
		7	93	2,450,533.0	514,518.7	1,147.60				Average	
		8	94	2,450,480.5	514,738.8	1,148.20				Average	
		9	95	2,450,442.5	514,916.6	1,148.80				Average	
		10	96	2,450,401.2	515,120.2	1,149.40				Average	
		11	97	2,450,354.8	515,399.3	1,150.20				Average	
		12	98	2,450,314.0	515,661.3	1,150.90				Average	
		13	99	2,450,261.5	516,051.8	1,152.40				Average	
		14	100	2,450,229.0	516,389.9	1,153.20				Average	
		15	101	2,450,209.5	516,675.9	1,153.90				Average	
		16	102	2,450,193.0	516,960.2	1,155.00				Average	
		17	103	2,450,184.8	517,280.8	1,155.90				Average	

INPUT: ROADWAYS

MAH SR11/2386

		18	104	2,450,186.5	517,595.6	1,156.70				Average	
		19	105	2,450,201.0	518,205.2	1,158.00				Average	
		20	106	2,450,216.0	518,859.0	1,156.30				Average	
		21	107	2,450,234.0	519,666.1	1,154.10				Average	
		22	108	2,450,252.0	520,448.8	1,151.80				Average	
		23	109	2,450,265.0	521,096.4	1,149.70				Average	
		24	110	2,450,288.0	522,068.9	1,146.90				Average	
		25	111	2,450,303.0	522,776.2	1,144.80				Average	
		26	112	2,450,312.8	523,160.7	1,143.70				Average	
		27	113	2,450,326.0	523,720.5	1,142.00				Average	
		28	114	2,450,334.8	524,116.8	1,140.70				Average	
		29	115	2,450,343.0	524,456.8	1,139.90				Average	
		30	116	2,450,350.5	524,720.9	1,139.00				Average	
		31	117	2,450,355.5	524,936.5	1,138.00				Average	
		32	118	2,450,355.2	525,120.6	1,137.20				Average	
		33	119	2,450,353.8	525,270.8	1,136.80				Average	
		34	120	2,450,346.0	525,422.5	1,136.30				Average	
		35	121	2,450,334.8	525,572.9	1,134.90				Average	
		36	122	2,450,319.5	525,726.5	1,133.70				Average	
		37	123	2,450,293.2	525,921.1	1,131.00				Average	
		38	124	2,450,264.5	526,097.6	1,128.10				Average	
		39	125	2,450,232.5	526,257.6	1,124.60				Average	
		40	126	2,450,182.5	526,476.7	1,119.30				Average	
		41	127	2,450,114.8	526,725.6	1,111.80				Average	
		42	128	2,450,025.2	527,001.1	1,106.50				Average	
		43	129	2,449,943.2	527,213.9	1,105.90					
SR11 SB-1	12.0	43	172	2,449,934.0	527,209.2	1,105.90				Average	
		42	171	2,450,015.5	526,997.0	1,106.50				Average	
		41	170	2,450,105.5	526,722.5	1,111.20				Average	
		40	169	2,450,172.8	526,474.0	1,119.30				Average	
		39	168	2,450,222.5	526,257.9	1,124.60				Average	
		38	167	2,450,254.2	526,097.9	1,128.10				Average	
		37	166	2,450,283.0	525,919.0	1,131.00				Average	
		36	165	2,450,309.5	525,724.5	1,133.70				Average	
		35	164	2,450,323.5	525,572.2	1,134.90				Average	
		34	163	2,450,336.0	525,421.5	1,135.70				Average	
		33	162	2,450,343.5	525,270.8	1,136.80				Average	
		32	161	2,450,345.0	525,120.8	1,136.60				Average	
		31	160	2,450,345.0	524,936.7	1,137.50				Average	

INPUT: ROADWAYS

MAH SR11/2386

		30	159	2,450,340.2	524,721.1	1,139.00				Average	
		29	158	2,450,332.8	524,457.1	1,139.60				Average	
		28	157	2,450,324.2	524,116.3	1,140.70				Average	
		27	156	2,450,315.8	523,717.7	1,141.70				Average	
		26	155	2,450,302.5	523,157.9	1,143.50				Average	
		25	154	2,450,293.0	522,773.3	1,144.90				Average	
		24	153	2,450,278.0	522,066.1	1,146.00				Average	
		23	152	2,450,254.8	521,093.5	1,149.70				Average	
		22	151	2,450,242.0	520,445.9	1,151.80				Average	
		21	150	2,450,223.0	519,666.3	1,153.40				Average	
		20	149	2,450,204.0	518,859.9	1,156.40				Average	
		19	148	2,450,189.5	518,205.5	1,158.00				Average	
		18	147	2,450,174.2	517,595.8	1,156.70				Average	
		17	146	2,450,174.2	517,280.5	1,155.90				Average	
		16	145	2,450,182.8	516,957.4	1,155.00				Average	
		15	144	2,450,198.0	516,675.2	1,154.00				Average	
		14	143	2,450,218.0	516,388.5	1,153.20				Average	
		13	142	2,450,250.5	516,050.2	1,152.40				Average	
		12	141	2,450,303.2	515,660.5	1,150.70				Average	
		11	140	2,450,344.5	515,396.4	1,150.20				Average	
		10	139	2,450,391.2	515,117.3	1,148.40				Average	
		9	138	2,450,432.2	514,913.7	1,148.50				Average	
		8	137	2,450,470.5	514,736.0	1,147.80				Average	
		7	136	2,450,522.8	514,515.9	1,147.60				Average	
		6	135	2,450,569.0	514,328.1	1,146.90				Average	
		5	134	2,450,628.0	514,114.9	1,146.30				Average	
		4	133	2,450,748.5	513,686.8	1,144.60				Average	
		3	132	2,450,932.0	513,032.2	1,142.70				Average	
		2	131	2,451,099.5	512,431.5	1,141.00				Average	
		1	130	2,451,262.8	511,864.3	1,142.70					
New EB	12.0	1	185	2,449,044.0	521,176.3	1,149.00				Average	
		2	186	2,449,744.8	521,189.4	1,152.90				Average	
		3	187	2,449,882.0	521,191.5	1,157.40				Average	
		4	188	2,449,970.2	521,193.1	1,161.30				Average	
		5	189	2,450,047.5	521,186.9	1,163.90				Average	
		6	190	2,450,149.0	521,169.1	1,166.80				Average	Y
		7	191	2,450,480.8	521,082.0	1,167.50				Average	
		8	192	2,450,564.5	521,064.3	1,165.80				Average	
		9	193	2,450,649.0	521,056.2	1,163.20				Average	



INPUT: ROADWAYS

MAH SR11/2386

		10	194	2,450,731.5	521,053.5	1,161.00				Average	
		11	195	2,450,871.8	521,053.8	1,158.00				Average	
		12	196	2,451,472.5	521,058.8	1,156.10					
New WB	12.0	12	208	2,451,472.5	521,070.8	1,156.10				Average	
		11	207	2,450,872.0	521,065.8	1,158.00				Average	
		10	206	2,450,731.5	521,065.5	1,159.20				Average	
		9	205	2,450,649.2	521,068.2	1,162.80				Average	
		8	204	2,450,564.5	521,076.3	1,165.80				Average	
		7	203	2,450,480.8	521,094.0	1,166.00				Average	Y
		6	202	2,450,149.0	521,181.1	1,166.80				Average	
		5	201	2,450,047.5	521,198.9	1,163.90				Average	
		4	200	2,449,970.5	521,205.1	1,161.30				Average	
		3	199	2,449,882.0	521,203.5	1,157.40				Average	
		2	198	2,449,745.0	521,201.4	1,152.90				Average	
		1	197	2,449,044.2	521,188.3	1,149.00					
Oakcrest WB	12.0	6	309	2,451,311.2	523,235.6	1,147.10				Average	
		5	308	2,450,966.0	523,236.4	1,145.10				Average	
		4	307	2,450,530.5	523,230.8	1,159.10				Average	Y
		3	306	2,450,196.0	523,223.2	1,159.10				Average	
		2	305	2,449,784.2	523,217.4	1,151.00				Average	
		1	304	2,449,408.0	523,211.2	1,158.50					
Oakcrest EB	12.0	1	310	2,449,408.0	523,199.2	1,158.50				Average	
		2	311	2,449,784.2	523,205.4	1,151.00				Average	
		3	312	2,450,196.0	523,211.2	1,159.10				Average	Y
		4	313	2,450,530.5	523,218.8	1,159.10				Average	
		5	314	2,450,966.0	523,224.4	1,145.00				Average	
		6	315	2,451,311.2	523,223.6	1,147.00					

INPUT: TRAFFIC FOR LAeq1h Volumes

MAH SR11/2386

ASC Group, Inc. mas		5 April 2018 TNM 2.5										
INPUT: TRAFFIC FOR LAeq1h Volumes PROJECT/CONTRACT:		MAH SR11/2386										
RUN:		existing-NSA6 Westhampton										
Roadway	Points											
Name	Name	No.	Segment		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
SR11 NB-1	1	1	820	65	7	65	62	65	10	65	8	65
	2	2	820	65	7	65	62	65	10	65	8	65
	3	3	820	65	7	65	62	65	10	65	8	65
	4	4	820	65	7	65	62	65	10	65	8	65
	5	5	820	65	7	65	62	65	10	65	8	65
	6	6	820	65	7	65	62	65	10	65	8	65
	7	7	820	65	7	65	62	65	10	65	8	65
	8	8	820	65	7	65	62	65	10	65	8	65
	9	9	820	65	7	65	62	65	10	65	8	65
	10	10	820	65	7	65	62	65	10	65	8	65
	11	11	820	65	7	65	62	65	10	65	8	65
	12	12	820	65	7	65	62	65	10	65	8	65
	13	13	820	65	7	65	62	65	10	65	8	65
	14	14	820	65	7	65	62	65	10	65	8	65
	15	15	820	65	7	65	62	65	10	65	8	65
	16	16	820	65	7	65	62	65	10	65	8	65
	17	17	820	65	7	65	62	65	10	65	8	65
	18	18	820	65	7	65	62	65	10	65	8	65
	19	19	820	65	7	65	62	65	10	65	8	65
	20	20	820	65	7	65	62	65	10	65	8	65
	21	21	820	65	7	65	62	65	10	65	8	65
	22	22	820	65	7	65	62	65	10	65	8	65
	23	23	820	65	7	65	62	65	10	65	8	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	24	24	820	65	7	65	62	65	10	65	8	65
	25	25	820	65	7	65	62	65	10	65	8	65
	26	26	820	65	7	65	62	65	10	65	8	65
	27	27	820	65	7	65	62	65	10	65	8	65
	28	28	820	65	7	65	62	65	10	65	8	65
	29	29	820	65	7	65	62	65	10	65	8	65
	30	30	820	65	7	65	62	65	10	65	8	65
	31	31	820	65	7	65	62	65	10	65	8	65
	32	32	820	65	7	65	62	65	10	65	8	65
	33	33	820	65	7	65	62	65	10	65	8	65
	34	34	820	65	7	65	62	65	10	65	8	65
	35	35	820	65	7	65	62	65	10	65	8	65
	36	36	820	65	7	65	62	65	10	65	8	65
	37	37	820	65	7	65	62	65	10	65	8	65
	38	38	820	65	7	65	62	65	10	65	8	65
	39	39	820	65	7	65	62	65	10	65	8	65
	40	40	820	65	7	65	62	65	10	65	8	65
	41	41	820	65	7	65	62	65	10	65	8	65
	42	42	820	65	7	65	62	65	10	65	8	65
	43	43										
SR11 NB-2	1	44	820	65	7	65	62	65	10	65	8	65
	2	45	820	65	7	65	62	65	10	65	8	65
	3	46	820	65	7	65	62	65	10	65	8	65
	4	47	820	65	7	65	62	65	10	65	8	65
	5	48	820	65	7	65	62	65	10	65	8	65
	6	49	820	65	7	65	62	65	10	65	8	65
	7	50	820	65	7	65	62	65	10	65	8	65
	8	51	820	65	7	65	62	65	10	65	8	65
	9	52	820	65	7	65	62	65	10	65	8	65
	10	53	820	65	7	65	62	65	10	65	8	65
	11	54	820	65	7	65	62	65	10	65	8	65
	12	55	820	65	7	65	62	65	10	65	8	65
	13	56	820	65	7	65	62	65	10	65	8	65
	14	57	820	65	7	65	62	65	10	65	8	65
	15	58	820	65	7	65	62	65	10	65	8	65
	16	59	820	65	7	65	62	65	10	65	8	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	17	60	820	65	7	65	62	65	10	65	8	65
	18	61	820	65	7	65	62	65	10	65	8	65
	19	62	820	65	7	65	62	65	10	65	8	65
	20	63	820	65	7	65	62	65	10	65	8	65
	21	64	820	65	7	65	62	65	10	65	8	65
	22	65	820	65	7	65	62	65	10	65	8	65
	23	66	820	65	7	65	62	65	10	65	8	65
	24	67	820	65	7	65	62	65	10	65	8	65
	25	68	820	65	7	65	62	65	10	65	8	65
	26	69	820	65	7	65	62	65	10	65	8	65
	27	70	820	65	7	65	62	65	10	65	8	65
	28	71	820	65	7	65	62	65	10	65	8	65
	29	72	820	65	7	65	62	65	10	65	8	65
	30	73	820	65	7	65	62	65	10	65	8	65
	31	74	820	65	7	65	62	65	10	65	8	65
	32	75	820	65	7	65	62	65	10	65	8	65
	33	76	820	65	7	65	62	65	10	65	8	65
	34	77	820	65	7	65	62	65	10	65	8	65
	35	78	820	65	7	65	62	65	10	65	8	65
	36	79	820	65	7	65	62	65	10	65	8	65
	37	80	820	65	7	65	62	65	10	65	8	65
	38	81	820	65	7	65	62	65	10	65	8	65
	39	82	820	65	7	65	62	65	10	65	8	65
	40	83	820	65	7	65	62	65	10	65	8	65
	41	84	820	65	7	65	62	65	10	65	8	65
	42	85	820	65	7	65	62	65	10	65	8	65
	43	86										
SR11 SB-2	1	87	803	65	6	65	58	65	9	65	4	65
	2	88	803	65	6	65	58	65	9	65	4	65
	3	89	803	65	6	65	58	65	9	65	4	65
	4	90	803	65	6	65	58	65	9	65	4	65
	5	91	803	65	6	65	58	65	9	65	4	65
	6	92	803	65	6	65	58	65	9	65	4	65
	7	93	803	65	6	65	58	65	9	65	4	65
	8	94	803	65	6	65	58	65	9	65	4	65
	9	95	803	65	6	65	58	65	9	65	4	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	10	96	803	65	6	65	58	65	9	65	4	65
	11	97	803	65	6	65	58	65	9	65	4	65
	12	98	803	65	6	65	58	65	9	65	4	65
	13	99	803	65	6	65	58	65	9	65	4	65
	14	100	803	65	6	65	58	65	9	65	4	65
	15	101	803	65	6	65	58	65	9	65	4	65
	16	102	803	65	6	65	58	65	9	65	4	65
	17	103	803	65	6	65	58	65	9	65	4	65
	18	104	803	65	6	65	58	65	9	65	4	65
	19	105	803	65	6	65	58	65	9	65	4	65
	20	106	803	65	6	65	58	65	9	65	4	65
	21	107	803	65	6	65	58	65	9	65	4	65
	22	108	803	65	6	65	58	65	9	65	4	65
	23	109	803	65	6	65	58	65	9	65	4	65
	24	110	803	65	6	65	58	65	9	65	4	65
	25	111	803	65	6	65	58	65	9	65	4	65
	26	112	803	65	6	65	58	65	9	65	4	65
	27	113	803	65	6	65	58	65	9	65	4	65
	28	114	803	65	6	65	58	65	9	65	4	65
	29	115	803	65	6	65	58	65	9	65	4	65
	30	116	803	65	6	65	58	65	9	65	4	65
	31	117	803	65	6	65	58	65	9	65	4	65
	32	118	803	65	6	65	58	65	9	65	4	65
	33	119	803	65	6	65	58	65	9	65	4	65
	34	120	803	65	6	65	58	65	9	65	4	65
	35	121	803	65	6	65	58	65	9	65	4	65
	36	122	803	65	6	65	58	65	9	65	4	65
	37	123	803	65	6	65	58	65	9	65	4	65
	38	124	803	65	6	65	58	65	9	65	4	65
	39	125	803	65	6	65	58	65	9	65	4	65
	40	126	803	65	6	65	58	65	9	65	4	65
	41	127	803	65	6	65	58	65	9	65	4	65
	42	128	803	65	6	65	58	65	9	65	4	65
	43	129										
SR11 SB-1	43	172	803	65	6	65	58	65	9	65	4	65
	42	171	803	65	6	65	58	65	9	65	4	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	41	170	803	65	6	65	58	65	9	65	4	65
	40	169	803	65	6	65	58	65	9	65	4	65
	39	168	803	65	6	65	58	65	9	65	4	65
	38	167	803	65	6	65	58	65	9	65	4	65
	37	166	803	65	6	65	58	65	9	65	4	65
	36	165	803	65	6	65	58	65	9	65	4	65
	35	164	803	65	6	65	58	65	9	65	4	65
	34	163	803	65	6	65	58	65	9	65	4	65
	33	162	803	65	6	65	58	65	9	65	4	65
	32	161	803	65	6	65	58	65	9	65	4	65
	31	160	803	65	6	65	58	65	9	65	4	65
	30	159	803	65	6	65	58	65	9	65	4	65
	29	158	803	65	6	65	58	65	9	65	4	65
	28	157	803	65	6	65	58	65	9	65	4	65
	27	156	803	65	6	65	58	65	9	65	4	65
	26	155	803	65	6	65	58	65	9	65	4	65
	25	154	803	65	6	65	58	65	9	65	4	65
	24	153	803	65	6	65	58	65	9	65	4	65
	23	152	803	65	6	65	58	65	9	65	4	65
	22	151	803	65	6	65	58	65	9	65	4	65
	21	150	803	65	6	65	58	65	9	65	4	65
	20	149	803	65	6	65	58	65	9	65	4	65
	19	148	803	65	6	65	58	65	9	65	4	65
	18	147	803	65	6	65	58	65	9	65	4	65
	17	146	803	65	6	65	58	65	9	65	4	65
	16	145	803	65	6	65	58	65	9	65	4	65
	15	144	803	65	6	65	58	65	9	65	4	65
	14	143	803	65	6	65	58	65	9	65	4	65
	13	142	803	65	6	65	58	65	9	65	4	65
	12	141	803	65	6	65	58	65	9	65	4	65
	11	140	803	65	6	65	58	65	9	65	4	65
	10	139	803	65	6	65	58	65	9	65	4	65
	9	138	803	65	6	65	58	65	9	65	4	65
	8	137	803	65	6	65	58	65	9	65	4	65
	7	136	803	65	6	65	58	65	9	65	4	65
	6	135	803	65	6	65	58	65	9	65	4	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	5	134	803	65	6	65	58	65	9	65	4	65
	4	133	803	65	6	65	58	65	9	65	4	65
	3	132	803	65	6	65	58	65	9	65	4	65
	2	131	803	65	6	65	58	65	9	65	4	65
	1	130										
New EB	1	185	303	35	1	35	7	35	1	35	1	35
	2	186	303	35	1	35	7	35	1	35	1	35
	3	187	303	35	1	35	7	35	1	35	1	35
	4	188	303	35	1	35	7	35	1	35	1	35
	5	189	303	35	1	35	7	35	1	35	1	35
	6	190	303	35	1	35	7	35	1	35	1	35
	7	191	303	35	1	35	7	35	1	35	1	35
	8	192	303	35	1	35	7	35	1	35	1	35
	9	193	303	35	1	35	7	35	1	35	1	35
	10	194	303	35	1	35	7	35	1	35	1	35
	11	195	303	35	1	35	7	35	1	35	1	35
	12	196										
New WB	12	208	303	35	1	35	7	35	1	35	1	35
	11	207	303	35	1	35	7	35	1	35	1	35
	10	206	303	35	1	35	7	35	1	35	1	35
	9	205	303	35	1	35	7	35	1	35	1	35
	8	204	303	35	1	35	7	35	1	35	1	35
	7	203	303	35	1	35	7	35	1	35	1	35
	6	202	303	35	1	35	7	35	1	35	1	35
	5	201	303	35	1	35	7	35	1	35	1	35
	4	200	303	35	1	35	7	35	1	35	1	35
	3	199	303	35	1	35	7	35	1	35	1	35
	2	198	303	35	1	35	7	35	1	35	1	35
	1	197										
Oakcrest WB	6	309	0	0	0	0	0	0	0	0	0	0
	5	308	0	0	0	0	0	0	0	0	0	0
	4	307	0	0	0	0	0	0	0	0	0	0
	3	306	0	0	0	0	0	0	0	0	0	0
	2	305	0	0	0	0	0	0	0	0	0	0
	1	304										
Oakcrest EB	1	310	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes****MAH SR11/2386**

	2	311	0	0	0	0	0	0	0	0	0	0
	3	312	0	0	0	0	0	0	0	0	0	0
	4	313	0	0	0	0	0	0	0	0	0	0
	5	314	0	0	0	0	0	0	0	0	0	0
	6	315										





**INPUT: RECEIVERS**

**MAH SR11/2386**

6-23	24	1	2,450,732.8	522,310.4	1,154.69	5.00	0.00	66	10.0	8.0	Y
6-24	25	1	2,450,733.2	522,353.4	1,152.00	5.00	0.00	66	10.0	8.0	Y
6-25	26	1	2,450,742.5	522,413.4	1,145.51	5.00	0.00	66	10.0	8.0	Y
6-26	27	1	2,450,755.8	522,462.2	1,146.23	5.00	0.00	66	10.0	8.0	Y
6-27	28	1	2,450,725.8	521,396.0	1,154.72	5.00	0.00	66	10.0	8.0	Y
6-28	29	1	2,450,733.0	521,449.4	1,156.30	5.00	0.00	66	10.0	8.0	Y
6-29	30	1	2,450,847.5	521,382.3	1,156.43	5.00	0.00	66	10.0	8.0	Y
6-30	31	1	2,450,840.2	521,424.8	1,156.79	5.00	0.00	66	10.0	8.0	Y
6-31	32	1	2,450,899.0	521,365.0	1,155.28	5.00	0.00	66	10.0	8.0	Y
6-32	33	1	2,450,896.2	521,433.3	1,157.61	5.00	0.00	66	10.0	8.0	Y
6-33	34	1	2,450,946.8	521,366.2	1,156.66	5.00	0.00	66	10.0	8.0	Y
6-34	35	1	2,450,942.0	521,445.2	1,157.28	5.00	0.00	66	10.0	8.0	Y
6-35	36	1	2,450,827.8	521,556.6	1,154.72	5.00	0.00	66	10.0	8.0	Y
6-36	37	1	2,450,824.0	521,627.6	1,155.61	5.00	0.00	66	10.0	8.0	Y
6-37	38	1	2,450,831.5	521,674.2	1,155.55	5.00	0.00	66	10.0	8.0	Y
6-38	39	1	2,450,832.0	521,702.0	1,155.55	5.00	0.00	66	10.0	8.0	Y
6-39	40	1	2,450,876.2	521,556.6	1,155.32	5.00	0.00	66	10.0	8.0	Y
6-40	41	1	2,450,886.8	521,618.5	1,156.27	5.00	0.00	66	10.0	8.0	Y
6-41	42	1	2,450,876.2	521,653.8	1,156.14	5.00	0.00	66	10.0	8.0	Y
6-42	43	1	2,450,872.8	521,742.4	1,155.71	5.00	0.00	66	10.0	8.0	Y
6-43	44	1	2,450,915.5	521,556.3	1,155.15	5.00	0.00	66	10.0	8.0	Y
6-44	45	1	2,450,911.8	521,625.8	1,156.04	5.00	0.00	66	10.0	8.0	Y
6-45	46	1	2,450,912.0	521,651.1	1,155.61	5.00	0.00	66	10.0	8.0	Y
6-46	47	1	2,450,903.0	521,742.4	1,155.58	5.00	0.00	66	10.0	8.0	Y
6-47	48	1	2,450,742.5	521,755.8	1,154.95	5.00	0.00	66	10.0	8.0	Y
6-48	49	1	2,450,783.0	521,764.0	1,155.25	5.00	0.00	66	10.0	8.0	Y
6-49	50	1	2,450,754.8	521,881.2	1,152.53	5.00	0.00	66	10.0	8.0	Y
6-50	51	1	2,450,758.2	521,925.8	1,152.85	5.00	0.00	66	10.0	8.0	Y
6-51	52	1	2,450,751.2	521,995.1	1,151.35	5.00	0.00	66	10.0	8.0	Y
6-52	53	1	2,450,785.8	522,047.9	1,149.84	5.00	0.00	66	10.0	8.0	Y
6-53	54	1	2,450,839.8	522,084.2	1,151.97	5.00	0.00	66	10.0	8.0	Y
6-54	55	1	2,450,872.5	522,049.3	1,153.35	5.00	0.00	66	10.0	8.0	Y
6-55	56	1	2,450,853.2	522,741.4	1,144.42	5.00	0.00	66	10.0	8.0	Y
6-56	57	1	2,450,754.5	522,718.9	1,144.06	5.00	0.00	66	10.0	8.0	Y
6-57	58	1	2,450,636.2	522,745.4	1,141.63	5.00	0.00	66	10.0	8.0	Y
6-58	59	1	2,450,733.0	523,078.1	1,143.34	5.00	0.00	66	10.0	8.0	Y

**INPUT: RECEIVERS**

**MAH SR11/2386**

6-59	60	1	2,450,833.5	522,956.4	1,141.57	5.00	0.00	66	10.0	8.0	Y
6-60	61	1	2,450,842.2	523,075.3	1,140.71	5.00	0.00	66	10.0	8.0	Y
6-1 residence											
6-2 residence											
6-3 residence											
6-4 residence											
6-5 residence											
6-6 residence											
6-7 residence											
6-8 residence											
6-9 residence											
6-10 residence											
6-11 residence											
6-12 residence											
6-13 residence											
6-14 residence											
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**INPUT: RECEIVERS**

**MAH SR11/2386**

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**RESULTS: SOUND LEVELS**

**MAH SR11/2386**

6-25	26	1	0.0	62.0	66	62.0	10	----	61.1	0.9	8	-7.1
6-26	27	1	0.0	62.1	66	62.1	10	----	61.2	0.9	8	-7.1
6-27	28	1	0.0	58.1	66	58.1	10	----	57.5	0.6	8	-7.4
6-28	29	1	0.0	54.1	66	54.1	10	----	54.2	-0.1	8	-8.1
6-29	30	1	0.0	57.7	66	57.7	10	----	57.5	0.2	8	-7.8
6-30	31	1	0.0	56.5	66	56.5	10	----	56.4	0.1	8	-7.9
6-31	32	1	0.0	55.9	66	55.9	10	----	55.6	0.3	8	-7.7
6-32	33	1	0.0	52.8	66	52.8	10	----	52.7	0.1	8	-7.9
6-33	34	1	0.0	56.0	66	56.0	10	----	55.7	0.3	8	-7.7
6-34	35	1	0.0	52.8	66	52.8	10	----	52.7	0.1	8	-7.9
6-35	36	1	0.0	56.4	66	56.4	10	----	56.3	0.1	8	-7.9
6-36	37	1	0.0	57.2	66	57.2	10	----	57.1	0.1	8	-7.9
6-37	38	1	0.0	57.1	66	57.1	10	----	56.9	0.2	8	-7.8
6-38	39	1	0.0	57.0	66	57.0	10	----	56.8	0.2	8	-7.8
6-39	40	1	0.0	55.9	66	55.9	10	----	55.8	0.1	8	-7.9
6-40	41	1	0.0	56.4	66	56.4	10	----	56.3	0.1	8	-7.9
6-41	42	1	0.0	56.7	66	56.7	10	----	56.6	0.1	8	-7.9
6-42	43	1	0.0	56.6	66	56.6	10	----	56.4	0.2	8	-7.8
6-43	44	1	0.0	55.2	66	55.2	10	----	55.0	0.2	8	-7.8
6-44	45	1	0.0	55.9	66	55.9	10	----	55.8	0.1	8	-7.9
6-45	46	1	0.0	55.9	66	55.9	10	----	55.8	0.1	8	-7.9
6-46	47	1	0.0	56.3	66	56.3	10	----	56.1	0.2	8	-7.8
6-47	48	1	0.0	58.0	66	58.0	10	----	57.7	0.3	8	-7.7
6-48	49	1	0.0	56.9	66	56.9	10	----	56.5	0.4	8	-7.6
6-49	50	1	0.0	56.6	66	56.6	10	----	57.7	-1.1	8	-9.1
6-50	51	1	0.0	56.6	66	56.6	10	----	57.7	-1.1	8	-9.1
6-51	52	1	0.0	55.9	66	55.9	10	----	57.4	-1.5	8	-9.5
6-52	53	1	0.0	54.9	66	54.9	10	----	56.6	-1.7	8	-9.7
6-53	54	1	0.0	56.4	66	56.4	10	----	57.0	-0.6	8	-8.6
6-54	55	1	0.0	56.9	66	56.9	10	----	57.3	-0.4	8	-8.4
6-55	56	1	0.0	58.9	66	58.9	10	----	58.6	0.3	8	-7.7
6-56	57	1	0.0	60.9	66	60.9	10	----	60.4	0.5	8	-7.5
6-57	58	1	0.0	63.7	66	63.7	10	----	62.3	1.4	8	-6.6
6-58	59	1	0.0	60.3	66	60.3	10	----	59.8	0.5	8	-7.5
6-59	60	1	0.0	58.7	66	58.7	10	----	58.1	0.6	8	-7.4
6-60	61	1	0.0	57.9	66	57.9	10	----	57.4	0.5	8	-7.5
<b>Dwelling Units</b>		<b># DUs</b>	<b>Noise Reduction</b>									
			<b>Min</b>	<b>Avg</b>	<b>Max</b>							
			<b>dB</b>	<b>dB</b>	<b>dB</b>							
All Selected		60	-1.7	0.6	5.4							
All Impacted		7	0.2	1.5	5.4							

**RESULTS: SOUND LEVELS**

**MAH SR11/2386**

All that meet NR Goal		0	0.0	0.0	0.0							
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INPUT: ROADWAYS

MAH SR11/2386

ASC Group, Inc. mas					5 April 2018 TNM 2.5					
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INPUT: ROADWAYS										
PROJECT/CONTRACT:	MAH SR11/2386									Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA
RUN:	existing-NSA8-9 Cross EOS									

Roadway	Width	Points	Coordinates (pavement)			Flow Control			Segment		
Name		Name	No.	X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
SR11 NB-1	12.0	1	1	2,451,374.8	511,900.4	1,142.60				Average	
		2	2	2,451,213.2	512,465.7	1,141.40				Average	
		3	3	2,451,045.8	513,066.4	1,142.80				Average	
		4	4	2,450,860.5	513,721.0	1,144.80				Average	
		5	5	2,450,744.2	514,149.3	1,146.30				Average	
		6	6	2,450,682.2	514,360.0	1,147.00				Average	
		7	7	2,450,634.2	514,550.1	1,147.00				Average	
		8	8	2,450,587.5	514,766.0	1,148.30				Average	
		9	9	2,450,547.5	514,947.7	1,148.60				Average	
		10	10	2,450,504.8	515,146.8	1,149.40				Average	
		11	11	2,450,455.8	515,432.0	1,150.40				Average	
		12	12	2,450,419.2	515,670.0	1,151.10				Average	
		13	13	2,450,366.5	516,083.0	1,152.20				Average	
		14	14	2,450,332.5	516,421.3	1,153.20				Average	
		15	15	2,450,316.5	516,682.7	1,154.10				Average	
		16	16	2,450,300.2	516,977.8	1,154.90				Average	
		17	17	2,450,293.5	517,281.5	1,155.70				Average	
		18	18	2,450,294.2	517,597.8	1,156.70				Average	
		19	19	2,450,308.2	518,208.7	1,157.90				Average	
		20	20	2,450,321.2	518,851.5	1,156.50				Average	
		21	21	2,450,339.0	519,672.9	1,154.10				Average	
		22	22	2,450,358.5	520,451.0	1,151.40				Average	
		23	23	2,450,371.5	521,077.9	1,149.70				Average	
		24	24	2,450,394.8	522,071.0	1,146.80				Average	
		25	25	2,450,410.2	522,781.8	1,144.80				Average	



INPUT: ROADWAYS

MAH SR11/2386

		26	26	2,450,421.0	523,153.8	1,143.60				Average	
		27	27	2,450,433.5	523,725.3	1,142.00				Average	
		28	28	2,450,442.5	524,118.8	1,140.40				Average	
		29	29	2,450,450.5	524,462.4	1,139.80				Average	
		30	30	2,450,458.0	524,726.5	1,138.90				Average	
		31	31	2,450,461.0	524,942.6	1,138.50				Average	
		32	32	2,450,462.8	525,119.3	1,138.10				Average	
		33	33	2,450,457.0	525,278.1	1,137.30				Average	
		34	34	2,450,453.0	525,427.2	1,137.10				Average	
		35	35	2,450,441.2	525,580.1	1,136.30				Average	
		36	36	2,450,425.5	525,732.6	1,134.50				Average	
		37	37	2,450,399.0	525,926.2	1,131.90				Average	
		38	38	2,450,370.8	526,102.7	1,129.00				Average	
		39	39	2,450,340.0	526,263.2	1,125.70				Average	
		40	40	2,450,290.0	526,482.5	1,120.20				Average	
		41	41	2,450,224.0	526,734.5	1,113.20				Average	
		42	42	2,450,134.5	527,011.3	1,108.00				Average	
		43	43	2,450,046.0	527,245.0	1,106.40					
SR11 NB-2	12.0	1	44	2,451,366.2	511,895.0	1,142.50				Average	
		2	45	2,451,203.0	512,462.0	1,140.90				Average	
		3	46	2,451,035.5	513,062.7	1,142.60				Average	
		4	47	2,450,850.2	513,717.3	1,144.50				Average	
		5	48	2,450,734.0	514,145.3	1,146.30				Average	
		6	49	2,450,672.2	514,356.5	1,147.00				Average	
		7	50	2,450,624.0	514,546.4	1,147.00				Average	
		8	51	2,450,577.2	514,762.3	1,147.50				Average	
		9	52	2,450,537.2	514,944.0	1,148.60				Average	
		10	53	2,450,494.5	515,143.2	1,149.40				Average	
		11	54	2,450,445.5	515,429.4	1,150.40				Average	
		12	55	2,450,408.0	515,668.5	1,149.90				Average	
		13	56	2,450,356.0	516,081.1	1,152.20				Average	
		14	57	2,450,322.5	516,419.1	1,153.20				Average	
		15	58	2,450,306.0	516,682.7	1,153.40				Average	
		16	59	2,450,290.0	516,974.1	1,154.90				Average	
		17	60	2,450,282.2	517,280.9	1,155.70				Average	
		18	61	2,450,282.8	517,597.1	1,156.30				Average	
		19	62	2,450,297.5	518,208.7	1,157.60				Average	
		20	63	2,450,309.5	518,851.9	1,155.90				Average	
		21	64	2,450,328.0	519,671.8	1,154.10				Average	

INPUT: ROADWAYS

MAH SR11/2386

		22	65	2,450,348.2	520,447.3	1,151.70				Average	
		23	66	2,450,361.0	521,077.3	1,149.70				Average	
		24	67	2,450,384.5	522,070.6	1,146.80				Average	
		25	68	2,450,400.0	522,778.2	1,144.80				Average	
		26	69	2,450,410.0	523,153.8	1,143.60				Average	
		27	70	2,450,423.2	523,721.6	1,142.10				Average	
		28	71	2,450,431.5	524,119.3	1,140.40				Average	
		29	72	2,450,440.2	524,462.6	1,139.80				Average	
		30	73	2,450,447.8	524,726.6	1,138.50				Average	
		31	74	2,450,450.5	524,942.4	1,137.10				Average	
		32	75	2,450,452.5	525,119.3	1,138.10				Average	
		33	76	2,450,447.0	525,276.8	1,137.30				Average	
		34	77	2,450,442.2	525,426.6	1,137.10				Average	
		35	78	2,450,431.0	525,580.3	1,135.20				Average	
		36	79	2,450,415.5	525,732.8	1,134.50				Average	
		37	80	2,450,388.8	525,926.3	1,131.90				Average	
		38	81	2,450,360.5	526,102.8	1,129.00				Average	
		39	82	2,450,330.0	526,263.4	1,125.70				Average	
		40	83	2,450,279.2	526,479.7	1,120.20				Average	
		41	84	2,450,213.5	526,731.3	1,113.20				Average	
		42	85	2,450,124.5	527,007.4	1,107.00				Average	
		43	86	2,450,035.5	527,241.1	1,106.40					
SR11 SB-2	12.0	1	87	2,451,271.2	511,869.0	1,142.70				Average	
		2	88	2,451,109.8	512,434.4	1,141.40				Average	
		3	89	2,450,942.2	513,035.0	1,142.70				Average	
		4	90	2,450,758.8	513,689.7	1,144.70				Average	
		5	91	2,450,638.0	514,117.7	1,146.30				Average	
		6	92	2,450,579.2	514,330.9	1,146.90				Average	
		7	93	2,450,533.0	514,518.7	1,147.60				Average	
		8	94	2,450,480.5	514,738.8	1,148.20				Average	
		9	95	2,450,442.5	514,916.6	1,148.80				Average	
		10	96	2,450,401.2	515,120.2	1,149.40				Average	
		11	97	2,450,354.8	515,399.3	1,150.20				Average	
		12	98	2,450,314.0	515,661.3	1,150.90				Average	
		13	99	2,450,261.5	516,051.8	1,152.40				Average	
		14	100	2,450,229.0	516,389.9	1,153.20				Average	
		15	101	2,450,209.5	516,675.9	1,153.90				Average	
		16	102	2,450,193.0	516,960.2	1,155.00				Average	
		17	103	2,450,184.8	517,280.8	1,155.90				Average	

