Traffic Noise Analysis Report

I-35W Transit Access Project

Minneapolis, MN

S.P. 2782-327
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Traffic Noise Analysis Report

I-35W Transit Access Project

Prepared for Hennepin County in cooperation with the Federal Highway Administration (FHWA), the Minnesota Department of Transportation (MnDOT) and the City of Minneapolis.

1.0 Project Description

The purpose of this analysis is to evaluate and document the effect of the proposed I-35W Transit Access Project on traffic noise levels in the project area.

This Transit Access Project is being led by Hennepin County and includes an intensive agency and public involvement process to gain input from key stakeholders responsible for or impacted by the study area transportation system. These stakeholders include MnDOT, FHWA, Metro Transit, the City of Minneapolis, neighborhood representatives and business owners from the project area.

By 2018, two major bridges in the project area must be replaced based on the requirements of the Chapter 152 Bridge Replacement Program (2008). The two bridges are the southbound I-35W bridge over northbound TH 65 near 24th Street, and the northbound I-35W/TH 65 flyover bridge to westbound I-94. Replacement of these two structures is impacted by other decisions along the I-35W corridor including a new transit station at Lake Street and any potential access changes in the Lake Street area.

The existing outside edge bus stops located along I-35W at Lake Street will be reconstructed to include an in-line, center transit station. The northbound I-35W MnPASS lane will be converted from an existing priced dynamic shoulder lane (PDSL) to a full MnPASS lane. A southbound MnPASS lane will be included from the TH 65/I-35W merge area down to the existing MnPASS lane at 42nd Street.

The project also includes adding two additional exit ramps from I-35W. Southbound I-35W will now include an exit ramp to Lake Street with an auxiliary lane from the westbound I-94 entrance ramp to the new exit. Northbound I-35W will include an exit ramp directly to 28th Street. There are also two other major interstate bridge changes included. The first change is the southbound I-35W braid bridge over northbound TH 65; this configuration will be modified so southbound I-35W merges on the right side of the freeway allowing buses from downtown to stay in the left most lanes for the transit station; the crossover point will be shifted north from about 24th Street to about 19th Street. The second modification is the existing northbound I-35W flyover ramp to westbound I-94 will be reconstructed to enter on the left hand side to help remove weaving traffic along I-94.

1.1 Project Limits

With the extension of the MnPASS lanes and the auxiliary lane, the noise modeling limits include almost 5 miles of freeway in south Minneapolis. The limits include:

- I-35W from 46th Street to the I-94 commons area at 11th Avenue
- TH 65 from I-35W into Downtown Minneapolis
- I-94 from Nicollet Avenue to 11th Avenue
- Lake Street from Blaisdell Avenue to 5th Avenue

1.2 Project Assessment

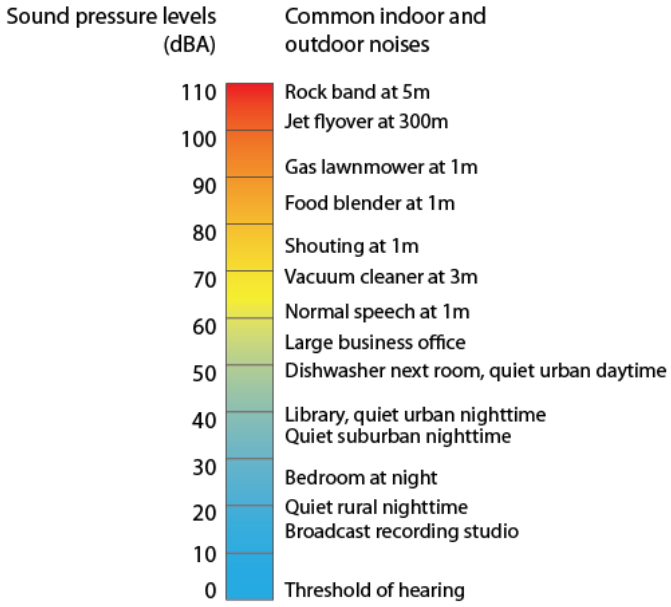
The analysis utilized MnDOT's MINNOISEV31 software model; which is a modified version of the Federal Highway Administration's (FHWA) STAMINA 2.0 software model. The analysis includes modeling of existing conditions (2012) and future (2038) no build and build conditions.

2.0 Noise Description

Noise is defined as any unwanted sound. Sound travels in a wave motion and produces a sound pressure level. This sound pressure level is commonly measured in decibels. Decibels (dBA) represent the logarithmic increase in sound energy relative to a reference energy level. A sound increase of three dBA is barely perceptible to the human ear, a five dBA increase is clearly noticeable, and a ten dBA increase is heard as twice as loud. For example, if the sound energy is doubled (e.g., the amount of traffic doubles), there is a three dBA increase in noise, which is just barely noticeable to most people. On the other hand, if traffic increases to where there is ten times the sound energy level over a reference level, then there is a ten dBA increase and it is heard as twice as loud.

For highway traffic noise, an adjustment, or weighting, of the high- and low-pitched sounds, is made to approximate the way that an average person hears sounds. The adjusted sound levels are stated in units of "A-weighted decibels" (dBA). In Minnesota, traffic noise impacts are evaluated by measuring and/or modeling the traffic noise levels that are exceeded 10 percent and 50 percent of the time during the hour of the day and/or night that has the loudest traffic noise. These numbers are identified as the L_{10} and L_{50} levels. The L_{10} value is compared to FHWA noise abatement criteria.

The following chart provides a rough comparison of the noise levels of some common noise sources.



Source: "A Guide to Noise Control in Minnesota" (May 2015)
Minnesota Pollution Control Agency, http://www.pca.state.mn.us

2.1 Minnesota Regulations

Daytime and nighttime noise standards have been established by for the State of Minnesota. State noise standards are for a one-hour period and apply to outdoor areas (i.e. exterior noise levels). The standards are set in terms of the L_{10} and L_{50} noise descriptors. The L_{10} is the sound level exceeded ten percent of the time, or six minutes out of an hour. The L_{50} is the sound level exceeded 50 percent of the time, or 30 minutes out of an hour.

The Minnesota Pollution Control Agency (MPCA) defines daytime as 7:00 a.m. to 10:00 p.m. and nighttime as 10:00 p.m. to 7:00 a.m.

The Minnesota State Noise Standards are depicted in Table 1.

Table 1
State of Minnesota Noise Standards

Noise Area Classification (NAC)	General Land Use Type	Sound Level (dBA)			
		Day (7:00 am to 10:00 pm)		Night (10:00 pm to 7:00 am)	
		L_{10}	L_{50}	L_{10}	L_{50}
1	Residential	65	60	55	50
2	Commercial	70	65	70	65
3	Industrial	80	75	80	75

2.2 Federal Regulations

The Federal Noise Abatement Criteria (23 CFR 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise) established the noise criteria for various land uses.

The criteria are in terms of the Leq or L_{10} descriptor. In Minnesota, the L_{10} descriptor is used to identify impacts and has been used to identify impacts in this analysis.

In the Federal Noise Abatement criteria, a noise impact is defined as occurring when the predicted worst hour L_{10} traffic noise levels in the design year:

- Approach or exceed the noise abatement criteria (see Table 2)
- Substantially exceed the existing noise levels (5 dBA increase)

The State of Minnesota has defined "approach or exceed" as being within one dBA or less of the activity category of the NAC, and "substantially exceed" as an increase of five dBA or more over existing noise levels.

Table 2
FHWA Noise Abatement Criteria

Activity Category	L_{10} (h)(1,2)	Description of Activity Category
A	60 dBA (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(3)	70 dBA (exterior)	Residential
C(3)	70 dBA (exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilitates, 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	55 dBA (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(3)	75 dBA (exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D of 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

(1) L_{10}(h) shall be used for impact assessment
(2) L_{10}(h) Activity Criteria values are for impact determination only, and are not design standards for noise abatement measures.
(3) Includes undeveloped lands permitted for this activity category.

3.0 Methodology

3.1 Affected Environment

The purpose of this noise analysis is to determine the impacts the proposed project has on traffic noise levels in the immediate vicinity of the project at noise sensitive receptors (residences, business, etc). It is important to note that this analysis only includes traffic generated noise modeling; there are other noise sources in the project area that have some affect on the ambient noise levels.

The I-35W Transit Access Project is located in South Minneapolis in both urban and suburban environments. For the purposes of this traffic noise analysis, the project limits are as follows:

- I-35W from 46th Street to the I-94 commons area at 11th Avenue
- TH 65 from I-35W into Downtown Minneapolis
- I-94 from Nicollet Avenue to 11th Avenue
- Lake Street from Blaisdell Avenue to 5th Avenue

Traffic noise is generated by all vehicular traffic traveling on the freeway, and both intersecting and parallel roadways.

3.2 Field Monitoring

Noise level monitoring is commonly performed during a noise study to document existing noise levels and assist in validating the noise prediction model. Monitored noise levels can also be used as a baseline of the possible ambient noise levels that can occur with a new roadway alignment.

The existing noise levels along the I-35W and I-94 corridors were monitored at two separate times. The first monitoring occurred in December 2012 to establish the existing noise levels along the corridor and assist in validating the noise prediction model. The second monitoring occurred in September 2013 which added more locations and repeated the initial monitoring to compare with and without vegetation. Both the AM and PM monitoring time periods had good weather (no precipitation with winds less than 12 mph), dry pavement and no snow cover; the sound level meter utilized was a Larson Davis model 814 that was calibrated in March of both 2012 and 2013.

A total of 5 sites were monitored in 2012, with two additional sites provided by MnDOT along I-94; these sites are from 2010 and 2011. A total of 12 sites were monitored in 2013; the 5 2012 sites were repeated and an additional 7 sites were monitored. Noise level monitoring results ranged from 61.3 dBA (L_{10}) to 75.9 dBA (L_{10}). All monitoring locations are first row receptors along the I-35W and I-94 corridors; the only exception is location ML-4, which is a 2nd row receptor.

The monitoring location sites and noise model limits are illustrated in the attached Figure 1, Existing Conditions. The monitoring results are provided in Table 3 which shows the results of the noise validation modeling to be at or within the 3 dBA limits; therefore the model is considered to be validated.

Table 3
Noise Monitoring Locations/Results

Site ID	Location Description	Measurement Date/Time			Measured Levels, dBA	Modeled Levels, dBA	Difference, dBA
		Date	Begin	End	L_{10}	L_{10}	L_{10}
ML 1	Commercial - Picnic Area 2701 Wells Fargo Way	12/4/2012	11:51 AM	2:06 PM	68.2	68.7	0.5
		12/4/2012	2:11 PM	3:56 PM	67.5	69.0	1.5
		9/12/2013	11:17 AM	11:47 AM	71.6		
ML 2	Single Family Home 3135 2nd Avenue	12/6/2012	11:57 AM	12:18 PM	75.9	75.4	-0.5
		12/6/2012	3:32 PM	4:03 PM	75.0	75.3	0.3
		9/12/2013	1:47 PM	2:18 PM	74.6		
ML 3	Public Park Tot Lot (28th Street at I-35W)	12/6/2012	10:42 AM	11:02 AM	64.4	65.6	1.2
		12/6/2012	2:16 PM	2:46 PM	63.6	66.3	2.7
		9/12/2013	12:18 PM	12:48 PM	64.2		
ML 4	Commercial - Playground 3111 1st Avenue; Tubman Facility	12/6/2012	11:21 AM	11:41 AM	61.3	62.0	0.7
		12/6/2012	2:55 PM	3:27 PM	62.1	62.9	
		9/12/2013	1:08 PM	1:38 PM	61.3	62.9	1.6
ML 5	Public Park Franklin Steele Park	12/6/2012	9:58 AM	10:18 AM	68.5	69.9	1.4
		12/6/2012	1:38 PM	2:08 PM	68.5	69.9	1.4
		9/10/2013	11:10 AM	11:30 AM	67.5		
ML 6	Apartment Building 1705 Stevens Avenue South	5/6/2011	9:00 AM	9:15 AM	70.0	71.6	1.6
		5/6/2011	1:00 PM	1:15 PM	69.0	71.2	2.2
ML 7	Apartment Building 921 18th Street East	6/29/2010	9:35 AM	10:00 AM	71.5	73.3	1.8
		6/29/2010	1:45 PM	2:10 PM	71.0	73.0	2.0
ML 8	Residential - Vacant Lot 2nd Avenue and 29th Street	9/17/2013	11:08 AM	11:38 AM	68.6	69.9	1.3
ML 9	Commercial - Vacant Lot 5th Avenue, north of Franklin	9/17/2013	11:48 AM	12:19 PM	68.5	70.5	2.0
ML 10	Commercial - Vacant Lot Nicollet Avenue, north of I-94	9/17/2013	12:30 PM	1:01 PM	69.5	70.2	0.7
ML 11	Commercial - Vacant Lot 4th Avenue, north of Franklin	9/17/2013	1:11 PM	1:41 PM	69.4	68.3	-1.1
ML 12	Commercial - Vacant Lot 4th Avenue and 22nd Street	9/17/2013	1:45 PM	2:15 PM	66.4	68.0	1.6
ML 13	Residential - Single Family 3528 Stevens Avenue S	9/17/2013	2:28 PM	2:58 PM	72.8	75.0	2.2
ML 14	Residential - Single Family 3704 Stevens Avenue S	9/17/2013	3:10 PM	3:40 PM	71.6	72.8	1.2

4.0 Noise Analysis

4.1 Noise Modeling

Traffic noise impacts were assessed by modeling noise levels at receptor sites likely to be affected by the construction of the proposed project. Traffic noise levels were modeled at a total of 1,458 representative receptor locations throughout the project area. The Existing and No Build models only include 1,445 receptors that exist today. The Build condition removes 3 receptors due to construction, but adds 13 receptors along a proposed trail connection between the Greenway and 31st Street; therefore the Build Condition has a total of 1,455 receptors.

The majority of the receptors represent residential land uses, though there are both scattered and pockets of commercial properties through the project. Based on the FHWA and MnDOT Noise Policy guidance, noise receptors were assigned and modeled within approximately 500 feet of the existing highway mainline.

The Franklin Avenue South Quarter Phase IV development is currently under construction as of Fall 2014. This development is being constructed on an existing, vacant parcel located north or Franklin Avenue, between 5th Avenue and Portland Avenue. Based on the site development plan, the buildings, balconies, and common areas were included in the noise analysis.

The locations of the existing modeled receptor sites are illustrated in Figures 2 through 8; No Build Conditions. The locations of the build modeled receptor sites are illustrated in Figures 9 through 15; Build Conditions. The attached Tables 4 and 5 include the receptor site ID's and land use for each receptor.

The noise modeling was done using the noise prediction program MINNOISEV31, which is a modified version of the Federal Highway Administration's (FHWA) STAMINA. The model uses the roadway alignment (horizontal and vertical), traffic volumes, traffic speeds, vehicle classification, and the distance from the roadway center-of-lanes to the receptor (horizontal and vertical).

The following assumptions were used in modeling the noise levels for this project:

- Traffic data input into the noise model included existing (year 2012) and future (year 2038) No Build and Build forecast traffic volumes. Year 2038 was identified as the design year for the proposed project.
- The 6:00 a.m. to 7:00 a.m. hour, just prior to the start of the morning rush hour, was identified as the loudest hour of the nighttime period.
  - Existing freeway loop detector volumes were collected and analyzed to determine the time frame that has the highest traffic volume between 10:00 p.m. and 7:00 a.m. The 6:00 a.m. to 7:00 a.m. has 25% more traffic than the next highest peak traffic demand and there is no significant congestion during this timeframe.
- The 1:00 p.m. to 2:00 p.m. hour, prior to the start of the afternoon rush hour, was identified as the loudest hour of the daytime period.
  - Existing freeway loop detector volumes were collected and analyzed to determine the time frame that has the highest traffic volume before travel speeds deteriorate from congestion. This occurred between 12:00 p.m. and 4:00 p.m.
  - Field monitoring at Site ML 1, 2701 Wells Fargo Way, was conducted for the same 4-hour period to determine the loudest peak hour. It was determined that the loudest hour was from 1:00 p.m. to 2:00 p.m.

- Monitoring Location 1, is located on the east side of I-35W between 26th Street and 28th Street. This location was chosen for its proximity to the center of the project area and that it does not have an existing noise wall.

- Vehicular fleet composition was collected from varying sources throughout the project area including MnDOT vehicle classification counts (freeways), Minneapolis Transportation Data Management System (arterial roads), and Metro Transit bus schedules (freeway and arterials).

4.2 Noise Model Results

Results of the noise modeling analysis are tabulated in Table 4 (daytime) and Table 5 (nighttime). The following describes the results of the traffic noise analysis for existing (2012), future (2038) No Build condition, and future (2038) Build condition.

It is MnDOT standard practice to replace any existing noise barrier in-kind, regardless of the cost effectiveness or acoustic reasonableness as the existing noise barriers represent a prior National Environmental Policy Act (NEPA) commitment from a previous project. Therefore, all existing noise barriers were included in this portion of the noise modeling.

Existing (2012) daytime modeled noise levels at the modeled receptor locations range from 49.3 dBA (L_{10}) to 78.8 dBA (L_{10}); nighttime noise levels range from 48.8 dBA (L_{10}) to 79.1 dBA (L_{10}). Modeled noise receptors exceeded State daytime standards (L_{10}) at 633 of 1445 modeled receptor locations under existing (2012) conditions. Modeled noise receptors exceeded State nighttime standards (L_{10}) at 1243 of 1445 modeled receptor locations under existing (2012) conditions.

Existing (2012) daytime modeled noise levels at the modeled receptor locations range from 47.1 dBA (L_{50}) to 74.4 dBA (L_{50}); nighttime noise levels range from 46.4 dBA (L_{50}) to 74.6 dBA (L_{50}). Modeled noise receptors exceeded State daytime standards (L_{50}) at 947 of 1445 modeled receptor locations under existing (2012) conditions. Modeled noise receptors exceeded State nighttime standards (L_{50}) at 1268 of 1445 modeled receptor locations under existing (2012) conditions.

Future (2038) No Build daytime modeled noise levels at the modeled receptor locations range from 49.7 dBA (L_{10}) to 79.2 dBA (L_{10}); nighttime noise levels range from 49.3 dBA (L_{10}) to 79.6 dBA (L_{10}). Modeled noise receptors exceeded State daytime standards (L_{10}) at 711 of 1445 modeled receptor locations under No Build (2038) conditions. Modeled noise receptors exceeded State nighttime standards (L_{10}) at 1272 of 1445 modeled receptor locations under No Build (2038) conditions.

Future (2038) No Build daytime modeled noise levels at the modeled receptor locations range from 47.6 dBA (L_{50}) to 77.2 dBA (L_{50}); nighttime noise levels range from 47.1 dBA (L_{50}) to 75.3 dBA (L_{50}). Modeled noise receptors exceeded State daytime standards (L_{50}) at 1059 of 1445 modeled receptor locations under No Build (2038) conditions. Modeled noise receptors exceeded State nighttime standards (L_{50}) at 1289 of 1445 modeled receptor locations under No Build (2038) conditions.

Future (2038) Build daytime modeled noise levels at the modeled receptor locations range from 49.7 dBA (L_{10}) to 79.2 dBA (L_{10}); nighttime noise levels range from 49.2 dBA (L_{10}) to 79.5 dBA (L_{10}). Modeled noise receptors exceeded State daytime standards (L_{10}) at 715 of 1455 modeled receptor locations under Build (2038) conditions. Modeled noise receptors exceeded State nighttime standards (L_{10}) at 1279 of 1455 modeled receptor locations under

Build (2038) conditions. Modeled noise levels (daytime and nighttime) range from -4.1 dBA to 3.9 dBA from the existing (2012) conditions.

Future (2038) Build daytime modeled noise levels at the modeled receptor locations range from 47.6 dBA (L_{50}) to 75.0 dBA (L_{50}); nighttime noise levels range from 47.0 dBA (L_{50}) to 75.2 dBA (L_{50}). Modeled noise receptors exceeded State daytime standards (L_{50}) at 1067 of 1455 modeled receptor locations under Build (2038) conditions. Modeled noise receptors exceeded State nighttime standards (L_{50}) at 1275 of 1455 modeled receptor locations under Build (2038) conditions. Modeled noise levels (daytime and nighttime) range from -5.2 dBA to 6.6 dBA from the existing (2012) conditions.

5.0 Noise Abatement Analysis

Because State and Federal noise standards are exceeded at modeled receptor locations throughout the project area, at a minimum, noise abatement in the form of a noise barrier must be considered. Noise barriers have been chosen as the most cost-effective noise mitigation measure available for this project.

5.1 Noise Barrier Evaluation

When noise impacts are identified, a noise barrier evaluation analysis must be performed. Noise barrier construction decisions are determined based on the evaluation of the feasibility and reasonableness of the noise barriers.

Feasibility of the noise barrier is determined by physical and/or engineering constraints (i.e., whether a noise barrier could feasibly be constructed on the site) and by acoustic feasibility (at least one impacted receptor per proposed barrier must receive the minimum reduction of 5 dBA). The feasibility of noise barrier construction is sometimes dependent on design details that are not known until the final design of the project. The following analysis assumes that noise barriers could be feasibly constructed throughout the project area, up to 20 feet high along I-35W and I-94.

Noise barriers were not evaluated along Lake Street as part of the abatement evaluation due to the feasibility of construction. Along Lake Street the sidewalk is typically 10 to 12 feet wide, adjacent to the curb, and the building fronts are typically abutting the sidewalk. Construction of a noise barrier would need to occur at the curb line to maintain pedestrian traffic along the sidewalk without impacting the business along the corridor. For vehicular traffic this would create unsafe sight lines, it would remove snow storage, and it would hinder sign and pole placement. For these reasons and among others, including pedestrian safety, noise abatement was not considered along Lake Street.

Reasonableness is based on a three factors that must be met for a noise abatement measure to be considered reasonable. The factors are as follows:

- A noise reduction goal of at least 7 dBA must be achieved at a minimum of one benefitted receptor for each proposed noise abatement measure to be considered reasonable.
- A cost effective (CE) threshold of $43,500 per individual benefitted receptor has been established, based on an estimated construction cost of $20 per square foot for noise barriers. Additional costs of some items such as guard rail, rub rail, purchased right-of-way and other extra costs shall be added to the baseline unit costs cited above for the purposes of the cost estimation. Additional costs for strengthening or rebuilding an existing retaining wall to support a proposed noise barrier shall be included as well.
- The viewpoints of the property owners and residents of all benefitted receptors shall be solicited and considered in reaching a decision on the abatement measure to be provided. See Section 5.3.3 of the MnDOT Noise Policy (effective date: June 1, 2011) for a detailed explanation of the voting system. A simple majority (greater than 50%) of all possible voting points (not just the ones that reply) for each potential noise abatement measure must vote “down” the abatement measure to have that measure removed from further consideration.

Assessing the CE of noise barriers includes several steps. First, the impacted noise areas are assessed to determine the probable location for an effective noise barrier. Second, the noise barriers are modeled to assess their acoustical effectiveness. For this study, three

heights of potential noise barriers were analyzed: 20, 15 and 10 feet. If a 20 foot (MnDOT's maximum height) high noise barrier is feasible and meets the reasonableness criteria, it would be proposed for construction. If the 20 foot high barrier does not meet the criteria, a 15 foot barrier would be evaluated. Likewise, if a 15 foot high barrier does not meet the criteria, a 10 foot barrier would be evaluated. All barriers evaluated must meet MnDOT's 7 dBA noise reduction design goal; if a barrier is unable to achieve the design goal, further evaluation will not be completed.

Noise barriers proposed on bridge structures are limited to 10 feet in height per MnDOT. The American Association of State Highway and Transportation Officials (AASHTO) requires that noise barrier on structures to be fully crash tested (Test Level 4, TL-4); currently only one system meets this requirement. This system has a much higher cost than the standard $20 per square foot, therefore a cost of $130 per square foot was used for any noise barrier evaluated on a bridge structure. Reference material from both AASHTO and MnDOT bridge manuals can be found in Appendix C.

There are locations where a noise barrier would be proposed on existing retaining walls that do not currently support a noise barrier. The retaining walls were assessed to determine if the existing wall could structurally support a noise barrier; any additional cost for strengthening or rebuilding the retaining wall would be associated with the noise barrier. All of the existing retaining walls that currently do not support a noise barrier would need to be reinforced to handle the additional load. The most economical reinforcement was a tie-back anchor system. Each wall was assessed a cost estimate based on the retaining wall height along the length of the wall. Retaining walls higher than 20 feet were assumed to require a two anchor system; at a cost of $8000 per noise barrier post. Retaining walls between 8 feet and 20 feet high were assumed to require a single anchor system; at a cost of $4300 per noise barrier post. Retaining walls less than 8 feet were assumed to not require an anchor system and have no additional costs. A cost estimate breakdown can be found in the attached Appendix D.

New, proposed retaining walls would be constructed to support a 20 foot high noise barrier. On all new retaining walls and bridge structures, a 32 inch crash barrier/parapet wall was assumed for the base modeled condition with no noise barriers.

The proposed transit station design over Lake Street will include a large curtain wall on both sides of the transit station. While these curtain walls are not noise barriers, they will provide some shielding of the highway sound in the middle of the freeway mainline. The designed curtain walls were included in the build noise models to account for any shielding these walls provide.

State noise standards are currently and/or predicted to be exceeded throughout most of the study area. Noise barriers were evaluated at 32 locations within the project study area. Figure 16 illustrates the analysis summary of noise barriers that were considered and identifies barriers that are proposed for reconstruction or refurbishing (replace in-kind) and new construction (no voting has occurred at this time).

Noise barrier cost-effectiveness results are tabulated in Appendix A. The discussion of the noise barrier modeling results presented here includes only the daytime results; unless otherwise noted, i.e. nighttime results show the barrier to be cost effective where the daytime result does not. For reference, nighttime noise barrier cost-effectiveness results are also tabulated and presented with the daytime noise barrier cost-effectiveness results.

5.1.1 Existing In-Place Noise Barriers

This project includes existing noise barriers throughout the majority of the I-35W corridor. A portion of the barriers were constructed in recent years as part of the Crosstown Project or the Urban Partnership Agreement (UPA) I-35W Project. The rest of the existing noise barriers were constructed around 1974 and some are currently in poor aesthetic and functioning condition.

MnDOT provided a January 2012 Noise Wall Assessment Report that documents all 269 noise walls in the metro area that were constructed before 2001. While this assessment was subjective, each noise wall described below will include a summary of the data from that report. The assessment gave an overall "health" index rating for each wall between 1 and 5; 1 being "excellent" condition, 2 being "good" condition, 3 being "fair" or average condition, 4 being "poor" conditions, and 5 being "failed" conditions. The thirteen existing noise walls in our study area were included; 6 were rated between "good" and "fair", 7 were rated between "fair" and "poor". Two of the noise walls are rated in the top 20 worst condition in the metro area.

The majority of the existing noise barriers are not physically impacted as part of the project as most of the project stays within the existing freeway right-of-way. These existing noise barriers were evaluated and compared as both replace in-kind and as full replacements (20' high barriers) to determine if the replacement noise barriers were feasible and reasonable. If the replacement barriers were found to be feasible and reasonable they were proposed as part of the project. Where not found feasible and/or reasonable, the existing noise barrier will be replaced in kind as the existing barrier represents a prior NEPA commitment.

Based on input from FHWA, MnDOT, Hennepin County, and the City of Minneapolis, the existing in-place barriers have three possible outcomes:

- **Remain In-Place**: These barriers are recently constructed and in good standing condition. They are not impacted by construction of any part of the proposed project and shall remain in-place.
  - Along northbound I-35W, the walls are between 46th Street and 35th Street
  - Along southbound I-35W, the walls are between 46th Street and 38th Street
- **Replace In-Kind**: The existing barriers are considered to be a prior NEPA agreement to abate highway noise; however the condition of the barriers is sometimes poor. These may or may not be impacted by the physical construction of the proposed project. There are two potential replacement options:
  - Fully replace all components of the existing noise barriers to the same length and height as the existing noise barrier.
  - Replace wood planking, leaving existing posts. This would be a case by case basis depending on the structural integrity of the existing columns.
- **New Noise Barrier**: A standard noise analysis will be completed, including obtaining benefited receptor viewpoints if the barrier is determined to be feasible and reasonable.

The different scenarios that these outcomes are applied to will be handled in the following ways:

- An existing noise barrier in good condition that is not impacted by construction shall **Remain In-Place**.
  - This includes the recently constructed UPA and Crosstown Project noise barriers along I-35W.

- An existing noise barrier in poor condition that is not impacted by construction shall be "**Replace In-Kind**"
  - This includes all existing noise barriers north of 35th Street along I-35W.
- An existing noise barrier where the footing (on embankment) would be reconstructed on a new retaining wall shall be "**Replace In-Kind**" matching the existing top of wall elevation.
- An existing noise barrier having minor location or alignment adjustments due to construction shall be "**Replace In-Kind**" matching the existing top of wall elevation.
  - This would be on a case by case basis with confirmation from both FHWA and MnDOT.
- An existing noise barrier that will be relocated shall require and follow the full Noise Analysis and Voting procedure.
  - This would be on a case by case basis with confirmation from both FHWA and MnDOT.
- An existing noise barrier that is currently substandard in either height (less than 20 feet) or length (ability to lengthen wall) requires full Noise Analysis.
  - If the design reduction goal and additional benefitted receptors resulting from the improved barrier make the barrier cost effective, the new noise barrier would be proposed for construction and voting as if it is a new noise barrier.
    - Alternative: Only the additional benefitted receptors would vote on the extension in length of a noise wall.
  - If the design reduction goal is not met and no additional benefitted receptors result from the improved barrier or the new barrier is not cost effective, the existing noise wall shall be "**Replace In-Kind**".

5.2 Noise Barrier Results

The project receptors were divided up into different noise areas based on proximity of freeway overpass and underpass locations. These roadways crossing the freeway provide a natural break between noise barrier locations.

5.2.1 Noise Area 1 – East side of I-35W between 46th St and 35th St

Land uses east of I-35W between 46th Street and 35th Street consist of all residential buildings including single family, duplex, triplex and apartment buildings. 2nd Avenue South runs continuously, parallel to the freeway between the land uses in Area 1 and the highway.

Noise levels were modeled at 106 receptor locations in Area 1. Modeled noise levels exceed State daytime standards at 98 of the 106 receptor locations with future (2038) Daytime Build conditions and State nighttime standards at 106 of 106 receptor locations with future (2038) Nighttime Build conditions.

Noise Area 1 currently has in-place noise barriers that were constructed with the recent UPA and Crosstown Projects. The change in modeled noise levels between the existing (2012) and future (2038) Build conditions has a maximum increase of 1.1 dBA during the daytime and 1.0 dBA during the nighttime.

The existing, approximate 20 foot high, noise barriers will remain in place and no additional noise abatement was considered for this area as part of the I-35W Transit Access Project.

5.2.2 Noise Area 2 – East side of I-35W between 35th St and 31st St

(See Figures B1 to B3 and Tables A1 to A3)

Land uses east of I-35W between 35th Street and 31st Street consist of mainly a mix of residential buildings, Central Park School and Central Park. This noise area also includes historic properties known as the Healy Block. 2nd Avenue South runs continuously, parallel to the freeway between the land uses in Area 2 and the highway.

Noise levels were modeled at 108 receptor locations in Area 2. Modeled noise levels exceed State daytime standards at 101 of the 108 receptor locations with future (2038) Daytime Build conditions and State nighttime standards at 103 of 108 receptor locations with future (2038) Nighttime Build conditions.

5.2.2.1 Barrier East E

Evaluation Outcome: **Replace In-Kind** (See Table A1 and Figure B1)

An approximate 648 foot long noise barrier is currently in place along the east side of I-35W between the 35th Street overpass and the 35th Street entrance ramp. The existing barrier has an overall "health" index of 2.88; which is slightly better than average. However, the existing wood is weathered with minor gaps in the wall. The existing noise barrier is not impacted by the construction of the I-35W Transit Access project.

The existing noise barrier ranges in height from approximately 20 to 29 feet with an average height of 25 feet. The modeled existing noise barrier provides a reduction that varies from 0.0 dBA to 7.5 dBA.

The existing 640 foot long noise barrier is proposed to be replaced in-kind as part of the I-35W Transit Access Project.

5.2.2.2 Barrier East F

Evaluation Outcome: **Replace In-Kind** (See Table A2 and Figure B2)

An approximate 1,424 foot long noise barrier is currently in place along the east side of I-35W between the 35th Street entrance ramp and the 31st Street exit ramp. The existing barrier has an overall "health" index of 3.5; which is worse than average; the existing wood is weathered with minor gaps in the wall and it does have some structural repairs needed soon. This wall is in the top 20 worst condition list. The existing noise barrier is not impacted by the construction of the I-35W Transit Access project.

The existing noise barrier ranges in height from approximately 17 to 25 feet with an average height of 20 feet. While the existing barrier reaches the maximum height, the north end of the barrier stops near 32nd Street. The modeled existing noise barrier provides a reduction that varies from 0.0 dBA to 10.7 dBA.

As part of the evaluation of Barrier East G, Barrier East F was extended approximately 106 feet further north. A 1,530 foot long noise barrier was modeled; the additional length was modeled with a 20 foot high barrier. The additional length, along with the inclusion of Barrier East G, provides an additional reduction in noise levels for some receptors behind Barrier East F, reduction varies from 0.0 dBA to 4.0 dBA. However no additional benefited receptors resulted from the extended noise barrier.

The existing 1,424 foot long noise barrier is proposed to be replaced in-kind as part of the I-35W Transit Access Project. The approximate 106 foot, 20 foot high extension of the noise barrier to the north is proposed as part of Barrier East G.

Barrier East G is currently proposed, but is directly in front of the Historic Healy Block. If the noise barrier is voted down or removed from consideration based on historic implications, the existing, 1,424 foot long noise barrier would then be proposed to be replaced in-kind as part of the I-35W Transit Access Project.

5.2.2.3 Barrier East G

Evaluation Outcome: **Proposed Noise Barrier** (See Table A3 and Figure B3)

There is no existing noise barrier between 32nd Street and 31st Street along northbound I-35W.

An approximate 619 foot long, 20 foot high noise barrier was modeled along the east side of I-35W between the 31st Street exit ramp and the 31st Street Bridge; an additional 100 foot long, 10 foot high (TL-4 system) noise barrier was modeled on the 31st Street Bridge structure. The total approximate noise barrier length is 719 feet. This noise barrier evaluation includes an approximate 106 foot extension of Barrier East F to enable an acceptable noise barrier overlap for the 31st Street exit ramp.

An approximate 719 foot long, 20 foot high noise barrier plus the 10 foot high noise barrier on structure, provides a reduction that varies from 0.0 dBA to 8.0 dBA. The cost effectiveness of the barrier is $40,400 per benefitted receptor.

Special consideration is warranted for this noise barrier as it fronts the historic Healy Block. The Minnesota State Historic Preservation Office (SHPO) and MnDOT Cultural Resource Unit (CRU) should have additional input regarding the proposal of any noise barrier in front of the Healy Block.

The approximate 719 foot long, 20 foot high noise barrier meets MnDOT's $43,500 cost-effectiveness criteria and is proposed as part of the I-35W Transit Access Project.

5.2.3 Noise Area 3 – East side of I-35W between 31st St and Lake St

(See Figure B3 and Table A4)

Land uses east of I-35W between 31st Street and Lake Street consist of a mix of residential buildings and commercial retail properties. 2nd Avenue South runs continuously, parallel to the freeway between the land uses in Area 3 and the highway.

Noise levels were modeled at 22 receptor locations in Area 3. Modeled noise levels exceed State daytime standards at 19 of the 22 receptor locations with future (2038) Daytime Build conditions and State nighttime standards at 19 of 22 receptor locations with future (2038) Nighttime Build conditions.

This section of freeway mainline will be reconstructed on a new retaining wall that will at a minimum include a 32" high crash barrier along the outside edge of the wall. The new I-35W bridges over 31st Street and Lake Street will also include a 32" crash barrier.

5.2.3.1 Barrier East H

Evaluation Outcome: **Noise Barrier Not Proposed** (See Table A4 and Figure B3)

An approximate 425 foot long, 20 foot high noise barrier was modeled along the east side of I-35W between the 31st Street and Lake Street bridges, an additional 315 foot long, 10 foot high noise barrier was modeled on the Lake Street Bridge structure. The total approximate noise barrier length is 740 feet.

The modeled noise barrier provides a reduction that varies from 0.0 dBA to 3.4 dBA; with no receptor receiving a reduction of at least 5dBA, the wall is considered not acoustically effective and is not proposed as part of the I-35W Transit Access Project.

The analyzed noise barrier does not reach a reduction of 5 dBA due to a couple different factors. The I-35W mainline is raised relative to the receptors along 2nd Avenue, the mainline is up to 25 feet higher than the receptors. Both the retaining walls and bridge structures along I-35W will include a 32" crash barrier. 2nd Avenue will still carry a significant amount of traffic that is not protected from the receptors.

5.2.4 Noise Area 4 – East side of I-35W between Lake St and 28th St

(See Figure B4 and Table A5)

Land uses east of I-35W between Lake Street and 28th Street consist of a mix of residential buildings, commercial retail properties, and includes the Midtown Greenway. 2nd Avenue South runs continuously, parallel to the freeway between the land uses in Area 4 and the highway.

Noise levels were modeled at 35 receptor locations in Area 4; 25 receptors are located between Lake Street and the Midtown Greenway with 7 along the Greenway. The 4 commercial receptors located between the Midtown Greenway and 28th Street do not have noise impacts as they are relatively far away from the freeway. Modeled noise levels exceed State daytime standards at 31 of the 35 receptor locations with future (2038) Daytime Build conditions and State nighttime standards at 27 of 35 receptor locations with future (2038) Nighttime Build conditions.

A portion of this section of freeway will be reconstructed on a new retaining wall (approximately between Lake Street and the Midtown Greenway) that will at a minimum include a 32" high crash barrier along the outside edge of the wall. The new 28th Street exit ramp will be constructed with a retaining wall between the freeway and the ramp, which will have a 32" high crash barrier along the wall. The new I-35W bridges over Lake Street and the Midtown Greenway will also include a 32" crash barrier.

5.2.4.1 Barrier East I

Evaluation Outcome: **Proposed Noise Barrier** (See Table A5 and Figure B4)

An approximate 500 foot long noise barrier was modeled along the east side of I-35W between the Lake Street Bridge and the Midtown Greenway, an additional 90 foot long, 10 foot high (TL-4 system) noise barrier was modeled on the Midtown Greenway Bridge structure. The total approximate noise barrier length is 590 feet.

An approximate 590 foot long, 20 foot high noise barrier plus the 10 foot high noise barrier on structure, provides a reduction that varies from 0.0 dBA to 8.8 dBA. The cost-effectiveness of the barrier is $21,786 per benefitted receptor.

The approximate 590 foot long, 20 foot high noise barrier meets MnDOT's $43,500 cost-effectiveness criteria and is proposed as part of the I-35W Transit Access Project.

5.2.5 Noise Area 5 – East side of I-35W between 28th St and 26th St

(See Figure B5 and Table A6)

Land uses east of I-35W between 28th Street and 26th Street consist of a single commercial property (Wells Fargo Home Mortgage) with an outdoor space. There are additional

residential receptors located on the east side of the commercial complex. There is no frontage road between the property and the freeway; however there is an existing earth berm that parallels the highway.

Noise levels were modeled at 24 receptor locations in Area 5. Modeled noise levels exceed State daytime standards at 23 of the 24 receptor locations with future (2038) Daytime Build conditions and State nighttime standards at 22 of 24 receptor locations with future (2038) Nighttime Build conditions.

5.2.5.1 Barrier East K

Evaluation Outcome: **Noise Barrier Not Proposed** (See Table A6 and Figure B5)

There is no existing noise barrier between 28th Street and 26th Street; however an earthen berm is currently in place that does provide noise abatement to the receptors. The proposed construction does impact the existing berm; however it is anticipated to be replaced at the approximate same top height elevation.

An approximate 1,440 foot long, 20 foot high noise barrier was modeled along the east side of I-35W between 28th Street and 26th Street. The modeled noise barrier provides a reduction that varies from 0.0 dBA to 9.7 dBA; with a cost-effectiveness of $279,000 per benefitted receptor. The noise barrier does not meet MnDOT's minimum $43,500 cost-effectiveness criteria and is not proposed as part of the I-35W Transit Access Project.

An approximate 1,440 foot long, 15 foot high noise barrier was modeled along the east side of I-35W between 28th Street and 26th Street. The modeled noise barrier provides a reduction that varies from 0.0 dBA to 7.3 dBA; with a cost-effectiveness of $211,400 per benefitted receptor. The noise barrier does not meet MnDOT's minimum $43,500 cost-effectiveness criteria and is not proposed as part of the I-35W Transit Access Project.

An approximate 1,440 foot long, 10 foot high noise barrier was modeled along the east side of I-35W between 28th Street and 26th Street. The modeled noise barrier provides a reduction that varies from 0.0 dBA to 4.1 dBA; with no receptor receiving a reduction of at least 5dBA the wall is considered not acoustically effective and is not proposed as part of the I-35W Transit Access Project.

The analyzed noise barrier does not meet the cost effectiveness criteria due to the low number of benefitted receptors in this noise area. Therefore, barrier East K is not proposed for construction.

5.2.6 Noise Area 6 – East side of I-35W between 26th St and 24th St

(See Figure B6 and Table A7)

Land uses east of I-35W between 26th Street and 24th Street consist of a mix of mainly residential buildings and two commercial retail properties. 5th Avenue South runs continuously, parallel to the freeway between the land uses in Area 6 and the highway; however near the intersection of 26th Street and 5th Avenue there are 4 residential receptors directly abutting the freeway. There is an existing retaining wall between 5th Avenue and I-35W between approximately 25th Street and 24th Street.

Noise levels were modeled at 55 receptor locations in Area 6. Modeled noise levels exceed State daytime standards at 41 of the 55 receptor locations with future (2038) Daytime Build conditions and State nighttime standards at 53 of 55 receptor locations with future (2038) Nighttime Build conditions.

5.2.6.1 Barrier East L1

Evaluation Outcome: **Replace In-Kind** (See Table A7 and Figure B6)

An approximate 1,355 foot long noise barrier is currently in place along the east side of I-35W between 26th Street and 24th Street. The existing barrier has an overall "health" index of 2.25; which is slightly better than average; the existing wood is weathered with minor gaps in the wall. The existing noise barrier is not impacted by the construction of the I-35W Transit Access project with the exception of the small segment that includes the 24th Street Pedestrian Bridge.

The reconstruction of the 24th Street Pedestrian Bridge will alter the existing noise barrier configuration. Currently the 24th Street Pedestrian Bridge cuts through the top of the existing noise barrier by approximately 4 feet; the existing noise barrier is constant through this area at an 890 foot top elevation. The proposed 24th Street Pedestrian Bridge will be constructed lower than the current bridge and was designed with a switchback ramp design to allow users to see across the bridge for safety concerns. Therefore, the reduced noise barrier area was deemed part of the construction project and no additional noise abatement was considered on the structure.

The existing noise barrier ranges in height from approximately 15 to 28 feet with an average height of 23 feet. The modeled noise barrier provides a reduction that varies from 0.0 dBA to 9.2 dBA.

The existing 1,355 foot long noise barrier is proposed to be replaced in-kind as part of the I-35W Transit Access Project.

5.2.7 Noise Area 7 – East side of I-35W between 24th St and Franklin Ave

(See Figure B7 and Table A8)

Land uses east of I-35W between 24th Street and Franklin Avenue consist of a mix of mainly residential buildings and two commercial retail properties. 5th Avenue South runs continuously, parallel to the freeway between the land uses in Area 7 and the highway. There is an existing retaining wall between 5th Avenue and I-35W between approximately 24th Street and Franklin Avenue.

Noise levels were modeled at 76 receptor locations in Area 7. Modeled noise levels exceed State daytime standards at 69 of the 76 receptor locations with future (2038) Daytime Build conditions and State nighttime standards at 74 of 76 receptor locations with future (2038) Nighttime Build conditions.

5.2.7.1 Barrier East L2

Evaluation Outcome: **Replace In-Kind** (See Table A8 and Figure B7)

An approximate 1,177 foot long noise barrier is currently in place along the east side of I-35W between 24th Street and Franklin Avenue. The existing barrier has an overall "health" index of 2.25; which is slightly better than average; the existing wood is weathered with minor gaps in the wall. The existing noise barrier is not impacted by the construction of the I-35W Transit Access project with the exception of the segment that includes the 24th Street Pedestrian Bridge.

The existing noise barrier ranges in height from approximately 20 to 25 feet with an average height of 21 feet. The modeled noise barrier provides a reduction that varies from 0.0 dBA to

8.0 dBA. While the existing barrier reaches the maximum noise barrier height, the north end of the barrier ends approximately 80 feet short of Franklin Avenue.

A 1,197 foot long noise barrier was modeled; the additional length was modeled with a 20 foot high barrier. The modeled noise barrier provides an additional reduction that varies from 0.0 dBA to 3.0 dBA; with no receptor receiving a reduction of at least 5dBA, the noise barrier extension is considered not acoustically effective and is not proposed as part of the I-35W Transit Access Project.

Therefore the existing 1,177 foot long noise barrier is proposed to be replaced in-kind as part of the I-35W Transit Access Project.

5.2.8 Noise Area 8 – East side of I-35W between Franklin Ave and Portland Ave

(See Figure B8 and Table A9)

Land uses east of I-35W between Franklin Avenue and Portland Avenue consist of a mix of mainly residential buildings and four commercial retail properties. 5th Avenue South and the 5th Avenue ramps run continuous, parallel to the freeway between the land uses in Area 8 and the highway. There is an existing retaining wall between 5th Avenue and I-35W between approximately Franklin Avenue and 19th Street.

The Franklin South Quarter Phase IV development, currently under construction, was included in the noise analysis based on the site plans.

Noise levels were modeled at 52 receptor locations in Area 8. Modeled noise levels exceed State daytime standards at 43 of the 52 receptor locations with future (2038) Daytime Build conditions and State nighttime standards at 43 of 52 receptor locations with future (2038) Nighttime Build conditions.

The existing retaining wall along 5th Avenue will not be impacted by construction of the project and the wall is in satisfactory structural condition. However, the retaining wall could not support a new, higher noise barrier due to the age and design of the retaining wall. Therefore the additional cost to reinforce the retaining wall would be incurred solely on the noise barrier construction and is thus included in the cost-effectiveness calculations.

The additional cost to reinforce the existing retaining wall for Barrier East M, at an increased height over the existing noise barrier, is approximately $301,000.

5.2.8.1 Barrier East M

Evaluation Outcome: **Replace In-Kind** (See Table A9 and Figure B8)

An approximate 753 foot long noise barrier is currently in place along the east side of I-35W between Franklin Avenue and Portland Avenue. The existing barrier has an overall “health” index of 2.75; which is slightly better than average. However, the existing wood is weathered with minor gaps in the wall. The existing noise barrier is not impacted as part of the I-35W Transit Access Project.

The existing noise barrier ranges in height from approximately 10 to 12 feet with an average height of 11.5 feet. The modeled noise barrier provides a reduction that varies from 0.0 dBA to 3.2 dBA.

The existing retaining wall along 5th Avenue will not be impacted by construction of the project and the wall is in satisfactory structural condition. However, the retaining wall could not

support a new, higher noise barrier due to the age and design of the retaining wall. Therefore the additional cost to reinforce the retaining wall would be incurred solely on the noise barrier construction and is thus included in the cost-effectiveness calculations.

The additional cost to reinforce the existing retaining wall for Barrier East M, at an increased height over the existing noise barrier, is approximately $301,000.

A 1,087 foot long, 20 foot high noise barrier was modeled along the east side of I-35W between Franklin Avenue and Portland Avenue; there is a gap in the wall for the 5th Avenue ramp to eastbound I-94. The modeled noise barrier provides an additional reduction that varies from 0.0 dBA to 6.8 dBA; with a cost-effectiveness of $143,560 per benefitted receptor. The noise barrier does not meet MnDOT's 7 dBA noise reduction design goal and is not proposed as part of the I-35W Transit Access Project.

The analyzed noise barrier does not reach a reduction of 7 dBA due to 5th Avenue carrying a significant amount of traffic that is not protected from the receptors and gaps in the noise barrier at the Franklin Bridge, the Portland Bridge, and the 5th Avenue Ramp.

Therefore the existing approximate 753 foot long, 10 foot high noise is proposed to be replaced in-kind as part of the I-35W Transit Access Project.

5.2.9 Noise Area 9 – West side of I-35W between 46th St and 38th St

Land uses west of I-35W between 46th Street and 38th Street consist mostly of residential buildings including single family, duplex, triplex and apartment buildings; there are 5 commercial properties scattered along the noise area as well as 10 receptors located along the Dr. Martin Luther King Park frontage. Stevens Avenue runs continuously, parallel to the freeway between the land uses in Area 9 and the highway.

Noise levels were modeled at 73 receptor locations in Area 9. Modeled noise levels exceed State daytime standards at 54 of the 73 receptor locations with future (2038) Daytime Build conditions and State nighttime standards at 59 of 73 receptor locations with future (2038) Nighttime Build conditions.

Noise Area 9 currently has in-place noise barriers that were constructed with the recent UPA and Crosstown Projects. The change in modeled noise levels between the existing (2012) and future (2038) Build conditions has a maximum increase of 1.0 dBA during the daytime and 1.5 dBA during the nighttime.

The existing, approximate 20 foot high, noise barriers will remain in place and no additional noise abatement was considered for this area as part of the I-35W Transit Access Project.

5.2.10 Noise Area 10 – West side of I-35W between 38th St and 36th St

(See Figure B25 and Table A10)

Land uses west of I-35W between 38th Street and 36th Street consist of all residential properties. Stevens Avenue runs continuously, parallel to the freeway between the land uses in Area 10 and the highway.

Noise levels were modeled at 63 receptor locations in Area 10. Modeled noise levels exceed State daytime standards at 45 of the 63 receptor locations with future (2038) Daytime Build conditions and State nighttime standards at 63 of 63 receptor locations with future (2038) Nighttime Build conditions.

5.2.10.1 Barrier West B

Evaluation Outcome: **Proposed Noise Barrier** (See Table A10 and Figure B25)

There is no existing noise barrier between 36th Street and 35th Street along southbound I-35W.

An approximate 800 foot long, 20 foot high noise barrier was modeled along the west side of I-35W between the 38th Street Bridge and the 36th Street entrance ramp; an approximate 567 foot long, 20 foot high noise barrier was modeled along the west side of I-35W between the 36th Street entrance ramp and the 36th Street Bridge.

The total approximate 1,367 foot long, 20 foot high noise barrier provides a reduction that varies from 0.0 dBA to 8.5 dBA. The cost effectiveness of the barrier is $22,033 per benefitted receptor.

The approximate 1,367 foot long, 20 foot high noise barrier meets MnDOT's $43,500 cost-effectiveness criteria and is proposed as part of the I-35W Transit Access Project.

5.2.11 Noise Area 11 – West side of I-35W between 36th St and 35th St

(See Figure B24 and Table A11)

Land uses west of I-35W between 36th Street and 35th Street consist of all residential properties. Stevens Avenue runs continuously, parallel to the freeway between the land uses in Area 11 and the highway.

Noise levels were modeled at 34 receptor locations in Area 11. Modeled noise levels exceed State daytime standards at 26 of the 34 receptor locations with future (2038) Daytime Build conditions and State nighttime standards at 34 of 34 receptor locations with future (2038) Nighttime Build conditions.

5.2.11.1 Barrier West D

Evaluation Outcome: **Noise Barrier Not Proposed** (See Table A11 and Figure B24)

There is no existing noise barrier between 36th Street and 35th Street along southbound I-35W.

An approximate 640 foot long, 20 foot high noise barrier was modeled along the west side of I-35W between the 36th Street and 35th Street bridges. The modeled noise barrier provides a reduction that varies from 0.0 dBA to 5.4 dBA (nighttime). The noise barrier does not meet MnDOT's 7 dBA noise reduction design goal and is not proposed as part of the I-35W Transit Access Project.

The analyzed noise barrier does not reach a reduction of the 7 dBA goal due to a couple different factors. Stevens Avenue will still carry a significant amount of traffic that is not protected from the receptors and the noise barrier would have gaps at the 36th Street and 35th Street Bridges.

5.2.12 Noise Area 12 – West side of I-35W between 35th St and 31st St

(See Figures B22 to B24 and Tables A12 to A14)

Land uses west of I-35W between 35th Street and 31st Street consist of mainly a mix of residential buildings with a few commercial properties mixed in. Stevens Avenue runs continuously, parallel to the freeway between the land uses in Area 12 and the highway.

Noise levels were modeled at 80 receptor locations in Area 12. Modeled noise levels exceed State daytime standards at 77 of the 80 receptor locations with future (2038) Daytime Build conditions and State nighttime standards at 75 of 80 receptor locations with future (2038) Nighttime Build conditions.

5.2.12.1 Barrier West E

Evaluation Outcome: **Replace In-Kind** (See Table A12 and Figure B24)

An approximate 592 foot long noise barrier is currently in place along the west side of I-35W between the 35th Street overpass and the 35th Street exit ramp. The existing barrier has an overall "health" index of 3.0; which is an average condition; the existing wood is weathered with minor gaps in the wall. The existing noise barrier is not impacted by the construction of the I-35W Transit Access project.

The existing noise barrier ranges in height from approximately 20 to 25 feet with an average height of 22 feet. While the existing barrier reaches the maximum height, the south end of the barrier stops short of the 35th Street Bridge and could be extended approximately 114 feet further south. The modeled existing noise barrier provides a reduction that varies from 0.0 dBA to 6.3 dBA.

An approximate 706 foot long noise barrier was modeled; the additional length was modeled with a 20 foot high barrier. The modeled noise barrier provides an additional reduction that varies from 0.0 dBA to 2.7 dBA; with no receptor receiving a reduction of at least 5 dBA, the noise barrier extension is considered not acoustically effective and is not proposed as part of the I-35W Transit Access Project.

The analyzed noise barrier extension does not result in any additional benefitted receptors (5 dBA reduction) due to a couple different factors. Stevens Avenue and the 35th Street exit ramp will still carry a significant amount of traffic that is not protected from the receptors and the noise barrier would have gaps at the 35th Street Bridge and 35th Street exit ramp.

Therefore the existing approximate 592 foot long noise barrier is proposed to be replaced in-kind as part of the I-35W Transit Access Project.

5.2.12.2 Barrier West F

Evaluation Outcome: **Replace In-Kind** (See Table A13 and Figure B23)

An approximate 1,594 foot long noise barrier is currently in place along the west side of I-35W between the 35th Street exit ramp and the 31st Street entrance ramp. The existing barrier has an overall "health" index of 2.88; which is slightly better than average; the existing wood is weathered with minor gaps in the wall. The existing noise barrier is impacted as part of the I-35W Transit Access Project.

The existing noise barrier ranges in height from approximately 20 to 25 feet with an average height of 21.5 feet. The reconstruction of the 31st Street Bridge and 31st Street entrance ramp shorten the limits of where a noise barrier is able to be constructed.

An approximate 1,503 foot long noise barrier was modeled between the 35th Street exit ramp and the 31st Street entrance ramp; the existing noise barrier top of wall elevation was modeled. The reduction in length of the wall does not change the noise levels on the blocks south of 32nd Street. The modeled existing noise barrier provides a reduction that varies from 0.0 dBA to 10.3 dBA.

Therefore the existing noise barrier is proposed to be replaced in-kind at a reduced length, to an approximate 1,503 foot long noise barrier, as part of the I-35W Transit Access Project.

5.2.12.3 Barrier West G

Evaluation Outcome: **Replace In-Kind** (See Table A14 and Figure B22

An approximate 432 foot long noise barrier is currently in place along the west side of I-35W between the 31st Street entrance ramp and the 31st Street Bridge. The existing barrier has an overall "health" index of 3.25; which is slightly worse than average; the existing wood is weathered with minor gaps in the wall. The existing noise barrier is impacted as part of the I-35W Transit Access Project.

The existing noise barrier ranges in height from approximately 18 to 19 feet with an average height of 18 feet. The reconstruction of the 31st Street Bridge and 31st Street entrance ramp push the alignment of the noise barrier closer to Stevens Avenue.

With the shortening of Barrier West F, the existing overlap condition of Barriers West F and G at the 31st Street entrance ramp is reduced. Therefore, the length of noise barrier West G was maximized to recreate the existing overlapping condition. The increased length of Barrier West G was maximized to an approximate 534 foot long noise barrier following the existing top of wall elevation.

An approximate 534 foot long noise barrier was modeled between the 31st Street entrance ramp and the 31st Street Bridge; the existing noise barrier top of wall elevation was modeled. The modeled existing noise barrier provides a reduction that varies from 0.0 dBA to 6.5 dBA. The cost effectiveness of the barrier is $182,900 per benefitted receptor.

An approximate 534 foot long, 20 foot high noise barrier was modeled along the west side of I-35W between the 31st Street entrance ramp and the 31st Street Bridge. The approximate 534 foot long, 20 foot high noise barrier provides an additional reduction that varies from 1.1 dBA to 2.5 dBA; with no receptor receiving a reduction of at least 5dBA, the noise barrier height increase is considered not acoustically effective and is not proposed as part of the I-35W Transit Access Project.

Therefore the existing noise barrier is proposed to be replaced in-kind at an extended length, to an approximate 534 foot long noise barrier, as part of the I-35W Transit Access Project. Though the alignment of the noise barrier will be moved closer to Stevens Avenue, the existing top of wall elevation should be maintained.

5.2.13 Noise Area 13 – West side of I-35W between 31st St and Lake St

(See Figure B22 and Table A15)

Land uses west of I-35W between 31st Street and Lake Street consist of all commercial retail properties. Stevens Avenue runs continuously, parallel to the freeway between the land uses in Area 13 and the highway.

Noise levels were modeled at 11 receptor locations in Area 13; this includes 6 new receptors along the proposed trail between Stevens Avenue and I-35W. Modeled noise levels exceed State daytime standards at 10 of the 11 receptor locations with future (2038) Daytime Build conditions and State nighttime standards at 10 of 11 receptor locations with future (2038) Nighttime Build conditions.

A portion of this section of freeway will be reconstructed on a new retaining wall (approximately between 32nd Street and the Midtown Greenway) that will at a minimum include a 32" high crash barrier along the outside edge of the wall. The new I-35W bridges over 31st Street, Lake Street and the Midtown Greenway will also include a 32" crash barrier.

5.2.13.1 Barrier West H

Evaluation Outcome: **Noise Barrier Not Proposed** (See Table A15 and Figure B22)

There is no existing noise barrier between 31st Street and Lake Street along southbound I-35W.

An approximate 601 foot long noise barrier was modeled along the west side of I-35W between the Lake Street Bridge and the 31st Street Bridge, an additional 315 foot long, 10 foot high (TL-4 system) noise barrier was modeled on the Midtown Greenway Bridge structure. The total approximate noise barrier length is 916 feet.

An approximate 916 foot long, 20 foot high noise barrier provides a reduction that varies from 0.0 dBA to 6.1 dBA (nighttime). The noise barrier does not meet MnDOT's 7 dBA noise reduction design goal and is not proposed as part of the I-35W Transit Access Project.

The analyzed noise barrier does not reach a reduction of 7 dBA due to a couple different factors. The I-35W mainline is raised above the receptors along Stevens Avenue, the mainline is up to 25 feet higher than the receptors. Both the retaining walls and bridge structures along I-35W will include a 32" crash barrier. Stevens Avenue will still carry a significant amount of traffic that is not protected from the receptors.

5.2.14 Noise Area 14 – West side of I-35W between Lake St and 28th St

(See Figures B20 and B21 and Tables A16 and A17)

Land uses west of I-35W between Lake Street and 28th Street consist of a mix of residential buildings, commercial retail properties, and includes the Midtown Greenway. Stevens Avenue runs continuously, parallel to the freeway between the highway, south of the Midtown Greenway. Between the Midtown Greenway and 28th Street, there are land uses between Stevens Avenue and the highway.

Noise levels were modeled at 41 receptor locations in Area 14. 19 receptors are located between Lake Street and the Midtown Greenway including 7 new receptors along the proposed trial between Stevens Avenue and I-35W. 22 receptors are located between the Midtown Greenway and 28th Street. Modeled noise levels exceed State daytime standards at 25 of the 41 receptor locations with future (2038) Daytime Build conditions and State nighttime standards at 24 of 41 receptor locations with future (2038) Nighttime Build conditions.

A portion of this section of freeway will be supported by a new retaining wall (approximately between Lake Street and the Midtown Greenway) that will at a minimum include a 32" high crash barrier along the outside edge of the wall. The new I-35W bridges over Lake Street and the Midtown Greenway will also include a 32" crash barrier. The new southbound I-35W exit ramp bridge over the Midtown Greenway will also include a 32" crash barrier.

5.2.14.1 Barrier West I

Evaluation Outcome: **Noise Barrier Not Proposed** (See Table A16 and Figure B21)

There is no existing noise barrier in this section of the noise area.

An approximate 436 foot long, 20 foot high noise barrier was modeled along the west side of I-35W between the Lake Street Bridge and the Greenway. The approximate 436 foot long, 20 foot high noise barrier provides a reduction that varies from 0.0 dBA to 5.3 dBA. The noise barrier does not meet MnDOT's 7 dBA noise reduction design goal and is not proposed as part of the I-35W Transit Access Project.

The analyzed noise barrier does not reach a reduction of 7 dBA due to a couple different factors. The I-35W mainline is raised above the receptors along Stevens Avenue, the mainline is up to 25 feet higher than the receptors. Both the retaining walls and bridge structures along I-35W will include a 32" crash. Stevens Avenue will still carry a significant amount of traffic that is not protected from the receptors.

5.2.14.2 Barrier West J

Evaluation Outcome: **Replace In-Kind** (See Table A17 and Figure B20)

An approximate 528 foot long noise barrier is currently in place along the west side of I-35W between the 28th Street Bridge and the Midtown Greenway. The existing barrier has an overall "health" index of 4.0; which is poor; the existing wood is weathered with many gaps in the wall. This wall is in the top 20 worst condition list. The existing noise barrier is impacted as part of the I-35W Transit Access Project.

The existing noise barrier ranges in height from approximately 17 to 27 feet with an average height of 21 feet. The construction of Transit Access Project and the new southbound Lake Street exit ramp push the noise barrier alignment closer to the existing receivers in this noise area; one existing receptor is removed due to right-of-way needs.

An approximate 625 foot long barrier, following the existing top of wall elevation was modeled along the west side of I-35W between the 28th Street Bridge and the Midtown Greenway Bridge; the noise barrier would follow on the outside of the new southbound Lake Street exit ramp. The approximate 625 foot long noise barrier provides a reduction that varies from 0.0 dBA to 16.4 dBA.

An approximate 625 foot long, 20 foot high noise barrier was modeled along the west side of I-35W between the 28th Street Bridge and the Midtown Greenway Bridge; the noise barrier would follow on the outside of the new southbound Lake Street exit ramp. Due to sight line limitations of the merge area of the ramp and Stevens Avenue, the wall was not extended onto the bridge structure. The approximate 625 foot long, 20 foot high noise barrier provides a reduction that varies from 0.0 dBA to 1.5 dBA; with no receptor receiving a reduction of at least 5 dBA, the 20 foot high noise barrier is considered not acoustically effective and is not proposed as part of the I-35W Transit Access Project.

Therefore the existing approximate 625 foot long noise barrier is proposed to be replaced in-kind, following the existing top of wall elevation, as part of the I-35W Transit Access Project.

5.2.15 Noise Area 15 – West side of I-35W between 28th St and 26th St

(See Figures B19 and B20 and Table A18)

Land uses west of I-35W between 28th Street and 26th Street consist of all residential properties. 3rd Avenue and Clinton Avenue run parallel to the freeway between the land uses in Area 15 and the highway.