INPUT: ROADWAYS

MAH SR11/2386

		18	104	2,450,186.5	517,595.6	1,156.70				Average	
		19	105	2,450,201.0	518,205.2	1,158.00				Average	
		20	106	2,450,216.0	518,859.0	1,156.30				Average	
		21	107	2,450,234.0	519,666.1	1,154.10				Average	
		22	108	2,450,252.0	520,448.8	1,151.80				Average	
		23	109	2,450,265.0	521,096.4	1,149.70				Average	
		24	110	2,450,288.0	522,068.9	1,146.90				Average	
		25	111	2,450,303.0	522,776.2	1,144.80				Average	
		26	112	2,450,312.8	523,160.7	1,143.70				Average	
		27	113	2,450,326.0	523,720.5	1,142.00				Average	
		28	114	2,450,334.8	524,116.8	1,140.70				Average	
		29	115	2,450,343.0	524,456.8	1,139.90				Average	
		30	116	2,450,350.5	524,720.9	1,139.00				Average	
		31	117	2,450,355.5	524,936.5	1,138.00				Average	
		32	118	2,450,355.2	525,120.6	1,137.20				Average	
		33	119	2,450,353.8	525,270.8	1,136.80				Average	
		34	120	2,450,346.0	525,422.5	1,136.30				Average	
		35	121	2,450,334.8	525,572.9	1,134.90				Average	
		36	122	2,450,319.5	525,726.5	1,133.70				Average	
		37	123	2,450,293.2	525,921.1	1,131.00				Average	
		38	124	2,450,264.5	526,097.6	1,128.10				Average	
		39	125	2,450,232.5	526,257.6	1,124.60				Average	
		40	126	2,450,182.5	526,476.7	1,119.30				Average	
		41	127	2,450,114.8	526,725.6	1,111.80				Average	
		42	128	2,450,025.2	527,001.1	1,106.50				Average	
		43	129	2,449,943.2	527,213.9	1,105.90					
SR11 SB-1	12.0	43	172	2,449,934.0	527,209.2	1,105.90				Average	
		42	171	2,450,015.5	526,997.0	1,106.50				Average	
		41	170	2,450,105.5	526,722.5	1,111.20				Average	
		40	169	2,450,172.8	526,474.0	1,119.30				Average	
		39	168	2,450,222.5	526,257.9	1,124.60				Average	
		38	167	2,450,254.2	526,097.9	1,128.10				Average	
		37	166	2,450,283.0	525,919.0	1,131.00				Average	
		36	165	2,450,309.5	525,724.5	1,133.70				Average	
		35	164	2,450,323.5	525,572.2	1,134.90				Average	
		34	163	2,450,336.0	525,421.5	1,135.70				Average	
		33	162	2,450,343.5	525,270.8	1,136.80				Average	
		32	161	2,450,345.0	525,120.8	1,136.60				Average	
		31	160	2,450,345.0	524,936.7	1,137.50				Average	

INPUT: ROADWAYS

MAH SR11/2386

		30	159	2,450,340.2	524,721.1	1,139.00				Average	
		29	158	2,450,332.8	524,457.1	1,139.60				Average	
		28	157	2,450,324.2	524,116.3	1,140.70				Average	
		27	156	2,450,315.8	523,717.7	1,141.70				Average	
		26	155	2,450,302.5	523,157.9	1,143.50				Average	
		25	154	2,450,293.0	522,773.3	1,144.90				Average	
		24	153	2,450,278.0	522,066.1	1,146.00				Average	
		23	152	2,450,254.8	521,093.5	1,149.70				Average	
		22	151	2,450,242.0	520,445.9	1,151.80				Average	
		21	150	2,450,223.0	519,666.3	1,153.40				Average	
		20	149	2,450,204.0	518,859.9	1,156.40				Average	
		19	148	2,450,189.5	518,205.5	1,158.00				Average	
		18	147	2,450,174.2	517,595.8	1,156.70				Average	
		17	146	2,450,174.2	517,280.5	1,155.90				Average	
		16	145	2,450,182.8	516,957.4	1,155.00				Average	
		15	144	2,450,198.0	516,675.2	1,154.00				Average	
		14	143	2,450,218.0	516,388.5	1,153.20				Average	
		13	142	2,450,250.5	516,050.2	1,152.40				Average	
		12	141	2,450,303.2	515,660.5	1,150.70				Average	
		11	140	2,450,344.5	515,396.4	1,150.20				Average	
		10	139	2,450,391.2	515,117.3	1,148.40				Average	
		9	138	2,450,432.2	514,913.7	1,148.50				Average	
		8	137	2,450,470.5	514,736.0	1,147.80				Average	
		7	136	2,450,522.8	514,515.9	1,147.60				Average	
		6	135	2,450,569.0	514,328.1	1,146.90				Average	
		5	134	2,450,628.0	514,114.9	1,146.30				Average	
		4	133	2,450,748.5	513,686.8	1,144.60				Average	
		3	132	2,450,932.0	513,032.2	1,142.70				Average	
		2	131	2,451,099.5	512,431.5	1,141.00				Average	
		1	130	2,451,262.8	511,864.3	1,142.70					
Mahoning EB-1	12.0	1	209	2,448,759.0	526,833.2	1,121.10				Average	
		2	210	2,449,181.2	526,840.6	1,112.50				Average	
		3	211	2,449,486.8	526,846.1	1,114.60				Average	
		4	212	2,449,592.8	526,847.5	1,117.20				Average	
		5	213	2,449,796.5	526,851.0	1,121.50				Average	
		6	214	2,449,944.8	526,859.2	1,125.10				Average	Y
		7	215	2,450,293.0	526,910.7	1,128.50				Average	
		8	216	2,450,383.5	526,927.8	1,128.70				Average	
		9	217	2,450,454.5	526,938.8	1,128.30				Average	

INPUT: ROADWAYS

MAH SR11/2386

		10	218	2,451,052.0	527,044.7	1,139.30				Average	
		11	219	2,451,194.0	527,069.0	1,139.50				Average	
		12	220	2,451,634.8	527,143.6	1,132.30					
Mahoning EB-2	12.0	1	221	2,448,759.0	526,845.2	1,121.10				Average	
		2	222	2,449,181.2	526,852.6	1,112.50				Average	
		3	223	2,449,486.8	526,858.1	1,114.60				Average	
		4	224	2,449,592.8	526,859.5	1,117.20				Average	
		5	225	2,449,796.5	526,863.0	1,121.50				Average	
		6	226	2,449,942.0	526,870.7	1,125.10				Average	Y
		7	227	2,450,288.8	526,922.6	1,128.50				Average	
		8	228	2,450,381.5	526,940.2	1,128.30				Average	
		9	229	2,450,450.5	526,950.9	1,128.30				Average	
		10	230	2,451,049.8	527,054.7	1,139.30				Average	
		11	231	2,451,192.0	527,079.8	1,139.60				Average	
		12	232	2,451,631.8	527,155.7	1,132.40					
Mahoning WB-center	12.0	1	233	2,448,759.2	526,855.0	1,121.10				Average	
		2	234	2,449,181.5	526,862.4	1,112.50				Average	
		3	235	2,449,487.0	526,867.9	1,114.60				Average	
		4	236	2,449,593.0	526,869.3	1,117.20				Average	
		5	237	2,449,795.5	526,873.9	1,121.50				Average	
		6	238	2,449,938.8	526,882.0	1,125.10				Average	Y
		7	239	2,450,284.0	526,935.7	1,128.20				Average	
		8	240	2,450,382.0	526,952.8	1,128.30				Average	
		9	241	2,450,447.0	526,962.4	1,128.30				Average	
		10	242	2,451,048.2	527,065.2	1,139.30				Average	
		11	243	2,451,189.5	527,089.6	1,139.60				Average	
		12	244	2,451,629.5	527,165.9	1,132.70					
Mahoning WB-2	12.0	12	256	2,451,627.5	527,174.6	1,132.70				Average	
		11	255	2,451,187.5	527,098.5	1,139.60				Average	
		10	254	2,451,048.2	527,073.9	1,139.30				Average	
		9	253	2,450,444.8	526,972.6	1,128.30				Average	
		8	252	2,450,379.0	526,965.6	1,128.70				Average	
		7	251	2,450,279.0	526,947.2	1,128.20				Average	Y
		6	250	2,449,935.2	526,894.7	1,123.60				Average	
		5	249	2,449,791.5	526,884.8	1,120.60				Average	
		4	248	2,449,593.5	526,879.2	1,117.10				Average	
		3	247	2,449,487.5	526,877.7	1,114.50				Average	
		2	246	2,449,182.0	526,872.2	1,112.60				Average	
		1	245	2,448,759.8	526,864.8	1,121.10					

**INPUT: ROADWAYS**

**MAH SR11/2386**

Mahoning WB-1	12.0	12	268	2,451,625.2	527,184.8	1,132.70				Average	
		11	267	2,451,184.5	527,110.5	1,139.60				Average	
		10	266	2,451,046.0	527,085.6	1,139.30				Average	
		9	265	2,450,440.5	526,985.9	1,128.30				Average	
		8	264	2,450,375.5	526,978.0	1,128.70				Average	
		7	263	2,450,274.5	526,960.4	1,128.20				Average	Y
		6	262	2,449,931.5	526,906.1	1,123.60				Average	
		5	261	2,449,791.5	526,896.8	1,120.60				Average	
		4	260	2,449,593.2	526,891.2	1,117.10				Average	
		3	259	2,449,487.5	526,889.7	1,114.50				Average	
		2	258	2,449,182.0	526,884.2	1,112.60				Average	
		1	257	2,448,759.8	526,876.8	1,121.10					
Ramp: Mahoning to SR 11S	12.0	22	290	2,449,830.5	526,832.2	1,123.60	Onramp	15.00	100	Average	
		21	289	2,449,891.5	526,734.7	1,126.10				Average	
		20	288	2,449,949.0	526,636.5	1,127.80				Average	
		19	287	2,450,029.5	526,501.5	1,128.20				Average	
		18	286	2,450,073.5	526,419.2	1,128.50				Average	
		17	285	2,450,112.0	526,327.8	1,127.30				Average	
		16	284	2,450,142.0	526,248.3	1,125.50				Average	
		15	283	2,450,175.8	526,143.3	1,127.30				Average	
		14	282	2,450,205.8	526,039.5	1,128.10				Average	
		13	281	2,450,233.0	525,932.0	1,129.50				Average	
		12	280	2,450,257.0	525,827.2	1,131.20				Average	
		11	279	2,450,277.2	525,701.7	1,132.20				Average	
		10	278	2,450,292.2	525,595.9	1,134.50				Average	
		9	277	2,450,303.2	525,497.7	1,135.00				Average	
		8	276	2,450,309.5	525,417.1	1,135.00				Average	
		7	275	2,450,320.2	525,267.3	1,136.30				Average	
		6	274	2,450,326.8	525,124.6	1,136.60				Average	
		5	273	2,450,328.0	525,027.6	1,137.00				Average	
		4	272	2,450,330.0	524,935.9	1,137.50				Average	
		3	271	2,450,329.2	524,720.5	1,139.00				Average	
		2	270	2,450,327.8	524,457.3	1,139.60				Average	
		1	269	2,450,322.8	524,116.3	1,140.70					
Ramp: SR 11N to Mahoning	12.0	1	291	2,450,461.0	524,726.6	1,138.90				Average	
		2	292	2,450,470.0	524,786.7	1,138.80				Average	
		3	293	2,450,472.5	524,942.3	1,138.50				Average	
		4	294	2,450,477.2	525,119.1	1,138.70				Average	
		5	295	2,450,481.8	525,277.6	1,138.30				Average	

**INPUT: ROADWAYS**

**MAH SR11/2386**

		6	296	2,450,484.8	525,426.3	1,137.90				Average	
		7	297	2,450,487.0	525,576.0	1,136.70				Average	
		8	298	2,450,488.5	525,676.4	1,136.00				Average	
		9	299	2,450,485.0	525,772.0	1,136.00				Average	
		10	300	2,450,482.0	525,906.4	1,137.60				Average	
		11	301	2,450,473.5	526,083.0	1,139.30				Average	
		12	302	2,450,456.5	526,452.9	1,139.70				Average	
		13	303	2,450,440.8	526,903.0	1,128.50					
Oakcrest WB	12.0	6	309	2,451,311.2	523,235.6	1,147.10				Average	
		5	308	2,450,966.0	523,236.4	1,145.10				Average	
		4	307	2,450,530.5	523,230.8	1,159.10				Average	Y
		3	306	2,450,196.0	523,223.2	1,159.10				Average	
		2	305	2,449,784.2	523,217.4	1,151.00				Average	
		1	304	2,449,408.0	523,211.2	1,158.50					
Oakcrest EB	12.0	1	310	2,449,408.0	523,199.2	1,158.50				Average	
		2	311	2,449,784.2	523,205.4	1,151.00				Average	
		3	312	2,450,196.0	523,211.2	1,159.10				Average	Y
		4	313	2,450,530.5	523,218.8	1,159.10				Average	
		5	314	2,450,966.0	523,224.4	1,145.00				Average	
		6	315	2,451,311.2	523,223.6	1,147.00					

INPUT: TRAFFIC FOR LAeq1h Volumes

MAH SR11/2386

ASC Group, Inc. mas		5 April 2018 TNM 2.5											
INPUT: TRAFFIC FOR LAeq1h Volumes													
PROJECT/CONTRACT:		MAH SR11/2386											
RUN:		existing-NSA8-9 Cross EOS											
Roadway	Points												
Name	Name	No.	Segment		MTrucks		HTrucks		Buses		Motorcycles		
			Autos		V	S	V	S	V	S	V	S	
			V	S	V	S	V	S	V	S			
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	
SR11 NB-1	1	1	820	65	7	65	62	65	10	65	8	65	
	2	2	820	65	7	65	62	65	10	65	8	65	
	3	3	820	65	7	65	62	65	10	65	8	65	
	4	4	820	65	7	65	62	65	10	65	8	65	
	5	5	820	65	7	65	62	65	10	65	8	65	
	6	6	820	65	7	65	62	65	10	65	8	65	
	7	7	820	65	7	65	62	65	10	65	8	65	
	8	8	820	65	7	65	62	65	10	65	8	65	
	9	9	820	65	7	65	62	65	10	65	8	65	
	10	10	820	65	7	65	62	65	10	65	8	65	
	11	11	820	65	7	65	62	65	10	65	8	65	
	12	12	820	65	7	65	62	65	10	65	8	65	
	13	13	820	65	7	65	62	65	10	65	8	65	
	14	14	820	65	7	65	62	65	10	65	8	65	
	15	15	820	65	7	65	62	65	10	65	8	65	
	16	16	820	65	7	65	62	65	10	65	8	65	
	17	17	820	65	7	65	62	65	10	65	8	65	
	18	18	820	65	7	65	62	65	10	65	8	65	
	19	19	820	65	7	65	62	65	10	65	8	65	
	20	20	820	65	7	65	62	65	10	65	8	65	
	21	21	820	65	7	65	62	65	10	65	8	65	
	22	22	820	65	7	65	62	65	10	65	8	65	
	23	23	820	65	7	65	62	65	10	65	8	65	



**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	24	24	820	65	7	65	62	65	10	65	8	65
	25	25	820	65	7	65	62	65	10	65	8	65
	26	26	820	65	7	65	62	65	10	65	8	65
	27	27	820	65	7	65	62	65	10	65	8	65
	28	28	820	65	7	65	62	65	10	65	8	65
	29	29	820	65	7	65	62	65	10	65	8	65
	30	30	820	65	7	65	62	65	10	65	8	65
	31	31	820	65	7	65	62	65	10	65	8	65
	32	32	820	65	7	65	62	65	10	65	8	65
	33	33	820	65	7	65	62	65	10	65	8	65
	34	34	820	65	7	65	62	65	10	65	8	65
	35	35	820	65	7	65	62	65	10	65	8	65
	36	36	820	65	7	65	62	65	10	65	8	65
	37	37	820	65	7	65	62	65	10	65	8	65
	38	38	820	65	7	65	62	65	10	65	8	65
	39	39	820	65	7	65	62	65	10	65	8	65
	40	40	820	65	7	65	62	65	10	65	8	65
	41	41	820	65	7	65	62	65	10	65	8	65
	42	42	820	65	7	65	62	65	10	65	8	65
	43	43										
SR11 NB-2	1	44	820	65	7	65	62	65	10	65	8	65
	2	45	820	65	7	65	62	65	10	65	8	65
	3	46	820	65	7	65	62	65	10	65	8	65
	4	47	820	65	7	65	62	65	10	65	8	65
	5	48	820	65	7	65	62	65	10	65	8	65
	6	49	820	65	7	65	62	65	10	65	8	65
	7	50	820	65	7	65	62	65	10	65	8	65
	8	51	820	65	7	65	62	65	10	65	8	65
	9	52	820	65	7	65	62	65	10	65	8	65
	10	53	820	65	7	65	62	65	10	65	8	65
	11	54	820	65	7	65	62	65	10	65	8	65
	12	55	820	65	7	65	62	65	10	65	8	65
	13	56	820	65	7	65	62	65	10	65	8	65
	14	57	820	65	7	65	62	65	10	65	8	65
	15	58	820	65	7	65	62	65	10	65	8	65
	16	59	820	65	7	65	62	65	10	65	8	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	17	60	820	65	7	65	62	65	10	65	8	65
	18	61	820	65	7	65	62	65	10	65	8	65
	19	62	820	65	7	65	62	65	10	65	8	65
	20	10	820	65	7	65	62	65	10	65	8	65
	21	64	820	65	7	65	62	65	10	65	8	65
	22	65	820	65	7	65	62	65	10	65	8	65
	23	66	820	65	7	65	62	65	10	65	8	65
	24	67	820	65	7	65	62	65	10	65	8	65
	25	68	820	65	7	65	62	65	10	65	8	65
	26	69	820	65	7	65	62	65	10	65	8	65
	27	70	820	65	7	65	62	65	10	65	8	65
	28	71	820	65	7	65	62	65	10	65	8	65
	29	72	820	65	7	65	62	65	10	65	8	65
	30	73	820	65	7	65	62	65	10	65	8	65
	31	74	820	65	7	65	62	65	10	65	8	65
	32	75	820	65	7	65	62	65	10	65	8	65
	33	76	820	65	7	65	62	65	10	65	8	65
	34	77	820	65	7	65	62	65	10	65	8	65
	35	78	820	65	7	65	62	65	10	65	8	65
	36	79	820	65	7	65	62	65	10	65	8	65
	37	80	820	65	7	65	62	65	10	65	8	65
	38	81	820	65	7	65	62	65	10	65	8	65
	39	82	820	65	7	65	62	65	10	65	8	65
	40	83	820	65	7	65	62	65	10	65	8	65
	41	84	820	65	7	65	62	65	10	65	8	65
	42	85	820	65	7	65	62	65	10	65	8	65
	43	86										
SR11 SB-2	1	87	803	65	6	65	58	65	9	65	4	65
	2	88	803	65	6	65	58	65	9	65	4	65
	3	89	803	65	6	65	58	65	9	65	4	65
	4	90	803	65	6	65	58	65	9	65	4	65
	5	91	803	65	6	65	58	65	9	65	4	65
	6	92	803	65	6	65	58	65	9	65	4	65
	7	93	803	65	6	65	58	65	9	65	4	65
	8	94	803	65	6	65	58	65	9	65	4	65
	9	95	803	65	6	65	58	65	9	65	4	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	10	96	803	65	6	65	58	65	9	65	4	65
	11	97	803	65	6	65	58	65	9	65	4	65
	12	98	803	65	6	65	58	65	9	65	4	65
	13	99	803	65	6	65	58	65	9	65	4	65
	14	100	803	65	6	65	58	65	9	65	4	65
	15	101	803	65	6	65	58	65	9	65	4	65
	16	102	803	65	6	65	58	65	9	65	4	65
	17	103	803	65	6	65	58	65	9	65	4	65
	18	104	803	65	6	65	58	65	9	65	4	65
	19	105	803	65	6	65	58	65	9	65	4	65
	20	106	803	65	6	65	58	65	9	65	4	65
	21	107	803	65	6	65	58	65	9	65	4	65
	22	108	803	65	6	65	58	65	9	65	4	65
	23	109	803	65	6	65	58	65	9	65	4	65
	24	110	803	65	6	65	58	65	9	65	4	65
	25	111	803	65	6	65	58	65	9	65	4	65
	26	112	803	65	6	65	58	65	9	65	4	65
	27	113	803	65	6	65	58	65	9	65	4	65
	28	114	803	65	6	65	58	65	9	65	4	65
	29	115	803	65	6	65	58	65	9	65	4	65
	30	116	803	65	6	65	58	65	9	65	4	65
	31	117	803	65	6	65	58	65	9	65	4	65
	32	118	803	65	6	65	58	65	9	65	4	65
	33	119	803	65	6	65	58	65	9	65	4	65
	34	120	803	65	6	65	58	65	9	65	4	65
	35	121	803	65	6	65	58	65	9	65	4	65
	36	122	803	65	6	65	58	65	9	65	4	65
	37	123	803	65	6	65	58	65	9	65	4	65
	38	124	803	65	6	65	58	65	9	65	4	65
	39	125	803	65	6	65	58	65	9	65	4	65
	40	126	803	65	6	65	58	65	9	65	4	65
	41	127	803	65	6	65	58	65	9	65	4	65
	42	128	803	65	6	65	58	65	9	65	4	65
	43	129										
SR11 SB-1	43	172	803	65	6	65	58	65	9	65	4	65
	42	171	803	65	6	65	58	65	9	65	4	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	41	170	803	65	6	65	58	65	9	65	4	65
	40	169	803	65	6	65	58	65	9	65	4	65
	39	168	803	65	6	65	58	65	9	65	4	65
	38	167	803	65	6	65	58	65	9	65	4	65
	37	166	803	65	6	65	58	65	9	65	4	65
	36	165	803	65	6	65	58	65	9	65	4	65
	35	164	803	65	6	65	58	65	9	65	4	65
	34	163	803	65	6	65	58	65	9	65	4	65
	33	162	803	65	6	65	58	65	9	65	4	65
	32	161	803	65	6	65	58	65	9	65	4	65
	31	160	803	65	6	65	58	65	9	65	4	65
	30	159	803	65	6	65	58	65	9	65	4	65
	29	158	803	65	6	65	58	65	9	65	4	65
	28	157	803	65	6	65	58	65	9	65	4	65
	27	156	803	65	6	65	58	65	9	65	4	65
	26	155	803	65	6	65	58	65	9	65	4	65
	25	154	803	65	6	65	58	65	9	65	4	65
	24	153	803	65	6	65	58	65	9	65	4	65
	23	152	803	65	6	65	58	65	9	65	4	65
	22	151	803	65	6	65	58	65	9	65	4	65
	21	150	803	65	6	65	58	65	9	65	4	65
	20	149	803	65	6	65	58	65	9	65	4	65
	19	148	803	65	6	65	58	65	9	65	4	65
	18	147	803	65	6	65	58	65	9	65	4	65
	17	146	803	65	6	65	58	65	9	65	4	65
	16	145	803	65	6	65	58	65	9	65	4	65
	15	144	803	65	6	65	58	65	9	65	4	65
	14	143	803	65	6	65	58	65	9	65	4	65
	13	142	803	65	6	65	58	65	9	65	4	65
	12	141	803	65	6	65	58	65	9	65	4	65
	11	140	803	65	6	65	58	65	9	65	4	65
	10	139	803	65	6	65	58	65	9	65	4	65
	9	138	803	65	6	65	58	65	9	65	4	65
	8	137	803	65	6	65	58	65	9	65	4	65
	7	136	803	65	6	65	58	65	9	65	4	65
	6	135	803	65	6	65	58	65	9	65	4	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	5	134	803	65	6	65	58	65	9	65	4	65
	4	133	803	65	6	65	58	65	9	65	4	65
	3	132	803	65	6	65	58	65	9	65	4	65
	2	131	803	65	6	65	58	65	9	65	4	65
	1	130										
Mahoning EB-1	1	209	663	35	3	35	15	35	2	35	2	35
	2	210	663	35	3	35	15	35	2	35	2	35
	3	211	663	35	3	35	15	35	2	35	2	35
	4	212	663	35	3	35	15	35	2	35	2	35
	5	213	663	35	3	35	15	35	2	35	2	35
	6	214	663	35	3	35	15	35	2	35	2	35
	7	215	663	35	3	35	15	35	2	35	2	35
	8	216	663	35	3	35	15	35	2	35	2	35
	9	217	663	35	3	35	15	35	2	35	2	35
	10	218	663	35	3	35	15	35	2	35	2	35
	11	219	663	35	3	35	15	35	2	35	2	35
	12	220										
Mahoning EB-2	1	221	663	35	3	35	15	35	2	35	2	35
	2	222	663	35	3	35	15	35	2	35	2	35
	3	223	663	35	3	35	15	35	2	35	2	35
	4	224	663	35	3	35	15	35	2	35	2	35
	5	225	663	35	3	35	15	35	2	35	2	35
	6	226	663	35	3	35	15	35	2	35	2	35
	7	227	663	35	3	35	15	35	2	35	2	35
	8	228	663	35	3	35	15	35	2	35	2	35
	9	229	663	35	3	35	15	35	2	35	2	35
	10	230	663	35	3	35	15	35	2	35	2	35
	11	231	663	35	3	35	15	35	2	35	2	35
	12	232										
Mahoning WB-center	1	233	0	0	0	0	0	0	0	0	0	0
	2	234	0	0	0	0	0	0	0	0	0	0
	3	235	0	0	0	0	0	0	0	0	0	0
	4	236	0	0	0	0	0	0	0	0	0	0
	5	237	0	0	0	0	0	0	0	0	0	0
	6	238	0	0	0	0	0	0	0	0	0	0
	7	239	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	8	240	0	0	0	0	0	0	0	0	0	0
	9	241	0	0	0	0	0	0	0	0	0	0
	10	242	0	0	0	0	0	0	0	0	0	0
	11	243	0	0	0	0	0	0	0	0	0	0
	12	244										
Mahoning WB-2	12	256	663	35	3	35	15	35	2	35	2	35
	11	255	663	35	3	35	15	35	2	35	2	35
	10	254	663	35	3	35	15	35	2	35	2	35
	9	253	663	35	3	35	15	35	2	35	2	35
	8	252	663	35	3	35	15	35	2	35	2	35
	7	251	663	35	3	35	15	35	2	35	2	35
	6	250	663	35	3	35	15	35	2	35	2	35
	5	249	663	35	3	35	15	35	2	35	2	35
	4	248	663	35	3	35	15	35	2	35	2	35
	3	247	663	35	3	35	15	35	2	35	2	35
	2	246	663	35	3	35	15	35	2	35	2	35
	1	245										
Mahoning WB-1	12	268	663	35	3	35	15	35	2	35	2	35
	11	267	663	35	3	35	15	35	2	35	2	35
	10	266	663	35	3	35	15	35	2	35	2	35
	9	265	663	35	3	35	15	35	2	35	2	35
	8	264	663	35	3	35	15	35	2	35	2	35
	7	263	663	35	3	35	15	35	2	35	2	35
	6	262	663	35	3	35	15	35	2	35	2	35
	5	261	663	35	3	35	15	35	2	35	2	35
	4	260	663	35	3	35	15	35	2	35	2	35
	3	259	663	35	3	35	15	35	2	35	2	35
	2	258	663	35	3	35	15	35	2	35	2	35
	1	257										
Ramp: Mahoning to SR 11S	22	290	304	65	1	65	6	65	1	65	0	0
	21	289	304	65	1	65	6	65	1	65	0	0
	20	288	304	65	1	65	6	65	1	65	0	0
	19	287	304	65	1	65	6	65	1	65	0	0
	18	286	304	65	1	65	6	65	1	65	0	0
	17	285	304	65	1	65	6	65	1	65	0	0
	16	284	304	65	1	65	6	65	1	65	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	15	283	304	65	1	65	6	65	1	65	0	0
	14	282	304	65	1	65	6	65	1	65	0	0
	13	281	304	65	1	65	6	65	1	65	0	0
	12	280	304	65	1	65	6	65	1	65	0	0
	11	279	304	65	1	65	6	65	1	65	0	0
	10	278	304	65	1	65	6	65	1	65	0	0
	9	277	304	65	1	65	6	65	1	65	0	0
	8	276	304	65	1	65	6	65	1	65	0	0
	7	275	304	65	1	65	6	65	1	65	0	0
	6	274	304	65	1	65	6	65	1	65	0	0
	5	273	304	65	1	65	6	65	1	65	0	0
	4	272	304	65	1	65	6	65	1	65	0	0
	3	271	304	65	1	65	6	65	1	65	0	0
	2	270	304	65	1	65	6	65	1	65	0	0
	1	269										
Ramp: SR 11N to Mahoning	1	291	319	65	2	65	7	65	1	65	1	65
	2	292	319	65	2	65	7	65	1	65	1	65
	3	293	319	65	2	65	7	65	1	65	1	65
	4	294	319	65	2	65	7	65	1	65	1	65
	5	295	319	65	2	65	7	65	1	65	1	65
	6	296	319	65	2	65	7	65	1	65	1	65
	7	297	319	65	2	65	7	65	1	65	1	65
	8	298	319	60	2	60	7	60	1	60	1	60
	9	299	319	50	2	50	7	50	1	50	1	50
	10	300	319	40	2	40	7	40	1	40	1	40
	11	301	319	30	2	30	7	30	1	30	1	30
	12	302	319	20	2	20	7	20	1	20	1	20
	13	303										
Oakcrest WB	6	309	0	0	0	0	0	0	0	0	0	0
	5	308	0	0	0	0	0	0	0	0	0	0
	4	307	0	0	0	0	0	0	0	0	0	0
	3	306	0	0	0	0	0	0	0	0	0	0
	2	305	0	0	0	0	0	0	0	0	0	0
	1	304										
Oakcrest EB	1	310	0	0	0	0	0	0	0	0	0	0
	2	311	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes****MAH SR11/2386**

	3	312	0	0	0	0	0	0	0	0	0	0
	4	313	0	0	0	0	0	0	0	0	0	0
	5	314	0	0	0	0	0	0	0	0	0	0
	6	315										





**INPUT: RECEIVERS**

**MAH SR11/2386**

8-23	24	1	2,450,802.8	524,599.6	1,137.37	5.00	0.00	66	10.0	8.0	Y
8-24	25	1	2,450,800.8	524,659.1	1,136.29	5.00	0.00	66	10.0	8.0	Y
8-25	26	1	2,450,791.2	524,721.8	1,138.71	5.00	0.00	66	10.0	8.0	Y
8-26	27	1	2,450,788.0	524,785.8	1,138.98	5.00	0.00	66	10.0	8.0	Y
8-27	28	1	2,450,784.8	524,886.2	1,139.37	5.00	0.00	66	10.0	8.0	Y
8-28	29	1	2,450,789.2	524,935.0	1,139.14	5.00	0.00	66	10.0	8.0	Y
8-29	30	1	2,450,789.2	524,993.2	1,139.24	5.00	0.00	66	10.0	8.0	Y
8-30	31	1	2,450,784.8	525,060.3	1,138.98	5.00	0.00	66	10.0	8.0	Y
8-31	32	1	2,450,783.5	525,102.9	1,139.01	5.00	0.00	66	10.0	8.0	Y
8-32	33	1	2,450,786.2	525,166.2	1,138.71	5.00	0.00	66	10.0	8.0	Y
9-1	34	1	2,450,901.5	525,567.1	1,135.79	5.00	0.00	66	10.0	8.0	Y
9-2	35	1	2,450,772.0	525,791.8	1,137.40	5.00	0.00	66	10.0	8.0	Y
9-3	36	1	2,450,565.8	525,898.2	1,141.50	5.00	0.00	66	10.0	8.0	Y
9-4	37	1	2,450,563.8	525,989.3	1,142.42	5.00	0.00	66	10.0	8.0	Y
9-5	38	1	2,450,664.5	526,156.0	1,144.78	5.00	0.00	66	10.0	8.0	Y
9-6	39	1	2,450,971.0	526,101.4	1,141.80	5.00	0.00	66	10.0	8.0	Y
9-7	40	1	2,450,807.2	526,333.6	1,144.62	5.00	0.00	66	10.0	8.0	Y
8-1 residence											
8-2 residence											
8-3 residence											
8-4 residence											
8-5 residence											
8-6 residence											
8-7 residence											
8-8 residence											
8-9 residence											
8-10 residence											
8-11 residence											
8-12 residence											
8-13 residence											
8-14 residence											
8-15 residence											
8-16 residence											
8-17 residence											
8-18 residence											
8-19 residence											

**INPUT: RECEIVERS**

**MAH SR11/2386**

8-20 residence												
8-21 residence												
8-22 residence												
8-23 residence												
8-24 residence												
8-25 residence												
8-26 residence												
8-27 residence												
8-28 residence												
8-29 residence												
8-30 residence												
8-31 residence												
8-32 residence												
9-1 non-profit interior												
9-2 school playground												
9-3 school playground												
9-4 school playground												
9-5 non-profit outdoor												
9-6 senior center interior												
9-7 restaurant patio												

RESULTS: SOUND LEVELS

MAH SR11/2386

ASC Group, Inc. mas									5 April 2018 TNM 2.5 Calculated with TNM 2.5				
RESULTS: SOUND LEVELS													
PROJECT/CONTRACT:		MAH SR11/2386											
RUN:		existing-NSA8-9 Cross EOS											
BARRIER DESIGN:		INPUT HEIGHTS											
ATMOSPHERICS:		68 deg F, 50% RH											
		Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.											

Receiver													
Name	No.	#DUs	Existing	No Barrier	Increase over existing			With Barrier					
			LAeq1h	LAeq1h	Crit'n	Calculated	Crit'n	Type	Calculated	Noise Reduction	Goal	Calculated	
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	minus	Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB		dB
8-1	1	1	0.0	62.2	66	62.2	10	----	61.3	0.9	8		-7.1
8-2	2	1	0.0	66.5	66	66.5	10	Snd Lvl	64.7	1.8	8		-6.2
8-3	3	1	0.0	69.4	66	69.4	10	Snd Lvl	66.5	2.9	8		-5.1
8-4	4	1	0.0	67.1	66	67.1	10	Snd Lvl	64.8	2.3	8		-5.7
8-5	5	1	0.0	66.0	66	66.0	10	Snd Lvl	64.1	1.9	8		-6.1
8-6	6	1	0.0	68.5	66	68.5	10	Snd Lvl	65.2	3.3	8		-4.7
8-7	7	1	0.0	69.0	66	69.0	10	Snd Lvl	65.3	3.7	8		-4.3
8-8	8	1	0.0	66.5	66	66.5	10	Snd Lvl	63.9	2.6	8		-5.4
8-9	10	1	0.0	62.2	66	62.2	10	----	60.8	1.4	8		-6.6
8-10	11	1	0.0	58.6	66	58.6	10	----	57.9	0.7	8		-7.3
8-11	12	1	0.0	58.6	66	58.6	10	----	58.0	0.6	8		-7.4
8-12	13	1	0.0	59.7	66	59.7	10	----	59.2	0.5	8		-7.5
8-13	14	1	0.0	60.3	66	60.3	10	----	59.4	0.9	8		-7.1
8-14	15	1	0.0	61.5	66	61.5	10	----	60.3	1.2	8		-6.8
8-15	16	1	0.0	61.6	66	61.6	10	----	60.5	1.1	8		-6.9
8-16	17	1	0.0	59.3	66	59.3	10	----	58.5	0.8	8		-7.2
8-17	18	1	0.0	59.1	66	59.1	10	----	57.7	1.4	8		-6.6
8-18	19	1	0.0	57.1	66	57.1	10	----	56.4	0.7	8		-7.3
8-19	20	1	0.0	60.3	66	60.3	10	----	59.0	1.3	8		-6.7
8-20	21	1	0.0	60.8	66	60.8	10	----	59.6	1.2	8		-6.8
8-21	22	1	0.0	61.1	66	61.1	10	----	59.7	1.4	8		-6.6
8-22	23	1	0.0	61.2	66	61.2	10	----	59.8	1.4	8		-6.6
8-23	24	1	0.0	61.3	66	61.3	10	----	59.8	1.5	8		-6.5
8-24	25	1	0.0	61.5	66	61.5	10	----	59.8	1.7	8		-6.3

**RESULTS: SOUND LEVELS**

**MAH SR11/2386**

8-25	26	1	0.0	61.4	66	61.4	10	----	60.2	1.2	8	-6.8
8-26	27	1	0.0	61.6	66	61.6	10	----	60.3	1.3	8	-6.7
8-27	28	1	0.0	61.8	66	61.8	10	----	60.4	1.4	8	-6.6
8-28	29	1	0.0	61.7	66	61.7	10	----	60.3	1.4	8	-6.6
8-29	30	1	0.0	61.8	66	61.8	10	----	60.3	1.5	8	-6.5
8-30	31	1	0.0	61.9	66	61.9	10	----	60.3	1.6	8	-6.4
8-31	32	1	0.0	62.0	66	62.0	10	----	60.3	1.7	8	-6.3
8-32	33	1	0.0	61.9	66	61.9	10	----	60.2	1.7	8	-6.3
9-1	34	1	0.0	60.1	66	60.1	10	----	56.9	3.2	8	-4.8
9-2	35	1	0.0	59.9	66	59.9	10	----	58.0	1.9	8	-6.1
9-3	36	1	0.0	67.5	66	67.5	10	Snd Lvl	64.8	2.7	8	-5.3
9-4	37	1	0.0	66.7	66	66.7	10	Snd Lvl	63.7	3.0	8	-5.0
9-5	38	1	0.0	59.5	66	59.5	10	----	56.3	3.2	8	-4.8
9-6	39	1	0.0	54.9	66	54.9	10	----	54.1	0.8	8	-7.2
9-7	40	1	0.0	57.8	66	57.8	10	----	54.9	2.9	8	-5.1
<b>Dwelling Units</b>		<b># DUs</b>	<b>Noise Reduction</b>									
			<b>Min</b>	<b>Avg</b>	<b>Max</b>							
			<b>dB</b>	<b>dB</b>	<b>dB</b>							
All Selected		39	0.5	1.7	3.7							
All Impacted		9	1.8	2.7	3.7							
All that meet NR Goal		0	0.0	0.0	0.0							

ASC Group, Inc. mas					5 April 2018 TNM 2.5					
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INPUT: ROADWAYS PROJECT/CONTRACT: RUN:	MAH SR11/2386 existing-NSA8-9 Cross-ROW	Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA								
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Roadway Name	Width ft	Points			Coordinates (pavement)			Flow Control			Segment	
		Name	No.		X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
					ft	ft	ft		mph	%		
SR11 NB-1	12.0	1	1	2,451,374.8	511,900.4	1,142.60					Average	
		2	2	2,451,213.2	512,465.7	1,141.40					Average	
		3	3	2,451,045.8	513,066.4	1,142.80					Average	
		4	4	2,450,860.5	513,721.0	1,144.80					Average	
		5	5	2,450,744.2	514,149.3	1,146.30					Average	
		6	6	2,450,682.2	514,360.0	1,147.00					Average	
		7	7	2,450,634.2	514,550.1	1,147.00					Average	
		8	8	2,450,587.5	514,766.0	1,148.30					Average	
		9	9	2,450,547.5	514,947.7	1,148.60					Average	
		10	10	2,450,504.8	515,146.8	1,149.40					Average	
		11	11	2,450,455.8	515,432.0	1,150.40					Average	
		12	12	2,450,419.2	515,670.0	1,151.10					Average	
		13	13	2,450,366.5	516,083.0	1,152.20					Average	
		14	14	2,450,332.5	516,421.3	1,153.20					Average	
		15	15	2,450,316.5	516,682.7	1,154.10					Average	
		16	16	2,450,300.2	516,977.8	1,154.90					Average	
		17	17	2,450,293.5	517,281.5	1,155.70					Average	
		18	18	2,450,294.2	517,597.8	1,156.70					Average	
		19	19	2,450,308.2	518,208.7	1,157.90					Average	
		20	20	2,450,321.2	518,851.5	1,156.50					Average	
		21	21	2,450,339.0	519,672.9	1,154.10					Average	
		22	22	2,450,358.5	520,451.0	1,151.40					Average	
		23	23	2,450,371.5	521,077.9	1,149.70					Average	
		24	24	2,450,394.8	522,071.0	1,146.80					Average	
		25	25	2,450,410.2	522,781.8	1,144.80					Average	

INPUT: ROADWAYS

MAH SR11/2386

		26	26	2,450,421.0	523,153.8	1,143.60				Average	
		27	27	2,450,433.5	523,725.3	1,142.00				Average	
		28	28	2,450,442.5	524,118.8	1,140.40				Average	
		29	29	2,450,450.5	524,462.4	1,139.80				Average	
		30	30	2,450,458.0	524,726.5	1,138.90				Average	
		31	31	2,450,461.0	524,942.6	1,138.50				Average	
		32	32	2,450,462.8	525,119.3	1,138.10				Average	
		33	33	2,450,457.0	525,278.1	1,137.30				Average	
		34	34	2,450,453.0	525,427.2	1,137.10				Average	
		35	35	2,450,441.2	525,580.1	1,136.30				Average	
		36	36	2,450,425.5	525,732.6	1,134.50				Average	
		37	37	2,450,399.0	525,926.2	1,131.90				Average	
		38	38	2,450,370.8	526,102.7	1,129.00				Average	
		39	39	2,450,340.0	526,263.2	1,125.70				Average	
		40	40	2,450,290.0	526,482.5	1,120.20				Average	
		41	41	2,450,224.0	526,734.5	1,113.20				Average	
		42	42	2,450,134.5	527,011.3	1,108.00				Average	
		43	43	2,450,046.0	527,245.0	1,106.40					
SR11 NB-2	12.0	1	44	2,451,366.2	511,895.0	1,142.50				Average	
		2	45	2,451,203.0	512,462.0	1,140.90				Average	
		3	46	2,451,035.5	513,062.7	1,142.60				Average	
		4	47	2,450,850.2	513,717.3	1,144.50				Average	
		5	48	2,450,734.0	514,145.3	1,146.30				Average	
		6	49	2,450,672.2	514,356.5	1,147.00				Average	
		7	50	2,450,624.0	514,546.4	1,147.00				Average	
		8	51	2,450,577.2	514,762.3	1,147.50				Average	
		9	52	2,450,537.2	514,944.0	1,148.60				Average	
		10	53	2,450,494.5	515,143.2	1,149.40				Average	
		11	54	2,450,445.5	515,429.4	1,150.40				Average	
		12	55	2,450,408.0	515,668.5	1,149.90				Average	
		13	56	2,450,356.0	516,081.1	1,152.20				Average	
		14	57	2,450,322.5	516,419.1	1,153.20				Average	
		15	58	2,450,306.0	516,682.7	1,153.40				Average	
		16	59	2,450,290.0	516,974.1	1,154.90				Average	
		17	60	2,450,282.2	517,280.9	1,155.70				Average	
		18	61	2,450,282.8	517,597.1	1,156.30				Average	
		19	62	2,450,297.5	518,208.7	1,157.60				Average	
		20	63	2,450,309.5	518,851.9	1,155.90				Average	
		21	64	2,450,328.0	519,671.8	1,154.10				Average	

INPUT: ROADWAYS

MAH SR11/2386

		22	65	2,450,348.2	520,447.3	1,151.70				Average	
		23	66	2,450,361.0	521,077.3	1,149.70				Average	
		24	67	2,450,384.5	522,070.6	1,146.80				Average	
		25	68	2,450,400.0	522,778.2	1,144.80				Average	
		26	69	2,450,410.0	523,153.8	1,143.60				Average	
		27	70	2,450,423.2	523,721.6	1,142.10				Average	
		28	71	2,450,431.5	524,119.3	1,140.40				Average	
		29	72	2,450,440.2	524,462.6	1,139.80				Average	
		30	73	2,450,447.8	524,726.6	1,138.50				Average	
		31	74	2,450,450.5	524,942.4	1,137.10				Average	
		32	75	2,450,452.5	525,119.3	1,138.10				Average	
		33	76	2,450,447.0	525,276.8	1,137.30				Average	
		34	77	2,450,442.2	525,426.6	1,137.10				Average	
		35	78	2,450,431.0	525,580.3	1,135.20				Average	
		36	79	2,450,415.5	525,732.8	1,134.50				Average	
		37	80	2,450,388.8	525,926.3	1,131.90				Average	
		38	81	2,450,360.5	526,102.8	1,129.00				Average	
		39	82	2,450,330.0	526,263.4	1,125.70				Average	
		40	83	2,450,279.2	526,479.7	1,120.20				Average	
		41	84	2,450,213.5	526,731.3	1,113.20				Average	
		42	85	2,450,124.5	527,007.4	1,107.00				Average	
		43	86	2,450,035.5	527,241.1	1,106.40					
SR11 SB-2	12.0	1	87	2,451,271.2	511,869.0	1,142.70				Average	
		2	88	2,451,109.8	512,434.4	1,141.40				Average	
		3	89	2,450,942.2	513,035.0	1,142.70				Average	
		4	90	2,450,758.8	513,689.7	1,144.70				Average	
		5	91	2,450,638.0	514,117.7	1,146.30				Average	
		6	92	2,450,579.2	514,330.9	1,146.90				Average	
		7	93	2,450,533.0	514,518.7	1,147.60				Average	
		8	94	2,450,480.5	514,738.8	1,148.20				Average	
		9	95	2,450,442.5	514,916.6	1,148.80				Average	
		10	96	2,450,401.2	515,120.2	1,149.40				Average	
		11	97	2,450,354.8	515,399.3	1,150.20				Average	
		12	98	2,450,314.0	515,661.3	1,150.90				Average	
		13	99	2,450,261.5	516,051.8	1,152.40				Average	
		14	100	2,450,229.0	516,389.9	1,153.20				Average	
		15	101	2,450,209.5	516,675.9	1,153.90				Average	
		16	102	2,450,193.0	516,960.2	1,155.00				Average	
		17	103	2,450,184.8	517,280.8	1,155.90				Average	



INPUT: ROADWAYS

MAH SR11/2386

		18	104	2,450,186.5	517,595.6	1,156.70				Average	
		19	105	2,450,201.0	518,205.2	1,158.00				Average	
		20	106	2,450,216.0	518,859.0	1,156.30				Average	
		21	107	2,450,234.0	519,666.1	1,154.10				Average	
		22	108	2,450,252.0	520,448.8	1,151.80				Average	
		23	109	2,450,265.0	521,096.4	1,149.70				Average	
		24	110	2,450,288.0	522,068.9	1,146.90				Average	
		25	111	2,450,303.0	522,776.2	1,144.80				Average	
		26	112	2,450,312.8	523,160.7	1,143.70				Average	
		27	113	2,450,326.0	523,720.5	1,142.00				Average	
		28	114	2,450,334.8	524,116.8	1,140.70				Average	
		29	115	2,450,343.0	524,456.8	1,139.90				Average	
		30	116	2,450,350.5	524,720.9	1,139.00				Average	
		31	117	2,450,355.5	524,936.5	1,138.00				Average	
		32	118	2,450,355.2	525,120.6	1,137.20				Average	
		33	119	2,450,353.8	525,270.8	1,136.80				Average	
		34	120	2,450,346.0	525,422.5	1,136.30				Average	
		35	121	2,450,334.8	525,572.9	1,134.90				Average	
		36	122	2,450,319.5	525,726.5	1,133.70				Average	
		37	123	2,450,293.2	525,921.1	1,131.00				Average	
		38	124	2,450,264.5	526,097.6	1,128.10				Average	
		39	125	2,450,232.5	526,257.6	1,124.60				Average	
		40	126	2,450,182.5	526,476.7	1,119.30				Average	
		41	127	2,450,114.8	526,725.6	1,111.80				Average	
		42	128	2,450,025.2	527,001.1	1,106.50				Average	
		43	129	2,449,943.2	527,213.9	1,105.90					
SR11 SB-1	12.0	43	172	2,449,934.0	527,209.2	1,105.90				Average	
		42	171	2,450,015.5	526,997.0	1,106.50				Average	
		41	170	2,450,105.5	526,722.5	1,111.20				Average	
		40	169	2,450,172.8	526,474.0	1,119.30				Average	
		39	168	2,450,222.5	526,257.9	1,124.60				Average	
		38	167	2,450,254.2	526,097.9	1,128.10				Average	
		37	166	2,450,283.0	525,919.0	1,131.00				Average	
		36	165	2,450,309.5	525,724.5	1,133.70				Average	
		35	164	2,450,323.5	525,572.2	1,134.90				Average	
		34	163	2,450,336.0	525,421.5	1,135.70				Average	
		33	162	2,450,343.5	525,270.8	1,136.80				Average	
		32	161	2,450,345.0	525,120.8	1,136.60				Average	
		31	160	2,450,345.0	524,936.7	1,137.50				Average	

INPUT: ROADWAYS

MAH SR11/2386

		30	159	2,450,340.2	524,721.1	1,139.00				Average	
		29	158	2,450,332.8	524,457.1	1,139.60				Average	
		28	157	2,450,324.2	524,116.3	1,140.70				Average	
		27	156	2,450,315.8	523,717.7	1,141.70				Average	
		26	155	2,450,302.5	523,157.9	1,143.50				Average	
		25	154	2,450,293.0	522,773.3	1,144.90				Average	
		24	153	2,450,278.0	522,066.1	1,146.00				Average	
		23	152	2,450,254.8	521,093.5	1,149.70				Average	
		22	151	2,450,242.0	520,445.9	1,151.80				Average	
		21	150	2,450,223.0	519,666.3	1,153.40				Average	
		20	149	2,450,204.0	518,859.9	1,156.40				Average	
		19	148	2,450,189.5	518,205.5	1,158.00				Average	
		18	147	2,450,174.2	517,595.8	1,156.70				Average	
		17	146	2,450,174.2	517,280.5	1,155.90				Average	
		16	145	2,450,182.8	516,957.4	1,155.00				Average	
		15	144	2,450,198.0	516,675.2	1,154.00				Average	
		14	143	2,450,218.0	516,388.5	1,153.20				Average	
		13	142	2,450,250.5	516,050.2	1,152.40				Average	
		12	141	2,450,303.2	515,660.5	1,150.70				Average	
		11	140	2,450,344.5	515,396.4	1,150.20				Average	
		10	139	2,450,391.2	515,117.3	1,148.40				Average	
		9	138	2,450,432.2	514,913.7	1,148.50				Average	
		8	137	2,450,470.5	514,736.0	1,147.80				Average	
		7	136	2,450,522.8	514,515.9	1,147.60				Average	
		6	135	2,450,569.0	514,328.1	1,146.90				Average	
		5	134	2,450,628.0	514,114.9	1,146.30				Average	
		4	133	2,450,748.5	513,686.8	1,144.60				Average	
		3	132	2,450,932.0	513,032.2	1,142.70				Average	
		2	131	2,451,099.5	512,431.5	1,141.00				Average	
		1	130	2,451,262.8	511,864.3	1,142.70					
Mahoning EB-1	12.0	1	209	2,448,759.0	526,833.2	1,121.10				Average	
		2	210	2,449,181.2	526,840.6	1,112.50				Average	
		3	211	2,449,486.8	526,846.1	1,114.60				Average	
		4	212	2,449,592.8	526,847.5	1,117.20				Average	
		5	213	2,449,796.5	526,851.0	1,121.50				Average	
		6	214	2,449,944.8	526,859.2	1,125.10				Average	Y
		7	215	2,450,293.0	526,910.7	1,128.50				Average	
		8	216	2,450,383.5	526,927.8	1,128.70				Average	
		9	217	2,450,454.5	526,938.8	1,128.30				Average	

INPUT: ROADWAYS

MAH SR11/2386

		10	218	2,451,052.0	527,044.7	1,139.30				Average	
		11	219	2,451,194.0	527,069.0	1,139.50				Average	
		12	220	2,451,634.8	527,143.6	1,132.30					
Mahoning EB-2	12.0	1	221	2,448,759.0	526,845.2	1,121.10				Average	
		2	222	2,449,181.2	526,852.6	1,112.50				Average	
		3	223	2,449,486.8	526,858.1	1,114.60				Average	
		4	224	2,449,592.8	526,859.5	1,117.20				Average	
		5	225	2,449,796.5	526,863.0	1,121.50				Average	
		6	226	2,449,942.0	526,870.7	1,125.10				Average	Y
		7	227	2,450,288.8	526,922.6	1,128.50				Average	
		8	228	2,450,381.5	526,940.2	1,128.30				Average	
		9	229	2,450,450.5	526,950.9	1,128.30				Average	
		10	230	2,451,049.8	527,054.7	1,139.30				Average	
		11	231	2,451,192.0	527,079.8	1,139.60				Average	
		12	232	2,451,631.8	527,155.7	1,132.40					
Mahoning WB-center	12.0	1	233	2,448,759.2	526,855.0	1,121.10				Average	
		2	234	2,449,181.5	526,862.4	1,112.50				Average	
		3	235	2,449,487.0	526,867.9	1,114.60				Average	
		4	236	2,449,593.0	526,869.3	1,117.20				Average	
		5	237	2,449,795.5	526,873.9	1,121.50				Average	
		6	238	2,449,938.8	526,882.0	1,125.10				Average	Y
		7	239	2,450,284.0	526,935.7	1,128.20				Average	
		8	240	2,450,382.0	526,952.8	1,128.30				Average	
		9	241	2,450,447.0	526,962.4	1,128.30				Average	
		10	242	2,451,048.2	527,065.2	1,139.30				Average	
		11	243	2,451,189.5	527,089.6	1,139.60				Average	
		12	244	2,451,629.5	527,165.9	1,132.70					
Mahoning WB-2	12.0	12	256	2,451,627.5	527,174.6	1,132.70				Average	
		11	255	2,451,187.5	527,098.5	1,139.60				Average	
		10	254	2,451,048.2	527,073.9	1,139.30				Average	
		9	253	2,450,444.8	526,972.6	1,128.30				Average	
		8	252	2,450,379.0	526,965.6	1,128.70				Average	
		7	251	2,450,279.0	526,947.2	1,128.20				Average	Y
		6	250	2,449,935.2	526,894.7	1,123.60				Average	
		5	249	2,449,791.5	526,884.8	1,120.60				Average	
		4	248	2,449,593.5	526,879.2	1,117.10				Average	
		3	247	2,449,487.5	526,877.7	1,114.50				Average	
		2	246	2,449,182.0	526,872.2	1,112.60				Average	
		1	245	2,448,759.8	526,864.8	1,121.10					

**INPUT: ROADWAYS**

**MAH SR11/2386**

Mahoning WB-1	12.0	12	268	2,451,625.2	527,184.8	1,132.70				Average	
		11	267	2,451,184.5	527,110.5	1,139.60				Average	
		10	266	2,451,046.0	527,085.6	1,139.30				Average	
		9	265	2,450,440.5	526,985.9	1,128.30				Average	
		8	264	2,450,375.5	526,978.0	1,128.70				Average	
		7	263	2,450,274.5	526,960.4	1,128.20				Average	Y
		6	262	2,449,931.5	526,906.1	1,123.60				Average	
		5	261	2,449,791.5	526,896.8	1,120.60				Average	
		4	260	2,449,593.2	526,891.2	1,117.10				Average	
		3	259	2,449,487.5	526,889.7	1,114.50				Average	
		2	258	2,449,182.0	526,884.2	1,112.60				Average	
		1	257	2,448,759.8	526,876.8	1,121.10					
Ramp: Mahoning to SR 11S	12.0	22	290	2,449,830.5	526,832.2	1,123.60	Onramp	15.00	100	Average	
		21	289	2,449,891.5	526,734.7	1,126.10				Average	
		20	288	2,449,949.0	526,636.5	1,127.80				Average	
		19	287	2,450,029.5	526,501.5	1,128.20				Average	
		18	286	2,450,073.5	526,419.2	1,128.50				Average	
		17	285	2,450,112.0	526,327.8	1,127.30				Average	
		16	284	2,450,142.0	526,248.3	1,125.50				Average	
		15	283	2,450,175.8	526,143.3	1,127.30				Average	
		14	282	2,450,205.8	526,039.5	1,128.10				Average	
		13	281	2,450,233.0	525,932.0	1,129.50				Average	
		12	280	2,450,257.0	525,827.2	1,131.20				Average	
		11	279	2,450,277.2	525,701.7	1,132.20				Average	
		10	278	2,450,292.2	525,595.9	1,134.50				Average	
		9	277	2,450,303.2	525,497.7	1,135.00				Average	
		8	276	2,450,309.5	525,417.1	1,135.00				Average	
		7	275	2,450,320.2	525,267.3	1,136.30				Average	
		6	274	2,450,326.8	525,124.6	1,136.60				Average	
		5	273	2,450,328.0	525,027.6	1,137.00				Average	
		4	272	2,450,330.0	524,935.9	1,137.50				Average	
		3	271	2,450,329.2	524,720.5	1,139.00				Average	
		2	270	2,450,327.8	524,457.3	1,139.60				Average	
		1	269	2,450,322.8	524,116.3	1,140.70					
Ramp: SR 11N to Mahoning	12.0	1	291	2,450,461.0	524,726.6	1,138.90				Average	
		2	292	2,450,470.0	524,786.7	1,138.80				Average	
		3	293	2,450,472.5	524,942.3	1,138.50				Average	
		4	294	2,450,477.2	525,119.1	1,138.70				Average	
		5	295	2,450,481.8	525,277.6	1,138.30				Average	

**INPUT: ROADWAYS**

**MAH SR11/2386**

		6	296	2,450,484.8	525,426.3	1,137.90				Average	
		7	297	2,450,487.0	525,576.0	1,136.70				Average	
		8	298	2,450,488.5	525,676.4	1,136.00				Average	
		9	299	2,450,485.0	525,772.0	1,136.00				Average	
		10	300	2,450,482.0	525,906.4	1,137.60				Average	
		11	301	2,450,473.5	526,083.0	1,139.30				Average	
		12	302	2,450,456.5	526,452.9	1,139.70				Average	
		13	303	2,450,440.8	526,903.0	1,128.50					
Oakcrest WB	12.0	6	309	2,451,311.2	523,235.6	1,147.10				Average	
		5	308	2,450,966.0	523,236.4	1,145.10				Average	
		4	307	2,450,530.5	523,230.8	1,159.10				Average	Y
		3	306	2,450,196.0	523,223.2	1,159.10				Average	
		2	305	2,449,784.2	523,217.4	1,151.00				Average	
		1	304	2,449,408.0	523,211.2	1,158.50					
Oakcrest EB	12.0	1	310	2,449,408.0	523,199.2	1,158.50				Average	
		2	311	2,449,784.2	523,205.4	1,151.00				Average	
		3	312	2,450,196.0	523,211.2	1,159.10				Average	Y
		4	313	2,450,530.5	523,218.8	1,159.10				Average	
		5	314	2,450,966.0	523,224.4	1,145.00				Average	
		6	315	2,451,311.2	523,223.6	1,147.00					

INPUT: TRAFFIC FOR LAeq1h Volumes

MAH SR11/2386

ASC Group, Inc. mas		5 April 2018 TNM 2.5										
INPUT: TRAFFIC FOR LAeq1h Volumes												
PROJECT/CONTRACT:		MAH SR11/2386										
RUN:		existing-NSA8-9 Cross-ROW										
Roadway	Points											
Name	Name	No.	Segment		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
SR11 NB-1	1	1	820	65	7	65	62	65	10	65	8	65
	2	2	820	65	7	65	62	65	10	65	8	65
	3	3	820	65	7	65	62	65	10	65	8	65
	4	4	820	65	7	65	62	65	10	65	8	65
	5	5	820	65	7	65	62	65	10	65	8	65
	6	6	820	65	7	65	62	65	10	65	8	65
	7	7	820	65	7	65	62	65	10	65	8	65
	8	8	820	65	7	65	62	65	10	65	8	65
	9	9	820	65	7	65	62	65	10	65	8	65
	10	10	820	65	7	65	62	65	10	65	8	65
	11	11	820	65	7	65	62	65	10	65	8	65
	12	12	820	65	7	65	62	65	10	65	8	65
	13	13	820	65	7	65	62	65	10	65	8	65
	14	14	820	65	7	65	62	65	10	65	8	65
	15	15	820	65	7	65	62	65	10	65	8	65
	16	16	820	65	7	65	62	65	10	65	8	65
	17	17	820	65	7	65	62	65	10	65	8	65
	18	18	820	65	7	65	62	65	10	65	8	65
	19	19	820	65	7	65	62	65	10	65	8	65
	20	20	820	65	7	65	62	65	10	65	8	65
	21	21	820	65	7	65	62	65	10	65	8	65
	22	22	820	65	7	65	62	65	10	65	8	65
	23	23	820	65	7	65	62	65	10	65	8	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	24	24	820	65	7	65	62	65	10	65	8	65
	25	25	820	65	7	65	62	65	10	65	8	65
	26	26	820	65	7	65	62	65	10	65	8	65
	27	27	820	65	7	65	62	65	10	65	8	65
	28	28	820	65	7	65	62	65	10	65	8	65
	29	29	820	65	7	65	62	65	10	65	8	65
	30	30	820	65	7	65	62	65	10	65	8	65
	31	31	820	65	7	65	62	65	10	65	8	65
	32	32	820	65	7	65	62	65	10	65	8	65
	33	33	820	65	7	65	62	65	10	65	8	65
	34	34	820	65	7	65	62	65	10	65	8	65
	35	35	820	65	7	65	62	65	10	65	8	65
	36	36	820	65	7	65	62	65	10	65	8	65
	37	37	820	65	7	65	62	65	10	65	8	65
	38	38	820	65	7	65	62	65	10	65	8	65
	39	39	820	65	7	65	62	65	10	65	8	65
	40	40	820	65	7	65	62	65	10	65	8	65
	41	41	820	65	7	65	62	65	10	65	8	65
	42	42	820	65	7	65	62	65	10	65	8	65
	43	43										
SR11 NB-2	1	44	820	65	7	65	62	65	10	65	8	65
	2	45	820	65	7	65	62	65	10	65	8	65
	3	46	820	65	7	65	62	65	10	65	8	65
	4	47	820	65	7	65	62	65	10	65	8	65
	5	48	820	65	7	65	62	65	10	65	8	65
	6	49	820	65	7	65	62	65	10	65	8	65
	7	50	820	65	7	65	62	65	10	65	8	65
	8	51	820	65	7	65	62	65	10	65	8	65
	9	52	820	65	7	65	62	65	10	65	8	65
	10	53	820	65	7	65	62	65	10	65	8	65
	11	54	820	65	7	65	62	65	10	65	8	65
	12	55	820	65	7	65	62	65	10	65	8	65
	13	56	820	65	7	65	62	65	10	65	8	65
	14	57	820	65	7	65	62	65	10	65	8	65
	15	58	820	65	7	65	62	65	10	65	8	65
	16	59	820	65	7	65	62	65	10	65	8	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	17	60	820	65	7	65	62	65	10	65	8	65
	18	61	820	65	7	65	62	65	10	65	8	65
	19	62	820	65	7	65	62	65	10	65	8	65
	20	63	820	65	1	65	62	65	10	65	8	65
	21	64	820	65	7	65	62	65	10	65	8	65
	22	65	820	65	7	65	62	65	10	65	8	65
	23	66	820	65	7	65	62	65	10	65	8	65
	24	67	820	65	7	65	62	65	10	65	8	65
	25	68	820	65	7	65	62	65	10	65	8	65
	26	69	820	65	7	65	62	65	10	65	8	65
	27	70	820	65	7	65	62	65	10	65	8	65
	28	71	820	65	7	65	62	65	10	65	8	65
	29	72	820	65	7	65	62	65	10	65	8	65
	30	73	820	65	7	65	62	65	10	65	8	65
	31	74	820	65	7	65	62	65	10	65	8	65
	32	75	820	65	7	65	62	65	10	65	8	65
	33	76	820	65	7	65	62	65	10	65	8	65
	34	77	820	65	7	65	62	65	10	65	8	65
	35	78	820	65	7	65	62	65	10	65	8	65
	36	79	820	65	7	65	62	65	10	65	8	65
	37	80	820	65	7	65	62	65	10	65	8	65
	38	81	820	65	7	65	62	65	10	65	8	65
	39	82	820	65	7	65	62	65	10	65	8	65
	40	83	820	65	7	65	62	65	10	65	8	65
	41	84	820	65	7	65	62	65	10	65	8	65
	42	85	820	65	7	65	62	65	10	65	8	65
	43	86										
SR11 SB-2	1	87	803	65	6	65	58	65	9	65	4	65
	2	88	803	65	6	65	58	65	9	65	4	65
	3	89	803	65	6	65	58	65	9	65	4	65
	4	90	803	65	6	65	58	65	9	65	4	65
	5	91	803	65	6	65	58	65	9	65	4	65
	6	92	803	65	6	65	58	65	9	65	4	65
	7	93	803	65	6	65	58	65	9	65	4	65
	8	94	803	65	6	65	58	65	9	65	4	65
	9	95	803	65	6	65	58	65	9	65	4	65



**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	10	96	803	65	6	65	58	65	9	65	4	65
	11	97	803	65	6	65	58	65	9	65	4	65
	12	98	803	65	6	65	58	65	9	65	4	65
	13	99	803	65	6	65	58	65	9	65	4	65
	14	100	803	65	6	65	58	65	9	65	4	65
	15	101	803	65	6	65	58	65	9	65	4	65
	16	102	803	65	6	65	58	65	9	65	4	65
	17	103	803	65	6	65	58	65	9	65	4	65
	18	104	803	65	6	65	58	65	9	65	4	65
	19	105	803	65	6	65	58	65	9	65	4	65
	20	106	803	65	6	65	58	65	9	65	4	65
	21	107	803	65	6	65	58	65	9	65	4	65
	22	108	803	65	6	65	58	65	9	65	4	65
	23	109	803	65	6	65	58	65	9	65	4	65
	24	110	803	65	6	65	58	65	9	65	4	65
	25	111	803	65	6	65	58	65	9	65	4	65
	26	112	803	65	6	65	58	65	9	65	4	65
	27	113	803	65	6	65	58	65	9	65	4	65
	28	114	803	65	6	65	58	65	9	65	4	65
	29	115	803	65	6	65	58	65	9	65	4	65
	30	116	803	65	6	65	58	65	9	65	4	65
	31	117	803	65	6	65	58	65	9	65	4	65
	32	118	803	65	6	65	58	65	9	65	4	65
	33	119	803	65	6	65	58	65	9	65	4	65
	34	120	803	65	6	65	58	65	9	65	4	65
	35	121	803	65	6	65	58	65	9	65	4	65
	36	122	803	65	6	65	58	65	9	65	4	65
	37	123	803	65	6	65	58	65	9	65	4	65
	38	124	803	65	6	65	58	65	9	65	4	65
	39	125	803	65	6	65	58	65	9	65	4	65
	40	126	803	65	6	65	58	65	9	65	4	65
	41	127	803	65	6	65	58	65	9	65	4	65
	42	128	803	65	6	65	58	65	9	65	4	65
	43	129										
SR11 SB-1	43	172	803	65	6	65	58	65	9	65	4	65
	42	171	803	65	6	65	58	65	9	65	4	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	41	170	803	65	6	65	58	65	9	65	4	65
	40	169	803	65	6	65	58	65	9	65	4	65
	39	168	803	65	6	65	58	65	9	65	4	65
	38	167	803	65	6	65	58	65	9	65	4	65
	37	166	803	65	6	65	58	65	9	65	4	65
	36	165	803	65	6	65	58	65	9	65	4	65
	35	164	803	65	6	65	58	65	9	65	4	65
	34	163	803	65	6	65	58	65	9	65	4	65
	33	162	803	65	6	65	58	65	9	65	4	65
	32	161	803	65	6	65	58	65	9	65	4	65
	31	160	803	65	6	65	58	65	9	65	4	65
	30	159	803	65	6	65	58	65	9	65	4	65
	29	158	803	65	6	65	58	65	9	65	4	65
	28	157	803	65	6	65	58	65	9	65	4	65
	27	156	803	65	6	65	58	65	9	65	4	65
	26	155	803	65	6	65	58	65	9	65	4	65
	25	154	803	65	6	65	58	65	9	65	4	65
	24	153	803	65	6	65	58	65	9	65	4	65
	23	152	803	65	6	65	58	65	9	65	4	65
	22	151	803	65	6	65	58	65	9	65	4	65
	21	150	803	65	6	65	58	65	9	65	4	65
	20	149	803	65	6	65	58	65	9	65	4	65
	19	148	803	65	6	65	58	65	9	65	4	65
	18	147	803	65	6	65	58	65	9	65	4	65
	17	146	803	65	6	65	58	65	9	65	4	65
	16	145	803	65	6	65	58	65	9	65	4	65
	15	144	803	65	6	65	58	65	9	65	4	65
	14	143	803	65	6	65	58	65	9	65	4	65
	13	142	803	65	6	65	58	65	9	65	4	65
	12	141	803	65	6	65	58	65	9	65	4	65
	11	140	803	65	6	65	58	65	9	65	4	65
	10	139	803	65	6	65	58	65	9	65	4	65
	9	138	803	65	6	65	58	65	9	65	4	65
	8	137	803	65	6	65	58	65	9	65	4	65
	7	136	803	65	6	65	58	65	9	65	4	65
	6	135	803	65	6	65	58	65	9	65	4	65

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	5	134	803	65	6	65	58	65	9	65	4	65
	4	133	803	65	6	65	58	65	9	65	4	65
	3	132	803	65	6	65	58	65	9	65	4	65
	2	131	803	65	6	65	58	65	9	65	4	65
	1	130										
Mahoning EB-1	1	209	663	35	3	35	15	35	2	35	2	35
	2	210	663	35	3	35	15	35	2	35	2	35
	3	211	663	35	3	35	15	35	2	35	2	35
	4	212	663	35	3	35	15	35	2	35	2	35
	5	213	663	35	3	35	15	35	2	35	2	35
	6	214	663	35	3	35	15	35	2	35	2	35
	7	215	663	35	3	35	15	35	2	35	2	35
	8	216	663	35	3	35	15	35	2	35	2	35
	9	217	663	35	3	35	15	35	2	35	2	35
	10	218	663	35	3	35	15	35	2	35	2	35
	11	219	663	35	3	35	15	35	2	35	2	35
	12	220										
Mahoning EB-2	1	221	663	35	3	35	15	35	2	35	2	35
	2	222	663	35	3	35	15	35	2	35	2	35
	3	223	663	35	3	35	15	35	2	35	2	35
	4	224	663	35	3	35	15	35	2	35	2	35
	5	225	663	35	3	35	15	35	2	35	2	35
	6	226	663	35	3	35	15	35	2	35	2	35
	7	227	663	35	3	35	15	35	2	35	2	35
	8	228	663	35	3	35	15	35	2	35	2	35
	9	229	663	35	3	35	15	35	2	35	2	35
	10	230	663	35	3	35	15	35	2	35	2	35
	11	231	663	35	3	35	15	35	2	35	2	35
	12	232										
Mahoning WB-center	1	233	0	0	0	0	0	0	0	0	0	0
	2	234	0	0	0	0	0	0	0	0	0	0
	3	235	0	0	0	0	0	0	0	0	0	0
	4	236	0	0	0	0	0	0	0	0	0	0
	5	237	0	0	0	0	0	0	0	0	0	0
	6	238	0	0	0	0	0	0	0	0	0	0
	7	239	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	8	240	0	0	0	0	0	0	0	0	0	0
	9	241	0	0	0	0	0	0	0	0	0	0
	10	242	0	0	0	0	0	0	0	0	0	0
	11	243	0	0	0	0	0	0	0	0	0	0
	12	244										
Mahoning WB-2	12	256	663	35	3	35	15	35	2	35	2	35
	11	255	663	35	3	35	15	35	2	35	2	35
	10	254	663	35	3	35	15	35	2	35	2	35
	9	253	663	35	3	35	15	35	2	35	2	35
	8	252	663	35	3	35	15	35	2	35	2	35
	7	251	663	35	3	35	15	35	2	35	2	35
	6	250	663	35	3	35	15	35	2	35	2	35
	5	249	663	35	3	35	15	35	2	35	2	35
	4	248	663	35	3	35	15	35	2	35	2	35
	3	247	663	35	3	35	15	35	2	35	2	35
	2	246	663	35	3	35	15	35	2	35	2	35
	1	245										
Mahoning WB-1	12	268	663	35	3	35	15	35	2	35	2	35
	11	267	663	35	3	35	15	35	2	35	2	35
	10	266	663	35	3	35	15	35	2	35	2	35
	9	265	663	35	3	35	15	35	2	35	2	35
	8	264	663	35	3	35	15	35	2	35	2	35
	7	263	663	35	3	35	15	35	2	35	2	35
	6	262	663	35	3	35	15	35	2	35	2	35
	5	261	663	35	3	35	15	35	2	35	2	35
	4	260	663	35	3	35	15	35	2	35	2	35
	3	259	663	35	3	35	15	35	2	35	2	35
	2	258	663	35	3	35	15	35	2	35	2	35
	1	257										
Ramp: Mahoning to SR 11S	22	290	304	65	1	65	6	65	1	65	0	0
	21	289	304	65	1	65	6	65	1	65	0	0
	20	288	304	65	1	65	6	65	1	65	0	0
	19	287	304	65	1	65	6	65	1	65	0	0
	18	286	304	65	1	65	6	65	1	65	0	0
	17	285	304	65	1	65	6	65	1	65	0	0
	16	284	304	65	1	65	6	65	1	65	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes**