Noise levels were modeled at 77 receptor locations in Area 15. Modeled noise levels exceed State daytime standards at 76 of the 77 receptor locations with future (2038) Daytime Build

conditions and State nighttime standards at 77 of 77 receptor locations with future (2038) Nighttime Build conditions.

5.2.15.1 Barrier West K

Evaluation Outcome: **Replace In-Kind** (See Tables B19-B20 and Figure A18)

An approximate 1,456 foot long noise barrier is currently in place along the east side of I-35W between the 28th Street Bridge and the 26th Street Bridge. The existing barrier has an overall "health" index of 3.0; which is an average condition; the existing wood is weathered with many gaps in the wall. The existing noise barrier is impacted during construction of the I-35W Transit Access Project; however the existing alignment would remain after construction is completed.

The existing noise barrier ranges in height from approximately 15 to 25 feet with an average height of 17 feet. The modeled existing noise barrier provides a reduction that varies from 0.0 dBA to 9.2 dBA.

Due to reconstruction of the freeway mainline, a new retaining wall will be constructed along the west side of I-35W near the existing noise barrier. It is proposed that the existing noise barrier be reconstructed along the new retaining wall, keeping the existing top of wall elevation, to remove some of the existing kinks in the noise barrier.

Therefore the existing approximate 1,456 foot long noise barrier is proposed to be replaced in-kind as part of the I-35W Transit Access Project on the proposed alignment. Though the alignment of the noise barrier will be moved closer to the receivers, the existing top of wall elevation will be maintained.

5.2.16 Noise Area 16 – West side of I-35W between 26th St and 24th St

(See Figure B18 and Table A19)

Land uses west of I-35W between 26th Street and 24th Street consist of a mix of mainly residential buildings and five commercial retail properties. 4th Avenue South runs parallel to the freeway between the land uses in Area 16 and the highway from 24th Street to 25th Street; between 25th Street and 26th Street there are receptors between Clinton Avenue and the highway.

Noise levels were modeled at 57 receptor locations in Area 16. Modeled noise levels exceed State daytime standards at 43 of the 57 receptor locations with future (2038) Daytime Build conditions and State nighttime standards at 52 of 57 receptor locations with future (2038) Nighttime Build conditions.

The reconstruction of the 24th Street Pedestrian Bridge will alter the existing noise barrier configuration. Currently the 24th Street Pedestrian Bridge is above the top of the existing noise barrier, which is only a 10 foot high barrier at that location. The existing noise barrier then tapers up to a full 20 foot high (up to 29 foot high) noise barrier south of the pedestrian bridge.

5.2.16.1 Barrier West L1

Evaluation Outcome: **Replace In-Kind** (See Table A19 and Figure B18)

An approximate 1,296 foot long noise barrier is currently in place along the west side of I-35W between 26th Street and 24th Street. The existing barrier has an overall "health" index of 3.13; which is slightly worse than average; the existing wood is weathered with minor gaps in

the wall. The existing noise barrier ranges in height from approximately 15 to 29 feet with an average height of 22 feet.

The reconstruction of the 24th Street Pedestrian Bridge to the proposed design would shorten the existing wall to an approximate 1,261 foot long noise barrier. However, the existing top of wall elevation was modeled. The modeled noise barrier provides a reduction that varies from 0.0 dBA to 12.4 dBA.

The existing 1,261 foot long noise barrier is proposed to be replaced in-kind as part of the I-35W Transit Access Project.

5.2.17 Noise Area 17 – West side of I-35W between 24th St and Franklin Ave

(See Figure B17 and Table A20)

Land uses west of I-35W between 24th Street and Franklin Avenue consist of a mix of mainly residential buildings and eleven commercial retail properties. 4th Avenue South runs continuously, parallel to the freeway between the land uses in Area 17 and the highway. There is an existing retaining wall between 4th Avenue and I-35W between approximately 24th Street and Franklin Avenue.

Noise levels were modeled at 37 receptor locations in Area 17. Modeled noise levels exceed State daytime standards at 24 of the 37 receptor locations with future (2038) Daytime Build conditions and State nighttime standards at 29 of 37 receptor locations with future (2038) Nighttime Build conditions.

5.2.17.1 Barrier West L2

Evaluation Outcome: **Replace In-Kind** (See Table A20 and Figure B17)

An approximate 744 foot long noise barrier is currently in place along the west side of I-35W between 24th Street and Franklin Avenue. The existing noise barrier is approximately 10 foot high and does not extend between 22nd Street and Franklin Avenue; the north end of the barrier ends approximately 557 feet short of Franklin Avenue. The existing barrier has an overall “health” index of 3.13; which is slightly worse than average; the existing wood is weathered with minor gaps in the wall. The modeled noise barrier provides a reduction that varies from 0.0 dBA to 4.7 dBA.

Between 24th Street and 22nd Street, where the existing noise barrier exists, there are 22 receivers of which 16 are residential. Between 22nd Street and Franklin Avenue, where no noise barrier exists, there are 15 receivers of which 10 are residential; however 3 of the 4 receivers on the frontage of 4th Avenue South are commercial. For that reason, the Barrier West L2 was divided into two separate noise barriers; West L2-1 (24th Street to 22nd Street) and West L2-2 (22nd Street to Franklin Avenue).

The existing retaining wall along 4th Avenue will not be impacted by construction of the project and the wall is in satisfactory structural condition. However, the retaining wall could not support a new noise barrier due to the age and design of the retaining wall. Therefore the additional cost to reinforce the retaining wall would be incurred solely on the noise barrier construction and is thus included in the cost-effectiveness calculations.

The additional cost to reinforce the existing retaining wall for Barrier West L2-1 is approximately $314,730 and the cost to reinforce the existing retaining wall for Barrier West L2-2 is approximately $330,870.

Barrier West L2-1

An approximate 744 foot long, 20 foot high noise barrier was modeled along the west side of I-35W between 24th Street and just north of 22nd Street. The noise barrier provides an additional reduction that varies from 0.0 dBA to 5.6 dBA. The noise barrier does not meet MnDOT's 7 dBA noise reduction design goal and is not proposed as part of the I-35W Transit Access Project.

Barrier West L2-2

An approximate 557 foot long, 20 foot high noise barrier was modeled along the west side of I-35W between 22nd Street and Franklin Avenue. The noise barrier provides a reduction that varies from 0.0 dBA to 8.0 dBA. The cost effectiveness of the barrier is $108,934 per benefitted receptor. The noise barrier does not meet MnDOT's minimum $43,500 cost-effectiveness criteria and is not proposed.

An approximate 557 foot long, 15 foot high noise barrier was modeled along the west side of I-35W between 22nd Street and Franklin Avenue. The noise barrier provides a reduction that varies from 0.0 dBA to 6.7 dBA. The noise barrier does not meet MnDOT's 7 dBA noise reduction design goal and is not proposed as part of the I-35W Transit Access Project.

Barrier West L2

Due to the evaluated noise barriers not meeting the feasibility and reasonableness criteria, neither Barrier West L2-1 nor West L2-2 are proposed.

Therefore, the existing 744 foot long noise barrier is proposed to be replaced in-kind as part of the I-35W Transit Access Project.

5.2.18 Noise Area 18 – West side of I-35W between Franklin Ave and 3rd Ave

(See Figure B16 and Table A21)

Land uses west of I-35W between Franklin Avenue and 3rd Avenue consist of a mix of mainly residential buildings and seven commercial retail properties. 4th Avenue South runs continuously, parallel to the freeway between the land uses in Area 18 and the I-35W; between 3rd Avenue and 18th Street the receivers are adjacent to the highway. There is an existing retaining wall between 4th Avenue and I-35W between approximately Franklin Avenue and 18th Street.

Noise levels were modeled at 76 receptor locations in Area 18. Modeled noise levels exceed State daytime standards at 74 of the 76 receptor locations with future (2038) Daytime Build conditions and State nighttime standards at 73 of 76 receptor locations with future (2038) Nighttime Build conditions.

The existing retaining wall along 4th Avenue will be partially impacted by construction of the project and the remaining wall is in satisfactory structural condition. However, the retaining wall could not support a new, higher noise barrier due to the age and design of the retaining wall. Therefore the additional cost to reinforce the retaining wall would be incurred solely on the noise barrier construction and is thus included in the cost-effectiveness calculations.

The retaining wall between Franklin Avenue and 19th Street will be reconstructed as part of the project. However, the remaining approximate 496 feet between 19th Street and 18th Street will have an additional cost to reinforce the existing retaining wall for Barrier West M is approximately $266,600.

5.2.18.1 Barrier West M

Evaluation Outcome: **Replace In-Kind** (See Table A21 and Figure B16)

An approximate 1,564 foot long noise barrier is currently in place along the west side of I-35W between Franklin Avenue and 3rd Avenue. The existing barrier has an overall "health" index between 2.13 and 2.63; which is better than average. However, the existing wood is weathered with minor gaps in the wall. The existing noise barrier is impacted as part of the I-35W Transit Access Project.

The existing noise barrier ranges in height from approximately 10 to 21 feet with an average height of 12 feet. From 3rd Avenue, the first approximate 275 feet are at or above 20 foot high, the next approximate 406 feet range between 15 and 18 foot high, and the last approximate 883 feet range between 8 and 12 foot high. The modeled existing noise barrier provides a reduction that varies from 0.0 dBA to 8.3 dBA.

The existing south end of the noise barrier stops short of the Franklin Avenue Bridge and could be extended approximately 87 feet further south. The height of the existing barrier could also be increased.

An approximate 1,651 foot long, 20 foot high noise barrier, following the existing top of wall elevation when higher than 20 foot, was modeled along the west side of I-35W between the Franklin Avenue Bridge and the 3rd Avenue Bridge. The noise barrier provides an additional reduction that varies from 0.0 dBA to 6.1 dBA. The noise barrier does not meet MnDOT's 7 dBA noise reduction design goal and is not proposed as part of the I-35W Transit Access Project.

Therefore the existing 1,564 foot long noise barrier is proposed to be replaced in-kind as part of the I-35W Transit Access Project.

5.2.19 Noise Area 19 – North side of I-94 between Nicollet Ave and 1st Ave

(See Figure B14 and Table A22)

Land uses north of I-94 between Nicollet Avenue and 1st Avenue consist of both residential and commercial properties. There are land uses that are immediately adjacent to the highway without street separation.

Noise levels were modeled at 6 receptor locations in Area 19. Modeled noise levels exceed State daytime standards at 4 of the 6 receptor locations with future (2038) Daytime Build conditions and State nighttime standards at 4 of 6 receptor locations with future (2038) Nighttime Build conditions.

5.2.19.1 Barrier North D

Evaluation Outcome: **Proposed Noise Barrier** (See Table A22 and Figure B14).

There is no existing noise barrier in this noise area.

An approximate 302 foot long, 20 foot high noise barrier was modeled along the north side of I-94 between the Nicollet Avenue Bridge and the 1st Avenue Bridge. The noise barrier provides a reduction that varies from 0.0 dBA to 14.4 dBA. The cost effectiveness of the barrier is $3,316 per benefitted receptor.

There is an existing short retaining wall between the Nicollet Avenue Bridge and 1st Avenue Bridge. The retaining wall is well within MnDOT right-of-way and a noise barrier can feasibly

be installed far enough behind the retaining wall, on MnDOT property, with no impact to the retaining wall.

The approximate 302 foot long, 20 foot high noise barrier meets MnDOT's $43,500 cost-effectiveness criteria and is proposed as part of the I-35W Transit Access Project.

5.2.20 Noise Area 20 – North side of I-94 between 1st Ave and 3rd Ave

(See Figure B14 and Table A23)

Land uses north of I-94 between 1st Avenue and 3rd Avenue consist of only two commercial properties; a fire station and the Minneapolis Convention Center. 16th Street East runs continuously, parallel to the freeway between the land uses in Area 20 and the highway.

Noise levels were modeled at 2 receptor locations in Area 20. Modeled noise levels exceed State daytime standards at 1 of the 2 receptor locations with future (2038) Daytime Build conditions and State nighttime standards at 1 of 2 receptor locations with future (2038) Nighttime Build conditions.

5.2.20.1 Barrier North E

Evaluation Outcome: **Noise Barrier Not Proposed** (See Table A23 and Figure B14)

There is no existing noise barrier in this noise area.

An approximate 1,022 foot long, 20 foot high noise barrier was modeled along the north side of I-94 between the 1st Avenue Bridge and the 3rd Avenue Bridge. The noise barrier provides a reduction that varies from 2.7 dBA to 9.8 dBA. The cost effectiveness of the barrier is $390,800 per benefitted receptor. The noise barrier does not meet MnDOT's minimum $43,500 cost-effectiveness criteria and is not proposed.

An approximate 1,022 foot long, 15 foot high noise barrier was modeled along the north side of I-94 between the 1st Avenue Bridge and the 3rd Avenue Bridge. The noise barrier provides a reduction that varies from 2.5 dBA to 8.0 dBA. The cost effectiveness of the barrier is $297,400 per benefitted receptor. The noise barrier does not meet MnDOT's minimum $43,500 cost-effectiveness criteria and is not proposed.

An approximate 1,022 foot long, 10 foot high noise barrier was modeled along the north side of I-94 between the 1st Avenue Bridge and the 3rd Avenue Bridge. The noise barrier provides a reduction that varies from 2.1 dBA to 5.8 dBA. The noise barrier does not meet MnDOT's 7 dBA noise reduction design goal and is not proposed.

The analyzed noise barrier does meet the cost effectiveness criteria due to the low number of benefitted receptors in this noise area.

5.2.21 Noise Area 21 – North side of I-94 between TH 65 and Portland Ave

(See Figure B13 and Table A24)

Land uses north of I-94 between TH 65 and Portland Avenue consist of a mix of residential and commercial properties; Franklin Steele Park is adjacent to the highway.

Noise levels were modeled at 29 receptor locations in Area 21. Modeled noise levels exceed State daytime standards at 13 of the 29 receptor locations with future (2038) Daytime Build conditions and State nighttime standards at 27 of 29 receptor locations with future (2038) Nighttime Build conditions.

The existing retaining wall along the Franklin Steele Park will not be impacted by construction of the project and the wall is in satisfactory structural condition. However, the retaining wall could not support a new noise barrier due to the age and design of the retaining wall. Therefore the additional cost to reinforce the retaining wall would be incurred solely on the noise barrier construction and is thus included in the cost-effectiveness calculations.

The additional cost to reinforce the existing retaining wall for Barrier North G is approximately $317,400.

5.2.21.1 Barrier North G

Evaluation Outcome: **Noise Barrier Not Proposed** (See Table A24 and Figure B13)

There is no existing noise barrier in this noise area.

An approximate 865 foot long, 20 foot high noise barrier was modeled along the north side of I-94 between the Portland Avenue Bridge and the 15th Street Bridge. The noise barrier provides a reduction that varies from 0.0 dBA to 11.9 dBA. The cost effectiveness of the barrier is $58,673 per benefitted receptor. The noise barrier does not meet MnDOT's minimum $43,500 cost-effectiveness criteria and is not proposed.

An approximate 865 foot long, 15 foot high noise barrier was modeled along the north side of I-94 between the Portland Avenue Bridge and the 15th Street Bridge. The noise barrier provides a reduction that varies from 0.0 dBA to 10.4 dBA. The cost effectiveness of the barrier is $113,380 per benefitted receptor. The noise barrier does not meet MnDOT's minimum $43,500 cost-effectiveness criteria and is not proposed.

An approximate 865 foot long, 10 foot high noise barrier was modeled along the north side of I-94 between the Portland Avenue Bridge and the 15th Street Bridge. The noise barrier provides a reduction that varies from 0.0 dBA to 7.1 dBA. The cost effectiveness of the barrier is $162,800 per benefitted receptor. The noise barrier does not meet MnDOT's minimum $43,500 cost-effectiveness criteria and is not proposed.

The analyzed noise barrier does meet the cost effectiveness criteria due to the cost of reinforcing the existing retaining wall to support a new noise barrier.

5.2.22 Noise Area 22 – North side of I-94 between Portland Ave and Park Ave

(See Figure B12 and Table A25)

Land uses north of I-94 between Portland Avenue and Park Avenue consist of a mix of residential and commercial properties. 17th Street East runs continuously, parallel to the freeway between the land uses in Area 22 and the highway.

Noise levels were modeled at 17 receptor locations in Area 22. Modeled noise levels exceed State daytime standards at 10 of the 17 receptor locations with future (2038) Daytime Build conditions and State nighttime standards at 15 of 17 receptor locations with future (2038) Nighttime Build conditions.

The existing retaining wall along 17th Street will not be impacted by construction of the project and the wall is in satisfactory structural condition. However, the retaining wall could not support a new noise barrier due to the age and design of the retaining wall. Therefore the additional cost to reinforce the retaining wall would be incurred solely on the noise barrier construction and is thus included in the cost-effectiveness calculations.

The additional cost to reinforce the existing retaining wall for Barrier North H is approximately $541,500.

5.2.22.1 Barrier North H

Evaluation Outcome: **Noise Barrier Not Proposed** (See Table A25 and Figure B12)

There is no existing noise barrier in this noise area.

An approximate 590 foot long, 20 foot high noise barrier was modeled along the north side of I-94 between the Portland Avenue Bridge and the Park Avenue Bridge. The noise barrier provides a reduction that varies from 0.0 dBA to 7.3 dBA. The cost effectiveness of the barrier is $84,389 per benefitted receptor. The noise barrier does not meet MnDOT's minimum $43,500 cost-effectiveness criteria and is not proposed.

An approximate 590 foot long, 15 foot high noise barrier was modeled along the north side of I-94 between the Portland Avenue Bridge and the Park Avenue Bridge. The noise barrier provides a reduction that varies from 0.0 dBA to 6.4 dBA. The noise barrier does not meet MnDOT's 7 dBA noise reduction design goal and is not proposed.

The analyzed noise barrier does meet the cost effectiveness criteria due to the cost of replacing the existing retaining wall to support a new noise barrier.

5.2.23 Noise Area 23 – North side of I-94 between Park Ave and Chicago Ave

(See Figure B12 and Table A26)

Land uses north of I-94 between Park Avenue and Chicago Avenue consist of a mix of residential and commercial properties. 17th Street East runs continuously, parallel to the freeway between the land uses in Area 23 and the highway.

Noise levels were modeled at 22 receptor locations in Area 23. Modeled noise levels exceed State daytime standards at 15 of the 22 receptor locations with future (2038) Daytime Build conditions and State nighttime standards at 20 of 22 receptor locations with future (2038) Nighttime Build conditions.

The existing retaining wall along 17th Street will not be impacted by construction of the project and the wall is in satisfactory structural condition. However, the retaining wall could not support a new noise barrier due to the age and design of the retaining wall. Therefore the additional cost to reinforce the retaining wall would be incurred solely on the noise barrier construction and is thus included in the cost-effectiveness calculations.

The additional cost to reinforce the existing retaining wall for Barrier North I is approximately $568,000.

5.2.23.1 Barrier North I

Evaluation Outcome: **Noise Barrier Not Proposed** (See Table A26 and Figure B12)

There is no existing noise barrier in this noise area.

An approximate 590 foot long, 20 foot high noise barrier was modeled along the north side of I-94 between the Park Avenue Bridge and the Chicago Avenue Bridge. The noise barrier provides a reduction that varies from 0.0 dBA to 8.9 dBA. The cost effectiveness of the barrier is $98,250 per benefitted receptor. The noise barrier does not meet MnDOT's minimum $43,500 cost-effectiveness criteria and is not proposed.

An approximate 590 foot long, 15 foot high noise barrier was modeled along the north side of I-94 between the Park Avenue Bridge and the Chicago Avenue Bridge. The noise barrier provides a reduction that varies from 0.0 dBA to 7.7 dBA. The cost effectiveness of the barrier is $91,875 per benefitted receptor. The noise barrier does not meet MnDOT's minimum $43,500 cost-effectiveness criteria and is not proposed.

An approximate 590 foot long, 10 foot high noise barrier was modeled along the north side of I-94 between the Park Avenue Bridge and the Chicago Avenue Bridge. The noise barrier provides a reduction that varies from 0.0 dBA to 5.2 dBA. The noise barrier does not meet MnDOT's 7 dBA noise reduction design goal and is not proposed.

The analyzed noise barrier does not meet the cost effectiveness criteria due to the cost of reinforcing the existing retaining wall to support a new noise barrier.

5.2.24 Noise Area 24 – North side of I-94 between Chicago Ave and 11th Ave

(See Figure B11 and Table A27)

Land uses north of I-94 between Chicago Avenue and 11th Avenue consist of a mix of residential and commercial properties. 17th Street East runs continuously, parallel to the freeway between the land uses in Area 24 and the highway.

Noise levels were modeled at 35 receptor locations in Area 24. Modeled noise levels exceed State daytime standards at 24 of the 35 receptor locations with future (2038) Daytime Build conditions and State nighttime standards at 32 of 35 receptor locations with future (2038) Nighttime Build conditions.

There is a short existing retaining wall along 17th Street that will not be impacted by construction of the project and the wall is in satisfactory structural condition. However, the retaining wall could not support a new noise barrier due to the age and design of the retaining wall. Therefore the additional cost to reinforce the retaining wall would be incurred solely on the noise barrier construction and is thus included in the cost-effectiveness calculations.

The additional cost to reinforce the existing retaining wall for Barrier North J is approximately $51,600.

5.2.24.1 Barrier North J

Evaluation Outcome: **Proposed Noise Barrier** (See Table A27 and Figure B11)

There is no existing noise barrier in this noise area.

An approximate 1,065 foot long, 20 foot high noise barrier was modeled along the north side of I-94 between the Chicago Avenue Bridge and the 11th Avenue Bridge. The noise barrier provides a reduction that varies from 0.0 dBA to 10.6 dBA. The cost effectiveness of the barrier is $38,300 per benefitted receptor.

The approximate 1,065 foot long, 20 foot high noise barrier meets MnDOT's $43,500 cost-effectiveness criteria and is proposed as part of the I-35W Transit Access Project.

5.2.25 Noise Area 25 – South side of I-94 between Nicollet Ave and 1st Ave

(See Figure B15 and Table A28)

Land uses south of I-94 between Nicollet Avenue and 1st Avenue consist of both residential and commercial properties. There are no land uses that are adjacent to the highway.

Noise levels were modeled at 3 receptor locations in Area 25. Modeled noise levels exceed State daytime standards at 0 of the 3 receptor locations with future (2038) Daytime Build conditions and State nighttime standards at 1 of 3 receptor locations with future (2038) Nighttime Build conditions.

5.2.25.1 Barrier South D

Evaluation Outcome: **Noise Barrier Not Proposed** (See Table A28 and Figure B15)

There is no existing noise barrier in this noise area.

An approximate 266 foot long, 20 foot high noise barrier was modeled along the south side of I-94 between the Nicollet Avenue Bridge and the 1st Avenue Bridge. The noise barrier provides a reduction that varies from 0.0 dBA to 1.1 dBA. The noise barrier does not meet MnDOT's 7 dBA noise reduction design goal and is not proposed.

The analyzed noise barrier does not reach a reduction of 5 dBA due to the distance between the freeway and existing receptors.

5.2.26 Noise Area 26 – South side of I-94 between 1st Ave and 3rd Ave

(See Figure B15 and Table A29)

Land uses south of I-94 between 1st Avenue and 3rd Avenue consist of mainly residential properties. 17th Street East runs continuously, parallel to the freeway between the land uses in Area 26 and the highway (See Figure B15 and Table A29).

Noise levels were modeled at 43 receptor locations in Area 26. Modeled noise levels exceed State daytime standards at 29 of the 43 receptor locations with future (2038) Daytime Build conditions and State nighttime standards at 43 of 43 receptor locations with future (2038) Nighttime Build conditions.

The existing retaining wall along 17th Street will not be impacted by construction of the project and the wall is in satisfactory structural condition. However, the retaining wall could not support a new noise barrier due to the age and design of the retaining wall. Therefore the additional cost to reinforce the retaining wall would be incurred solely on the noise barrier construction and is thus included in the cost-effectiveness calculations.

The additional cost to reinforce the existing retaining wall for Barrier South E is approximately $250,800.

5.2.26.1 Barrier South E

Evaluation Outcome: **Proposed Noise Barrier** (See Table A29 and Figure B15)

There is no existing noise barrier in this noise area.

An approximate 903 foot long, 20 foot high noise barrier was modeled along the south side of I-94 between the 1st Avenue Bridge and the 3rd Avenue Bridge. The noise barrier provides a reduction that varies from 0.0 dBA to 9.3 dBA. The cost effectiveness of the barrier is $49,500 per benefitted receptor. The noise barrier does not meet MnDOT's minimum $43,500 cost-effectiveness criteria and is not proposed.

An approximate 903 foot long, 15 foot high noise barrier was modeled along the south side of I-94 between the 1st Avenue Bridge and the 3rd Avenue Bridge. The noise barrier provides a reduction that varies from 0.0 dBA to 8.2 dBA. The cost effectiveness of the barrier is $42,642 per benefitted receptor.

Special consideration is warranted for this noise barrier as it fronts the historic Stevens Square District. The Minnesota State Historic Preservation Office (SHPO) and MnDOT Cultural Resource Unit (CRU) should have additional input regarding the proposal of any noise barrier in front of the historic district.

The approximate 903 foot long, 15 foot high noise barrier meets MnDOT's $43,500 cost-effectiveness criteria and is proposed as part of the I-35W Transit Access Project.

5.2.27 Noise Area 27 – South side of I-94 between Portland Ave and Park Ave

(See Figure B9 and Table A30)

Land uses south of I-94 between Portland Avenue and Park Avenue consist of a mix of residential and commercial properties. 18th Street East runs continuously, parallel to the freeway between the land uses in Area 27 and the highway.

Noise levels were modeled at 7 receptor locations in Area 27. Modeled noise levels exceed State daytime standards at 7 of the 7 receptor locations with future (2038) Daytime Build conditions and State nighttime standards at 6 of 7 receptor locations with future (2038) Nighttime Build conditions.

The existing retaining wall along 18th Street will not be impacted by construction of the project and the wall is in satisfactory structural condition. However, the retaining wall could not support a new noise barrier due to the age and design of the retaining wall. Therefore the additional cost to reinforce the retaining wall would be incurred solely on the noise barrier construction and is thus included in the cost-effectiveness calculations.

The additional cost to reinforce the existing retaining wall for Barrier South H is approximately $342,300.

5.2.27.1 Barrier South H

Evaluation Outcome: **Noise Barrier Not Proposed** (See Table A30 and Figure B9)

There is no existing noise barrier in this noise area.

An approximate 587 foot long, 20 foot high noise barrier was modeled along the south side of I-94 between the Portland Avenue Bridge and the Park Avenue Bridge. The noise barrier provides a reduction that varies from 0.0 dBA to 7.7 dBA (nighttime). The cost effectiveness of the barrier is $50,827 per benefitted receptor. The noise barrier does not meet MnDOT's minimum $43,500 cost-effectiveness criteria and is not proposed.

A calculation of lowing the height of the modeled barrier, between 20 foot high and 15 foot high, was conducted; a 20 foot high barrier produced 11 benefitted receptors. Holding the number of benefitted receptors, the barrier height would have to be lowered below 15 foot high in order to produce a cost effective barrier. This is due to the high cost of reinforcing the existing retaining wall.

An approximate 587 foot long, 15 foot high noise barrier was modeled along the south side of I-94 between the Portland Avenue Bridge and the Park Avenue Bridge. The noise barrier provides a reduction that varies from 0.0 dBA to 6.6 dBA (nighttime). The noise barrier does not meet MnDOT's 7 dBA noise reduction design goal and is not proposed.

The analyzed noise barrier does meet the cost effectiveness criteria due to the cost of reinforcing the existing retaining wall to support a new noise barrier.

5.2.28 Noise Area 28 – South side of I-94 between Park Ave and Chicago Ave

(See Figure B9 and Table A31)

Land uses south of I-94 between Park Avenue and Chicago Avenue consist of a mix of residential and commercial properties. 18th Street East runs continuously, parallel to the freeway between the land uses in Area 28 and the highway.

Noise levels were modeled at 15 receptor locations in Area 28. Modeled noise levels exceed State daytime standards at 10 of the 15 receptor locations with future (2038) Daytime Build conditions and State nighttime standards at 15 of 15 receptor locations with future (2038) Nighttime Build conditions.

The existing retaining wall along 18th Street will not be impacted by construction of the project and the wall is in satisfactory structural condition. However, the retaining wall could not support a new noise barrier due to the age and design of the retaining wall. Therefore the additional cost to reinforce the retaining wall would be incurred solely on the noise barrier construction and is thus included in the cost-effectiveness calculations.

The additional cost to reinforce the existing retaining wall for Barrier South I is approximately $305,300.

5.2.28.1 Barrier South I

Evaluation Outcome: **Noise Barrier Not Proposed** (See Table A31 and Figure B9)

There is no existing noise barrier in this noise area.

An approximate 582 foot long, 20 foot high noise barrier was modeled along the south side of I-94 between the Park Avenue Bridge and the Chicago Avenue Bridge. The noise barrier provides a reduction that varies from 0.0 dBA to 8.1 dBA (nighttime). The cost effectiveness of the barrier is $104,020 per benefitted receptor. The noise barrier does not meet MnDOT's minimum $43,500 cost-effectiveness criteria and is not proposed.

An approximate 582 foot long, 15 foot high noise barrier was modeled along the south side of I-94 between the Park Avenue Bridge and the Chicago Avenue Bridge. The noise barrier provides a reduction that varies from 0.0 dBA to 7.2 dBA (nighttime). The cost effectiveness of the barrier is $93,980 per benefitted receptor. The noise barrier does not meet MnDOT's minimum $43,500 cost-effectiveness criteria and is not proposed.

An approximate 582 foot long, 10 foot high noise barrier was modeled along the south side of I-94 between the Park Avenue Bridge and the Chicago Avenue Bridge. The noise barrier provides a reduction that varies from 0.0 dBA to 5.1 dBA. The noise barrier does not meet MnDOT's 7 dBA noise reduction design goal and is not proposed.

The analyzed noise barrier does meet the cost effectiveness criteria due to the cost of reinforcing the existing retaining wall to support a new noise barrier.

5.2.29 Noise Area 29 – South side of I-94 between Chicago Ave and 11th Ave

(See Figure B10 and Table A31)

Land uses south of I-94 between Chicago Avenue and 11th Avenue consist of a mix of residential and commercial properties. 18th Street East runs continuously, parallel to the freeway between the land uses in Area 29 and the highway.

Noise levels were modeled at 44 receptor locations in Area 29. Modeled noise levels exceed State daytime standards at 23 of the 44 receptor locations with future (2038) Daytime Build conditions and State nighttime standards at 40 of 44 receptor locations with future (2038) Nighttime Build conditions.

5.2.29.1 Barrier South J

Evaluation Outcome: **Proposed Noise Barrier** (See Table A31 and Figure B10)

There is no existing noise barrier in this noise area.

An approximate 1,092 foot long, 20 foot high noise barrier was modeled along the south side of I-94 between the Chicago Avenue Bridge and the 11th Avenue Bridge. The noise barrier provides a reduction that varies from 0.0 dBA to 12.1 dBA. The cost effectiveness of the barrier is $8,054 per benefitted receptor.

The approximate 1,092 foot long, 20 foot high noise barrier meets MnDOT's $43,500 cost-effectiveness criteria and is proposed as part of the I-35W Transit Access Project.

5.3 Evaluation of Other Noise Abatement Measures

Noise barriers have been chosen as the most cost-effective noise mitigation measure available for this project. Other noise mitigation measures have been considered, as listed in 23 CFR 772.13(c) and are addressed below:

- **Traffic management measures**: The primary purpose of the facility is to move people and goods. Restrictions of certain vehicles or speeds would be inconsistent with the purpose of the project.
- **Alteration of horizontal and vertical alignments**: The project was aligned for practical reasons based on grade and safety within the available right of way. Redesigning the horizontal and vertical alignments to minimize noise impacts would be impractical for this project.
- **Acquisition of real property or interests therein (predominantly unimproved property) to serve as a buffer zone to preempt development that would be adversely impacted by traffic noise**: Exclusive land use designations or acquisition of property to serve as a buffer zone between the roadway and adjacent lands would not be feasible because land has already been developed along the project corridor.
- **Noise insulation of public use or nonprofit institutional structures**: Noise insulation does not address the outside environment. Therefore, noise insulation is not proposed as a part of the project. Under MnDOT and FHWA guidelines, only public buildings such as schools and hospitals should be considered for acoustical insulation.

The use of quieter pavements is not an acceptable noise abatement measure for Federal-aid projects. Planting of vegetation or landscaping is not an acceptable Federal-aid noise abatement measure because only dense stands of evergreen vegetation at least 100 feet deep will reduce noise levels by a noticeable amount.

6.0 Construction Noise

The construction activities associated with construction of the proposed project will result in increased noise levels relative to existing conditions. These impacts will primarily be associated with construction equipment and pile driving.

The following table (Table 7) shows peak noise levels monitored at 50 feet from various types of construction equipment. This equipment is primarily associated with site grading/site preparation, which is generally the roadway construction phase associated with the greatest noise levels.

Table 7
Typical Construction Equipment Noise Levels at 50 feet

Equipment Type	Manufacturers Sampled	Total Number of Models in Sample	Peak Noise Level (dBA)	
			Range	Average
Backhoes	5	6	74-92	83
Front Loaders	5	30	75-96	85
Dozers	8	41	65-95	85
Graders	3	15	72-92	84
Scrapers	2	27	76-98	87
Pile Drivers	N/A	N/A	95-105	101

Source: United States Environmental Protection Agency and Federal Highway Administration

Elevated noise levels are, to a degree, unavoidable for this type of project. MnDOT will require that construction equipment be properly muffled and in proper working order. While MnDOT and its contractor(s) are exempt from local noise ordinances, it is the practice to require contractor(s) to comply with applicable local noise restrictions and ordinances to the extent that is reasonable. Advanced notice will be provided to affected communities of any planned abnormally loud construction activities. It is anticipated that night construction may be required to minimize traffic impacts and to improve safety. However, construction will be limited to daytime hours as much as possible. This project is expected to be under construction for three to four years.

Any associated high-impact equipment noise, such as pile driving, pavement sawing, or jack hammering, will be unavoidable with construction of the proposed project. Pile-driving noise is associated with any bridge construction and sheet piling necessary for retaining wall construction. High-impact noise construction activities will be limited in duration to the greatest extent possible. The use of pile drivers, jack hammers, and pavement sawing equipment will be prohibited during nighttime hours.

7.0 Conclusion

In general, the construction of the I-35W Transit Access Project will result in increases in traffic noise levels compared to the existing conditions. Modeled noise levels (daytime and nighttime) vary from -4.1 dBA to 16.6 dBA from existing (2012) conditions.

Acoustic reasonableness and cost effectiveness were calculated for each noise barrier. Many of the existing noise barriers are not impacted by the construction of the project and are proposed to be replaced in-kind as part of the project. These barriers include:

- Wall eE
- Wall eF
- Wall eL1
- Wall eL2
- Wall eM
- Wall wE
- Wall wF
- Wall wG
- Wall wJ
- Wall wK
- Wall wL1
- Wall wL2
- Wall wM

Barriers that are proposed to be included are subject to input from affected property owners (all benefitted receptors) and final design considerations. These barriers include:

- Wall eG
- Wall eI
- Wall wB
- Wall sE
- Wall sJ
- Wall nD
- Wall nJ

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Table 5 – Nighttime Noise Analysis Summary

Table 4
Daytime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
Receivers - Greenway - W1 would be removed																
GrnWayE1	General	NAC-2	70	65	C	70	**70.4**	**65.8**	**71.1**	**66.8**	0.7	1.0	66.9	63.4	-3.5	-2.4
GrnWayE2	General	NAC-2	70	65	C	70	**71.0**	**67.7**	**71.7**	**68.7**	0.7	1.0	**70.4**	**67.3**	-0.6	-0.4
GrnWayE3	General	NAC-2	70	65	C	70	69.9	**67.3**	**70.6**	**68.2**	0.7	0.9	69.8	**67.3**	-0.1	0.0
GrnWayE4	General	NAC-2	70	65	C	70	69.0	**66.9**	69.7	**67.7**	0.7	0.8	69.1	**67.1**	0.1	0.2
GrnWayE5	General	NAC-2	70	65	C	70	67.3	**65.3**	67.9	**66.1**	0.6	0.8	67.2	**65.3**	-0.1	0.0
GrnWayE6	General	NAC-2	70	65	C	70	67.3	**65.3**	67.9	**66.1**	0.6	0.8	67.2	**65.3**	-0.1	0.0
GrnWayE7	General	NAC-2	70	65	C	70	67.3	**65.3**	67.9	**66.1**	0.6	0.8	67.2	**65.3**	-0.1	0.0
GrnWayW1	General	NAC-2	70	65	C	70	64.7	61.0	65.1	61.7	0.4	0.7	N/A	N/A		
GrnWayW2	General	NAC-2	70	65	C	70	69.7	63.9	**70.1**	64.6	0.4	0.7	66.6	58.8	-3.1	-5.1
GrnWayW3	General	NAC-2	70	65	C	70	69.8	64.6	**70.3**	**65.3**	0.5	0.7	69.8	64.1	0.0	-0.5
GrnWayW4	General	NAC-2	70	65	C	70	67.6	64.6	68.1	**65.3**	0.5	0.7	67.5	64.1	-0.1	-0.5
GrnWayW5	General	NAC-2	70	65	C	70	66.3	63.8	66.8	64.5	0.5	0.7	66.2	63.3	-0.1	-0.5
GrnWayW6	General	NAC-2	70	65	C	70	65.1	62.8	65.6	63.6	0.5	0.8	64.9	62.5	-0.2	-0.3
GrnWayW7	General	NAC-2	70	65	C	70	64.0	61.9	64.5	62.7	0.5	0.8	63.8	61.7	-0.2	-0.2
Receivers - Greeway Cresent - New Receivers in Build Only																
crest1	General	NAC-2	70	65	C	70	N/A	N/A	N/A	N/A			**73.4**	64.4		
crest2	General	NAC-2	70	65	C	70	N/A	N/A	N/A	N/A			**73.1**	64.4		
crest3	General	NAC-2	70	65	C	70	N/A	N/A	N/A	N/A			**72.6**	63.8		
crest4	General	NAC-2	70	65	C	70	N/A	N/A	N/A	N/A			**70.2**	61.4		
crest5	General	NAC-2	70	65	C	70	N/A	N/A	N/A	N/A			**70.0**	61.7		
crest6	General	NAC-2	70	65	C	70	N/A	N/A	N/A	N/A			**70.7**	62.1		
crest7	General	NAC-2	70	65	C	70	N/A	N/A	N/A	N/A			**72.2**	64.3		
crest8	General	NAC-2	70	65	C	70	N/A	N/A	N/A	N/A			**74.5**	**66.1**		
crest9	General	NAC-2	70	65	C	70	N/A	N/A	N/A	N/A			**73.9**	64.5		
crest10	General	NAC-2	70	65	C	70	N/A	N/A	N/A	N/A			**73.8**	64.3		
crest11	General	NAC-2	70	65	C	70	N/A	N/A	N/A	N/A			**74.2**	64.4		
crest12	General	NAC-2	70	65	C	70	N/A	N/A	N/A	N/A			**73.8**	64.4		
crest13	General	NAC-2	70	65	C	70	N/A	N/A	N/A	N/A			**74.9**	**65.8**		
Receivers - Lake Street																
Lake1	Commercial	NAC-2	70	65	E	75	64.2	56.8	66.3	59.6	2.1	2.8	66.7	60.1	2.5	3.3
Lake2	Commercial	NAC-2	70	65	E	75	69.0	62.2	**71.1**	**65.2**	2.1	3.0	**71.5**	**65.7**	2.5	3.5
Lake2b	Residential	NAC-1	65	60	B	70	**70.6**	**62.7**	**72.9**	**65.9**	2.3	3.2	**73.4**	**66.5**	2.8	3.8
Lake2c	Residential	NAC-1	65	60	B	70	**70.1**	**62.4**	**72.4**	**65.6**	2.3	3.2	**72.9**	**66.2**	2.8	3.8
Lake2d	Residential	NAC-1	65	60	B	70	**69.6**	**62.1**	**71.8**	**65.2**	2.2	3.1	**72.3**	**65.8**	2.7	3.7
Lake3b	Residential	NAC-1	65	60	B	70	**70.9**	**63.0**	**73.2**	**66.2**	2.3	3.2	**73.6**	**66.9**	2.7	3.9
Lake3c	Residential	NAC-1	65	60	B	70	**70.4**	**62.8**	**72.7**	**65.9**	2.3	3.1	**73.1**	**66.5**	2.7	3.7
Lake3d	Residential	NAC-1	65	60	B	70	**69.9**	**62.4**	**72.1**	**65.5**	2.2	3.1	**72.5**	**66.1**	2.6	3.7
Lake4b	Residential	NAC-1	65	60	B	70	**71.0**	**63.2**	**73.3**	**66.4**	2.3	3.2	**73.8**	**67.0**	2.8	3.8
Lake4c	Residential	NAC-1	65	60	B	70	**70.6**	**63.0**	**72.8**	**66.1**	2.2	3.1	**73.3**	**66.7**	2.7	3.7
Lake4d	Residential	NAC-1	65	60	B	70	**70.0**	**62.6**	**72.2**	**65.7**	2.2	3.1	**72.7**	**66.3**	2.7	3.7
Lake5b	Residential	NAC-1	65	60	B	70	**71.2**	**63.5**	**73.5**	**66.6**	2.3	3.1	**73.9**	**67.2**	2.7	3.7
Lake5c	Residential	NAC-1	65	60	B	70	**70.8**	**63.2**	**73.0**	**66.3**	2.2	3.1	**73.4**	**66.9**	2.6	3.7
Lake5d	Residential	NAC-1	65	60	B	70	**70.2**	**62.9**	**72.4**	**66.0**	2.2	3.1	**72.8**	**66.6**	2.6	3.7
Lake66b	Residential	NAC-1	65	60	B	70	**68.3**	**61.8**	**70.4**	**64.7**	2.1	2.9	**70.8**	**65.2**	2.5	3.4
Lake66c	Residential	NAC-1	65	60	B	70	**68.2**	**61.8**	**70.3**	**64.6**	2.1	2.8	**70.6**	**65.1**	2.4	3.3
Lake66d	Residential	NAC-1	65	60	B	70	**68.1**	**61.7**	**70.1**	**64.6**	2.0	2.9	**70.4**	**65.0**	2.3	3.3
Lake77b	Residential	NAC-1	65	60	B	70	**66.9**	**61.1**	**68.9**	**63.8**	2.0	2.7	**69.2**	**64.2**	2.3	3.1
Lake77c	Residential	NAC-1	65	60	B	70	**66.9**	**61.1**	**68.8**	**63.8**	1.9	2.7	**69.2**	**64.2**	2.3	3.1
Lake77d	Residential	NAC-1	65	60	B	70	**66.9**	**61.2**	**68.7**	**63.8**	1.8	2.6	**69.1**	**64.2**	2.2	3.0
Lake88b	Residential	NAC-1	65	60	B	70	**67.0**	**61.2**	**68.9**	**63.9**	1.9	2.7	**69.3**	**64.3**	2.3	3.1
Lake88c	Residential	NAC-1	65	60	B	70	**67.0**	**61.3**	**68.9**	**63.9**	1.9	2.6	**69.2**	**64.3**	2.2	3.0
Lake88d	Residential	NAC-1	65	60	B	70	**66.9**	**61.3**	**68.8**	**63.9**	1.9	2.6	**69.1**	**64.3**	2.2	3.0
Lake99b	Residential	NAC-1	65	60	B	70	**66.0**	**60.8**	**67.8**	**63.2**	1.8	2.4	**68.1**	**63.6**	2.1	2.8
Lake99c	Residential	NAC-1	65	60	B	70	**66.0**	**60.9**	**67.8**	**63.3**	1.8	2.4	**68.1**	**63.6**	2.1	2.7

Table 4
Daytime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
Lake99d	Residential	NAC-1	65	60	B	70	**66.0**	**61.0**	**67.8**	**63.4**	1.8	2.4	**68.0**	**63.7**	2.0	2.7
Lake6	Commercial	NAC-2	70	65	E	75	68.6	62.5	**70.5**	**65.1**	1.9	2.6	**70.8**	**65.6**	2.2	3.1
Lake7	Commercial	NAC-2	70	65	E	75	64.8	57.1	66.9	60.0	2.1	2.9	67.3	60.5	2.5	3.4
Lake8	Commercial	NAC-2	70	65	E	75	**72.6**	**65.1**	**74.3**	**67.5**	1.7	2.4	**74.8**	**68.1**	2.2	3.0
Lake9	Commercial	NAC-2	70	65	E	75	**72.5**	64.9	**74.3**	**67.4**	1.8	2.5	**74.8**	**68.0**	2.3	3.1
Lake10	Residential	NAC-1	65	60	B	70	**65.4**	**62.2**	**66.6**	**63.6**	1.2	1.4	**66.6**	**63.5**	1.2	1.3
Lake11	Commercial	NAC-2	70	65	E	75	66.4	62.2	67.7	63.9	1.3	1.7	68.0	64.1	1.6	1.9
Lake12	Commercial	NAC-2	70	65	E	75	**72.1**	64.5	**73.9**	**67.0**	1.8	2.5	**74.4**	**67.7**	2.3	3.2
Lake13	Commercial	NAC-2	70	65	E	75	**72.0**	64.4	**73.8**	**66.9**	1.8	2.5	**74.3**	**67.6**	2.3	3.2
Lake14	Commercial	NAC-2	70	65	E	75	**71.9**	64.0	**73.7**	**66.5**	1.8	2.5	**74.3**	**67.3**	2.4	3.3
Lake15	Commercial	NAC-2	70	65	E	75	64.7	60.9	65.9	62.4	1.2	1.5	66.2	62.6	1.5	1.7
Lake16	Commercial	NAC-2	70	65	E	75	63.9	58.7	65.2	60.5	1.3	1.8	65.5	60.7	1.6	2.0
Lake17	Commercial	NAC-2	70	65	E	75	64.7	58.5	66.2	60.4	1.5	1.9	66.4	60.7	1.7	2.2
Lake18	Commercial	NAC-2	70	65	E	75	63.8	58.3	65.1	60.1	1.3	1.8	65.3	60.2	1.5	1.9
Lake19	Commercial	NAC-2	70	65	E	75	63.0	58.1	64.2	59.7	1.2	1.6	64.4	59.8	1.4	1.7
Lake20	Commercial	NAC-2	70	65	E	75	**71.5**	**65.0**	**73.1**	**67.2**	1.6	2.2	**73.5**	**67.6**	2.0	2.6
Lake21	Commercial	NAC-2	70	65	E	75	**72.1**	64.9	**73.8**	**67.2**	1.7	2.3	**74.2**	**67.8**	2.1	2.9
Lake22	Commercial	NAC-2	70	65	E	75	**72.0**	64.7	**73.7**	**67.1**	1.7	2.4	**74.2**	**67.7**	2.2	3.0
Lake23	Commercial	NAC-2	70	65	E	75	**71.9**	64.5	**73.6**	**66.9**	1.7	2.4	**74.1**	**67.6**	2.2	3.1
Lake24	General	NAC-2	70	65	C	70	65.6	62.3	66.8	63.7	1.2	1.4	67.0	63.8	1.4	1.5
Lake25	Commercial	NAC-2	70	65	E	75	**71.7**	64.2	**73.5**	**66.7**	1.8	2.5	**74.0**	**67.4**	2.3	3.2
Lake26	Commercial	NAC-2	70	65	E	75	**70.4**	62.9	**72.2**	**65.4**	1.8	2.5	**72.7**	**66.1**	2.3	3.2
Lake27	Commercial	NAC-2	70	65	E	75	62.9	58.2	64.1	59.8	1.2	1.6	64.4	59.9	1.5	1.7
Lake28	General	NAC-2	70	65	C	70	63.8	58.9	65.1	60.6	1.3	1.7	65.4	60.8	1.6	1.9
Receivers - East side Blocks AA to Block GG (46th Street to 39th Street)																
eAA103	Residential	NAC-1	65	60	B	70	**65.2**	58.6	**65.8**	59.4	0.6	0.8	**66.0**	59.7	0.8	1.1
eAA107	Residential	NAC-1	65	60	B	70	64.7	59.0	**65.3**	59.8	0.6	0.8	**65.5**	**60.1**	0.8	1.1
eAA111	Residential	NAC-1	65	60	B	70	64.5	59.0	**65.2**	59.8	0.7	0.8	**65.3**	**60.1**	0.8	1.1
eAA115	Residential	NAC-1	65	60	B	70	64.9	59.0	**65.5**	59.8	0.6	0.8	**65.7**	**60.1**	0.8	1.1
eAA203	Residential	NAC-1	65	60	B	70	59.6	58.0	60.1	58.6	0.5	0.6	60.4	58.9	0.8	0.9
eAA207	Residential	NAC-1	65	60	B	70	59.5	57.9	60.0	58.5	0.5	0.6	60.3	58.8	0.8	0.9
eAA211	Residential	NAC-1	65	60	B	70	59.8	58.2	60.4	58.9	0.6	0.7	60.6	59.2	0.8	1.0
eAA215	Residential	NAC-1	65	60	B	70	60.0	58.4	60.6	59.1	0.6	0.7	60.8	59.4	0.8	1.0
eBB103	Residential	NAC-1	65	60	B	70	62.4	**61.0**	62.9	**61.7**	0.5	0.7	63.1	**61.9**	0.7	0.9
eBB107	Residential	NAC-1	65	60	B	70	63.1	**61.7**	63.7	**62.3**	0.6	0.6	63.9	**62.6**	0.8	0.9
eBB111	Residential	NAC-1	65	60	B	70	63.5	**62.0**	64.1	**62.6**	0.6	0.6	64.3	**62.9**	0.8	0.9
eBB115	Residential	NAC-1	65	60	B	70	64.4	**62.3**	64.9	**63.0**	0.5	0.7	**65.2**	**63.3**	0.8	1.0
eBB203	Residential	NAC-1	65	60	B	70	60.9	59.5	61.4	**60.1**	0.5	0.6	61.7	**60.4**	0.8	0.9
eBB207	Residential	NAC-1	65	60	B	70	60.4	59.2	60.9	59.8	0.5	0.6	61.2	**60.1**	0.8	0.9
eBB211	Residential	NAC-1	65	60	B	70	59.9	58.7	60.4	59.3	0.5	0.6	60.7	59.6	0.8	0.9
eBB215	Residential	NAC-1	65	60	B	70	59.9	58.6	60.5	59.2	0.6	0.6	60.7	59.5	0.8	0.9
eCC103	Residential	NAC-1	65	60	B	70	**68.6**	**65.2**	**69.1**	**65.9**	0.5	0.7	**69.3**	**66.2**	0.7	1.0
eCC107	Residential	NAC-1	65	60	B	70	63.0	**61.5**	63.6	**62.2**	0.6	0.7	63.8	**62.4**	0.8	0.9
eCC111	Residential	NAC-1	65	60	B	70	62.7	**61.4**	63.3	**62.0**	0.6	0.6	63.5	**62.3**	0.8	0.9
eCC115	Residential	NAC-1	65	60	B	70	62.6	**61.3**	63.1	**61.9**	0.5	0.6	63.3	**62.1**	0.7	0.8
eCC203	Residential	NAC-1	65	60	B	70	**67.2**	**62.8**	**67.7**	**63.5**	0.5	0.7	**67.9**	**63.8**	0.7	1.0
eCC207	Residential	NAC-1	65	60	B	70	**65.4**	**61.7**	**65.9**	**62.4**	0.5	0.7	**66.1**	**62.6**	0.7	0.9
eCC211	Residential	NAC-1	65	60	B	70	63.4	**60.7**	63.9	**61.3**	0.5	0.6	64.1	**61.6**	0.7	0.9
eCC215	Residential	NAC-1	65	60	B	70	62.1	**60.1**	62.6	**60.7**	0.5	0.6	62.8	**61.0**	0.7	0.9
eDD103	Residential	NAC-1	65	60	B	70	61.7	**60.2**	62.3	**60.9**	0.6	0.7	62.5	**61.1**	0.8	0.9
eDD107	Residential	NAC-1	65	60	B	70	63.3	**61.8**	63.8	**62.4**	0.5	0.6	64.0	**62.7**	0.7	0.9
eDD111	Residential	NAC-1	65	60	B	70	63.7	**62.1**	64.2	**62.7**	0.5	0.6	64.5	**63.0**	0.8	0.9
eDD115	Residential	NAC-1	65	60	B	70	**67.8**	**63.9**	**68.3**	**64.6**	0.5	0.7	**68.5**	**64.9**	0.7	1.0
eDD203	Residential	NAC-1	65	60	B	70	60.3	58.9	60.8	59.5	0.5	0.6	61.0	59.7	0.7	0.8
eDD207	Residential	NAC-1	65	60	B	70	61.7	59.3	62.2	**60.0**	0.5	0.7	62.4	**60.3**	0.7	1.0

Table 4
Daytime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
eDD211	Residential	NAC-1	65	60	B	70	64.3	**60.3**	64.8	**61.0**	0.5	0.7	**65.0**	**61.3**	0.7	1.0
eDD215	Residential	NAC-1	65	60	B	70	**66.7**	**61.5**	**67.2**	**62.2**	0.5	0.7	**67.4**	**62.5**	0.7	1.0
eEE103	Residential	NAC-1	65	60	B	70	62.3	**60.7**	62.8	**61.3**	0.5	0.6	63.0	**61.6**	0.7	0.9
eEE107	Residential	NAC-1	65	60	B	70	62.1	**60.6**	62.7	**61.2**	0.6	0.6	62.9	**61.5**	0.8	0.9
eEE111	Residential	NAC-1	65	60	B	70	62.1	**60.6**	62.7	**61.3**	0.6	0.7	62.9	**61.5**	0.8	0.9
eEE115	Residential	NAC-1	65	60	B	70	61.9	**60.4**	62.5	**61.0**	0.6	0.6	62.7	**61.3**	0.8	0.9
eEE203	Residential	NAC-1	65	60	B	70	61.2	59.9	61.8	**60.5**	0.6	0.6	61.9	**60.7**	0.7	0.8
eEE207	Residential	NAC-1	65	60	B	70	60.8	59.5	61.3	**60.1**	0.5	0.6	61.5	**60.3**	0.7	0.8
eEE211	Residential	NAC-1	65	60	B	70	60.6	59.3	61.1	59.9	0.5	0.6	61.3	**60.2**	0.7	0.9
eEE215	Residential	NAC-1	65	60	B	70	60.4	59.1	60.9	59.7	0.5	0.6	61.1	**60.0**	0.7	0.9
eFF103	Residential	NAC-1	65	60	B	70	63.8	**60.9**	64.4	**61.7**	0.6	0.8	64.6	**61.9**	0.8	1.0
eFF107	Residential	NAC-1	65	60	B	70	63.1	**61.5**	63.7	**62.1**	0.6	0.6	63.8	**62.3**	0.7	0.8
eFF111	Residential	NAC-1	65	60	B	70	62.2	**60.6**	62.8	**61.3**	0.6	0.7	63.0	**61.5**	0.8	0.9
eFF115	Residential	NAC-1	65	60	B	70	62.3	**60.6**	62.9	**61.3**	0.6	0.7	63.0	**61.5**	0.7	0.9
eFF203	Residential	NAC-1	65	60	B	70	64.8	**62.7**	**65.4**	**63.4**	0.6	0.7	**65.5**	**63.5**	0.7	0.8
eFF207	Residential	NAC-1	65	60	B	70	63.4	**61.7**	64.0	**62.4**	0.6	0.7	64.1	**62.5**	0.7	0.8
eFF211	Residential	NAC-1	65	60	B	70	62.4	**60.8**	63.0	**61.5**	0.6	0.7	63.1	**61.6**	0.7	0.8
eFF215	Residential	NAC-1	65	60	B	70	61.9	**60.4**	62.5	**61.1**	0.6	0.7	62.6	**61.3**	0.7	0.9
eGG103	Residential	NAC-1	65	60	B	70	**70.9**	**65.4**	**71.6**	**66.4**	0.7	1.0	**71.8**	**66.5**	0.9	1.1
eGG107	Residential	NAC-1	65	60	B	70	**68.4**	**61.9**	**69.2**	**63.0**	0.8	1.1	**69.4**	**63.2**	1.0	1.3
eGG111	Residential	NAC-1	65	60	B	70	**67.4**	**60.8**	**68.2**	**61.8**	0.8	1.0	**68.5**	**62.1**	1.1	1.3
eGG115	Residential	NAC-1	65	60	B	70	**67.0**	**60.1**	**67.8**	**61.1**	0.8	1.0	**68.1**	**61.5**	1.1	1.4
eGG203	Residential	NAC-1	65	60	B	70	**71.8**	**69.2**	**72.3**	**69.9**	0.5	0.7	**72.3**	**69.9**	0.5	0.7
eGG207	Residential	NAC-1	65	60	B	70	**69.2**	**66.8**	**69.7**	**67.5**	0.5	0.7	**69.8**	**67.6**	0.6	0.8
eGG211	Residential	NAC-1	65	60	B	70	**67.4**	**65.1**	**68.0**	**65.8**	0.6	0.7	**68.1**	**65.9**	0.7	0.8
eGG215	Residential	NAC-1	65	60	B	70	**66.3**	**63.9**	**66.9**	**64.7**	0.6	0.8	**67.0**	**64.8**	0.7	0.9
Receivers - East side Block A (39th Street to 38th Street)																
eA103	Residential	NAC-1	65	60	B	70	64.5	59.0	**65.1**	59.8	0.6	0.8	**65.3**	**60.1**	0.8	1.1
eA107	Residential	NAC-1	65	60	B	70	64.7	59.4	**65.3**	**60.2**	0.6	0.8	**65.5**	**60.5**	0.8	1.1
eA111	Residential	NAC-1	65	60	B	70	**65.0**	**60.2**	**65.6**	**60.9**	0.6	0.7	**65.8**	**61.3**	0.8	1.1
eA115	Residential	NAC-1	65	60	B	70	**67.9**	**62.9**	**68.4**	**63.7**	0.5	0.8	**68.6**	**64.0**	0.7	1.1
eA203	Residential	NAC-1	65	60	B	70	60.6	59.0	61.2	59.6	0.6	0.6	61.3	59.8	0.7	0.8
eA207	Residential	NAC-1	65	60	B	70	62.0	59.7	62.5	**60.3**	0.5	0.6	62.7	**60.6**	0.7	0.9
eA211	Residential	NAC-1	65	60	B	70	63.5	**60.4**	64.0	**61.1**	0.5	0.7	64.1	**61.4**	0.6	1.0
eA213	Residential	NAC-1	65	60	B	70	**65.8**	**61.3**	**66.4**	**62.1**	0.6	0.8	**66.5**	**62.3**	0.7	1.0
Receivers - East side Block B (38th Street to 37th Street)																
eB103	Residential	NAC-1	65	60	B	70	**67.1**	**62.4**	**67.7**	**63.2**	0.6	0.8	**67.8**	**63.5**	0.7	1.1
eB107	Residential	NAC-1	65	60	B	70	**66.0**	**61.6**	**66.6**	**62.3**	0.6	0.7	**66.8**	**62.7**	0.8	1.1
eB111	Residential	NAC-1	65	60	B	70	**65.9**	**61.9**	**66.5**	**62.6**	0.6	0.7	**66.7**	**63.0**	0.8	1.1
eB115	Residential	NAC-1	65	60	B	70	**65.6**	**60.9**	**66.2**	**61.6**	0.6	0.7	**66.3**	**62.0**	0.7	1.1
eB203	Residential	NAC-1	65	60	B	70	**66.6**	**61.2**	**67.1**	**62.0**	0.5	0.8	**67.3**	**62.3**	0.7	1.1
eB207	Residential	NAC-1	65	60	B	70	63.6	**60.9**	64.1	**61.5**	0.5	0.6	64.4	**61.9**	0.8	1.0
eB211	Residential	NAC-1	65	60	B	70	62.6	**60.6**	63.1	**61.2**	0.5	0.6	63.4	**61.6**	0.8	1.0
eB215	Residential	NAC-1	65	60	B	70	62.5	**60.6**	63.0	**61.2**	0.5	0.6	63.2	**61.6**	0.7	1.0
Receivers - East side Block C (37th Street to 36th Street)																
eC103	Residential	NAC-1	65	60	B	70	**67.0**	**60.2**	**67.6**	**61.1**	0.6	0.9	**67.6**	**61.2**	0.6	1.0
eC107	Residential	NAC-1	65	60	B	70	**69.1**	**62.8**	**69.8**	**63.7**	0.7	0.9	**69.6**	**63.8**	0.5	1.0
eC111	Residential	NAC-1	65	60	B	70	**69.3**	**62.8**	**69.9**	**63.7**	0.6	0.9	**69.8**	**63.9**	0.5	1.1
eC115	Residential	NAC-1	65	60	B	70	**70.4**	**64.7**	**71.0**	**65.6**	0.6	0.9	**71.1**	**65.8**	0.7	1.1
eC203	Residential	NAC-1	65	60	B	70	63.5	**60.7**	64.0	**61.4**	0.5	0.7	64.1	**61.8**	0.6	1.1
eC207	Residential	NAC-1	65	60	B	70	64.4	**61.2**	64.9	**61.9**	0.5	0.7	64.9	**62.2**	0.5	1.0
eC211	Residential	NAC-1	65	60	B	70	**65.9**	**62.5**	**66.4**	**63.2**	0.5	0.7	**66.5**	**63.5**	0.6	1.0
eC215	Residential	NAC-1	65	60	B	70	**68.3**	**63.2**	**68.9**	**64.0**	0.6	0.8	**69.0**	**64.2**	0.7	1.0
Receivers - East side Block D (36th Street to 35th Street)																
eD101	Residential	NAC-1	65	60	B	70	**71.3**	**65.0**	**71.8**	**65.8**	0.5	0.8	**71.9**	**66.0**	0.6	1.0