**MAH SR11/2386**

	15	283	304	65	1	65	6	65	1	65	0	0
	14	282	304	65	1	65	6	65	1	65	0	0
	13	281	304	65	1	65	6	65	1	65	0	0
	12	280	304	65	1	65	6	65	1	65	0	0
	11	279	304	65	1	65	6	65	1	65	0	0
	10	278	304	65	1	65	6	65	1	65	0	0
	9	277	304	65	1	65	6	65	1	65	0	0
	8	276	304	65	1	65	6	65	1	65	0	0
	7	275	304	65	1	65	6	65	1	65	0	0
	6	274	304	65	1	65	6	65	1	65	0	0
	5	273	304	65	1	65	6	65	1	65	0	0
	4	272	304	65	1	65	6	65	1	65	0	0
	3	271	304	65	1	65	6	65	1	65	0	0
	2	270	304	65	1	65	6	65	1	65	0	0
	1	269										
Ramp: SR 11N to Mahoning	1	291	319	65	2	65	7	65	1	65	1	65
	2	292	319	65	2	65	7	65	1	65	1	65
	3	293	319	65	2	65	7	65	1	65	1	65
	4	294	319	65	2	65	7	65	1	65	1	65
	5	295	319	65	2	65	7	65	1	65	1	65
	6	296	319	65	2	65	7	65	1	65	1	65
	7	297	319	65	2	65	7	65	1	65	1	65
	8	298	319	60	2	60	7	60	1	60	1	60
	9	299	319	50	2	50	7	50	1	50	1	50
	10	300	319	40	2	40	7	40	1	40	1	40
	11	301	319	30	2	30	7	30	1	30	1	30
	12	302	319	20	2	20	7	20	1	20	1	20
	13	303										
Oakcrest WB	6	309	0	0	0	0	0	0	0	0	0	0
	5	308	0	0	0	0	0	0	0	0	0	0
	4	307	0	0	0	0	0	0	0	0	0	0
	3	306	0	0	0	0	0	0	0	0	0	0
	2	305	0	0	0	0	0	0	0	0	0	0
	1	304										
Oakcrest EB	1	310	0	0	0	0	0	0	0	0	0	0
	2	311	0	0	0	0	0	0	0	0	0	0

**INPUT: TRAFFIC FOR LAeq1h Volumes****MAH SR11/2386**

	3	312	0	0	0	0	0	0	0	0	0	0
	4	313	0	0	0	0	0	0	0	0	0	0
	5	314	0	0	0	0	0	0	0	0	0	0
	6	315										



**INPUT: RECEIVERS**

**MAH SR11/2386**

8-23	24	1	2,450,802.8	524,599.6	1,137.37	5.00	0.00	66	10.0	8.0	Y
8-24	25	1	2,450,800.8	524,659.1	1,136.29	5.00	0.00	66	10.0	8.0	Y
8-25	26	1	2,450,791.2	524,721.8	1,138.71	5.00	0.00	66	10.0	8.0	Y
8-26	27	1	2,450,788.0	524,785.8	1,138.98	5.00	0.00	66	10.0	8.0	Y
8-27	28	1	2,450,784.8	524,886.2	1,139.37	5.00	0.00	66	10.0	8.0	Y
8-28	29	1	2,450,789.2	524,935.0	1,139.14	5.00	0.00	66	10.0	8.0	Y
8-29	30	1	2,450,789.2	524,993.2	1,139.24	5.00	0.00	66	10.0	8.0	Y
8-30	31	1	2,450,784.8	525,060.3	1,138.98	5.00	0.00	66	10.0	8.0	Y
8-31	32	1	2,450,783.5	525,102.9	1,139.01	5.00	0.00	66	10.0	8.0	Y
8-32	33	1	2,450,786.2	525,166.2	1,138.71	5.00	0.00	66	10.0	8.0	Y
9-1	34	1	2,450,901.5	525,567.1	1,135.79	5.00	0.00	66	10.0	8.0	Y
9-2	35	1	2,450,772.0	525,791.8	1,137.40	5.00	0.00	66	10.0	8.0	Y
9-3	36	1	2,450,565.8	525,898.2	1,141.50	5.00	0.00	66	10.0	8.0	Y
9-4	37	1	2,450,563.8	525,989.3	1,142.42	5.00	0.00	66	10.0	8.0	Y
9-5	38	1	2,450,664.5	526,156.0	1,144.78	5.00	0.00	66	10.0	8.0	Y
9-6	39	1	2,450,971.0	526,101.4	1,141.80	5.00	0.00	66	10.0	8.0	Y
9-7	40	1	2,450,807.2	526,333.6	1,144.62	5.00	0.00	66	10.0	8.0	Y
8-1 residence											
8-2 residence											
8-3 residence											
8-4 residence											
8-5 residence											
8-6 residence											
8-7 residence											
8-8 residence											
8-9 residence											
8-10 residence											
8-11 residence											
8-12 residence											
8-13 residence											
8-14 residence											
8-15 residence											
8-16 residence											
8-17 residence											
8-18 residence											
8-19 residence											



**INPUT: RECEIVERS**

**MAH SR11/2386**

8-20 residence												
8-21 residence												
8-22 residence												
8-23 residence												
8-24 residence												
8-25 residence												
8-26 residence												
8-27 residence												
8-28 residence												
8-29 residence												
8-30 residence												
8-31 residence												
8-32 residence												
9-1 non-profit interior												
9-2 school playground												
9-3 school playground												
9-4 school playground												
9-5 non-profit outdoor												
9-6 senior center interior												
9-7 restaurant patio												

**RESULTS: SOUND LEVELS**

**MAH SR11/2386**

ASC Group, Inc. mas									5 April 2018 TNM 2.5 Calculated with TNM 2.5				
<b>RESULTS: SOUND LEVELS</b>													
<b>PROJECT/CONTRACT:</b>		<b>MAH SR11/2386</b>											
<b>RUN:</b>		<b>existing-NSA8-9 Cross-ROW</b>											
<b>BARRIER DESIGN:</b>		<b>INPUT HEIGHTS</b>											
<b>ATMOSPHERICS:</b>		<b>68 deg F, 50% RH</b>											
		<b>Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.</b>											

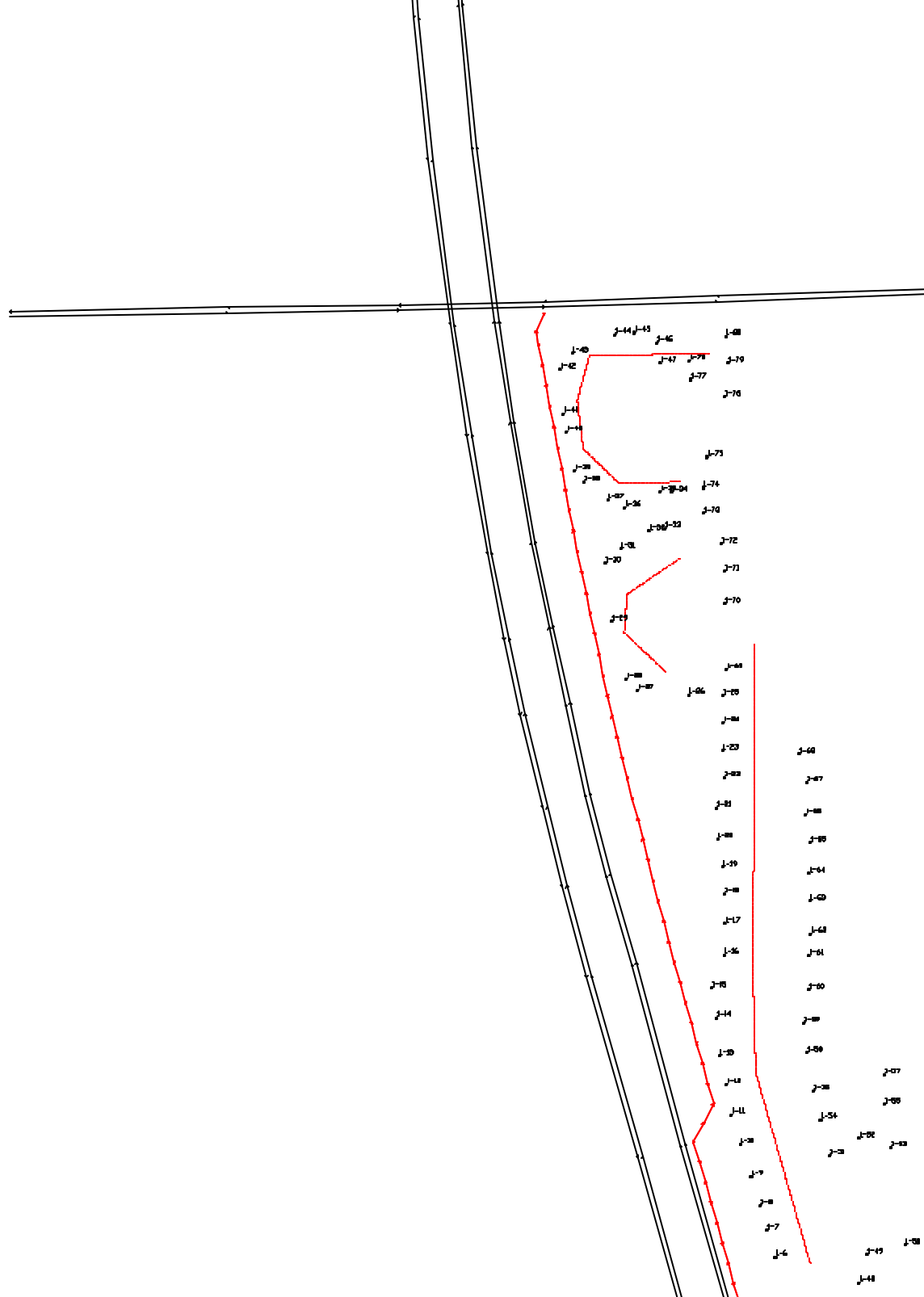
Receiver												
Name	No.	#DUs	Existing	No Barrier	Increase over existing			With Barrier				
			LAeq1h	LAeq1h	Crit'n	Calculated	Crit'n	Type	Calculated	Noise Reduction	Goal	Calculated
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	minus Goal
												Goal
8-1	1	1	0.0	62.1	66	62.1	10	----	61.3	0.8	8	-7.2
8-2	2	1	0.0	66.5	66	66.5	10	Snd Lvl	63.2	3.3	8	-4.7
8-3	3	1	0.0	69.6	66	69.6	10	Snd Lvl	64.7	4.9	8	-3.1
8-4	4	1	0.0	67.0	66	67.0	10	Snd Lvl	62.0	5.0	8	-3.0
8-5	5	1	0.0	66.1	66	66.1	10	Snd Lvl	62.1	4.0	8	-4.0
8-6	6	1	0.0	68.5	66	68.5	10	Snd Lvl	62.4	6.1	8	-1.9
8-7	7	1	0.0	68.9	66	68.9	10	Snd Lvl	62.4	6.5	8	-1.5
8-8	8	1	0.0	66.6	66	66.6	10	Snd Lvl	64.3	2.3	8	-5.7
8-9	10	1	0.0	62.6	66	62.6	10	----	61.9	0.7	8	-7.3
8-10	11	1	0.0	58.6	66	58.6	10	----	57.9	0.7	8	-7.3
8-11	12	1	0.0	58.6	66	58.6	10	----	58.1	0.5	8	-7.5
8-12	13	1	0.0	59.5	66	59.5	10	----	58.7	0.8	8	-7.2
8-13	14	1	0.0	60.2	66	60.2	10	----	59.1	1.1	8	-6.9
8-14	15	1	0.0	61.7	66	61.7	10	----	59.8	1.9	8	-6.1
8-15	16	1	0.0	61.5	66	61.5	10	----	60.3	1.2	8	-6.8
8-16	17	1	0.0	59.4	66	59.4	10	----	59.3	0.1	8	-7.9
8-17	18	1	0.0	59.5	66	59.5	10	----	58.8	0.7	8	-7.3
8-18	19	1	0.0	57.3	66	57.3	10	----	57.4	-0.1	8	-8.1
8-19	20	1	0.0	60.5	66	60.5	10	----	60.3	0.2	8	-7.8
8-20	21	1	0.0	61.2	66	61.2	10	----	61.0	0.2	8	-7.8
8-21	22	1	0.0	61.4	66	61.4	10	----	61.3	0.1	8	-7.9
8-22	23	1	0.0	61.6	66	61.6	10	----	61.4	0.2	8	-7.8
8-23	24	1	0.0	61.6	66	61.6	10	----	61.4	0.2	8	-7.8
8-24	25	1	0.0	62.1	66	62.1	10	----	61.3	0.8	8	-7.2

**RESULTS: SOUND LEVELS**

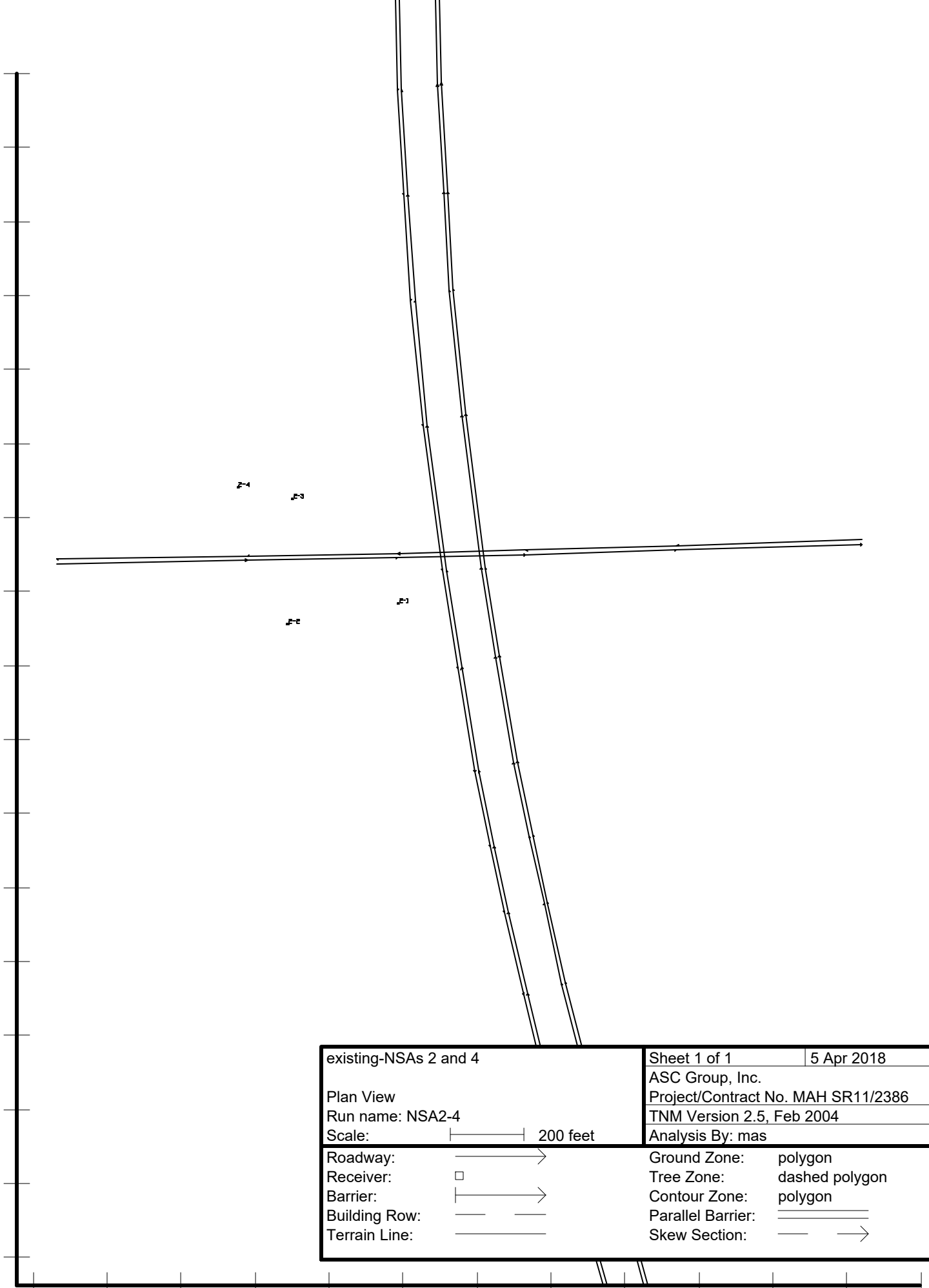
**MAH SR11/2386**






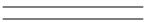


8-25	26	1	0.0	62.0	66	62.0	10	----	62.1	-0.1	8	-8.1
8-26	27	1	0.0	62.2	66	62.2	10	----	62.3	-0.1	8	-8.1
8-27	28	1	0.0	62.5	66	62.5	10	----	62.5	0.0	8	-8.0
8-28	29	1	0.0	62.4	66	62.4	10	----	62.4	0.0	8	-8.0
8-29	30	1	0.0	62.5	66	62.5	10	----	62.4	0.1	8	-7.9
8-30	31	1	0.0	62.6	66	62.6	10	----	62.3	0.3	8	-7.7
8-31	32	1	0.0	62.6	66	62.6	10	----	62.3	0.3	8	-7.7
8-32	33	1	0.0	62.5	66	62.5	10	----	62.1	0.4	8	-7.6
9-1	34	1	0.0	60.6	66	60.6	10	----	57.8	2.8	8	-5.2
9-2	35	1	0.0	59.7	66	59.7	10	----	58.4	1.3	8	-6.7
9-3	36	1	0.0	67.4	66	67.4	10	Snd Lvl	56.8	10.6	8	2.6
9-4	37	1	0.0	66.7	66	66.7	10	Snd Lvl	56.8	9.9	8	1.9
9-5	38	1	0.0	58.5	66	58.5	10	----	56.3	2.2	8	-5.8
9-6	39	1	0.0	55.3	66	55.3	10	----	54.8	0.5	8	-7.5
9-7	40	1	0.0	55.6	66	55.6	10	----	55.3	0.3	8	-7.7
<b>Dwelling Units</b>		<b># DUs</b>	<b>Noise Reduction</b>									
			<b>Min</b>	<b>Avg</b>	<b>Max</b>							
			<b>dB</b>	<b>dB</b>	<b>dB</b>							
All Selected		39	-0.1	1.8	10.6							
All Impacted		9	2.3	5.8	10.6							
All that meet NR Goal		2	9.9	10.2	10.6							

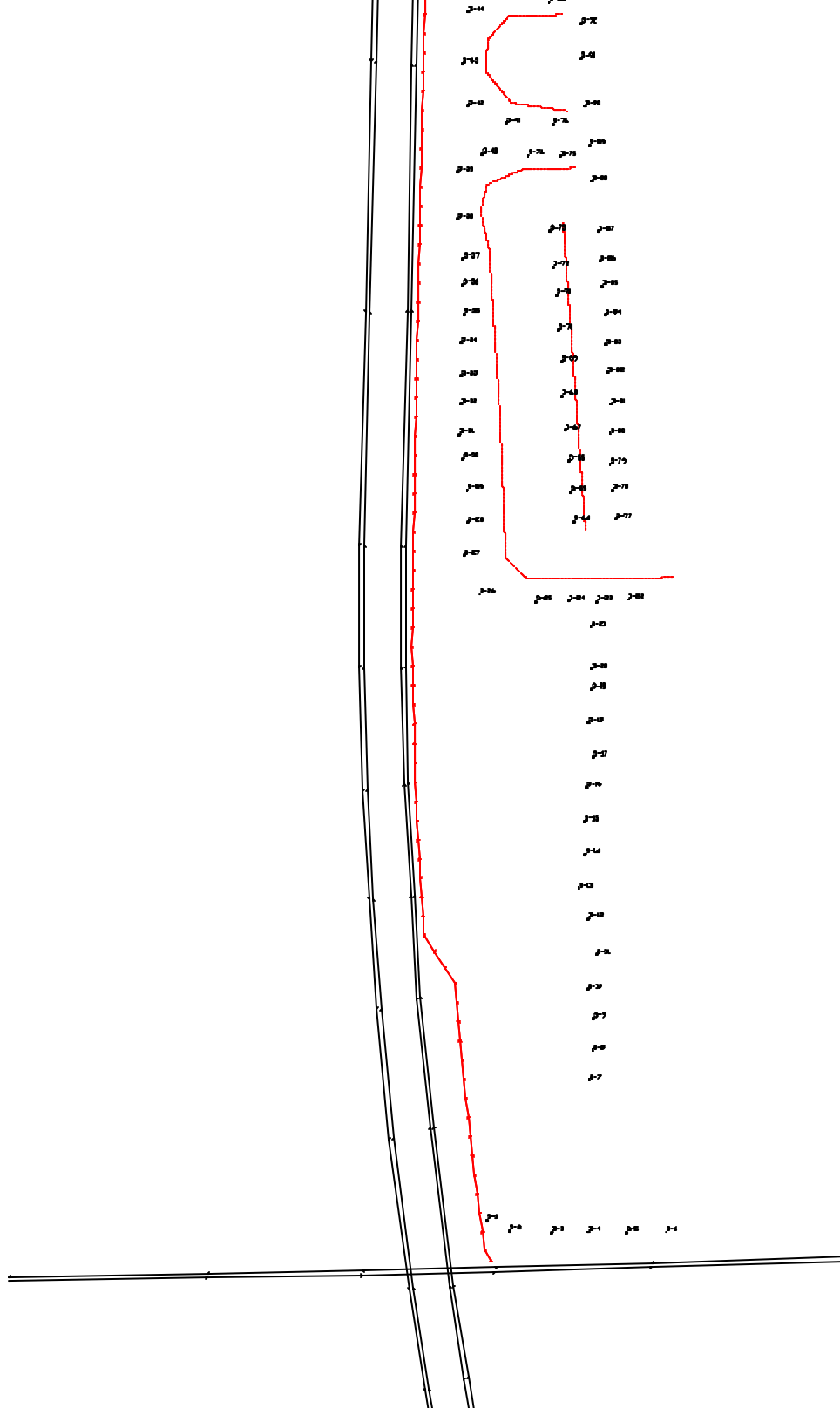
APPENDIX D: TNM PLAN VIEWS






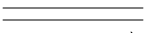




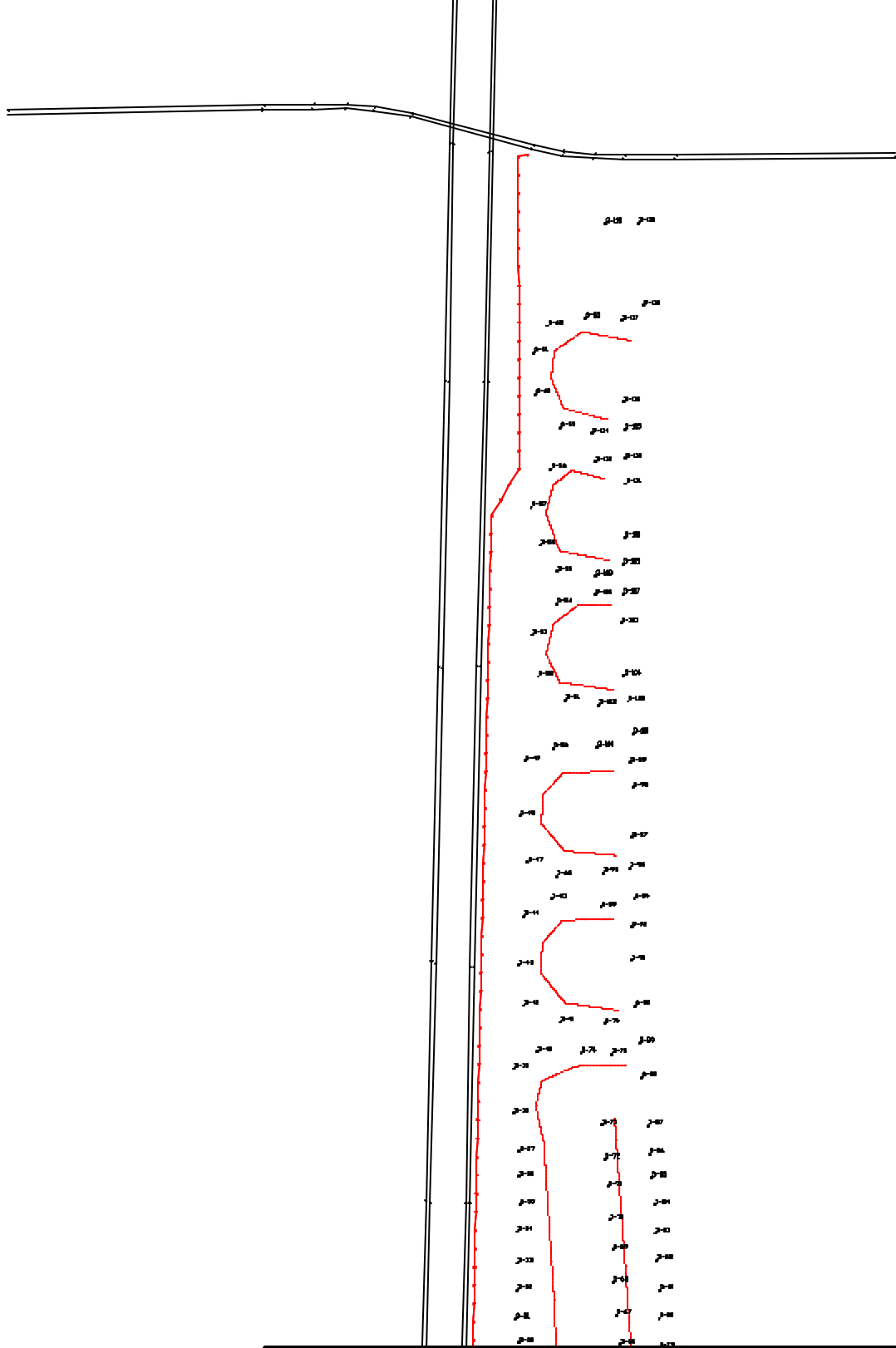
existing NSA1 Starwick		Sheet 1 of 1	5 Apr 2018
Plan View		ASC Group, Inc.	
Run name: NSA1		Project/Contract No. MAH SR11/2386	
Scale:		TNM Version 2.5, Feb 2004	
Analysis By: mas			
Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	











existing-NSAs 2 and 4		Sheet 1 of 1	5 Apr 2018
Plan View		ASC Group, Inc.	
Run name: NSA2-4		Project/Contract No. MAH SR11/2386	
Scale:  200 feet		TNM Version 2.5, Feb 2004	
Analysis By: mas			
Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

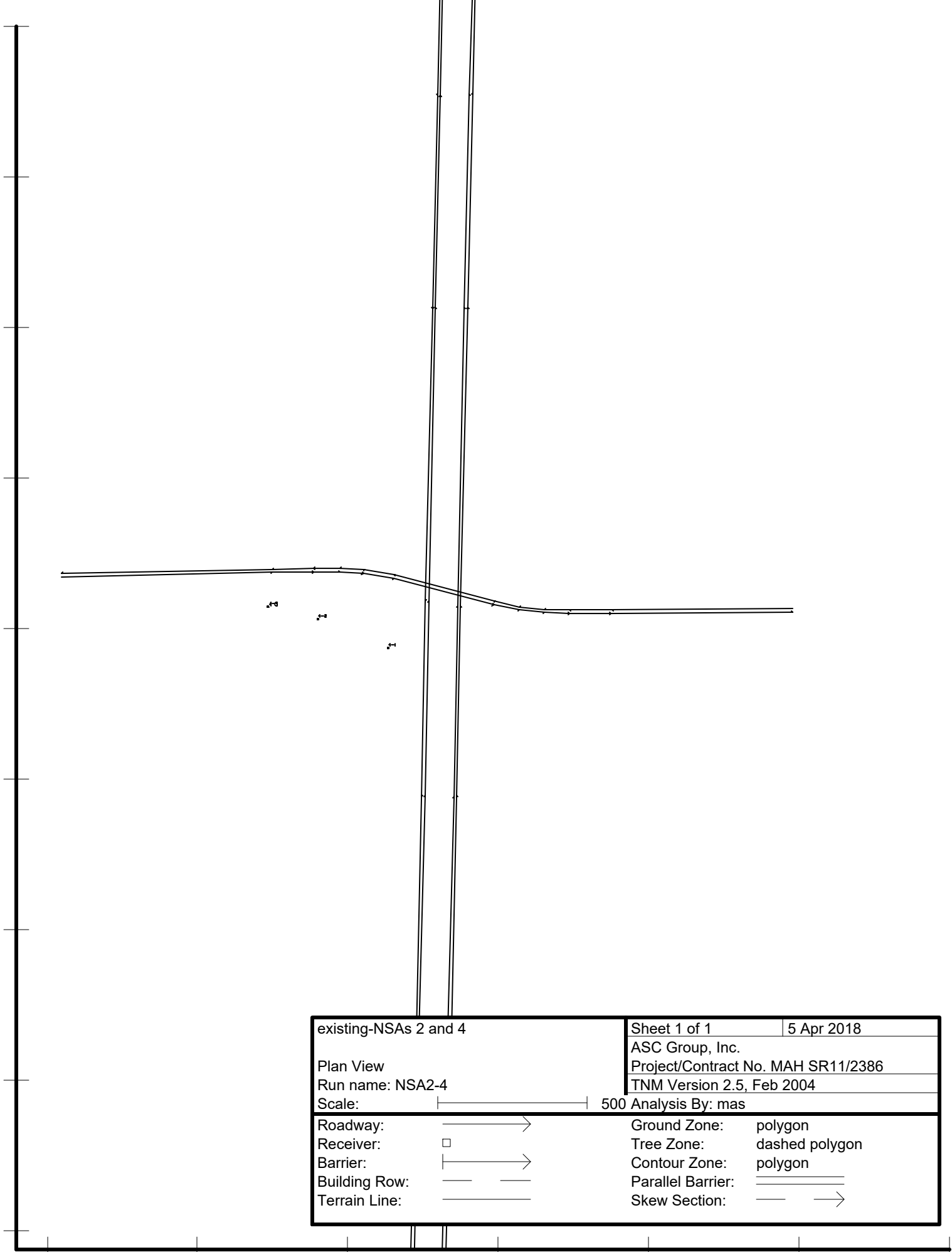


existing-NSA 3 Oak Trace Barrier		Sheet 1 of 1	5 Apr 2018
Plan View		ASC Group, Inc.	
Run name: NSA3		Project/Contract No. MAH SR11/2386	
Scale: 		TNM Version 2.5, Feb 2004	
Analysis By: mas			
Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

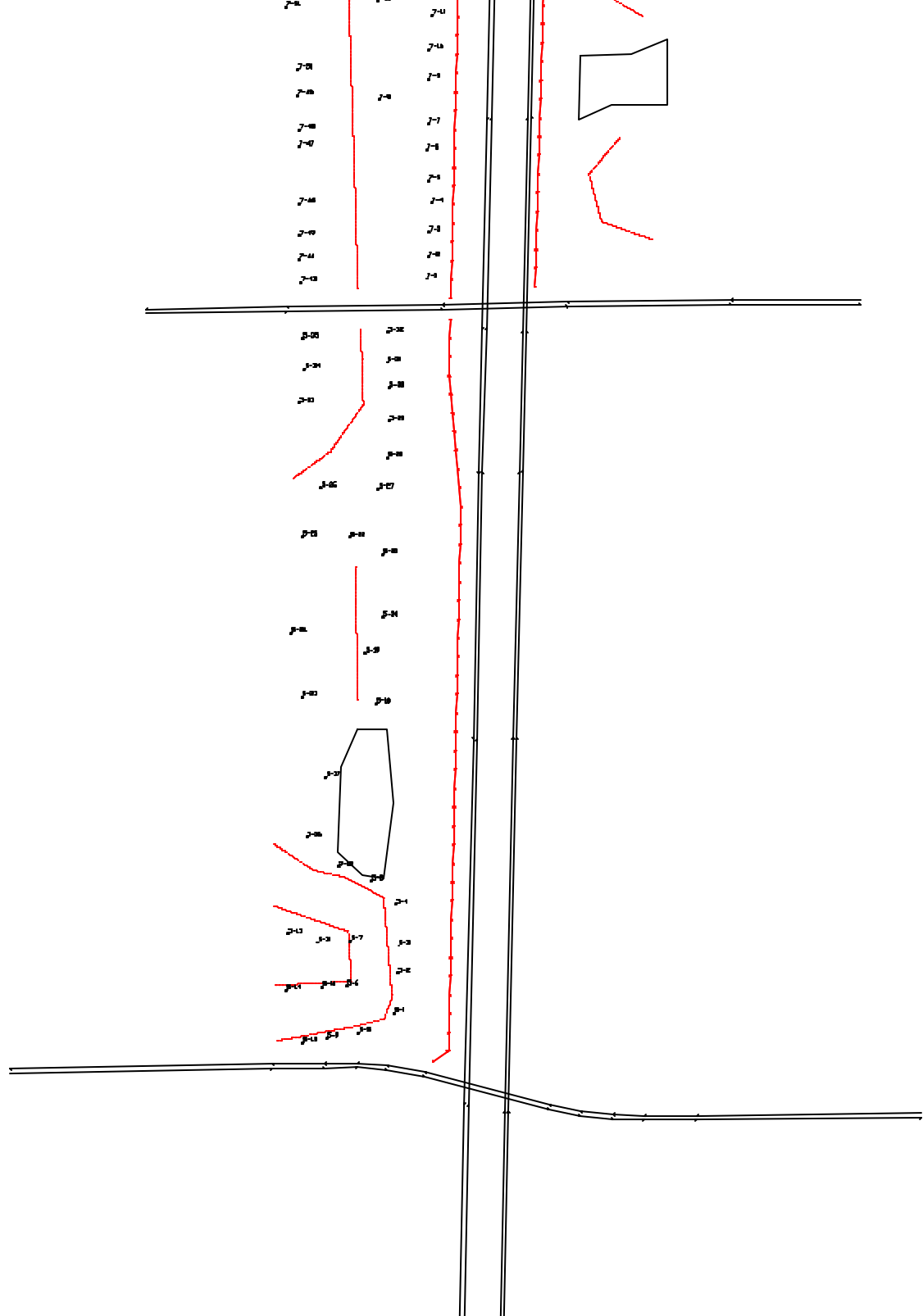







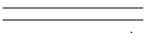


existing-NSA 3 Oak Trace Barrier		Sheet 1 of 1	5 Apr 2018
Plan View		ASC Group, Inc.	
Run name: NSA3		Project/Contract No. MAH SR11/2386	
Scale: 		TNM Version 2.5, Feb 2004	
Analysis By: mas			
Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

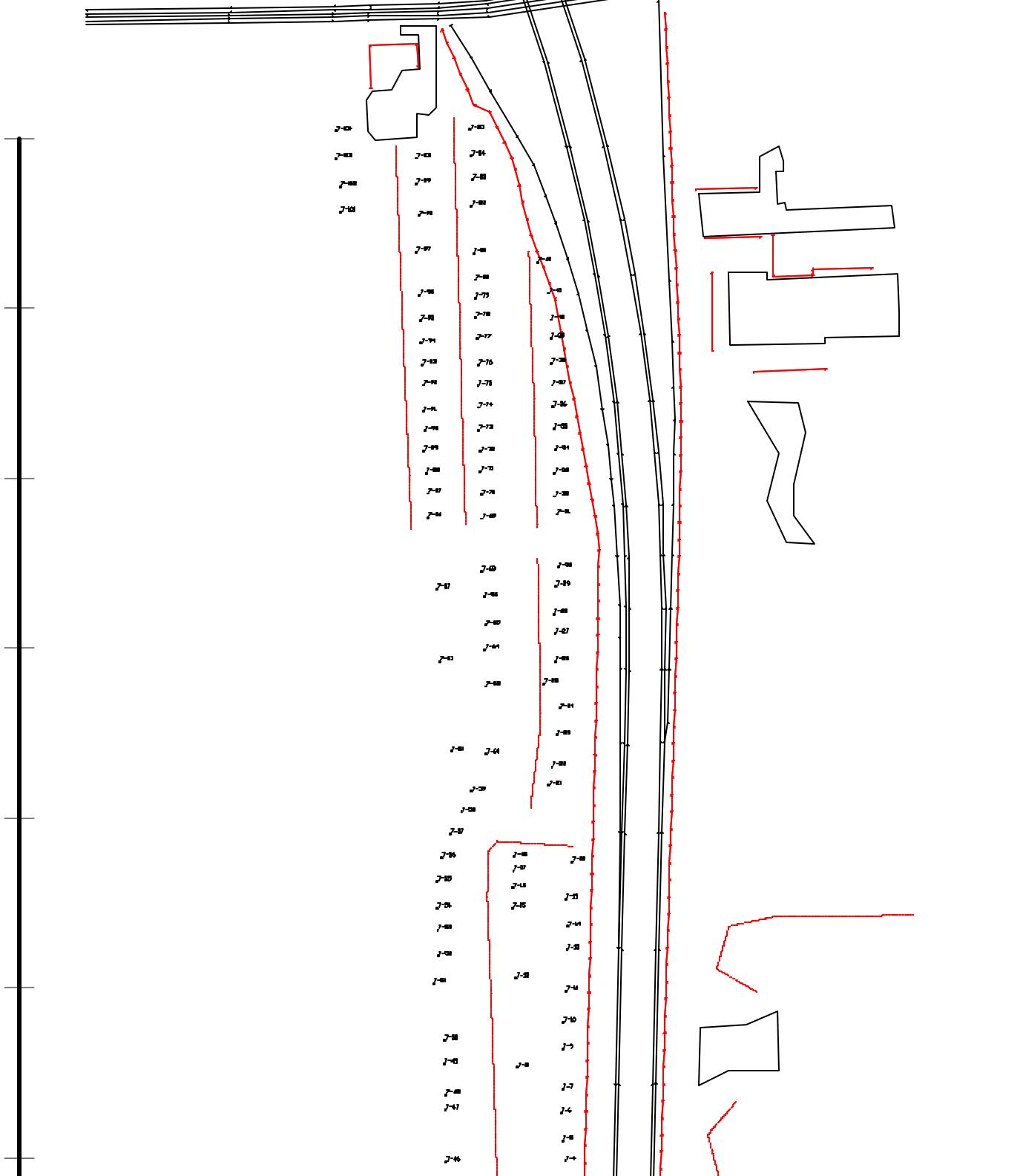












existing-NSAs 2 and 4		Sheet 1 of 1	5 Apr 2018
Plan View		ASC Group, Inc.	
Run name: NSA2-4		Project/Contract No. MAH SR11/2386	
Scale:		TNM Version 2.5, Feb 2004	
Analysis By: mas			
Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

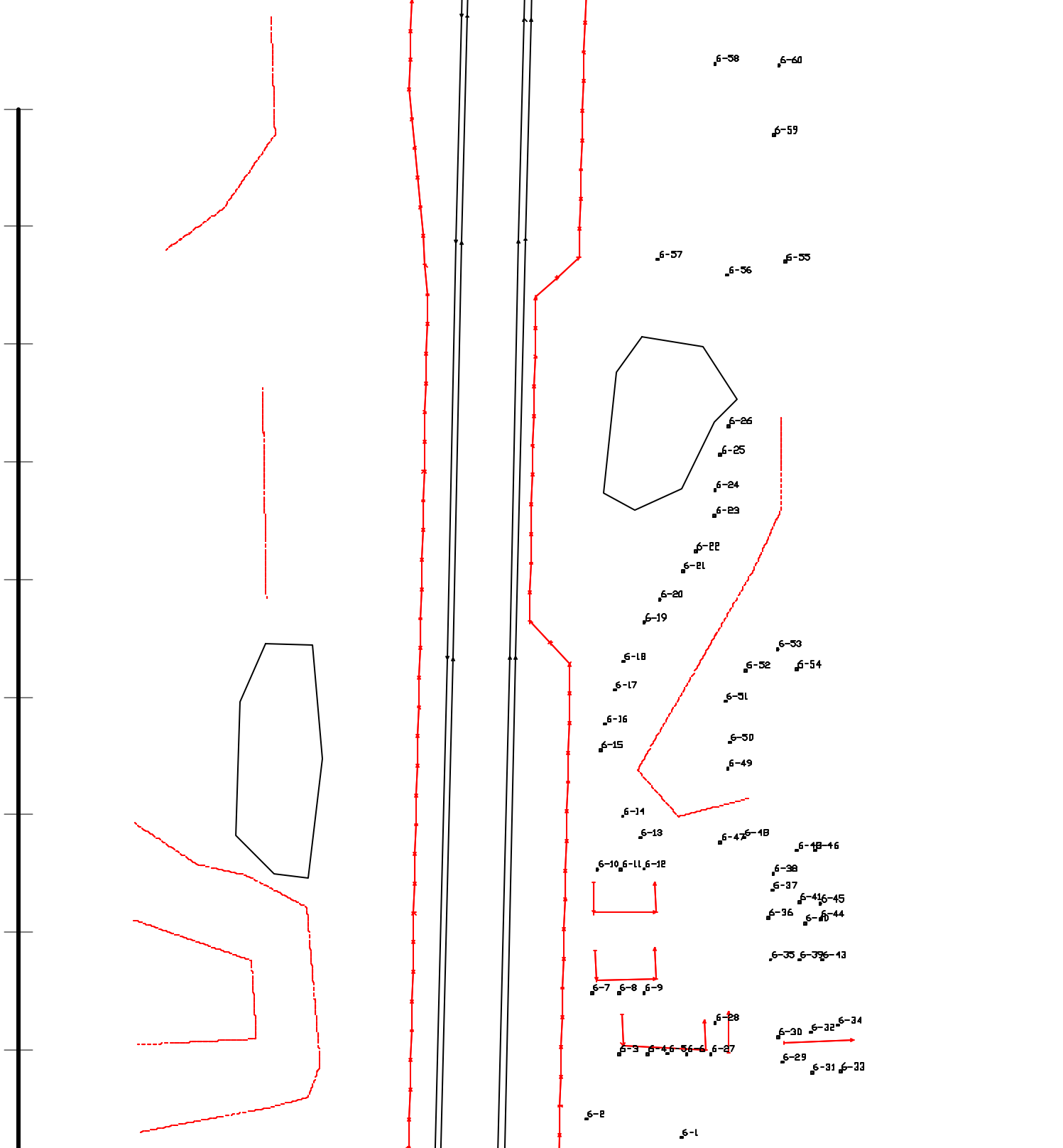


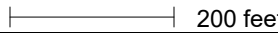







existing-NSA5, 7 Nashua-Inglewood		Sheet 1 of 1	5 Apr 2018
Plan View		ASC Group, Inc.	
Run name: NSA5-7		Project/Contract No. MAH SR11/2386	
Scale:  500 ft		Analysis By: mas	
Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

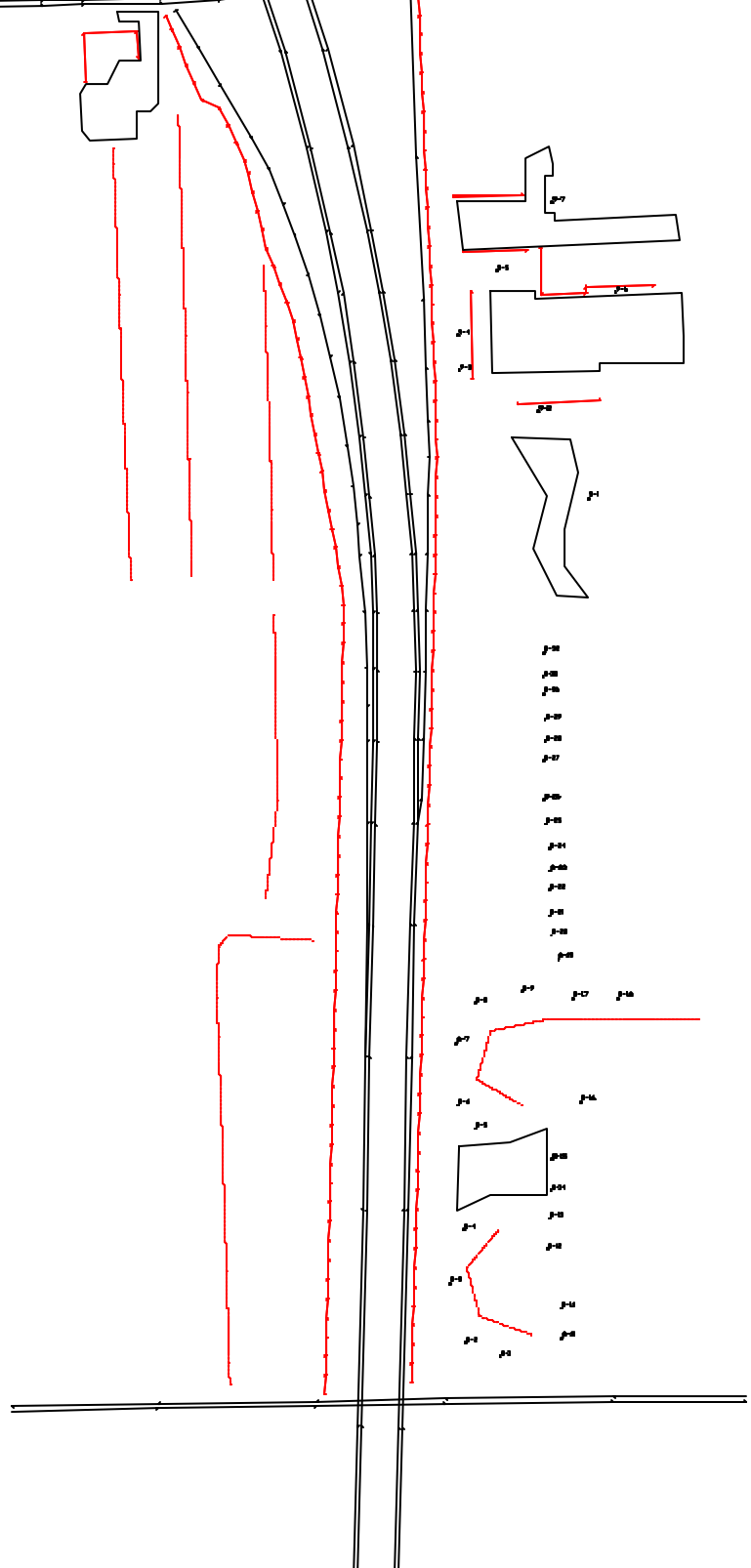


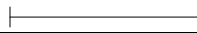










existing-NSA5, 7 Nashua-Inglewood		Sheet 1 of 1	5 Apr 2018
Plan View		ASC Group, Inc.	
Run name: NSA5-7		Project/Contract No. MAH SR11/2386	
Scale: 		TNM Version 2.5, Feb 2004	
Analysis By: mas			
Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

2449000      2449500      2450000      2450500      2451000      2451500

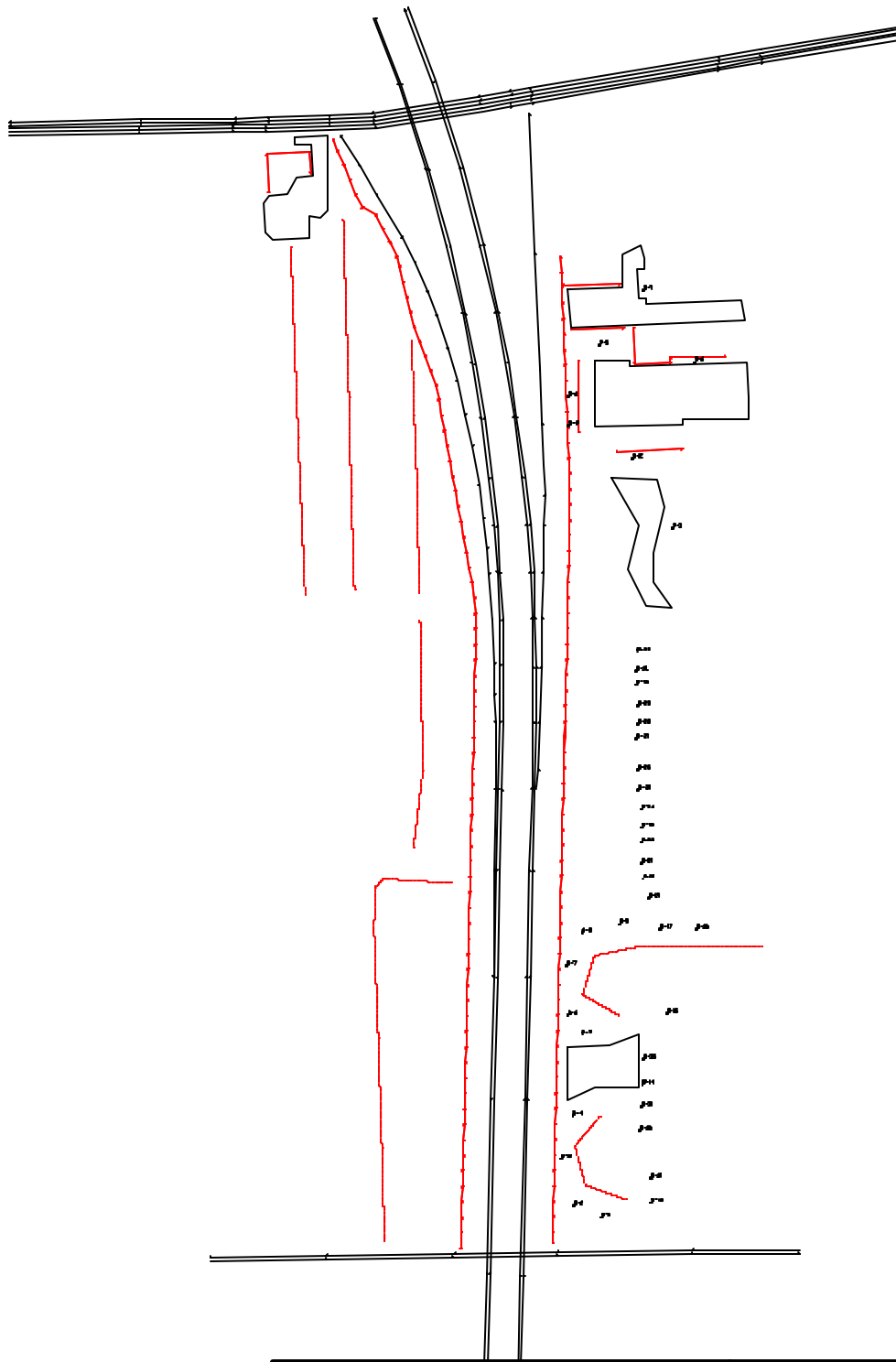










existing-NSA6 Westhampton		Sheet 1 of 1	5 Apr 2018
Plan View		ASC Group, Inc.	
Run name: NSA6		Project/Contract No. MAH SR11/2386	
Scale: 		TNM Version 2.5, Feb 2004	
		Analysis By: mas	
Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	



existing-NSA8-9 Cross EOS		Sheet 1 of 1	5 Apr 2018
Plan View		ASC Group, Inc.	
Run name: NSA8-9		Project/Contract No. MAH SR11/2386	
Scale: 		TNM Version 2.5, Feb 2004	
Analysis By: mas			
Roadway:		Ground Zone:	 polygon
Receiver:		Tree Zone:	 dashed polygon
Barrier:		Contour Zone:	 polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

2449000      2449500      2450000      2450500      2451000      2451500      2452000



existing-NSA8-9 Cross-ROW		Sheet 1 of 1	5 Apr 2018
Plan View		ASC Group, Inc.	
Run name: cross-row		Project/Contract No. MAH SR11/2386	
Scale:  500 feet		TNM Version 2.5, Feb 2004	
Analysis By: mas			
Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

APPENDIX E: TNM BARRIER DESCRIPTION TABLES

**RESULTS: BARRIER DESCRIPTIONS**

**MAH SR11/2386**

ASC Group, Inc.				17 April 2018						
mas				TNM 2.5						

**RESULTS: BARRIER DESCRIPTIONS**

<b>PROJECT/CONTRACT:</b>	MAH SR11/2386									
<b>RUN:</b>	existing-NSA5, 7 Nashua-Inglewood									
<b>BARRIER DESIGN:</b>	N/I 16									

<b>Barriers</b>										
Name	Type	Heights along Barrier			Length	If Wall Area	If Berm Volume	Top Width	Run:Rise	Cost
		Min	Avg	Max						
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	\$
Nashua	W	16.00	16.00	16.00	800	12800				319989
Inglewood	W	16.00	16.00	16.00	3585	57354				1433844
									Total Cost:	1753833



APPENDIX F: TNM BARRIER SEGMENT DESCRIPTION TABLES



**RESULTS: BARRIER-SEGMENT DESCRIPTIONS**

**MAH SR11/2386**

		27	472	16.00	16.00	16.00	50	799				19967
		28	473	16.00	16.00	16.00	50	800				20006
		29	474	16.00	16.00	16.00	50	800				20006
		30	475	16.00	16.00	16.00	50	800				20004
		31	476	16.00	16.00	16.00	50	800				20006
		32	477	16.00	16.00	16.00	50	800				19994
		33	478	16.00	16.00	16.00	50	800				20006
		34	479	16.00	16.00	16.00	50	800				19994
		35	480	16.00	16.00	16.00	50	800				20006
		36	481	16.00	16.00	16.00	50	801				20015
		37	482	16.00	16.00	16.00	50	800				19994
		38	483	16.00	16.00	16.00	50	800				20006
		39	484	16.00	16.00	16.00	50	799				19969
		40	485	16.00	16.00	16.00	50	800				20006
Inglewood	W	1	336	16.00	16.00	16.00	50	799				19983
		2	337	16.00	16.00	16.00	50	800				20006
		3	338	16.00	16.00	16.00	50	800				20006
		4	339	16.00	16.00	16.00	50	800				20006
		5	340	16.00	16.00	16.00	50	800				20006
		6	341	16.00	16.00	16.00	50	800				20006
		7	342	16.00	16.00	16.00	50	799				19969
		8	343	16.00	16.00	16.00	50	800				20006
		9	344	16.00	16.00	16.00	50	800				20004
		10	345	16.00	16.00	16.00	50	800				20009
		11	346	16.00	16.00	16.00	50	800				20004
		12	347	16.00	16.00	16.00	50	800				20006
		13	348	16.00	16.00	16.00	50	799				19969
		14	349	16.00	16.00	16.00	50	800				20006
		15	350	16.00	16.00	16.00	50	800				20006
		16	351	16.00	16.00	16.00	50	800				20006
		17	352	16.00	16.00	16.00	50	800				20006
		18	353	16.00	16.00	16.00	50	800				20006
		19	354	16.00	16.00	16.00	50	800				20006
		20	355	16.00	16.00	16.00	50	798				19956
		21	356	16.00	16.00	16.00	50	800				20006
		22	357	16.00	16.00	16.00	50	800				20004
		23	358	16.00	16.00	16.00	50	800				20009
		24	359	16.00	16.00	16.00	50	800				20004

**RESULTS: BARRIER-SEGMENT DESCRIPTIONS**

**MAH SR11/2386**

		25	360	16.00	16.00	16.00	50	800				20006
		26	361	16.00	16.00	16.00	50	799				19981
		27	362	16.00	16.00	16.00	50	800				20006
		28	363	16.00	16.00	16.00	50	800				20006
		29	364	16.00	16.00	16.00	50	800				20006
		30	365	16.00	16.00	16.00	50	800				20006
		31	366	16.00	16.00	16.00	50	800				20006
		32	367	16.00	16.00	16.00	50	800				20006
		33	368	16.00	16.00	16.00	50	798				19956
		34	369	16.00	16.00	16.00	50	800				20006
		35	370	16.00	16.00	16.00	50	800				20004
		36	371	16.00	16.00	16.00	50	800				20009
		37	372	16.00	16.00	16.00	50	800				20001
		38	373	16.00	16.00	16.00	50	800				20001
		39	374	16.00	16.00	16.00	50	800				20001
		40	375	16.00	16.00	16.00	50	800				20002
		41	376	16.00	16.00	16.00	50	800				20001
		42	377	16.00	16.00	16.00	50	800				19997
		43	378	16.00	16.00	16.00	50	800				20011
		44	379	16.00	16.00	16.00	50	799				19984
		45	380	16.00	16.00	16.00	50	800				20002
		46	381	16.00	16.00	16.00	50	799				19977
		47	382	16.00	16.00	16.00	50	800				20002
		48	383	16.00	16.00	16.00	50	800				20002
		49	384	16.00	16.00	16.00	50	800				20002
		50	385	16.00	16.00	16.00	50	801				20026
		51	386	16.00	16.00	16.00	50	800				20002
		52	387	16.00	16.00	16.00	50	800				20002
		53	388	16.00	16.00	16.00	50	800				20002
		54	389	16.00	16.00	16.00	50	799				19977
		55	390	16.00	16.00	16.00	50	800				20002
		56	391	16.00	16.00	16.00	50	800				20002
		57	392	16.00	16.00	16.00	50	799				19979
		58	393	16.00	16.00	16.00	50	800				20002
		59	394	16.00	16.00	16.00	50	801				20015
		60	395	16.00	16.00	16.00	50	801				20015
		61	396	16.00	16.00	16.00	50	799				19987
		62	397	16.00	16.00	16.00	50	799				19986
		63	398	16.00	16.00	16.00	50	800				20011

**RESULTS: BARRIER-SEGMENT DESCRIPTIONS**

**MAH SR11/2386**

		64	399	16.00	16.00	16.00	50	800				20010
		65	400	16.00	16.00	16.00	35	555				13880
		66	401	16.00	16.00	16.00	50	801				20014
		67	402	16.00	16.00	16.00	50	801				20013
		68	403	16.00	16.00	16.00	50	798				19946
		69	404	16.00	16.00	16.00	50	800				19996
		70	405	16.00	16.00	16.00	50	801				20018
		71	406	16.00	16.00	16.00	50	799				19978
		72	407	16.00	16.00	16.00	50	800				20001
		73	408	0.00	0.00	0.00	0	0				0
		74	409	0.00	0.00	0.00	0	0				0

## APPENDIX G: TRAFFIC DATA

Includes:

- Table G-1. Roads Used in TNM Modeling
- Table G-2. Hourly Traffic Volumes for TNM Modeling
- Table G-3. Traffic Volumes
- Printouts from the ODOT traffic web site for stations used in computing TNM-formatted traffic data

**Table G-1. Roads Used in TNM Modeling**

<b>Road Segment</b>	<b>Road Section: Travel Direction</b>	<b>Existing Lanes</b>	<b>Existing Speed (mph)</b>	<b>Functional Class</b>	<b>Traffic Count Location ID</b>
SR 11	SR 11: NB	2	65	Freeway & Expressway	7150
SR 11	SR 11: SB	2	65	Freeway & Expressway	7150
Ramp: SR 11N to Mahoning	Ramp: SR 11N to Mahoning	1	varies	Freeway & Expressway	53650
Ramp: Mahoning to SR 11S	Ramp: Mahoning to SR 11S	1	65	Freeway & Expressway	53950
Kirk Road	Kirk Road: WB	1	35	Minor Arterial	4655098
Kirk Road	Kirk Road: EB	1	35	Minor Arterial	4655098
New Road	New Road: WB	1	35	Major Collector	5285098
New Road	New Road: EB	1	35	Major Collector	5285098
Mahoning Avenue	Mahoning Avenue: WB	2	35	Other Principal Arterial	15098
Mahoning Avenue	Mahoning Avenue: EB	2	35	Other Principal Arterial	15098

**Table G-2. Traffic Data Used in TNM Modeling (Per Lane)**

Vehicle	SR 11: NB		SR 11: SB		Ramp: SR 11N to Mahoning		Ramp: Mahoning to SR 11S		Kirk Road: WB		Kirk Road: EB		New Road: WB		New Road: EB		Mahoning Avenue: WB		Mahoning Avenue: EB	
	Veh/hr	mph	Veh/hr	mph	Veh/hr	mph	Veh/hr	mph	Veh/hr	mph	Veh/hr	mph	Veh/hr	mph	Veh/hr	mph	Veh/hr	mph	Veh/hr	mph
<b>Existing (per lane)</b>																				
<b>Cars</b>	820	65	803	65	319	varies	304	65	455	35	455	35	303	35	303	35	663	35	663	35
<b>Med. Trucks</b>	7	65	6	65	2	varies	1	65	2	35	2	35	1	35	1	35	3	35	3	35
<b>Heavy Trucks</b>	62	65	58	65	7	varies	6	65	10	35	10	35	7	35	7	35	15	35	15	35
<b>Buses</b>	10	65	9	65	1	varies	1	65	1	35	1	35	1	35	1	35	2	35	2	35
<b>Motorcycles</b>	8	65	4	65	1	varies	0	0	1	35	1	35	1	35	1	35	2	35	2	35



**Table G-3. Traffic Volumes**

Road Segment	Traffic Count Location	Existing Year		Vehicle Class Fractions					Max. Hourly Volume	Peak Hourly Volumes					Heavy Truck Fraction	
		AADT	Peak Hour Percents		CLASS 1	CLASS 2-3	CLASS 4	CLASS 5		CLASS 6-15	Motorcycles	Cars	Buses	Med. Trucks		Heavy Trucks
			AM	PM	Motorcycle Percent	Car Percent	Bus Percent	Med. Truck Percent		Heavy Truck Percent						
SR 11: NB	7150	18,096	FALSE	FALSE	0.86%	90.55%	1.06%	0.70%	6.82%	1,810	16	1,639	19	13	123	90.44%
SR 11: SB	7150	17,553	FALSE	FALSE	0.42%	91.44%	0.94%	0.61%	6.58%	1,755	7	1,605	17	11	116	91.34%
Ramp: SR 11N to Mahoning	53650	3,652	6.77%	7.76%	0.25%	96.89%	0.31%	0.46%	2.09%	329	1	319	1	2	7	77.78%
Ramp: Mahoning to SR 11S	53950	3,482	0.00%	0.00%	0.08%	97.24%	0.34%	0.39%	1.95%	313	0	304	1	1	6	85.71%
Kirk Road: WB	4655098	4,701	FALSE	FALSE	0.25%	96.89%	0.31%	0.46%	2.09%	470	1	455	1	2	10	83.33%
Kirk Road: EB	4655098	4,701	FALSE	FALSE	0.25%	96.89%	0.31%	0.46%	2.09%	470	1	455	1	2	10	83.33%
New Road: WB	5285098	3,134	FALSE	FALSE	0.25%	96.89%	0.31%	0.46%	2.09%	313	1	303	1	1	7	87.50%
New Road: EB	5285098	3,134	FALSE	FALSE	0.25%	96.89%	0.31%	0.46%	2.09%	313	1	303	1	1	7	87.50%
Mahoning Avenue: WB	15098	13,674	10.00%	10.00%	0.25%	96.89%	0.31%	0.46%	2.09%	1,367	3	1,325	4	6	29	82.86%
Mahoning Avenue: EB	15098	13,674	10.00%	10.00%	0.25%	96.89%	0.31%	0.46%	2.09%	1,367	3	1,325	4	6	29	82.86%

## Record Detail Table

Location ID	7150	MPO ID	
Type	SPOT	HPMS ID	000011008860
On NHS		On HPMS	Yes
LRS ID	SMAHSR00011**C	LRS Loc Pt.	11.344
SF Group	URBAN_FREEWAY_EXPRESSWAY	Route Type	SR
AF Group	URBAN_FREEWAY_EXPRESSWAY	Route	00011
GF Group	URBAN_FREEWAY_EXPRESSWAY	Active	Yes
Class Dist Grp		Category	State Program
WIM Group			
QC Group	Default		
Funct'l Class	Freeway & Expressway	Milepost	
Located On	RIVER LAKE HWY		
Loc On Alias			
	SR11 N OF US224, E OF CANFIELD		

### 7150 SR 11 AADT

AADT								
Year	AA DT	DHV-30	K %	D %	PA	BC	Src	
2016	35,649		9	55	32,667 (92%)	2,980 (8%)	Grown from 2015	
2015	34,813		9	55	31,901 (92%)	2,910 (8%)	Grown from 2014	
2014	33,898	2,918	9	55	31,063 (92%)	2,834 (8%)		
2011	29,384				25,196 (86%)	4,188 (14%)		
2008	28,010				24,970 (89%)	3,040 (11%)		

**Ohio Department of Transportation  
7150: September 2014 class Report**

Location ID: 7150 Functional Class: 2  
 County: MAHONING Axle Factor Group: URBAN\_FREEMWAY\_EXPRESSWAY  
 Community: E OF CANFIELD  
 Description: On RIVER LAKE HWY at SR11 N OF US224, E OF CANFIELD

DATE	LANE	MOTOR CYCLE	CAR	PICK UP	BUS	2A SU	3A SU	>3A SU	<5A 2U	5A 2U	>5A 2U	<6A >2U	6A >2U	>6A >2U	14	15	TOTAL
Mon 1	NB																
Mon 1	SB																
Tue 2	NB																
Tue 2	SB																
Wed 3	NB																
Wed 3	SB																
Thu 4	NB																
Thu 4	SB																
Fri 5	NB																
Fri 5	SB																
Sat 6	NB																
Sat 6	SB																
Sun 7	NB																
Sun 7	SB																
Mon 8	NB	135	12290	3048	190	118	66	0	0	1110	31	0	0	0	0	0	16988
Mon 8	SB	70	12060	2992	165	103	67	0	0	1006	11	0	0	0	0	0	16474
Tue 9	NB	164	12804	3177	178	124	46	0	0	1084	22	0	0	0	0	0	17599
Tue 9	SB	72	12493	3101	151	102	51	0	0	1059	12	0	0	0	0	0	17041
Wed 10	NB																
Wed 10	SB																
Thu 11	NB																
Thu 11	SB																
Fri 12	NB																
Fri 12	SB																
Sat 13	NB																
Sat 13	SB																
Sun 14	NB																
Sun 14	SB																
Mon 15	NB																
Mon 15	SB																
Tue 16	NB																
Tue 16	SB																
Wed 17	NB																
Wed 17	SB																
Thu 18	NB																
Thu 18	SB																
Fri 19	NB																
Fri 19	SB																
Sat 20	NB																
Sat 20	SB																
Sun 21	NB																
Sun 21	SB																
Mon 22	NB																
Mon 22	SB																
Tue 23	NB																
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Wed 24	NB																
Wed 24	SB																
Thu 25	NB																
Thu 25	SB																
Fri 26	NB																
Fri 26	SB																
Sat 27	NB																
Sat 27	SB																
Sun 28	NB																
Sun 28	SB																
Mon 29	NB																
Mon 29	SB																
Tue 30	NB																
Tue 30	SB																
<b>Percentages</b>		.65%	72.90%	18.09%	1.0%	.66%	.34%	0%	0%	6.25%	.11%	0%	0%	0%	0%	0%	100%
<b>Totals</b>		441	49647	12318	684	447	230	0	0	4259	76	0	0	0	0	0	68102

## Record Detail Table

Location ID	4655098	MPO ID	
Type	SPOT	HPMS ID	
On NHS		On HPMS	
LRS ID	CMAHCR00146**C	LRS Loc Pt.	5.732
SF Group	Urban Minor Arterial (4);Collector(5-6);Local(7)	Route Type	CR
AF Group	URBAN_MINOR_ARTERIAL	Route	00146
GF Group	URBAN_MINOR_ARTERIAL	Active	Yes
Class Dist Grp		Category	Local
WIM Group			
QC Group	Default		
Funct'l Class	Minor Arterial	Milepost	
Located On	KIRK RD		
Loc On Alias			

## 4655098 Kirk Road AADT

AADT								
	Year	AADT	DHV-30	K %	D %	PA	BC	Src
	2016	9,401						Grown from 2015
	2015	9,022						Grown from 2014
	2014	8,926						Grown from 2013
	2013	9,155						
	2011	9,447						

**Ohio Department of Transportation  
7150: September 2014 class Report**

Location ID: 7150 Functional Class: 2  
 County: MAHONING Axle Factor Group: URBAN\_FREEMWAY\_EXPRESSWAY  
 Community: E OF CANFIELD  
 Description: On RIVER LAKE HWY at SR11 N OF US224, E OF CANFIELD

DATE	LANE	MOTOR CYCLE	CAR	PICK UP	BUS	2A SU	3A SU	>3A SU	<5A 2U	5A 2U	>5A 2U	<6A >2U	6A >2U	>6A >2U	14	15	TOTAL
Mon 1	NB																
Mon 1	SB																
Tue 2	NB																
Tue 2	SB																
Wed 3	NB																
Wed 3	SB																
Thu 4	NB																
Thu 4	SB																
Fri 5	NB																
Fri 5	SB																
Sat 6	NB																
Sat 6	SB																
Sun 7	NB																
Sun 7	SB																
Mon 8	NB	135	12290	3048	190	118	66	0	0	1110	31	0	0	0	0	0	16988
Mon 8	SB	70	12060	2992	165	103	67	0	0	1006	11	0	0	0	0	0	16474
Tue 9	NB	164	12804	3177	178	124	46	0	0	1084	22	0	0	0	0	0	17599
Tue 9	SB	72	12493	3101	151	102	51	0	0	1059	12	0	0	0	0	0	17041
Wed 10	NB																
Wed 10	SB																
Thu 11	NB																
Thu 11	SB																
Fri 12	NB																
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Sat 27	NB																
Sat 27	SB																
Sun 28	NB																
Sun 28	SB																
Mon 29	NB																
Mon 29	SB																
Tue 30	NB																
Tue 30	SB																
<b>Percentages</b>		<b>.65%</b>	<b>72.90%</b>	<b>18.09%</b>	<b>1.0%</b>	<b>.66%</b>	<b>.34%</b>	<b>0%</b>	<b>0%</b>	<b>6.25%</b>	<b>.11%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>100%</b>
<b>Totals</b>		<b>441</b>	<b>49647</b>	<b>12318</b>	<b>684</b>	<b>447</b>	<b>230</b>	<b>0</b>	<b>0</b>	<b>4259</b>	<b>76</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>68102</b>

## Record Detail Table

Location ID	5285098	MPO ID	
Type	SPOT	HPMS ID	
On NHS		On HPMS	
LRS ID	CMAHCR00162**C	LRS Loc Pt.	1.175
SF Group	Urban Minor Arterial (4);Collector(5-6);Local(7)	Route Type	CR
AF Group	URBAN_MAJOR_COLLECTOR	Route	00162
GF Group	URBAN_MAJOR_COLLECTOR	Active	Yes
Class Dist Grp		Category	Local
WIM Group			
QC Group	Default		
Funct'l Class	Major Collector	Milepost	
Located On	NEW RD		
Loc On Alias			

## 5285098 New Road AADT

AADT								
Year	AADT	DHV-30	K %	D %	PA	BC	Src	
2016	6,268							Grown from 2015
2015	5,970							Grown from 2014
2014	5,782							Grown from 2013
2013	5,697							

**Ohio Department of Transportation  
7150: September 2014 class Report**

Location ID: 7150 Functional Class: 2  
 County: MAHONING Axle Factor Group: URBAN\_FREEMWAY\_EXPRESSWAY  
 Community: E OF CANFIELD  
 Description: On RIVER LAKE HWY at SR11 N OF US224, E OF CANFIELD

DATE	LANE	MOTOR CYCLE	CAR	PICK UP	BUS	2A SU	3A SU	>3A SU	<5A 2U	5A 2U	>5A 2U	<6A >2U	6A >2U	>6A >2U	14	15	TOTAL
Mon 1	NB																
Mon 1	SB																
Tue 2	NB																
Tue 2	SB																
Wed 3	NB																
Wed 3	SB																
Thu 4	NB																
Thu 4	SB																
Fri 5	NB																
Fri 5	SB																
Sat 6	NB																
Sat 6	SB																
Sun 7	NB																
Sun 7	SB																
Mon 8	NB	135	12290	3048	190	118	66	0	0	1110	31	0	0	0	0	0	16988
Mon 8	SB	70	12060	2992	165	103	67	0	0	1006	11	0	0	0	0	0	16474
Tue 9	NB	164	12804	3177	178	124	46	0	0	1084	22	0	0	0	0	0	17599
Tue 9	SB	72	12493	3101	151	102	51	0	0	1059	12	0	0	0	0	0	17041
Wed 10	NB																
Wed 10	SB																
Thu 11	NB																
Thu 11	SB																
Fri 12	NB																
Fri 12	SB																
Sat 13	NB																
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Fri 26	SB																
Sat 27	NB																
Sat 27	SB																
Sun 28	NB																
Sun 28	SB																
Mon 29	NB																
Mon 29	SB																
Tue 30	NB																
Tue 30	SB																
<b>Percentages</b>		<b>.65%</b>	<b>72.90%</b>	<b>18.09%</b>	<b>1.0%</b>	<b>.66%</b>	<b>.34%</b>	<b>0%</b>	<b>0%</b>	<b>6.25%</b>	<b>.11%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>100%</b>
<b>Totals</b>		<b>441</b>	<b>49647</b>	<b>12318</b>	<b>684</b>	<b>447</b>	<b>230</b>	<b>0</b>	<b>0</b>	<b>4259</b>	<b>76</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>68102</b>