Table 4
Daytime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
eD102	Residential	NAC-1	65	60	B	70	**67.6**	**63.0**	**68.1**	**63.7**	0.5	0.7	**68.2**	**64.0**	0.6	1.0
eD103	Residential	NAC-1	65	60	B	70	**69.0**	**63.1**	**69.5**	**63.9**	0.5	0.8	**69.6**	**64.1**	0.6	1.0
eD104	Residential	NAC-1	65	60	B	70	**67.9**	**62.6**	**68.4**	**63.4**	0.5	0.8	**68.5**	**63.6**	0.6	1.0
eD105	Residential	NAC-1	65	60	B	70	**68.8**	**62.4**	**69.4**	**63.2**	0.6	0.8	**69.5**	**63.5**	0.7	1.1
eD106	Residential	NAC-1	65	60	B	70	**68.7**	**62.4**	**69.3**	**63.2**	0.6	0.8	**69.4**	**63.4**	0.7	1.0
eD107	Residential	NAC-1	65	60	B	70	**68.8**	**62.5**	**69.3**	**63.4**	0.5	0.9	**69.5**	**63.6**	0.7	1.1
eD108	Residential	NAC-1	65	60	B	70	**69.4**	**63.0**	**69.9**	**63.8**	0.5	0.8	**70.1**	**64.0**	0.7	1.0
eD110	Residential	NAC-1	65	60	B	70	**70.2**	**64.4**	**70.7**	**65.2**	0.5	0.8	**70.9**	**65.4**	0.7	1.0
eD109	Residential	NAC-1	65	60	B	70	**69.7**	**63.8**	**70.2**	**64.6**	0.5	0.8	**70.4**	**64.8**	0.7	1.0
eD111	Residential	NAC-1	65	60	B	70	**71.6**	**65.0**	**72.2**	**65.8**	0.6	0.8	**72.3**	**66.1**	0.7	1.1
eD202	Residential	NAC-1	65	60	B	70	**68.5**	**63.3**	**69.1**	**64.1**	0.6	0.8	**69.2**	**64.3**	0.7	1.0
eD204	Residential	NAC-1	65	60	B	70	**66.5**	**63.3**	**67.0**	**64.0**	0.5	0.7	**67.1**	**64.2**	0.6	0.9
eD205	Residential	NAC-1	65	60	B	70	**66.1**	**63.5**	**66.6**	**64.1**	0.5	0.6	**66.7**	**64.4**	0.6	0.9
eD207	Residential	NAC-1	65	60	B	70	**65.7**	**63.3**	**66.2**	**63.9**	0.5	0.6	**66.3**	**64.1**	0.6	0.8
eD209	Residential	NAC-1	65	60	B	70	**65.7**	**63.2**	**66.2**	**63.9**	0.5	0.7	**66.4**	**64.1**	0.7	0.9
eD211	Residential	NAC-1	65	60	B	70	**66.1**	**63.2**	**66.6**	**63.9**	0.5	0.7	**66.8**	**64.1**	0.7	0.9
eD213	Residential	NAC-1	65	60	B	70	**67.5**	**63.1**	**68.1**	**63.8**	0.6	0.7	**68.2**	**64.1**	0.7	1.0
eD214	Residential	NAC-1	65	60	B	70	**69.7**	**62.8**	**70.3**	**63.6**	0.6	0.8	**70.4**	**63.8**	0.7	1.0
eD302	Residential	NAC-1	65	60	B	70	**65.5**	**60.8**	**66.0**	**61.5**	0.5	0.7	**66.1**	**61.7**	0.6	0.9
eD304	Residential	NAC-1	65	60	B	70	64.2	**61.0**	64.7	**61.7**	0.5	0.7	64.9	**61.9**	0.7	0.9
eD306	Residential	NAC-1	65	60	B	70	63.7	**61.0**	64.2	**61.7**	0.5	0.7	64.3	**61.8**	0.6	0.8
eD308	Residential	NAC-1	65	60	B	70	63.5	**61.0**	64.0	**61.6**	0.5	0.6	64.2	**61.8**	0.7	0.8
eD310	Residential	NAC-1	65	60	B	70	63.7	**60.9**	64.2	**61.6**	0.5	0.7	64.3	**61.8**	0.6	0.9
eD312	Residential	NAC-1	65	60	B	70	64.3	**60.8**	64.8	**61.4**	0.5	0.6	64.9	**61.6**	0.6	0.8
eD314	Residential	NAC-1	65	60	B	70	**65.7**	**60.2**	**66.3**	**61.0**	0.6	0.8	**66.3**	**61.2**	0.6	1.0
Receivers - East side Block E (35th Street to 34th Street)																
eE101	Residential	NAC-1	65	60	B	70	**71.1**	**64.6**	**71.6**	**65.4**	0.5	0.8	**71.8**	**65.7**	0.7	1.1
eE102	Residential	NAC-1	65	60	B	70	**70.4**	**63.8**	**70.9**	**64.6**	0.5	0.8	**71.2**	**65.0**	0.8	1.2
eE103	Residential	NAC-1	65	60	B	70	**69.8**	**63.5**	**70.4**	**64.2**	0.6	0.7	**70.7**	**64.7**	0.9	1.2
eE104	Residential	NAC-1	65	60	B	70	**69.7**	**63.4**	**70.2**	**64.2**	0.5	0.8	**70.6**	**64.7**	0.9	1.3
eE105	Residential	NAC-1	65	60	B	70	**69.5**	**63.4**	**70.0**	**64.2**	0.5	0.8	**70.3**	**64.6**	0.8	1.2
eE106	Residential	NAC-1	65	60	B	70	**69.6**	**63.5**	**70.1**	**64.3**	0.5	0.8	**70.4**	**64.8**	0.8	1.3
eE107	Residential	NAC-1	65	60	B	70	**69.5**	**63.7**	**70.0**	**64.5**	0.5	0.8	**70.3**	**64.9**	0.8	1.2
eE108	Residential	NAC-1	65	60	B	70	**69.5**	**63.7**	**70.0**	**64.5**	0.5	0.8	**70.3**	**65.0**	0.8	1.3
eE109	Residential	NAC-1	65	60	B	70	**69.1**	**63.7**	**69.6**	**64.4**	0.5	0.7	**69.9**	**64.9**	0.8	1.2
eE110	Residential	NAC-1	65	60	B	70	**68.8**	**63.4**	**69.3**	**64.2**	0.5	0.8	**69.6**	**64.6**	0.8	1.2
eE110b2	Residential	NAC-1	65	60	B	70	**71.2**	**66.8**	**71.7**	**67.5**	0.5	0.7	**72.0**	**67.9**	0.8	1.1
eE111	Residential	NAC-1	65	60	B	70	**68.4**	**62.7**	**68.9**	**63.5**	0.5	0.8	**69.2**	**63.9**	0.8	1.2
eE112	Residential	NAC-1	65	60	B	70	**67.8**	**62.1**	**68.3**	**62.9**	0.5	0.8	**68.6**	**63.3**	0.8	1.2
eE113	Residential	NAC-1	65	60	B	70	**67.1**	**61.9**	**67.6**	**62.6**	0.5	0.7	**67.9**	**63.1**	0.8	1.2
eE202	Residential	NAC-1	65	60	B	70	**68.6**	**63.3**	**69.1**	**64.1**	0.5	0.8	**69.3**	**64.3**	0.7	1.0
eE204	Residential	NAC-1	65	60	B	70	**66.5**	**62.7**	**67.0**	**63.4**	0.5	0.7	**67.2**	**63.7**	0.7	1.0
eE205	Residential	NAC-1	65	60	B	70	**65.8**	**62.4**	**66.2**	**63.1**	0.4	0.7	**66.4**	**63.4**	0.6	1.0
eE207	Residential	NAC-1	65	60	B	70	**65.4**	**62.2**	**65.9**	**62.9**	0.5	0.7	**66.1**	**63.2**	0.7	1.0
eE209	Residential	NAC-1	65	60	B	70	**65.2**	**62.2**	**65.7**	**62.8**	0.5	0.6	**65.9**	**63.1**	0.7	0.9
eE211	Residential	NAC-1	65	60	B	70	64.9	**62.0**	**65.4**	**62.7**	0.5	0.7	**65.6**	**63.0**	0.7	1.0
eE213	Residential	NAC-1	65	60	B	70	64.4	**61.8**	64.8	**62.5**	0.4	0.7	**65.1**	**62.7**	0.7	0.9
eE301	General	NAC-2	70	65	C	70	63.4	60.5	63.9	61.2	0.5	0.7	64.0	61.3	0.6	0.8
eE303	General	NAC-2	70	65	C	70	63.0	60.4	63.5	61.1	0.5	0.7	63.6	61.2	0.6	0.8
eE305	General	NAC-2	70	65	C	70	63.0	60.6	63.5	61.3	0.5	0.7	63.6	61.4	0.6	0.8
eE307	General	NAC-2	70	65	C	70	62.7	60.6	63.2	61.2	0.5	0.6	63.4	61.3	0.7	0.7
eE309	General	NAC-2	70	65	C	70	62.5	60.5	63.0	61.2	0.5	0.7	63.1	61.3	0.6	0.8
Receivers - East side Block F (34th Street to 32nd Street)																
eF101	Residential	NAC-1	65	60	B	70	**65.2**	**62.3**	**65.6**	**63.0**	0.4	0.7	**65.8**	**63.4**	0.6	1.1
eF102	Residential	NAC-1	65	60	B	70	**65.0**	**62.3**	**65.5**	**63.1**	0.5	0.8	**65.7**	**63.4**	0.7	1.1

Table 4
Daytime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
eF103	Residential	NAC-1	65	60	B	70	64.7	**62.3**	**65.2**	**63.0**	0.5	0.7	**65.4**	**63.4**	0.7	1.1
eF104	Residential	NAC-1	65	60	B	70	64.9	**62.3**	**65.4**	**63.0**	0.5	0.7	**65.6**	**63.4**	0.7	1.1
eF105	Residential	NAC-1	65	60	B	70	**65.0**	**62.2**	**65.4**	**62.9**	0.4	0.7	**65.6**	**63.3**	0.6	1.1
eF106	Residential	NAC-1	65	60	B	70	64.9	**62.2**	**65.3**	**62.9**	0.4	0.7	**65.6**	**63.2**	0.7	1.0
eF107	Residential	NAC-1	65	60	B	70	**65.1**	**62.1**	**65.6**	**62.9**	0.5	0.8	**65.8**	**63.2**	0.7	1.1
eF108	Residential	NAC-1	65	60	B	70	64.9	**62.3**	**65.4**	**63.0**	0.5	0.7	**65.6**	**63.4**	0.7	1.1
eF108B	Residential	NAC-1	65	60	B	70	**67.6**	**65.8**	**68.1**	**66.4**	0.5	0.6	**68.4**	**66.8**	0.8	1.0
eF109	Residential	NAC-1	65	60	B	70	**65.0**	**62.3**	**65.5**	**63.0**	0.5	0.7	**65.7**	**63.4**	0.7	1.1
eF109B	Residential	NAC-1	65	60	B	70	**67.8**	**65.9**	**68.2**	**66.5**	0.4	0.6	**68.6**	**66.9**	0.8	1.0
eF110	Residential	NAC-1	65	60	B	70	**65.2**	**62.3**	**65.7**	**63.1**	0.5	0.8	**65.9**	**63.4**	0.7	1.1
eF111	Residential	NAC-1	65	60	B	70	64.6	**62.2**	**65.1**	**62.9**	0.5	0.7	**65.3**	**63.3**	0.7	1.1
eF112	Residential	NAC-1	65	60	B	70	64.5	**62.1**	**65.0**	**62.8**	0.5	0.7	**65.2**	**63.1**	0.7	1.0
eF201	Residential	NAC-1	65	60	B	70	63.4	**61.7**	63.9	**62.3**	0.5	0.6	64.1	**62.5**	0.7	0.8
eF204	Residential	NAC-1	65	60	B	70	63.2	**61.6**	63.7	**62.3**	0.5	0.7	63.9	**62.5**	0.7	0.9
eF206	Residential	NAC-1	65	60	B	70	63.1	**61.7**	63.6	**62.3**	0.5	0.6	63.8	**62.5**	0.7	0.8
eF208	Residential	NAC-1	65	60	B	70	63.1	**61.8**	63.6	**62.4**	0.5	0.6	63.8	**62.6**	0.7	0.8
eF209	Residential	NAC-1	65	60	B	70	63.2	**61.9**	63.8	**62.5**	0.6	0.6	63.9	**62.6**	0.7	0.7
eF210	Residential	NAC-1	65	60	B	70	63.4	**62.1**	63.9	**62.7**	0.5	0.6	64.0	**62.8**	0.6	0.7
eF211	Residential	NAC-1	65	60	B	70	63.5	**62.1**	64.0	**62.8**	0.5	0.7	64.1	**62.9**	0.6	0.8
eF212	Residential	NAC-1	65	60	B	70	63.6	**62.2**	64.2	**62.9**	0.6	0.7	64.2	**63.0**	0.6	0.8
eF213	Residential	NAC-1	65	60	B	70	63.8	**62.4**	64.4	**63.0**	0.6	0.6	64.4	**63.1**	0.6	0.7
eF214	Residential	NAC-1	65	60	B	70	64.0	**62.5**	64.5	**63.1**	0.5	0.6	64.6	**63.2**	0.6	0.7
eF302	Residential	NAC-1	65	60	B	70	62.2	**60.6**	62.8	**61.2**	0.6	0.6	62.8	**61.3**	0.6	0.7
eF303	Residential	NAC-1	65	60	B	70	62.2	**60.6**	62.8	**61.3**	0.6	0.7	62.8	**61.4**	0.6	0.8
eF305	Residential	NAC-1	65	60	B	70	62.3	**60.7**	62.8	**61.4**	0.5	0.7	62.9	**61.5**	0.6	0.8
eF307	Residential	NAC-1	65	60	B	70	62.5	**61.0**	63.0	**61.6**	0.5	0.6	63.1	**61.7**	0.6	0.7
eF309	Residential	NAC-1	65	60	B	70	62.8	**61.2**	63.3	**61.9**	0.5	0.7	63.4	**61.9**	0.6	0.7
eF311	Residential	NAC-1	65	60	B	70	63.1	**61.5**	63.7	**62.1**	0.6	0.6	63.7	**62.2**	0.6	0.7
eF312	Residential	NAC-1	65	60	B	70	63.5	**61.7**	64.1	**62.4**	0.6	0.7	64.0	**62.4**	0.5	0.7
eF115	Residential	NAC-1	65	60	B	70	64.8	**61.9**	**65.3**	**62.7**	0.5	0.8	**65.4**	**63.0**	0.6	1.1
eF117	Residential	NAC-1	65	60	B	70	**65.0**	**62.0**	**65.4**	**62.7**	0.4	0.7	**65.6**	**63.0**	0.6	1.0
eF119	Residential	NAC-1	65	60	B	70	64.8	**62.0**	**65.2**	**62.8**	0.4	0.8	**65.4**	**63.0**	0.6	1.0
eF121	Residential	NAC-1	65	60	B	70	**65.2**	**62.8**	**65.7**	**63.5**	0.5	0.7	**65.7**	**63.6**	0.5	0.8
eF123	Residential	NAC-1	65	60	B	70	**65.7**	**63.5**	**66.3**	**64.3**	0.6	0.8	**66.2**	**64.2**	0.5	0.7
eF124	Residential	NAC-1	65	60	B	70	**67.1**	**64.6**	**67.7**	**65.4**	0.6	0.8	**67.5**	**65.3**	0.4	0.7
eF125	Residential	NAC-1	65	60	B	70	**69.5**	**66.6**	**70.1**	**67.4**	0.6	0.8	**69.9**	**67.2**	0.4	0.6
eF220	Residential	NAC-1	65	60	B	70	62.0	**60.6**	62.5	**61.2**	0.5	0.6	62.8	**61.5**	0.8	0.9
eF222	Residential	NAC-1	65	60	B	70	62.2	**60.7**	62.7	**61.4**	0.5	0.7	63.0	**61.6**	0.8	0.9
eF224	Residential	NAC-1	65	60	B	70	62.5	**60.9**	63.0	**61.6**	0.5	0.7	63.3	**61.8**	0.8	0.9
eF226	Residential	NAC-1	65	60	B	70	63.0	**61.3**	63.6	**61.9**	0.6	0.6	63.8	**62.2**	0.8	0.9
eF227	Residential	NAC-1	65	60	B	70	63.6	**61.6**	64.2	**62.3**	0.6	0.7	64.4	**62.6**	0.8	1.0
eF228	Residential	NAC-1	65	60	B	70	64.5	**62.2**	**65.1**	**62.9**	0.6	0.7	**65.3**	**63.3**	0.8	1.1
eF229	Residential	NAC-1	65	60	B	70	**65.3**	**62.8**	**65.9**	**63.5**	0.6	0.7	**66.1**	**63.8**	0.8	1.0
eF231	Residential	NAC-1	65	60	B	70	**66.0**	**63.3**	**66.6**	**64.1**	0.6	0.8	**66.9**	**64.4**	0.9	1.1
eF321	Residential	NAC-1	65	60	B	70	60.3	58.9	60.9	59.5	0.6	0.6	61.2	59.9	0.9	1.0
eF322	Residential	NAC-1	65	60	B	70	60.4	58.9	61.0	59.6	0.6	0.7	61.3	59.9	0.9	1.0
eF324	Residential	NAC-1	65	60	B	70	60.6	59.1	61.1	59.7	0.5	0.6	61.5	**60.1**	0.9	1.0
eF325	Residential	NAC-1	65	60	B	70	61.1	59.4	61.7	**60.1**	0.6	0.7	62.0	**60.4**	0.9	1.0
eF327	Residential	NAC-1	65	60	B	70	61.5	59.7	62.1	**60.3**	0.6	0.6	62.4	**60.7**	0.9	1.0
eF329	Residential	NAC-1	65	60	B	70	62.0	**60.0**	62.6	**60.7**	0.6	0.7	62.9	**61.0**	0.9	1.0
eF331	Residential	NAC-1	65	60	B	70	62.6	**60.4**	63.1	**61.1**	0.5	0.7	63.4	**61.4**	0.8	1.0
eF332	Residential	NAC-1	65	60	B	70	63.0	**60.7**	63.6	**61.4**	0.6	0.7	63.9	**61.7**	0.9	1.0
Receivers - East side Block G (32nd Street to 31st Street)																
eG101	Residential	NAC-1	65	60	B	70	**74.9**	**71.6**	**75.5**	**72.4**	0.6	0.8	**75.3**	**72.4**	0.4	0.8
eG102	Residential	NAC-1	65	60	B	70	**75.0**	**71.8**	**75.6**	**72.6**	0.6	0.8	**75.4**	**72.6**	0.4	0.8

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Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
eG103	Residential	NAC-1	65	60	B	70	**75.3**	**72.2**	**75.9**	**73.0**	0.6	0.8	**75.7**	**72.9**	0.4	0.7
eG104	Residential	NAC-1	65	60	B	70	**75.4**	**72.2**	**76.0**	**72.9**	0.6	0.7	**75.6**	**72.8**	0.2	0.6
eG105	Residential	NAC-1	65	60	B	70	**75.3**	**72.0**	**75.8**	**72.8**	0.5	0.8	**75.5**	**72.6**	0.2	0.6
eG106	Residential	NAC-1	65	60	B	70	**75.1**	**71.9**	**75.7**	**72.7**	0.6	0.8	**75.4**	**72.4**	0.3	0.5
eG107	Residential	NAC-1	65	60	B	70	**75.0**	**71.7**	**75.6**	**72.5**	0.6	0.8	**75.3**	**72.3**	0.3	0.6
eG108	Residential	NAC-1	65	60	B	70	**74.8**	**71.6**	**75.3**	**72.4**	0.5	0.8	**75.2**	**72.1**	0.4	0.5
eG109	Residential	NAC-1	65	60	B	70	**74.8**	**71.5**	**75.4**	**72.4**	0.6	0.9	**75.3**	**72.0**	0.5	0.5
eG110	Residential	NAC-1	65	60	B	70	**74.5**	**71.3**	**75.1**	**72.1**	0.6	0.8	**74.9**	**71.7**	0.4	0.4
eG111	Residential	NAC-1	65	60	B	70	**74.5**	**71.2**	**75.1**	**72.0**	0.6	0.8	**74.8**	**71.4**	0.3	0.2
eG112	Residential	NAC-1	65	60	B	70	**74.4**	**71.0**	**75.0**	**71.8**	0.6	0.8	**74.7**	**71.0**	0.3	0.0
eG202	Residential	NAC-1	65	60	B	70	**67.4**	**64.3**	**68.0**	**65.0**	0.6	0.7	**67.9**	**65.0**	0.5	0.7
eG204	Residential	NAC-1	65	60	B	70	**68.0**	**64.9**	**68.6**	**65.7**	0.6	0.8	**68.4**	**65.6**	0.4	0.7
eG206	Residential	NAC-1	65	60	B	70	**68.0**	**65.1**	**68.6**	**65.9**	0.6	0.8	**68.3**	**65.5**	0.3	0.4
eG208	Residential	NAC-1	65	60	B	70	**67.9**	**65.0**	**68.5**	**65.8**	0.6	0.8	**68.1**	**65.3**	0.2	0.3
eG210	Residential	NAC-1	65	60	B	70	**68.0**	**65.2**	**68.6**	**66.0**	0.6	0.8	**68.1**	**65.3**	0.1	0.1
eG212	Residential	NAC-1	65	60	B	70	**68.3**	**65.2**	**68.9**	**66.0**	0.6	0.8	**68.5**	**65.3**	0.2	0.1
eG302	Residential	NAC-1	65	60	B	70	63.4	**60.6**	64.0	**61.4**	0.6	0.8	63.8	**61.2**	0.4	0.6
eG303	Residential	NAC-1	65	60	B	70	63.7	**61.0**	64.3	**61.8**	0.6	0.8	64.1	**61.6**	0.4	0.6
eG303B	Residential	NAC-1	65	60	B	70	64.1	**61.6**	64.7	**62.3**	0.6	0.7	64.7	**62.3**	0.6	0.7
eG304	Residential	NAC-1	65	60	B	70	63.9	**61.1**	64.5	**61.9**	0.6	0.8	64.2	**61.7**	0.3	0.6
eG306	Residential	NAC-1	65	60	B	70	64.1	**61.5**	64.7	**62.3**	0.6	0.8	64.4	**61.9**	0.3	0.4
eG307	Residential	NAC-1	65	60	B	70	64.2	**61.5**	64.8	**62.3**	0.6	0.8	64.4	**61.9**	0.2	0.4
eG309	Residential	NAC-1	65	60	B	70	64.2	**61.6**	64.8	**62.4**	0.6	0.8	64.3	**61.8**	0.1	0.2
eG311	Residential	NAC-1	65	60	B	70	64.3	**61.7**	64.9	**62.5**	0.6	0.8	64.3	**61.7**	0.0	0.0
eG312	Residential	NAC-1	65	60	B	70	64.1	**61.5**	64.7	**62.3**	0.6	0.8	64.0	**61.4**	-0.1	-0.1
eG313	Residential	NAC-1	65	60	B	70	63.4	**61.0**	64.0	**61.8**	0.6	0.8	63.3	**60.9**	-0.1	-0.1
Receivers - East side Block H (31st Street to Lake Street)																
eH101	Residential	NAC-1	65	60	B	70	**75.0**	**71.1**	**75.6**	**72.0**	0.6	0.9	**74.4**	**70.1**	-0.6	-1.0
eH102	Residential	NAC-1	65	60	B	70	**74.4**	**70.9**	**75.1**	**71.7**	0.7	0.8	**73.4**	**69.4**	-1.0	-1.5
eH103	Residential	NAC-1	65	60	B	70	**74.7**	**70.7**	**75.3**	**71.7**	0.6	1.0	**73.4**	**68.7**	-1.3	-2.0
eH104	Commercial	NAC-2	70	65	E	75	**74.8**	**69.9**	**75.4**	**71.0**	0.6	1.1	**73.4**	**67.5**	-1.4	-2.4
eH105	Commercial	NAC-2	70	65	E	75	**74.4**	**69.3**	**75.0**	**70.3**	0.6	1.0	**73.4**	**67.4**	-1.0	-1.9
eH106	Commercial	NAC-2	70	65	E	75	**74.3**	**68.7**	**75.1**	**70.0**	0.8	1.3	**74.0**	**67.9**	-0.3	-0.8
eH106B	Residential	NAC-1	65	60	B	70	**74.9**	**72.0**	**75.7**	**73.0**	0.8	1.0	**74.3**	**71.3**	-0.6	-0.7
eH107	Commercial	NAC-2	70	65	E	75	**75.2**	**69.4**	**76.5**	**71.0**	1.3	1.6	**76.3**	**70.4**	1.1	1.0
eH201	Residential	NAC-1	65	60	B	70	**70.0**	**65.8**	**70.5**	**66.7**	0.5	0.9	**70.0**	**65.6**	0.0	-0.2
eH202	Residential	NAC-1	65	60	B	70	**69.5**	**65.4**	**70.1**	**66.2**	0.6	0.8	**69.7**	**65.2**	0.2	-0.2
eH203	Residential	NAC-1	65	60	B	70	**67.5**	**64.8**	**68.2**	**65.7**	0.7	0.9	**66.8**	**64.3**	-0.7	-0.5
eH205	Residential	NAC-1	65	60	B	70	**67.2**	**64.5**	**67.9**	**65.4**	0.7	0.9	**66.1**	**63.8**	-1.1	-0.7
eH207	Residential	NAC-1	65	60	B	70	**67.0**	**64.4**	**67.7**	**65.3**	0.7	0.9	**65.8**	**63.8**	-1.2	-0.6
eH206	Residential	NAC-1	65	60	B	70	**67.1**	**64.4**	**67.8**	**65.3**	0.7	0.9	**65.9**	**63.7**	-1.2	-0.7
eH209	Commercial	NAC-2	70	65	E	75	67.6	64.7	68.6	**65.8**	1.0	1.1	68.0	64.8	0.4	0.1
eH301	Residential	NAC-1	65	60	B	70	**65.5**	**61.5**	**66.1**	**62.3**	0.6	0.8	**65.8**	**61.5**	0.3	0.0
eH303	Residential	NAC-1	65	60	B	70	**66.8**	**61.9**	**67.4**	**62.8**	0.6	0.9	**67.1**	**62.0**	0.3	0.1
eH305	Residential	NAC-1	65	60	B	70	64.1	**61.7**	64.7	**62.5**	0.6	0.8	63.7	**61.4**	-0.4	-0.3
eH307	Residential	NAC-1	65	60	B	70	63.9	**61.6**	64.6	**62.4**	0.7	0.8	63.4	**61.3**	-0.5	-0.3
eH308	Residential	NAC-1	65	60	B	70	63.8	**61.6**	64.5	**62.5**	0.7	0.9	63.4	**61.4**	-0.4	-0.2
eH309	Commercial	NAC-2	70	65	E	75	64.2	61.9	65.0	62.9	0.8	1.0	64.1	62.0	-0.1	0.1
eH310	Commercial	NAC-2	70	65	E	75	67.9	62.3	69.2	64.0	1.3	1.7	69.1	63.6	1.2	1.3
Receivers - East side Block I (Lake Street to 29th Street)																
eI101	Commercial	NAC-2	70	65	E	75	**74.7**	**69.8**	**75.8**	**71.2**	1.1	1.4	**75.4**	**70.1**	0.7	0.3
eI102	Residential	NAC-1	65	60	B	70	**73.7**	**70.6**	**74.4**	**71.5**	0.7	0.9	**72.8**	**69.5**	-0.9	-1.1
eI103	Residential	NAC-1	65	60	B	70	**73.9**	**70.8**	**74.6**	**71.7**	0.7	0.9	**73.0**	**69.7**	-0.9	-1.1
eI104	Residential	NAC-1	65	60	B	70	**74.3**	**71.0**	**75.0**	**71.9**	0.7	0.9	**73.2**	**69.8**	-1.1	-1.2
eI104B	Residential	NAC-1	65	60	B	70	**76.5**	**73.0**	**77.2**	**73.9**	0.7	0.9	**76.5**	**72.8**	0.0	-0.2

Table 4
Daytime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
eI105	Residential	NAC-1	65	60	B	70	**74.5**	**71.2**	**75.2**	**72.1**	0.7	0.9	**73.3**	**70.0**	-1.2	-1.2
eI105B	Residential	NAC-1	65	60	B	70	**76.7**	**73.2**	**77.4**	**74.1**	0.7	0.9	**76.6**	**73.1**	-0.1	-0.1
eI106	Residential	NAC-1	65	60	B	70	**74.7**	**71.4**	**75.4**	**72.3**	0.7	0.9	**73.8**	**70.5**	-0.9	-0.9
eI107	Residential	NAC-1	65	60	B	70	**74.9**	**71.5**	**75.5**	**72.4**	0.6	0.9	**74.1**	**70.9**	-0.8	-0.6
eI108	Residential	NAC-1	65	60	B	70	**75.0**	**71.4**	**75.7**	**72.4**	0.7	1.0	**74.3**	**71.0**	-0.7	-0.4
eI109	Residential	NAC-1	65	60	B	70	**75.3**	**71.5**	**76.0**	**72.5**	0.7	1.0	**74.9**	**71.6**	-0.4	0.1
eI110	Residential	NAC-1	65	60	B	70	**74.9**	**71.1**	**75.6**	**72.1**	0.7	1.0	**75.3**	**72.1**	0.4	1.0
eI202	Residential	NAC-1	65	60	B	70	**68.1**	**65.4**	**69.0**	**66.5**	0.9	1.1	**68.2**	**65.7**	0.1	0.3
eI203	Residential	NAC-1	65	60	B	70	**67.6**	**64.8**	**68.3**	**65.8**	0.7	1.0	**67.0**	**64.7**	-0.6	-0.1
eI204	Residential	NAC-1	65	60	B	70	**67.7**	**64.9**	**68.3**	**65.8**	0.6	0.9	**67.0**	**64.8**	-0.7	-0.1
eI205	Residential	NAC-1	65	60	B	70	**67.6**	**64.8**	**68.3**	**65.7**	0.7	0.9	**67.1**	**64.8**	-0.5	0.0
eI207	Residential	NAC-1	65	60	B	70	**67.7**	**64.8**	**68.4**	**65.7**	0.7	0.9	**67.5**	**65.0**	-0.2	0.2
eI209	Residential	NAC-1	65	60	B	70	**67.6**	**64.7**	**68.2**	**65.5**	0.6	0.8	**68.0**	**65.3**	0.4	0.6
eI210	Residential	NAC-1	65	60	B	70	**69.4**	**66.5**	**70.0**	**67.4**	0.6	0.9	**70.3**	**67.6**	0.9	1.1
eI301	Commercial	NAC-2	70	65	E	75	67.6	64.5	68.7	**65.8**	1.1	1.3	68.6	**65.5**	1.0	1.0
eI303	Residential	NAC-1	65	60	B	70	**65.5**	**63.1**	**66.2**	**64.1**	0.7	1.0	**65.5**	**63.4**	0.0	0.3
eI304	Residential	NAC-1	65	60	B	70	63.9	**61.6**	64.6	**62.5**	0.7	0.9	63.9	**61.8**	0.0	0.2
eI306	Residential	NAC-1	65	60	B	70	63.9	**61.5**	64.6	**62.3**	0.7	0.8	64.1	**61.8**	0.2	0.3
eI307	Residential	NAC-1	65	60	B	70	64.0	**61.6**	64.7	**62.4**	0.7	0.8	64.5	**62.1**	0.5	0.5
eI309	Residential	NAC-1	65	60	B	70	**65.6**	**63.2**	**66.2**	**64.0**	0.6	0.8	**66.3**	**63.8**	0.7	0.6
Receivers - East side Block J (Greenway to 28th Street)																
eJ100	Commercial	NAC-2	70	65	E	75	67.1	**65.1**	67.7	**65.9**	0.6	0.8	66.3	64.6	-0.8	-0.5
eJ200	Commercial	NAC-2	70	65	E	75	64.0	59.8	64.6	60.7	0.6	0.9	64.3	60.1	0.3	0.3
eJ105	General	NAC-2	70	65	C	70	65.1	63.3	65.7	64.1	0.6	0.8	64.9	63.3	-0.2	0.0
eJ106	General	NAC-2	70	65	C	70	65.3	63.4	65.9	64.2	0.6	0.8	64.8	63.2	-0.5	-0.2
Receivers - East side Block K (28th Street to 26th Street)																
eK100	Commercial	NAC-2	70	65	E	75	62.4	60.8	63.0	61.6	0.6	0.8	63.1	61.6	0.7	0.8
eK105	General	NAC-2	70	65	C	70	67.6	**65.0**	68.2	**65.8**	0.6	0.8	68.8	**66.3**	1.2	1.3
eK106	General	NAC-2	70	65	C	70	66.4	64.0	67.0	64.8	0.6	0.8	67.5	**65.2**	1.1	1.2
eK501	Residential	NAC-1	65	60	B	70	62.7	**61.0**	63.4	**61.8**	0.7	0.8	62.8	**61.3**	0.1	0.3
eK503	Residential	NAC-1	65	60	B	70	62.7	**61.0**	63.3	**61.8**	0.6	0.8	62.9	**61.4**	0.2	0.4
eK505	Residential	NAC-1	65	60	B	70	62.6	**61.0**	63.3	**61.7**	0.7	0.7	62.8	**61.4**	0.2	0.4
eK507	Residential	NAC-1	65	60	B	70	62.6	**61.0**	63.2	**61.7**	0.6	0.7	62.8	**61.4**	0.2	0.4
eK508	Residential	NAC-1	65	60	B	70	62.7	**61.1**	63.3	**61.8**	0.6	0.7	63.0	**61.6**	0.3	0.5
eK509	Residential	NAC-1	65	60	B	70	62.8	**61.2**	63.4	**62.0**	0.6	0.8	63.2	**61.8**	0.4	0.6
eK120	Commercial	NAC-2	70	65	E	75	**71.0**	**67.7**	**71.7**	**68.6**	0.7	0.9	**72.4**	**69.1**	1.4	1.4
eK320	Residential	NAC-1	65	60	B	70	62.8	**61.2**	63.4	**61.9**	0.6	0.7	63.2	**61.7**	0.4	0.5
eK322	Residential	NAC-1	65	60	B	70	62.5	**60.9**	63.1	**61.6**	0.6	0.7	62.9	**61.5**	0.4	0.6
eK324	Residential	NAC-1	65	60	B	70	63.1	**61.3**	63.7	**62.1**	0.6	0.8	63.6	**62.0**	0.5	0.7
eK326	Residential	NAC-1	65	60	B	70	62.8	**61.0**	63.4	**61.7**	0.6	0.7	63.3	**61.6**	0.5	0.6
eK328	Residential	NAC-1	65	60	B	70	64.4	**61.6**	64.9	**62.3**	0.5	0.7	**65.0**	**62.4**	0.6	0.8
eK330	Residential	NAC-1	65	60	B	70	64.0	**61.2**	64.6	**62.0**	0.6	0.8	64.7	**62.0**	0.7	0.8
eK332	Residential	NAC-1	65	60	B	70	**69.3**	**62.4**	**69.9**	**63.2**	0.6	0.8	**70.0**	**63.5**	0.7	1.1
eK334	Residential	NAC-1	65	60	B	70	**68.9**	**61.8**	**69.4**	**62.6**	0.5	0.8	**69.6**	**62.8**	0.7	1.0
eK421	Residential	NAC-1	65	60	B	70	62.2	**60.6**	62.8	**61.3**	0.6	0.7	62.6	**61.1**	0.4	0.5
eK423	Residential	NAC-1	65	60	B	70	62.3	**60.6**	62.9	**61.3**	0.6	0.7	62.7	**61.2**	0.4	0.6
eK425	Residential	NAC-1	65	60	B	70	62.5	**60.6**	63.1	**61.3**	0.6	0.7	63.0	**61.2**	0.5	0.6
eK426	Residential	NAC-1	65	60	B	70	62.9	**60.7**	63.4	**61.4**	0.5	0.7	63.5	**61.3**	0.6	0.6
eK428	Residential	NAC-1	65	60	B	70	63.5	**60.7**	64.1	**61.4**	0.6	0.7	64.1	**61.4**	0.6	0.7
eK430	Residential	NAC-1	65	60	B	70	**65.5**	**60.7**	**66.0**	**61.5**	0.5	0.8	**66.1**	**61.5**	0.6	0.8
Receivers - East side Block L1 (26th Street to 24th Street)																
eL001	Residential	NAC-1	65	60	B	70	**67.3**	**64.2**	**67.9**	**65.0**	0.6	0.8	**67.8**	**64.8**	0.5	0.6
eL002	Residential	NAC-1	65	60	B	70	**66.9**	**62.1**	**67.5**	**63.0**	0.6	0.9	**67.6**	**63.1**	0.7	1.0
eL002b2	Residential	NAC-1	65	60	B	70	**71.6**	**65.8**	**72.2**	**66.6**	0.6	0.8	**72.4**	**66.8**	0.8	1.0
eL004	Residential	NAC-1	65	60	B	70	**65.1**	**60.5**	**65.7**	**61.3**	0.6	0.8	**65.6**	**61.2**	0.5	0.7

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Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
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N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
eL101	Residential	NAC-1	65	60	B	70	**69.9**	**61.9**	**70.5**	**62.8**	0.6	0.9	**70.6**	**62.9**	0.7	1.0
eL102	Residential	NAC-1	65	60	B	70	**69.5**	**61.3**	**70.1**	**62.2**	0.6	0.9	**70.2**	**62.3**	0.7	1.0
eL103	Residential	NAC-1	65	60	B	70	**69.2**	**60.8**	**69.8**	**61.7**	0.6	0.9	**70.0**	**61.8**	0.8	1.0
eL105	Residential	NAC-1	65	60	B	70	**66.9**	58.4	**67.7**	59.3	0.8	0.9	**67.7**	59.4	0.8	1.0
eL106	General	NAC-2	70	65	C	70	66.5	58.1	67.2	59.1	0.7	1.0	67.2	59.0	0.7	0.9
eL108	Residential	NAC-1	65	60	B	70	**66.6**	57.5	**67.3**	58.5	0.7	1.0	**67.2**	58.3	0.6	0.8
eL109	Commercial	NAC-2	70	65	E	75	66.6	57.1	67.3	58.0	0.7	0.9	67.2	57.9	0.6	0.8
eL110	Residential	NAC-1	65	60	B	70	**66.3**	57.5	**67.0**	58.4	0.7	0.9	**66.9**	58.3	0.6	0.8
eL201	Residential	NAC-1	65	60	B	70	**68.2**	**61.0**	**68.8**	**61.9**	0.6	0.9	**68.9**	**62.1**	0.7	1.1
eL202	Residential	NAC-1	65	60	B	70	**65.8**	**61.2**	**66.3**	**62.0**	0.5	0.8	**66.4**	**62.1**	0.6	0.9
eL203	Residential	NAC-1	65	60	B	70	**65.1**	**61.2**	**65.7**	**61.9**	0.6	0.7	**65.8**	**62.0**	0.7	0.8
eL204	Residential	NAC-1	65	60	B	70	64.7	**61.1**	**65.2**	**61.9**	0.5	0.8	**65.4**	**61.9**	0.7	0.8
eL205	Residential	NAC-1	65	60	B	70	62.3	59.6	62.9	**60.3**	0.6	0.7	62.8	**60.2**	0.5	0.6
eL206	Residential	NAC-1	65	60	B	70	64.2	**60.9**	64.7	**61.6**	0.5	0.7	64.8	**61.7**	0.6	0.8
eL207	Residential	NAC-1	65	60	B	70	61.7	59.1	62.2	59.8	0.5	0.7	62.2	59.8	0.5	0.7
eL208	Residential	NAC-1	65	60	B	70	63.5	**60.4**	64.1	**61.1**	0.6	0.7	64.2	**61.2**	0.7	0.8
eL210	Residential	NAC-1	65	60	B	70	63.2	**60.0**	63.8	**60.7**	0.6	0.7	63.7	**60.7**	0.5	0.7
eL211	Residential	NAC-1	65	60	B	70	63.3	59.9	63.9	**60.6**	0.6	0.7	63.7	**60.4**	0.4	0.5
eL301	Residential	NAC-1	65	60	B	70	61.4	59.3	61.9	**60.0**	0.5	0.7	62.0	59.9	0.6	0.6
eL302	Residential	NAC-1	65	60	B	70	61.4	59.3	61.9	**60.0**	0.5	0.7	62.0	**60.0**	0.6	0.7
eL121	Residential	NAC-1	65	60	B	70	**67.2**	58.3	**67.8**	59.2	0.6	0.9	**67.9**	59.3	0.7	1.0
eL123	Residential	NAC-1	65	60	B	70	64.0	58.6	64.6	59.5	0.6	0.9	64.8	59.9	0.8	1.3
eL124	Residential	NAC-1	65	60	B	70	**66.8**	57.7	**67.5**	58.6	0.7	0.9	**68.1**	59.5	1.3	1.8
eL221	Residential	NAC-1	65	60	B	70	62.1	58.5	62.6	59.2	0.5	0.7	62.6	59.1	0.5	0.6
eL222	Residential	NAC-1	65	60	B	70	62.8	59.6	63.3	**60.3**	0.5	0.7	63.2	**60.1**	0.4	0.5
eL223	Residential	NAC-1	65	60	B	70	61.0	58.3	61.6	59.0	0.6	0.7	61.4	58.9	0.4	0.6
eL224	Residential	NAC-1	65	60	B	70	60.9	58.1	61.4	58.9	0.5	0.8	61.4	58.8	0.5	0.7
eL225	Residential	NAC-1	65	60	B	70	63.0	59.6	63.5	**60.3**	0.5	0.7	63.5	**60.2**	0.5	0.6
eL226	Residential	NAC-1	65	60	B	70	63.7	59.8	64.2	**60.6**	0.5	0.8	64.3	**60.8**	0.6	1.0
eL226a	Residential	NAC-1	65	60	B	70	63.1	59.7	63.6	**60.4**	0.5	0.7	63.6	**60.4**	0.5	0.7
eL226a2	Residential	NAC-1	65	60	B	70	63.9	**61.1**	64.4	**61.7**	0.5	0.6	64.2	**61.6**	0.3	0.5
eL226a3	Residential	NAC-1	65	60	B	70	**65.0**	**62.7**	**65.5**	**63.3**	0.5	0.6	**65.1**	**62.9**	0.1	0.2
eL226b	Residential	NAC-1	65	60	B	70	63.1	59.7	63.6	**60.4**	0.5	0.7	63.6	**60.4**	0.5	0.7
eL226b2	Residential	NAC-1	65	60	B	70	63.9	**61.1**	64.3	**61.7**	0.4	0.6	64.3	**61.6**	0.4	0.5
eL226b3	Residential	NAC-1	65	60	B	70	**65.0**	**62.7**	**65.4**	**63.3**	0.4	0.6	**65.1**	**62.9**	0.1	0.2
eL226c	Residential	NAC-1	65	60	B	70	63.1	59.7	63.6	**60.4**	0.5	0.7	63.6	**60.5**	0.5	0.8
eL226c2	Residential	NAC-1	65	60	B	70	63.9	**61.1**	64.4	**61.7**	0.5	0.6	64.3	**61.7**	0.4	0.6
eL226c3	Residential	NAC-1	65	60	B	70	**65.0**	**62.7**	**65.5**	**63.3**	0.5	0.6	**65.2**	**63.0**	0.2	0.3
eL226d2	Residential	NAC-1	65	60	B	70	63.5	**60.9**	64.0	**61.6**	0.5	0.7	64.0	**61.6**	0.5	0.7
eL226d3	Residential	NAC-1	65	60	B	70	64.6	**62.4**	**65.0**	**63.0**	0.4	0.6	64.8	**62.8**	0.2	0.4
eL226e	Residential	NAC-1	65	60	B	70	62.1	59.3	62.6	**60.0**	0.5	0.7	62.6	**60.0**	0.5	0.7
eL226f	Residential	NAC-1	65	60	B	70	62.1	59.3	62.6	**60.0**	0.5	0.7	62.5	**60.0**	0.4	0.7
eL226g	Residential	NAC-1	65	60	B	70	62.1	59.3	62.6	**60.0**	0.5	0.7	62.6	**60.1**	0.5	0.8
eL228	Residential	NAC-1	65	60	B	70	63.3	59.7	63.8	**60.5**	0.5	0.8	64.1	**60.9**	0.8	1.2
eL230	Residential	NAC-1	65	60	B	70	61.2	58.6	61.7	59.3	0.5	0.7	62.4	59.9	1.2	1.3
eL232	Residential	NAC-1	65	60	B	70	61.2	58.7	61.7	59.3	0.5	0.6	62.6	**60.1**	1.4	1.4
eL321	Residential	NAC-1	65	60	B	70	61.0	59.0	61.5	59.6	0.5	0.6	61.4	59.6	0.4	0.6
eL324	Residential	NAC-1	65	60	B	70	60.9	58.9	61.4	59.5	0.5	0.6	61.3	59.4	0.4	0.5
eL325	Residential	NAC-1	65	60	B	70	61.0	58.9	61.5	59.6	0.5	0.7	61.4	59.5	0.4	0.6
eL326	Residential	NAC-1	65	60	B	70	60.9	58.8	61.4	59.5	0.5	0.7	61.4	59.4	0.5	0.6
eL326C	Residential	NAC-1	65	60	B	70	60.4	58.6	60.9	59.3	0.5	0.7	60.8	59.1	0.4	0.5
Receivers - East side Block L2 (24th Street to Franklin Avenue)																
eL141	Residential	NAC-1	65	60	B	70	**66.5**	58.4	**67.1**	59.3	0.6	0.9	**69.6**	**63.7**	3.1	5.3
eL142	Residential	NAC-1	65	60	B	70	64.7	58.8	**65.2**	59.6	0.5	0.8	**66.9**	**62.6**	2.2	3.8
eL143	Residential	NAC-1	65	60	B	70	63.1	58.9	63.7	59.7	0.6	0.8	**65.0**	**61.5**	1.9	2.6

Table 4
Daytime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
eL143b2	Residential	NAC-1	65	60	B	70	**65.6**	**61.8**	**66.1**	**62.5**	0.5	0.7	**66.9**	**63.7**	1.3	1.9
eL143b3	Residential	NAC-1	65	60	B	70	**66.8**	**63.9**	**67.3**	**64.5**	0.5	0.6	**68.0**	**65.3**	1.2	1.4
eL144	Residential	NAC-1	65	60	B	70	**68.1**	58.7	**68.7**	59.6	0.6	0.9	**69.3**	**60.5**	1.2	1.8
eL144B	Residential	NAC-1	65	60	B	70	**69.2**	**61.6**	**69.8**	**62.5**	0.6	0.9	**70.3**	**63.5**	1.1	1.9
eL145	Residential	NAC-1	65	60	B	70	**67.5**	58.3	**68.2**	59.2	0.7	0.9	**68.7**	**60.0**	1.2	1.7
eL147	Residential	NAC-1	65	60	B	70	**67.4**	58.3	**68.1**	59.2	0.7	0.9	**68.3**	59.6	0.9	1.3
eL148	Residential	NAC-1	65	60	B	70	**68.0**	58.7	**68.6**	59.5	0.6	0.8	**68.7**	59.7	0.7	1.0
eL148B	Residential	NAC-1	65	60	B	70	**69.1**	**61.3**	**69.7**	**62.2**	0.6	0.9	**69.7**	**62.2**	0.6	0.9
eL149	Residential	NAC-1	65	60	B	70	**67.9**	58.6	**68.5**	59.4	0.6	0.8	**68.6**	59.5	0.7	0.9
eL149B	Residential	NAC-1	65	60	B	70	**68.9**	**61.3**	**69.6**	**62.2**	0.7	0.9	**69.5**	**62.1**	0.6	0.8
eL149C	Residential	NAC-1	65	60	B	70	63.6	58.8	64.1	59.6	0.5	0.8	64.5	**60.5**	0.9	1.7
eL150	Residential	NAC-1	65	60	B	70	**67.9**	58.5	**68.6**	59.4	0.7	0.9	**68.6**	59.4	0.7	0.9
eL241	Residential	NAC-1	65	60	B	70	63.2	59.8	63.7	**60.5**	0.5	0.7	64.1	**61.1**	0.9	1.3
eL243	Residential	NAC-1	65	60	B	70	61.6	58.7	62.1	59.4	0.5	0.7	62.8	**60.2**	1.2	1.5
eL244	Residential	NAC-1	65	60	B	70	61.2	58.6	61.7	59.3	0.5	0.7	62.3	59.9	1.1	1.3
eL245	Residential	NAC-1	65	60	B	70	63.6	**60.0**	64.1	**60.7**	0.5	0.7	64.5	**61.3**	0.9	1.3
eL246	Residential	NAC-1	65	60	B	70	63.4	**60.0**	63.9	**60.7**	0.5	0.7	64.2	**61.2**	0.8	1.2
eL248	Residential	NAC-1	65	60	B	70	63.5	**60.0**	63.9	**60.8**	0.4	0.8	64.3	**61.5**	0.8	1.5
eL249	Residential	NAC-1	65	60	B	70	63.5	**60.1**	64.0	**60.8**	0.5	0.7	64.4	**61.6**	0.9	1.5
eL250	Residential	NAC-1	65	60	B	70	63.5	**60.2**	64.0	**60.9**	0.5	0.7	64.4	**61.7**	0.9	1.5
eL251	Residential	NAC-1	65	60	B	70	63.6	**60.4**	64.1	**61.1**	0.5	0.7	64.6	**62.0**	1.0	1.6
eL341	Residential	NAC-1	65	60	B	70	60.9	58.9	61.4	59.5	0.5	0.6	61.6	59.6	0.7	0.7
eL342	Residential	NAC-1	65	60	B	70	61.0	59.0	61.5	59.6	0.5	0.6	61.6	59.7	0.6	0.7
eL343	Residential	NAC-1	65	60	B	70	61.0	59.0	61.5	59.6	0.5	0.6	61.7	59.8	0.7	0.8
eL345	Residential	NAC-1	65	60	B	70	61.1	59.0	61.6	59.7	0.5	0.7	61.7	59.8	0.6	0.8
eL346	Residential	NAC-1	65	60	B	70	61.1	59.0	61.6	59.7	0.5	0.7	61.7	59.9	0.6	0.9
eL347	Residential	NAC-1	65	60	B	70	61.2	59.2	61.7	59.8	0.5	0.6	61.8	**60.0**	0.6	0.8
eL348	Residential	NAC-1	65	60	B	70	61.2	59.2	61.7	59.9	0.5	0.7	61.9	**60.1**	0.7	0.9
eL349	Residential	NAC-1	65	60	B	70	61.2	59.2	61.7	59.9	0.5	0.7	61.9	**60.1**	0.7	0.9
eL350	Residential	NAC-1	65	60	B	70	61.3	59.3	61.8	**60.0**	0.5	0.7	62.0	**60.2**	0.7	0.9
eL351	Residential	NAC-1	65	60	B	70	61.4	59.4	61.9	**60.0**	0.5	0.6	62.1	**60.3**	0.7	0.9
eL161	Residential	NAC-1	65	60	B	70	**67.9**	58.7	**68.6**	59.5	0.7	0.8	**68.6**	59.6	0.7	0.9
eL161b2	Residential	NAC-1	65	60	B	70	**69.1**	**61.6**	**69.7**	**62.5**	0.6	0.9	**69.7**	**62.4**	0.6	0.8
eL162	Residential	NAC-1	65	60	B	70	**68.7**	59.0	**69.4**	59.8	0.7	0.8	**69.4**	59.9	0.7	0.9
eL162b2	Residential	NAC-1	65	60	B	70	**69.5**	**61.4**	**70.1**	**62.3**	0.6	0.9	**70.1**	**62.3**	0.6	0.9
eL163	Residential	NAC-1	65	60	B	70	**67.6**	58.6	**68.2**	59.5	0.6	0.9	**68.3**	59.6	0.7	1.0
eL164	Residential	NAC-1	65	60	B	70	**67.6**	58.8	**68.2**	59.7	0.6	0.9	**68.4**	59.9	0.8	1.1
eL165	Residential	NAC-1	65	60	B	70	**68.1**	59.8	**68.8**	**60.7**	0.7	0.9	**69.0**	**61.0**	0.9	1.2
eL166	Residential	NAC-1	65	60	B	70	**69.2**	**61.5**	**69.9**	**62.5**	0.7	1.0	**70.1**	**63.0**	0.9	1.5
eL167	Residential	NAC-1	65	60	B	70	**71.5**	**64.7**	**72.1**	**65.6**	0.6	0.9	**72.4**	**66.2**	0.9	1.5
eL167B	Residential	NAC-1	65	60	B	70	**74.1**	**70.3**	**74.7**	**71.1**	0.6	0.8	**75.1**	**71.4**	1.0	1.1
eL168	Residential	NAC-1	65	60	B	70	**72.6**	**66.7**	**73.2**	**67.7**	0.6	1.0	**73.5**	**68.2**	0.9	1.5
eL168B	Residential	NAC-1	65	60	B	70	**75.2**	**71.7**	**75.8**	**72.5**	0.6	0.8	**76.2**	**72.9**	1.0	1.2
eL169	Residential	NAC-1	65	60	B	70	**73.7**	**68.3**	**74.3**	**69.2**	0.6	0.9	**74.5**	**69.6**	0.8	1.3
eL169B	Residential	NAC-1	65	60	B	70	**75.7**	**72.3**	**76.3**	**73.1**	0.6	0.8	**76.7**	**73.4**	1.0	1.1
eL261	Residential	NAC-1	65	60	B	70	63.7	**60.7**	64.2	**61.4**	0.5	0.7	64.6	**62.1**	0.9	1.4
eL262	Residential	NAC-1	65	60	B	70	64.0	**60.9**	64.5	**61.6**	0.5	0.7	64.8	**62.2**	0.8	1.3
eL263	Residential	NAC-1	65	60	B	70	64.0	**61.0**	64.5	**61.7**	0.5	0.7	64.8	**62.3**	0.8	1.3
eL264	Residential	NAC-1	65	60	B	70	64.2	**61.3**	64.8	**62.0**	0.6	0.7	**65.1**	**62.5**	0.9	1.2
eL265	Residential	NAC-1	65	60	B	70	64.6	**61.6**	**65.1**	**62.3**	0.5	0.7	**65.4**	**62.8**	0.8	1.2
eL265b2	Residential	NAC-1	65	60	B	70	**65.6**	**63.4**	**66.1**	**64.1**	0.5	0.7	**66.3**	**64.3**	0.7	0.9
eL265b3	Residential	NAC-1	65	60	B	70	**65.0**	**62.9**	**65.5**	**63.6**	0.5	0.7	**65.7**	**63.9**	0.7	1.0
eL266	Residential	NAC-1	65	60	B	70	64.5	**61.6**	**65.0**	**62.3**	0.5	0.7	**65.3**	**62.8**	0.8	1.2
eL267	Residential	NAC-1	65	60	B	70	64.9	**62.0**	**65.4**	**62.7**	0.5	0.7	**65.7**	**63.1**	0.8	1.1
eL268	Residential	NAC-1	65	60	B	70	**65.3**	**62.4**	**65.8**	**63.1**	0.5	0.7	**66.1**	**63.5**	0.8	1.1

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Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
eL269	Residential	NAC-1	65	60	B	70	**67.0**	**63.6**	**67.5**	**64.3**	0.5	0.7	**67.7**	**64.6**	0.7	1.0
eL269b4a	Residential	NAC-1	65	60	B	70	**66.1**	**62.9**	**66.6**	**63.6**	0.5	0.7	**66.8**	**64.0**	0.7	1.1
eL269b4b	Residential	NAC-1	65	60	B	70	**66.6**	**63.1**	**67.1**	**63.8**	0.5	0.7	**67.3**	**64.2**	0.7	1.1
eL269b4c	Residential	NAC-1	65	60	B	70	**67.0**	**63.4**	**67.5**	**64.1**	0.5	0.7	**67.7**	**64.4**	0.7	1.0
eL269b4d	Residential	NAC-1	65	60	B	70	**71.7**	**65.0**	**72.2**	**65.7**	0.5	0.7	**72.3**	**65.9**	0.6	0.9
eL270	Commercial	NAC-2	70	65	E	75	**71.7**	**65.3**	**72.2**	**66.0**	0.5	0.7	**72.3**	**66.2**	0.6	0.9
eL361	Residential	NAC-1	65	60	B	70	61.6	59.6	62.1	**60.2**	0.5	0.6	62.3	**60.5**	0.7	0.9
eL362	Residential	NAC-1	65	60	B	70	61.8	59.8	62.3	**60.5**	0.5	0.7	62.6	**60.8**	0.8	1.0
eL362B	Residential	NAC-1	65	60	B	70	62.3	**60.4**	62.8	**61.1**	0.5	0.7	63.0	**61.3**	0.7	0.9
eL363	Residential	NAC-1	65	60	B	70	62.0	**60.0**	62.6	**60.7**	0.6	0.7	62.8	**61.0**	0.8	1.0
eL364	Residential	NAC-1	65	60	B	70	62.3	**60.2**	62.8	**60.8**	0.5	0.6	63.1	**61.2**	0.8	1.0
eL365	Residential	NAC-1	65	60	B	70	62.7	**60.5**	63.2	**61.1**	0.5	0.6	63.5	**61.6**	0.8	1.1
eL366	General	NAC-2	70	65	C	70	63.0	60.7	63.5	61.4	0.5	0.7	63.9	61.9	0.9	1.2
eL367	Residential	NAC-1	65	60	B	70	63.9	**61.1**	64.4	**61.8**	0.5	0.7	64.7	**62.3**	0.8	1.2
eL367B	Residential	NAC-1	65	60	B	70	64.2	**61.7**	64.7	**62.4**	0.5	0.7	64.9	**62.8**	0.7	1.1
eL368	Residential	NAC-1	65	60	B	70	64.4	**61.3**	64.9	**62.0**	0.5	0.7	**65.2**	**62.5**	0.8	1.2
eL369	Residential	NAC-1	65	60	B	70	64.9	**61.5**	**65.4**	**62.2**	0.5	0.7	**65.6**	**62.7**	0.7	1.2
eL370	Residential	NAC-1	65	60	B	70	**66.1**	**61.4**	**66.6**	**62.2**	0.5	0.8	**66.8**	**62.6**	0.7	1.2
Receivers - East side Block M (Franklin Avenue to I-94/Portland Avenue)																
eM100	Residential	NAC-1	65	60	B	70	59.6	55.8	60.2	56.6	0.6	0.8	60.8	57.0	1.2	1.2
eM1001b1	Commercial	NAC-2	70	65	E	75	**70.9**	63.4	**71.4**	64.2	0.5	0.8	**71.4**	64.1	0.5	0.7
eM1001b3	Residential	NAC-1	65	60	B	70	**70.9**	**64.4**	**71.4**	**65.3**	0.5	0.9	**71.5**	**65.4**	0.6	1.0
eM1002b1	Commercial	NAC-2	70	65	E	75	**71.5**	64.4	**72.0**	**65.2**	0.5	0.8	**72.0**	**65.2**	0.5	0.8
eM1003b1	Commercial	NAC-2	70	65	E	75	**71.9**	**65.9**	**72.5**	**66.8**	0.6	0.9	**72.7**	**67.3**	0.8	1.4
eM1003b3	Residential	NAC-1	65	60	B	70	**73.5**	**69.8**	**74.1**	**70.7**	0.6	0.9	**74.7**	**71.4**	1.2	1.6
eM1004b1	Commercial	NAC-2	70	65	E	75	**71.5**	**65.3**	**72.1**	**66.3**	0.6	1.0	**72.4**	**66.8**	0.9	1.5
eM1005b2	Residential	NAC-1	65	60	B	70	**72.8**	**68.3**	**73.4**	**69.2**	0.6	0.9	**73.8**	**69.8**	1.0	1.5
eM1006b2	Residential	NAC-1	65	60	B	70	**68.9**	**63.8**	**69.6**	**64.8**	0.7	1.0	**70.1**	**65.5**	1.2	1.7
eM1007b1	Commercial	NAC-2	70	65	E	75	60.8	57.3	61.4	58.1	0.6	0.8	62.1	58.6	1.3	1.3
eM1007b3	Residential	NAC-1	65	60	B	70	**66.0**	**62.0**	**66.6**	**62.9**	0.6	0.9	**67.2**	**63.4**	1.2	1.4
eM1007b4	Residential	NAC-1	65	60	B	70	**67.9**	**65.2**	**68.5**	**66.0**	0.6	0.8	**69.2**	**66.4**	1.3	1.2
eM1008b1	Commercial	NAC-2	70	65	E	75	60.0	56.5	60.6	57.3	0.6	0.8	61.2	57.7	1.2	1.2
eM1008b4	Residential	NAC-1	65	60	B	70	**67.3**	**64.7**	**67.9**	**65.6**	0.6	0.9	**68.6**	**65.9**	1.3	1.2
eM1009b4	Residential	NAC-1	65	60	B	70	**70.6**	**67.8**	**71.2**	**68.6**	0.6	0.8	**71.9**	**69.2**	1.3	1.4
eM1010b1	Commercial	NAC-2	70	65	E	75	**71.3**	64.5	**71.9**	**65.5**	0.6	1.0	**72.3**	**66.2**	1.0	1.7
eM1011b1	Commercial	NAC-2	70	65	E	75	**71.3**	64.5	**71.9**	**65.5**	0.6	1.0	**72.3**	**66.2**	1.0	1.7
eM1012b2	Residential	NAC-1	65	60	B	70	**71.3**	**64.6**	**72.0**	**65.5**	0.7	0.9	**72.3**	**66.2**	1.0	1.6
eM1012b4	Residential	NAC-1	65	60	B	70	**73.4**	**70.2**	**74.0**	**71.0**	0.6	0.8	**74.5**	**71.5**	1.1	1.3
eM1013b1	Commercial	NAC-2	70	65	E	75	66.2	61.3	66.8	62.2	0.6	0.9	67.3	62.9	1.1	1.6
eM1014b1	Commercial	NAC-2	70	65	E	75	64.8	61.0	65.4	61.9	0.6	0.9	65.9	62.5	1.1	1.5
eM1014b3	Residential	NAC-1	65	60	B	70	**67.0**	**63.9**	**67.7**	**64.8**	0.7	0.9	**68.2**	**65.3**	1.2	1.4
eM1014b4	Residential	NAC-1	65	60	B	70	**68.1**	**65.7**	**68.7**	**66.5**	0.6	0.8	**69.2**	**66.8**	1.1	1.1
eM1015b1	Commercial	NAC-2	70	65	E	75	63.7	60.7	64.3	61.5	0.6	0.8	64.9	62.1	1.2	1.4
eM1015b2	Residential	NAC-1	65	60	B	70	**65.1**	**62.2**	**65.7**	**63.1**	0.6	0.9	**66.3**	**63.5**	1.2	1.3
eM1015b4	Residential	NAC-1	65	60	B	70	**67.1**	**64.8**	**67.7**	**65.6**	0.6	0.8	**68.2**	**65.9**	1.1	1.1
eM103	Residential	NAC-1	65	60	B	70	**72.6**	**63.4**	**73.3**	**64.3**	0.7	0.9	**73.4**	**64.6**	0.8	1.2
eM103C	Residential	NAC-1	65	60	B	70	64.6	**61.2**	**65.1**	**62.0**	0.5	0.8	**65.6**	**62.7**	1.0	1.5
eM301	Residential	NAC-1	65	60	B	70	60.8	58.3	61.4	59.0	0.6	0.7	61.6	59.3	0.8	1.0
eM302	General	NAC-2	70	65	C	70	62.1	60.2	62.7	60.9	0.6	0.7	63.1	61.3	1.0	1.1
eM403	Residential	NAC-1	65	60	B	70	62.0	**60.4**	62.6	**61.1**	0.6	0.7	62.8	**61.3**	0.8	0.9
eM404	Residential	NAC-1	65	60	B	70	61.7	**60.1**	62.3	**60.8**	0.6	0.7	62.5	**61.0**	0.8	0.9
eM405	Residential	NAC-1	65	60	B	70	61.4	59.9	62.0	**60.6**	0.6	0.7	62.2	**60.7**	0.8	0.8
eM406	Residential	NAC-1	65	60	B	70	61.2	59.6	61.8	**60.3**	0.6	0.7	62.0	**60.5**	0.8	0.9
eM121	Residential	NAC-1	65	60	B	70	**72.6**	**63.8**	**73.2**	**64.7**	0.6	0.9	**73.4**	**65.1**	0.8	1.3
eM221	Residential	NAC-1	65	60	B	70	**65.3**	**63.5**	**65.9**	**64.2**	0.6	0.7	**66.5**	**64.7**	1.2	1.2

Table 4
Daytime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
eM222	Residential	NAC-1	65	60	B	70	**65.2**	**63.4**	**65.8**	**64.2**	0.6	0.8	**66.3**	**64.6**	1.1	1.2
eM223	Residential	NAC-1	65	60	B	70	**65.8**	**64.0**	**66.4**	**64.7**	0.6	0.7	**66.9**	**65.1**	1.1	1.1
eM224	Residential	NAC-1	65	60	B	70	**70.2**	**68.1**	**70.8**	**68.8**	0.6	0.7	**71.0**	**69.0**	0.8	0.9
eM225	Commercial	NAC-2	70	65	E	75	67.0	**65.1**	67.6	**65.8**	0.6	0.7	67.9	**66.1**	0.9	1.0
eM321	General	NAC-2	70	65	C	70	66.0	61.6	66.6	62.5	0.6	0.9	66.8	62.8	0.8	1.2
eM323	Residential	NAC-1	65	60	B	70	**65.9**	**62.7**	**66.5**	**63.4**	0.6	0.7	**66.6**	**63.7**	0.7	1.0
eM324	Residential	NAC-1	65	60	B	70	**66.5**	**63.5**	**67.0**	**64.2**	0.5	0.7	**67.2**	**64.5**	0.7	1.0
eM325	Residential	NAC-1	65	60	B	70	**67.0**	**64.1**	**67.5**	**64.9**	0.5	0.8	**67.6**	**65.1**	0.6	1.0
eM326	Residential	NAC-1	65	60	B	70	**67.9**	**65.3**	**68.5**	**66.0**	0.6	0.7	**68.5**	**66.2**	0.6	0.9
eM327	Residential	NAC-1	65	60	B	70	**71.4**	**68.9**	**72.0**	**69.6**	0.6	0.7	**72.1**	**69.7**	0.7	0.8
eM328	Residential	NAC-1	65	60	B	70	**70.4**	**68.7**	**71.0**	**69.4**	0.6	0.7	**71.1**	**69.5**	0.7	0.8
eM421	Residential	NAC-1	65	60	B	70	62.6	**61.0**	63.2	**61.7**	0.6	0.7	63.3	**61.8**	0.7	0.8
eM423	Residential	NAC-1	65	60	B	70	63.5	**61.8**	64.1	**62.5**	0.6	0.7	64.3	**62.7**	0.8	0.9
eM425	Residential	NAC-1	65	60	B	70	63.2	**61.5**	63.8	**62.2**	0.6	0.7	63.9	**62.4**	0.7	0.9
eM427	Residential	NAC-1	65	60	B	70	**67.3**	**65.7**	**67.9**	**66.4**	0.6	0.7	**68.0**	**66.5**	0.7	0.8
eM429	Residential	NAC-1	65	60	B	70	**68.5**	**66.8**	**69.1**	**67.5**	0.6	0.7	**69.2**	**67.6**	0.7	0.8
Receivers - West side Blocks AA to GG (46th Street to 39th Street)																
wAA103	Residential	NAC-1	65	60	B	70	**65.3**	**60.4**	**65.9**	**61.1**	0.6	0.7	**66.1**	**61.5**	0.8	1.1
wAA107	Residential	NAC-1	65	60	B	70	64.8	59.2	**65.4**	59.9	0.6	0.7	**65.7**	**60.4**	0.9	1.2
wAA111	Residential	NAC-1	65	60	B	70	**65.0**	58.8	**65.6**	59.5	0.6	0.7	**65.8**	**60.0**	0.8	1.2
wAA115	Commercial	NAC-2	70	65	E	75	64.9	59.3	65.5	60.1	0.6	0.8	65.8	60.5	0.9	1.2
wAA203	Residential	NAC-1	65	60	B	70	60.2	58.7	60.7	59.4	0.5	0.7	60.9	59.6	0.7	0.9
wAA207	Residential	NAC-1	65	60	B	70	59.7	58.4	60.3	59.0	0.6	0.6	60.5	59.3	0.8	0.9
wAA211	Residential	NAC-1	65	60	B	70	59.5	58.2	60.1	58.9	0.6	0.7	60.3	59.1	0.8	0.9
wAA215	General	NAC-2	70	65	C	70	60.4	59.1	61.0	59.7	0.6	0.6	61.2	60.0	0.8	0.9
wBB101	General	NAC-2	70	65	C	70	67.8	**65.0**	68.3	**65.7**	0.5	0.7	68.8	**66.1**	1.0	1.1
wBB102	General	NAC-2	70	65	C	70	64.9	63.1	65.4	63.7	0.5	0.6	65.7	64.1	0.8	1.0
wBB103	General	NAC-2	70	65	C	70	63.9	62.4	64.4	63.0	0.5	0.6	64.7	63.3	0.8	0.9
wBB104	General	NAC-2	70	65	C	70	64.6	63.1	65.1	63.7	0.5	0.6	65.4	64.0	0.8	0.9
wBB105	General	NAC-2	70	65	C	70	64.1	62.6	64.6	63.2	0.5	0.6	64.9	63.5	0.8	0.9
wBB106	General	NAC-2	70	65	C	70	63.6	62.2	64.1	62.8	0.5	0.6	64.4	63.1	0.8	0.9
wBB107	General	NAC-2	70	65	C	70	63.5	62.0	64.0	62.6	0.5	0.6	64.3	62.9	0.8	0.9
wBB108	General	NAC-2	70	65	C	70	63.5	62.0	64.0	62.6	0.5	0.6	64.4	63.0	0.9	1.0
wBB109	General	NAC-2	70	65	C	70	64.4	62.8	64.8	63.4	0.4	0.6	65.2	63.7	0.8	0.9
wBB110	General	NAC-2	70	65	C	70	64.5	62.8	65.0	63.4	0.5	0.6	65.3	63.7	0.8	0.9
wDD103	Residential	NAC-1	65	60	B	70	62.2	**60.8**	62.7	**61.4**	0.5	0.6	62.9	**61.6**	0.7	0.8
wDD107	Residential	NAC-1	65	60	B	70	62.4	**60.9**	62.9	**61.5**	0.5	0.6	63.1	**61.8**	0.7	0.9
wDD111	Residential	NAC-1	65	60	B	70	63.7	**61.9**	64.2	**62.5**	0.5	0.6	64.4	**62.7**	0.7	0.8
wDD115	Residential	NAC-1	65	60	B	70	**69.3**	**64.6**	**69.8**	**65.4**	0.5	0.8	**70.1**	**65.7**	0.8	1.1
wDD203	Residential	NAC-1	65	60	B	70	61.2	59.9	61.7	**60.5**	0.5	0.6	61.8	**60.6**	0.6	0.7
wDD207	Residential	NAC-1	65	60	B	70	61.8	59.8	62.3	**60.4**	0.5	0.6	62.5	**60.6**	0.7	0.8
wDD211	Residential	NAC-1	65	60	B	70	64.5	**60.7**	**65.0**	**61.4**	0.5	0.7	**65.2**	**61.6**	0.7	0.9
wDD215	Residential	NAC-1	65	60	B	70	**67.1**	**62.1**	**67.6**	**62.8**	0.5	0.7	**67.8**	**63.1**	0.7	1.0
wEE103	Residential	NAC-1	65	60	B	70	62.7	**61.5**	63.2	**62.0**	0.5	0.5	63.4	**62.3**	0.7	0.8
wEE107	Residential	NAC-1	65	60	B	70	63.1	**61.8**	63.6	**62.4**	0.5	0.6	63.8	**62.6**	0.7	0.8
wEE111	Residential	NAC-1	65	60	B	70	63.2	**61.9**	63.7	**62.5**	0.5	0.6	63.9	**62.7**	0.7	0.8
wEE115	Residential	NAC-1	65	60	B	70	63.2	**61.7**	63.7	**62.3**	0.5	0.6	63.9	**62.6**	0.7	0.9
wEE203	Residential	NAC-1	65	60	B	70	61.8	**60.5**	62.3	**61.1**	0.5	0.6	62.4	**61.2**	0.6	0.7
wEE207	Residential	NAC-1	65	60	B	70	61.7	**60.5**	62.2	**61.1**	0.5	0.6	62.3	**61.2**	0.6	0.7
wEE211	Residential	NAC-1	65	60	B	70	61.4	**60.2**	61.9	**60.8**	0.5	0.6	62.0	**60.9**	0.6	0.7
wEE215	General	NAC-2	70	65	C	70	61.2	60.0	61.7	60.6	0.5	0.6	61.9	60.8	0.7	0.8
wFF103	Residential	NAC-1	65	60	B	70	64.8	**60.0**	**65.1**	**60.7**	0.3	0.7	**65.6**	**61.0**	0.8	1.0
wFF107	Residential	NAC-1	65	60	B	70	62.5	**60.9**	63.0	**61.5**	0.5	0.6	63.2	**61.7**	0.7	0.8
wFF111	Residential	NAC-1	65	60	B	70	62.0	**60.5**	62.5	**61.1**	0.5	0.6	62.7	**61.4**	0.7	0.9
wFF115	Residential	NAC-1	65	60	B	70	61.9	**60.4**	62.4	**61.0**	0.5	0.6	62.6	**61.3**	0.7	0.9

Table 4
Daytime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
wFF203	Residential	NAC-1	65	60	B	70	61.1	58.9	61.6	59.5	0.5	0.6	61.8	59.7	0.7	0.8
wFF207	Residential	NAC-1	65	60	B	70	60.0	58.5	60.5	59.1	0.5	0.6	60.7	59.3	0.7	0.8
wFF211	Residential	NAC-1	65	60	B	70	63.1	**61.5**	63.5	**62.0**	0.4	0.5	63.6	**62.2**	0.5	0.7
wFF215	Residential	NAC-1	65	60	B	70	62.5	**61.0**	62.9	**61.6**	0.4	0.6	63.1	**61.7**	0.6	0.7
wGG103	Residential	NAC-1	65	60	B	70	**75.1**	**71.3**	**75.4**	**71.8**	0.3	0.5	**75.6**	**72.0**	0.5	0.7
wGG107	Residential	NAC-1	65	60	B	70	**72.2**	**67.3**	**72.5**	**67.8**	0.3	0.5	**72.9**	**68.2**	0.7	0.9
wGG111	Residential	NAC-1	65	60	B	70	**70.9**	**65.2**	**71.2**	**65.7**	0.3	0.5	**71.7**	**66.2**	0.8	1.0
wGG115	Residential	NAC-1	65	60	B	70	**70.1**	**63.9**	**70.4**	**64.4**	0.3	0.5	**71.0**	**65.1**	0.9	1.2
wGG203	Residential	NAC-1	65	60	B	70	**72.8**	**70.2**	**73.2**	**70.8**	0.4	0.6	**73.3**	**70.9**	0.5	0.7
wGG207	Residential	NAC-1	65	60	B	70	**70.3**	**67.9**	**70.7**	**68.4**	0.4	0.5	**70.8**	**68.6**	0.5	0.7
wGG211	Residential	NAC-1	65	60	B	70	**68.4**	**66.0**	**68.8**	**66.5**	0.4	0.5	**69.0**	**66.7**	0.6	0.7
wGG215	Residential	NAC-1	65	60	B	70	**67.2**	**64.7**	**67.6**	**65.2**	0.4	0.5	**67.8**	**65.4**	0.6	0.7
Receivers - West side Block A (39th Street to 38th Street)																
wA101	Residential	NAC-1	65	60	B	70	**70.7**	**66.2**	**71.2**	**66.9**	0.5	0.7	**71.4**	**67.2**	0.7	1.0
wA103	Residential	NAC-1	65	60	B	70	**68.0**	**64.2**	**68.6**	**64.9**	0.6	0.7	**68.8**	**65.3**	0.8	1.1
wA104	Residential	NAC-1	65	60	B	70	**66.9**	**62.0**	**67.5**	**62.7**	0.6	0.7	**67.8**	**63.1**	0.9	1.1
wA106	Residential	NAC-1	65	60	B	70	**66.1**	**60.9**	**66.7**	**61.6**	0.6	0.7	**67.0**	**62.2**	0.9	1.3
wA108	Residential	NAC-1	65	60	B	70	**65.6**	59.7	**66.1**	**60.5**	0.5	0.8	**66.5**	**61.1**	0.9	1.4
wA110	Residential	NAC-1	65	60	B	70	**65.0**	59.6	**65.6**	**60.3**	0.6	0.7	**65.9**	**60.9**	0.9	1.3
wA112	Residential	NAC-1	65	60	B	70	64.9	**60.0**	**65.5**	**60.7**	0.6	0.7	**65.8**	**61.2**	0.9	1.2
wA114	Residential	NAC-1	65	60	B	70	64.7	59.7	**65.3**	**60.5**	0.6	0.8	**65.5**	**61.0**	0.8	1.3
wA201	General	NAC-2	70	65	C	70	69.8	64.7	**70.3**	**65.5**	0.5	0.8	**70.4**	**65.6**	0.6	0.9
wA203	Residential	NAC-1	65	60	B	70	**65.5**	**62.9**	**66.0**	**63.6**	0.5	0.7	**66.1**	**63.8**	0.6	0.9
wA205	Residential	NAC-1	65	60	B	70	64.4	**62.4**	**65.0**	**63.1**	0.6	0.7	**65.1**	**63.3**	0.7	0.9
wA207	Residential	NAC-1	65	60	B	70	63.7	**62.0**	64.2	**62.6**	0.5	0.6	64.4	**62.8**	0.7	0.8
wA209	Residential	NAC-1	65	60	B	70	62.9	**61.3**	63.5	**62.0**	0.6	0.7	63.7	**62.2**	0.8	0.9
wA211	Residential	NAC-1	65	60	B	70	62.4	**61.0**	63.0	**61.7**	0.6	0.7	63.2	**61.9**	0.8	0.9
wA212	Residential	NAC-1	65	60	B	70	62.0	**60.7**	62.5	**61.4**	0.5	0.7	62.7	**61.6**	0.7	0.9
wA301	Commercial	NAC-2	70	65	E	75	64.4	60.6	65.0	61.4	0.6	0.8	65.1	61.6	0.7	1.0
wA303	Residential	NAC-1	65	60	B	70	64.0	**61.1**	64.6	**61.9**	0.6	0.8	64.7	**62.1**	0.7	1.0
wA305	Residential	NAC-1	65	60	B	70	63.1	**60.8**	63.6	**61.5**	0.5	0.7	63.8	**61.7**	0.7	0.9
wA307	Residential	NAC-1	65	60	B	70	62.4	**60.5**	63.0	**61.2**	0.6	0.7	63.1	**61.4**	0.7	0.9
wA309	Residential	NAC-1	65	60	B	70	61.7	**60.0**	62.3	**60.7**	0.6	0.7	62.5	**60.9**	0.8	0.9
wA311	Residential	NAC-1	65	60	B	70	61.2	59.6	61.8	**60.3**	0.6	0.7	62.0	**60.5**	0.8	0.9
wA313	Residential	NAC-1	65	60	B	70	60.9	59.5	61.5	**60.1**	0.6	0.6	61.7	**60.4**	0.8	0.9
wA314	Residential	NAC-1	65	60	B	70	60.2	58.8	60.8	59.5	0.6	0.7	61.0	59.7	0.8	0.9
Receivers - West side Block B (38th Street to 37th Street)																
wB101	Residential	NAC-1	65	60	B	70	**73.2**	**70.7**	**73.7**	**71.4**	0.5	0.7	**74.0**	**71.6**	0.8	0.9
wB102	Residential	NAC-1	65	60	B	70	**73.2**	**70.7**	**73.7**	**71.4**	0.5	0.7	**74.0**	**71.7**	0.8	1.0
wB104	Residential	NAC-1	65	60	B	70	**72.8**	**70.2**	**73.3**	**70.9**	0.5	0.7	**73.5**	**71.2**	0.7	1.0
wB106	Residential	NAC-1	65	60	B	70	**72.9**	**70.2**	**73.4**	**70.9**	0.5	0.7	**73.6**	**71.2**	0.7	1.0
wB108	Residential	NAC-1	65	60	B	70	**72.8**	**70.2**	**73.3**	**70.9**	0.5	0.7	**73.5**	**71.1**	0.7	0.9
wB110	Residential	NAC-1	65	60	B	70	**73.3**	**70.6**	**73.8**	**71.3**	0.5	0.7	**74.1**	**71.6**	0.8	1.0
wB112	Residential	NAC-1	65	60	B	70	**72.8**	**70.0**	**73.3**	**70.7**	0.5	0.7	**73.6**	**70.9**	0.8	0.9
wB113	Residential	NAC-1	65	60	B	70	**72.8**	**69.8**	**73.3**	**70.5**	0.5	0.7	**73.5**	**70.8**	0.7	1.0
wB114	Residential	NAC-1	65	60	B	70	**71.0**	**63.4**	**71.6**	**64.2**	0.6	0.8	**71.7**	**64.4**	0.7	1.0
wB115	Residential	NAC-1	65	60	B	70	**67.3**	**60.7**	**67.9**	**61.6**	0.6	0.9	**68.0**	**61.7**	0.7	1.0
wB201	Residential	NAC-1	65	60	B	70	60.8	59.0	61.4	59.7	0.6	0.7	61.4	59.9	0.6	0.9
wB202	Residential	NAC-1	65	60	B	70	61.5	59.7	62.1	**60.4**	0.6	0.7	62.2	**60.6**	0.7	0.9
wB203	Residential	NAC-1	65	60	B	70	62.6	**60.7**	63.2	**61.5**	0.6	0.8	63.3	**61.6**	0.7	0.9
wB205	Residential	NAC-1	65	60	B	70	61.9	**60.0**	62.4	**60.7**	0.5	0.7	62.5	**60.9**	0.6	0.9
wB207	Residential	NAC-1	65	60	B	70	61.9	**60.0**	62.4	**60.7**	0.5	0.7	62.6	**60.9**	0.7	0.9
wB209	Residential	NAC-1	65	60	B	70	61.7	59.7	62.3	**60.5**	0.6	0.8	62.4	**60.6**	0.7	0.9
wB211	Residential	NAC-1	65	60	B	70	61.6	59.5	62.1	**60.2**	0.5	0.7	62.2	**60.4**	0.6	0.9
wB212	Residential	NAC-1	65	60	B	70	62.7	**60.4**	63.3	**61.1**	0.6	0.7	63.4	**61.3**	0.7	0.9

Table 4
Daytime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
wB213	Residential	NAC-1	65	60	B	70	62.2	59.5	62.8	**60.2**	0.6	0.7	62.9	**60.4**	0.7	0.9
wB214	Residential	NAC-1	65	60	B	70	**66.6**	**60.8**	**67.1**	**61.7**	0.5	0.9	**67.2**	**61.8**	0.6	1.0
wB215	Residential	NAC-1	65	60	B	70	**65.9**	59.9	**66.4**	**60.7**	0.5	0.8	**66.5**	**60.9**	0.6	1.0
wB216	Residential	NAC-1	65	60	B	70	**65.4**	59.3	**66.0**	**60.1**	0.6	0.8	**66.1**	**60.3**	0.7	1.0
wB301	Residential	NAC-1	65	60	B	70	57.5	55.9	58.1	56.6	0.6	0.7	58.2	56.7	0.7	0.8
wB303	Residential	NAC-1	65	60	B	70	57.5	55.8	58.1	56.5	0.6	0.7	58.2	56.7	0.7	0.9
wB305	Residential	NAC-1	65	60	B	70	57.5	55.8	58.1	56.5	0.6	0.7	58.2	56.6	0.7	0.8
wB307	Residential	NAC-1	65	60	B	70	57.6	55.8	58.2	56.5	0.6	0.7	58.3	56.6	0.7	0.8
wB309	Residential	NAC-1	65	60	B	70	57.6	55.6	58.2	56.3	0.6	0.7	58.3	56.5	0.7	0.9
wB311	Residential	NAC-1	65	60	B	70	58.1	55.6	58.6	56.3	0.5	0.7	58.8	56.5	0.7	0.9
wB313	Residential	NAC-1	65	60	B	70	59.1	55.5	59.6	56.3	0.5	0.8	59.7	56.5	0.6	1.0
wB314	Residential	NAC-1	65	60	B	70	64.4	56.5	**65.0**	57.4	0.6	0.9	**65.1**	57.5	0.7	1.0
Receivers - West side Block C (37th Street to 36th Street)																
wC101	Residential	NAC-1	65	60	B	70	**73.9**	**69.8**	**74.5**	**70.5**	0.6	0.7	**74.4**	**70.8**	0.5	1.0
wC102	Residential	NAC-1	65	60	B	70	**73.7**	**69.7**	**74.3**	**70.5**	0.6	0.8	**74.1**	**70.7**	0.4	1.0
wC103	Residential	NAC-1	65	60	B	70	**73.4**	**69.7**	**74.0**	**70.5**	0.6	0.8	**73.7**	**70.6**	0.3	0.9
wC105	Residential	NAC-1	65	60	B	70	**73.0**	**69.8**	**73.6**	**70.5**	0.6	0.7	**73.4**	**70.7**	0.4	0.9
wC107	Residential	NAC-1	65	60	B	70	**72.6**	**69.5**	**73.2**	**70.3**	0.6	0.8	**73.0**	**70.4**	0.4	0.9
wC109	Residential	NAC-1	65	60	B	70	**72.5**	**69.6**	**73.1**	**70.4**	0.6	0.8	**73.0**	**70.5**	0.5	0.9
wC111	Residential	NAC-1	65	60	B	70	**72.8**	**69.9**	**73.4**	**70.7**	0.6	0.8	**73.4**	**70.8**	0.6	0.9
wC113	Residential	NAC-1	65	60	B	70	**73.0**	**70.2**	**73.5**	**70.9**	0.5	0.7	**73.6**	**71.1**	0.6	0.9
wC114	Residential	NAC-1	65	60	B	70	**73.3**	**70.5**	**73.8**	**71.3**	0.5	0.8	**74.0**	**71.4**	0.7	0.9
wC115	Residential	NAC-1	65	60	B	70	64.6	**62.5**	**65.2**	**63.3**	0.6	0.8	**65.3**	**63.4**	0.7	0.9
wC201	Residential	NAC-1	65	60	B	70	**69.6**	**63.4**	**70.2**	**64.3**	0.6	0.9	**70.2**	**64.4**	0.6	1.0
wC202	Residential	NAC-1	65	60	B	70	**70.3**	**62.4**	**70.9**	**63.3**	0.6	0.9	**70.9**	**63.3**	0.6	0.9
wC204	Residential	NAC-1	65	60	B	70	**65.1**	**60.6**	**65.7**	**61.4**	0.6	0.8	**68.4**	**62.1**	3.3	1.5
wC205	Residential	NAC-1	65	60	B	70	63.6	**60.6**	64.1	**61.4**	0.5	0.8	64.2	**61.5**	0.6	0.9
wC206	Residential	NAC-1	65	60	B	70	62.6	**60.1**	63.2	**60.8**	0.6	0.7	63.2	**61.0**	0.6	0.9
wC208	Residential	NAC-1	65	60	B	70	62.4	**60.1**	62.9	**60.8**	0.5	0.7	62.9	**60.9**	0.5	0.8
wC210	Residential	NAC-1	65	60	B	70	61.6	59.5	62.2	**60.2**	0.6	0.7	62.1	**60.3**	0.5	0.8
wC211	Residential	NAC-1	65	60	B	70	61.9	59.8	62.5	**60.5**	0.6	0.7	62.4	**60.6**	0.5	0.8
wC213	Residential	NAC-1	65	60	B	70	61.2	59.3	61.8	**60.0**	0.6	0.7	61.8	**60.1**	0.6	0.8
wC214	Residential	NAC-1	65	60	B	70	61.6	59.7	62.2	**60.4**	0.6	0.7	62.2	**60.5**	0.6	0.8
wC215	Residential	NAC-1	65	60	B	70	61.5	59.7	62.1	**60.4**	0.6	0.7	62.2	**60.5**	0.7	0.8
wC216	Residential	NAC-1	65	60	B	70	62.3	**60.4**	62.9	**61.1**	0.6	0.7	63.0	**61.3**	0.7	0.9
wC217	Residential	NAC-1	65	60	B	70	60.1	58.3	60.7	59.0	0.6	0.7	62.3	**60.7**	2.2	2.4
wC218	Residential	NAC-1	65	60	B	70	59.7	57.9	60.3	58.6	0.6	0.7	60.0	58.4	0.3	0.5
wC301	Residential	NAC-1	65	60	B	70	60.2	56.4	60.7	57.2	0.5	0.8	64.1	57.6	3.9	1.2
wC303	Residential	NAC-1	65	60	B	70	59.0	56.4	59.5	57.1	0.5	0.7	59.6	57.2	0.6	0.8
wC305	Residential	NAC-1	65	60	B	70	58.4	56.3	59.0	57.0	0.6	0.7	59.0	57.1	0.6	0.8
wC307	Residential	NAC-1	65	60	B	70	58.1	56.2	58.7	56.9	0.6	0.7	58.7	57.0	0.6	0.8
wC309	Residential	NAC-1	65	60	B	70	57.9	56.0	58.5	56.8	0.6	0.8	58.5	56.9	0.6	0.9
wC311	Residential	NAC-1	65	60	B	70	57.7	56.0	58.3	56.7	0.6	0.7	58.3	56.8	0.6	0.8
wC312	Residential	NAC-1	65	60	B	70	57.8	56.1	58.4	56.8	0.6	0.7	58.5	57.0	0.7	0.9
wC314	Residential	NAC-1	65	60	B	70	57.8	56.1	58.4	56.8	0.6	0.7	58.4	56.9	0.6	0.8
wC315	Residential	NAC-1	65	60	B	70	56.7	55.1	57.3	55.8	0.6	0.7	57.4	55.9	0.7	0.8
Receivers - West side Block D (36th Street to 35th Street)																
wD101	Residential	NAC-1	65	60	B	70	**74.4**	**70.6**	**75.0**	**71.3**	0.6	0.7	**75.1**	**71.5**	0.7	0.9
wD102	Residential	NAC-1	65	60	B	70	**74.0**	**70.5**	**74.5**	**71.2**	0.5	0.7	**74.7**	**71.5**	0.7	1.0
wD103	Residential	NAC-1	65	60	B	70	**74.5**	**70.7**	**75.0**	**71.4**	0.5	0.7	**75.1**	**71.6**	0.6	0.9
wD104	Residential	NAC-1	65	60	B	70	**74.2**	**70.7**	**74.7**	**71.4**	0.5	0.7	**74.8**	**71.7**	0.6	1.0
wD105	Residential	NAC-1	65	60	B	70	**74.4**	**70.9**	**74.9**	**71.6**	0.5	0.7	**75.1**	**71.9**	0.7	1.0
wD106	Residential	NAC-1	65	60	B	70	**74.2**	**70.9**	**74.7**	**71.6**	0.5	0.7	**74.9**	**71.9**	0.7	1.0
wD107	Residential	NAC-1	65	60	B	70	**74.0**	**70.8**	**74.5**	**71.5**	0.5	0.7	**74.7**	**71.8**	0.7	1.0
wD108	Residential	NAC-1	65	60	B	70	**74.1**	**70.9**	**74.6**	**71.6**	0.5	0.7	**74.8**	**71.9**	0.7	1.0

Table 4
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Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
wD109	Residential	NAC-1	65	60	B	70	**73.7**	**70.8**	**74.2**	**71.5**	0.5	0.7	**74.5**	**71.8**	0.8	1.0
wD110	Residential	NAC-1	65	60	B	70	**73.6**	**70.3**	**74.1**	**71.0**	0.5	0.7	**74.3**	**71.3**	0.7	1.0
wD111	Residential	NAC-1	65	60	B	70	**73.7**	**70.3**	**74.2**	**71.1**	0.5	0.8	**74.4**	**71.3**	0.7	1.0
wD112	Residential	NAC-1	65	60	B	70	**73.3**	**70.0**	**73.8**	**70.7**	0.5	0.7	**74.0**	**71.0**	0.7	1.0
wD113	Residential	NAC-1	65	60	B	70	**73.5**	**70.1**	**74.0**	**70.8**	0.5	0.7	**74.2**	**71.1**	0.7	1.0
wD114	Residential	NAC-1	65	60	B	70	**73.9**	**69.5**	**74.4**	**70.2**	0.5	0.7	**74.6**	**70.5**	0.7	1.0
wD115	Residential	NAC-1	65	60	B	70	**68.0**	**62.5**	**68.6**	**63.3**	0.6	0.8	**68.7**	**63.5**	0.7	1.0
wD201	Residential	NAC-1	65	60	B	70	**67.6**	**62.4**	**68.1**	**63.2**	0.5	0.8	**68.2**	**63.3**	0.6	0.9
wD202	Residential	NAC-1	65	60	B	70	**67.2**	**61.6**	**67.8**	**62.5**	0.6	0.9	**67.9**	**62.6**	0.7	1.0
wD203	Residential	NAC-1	65	60	B	70	**66.9**	**60.9**	**67.4**	**61.8**	0.5	0.9	**67.5**	**61.9**	0.6	1.0
wD204	Residential	NAC-1	65	60	B	70	**66.3**	**60.2**	**66.9**	**61.0**	0.6	0.8	**66.9**	**61.1**	0.6	0.9
wD205	Residential	NAC-1	65	60	B	70	64.1	**61.4**	64.6	**62.2**	0.5	0.8	64.7	**62.3**	0.6	0.9
wD207	Residential	NAC-1	65	60	B	70	63.3	**61.2**	63.8	**61.9**	0.5	0.7	63.9	**62.1**	0.6	0.9
wD210	Residential	NAC-1	65	60	B	70	63.1	**61.1**	63.7	**61.8**	0.6	0.7	63.8	**62.0**	0.7	0.9
wD211	Residential	NAC-1	65	60	B	70	63.3	**61.2**	63.9	**61.9**	0.6	0.7	64.0	**62.0**	0.7	0.8
wD212	Residential	NAC-1	65	60	B	70	63.3	**60.9**	63.8	**61.6**	0.5	0.7	63.9	**61.8**	0.6	0.9
wD214	Residential	NAC-1	65	60	B	70	63.9	**60.5**	64.4	**61.3**	0.5	0.8	64.5	**61.4**	0.6	0.9
wD215	Residential	NAC-1	65	60	B	70	**69.1**	**60.9**	**69.8**	**61.7**	0.7	0.8	**69.8**	**61.8**	0.7	0.9
wD302	Residential	NAC-1	65	60	B	70	63.6	56.9	64.2	57.7	0.6	0.8	64.3	57.8	0.7	0.9
wD304	Residential	NAC-1	65	60	B	70	59.3	56.9	59.8	57.6	0.5	0.7	59.9	57.7	0.6	0.8
wD306	Residential	NAC-1	65	60	B	70	59.0	56.9	59.6	57.6	0.6	0.7	59.6	57.8	0.6	0.9
wD308	Residential	NAC-1	65	60	B	70	58.9	56.9	59.5	57.6	0.6	0.7	59.6	57.7	0.7	0.8
wD310	Residential	NAC-1	65	60	B	70	58.9	56.7	59.4	57.4	0.5	0.7	59.5	57.5	0.6	0.8
wD312	Residential	NAC-1	65	60	B	70	59.1	56.5	59.6	57.2	0.5	0.7	59.7	57.3	0.6	0.8
wD313	Residential	NAC-1	65	60	B	70	62.7	56.1	63.3	56.9	0.6	0.8	63.3	57.0	0.6	0.9
wD314	Residential	NAC-1	65	60	B	70	63.5	55.7	64.1	56.5	0.6	0.8	64.2	56.6	0.7	0.9
Receivers - West side Block E (35th Street to 34th Street)																
wE101	Residential	NAC-1	65	60	B	70	**72.5**	**68.7**	**73.0**	**69.4**	0.5	0.7	**73.2**	**69.7**	0.7	1.0
wE102	Residential	NAC-1	65	60	B	70	**70.1**	**66.9**	**70.6**	**67.6**	0.5	0.7	**70.8**	**67.8**	0.7	0.9
wE103	Residential	NAC-1	65	60	B	70	**70.5**	**66.9**	**71.0**	**67.6**	0.5	0.7	**71.1**	**67.8**	0.6	0.9
wE104	Residential	NAC-1	65	60	B	70	**72.7**	**67.8**	**73.2**	**68.5**	0.5	0.7	**73.4**	**68.9**	0.7	1.1
wE105	Residential	NAC-1	65	60	B	70	**72.2**	**66.4**	**72.7**	**67.2**	0.5	0.8	**72.9**	**67.5**	0.7	1.1
wE106	Residential	NAC-1	65	60	B	70	**71.7**	**65.5**	**72.2**	**66.2**	0.5	0.7	**72.3**	**66.5**	0.6	1.0
wE107	Residential	NAC-1	65	60	B	70	**71.0**	**64.9**	**71.4**	**65.6**	0.4	0.7	**71.4**	**65.8**	0.4	0.9
wE108	Residential	NAC-1	65	60	B	70	**71.3**	**64.3**	**71.7**	**64.8**	0.4	0.5	**71.6**	**64.9**	0.3	0.6
wE109	Residential	NAC-1	65	60	B	70	**71.1**	**64.2**	**71.3**	**64.7**	0.2	0.5	**71.2**	**64.6**	0.1	0.4
wE110	Residential	NAC-1	65	60	B	70	**71.0**	**64.1**	**71.2**	**64.6**	0.2	0.5	**71.1**	**64.5**	0.1	0.4
wE111	Residential	NAC-1	65	60	B	70	**70.2**	**63.7**	**70.5**	**64.2**	0.3	0.5	**70.3**	**64.1**	0.1	0.4
wE112	Residential	NAC-1	65	60	B	70	**69.4**	**63.0**	**69.7**	**63.5**	0.3	0.5	**69.5**	**63.5**	0.1	0.5
wE113	Residential	NAC-1	65	60	B	70	**68.8**	**62.3**	**69.1**	**62.9**	0.3	0.6	**69.0**	**62.9**	0.2	0.6
wE114	Residential	NAC-1	65	60	B	70	**67.3**	**63.4**	**67.7**	**64.0**	0.4	0.6	**67.6**	**64.2**	0.3	0.8
wE201	Residential	NAC-1	65	60	B	70	**70.3**	**64.4**	**70.9**	**65.2**	0.6	0.8	**71.0**	**65.4**	0.7	1.0
wE202	Residential	NAC-1	65	60	B	70	**68.2**	**64.5**	**68.7**	**65.2**	0.5	0.7	**68.8**	**65.4**	0.6	0.9
wE203	Residential	NAC-1	65	60	B	70	**67.1**	**64.1**	**67.6**	**64.8**	0.5	0.7	**67.6**	**64.9**	0.5	0.8
wE204	Residential	NAC-1	65	60	B	70	**66.7**	**63.8**	**67.1**	**64.4**	0.4	0.6	**67.2**	**64.6**	0.5	0.8
wE206	Residential	NAC-1	65	60	B	70	**66.5**	**63.6**	**66.9**	**64.2**	0.4	0.6	**66.9**	**64.3**	0.4	0.7
wE207	Residential	NAC-1	65	60	B	70	**66.4**	**63.5**	**66.8**	**64.2**	0.4	0.7	**66.8**	**64.3**	0.4	0.8
wE209	Residential	NAC-1	65	60	B	70	**66.4**	**63.5**	**66.8**	**64.1**	0.4	0.6	**66.7**	**64.2**	0.3	0.7
wE210	Residential	NAC-1	65	60	B	70	**66.2**	**63.2**	**66.6**	**63.9**	0.4	0.7	**66.5**	**64.0**	0.3	0.8
wE212	Residential	NAC-1	65	60	B	70	**66.0**	**63.0**	**66.4**	**63.6**	0.4	0.6	**66.3**	**63.7**	0.3	0.7
wE214	Residential	NAC-1	65	60	B	70	**65.4**	**62.6**	**65.8**	**63.2**	0.4	0.6	**65.7**	**63.4**	0.3	0.8
wE302	Residential	NAC-1	65	60	B	70	**66.3**	**62.0**	**66.8**	**62.7**	0.5	0.7	**66.9**	**62.8**	0.6	0.8
wE304	Residential	NAC-1	65	60	B	70	**65.0**	**62.1**	**65.5**	**62.7**	0.5	0.6	**65.5**	**62.8**	0.5	0.7
wE306	Residential	NAC-1	65	60	B	70	64.5	**62.0**	**65.0**	**62.6**	0.5	0.6	**65.0**	**62.7**	0.5	0.7
wE308	Residential	NAC-1	65	60	B	70	64.1	**61.8**	64.6	**62.5**	0.5	0.7	64.6	**62.5**	0.5	0.7

Table 4
Daytime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
wE309	Residential	NAC-1	65	60	B	70	63.9	**61.7**	64.4	**62.3**	0.5	0.6	64.3	**62.3**	0.4	0.6
wE311	Residential	NAC-1	65	60	B	70	63.7	**61.5**	64.1	**62.1**	0.4	0.6	64.1	**62.1**	0.4	0.6
wE312	Residential	NAC-1	65	60	B	70	63.3	**61.2**	63.8	**61.8**	0.5	0.6	63.7	**61.8**	0.4	0.6
wE313	Residential	NAC-1	65	60	B	70	62.4	**60.4**	62.8	**61.1**	0.4	0.7	62.7	**61.1**	0.3	0.7
Receivers - West side Block F (34th Street to 32nd Street)																
wF101	Residential	NAC-1	65	60	B	70	**66.4**	**61.8**	**66.9**	**62.4**	0.5	0.6	**67.0**	**62.7**	0.6	0.9
wF102	Residential	NAC-1	65	60	B	70	**65.7**	**63.0**	**66.1**	**63.7**	0.4	0.7	**66.1**	**63.9**	0.4	0.9
wF103	Residential	NAC-1	65	60	B	70	**66.1**	**61.3**	**66.7**	**61.9**	0.6	0.6	**66.8**	**62.3**	0.7	1.0
wF104	Residential	NAC-1	65	60	B	70	**65.3**	**60.8**	**65.9**	**61.4**	0.6	0.6	**66.1**	**61.8**	0.8	1.0
wF106	Residential	NAC-1	65	60	B	70	**65.1**	**60.5**	**65.7**	**61.1**	0.6	0.6	**66.0**	**61.7**	0.9	1.2
wF108	Residential	NAC-1	65	60	B	70	**65.0**	**60.7**	**65.6**	**61.3**	0.6	0.6	**65.9**	**61.8**	0.9	1.1
wF111	Residential	NAC-1	65	60	B	70	64.9	**60.6**	**65.5**	**61.2**	0.6	0.6	**65.8**	**61.8**	0.9	1.2
wF113	Residential	NAC-1	65	60	B	70	**65.2**	**60.4**	**65.8**	**61.0**	0.6	0.6	**66.1**	**61.7**	0.9	1.3
wF114	Residential	NAC-1	65	60	B	70	**65.3**	**60.5**	**65.9**	**61.1**	0.6	0.6	**66.3**	**61.8**	1.0	1.3
wF202	Residential	NAC-1	65	60	B	70	64.3	**62.0**	64.7	**62.7**	0.4	0.7	64.7	**62.8**	0.4	0.8
wF204	Residential	NAC-1	65	60	B	70	63.6	**61.8**	64.1	**62.4**	0.5	0.6	64.1	**62.6**	0.5	0.8
wF206	Residential	NAC-1	65	60	B	70	63.2	**61.6**	63.7	**62.3**	0.5	0.7	63.7	**62.4**	0.5	0.8
wF208	Residential	NAC-1	65	60	B	70	62.9	**61.6**	63.4	**62.2**	0.5	0.6	63.5	**62.3**	0.6	0.7
wF209	Residential	NAC-1	65	60	B	70	63.0	**61.7**	63.6	**62.4**	0.6	0.7	63.7	**62.5**	0.7	0.8
wF211	Residential	NAC-1	65	60	B	70	63.0	**61.7**	63.5	**62.4**	0.5	0.7	63.6	**62.5**	0.6	0.8
wF213	Residential	NAC-1	65	60	B	70	63.2	**62.0**	63.8	**62.6**	0.6	0.6	63.9	**62.8**	0.7	0.8
wF213C	Residential	NAC-1	65	60	B	70	62.9	**61.6**	63.4	**62.3**	0.5	0.7	63.4	**62.3**	0.5	0.7
wF302	Residential	NAC-1	65	60	B	70	62.6	**60.7**	63.0	**61.4**	0.4	0.7	63.0	**61.4**	0.4	0.7
wF304	Residential	NAC-1	65	60	B	70	62.2	**60.6**	62.7	**61.2**	0.5	0.6	62.6	**61.2**	0.4	0.6
wF306	Residential	NAC-1	65	60	B	70	62.0	**60.5**	62.5	**61.1**	0.5	0.6	62.4	**61.1**	0.4	0.6
wF308	Residential	NAC-1	65	60	B	70	61.9	**60.5**	62.4	**61.1**	0.5	0.6	62.3	**61.1**	0.4	0.6
wF310	Residential	NAC-1	65	60	B	70	61.9	**60.6**	62.4	**61.2**	0.5	0.6	62.3	**61.2**	0.4	0.6
wF312	Residential	NAC-1	65	60	B	70	62.0	**60.8**	62.6	**61.4**	0.6	0.6	62.5	**61.3**	0.5	0.5
wF313	Residential	NAC-1	65	60	B	70	62.1	**60.9**	62.7	**61.5**	0.6	0.6	62.6	**61.4**	0.5	0.5
wF120	Residential	NAC-1	65	60	B	70	**65.3**	**60.4**	**65.9**	**61.1**	0.6	0.7	**66.3**	**61.8**	1.0	1.4
wF124	General	NAC-2	70	65	C	70	65.5	60.5	66.1	61.1	0.6	0.6	66.5	62.0	1.0	1.5
wF124C	General	NAC-2	70	65	C	70	65.0	63.2	65.6	63.9	0.6	0.7	65.7	64.0	0.7	0.8
wF221	Residential	NAC-1	65	60	B	70	63.2	**61.8**	63.7	**62.5**	0.5	0.7	63.8	**62.6**	0.6	0.8
wF222	Residential	NAC-1	65	60	B	70	63.3	**62.0**	63.9	**62.6**	0.6	0.6	63.9	**62.7**	0.6	0.7
wF322	Residential	NAC-1	65	60	B	70	62.2	**60.8**	62.8	**61.5**	0.6	0.7	62.7	**61.4**	0.5	0.6
wF324	Residential	NAC-1	65	60	B	70	62.5	**61.0**	63.0	**61.7**	0.5	0.7	63.0	**61.6**	0.5	0.6
wF326	Residential	NAC-1	65	60	B	70	62.8	**61.2**	63.3	**61.9**	0.5	0.7	63.3	**61.8**	0.5	0.6
wF328	Residential	NAC-1	65	60	B	70	63.1	**61.5**	63.7	**62.2**	0.6	0.7	63.6	**62.0**	0.5	0.5
wF330	Residential	NAC-1	65	60	B	70	63.5	**61.8**	64.0	**62.5**	0.5	0.7	63.9	**62.3**	0.4	0.5
wF331	Residential	NAC-1	65	60	B	70	63.8	**62.0**	64.4	**62.7**	0.6	0.7	64.2	**62.5**	0.4	0.5
wF332	Residential	NAC-1	65	60	B	70	64.3	**62.4**	64.8	**63.1**	0.5	0.7	64.7	**62.8**	0.4	0.4
Receivers - West side Block G (32nd Street to 31st Street)																
wG101	General	NAC-2	70	65	C	70	66.2	63.6	66.7	64.2	0.5	0.6	68.8	64.4	2.6	0.8
wG105	Residential	NAC-1	65	60	B	70	**69.9**	**65.2**	**70.2**	**65.8**	0.3	0.6	**71.3**	**65.8**	1.4	0.6
wG106	General	NAC-2	70	65	C	70	**71.2**	**67.3**	**71.6**	**67.9**	0.4	0.6	**71.9**	**67.8**	0.7	0.5
wG106C	General	NAC-2	70	65	C	70	67.9	**65.4**	68.3	**66.0**	0.4	0.6	68.5	**65.9**	0.6	0.5
wG201	Residential	NAC-1	65	60	B	70	**65.8**	**63.8**	**66.3**	**64.4**	0.5	0.6	**66.4**	**64.4**	0.6	0.6
wG202	Residential	NAC-1	65	60	B	70	**66.1**	**63.9**	**66.6**	**64.6**	0.5	0.7	**66.7**	**64.4**	0.6	0.5
wG203	Residential	NAC-1	65	60	B	70	**66.7**	**64.4**	**67.2**	**65.0**	0.5	0.6	**67.4**	**64.9**	0.7	0.5
wG204	Residential	NAC-1	65	60	B	70	**67.1**	**64.7**	**67.6**	**65.3**	0.5	0.6	**67.7**	**65.1**	0.6	0.4
wG205	General	NAC-2	70	65	C	70	68.1	**65.3**	68.5	**66.0**	0.4	0.7	68.5	**65.7**	0.4	0.4
wG301	Residential	NAC-1	65	60	B	70	**65.1**	**63.0**	**65.6**	**63.7**	0.5	0.7	**65.5**	**63.5**	0.4	0.5
wG303	Residential	NAC-1	65	60	B	70	**65.6**	**63.4**	**66.1**	**64.1**	0.5	0.7	**66.0**	**63.8**	0.4	0.4
wG305	Residential	NAC-1	65	60	B	70	**66.2**	**63.9**	**66.7**	**64.6**	0.5	0.7	**66.6**	**64.3**	0.4	0.4
Receivers - West side Block H (31st Street to Lake Street)																

Table 4
Daytime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
wH101	Commercial	NAC-2	70	65	E	75	**71.1**	**68.4**	**71.6**	**69.1**	0.5	0.7	**72.1**	**68.8**	1.0	0.4
wH103	Commercial	NAC-2	70	65	E	75	**74.1**	**70.0**	**74.7**	**70.8**	0.6	0.8	**73.5**	**68.6**	-0.6	-1.4
wH104	Commercial	NAC-2	70	65	E	75	**73.8**	**69.0**	**75.1**	**70.5**	1.3	1.5	**74.9**	**69.8**	1.1	0.8
wH205	Commercial	NAC-2	70	65	E	75	**72.8**	**67.1**	**74.3**	**69.0**	1.5	1.9	**74.3**	**68.8**	1.5	1.7
wH301	Commercial	NAC-2	70	65	E	75	63.6	61.0	64.1	61.7	0.5	0.7	64.0	61.4	0.4	0.4
Receivers - West side Block I (Lake Street to Greenway)																
wI101	Commercial	NAC-2	70	65	E	75	**71.6**	**65.5**	**73.1**	**67.3**	1.5	1.8	**75.3**	**68.5**	3.7	3.0
wI102	Commercial	NAC-2	70	65	E	75	**75.0**	**69.7**	**76.3**	**71.1**	1.3	1.4	N/A	N/A		
wI103	Commercial	NAC-2	70	65	E	75	**70.9**	**68.3**	**71.4**	**69.0**	0.5	0.7	**70.6**	**67.4**	-0.3	-0.9
wI201	Commercial	NAC-2	70	65	E	75	**70.0**	**65.7**	**71.3**	**67.2**	1.3	1.5	**73.0**	**67.5**	3.0	1.8
wI202	Commercial	NAC-2	70	65	E	75	**71.7**	**66.3**	**73.1**	**68.0**	1.4	1.7	**74.9**	**68.5**	3.2	2.2
wI301	Commercial	NAC-2	70	65	E	75	63.4	61.1	64.1	62.0	0.7	0.9	62.9	59.7	-0.5	-1.4
Receivers - West side Block J (Greenway to 28th Street) - wJ001 is removed																
wJ001	Commercial	NAC-2	70	65	E	75	**71.2**	**67.3**	**71.7**	**68.0**	0.5	0.7	N/A	N/A		
wJ003	Residential	NAC-1	65	60	B	70	**68.6**	**65.7**	**69.1**	**66.4**	0.5	0.7	**65.1**	**61.6**	-3.5	-4.1
wJ004	Residential	NAC-1	65	60	B	70	**67.0**	**63.9**	**67.6**	**64.7**	0.6	0.8	**65.9**	**62.1**	-1.1	-1.8
wJ005	Residential	NAC-1	65	60	B	70	**65.7**	**63.4**	**66.3**	**64.1**	0.6	0.7	**65.0**	**62.5**	-0.7	-0.9
wJ006	Residential	NAC-1	65	60	B	70	**66.5**	**62.8**	**67.0**	**63.5**	0.5	0.7	**66.4**	**62.4**	-0.1	-0.4
wJ010	General	NAC-2	70	65	C	70	65.6	63.5	66.1	64.1	0.5	0.6	63.9	61.2	-1.7	-2.3
wJ012	General	NAC-2	70	65	C	70	64.0	62.0	64.6	62.7	0.6	0.7	63.9	61.5	-0.1	-0.5
wJ014	General	NAC-2	70	65	C	70	64.6	62.1	65.1	62.8	0.5	0.7	64.8	61.7	0.2	-0.4
wJ016	General	NAC-2	70	65	C	70	69.6	64.4	**70.1**	**65.3**	0.5	0.9	68.8	63.6	-0.8	-0.8
wJ101	Commercial	NAC-2	70	65	E	75	**72.5**	**66.7**	**73.1**	**67.5**	0.6	0.8	**71.9**	**65.5**	-0.6	-1.2
wJ103	Residential	NAC-1	65	60	B	70	**70.3**	**65.4**	**70.9**	**66.1**	0.6	0.7	**69.7**	**64.1**	-0.6	-1.3
wJ104	Residential	NAC-1	65	60	B	70	**70.4**	**63.8**	**71.1**	**64.6**	0.7	0.8	**69.9**	**62.4**	-0.5	-1.4
wJ105	Residential	NAC-1	65	60	B	70	**69.9**	**63.5**	**70.6**	**64.3**	0.7	0.8	**69.5**	**62.3**	-0.4	-1.2
wJ107	Residential	NAC-1	65	60	B	70	**69.7**	**62.8**	**70.3**	**63.7**	0.6	0.9	**69.3**	**61.9**	-0.4	-0.9
wJ108	Residential	NAC-1	65	60	B	70	**69.5**	**62.4**	**70.2**	**63.2**	0.7	0.8	**69.2**	**61.5**	-0.3	-0.9
wJ109	Residential	NAC-1	65	60	B	70	**69.3**	**62.2**	**69.9**	**63.1**	0.6	0.9	**69.0**	**61.5**	-0.3	-0.7
wJ201	Commercial	NAC-2	70	65	E	75	68.5	**65.4**	68.9	**66.2**	0.4	0.8	68.1	**65.1**	-0.4	-0.3
wJ202	Residential	NAC-1	65	60	B	70	**67.5**	**64.6**	**68.0**	**65.3**	0.5	0.7	**67.0**	**64.2**	-0.5	-0.4
wJ203	Residential	NAC-1	65	60	B	70	**67.0**	**64.2**	**67.5**	**64.9**	0.5	0.7	**66.5**	**63.9**	-0.5	-0.3
wJ204	Residential	NAC-1	65	60	B	70	**66.6**	**63.8**	**67.1**	**64.6**	0.5	0.8	**66.1**	**63.6**	-0.5	-0.2
wJ205	Residential	NAC-1	65	60	B	70	**66.3**	**63.5**	**66.8**	**64.3**	0.5	0.8	**65.7**	**63.3**	-0.6	-0.2
wJ207	Residential	NAC-1	65	60	B	70	**65.8**	**63.1**	**66.3**	**63.9**	0.5	0.8	**65.3**	**62.9**	-0.5	-0.2
wJ301	Commercial	NAC-2	70	65	E	75	67.3	64.5	67.8	**65.3**	0.5	0.8	66.9	64.2	-0.4	-0.3
wJ302	Residential	NAC-1	65	60	B	70	**66.1**	**63.4**	**66.6**	**64.2**	0.5	0.8	**65.7**	**63.1**	-0.4	-0.3
wJ303	Residential	NAC-1	65	60	B	70	**65.8**	**63.1**	**66.3**	**63.9**	0.5	0.8	**65.4**	**62.9**	-0.4	-0.2
wJ304	Residential	NAC-1	65	60	B	70	**65.3**	**62.7**	**65.8**	**63.4**	0.5	0.7	64.8	**62.4**	-0.5	-0.3
wJ305	Residential	NAC-1	65	60	B	70	**65.1**	**62.5**	**65.6**	**63.3**	0.5	0.8	64.6	**62.3**	-0.5	-0.2
wJ306	Commercial	NAC-2	70	65	E	75	64.7	62.2	65.2	62.9	0.5	0.7	64.2	62.0	-0.5	-0.2
Receivers - West side Block K (28th Street to 26th Street)																
wK100	Residential	NAC-1	65	60	B	70	64.9	**63.0**	**65.4**	**63.8**	0.5	0.8	64.5	**63.0**	-0.4	0.0
wK101	Residential	NAC-1	65	60	B	70	64.4	**62.6**	**65.0**	**63.4**	0.6	0.8	64.3	**62.9**	-0.1	0.3
wK102	Residential	NAC-1	65	60	B	70	64.0	**62.4**	64.6	**63.1**	0.6	0.7	64.1	**62.7**	0.1	0.3
wK103	Residential	NAC-1	65	60	B	70	62.2	**60.6**	62.8	**61.3**	0.6	0.7	62.3	**61.1**	0.1	0.5
wK104	Residential	NAC-1	65	60	B	70	63.3	**61.8**	63.9	**62.6**	0.6	0.8	63.8	**62.4**	0.5	0.6
wK105	Residential	NAC-1	65	60	B	70	61.1	59.6	61.8	**60.4**	0.7	0.8	61.4	**60.2**	0.3	0.6
wK106	Residential	NAC-1	65	60	B	70	61.6	**60.1**	62.2	**60.9**	0.6	0.8	61.8	**60.5**	0.2	0.4
wK201	Residential	NAC-1	65	60	B	70	63.1	**60.8**	63.7	**61.6**	0.6	0.8	63.7	**61.4**	0.6	0.6
wK201a	Residential	NAC-1	65	60	B	70	**66.0**	**61.5**	**66.5**	**62.4**	0.5	0.9	**66.8**	**62.5**	0.8	1.0
wK201a2	Residential	NAC-1	65	60	B	70	**68.0**	**63.8**	**68.6**	**64.7**	0.6	0.9	**69.1**	**65.0**	1.1	1.2
wK201a3	Residential	NAC-1	65	60	B	70	**69.0**	**65.5**	**69.5**	**66.4**	0.5	0.9	**70.1**	**67.0**	1.1	1.5
wK201b	Residential	NAC-1	65	60	B	70	64.9	**61.6**	**65.5**	**62.4**	0.6	0.8	**65.7**	**62.2**	0.8	0.6
wK201b2	Residential	NAC-1	65	60	B	70	**67.5**	**63.9**	**68.1**	**64.8**	0.6	0.9	**68.5**	**64.8**	1.0	0.9

Table 4
Daytime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
wK201b3	Residential	NAC-1	65	60	B	70	**68.8**	**66.0**	**69.5**	**66.8**	0.7	0.8	**69.9**	**67.1**	1.1	1.1
wK201c	Residential	NAC-1	65	60	B	70	**65.0**	**61.4**	**65.6**	**62.3**	0.6	0.9	**65.8**	**62.0**	0.8	0.6
wK201c2	Residential	NAC-1	65	60	B	70	**66.0**	**63.1**	**66.6**	**64.0**	0.6	0.9	**66.9**	**63.9**	0.9	0.8
wK201c3	Residential	NAC-1	65	60	B	70	**67.4**	**64.9**	**68.0**	**65.7**	0.6	0.8	**68.2**	**65.8**	0.8	0.9
wK201d	Residential	NAC-1	65	60	B	70	63.8	**60.8**	64.4	**61.7**	0.6	0.9	64.5	**61.5**	0.7	0.7
wK201d2	Residential	NAC-1	65	60	B	70	64.8	**62.4**	**65.5**	**63.2**	0.7	0.8	**65.6**	**63.2**	0.8	0.8
wK201d3	Residential	NAC-1	65	60	B	70	**66.1**	**63.9**	**66.7**	**64.7**	0.6	0.8	**66.8**	**64.8**	0.7	0.9
wK201e	Residential	NAC-1	65	60	B	70	63.0	**60.4**	63.6	**61.2**	0.6	0.8	63.8	**61.1**	0.8	0.7
wK201e2	Residential	NAC-1	65	60	B	70	64.1	**61.8**	64.7	**62.6**	0.6	0.8	64.8	**62.6**	0.7	0.8
wK201e3	Residential	NAC-1	65	60	B	70	**65.2**	**63.2**	**65.9**	**64.1**	0.7	0.9	**65.9**	**64.1**	0.7	0.9
wK202	Residential	NAC-1	65	60	B	70	62.2	59.8	62.8	**60.6**	0.6	0.8	62.5	**60.5**	0.3	0.7
wK203	Residential	NAC-1	65	60	B	70	61.9	59.6	62.6	**60.4**	0.7	0.8	62.1	**60.3**	0.2	0.7
wK204	Residential	NAC-1	65	60	B	70	61.5	59.3	62.1	**60.1**	0.6	0.8	61.3	**60.0**	-0.2	0.7
wK205	Residential	NAC-1	65	60	B	70	61.1	59.0	61.7	59.8	0.6	0.8	61.0	59.7	-0.1	0.7
wK206	Residential	NAC-1	65	60	B	70	60.7	58.8	61.4	59.6	0.7	0.8	60.8	59.5	0.1	0.7
wK207	Residential	NAC-1	65	60	B	70	60.5	58.6	61.1	59.4	0.6	0.8	60.6	59.3	0.1	0.7
wK208	Residential	NAC-1	65	60	B	70	60.4	58.6	61.0	59.3	0.6	0.7	60.5	59.1	0.1	0.5
wK209	Residential	NAC-1	65	60	B	70	60.6	58.9	61.2	59.6	0.6	0.7	60.9	59.2	0.3	0.3
wK301	Residential	NAC-1	65	60	B	70	**67.2**	**62.6**	**67.8**	**63.5**	0.6	0.9	**67.2**	**62.2**	0.0	-0.4
wK302	Residential	NAC-1	65	60	B	70	62.5	**60.5**	63.1	**61.3**	0.6	0.8	62.4	**60.0**	-0.1	-0.5
wK303	Residential	NAC-1	65	60	B	70	62.0	**60.1**	62.6	**60.9**	0.6	0.8	61.9	59.7	-0.1	-0.4
wK304	Residential	NAC-1	65	60	B	70	61.7	59.9	62.3	**60.7**	0.6	0.8	61.5	59.5	-0.2	-0.4
wK306	Residential	NAC-1	65	60	B	70	61.3	59.5	61.9	**60.3**	0.6	0.8	61.0	59.1	-0.3	-0.4
wK307	Residential	NAC-1	65	60	B	70	60.8	59.2	61.5	**60.0**	0.7	0.8	60.6	58.9	-0.2	-0.3
wK401	Residential	NAC-1	65	60	B	70	**67.0**	**62.5**	**67.5**	**63.3**	0.5	0.8	**66.7**	**61.8**	-0.3	-0.7
wK402	Residential	NAC-1	65	60	B	70	**65.5**	**62.3**	**66.1**	**63.0**	0.6	0.7	**65.2**	**61.5**	-0.3	-0.8
wK403	Residential	NAC-1	65	60	B	70	64.8	**62.0**	**65.3**	**62.7**	0.5	0.7	64.3	**61.3**	-0.5	-0.7
wK404	Residential	NAC-1	65	60	B	70	64.0	**61.7**	64.5	**62.4**	0.5	0.7	63.5	**61.1**	-0.5	-0.6
wK406	Residential	NAC-1	65	60	B	70	63.1	**61.0**	63.6	**61.7**	0.5	0.7	62.6	**60.4**	-0.5	-0.6
wK407	Residential	NAC-1	65	60	B	70	62.2	**60.3**	62.8	**61.0**	0.6	0.7	61.7	59.7	-0.5	-0.6
wK121	Residential	NAC-1	65	60	B	70	60.6	59.2	61.2	**60.0**	0.6	0.8	60.9	59.7	0.3	0.5
wK122	Residential	NAC-1	65	60	B	70	60.9	59.5	61.5	**60.3**	0.6	0.8	61.2	**60.0**	0.3	0.5
wK123	Residential	NAC-1	65	60	B	70	61.3	59.9	61.9	**60.7**	0.6	0.8	61.6	**60.4**	0.3	0.5
wK124	Residential	NAC-1	65	60	B	70	60.9	59.6	61.6	**60.3**	0.7	0.7	61.2	**60.0**	0.3	0.4
wK125	Residential	NAC-1	65	60	B	70	62.6	**61.1**	63.2	**61.9**	0.6	0.8	63.0	**61.7**	0.4	0.6
wK127	Residential	NAC-1	65	60	B	70	63.0	**61.5**	63.7	**62.3**	0.7	0.8	63.3	**61.9**	0.3	0.4
wK128	Residential	NAC-1	65	60	B	70	63.3	**61.7**	64.0	**62.5**	0.7	0.8	63.4	**61.9**	0.1	0.2
wK129	Residential	NAC-1	65	60	B	70	63.1	**61.6**	63.8	**62.4**	0.7	0.8	63.2	**61.7**	0.1	0.1
wK129b2	Residential	NAC-1	65	60	B	70	64.3	**62.7**	**65.0**	**63.4**	0.7	0.7	64.5	**62.9**	0.2	0.2
wK129b3	Residential	NAC-1	65	60	B	70	**66.4**	**64.9**	**67.1**	**65.7**	0.7	0.8	**66.2**	**64.8**	-0.2	-0.1
wK130	Residential	NAC-1	65	60	B	70	62.8	**61.1**	63.5	**61.9**	0.7	0.8	62.9	**61.3**	0.1	0.2
wK130b2	Residential	NAC-1	65	60	B	70	64.4	**62.4**	**65.0**	**63.2**	0.6	0.8	64.7	**62.7**	0.3	0.3
wK130b3	Residential	NAC-1	65	60	B	70	**66.0**	**64.4**	**66.7**	**65.2**	0.7	0.8	**66.0**	**64.4**	0.0	0.0
wK132	Residential	NAC-1	65	60	B	70	64.4	**62.7**	**65.0**	**63.4**	0.6	0.7	64.3	**62.8**	-0.1	0.1
wK135	Residential	NAC-1	65	60	B	70	64.8	**62.8**	**65.4**	**63.6**	0.6	0.8	64.8	**62.9**	0.0	0.1
wK137	Residential	NAC-1	65	60	B	70	**65.9**	**62.4**	**66.5**	**63.2**	0.6	0.8	**66.2**	**62.7**	0.3	0.3
wK138	Residential	NAC-1	65	60	B	70	**67.8**	**62.0**	**68.4**	**62.9**	0.6	0.9	**68.3**	**62.5**	0.5	0.5
wK221	Residential	NAC-1	65	60	B	70	**65.1**	**61.9**	**65.6**	**62.7**	0.5	0.8	**65.5**	**62.3**	0.4	0.4
wK223	Residential	NAC-1	65	60	B	70	**67.8**	**61.6**	**68.4**	**62.5**	0.6	0.9	**68.3**	**62.3**	0.5	0.7
wK321	Residential	NAC-1	65	60	B	70	61.9	**60.5**	62.6	**61.3**	0.7	0.8	62.2	**60.9**	0.3	0.4
wK322	Residential	NAC-1	65	60	B	70	61.9	**60.5**	62.6	**61.2**	0.7	0.7	62.2	**60.9**	0.3	0.4
wK323	Residential	NAC-1	65	60	B	70	61.9	**60.3**	62.5	**61.1**	0.6	0.8	62.2	**60.8**	0.3	0.5
wK324	Residential	NAC-1	65	60	B	70	62.1	**60.4**	62.7	**61.2**	0.6	0.8	62.5	**60.8**	0.4	0.4
wK325	Residential	NAC-1	65	60	B	70	62.3	**60.3**	63.0	**61.1**	0.7	0.8	62.7	**60.8**	0.4	0.5
wK326	Residential	NAC-1	65	60	B	70	62.7	**60.2**	63.3	**61.0**	0.6	0.8	63.2	**60.7**	0.5	0.5