## Record Detail Table

Location ID	15098	MPO ID	
Type	SPOT	HPMS ID	
On NHS		On HPMS	
LRS ID	CMAHCR00018**C	LRS Loc Pt.	12.975
SF Group	URBAN_OTHER_PRINCIPAL_ARTERIAL	Route Type	CR
AF Group	URBAN_OTHER_PRINCIPAL_ARTERIAL	Route	00018
GF Group	URBAN_OTHER_PRINCIPAL_ARTERIAL	Active	Yes
Class Dist Grp		Category	Local
WIM Group			
QC Group	Default		
Funct'l Class	Other Principal Arterial	Milepost	
Located On	MAHONING AVE		
Loc On Alias			

## 15098 Mahoning Avenue AADT

AADT								
Year	AADT	DHV-30	K %	D %	PA	BC	Src	
2016	27,347							Grown from 2015
2015	26,785							Grown from 2014
2014	26,296							Grown from 2013
2013	26,113							
2010	26,005							



## Record Detail Table

Location ID	53650	MPO ID	
Type	SPOT	HPMS ID	
On NHS		On HPMS	
LRS ID	SMAHRA50014**C	LRS Loc Pt.	0.161
SF Group	URBAN_FREEWAY_EXPRESSWAY	Route Type	RA
AF Group	URBAN_FREEWAY_EXPRESSWAY	Route	50014
GF Group	URBAN_FREEWAY_EXPRESSWAY	Active	Yes
Class Dist Grp		Category	State Program
WIM Group			
QC Group	Default		
Funct'l Class	Freeway & Expressway	Milepost	
Located On	RAMP FROM SR11 NB TO C18 MAHONING AVE		
Loc On Alias			
	RAMP FROM SR11 NB TO C18 MAHONING AVE, N OF CANFIELD		

## 53650 Ramp: SR 11N to Mahoning AADT

AADT								
Year	AADT	DHV-30	K %	D %	PA	BC	Src	
2016	3,652		9		3,548 (97%)	103 (3%)	Grown from 2015	
2015	3,566		9		3,464 (97%)	101 (3%)	Grown from 2014	
2014	3,472	300	9		3,388 (98%)	84 (2%)		
2013	3,232				3,038 (94%)	194 (6%)		
2011	3,098				2,913 (94%)	185 (6%)		

Ohio Department of Transportation

53650 Weekly Volume Report - Mon 08/18/2014 - Sun 08/24/2014

Location ID:	53650
Located On:	RAMP FROM SR11 NB TO C18 MAHONING AVE
Direction:	RAMP
Community:	-
AADT:	3472

Type:	SPOT
Period:	Mon 08/18/2014 - Sun 08/24/2014

Start Time	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Avg
12:00 AM					36			36
1:00 AM					20			20
2:00 AM					13			13
3:00 AM					16			16
4:00 AM					37			37
5:00 AM					47			47
6:00 AM					166			166
7:00 AM					280			280
8:00 AM					253			253
9:00 AM				264				264
10:00 AM				204				204
11:00 AM				224				224
12:00 PM				217				217
1:00 PM				258				258
2:00 PM				251				251
3:00 PM				252				252
4:00 PM				286				286
5:00 PM				300				300
6:00 PM				234				234
7:00 PM				168				168
8:00 PM				161				161
9:00 PM				121				121
10:00 PM				83				83
11:00 PM				37				37
Total	0	0	0	3060	868	0	0	
24HrTotal					3928			3928
AM Pk Hr								
AM Peak								266
PM Pk Hr								
PM Peak								305
% Peak Hr								
% Peak Hr					7.64%			7.64%

53650 Ramp: SR 11N to Mahoning Monthly Class Report

Ohio Department of Transportation  
53650: August 2014 class Report

Location ID: 53650 Functional Class: 2  
 County: MAHONING Axle Factor Group: URBAN\_FREEWAY\_EXPRESSWAY  
 Community: -  
 Description: On RAMP FROM SR11 NB TO C18 MAHONING AVE at RAMP FROM SR11 NB TO C18 MAHONING AVE, N OF CANFIELD

DATE	LANE	MOTOR CYCLE	CAR	PICK UP	BUS	2A SU	3A SU	>3A SU	<5A 2U	5A 2U	>5A 2U	<6A >2U	6A >2U	>6A >2U	14	15	TOTAL
Fri 1	NB																
Sat 2	NB																
Sun 3	NB																
Mon 4	NB																
Tue 5	NB																
Wed 6	NB																
Thu 7	NB																
Fri 8	NB																
Sat 9	NB																
Sun 10	NB																
Mon 11	NB																
Tue 12	NB																
Wed 13	NB																
Thu 14	NB																
Fri 15	NB																
Sat 16	NB																
Sun 17	NB																
Mon 18	NB																
Tue 19	NB																
Wed 20	NB																
Thu 21	NB	10	3052	754	12	18	9	0	0	70	3	0	0	0	0	0	3928
Fri 22	NB																
Sat 23	NB																
Sun 24	NB																
Mon 25	NB																
Tue 26	NB																
Wed 27	NB																
Thu 28	NB																
Fri 29	NB																
Sat 30	NB																
Sun 31	NB																
<b>Percentages</b>		<b>.25%</b>	<b>77.70%</b>	<b>19.20%</b>	<b>.31%</b>	<b>.46%</b>	<b>.23%</b>	<b>0%</b>	<b>0%</b>	<b>1.78%</b>	<b>.08%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>100%</b>
<b>Totals</b>		<b>10</b>	<b>3052</b>	<b>754</b>	<b>12</b>	<b>18</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>70</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3928</b>

## Record Detail Table

Location ID	53950	MPO ID	
Type	SPOT	HPMS ID	
On NHS		On HPMS	
LRS ID	SMAHRA50018**C	LRS Loc Pt.	0.079
SF Group	URBAN_FREEWAY_EXPRESSWAY	Route Type	RA
AF Group	URBAN_FREEWAY_EXPRESSWAY	Route	50018
GF Group	URBAN_FREEWAY_EXPRESSWAY	Active	Yes
Class Dist Grp		Category	State Program
WIM Group			
QC Group	Default		
Funct'l Class	Freeway & Expressway	Milepost	
Located On	RAMP FROM C18 MAHONING AVE TO SR11 SB		
Loc On Alias			
	RAMP FROM C18 MAHONING AVE TO SR11 SB, N OF CANFIELD		

### 53950 Ramp: Mahoning to SR 11S AADT

AADT								
Year	AADT	DHV-30	K %	D %	PA	BC	Src	
2016	3,482		9		3,389 (97%)	92 (3%)	Grown from 2015	
2015	3,400		9		3,309 (97%)	90 (3%)	Grown from 2014	
2014	3,311	305	9		3,241 (98%)	70 (2%)		
2013	3,083				2,929 (95%)	154 (5%)		
2011	2,955				2,821 (95%)	134 (5%)		

Ohio Department of Transportation

53950 Weekly Volume Report - Mon 09/29/2014 - Sun 10/05/2014

Location ID:	53950
Located On:	RAMP FROM C18 MAHONING AVE TO SR11 SB
Direction:	RAMP
Community:	-
AADT:	3311

Type:	SPOT
Period:	Mon 09/29/2014 - Sun 10/05/2014

Start Time	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Avg										
12:00 AM			16					16										
1:00 AM			17					17										
2:00 AM			12					12										
3:00 AM			16					16										
4:00 AM			29					29										
5:00 AM			66					66										
6:00 AM			161					161										
7:00 AM			266					266										
8:00 AM			212					212										
9:00 AM			208					208										
10:00 AM			177					177										
11:00 AM			185					185										
12:00 PM			224					224										
1:00 PM		220						220										
2:00 PM		253						253										
3:00 PM		291						291										
4:00 PM		305						305										
5:00 PM		283						283										
6:00 PM		196						196										
7:00 PM		127						127										
8:00 PM		89						89										
9:00 PM		102						102										
10:00 PM		56						56										
11:00 PM		35						35										
Total	0	1957	1589	0	0	0	0											
24HrTotal			3546					3546										
AM Pk Hr																		
AM Peak								0										
PM Pk Hr																		
PM Peak								0										
% Peak Hr																		
% Peak Hr			8.60%					8.60%										
Totals	3	2769	679	12	14	8	0	0	61	0	0	0	0	0	0	0	0	3546

53950 Ramp: Mahoning to SR 11S Monthly Class Report

**Ohio Department of Transportation**  
**53950: September 2014 class Report**

Location ID: 53950 Functional Class: 2  
 County: MAHONING Axle Factor Group: URBAN\_FREEMWAY\_EXPRESSWAY  
 Community: -  
 Description: On RAMP FROM C18 MAHONING AVE TO SR11 SB at RAMP FROM C18 MAHONING AVE TO SR11 SB, N OF CANFIELD

DATE	LANE	MOTOR CYCLE	CAR	PICK UP	BUS	2A SU	3A SU	>3A SU	<5A 2U	5A 2U	>5A 2U	<6A >2U	6A >2U	>6A >2U	14	15	TOTAL
Mon 1	SB																
Tue 2	SB																
Wed 3	SB																
Thu 4	SB																
Fri 5	SB																
Sat 6	SB																
Sun 7	SB																
Mon 8	SB																
Tue 9	SB																
Wed 10	SB																
Thu 11	SB																
Fri 12	SB																
Sat 13	SB																
Sun 14	SB																
Mon 15	SB																
Tue 16	SB																
Wed 17	SB																
Thu 18	SB																
Fri 19	SB																
Sat 20	SB																
Sun 21	SB																
Mon 22	SB																
Tue 23	SB																
Wed 24	SB																
Thu 25	SB																
Fri 26	SB																
Sat 27	SB																
Sun 28	SB																
Mon 29	SB																
Tue 30	SB	3	2769	679	12	14	8	0	0	61	0	0	0	0	0	0	3546
<b>Percentages</b>		<b>.08%</b>	<b>78.09%</b>	<b>19.15%</b>	<b>.34%</b>	<b>.39%</b>	<b>.23%</b>	<b>0%</b>	<b>0%</b>	<b>1.72%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>100%</b>
<b>Totals</b>		<b>3</b>	<b>2769</b>	<b>679</b>	<b>12</b>	<b>14</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>61</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3546</b>
<b>Totals</b>		<b>10</b>	<b>3052</b>	<b>754</b>	<b>12</b>	<b>18</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>70</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3928</b>

APPENDIX H: NOISE BARRIER DESIGN TABLES

**Table H-1. Summary of Noise Barrier Evaluations**

Barrier Name	Noise Sensitive Area	Barrier Location	Barrier Dimensions			Est. Cost	Max. Noise Reduction (dBA)	No. of Benefited Receptors <sup>a</sup>	Cost per Benefited Receptor	No. of Type II Receptors <sup>a</sup>	No. of Benefited Type II Receptors <sup>a</sup>	Cost per Benefited Type II Receptor	No. of Impacted Receptors	No. of Impacted and Benefited Receptors	No. of Receptors with 7 dBA Benefit	Benefited Percent of Impacted Receptors	Meets Design Goal? <sup>b</sup>	Feasible? <sup>c</sup>	Reasonable? <sup>d</sup>	Recommended? <sup>e</sup>
			Height (ft)	Length (ft)	Area (sq. ft)															
Starwick	1	0	12	3,181	38,167	\$954,200	9	34	\$28,100	0	0	--	21	20	11	95	Yes	Yes	No	No
Starwick	1	0	13	3,181	38,167	\$1,033,700	9	39	\$26,500	0	0	--	21	21	16	100	Yes	Yes	No	No
Starwick	1	0	14	3,181	44,529	\$1,113,200	9	44	\$25,300	0	0	--	21	21	20	100	Yes	Yes	No	No
Oak Trace-full	3	full	12	5,410	64,921	\$1,623,000	10	70	\$23,200	24	10	\$162,303	28	28	22	100	Yes	Yes	No	No
Oak Trace-full	3	full	13	5,410	70,331	\$1,758,300	11	81	\$21,700	24	10	\$175,828	28	28	29	100	Yes	Yes	No	No
Oak Trace-full	3	full	14	5,410	75,741	\$1,893,500	11	91	\$20,800	24	11	\$172,140	28	28	38	100	Yes	Yes	No	No
Oak Trace-full	3	full	15	5,410	81,151	\$2,028,800	11	98	\$20,700	24	12	\$169,066	28	28	42	100	Yes	Yes	No	No
Oak Trace-full	3	full	16	5,410	86,562	\$2,164,000	12	101	\$21,400	24	12	\$180,337	28	28	53	100	Yes	Yes	No	No
Oak Trace-Type 2	3	Type 2	12	2,282	27,383	\$684,600	10	18	\$38,000	24	9	\$76,065	28	6	1	21	Yes	Yes	No	No
Oak Trace-Type 2	3	Type 2	13	2,132	27,717	\$692,900	11	18	\$38,500	24	10	\$69,292	28	4	1	14	Yes	Yes	No	No
Oak Trace-Type 2	3	Type 2	14	2,082	29,149	\$728,700	11	16	\$45,500	24	10	\$72,871	28	3	1	11	Yes	Yes	No	No
Oak Trace-Type 2	3	Type 2	15	2,032	30,481	\$762,000	11	16	\$47,600	24	11	\$69,274	28	2	1	7	Yes	Yes	No	No
Oak Trace-Type 2	3	Type 2	16	2,032	32,513	\$812,800	12	16	\$50,800	24	11	\$73,892	28	2	1	7	Yes	Yes	No	No
Nashua-full	5	full	15	2,000	30,000	\$750,000	6	11	\$68,200	10	4	\$187,497	2	2	0	100	No	Yes	No	No
Nashua-full	5	full	16	2,000	32,000	\$800,000	7	15	\$53,300	10	5	\$159,998	2	2	0	100	No	Yes	No	No
Nashua-Type2	5	Type2	15	900	13,500	\$337,500	5	3	\$112,500	10	3	\$112,500	2	0	0	0	No	No	No	No
Nashua-Type2	5	Type2	16	900	14,400	\$360,000	5	6	\$60,000	10	5	\$72,000	2	0	0	0	No	No	No	No
N-I-full	5-7	full	14	5,585	78,185	\$1,954,600	13	50	\$39,100	101	46	\$42,491	37	37	23	100	Yes	Yes	No	No
N-I-full	5-7	full	15	5,585	83,769	\$2,094,200	13	56	\$37,400	101	49	\$42,739	37	37	33	100	Yes	Yes	No	No
N-I-full	5-7	full	16	5,585	89,354	\$2,233,800	14	70	\$31,900	101	60	\$37,231	37	37	35	100	Yes	Yes	No	No
N-I	5-7	0	13	4,485	58,300	\$1,457,500	12	37	\$39,400	101	37	\$39,392	37	34	17	92	Yes	Yes	No	No
N-I	5-7	0	14	4,485	62,785	\$1,569,600	13	46	\$34,100	101	46	\$34,122	37	35	23	95	Yes	Yes	Yes	No
N-I	5-7	0	15	4,485	67,269	\$1,681,700	13	48	\$35,000	101	48	\$35,036	37	35	33	95	Yes	Yes	No	No
N-I	5-7	0	16	4,385	70,154	\$1,753,800	14	57	\$30,800	101	57	\$30,769	37	35	35	95	Yes	Yes	Yes	Yes
N-I	5-7	0	15	4,485	63,685	\$1,592,100	13	47	\$33,900	101	47	\$33,875	37	35	23	95	Yes	Yes	Yes	No
N-I	5-7	0	16	4,485	64,585	\$1,614,600	13	50	\$32,300	101	49	\$32,951	37	35	23	95	Yes	Yes	Yes	No
Westhampton	6	0	14	1,900	26,600	\$665,000	8	17	\$39,100	2	1	\$665,004	7	6	3	86	Yes	Yes	No	No
Westhampton	6	0	15	1,850	27,751	\$693,800	8	19	\$36,500	2	1	\$693,781	7	7	4	100	Yes	Yes	No	No
Westhampton	6	0	16	1,950	31,200	\$780,000	9	23	\$33,900	2	1	\$780,010	7	7	9	100	Yes	Yes	No	No
Cross-EOS	8	EOS	14	3,000	42,000	\$1,050,000	9	31	\$33,900	0	0	--	9	9	7	100	Yes	Yes	No	No
Cross-EOS	8	EOS	15	2,950	44,249	\$1,106,200	9	32	\$34,600	0	0	--	9	9	8	100	Yes	Yes	No	No
Cross-EOS	8	EOS	16	2,950	47,199	\$1,180,000	10	32	\$36,900	0	0	--	9	9	8	100	Yes	Yes	No	No
Cross-ROW	8	ROW	13	3,000	39,000	\$975,000	15	11	\$88,600	0	0	--	9	9	6	100	Yes	Yes	No	No
Cross-ROW	8	ROW	15	2,937	44,056	\$1,101,400	16	15	\$73,400	0	0	--	9	9	9	100	Yes	Yes	No	No
Cross-ROW	8	ROW	18	2,937	52,867	\$1,321,700	17	32	\$41,300	0	0	--	9	9	9	100	Yes	Yes	No	No

a The number of benefited units includes all units receiving at least 5 dBA noise reduction whether impacted or not.

b The noise reduction design goal for Indiana is 7 dBA for a majority (greater than 50%) of the benefited first row receptors.

c A barrier is considered feasible if it can achieve at least 5 dBA noise reduction at a majority (greater than 50%) of the impacted receptors and it meets INDOT engineering feasibility requirements as described in the INDOT Noise Policy.

d A barrier is considered reasonable if its cost does not exceed \$25,000 per benefited receptor and if a majority of benefited residents are in favor of the barrier based on survey data collected as described in the INDOT Noise Policy.

e A barrier is considered recommended if its cost does not exceed \$25,000 per benefited receptor and if a majority of benefited residents are in favor of the barrier based on survey data collected as described in the INDOT Noise Policy.



**Table H-2. Noise Levels and Benefits for the Starwick Barrier.**

Receptor	Sound Level Without Barrier (dBA)	No. of Type II Receptors	Height = 12			Height = 13			Height = 14		
			Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors
1-1	57.6	0	53.5	4.1	0	53	4.6	1	52.7	4.9	1
1-2	58.2	0	54.3	3.9	0	53.8	4.4	0	53.5	4.7	1
1-3	60.6	0	55.7	4.9	1	55.2	5.4	1	54.9	5.7	1
1-4	62.6	0	56.9	5.7	1	56.4	6.2	1	56	6.6	1
1-5	65.9	0	58.7	7.2	1	58.3	7.6	1	57.9	8	1
1-6	68	0	59.9	8.1	1	59.3	8.7	1	58.8	9.2	1
1-7	67.9	0	60.5	7.4	1	59.7	8.2	1	59.2	8.7	1
1-8	67.9	0	61.3	6.6	1	60.1	7.8	1	59.5	8.4	1
1-9	68.3	0	62.8	5.5	1	61.6	6.7	1	60.7	7.6	1
1-10	69.1	0	64.7	4.4	0	63.6	5.5	1	62.4	6.7	1
1-11	69.3	0	64.6	4.7	1	63.5	5.8	1	62.4	6.9	1
1-12	68.4	0	61.9	6.5	1	61.1	7.3	1	60.4	8	1
1-13	68.1	0	60.6	7.5	1	60	8.1	1	59.3	8.8	1
1-14	66.9	0	60	6.9	1	59.4	7.5	1	58.9	8	1
1-15	66.3	0	59.6	6.7	1	59.1	7.2	1	58.6	7.7	1
1-16	63.8	0	58.4	5.4	1	58	5.8	1	57.5	6.3	1
1-17	62.3	0	57.5	4.8	1	57.1	5.2	1	56.8	5.5	1
1-18	61.7	0	57.1	4.6	1	56.7	5	1	56.4	5.3	1
1-19	61.9	0	57.2	4.7	1	56.9	5	1	56.5	5.4	1
1-20	62.1	0	57.3	4.8	1	56.9	5.2	1	56.6	5.5	1
1-21	62.1	0	57.3	4.8	1	57	5.1	1	56.7	5.4	1
1-22	61.5	0	57.3	4.2	0	57	4.5	1	56.7	4.8	1
1-23	61.1	0	57	4.1	0	56.7	4.4	0	56.4	4.7	1
1-24	60.7	0	56.5	4.2	0	56.3	4.4	0	56	4.7	1
1-25	60	0	56	4	0	55.8	4.2	0	55.6	4.4	0
1-26	62.2	0	57.5	4.7	1	57.2	5	1	56.9	5.3	1
1-27	66.3	0	59.8	6.5	1	59.4	6.9	1	59	7.3	1
1-28	67	0	59.5	7.5	1	59.1	7.9	1	58.7	8.3	1
1-29	67.5	0	60	7.5	1	59.5	8	1	59.1	8.4	1
1-30	66.6	0	59.3	7.3	1	58.9	7.7	1	58.5	8.1	1
1-31	65.1	0	58.6	6.5	1	58.3	6.8	1	57.9	7.2	1
1-32	62.1	0	57	5.1	1	56.7	5.4	1	56.4	5.7	1
1-33	60.7	0	56.3	4.4	0	56.2	4.5	1	56	4.7	1
1-34	59.3	0	55.2	4.1	0	55	4.3	0	54.8	4.5	1
1-35	59.9	0	55.6	4.3	0	55.3	4.6	1	55.1	4.8	1
1-36	63.7	0	57.7	6	1	57.4	6.3	1	57	6.7	1
1-37	65.3	0	58.9	6.4	1	58.5	6.8	1	58.1	7.2	1

**Table H-2. Noise Levels and Benefits for the Starwick Barrier.**

Receptor	Sound Level Without Barrier (dBA)	No. of Type II Receptors	Height = 12			Height = 13			Height = 14		
			Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors
1-38	67.4	0	60	7.4	1	59.5	7.9	1	59.1	8.3	1
1-39	68.2	0	59.8	8.4	1	59.3	8.9	1	59	9.2	1
1-40	69	0	60.5	8.5	1	60.1	8.9	1	59.7	9.3	1
1-41	68.7	0	60.4	8.3	1	60	8.7	1	59.7	9	1
1-42	68.6	0	61.7	6.9	1	61.4	7.2	1	61.2	7.4	1
1-43	66.5	0	61.9	4.6	1	61.7	4.8	1	61.5	5	1
1-44	63	0	61.2	1.8	0	61.2	1.8	0	61.1	1.9	0
1-45	63	0	62.2	0.8	0	62.1	0.9	0	62.1	0.9	0
1-46	61.6	0	60.9	0.7	0	60.8	0.8	0	60.8	0.8	0
1-47	58.6	0	56.2	2.4	0	56.1	2.5	0	56	2.6	0
1-48	61.1	0	56.1	5	1	55.6	5.5	1	55.1	6	1
1-49	59.2	0	55.8	3.4	0	55.2	4	0	54.7	4.5	1
1-50	57.5	0	54.5	3	0	53.9	3.6	0	53.5	4	0
1-51	58.3	0	56.2	2.1	0	55.5	2.8	0	55	3.3	0
1-52	56.9	0	55.3	1.6	0	54.8	2.1	0	54.3	2.6	0
1-53	55.7	0	54.1	1.6	0	53.5	2.2	0	53.1	2.6	0
1-54	57.9	0	56.5	1.4	0	55.9	2	0	55.3	2.6	0
1-55	55.2	0	53.9	1.3	0	53.3	1.9	0	53	2.2	0
1-56	57.6	0	56.6	1	0	56	1.6	0	55.5	2.1	0
1-57	55.2	0	53.9	1.3	0	53.3	1.9	0	52.9	2.3	0
1-58	57.1	0	56.2	0.9	0	55.6	1.5	0	55.2	1.9	0
1-59	56.7	0	55.8	0.9	0	55.3	1.4	0	54.8	1.9	0
1-60	55.4	0	54.9	0.5	0	54.5	0.9	0	54.1	1.3	0
1-61	54.1	0	54.3	-0.2	0	53.9	0.2	0	53.6	0.5	0
1-62	54.2	0	54	0.2	0	53.7	0.5	0	53.4	0.8	0
1-63	54.5	0	54.1	0.4	0	53.6	0.9	0	53.3	1.2	0
1-64	55	0	54.2	0.8	0	53.8	1.2	0	53.4	1.6	0
1-65	55	0	54.2	0.8	0	53.8	1.2	0	53.4	1.6	0
1-66	55.2	0	54.1	1.1	0	53.7	1.5	0	53.4	1.8	0
1-67	55.3	0	54.1	1.2	0	53.8	1.5	0	53.4	1.9	0
1-68	55	0	54.3	0.7	0	53.9	1.1	0	53.6	1.4	0
1-69	59.8	0	55.9	3.9	0	55.6	4.2	0	55.4	4.4	0
1-70	57.5	0	54.5	3	0	54.4	3.1	0	54.2	3.3	0
1-71	57.3	0	54.7	2.6	0	54.5	2.8	0	54.4	2.9	0
1-72	58.1	0	54.9	3.2	0	54.7	3.4	0	54.6	3.5	0
1-73	58.4	0	55.3	3.1	0	55.1	3.3	0	54.9	3.5	0
1-74	58.6	0	55.7	2.9	0	55.6	3	0	55.5	3.1	0

**Table H-2. Noise Levels and Benefits for the Starwick Barrier.**

Receptor	Sound Level Without Barrier (dBA)	No. of Type II Receptors	Height = 12			Height = 13			Height = 14		
			Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors
1-75	57.4	0	55.4	2	0	55.3	2.1	0	55.2	2.2	0
1-76	57.9	0	55.6	2.3	0	55.5	2.4	0	55.5	2.4	0
1-77	58.1	0	55.7	2.4	0	55.6	2.5	0	55.4	2.7	0
1-78	57.6	0	55.4	2.2	0	55.3	2.3	0	55.2	2.4	0
1-79	58.4	0	57	1.4	0	57	1.4	0	57	1.4	0
1-80	60.8	0	60.4	0.4	0	60.4	0.4	0	60.4	0.4	0

Legend: Impact Benefited receptors

**Table H-3. Noise Levels and Benefits for the Oak Trace Barrier.**

Receptor	Sound Level Without Barrier (dBA)	No. of Type II Receptors	Full Option: Height = 12			Full Option: Height = 14			Full Option: Height = 16			Type 2 Option: Height = 12			Type 2 Option: Height = 14			Type 2 Option: Height = 16		
			Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors
3-1	69.9	1	59.8	10.1	1	58.9	11	1	58.3	11.6	1	59.8	10.1	1	59	10.9	1	58.4	11.5	1
3-2	66.9	1	62	4.9	1	61.5	5.4	1	61.1	5.8	1	62.1	4.8	1	61.5	5.4	1	61.1	5.8	1
3-3	62.6	1	60.4	2.2	0	60.1	2.5	0	59.9	2.7	0	60.4	2.2	0	60.1	2.5	0	59.9	2.7	0
3-4	61.9	1	60.8	1.1	0	60.6	1.3	0	60.5	1.4	0	60.8	1.1	0	60.6	1.3	0	60.5	1.4	0
3-5	62	1	61.4	0.6	0	61.3	0.7	0	61.2	0.8	0	61.4	0.6	0	61.3	0.7	0	61.3	0.7	0
3-6	61.4	1	61	0.4	0	60.9	0.5	0	60.9	0.5	0	61	0.4	0	60.9	0.5	0	60.9	0.5	0
3-7	58.8	1	55.9	2.9	0	55.3	3.5	0	54.8	4	0	56	2.8	0	55.4	3.4	0	54.9	3.9	0
3-8	58.7	1	55.9	2.8	0	55.1	3.6	0	54.6	4.1	0	55.9	2.8	0	55.2	3.5	0	54.7	4	0
3-9	58.6	1	55.8	2.8	0	54.9	3.7	0	54.4	4.2	0	55.9	2.7	0	55	3.6	0	54.5	4.1	0
3-10	58.7	1	55.9	2.8	0	54.9	3.8	0	54.3	4.4	0	55.9	2.8	0	55	3.7	0	54.4	4.3	0
3-11	58.2	1	55.4	2.8	0	54.4	3.8	0	53.8	4.4	0	55.5	2.7	0	54.5	3.7	0	54	4.2	0
3-12	58.5	1	55.4	3.1	0	54.3	4.2	0	53.7	4.8	1	55.7	2.8	0	54.6	3.9	0	54.1	4.4	0
3-13	58.9	1	55.4	3.5	0	54.2	4.7	1	53.5	5.4	1	55.6	3.3	0	54.6	4.3	0	54	4.9	1
3-14	59.1	1	54.6	4.5	1	53.5	5.6	1	52.9	6.2	1	54.8	4.3	0	53.9	5.2	1	53.4	5.7	1
3-15	59.1	1	54	5.1	1	53	6.1	1	52.4	6.7	1	54.3	4.8	1	53.5	5.6	1	53.1	6	1
3-16	59.2	1	53.8	5.4	1	52.8	6.4	1	52.2	7	1	54.1	5.1	1	53.4	5.8	1	53	6.2	1
3-17	59.8	1	53.7	6.1	1	52.7	7.1	1	52.1	7.7	1	54.2	5.6	1	53.6	6.2	1	53.2	6.6	1
3-18	59.1	1	53.5	5.6	1	52.6	6.5	1	52	7.1	1	54	5.1	1	53.5	5.6	1	53.2	5.9	1
3-19	57.8	1	53	4.8	1	52.1	5.7	1	51.5	6.3	1	53.3	4.5	1	52.9	4.9	1	52.7	5.1	1
3-20	57.9	1	53	4.9	1	52.1	5.8	1	51.5	6.4	1	53.4	4.5	1	53.1	4.8	1	52.9	5	1
3-21	58.4	1	53.2	5.2	1	52.1	6.3	1	51.4	7	1	53.9	4.5	1	53.8	4.6	1	53.7	4.7	1
3-22	56.1	0	51.1	5	1	50.1	6	1	49.6	6.5	1	51.7	4.4	0	51.7	4.4	0	51.7	4.4	0
3-23	57.6	0	52.4	5.2	1	51.4	6.2	1	50.7	6.9	1	52.9	4.7	1	53	4.6	1	53	4.6	1
3-24	58.9	0	53.5	5.4	1	52.4	6.5	1	51.8	7.1	1	54	4.9	1	53.8	5.1	1	53.8	5.1	1
3-25	60.4	0	55	5.4	1	53.9	6.5	1	53.2	7.2	1	55.4	5	1	55.3	5.1	1	55.3	5.1	1
3-26	64	0	57.2	6.8	1	56.3	7.7	1	55.6	8.4	1	57.7	6.3	1	57.9	6.1	1	57.9	6.1	1
3-27	65.3	0	58.1	7.2	1	57.2	8.1	1	56.4	8.9	1	58.6	6.7	1	59.3	6	1	59.7	5.6	1
3-28	65.5	0	58.4	7.1	1	57.4	8.1	1	56.5	9	1	59.2	6.3	1	60.5	5	1	61.5	4	0
3-29	66.1	0	58.8	7.3	1	57.7	8.4	1	56.8	9.3	1	59.9	6.2	1	62.7	3.4	0	63.8	2.3	0
3-30	67.1	0	59.3	7.8	1	58.2	8.9	1	57.3	9.8	1	61.2	5.9	1	65.2	1.9	0	66	1.1	0
3-31	67.7	0	59.8	7.9	1	58.7	9	1	57.7	10	1	62.8	4.9	1	67	0.7	0	67.3	0.4	0
3-32	67.5	0	59.8	7.7	1	58.6	8.9	1	57.7	9.8	1	64.8	2.7	0	67.2	0.3	0	67.3	0.2	0
3-33	67.6	0	59.8	7.8	1	58.6	9	1	57.7	9.9	1	66.4	1.2	0	67.4	0.2	0	67.5	0.1	0
3-34	67.7	0	59.9	7.8	1	58.7	9	1	57.8	9.9	1	67.2	0.5	0	67.6	0.1	0	67.6	0.1	0
3-35	67.5	0	59.9	7.6	1	58.7	8.8	1	57.8	9.7	1	67.3	0.2	0	67.5	0	0	67.5	0	0
3-36	67.7	0	59.9	7.8	1	58.8	8.9	1	57.8	9.9	1	67.6	0.1	0	67.7	0	0	67.7	0	0
3-37	67.8	0	60.1	7.7	1	58.9	8.9	1	57.9	9.9	1	67.7	0.1	0	67.7	0.1	0	67.7	0.1	0
3-38	68.7	0	60.4	8.3	1	59.2	9.5	1	58.2	10.5	1	68.7	0	0	68.7	0	0	68.7	0	0
3-39	68.8	0	60.1	8.7	1	59	9.8	1	58.1	10.7	1	68.8	0	0	68.8	0	0	68.8	0	0
3-40	64.9	0	58.2	6.7	1	57.1	7.8	1	56.3	8.6	1	64.9	0	0	64.9	0	0	64.9	0	0
3-41	62.7	0	56.9	5.8	1	55.9	6.8	1	55.1	7.6	1	62.7	0	0	62.7	0	0	62.7	0	0
3-42	65.5	0	58.3	7.2	1	57.4	8.1	1	56.7	8.8	1	65.5	0	0	65.5	0	0	65.5	0	0
3-43	66.2	0	58.7	7.5	1	57.8	8.4	1	57	9.2	1	66.2	0	0	66.2	0	0	66.2	0	0
3-44	67.8	0	60.2	7.6	1	59	8.8	1	58	9.8	1	67.8	0	0	67.8	0	0	67.8	0	0
3-45	64.4	0	58.7	5.7	1	57.3	7.1	1	56.3	8.1	1	64.4	0	0	64.4	0	0	64.4	0	0

**Table H-3. Noise Levels and Benefits for the Oak Trace Barrier.**

Receptor	Sound Level Without Barrier (dBA)	No. of Type II Receptors	Full Option: Height = 12			Full Option: Height = 14			Full Option: Height = 16			Type 2 Option: Height = 12			Type 2 Option: Height = 14			Type 2 Option: Height = 16		
			Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors
3-46	64.1	0	58.3	5.8	1	56.9	7.2	1	56	8.1	1	64.1	0	0	64.1	0	0	64.1	0	0
3-47	67.5	0	60.2	7.3	1	58.9	8.6	1	57.9	9.6	1	67.5	0	0	67.5	0	0	67.5	0	0
3-48	68.9	0	60.7	8.2	1	59.5	9.4	1	58.6	10.3	1	68.9	0	0	68.9	0	0	68.9	0	0
3-49	68.3	0	61.2	7.1	1	59.8	8.5	1	58.7	9.6	1	68.3	0	0	68.3	0	0	68.3	0	0
3-50	64.5	0	58.7	5.8	1	57.5	7	1	56.6	7.9	1	64.5	0	0	64.5	0	0	64.5	0	0
3-51	63.4	0	58.7	4.7	1	56.9	6.5	1	55.9	7.5	1	63.4	0	0	63.4	0	0	63.4	0	0
3-52	66.7	0	60.7	6	1	59.1	7.6	1	58.1	8.6	1	66.7	0	0	66.7	0	0	66.7	0	0
3-53	67.7	0	61.5	6.2	1	59.9	7.8	1	58.8	8.9	1	67.7	0	0	67.7	0	0	67.7	0	0
3-54	64.6	0	59.6	5	1	58.2	6.4	1	57.2	7.4	1	64.6	0	0	64.6	0	0	64.6	0	0
3-55	64.7	0	59.7	5	1	58.3	6.4	1	57.3	7.4	1	64.7	0	0	64.7	0	0	64.7	0	0
3-56	66.9	0	61.1	5.8	1	59.7	7.2	1	58.6	8.3	1	66.9	0	0	66.9	0	0	66.9	0	0
3-57	68.7	0	62.2	6.5	1	60.7	8	1	59.7	9	1	68.7	0	0	68.7	0	0	68.7	0	0
3-58	65.6	0	60.4	5.2	1	59.4	6.2	1	58.4	7.2	1	65.6	0	0	65.6	0	0	65.6	0	0
3-59	63.4	0	58.4	5	1	57.6	5.8	1	56.9	6.5	1	63.4	0	0	63.4	0	0	63.4	0	0
3-60	67.2	0	59.7	7.5	1	58.8	8.4	1	58	9.2	1	67.2	0	0	67.2	0	0	67.2	0	0
3-61	69	0	60.3	8.7	1	59.3	9.7	1	58.5	10.5	1	69	0	0	69	0	0	69	0	0
3-62	66.7	0	60.9	5.8	1	59.7	7	1	58.8	7.9	1	66.7	0	0	66.7	0	0	66.7	0	0
3-63	62.8	0	60.4	2.4	0	58.3	4.5	1	57.3	5.5	1	62.8	0	0	62.8	0	0	62.8	0	0
3-64	58	0	53.8	4.2	0	52.6	5.4	1	51.7	6.3	1	54.6	3.4	0	54.9	3.1	0	55	3	0
3-65	58.3	0	53.8	4.5	1	52.5	5.8	1	51.6	6.7	1	55	3.3	0	55.6	2.7	0	55.8	2.5	0
3-66	58.5	0	53.9	4.6	1	52.6	5.9	1	51.7	6.8	1	55.7	2.8	0	56.4	2.1	0	56.5	2	0
3-67	59.5	0	54.9	4.6	1	53.8	5.7	1	53.1	6.4	1	57	2.5	0	57.7	1.8	0	57.9	1.6	0
3-68	59.8	0	54.1	5.7	1	52.8	7	1	52	7.8	1	57.8	2	0	58.6	1.2	0	58.7	1.1	0
3-69	60.8	0	54.2	6.6	1	53	7.8	1	52.2	8.6	1	59	1.8	0	60	0.8	0	60.1	0.7	0
3-70	60.6	0	54.2	6.4	1	52.9	7.7	1	52.2	8.4	1	59.4	1.2	0	60.1	0.5	0	60.1	0.5	0
3-71	60.2	0	54.1	6.1	1	52.9	7.3	1	52.1	8.1	1	59.3	0.9	0	59.8	0.4	0	59.9	0.3	0
3-72	60.3	0	56.6	3.7	0	55.9	4.4	0	55.3	5	1	59.6	0.7	0	59.9	0.4	0	60	0.3	0
3-73	59.4	0	54.6	4.8	1	53.4	6	1	52.4	7	1	58.9	0.5	0	59.1	0.3	0	59.1	0.3	0
3-74	60.3	0	54.9	5.4	1	53.9	6.4	1	53.1	7.2	1	60.2	0.1	0	60.3	0	0	60.3	0	0
3-75	57.5	0	53	4.5	1	52	5.5	1	51.2	6.3	1	57.5	0	0	57.5	0	0	57.5	0	0
3-76	58.8	0	53.8	5	1	52.9	5.9	1	52.1	6.7	1	58.7	0.1	0	58.7	0.1	0	58.7	0.1	0
3-77	54.7	0	50.9	3.8	0	50.1	4.6	1	49.4	5.3	1	51.4	3.3	0	51.4	3.3	0	51.3	3.4	0
3-78	52.9	0	49.8	3.1	0	49	3.9	0	48.4	4.5	1	50.3	2.6	0	50.5	2.4	0	50.4	2.5	0
3-79	51.8	0	48.8	3	0	48.2	3.6	0	47.8	4	0	49.4	2.4	0	49.9	1.9	0	49.8	2	0
3-80	52.6	0	49.1	3.5	0	48.4	4.2	0	48	4.6	1	50.4	2.2	0	50.7	1.9	0	50.8	1.8	0
3-81	53.2	0	49.4	3.8	0	48.6	4.6	1	48	5.2	1	51.2	2	0	51.5	1.7	0	51.5	1.7	0
3-82	53	0	49.4	3.6	0	48.7	4.3	0	48.1	4.9	1	51.7	1.3	0	51.9	1.1	0	51.9	1.1	0
3-83	53.5	0	49.6	3.9	0	48.8	4.7	1	48.2	5.3	1	52.6	0.9	0	52.9	0.6	0	52.9	0.6	0
3-84	54.1	0	49.9	4.2	0	49	5.1	1	48.4	5.7	1	53.4	0.7	0	53.6	0.5	0	53.6	0.5	0
3-85	54.1	0	49.9	4.2	0	49.1	5	1	48.5	5.6	1	53.6	0.5	0	53.8	0.3	0	53.8	0.3	0
3-86	54.3	0	50.3	4	0	49.6	4.7	1	49	5.3	1	53.9	0.4	0	54	0.3	0	54	0.3	0
3-87	55.8	0	51.2	4.6	1	50.4	5.4	1	49.9	5.9	1	55.6	0.2	0	55.6	0.2	0	55.6	0.2	0
3-88	56	0	52.7	3.3	0	51.7	4.3	0	50.8	5.2	1	55.9	0.1	0	56	0	0	55.9	0.1	0
3-89	56.1	0	52.6	3.5	0	51.7	4.4	0	50.9	5.2	1	56.1	0	0	56.1	0	0	56	0.1	0
3-90	57	0	53.7	3.3	0	52.8	4.2	0	52.1	4.9	1	57	0	0	57	0	0	57	0	0