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Noise Level Comparison to Standards	
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N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
wK327	Residential	NAC-1	65	60	B	70	63.4	**60.3**	64.0	**61.1**	0.6	0.8	63.8	**60.7**	0.4	0.4
wK328	Residential	NAC-1	65	60	B	70	64.4	59.8	**65.0**	**60.7**	0.6	0.9	64.9	**60.4**	0.5	0.6
wK329	Residential	NAC-1	65	60	B	70	**65.4**	59.3	**66.0**	**60.2**	0.6	0.9	**66.0**	**60.0**	0.6	0.7
wK421	Residential	NAC-1	65	60	B	70	60.5	58.9	61.1	59.6	0.6	0.7	60.8	59.6	0.3	0.7
wK422	Residential	NAC-1	65	60	B	70	60.9	59.4	61.5	**60.1**	0.6	0.7	61.1	59.9	0.2	0.5
wK423	Residential	NAC-1	65	60	B	70	61.2	59.7	61.8	**60.5**	0.6	0.8	61.2	**60.1**	0.0	0.4
wK424	Residential	NAC-1	65	60	B	70	60.5	59.0	61.1	59.8	0.6	0.8	60.8	59.6	0.3	0.6
wK425	Residential	NAC-1	65	60	B	70	60.5	59.1	61.2	59.8	0.7	0.7	60.9	59.6	0.4	0.5
wK426	Residential	NAC-1	65	60	B	70	60.4	58.9	61.1	59.7	0.7	0.8	60.9	59.5	0.5	0.6
Receivers - West side Block L1 (26th Street to 24th Street)																
wL001	Residential	NAC-1	65	60	B	70	64.6	**62.2**	**65.2**	**63.0**	0.6	0.8	64.4	**62.1**	-0.2	-0.1
wL002	Residential	NAC-1	65	60	B	70	61.8	**60.3**	62.4	**61.0**	0.6	0.7	61.7	**60.3**	-0.1	0.0
wL004	Residential	NAC-1	65	60	B	70	61.2	59.8	61.9	**60.5**	0.7	0.7	61.2	59.9	0.0	0.1
wL005	Residential	NAC-1	65	60	B	70	60.8	59.3	61.4	**60.1**	0.6	0.8	60.7	59.5	-0.1	0.2
wL005B	Residential	NAC-1	65	60	B	70	63.0	**61.5**	63.7	**62.2**	0.7	0.7	62.9	**61.5**	-0.1	0.0
wL006	Residential	NAC-1	65	60	B	70	60.4	59.0	61.0	59.8	0.6	0.8	60.4	59.2	0.0	0.2
wL006B	Residential	NAC-1	65	60	B	70	62.6	**61.1**	63.2	**61.8**	0.6	0.7	62.4	**61.2**	-0.2	0.1
wL007	Residential	NAC-1	65	60	B	70	62.1	**60.5**	62.7	**61.2**	0.6	0.7	62.1	**60.7**	0.0	0.2
wL008	Residential	NAC-1	65	60	B	70	62.3	**60.0**	62.7	**60.7**	0.4	0.7	62.3	**60.3**	0.0	0.3
wL009	Residential	NAC-1	65	60	B	70	63.5	**60.6**	64.0	**61.4**	0.5	0.8	63.6	**60.8**	0.1	0.2
wL009C	Residential	NAC-1	65	60	B	70	62.5	**60.8**	63.0	**61.5**	0.5	0.7	62.5	**61.0**	0.0	0.2
wL201	Residential	NAC-1	65	60	B	70	**69.6**	**62.5**	**70.2**	**63.3**	0.6	0.8	**70.3**	**63.4**	0.7	0.9
wL202	Residential	NAC-1	65	60	B	70	**67.8**	**62.1**	**68.4**	**62.9**	0.6	0.8	**68.4**	**62.9**	0.6	0.8
wL203	Residential	NAC-1	65	60	B	70	**66.4**	**61.6**	**67.0**	**62.5**	0.6	0.9	**67.0**	**62.4**	0.6	0.8
wL204	Residential	NAC-1	65	60	B	70	**65.1**	**61.2**	**65.7**	**62.1**	0.6	0.9	**65.7**	**61.8**	0.6	0.6
wL205	Residential	NAC-1	65	60	B	70	64.4	**61.2**	**65.0**	**62.0**	0.6	0.8	**65.0**	**61.7**	0.6	0.5
wL206	Residential	NAC-1	65	60	B	70	63.4	**60.7**	64.0	**61.5**	0.6	0.8	63.9	**61.2**	0.5	0.5
wL208	Residential	NAC-1	65	60	B	70	62.4	**60.2**	63.0	**61.0**	0.6	0.8	62.8	**60.5**	0.4	0.3
wL209	Commercial	NAC-2	70	65	E	75	61.6	59.8	62.2	60.5	0.6	0.7	61.5	60.0	-0.1	0.2
wL210	Residential	NAC-1	65	60	B	70	61.6	**60.1**	62.2	**60.8**	0.6	0.7	61.7	**60.3**	0.1	0.2
wL211	Residential	NAC-1	65	60	B	70	62.1	**60.0**	62.7	**60.7**	0.6	0.7	62.2	**60.2**	0.1	0.2
wL301	Residential	NAC-1	65	60	B	70	**69.2**	**61.0**	**69.9**	**61.8**	0.7	0.8	**70.1**	**62.2**	0.9	1.2
wL302	Residential	NAC-1	65	60	B	70	**69.5**	**61.6**	**70.1**	**62.5**	0.6	0.9	**70.2**	**62.5**	0.7	0.9
wL303	Residential	NAC-1	65	60	B	70	**66.3**	**60.6**	**66.9**	**61.5**	0.6	0.9	**67.0**	**61.6**	0.7	1.0
wL304	Residential	NAC-1	65	60	B	70	64.0	**60.1**	64.5	**60.9**	0.5	0.8	64.7	**61.1**	0.7	1.0
wL305	Residential	NAC-1	65	60	B	70	61.7	59.3	62.3	**60.1**	0.6	0.8	62.6	**60.4**	0.9	1.1
wL121	General	NAC-2	70	65	C	70	60.9	59.4	61.5	60.1	0.6	0.7	60.8	59.6	-0.1	0.2
wL121-1	General	NAC-2	70	65	C	70	64.9	59.7	65.4	60.6	0.5	0.9	65.1	59.9	0.2	0.2
wL121-2	General	NAC-2	70	65	C	70	63.5	60.6	63.9	61.3	0.4	0.7	63.5	60.7	0.0	0.1
wL121-3	General	NAC-2	70	65	C	70	63.4	60.9	63.9	61.6	0.5	0.7	63.4	60.9	0.0	0.0
wL123	Residential	NAC-1	65	60	B	70	63.3	**60.6**	63.8	**61.3**	0.5	0.7	63.2	**60.8**	-0.1	0.2
wL122	Residential	NAC-1	65	60	B	70	63.0	**60.2**	63.4	**60.9**	0.4	0.7	62.9	**60.4**	-0.1	0.2
wL124	Residential	NAC-1	65	60	B	70	63.6	**60.7**	64.1	**61.4**	0.5	0.7	63.6	**60.8**	0.0	0.1
wL124B	Residential	NAC-1	65	60	B	70	**65.2**	**63.0**	**65.7**	**63.8**	0.5	0.8	**65.0**	**63.2**	-0.2	0.2
wL125	Residential	NAC-1	65	60	B	70	63.9	**61.1**	64.4	**61.9**	0.5	0.8	63.7	**61.3**	-0.2	0.2
wL126	Residential	NAC-1	65	60	B	70	**65.0**	**61.8**	**65.4**	**62.5**	0.4	0.7	64.9	**61.9**	-0.1	0.1
wL127	Residential	NAC-1	65	60	B	70	**65.8**	**62.6**	**66.3**	**63.4**	0.5	0.8	**66.0**	**62.9**	0.2	0.3
wL128	Residential	NAC-1	65	60	B	70	**66.9**	**63.5**	**67.4**	**64.2**	0.5	0.7	**66.9**	**63.7**	0.0	0.2
wL222	Residential	NAC-1	65	60	B	70	62.2	**60.7**	62.8	**61.5**	0.6	0.8	62.0	**60.8**	-0.2	0.1
wL222b1	Residential	NAC-1	65	60	B	70	63.6	**62.0**	64.2	**62.7**	0.6	0.7	63.2	**61.9**	-0.4	-0.1
wL222b2	Residential	NAC-1	65	60	B	70	63.9	**62.2**	64.5	**62.9**	0.6	0.7	63.5	**62.1**	-0.4	-0.1
wL223	Residential	NAC-1	65	60	B	70	62.9	**61.1**	63.5	**61.8**	0.6	0.7	62.6	**61.1**	-0.3	0.0
wL224	Residential	NAC-1	65	60	B	70	63.3	**61.3**	63.8	**62.1**	0.5	0.8	62.8	**61.3**	-0.5	0.0
wL225	Residential	NAC-1	65	60	B	70	64.1	**61.8**	64.6	**62.6**	0.5	0.8	63.4	**61.6**	-0.7	-0.2
wL226	Residential	NAC-1	65	60	B	70	64.3	**61.9**	64.8	**62.6**	0.5	0.7	63.2	**61.5**	-1.1	-0.4

Table 4
Daytime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
wL321	Residential	NAC-1	65	60	B	70	59.2	57.8	59.9	58.6	0.7	0.8	59.2	58.0	0.0	0.2
wL321C	Residential	NAC-1	65	60	B	70	59.3	57.8	59.9	58.5	0.6	0.7	59.2	57.9	-0.1	0.1
wL321a	Residential	NAC-1	65	60	B	70	58.4	57.1	59.1	57.9	0.7	0.8	58.4	57.4	0.0	0.3
wL321b	Residential	NAC-1	65	60	B	70	58.7	57.4	59.3	58.1	0.6	0.7	58.7	57.6	0.0	0.2
wL321c	Residential	NAC-1	65	60	B	70	59.3	57.8	59.9	58.5	0.6	0.7	59.2	57.9	-0.1	0.1
wL321d	Residential	NAC-1	65	60	B	70	59.7	58.1	60.3	58.8	0.6	0.7	59.5	58.2	-0.2	0.1
wL325	Residential	NAC-1	65	60	B	70	61.3	59.8	61.9	**60.5**	0.6	0.7	61.2	**60.0**	-0.1	0.2
wL325C	Residential	NAC-1	65	60	B	70	61.4	59.8	62.0	**60.5**	0.6	0.7	61.2	**60.0**	-0.2	0.2
wL330	Residential	NAC-1	65	60	B	70	62.1	**60.2**	62.7	**60.9**	0.6	0.7	61.6	**60.2**	-0.5	0.0
wL330C	Residential	NAC-1	65	60	B	70	62.2	**60.2**	62.8	**61.0**	0.6	0.8	61.6	**60.3**	-0.6	0.1
wL335C	Residential	NAC-1	65	60	B	70	63.0	**60.8**	63.5	**61.6**	0.5	0.8	62.2	**60.8**	-0.8	0.0
wL335	Residential	NAC-1	65	60	B	70	63.4	**61.0**	63.9	**61.8**	0.5	0.8	62.3	**60.8**	-1.1	-0.2
Receivers - West side Block L2 (24th Street to Franklin Avenue)																
wL141	Residential	NAC-1	65	60	B	70	**66.2**	**63.2**	**66.7**	**64.0**	0.5	0.8	64.3	**62.2**	-1.9	-1.0
wL142	Commercial	NAC-2	70	65	E	75	68.5	64.9	68.9	**65.7**	0.4	0.8	66.1	63.9	-2.4	-1.0
wL143	Residential	NAC-1	65	60	B	70	**70.1**	**66.6**	**70.6**	**67.4**	0.5	0.8	**68.0**	**65.6**	-2.1	-1.0
wL144	Commercial	NAC-2	70	65	E	75	66.9	64.3	67.4	**65.0**	0.5	0.7	65.3	63.4	-1.6	-0.9
wL145	Residential	NAC-1	65	60	B	70	**68.3**	**65.7**	**68.8**	**66.4**	0.5	0.7	**67.4**	**65.3**	-0.9	-0.4
wL146	Residential	NAC-1	65	60	B	70	**67.3**	**64.9**	**67.8**	**65.7**	0.5	0.8	**66.2**	**64.4**	-1.1	-0.5
wL147	Residential	NAC-1	65	60	B	70	**66.1**	**63.9**	**66.7**	**64.7**	0.6	0.8	**65.1**	**63.3**	-1.0	-0.6
wL148	Commercial	NAC-2	70	65	E	75	67.6	**65.2**	68.1	**65.9**	0.5	0.7	66.9	64.9	-0.7	-0.3
wL149	Commercial	NAC-2	70	65	E	75	68.5	**65.1**	69.0	**66.0**	0.5	0.9	68.3	**65.1**	-0.2	0.0
wL150	Residential	NAC-1	65	60	B	70	**66.5**	**64.4**	**67.1**	**65.1**	0.6	0.7	**66.5**	**64.6**	0.0	0.2
wL241	Residential	NAC-1	65	60	B	70	64.9	**62.3**	**65.4**	**63.0**	0.5	0.7	63.3	**61.6**	-1.6	-0.7
wL242	Residential	NAC-1	65	60	B	70	64.9	**62.5**	**65.5**	**63.3**	0.6	0.8	63.5	**61.9**	-1.4	-0.6
wL242B	Residential	NAC-1	65	60	B	70	**66.3**	**63.8**	**66.9**	**64.5**	0.6	0.7	64.9	**63.2**	-1.4	-0.6
wL243	Residential	NAC-1	65	60	B	70	64.9	**62.7**	**65.5**	**63.5**	0.6	0.8	63.7	**62.2**	-1.2	-0.5
wL244	Residential	NAC-1	65	60	B	70	64.8	**62.7**	**65.3**	**63.4**	0.5	0.7	63.8	**62.2**	-1.0	-0.5
wL245	Commercial	NAC-2	70	65	E	75	64.4	62.4	65.0	63.1	0.6	0.7	63.2	61.7	-1.2	-0.7
wL246	General	NAC-2	70	65	C	70	65.5	63.5	66.1	64.3	0.6	0.8	65.3	63.5	-0.2	0.0
wL341	Residential	NAC-1	65	60	B	70	62.6	**60.7**	63.2	**61.5**	0.6	0.8	61.7	**60.2**	-0.9	-0.5
wL342	Residential	NAC-1	65	60	B	70	62.6	**60.8**	63.2	**61.5**	0.6	0.7	62.0	**60.4**	-0.6	-0.4
wL343	Residential	NAC-1	65	60	B	70	62.6	**60.8**	63.2	**61.5**	0.6	0.7	62.1	**60.5**	-0.5	-0.3
wL344	Residential	NAC-1	65	60	B	70	62.7	**60.8**	63.3	**61.6**	0.6	0.8	62.3	**60.7**	-0.4	-0.1
wL345	Residential	NAC-1	65	60	B	70	62.6	**60.8**	63.2	**61.5**	0.6	0.7	62.4	**60.7**	-0.2	-0.1
wL161	Commercial	NAC-2	70	65	E	75	**70.5**	**67.2**	**71.1**	**68.1**	0.6	0.9	**70.9**	**68.3**	0.4	1.1
wL162	Commercial	NAC-2	70	65	E	75	69.5	**66.8**	**70.1**	**67.7**	0.6	0.9	**70.4**	**68.1**	0.9	1.3
wL163	Residential	NAC-1	65	60	B	70	**71.4**	**68.4**	**72.0**	**69.3**	0.6	0.9	**72.2**	**69.8**	0.8	1.4
wL164	Commercial	NAC-2	70	65	E	75	**71.4**	**68.5**	**72.0**	**69.3**	0.6	0.8	**72.2**	**69.8**	0.8	1.3
wL261	Commercial	NAC-2	70	65	E	75	61.3	59.2	62.0	60.0	0.7	0.8	62.1	60.1	0.8	0.9
wL262	Commercial	NAC-2	70	65	E	75	69.8	62.2	**70.4**	63.0	0.6	0.8	**70.4**	63.0	0.6	0.8
wL361	Residential	NAC-1	65	60	B	70	62.0	**60.2**	62.6	**60.9**	0.6	0.7	62.3	**60.7**	0.3	0.5
wL362	Residential	NAC-1	65	60	B	70	63.0	**61.2**	63.7	**62.0**	0.7	0.8	63.4	**61.7**	0.4	0.5
wL363	Residential	NAC-1	65	60	B	70	56.7	54.8	57.3	55.6	0.6	0.8	57.2	55.5	0.5	0.7
wL364	Residential	NAC-1	65	60	B	70	56.8	54.8	57.4	55.6	0.6	0.8	57.3	55.5	0.5	0.7
wL365	Residential	NAC-1	65	60	B	70	58.4	56.4	59.0	57.2	0.6	0.8	59.0	57.2	0.6	0.8
wL366	Residential	NAC-1	65	60	B	70	58.5	56.4	59.1	57.2	0.6	0.8	59.2	57.3	0.7	0.9
wL367	Residential	NAC-1	65	60	B	70	59.2	56.6	59.8	57.4	0.6	0.8	59.9	57.6	0.7	1.0
wL368	Residential	NAC-1	65	60	B	70	64.1	57.1	64.6	57.9	0.5	0.8	64.7	58.1	0.6	1.0
wL367C	Residential	NAC-1	65	60	B	70	57.2	54.3	57.7	55.0	0.5	0.7	57.9	55.3	0.7	1.0
Receivers - West side Block M (Franklin Avenue to I-94/3rd Avenue)																
wM100	Commercial	NAC-2	70	65	E	75	**73.6**	**66.8**	**74.2**	**67.7**	0.6	0.9	**74.4**	**68.2**	0.8	1.4
wM101	Commercial	NAC-2	70	65	E	75	**70.1**	**66.2**	**70.7**	**67.2**	0.6	1.0	**71.0**	**67.7**	0.9	1.5
wM102	Residential	NAC-1	65	60	B	70	**68.2**	**64.9**	**68.8**	**65.8**	0.6	0.9	**69.2**	**66.4**	1.0	1.5
wM102C	Residential	NAC-1	65	60	B	70	**66.5**	**63.2**	**67.1**	**64.1**	0.6	0.9	**67.5**	**64.7**	1.0	1.5

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XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
wM103	General	NAC-2	70	65	C	70	69.2	61.9	69.9	63.0	0.7	1.1	**70.3**	63.8	1.1	1.9
wM104	Commercial	NAC-2	70	65	E	75	69.1	61.8	69.9	63.0	0.8	1.2	**70.3**	63.8	1.2	2.0
wM105	Residential	NAC-1	65	60	B	70	**69.2**	**62.2**	**69.9**	**63.4**	0.7	1.2	**70.4**	**64.3**	1.2	2.1
wM105a2	Residential	NAC-1	65	60	B	70	**67.6**	**65.6**	**68.3**	**66.5**	0.7	0.9	**69.3**	**67.3**	1.7	1.7
wM105a3	Residential	NAC-1	65	60	B	70	**69.5**	**67.6**	**70.2**	**68.4**	0.7	0.8	**71.4**	**69.2**	1.9	1.6
wM105a4	Residential	NAC-1	65	60	B	70	**71.7**	**69.8**	**72.4**	**70.6**	0.7	0.8	**73.8**	**71.5**	2.1	1.7
wM105b2	Residential	NAC-1	65	60	B	70	**68.4**	**66.2**	**69.0**	**67.1**	0.6	0.9	**70.0**	**67.9**	1.6	1.7
wM105b3	Residential	NAC-1	65	60	B	70	**70.6**	**68.5**	**71.3**	**69.3**	0.7	0.8	**72.6**	**70.2**	2.0	1.7
wM105b4	Residential	NAC-1	65	60	B	70	**73.0**	**70.6**	**73.8**	**71.5**	0.8	0.9	**74.8**	**72.5**	1.8	1.9
wM105c2	Residential	NAC-1	65	60	B	70	**72.3**	**68.7**	**72.9**	**69.6**	0.6	0.9	**73.3**	**70.2**	1.0	1.5
wM105c3	Residential	NAC-1	65	60	B	70	**75.8**	**72.8**	**76.6**	**73.8**	0.8	1.0	**76.7**	**74.2**	0.9	1.4
wM105c4	Residential	NAC-1	65	60	B	70	**77.5**	**74.1**	**78.1**	**75.1**	0.6	1.0	**77.3**	**75.0**	-0.2	0.9
wM105d2	Residential	NAC-1	65	60	B	70	**69.0**	**66.6**	**69.6**	**67.5**	0.6	0.9	**70.5**	**68.3**	1.5	1.7
wM105d3	Residential	NAC-1	65	60	B	70	**71.6**	**69.3**	**72.2**	**70.1**	0.6	0.8	**73.7**	**71.1**	2.1	1.8
wM105d4	Residential	NAC-1	65	60	B	70	**73.7**	**71.3**	**74.5**	**72.2**	0.8	0.9	**75.2**	**73.0**	1.5	1.7
wM106	Residential	NAC-1	65	60	B	70	**65.1**	**63.1**	**65.7**	**63.9**	0.6	0.8	**66.6**	**64.6**	1.5	1.5
wM201	Residential	NAC-1	65	60	B	70	64.9	**63.0**	**65.6**	**63.8**	0.7	0.8	**66.3**	**64.4**	1.4	1.4
wM202	Residential	NAC-1	65	60	B	70	64.8	**62.9**	**65.4**	**63.7**	0.6	0.8	**66.2**	**64.3**	1.4	1.4
wM203	Residential	NAC-1	65	60	B	70	64.4	**62.6**	**65.1**	**63.4**	0.7	0.8	**65.8**	**64.0**	1.4	1.4
wM204	Residential	NAC-1	65	60	B	70	64.1	**62.3**	64.7	**63.1**	0.6	0.8	**65.5**	**63.7**	1.4	1.4
wM301	Commercial	NAC-2	70	65	E	75	65.7	61.2	66.3	62.0	0.6	0.8	66.4	62.3	0.7	1.1
wM302	Commercial	NAC-2	70	65	E	75	64.4	61.2	65.0	62.0	0.6	0.8	65.2	62.3	0.8	1.1
wM303	Residential	NAC-1	65	60	B	70	64.2	**61.5**	64.7	**62.2**	0.5	0.7	**65.0**	**62.6**	0.8	1.1
wM304	Residential	NAC-1	65	60	B	70	63.8	**61.5**	64.4	**62.2**	0.6	0.7	64.8	**62.7**	1.0	1.2
wM305	Residential	NAC-1	65	60	B	70	63.2	**61.3**	63.8	**62.0**	0.6	0.7	64.3	**62.5**	1.1	1.2
wM306	Residential	NAC-1	65	60	B	70	62.8	**61.1**	63.4	**61.8**	0.6	0.7	64.0	**62.4**	1.2	1.3
wM121	Residential	NAC-1	65	60	B	70	**66.0**	**63.7**	**66.6**	**64.6**	0.6	0.9	**67.9**	**65.6**	1.9	1.9
wM123	Residential	NAC-1	65	60	B	70	**68.9**	**63.9**	**69.6**	**64.9**	0.7	1.0	**70.3**	**66.1**	1.4	2.2
wM124	Residential	NAC-1	65	60	B	70	**69.5**	**63.1**	**70.2**	**64.3**	0.7	1.2	**71.0**	**65.7**	1.5	2.6
wM126	Commercial	NAC-2	70	65	E	75	68.5	63.8	69.1	64.8	0.6	1.0	**70.0**	**66.2**	1.5	2.4
wM127	Residential	NAC-1	65	60	B	70	**68.7**	**63.4**	**69.3**	**64.5**	0.6	1.1	**70.1**	**65.9**	1.4	2.5
wM128	Residential	NAC-1	65	60	B	70	**68.3**	59.4	**69.2**	**60.6**	0.9	1.2	**69.9**	**61.8**	1.6	2.4
wM128a	Residential	NAC-1	65	60	B	70	**68.6**	**61.2**	**69.4**	**62.5**	0.8	1.3	**70.1**	**63.8**	1.5	2.6
wM128b	Residential	NAC-1	65	60	B	70	**68.5**	**60.0**	**69.3**	**61.3**	0.8	1.3	**70.0**	**62.5**	1.5	2.5
wM128c	Residential	NAC-1	65	60	B	70	**68.2**	58.9	**69.1**	**60.2**	0.9	1.3	**69.8**	**61.3**	1.6	2.4
wM128d	Residential	NAC-1	65	60	B	70	**67.0**	59.0	**67.7**	**60.2**	0.7	1.2	**68.5**	**61.7**	1.5	2.7
wM128e	Residential	NAC-1	65	60	B	70	**66.4**	58.6	**67.1**	59.8	0.7	1.2	**67.9**	**61.2**	1.5	2.6
wM221	Residential	NAC-1	65	60	B	70	64.4	**62.7**	**65.0**	**63.5**	0.6	0.8	**66.1**	**64.2**	1.7	1.5
wM222	Residential	NAC-1	65	60	B	70	63.9	**62.3**	64.5	**63.0**	0.6	0.7	**65.6**	**63.8**	1.7	1.5
wM222	Residential	NAC-1	65	60	B	70	63.9	**62.3**	64.5	**63.0**	0.6	0.7	**65.6**	**63.8**	1.7	1.5
wM223	Residential	NAC-1	65	60	B	70	63.7	**62.2**	64.4	**63.0**	0.7	0.8	**65.6**	**63.8**	1.9	1.6
wM225	Residential	NAC-1	65	60	B	70	63.5	**62.0**	64.2	**62.7**	0.7	0.7	**65.3**	**63.5**	1.8	1.5
wM226	Residential	NAC-1	65	60	B	70	63.7	**62.2**	64.4	**62.9**	0.7	0.7	**65.4**	**63.7**	1.7	1.5
wM227	Residential	NAC-1	65	60	B	70	64.8	**61.7**	**65.3**	**62.5**	0.5	0.8	**65.9**	**63.3**	1.1	1.6
wM229	Residential	NAC-1	65	60	B	70	64.0	**61.7**	64.5	**62.5**	0.5	0.8	**65.2**	**63.2**	1.2	1.5
wM231	Residential	NAC-1	65	60	B	70	63.5	**61.7**	64.0	**62.5**	0.5	0.8	64.8	**63.1**	1.3	1.4
wM321	Residential	NAC-1	65	60	B	70	62.5	**61.0**	63.1	**61.7**	0.6	0.7	63.9	**62.4**	1.4	1.4
wM322	Residential	NAC-1	65	60	B	70	62.4	**61.0**	63.0	**61.7**	0.6	0.7	63.9	**62.3**	1.5	1.3
wM323	Residential	NAC-1	65	60	B	70	62.3	**60.9**	62.9	**61.7**	0.6	0.8	63.8	**62.3**	1.5	1.4
wM324	Residential	NAC-1	65	60	B	70	62.4	**61.1**	63.0	**61.8**	0.6	0.7	63.8	**62.4**	1.4	1.3
wM324b	Residential	NAC-1	65	60	B	70	62.3	**61.0**	63.0	**61.7**	0.7	0.7	63.6	**62.2**	1.3	1.2
wM324b2	Residential	NAC-1	65	60	B	70	63.7	**62.4**	64.3	**63.2**	0.6	0.8	**65.0**	**63.7**	1.3	1.3
wM324b3	Residential	NAC-1	65	60	B	70	**65.0**	**63.8**	**65.6**	**64.5**	0.6	0.7	**66.3**	**65.0**	1.3	1.2
wM324b4	Residential	NAC-1	65	60	B	70	**66.6**	**65.5**	**67.3**	**66.3**	0.7	0.8	**67.8**	**66.7**	1.2	1.2
wM421	Residential	NAC-1	65	60	B	70	61.3	**60.0**	61.9	**60.7**	0.6	0.7	62.5	**61.1**	1.2	1.1

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XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
wM422	Residential	NAC-1	65	60	B	70	61.3	**60.0**	61.9	**60.7**	0.6	0.7	62.4	**61.1**	1.1	1.1
wM423	Residential	NAC-1	65	60	B	70	61.7	**60.2**	62.3	**60.8**	0.6	0.6	62.7	**61.2**	1.0	1.0
wM424	Residential	NAC-1	65	60	B	70	62.1	**60.4**	62.7	**61.1**	0.6	0.7	63.0	**61.5**	0.9	1.1
wM141	Residential	NAC-1	65	60	B	70	**65.2**	**60.6**	**65.8**	**61.6**	0.6	1.0	**66.4**	**62.5**	1.2	1.9
wM141b1	Residential	NAC-1	65	60	B	70	63.9	**61.9**	64.5	**62.6**	0.6	0.7	**65.1**	**63.3**	1.2	1.4
wM141b2	Residential	NAC-1	65	60	B	70	**67.4**	**65.8**	**68.1**	**66.6**	0.7	0.8	**68.6**	**67.0**	1.2	1.2
wM141b3	Residential	NAC-1	65	60	B	70	**71.0**	**69.5**	**71.7**	**70.3**	0.7	0.8	**72.0**	**70.5**	1.0	1.0
wM142b1	Residential	NAC-1	65	60	B	70	63.3	**61.7**	63.9	**62.5**	0.6	0.8	64.6	**63.1**	1.3	1.4
wM142b2	Residential	NAC-1	65	60	B	70	**66.4**	**65.0**	**67.1**	**65.7**	0.7	0.7	**67.6**	**66.2**	1.2	1.2
wM142b3	Residential	NAC-1	65	60	B	70	**69.3**	**67.9**	**70.0**	**68.7**	0.7	0.8	**70.3**	**69.0**	1.0	1.1
wM143b1	Residential	NAC-1	65	60	B	70	62.9	**61.5**	63.5	**62.2**	0.6	0.7	64.2	**62.8**	1.3	1.3
wM143b2	Residential	NAC-1	65	60	B	70	**65.7**	**64.3**	**66.4**	**65.1**	0.7	0.8	**66.9**	**65.5**	1.2	1.2
wM143b3	Residential	NAC-1	65	60	B	70	**68.2**	**66.8**	**68.8**	**67.5**	0.6	0.7	**69.2**	**67.9**	1.0	1.1
wM341	Residential	NAC-1	65	60	B	70	62.6	**61.2**	63.2	**61.9**	0.6	0.7	63.7	**62.3**	1.1	1.1
wM342	Residential	NAC-1	65	60	B	70	63.0	**61.5**	63.6	**62.3**	0.6	0.8	64.1	**62.7**	1.1	1.2
wM441	Residential	NAC-1	65	60	B	70	62.8	**60.9**	63.4	**61.6**	0.6	0.7	63.6	**61.9**	0.8	1.0
wM442	Residential	NAC-1	65	60	B	70	**66.3**	**64.0**	**66.8**	**64.7**	0.5	0.7	**66.8**	**64.7**	0.5	0.7
Receivers - North side Block D (Nicollet Avenue to 1st Avenue)																
nD001	Commercial	NAC-2	70	65	E	75	**77.9**	**74.1**	**78.3**	**74.7**	0.4	0.6	**78.2**	**74.7**	0.3	0.6
nD002	Residential	NAC-1	65	60	B	70	**71.5**	**68.8**	**71.9**	**69.4**	0.4	0.6	**71.9**	**69.4**	0.4	0.6
nD002C	Residential	NAC-1	65	60	B	70	**73.4**	**70.5**	**73.8**	**71.1**	0.4	0.6	**73.8**	**71.0**	0.4	0.5
nD101	Commercial	NAC-2	70	65	E	75	**72.6**	64.0	**73.2**	64.8	0.6	0.8	**73.2**	64.8	0.6	0.8
nD201	Commercial	NAC-2	70	65	E	75	63.6	59.7	64.1	60.3	0.5	0.6	64.1	60.3	0.5	0.6
nD202	Commercial	NAC-2	70	65	E	75	61.7	58.1	62.1	58.8	0.4	0.7	62.1	58.8	0.4	0.7
Receivers - North side Block E (1st Avenue to 3rd Avenue)																
nE101	Commercial	NAC-2	70	65	E	75	69.4	**67.0**	69.8	**67.6**	0.4	0.6	69.9	**67.6**	0.5	0.6
nE102	Commercial	NAC-2	70	65	E	75	63.9	62.3	64.4	62.9	0.5	0.6	64.4	62.9	0.5	0.6
Receivers - North side Block F (3rd Avenue to Downtown)																
nF101	General	NAC-2	70	65	C	70	65.7	62.4	66.4	63.4	0.7	1.0	66.6	63.6	0.9	1.2
nF102	General	NAC-2	70	65	C	70	65.6	62.0	66.3	63.0	0.7	1.0	66.5	63.2	0.9	1.2
nF103	General	NAC-2	70	65	C	70	64.2	60.5	64.8	61.5	0.6	1.0	65.0	61.7	0.8	1.2
nF201	General	NAC-2	70	65	C	70	60.2	58.2	60.9	59.0	0.7	0.8	61.0	59.1	0.8	0.9
Receivers - North side Block G (Downtown to Portland Avenue)																
nG001	General	NAC-2	70	65	C	70	**71.9**	**69.3**	**72.7**	**70.3**	0.8	1.0	**72.7**	**70.2**	0.8	0.9
nG002	General	NAC-2	70	65	C	70	**72.8**	**70.4**	**73.6**	**71.4**	0.8	1.0	**73.7**	**71.4**	0.9	1.0
nG003	General	NAC-2	70	65	C	70	**70.6**	**69.0**	**71.3**	**69.8**	0.7	0.8	**71.2**	**69.8**	0.6	0.8
nG004	General	NAC-2	70	65	C	70	**71.8**	**70.2**	**72.4**	**70.9**	0.6	0.7	**72.3**	**70.9**	0.5	0.7
nG005	General	NAC-2	70	65	C	70	**73.4**	**71.2**	**73.9**	**71.9**	0.5	0.7	**73.7**	**71.9**	0.3	0.7
nG006	General	NAC-2	70	65	C	70	68.4	**66.8**	69.2	**67.7**	0.8	0.9	69.1	**67.6**	0.7	0.8
nG101	Commercial	NAC-2	70	65	E	75	66.6	62.5	67.6	63.7	1.0	1.2	67.7	63.9	1.1	1.4
nG201	Residential	NAC-1	65	60	B	70	60.0	56.6	60.8	57.7	0.8	1.1	60.9	57.8	0.9	1.2
nG102	Residential	NAC-1	65	60	B	70	**65.9**	**63.1**	**66.9**	**64.2**	1.0	1.1	**67.0**	**64.3**	1.1	1.2
nG103	Residential	NAC-1	65	60	B	70	**66.3**	**63.5**	**67.1**	**64.6**	0.8	1.1	**67.2**	**64.7**	0.9	1.2
nG202	Residential	NAC-1	65	60	B	70	60.3	58.3	61.1	59.2	0.8	0.9	61.2	59.3	0.9	1.0
nG203	Residential	NAC-1	65	60	B	70	60.6	58.5	61.3	59.4	0.7	0.9	61.4	59.5	0.8	1.0
nG204	Residential	NAC-1	65	60	B	70	59.3	57.4	60.0	58.3	0.7	0.9	60.1	58.4	0.8	1.0
nG205	Residential	NAC-1	65	60	B	70	59.5	57.7	60.3	58.6	0.8	0.9	60.3	58.6	0.8	0.9
nG206	Residential	NAC-1	65	60	B	70	60.5	58.2	61.1	59.1	0.6	0.9	61.2	59.1	0.7	0.9
nG207	Residential	NAC-1	65	60	B	70	64.6	57.9	**65.2**	59.0	0.6	1.1	**65.2**	59.0	0.6	1.1
nG301	General	NAC-2	70	65	C	70	56.2	54.1	57.0	55.0	0.8	0.9	57.0	55.0	0.8	0.9
nG302	Residential	NAC-1	65	60	B	70	56.3	54.7	57.0	55.5	0.7	0.8	57.0	55.5	0.7	0.8
nG303	Residential	NAC-1	65	60	B	70	57.3	55.3	57.9	56.1	0.6	0.8	57.9	56.1	0.6	0.8
nG304	Residential	NAC-1	65	60	B	70	56.2	54.7	56.8	55.5	0.6	0.8	56.8	55.5	0.6	0.8
nG305	Residential	NAC-1	65	60	B	70	57.0	55.3	57.6	56.1	0.6	0.8	57.6	56.1	0.6	0.8
nG306	Residential	NAC-1	65	60	B	70	58.0	56.3	58.6	57.1	0.6	0.8	58.6	57.1	0.6	0.8

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Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
nG307	Residential	NAC-1	65	60	B	70	61.6	57.0	62.1	57.9	0.5	0.9	62.1	57.9	0.5	0.9
nG308	Residential	NAC-1	65	60	B	70	63.3	56.8	63.9	57.7	0.6	0.9	63.9	57.7	0.6	0.9
nG309	Residential	NAC-1	65	60	B	70	58.7	56.9	59.3	57.6	0.6	0.7	59.3	57.6	0.6	0.7
nG208	Residential	NAC-1	65	60	B	70	61.1	59.2	61.8	**60.0**	0.7	0.8	61.8	**60.0**	0.7	0.8
nG208C	Residential	NAC-1	65	60	B	70	60.9	59.2	61.6	**60.0**	0.7	0.8	61.6	**60.0**	0.7	0.8
nG209	Residential	NAC-1	65	60	B	70	64.2	**62.2**	64.8	**63.0**	0.6	0.8	64.8	**63.0**	0.6	0.8
nG105	Residential	NAC-1	65	60	B	70	**67.0**	**64.7**	**67.9**	**65.7**	0.9	1.0	**68.0**	**65.8**	1.0	1.1
Receivers - North side Block H (Portland Avenue to Park Avenue)																
nH101	Residential	NAC-1	65	60	B	70	**70.7**	**68.5**	**71.2**	**69.2**	0.5	0.7	**71.2**	**69.2**	0.5	0.7
nH102	General	NAC-2	70	65	C	70	68.1	**66.3**	68.7	**67.0**	0.6	0.7	68.7	**67.1**	0.6	0.8
nH102C	General	NAC-2	70	65	C	70	65.7	64.1	66.2	64.8	0.5	0.7	66.3	64.9	0.6	0.8
nH103	Commercial	NAC-2	70	65	E	75	**71.7**	**69.1**	**72.3**	**69.8**	0.6	0.7	**72.3**	**69.9**	0.6	0.8
nH104	Residential	NAC-1	65	60	B	70	**70.1**	**68.0**	**70.7**	**68.7**	0.6	0.7	**70.8**	**68.8**	0.7	0.8
nH201	Residential	NAC-1	65	60	B	70	**67.6**	**60.5**	**68.2**	**61.4**	0.6	0.9	**68.2**	**61.4**	0.6	0.9
nH202	Residential	NAC-1	65	60	B	70	**67.0**	59.6	**67.6**	**60.5**	0.6	0.9	**67.6**	**60.5**	0.6	0.9
nH203	Residential	NAC-1	65	60	B	70	61.0	59.1	61.6	59.8	0.6	0.7	61.6	59.9	0.6	0.8
nH203B	Residential	NAC-1	65	60	B	70	62.1	**60.5**	62.7	**61.2**	0.6	0.7	62.7	**61.2**	0.6	0.7
nH204	Residential	NAC-1	65	60	B	70	61.7	**60.1**	62.3	**60.8**	0.6	0.7	62.3	**60.8**	0.6	0.7
nH205	Commercial	NAC-2	70	65	E	75	69.8	63.2	**70.4**	64.1	0.6	0.9	**70.4**	64.1	0.6	0.9
nH206	Residential	NAC-1	65	60	B	70	**68.4**	**60.4**	**69.1**	**61.2**	0.7	0.8	**69.1**	**61.2**	0.7	0.8
nH301	Residential	NAC-1	65	60	B	70	58.3	56.7	58.8	57.5	0.5	0.8	58.8	57.5	0.5	0.8
nH302	Residential	NAC-1	65	60	B	70	58.1	56.7	58.7	57.4	0.6	0.7	58.7	57.4	0.6	0.7
nH303	Residential	NAC-1	65	60	B	70	58.1	56.6	58.7	57.3	0.6	0.7	58.7	57.3	0.6	0.7
nH304	Residential	NAC-1	65	60	B	70	58.0	56.5	58.6	57.2	0.6	0.7	58.6	57.3	0.6	0.8
nH305	Residential	NAC-1	65	60	B	70	62.5	56.5	63.1	57.3	0.6	0.8	63.1	57.4	0.6	0.9
Receivers - North side Block I (Park Avenue to Chicago Avenue)																
nI101	General	NAC-2	70	65	C	70	**72.2**	**68.6**	**72.7**	**69.3**	0.5	0.7	**72.8**	**69.4**	0.6	0.8
nI102	Residential	NAC-1	65	60	B	70	**70.7**	**68.5**	**71.3**	**69.2**	0.6	0.7	**71.3**	**69.3**	0.6	0.8
nI103	Residential	NAC-1	65	60	B	70	**70.4**	**68.3**	**70.9**	**69.0**	0.5	0.7	**71.0**	**69.0**	0.6	0.7
nI104	General	NAC-2	70	65	C	70	**72.8**	**68.9**	**73.3**	**69.6**	0.5	0.7	**73.3**	**69.7**	0.5	0.8
nI104C	General	NAC-2	70	65	C	70	69.5	**67.4**	**70.1**	**68.1**	0.6	0.7	**70.1**	**68.2**	0.6	0.8
nI201	Commercial	NAC-2	70	65	E	75	**70.3**	63.3	**70.9**	64.2	0.6	0.9	**70.9**	64.2	0.6	0.9
nI202	Residential	NAC-1	65	60	B	70	**69.1**	**61.2**	**69.7**	**62.0**	0.6	0.8	**69.7**	**62.0**	0.6	0.8
nI203	Residential	NAC-1	65	60	B	70	**68.8**	**60.7**	**69.5**	**61.6**	0.7	0.9	**69.5**	**61.6**	0.7	0.9
nI204	Residential	NAC-1	65	60	B	70	62.8	**61.1**	63.4	**61.8**	0.6	0.7	63.4	**61.8**	0.6	0.7
nI205	Residential	NAC-1	65	60	B	70	61.5	59.4	62.0	**60.1**	0.5	0.7	62.1	**60.2**	0.6	0.8
nI206	Residential	NAC-1	65	60	B	70	61.1	59.4	61.7	**60.0**	0.6	0.6	61.7	**60.1**	0.6	0.7
nI206C	Residential	NAC-1	65	60	B	70	60.6	58.9	61.1	59.5	0.5	0.6	61.2	59.6	0.6	0.7
nI207	Residential	NAC-1	65	60	B	70	61.6	59.8	62.2	**60.5**	0.6	0.7	62.2	**60.6**	0.6	0.8
nI208	Residential	NAC-1	65	60	B	70	62.3	**60.4**	62.8	**61.0**	0.5	0.6	62.8	**61.1**	0.5	0.7
nI208b2	Residential	NAC-1	65	60	B	70	63.1	**61.4**	63.7	**62.0**	0.6	0.6	63.7	**62.1**	0.6	0.7
nI208b3	Residential	NAC-1	65	60	B	70	63.4	**61.6**	63.9	**62.3**	0.5	0.7	**65.4**	**63.8**	2.0	2.2
nI209	Commercial	NAC-2	70	65	E	75	65.1	62.0	65.6	62.7	0.5	0.7	65.6	62.8	0.5	0.8
nI301	Residential	NAC-1	65	60	B	70	61.4	56.4	62.0	57.2	0.6	0.8	62.0	57.2	0.6	0.8
nI302	Residential	NAC-1	65	60	B	70	58.1	56.3	58.7	57.0	0.6	0.7	58.7	57.0	0.6	0.7
nI303	Residential	NAC-1	65	60	B	70	58.4	56.4	59.0	57.0	0.6	0.6	59.0	57.1	0.6	0.7
nI304	Residential	NAC-1	65	60	B	70	62.2	56.4	62.8	57.2	0.6	0.8	62.8	57.3	0.6	0.9
nI305	Residential	NAC-1	65	60	B	70	63.7	56.0	64.3	56.8	0.6	0.8	64.4	56.9	0.7	0.9
Receivers - North side Block J (Chicago Avenue to 11th Avenue)																
nJ101	Commercial	NAC-2	70	65	E	75	**71.0**	**67.3**	**71.5**	**68.1**	0.5	0.8	**71.6**	**68.1**	0.6	0.8
nJ102	Commercial	NAC-2	70	65	E	75	**70.4**	**68.2**	**70.9**	**68.8**	0.5	0.6	**71.0**	**68.9**	0.6	0.7
nJ103	Residential	NAC-1	65	60	B	70	**72.1**	**69.3**	**72.6**	**70.0**	0.5	0.7	**72.6**	**70.1**	0.5	0.8
nJ104	Residential	NAC-1	65	60	B	70	**71.9**	**69.2**	**72.4**	**69.9**	0.5	0.7	**72.4**	**70.0**	0.5	0.8
nJ105	Residential	NAC-1	65	60	B	70	**72.0**	**69.4**	**72.5**	**70.0**	0.5	0.6	**72.5**	**70.1**	0.5	0.7
nJ106	Residential	NAC-1	65	60	B	70	**72.0**	**69.4**	**72.5**	**70.1**	0.5	0.7	**72.5**	**70.1**	0.5	0.7

Table 4
Daytime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
nJ107	Residential	NAC-1	65	60	B	70	**71.5**	**69.2**	**72.0**	**69.8**	0.5	0.6	**72.0**	**69.9**	0.5	0.7
nJ108	Residential	NAC-1	65	60	B	70	**71.6**	**69.2**	**72.0**	**69.9**	0.4	0.7	**72.1**	**69.9**	0.5	0.7
nJ108b1	Residential	NAC-1	65	60	B	70	**68.2**	**65.4**	**68.6**	**66.0**	0.4	0.6	**68.7**	**66.1**	0.5	0.7
nJ108b2	Residential	NAC-1	65	60	B	70	**72.5**	**69.6**	**72.9**	**70.2**	0.4	0.6	**73.0**	**70.3**	0.5	0.7
nJ109	Residential	NAC-1	65	60	B	70	**70.8**	**68.6**	**71.2**	**69.2**	0.4	0.6	**71.3**	**69.2**	0.5	0.6
nJ109C	Residential	NAC-1	65	60	B	70	**66.3**	**64.5**	**66.8**	**65.1**	0.5	0.6	**66.9**	**65.2**	0.6	0.7
nJ201	Commercial	NAC-2	70	65	E	75	69.8	61.3	**70.4**	62.2	0.6	0.9	**70.4**	62.3	0.6	1.0
nJ202	Commercial	NAC-2	70	65	E	75	**70.1**	61.8	**70.7**	62.7	0.6	0.9	**70.7**	62.7	0.6	0.9
nJ203	Commercial	NAC-2	70	65	E	75	**70.3**	62.5	**70.9**	63.4	0.6	0.9	**71.0**	63.4	0.7	0.9
nJ204	Residential	NAC-1	65	60	B	70	64.3	**62.5**	64.8	**63.2**	0.5	0.7	64.9	**63.2**	0.6	0.7
nJ205	Residential	NAC-1	65	60	B	70	62.2	**60.4**	62.7	**61.1**	0.5	0.7	62.7	**61.1**	0.5	0.7
nJ206	Residential	NAC-1	65	60	B	70	**65.0**	**63.2**	**65.6**	**63.8**	0.6	0.6	**65.6**	**63.9**	0.6	0.7
nJ206b2	Residential	NAC-1	65	60	B	70	**67.5**	**65.4**	**68.0**	**66.1**	0.5	0.7	**68.0**	**66.1**	0.5	0.7
nJ207	Residential	NAC-1	65	60	B	70	62.4	**60.6**	62.9	**61.2**	0.5	0.6	62.9	**61.2**	0.5	0.6
nJ208	Residential	NAC-1	65	60	B	70	62.1	**60.4**	62.6	**61.0**	0.5	0.6	62.7	**61.1**	0.6	0.7
nJ209	Residential	NAC-1	65	60	B	70	64.8	**62.8**	**65.3**	**63.4**	0.5	0.6	63.4	**61.5**	-1.4	-1.3
nJ301	Residential	NAC-1	65	60	B	70	64.7	58.0	**65.3**	58.8	0.6	0.8	61.4	57.5	-3.3	-0.5
nJ302	Residential	NAC-1	65	60	B	70	58.2	56.6	58.8	57.2	0.6	0.6	58.8	57.2	0.6	0.6
nJ303	Residential	NAC-1	65	60	B	70	58.7	57.0	59.2	57.6	0.5	0.6	60.8	59.2	2.1	2.2
nJ304	Residential	NAC-1	65	60	B	70	61.3	59.6	61.8	**60.2**	0.5	0.6	61.8	**60.3**	0.5	0.7
nJ305	Residential	NAC-1	65	60	B	70	58.3	56.7	58.8	57.3	0.5	0.6	58.9	57.4	0.6	0.7
nJ306	Residential	NAC-1	65	60	B	70	58.7	57.1	59.2	57.7	0.5	0.6	59.3	57.8	0.6	0.7
nJ307	Residential	NAC-1	65	60	B	70	59.1	57.5	59.7	58.1	0.6	0.6	59.7	58.2	0.6	0.7
nJ308	Residential	NAC-1	65	60	B	70	59.8	58.1	60.3	58.7	0.5	0.6	60.4	58.8	0.6	0.7
nJ309	Residential	NAC-1	65	60	B	70	58.7	57.2	59.2	57.8	0.5	0.6	59.3	57.8	0.6	0.6
nJ310	Residential	NAC-1	65	60	B	70	59.3	57.7	59.8	58.3	0.5	0.6	59.8	58.4	0.5	0.7
nJ311	Residential	NAC-1	65	60	B	70	59.9	58.3	60.4	58.9	0.5	0.6	60.5	58.9	0.6	0.6
nJ312	Residential	NAC-1	65	60	B	70	60.3	58.7	60.7	59.3	0.4	0.6	60.8	59.3	0.5	0.6
nJ313	Residential	NAC-1	65	60	B	70	63.5	59.6	63.9	**60.3**	0.4	0.7	63.9	**60.3**	0.4	0.7
Receivers - South side Block D (Nicollet Avenue to 1st Avenue)																
sD101	Commercial	NAC-2	70	65	E	75	66.0	60.4	66.5	61.1	0.5	0.7	66.5	61.1	0.5	0.7
sD301	Commercial	NAC-2	70	65	E	75	60.5	57.6	60.9	58.3	0.4	0.7	61.0	58.3	0.5	0.7
sD302	Residential	NAC-1	65	60	B	70	59.6	57.2	60.1	57.8	0.5	0.6	60.1	57.8	0.5	0.6
Receivers - South side Block E (1st Avenue to 3rd Avenue)																
sE101	Residential	NAC-1	65	60	B	70	**69.6**	**64.2**	**70.1**	**64.8**	0.5	0.6	**70.1**	**64.8**	0.5	0.6
sE102	Residential	NAC-1	65	60	B	70	**72.0**	**69.2**	**72.4**	**69.8**	0.4	0.6	**72.4**	**69.8**	0.4	0.6
sE103	Residential	NAC-1	65	60	B	70	64.8	**62.5**	**65.3**	**63.1**	0.5	0.6	**65.3**	**63.1**	0.5	0.6
sE104	Residential	NAC-1	65	60	B	70	**70.7**	**68.1**	**71.1**	**68.6**	0.4	0.5	**71.1**	**68.7**	0.4	0.6
sE104a1	Residential	NAC-1	65	60	B	70	63.7	**61.4**	64.2	**61.9**	0.5	0.5	64.2	**62.0**	0.5	0.6
sE104a2	Residential	NAC-1	65	60	B	70	**65.3**	**62.8**	**65.7**	**63.4**	0.4	0.6	**65.7**	**63.4**	0.4	0.6
sE104a3	Residential	NAC-1	65	60	B	70	**66.1**	**63.7**	**66.5**	**64.2**	0.4	0.5	**66.5**	**64.2**	0.4	0.5
sE104b1	Residential	NAC-1	65	60	B	70	63.8	**61.4**	64.2	**61.9**	0.4	0.5	64.3	**62.0**	0.5	0.6
sE104b2	Residential	NAC-1	65	60	B	70	**65.2**	**62.8**	**65.6**	**63.3**	0.4	0.5	**65.6**	**63.4**	0.4	0.6
sE104b3	Residential	NAC-1	65	60	B	70	**66.0**	**63.6**	**66.4**	**64.1**	0.4	0.5	**66.4**	**64.1**	0.4	0.5
sE105	Residential	NAC-1	65	60	B	70	**70.5**	**67.8**	**70.9**	**68.4**	0.4	0.6	**71.0**	**68.5**	0.5	0.7
sE106	Residential	NAC-1	65	60	B	70	**71.1**	**68.3**	**71.5**	**68.9**	0.4	0.6	**71.7**	**69.1**	0.6	0.8
sE107	Residential	NAC-1	65	60	B	70	**71.4**	**68.6**	**71.8**	**69.1**	0.4	0.5	**72.0**	**69.3**	0.6	0.7
sE108	Commercial	NAC-2	70	65	E	75	**71.2**	**67.8**	**71.7**	**68.5**	0.5	0.7	**71.7**	**68.6**	0.5	0.8
sE109	Residential	NAC-1	65	60	B	70	**71.5**	**68.6**	**71.9**	**69.2**	0.4	0.6	**72.0**	**69.4**	0.5	0.8
sE201	Residential	NAC-1	65	60	B	70	61.9	57.9	62.5	58.5	0.6	0.6	62.5	58.6	0.6	0.7
sE202	Residential	NAC-1	65	60	B	70	59.9	57.9	60.3	58.4	0.4	0.5	60.4	58.5	0.5	0.6
sE203	Residential	NAC-1	65	60	B	70	60.5	58.5	61.0	59.1	0.5	0.6	61.1	59.2	0.6	0.7
sE204	Residential	NAC-1	65	60	B	70	57.4	55.5	57.9	56.1	0.5	0.6	58.0	56.2	0.6	0.7
sE205	Residential	NAC-1	65	60	B	70	61.9	59.7	62.3	**60.3**	0.4	0.6	62.4	**60.4**	0.5	0.7
sE206	Residential	NAC-1	65	60	B	70	60.6	58.6	61.1	59.2	0.5	0.6	61.2	59.3	0.6	0.7

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Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
sE207	Residential	NAC-1	65	60	B	70	56.6	54.8	57.1	55.4	0.5	0.6	57.3	55.6	0.7	0.8
sE208	Residential	NAC-1	65	60	B	70	59.9	57.9	60.4	58.5	0.5	0.6	60.6	58.7	0.7	0.8
sE209	Residential	NAC-1	65	60	B	70	**67.8**	59.3	**68.4**	**60.1**	0.6	0.8	**68.5**	**60.3**	0.7	1.0
sE210	Residential	NAC-1	65	60	B	70	61.3	58.4	61.7	59.0	0.4	0.6	61.9	59.3	0.6	0.9
sE210a2	Residential	NAC-1	65	60	B	70	61.8	59.2	62.3	59.8	0.5	0.6	62.5	**60.1**	0.7	0.9
sE210a3	Residential	NAC-1	65	60	B	70	62.7	**60.4**	63.2	**61.0**	0.5	0.6	63.4	**61.3**	0.7	0.9
sE210a4	Residential	NAC-1	65	60	B	70	64.0	**61.7**	64.5	**62.3**	0.5	0.6	64.8	**62.6**	0.8	0.9
sE210b2	Residential	NAC-1	65	60	B	70	62.2	59.7	62.7	**60.3**	0.5	0.6	62.9	**60.6**	0.7	0.9
sE210b3	Residential	NAC-1	65	60	B	70	63.3	**61.0**	63.8	**61.7**	0.5	0.7	64.0	**61.8**	0.7	0.8
sE210b4	Residential	NAC-1	65	60	B	70	64.7	**62.4**	**65.2**	**63.0**	0.5	0.6	**65.4**	**63.3**	0.7	0.9
sE210c2	Residential	NAC-1	65	60	B	70	**65.0**	58.9	**65.5**	59.7	0.5	0.8	**65.7**	**60.0**	0.7	1.1
sE210c3	Residential	NAC-1	65	60	B	70	**65.6**	**60.5**	**66.1**	**61.3**	0.5	0.8	**66.2**	**61.5**	0.6	1.0
sE210c4	Residential	NAC-1	65	60	B	70	**66.2**	**62.3**	**66.7**	**63.0**	0.5	0.7	**66.9**	**63.3**	0.7	1.0
sE210d2	Residential	NAC-1	65	60	B	70	64.2	57.6	64.8	58.4	0.6	0.8	64.9	58.7	0.7	1.1
sE210d3	Residential	NAC-1	65	60	B	70	64.7	59.0	**65.3**	59.8	0.6	0.8	**65.4**	**60.1**	0.7	1.1
sE210d4	Residential	NAC-1	65	60	B	70	**65.2**	**60.5**	**65.7**	**61.3**	0.5	0.8	**65.8**	**61.5**	0.6	1.0
sE211	Residential	NAC-1	65	60	B	70	**67.9**	58.3	**68.5**	59.1	0.6	0.8	**68.6**	59.2	0.7	0.9
sE212	Residential	NAC-1	65	60	B	70	58.0	56.1	58.5	56.7	0.5	0.6	58.6	56.8	0.6	0.7
sE301	Residential	NAC-1	65	60	B	70	60.6	51.2	61.3	52.0	0.7	0.8	61.3	52.1	0.7	0.9
sE302	Residential	NAC-1	65	60	B	70	56.6	54.1	57.1	54.7	0.5	0.6	57.1	54.7	0.5	0.6
sE303	Residential	NAC-1	65	60	B	70	56.0	54.0	56.5	54.7	0.5	0.7	56.6	54.9	0.6	0.9
sE304	Residential	NAC-1	65	60	B	70	60.7	54.0	61.2	54.8	0.5	0.8	61.4	55.0	0.7	1.0
Receivers - South side Block H (Portland Avenue to Park Avenue)																
sH102	Residential	NAC-1	65	60	B	70	**70.8**	**68.7**	**71.3**	**69.4**	0.5	0.7	**71.4**	**69.5**	0.6	0.8
sH103	Residential	NAC-1	65	60	B	70	**71.1**	**69.0**	**71.7**	**69.7**	0.6	0.7	**71.7**	**69.7**	0.6	0.7
sH104	Residential	NAC-1	65	60	B	70	**71.6**	**69.1**	**72.1**	**69.8**	0.5	0.7	**72.1**	**69.9**	0.5	0.8
sH203	General	NAC-2	70	65	C	70	69.2	62.1	69.8	62.9	0.6	0.8	69.8	63.0	0.6	0.9
sH303	Residential	NAC-1	65	60	B	70	**67.7**	59.9	**68.3**	**60.8**	0.6	0.9	**68.3**	**60.8**	0.6	0.9
sH304	Residential	NAC-1	65	60	B	70	**66.9**	58.8	**67.5**	59.7	0.6	0.9	**67.5**	59.7	0.6	0.9
sH305	Residential	NAC-1	65	60	B	70	**65.1**	56.9	**65.7**	57.8	0.6	0.9	**65.7**	57.9	0.6	1.0
Receivers - South side Block I (Park Avenue to Chicago Avenue)																
sI101	Residential	NAC-1	65	60	B	70	**69.9**	**65.7**	**70.4**	**66.5**	0.5	0.8	**70.5**	**66.6**	0.6	0.9
sI102	Residential	NAC-1	65	60	B	70	**70.3**	**68.1**	**70.8**	**68.8**	0.5	0.7	**70.8**	**68.9**	0.5	0.8
sI103	Residential	NAC-1	65	60	B	70	**70.1**	**68.0**	**70.6**	**68.6**	0.5	0.6	**70.7**	**68.7**	0.6	0.7
sI104	Commercial	NAC-2	70	65	E	75	**70.8**	**68.5**	**71.3**	**69.2**	0.5	0.7	**71.3**	**69.3**	0.5	0.8
sI201	Residential	NAC-1	65	60	B	70	**68.4**	**62.3**	**69.0**	**63.2**	0.6	0.9	**69.1**	**63.2**	0.7	0.9
sI202	Residential	NAC-1	65	60	B	70	64.6	**62.7**	**65.2**	**63.4**	0.6	0.7	**65.2**	**63.5**	0.6	0.8
sI301	Residential	NAC-1	65	60	B	70	**65.9**	59.0	**66.5**	59.8	0.6	0.8	**66.6**	59.9	0.7	0.9
sI302	Residential	NAC-1	65	60	B	70	**65.6**	58.1	**66.3**	58.9	0.7	0.8	**66.3**	59.0	0.7	0.9
sI302b2	Residential	NAC-1	65	60	B	70	**65.4**	58.8	**66.0**	59.6	0.6	0.8	**66.1**	59.7	0.7	0.9
sI303	Residential	NAC-1	65	60	B	70	62.5	55.0	63.1	55.9	0.6	0.9	63.2	56.0	0.7	1.0
sI303b2	Residential	NAC-1	65	60	B	70	62.3	55.9	62.9	56.7	0.6	0.8	63.0	56.8	0.7	0.9
sI303b3	Residential	NAC-1	65	60	B	70	62.7	56.9	63.2	57.7	0.5	0.8	63.3	57.8	0.6	0.9
sI304	Residential	NAC-1	65	60	B	70	60.3	58.4	60.8	59.1	0.5	0.7	60.9	59.2	0.6	0.8
sI305	Residential	NAC-1	65	60	B	70	59.7	57.7	60.2	58.4	0.5	0.7	60.3	58.5	0.6	0.8
sI306	Residential	NAC-1	65	60	B	70	**66.1**	57.3	**66.8**	58.2	0.7	0.9	**66.8**	58.3	0.7	1.0
Receivers - South side Block J (Chicago Avenue to 11th Avenue)																
sJ101	Commercial	NAC-2	70	65	E	75	**71.5**	**68.9**	**72.0**	**69.6**	0.5	0.7	**72.0**	**69.6**	0.5	0.7
sJ102	Residential	NAC-1	65	60	B	70	**72.6**	**69.9**	**73.0**	**70.5**	0.4	0.6	**73.0**	**70.5**	0.4	0.6
sJ102C	Residential	NAC-1	65	60	B	70	**70.7**	**68.3**	**71.2**	**68.9**	0.5	0.6	**71.2**	**68.9**	0.5	0.6
sJ103	Residential	NAC-1	65	60	B	70	**69.5**	**67.0**	**70.0**	**67.6**	0.5	0.6	**70.0**	**67.7**	0.5	0.7
sJ104	Residential	NAC-1	65	60	B	70	**71.9**	**69.4**	**72.4**	**70.0**	0.5	0.6	**72.4**	**70.1**	0.5	0.7
sJ105	Residential	NAC-1	65	60	B	70	**70.0**	**67.4**	**70.5**	**68.0**	0.5	0.6	**70.5**	**68.1**	0.5	0.7
sJ107	Residential	NAC-1	65	60	B	70	**66.3**	**62.9**	**66.8**	**63.6**	0.5	0.7	**66.8**	**63.6**	0.5	0.7
sJ106	Residential	NAC-1	65	60	B	70	**67.6**	**64.3**	**68.0**	**65.0**	0.4	0.7	**68.1**	**65.0**	0.5	0.7

Table 4
Daytime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
sJ108	Residential	NAC-1	65	60	B	70	**65.4**	**62.0**	**65.9**	**62.7**	0.5	0.7	**65.9**	**62.8**	0.5	0.8
sJ109	Residential	NAC-1	65	60	B	70	**72.0**	**69.4**	**72.4**	**70.1**	0.4	0.7	**72.4**	**70.1**	0.4	0.7
sJ109C	Residential	NAC-1	65	60	B	70	**68.5**	**65.4**	**69.0**	**66.0**	0.5	0.6	**69.0**	**66.1**	0.5	0.7
sJ110	Residential	NAC-1	65	60	B	70	**72.0**	**69.4**	**72.5**	**70.0**	0.5	0.6	**72.5**	**70.1**	0.5	0.7
sJ110b1	Residential	NAC-1	65	60	B	70	**66.8**	**62.6**	**67.3**	**63.3**	0.5	0.7	**67.3**	**63.4**	0.5	0.8
sJ110b2	Residential	NAC-1	65	60	B	70	**71.5**	**68.0**	**71.9**	**68.7**	0.4	0.7	**72.0**	**68.8**	0.5	0.8
sJ110c2	Residential	NAC-1	65	60	B	70	59.9	58.5	60.4	59.1	0.5	0.6	60.4	59.1	0.5	0.6
sJ201	Commercial	NAC-2	70	65	E	75	62.6	57.6	63.2	58.4	0.6	0.8	63.2	58.4	0.6	0.8
sJ202	Residential	NAC-1	65	60	B	70	62.4	**60.3**	62.9	**61.0**	0.5	0.7	62.9	**61.0**	0.5	0.7
sJ203	Residential	NAC-1	65	60	B	70	62.6	**60.2**	63.1	**60.9**	0.5	0.7	63.1	**60.9**	0.5	0.7
sJ204	Residential	NAC-1	65	60	B	70	60.5	58.4	61.1	59.1	0.6	0.7	61.1	59.1	0.6	0.7
sJ205	Residential	NAC-1	65	60	B	70	60.0	58.0	60.5	58.7	0.5	0.7	60.6	58.7	0.6	0.7
sJ206	Residential	NAC-1	65	60	B	70	63.2	**61.0**	63.7	**61.6**	0.5	0.6	63.7	**61.7**	0.5	0.7
sJ207	Residential	NAC-1	65	60	B	70	62.4	**60.3**	62.9	**61.0**	0.5	0.7	62.9	**61.0**	0.5	0.7
sJ208	Residential	NAC-1	65	60	B	70	59.1	57.3	59.6	57.9	0.5	0.6	59.6	57.9	0.5	0.6
sJ208C	Residential	NAC-1	65	60	B	70	59.3	57.4	59.8	58.0	0.5	0.6	59.8	58.0	0.5	0.6
sJ209	Residential	NAC-1	65	60	B	70	**67.3**	**64.8**	**67.8**	**65.4**	0.5	0.6	**67.8**	**65.5**	0.5	0.7
sJ210	Residential	NAC-1	65	60	B	70	61.9	59.3	62.3	**60.0**	0.4	0.7	62.4	**60.0**	0.5	0.7
sJ211	Residential	NAC-1	65	60	B	70	59.8	57.7	60.2	58.3	0.4	0.6	60.2	58.3	0.4	0.6
sJ212	Residential	NAC-1	65	60	B	70	59.5	57.6	60.0	58.2	0.5	0.6	60.0	58.2	0.5	0.6
sJ213	Residential	NAC-1	65	60	B	70	59.1	57.3	59.6	57.9	0.5	0.6	59.6	58.0	0.5	0.7
sJ214	Residential	NAC-1	65	60	B	70	**67.5**	**61.3**	**68.0**	**62.0**	0.5	0.7	**68.0**	**62.1**	0.5	0.8
sJ215	Residential	NAC-1	65	60	B	70	**66.9**	**60.3**	**67.4**	**61.1**	0.5	0.8	**67.4**	**61.2**	0.5	0.9
sJ216	Residential	NAC-1	65	60	B	70	**65.2**	57.6	**65.8**	58.4	0.6	0.8	**65.8**	58.4	0.6	0.8
sJ217	Residential	NAC-1	65	60	B	70	64.2	56.8	64.7	57.7	0.5	0.9	64.8	57.7	0.6	0.9
sJ218	Residential	NAC-1	65	60	B	70	63.1	56.4	63.6	57.2	0.5	0.8	63.6	57.3	0.5	0.9
sJ301	Commercial	NAC-2	70	65	E	75	55.6	53.6	56.1	54.3	0.5	0.7	56.1	54.3	0.5	0.7
sJ302	General	NAC-2	70	65	C	70	58.0	56.0	58.5	56.6	0.5	0.6	58.5	56.7	0.5	0.7
sJ303	General	NAC-2	70	65	C	70	57.7	55.8	58.2	56.5	0.5	0.7	58.2	56.5	0.5	0.7
sJ304	Residential	NAC-1	65	60	B	70	55.4	53.7	55.9	54.3	0.5	0.6	56.0	54.3	0.6	0.6
sJ305	Residential	NAC-1	65	60	B	70	55.0	53.3	55.5	53.9	0.5	0.6	55.5	54.0	0.5	0.7
sJ306	Residential	NAC-1	65	60	B	70	59.0	57.0	59.5	57.7	0.5	0.7	59.5	57.7	0.5	0.7
sJ307	Residential	NAC-1	65	60	B	70	58.7	56.8	59.3	57.5	0.6	0.7	59.3	57.5	0.6	0.7
sJ317	Residential	NAC-1	65	60	B	70	57.0	55.3	57.5	55.9	0.5	0.6	57.5	55.9	0.5	0.6
sJ318	Residential	NAC-1	65	60	B	70	57.2	55.5	57.7	56.0	0.5	0.5	57.7	56.1	0.5	0.6
sJ325	Residential	NAC-1	65	60	B	70	60.6	55.0	61.1	55.8	0.5	0.8	61.1	55.8	0.5	0.8

Table 5
Nighttime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
Receivers - Greenway - W1 would be removed																
GrnWayE1	General	NAC-2	70	65	C	70	**71.0**	**66.0**	**71.6**	**67.0**	0.6	1.0	66.9	63.3	-4.1	-2.7
GrnWayE2	General	NAC-2	70	65	C	70	**70.9**	**67.5**	**71.6**	**68.5**	0.7	1.0	**70.3**	**67.1**	-0.6	-0.4
GrnWayE3	General	NAC-2	70	65	C	70	69.7	**67.0**	**70.4**	**67.9**	0.7	0.9	69.6	**67.0**	-0.1	0.0
GrnWayE4	General	NAC-2	70	65	C	70	68.7	**66.4**	69.4	**67.3**	0.7	0.9	68.8	**66.7**	0.1	0.3
GrnWayE5	General	NAC-2	70	65	C	70	66.9	64.8	67.6	**65.7**	0.7	0.9	66.9	64.9	0.0	0.1
GrnWayE6	General	NAC-2	70	65	C	70	66.9	64.8	67.6	**65.7**	0.7	0.9	66.9	64.9	0.0	0.1
GrnWayE7	General	NAC-2	70	65	C	70	66.9	64.8	67.6	**65.7**	0.7	0.9	66.9	64.9	0.0	0.1
GrnWayW1	General	NAC-2	70	65	C	70	63.3	59.5	64.1	60.6	0.8	1.1	N/A	N/A		
GrnWayW2	General	NAC-2	70	65	C	70	67.8	61.8	68.6	63.0	0.8	1.2	64.4	56.6	-3.4	-5.2
GrnWayW3	General	NAC-2	70	65	C	70	68.1	63.0	68.8	64.1	0.7	1.1	68.0	62.3	-0.1	-0.7
GrnWayW4	General	NAC-2	70	65	C	70	66.5	63.4	67.2	64.4	0.7	1.0	66.3	62.7	-0.2	-0.7
GrnWayW5	General	NAC-2	70	65	C	70	65.4	62.8	66.2	63.7	0.8	0.9	65.1	62.1	-0.3	-0.7
GrnWayW6	General	NAC-2	70	65	C	70	64.3	61.9	65.0	62.9	0.7	1.0	63.9	61.3	-0.4	-0.6
GrnWayW7	General	NAC-2	70	65	C	70	63.2	61.1	64.0	62.0	0.8	0.9	62.9	60.6	-0.3	-0.5
Receivers - Greeway Cresent - New Receivers in Build Only																
crest1	General	NAC-2	70	65	C	70	N/A	N/A	N/A	N/A			**72.3**	62.8		
crest2	General	NAC-2	70	65	C	70	N/A	N/A	N/A	N/A			**71.7**	62.5		
crest3	General	NAC-2	70	65	C	70	N/A	N/A	N/A	N/A			**70.6**	61.1		
crest4	General	NAC-2	70	65	C	70	N/A	N/A	N/A	N/A			67.6	58.6		
crest5	General	NAC-2	70	65	C	70	N/A	N/A	N/A	N/A			67.4	58.9		
crest6	General	NAC-2	70	65	C	70	N/A	N/A	N/A	N/A			67.9	59.0		
crest7	General	NAC-2	70	65	C	70	N/A	N/A	N/A	N/A			69.3	60.8		
crest8	General	NAC-2	70	65	C	70	N/A	N/A	N/A	N/A			**71.8**	62.5		
crest9	General	NAC-2	70	65	C	70	N/A	N/A	N/A	N/A			**71.4**	61.3		
crest10	General	NAC-2	70	65	C	70	N/A	N/A	N/A	N/A			**71.3**	61.2		
crest11	General	NAC-2	70	65	C	70	N/A	N/A	N/A	N/A			**71.7**	61.2		
crest12	General	NAC-2	70	65	C	70	N/A	N/A	N/A	N/A			**71.4**	61.3		
crest13	General	NAC-2	70	65	C	70	N/A	N/A	N/A	N/A			**72.2**	62.1		
Receivers - Lake Street																
Lake1	Commercial	NAC-2	70	65	E	75	61.2	52.8	63.2	55.5	2.0	2.7	63.5	55.9	2.3	3.1
Lake2	Commercial	NAC-2	70	65	E	75	65.8	57.9	68.0	60.8	2.2	2.9	68.4	61.3	2.6	3.4
Lake2b	Residential	NAC-1	55	50	B	70	**67.1**	**58.0**	**69.5**	**61.2**	2.4	3.2	**69.9**	**61.8**	2.8	3.8
Lake2c	Residential	NAC-1	55	50	B	70	**66.7**	**57.8**	**69.0**	**60.9**	2.3	3.1	**69.5**	**61.5**	2.8	3.7
Lake2d	Residential	NAC-1	55	50	B	70	**66.3**	**57.6**	**68.5**	**60.6**	2.2	3.0	**69.0**	**61.2**	2.7	3.6
Lake3b	Residential	NAC-1	55	50	B	70	**67.4**	**58.4**	**69.7**	**61.5**	2.3	3.1	**70.2**	**62.2**	2.8	3.8
Lake3c	Residential	NAC-1	55	50	B	70	**67.0**	**58.2**	**69.3**	**61.3**	2.3	3.1	**69.8**	**61.9**	2.8	3.7
Lake3d	Residential	NAC-1	55	50	B	70	**66.5**	**58.0**	**68.8**	**61.0**	2.3	3.0	**69.2**	**61.6**	2.7	3.6
Lake4b	Residential	NAC-1	55	50	B	70	**67.6**	**58.6**	**69.9**	**61.7**	2.3	3.1	**70.4**	**62.4**	2.8	3.8
Lake4c	Residential	NAC-1	55	50	B	70	**67.2**	**58.4**	**69.5**	**61.5**	2.3	3.1	**69.9**	**62.1**	2.7	3.7
Lake4d	Residential	NAC-1	55	50	B	70	**66.7**	**58.2**	**69.0**	**61.2**	2.3	3.0	**69.4**	**61.8**	2.7	3.6
Lake5b	Residential	NAC-1	55	50	B	70	**67.8**	**58.8**	**70.1**	**62.0**	2.3	3.2	**70.6**	**62.6**	2.8	3.8
Lake5c	Residential	NAC-1	55	50	B	70	**67.4**	**58.7**	**69.7**	**61.8**	2.3	3.1	**70.1**	**62.3**	2.7	3.6
Lake5d	Residential	NAC-1	55	50	B	70	**66.9**	**58.5**	**69.2**	**61.5**	2.3	3.0	**69.6**	**62.1**	2.7	3.6
Lake66b	Residential	NAC-1	55	50	B	70	**65.3**	**57.6**	**67.3**	**60.5**	2.0	2.9	**67.7**	**60.9**	2.4	3.3
Lake66c	Residential	NAC-1	55	50	B	70	**65.2**	**57.7**	**67.3**	**60.5**	2.1	2.8	**67.6**	**60.9**	2.4	3.2
Lake66d	Residential	NAC-1	55	50	B	70	**65.1**	**57.8**	**67.1**	**60.5**	2.0	2.7	**67.5**	**60.9**	2.4	3.1
Lake77b	Residential	NAC-1	55	50	B	70	**64.1**	**57.2**	**66.0**	**59.9**	1.9	2.7	**66.3**	**60.2**	2.2	3.0
Lake77c	Residential	NAC-1	55	50	B	70	**64.2**	**57.4**	**66.0**	**60.0**	1.8	2.6	**66.3**	**60.2**	2.1	2.8
Lake77d	Residential	NAC-1	55	50	B	70	**64.2**	**57.6**	**66.0**	**60.1**	1.8	2.5	**66.3**	**60.3**	2.1	2.7
Lake88b	Residential	NAC-1	55	50	B	70	**64.2**	**57.4**	**66.1**	**60.0**	1.9	2.6	**66.4**	**60.3**	2.2	2.9
Lake88c	Residential	NAC-1	55	50	B	70	**64.3**	**57.6**	**66.1**	**60.1**	1.8	2.5	**66.4**	**60.4**	2.1	2.8
Lake88d	Residential	NAC-1	55	50	B	70	**64.3**	**57.8**	**66.1**	**60.2**	1.8	2.4	**66.3**	**60.5**	2.0	2.7
Lake99b	Residential	NAC-1	55	50	B	70	**63.4**	**57.4**	**65.2**	**59.7**	1.8	2.3	**65.4**	**59.9**	2.0	2.5
Lake99c	Residential	NAC-1	55	50	B	70	**63.5**	**57.6**	**65.2**	**59.9**	1.7	2.3	**65.4**	**60.0**	1.9	2.4

Table 5
Nighttime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
Lake99d	Residential	NAC-1	55	50	B	70	**63.6**	**57.9**	**65.3**	**60.1**	1.7	2.2	**65.4**	**60.2**	1.8	2.3
Lake6	Commercial	NAC-2	70	65	E	75	65.7	58.6	67.6	61.2	1.9	2.6	67.9	61.5	2.2	2.9
Lake7	Commercial	NAC-2	70	65	E	75	61.6	53.0	63.8	55.8	2.2	2.8	64.1	56.2	2.5	3.2
Lake8	Commercial	NAC-2	70	65	E	75	69.9	61.6	**71.7**	63.9	1.8	2.3	**72.1**	64.4	2.2	2.8
Lake9	Commercial	NAC-2	70	65	E	75	69.7	61.2	**71.6**	63.6	1.9	2.4	**72.0**	64.2	2.3	3.0
Lake10	Residential	NAC-1	55	50	B	70	**64.0**	**60.7**	**65.1**	**62.0**	1.1	1.3	**65.0**	**61.6**	1.0	0.9
Lake11	Commercial	NAC-2	70	65	E	75	64.6	60.1	65.9	61.6	1.3	1.5	66.0	61.6	1.4	1.5
Lake12	Commercial	NAC-2	70	65	E	75	69.3	60.8	**71.1**	63.2	1.8	2.4	**71.6**	63.9	2.3	3.1
Lake13	Commercial	NAC-2	70	65	E	75	69.2	60.6	**71.0**	63.1	1.8	2.5	**71.5**	63.7	2.3	3.1
Lake14	Commercial	NAC-2	70	65	E	75	69.0	60.2	**70.9**	62.7	1.9	2.5	**71.4**	63.4	2.4	3.2
Lake15	Commercial	NAC-2	70	65	E	75	63.1	59.0	64.2	60.4	1.1	1.4	64.3	60.3	1.2	1.3
Lake16	Commercial	NAC-2	70	65	E	75	62.1	56.7	63.4	58.2	1.3	1.5	63.5	58.2	1.4	1.5
Lake17	Commercial	NAC-2	70	65	E	75	62.8	56.1	64.1	57.9	1.3	1.8	64.3	57.9	1.5	1.8
Lake18	Commercial	NAC-2	70	65	E	75	62.0	56.2	63.3	57.8	1.3	1.6	63.4	57.7	1.4	1.5
Lake19	Commercial	NAC-2	70	65	E	75	61.3	56.2	62.5	57.7	1.2	1.5	62.6	57.5	1.3	1.3
Lake20	Commercial	NAC-2	70	65	E	75	69.3	62.1	**70.8**	64.1	1.5	2.0	**71.1**	64.3	1.8	2.2
Lake21	Commercial	NAC-2	70	65	E	75	69.5	61.5	**71.2**	63.8	1.7	2.3	**71.6**	64.2	2.1	2.7
Lake22	Commercial	NAC-2	70	65	E	75	69.3	61.1	**71.1**	63.5	1.8	2.4	**71.5**	64.0	2.2	2.9
Lake23	Commercial	NAC-2	70	65	E	75	69.1	60.9	**70.9**	63.3	1.8	2.4	**71.4**	63.9	2.3	3.0
Lake24	General	NAC-2	70	65	C	70	64.1	60.6	65.2	62.0	1.1	1.4	65.3	61.8	1.2	1.2
Lake25	Commercial	NAC-2	70	65	E	75	68.9	60.5	**70.7**	63.0	1.8	2.5	**71.2**	63.6	2.3	3.1
Lake26	Commercial	NAC-2	70	65	E	75	67.7	59.3	69.5	61.7	1.8	2.4	**70.0**	62.3	2.3	3.0
Lake27	Commercial	NAC-2	70	65	E	75	61.3	56.4	62.4	57.8	1.1	1.4	62.5	57.7	1.2	1.3
Lake28	General	NAC-2	70	65	C	70	62.1	56.9	63.3	58.4	1.2	1.5	63.5	58.4	1.4	1.5
Receivers - East side Blocks AA to Block GG (46th Street to 39th Street)																
eAA103	Residential	NAC-1	55	50	B	70	**64.6**	**57.6**	**65.4**	**58.7**	0.8	1.1	**65.6**	**59.0**	1.0	1.4
eAA107	Residential	NAC-1	55	50	B	70	**64.2**	**58.1**	**65.0**	**59.1**	0.8	1.0	**65.1**	**59.4**	0.9	1.3
eAA111	Residential	NAC-1	55	50	B	70	**64.1**	**58.1**	**64.8**	**59.2**	0.7	1.1	**65.0**	**59.4**	0.9	1.3
eAA115	Residential	NAC-1	55	50	B	70	**64.4**	**58.1**	**65.2**	**59.1**	0.8	1.0	**65.3**	**59.4**	0.9	1.3
eAA203	Residential	NAC-1	55	50	B	70	**59.0**	**57.2**	**59.7**	**58.1**	0.7	0.9	**59.9**	**58.3**	0.9	1.1
eAA207	Residential	NAC-1	55	50	B	70	**58.9**	**57.1**	**59.6**	**57.9**	0.7	0.8	**59.7**	**58.2**	0.8	1.1
eAA211	Residential	NAC-1	55	50	B	70	**59.1**	**57.4**	**59.8**	**58.2**	0.7	0.8	**60.0**	**58.5**	0.9	1.1
eAA215	Residential	NAC-1	55	50	B	70	**59.3**	**57.6**	**60.0**	**58.4**	0.7	0.8	**60.2**	**58.7**	0.9	1.1
eBB103	Residential	NAC-1	55	50	B	70	**61.8**	**60.3**	**62.5**	**61.2**	0.7	0.9	**62.7**	**61.4**	0.9	1.1
eBB107	Residential	NAC-1	55	50	B	70	**62.5**	**61.0**	**63.2**	**61.8**	0.7	0.8	**63.4**	**62.1**	0.9	1.1
eBB111	Residential	NAC-1	55	50	B	70	**62.9**	**61.2**	**63.6**	**62.1**	0.7	0.9	**63.8**	**62.3**	0.9	1.1
eBB115	Residential	NAC-1	55	50	B	70	**63.8**	**61.5**	**64.5**	**62.4**	0.7	0.9	**64.7**	**62.7**	0.9	1.2
eBB203	Residential	NAC-1	55	50	B	70	**60.1**	**58.6**	**60.8**	**59.4**	0.7	0.8	**61.1**	**59.7**	1.0	1.1
eBB207	Residential	NAC-1	55	50	B	70	**59.6**	**58.3**	**60.3**	**59.1**	0.7	0.8	**60.6**	**59.4**	1.0	1.1
eBB211	Residential	NAC-1	55	50	B	70	**59.2**	**57.9**	**59.9**	**58.7**	0.7	0.8	**60.1**	**58.9**	0.9	1.0
eBB215	Residential	NAC-1	55	50	B	70	**59.2**	**57.8**	**59.9**	**58.6**	0.7	0.8	**60.2**	**58.9**	1.0	1.1
eCC103	Residential	NAC-1	55	50	B	70	**68.1**	**64.4**	**68.7**	**65.4**	0.6	1.0	**68.9**	**65.6**	0.8	1.2
eCC107	Residential	NAC-1	55	50	B	70	**62.5**	**60.9**	**63.2**	**61.7**	0.7	0.8	**63.4**	**61.9**	0.9	1.0
eCC111	Residential	NAC-1	55	50	B	70	**62.1**	**60.7**	**62.8**	**61.5**	0.7	0.8	**63.0**	**61.7**	0.9	1.0
eCC115	Residential	NAC-1	55	50	B	70	**62.0**	**60.6**	**62.7**	**61.4**	0.7	0.8	**62.9**	**61.6**	0.9	1.0
eCC203	Residential	NAC-1	55	50	B	70	**66.3**	**61.5**	**67.0**	**62.5**	0.7	1.0	**67.1**	**62.8**	0.8	1.3
eCC207	Residential	NAC-1	55	50	B	70	**64.7**	**60.6**	**65.4**	**61.6**	0.7	1.0	**65.5**	**61.8**	0.8	1.2
eCC211	Residential	NAC-1	55	50	B	70	**62.7**	**59.7**	**63.4**	**60.6**	0.7	0.9	**63.6**	**60.8**	0.9	1.1
eCC215	Residential	NAC-1	55	50	B	70	**61.4**	**59.1**	**62.1**	**60.0**	0.7	0.9	**62.3**	**60.3**	0.9	1.2
eDD103	Residential	NAC-1	55	50	B	70	**61.2**	**59.6**	**61.9**	**60.4**	0.7	0.8	**62.1**	**60.6**	0.9	1.0
eDD107	Residential	NAC-1	55	50	B	70	**62.6**	**61.0**	**63.3**	**61.9**	0.7	0.9	**63.5**	**62.2**	0.9	1.2
eDD111	Residential	NAC-1	55	50	B	70	**62.9**	**61.3**	**63.6**	**62.1**	0.7	0.8	**63.9**	**62.4**	1.0	1.1
eDD115	Residential	NAC-1	55	50	B	70	**67.0**	**62.8**	**67.7**	**63.8**	0.7	1.0	**67.9**	**64.1**	0.9	1.3
eDD203	Residential	NAC-1	55	50	B	70	**59.4**	**58.0**	**60.1**	**58.9**	0.7	0.9	**60.3**	**59.1**	0.9	1.1
eDD207	Residential	NAC-1	55	50	B	70	**60.9**	**58.4**	**61.5**	**59.2**	0.6	0.8	**61.7**	**59.5**	0.8	1.1

Table 5
Nighttime Noise Analysis Summary
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Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
eDD211	Residential	NAC-1	55	50	B	70	**63.3**	**59.0**	**64.0**	**60.0**	0.7	1.0	**64.2**	**60.3**	0.9	1.3
eDD215	Residential	NAC-1	55	50	B	70	**65.4**	**60.0**	**66.0**	**61.0**	0.6	1.0	**66.2**	**61.3**	0.8	1.3
eEE103	Residential	NAC-1	55	50	B	70	**61.8**	**60.1**	**62.5**	**60.9**	0.7	0.8	**62.7**	**61.1**	0.9	1.0
eEE107	Residential	NAC-1	55	50	B	70	**61.7**	**60.0**	**62.4**	**60.8**	0.7	0.8	**62.5**	**61.1**	0.8	1.1
eEE111	Residential	NAC-1	55	50	B	70	**61.7**	**60.0**	**62.4**	**60.9**	0.7	0.9	**62.6**	**61.1**	0.9	1.1
eEE115	Residential	NAC-1	55	50	B	70	**61.4**	**59.7**	**62.1**	**60.6**	0.7	0.9	**62.3**	**60.8**	0.9	1.1
eEE203	Residential	NAC-1	55	50	B	70	**60.7**	**59.2**	**61.4**	**60.0**	0.7	0.8	**61.5**	**60.2**	0.8	1.0
eEE207	Residential	NAC-1	55	50	B	70	**60.2**	**58.8**	**60.9**	**59.6**	0.7	0.8	**61.0**	**59.8**	0.8	1.0
eEE211	Residential	NAC-1	55	50	B	70	**59.9**	**58.6**	**60.6**	**59.4**	0.7	0.8	**60.8**	**59.6**	0.9	1.0
eEE215	Residential	NAC-1	55	50	B	70	**59.7**	**58.4**	**60.4**	**59.2**	0.7	0.8	**60.6**	**59.4**	0.9	1.0
eFF103	Residential	NAC-1	55	50	B	70	**63.9**	**60.4**	**64.6**	**61.3**	0.7	0.9	**64.7**	**61.5**	0.8	1.1
eFF107	Residential	NAC-1	55	50	B	70	**62.7**	**60.9**	**63.4**	**61.7**	0.7	0.8	**63.5**	**61.9**	0.8	1.0
eFF111	Residential	NAC-1	55	50	B	70	**61.8**	**60.1**	**62.5**	**60.9**	0.7	0.8	**62.7**	**61.1**	0.9	1.0
eFF115	Residential	NAC-1	55	50	B	70	**61.9**	**60.1**	**62.5**	**60.9**	0.6	0.8	**62.7**	**61.1**	0.8	1.0
eFF203	Residential	NAC-1	55	50	B	70	**64.7**	**62.2**	**65.3**	**63.0**	0.6	0.8	**65.4**	**63.1**	0.7	0.9
eFF207	Residential	NAC-1	55	50	B	70	**63.2**	**61.1**	**63.8**	**61.9**	0.6	0.8	**63.9**	**62.1**	0.7	1.0
eFF211	Residential	NAC-1	55	50	B	70	**62.1**	**60.3**	**62.7**	**61.1**	0.6	0.8	**62.8**	**61.2**	0.7	0.9
eFF215	Residential	NAC-1	55	50	B	70	**61.5**	**59.8**	**62.1**	**60.6**	0.6	0.8	**62.3**	**60.8**	0.8	1.0
eGG103	Residential	NAC-1	55	50	B	70	**71.2**	**65.1**	**71.9**	**66.1**	0.7	1.0	**71.9**	**66.2**	0.7	1.1
eGG107	Residential	NAC-1	55	50	B	70	**69.1**	**62.3**	**69.8**	**63.3**	0.7	1.0	**69.8**	**63.4**	0.7	1.1
eGG111	Residential	NAC-1	55	50	B	70	**68.2**	**61.3**	**68.9**	**62.3**	0.7	1.0	**69.0**	**62.4**	0.8	1.1
eGG115	Residential	NAC-1	55	50	B	70	**67.8**	**60.6**	**68.5**	**61.6**	0.7	1.0	**68.6**	**61.7**	0.8	1.1
eGG203	Residential	NAC-1	55	50	B	70	**71.2**	**68.5**	**71.8**	**69.3**	0.6	0.8	**71.9**	**69.4**	0.7	0.9
eGG207	Residential	NAC-1	55	50	B	70	**68.9**	**66.3**	**69.5**	**67.1**	0.6	0.8	**69.6**	**67.2**	0.7	0.9
eGG211	Residential	NAC-1	55	50	B	70	**67.3**	**64.6**	**67.9**	**65.4**	0.6	0.8	**68.0**	**65.6**	0.7	1.0
eGG215	Residential	NAC-1	55	50	B	70	**66.3**	**63.5**	**66.9**	**64.3**	0.6	0.8	**67.0**	**64.4**	0.7	0.9
Receivers - East side Block A (39th Street to 38th Street)																
eA103	Residential	NAC-1	55	50	B	70	**64.0**	**58.1**	**64.8**	**59.1**	0.8	1.0	**64.9**	**59.4**	0.9	1.3
eA107	Residential	NAC-1	55	50	B	70	**64.1**	**58.4**	**64.9**	**59.4**	0.8	1.0	**65.0**	**59.7**	0.9	1.3
eA111	Residential	NAC-1	55	50	B	70	**64.3**	**58.9**	**65.0**	**59.9**	0.7	1.0	**65.2**	**60.2**	0.9	1.3
eA115	Residential	NAC-1	55	50	B	70	**66.2**	**61.1**	**66.9**	**62.1**	0.7	1.0	**67.1**	**62.4**	0.9	1.3
eA203	Residential	NAC-1	55	50	B	70	**59.7**	**58.1**	**60.4**	**58.9**	0.7	0.8	**60.5**	**59.1**	0.8	1.0
eA207	Residential	NAC-1	55	50	B	70	**60.8**	**58.6**	**61.5**	**59.4**	0.7	0.8	**61.6**	**59.6**	0.8	1.0
eA211	Residential	NAC-1	55	50	B	70	**61.9**	**59.1**	**62.6**	**60.0**	0.7	0.9	**62.7**	**60.3**	0.8	1.2
eA213	Residential	NAC-1	55	50	B	70	**63.6**	**59.6**	**64.2**	**60.5**	0.6	0.9	**64.4**	**60.8**	0.8	1.2
Receivers - East side Block B (38th Street to 37th Street)																
eB103	Residential	NAC-1	55	50	B	70	**65.9**	**60.7**	**66.6**	**61.7**	0.7	1.0	**66.7**	**62.0**	0.8	1.3
eB107	Residential	NAC-1	55	50	B	70	**65.4**	**60.5**	**66.2**	**61.5**	0.8	1.0	**66.3**	**61.8**	0.9	1.3
eB111	Residential	NAC-1	55	50	B	70	**65.4**	**61.0**	**66.1**	**61.9**	0.7	0.9	**66.3**	**62.3**	0.9	1.3
eB115	Residential	NAC-1	55	50	B	70	**65.1**	**59.9**	**65.8**	**60.9**	0.7	1.0	**65.9**	**61.2**	0.8	1.3
eB203	Residential	NAC-1	55	50	B	70	**64.0**	**59.3**	**64.6**	**60.2**	0.6	0.9	**64.7**	**60.6**	0.7	1.3
eB207	Residential	NAC-1	55	50	B	70	**62.2**	**59.6**	**62.9**	**60.5**	0.7	0.9	**63.1**	**60.9**	0.9	1.3
eB211	Residential	NAC-1	55	50	B	70	**61.5**	**59.5**	**62.2**	**60.4**	0.7	0.9	**62.4**	**60.7**	0.9	1.2
eB215	Residential	NAC-1	55	50	B	70	**61.4**	**59.6**	**62.2**	**60.5**	0.8	0.9	**62.3**	**60.8**	0.9	1.2
Receivers - East side Block C (37th Street to 36th Street)																
eC103	Residential	NAC-1	55	50	B	70	**65.8**	**58.8**	**66.7**	**60.0**	0.9	1.2	**66.5**	**60.1**	0.7	1.3
eC107	Residential	NAC-1	55	50	B	70	**67.8**	**61.6**	**68.7**	**62.8**	0.9	1.2	**68.2**	**62.8**	0.4	1.2
eC111	Residential	NAC-1	55	50	B	70	**68.3**	**61.8**	**69.1**	**62.9**	0.8	1.1	**68.9**	**63.0**	0.6	1.2
eC115	Residential	NAC-1	55	50	B	70	**69.9**	**63.9**	**70.5**	**64.9**	0.6	1.0	**70.6**	**65.0**	0.7	1.1
eC203	Residential	NAC-1	55	50	B	70	**62.4**	**59.8**	**63.2**	**60.7**	0.8	0.9	**63.1**	**61.0**	0.7	1.2
eC207	Residential	NAC-1	55	50	B	70	**63.3**	**60.2**	**64.1**	**61.1**	0.8	0.9	**64.0**	**61.4**	0.7	1.2
eC211	Residential	NAC-1	55	50	B	70	**65.3**	**61.6**	**66.0**	**62.5**	0.7	0.9	**66.0**	**62.7**	0.7	1.1
eC215	Residential	NAC-1	55	50	B	70	**68.0**	**62.1**	**68.6**	**63.1**	0.6	1.0	**68.7**	**63.2**	0.7	1.1
Receivers - East side Block D (36th Street to 35th Street)																
eD101	Residential	NAC-1	55	50	B	70	**70.8**	**64.2**	**71.4**	**65.2**	0.6	1.0	**71.5**	**65.3**	0.7	1.1

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Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
eD102	Residential	NAC-1	55	50	B	70	**67.3**	**62.0**	**67.9**	**62.9**	0.6	0.9	**68.0**	**63.1**	0.7	1.1
eD103	Residential	NAC-1	55	50	B	70	**68.4**	**62.3**	**69.0**	**63.2**	0.6	0.9	**69.1**	**63.4**	0.7	1.1
eD104	Residential	NAC-1	55	50	B	70	**67.3**	**61.8**	**68.0**	**62.7**	0.7	0.9	**68.0**	**62.9**	0.7	1.1
eD105	Residential	NAC-1	55	50	B	70	**68.2**	**61.6**	**68.8**	**62.6**	0.6	1.0	**68.9**	**62.7**	0.7	1.1
eD106	Residential	NAC-1	55	50	B	70	**68.1**	**61.6**	**68.8**	**62.5**	0.7	0.9	**68.9**	**62.7**	0.8	1.1
eD107	Residential	NAC-1	55	50	B	70	**68.2**	**61.7**	**68.8**	**62.7**	0.6	1.0	**68.9**	**62.8**	0.7	1.1
eD108	Residential	NAC-1	55	50	B	70	**68.8**	**62.1**	**69.4**	**63.1**	0.6	1.0	**69.5**	**63.2**	0.7	1.1
eD110	Residential	NAC-1	55	50	B	70	**69.5**	**63.4**	**70.1**	**64.3**	0.6	0.9	**70.2**	**64.5**	0.7	1.1
eD109	Residential	NAC-1	55	50	B	70	**69.0**	**62.9**	**69.7**	**63.8**	0.7	0.9	**69.8**	**64.0**	0.8	1.1
eD111	Residential	NAC-1	55	50	B	70	**70.7**	**63.9**	**71.3**	**64.8**	0.6	0.9	**71.4**	**65.0**	0.7	1.1
eD202	Residential	NAC-1	55	50	B	70	**68.2**	**62.3**	**68.8**	**63.3**	0.6	1.0	**68.9**	**63.4**	0.7	1.1
eD204	Residential	NAC-1	55	50	B	70	**66.2**	**62.5**	**66.7**	**63.3**	0.5	0.8	**66.8**	**63.5**	0.6	1.0
eD205	Residential	NAC-1	55	50	B	70	**65.7**	**62.8**	**66.3**	**63.6**	0.6	0.8	**66.4**	**63.7**	0.7	0.9
eD207	Residential	NAC-1	55	50	B	70	**65.2**	**62.6**	**65.8**	**63.3**	0.6	0.7	**65.9**	**63.5**	0.7	0.9
eD209	Residential	NAC-1	55	50	B	70	**65.2**	**62.5**	**65.8**	**63.3**	0.6	0.8	**65.9**	**63.5**	0.7	1.0
eD211	Residential	NAC-1	55	50	B	70	**65.5**	**62.5**	**66.1**	**63.3**	0.6	0.8	**66.2**	**63.4**	0.7	0.9
eD213	Residential	NAC-1	55	50	B	70	**66.7**	**62.2**	**67.3**	**63.1**	0.6	0.9	**67.4**	**63.2**	0.7	1.0
eD214	Residential	NAC-1	55	50	B	70	**68.6**	**61.5**	**69.3**	**62.4**	0.7	0.9	**69.3**	**62.6**	0.7	1.1
eD302	Residential	NAC-1	55	50	B	70	**65.1**	**59.8**	**65.7**	**60.7**	0.6	0.9	**65.8**	**60.8**	0.7	1.0
eD304	Residential	NAC-1	55	50	B	70	**63.9**	**60.2**	**64.5**	**61.0**	0.6	0.8	**64.5**	**61.1**	0.6	0.9
eD306	Residential	NAC-1	55	50	B	70	**63.3**	**60.2**	**63.9**	**61.0**	0.6	0.8	**63.9**	**61.1**	0.6	0.9
eD308	Residential	NAC-1	55	50	B	70	**63.1**	**60.2**	**63.6**	**61.0**	0.5	0.8	**63.7**	**61.1**	0.6	0.9
eD310	Residential	NAC-1	55	50	B	70	**63.1**	**60.2**	**63.7**	**60.9**	0.6	0.7	**63.8**	**61.1**	0.7	0.9
eD312	Residential	NAC-1	55	50	B	70	**63.6**	**60.0**	**64.2**	**60.8**	0.6	0.8	**64.2**	**60.9**	0.6	0.9
eD314	Residential	NAC-1	55	50	B	70	**64.8**	**59.3**	**65.4**	**60.2**	0.6	0.9	**65.5**	**60.3**	0.7	1.0
Receivers - East side Block E (35th Street to 34th Street)																
eE101	Residential	NAC-1	55	50	B	70	**70.7**	**63.8**	**71.2**	**64.6**	0.5	0.8	**71.4**	**64.8**	0.7	1.0
eE102	Residential	NAC-1	55	50	B	70	**70.4**	**63.4**	**70.9**	**64.1**	0.5	0.7	**71.0**	**64.4**	0.6	1.0
eE103	Residential	NAC-1	55	50	B	70	**70.0**	**63.3**	**70.4**	**64.0**	0.4	0.7	**70.6**	**64.2**	0.6	0.9
eE104	Residential	NAC-1	55	50	B	70	**70.0**	**63.3**	**70.4**	**64.0**	0.4	0.7	**70.5**	**64.3**	0.5	1.0
eE105	Residential	NAC-1	55	50	B	70	**69.7**	**63.3**	**70.1**	**64.0**	0.4	0.7	**70.3**	**64.3**	0.6	1.0
eE106	Residential	NAC-1	55	50	B	70	**69.9**	**63.5**	**70.3**	**64.2**	0.4	0.7	**70.5**	**64.4**	0.6	0.9
eE107	Residential	NAC-1	55	50	B	70	**69.8**	**63.6**	**70.2**	**64.3**	0.4	0.7	**70.4**	**64.6**	0.6	1.0
eE108	Residential	NAC-1	55	50	B	70	**69.8**	**63.6**	**70.2**	**64.3**	0.4	0.7	**70.3**	**64.6**	0.5	1.0
eE109	Residential	NAC-1	55	50	B	70	**69.3**	**63.5**	**69.7**	**64.2**	0.4	0.7	**69.9**	**64.5**	0.6	1.0
eE110	Residential	NAC-1	55	50	B	70	**69.1**	**63.2**	**69.5**	**63.9**	0.4	0.7	**69.7**	**64.2**	0.6	1.0
eE110b2	Residential	NAC-1	55	50	B	70	**71.4**	**66.4**	**71.8**	**67.2**	0.4	0.8	**72.0**	**67.4**	0.6	1.0
eE111	Residential	NAC-1	55	50	B	70	**68.7**	**62.5**	**69.1**	**63.2**	0.4	0.7	**69.3**	**63.5**	0.6	1.0
eE112	Residential	NAC-1	55	50	B	70	**68.0**	**61.8**	**68.4**	**62.6**	0.4	0.8	**68.6**	**62.8**	0.6	1.0
eE113	Residential	NAC-1	55	50	B	70	**67.3**	**61.1**	**67.8**	**62.0**	0.5	0.9	**68.0**	**62.2**	0.7	1.1
eE202	Residential	NAC-1	55	50	B	70	**67.8**	**62.5**	**68.3**	**63.3**	0.5	0.8	**68.4**	**63.5**	0.6	1.0
eE204	Residential	NAC-1	55	50	B	70	**66.1**	**62.1**	**66.6**	**62.8**	0.5	0.7	**66.7**	**63.0**	0.6	0.9
eE205	Residential	NAC-1	55	50	B	70	**65.6**	**61.8**	**66.0**	**62.6**	0.4	0.8	**66.2**	**62.8**	0.6	1.0
eE207	Residential	NAC-1	55	50	B	70	**65.4**	**61.7**	**65.8**	**62.4**	0.4	0.7	**65.9**	**62.6**	0.5	0.9
eE209	Residential	NAC-1	55	50	B	70	**65.2**	**61.6**	**65.6**	**62.4**	0.4	0.8	**65.7**	**62.6**	0.5	1.0
eE211	Residential	NAC-1	55	50	B	70	**64.9**	**61.5**	**65.3**	**62.2**	0.4	0.7	**65.4**	**62.4**	0.5	0.9
eE213	Residential	NAC-1	55	50	B	70	**64.3**	**61.2**	**64.8**	**62.0**	0.5	0.8	**64.9**	**62.2**	0.6	1.0
eE301	General	NAC-2	70	65	C	70	63.0	59.8	63.5	60.6	0.5	0.8	63.6	60.7	0.6	0.9
eE303	General	NAC-2	70	65	C	70	62.7	59.8	63.2	60.6	0.5	0.8	63.2	60.6	0.5	0.8
eE305	General	NAC-2	70	65	C	70	62.8	60.0	63.3	60.8	0.5	0.8	63.3	60.8	0.5	0.8
eE307	General	NAC-2	70	65	C	70	62.5	60.0	63.0	60.7	0.5	0.7	63.1	60.8	0.6	0.8
eE309	General	NAC-2	70	65	C	70	62.2	59.9	62.7	60.7	0.5	0.8	62.8	60.7	0.6	0.8
Receivers - East side Block F (34th Street to 32nd Street)																
eF101	Residential	NAC-1	55	50	B	70	**65.6**	**60.8**	**66.3**	**61.7**	0.7	0.9	**66.5**	**62.0**	0.9	1.2
eF102	Residential	NAC-1	55	50	B	70	**65.5**	**61.0**	**66.1**	**61.9**	0.6	0.9	**66.3**	**62.2**	0.8	1.2

Table 5
Nighttime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
eF103	Residential	NAC-1	55	50	B	70	**65.1**	**61.1**	**65.8**	**62.0**	0.7	0.9	**66.0**	**62.3**	0.9	1.2
eF104	Residential	NAC-1	55	50	B	70	**65.4**	**61.0**	**66.0**	**61.9**	0.6	0.9	**66.2**	**62.3**	0.8	1.3
eF105	Residential	NAC-1	55	50	B	70	**65.4**	**60.8**	**66.1**	**61.8**	0.7	1.0	**66.3**	**62.1**	0.9	1.3
eF106	Residential	NAC-1	55	50	B	70	**65.3**	**60.8**	**66.0**	**61.7**	0.7	0.9	**66.2**	**62.0**	0.9	1.2
eF107	Residential	NAC-1	55	50	B	70	**65.6**	**60.6**	**66.3**	**61.5**	0.7	0.9	**66.4**	**61.9**	0.8	1.3
eF108	Residential	NAC-1	55	50	B	70	**65.4**	**61.0**	**66.1**	**61.9**	0.7	0.9	**66.2**	**62.2**	0.8	1.2
eF108B	Residential	NAC-1	55	50	B	70	**67.3**	**64.9**	**68.0**	**65.8**	0.7	0.9	**68.2**	**66.1**	0.9	1.2
eF109	Residential	NAC-1	55	50	B	70	**65.5**	**60.9**	**66.2**	**61.8**	0.7	0.9	**66.3**	**62.1**	0.8	1.2
eF109B	Residential	NAC-1	55	50	B	70	**67.5**	**65.0**	**68.2**	**65.9**	0.7	0.9	**68.4**	**66.2**	0.9	1.2
eF110	Residential	NAC-1	55	50	B	70	**65.7**	**60.8**	**66.4**	**61.8**	0.7	1.0	**66.5**	**62.1**	0.8	1.3
eF111	Residential	NAC-1	55	50	B	70	**65.0**	**61.1**	**65.7**	**62.0**	0.7	0.9	**65.8**	**62.3**	0.8	1.2
eF112	Residential	NAC-1	55	50	B	70	**64.9**	**60.9**	**65.6**	**61.8**	0.7	0.9	**65.7**	**62.1**	0.8	1.2
eF201	Residential	NAC-1	55	50	B	70	**63.2**	**61.1**	**63.7**	**61.9**	0.5	0.8	**63.8**	**62.0**	0.6	0.9
eF204	Residential	NAC-1	55	50	B	70	**62.9**	**61.0**	**63.5**	**61.8**	0.6	0.8	**63.6**	**61.9**	0.7	0.9
eF206	Residential	NAC-1	55	50	B	70	**62.7**	**61.1**	**63.3**	**61.9**	0.6	0.8	**63.4**	**62.0**	0.7	0.9
eF208	Residential	NAC-1	55	50	B	70	**62.7**	**61.2**	**63.4**	**62.0**	0.7	0.8	**63.4**	**62.0**	0.7	0.8
eF209	Residential	NAC-1	55	50	B	70	**62.8**	**61.3**	**63.4**	**62.1**	0.6	0.8	**63.5**	**62.1**	0.7	0.8
eF210	Residential	NAC-1	55	50	B	70	**63.0**	**61.4**	**63.6**	**62.2**	0.6	0.8	**63.7**	**62.3**	0.7	0.9
eF211	Residential	NAC-1	55	50	B	70	**63.0**	**61.5**	**63.7**	**62.3**	0.7	0.8	**63.7**	**62.3**	0.7	0.8
eF212	Residential	NAC-1	55	50	B	70	**63.2**	**61.6**	**63.8**	**62.4**	0.6	0.8	**63.9**	**62.4**	0.7	0.8
eF213	Residential	NAC-1	55	50	B	70	**63.3**	**61.7**	**64.0**	**62.5**	0.7	0.8	**64.0**	**62.6**	0.7	0.9
eF214	Residential	NAC-1	55	50	B	70	**63.5**	**61.9**	**64.2**	**62.7**	0.7	0.8	**64.2**	**62.7**	0.7	0.8
eF302	Residential	NAC-1	55	50	B	70	**61.9**	**60.0**	**62.5**	**60.7**	0.6	0.7	**62.5**	**60.8**	0.6	0.8
eF303	Residential	NAC-1	55	50	B	70	**61.9**	**60.0**	**62.4**	**60.8**	0.5	0.8	**62.5**	**60.8**	0.6	0.8
eF305	Residential	NAC-1	55	50	B	70	**61.9**	**60.1**	**62.5**	**60.9**	0.6	0.8	**62.5**	**60.9**	0.6	0.8
eF307	Residential	NAC-1	55	50	B	70	**62.0**	**60.4**	**62.7**	**61.1**	0.7	0.7	**62.7**	**61.2**	0.7	0.8
eF309	Residential	NAC-1	55	50	B	70	**62.3**	**60.6**	**63.0**	**61.4**	0.7	0.8	**63.0**	**61.4**	0.7	0.8
eF311	Residential	NAC-1	55	50	B	70	**62.7**	**60.8**	**63.3**	**61.7**	0.6	0.9	**63.3**	**61.6**	0.6	0.8
eF312	Residential	NAC-1	55	50	B	70	**63.0**	**61.1**	**63.7**	**61.9**	0.7	0.8	**63.7**	**61.9**	0.7	0.8
eF115	Residential	NAC-1	55	50	B	70	**65.3**	**60.5**	**66.0**	**61.5**	0.7	1.0	**66.1**	**61.7**	0.8	1.2
eF117	Residential	NAC-1	55	50	B	70	**65.5**	**60.5**	**66.2**	**61.5**	0.7	1.0	**66.3**	**61.7**	0.8	1.2
eF119	Residential	NAC-1	55	50	B	70	**65.3**	**60.8**	**66.0**	**61.7**	0.7	0.9	**66.0**	**61.9**	0.7	1.1
eF121	Residential	NAC-1	55	50	B	70	**65.6**	**61.8**	**66.3**	**62.7**	0.7	0.9	**66.3**	**62.7**	0.7	0.9
eF123	Residential	NAC-1	55	50	B	70	**66.0**	**62.8**	**66.7**	**63.7**	0.7	0.9	**66.6**	**63.6**	0.6	0.8
eF124	Residential	NAC-1	55	50	B	70	**67.3**	**64.0**	**68.0**	**64.9**	0.7	0.9	**67.8**	**64.7**	0.5	0.7
eF125	Residential	NAC-1	55	50	B	70	**69.5**	**66.1**	**70.1**	**67.0**	0.6	0.9	**69.9**	**66.8**	0.4	0.7
eF220	Residential	NAC-1	55	50	B	70	**61.5**	**59.9**	**62.2**	**60.7**	0.7	0.8	**62.4**	**60.9**	0.9	1.0
eF222	Residential	NAC-1	55	50	B	70	**61.7**	**60.0**	**62.4**	**60.8**	0.7	0.8	**62.6**	**61.0**	0.9	1.0
eF224	Residential	NAC-1	55	50	B	70	**62.0**	**60.2**	**62.7**	**61.1**	0.7	0.9	**62.9**	**61.3**	0.9	1.1
eF226	Residential	NAC-1	55	50	B	70	**62.6**	**60.6**	**63.3**	**61.4**	0.7	0.8	**63.4**	**61.6**	0.8	1.0
eF227	Residential	NAC-1	55	50	B	70	**63.2**	**61.0**	**63.8**	**61.8**	0.6	0.8	**64.0**	**62.0**	0.8	1.0
eF228	Residential	NAC-1	55	50	B	70	**64.1**	**61.6**	**64.8**	**62.5**	0.7	0.9	**64.9**	**62.7**	0.8	1.1
eF229	Residential	NAC-1	55	50	B	70	**64.9**	**62.2**	**65.6**	**63.0**	0.7	0.8	**65.7**	**63.3**	0.8	1.1
eF231	Residential	NAC-1	55	50	B	70	**65.6**	**62.7**	**66.3**	**63.6**	0.7	0.9	**66.5**	**63.9**	0.9	1.2
eF321	Residential	NAC-1	55	50	B	70	**59.8**	**58.2**	**60.5**	**59.0**	0.7	0.8	**60.7**	**59.2**	0.9	1.0
eF322	Residential	NAC-1	55	50	B	70	**59.9**	**58.2**	**60.5**	**59.0**	0.6	0.8	**60.8**	**59.3**	0.9	1.1
eF324	Residential	NAC-1	55	50	B	70	**60.1**	**58.3**	**60.7**	**59.2**	0.6	0.9	**61.0**	**59.4**	0.9	1.1
eF325	Residential	NAC-1	55	50	B	70	**60.6**	**58.7**	**61.3**	**59.5**	0.7	0.8	**61.5**	**59.8**	0.9	1.1
eF327	Residential	NAC-1	55	50	B	70	**61.0**	**59.0**	**61.7**	**59.8**	0.7	0.8	**61.9**	**60.1**	0.9	1.1
eF329	Residential	NAC-1	55	50	B	70	**61.5**	**59.3**	**62.2**	**60.1**	0.7	0.8	**62.4**	**60.4**	0.9	1.1
eF331	Residential	NAC-1	55	50	B	70	**62.1**	**59.7**	**62.7**	**60.5**	0.6	0.8	**62.9**	**60.8**	0.8	1.1
eF332	Residential	NAC-1	55	50	B	70	**62.5**	**60.0**	**63.2**	**60.9**	0.7	0.9	**63.3**	**61.1**	0.8	1.1
Receivers - East side Block G (32nd Street to 31st Street)																
eG101	Residential	NAC-1	55	50	B	70	**74.9**	**71.3**	**75.4**	**72.2**	0.5	0.9	**75.2**	**72.1**	0.3	0.8
eG102	Residential	NAC-1	55	50	B	70	**75.0**	**71.6**	**75.5**	**72.4**	0.5	0.8	**75.3**	**72.4**	0.3	0.8

Table 5
Nighttime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
eG103	Residential	NAC-1	55	50	B	70	**75.4**	**72.0**	**75.9**	**72.8**	0.5	0.8	**75.6**	**72.7**	0.2	0.7
eG104	Residential	NAC-1	55	50	B	70	**75.5**	**72.0**	**76.0**	**72.8**	0.5	0.8	**75.6**	**72.5**	0.1	0.5
eG105	Residential	NAC-1	55	50	B	70	**75.3**	**71.8**	**75.8**	**72.6**	0.5	0.8	**75.5**	**72.4**	0.2	0.6
eG106	Residential	NAC-1	55	50	B	70	**75.2**	**71.6**	**75.7**	**72.4**	0.5	0.8	**75.4**	**72.2**	0.2	0.6
eG107	Residential	NAC-1	55	50	B	70	**75.1**	**71.5**	**75.6**	**72.3**	0.5	0.8	**75.3**	**72.1**	0.2	0.6
eG108	Residential	NAC-1	55	50	B	70	**74.9**	**71.4**	**75.4**	**72.2**	0.5	0.8	**75.2**	**72.0**	0.3	0.6
eG109	Residential	NAC-1	55	50	B	70	**75.0**	**71.3**	**75.6**	**72.2**	0.6	0.9	**75.5**	**71.9**	0.5	0.6
eG110	Residential	NAC-1	55	50	B	70	**74.6**	**71.1**	**75.3**	**72.0**	0.7	0.9	**75.1**	**71.6**	0.5	0.5
eG111	Residential	NAC-1	55	50	B	70	**74.5**	**70.9**	**75.2**	**71.8**	0.7	0.9	**74.9**	**71.3**	0.4	0.4
eG112	Residential	NAC-1	55	50	B	70	**74.1**	**70.6**	**74.7**	**71.5**	0.6	0.9	**74.4**	**70.7**	0.3	0.1
eG202	Residential	NAC-1	55	50	B	70	**67.1**	**63.8**	**67.7**	**64.7**	0.6	0.9	**67.6**	**64.6**	0.5	0.8
eG204	Residential	NAC-1	55	50	B	70	**67.7**	**64.5**	**68.3**	**65.4**	0.6	0.9	**68.1**	**65.2**	0.4	0.7
eG206	Residential	NAC-1	55	50	B	70	**67.7**	**64.6**	**68.4**	**65.5**	0.7	0.9	**68.1**	**65.2**	0.4	0.6
eG208	Residential	NAC-1	55	50	B	70	**67.6**	**64.5**	**68.2**	**65.4**	0.6	0.9	**67.8**	**64.9**	0.2	0.4
eG210	Residential	NAC-1	55	50	B	70	**67.6**	**64.6**	**68.2**	**65.5**	0.6	0.9	**67.8**	**64.9**	0.2	0.3
eG212	Residential	NAC-1	55	50	B	70	**67.5**	**64.5**	**68.1**	**65.4**	0.6	0.9	**67.5**	**64.6**	0.0	0.1
eG302	Residential	NAC-1	55	50	B	70	**63.0**	**60.0**	**63.7**	**60.9**	0.7	0.9	**63.5**	**60.7**	0.5	0.7
eG303	Residential	NAC-1	55	50	B	70	**63.4**	**60.4**	**64.0**	**61.3**	0.6	0.9	**63.8**	**61.1**	0.4	0.7
eG303B	Residential	NAC-1	55	50	B	70	**63.8**	**61.0**	**64.4**	**61.9**	0.6	0.9	**64.4**	**61.9**	0.6	0.9
eG304	Residential	NAC-1	55	50	B	70	**63.5**	**60.6**	**64.1**	**61.5**	0.6	0.9	**63.9**	**61.2**	0.4	0.6
eG306	Residential	NAC-1	55	50	B	70	**63.7**	**60.9**	**64.4**	**61.8**	0.7	0.9	**64.1**	**61.4**	0.4	0.5
eG307	Residential	NAC-1	55	50	B	70	**63.7**	**61.0**	**64.4**	**61.8**	0.7	0.8	**64.1**	**61.4**	0.4	0.4
eG309	Residential	NAC-1	55	50	B	70	**63.7**	**61.0**	**64.4**	**61.9**	0.7	0.9	**63.9**	**61.3**	0.2	0.3
eG311	Residential	NAC-1	55	50	B	70	**63.7**	**61.0**	**64.4**	**61.9**	0.7	0.9	**63.7**	**61.1**	0.0	0.1
eG312	Residential	NAC-1	55	50	B	70	**63.4**	**60.7**	**64.0**	**61.6**	0.6	0.9	**63.3**	**60.8**	-0.1	0.1
eG313	Residential	NAC-1	55	50	B	70	**62.8**	**60.3**	**63.5**	**61.2**	0.7	0.9	**62.7**	**60.3**	-0.1	0.0
Receivers - East side Block H (31st Street to Lake Street)																
eH101	Residential	NAC-1	55	50	B	70	**74.9**	**70.7**	**75.6**	**71.7**	0.7	1.0	**74.4**	**69.7**	-0.5	-1.0
eH102	Residential	NAC-1	55	50	B	70	**74.6**	**70.6**	**75.3**	**71.6**	0.7	1.0	**73.8**	**69.2**	-0.8	-1.4
eH103	Residential	NAC-1	55	50	B	70	**75.0**	**70.6**	**75.7**	**71.6**	0.7	1.0	**74.0**	**68.8**	-1.0	-1.8
eH104	Commercial	NAC-2	70	65	E	75	**75.4**	**70.1**	**76.0**	**71.1**	0.6	1.0	**74.4**	**68.1**	-1.0	-2.0
eH105	Commercial	NAC-2	70	65	E	75	**75.0**	**69.4**	**75.7**	**70.4**	0.7	1.0	**74.4**	**68.0**	-0.6	-1.4
eH106	Commercial	NAC-2	70	65	E	75	**74.9**	**68.7**	**75.6**	**69.8**	0.7	1.1	**74.7**	**68.0**	-0.2	-0.7
eH106B	Residential	NAC-1	55	50	B	70	**74.8**	**71.5**	**75.5**	**72.5**	0.7	1.0	**74.3**	**71.0**	-0.5	-0.5
eH107	Commercial	NAC-2	70	65	E	75	**73.8**	**68.1**	**75.0**	**69.5**	1.2	1.4	**74.7**	**68.5**	0.9	0.4
eH201	Residential	NAC-1	55	50	B	70	**68.3**	**64.8**	**68.9**	**65.7**	0.6	0.9	**68.0**	**64.4**	-0.3	-0.4
eH202	Residential	NAC-1	55	50	B	70	**67.8**	**64.4**	**68.4**	**65.3**	0.6	0.9	**67.6**	**64.0**	-0.2	-0.4
eH203	Residential	NAC-1	55	50	B	70	**67.1**	**64.2**	**67.8**	**65.1**	0.7	0.9	**66.3**	**63.7**	-0.8	-0.5
eH205	Residential	NAC-1	55	50	B	70	**66.9**	**64.0**	**67.6**	**65.0**	0.7	1.0	**65.8**	**63.4**	-1.1	-0.6
eH207	Residential	NAC-1	55	50	B	70	**66.7**	**63.9**	**67.4**	**64.9**	0.7	1.0	**65.5**	**63.3**	-1.2	-0.6
eH206	Residential	NAC-1	55	50	B	70	**66.8**	**64.0**	**67.5**	**64.9**	0.7	0.9	**65.6**	**63.3**	-1.2	-0.7
eH209	Commercial	NAC-2	70	65	E	75	66.8	63.8	67.7	64.9	0.9	1.1	66.8	63.7	0.0	-0.1
eH301	Residential	NAC-1	55	50	B	70	**63.7**	**60.6**	**64.4**	**61.5**	0.7	0.9	**63.8**	**60.5**	0.1	-0.1
eH303	Residential	NAC-1	55	50	B	70	**64.8**	**61.0**	**65.4**	**61.9**	0.6	0.9	**64.9**	**60.8**	0.1	-0.2
eH305	Residential	NAC-1	55	50	B	70	**63.5**	**61.0**	**64.2**	**61.9**	0.7	0.9	**63.1**	**60.8**	-0.4	-0.2
eH307	Residential	NAC-1	55	50	B	70	**63.4**	**60.9**	**64.1**	**61.9**	0.7	1.0	**62.9**	**60.7**	-0.5	-0.2
eH308	Residential	NAC-1	55	50	B	70	**63.4**	**60.9**	**64.1**	**61.8**	0.7	0.9	**62.9**	**60.7**	-0.5	-0.2
eH309	Commercial	NAC-2	70	65	E	75	63.6	61.1	64.3	62.1	0.7	1.0	63.4	61.1	-0.2	0.0
eH310	Commercial	NAC-2	70	65	E	75	66.4	60.7	67.6	62.2	1.2	1.5	67.3	61.4	0.9	0.7
Receivers - East side Block I (Lake Street to 29th Street)																
eI101	Commercial	NAC-2	70	65	E	75	**73.6**	**68.9**	**74.7**	**70.1**	1.1	1.2	**74.0**	**68.7**	0.4	-0.2
eI102	Residential	NAC-1	55	50	B	70	**73.6**	**70.3**	**74.3**	**71.3**	0.7	1.0	**72.7**	**69.4**	-0.9	-0.9
eI103	Residential	NAC-1	55	50	B	70	**73.8**	**70.5**	**74.5**	**71.5**	0.7	1.0	**72.9**	**69.6**	-0.9	-0.9
eI104	Residential	NAC-1	55	50	B	70	**74.2**	**70.8**	**74.9**	**71.7**	0.7	0.9	**73.0**	**69.6**	-1.2	-1.2
eI104B	Residential	NAC-1	55	50	B	70	**76.2**	**72.6**	**76.9**	**73.6**	0.7	1.0	**76.3**	**72.6**	0.1	0.0