**Table H-3. Noise Levels and Benefits for the Oak Trace Barrier.**

Receptor	Sound Level Without Barrier (dBA)	No. of Type II Receptors	Full Option: Height = 12			Full Option: Height = 14			Full Option: Height = 16			Type 2 Option: Height = 12			Type 2 Option: Height = 14			Type 2 Option: Height = 16		
			Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors
3-91	57.2	0	53.4	3.8	0	52.2	5	1	51.4	5.8	1	57.2	0	0	57.2	0	0	57.2	0	0
3-92	57.9	0	53.5	4.4	0	52.4	5.5	1	51.5	6.4	1	57.9	0	0	57.9	0	0	57.8	0.1	0
3-93	60.5	0	55.1	5.4	1	53.8	6.7	1	53	7.5	1	60.5	0	0	60.5	0	0	60.5	0	0
3-94	57.4	0	53	4.4	0	52	5.4	1	51.3	6.1	1	57.4	0	0	57.4	0	0	57.4	0	0
3-95	59.5	0	54	5.5	1	52.7	6.8	1	51.9	7.6	1	59.5	0	0	59.5	0	0	59.5	0	0
3-96	57.6	0	53.4	4.2	0	52.2	5.4	1	51.5	6.1	1	57.6	0	0	57.6	0	0	57.6	0	0
3-97	55.4	0	53.5	1.9	0	52.4	3	0	51.4	4	0	55.3	0.1	0	55.4	0	0	55.3	0.1	0
3-98	57.8	0	53.9	3.9	0	52.8	5	1	51.8	6	1	57.7	0.1	0	57.7	0.1	0	57.7	0.1	0
3-99	58.7	0	53.9	4.8	1	52.8	5.9	1	52.1	6.6	1	58.7	0	0	58.7	0	0	58.7	0	0
3-100	61.3	0	55.5	5.8	1	54.2	7.1	1	53.5	7.8	1	61.3	0	0	61.3	0	0	61.3	0	0
3-101	58.8	0	54.2	4.6	1	52.9	5.9	1	52.2	6.6	1	58.8	0	0	58.8	0	0	58.8	0	0
3-102	60.3	0	55.5	4.8	1	53.9	6.4	1	53	7.3	1	60.3	0	0	60.3	0	0	60.3	0	0
3-103	59.1	0	54.5	4.6	1	53.2	5.9	1	52.4	6.7	1	59.1	0	0	59.1	0	0	59.1	0	0
3-104	57.4	0	55	2.4	0	53.7	3.7	0	52.7	4.7	1	57.4	0	0	57.4	0	0	57.4	0	0
3-105	57.3	0	55.3	2	0	54	3.3	0	53	4.3	0	57.2	0.1	0	57.2	0.1	0	57.2	0.1	0
3-106	60.2	0	55.9	4.3	0	54.7	5.5	1	53.8	6.4	1	60.1	0.1	0	60.2	0	0	60.2	0	0
3-107	58.6	0	54.7	3.9	0	53.8	4.8	1	52.9	5.7	1	58.5	0.1	0	58.5	0.1	0	58.5	0.1	0
3-108	60.3	0	56	4.3	0	54.6	5.7	1	53.7	6.6	1	60.2	0.1	0	60.2	0.1	0	60.2	0.1	0
3-109	58.5	0	55.2	3.3	0	54.1	4.4	0	53.4	5.1	1	58.5	0	0	58.5	0	0	58.5	0	0
3-110	56.9	0	54.9	2	0	54	2.9	0	53.2	3.7	0	56.9	0	0	56.9	0	0	56.9	0	0
3-111	57.7	0	55.4	2.3	0	54.3	3.4	0	53.5	4.2	0	57.7	0	0	57.7	0	0	57.7	0	0
3-112	59.6	0	56.3	3.3	0	55.1	4.5	1	54.4	5.2	1	59.6	0	0	59.6	0	0	59.6	0	0
3-113	57.6	0	55.2	2.4	0	54.1	3.5	0	53.4	4.2	0	57.6	0	0	57.6	0	0	57.6	0	0
3-114	60.4	0	56.6	3.8	0	55.3	5.1	1	54.6	5.8	1	60.4	0	0	60.4	0	0	60.4	0	0
3-115	59.3	0	55.9	3.4	0	54.7	4.6	1	54.1	5.2	1	59.3	0	0	59.3	0	0	59.3	0	0
3-116	59.6	0	56.4	3.2	0	55	4.6	1	54.3	5.3	1	59.6	0	0	59.6	0	0	59.6	0	0
3-117	59.7	0	58.4	1.3	0	57	2.7	0	55.5	4.2	0	59.7	0	0	59.7	0	0	59.7	0	0
3-118	59.1	1	57.7	1.4	0	56.8	2.3	0	55.2	3.9	0	59.1	0	0	59.1	0	0	59.1	0	0
3-119	61.5	1	59.9	1.6	0	58.9	2.6	0	57.9	3.6	0	61.5	0	0	61.5	0	0	61.5	0	0
3-120	59.6	1	58.4	1.2	0	57.8	1.8	0	56.7	2.9	0	59.6	0	0	59.6	0	0	59.6	0	0

Legend: Impact Benefited receptors

**Table = 4. Noise Levels and Benefits for the Nashua-Inglewood Barrier.**

Receptor	Sound Level Without Barrier (dBA)	No. of Type II Receptors	Full Option: Height = 14			Full Option: Height = 15			Full Option: Height = 16			Type 2 Option: Height = 14			Type 2 Option: Height = 15			Type 2 Option: Height = 16		
			Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors
7-1	65.4	1	60.6	4.8	1	60.4	5	1	60.2	5.2	1	60.5	4.9	1	60.4	5	1	60.2	5.2	1
7-2	66.5	1	59.6	6.9	1	59.3	7.2	1	59.1	7.4	1	59.7	6.8	1	59.4	7.1	1	59.1	7.4	1
7-3	66.7	1	59.2	7.5	1	58.9	7.8	1	58.5	8.2	1	59.3	7.4	1	58.9	7.8	1	58.6	8.1	1
7-4	67.2	1	59.2	8	1	58.8	8.4	1	58.4	8.8	1	59.2	8	1	58.8	8.4	1	58.5	8.7	1
7-5	66.5	1	59	7.5	1	58.6	7.9	1	58.2	8.3	1	59	7.5	1	58.6	7.9	1	58.3	8.2	1
7-6	66.5	1	59.2	7.3	1	58.8	7.7	1	58.5	8	1	59.2	7.3	1	58.9	7.6	1	58.5	8	1
7-7	66.7	1	59.3	7.4	1	58.9	7.8	1	58.5	8.2	1	59.3	7.4	1	58.9	7.8	1	58.5	8.2	1
7-8	62	1	57.3	4.7	1	57	5	1	56.6	5.4	1	57.4	4.6	1	57	5	1	56.7	5.3	1
7-9	66.7	1	59.3	7.4	1	58.9	7.8	1	58.5	8.2	1	59.3	7.4	1	58.9	7.8	1	58.6	8.1	1
7-10	66.8	1	59.3	7.5	1	58.9	7.9	1	58.5	8.3	1	59.3	7.5	1	58.9	7.9	1	58.6	8.2	1
7-11	67.2	1	59.3	7.9	1	58.9	8.3	1	58.5	8.7	1	59.3	7.9	1	58.9	8.3	1	58.6	8.6	1
7-12	62	1	57.5	4.5	1	57.1	4.9	1	56.7	5.3	1	57.5	4.5	1	57.1	4.9	1	56.8	5.2	1
7-13	67.7	1	59.3	8.4	1	58.9	8.8	1	58.5	9.2	1	59.4	8.3	1	59	8.7	1	58.6	9.1	1
7-14	68.1	1	59.5	8.6	1	59.1	9	1	58.7	9.4	1	59.5	8.6	1	59.1	9	1	58.7	9.4	1
7-15	61.8	1	57.3	4.5	1	56.9	4.9	1	56.5	5.3	1	57.3	4.5	1	56.9	4.9	1	56.6	5.2	1
7-16	62	1	57.4	4.6	1	57	5	1	56.6	5.4	1	57.4	4.6	1	57	5	1	56.6	5.4	1
7-17	62.2	1	57.4	4.8	1	57	5.2	1	56.6	5.6	1	57.5	4.7	1	57	5.2	1	56.6	5.6	1
7-18	61.8	1	59.7	2.1	0	59.2	2.6	0	59	2.8	0	59.7	2.1	0	59.2	2.6	0	59	2.8	0
7-19	67.8	1	59.4	8.4	1	59	8.8	1	58.7	9.1	1	59.5	8.3	1	59.1	8.7	1	58.7	9.1	1
7-20	69.5	1	60.5	9	1	60	9.5	1	59.5	10	1	60.5	9	1	60	9.5	1	59.5	10	1
7-21	66	1	59.7	6.3	1	59.2	6.8	1	58.8	7.2	1	59.7	6.3	1	59.2	6.8	1	58.8	7.2	1
7-22	66.5	1	59.9	6.6	1	59.4	7.1	1	59	7.5	1	59.9	6.6	1	59.4	7.1	1	59	7.5	1
7-23	67.7	1	61.3	6.4	1	60.7	7	1	60.1	7.6	1	61.3	6.4	1	60.7	7	1	60.2	7.5	1
7-24	67.5	1	60.2	7.3	1	59.7	7.8	1	59.3	8.2	1	60.2	7.3	1	59.7	7.8	1	59.3	8.2	1
7-25	66.2	1	60.8	5.4	1	60.2	6	1	59.6	6.6	1	60.8	5.4	1	60.2	6	1	59.6	6.6	1
7-26	67	1	60.3	6.7	1	59.8	7.2	1	59.3	7.7	1	60.3	6.7	1	59.8	7.2	1	59.3	7.7	1
7-27	66.9	1	60.1	6.8	1	59.6	7.3	1	59.2	7.7	1	60.1	6.8	1	59.6	7.3	1	59.2	7.7	1
7-28	66.6	1	60	6.6	1	59.5	7.1	1	59.1	7.5	1	60	6.6	1	59.5	7.1	1	59.1	7.5	1
7-29	66.7	1	60.2	6.5	1	59.7	7	1	59.2	7.5	1	60.2	6.5	1	59.7	7	1	59.2	7.5	1
7-30	67	1	60.9	6.1	1	60.3	6.7	1	59.8	7.2	1	60.9	6.1	1	60.3	6.7	1	59.8	7.2	1
7-31	66.4	1	59.8	6.6	1	59.4	7	1	58.9	7.5	1	59.8	6.6	1	59.4	7	1	58.9	7.5	1
7-32	66.1	1	59.5	6.6	1	59.1	7	1	58.7	7.4	1	59.5	6.6	1	59.1	7	1	58.7	7.4	1
7-33	66	1	59.3	6.7	1	58.8	7.2	1	58.5	7.5	1	59.3	6.7	1	58.8	7.2	1	58.5	7.5	1
7-34	66.2	1	59.2	7	1	58.8	7.4	1	58.4	7.8	1	59.2	7	1	58.8	7.4	1	58.4	7.8	1
7-35	66.3	1	59.1	7.2	1	58.7	7.6	1	58.3	8	1	59.1	7.2	1	58.7	7.6	1	58.3	8	1
7-36	66.3	1	58.8	7.5	1	58.4	7.9	1	58	8.3	1	58.8	7.5	1	58.4	7.9	1	58	8.3	1
7-37	66.9	1	58.9	8	1	58.5	8.4	1	58.1	8.8	1	58.9	8	1	58.5	8.4	1	58.1	8.8	1
7-38	67.2	1	58.6	8.6	1	58.2	9	1	57.9	9.3	1	58.6	8.6	1	58.2	9	1	57.9	9.3	1
7-39	67.7	1	58.4	9.3	1	58	9.7	1	57.7	10	1	58.4	9.3	1	58	9.7	1	57.7	10	1
7-40	68.5	1	57.9	10.6	1	57.5	11	1	57.1	11.4	1	57.9	10.6	1	57.5	11	1	57.2	11.3	1
7-41	69.6	1	57	12.6	1	56.4	13.2	1	56	13.6	1	57	12.6	1	56.5	13.1	1	56.1	13.5	1
7-42	69.5	1	57.5	12	1	56.8	12.7	1	56.4	13.1	1	57.5	12	1	56.8	12.7	1	56.4	13.1	1
7-43	57.3	1	57.5	-0.2	0	57.4	-0.1	0	57.2	0.1	0	57.4	-0.1	0	57.3	0	0	57.1	0.2	0
7-44	57.2	1	54.7	2.5	0	54.4	2.8	0	54.1	3.1	0	54.5	2.7	0	54.2	3	0	53.9	3.3	0
7-45	56.9	1	54.5	2.4	0	54.3	2.6	0	54	2.9	0	54.4	2.5	0	54.1	2.8	0	53.8	3.1	0

**Table H-4. Noise Levels and Benefits for the Nashua-Inglewood Barrier.**

Receptor	Sound Level Without Barrier (dBA)	No. of Type II Receptors	Full Option: Height = 14			Full Option: Height = 15			Full Option: Height = 16			Type 2 Option: Height = 14			Type 2 Option: Height = 15			Type 2 Option: Height = 16		
			Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors
7-46	57	1	54.1	2.9	0	53.9	3.1	0	53.8	3.2	0	54	3	0	53.8	3.2	0	53.6	3.4	0
7-47	57.2	1	54	3.2	0	53.6	3.6	0	53.2	4	0	54.2	3	0	53.9	3.3	0	53.6	3.6	0
7-48	57.3	1	54	3.3	0	53.6	3.7	0	53.1	4.2	0	54.2	3.1	0	53.8	3.5	0	53.5	3.8	0
7-49	57.2	1	54	3.2	0	53.6	3.6	0	53.1	4.1	0	54.1	3.1	0	53.8	3.4	0	53.5	3.7	0
7-50	57.2	1	54.1	3.1	0	53.6	3.6	0	53.2	4	0	54.2	3	0	53.8	3.4	0	53.5	3.7	0
7-51	56.7	0	54.2	2.5	0	53.8	2.9	0	53.5	3.2	0	54.2	2.5	0	53.9	2.8	0	53.6	3.1	0
7-52	56.8	0	54.3	2.5	0	53.8	3	0	53.4	3.4	0	54.3	2.5	0	53.9	2.9	0	53.6	3.2	0
7-53	56.7	0	54.3	2.4	0	53.9	2.8	0	53.5	3.2	0	54.4	2.3	0	54	2.7	0	53.6	3.1	0
7-54	56.7	0	54.4	2.3	0	54	2.7	0	53.6	3.1	0	54.5	2.2	0	54.1	2.6	0	53.7	3	0
7-55	56.7	0	54.4	2.3	0	54	2.7	0	53.7	3	0	54.5	2.2	0	54.1	2.6	0	53.8	2.9	0
7-56	57	0	54.7	2.3	0	54.2	2.8	0	53.9	3.1	0	54.7	2.3	0	54.3	2.7	0	54	3	0
7-57	57.7	0	55.1	2.6	0	54.8	2.9	0	54.4	3.3	0	55.2	2.5	0	54.8	2.9	0	54.4	3.3	0
7-58	58.5	1	56.3	2.2	0	56	2.5	0	55.6	2.9	0	56.3	2.2	0	56	2.5	0	55.7	2.8	0
7-59	59.2	1	56	3.2	0	55.5	3.7	0	55.1	4.1	0	56	3.2	0	55.5	3.7	0	55.1	4.1	0
7-60	60.3	1	57	3.3	0	56.4	3.9	0	55.9	4.4	0	57	3.3	0	56.4	3.9	0	55.9	4.4	0
7-61	58.5	1	56	2.5	0	55.3	3.2	0	54.8	3.7	0	56	2.5	0	55.3	3.2	0	54.8	3.7	0
7-62	60.3	1	57.4	2.9	0	56.6	3.7	0	56	4.3	0	57.4	2.9	0	56.6	3.7	0	56.1	4.2	0
7-63	58.1	1	56	2.1	0	55.1	3	0	54.6	3.5	0	56	2.1	0	55.1	3	0	54.6	3.5	0
7-64	60.6	1	57.7	2.9	0	56.7	3.9	0	56.2	4.4	0	57.7	2.9	0	56.7	3.9	0	56.2	4.4	0
7-65	60.7	1	57.8	2.9	0	56.8	3.9	0	56.2	4.5	1	57.8	2.9	0	56.8	3.9	0	56.3	4.4	0
7-66	60.6	1	57.5	3.1	0	56.7	3.9	0	56.1	4.5	1	57.5	3.1	0	56.7	3.9	0	56.2	4.4	0
7-67	58.1	1	55.9	2.2	0	55.1	3	0	54.6	3.5	0	55.9	2.2	0	55.1	3	0	54.6	3.5	0
7-68	60.3	1	57.3	3	0	56.5	3.8	0	55.9	4.4	0	57.3	3	0	56.5	3.8	0	56	4.3	0
7-69	60.1	1	56.6	3.5	0	55.9	4.2	0	55.5	4.6	1	56.6	3.5	0	55.9	4.2	0	55.5	4.6	1
7-70	59.8	1	56.1	3.7	0	55.5	4.3	0	55.1	4.7	1	56.1	3.7	0	55.5	4.3	0	55.1	4.7	1
7-71	59.5	1	55.7	3.8	0	55.2	4.3	0	54.8	4.7	1	55.7	3.8	0	55.2	4.3	0	54.8	4.7	1
7-72	59.1	1	55.5	3.6	0	55	4.1	0	54.6	4.5	1	55.5	3.6	0	55	4.1	0	54.7	4.4	0
7-73	59.5	1	55.5	4	0	55.1	4.4	0	54.7	4.8	1	55.5	4	0	55.1	4.4	0	54.7	4.8	1
7-74	59.6	1	55.5	4.1	0	55.1	4.5	1	54.7	4.9	1	55.5	4.1	0	55.1	4.5	1	54.7	4.9	1
7-75	59.3	1	55.3	4	0	55	4.3	0	54.6	4.7	1	55.3	4	0	55	4.3	0	54.6	4.7	1
7-76	59.1	1	55.2	3.9	0	54.9	4.2	0	54.5	4.6	1	55.2	3.9	0	54.9	4.2	0	54.6	4.5	1
7-77	58.3	1	54.9	3.4	0	54.6	3.7	0	54.3	4	0	54.9	3.4	0	54.6	3.7	0	54.3	4	0
7-78	57.3	1	54.7	2.6	0	54.4	2.9	0	54.2	3.1	0	54.7	2.6	0	54.4	2.9	0	54.2	3.1	0
7-79	56.8	1	54.7	2.1	0	54.4	2.4	0	54.2	2.6	0	54.7	2.1	0	54.4	2.4	0	54.2	2.6	0
7-80	56.5	1	54.7	1.8	0	54.5	2	0	54.2	2.3	0	54.7	1.8	0	54.5	2	0	54.2	2.3	0
7-81	57.2	1	55	2.2	0	54.7	2.5	0	54.5	2.7	0	55	2.2	0	54.7	2.5	0	54.5	2.7	0
7-82	59.6	1	55.5	4.1	0	55.3	4.3	0	55.1	4.5	1	55.6	4	0	55.3	4.3	0	55.1	4.5	1
7-83	60.3	1	55.7	4.6	1	55.5	4.8	1	55.3	5	1	55.7	4.6	1	55.5	4.8	1	55.3	5	1
7-84	61.8	1	56.1	5.7	1	55.9	5.9	1	55.7	6.1	1	56.1	5.7	1	55.9	5.9	1	55.7	6.1	1
7-85	63.6	1	56.5	7.1	1	56.3	7.3	1	56.1	7.5	1	56.5	7.1	1	56.3	7.3	1	56.2	7.4	1
7-86	56.3	0	54.2	2.1	0	53.8	2.5	0	53.4	2.9	0	54.2	2.1	0	53.8	2.5	0	53.4	2.9	0
7-87	54.6	0	53.8	0.8	0	53.4	1.2	0	53	1.6	0	53.8	0.8	0	53.4	1.2	0	53	1.6	0
7-88	54.2	0	53.7	0.5	0	53.3	0.9	0	53	1.2	0	53.7	0.5	0	53.4	0.8	0	53	1.2	0
7-89	54.1	0	53.6	0.5	0	53.3	0.8	0	52.9	1.2	0	53.6	0.5	0	53.3	0.8	0	53	1.1	0
7-90	54.9	0	53.4	1.5	0	53.2	1.7	0	52.9	2	0	53.4	1.5	0	53.2	1.7	0	52.9	2	0



**Table H-4. Noise Levels and Benefits for the Nashua-Inglewood Barrier.**

Receptor	Sound Level Without Barrier (dBA)	No. of Type II Receptors	Full Option: Height = 14			Full Option: Height = 15			Full Option: Height = 16			Type 2 Option: Height = 14			Type 2 Option: Height = 15			Type 2 Option: Height = 16		
			Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors
7-91	55	1	53.3	1.7	0	53.1	1.9	0	52.8	2.2	0	53.4	1.6	0	53.1	1.9	0	52.8	2.2	0
7-92	54.3	1	53.1	1.2	0	52.9	1.4	0	52.6	1.7	0	53.1	1.2	0	52.9	1.4	0	52.7	1.6	0
7-93	54.1	1	53	1.1	0	52.8	1.3	0	52.5	1.6	0	53	1.1	0	52.8	1.3	0	52.6	1.5	0
7-94	54	1	52.9	1.1	0	52.6	1.4	0	52.4	1.6	0	52.9	1.1	0	52.7	1.3	0	52.5	1.5	0
7-95	53.5	1	52.7	0.8	0	52.5	1	0	52.3	1.2	0	52.7	0.8	0	52.5	1	0	52.3	1.2	0
7-96	51.4	1	51.3	0.1	0	51.2	0.2	0	51.1	0.3	0	51.3	0.1	0	51.2	0.2	0	51.2	0.2	0
7-97	51.1	1	51	0.1	0	50.9	0.2	0	50.8	0.3	0	51	0.1	0	50.9	0.2	0	50.9	0.2	0
7-98	54.6	1	52.5	2.1	0	52.4	2.2	0	52.3	2.3	0	52.5	2.1	0	52.4	2.2	0	52.4	2.2	0
7-99	55.7	1	53	2.7	0	52.9	2.8	0	52.8	2.9	0	53	2.7	0	52.9	2.8	0	53.1	2.6	0
7-100	55.4	1	53.2	2.2	0	53.1	2.3	0	53	2.4	0	53.2	2.2	0	53.1	2.3	0	53.5	1.9	0
7-101	51.6	0	50.4	1.2	0	50.4	1.2	0	50.3	1.3	0	50.5	1.1	0	50.4	1.2	0	50.9	0.7	0
7-102	52.8	1	51.4	1.4	0	51.4	1.4	0	51.4	1.4	0	51.5	1.3	0	51.4	1.4	0	51.9	0.9	0
7-103	53.2	1	52.6	0.6	0	52.5	0.7	0	52.4	0.8	0	52.6	0.6	0	52.5	0.7	0	52.9	0.3	0
7-104	54.9	1	54.3	0.6	0	54.2	0.7	0	54.1	0.8	0	54.3	0.6	0	54.2	0.7	0	54.5	0.4	0
5-1	64.9	0	60	4.9	1	59.7	5.2	1	59.4	5.5	1	64.8	0.1	0	64.8	0.1	0	64.8	0.1	0
5-2	65.6	0	60.1	5.5	1	59.6	6	1	59.2	6.4	1	65.5	0.1	0	65.5	0.1	0	65.5	0.1	0
5-3	65.5	0	59.9	5.6	1	59.4	6.1	1	59	6.5	1	65.5	0	0	65.5	0	0	65.5	0	0
5-4	65.2	0	59.9	5.3	1	59.4	5.8	1	58.9	6.3	1	65.2	0	0	65.2	0	0	65.2	0	0
5-5	61.4	0	59.1	2.3	0	58.9	2.5	0	58.7	2.7	0	61.4	0	0	61.4	0	0	61.4	0	0
5-6	60.8	0	57.4	3.4	0	57	3.8	0	56.7	4.1	0	60.8	0	0	60.8	0	0	60.8	0	0
5-7	61.7	0	58.1	3.6	0	57.4	4.3	0	57	4.7	1	61.6	0.1	0	61.6	0.1	0	61.6	0.1	0
5-8	62.6	0	58.3	4.3	0	57.6	5	1	57.1	5.5	1	62.5	0.1	0	62.5	0.1	0	62.5	0.1	0
5-9	59.6	0	58.4	1.2	0	58.3	1.3	0	58.2	1.4	0	59.5	0.1	0	59.5	0.1	0	59.5	0.1	0
5-10	58.9	0	56.9	2	0	56.7	2.2	0	56.5	2.4	0	58.9	0	0	58.9	0	0	58.9	0	0
5-11	58.7	0	56.2	2.5	0	55.6	3.1	0	55.1	3.6	0	58.5	0.2	0	58.5	0.2	0	58.5	0.2	0
5-12	60.7	0	58.2	2.5	0	57.1	3.6	0	56.7	4	0	60.6	0.1	0	60.6	0.1	0	60.6	0.1	0
5-13	60.6	0	60.1	0.5	0	60	0.6	0	60	0.6	0	60.6	0	0	60.6	0	0	60.6	0	0
5-14	58	0	56.8	1.2	0	56.6	1.4	0	56.5	1.5	0	57.9	0.1	0	57.9	0.1	0	57.9	0.1	0
5-15	57.5	0	56.1	1.4	0	55.4	2.1	0	54.8	2.7	0	57.3	0.2	0	57.3	0.2	0	57.3	0.2	0
5-16	59.5	0	57.8	1.7	0	56.7	2.8	0	55.7	3.8	0	59.4	0.1	0	59.4	0.1	0	59.4	0.1	0
5-17	60.8	0	58.9	1.9	0	57.7	3.1	0	56.7	4.1	0	60.6	0.2	0	60.5	0.3	0	60.6	0.2	0
5-18	63.2	0	60.5	2.7	0	58.9	4.3	0	58.2	5	1	62.7	0.5	0	62.6	0.6	0	62.9	0.3	0
5-19	62.4	0	60.1	2.3	0	58.8	3.6	0	57.9	4.5	1	61.3	1.1	0	60.9	1.5	0	61.4	1	0
5-20	63.4	0	59.8	3.6	0	58.6	4.8	1	58	5.4	1	61	2.4	0	60.5	2.9	0	61.6	1.8	0
5-21	63.2	0	59.1	4.1	0	58.3	4.9	1	57.7	5.5	1	59.5	3.7	0	58.9	4.3	0	59.2	4	0
5-22	60.8	0	57.8	3	0	57.1	3.7	0	56.5	4.3	0	58	2.8	0	57.6	3.2	0	57.6	3.2	0
5-23	59	0	57.9	1.1	0	57	2	0	55.7	3.3	0	58.6	0.4	0	58.4	0.6	0	58.5	0.5	0
5-24	58	0	56.7	1.3	0	55.9	2.1	0	54.9	3.1	0	57.2	0.8	0	56.9	1.1	0	57	1	0
5-25	58.3	0	56.5	1.8	0	55.9	2.4	0	55.1	3.2	0	56.6	1.7	0	56.1	2.2	0	56	2.3	0
5-26	59	1	56.6	2.4	0	56	3	0	55.3	3.7	0	56.6	2.4	0	56.1	2.9	0	55.9	3.1	0
5-27	62.7	1	58.7	4	0	58.1	4.6	1	57.5	5.2	1	58.7	4	0	58.3	4.4	0	58	4.7	1
5-28	63.3	1	58.9	4.4	0	58.3	5	1	57.8	5.5	1	58.9	4.4	0	58.4	4.9	1	58.1	5.2	1
5-29	63	1	58.3	4.7	1	57.9	5.1	1	57.5	5.5	1	58.3	4.7	1	58	5	1	57.7	5.3	1
5-30	62.4	1	57.8	4.6	1	57.5	4.9	1	57.2	5.2	1	57.9	4.5	1	57.6	4.8	1	57.4	5	1
5-31	62.2	1	58.1	4.1	0	57.8	4.4	0	57.6	4.6	1	58.2	4	0	57.9	4.3	0	57.7	4.5	1
5-32	61.1	1	57.5	3.6	0	57.4	3.7	0	57.1	4	0	57.6	3.5	0	57.4	3.7	0	57.2	3.9	0
5-33	57.6	1	55.3	2.3	0	54.8	2.8	0	54.4	3.2	0	55.2	2.4	0	54.7	2.9	0	54.4	3.2	0

**Table H-4. Noise Levels and Benefits for the Nashua-Inglewood Barrier.**

Receptor	Sound Level Without Barrier (dBA)	No. of Type II Receptors	Full Option: Height = 14			Full Option: Height = 15			Full Option: Height = 16			Type 2 Option: Height = 14			Type 2 Option: Height = 15			Type 2 Option: Height = 16		
			Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors
5-34	57.5	1	55.3	2.2	0	54.8	2.7	0	54.5	3	0	55.1	2.4	0	54.7	2.8	0	54.3	3.2	0
5-35	57.3	1	55.1	2.2	0	54.7	2.6	0	54.4	2.9	0	55	2.3	0	54.6	2.7	0	54.2	3.1	0

Legend: Impact Benefited receptors

**Table H-5. Noise Levels and Benefits for the Westhampton Barrier.**

Receptor	Sound Level Without Barrier (dBA)	No. of Type II Receptors	Height = 14 ft			Height = 15 ft			Height = 16 ft		
			Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors
6-1	60.8	1	57.7	3.1	0	57.6	3.2	0	57.4	3.4	0
6-2	67.5	1	59.8	7.7	1	59.4	8.1	1	59.2	8.3	1
6-3	65	0	58.6	6.4	1	58.3	6.7	1	58	7	1
6-4	61.3	0	56.3	5	1	56	5.3	1	55.8	5.5	1
6-5	59.9	0	55.7	4.2	0	55.5	4.4	0	55.2	4.7	1
6-6	59	0	55.4	3.6	0	55.2	3.8	0	55	4	0
6-7	68.2	0	60.7	7.5	1	60.2	8	1	59.7	8.5	1
6-8	64	0	57.8	6.2	1	57.4	6.6	1	57	7	1
6-9	60.8	0	55.6	5.2	1	55.2	5.6	1	54.9	5.9	1
6-10	68	0	60.5	7.5	1	60	8	1	59.4	8.6	1
6-11	64.2	0	58	6.2	1	57.6	6.6	1	57.2	7	1
6-12	62.2	0	56.8	5.4	1	56.4	5.8	1	56	6.2	1
6-13	63.6	0	57.6	6	1	57.2	6.4	1	56.8	6.8	1
6-14	65.4	0	59.1	6.3	1	58.6	6.8	1	58.2	7.2	1
6-15	68.5	0	62.2	6.3	1	61.5	7	1	60.9	7.6	1
6-16	68.3	0	62.8	5.5	1	62	6.3	1	61.3	7	1
6-17	67.3	0	62	5.3	1	61.4	5.9	1	60.8	6.5	1
6-18	66.7	0	62.3	4.4	0	61.6	5.1	1	61	5.7	1
6-19	65.2	0	61.3	3.9	0	60.7	4.5	1	60.1	5.1	1
6-20	64.1	0	60.4	3.7	0	59.9	4.2	0	59.3	4.8	1
6-21	62.7	0	59.2	3.5	0	58.7	4	0	58.3	4.4	0
6-22	62.2	0	59	3.2	0	58.5	3.7	0	58	4.2	0
6-23	61.8	0	58.7	3.1	0	58.2	3.6	0	57.7	4.1	0
6-24	61.9	0	58.4	3.5	0	57.9	4	0	57.3	4.6	1
6-25	62	0	57.3	4.7	1	56.7	5.3	1	56.2	5.8	1
6-26	62.1	0	57.5	4.6	1	56.8	5.3	1	56.4	5.7	1
6-27	58.1	0	55.4	2.7	0	55.2	2.9	0	55.1	3	0
6-28	54.1	0	53.2	0.9	0	53.1	1	0	52.9	1.2	0
6-29	57.7	0	56.5	1.2	0	56.4	1.3	0	56.3	1.4	0
6-30	56.5	0	55.6	0.9	0	55.5	1	0	55.4	1.1	0
6-31	55.9	0	54.5	1.4	0	54.5	1.4	0	54.4	1.5	0
6-32	52.8	0	51.2	1.6	0	50.9	1.9	0	50.6	2.2	0
6-33	56	0	55	1	0	55	1	0	55	1	0
6-34	52.8	0	51.2	1.6	0	50.9	1.9	0	50.7	2.1	0
6-35	56.4	0	54.5	1.9	0	54.3	2.1	0	54.1	2.3	0
6-36	57.2	0	55.1	2.1	0	54.8	2.4	0	54.6	2.6	0
6-37	57.1	0	55.1	2	0	54.9	2.2	0	54.6	2.5	0