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Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
eI105	Residential	NAC-1	55	50	B	70	**74.4**	**70.9**	**75.0**	**71.9**	0.6	1.0	**73.2**	**69.9**	-1.2	-1.0
eI105B	Residential	NAC-1	55	50	B	70	**76.4**	**72.7**	**77.1**	**73.7**	0.7	1.0	**76.4**	**72.9**	0.0	0.2
eI106	Residential	NAC-1	55	50	B	70	**74.6**	**71.1**	**75.2**	**72.1**	0.6	1.0	**73.7**	**70.4**	-0.9	-0.7
eI107	Residential	NAC-1	55	50	B	70	**74.7**	**71.2**	**75.4**	**72.2**	0.7	1.0	**74.0**	**70.7**	-0.7	-0.5
eI108	Residential	NAC-1	55	50	B	70	**74.9**	**71.2**	**75.5**	**72.1**	0.6	0.9	**74.2**	**70.8**	-0.7	-0.4
eI109	Residential	NAC-1	55	50	B	70	**75.1**	**71.2**	**75.8**	**72.2**	0.7	1.0	**74.8**	**71.4**	-0.3	0.2
eI110	Residential	NAC-1	55	50	B	70	**74.7**	**70.8**	**75.4**	**71.8**	0.7	1.0	**75.2**	**71.9**	0.5	1.1
eI202	Residential	NAC-1	55	50	B	70	**67.4**	**64.5**	**68.2**	**65.6**	0.8	1.1	**67.2**	**64.7**	-0.2	0.2
eI203	Residential	NAC-1	55	50	B	70	**67.2**	**64.3**	**67.9**	**65.2**	0.7	0.9	**66.6**	**64.2**	-0.6	-0.1
eI204	Residential	NAC-1	55	50	B	70	**67.3**	**64.3**	**68.0**	**65.3**	0.7	1.0	**66.7**	**64.3**	-0.6	0.0
eI205	Residential	NAC-1	55	50	B	70	**67.2**	**64.2**	**67.9**	**65.2**	0.7	1.0	**66.8**	**64.3**	-0.4	0.1
eI207	Residential	NAC-1	55	50	B	70	**67.3**	**64.2**	**68.0**	**65.2**	0.7	1.0	**67.2**	**64.6**	-0.1	0.4
eI209	Residential	NAC-1	55	50	B	70	**67.2**	**64.1**	**67.9**	**65.1**	0.7	1.0	**67.7**	**64.9**	0.5	0.8
eI210	Residential	NAC-1	55	50	B	70	**69.0**	**66.0**	**69.7**	**66.9**	0.7	0.9	**70.0**	**67.1**	1.0	1.1
eI301	Commercial	NAC-2	70	65	E	75	66.4	63.2	67.4	64.4	1.0	1.2	67.1	63.8	0.7	0.6
eI303	Residential	NAC-1	55	50	B	70	**64.9**	**62.4**	**65.7**	**63.4**	0.8	1.0	**64.9**	**62.7**	0.0	0.3
eI304	Residential	NAC-1	55	50	B	70	**63.4**	**60.9**	**64.1**	**61.8**	0.7	0.9	**63.4**	**61.2**	0.0	0.3
eI306	Residential	NAC-1	55	50	B	70	**63.4**	**60.8**	**64.1**	**61.8**	0.7	1.0	**63.6**	**61.2**	0.2	0.4
eI307	Residential	NAC-1	55	50	B	70	**63.5**	**60.9**	**64.3**	**61.9**	0.8	1.0	**64.1**	**61.5**	0.6	0.6
eI309	Residential	NAC-1	55	50	B	70	**65.1**	**62.5**	**65.8**	**63.5**	0.7	1.0	**65.8**	**63.3**	0.7	0.8
Receivers - East side Block J (Greenway to 28th Street)																
eJ100	Commercial	NAC-2	70	65	E	75	66.8	64.6	67.5	**65.5**	0.7	0.9	65.9	64.1	-0.9	-0.5
eJ200	Commercial	NAC-2	70	65	E	75	63.5	59.1	64.1	60.1	0.6	1.0	63.7	59.4	0.2	0.3
eJ105	General	NAC-2	70	65	C	70	64.6	62.7	65.4	63.6	0.8	0.9	64.5	62.8	-0.1	0.1
eJ106	General	NAC-2	70	65	C	70	64.8	62.9	65.6	63.8	0.8	0.9	64.4	62.7	-0.4	-0.2
Receivers - East side Block K (28th Street to 26th Street)																
eK100	Commercial	NAC-2	70	65	E	75	61.9	60.2	62.6	61.1	0.7	0.9	62.6	61.0	0.7	0.8
eK105	General	NAC-2	70	65	C	70	67.2	64.5	68.0	**65.4**	0.8	0.9	68.4	**65.8**	1.2	1.3
eK106	General	NAC-2	70	65	C	70	66.0	63.4	66.7	64.4	0.7	1.0	67.1	64.7	1.1	1.3
eK501	Residential	NAC-1	55	50	B	70	**62.1**	**60.3**	**62.8**	**61.2**	0.7	0.9	**62.2**	**60.6**	0.1	0.3
eK503	Residential	NAC-1	55	50	B	70	**62.1**	**60.3**	**62.8**	**61.2**	0.7	0.9	**62.2**	**60.6**	0.1	0.3
eK505	Residential	NAC-1	55	50	B	70	**62.0**	**60.2**	**62.7**	**61.1**	0.7	0.9	**62.2**	**60.7**	0.2	0.5
eK507	Residential	NAC-1	55	50	B	70	**61.9**	**60.2**	**62.7**	**61.1**	0.8	0.9	**62.2**	**60.7**	0.3	0.5
eK508	Residential	NAC-1	55	50	B	70	**62.0**	**60.3**	**62.7**	**61.2**	0.7	0.9	**62.3**	**60.8**	0.3	0.5
eK509	Residential	NAC-1	55	50	B	70	**62.1**	**60.4**	**62.8**	**61.3**	0.7	0.9	**62.5**	**61.0**	0.4	0.6
eK120	Commercial	NAC-2	70	65	E	75	**70.8**	**67.3**	**71.5**	**68.2**	0.7	0.9	**72.1**	**68.6**	1.3	1.3
eK320	Residential	NAC-1	55	50	B	70	**62.0**	**60.3**	**62.7**	**61.2**	0.7	0.9	**62.5**	**60.9**	0.5	0.6
eK322	Residential	NAC-1	55	50	B	70	**61.7**	**60.0**	**62.4**	**60.9**	0.7	0.9	**62.2**	**60.6**	0.5	0.6
eK324	Residential	NAC-1	55	50	B	70	**62.3**	**60.4**	**63.0**	**61.3**	0.7	0.9	**62.8**	**61.1**	0.5	0.7
eK326	Residential	NAC-1	55	50	B	70	**61.9**	**60.1**	**62.6**	**60.9**	0.7	0.8	**62.5**	**60.7**	0.6	0.6
eK328	Residential	NAC-1	55	50	B	70	**63.1**	**60.4**	**63.7**	**61.3**	0.6	0.9	**63.8**	**61.2**	0.7	0.8
eK330	Residential	NAC-1	55	50	B	70	**62.7**	**60.0**	**63.3**	**60.9**	0.6	0.9	**63.4**	**60.9**	0.7	0.9
eK332	Residential	NAC-1	55	50	B	70	**66.6**	**59.4**	**67.3**	**60.4**	0.7	1.0	**67.5**	**60.6**	0.9	1.2
eK334	Residential	NAC-1	55	50	B	70	**66.1**	**58.7**	**66.8**	**59.8**	0.7	1.1	**67.0**	**59.8**	0.9	1.1
eK421	Residential	NAC-1	55	50	B	70	**61.4**	**59.7**	**62.1**	**60.5**	0.7	0.8	**61.9**	**60.3**	0.5	0.6
eK423	Residential	NAC-1	55	50	B	70	**61.4**	**59.6**	**62.1**	**60.5**	0.7	0.9	**61.9**	**60.3**	0.5	0.7
eK425	Residential	NAC-1	55	50	B	70	**61.5**	**59.6**	**62.2**	**60.4**	0.7	0.8	**62.1**	**60.3**	0.6	0.7
eK426	Residential	NAC-1	55	50	B	70	**61.7**	**59.6**	**62.4**	**60.4**	0.7	0.8	**62.4**	**60.3**	0.7	0.7
eK428	Residential	NAC-1	55	50	B	70	**62.1**	**59.5**	**62.8**	**60.4**	0.7	0.9	**62.8**	**60.3**	0.7	0.8
eK430	Residential	NAC-1	55	50	B	70	**63.6**	**59.1**	**64.2**	**60.0**	0.6	0.9	**64.3**	**60.0**	0.7	0.9
Receivers - East side Block L1 (26th Street to 24th Street)																
eL001	Residential	NAC-1	55	50	B	70	**66.1**	**63.2**	**66.8**	**64.1**	0.7	0.9	**66.6**	**64.0**	0.5	0.8
eL002	Residential	NAC-1	55	50	B	70	**65.6**	**60.8**	**66.3**	**61.8**	0.7	1.0	**66.4**	**61.9**	0.8	1.1
eL002b2	Residential	NAC-1	55	50	B	70	**69.6**	**63.8**	**70.2**	**64.9**	0.6	1.1	**70.5**	**65.0**	0.9	1.2
eL004	Residential	NAC-1	55	50	B	70	**64.1**	**59.4**	**64.7**	**60.4**	0.6	1.0	**64.6**	**60.1**	0.5	0.7

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XX	**Bold**; Exceeds MN State Standards
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N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
eL101	Residential	NAC-1	55	50	B	70	**66.9**	**58.2**	**67.6**	**59.3**	0.7	1.1	**67.8**	**59.4**	0.9	1.2
eL102	Residential	NAC-1	55	50	B	70	**66.2**	**57.5**	**67.0**	**58.5**	0.8	1.0	**67.1**	**58.7**	0.9	1.2
eL103	Residential	NAC-1	55	50	B	70	**65.8**	**56.7**	**66.6**	**57.8**	0.8	1.1	**66.7**	**57.9**	0.9	1.2
eL105	Residential	NAC-1	55	50	B	70	**65.5**	**56.6**	**66.3**	**57.7**	0.8	1.1	**66.4**	**57.8**	0.9	1.2
eL106	General	NAC-2	70	65	C	70	65.3	56.6	66.1	57.8	0.8	1.2	66.0	57.7	0.7	1.1
eL108	Residential	NAC-1	55	50	B	70	**65.3**	**56.0**	**66.1**	**57.1**	0.8	1.1	**66.0**	**56.9**	0.7	0.9
eL109	Commercial	NAC-2	70	65	E	75	65.2	55.4	66.0	56.5	0.8	1.1	65.9	56.3	0.7	0.9
eL110	Residential	NAC-1	55	50	B	70	**64.8**	**55.7**	**65.6**	**56.9**	0.8	1.2	**65.5**	**56.6**	0.7	0.9
eL201	Residential	NAC-1	55	50	B	70	**65.5**	**58.1**	**66.3**	**59.2**	0.8	1.1	**66.4**	**59.3**	0.9	1.2
eL202	Residential	NAC-1	55	50	B	70	**63.9**	**59.6**	**64.6**	**60.5**	0.7	0.9	**64.7**	**60.6**	0.8	1.0
eL203	Residential	NAC-1	55	50	B	70	**63.5**	**59.7**	**64.1**	**60.6**	0.6	0.9	**64.3**	**60.6**	0.8	0.9
eL204	Residential	NAC-1	55	50	B	70	**63.2**	**59.7**	**63.8**	**60.6**	0.6	0.9	**64.0**	**60.6**	0.8	0.9
eL205	Residential	NAC-1	55	50	B	70	**61.2**	**58.4**	**61.9**	**59.3**	0.7	0.9	**61.8**	**59.3**	0.6	0.9
eL206	Residential	NAC-1	55	50	B	70	**63.0**	**59.6**	**63.6**	**60.5**	0.6	0.9	**63.8**	**60.6**	0.8	1.0
eL207	Residential	NAC-1	55	50	B	70	**60.7**	**58.1**	**61.3**	**59.0**	0.6	0.9	**61.3**	**58.9**	0.6	0.8
eL208	Residential	NAC-1	55	50	B	70	**62.4**	**59.1**	**63.0**	**60.0**	0.6	0.9	**63.2**	**60.2**	0.8	1.1
eL210	Residential	NAC-1	55	50	B	70	**62.0**	**58.7**	**62.7**	**59.6**	0.7	0.9	**62.6**	**59.6**	0.6	0.9
eL211	Residential	NAC-1	55	50	B	70	**62.0**	**58.6**	**62.6**	**59.5**	0.6	0.9	**62.5**	**59.3**	0.5	0.7
eL301	Residential	NAC-1	55	50	B	70	**60.1**	**58.1**	**60.8**	**59.0**	0.7	0.9	**60.9**	**58.8**	0.8	0.7
eL302	Residential	NAC-1	55	50	B	70	**60.2**	**58.2**	**60.9**	**59.1**	0.7	0.9	**61.0**	**59.0**	0.8	0.8
eL121	Residential	NAC-1	55	50	B	70	**64.4**	**55.3**	**65.2**	**56.4**	0.8	1.1	**65.2**	**56.4**	0.8	1.1
eL123	Residential	NAC-1	55	50	B	70	**62.2**	**57.3**	**62.9**	**58.3**	0.7	1.0	**63.1**	**58.8**	0.9	1.5
eL124	Residential	NAC-1	55	50	B	70	**63.8**	**54.2**	**64.6**	**55.4**	0.8	1.2	**65.4**	**56.7**	1.6	2.5
eL221	Residential	NAC-1	55	50	B	70	**60.6**	**57.3**	**61.3**	**58.3**	0.7	1.0	**61.2**	**58.1**	0.6	0.8
eL222	Residential	NAC-1	55	50	B	70	**61.3**	**58.3**	**61.9**	**59.2**	0.6	0.9	**61.8**	**59.0**	0.5	0.7
eL223	Residential	NAC-1	55	50	B	70	**59.6**	**57.2**	**60.3**	**58.1**	0.7	0.9	**60.2**	**58.0**	0.6	0.8
eL224	Residential	NAC-1	55	50	B	70	**59.5**	**57.0**	**60.2**	**57.9**	0.7	0.9	**60.1**	**57.8**	0.6	0.8
eL225	Residential	NAC-1	55	50	B	70	**61.3**	**58.2**	**61.9**	**59.1**	0.6	0.9	**61.9**	**59.0**	0.6	0.8
eL226	Residential	NAC-1	55	50	B	70	**61.8**	**58.4**	**62.4**	**59.3**	0.6	0.9	**62.6**	**59.5**	0.8	1.1
eL226a	Residential	NAC-1	55	50	B	70	**61.3**	**58.3**	**62.0**	**59.2**	0.7	0.9	**62.0**	**59.2**	0.7	0.9
eL226a2	Residential	NAC-1	55	50	B	70	**62.2**	**59.7**	**62.9**	**60.6**	0.7	0.9	**62.8**	**60.5**	0.6	0.8
eL226a3	Residential	NAC-1	55	50	B	70	**63.4**	**61.2**	**64.1**	**62.1**	0.7	0.9	**63.7**	**61.8**	0.3	0.6
eL226b	Residential	NAC-1	55	50	B	70	**61.3**	**58.3**	**61.9**	**59.2**	0.6	0.9	**62.0**	**59.2**	0.7	0.9
eL226b2	Residential	NAC-1	55	50	B	70	**62.2**	**59.7**	**62.8**	**60.6**	0.6	0.9	**62.8**	**60.5**	0.6	0.8
eL226b3	Residential	NAC-1	55	50	B	70	**63.4**	**61.2**	**64.1**	**62.1**	0.7	0.9	**63.8**	**61.9**	0.4	0.7
eL226c	Residential	NAC-1	55	50	B	70	**61.3**	**58.3**	**61.9**	**59.2**	0.6	0.9	**62.0**	**59.2**	0.7	0.9
eL226c2	Residential	NAC-1	55	50	B	70	**62.2**	**59.7**	**62.9**	**60.6**	0.7	0.9	**62.8**	**60.5**	0.6	0.8
eL226c3	Residential	NAC-1	55	50	B	70	**63.4**	**61.3**	**64.2**	**62.2**	0.8	0.9	**63.8**	**61.9**	0.4	0.6
eL226d2	Residential	NAC-1	55	50	B	70	**61.8**	**59.6**	**62.5**	**60.4**	0.7	0.8	**62.6**	**60.4**	0.8	0.8
eL226d3	Residential	NAC-1	55	50	B	70	**63.0**	**61.0**	**63.7**	**61.9**	0.7	0.9	**63.6**	**61.7**	0.6	0.7
eL226e	Residential	NAC-1	55	50	B	70	**60.4**	**58.0**	**61.1**	**58.9**	0.7	0.9	**61.1**	**58.9**	0.7	0.9
eL226f	Residential	NAC-1	55	50	B	70	**60.4**	**58.0**	**61.1**	**58.8**	0.7	0.8	**61.0**	**58.8**	0.6	0.8
eL226g	Residential	NAC-1	55	50	B	70	**60.4**	**58.0**	**61.0**	**58.8**	0.6	0.8	**61.1**	**58.9**	0.7	0.9
eL228	Residential	NAC-1	55	50	B	70	**61.4**	**58.3**	**62.1**	**59.1**	0.7	0.8	**62.5**	**59.6**	1.1	1.3
eL230	Residential	NAC-1	55	50	B	70	**59.6**	**57.4**	**60.3**	**58.3**	0.7	0.9	**61.3**	**58.8**	1.7	1.4
eL232	Residential	NAC-1	55	50	B	70	**59.7**	**57.4**	**60.4**	**58.4**	0.7	1.0	**61.5**	**59.0**	1.8	1.6
eL321	Residential	NAC-1	55	50	B	70	**59.6**	**57.8**	**60.3**	**58.6**	0.7	0.8	**60.2**	**58.5**	0.6	0.7
eL324	Residential	NAC-1	55	50	B	70	**59.5**	**57.7**	**60.2**	**58.5**	0.7	0.8	**60.0**	**58.3**	0.5	0.6
eL325	Residential	NAC-1	55	50	B	70	**59.5**	**57.7**	**60.2**	**58.5**	0.7	0.8	**60.1**	**58.4**	0.6	0.7
eL326	Residential	NAC-1	55	50	B	70	**59.5**	**57.6**	**60.1**	**58.4**	0.6	0.8	**60.1**	**58.3**	0.6	0.7
eL326C	Residential	NAC-1	55	50	B	70	**59.1**	**57.5**	**59.8**	**58.2**	0.7	0.7	**59.6**	**58.1**	0.5	0.6
Receivers - East side Block L2 (24th Street to Franklin Avenue)																
eL141	Residential	NAC-1	55	50	B	70	**64.0**	**55.8**	**64.8**	**57.0**	0.8	1.2	**67.9**	**62.4**	3.9	6.6
eL142	Residential	NAC-1	55	50	B	70	**62.7**	**57.2**	**63.4**	**58.3**	0.7	1.1	**65.5**	**61.4**	2.8	4.2
eL143	Residential	NAC-1	55	50	B	70	**61.3**	**57.6**	**62.0**	**58.6**	0.7	1.0	**63.7**	**60.4**	2.4	2.8

Table 5
Nighttime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
eL143b2	Residential	NAC-1	55	50	B	70	**63.7**	**60.2**	**64.4**	**61.2**	0.7	1.0	**65.4**	**62.4**	1.7	2.2
eL143b3	Residential	NAC-1	55	50	B	70	**65.1**	**62.4**	**65.8**	**63.3**	0.7	0.9	**66.8**	**64.2**	1.7	1.8
eL144	Residential	NAC-1	55	50	B	70	**64.7**	**54.8**	**65.5**	**55.8**	0.8	1.0	**66.6**	**57.6**	1.9	2.8
eL144B	Residential	NAC-1	55	50	B	70	**66.8**	**59.2**	**67.6**	**60.3**	0.8	1.1	**68.4**	**61.8**	1.6	2.6
eL145	Residential	NAC-1	55	50	B	70	**64.3**	**54.7**	**65.2**	**55.8**	0.9	1.1	**66.2**	**57.3**	1.9	2.6
eL147	Residential	NAC-1	55	50	B	70	**64.3**	**54.8**	**65.2**	**55.9**	0.9	1.1	**65.7**	**56.7**	1.4	1.9
eL148	Residential	NAC-1	55	50	B	70	**64.6**	**54.8**	**65.4**	**55.8**	0.8	1.0	**65.7**	**56.2**	1.1	1.4
eL148B	Residential	NAC-1	55	50	B	70	**66.6**	**58.8**	**67.4**	**59.9**	0.8	1.1	**67.4**	**59.9**	0.8	1.1
eL149	Residential	NAC-1	55	50	B	70	**64.6**	**54.7**	**65.4**	**55.8**	0.8	1.1	**65.5**	**56.0**	0.9	1.3
eL149B	Residential	NAC-1	55	50	B	70	**66.5**	**58.9**	**67.3**	**59.9**	0.8	1.0	**67.3**	**59.9**	0.8	1.0
eL149C	Residential	NAC-1	55	50	B	70	**61.7**	**57.5**	**62.4**	**58.5**	0.7	1.0	**63.0**	**59.5**	1.3	2.0
eL150	Residential	NAC-1	55	50	B	70	**64.5**	**54.6**	**65.4**	**55.6**	0.9	1.0	**65.4**	**55.6**	0.9	1.0
eL241	Residential	NAC-1	55	50	B	70	**61.3**	**58.3**	**62.0**	**59.2**	0.7	0.9	**62.6**	**59.9**	1.3	1.6
eL243	Residential	NAC-1	55	50	B	70	**60.0**	**57.4**	**60.7**	**58.3**	0.7	0.9	**61.6**	**59.1**	1.6	1.7
eL244	Residential	NAC-1	55	50	B	70	**59.7**	**57.3**	**60.4**	**58.3**	0.7	1.0	**61.1**	**58.8**	1.4	1.5
eL245	Residential	NAC-1	55	50	B	70	**61.8**	**58.6**	**62.4**	**59.4**	0.6	0.8	**62.8**	**60.1**	1.0	1.5
eL246	Residential	NAC-1	55	50	B	70	**61.6**	**58.6**	**62.2**	**59.4**	0.6	0.8	**62.6**	**60.0**	1.0	1.4
eL248	Residential	NAC-1	55	50	B	70	**61.7**	**58.7**	**62.3**	**59.5**	0.6	0.8	**62.7**	**60.2**	1.0	1.5
eL249	Residential	NAC-1	55	50	B	70	**61.7**	**58.7**	**62.3**	**59.5**	0.6	0.8	**62.8**	**60.4**	1.1	1.7
eL250	Residential	NAC-1	55	50	B	70	**61.7**	**58.9**	**62.3**	**59.7**	0.6	0.8	**62.9**	**60.6**	1.2	1.7
eL251	Residential	NAC-1	55	50	B	70	**61.9**	**59.0**	**62.5**	**59.9**	0.6	0.9	**63.1**	**60.8**	1.2	1.8
eL341	Residential	NAC-1	55	50	B	70	**59.5**	**57.7**	**60.1**	**58.4**	0.6	0.7	**60.3**	**58.5**	0.8	0.8
eL342	Residential	NAC-1	55	50	B	70	**59.6**	**57.8**	**60.2**	**58.5**	0.6	0.7	**60.4**	**58.6**	0.8	0.8
eL343	Residential	NAC-1	55	50	B	70	**59.6**	**57.8**	**60.2**	**58.6**	0.6	0.8	**60.4**	**58.7**	0.8	0.9
eL345	Residential	NAC-1	55	50	B	70	**59.7**	**57.8**	**60.3**	**58.6**	0.6	0.8	**60.5**	**58.7**	0.8	0.9
eL346	Residential	NAC-1	55	50	B	70	**59.7**	**57.9**	**60.3**	**58.6**	0.6	0.7	**60.5**	**58.8**	0.8	0.9
eL347	Residential	NAC-1	55	50	B	70	**59.8**	**58.0**	**60.4**	**58.7**	0.6	0.7	**60.6**	**58.9**	0.8	0.9
eL348	Residential	NAC-1	55	50	B	70	**59.9**	**58.1**	**60.5**	**58.8**	0.6	0.7	**60.7**	**59.0**	0.8	0.9
eL349	Residential	NAC-1	55	50	B	70	**59.9**	**58.1**	**60.5**	**58.8**	0.6	0.7	**60.7**	**59.0**	0.8	0.9
eL350	Residential	NAC-1	55	50	B	70	**60.0**	**58.2**	**60.6**	**58.9**	0.6	0.7	**60.8**	**59.1**	0.8	0.9
eL351	Residential	NAC-1	55	50	B	70	**60.1**	**58.2**	**60.7**	**59.0**	0.6	0.8	**60.9**	**59.2**	0.8	1.0
eL161	Residential	NAC-1	55	50	B	70	**64.7**	**54.9**	**65.5**	**56.0**	0.8	1.1	**65.6**	**56.1**	0.9	1.2
eL161b2	Residential	NAC-1	55	50	B	70	**66.8**	**59.3**	**67.6**	**60.4**	0.8	1.1	**67.5**	**60.2**	0.7	0.9
eL162	Residential	NAC-1	55	50	B	70	**65.1**	**54.7**	**65.9**	**55.7**	0.8	1.0	**66.1**	**55.9**	1.0	1.2
eL162b2	Residential	NAC-1	55	50	B	70	**66.9**	**58.7**	**67.7**	**59.8**	0.8	1.1	**67.8**	**59.9**	0.9	1.2
eL163	Residential	NAC-1	55	50	B	70	**64.6**	**55.3**	**65.5**	**56.4**	0.9	1.1	**65.6**	**56.6**	1.0	1.3
eL164	Residential	NAC-1	55	50	B	70	**64.8**	**55.8**	**65.6**	**56.9**	0.8	1.1	**65.8**	**57.3**	1.0	1.5
eL165	Residential	NAC-1	55	50	B	70	**65.7**	**57.2**	**66.5**	**58.3**	0.8	1.1	**66.8**	**58.8**	1.1	1.6
eL166	Residential	NAC-1	55	50	B	70	**67.1**	**59.6**	**67.9**	**60.8**	0.8	1.2	**68.2**	**61.4**	1.1	1.8
eL167	Residential	NAC-1	55	50	B	70	**69.6**	**63.1**	**70.4**	**64.4**	0.8	1.3	**70.7**	**64.8**	1.1	1.7
eL167B	Residential	NAC-1	55	50	B	70	**72.8**	**69.1**	**73.6**	**70.2**	0.8	1.1	**73.9**	**70.2**	1.1	1.1
eL168	Residential	NAC-1	55	50	B	70	**70.8**	**65.3**	**71.6**	**66.5**	0.8	1.2	**71.9**	**66.9**	1.1	1.6
eL168B	Residential	NAC-1	55	50	B	70	**74.0**	**70.4**	**74.8**	**71.6**	0.8	1.2	**75.1**	**71.6**	1.1	1.2
eL169	Residential	NAC-1	55	50	B	70	**71.7**	**66.6**	**72.5**	**67.7**	0.8	1.1	**72.8**	**68.1**	1.1	1.5
eL169B	Residential	NAC-1	55	50	B	70	**74.5**	**71.0**	**75.3**	**72.1**	0.8	1.1	**75.6**	**72.1**	1.1	1.1
eL261	Residential	NAC-1	55	50	B	70	**62.0**	**59.4**	**62.6**	**60.2**	0.6	0.8	**63.1**	**61.0**	1.1	1.6
eL262	Residential	NAC-1	55	50	B	70	**62.3**	**59.6**	**62.9**	**60.4**	0.6	0.8	**63.3**	**61.0**	1.0	1.4
eL263	Residential	NAC-1	55	50	B	70	**62.3**	**59.7**	**63.0**	**60.5**	0.7	0.8	**63.4**	**61.1**	1.1	1.4
eL264	Residential	NAC-1	55	50	B	70	**62.6**	**60.0**	**63.2**	**60.8**	0.6	0.8	**63.6**	**61.3**	1.0	1.3
eL265	Residential	NAC-1	55	50	B	70	**62.9**	**60.2**	**63.5**	**61.0**	0.6	0.8	**63.9**	**61.5**	1.0	1.3
eL265b2	Residential	NAC-1	55	50	B	70	**64.2**	**62.2**	**64.9**	**63.1**	0.7	0.9	**65.1**	**63.2**	0.9	1.0
eL265b3	Residential	NAC-1	55	50	B	70	**63.6**	**61.7**	**64.3**	**62.6**	0.7	0.9	**64.5**	**62.8**	0.9	1.1
eL266	Residential	NAC-1	55	50	B	70	**62.8**	**60.2**	**63.5**	**61.0**	0.7	0.8	**63.8**	**61.5**	1.0	1.3
eL267	Residential	NAC-1	55	50	B	70	**63.2**	**60.5**	**63.8**	**61.3**	0.6	0.8	**64.2**	**61.8**	1.0	1.3
eL268	Residential	NAC-1	55	50	B	70	**63.6**	**60.9**	**64.2**	**61.7**	0.6	0.8	**64.5**	**62.1**	0.9	1.2

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Noise Level Comparison to Standards	
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N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
eL269	Residential	NAC-1	55	50	B	70	**65.1**	**61.8**	**65.7**	**62.6**	0.6	0.8	**65.9**	**63.0**	0.8	1.2
eL269b4a	Residential	NAC-1	55	50	B	70	**64.3**	**61.2**	**64.9**	**62.1**	0.6	0.9	**65.2**	**62.4**	0.9	1.2
eL269b4b	Residential	NAC-1	55	50	B	70	**64.6**	**61.4**	**65.2**	**62.2**	0.6	0.8	**65.5**	**62.6**	0.9	1.2
eL269b4c	Residential	NAC-1	55	50	B	70	**65.1**	**61.5**	**65.7**	**62.4**	0.6	0.9	**65.9**	**62.7**	0.8	1.2
eL269b4d	Residential	NAC-1	55	50	B	70	**68.8**	**61.8**	**69.4**	**62.7**	0.6	0.9	**69.6**	**63.0**	0.8	1.2
eL270	Commercial	NAC-2	70	65	E	75	68.9	62.3	69.5	63.2	0.6	0.9	69.7	63.5	0.8	1.2
eL361	Residential	NAC-1	55	50	B	70	**60.3**	**58.4**	**60.9**	**59.1**	0.6	0.7	**61.1**	**59.4**	0.8	1.0
eL362	Residential	NAC-1	55	50	B	70	**60.6**	**58.6**	**61.1**	**59.4**	0.5	0.8	**61.4**	**59.6**	0.8	1.0
eL362B	Residential	NAC-1	55	50	B	70	**61.1**	**59.3**	**61.7**	**60.1**	0.6	0.8	**61.8**	**60.2**	0.7	0.9
eL363	Residential	NAC-1	55	50	B	70	**60.8**	**58.8**	**61.3**	**59.5**	0.5	0.7	**61.6**	**59.8**	0.8	1.0
eL364	Residential	NAC-1	55	50	B	70	**61.0**	**59.0**	**61.5**	**59.7**	0.5	0.7	**61.8**	**60.1**	0.8	1.1
eL365	Residential	NAC-1	55	50	B	70	**61.3**	**59.2**	**61.9**	**59.9**	0.6	0.7	**62.2**	**60.4**	0.9	1.2
eL366	General	NAC-2	70	65	C	70	61.7	59.5	62.2	60.2	0.5	0.7	62.6	60.6	0.9	1.1
eL367	Residential	NAC-1	55	50	B	70	**62.4**	**59.8**	**62.9**	**60.5**	0.5	0.7	**63.2**	**61.0**	0.8	1.2
eL367B	Residential	NAC-1	55	50	B	70	**62.7**	**60.5**	**63.3**	**61.2**	0.6	0.7	**63.6**	**61.6**	0.9	1.1
eL368	Residential	NAC-1	55	50	B	70	**62.8**	**60.0**	**63.3**	**60.7**	0.5	0.7	**63.6**	**61.2**	0.8	1.2
eL369	Residential	NAC-1	55	50	B	70	**63.2**	**60.1**	**63.7**	**60.8**	0.5	0.7	**64.0**	**61.3**	0.8	1.2
eL370	Residential	NAC-1	55	50	B	70	**64.2**	**60.0**	**64.7**	**60.7**	0.5	0.7	**65.0**	**61.2**	0.8	1.2
Receivers - East side Block M (Franklin Avenue to I-94/Portland Avenue)																
eM100	Residential	NAC-1	55	50	B	70	**58.7**	**54.9**	**59.6**	**55.9**	0.9	1.0	**60.0**	**56.2**	1.3	1.3
eM1001b1	Commercial	NAC-2	70	65	E	75	67.7	59.8	68.5	60.8	0.8	1.0	68.3	60.6	0.6	0.8
eM1001b3	Residential	NAC-1	55	50	B	70	**68.4**	**62.0**	**69.2**	**63.2**	0.8	1.2	**69.2**	**63.2**	0.8	1.2
eM1002b1	Commercial	NAC-2	70	65	E	75	68.6	61.3	69.4	62.4	0.8	1.1	69.3	62.3	0.7	1.0
eM1003b1	Commercial	NAC-2	70	65	E	75	69.9	64.2	**70.7**	**65.4**	0.8	1.2	**71.0**	**65.9**	1.1	1.7
eM1003b3	Residential	NAC-1	55	50	B	70	**72.3**	**68.9**	**73.0**	**69.9**	0.7	1.0	**73.8**	**70.7**	1.5	1.8
eM1004b1	Commercial	NAC-2	70	65	E	75	69.6	63.7	**70.4**	64.9	0.8	1.2	**70.7**	**65.5**	1.1	1.8
eM1005b2	Residential	NAC-1	55	50	B	70	**71.4**	**67.2**	**72.1**	**68.4**	0.7	1.2	**72.5**	**68.9**	1.1	1.7
eM1006b2	Residential	NAC-1	55	50	B	70	**67.7**	**63.0**	**68.5**	**64.3**	0.8	1.3	**69.0**	**64.8**	1.3	1.8
eM1007b1	Commercial	NAC-2	70	65	E	75	60.0	56.5	60.8	57.5	0.8	1.0	61.4	57.8	1.4	1.3
eM1007b3	Residential	NAC-1	55	50	B	70	**65.2**	**61.2**	**66.1**	**62.4**	0.9	1.2	**66.6**	**62.7**	1.4	1.5
eM1007b4	Residential	NAC-1	55	50	B	70	**67.2**	**64.5**	**68.0**	**65.5**	0.8	1.0	**68.6**	**65.7**	1.4	1.2
eM1008b1	Commercial	NAC-2	70	65	E	75	59.1	55.4	59.9	56.5	0.8	1.1	60.3	56.7	1.2	1.3
eM1008b4	Residential	NAC-1	55	50	B	70	**66.7**	**64.1**	**67.5**	**65.1**	0.8	1.0	**68.0**	**65.3**	1.3	1.2
eM1009b4	Residential	NAC-1	55	50	B	70	**69.9**	**67.1**	**70.6**	**68.1**	0.7	1.0	**71.4**	**68.6**	1.5	1.5
eM1010b1	Commercial	NAC-2	70	65	E	75	69.4	62.9	**70.2**	64.2	0.8	1.3	**70.5**	64.9	1.1	2.0
eM1011b1	Commercial	NAC-2	70	65	E	75	69.4	62.9	**70.2**	64.2	0.8	1.3	**70.6**	64.9	1.2	2.0
eM1012b2	Residential	NAC-1	55	50	B	70	**69.5**	**63.0**	**70.2**	**64.2**	0.7	1.2	**70.6**	**64.9**	1.1	1.9
eM1012b4	Residential	NAC-1	55	50	B	70	**72.6**	**69.5**	**73.2**	**70.4**	0.6	0.9	**73.9**	**70.9**	1.3	1.4
eM1013b1	Commercial	NAC-2	70	65	E	75	64.9	60.7	65.6	61.8	0.7	1.1	66.1	62.3	1.2	1.6
eM1014b1	Commercial	NAC-2	70	65	E	75	63.6	60.5	64.3	61.4	0.7	0.9	64.9	61.9	1.3	1.4
eM1014b3	Residential	NAC-1	55	50	B	70	**66.4**	**63.4**	**67.2**	**64.4**	0.8	1.0	**67.7**	**64.7**	1.3	1.3
eM1014b4	Residential	NAC-1	55	50	B	70	**67.5**	**65.0**	**68.3**	**66.0**	0.8	1.0	**68.8**	**66.2**	1.3	1.2
eM1015b1	Commercial	NAC-2	70	65	E	75	62.7	60.1	63.4	61.1	0.7	1.0	64.1	61.5	1.4	1.4
eM1015b2	Residential	NAC-1	55	50	B	70	**64.4**	**61.7**	**65.1**	**62.6**	0.7	0.9	**65.6**	**62.9**	1.2	1.2
eM1015b4	Residential	NAC-1	55	50	B	70	**66.5**	**64.2**	**67.4**	**65.2**	0.9	1.0	**67.7**	**65.3**	1.2	1.1
eM103	Residential	NAC-1	55	50	B	70	**69.8**	**60.3**	**70.6**	**61.3**	0.8	1.0	**70.8**	**61.8**	1.0	1.5
eM103C	Residential	NAC-1	55	50	B	70	**63.4**	**60.5**	**64.0**	**61.5**	0.6	1.0	**64.6**	**62.0**	1.2	1.5
eM301	Residential	NAC-1	55	50	B	70	**59.9**	**57.9**	**60.5**	**58.7**	0.6	0.8	**60.7**	**58.9**	0.8	1.0
eM302	General	NAC-2	70	65	C	70	61.7	59.8	62.3	60.6	0.6	0.8	62.6	60.9	0.9	1.1
eM403	Residential	NAC-1	55	50	B	70	**61.9**	**60.1**	**62.5**	**60.9**	0.6	0.8	**62.6**	**61.0**	0.7	0.9
eM404	Residential	NAC-1	55	50	B	70	**61.6**	**59.9**	**62.2**	**60.6**	0.6	0.7	**62.3**	**60.7**	0.7	0.8
eM405	Residential	NAC-1	55	50	B	70	**61.3**	**59.6**	**61.9**	**60.4**	0.6	0.8	**62.0**	**60.4**	0.7	0.8
eM406	Residential	NAC-1	55	50	B	70	**61.0**	**59.3**	**61.6**	**60.1**	0.6	0.8	**61.7**	**60.2**	0.7	0.9
eM121	Residential	NAC-1	55	50	B	70	**70.2**	**61.3**	**70.9**	**62.3**	0.7	1.0	**71.2**	**62.8**	1.0	1.5
eM221	Residential	NAC-1	55	50	B	70	**65.1**	**63.2**	**65.7**	**64.0**	0.6	0.8	**66.2**	**64.3**	1.1	1.1

Table 5
Nighttime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
eM222	Residential	NAC-1	55	50	B	70	**65.1**	**63.3**	**65.7**	**64.0**	0.6	0.7	**66.2**	**64.4**	1.1	1.1
eM223	Residential	NAC-1	55	50	B	70	**65.7**	**63.9**	**66.3**	**64.6**	0.6	0.7	**66.7**	**64.9**	1.0	1.0
eM224	Residential	NAC-1	55	50	B	70	**69.8**	**67.8**	**70.3**	**68.5**	0.5	0.7	**70.5**	**68.6**	0.7	0.8
eM225	Commercial	NAC-2	70	65	E	75	67.0	**65.0**	67.5	**65.8**	0.5	0.8	67.8	**66.0**	0.8	1.0
eM321	General	NAC-2	70	65	C	70	65.9	61.1	66.5	62.0	0.6	0.9	66.6	62.3	0.7	1.2
eM323	Residential	NAC-1	55	50	B	70	**65.9**	**62.3**	**66.4**	**63.2**	0.5	0.9	**66.6**	**63.3**	0.7	1.0
eM324	Residential	NAC-1	55	50	B	70	**66.5**	**63.2**	**67.1**	**64.0**	0.6	0.8	**67.2**	**64.2**	0.7	1.0
eM325	Residential	NAC-1	55	50	B	70	**67.1**	**64.0**	**67.6**	**64.7**	0.5	0.7	**67.7**	**64.9**	0.6	0.9
eM326	Residential	NAC-1	55	50	B	70	**68.1**	**65.2**	**68.6**	**65.9**	0.5	0.7	**68.6**	**66.0**	0.5	0.8
eM327	Residential	NAC-1	55	50	B	70	**71.4**	**68.7**	**71.9**	**69.3**	0.5	0.6	**72.0**	**69.4**	0.6	0.7
eM328	Residential	NAC-1	55	50	B	70	**70.4**	**68.6**	**70.9**	**69.2**	0.5	0.6	**70.9**	**69.2**	0.5	0.6
eM421	Residential	NAC-1	55	50	B	70	**62.6**	**60.8**	**63.1**	**61.5**	0.5	0.7	**63.2**	**61.6**	0.6	0.8
eM423	Residential	NAC-1	55	50	B	70	**63.6**	**61.7**	**64.1**	**62.4**	0.5	0.7	**64.2**	**62.5**	0.6	0.8
eM425	Residential	NAC-1	55	50	B	70	**63.2**	**61.4**	**63.8**	**62.1**	0.6	0.7	**63.8**	**62.2**	0.6	0.8
eM427	Residential	NAC-1	55	50	B	70	**67.3**	**65.6**	**67.7**	**66.2**	0.4	0.6	**67.8**	**66.2**	0.5	0.6
eM429	Residential	NAC-1	55	50	B	70	**68.5**	**66.7**	**69.0**	**67.3**	0.5	0.6	**69.0**	**67.3**	0.5	0.6
Receivers - West side Blocks AA to GG (46th Street to 39th Street)																
wAA103	Residential	NAC-1	55	50	B	70	**64.8**	**59.4**	**65.6**	**60.4**	0.8	1.0	**65.7**	**60.7**	0.9	1.3
wAA107	Residential	NAC-1	55	50	B	70	**64.3**	**58.1**	**65.1**	**59.2**	0.8	1.1	**65.3**	**59.6**	1.0	1.5
wAA111	Residential	NAC-1	55	50	B	70	**64.4**	**57.7**	**65.2**	**58.7**	0.8	1.0	**65.4**	**59.2**	1.0	1.5
wAA115	Commercial	NAC-2	70	65	E	75	64.4	58.2	65.1	59.3	0.7	1.1	65.4	59.7	1.0	1.5
wAA203	Residential	NAC-1	55	50	B	70	**59.6**	**58.1**	**60.3**	**58.9**	0.7	0.8	**60.5**	**59.1**	0.9	1.0
wAA207	Residential	NAC-1	55	50	B	70	**59.2**	**57.7**	**59.9**	**58.6**	0.7	0.9	**60.0**	**58.8**	0.8	1.1
wAA211	Residential	NAC-1	55	50	B	70	**58.9**	**57.6**	**59.6**	**58.4**	0.7	0.8	**59.8**	**58.6**	0.9	1.0
wAA215	General	NAC-2	70	65	C	70	59.8	58.4	60.5	59.2	0.7	0.8	60.7	59.4	0.9	1.0
wBB101	General	NAC-2	70	65	C	70	66.9	64.1	67.6	**65.0**	0.7	0.9	68.1	**65.4**	1.2	1.3
wBB102	General	NAC-2	70	65	C	70	64.1	62.2	64.8	63.1	0.7	0.9	65.1	63.4	1.0	1.2
wBB103	General	NAC-2	70	65	C	70	63.1	61.5	63.8	62.4	0.7	0.9	64.1	62.7	1.0	1.2
wBB104	General	NAC-2	70	65	C	70	63.8	62.2	64.6	63.1	0.8	0.9	64.8	63.3	1.0	1.1
wBB105	General	NAC-2	70	65	C	70	63.3	61.8	64.0	62.6	0.7	0.8	64.3	62.9	1.0	1.1
wBB106	General	NAC-2	70	65	C	70	62.9	61.4	63.6	62.2	0.7	0.8	63.9	62.5	1.0	1.1
wBB107	General	NAC-2	70	65	C	70	62.7	61.1	63.4	62.0	0.7	0.9	63.7	62.3	1.0	1.2
wBB108	General	NAC-2	70	65	C	70	62.7	61.1	63.4	62.0	0.7	0.9	63.8	62.3	1.1	1.2
wBB109	General	NAC-2	70	65	C	70	63.6	61.9	64.3	62.8	0.7	0.9	64.6	63.1	1.0	1.2
wBB110	General	NAC-2	70	65	C	70	63.8	62.0	64.5	62.9	0.7	0.9	64.7	63.1	0.9	1.1
wDD103	Residential	NAC-1	55	50	B	70	**61.4**	**59.9**	**62.1**	**60.8**	0.7	0.9	**62.3**	**61.0**	0.9	1.1
wDD107	Residential	NAC-1	55	50	B	70	**61.5**	**60.0**	**62.2**	**60.9**	0.7	0.9	**62.4**	**61.1**	0.9	1.1
wDD111	Residential	NAC-1	55	50	B	70	**62.8**	**61.0**	**63.4**	**61.9**	0.6	0.9	**63.6**	**62.1**	0.8	1.1
wDD115	Residential	NAC-1	55	50	B	70	**68.3**	**63.5**	**69.0**	**64.5**	0.7	1.0	**69.3**	**64.8**	1.0	1.3
wDD203	Residential	NAC-1	55	50	B	70	**60.4**	**59.0**	**61.1**	**59.9**	0.7	0.9	**61.2**	**60.0**	0.8	1.0
wDD207	Residential	NAC-1	55	50	B	70	**61.0**	**58.9**	**61.7**	**59.7**	0.7	0.8	**61.8**	**59.9**	0.8	1.0
wDD211	Residential	NAC-1	55	50	B	70	**63.6**	**59.7**	**64.3**	**60.6**	0.7	0.9	**64.5**	**60.8**	0.9	1.1
wDD215	Residential	NAC-1	55	50	B	70	**65.9**	**60.8**	**66.5**	**61.8**	0.6	1.0	**66.7**	**62.0**	0.8	1.2
wEE103	Residential	NAC-1	55	50	B	70	**61.9**	**60.6**	**62.6**	**61.4**	0.7	0.8	**62.8**	**61.7**	0.9	1.1
wEE107	Residential	NAC-1	55	50	B	70	**62.4**	**61.0**	**63.1**	**61.9**	0.7	0.9	**63.3**	**62.1**	0.9	1.1
wEE111	Residential	NAC-1	55	50	B	70	**62.5**	**61.1**	**63.3**	**61.9**	0.8	0.8	**63.5**	**62.2**	1.0	1.1
wEE115	Residential	NAC-1	55	50	B	70	**62.5**	**61.0**	**63.2**	**61.8**	0.7	0.8	**63.4**	**62.0**	0.9	1.0
wEE203	Residential	NAC-1	55	50	B	70	**60.9**	**59.6**	**61.6**	**60.4**	0.7	0.8	**61.8**	**60.6**	0.9	1.0
wEE207	Residential	NAC-1	55	50	B	70	**60.9**	**59.7**	**61.6**	**60.5**	0.7	0.8	**61.8**	**60.7**	0.9	1.0
wEE211	Residential	NAC-1	55	50	B	70	**60.6**	**59.3**	**61.3**	**60.2**	0.7	0.9	**61.5**	**60.3**	0.9	1.0
wEE215	General	NAC-2	70	65	C	70	60.5	59.2	61.2	60.0	0.7	0.8	61.3	60.2	0.8	1.0
wFF103	Residential	NAC-1	55	50	B	70	**63.1**	**58.8**	**64.0**	**59.8**	0.9	1.0	**64.3**	**60.1**	1.2	1.3
wFF107	Residential	NAC-1	55	50	B	70	**61.7**	**60.1**	**62.5**	**60.9**	0.8	0.8	**62.7**	**61.2**	1.0	1.1
wFF111	Residential	NAC-1	55	50	B	70	**61.3**	**59.7**	**62.0**	**60.6**	0.7	0.9	**62.2**	**60.8**	0.9	1.1
wFF115	Residential	NAC-1	55	50	B	70	**61.2**	**59.6**	**61.9**	**60.5**	0.7	0.9	**62.1**	**60.7**	0.9	1.1

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Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
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N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
wFF203	Residential	NAC-1	55	50	B	70	**59.8**	**57.8**	**60.6**	**58.7**	0.8	0.9	**60.9**	**59.0**	1.1	1.2
wFF207	Residential	NAC-1	55	50	B	70	**59.1**	**57.7**	**59.9**	**58.5**	0.8	0.8	**60.1**	**58.7**	1.0	1.0
wFF211	Residential	NAC-1	55	50	B	70	**62.0**	**60.4**	**62.8**	**61.2**	0.8	0.8	**62.9**	**61.4**	0.9	1.0
wFF215	Residential	NAC-1	55	50	B	70	**61.5**	**60.0**	**62.2**	**60.9**	0.7	0.9	**62.4**	**61.0**	0.9	1.0
wGG103	Residential	NAC-1	55	50	B	70	**73.5**	**69.7**	**74.3**	**70.6**	0.8	0.9	**74.6**	**70.9**	1.1	1.2
wGG107	Residential	NAC-1	55	50	B	70	**70.1**	**65.2**	**71.1**	**66.3**	1.0	1.1	**71.4**	**66.7**	1.3	1.5
wGG111	Residential	NAC-1	55	50	B	70	**68.4**	**62.6**	**69.5**	**63.8**	1.1	1.2	**69.9**	**64.2**	1.5	1.6
wGG115	Residential	NAC-1	55	50	B	70	**67.6**	**61.1**	**68.7**	**62.4**	1.1	1.3	**69.1**	**62.9**	1.5	1.8
wGG203	Residential	NAC-1	55	50	B	70	**71.8**	**69.0**	**72.4**	**69.9**	0.6	0.9	**72.6**	**70.1**	0.8	1.1
wGG207	Residential	NAC-1	55	50	B	70	**69.2**	**66.6**	**69.9**	**67.5**	0.7	0.9	**70.0**	**67.7**	0.8	1.1
wGG211	Residential	NAC-1	55	50	B	70	**67.1**	**64.6**	**67.8**	**65.5**	0.7	0.9	**68.0**	**65.7**	0.9	1.1
wGG215	Residential	NAC-1	55	50	B	70	**65.8**	**63.3**	**66.6**	**64.2**	0.8	0.9	**66.8**	**64.4**	1.0	1.1
Receivers - West side Block A (39th Street to 38th Street)																
wA101	Residential	NAC-1	55	50	B	70	**68.9**	**64.9**	**69.6**	**65.8**	0.7	0.9	**69.8**	**66.1**	0.9	1.2
wA103	Residential	NAC-1	55	50	B	70	**67.2**	**62.9**	**67.9**	**63.9**	0.7	1.0	**68.1**	**64.2**	0.9	1.3
wA104	Residential	NAC-1	55	50	B	70	**66.2**	**60.5**	**66.9**	**61.6**	0.7	1.1	**67.2**	**62.0**	1.0	1.5
wA106	Residential	NAC-1	55	50	B	70	**65.4**	**59.6**	**66.2**	**60.6**	0.8	1.0	**66.4**	**61.1**	1.0	1.5
wA108	Residential	NAC-1	55	50	B	70	**64.9**	**58.4**	**65.6**	**59.5**	0.7	1.1	**65.9**	**60.0**	1.0	1.6
wA110	Residential	NAC-1	55	50	B	70	**64.4**	**58.4**	**65.2**	**59.5**	0.8	1.1	**65.4**	**60.0**	1.0	1.6
wA112	Residential	NAC-1	55	50	B	70	**64.4**	**58.9**	**65.1**	**59.9**	0.7	1.0	**65.3**	**60.3**	0.9	1.4
wA114	Residential	NAC-1	55	50	B	70	**64.2**	**58.7**	**64.9**	**59.7**	0.7	1.0	**65.1**	**60.1**	0.9	1.4
wA201	General	NAC-2	70	65	C	70	67.3	63.2	67.9	64.2	0.6	1.0	68.0	64.3	0.7	1.1
wA203	Residential	NAC-1	55	50	B	70	**64.2**	**62.0**	**64.9**	**62.8**	0.7	0.8	**65.0**	**63.0**	0.8	1.0
wA205	Residential	NAC-1	55	50	B	70	**63.4**	**61.5**	**64.1**	**62.4**	0.7	0.9	**64.3**	**62.5**	0.9	1.0
wA207	Residential	NAC-1	55	50	B	70	**62.8**	**61.2**	**63.5**	**62.0**	0.7	0.8	**63.7**	**62.2**	0.9	1.0
wA209	Residential	NAC-1	55	50	B	70	**62.1**	**60.5**	**62.8**	**61.4**	0.7	0.9	**63.0**	**61.6**	0.9	1.1
wA211	Residential	NAC-1	55	50	B	70	**61.7**	**60.2**	**62.4**	**61.1**	0.7	0.9	**62.5**	**61.3**	0.8	1.1
wA212	Residential	NAC-1	55	50	B	70	**61.2**	**60.0**	**62.0**	**60.8**	0.8	0.8	**62.1**	**61.0**	0.9	1.0
wA301	Commercial	NAC-2	70	65	E	75	62.5	59.7	63.1	60.5	0.6	0.8	63.2	60.7	0.7	1.0
wA303	Residential	NAC-1	55	50	B	70	**62.5**	**60.2**	**63.2**	**61.0**	0.7	0.8	**63.3**	**61.2**	0.8	1.0
wA305	Residential	NAC-1	55	50	B	70	**61.9**	**59.9**	**62.6**	**60.8**	0.7	0.9	**62.7**	**60.9**	0.8	1.0
wA307	Residential	NAC-1	55	50	B	70	**61.4**	**59.6**	**62.1**	**60.5**	0.7	0.9	**62.2**	**60.6**	0.8	1.0
wA309	Residential	NAC-1	55	50	B	70	**60.8**	**59.2**	**61.5**	**60.0**	0.7	0.8	**61.7**	**60.2**	0.9	1.0
wA311	Residential	NAC-1	55	50	B	70	**60.4**	**58.9**	**61.1**	**59.7**	0.7	0.8	**61.2**	**59.9**	0.8	1.0
wA313	Residential	NAC-1	55	50	B	70	**60.1**	**58.7**	**60.8**	**59.5**	0.7	0.8	**61.0**	**59.7**	0.9	1.0
wA314	Residential	NAC-1	55	50	B	70	**59.5**	**58.1**	**60.2**	**58.9**	0.7	0.8	**60.3**	**59.1**	0.8	1.0
Receivers - West side Block B (38th Street to 37th Street)																
wB101	Residential	NAC-1	55	50	B	70	**72.6**	**70.0**	**73.3**	**70.9**	0.7	0.9	**73.5**	**71.1**	0.9	1.1
wB102	Residential	NAC-1	55	50	B	70	**72.6**	**70.0**	**73.3**	**70.9**	0.7	0.9	**73.5**	**71.1**	0.9	1.1
wB104	Residential	NAC-1	55	50	B	70	**72.2**	**69.6**	**72.9**	**70.5**	0.7	0.9	**73.1**	**70.7**	0.9	1.1
wB106	Residential	NAC-1	55	50	B	70	**72.3**	**69.6**	**73.0**	**70.5**	0.7	0.9	**73.1**	**70.7**	0.8	1.1
wB108	Residential	NAC-1	55	50	B	70	**72.2**	**69.4**	**72.9**	**70.3**	0.7	0.9	**73.0**	**70.5**	0.8	1.1
wB110	Residential	NAC-1	55	50	B	70	**72.6**	**69.8**	**73.3**	**70.7**	0.7	0.9	**73.5**	**71.0**	0.9	1.2
wB112	Residential	NAC-1	55	50	B	70	**72.1**	**69.1**	**72.8**	**70.0**	0.7	0.9	**73.0**	**70.2**	0.9	1.1
wB113	Residential	NAC-1	55	50	B	70	**71.9**	**68.8**	**72.6**	**69.8**	0.7	1.0	**72.8**	**70.0**	0.9	1.2
wB114	Residential	NAC-1	55	50	B	70	**67.7**	**60.5**	**68.4**	**61.6**	0.7	1.1	**68.5**	**61.8**	0.8	1.3
wB115	Residential	NAC-1	55	50	B	70	**64.5**	**58.8**	**65.2**	**59.9**	0.7	1.1	**65.3**	**60.0**	0.8	1.2
wB201	Residential	NAC-1	55	50	B	70	**60.3**	**58.5**	**61.0**	**59.3**	0.7	0.8	**61.1**	**59.4**	0.8	0.9
wB202	Residential	NAC-1	55	50	B	70	**61.1**	**59.2**	**61.8**	**60.0**	0.7	0.8	**61.9**	**60.1**	0.8	0.9
wB203	Residential	NAC-1	55	50	B	70	**62.2**	**60.2**	**62.8**	**61.0**	0.6	0.8	**62.9**	**61.2**	0.7	1.0
wB205	Residential	NAC-1	55	50	B	70	**61.4**	**59.4**	**62.0**	**60.2**	0.6	0.8	**62.1**	**60.4**	0.7	1.0
wB207	Residential	NAC-1	55	50	B	70	**61.3**	**59.3**	**62.0**	**60.2**	0.7	0.9	**62.1**	**60.3**	0.8	1.0
wB209	Residential	NAC-1	55	50	B	70	**61.1**	**59.0**	**61.7**	**59.9**	0.6	0.9	**61.8**	**60.0**	0.7	1.0
wB211	Residential	NAC-1	55	50	B	70	**60.8**	**58.7**	**61.5**	**59.6**	0.7	0.9	**61.6**	**59.7**	0.8	1.0
wB212	Residential	NAC-1	55	50	B	70	**61.8**	**59.5**	**62.5**	**60.4**	0.7	0.9	**62.6**	**60.5**	0.8	1.0

Table 5
Nighttime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
wB213	Residential	NAC-1	55	50	B	70	**60.9**	**58.5**	**61.5**	**59.4**	0.6	0.9	**61.7**	**59.5**	0.8	1.0
wB214	Residential	NAC-1	55	50	B	70	**63.6**	**58.7**	**64.2**	**59.6**	0.6	0.9	**64.3**	**59.8**	0.7	1.1
wB215	Residential	NAC-1	55	50	B	70	**62.9**	**57.7**	**63.5**	**58.6**	0.6	0.9	**63.6**	**58.8**	0.7	1.1
wB216	Residential	NAC-1	55	50	B	70	**62.5**	**57.0**	**63.1**	**58.0**	0.6	1.0	**63.1**	**58.2**	0.6	1.2
wB301	Residential	NAC-1	55	50	B	70	**57.0**	**55.3**	**57.7**	**56.1**	0.7	0.8	**57.8**	**56.2**	0.8	0.9
wB303	Residential	NAC-1	55	50	B	70	**57.0**	**55.2**	**57.6**	**56.0**	0.6	0.8	**57.7**	**56.1**	0.7	0.9
wB305	Residential	NAC-1	55	50	B	70	**56.9**	**55.1**	**57.6**	**55.9**	0.7	0.8	**57.7**	**56.1**	0.8	1.0
wB307	Residential	NAC-1	55	50	B	70	**56.9**	**55.0**	**57.5**	**55.8**	0.6	0.8	**57.6**	**56.0**	0.7	1.0
wB309	Residential	NAC-1	55	50	B	70	**56.7**	**54.8**	**57.4**	**55.6**	0.7	0.8	**57.5**	**55.7**	0.8	0.9
wB311	Residential	NAC-1	55	50	B	70	**56.8**	**54.7**	**57.5**	**55.5**	0.7	0.8	**57.6**	**55.6**	0.8	0.9
wB313	Residential	NAC-1	55	50	B	70	**57.3**	**54.6**	**57.9**	**55.5**	0.6	0.9	**58.0**	**55.6**	0.7	1.0
wB314	Residential	NAC-1	55	50	B	70	**60.8**	**53.0**	**61.4**	**54.1**	0.6	1.1	**61.5**	**54.2**	0.7	1.2
Receivers - West side Block C (37th Street to 36th Street)																
wC101	Residential	NAC-1	55	50	B	70	**73.7**	**69.0**	**74.4**	**70.0**	0.7	1.0	**74.5**	**70.2**	0.8	1.2
wC102	Residential	NAC-1	55	50	B	70	**73.6**	**69.0**	**74.3**	**70.0**	0.7	1.0	**74.4**	**70.2**	0.8	1.2
wC103	Residential	NAC-1	55	50	B	70	**73.2**	**69.1**	**73.9**	**70.0**	0.7	0.9	**74.0**	**70.2**	0.8	1.1
wC105	Residential	NAC-1	55	50	B	70	**72.8**	**69.2**	**73.5**	**70.2**	0.7	1.0	**73.6**	**70.3**	0.8	1.1
wC107	Residential	NAC-1	55	50	B	70	**72.4**	**69.0**	**73.1**	**69.9**	0.7	0.9	**73.1**	**70.0**	0.7	1.0
wC109	Residential	NAC-1	55	50	B	70	**72.2**	**69.1**	**72.9**	**70.0**	0.7	0.9	**72.9**	**70.1**	0.7	1.0
wC111	Residential	NAC-1	55	50	B	70	**72.4**	**69.4**	**73.1**	**70.3**	0.7	0.9	**73.2**	**70.4**	0.8	1.0
wC113	Residential	NAC-1	55	50	B	70	**72.5**	**69.6**	**73.2**	**70.5**	0.7	0.9	**73.3**	**70.6**	0.8	1.0
wC114	Residential	NAC-1	55	50	B	70	**72.7**	**69.9**	**73.4**	**70.8**	0.7	0.9	**73.6**	**71.0**	0.9	1.1
wC115	Residential	NAC-1	55	50	B	70	**64.2**	**62.0**	**64.9**	**62.9**	0.7	0.9	**65.0**	**63.0**	0.8	1.0
wC201	Residential	NAC-1	55	50	B	70	**69.3**	**62.5**	**69.9**	**63.5**	0.6	1.0	**70.0**	**63.6**	0.7	1.1
wC202	Residential	NAC-1	55	50	B	70	**69.9**	**61.5**	**70.6**	**62.4**	0.7	0.9	**70.6**	**62.5**	0.7	1.0
wC204	Residential	NAC-1	55	50	B	70	**64.9**	**59.8**	**65.5**	**60.7**	0.6	0.9	**68.2**	**61.3**	3.3	1.5
wC205	Residential	NAC-1	55	50	B	70	**63.4**	**60.0**	**64.0**	**60.9**	0.6	0.9	**64.1**	**61.0**	0.7	1.0
wC206	Residential	NAC-1	55	50	B	70	**62.4**	**59.5**	**63.0**	**60.4**	0.6	0.9	**63.1**	**60.5**	0.7	1.0
wC208	Residential	NAC-1	55	50	B	70	**62.1**	**59.6**	**62.7**	**60.4**	0.6	0.8	**62.8**	**60.5**	0.7	0.9
wC210	Residential	NAC-1	55	50	B	70	**61.3**	**58.9**	**61.9**	**59.8**	0.6	0.9	**62.0**	**59.9**	0.7	1.0
wC211	Residential	NAC-1	55	50	B	70	**61.6**	**59.2**	**62.3**	**60.1**	0.7	0.9	**62.4**	**60.2**	0.8	1.0
wC213	Residential	NAC-1	55	50	B	70	**60.9**	**58.7**	**61.5**	**59.6**	0.6	0.9	**61.6**	**59.7**	0.7	1.0
wC214	Residential	NAC-1	55	50	B	70	**61.3**	**59.2**	**61.9**	**60.0**	0.6	0.8	**62.0**	**60.1**	0.7	0.9
wC215	Residential	NAC-1	55	50	B	70	**61.2**	**59.1**	**61.8**	**60.0**	0.6	0.9	**61.9**	**60.1**	0.7	1.0
wC216	Residential	NAC-1	55	50	B	70	**61.9**	**59.9**	**62.6**	**60.7**	0.7	0.8	**62.7**	**60.9**	0.8	1.0
wC217	Residential	NAC-1	55	50	B	70	**59.7**	**57.8**	**60.4**	**58.6**	0.7	0.8	**62.0**	**60.2**	2.3	2.4
wC218	Residential	NAC-1	55	50	B	70	**59.4**	**57.3**	**60.0**	**58.1**	0.6	0.8	**59.7**	**58.0**	0.3	0.7
wC301	Residential	NAC-1	55	50	B	70	**60.0**	**55.6**	**60.6**	**56.5**	0.6	0.9	**63.8**	**56.8**	3.8	1.2
wC303	Residential	NAC-1	55	50	B	70	**58.7**	**55.8**	**59.3**	**56.6**	0.6	0.8	**59.4**	**56.7**	0.7	0.9
wC305	Residential	NAC-1	55	50	B	70	**58.1**	**55.7**	**58.7**	**56.5**	0.6	0.8	**58.8**	**56.6**	0.7	0.9
wC307	Residential	NAC-1	55	50	B	70	**57.8**	**55.6**	**58.5**	**56.5**	0.7	0.9	**58.5**	**56.5**	0.7	0.9
wC309	Residential	NAC-1	55	50	B	70	**57.5**	**55.5**	**58.2**	**56.3**	0.7	0.8	**58.2**	**56.4**	0.7	0.9
wC311	Residential	NAC-1	55	50	B	70	**57.3**	**55.4**	**58.0**	**56.2**	0.7	0.8	**58.1**	**56.3**	0.8	0.9
wC312	Residential	NAC-1	55	50	B	70	**57.4**	**55.6**	**58.1**	**56.4**	0.7	0.8	**58.2**	**56.5**	0.8	0.9
wC314	Residential	NAC-1	55	50	B	70	**57.3**	**55.5**	**58.0**	**56.4**	0.7	0.9	**58.1**	**56.5**	0.8	1.0
wC315	Residential	NAC-1	55	50	B	70	**56.3**	**54.5**	**56.9**	**55.3**	0.6	0.8	**57.0**	**55.4**	0.7	0.9
Receivers - West side Block D (36th Street to 35th Street)																
wD101	Residential	NAC-1	55	50	B	70	**73.6**	**69.8**	**74.2**	**70.7**	0.6	0.9	**74.3**	**70.9**	0.7	1.1
wD102	Residential	NAC-1	55	50	B	70	**73.1**	**69.7**	**73.8**	**70.6**	0.7	0.9	**73.9**	**70.8**	0.8	1.1
wD103	Residential	NAC-1	55	50	B	70	**73.5**	**69.8**	**74.1**	**70.8**	0.6	1.0	**74.2**	**70.9**	0.7	1.1
wD104	Residential	NAC-1	55	50	B	70	**73.3**	**69.9**	**73.9**	**70.8**	0.6	0.9	**74.0**	**71.0**	0.7	1.1
wD105	Residential	NAC-1	55	50	B	70	**73.5**	**70.0**	**74.1**	**70.9**	0.6	0.9	**74.2**	**71.1**	0.7	1.1
wD106	Residential	NAC-1	55	50	B	70	**73.3**	**70.0**	**73.9**	**70.9**	0.6	0.9	**74.1**	**71.2**	0.8	1.2
wD107	Residential	NAC-1	55	50	B	70	**73.1**	**70.0**	**73.8**	**70.9**	0.7	0.9	**73.9**	**71.1**	0.8	1.1
wD108	Residential	NAC-1	55	50	B	70	**73.2**	**70.1**	**73.8**	**71.0**	0.6	0.9	**74.0**	**71.2**	0.8	1.1