**Table H-5. Noise Levels and Benefits for the Westhampton Barrier.**

Receptor	Sound Level Without Barrier (dBA)	No. of Type II Receptors	Height = 14 ft			Height = 15 ft			Height = 16 ft		
			Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors
6-38	57	0	55	2	0	54.8	2.2	0	54.5	2.5	0
6-39	55.9	0	54.2	1.7	0	54.1	1.8	0	53.9	2	0
6-40	56.4	0	54.6	1.8	0	54.4	2	0	54.2	2.2	0
6-41	56.7	0	54.8	1.9	0	54.5	2.2	0	54.3	2.4	0
6-42	56.6	0	54.7	1.9	0	54.4	2.2	0	54.2	2.4	0
6-43	55.2	0	53.3	1.9	0	53.1	2.1	0	52.9	2.3	0
6-44	55.9	0	54.1	1.8	0	53.8	2.1	0	53.6	2.3	0
6-45	55.9	0	54.1	1.8	0	53.9	2	0	53.7	2.2	0
6-46	56.3	0	54.4	1.9	0	54.2	2.1	0	53.9	2.4	0
6-47	58	0	54.5	3.5	0	54.2	3.8	0	53.8	4.2	0
6-48	56.9	0	54	2.9	0	53.8	3.1	0	53.5	3.4	0
6-49	56.6	0	55.7	0.9	0	55.4	1.2	0	54.9	1.7	0
6-50	56.6	0	55.6	1	0	55.2	1.4	0	54.8	1.8	0
6-51	55.9	0	55.3	0.6	0	54.8	1.1	0	54.4	1.5	0
6-52	54.9	0	54.5	0.4	0	54.1	0.8	0	53.6	1.3	0
6-53	56.4	0	55	1.4	0	54.7	1.7	0	54.3	2.1	0
6-54	56.9	0	55.2	1.7	0	54.9	2	0	54.5	2.4	0
6-55	58.9	0	56	2.9	0	55.8	3.1	0	55.1	3.8	0
6-56	60.9	0	57.3	3.6	0	57.1	3.8	0	56.3	4.6	1
6-57	63.7	0	58.4	5.3	1	58.2	5.5	1	57.4	6.3	1
6-58	60.3	0	59	1.3	0	59.4	0.9	0	58.3	2	0
6-59	58.7	0	56.5	2.2	0	56.7	2	0	55.7	3	0
6-60	57.9	0	56.5	1.4	0	56.7	1.2	0	55.9	2	0

Legend: Impact Benefited receptors

**Table H-6. Noise Levels and Benefits for the Cross Barrier.**

Receptor	Sound Level Without Barrier (dBA)	No. of Type II Receptors	Height = 14 ft (EOS)			Height = 15 ft (EOS)			Height = 16 ft (EOS)			Height = 13 ft (ROW)			Height = 15 ft (ROW)			Height = 18 ft (ROW)		
			Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors	Sound Level (dBA)	Noise Reduction (dBA)	No. of Benefited Receptors
8-1	62.2	0	58.4	3.8	0	58.1	4.1	0	57.9	4.3	0	58.1	4	0	57.5	4.6	1	56.7	5.4	1
8-2	66.5	0	61.5	5	1	61.3	5.2	1	61.1	5.4	1	59.9	6.6	1	59.2	7.3	1	58.4	8.1	1
8-3	69.4	0	61.7	7.7	1	61.2	8.2	1	60.8	8.6	1	60.4	9.2	1	59.2	10.4	1	57.7	11.9	1
8-4	67.1	0	59.9	7.2	1	59.4	7.7	1	59	8.1	1	59.6	7.4	1	58.8	8.2	1	57.8	9.2	1
8-5	66	0	59.1	6.9	1	58.6	7.4	1	58.2	7.8	1	59.6	6.5	1	58.8	7.3	1	57.8	8.3	1
8-6	68.5	0	60.1	8.4	1	59.6	8.9	1	59.2	9.3	1	59.6	8.9	1	58.8	9.7	1	57.5	11	1
8-7	69	0	60.1	8.9	1	59.7	9.3	1	59.2	9.8	1	59.4	9.5	1	58.4	10.5	1	57.1	11.8	1
8-8	66.5	0	59	7.5	1	58.5	8	1	58.1	8.4	1	60.2	6.4	1	59.3	7.3	1	58.1	8.5	1
8-9	62.2	0	56.4	5.8	1	56	6.2	1	55.6	6.6	1	58.6	4	0	57.6	5	1	56.5	6.1	1
8-10	58.6	0	55.8	2.8	0	55.6	3	0	55.4	3.2	0	56.1	2.5	0	55.7	2.9	0	55.3	3.3	0
8-11	58.6	0	55.6	3	0	55.3	3.3	0	55.1	3.5	0	56	2.6	0	55.6	3	0	55	3.6	0
8-12	59.7	0	56.1	3.6	0	55.8	3.9	0	55.5	4.2	0	56.3	3.2	0	55.7	3.8	0	54.9	4.6	1
8-13	60.3	0	55.8	4.5	1	55.4	4.9	1	55	5.3	1	56.5	3.7	0	55.9	4.3	0	55	5.2	1
8-14	61.5	0	55.9	5.6	1	55.4	6.1	1	55	6.5	1	56.6	5.1	1	56	5.7	1	55.1	6.6	1
8-15	61.6	0	56.3	5.3	1	55.8	5.8	1	55.4	6.2	1	57.3	4.2	0	56.6	4.9	1	55.6	5.9	1
8-16	59.3	0	55	4.3	0	54.6	4.7	1	54.3	5	1	57.2	2.2	0	56.1	3.3	0	55.1	4.3	0
8-17	59.1	0	54.3	4.8	1	54	5.1	1	53.6	5.5	1	57	2.5	0	55.7	3.8	0	54.7	4.8	1
8-18	57.1	0	53.8	3.3	0	53.5	3.6	0	53.2	3.9	0	56.5	0.8	0	55.2	2.1	0	54.3	3	0
8-19	60.3	0	55.3	5	1	54.9	5.4	1	54.5	5.8	1	58.3	2.2	0	56.8	3.7	0	55.7	4.8	1
8-20	60.8	0	55.7	5.1	1	55.2	5.6	1	54.8	6	1	58.8	2.4	0	57.3	3.9	0	56.2	5	1
8-21	61.1	0	55.8	5.3	1	55.4	5.7	1	55	6.1	1	59.3	2.1	0	57.6	3.8	0	56.4	5	1
8-22	61.2	0	55.9	5.3	1	55.5	5.7	1	55.1	6.1	1	59.5	2.1	0	57.8	3.8	0	56.6	5	1
8-23	61.3	0	55.9	5.4	1	55.4	5.9	1	55	6.3	1	59.5	2.1	0	57.8	3.8	0	56.5	5.1	1
8-24	61.5	0	55.8	5.7	1	55.4	6.1	1	55	6.5	1	59.2	2.9	0	57.6	4.5	1	56.5	5.6	1
8-25	61.4	0	56.3	5.1	1	55.8	5.6	1	55.4	6	1	60.4	1.6	0	58.4	3.6	0	57.1	4.9	1
8-26	61.6	0	56.4	5.2	1	55.9	5.7	1	55.5	6.1	1	60.6	1.6	0	58.6	3.6	0	57.2	5	1
8-27	61.8	0	56.5	5.3	1	56	5.8	1	55.6	6.2	1	61	1.5	0	58.8	3.7	0	57.4	5.1	1
8-28	61.7	0	56.3	5.4	1	55.9	5.8	1	55.6	6.1	1	60.8	1.6	0	58.7	3.7	0	57.3	5.1	1
8-29	61.8	0	56.3	5.5	1	55.9	5.9	1	55.6	6.2	1	60.8	1.7	0	58.7	3.8	0	57.3	5.2	1
8-30	61.9	0	56.4	5.5	1	55.9	6	1	55.6	6.3	1	60.6	2	0	58.7	3.9	0	57.3	5.3	1
8-31	62	0	56.4	5.6	1	56	6	1	55.6	6.4	1	60.5	2.1	0	58.6	4	0	57.3	5.3	1
8-32	61.9	0	56.2	5.7	1	55.9	6	1	55.5	6.4	1	60.1	2.4	0	58.4	4.1	0	57.2	5.3	1
9-1	60.1	0	54	6.1	1	53.7	6.4	1	53.5	6.6	1	55.8	4.8	1	55	5.6	1	54.2	6.4	1
9-2	59.9	0	54.6	5.3	1	54.3	5.6	1	54	5.9	1	56.2	3.5	0	55.5	4.2	0	54.5	5.2	1
9-3	67.5	0	60.2	7.3	1	59.7	7.8	1	59.2	8.3	1	52.5	14.9	1	51.7	15.7	1	50.9	16.5	1
9-4	66.7	0	59.7	7	1	59.2	7.5	1	58.8	7.9	1	53.5	13.2	1	52.4	14.3	1	51.1	15.6	1
9-5	59.5	0	54.6	4.9	1	55	4.5	1	54.7	4.8	1	55.3	3.2	0	54.8	3.7	0	54.1	4.4	0
9-6	54.9	0	51.8	3.1	0	51.5	3.4	0	51.3	3.6	0	53	2.3	0	52.5	2.8	0	51.9	3.4	0
9-7	57.8	0	55.8	2	0	56.6	1.2	0	56.5	1.3	0	55.5	0.1	0	55.2	0.4	0	54.8	0.8	0

Legend: Impact Benefited receptors

**Table H-7. Nashua-Inglewood (16-ft) Barrier Design Table**

Wall Section	Point Number	x (ft)	y (ft)	Length (ft)	Wall Base Elevation (ft)	Wall Height (ft)	Wall Top Elevation (ft)	Distance to SR 11 SB Centerline (ft)	SR 11 SB Elevation (ft)	
Nashua	23	2450237	522288	50	1142	0	NA	53	1146	
	24	2450238	522338	50	1141	0	NA	53	1146	
	25	2450239	522388	50	1142	16	1158	53	1146	
	26	2450240	522438	50	1143	16	1159	53	1146	
	27	2450241	522488	50	1143	16	1159	53	1146	
	28	2450242	522538	50	1143	16	1159	53	1146	
	29	2450243	522588	50	1143	16	1159	53	1145	
	30	2450245	522638	50	1143	16	1159	54	1145	
	31	2450246	522688	50	1144	16	1160	55	1145	
	32	2450241	522737	50	1144	16	1160	55	1145	
	33	2450237	522787	50	1146	16	1162	66	1145	
	34	2450232	522837	50	1146	16	1162	72	1145	
	35	2450228	522887	50	1147	16	1163	77	1145	
	36	2450223	522937	50	1148	16	1164	82	1145	
	37	2450218	522986	50	1148	16	1164	87	1143	
	38	2450214	523036	50	1148	16	1164	93	1143	
	39	2450215	523086	50	1147	16	1163	93	1143	
	40	2450216	523136	50	1147	16	1163	94	1143	
	41	2450218	523186	0	1159	16	1175	94	1143	
	Inglewood	1	2450218	523242	50	1159	16	1175	94	1143
		2	2450220	523292	50	1148	16	1164	94	1143
3		2450221	523342	50	1148	16	1164	94	1143	
4		2450222	523392	50	1148	16	1164	94	1143	
5		2450224	523442	50	1147	16	1163	94	1143	
6		2450225	523492	50	1145	16	1161	94	1143	
7		2450226	523542	50	1145	16	1161	94	1142	
8		2450227	523591	50	1145	16	1161	94	1142	
9		2450229	523641	50	1145	16	1161	94	1142	
10		2450230	523691	50	1144	16	1160	94	1142	
11		2450231	523741	50	1143	16	1159	94	1142	
12		2450232	523791	50	1143	16	1159	94	1142	
13		2450233	523841	50	1144	16	1160	93	1142	
14		2450235	523891	50	1143	16	1159	93	1141	
15		2450236	523941	50	1143	16	1159	93	1141	
16		2450237	523991	50	1141	16	1157	93	1141	
17		2450238	524041	50	1141	16	1157	93	1141	
18		2450240	524091	50	1141	16	1157	93	1141	
19		2450241	524141	50	1141	16	1157	93	1141	
20		2450242	524191	50	1140	16	1156	93	1141	
21		2450243	524241	50	1140	16	1156	93	1141	
22		2450245	524291	50	1139	16	1155	93	1140	
23		2450246	524341	50	1139	16	1155	93	1140	
24		2450247	524391	50	1140	16	1156	93	1140	
25		2450248	524441	50	1140	16	1156	93	1140	
26		2450249	524491	50	1140	16	1156	93	1140	
27		2450251	524541	50	1140	16	1156	93	1140	
28		2450252	524591	50	1140	16	1156	92	1140	
29		2450253	524641	50	1138	16	1154	92	1139	
30		2450254	524691	50	1138	16	1154	92	1139	
31		2450256	524741	50	1137	16	1153	92	1139	
32		2450257	524791	50	1137	16	1153	92	1139	
33		2450258	524841	50	1137	16	1153	92	1137	
34		2450259	524891	50	1136	16	1152	92	1137	
35		2450261	524941	50	1137	16	1153	91	1137	
36		2450262	524991	50	1136	16	1152	91	1137	
37	2450263	525041	50	1137	16	1153	90	1137		
38	2450264	525091	50	1136	16	1152	90	1137		
39	2450264	525141	50	1137	16	1153	89	1137		
40	2450265	525191	50	1137	16	1153	88	1137		
41	2450265	525241	50	1136	16	1152	86	1137		
42	2450266	525291	50	1134	16	1150	84	1137		
43	2450262	525341	50	1136	16	1152	86	1136		
44	2450254	525390	50	1136	16	1152	90	1136		
45	2450246	525440	50	1136	16	1152	97	1136		
46	2450237	525489	50	1136	16	1152	102	1135		
47	2450228	525538	50	1137	16	1153	108	1135		
48	2450219	525587	50	1138	16	1154	113	1135		
49	2450210	525636	50	1138	16	1154	117	1134		
50	2450201	525685	50	1139	16	1155	121	1134		
51	2450192	525735	50	1140	16	1156	124	1134		
52	2450183	525784	50	1140	16	1156	127	1134		
53	2450174	525833	50	1141	16	1157	129	1131		
54	2450165	525882	50	1141	16	1157	131	1131		
55	2450156	525931	50	1142	16	1158	133	1131		
56	2450147	525981	50	1144	16	1160	134	1128		

**Table H-7. Nashua-Inglewood (16-ft) Barrier Design Table**

Wall Section	Point Number	x (ft)	y (ft)	Length (ft)	Wall Base Elevation (ft)	Wall Height (ft)	Wall Top Elevation (ft)	Distance to SR 11 SB Centerline (ft)	SR 11 SB Elevation (ft)
	57	2450138	526030	50	1144	16	1160	135	1128
	58	2450120	526076	50	1145	16	1161	145	1128
	59	2450102	526123	50	1139	16	1155	154	1128
	60	2450084	526170	50	1142	16	1158	163	1125
	61	2450066	526217	50	1141	16	1157	170	1125
	62	2450055	526265	50	1140	16	1156	172	1125
	63	2450043	526314	50	1137	16	1153	172	1125
	64	2450031	526362	50	1137	16	1153	172	1119
	65	2450020	526411	35	1135	16	1151	172	1119
	66	2450010	526444	50	1133	16	1149	173	1119
	67	2449988	526489	50	1130	16	1146	183	1119
	68	2449966	526534	50	1131	16	1147	193	1111
	69	2449944	526579	50	1131	16	1147	202	1111
	70	2449899	526600	50	1131	16	1147	240	1111
	71	2449879	526646	50	1129	16	1145	246	1111
	72	2449859	526692	50	1127	16	1143	251	1111

APPENDIX I: PUBLIC INVOLVEMENT

Includes the following:

- a copy of the letter used to notify property owners of the noise analysis and associated field work mailing
- addresses of benefited receptors





**RE: MAH-11-11.48 Noise Analysis; PID 106325  
Austintown Township, Mahoning County, Ohio  
Notice of Entry for Highway Traffic Noise Measurements  
Property Owner Notification**

September 21, 2017

Dear Property Owner and/or Current Tenant:

The Ohio Department of Transportation (ODOT), District 4, is in the process of conducting a highway traffic noise analysis at all noise sensitive receivers (e.g. houses, apartments, schools, etc.) within 500 feet on each side of the existing driving lanes/ramps along State Route (SR) 11 between the Austintown Township/Canfield Township Line and Mahoning Avenue in Austintown Township, Mahoning County.

We wish to advise you that it may be necessary for our environmental consultant staff to collect data on or near your property within the next few weeks. Please note that field personnel will not be able to give any definitive information or answer to your questions. The staff will simply be collecting information and data to complete their studies.

Section 5517.01 and 163.03 of the Ohio Revised Code authorize such entries but also require reimbursement be made for any actual damage resulting from such work. It is not anticipated that any physical sampling or vegetation clearing will be required; however, in the event that any valuable vegetation must be cleared in order to accomplish the work needed, you will be notified and informed as to the procedure to follow in preparing a claim for reimbursement. The work crews have received strict instructions concerning the preservation of private property and public lands.

If at any time you feel that our representatives have not given property attention to private property, please notify:

Edward W. Deley, Jr., District Environmental Coordinator  
ODOT District 4 Planning & Engineering Department  
2088 South Arlington Road  
Akron, Ohio 44306

Phone: (330) 786-4930  
Email: edward.deley@dot.ohio.gov

Thank you for your consideration.

Respectfully,

A handwritten signature in blue ink that reads "Edward W. Deley, Jr." in a cursive style.

Edward W. Deley, Jr.  
District Environmental Coordinator

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.

## Addresses of Benefited Receptors

Benefited Receptor	Street Address	Owner	Mailing Address	Tax Address (if different)
7-1	345 S INGLEWOOD AVE	ZIELINSKI MICHALINA	345 S INGLEWOOD AVE, YOUNGSTOWN, OH, 44515	
7-2	337 S INGLEWOOD AVE	FOLEY ZENO J & P A	337 INGLEWOOD AVE, YOUNGSTOWN, OH, 44515	
7-3	333 S INGLEWOOD AVE	TOLAND LEONARD W & TOLAND KAREN JEAN	333 S INGLEWOOD AVE, YOUNGSTOWN, OH, 44515	
7-4	329 S INGLEWOOD AVE	DYKES JAMES ROBERT & DYKES CANDY MARIE	329 S INGLEWOOD AVE, YOUNGSTOWN, OH, 44515	3001 HACKBERRY , IRVING, TX, 75063
7-5	325 S INGLEWOOD AVE	GREEN ANDREW J	325 S INGLEWOOD AVE, YOUNGSTOWN, OH, 44515	
7-6	321 S INGLEWOOD AVE	CEARFOSS ANGELINE R	321 S INGLEWOOD AVE, AUSTINTOWN, OH, 44515	
7-7	317 S INGLEWOOD AVE	HEGEDUS EDW A & PENNY	317 S INGLEWOOD AVE, YOUNGSTOWN, OH, 44515	
7-8	313 S INGLEWOOD AVE	CAMBERT ALBERT J	313 S INGLEWOOD AVE, YOUNGSTOWN, OH, 44515	
7-9	309 S INGLEWOOD AVE	BUCK LARRY G & BUCK KAREN J	309 S INGLEWOOD AVE, YOUNGSTOWN, OH, 44515	
7-10	301 S INGLEWOOD AVE	THEIS JOEL J JR & THEIS ANGELINE M	301 S INGLEWOOD AVE, YOUNGSTOWN, OH, 44515	
7-11	297 S INGLEWOOD AVE	SMAIL DONALD L SMAIL PHYLLIS J	297 S INGLEWOOD AVE, YOUNGSTOWN, OH, 44515	
7-12	293 S INGLEWOOD AVE	SANSON FRANCES	293 S INGLEWOOD AVE, YOUNGSTOWN, OH, 44515	
7-13	291 S INGLEWOOD AVE	GIOVANNI JEANETTE R	291 S INGLEWOOD AVE, YOUNGSTOWN, OH, 44515	
7-14	289 S INGLEWOOD AVE	CAMACCI MARK & DENISE M	289 S INGLEWOOD AVE, YOUNGSTOWN, OH, 44515	3001 HACKBERRY , IRVING, TX, 75063
7-15	285 S INGLEWOOD AVE	EMPIRE PROPERTY HOLDINGS LLC	6090 DEER SPRING RUN , CANFIELD, OH, 44406	194 W MAIN ST, CORTLAND, OH, 44410-0098
7-16	281 S INGLEWOOD AVE	ANTAL PAUL & ANTAL CHRISTINA L	281 S INGLEWOOD AVE, YOUNGSTOWN, OH, 44515	3001 HACKBERRY , IRVING, TX, 75063
7-17	275 S INGLEWOOD AVE	ELROD TIFFANY	3436 SHELBY RD, YOUNGSTOWN, OH, 44511	275 S INGLEWOOD AVE, YOUNGSTOWN, OH, 44515
7-19	5087 BIRCHCREST AVE	ELLINOS EMMANUEL N & ELLINOS DIANE	5087 BIRCHCREST , YOUNGSTOWN, OH, 44515	
7-20	5077 BIRCHCREST AVE	VOSCH MARTIN & CAROL J	5077 BIRCHCREST DR, YOUNGSTOWN, OH, 44515	
7-21	5088 BIRCHCREST AVE	TAFT JOHN K & TAFT VIRGINIA R	5088 BIRCHCREST AVE, YOUNGSTOWN, OH, 44515	
7-22	253 S INGLEWOOD AVE	WINKLE JOHN	253 S INGLEWOOD AVE, YOUNGSTOWN, OH, 44515	
7-23	247 S INGLEWOOD AVE	BANFIELD BEAU E	247 S INGLEWOOD , YOUNGSTOWN, OH, 44515	3001 HACKBERRY , IRVING, TX, 75063
7-24	241 S INGLEWOOD AVE	PHILLIPS AMANDA M	241 S INGLEWOOD AVE, YOUNGSTOWN, OH, 44515	3001 HACKBERRY , IRVING, TX, 75063
7-25	235 S INGLEWOOD AVE	AVERY LINDA R TRUSTEE	235 S INGLEWOOD AVE, YOUNGSTOWN, OH, 44515	
7-26	227 S INGLEWOOD AVE	CESTARY JAMES C & B A	227 S INGLEWOOD RD , YOUNGSTOWN, OH, 44515	
7-27	221 S INGLEWOOD AVE	BEGLEY DEAN A	1241 SIGNATURE DR, YOUNGSTOWN, OH, 44515	1241 SIGNATURE DR, YOUNGSTOWN, OH, 44515
7-28	215 S INGLEWOOD AVE	LAGAMBA JORDAN R	215 S INGLEWOOD AVE, AUSTINTOWN, OH, 44515	
7-29	209 S INGLEWOOD AVE	RENDA JACQUELINE	209 INGLEWOOD DR, YOUNGSTOWN, OH, 44515	34 MATTATUCK WAY , WATERVILLE, OH, 43566
7-30	203 S INGLEWOOD AVE	DENBEIGH TINA M & DENBEIGH TONY J	203 S INGLEWOOD RD, AUSTINTOWN, OH, 44515	3001 HACKBERRY , IRVING, TX, 75063
7-31	157 S INGLEWOOD AVE	HEAVEN MARILYN J	157 INGLEWOOD AVE, YOUNGSTOWN, OH, 44515	
7-32	153 S INGLEWOOD AVE	NOVOTNY BERNICE	153 S INGLEWOOD AVE, YOUNGSTOWN, OH, 44515	
7-33	149 S INGLEWOOD AVE	CIPRIANO LARRY D & CIPRIANO LIANE R	149 S INGLEWOOD AVE, YOUNGSTOWN, OH, 44515	
7-34	145 S INGLEWOOD AVE	WILLIAMS CHRISTINA M & CENE WILLIAM I	145 S INGLEWOOD , YOUNGSTOWN, OH, 44515	
7-35	141 S INGLEWOOD AVE	BOHR MELISSA J	141 INGLEWOOD AVE, YOUNGSTOWN, OH, 44515	
7-36	137 S INGLEWOOD AVE	THEISLER MARTIN JR & THEISLER CHERYL L	137 S INGLEWOOD AVE, AUSTINTOWN, OH, 44515	
7-37	133 S INGLEWOOD AVE	POPA JENNIFER A	133 INGLEWOOD AVE, YOUNGSTOWN, OH, 44515	3001 HACKBERRY , IRVING, TX, 75063
7-38	129 S INGLEWOOD AVE	KURTZ DAVID E	115 ROSEMONT , YOUNGSTOWN, OH, 44515	129 S INGLEWOOD AVE, YOUNGSTOWN, OH, 44515
7-39	125 S INGLEWOOD AVE	HANS TIFFANY M & HANS NICHOLAS F	125 S INGLEWOOD AVE, YOUNGSTOWN, OH, 44515	MAC X2502-011 , DES MOINES, IA, 50328-0001
7-40	121 S INGLEWOOD AVE	MARINELLI JOSEPH M	121 S INGLEWOOD AVE, YOUNGSTOWN, OH, 44515	3001 HACKBERRY , IRVING, TX, 75063
7-41	117 S INGLEWOOD AVE	PARSONS ELLA P	117 S INGLEWOOD , YOUNGSTOWN, OH, 44515	
7-42	105 S INGLEWOOD AVE	LOSWEGO DAVID J & LOSWEGO SANDRA	105 S INGLEWOOD , AUSTINTOWN, OH, 44515	3001 HACKBERRY , IRVING, TX, 75063
7-69	164 S INGLEWOOD AVE	SOPP LINDA	164 INGLEWOOD AVE, YOUNGSTOWN, OH, 44515	3001 HACKBERRY , IRVING, TX, 75063
7-70	162 S INGLEWOOD AVE	BEGLEY DEAN A	1241 SIGNATURE DR, AUSTINTOWN, OH, 44515	1241 SIGNATURE DR, AUSTINTOWN, OH, 44515
7-71	158 S INGLEWOOD AVE	BARANYI MARY ANN	158 S INGLEWOOD AVE, YOUNGSTOWN, OH, 44515	
7-73	148 S INGLEWOOD AVE	MARKS CRAIG	148 S INGLEWOOD AVE, YOUNGSTOWN, OH, 44515	3001 HACKBERRY , IRVING, TX, 75063
7-74	142 S INGLEWOOD AVE	KANE MARY K	142 S INGLEWOOD , YOUNGSTOWN, OH, 44515	
7-75	136 S INGLEWOOD AVE	FELLOWS TIMOTHY R & FELLOWS MARK S	136 S INGLEWOOD AVE, YOUNGSTOWN, OH, 44515	
7-76	130 S INGLEWOOD AVE	SHEA WILLIAM T	130 INGLEWOOD RD, YOUNGSTOWN, OH, 44515	
7-82	54 S INGLEWOOD AVE	BROWN ROY W & J G	54 S INGLEWOOD AVE, YOUNGSTOWN, OH, 44515	
7-83	46 S INGLEWOOD AVE	COOL STEVEN J & COOL JESSICA J	46 S INGLEWOOD AVENE, YOUNGSTOWN, OH, 44515	
7-84	42 S INGLEWOOD AVE	CHIPPS EDWARD J & CHIPPS JESSICA R	42 S INGLEWOOD AVE, YOUNGSTOWN, OH, 44515	1123 S PARKVIEW DRIVE , COVINA, CA, 91724
7-85	36 S INGLEWOOD AVE	DOWDELL ASHLEY	36 S INGLEWOOD AVE, AUSTINTOWN, OH, 44515	3001 HACKBERRY , IRVING, TX, 75063
5-21	423 E BEACON DR	MCHENRY JOSEPH R TRUSTEE	423 E BEACON DR, YOUNGSTOWN, OH, 44515	
5-27	5113 WILLOWCREST DR	PENNELL TIMOTHY F & PENNELL REBECCA J	5113 WILLOWCREST DR, YOUNGSTOWN, OH, 44515	

## Addresses of Benefited Receptors

Benefited Receptor	Street Address	Owner	Mailing Address	Tax Address (if different)
5-28	5109 WILLOWCREST DR	VALDES JORDAN & AUSTINTOWN TWP TRUSTEES	5109 WILLOWCREST DR, YOUNGSTOWN, OH, 44515	3001 HACKBERRY , IRVING, TX, 75063
5-29	5105 WILLOWCREST DR	SALINAS BALLARDO JR ETAL	5105 WILLOWCREST , YOUNGSTOWN, OH, 44515	
5-30	5101 WILLOWCREST DR	TANOFF BRENDA LYNN & AUSTINTOWN TWP TRUSTEES	5101 WILLOW CREST AVE, YOUNGSTOWN, OH, 44515	3001 HACKBERRY , IRVING, TX, 75063
5-31	361 S INGLEWOOD AVE	CLEELAND JAMES A	6520 WOODRIDGE WAYSW, WARREN, OH, 44481	6520 WOODRIDGE WAYSW, WARREN, OH, 44481

APPENDIX J: NOISE FUNDAMENTALS

This Appendix describes basic acoustical principles and terminology as they are applied to highway noise. Noise is often defined as undesirable sound. Some sounds (such as music or birds singing) are not considered noise by most people, but other sounds from sources such as trucks on a highway or planes passing overhead are typically considered noise. This report focuses on the noises associated with highway traffic, though other noises may have been included in some measured noise levels. Traffic noises arise due to vehicle engines and exhausts, tire vibration, horns, brakes, etc. Each noise source produces its own combination of sounds. In the following paragraphs, some basic principles of sound are discussed in the context of highway noise analysis.

### Loudness

Sound is created when a source vibrates in air, creating pressure pulses that move through the air or other medium away from the source in waves. When these pressure waves reach a receiver like the human ear, the pressure variations are interpreted as sounds. More forceful vibrations mean higher pressures in the sound waves, and these are interpreted by the human ear as louder or more intense sounds.

Sound pressures to which people may be exposed can vary greatly. For example, the sound pressure of leaves rustling at night might be 200 micropascals ( $\mu\text{Pa}$ ), and the sound pressure of a jet plane passing overhead might be 6,000,000  $\mu\text{Pa}$ . To simplify handling such large ranges of numbers, loudness is usually expressed as a Sound Pressure Level (SPL), which is expressed in units called decibels (dB). The dB is defined based on a logarithmic scale relative to a defined reference level. Mathematically, the SPL in dB is defined in Equation (1).

$$\text{SPL (in dB)} = 20 \log_{10} (p/p_0) \quad (1)$$

Where  $p$  = the sound pressure in  $\mu\text{Pa}$ ;

$p_0$  = the reference sound pressure (normally 20  $\mu\text{Pa}$ , the typical hearing threshold of a young adult).

In the example given above, leaves rustling at 200  $\mu\text{Pa}$  would give an SPL of about 20 dB and a jet plane at 6,000,000  $\mu\text{Pa}$  would have an SPL of about 110 dB. Decibel levels associated with other common noises include a quiet bedroom at night (30 dB), normal speech with someone 3 ft away (67 dB), and a gasoline-powered lawn mower from 3 ft away (90 dB).

Because of the way the decibel is defined mathematically and the way human ears respond to **sound intensities, comparing the “noisiness” of two sounds based on their dB values is not straightforward.** For example, a truck passing on the highway might be generating a sound pressure level of 90 dB. However, the addition of a second identical truck will not produce 180 dB, nor will it double the apparent loudness to the listener. In fact, the second truck would only produce an additional 3 dB (for a total SPL of 93 dB) and the average listener would just barely be able to discern any difference in loudness. It would require 10 identical trucks to double the apparent loudness for the listener, at which point the SPL would increase by 10 to a value of 100 dB. Thus, for most highway applications, two rules of thumb are commonly used:

- A change of less than 3 dB is not noticeable to most people, and
- An increase of 10 dB will sound twice as loud and a decrease of 10 dB will sound half as loud.

## Frequency

In addition to loudness, sounds can also be described by how fast the pressure changes over time. Increasing the vibration rate at the source (more beats per minute) will cause the air pressure to change at a higher frequency. The human ear perceives the frequency of the sound pressure wave as pitch. For example, different notes played on a piano have different frequencies. Lower frequencies are perceived as being lower in pitch while higher frequencies are perceived as being higher in pitch.

Frequency is measured in units of Hertz (Hz), which represent the number of times the pressure changes per second. Normal human ears can detect frequencies ranging from approximately 30 Hz to 16,000 Hz. However, the ear is best at hearing mid-range frequencies (around 1000 Hz). For example, if a person hears two sounds that have the same pressure level (same dB value), but one sound is at 200 Hz and the other is at 1000 Hz, the 1000 Hz sound will seem to be much louder.

In recognition of this human hearing phenomenon, a frequency-weighting scheme called A-weighting is used in representing highway sound levels. In the A-weighting scheme, sound levels from various frequencies are weighted using the factors shown in Table 1 to essentially subtract out portions of the sounds (mostly in the lower frequencies) that human ears do not hear well. Then the weighted sounds are added together to yield a single value (designated dBA) that approximately simulates the overall loudness that the human ear would perceive. All noise levels presented in this report are A-weighted values.

## Duration

In addition to the relatively quick pressure variations (hundreds or thousands per second) that are measured as frequency, sound levels may also vary over longer time periods of minutes or hours. Noise measurements made at regular time intervals at the same location will generally vary widely, making it difficult to compare overall noise levels associated with a highway project at two or more locations or traffic scenarios.

One option for describing a varying sound environment is to measure the sound exposure level (SEL), which is the total sound energy of a single sound event and takes into account both its intensity and duration. One way to understand SEL is to think of it as the sound level you would experience if all of the sound energy of a sound event occurred in one second. This normalization to a duration of one second allows the direct comparison of sounds of different durations.

Another alternative is to look at average noise levels over a specified time period. Several noise descriptors or metrics are used to describe time-averaged noise levels. The  $Leq$  is a single number that describes the mean sound intensity level during a specified time period. The time period can be one hour or several hours. The symbol  $Leq(h)$  is typically used to denote an  $Leq$  for the noisiest hour of the day.  $Leq(day)$  and  $Leq(night)$  refer to averages over daylight and nighttime hours, respectively.  $Ldn$  is essentially a weighted average of  $Leq(day)$  and  $Leq(night)$  values where nighttime sounds are weighted more heavily than daylight sounds. Another descriptor that is occasionally used is  $L10(h)$ , which is the sound level exceeded 10 percent of the time over a one-hour period. The noise measurements and modeling results presented in this report are  $Leq(h)$  values.

## Noise Measurement

Noise levels for highway projects are measured following FHWA guidance (Lee and Fleming 1996). A Sound Level Meter (SLM) that meets or exceeds American National Standards Institute (ANSI) S1.4-1993, TYPE II standards for accuracy (ANSI 1993) is required. The SLM detects sounds using a microphone that converts the sound pressure levels into electrical signals. The electrical signals are then amplified and recorded or displayed. Typically, the SLM measures sounds of all frequencies within its operating range and add these together to produce a single sound level measurement. Filtering circuitry is included to automatically give A-weighted results. In addition, some SLMs have integrating capabilities built in so that Leq values can be obtained directly.

Calibration of the SLM is important to ensure that accurate measurements are obtained. In addition to annual calibration in the lab, a calibrator is also used before and after field measurements. The calibrator generates a known volume sound level at a single frequency (typically either 94 or 114 dB at 1000 Hz). By placing the calibrator over the SLM microphone and obtaining a reading, accuracy of the SLM can be checked. If SLM readings obtained using the calibrator are off by less than 1 dB, the measurement readings can be corrected for instrument drift. If the calibration readings are off by more than 1 dB, the measurement readings must be discarded.

In the field, the SLM is situated with the microphone pointing up so that highway sounds all impinge on the membrane at the end of the microphone at an incidence angle of 90 degrees (grazing incidence). The microphone is situated atop a tripod or other support at a height of **5 ft above the ground to simulate the height of the average listener's ears. A windscreen is placed** over the microphone to eliminate wind noise from the measurements. Measurement periods of at least 15 minutes are used to obtain a good estimate of the Leq(h).

While noise measurements are being made, traffic counts are obtained for nearby roadways. Counts are made of different vehicle types in each travel direction. In situations where traffic volumes are too large to count using a tally sheet, a video camera may be used to record the traffic so it can be counted later.

A number of environmental factors can affect noise readings in the field, including meteorological conditions (wind speed and direction, humidity, temperature, precipitation), terrain, ground surface (paved, grass, etc.), distance to nearby roads, and the presence of structures and buildings that may block or reflect traffic noise. All of these things should be measured and/or described when field measurements are taken.

## Noise Modeling

Noise modeling is the calculation of noise levels at one or more receptor locations using complex mathematical equations representing the physics of sound propagation. Various parameters must be known or estimated to use these equations. Such parameters include the physical relationship of source to receptor (distance, height differences, intervening terrain, type of ground surface, locations of barriers, etc.) and the noise emissions of the source.

For highway noise modeling, the latest version of the Traffic Noise Model (TNM), TNM 2.5, is used. This model was developed by the FHWA for use in highway noise analyses and is accepted **by most state transportation authorities. As described in its User's Manual (Anderson et al. 1998; Lau et al. 2004)**, TNM calculates noise levels at user-specified receptor locations using the volume, speed, and vehicle mix of traffic on nearby roadways. Noise emissions profiles for

various vehicle types are built into the model and are used with site-specific traffic volumes to define the noise source term. TNM then calculates the propagation of noise from one or more sources to user-specified receptors, taking into account terrain and ground surface variations and the presence of existing buildings and natural noise barriers. TNM also contains tools for designing noise barriers and evaluating their effectiveness.

Table 1. A-Weighted Frequency Response Factors.

Center of Frequency Range (Hz)	A-Weighted Response Factor (dB)
31.5	-39
63	-26
125	-16
250	-9
500	-3
1000	0
2000	+1
4000	+1
8000	-1
16000	-7