Table 5
Nighttime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
wD109	Residential	NAC-1	55	50	B	70	**72.9**	**69.9**	**73.5**	**70.8**	0.6	0.9	**73.7**	**71.0**	0.8	1.1
wD110	Residential	NAC-1	55	50	B	70	**72.7**	**69.5**	**73.3**	**70.4**	0.6	0.9	**73.4**	**70.6**	0.7	1.1
wD111	Residential	NAC-1	55	50	B	70	**72.8**	**69.5**	**73.4**	**70.4**	0.6	0.9	**73.6**	**70.6**	0.8	1.1
wD112	Residential	NAC-1	55	50	B	70	**72.4**	**69.1**	**73.0**	**70.0**	0.6	0.9	**73.1**	**70.3**	0.7	1.2
wD113	Residential	NAC-1	55	50	B	70	**72.6**	**69.2**	**73.2**	**70.1**	0.6	0.9	**73.3**	**70.3**	0.7	1.1
wD114	Residential	NAC-1	55	50	B	70	**72.9**	**68.4**	**73.5**	**69.3**	0.6	0.9	**73.6**	**69.5**	0.7	1.1
wD115	Residential	NAC-1	55	50	B	70	**66.9**	**61.3**	**67.6**	**62.3**	0.7	1.0	**67.7**	**62.4**	0.8	1.1
wD201	Residential	NAC-1	55	50	B	70	**67.3**	**61.5**	**67.9**	**62.4**	0.6	0.9	**68.0**	**62.5**	0.7	1.0
wD202	Residential	NAC-1	55	50	B	70	**67.0**	**60.7**	**67.6**	**61.7**	0.6	1.0	**67.6**	**61.8**	0.6	1.1
wD203	Residential	NAC-1	55	50	B	70	**66.6**	**60.0**	**67.2**	**60.9**	0.6	0.9	**67.2**	**61.0**	0.6	1.0
wD204	Residential	NAC-1	55	50	B	70	**66.0**	**59.2**	**66.6**	**60.2**	0.6	1.0	**66.7**	**60.3**	0.7	1.1
wD205	Residential	NAC-1	55	50	B	70	**63.7**	**60.8**	**64.3**	**61.6**	0.6	0.8	**64.4**	**61.7**	0.7	0.9
wD207	Residential	NAC-1	55	50	B	70	**62.8**	**60.6**	**63.4**	**61.4**	0.6	0.8	**63.5**	**61.5**	0.7	0.9
wD210	Residential	NAC-1	55	50	B	70	**62.5**	**60.5**	**63.2**	**61.3**	0.7	0.8	**63.2**	**61.4**	0.7	0.9
wD211	Residential	NAC-1	55	50	B	70	**62.7**	**60.5**	**63.3**	**61.3**	0.6	0.8	**63.4**	**61.4**	0.7	0.9
wD212	Residential	NAC-1	55	50	B	70	**62.6**	**60.2**	**63.2**	**60.9**	0.6	0.7	**63.3**	**61.1**	0.7	0.9
wD214	Residential	NAC-1	55	50	B	70	**63.0**	**59.6**	**63.6**	**60.4**	0.6	0.8	**63.6**	**60.6**	0.6	1.0
wD215	Residential	NAC-1	55	50	B	70	**67.5**	**58.8**	**68.2**	**59.7**	0.7	0.9	**68.2**	**59.8**	0.7	1.0
wD302	Residential	NAC-1	55	50	B	70	**63.3**	**55.9**	**63.9**	**56.8**	0.6	0.9	**63.9**	**56.9**	0.6	1.0
wD304	Residential	NAC-1	55	50	B	70	**58.9**	**56.2**	**59.5**	**57.0**	0.6	0.8	**59.6**	**57.1**	0.7	0.9
wD306	Residential	NAC-1	55	50	B	70	**58.5**	**56.3**	**59.1**	**57.1**	0.6	0.8	**59.2**	**57.2**	0.7	0.9
wD308	Residential	NAC-1	55	50	B	70	**58.4**	**56.3**	**59.0**	**57.0**	0.6	0.7	**59.0**	**57.1**	0.6	0.8
wD310	Residential	NAC-1	55	50	B	70	**58.2**	**56.0**	**58.8**	**56.8**	0.6	0.8	**58.9**	**56.9**	0.7	0.9
wD312	Residential	NAC-1	55	50	B	70	**58.4**	**55.7**	**58.9**	**56.5**	0.5	0.8	**59.0**	**56.6**	0.6	0.9
wD313	Residential	NAC-1	55	50	B	70	**61.4**	**54.6**	**62.1**	**55.6**	0.7	1.0	**62.1**	**55.6**	0.7	1.0
wD314	Residential	NAC-1	55	50	B	70	**62.1**	**53.9**	**62.8**	**54.9**	0.7	1.0	**62.8**	**54.9**	0.7	1.0
Receivers - West side Block E (35th Street to 34th Street)																
wE101	Residential	NAC-1	55	50	B	70	**71.5**	**67.7**	**72.1**	**68.6**	0.6	0.9	**72.2**	**68.8**	0.7	1.1
wE102	Residential	NAC-1	55	50	B	70	**69.3**	**66.0**	**69.9**	**66.8**	0.6	0.8	**70.0**	**67.0**	0.7	1.0
wE103	Residential	NAC-1	55	50	B	70	**69.5**	**65.8**	**70.1**	**66.7**	0.6	0.9	**70.2**	**66.8**	0.7	1.0
wE104	Residential	NAC-1	55	50	B	70	**71.5**	**66.6**	**72.1**	**67.6**	0.6	1.0	**72.3**	**67.9**	0.8	1.3
wE105	Residential	NAC-1	55	50	B	70	**70.9**	**65.0**	**71.5**	**66.0**	0.6	1.0	**71.6**	**66.3**	0.7	1.3
wE106	Residential	NAC-1	55	50	B	70	**70.3**	**63.9**	**70.9**	**64.9**	0.6	1.0	**71.0**	**65.1**	0.7	1.2
wE107	Residential	NAC-1	55	50	B	70	**69.7**	**63.4**	**70.2**	**64.3**	0.5	0.9	**70.2**	**64.5**	0.5	1.1
wE108	Residential	NAC-1	55	50	B	70	**70.0**	**62.6**	**70.5**	**63.4**	0.5	0.8	**70.3**	**63.5**	0.3	0.9
wE109	Residential	NAC-1	55	50	B	70	**69.8**	**62.6**	**70.3**	**63.3**	0.5	0.7	**69.9**	**63.2**	0.1	0.6
wE110	Residential	NAC-1	55	50	B	70	**69.8**	**62.5**	**70.2**	**63.3**	0.4	0.8	**69.9**	**63.1**	0.1	0.6
wE111	Residential	NAC-1	55	50	B	70	**69.1**	**62.2**	**69.6**	**62.9**	0.5	0.7	**69.3**	**62.8**	0.2	0.6
wE112	Residential	NAC-1	55	50	B	70	**68.4**	**61.6**	**68.9**	**62.4**	0.5	0.8	**68.6**	**62.3**	0.2	0.7
wE113	Residential	NAC-1	55	50	B	70	**68.0**	**61.1**	**68.5**	**61.9**	0.5	0.8	**68.3**	**61.8**	0.3	0.7
wE114	Residential	NAC-1	55	50	B	70	**66.4**	**62.4**	**66.9**	**63.3**	0.5	0.9	**66.7**	**63.4**	0.3	1.0
wE201	Residential	NAC-1	55	50	B	70	**69.2**	**63.1**	**69.8**	**64.0**	0.6	0.9	**69.9**	**64.1**	0.7	1.0
wE202	Residential	NAC-1	55	50	B	70	**67.2**	**63.4**	**67.8**	**64.3**	0.6	0.9	**67.9**	**64.4**	0.7	1.0
wE203	Residential	NAC-1	55	50	B	70	**66.2**	**63.1**	**66.7**	**63.9**	0.5	0.8	**66.7**	**64.0**	0.5	0.9
wE204	Residential	NAC-1	55	50	B	70	**65.8**	**62.8**	**66.3**	**63.6**	0.5	0.8	**66.3**	**63.7**	0.5	0.9
wE206	Residential	NAC-1	55	50	B	70	**65.5**	**62.6**	**66.1**	**63.4**	0.6	0.8	**66.0**	**63.5**	0.5	0.9
wE207	Residential	NAC-1	55	50	B	70	**65.5**	**62.6**	**66.0**	**63.4**	0.5	0.8	**65.9**	**63.5**	0.4	0.9
wE209	Residential	NAC-1	55	50	B	70	**65.5**	**62.6**	**66.0**	**63.4**	0.5	0.8	**65.8**	**63.4**	0.3	0.8
wE210	Residential	NAC-1	55	50	B	70	**65.3**	**62.4**	**65.8**	**63.2**	0.5	0.8	**65.6**	**63.2**	0.3	0.8
wE212	Residential	NAC-1	55	50	B	70	**65.2**	**62.1**	**65.6**	**62.9**	0.4	0.8	**65.4**	**63.0**	0.2	0.9
wE214	Residential	NAC-1	55	50	B	70	**64.6**	**61.8**	**65.1**	**62.6**	0.5	0.8	**64.9**	**62.7**	0.3	0.9
wE302	Residential	NAC-1	55	50	B	70	**65.3**	**61.0**	**65.9**	**61.8**	0.6	0.8	**65.9**	**61.9**	0.6	0.9
wE304	Residential	NAC-1	55	50	B	70	**64.1**	**61.1**	**64.7**	**61.9**	0.6	0.8	**64.7**	**62.0**	0.6	0.9
wE306	Residential	NAC-1	55	50	B	70	**63.6**	**61.1**	**64.2**	**61.9**	0.6	0.8	**64.2**	**61.9**	0.6	0.8
wE308	Residential	NAC-1	55	50	B	70	**63.3**	**61.0**	**63.9**	**61.7**	0.6	0.7	**63.8**	**61.7**	0.5	0.7

Table 5
Nighttime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
wE309	Residential	NAC-1	55	50	B	70	**63.1**	**60.8**	**63.6**	**61.6**	0.5	0.8	**63.5**	**61.6**	0.4	0.8
wE311	Residential	NAC-1	55	50	B	70	**62.9**	**60.7**	**63.5**	**61.5**	0.6	0.8	**63.3**	**61.4**	0.4	0.7
wE312	Residential	NAC-1	55	50	B	70	**62.6**	**60.5**	**63.1**	**61.2**	0.5	0.7	**62.9**	**61.2**	0.3	0.7
wE313	Residential	NAC-1	55	50	B	70	**61.6**	**59.7**	**62.2**	**60.5**	0.6	0.8	**62.0**	**60.4**	0.4	0.7
Receivers - West side Block F (34th Street to 32nd Street)																
wF101	Residential	NAC-1	55	50	B	70	**66.8**	**60.4**	**67.4**	**61.3**	0.6	0.9	**67.5**	**61.5**	0.7	1.1
wF102	Residential	NAC-1	55	50	B	70	**65.1**	**62.3**	**65.7**	**63.2**	0.6	0.9	**65.6**	**63.3**	0.5	1.0
wF103	Residential	NAC-1	55	50	B	70	**66.6**	**59.8**	**67.3**	**60.8**	0.7	1.0	**67.4**	**61.1**	0.8	1.3
wF104	Residential	NAC-1	55	50	B	70	**65.9**	**59.3**	**66.6**	**60.3**	0.7	1.0	**66.8**	**60.6**	0.9	1.3
wF106	Residential	NAC-1	55	50	B	70	**65.7**	**59.1**	**66.5**	**60.1**	0.8	1.0	**66.7**	**60.5**	1.0	1.4
wF108	Residential	NAC-1	55	50	B	70	**65.6**	**59.3**	**66.3**	**60.3**	0.7	1.0	**66.6**	**60.7**	1.0	1.4
wF111	Residential	NAC-1	55	50	B	70	**65.5**	**59.2**	**66.3**	**60.3**	0.8	1.1	**66.5**	**60.7**	1.0	1.5
wF113	Residential	NAC-1	55	50	B	70	**65.8**	**59.0**	**66.5**	**60.0**	0.7	1.0	**66.8**	**60.5**	1.0	1.5
wF114	Residential	NAC-1	55	50	B	70	**65.9**	**59.0**	**66.6**	**60.1**	0.7	1.1	**66.9**	**60.6**	1.0	1.6
wF202	Residential	NAC-1	55	50	B	70	**63.6**	**61.3**	**64.2**	**62.1**	0.6	0.8	**64.1**	**62.2**	0.5	0.9
wF204	Residential	NAC-1	55	50	B	70	**63.1**	**61.2**	**63.6**	**62.0**	0.5	0.8	**63.6**	**62.0**	0.5	0.8
wF206	Residential	NAC-1	55	50	B	70	**62.7**	**61.0**	**63.3**	**61.8**	0.6	0.8	**63.3**	**61.9**	0.6	0.9
wF208	Residential	NAC-1	55	50	B	70	**62.5**	**61.0**	**63.2**	**61.8**	0.7	0.8	**63.2**	**61.8**	0.7	0.8
wF209	Residential	NAC-1	55	50	B	70	**62.7**	**61.2**	**63.4**	**62.0**	0.7	0.8	**63.4**	**62.0**	0.7	0.8
wF211	Residential	NAC-1	55	50	B	70	**62.7**	**61.2**	**63.3**	**62.0**	0.6	0.8	**63.3**	**62.0**	0.6	0.8
wF213	Residential	NAC-1	55	50	B	70	**62.9**	**61.4**	**63.6**	**62.2**	0.7	0.8	**63.6**	**62.3**	0.7	0.9
wF213C	Residential	NAC-1	55	50	B	70	**62.5**	**61.1**	**63.1**	**61.9**	0.6	0.8	**63.1**	**61.8**	0.6	0.7
wF302	Residential	NAC-1	55	50	B	70	**61.9**	**60.0**	**62.4**	**60.8**	0.5	0.8	**62.3**	**60.7**	0.4	0.7
wF304	Residential	NAC-1	55	50	B	70	**61.6**	**59.9**	**62.2**	**60.7**	0.6	0.8	**62.0**	**60.6**	0.4	0.7
wF306	Residential	NAC-1	55	50	B	70	**61.4**	**59.9**	**62.0**	**60.6**	0.6	0.7	**61.8**	**60.5**	0.4	0.6
wF308	Residential	NAC-1	55	50	B	70	**61.3**	**59.9**	**61.9**	**60.7**	0.6	0.8	**61.8**	**60.5**	0.5	0.6
wF310	Residential	NAC-1	55	50	B	70	**61.3**	**60.0**	**62.0**	**60.8**	0.7	0.8	**61.8**	**60.6**	0.5	0.6
wF312	Residential	NAC-1	55	50	B	70	**61.5**	**60.1**	**62.2**	**60.9**	0.7	0.8	**62.0**	**60.7**	0.5	0.6
wF313	Residential	NAC-1	55	50	B	70	**61.6**	**60.2**	**62.3**	**61.1**	0.7	0.9	**62.1**	**60.8**	0.5	0.6
wF120	Residential	NAC-1	55	50	B	70	**65.9**	**59.0**	**66.6**	**60.0**	0.7	1.0	**66.9**	**60.5**	1.0	1.5
wF124	General	NAC-2	70	65	C	70	66.0	59.0	66.7	60.1	0.7	1.1	67.1	60.7	1.1	1.7
wF124C	General	NAC-2	70	65	C	70	64.9	62.4	65.5	63.3	0.6	0.9	65.5	63.2	0.6	0.8
wF221	Residential	NAC-1	55	50	B	70	**62.8**	**61.2**	**63.5**	**62.0**	0.7	0.8	**63.5**	**62.0**	0.7	0.8
wF222	Residential	NAC-1	55	50	B	70	**62.9**	**61.3**	**63.6**	**62.2**	0.7	0.9	**63.6**	**62.1**	0.7	0.8
wF322	Residential	NAC-1	55	50	B	70	**61.6**	**60.2**	**62.3**	**61.0**	0.7	0.8	**62.1**	**60.7**	0.5	0.5
wF324	Residential	NAC-1	55	50	B	70	**61.9**	**60.3**	**62.6**	**61.2**	0.7	0.9	**62.4**	**60.9**	0.5	0.6
wF326	Residential	NAC-1	55	50	B	70	**62.1**	**60.5**	**62.8**	**61.4**	0.7	0.9	**62.6**	**61.1**	0.5	0.6
wF328	Residential	NAC-1	55	50	B	70	**62.4**	**60.8**	**63.2**	**61.6**	0.8	0.8	**62.9**	**61.2**	0.5	0.4
wF330	Residential	NAC-1	55	50	B	70	**62.7**	**61.0**	**63.5**	**61.9**	0.8	0.9	**63.2**	**61.4**	0.5	0.4
wF331	Residential	NAC-1	55	50	B	70	**63.1**	**61.2**	**63.8**	**62.1**	0.7	0.9	**63.5**	**61.6**	0.4	0.4
wF332	Residential	NAC-1	55	50	B	70	**63.5**	**61.5**	**64.2**	**62.4**	0.7	0.9	**63.9**	**61.9**	0.4	0.4
Receivers - West side Block G (32nd Street to 31st Street)																
wG101	General	NAC-2	70	65	C	70	66.2	62.5	66.9	63.5	0.7	1.0	68.0	63.3	1.8	0.8
wG105	Residential	NAC-1	55	50	B	70	**68.9**	**63.8**	**69.4**	**64.8**	0.5	1.0	**69.9**	**64.1**	1.0	0.3
wG106	General	NAC-2	70	65	C	70	69.1	**65.7**	69.8	**66.7**	0.7	1.0	69.8	**66.0**	0.7	0.3
wG106C	General	NAC-2	70	65	C	70	66.8	64.2	67.5	**65.1**	0.7	0.9	67.4	64.6	0.6	0.4
wG201	Residential	NAC-1	55	50	B	70	**65.0**	**62.9**	**65.6**	**63.7**	0.6	0.8	**65.6**	**63.4**	0.6	0.5
wG202	Residential	NAC-1	55	50	B	70	**65.2**	**62.9**	**65.9**	**63.8**	0.7	0.9	**65.7**	**63.4**	0.5	0.5
wG203	Residential	NAC-1	55	50	B	70	**65.8**	**63.3**	**66.4**	**64.2**	0.6	0.9	**66.4**	**63.7**	0.6	0.4
wG204	Residential	NAC-1	55	50	B	70	**66.1**	**63.6**	**66.8**	**64.5**	0.7	0.9	**66.6**	**63.9**	0.5	0.3
wG205	General	NAC-2	70	65	C	70	66.9	64.0	67.5	**65.0**	0.6	1.0	67.3	64.3	0.4	0.3
wG301	Residential	NAC-1	55	50	B	70	**64.2**	**62.0**	**64.9**	**62.9**	0.7	0.9	**64.6**	**62.4**	0.4	0.4
wG303	Residential	NAC-1	55	50	B	70	**64.6**	**62.4**	**65.3**	**63.3**	0.7	0.9	**65.0**	**62.7**	0.4	0.3
wG305	Residential	NAC-1	55	50	B	70	**65.2**	**62.8**	**65.9**	**63.7**	0.7	0.9	**65.6**	**63.1**	0.4	0.3
Receivers - West side Block H (31st Street to Lake Street)																

Table 5
Nighttime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
wH101	Commercial	NAC-2	70	65	E	75	69.9	**67.1**	**70.6**	**68.0**	0.7	0.9	**70.8**	**67.2**	0.9	0.1
wH103	Commercial	NAC-2	70	65	E	75	**72.7**	**68.3**	**73.5**	**69.4**	0.8	1.1	**71.8**	**66.3**	-0.9	-2.0
wH104	Commercial	NAC-2	70	65	E	75	**72.1**	**67.3**	**73.4**	**68.6**	1.3	1.3	**72.7**	**67.0**	0.6	-0.3
wH205	Commercial	NAC-2	70	65	E	75	**70.6**	64.4	**72.1**	**66.2**	1.5	1.8	**71.7**	**65.3**	1.1	0.9
wH301	Commercial	NAC-2	70	65	E	75	62.3	59.6	63.1	60.6	0.8	1.0	62.7	59.8	0.4	0.2
Receivers - West side Block I (Lake Street to Greenway)																
wI101	Commercial	NAC-2	70	65	E	75	69.7	63.3	**71.1**	**65.0**	1.4	1.7	**72.4**	64.6	2.7	1.3
wI102	Commercial	NAC-2	70	65	E	75	**73.1**	**67.5**	**74.4**	**69.0**	1.3	1.5	N/A	N/A		
wI103	Commercial	NAC-2	70	65	E	75	69.9	**67.2**	**70.6**	**68.2**	0.7	1.0	69.4	**65.9**	-0.5	-1.3
wI201	Commercial	NAC-2	70	65	E	75	68.2	63.8	69.5	**65.2**	1.3	1.4	**70.2**	63.7	2.0	-0.1
wI202	Commercial	NAC-2	70	65	E	75	69.8	64.1	**71.1**	**65.7**	1.3	1.6	**71.9**	64.4	2.1	0.3
wI301	Commercial	NAC-2	70	65	E	75	62.2	59.7	63.0	60.8	0.8	1.1	60.6	56.9	-1.6	-2.8
Receivers - West side Block J (Greenway to 28th Street) - wJ001 is removed																
wJ001	Commercial	NAC-2	70	65	E	75	**70.0**	**66.0**	**70.8**	**67.0**	0.8	1.0	N/A	N/A		
wJ003	Residential	NAC-1	55	50	B	70	**67.6**	**64.6**	**68.3**	**65.6**	0.7	1.0	**63.6**	**60.5**	-4.0	-4.1
wJ004	Residential	NAC-1	55	50	B	70	**65.9**	**63.0**	**66.5**	**63.9**	0.6	0.9	**64.4**	**61.1**	-1.5	-1.9
wJ005	Residential	NAC-1	55	50	B	70	**64.8**	**62.5**	**65.4**	**63.4**	0.6	0.9	**64.0**	**61.6**	-0.8	-0.9
wJ006	Residential	NAC-1	55	50	B	70	**65.7**	**61.8**	**66.3**	**62.8**	0.6	1.0	**65.6**	**61.4**	-0.1	-0.4
wJ010	General	NAC-2	70	65	C	70	64.5	62.2	65.2	63.1	0.7	0.9	62.9	60.0	-1.6	-2.2
wJ012	General	NAC-2	70	65	C	70	63.2	61.1	63.9	62.0	0.7	0.9	63.0	60.4	-0.2	-0.7
wJ014	General	NAC-2	70	65	C	70	63.9	61.2	64.5	62.1	0.6	0.9	64.0	60.7	0.1	-0.5
wJ016	General	NAC-2	70	65	C	70	69.0	63.6	69.6	64.6	0.6	1.0	68.2	62.6	-0.8	-1.0
wJ101	Commercial	NAC-2	70	65	E	75	**70.9**	**65.2**	**71.6**	**66.4**	0.7	1.2	**70.1**	63.9	-0.8	-1.3
wJ103	Residential	NAC-1	55	50	B	70	**68.8**	**64.0**	**69.4**	**65.1**	0.6	1.1	**67.9**	**62.7**	-0.9	-1.3
wJ104	Residential	NAC-1	55	50	B	70	**68.7**	**62.1**	**69.4**	**63.4**	0.7	1.3	**67.8**	**60.4**	-0.9	-1.7
wJ105	Residential	NAC-1	55	50	B	70	**68.2**	**61.9**	**68.9**	**63.1**	0.7	1.2	**67.4**	**60.4**	-0.8	-1.5
wJ107	Residential	NAC-1	55	50	B	70	**67.9**	**61.2**	**68.7**	**62.4**	0.8	1.2	**67.3**	**60.0**	-0.6	-1.2
wJ108	Residential	NAC-1	55	50	B	70	**67.8**	**60.7**	**68.5**	**62.0**	0.7	1.3	**67.2**	**59.6**	-0.6	-1.1
wJ109	Residential	NAC-1	55	50	B	70	**67.6**	**60.7**	**68.4**	**61.9**	0.8	1.2	**67.1**	**59.7**	-0.5	-1.0
wJ201	Commercial	NAC-2	70	65	E	75	67.4	64.3	68.1	**65.3**	0.7	1.0	67.0	63.8	-0.4	-0.5
wJ202	Residential	NAC-1	55	50	B	70	**66.4**	**63.4**	**67.1**	**64.4**	0.7	1.0	**65.9**	**63.0**	-0.5	-0.4
wJ203	Residential	NAC-1	55	50	B	70	**65.9**	**63.0**	**66.6**	**64.0**	0.7	1.0	**65.4**	**62.7**	-0.5	-0.3
wJ204	Residential	NAC-1	55	50	B	70	**65.5**	**62.7**	**66.2**	**63.7**	0.7	1.0	**65.0**	**62.4**	-0.5	-0.3
wJ205	Residential	NAC-1	55	50	B	70	**65.2**	**62.4**	**65.9**	**63.4**	0.7	1.0	**64.6**	**62.1**	-0.6	-0.3
wJ207	Residential	NAC-1	55	50	B	70	**64.8**	**62.0**	**65.4**	**63.0**	0.6	1.0	**64.2**	**61.8**	-0.6	-0.2
wJ301	Commercial	NAC-2	70	65	E	75	66.2	63.4	67.0	64.3	0.8	0.9	65.8	62.9	-0.4	-0.5
wJ302	Residential	NAC-1	55	50	B	70	**65.1**	**62.3**	**65.8**	**63.3**	0.7	1.0	**64.6**	**61.9**	-0.5	-0.4
wJ303	Residential	NAC-1	55	50	B	70	**64.8**	**62.0**	**65.5**	**63.0**	0.7	1.0	**64.3**	**61.7**	-0.5	-0.3
wJ304	Residential	NAC-1	55	50	B	70	**64.2**	**61.6**	**65.0**	**62.6**	0.8	1.0	**63.8**	**61.3**	-0.4	-0.3
wJ305	Residential	NAC-1	55	50	B	70	**64.1**	**61.5**	**64.8**	**62.4**	0.7	0.9	**63.6**	**61.2**	-0.5	-0.3
wJ306	Commercial	NAC-2	70	65	E	75	63.7	61.1	64.4	62.1	0.7	1.0	63.2	60.9	-0.5	-0.2
Receivers - West side Block K (28th Street to 26th Street)																
wK100	Residential	NAC-1	55	50	B	70	**64.3**	**62.4**	**65.0**	**63.3**	0.7	0.9	**64.0**	**62.4**	-0.3	0.0
wK101	Residential	NAC-1	55	50	B	70	**63.9**	**62.1**	**64.6**	**63.0**	0.7	0.9	**63.8**	**62.3**	-0.1	0.2
wK102	Residential	NAC-1	55	50	B	70	**63.6**	**61.8**	**64.3**	**62.7**	0.7	0.9	**63.6**	**62.1**	0.0	0.3
wK103	Residential	NAC-1	55	50	B	70	**61.8**	**60.1**	**62.5**	**61.0**	0.7	0.9	**61.9**	**60.6**	0.1	0.5
wK104	Residential	NAC-1	55	50	B	70	**62.9**	**61.3**	**63.6**	**62.2**	0.7	0.9	**63.4**	**61.9**	0.5	0.6
wK105	Residential	NAC-1	55	50	B	70	**60.7**	**59.1**	**61.5**	**60.0**	0.8	0.9	**61.0**	**59.8**	0.3	0.7
wK106	Residential	NAC-1	55	50	B	70	**61.2**	**59.6**	**61.9**	**60.5**	0.7	0.9	**61.4**	**60.1**	0.2	0.5
wK201	Residential	NAC-1	55	50	B	70	**62.6**	**60.3**	**63.3**	**61.1**	0.7	0.8	**63.1**	**60.9**	0.5	0.6
wK201a	Residential	NAC-1	55	50	B	70	**65.5**	**60.8**	**66.1**	**61.8**	0.6	1.0	**66.2**	**61.8**	0.7	1.0
wK201a2	Residential	NAC-1	55	50	B	70	**67.5**	**63.1**	**68.1**	**64.1**	0.6	1.0	**68.5**	**64.3**	1.0	1.2
wK201a3	Residential	NAC-1	55	50	B	70	**68.5**	**65.0**	**69.2**	**65.9**	0.7	0.9	**69.7**	**66.4**	1.2	1.4
wK201b	Residential	NAC-1	55	50	B	70	**64.4**	**60.9**	**65.1**	**61.8**	0.7	0.9	**65.1**	**61.5**	0.7	0.6
wK201b2	Residential	NAC-1	55	50	B	70	**67.0**	**63.3**	**67.7**	**64.3**	0.7	1.0	**67.9**	**64.2**	0.9	0.9

Table 5
Nighttime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
wK201b3	Residential	NAC-1	55	50	B	70	**68.5**	**65.5**	**69.1**	**66.4**	0.6	0.9	**69.4**	**66.6**	0.9	1.1
wK201c	Residential	NAC-1	55	50	B	70	**64.4**	**60.7**	**65.1**	**61.6**	0.7	0.9	**65.2**	**61.3**	0.8	0.6
wK201c2	Residential	NAC-1	55	50	B	70	**65.6**	**62.5**	**66.3**	**63.5**	0.7	1.0	**66.3**	**63.3**	0.7	0.8
wK201c3	Residential	NAC-1	55	50	B	70	**67.0**	**64.4**	**67.7**	**65.3**	0.7	0.9	**67.7**	**65.3**	0.7	0.9
wK201d	Residential	NAC-1	55	50	B	70	**63.2**	**60.1**	**63.9**	**61.0**	0.7	0.9	**64.0**	**60.8**	0.8	0.7
wK201d2	Residential	NAC-1	55	50	B	70	**64.4**	**61.8**	**65.1**	**62.7**	0.7	0.9	**65.1**	**62.6**	0.7	0.8
wK201d3	Residential	NAC-1	55	50	B	70	**65.7**	**63.4**	**66.4**	**64.3**	0.7	0.9	**66.3**	**64.3**	0.6	0.9
wK201e	Residential	NAC-1	55	50	B	70	**62.5**	**59.7**	**63.2**	**60.6**	0.7	0.9	**63.2**	**60.4**	0.7	0.7
wK201e2	Residential	NAC-1	55	50	B	70	**63.6**	**61.2**	**64.3**	**62.1**	0.7	0.9	**64.3**	**62.0**	0.7	0.8
wK201e3	Residential	NAC-1	55	50	B	70	**64.9**	**62.8**	**65.6**	**63.6**	0.7	0.8	**65.5**	**63.6**	0.6	0.8
wK202	Residential	NAC-1	55	50	B	70	**61.7**	**59.1**	**62.3**	**60.0**	0.6	0.9	**61.9**	**59.8**	0.2	0.7
wK203	Residential	NAC-1	55	50	B	70	**61.4**	**58.9**	**62.1**	**59.8**	0.7	0.9	**61.5**	**59.6**	0.1	0.7
wK204	Residential	NAC-1	55	50	B	70	**60.9**	**58.6**	**61.6**	**59.5**	0.7	0.9	**60.7**	**59.3**	-0.2	0.7
wK205	Residential	NAC-1	55	50	B	70	**60.5**	**58.3**	**61.2**	**59.2**	0.7	0.9	**60.4**	**59.0**	-0.1	0.7
wK206	Residential	NAC-1	55	50	B	70	**60.1**	**58.1**	**60.8**	**59.0**	0.7	0.9	**60.1**	**58.8**	0.0	0.7
wK207	Residential	NAC-1	55	50	B	70	**59.9**	**57.9**	**60.6**	**58.8**	0.7	0.9	**59.9**	**58.6**	0.0	0.7
wK208	Residential	NAC-1	55	50	B	70	**59.7**	**57.8**	**60.4**	**58.7**	0.7	0.9	**59.9**	**58.4**	0.2	0.6
wK209	Residential	NAC-1	55	50	B	70	**59.9**	**58.0**	**60.6**	**58.9**	0.7	0.9	**60.3**	**58.5**	0.4	0.5
wK301	Residential	NAC-1	55	50	B	70	**66.5**	**61.6**	**67.1**	**62.6**	0.6	1.0	**66.4**	**61.1**	-0.1	-0.5
wK302	Residential	NAC-1	55	50	B	70	**61.8**	**59.7**	**62.5**	**60.6**	0.7	0.9	**61.7**	**59.2**	-0.1	-0.5
wK303	Residential	NAC-1	55	50	B	70	**61.3**	**59.3**	**62.0**	**60.2**	0.7	0.9	**61.2**	**58.9**	-0.1	-0.4
wK304	Residential	NAC-1	55	50	B	70	**61.0**	**59.1**	**61.7**	**60.0**	0.7	0.9	**60.9**	**58.7**	-0.1	-0.4
wK306	Residential	NAC-1	55	50	B	70	**60.5**	**58.7**	**61.3**	**59.6**	0.8	0.9	**60.3**	**58.3**	-0.2	-0.4
wK307	Residential	NAC-1	55	50	B	70	**60.1**	**58.4**	**60.9**	**59.3**	0.8	0.9	**59.9**	**58.1**	-0.2	-0.3
wK401	Residential	NAC-1	55	50	B	70	**66.0**	**61.3**	**66.7**	**62.3**	0.7	1.0	**65.7**	**60.4**	-0.3	-0.9
wK402	Residential	NAC-1	55	50	B	70	**64.7**	**61.2**	**65.3**	**62.2**	0.6	1.0	**64.3**	**60.3**	-0.4	-0.9
wK403	Residential	NAC-1	55	50	B	70	**63.9**	**61.0**	**64.5**	**61.9**	0.6	0.9	**63.4**	**60.2**	-0.5	-0.8
wK404	Residential	NAC-1	55	50	B	70	**63.1**	**60.7**	**63.8**	**61.6**	0.7	0.9	**62.6**	**60.0**	-0.5	-0.7
wK406	Residential	NAC-1	55	50	B	70	**62.3**	**60.1**	**63.0**	**61.0**	0.7	0.9	**61.7**	**59.4**	-0.6	-0.7
wK407	Residential	NAC-1	55	50	B	70	**61.4**	**59.4**	**62.1**	**60.3**	0.7	0.9	**60.9**	**58.8**	-0.5	-0.6
wK121	Residential	NAC-1	55	50	B	70	**60.2**	**58.7**	**60.9**	**59.6**	0.7	0.9	**60.5**	**59.2**	0.3	0.5
wK122	Residential	NAC-1	55	50	B	70	**60.4**	**59.0**	**61.2**	**59.9**	0.8	0.9	**60.8**	**59.5**	0.4	0.5
wK123	Residential	NAC-1	55	50	B	70	**60.8**	**59.4**	**61.6**	**60.2**	0.8	0.8	**61.2**	**59.9**	0.4	0.5
wK124	Residential	NAC-1	55	50	B	70	**60.5**	**59.0**	**61.2**	**59.9**	0.7	0.9	**60.8**	**59.6**	0.3	0.6
wK125	Residential	NAC-1	55	50	B	70	**62.1**	**60.6**	**62.9**	**61.5**	0.8	0.9	**62.6**	**61.2**	0.5	0.6
wK127	Residential	NAC-1	55	50	B	70	**62.6**	**61.0**	**63.4**	**61.9**	0.8	0.9	**62.9**	**61.4**	0.3	0.4
wK128	Residential	NAC-1	55	50	B	70	**62.9**	**61.3**	**63.7**	**62.1**	0.8	0.8	**63.0**	**61.5**	0.1	0.2
wK129	Residential	NAC-1	55	50	B	70	**62.7**	**61.1**	**63.5**	**61.9**	0.8	0.8	**62.7**	**61.2**	0.0	0.1
wK129b2	Residential	NAC-1	55	50	B	70	**63.6**	**62.0**	**64.3**	**62.9**	0.7	0.9	**63.8**	**62.3**	0.2	0.3
wK129b3	Residential	NAC-1	55	50	B	70	**66.0**	**64.4**	**66.7**	**65.3**	0.7	0.9	**65.7**	**64.3**	-0.3	-0.1
wK130	Residential	NAC-1	55	50	B	70	**62.3**	**60.6**	**63.0**	**61.4**	0.7	0.8	**62.3**	**60.8**	0.0	0.2
wK130b2	Residential	NAC-1	55	50	B	70	**63.4**	**61.6**	**64.1**	**62.5**	0.7	0.9	**63.7**	**61.9**	0.3	0.3
wK130b3	Residential	NAC-1	55	50	B	70	**65.4**	**63.8**	**66.1**	**64.7**	0.7	0.9	**65.2**	**63.8**	-0.2	0.0
wK132	Residential	NAC-1	55	50	B	70	**63.8**	**62.1**	**64.5**	**62.9**	0.7	0.8	**63.7**	**62.2**	-0.1	0.1
wK135	Residential	NAC-1	55	50	B	70	**64.0**	**62.1**	**64.7**	**63.0**	0.7	0.9	**63.9**	**62.2**	-0.1	0.1
wK137	Residential	NAC-1	55	50	B	70	**64.5**	**61.4**	**65.1**	**62.4**	0.6	1.0	**64.7**	**61.6**	0.2	0.2
wK138	Residential	NAC-1	55	50	B	70	**65.9**	**60.4**	**66.5**	**61.4**	0.6	1.0	**66.3**	**60.7**	0.4	0.3
wK221	Residential	NAC-1	55	50	B	70	**63.6**	**60.9**	**64.3**	**61.8**	0.7	0.9	**64.0**	**61.3**	0.4	0.4
wK223	Residential	NAC-1	55	50	B	70	**65.5**	**59.4**	**66.2**	**60.5**	0.7	1.1	**66.1**	**60.0**	0.6	0.6
wK321	Residential	NAC-1	55	50	B	70	**61.2**	**59.8**	**62.0**	**60.7**	0.8	0.9	**61.5**	**60.3**	0.3	0.5
wK322	Residential	NAC-1	55	50	B	70	**61.2**	**59.8**	**61.9**	**60.6**	0.7	0.8	**61.5**	**60.2**	0.3	0.4
wK323	Residential	NAC-1	55	50	B	70	**61.1**	**59.6**	**61.8**	**60.5**	0.7	0.9	**61.4**	**60.1**	0.3	0.5
wK324	Residential	NAC-1	55	50	B	70	**61.2**	**59.7**	**61.9**	**60.5**	0.7	0.8	**61.6**	**60.1**	0.4	0.4
wK325	Residential	NAC-1	55	50	B	70	**61.3**	**59.5**	**62.0**	**60.4**	0.7	0.9	**61.7**	**60.0**	0.4	0.5
wK326	Residential	NAC-1	55	50	B	70	**61.5**	**59.4**	**62.2**	**60.3**	0.7	0.9	**61.9**	**59.8**	0.4	0.4

Table 5
Nighttime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
wK327	Residential	NAC-1	55	50	B	70	**62.0**	**59.5**	**62.7**	**60.3**	0.7	0.8	**62.4**	**59.8**	0.4	0.3
wK328	Residential	NAC-1	55	50	B	70	**62.7**	**58.8**	**63.4**	**59.8**	0.7	1.0	**63.2**	**59.2**	0.5	0.4
wK329	Residential	NAC-1	55	50	B	70	**63.6**	**57.8**	**64.3**	**58.9**	0.7	1.1	**64.1**	**58.3**	0.5	0.5
wK421	Residential	NAC-1	55	50	B	70	**59.9**	**58.2**	**60.6**	**59.1**	0.7	0.9	**60.2**	**59.0**	0.3	0.8
wK422	Residential	NAC-1	55	50	B	70	**60.3**	**58.7**	**61.0**	**59.6**	0.7	0.9	**60.5**	**59.3**	0.2	0.6
wK423	Residential	NAC-1	55	50	B	70	**60.6**	**59.1**	**61.3**	**59.9**	0.7	0.8	**60.7**	**59.5**	0.1	0.4
wK424	Residential	NAC-1	55	50	B	70	**59.8**	**58.3**	**60.5**	**59.2**	0.7	0.9	**60.2**	**58.9**	0.4	0.6
wK425	Residential	NAC-1	55	50	B	70	**59.8**	**58.4**	**60.6**	**59.2**	0.8	0.8	**60.2**	**58.9**	0.4	0.5
wK426	Residential	NAC-1	55	50	B	70	**59.7**	**58.2**	**60.4**	**59.0**	0.7	0.8	**60.1**	**58.8**	0.4	0.6
Receivers - West side Block L1 (26th Street to 24th Street)																
wL001	Residential	NAC-1	55	50	B	70	**63.7**	**61.5**	**64.4**	**62.4**	0.7	0.9	**63.5**	**61.4**	-0.2	-0.1
wL002	Residential	NAC-1	55	50	B	70	**61.2**	**59.6**	**61.9**	**60.4**	0.7	0.8	**61.1**	**59.7**	-0.1	0.1
wL004	Residential	NAC-1	55	50	B	70	**60.6**	**59.1**	**61.4**	**60.0**	0.8	0.9	**60.6**	**59.3**	0.0	0.2
wL005	Residential	NAC-1	55	50	B	70	**60.2**	**58.6**	**60.9**	**59.5**	0.7	0.9	**60.2**	**58.9**	0.0	0.3
wL005B	Residential	NAC-1	55	50	B	70	**62.4**	**60.7**	**63.1**	**61.6**	0.7	0.9	**62.2**	**60.9**	-0.2	0.2
wL006	Residential	NAC-1	55	50	B	70	**59.9**	**58.3**	**60.6**	**59.2**	0.7	0.9	**60.0**	**58.6**	0.1	0.3
wL006B	Residential	NAC-1	55	50	B	70	**62.0**	**60.3**	**62.7**	**61.2**	0.7	0.9	**61.9**	**60.5**	-0.1	0.2
wL007	Residential	NAC-1	55	50	B	70	**61.4**	**59.6**	**62.1**	**60.6**	0.7	1.0	**61.6**	**60.1**	0.2	0.5
wL008	Residential	NAC-1	55	50	B	70	**62.3**	**58.0**	**63.0**	**59.2**	0.7	1.2	**62.7**	**58.8**	0.4	0.8
wL009	Residential	NAC-1	55	50	B	70	**63.7**	**57.9**	**64.4**	**59.3**	0.7	1.4	**64.0**	**58.5**	0.3	0.6
wL009C	Residential	NAC-1	55	50	B	70	**62.3**	**59.6**	**63.0**	**60.6**	0.7	1.0	**62.5**	**60.0**	0.2	0.4
wL201	Residential	NAC-1	55	50	B	70	**66.9**	**59.5**	**67.6**	**60.6**	0.7	1.1	**67.7**	**60.4**	0.8	0.9
wL202	Residential	NAC-1	55	50	B	70	**65.7**	**60.1**	**66.4**	**61.1**	0.7	1.0	**66.4**	**60.8**	0.7	0.7
wL203	Residential	NAC-1	55	50	B	70	**64.6**	**60.1**	**65.3**	**61.1**	0.7	1.0	**65.3**	**60.7**	0.7	0.6
wL204	Residential	NAC-1	55	50	B	70	**63.6**	**60.0**	**64.3**	**60.9**	0.7	0.9	**64.3**	**60.5**	0.7	0.5
wL205	Residential	NAC-1	55	50	B	70	**63.1**	**60.1**	**63.8**	**61.0**	0.7	0.9	**63.8**	**60.5**	0.7	0.4
wL206	Residential	NAC-1	55	50	B	70	**62.3**	**59.8**	**62.9**	**60.7**	0.6	0.9	**62.9**	**60.2**	0.6	0.4
wL208	Residential	NAC-1	55	50	B	70	**61.4**	**59.3**	**62.1**	**60.2**	0.7	0.9	**61.8**	**59.7**	0.4	0.4
wL209	Commercial	NAC-2	70	65	E	75	60.7	58.9	61.4	59.8	0.7	0.9	60.6	59.2	-0.1	0.3
wL210	Residential	NAC-1	55	50	B	70	**61.4**	**59.1**	**62.0**	**60.0**	0.6	0.9	**61.5**	**59.4**	0.1	0.3
wL211	Residential	NAC-1	55	50	B	70	**62.4**	**58.2**	**63.0**	**59.4**	0.6	1.2	**62.6**	**58.6**	0.2	0.4
wL301	Residential	NAC-1	55	50	B	70	**65.9**	**57.0**	**66.7**	**58.1**	0.8	1.1	**66.9**	**58.3**	1.0	1.3
wL302	Residential	NAC-1	55	50	B	70	**66.3**	**57.8**	**67.0**	**58.9**	0.7	1.1	**67.1**	**58.7**	0.8	0.9
wL303	Residential	NAC-1	55	50	B	70	**64.2**	**58.7**	**64.8**	**59.7**	0.6	1.0	**64.9**	**59.6**	0.7	0.9
wL304	Residential	NAC-1	55	50	B	70	**62.3**	**58.9**	**63.0**	**59.8**	0.7	0.9	**63.2**	**59.8**	0.9	0.9
wL305	Residential	NAC-1	55	50	B	70	**60.6**	**58.4**	**61.2**	**59.3**	0.6	0.9	**61.5**	**59.4**	0.9	1.0
wL121	General	NAC-2	70	65	C	70	60.5	58.5	61.2	59.5	0.7	1.0	60.6	58.9	0.1	0.4
wL121-1	General	NAC-2	70	65	C	70	63.9	55.1	64.8	56.6	0.9	1.5	64.3	55.8	0.4	0.7
wL121-2	General	NAC-2	70	65	C	70	63.6	57.7	64.3	59.2	0.7	1.5	63.9	58.3	0.3	0.6
wL121-3	General	NAC-2	70	65	C	70	63.6	58.5	64.3	59.8	0.7	1.3	63.8	58.9	0.2	0.4
wL123	Residential	NAC-1	55	50	B	70	**63.3**	**58.2**	**64.1**	**59.6**	0.8	1.4	**63.6**	**58.8**	0.3	0.6
wL122	Residential	NAC-1	55	50	B	70	**63.0**	**57.5**	**63.8**	**59.0**	0.8	1.5	**63.3**	**58.2**	0.3	0.7
wL124	Residential	NAC-1	55	50	B	70	**63.6**	**57.9**	**64.4**	**59.4**	0.8	1.5	**63.9**	**58.6**	0.3	0.7
wL124B	Residential	NAC-1	55	50	B	70	**65.2**	**61.5**	**65.8**	**62.6**	0.6	1.1	**65.3**	**62.0**	0.1	0.5
wL125	Residential	NAC-1	55	50	B	70	**63.9**	**58.9**	**64.6**	**60.2**	0.7	1.3	**64.1**	**59.4**	0.2	0.5
wL126	Residential	NAC-1	55	50	B	70	**64.8**	**59.0**	**65.6**	**60.5**	0.8	1.5	**65.2**	**59.7**	0.4	0.7
wL127	Residential	NAC-1	55	50	B	70	**65.6**	**60.2**	**66.4**	**61.6**	0.8	1.4	**66.1**	**61.2**	0.5	1.0
wL128	Residential	NAC-1	55	50	B	70	**66.5**	**61.3**	**67.2**	**62.6**	0.7	1.3	**67.0**	**62.1**	0.5	0.8
wL222	Residential	NAC-1	55	50	B	70	**61.7**	**59.9**	**62.4**	**60.8**	0.7	0.9	**61.7**	**60.2**	0.0	0.3
wL222b1	Residential	NAC-1	55	50	B	70	**63.0**	**61.2**	**63.7**	**62.1**	0.7	0.9	**62.8**	**61.3**	-0.2	0.1
wL222b2	Residential	NAC-1	55	50	B	70	**63.3**	**61.5**	**64.0**	**62.3**	0.7	0.8	**63.1**	**61.5**	-0.2	0.0
wL223	Residential	NAC-1	55	50	B	70	**62.2**	**60.3**	**62.9**	**61.2**	0.7	0.9	**62.2**	**60.5**	0.0	0.2
wL224	Residential	NAC-1	55	50	B	70	**62.6**	**60.5**	**63.3**	**61.4**	0.7	0.9	**62.5**	**60.6**	-0.1	0.1
wL225	Residential	NAC-1	55	50	B	70	**63.4**	**61.0**	**64.0**	**61.9**	0.6	0.9	**63.0**	**61.0**	-0.4	0.0
wL226	Residential	NAC-1	55	50	B	70	**63.5**	**61.0**	**64.2**	**61.9**	0.7	0.9	**62.8**	**60.8**	-0.7	-0.2

Table 5
Nighttime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
wL321	Residential	NAC-1	55	50	B	70	**58.6**	**57.2**	**59.4**	**58.0**	0.8	0.8	**58.7**	**57.5**	0.1	0.3
wL321C	Residential	NAC-1	55	50	B	70	**58.7**	**57.1**	**59.4**	**58.0**	0.7	0.9	**58.7**	**57.4**	0.0	0.3
wL321a	Residential	NAC-1	55	50	B	70	**57.8**	**56.5**	**58.6**	**57.3**	0.8	0.8	**57.9**	**56.8**	0.1	0.3
wL321b	Residential	NAC-1	55	50	B	70	**58.1**	**56.7**	**58.9**	**57.6**	0.8	0.9	**58.2**	**57.0**	0.1	0.3
wL321c	Residential	NAC-1	55	50	B	70	**58.7**	**57.1**	**59.4**	**58.0**	0.7	0.9	**58.7**	**57.4**	0.0	0.3
wL321d	Residential	NAC-1	55	50	B	70	**59.0**	**57.4**	**59.8**	**58.3**	0.8	0.9	**59.1**	**57.7**	0.1	0.3
wL325	Residential	NAC-1	55	50	B	70	**60.7**	**59.0**	**61.4**	**59.9**	0.7	0.9	**60.7**	**59.4**	0.0	0.4
wL325C	Residential	NAC-1	55	50	B	70	**60.8**	**59.0**	**61.4**	**59.9**	0.6	0.9	**60.7**	**59.3**	-0.1	0.3
wL330	Residential	NAC-1	55	50	B	70	**61.4**	**59.4**	**62.1**	**60.3**	0.7	0.9	**61.1**	**59.6**	-0.3	0.2
wL330C	Residential	NAC-1	55	50	B	70	**61.6**	**59.5**	**62.2**	**60.3**	0.6	0.8	**61.1**	**59.6**	-0.5	0.1
wL335C	Residential	NAC-1	55	50	B	70	**62.3**	**60.1**	**62.9**	**60.9**	0.6	0.8	**61.7**	**60.1**	-0.6	0.0
wL335	Residential	NAC-1	55	50	B	70	**62.6**	**60.2**	**63.3**	**61.1**	0.7	0.9	**61.8**	**60.2**	-0.8	0.0
Receivers - West side Block L2 (24th Street to Franklin Avenue)																
wL141	Residential	NAC-1	55	50	B	70	**65.3**	**62.3**	**66.0**	**63.3**	0.7	1.0	**63.8**	**61.6**	-1.5	-0.7
wL142	Commercial	NAC-2	70	65	E	75	67.5	63.9	68.2	64.9	0.7	1.0	65.9	63.1	-1.6	-0.8
wL143	Residential	NAC-1	55	50	B	70	**69.4**	**65.3**	**70.1**	**66.4**	0.7	1.1	**68.2**	**64.2**	-1.2	-1.1
wL144	Commercial	NAC-2	70	65	E	75	66.1	63.4	66.8	64.4	0.7	1.0	64.9	62.8	-1.2	-0.6
wL145	Residential	NAC-1	55	50	B	70	**68.0**	**64.4**	**68.7**	**65.5**	0.7	1.1	**67.6**	**64.1**	-0.4	-0.3
wL146	Residential	NAC-1	55	50	B	70	**66.6**	**64.0**	**67.4**	**65.0**	0.8	1.0	**65.9**	**63.7**	-0.7	-0.3
wL147	Residential	NAC-1	55	50	B	70	**65.5**	**63.1**	**66.2**	**64.1**	0.7	1.0	**64.6**	**62.7**	-0.9	-0.4
wL148	Commercial	NAC-2	70	65	E	75	67.3	64.0	68.0	**65.1**	0.7	1.1	67.0	63.8	-0.3	-0.2
wL149	Commercial	NAC-2	70	65	E	75	68.5	62.5	69.3	64.0	0.8	1.5	68.5	62.6	0.0	0.1
wL150	Residential	NAC-1	55	50	B	70	**65.9**	**63.7**	**66.7**	**64.6**	0.8	0.9	**66.0**	**64.0**	0.1	0.3
wL241	Residential	NAC-1	55	50	B	70	**64.1**	**61.4**	**64.7**	**62.3**	0.6	0.9	**62.9**	**61.0**	-1.2	-0.4
wL242	Residential	NAC-1	55	50	B	70	**64.2**	**61.7**	**64.8**	**62.6**	0.6	0.9	**63.0**	**61.2**	-1.2	-0.5
wL242B	Residential	NAC-1	55	50	B	70	**65.6**	**63.0**	**66.3**	**63.9**	0.7	0.9	**64.5**	**62.6**	-1.1	-0.4
wL243	Residential	NAC-1	55	50	B	70	**64.2**	**61.9**	**64.9**	**62.8**	0.7	0.9	**63.3**	**61.5**	-0.9	-0.4
wL244	Residential	NAC-1	55	50	B	70	**64.1**	**61.9**	**64.8**	**62.8**	0.7	0.9	**63.3**	**61.6**	-0.8	-0.3
wL245	Commercial	NAC-2	70	65	E	75	63.8	61.6	64.4	62.5	0.6	0.9	62.8	61.0	-1.0	-0.6
wL246	General	NAC-2	70	65	C	70	64.9	62.8	65.6	63.7	0.7	0.9	64.9	62.8	0.0	0.0
wL341	Residential	NAC-1	55	50	B	70	**62.0**	**60.0**	**62.6**	**60.8**	0.6	0.8	**61.3**	**59.6**	-0.7	-0.4
wL342	Residential	NAC-1	55	50	B	70	**62.0**	**60.1**	**62.7**	**60.9**	0.7	0.8	**61.5**	**59.8**	-0.5	-0.3
wL343	Residential	NAC-1	55	50	B	70	**62.0**	**60.0**	**62.6**	**60.8**	0.6	0.8	**61.6**	**59.8**	-0.4	-0.2
wL344	Residential	NAC-1	55	50	B	70	**62.0**	**60.1**	**62.7**	**60.9**	0.7	0.8	**61.8**	**60.0**	-0.2	-0.1
wL345	Residential	NAC-1	55	50	B	70	**62.0**	**60.0**	**62.7**	**60.9**	0.7	0.9	**61.8**	**60.0**	-0.2	0.0
wL161	Commercial	NAC-2	70	65	E	75	69.9	**66.4**	**70.7**	**67.5**	0.8	1.1	**70.4**	**67.5**	0.5	1.1
wL162	Commercial	NAC-2	70	65	E	75	69.0	**66.1**	69.8	**67.1**	0.8	1.0	69.8	**67.4**	0.8	1.3
wL163	Residential	NAC-1	55	50	B	70	**70.9**	**67.5**	**71.7**	**68.7**	0.8	1.2	**71.7**	**68.9**	0.8	1.4
wL164	Commercial	NAC-2	70	65	E	75	**71.0**	**67.5**	**71.7**	**68.6**	0.7	1.1	**71.8**	**68.9**	0.8	1.4
wL261	Commercial	NAC-2	70	65	E	75	60.8	58.5	61.5	59.3	0.7	0.8	61.5	59.4	0.7	0.9
wL262	Commercial	NAC-2	70	65	E	75	66.4	58.2	67.1	59.1	0.7	0.9	67.2	59.3	0.8	1.1
wL361	Residential	NAC-1	55	50	B	70	**61.3**	**59.4**	**62.0**	**60.2**	0.7	0.8	**61.6**	**59.9**	0.3	0.5
wL362	Residential	NAC-1	55	50	B	70	**62.4**	**60.5**	**63.1**	**61.3**	0.7	0.8	**62.7**	**60.9**	0.3	0.4
wL363	Residential	NAC-1	55	50	B	70	**56.1**	**54.0**	**56.7**	**54.9**	0.6	0.9	**56.6**	**54.7**	0.5	0.7
wL364	Residential	NAC-1	55	50	B	70	**56.1**	**54.0**	**56.8**	**54.9**	0.7	0.9	**56.7**	**54.7**	0.6	0.7
wL365	Residential	NAC-1	55	50	B	70	**57.7**	**55.6**	**58.3**	**56.4**	0.6	0.8	**58.3**	**56.3**	0.6	0.7
wL366	Residential	NAC-1	55	50	B	70	**57.7**	**55.6**	**58.4**	**56.4**	0.7	0.8	**58.4**	**56.4**	0.7	0.8
wL367	Residential	NAC-1	55	50	B	70	**58.0**	**55.6**	**58.7**	**56.5**	0.7	0.9	**58.9**	**56.6**	0.9	1.0
wL368	Residential	NAC-1	55	50	B	70	**61.2**	**54.0**	**61.9**	**54.9**	0.7	0.9	**62.0**	**55.2**	0.8	1.2
wL367C	Residential	NAC-1	55	50	B	70	**55.8**	**53.2**	**56.5**	**54.1**	0.7	0.9	**56.7**	**54.3**	0.9	1.1
Receivers - West side Block M (Franklin Avenue to I-94/3rd Avenue)																
wM100	Commercial	NAC-2	70	65	E	75	**71.3**	64.6	**72.0**	**65.7**	0.7	1.1	**72.3**	**66.3**	1.0	1.7
wM101	Commercial	NAC-2	70	65	E	75	69.1	**65.4**	69.8	**66.5**	0.7	1.1	**70.0**	**66.9**	0.9	1.5
wM102	Residential	NAC-1	55	50	B	70	**67.3**	**64.2**	**68.0**	**65.3**	0.7	1.1	**68.2**	**65.7**	0.9	1.5
wM102C	Residential	NAC-1	55	50	B	70	**65.1**	**62.3**	**65.7**	**63.2**	0.6	0.9	**66.2**	**63.7**	1.1	1.4

Table 5
Nighttime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
wM103	General	NAC-2	70	65	C	70	68.2	61.4	69.1	62.9	0.9	1.5	69.3	63.4	1.1	2.0
wM104	Commercial	NAC-2	70	65	E	75	68.2	61.3	69.1	62.9	0.9	1.6	69.4	63.4	1.2	2.1
wM105	Residential	NAC-1	55	50	B	70	**68.3**	**61.9**	**69.1**	**63.3**	0.8	1.4	**69.4**	**63.9**	1.1	2.0
wM105a2	Residential	NAC-1	55	50	B	70	**67.1**	**65.1**	**67.8**	**66.0**	0.7	0.9	**68.7**	**66.6**	1.6	1.5
wM105a3	Residential	NAC-1	55	50	B	70	**69.1**	**67.1**	**69.8**	**68.0**	0.7	0.9	**70.9**	**68.6**	1.8	1.5
wM105a4	Residential	NAC-1	55	50	B	70	**71.4**	**69.4**	**72.1**	**70.2**	0.7	0.8	**73.3**	**71.1**	1.9	1.7
wM105b2	Residential	NAC-1	55	50	B	70	**67.8**	**65.7**	**68.5**	**66.6**	0.7	0.9	**69.3**	**67.2**	1.5	1.5
wM105b3	Residential	NAC-1	55	50	B	70	**70.2**	**68.0**	**70.9**	**68.9**	0.7	0.9	**72.1**	**69.7**	1.9	1.7
wM105b4	Residential	NAC-1	55	50	B	70	**72.8**	**70.3**	**73.5**	**71.2**	0.7	0.9	**74.3**	**72.0**	1.5	1.7
wM105c2	Residential	NAC-1	55	50	B	70	**71.6**	**68.2**	**72.4**	**69.3**	0.8	1.1	**72.5**	**69.6**	0.9	1.4
wM105c3	Residential	NAC-1	55	50	B	70	**75.6**	**72.5**	**76.4**	**73.5**	0.8	1.0	**76.1**	**73.5**	0.5	1.0
wM105c4	Residential	NAC-1	55	50	B	70	**76.8**	**73.6**	**77.7**	**74.7**	0.9	1.1	**76.6**	**74.3**	-0.2	0.7
wM105d2	Residential	NAC-1	55	50	B	70	**68.4**	**66.1**	**69.1**	**67.1**	0.7	1.0	**69.9**	**67.7**	1.5	1.6
wM105d3	Residential	NAC-1	55	50	B	70	**71.2**	**68.9**	**71.9**	**69.8**	0.7	0.9	**73.2**	**70.6**	2.0	1.7
wM105d4	Residential	NAC-1	55	50	B	70	**73.5**	**70.9**	**74.3**	**71.9**	0.8	1.0	**74.7**	**72.5**	1.2	1.6
wM106	Residential	NAC-1	55	50	B	70	**64.3**	**62.5**	**65.0**	**63.3**	0.7	0.8	**65.8**	**63.9**	1.5	1.4
wM201	Residential	NAC-1	55	50	B	70	**64.1**	**62.3**	**64.8**	**63.1**	0.7	0.8	**65.5**	**63.7**	1.4	1.4
wM202	Residential	NAC-1	55	50	B	70	**64.0**	**62.2**	**64.7**	**63.0**	0.7	0.8	**65.4**	**63.6**	1.4	1.4
wM203	Residential	NAC-1	55	50	B	70	**63.6**	**61.9**	**64.3**	**62.7**	0.7	0.8	**65.0**	**63.2**	1.4	1.3
wM204	Residential	NAC-1	55	50	B	70	**63.3**	**61.6**	**64.0**	**62.4**	0.7	0.8	**64.7**	**62.9**	1.4	1.3
wM301	Commercial	NAC-2	70	65	E	75	64.0	60.0	64.6	60.9	0.6	0.9	64.7	61.1	0.7	1.1
wM302	Commercial	NAC-2	70	65	E	75	62.9	60.2	63.6	61.0	0.7	0.8	63.8	61.3	0.9	1.1
wM303	Residential	NAC-1	55	50	B	70	**62.9**	**60.5**	**63.5**	**61.3**	0.6	0.8	**63.8**	**61.7**	0.9	1.2
wM304	Residential	NAC-1	55	50	B	70	**62.7**	**60.6**	**63.3**	**61.4**	0.6	0.8	**63.8**	**61.8**	1.1	1.2
wM305	Residential	NAC-1	55	50	B	70	**62.3**	**60.5**	**62.9**	**61.2**	0.6	0.7	**63.4**	**61.7**	1.1	1.2
wM306	Residential	NAC-1	55	50	B	70	**62.0**	**60.4**	**62.7**	**61.2**	0.7	0.8	**63.3**	**61.6**	1.3	1.2
wM121	Residential	NAC-1	55	50	B	70	**65.4**	**63.3**	**66.1**	**64.2**	0.7	0.9	**67.3**	**65.0**	1.9	1.7
wM123	Residential	NAC-1	55	50	B	70	**68.1**	**63.6**	**68.7**	**64.8**	0.6	1.2	**69.3**	**65.7**	1.2	2.1
wM124	Residential	NAC-1	55	50	B	70	**68.7**	**62.9**	**69.4**	**64.3**	0.7	1.4	**70.0**	**65.3**	1.3	2.4
wM126	Commercial	NAC-2	70	65	E	75	67.7	63.5	68.3	64.7	0.6	1.2	69.1	**65.7**	1.4	2.2
wM127	Residential	NAC-1	55	50	B	70	**67.9**	**63.3**	**68.5**	**64.5**	0.6	1.2	**69.2**	**65.4**	1.3	2.1
wM128	Residential	NAC-1	55	50	B	70	**67.6**	**59.0**	**68.5**	**60.6**	0.9	1.6	**69.0**	**61.5**	1.4	2.5
wM128a	Residential	NAC-1	55	50	B	70	**67.9**	**61.0**	**68.7**	**62.5**	0.8	1.5	**69.2**	**63.5**	1.3	2.5
wM128b	Residential	NAC-1	55	50	B	70	**67.7**	**59.8**	**68.6**	**61.3**	0.9	1.5	**69.1**	**62.2**	1.4	2.4
wM128c	Residential	NAC-1	55	50	B	70	**67.5**	**58.6**	**68.4**	**60.1**	0.9	1.5	**68.9**	**61.0**	1.4	2.4
wM128d	Residential	NAC-1	55	50	B	70	**66.4**	**59.1**	**67.1**	**60.4**	0.7	1.3	**67.7**	**61.6**	1.3	2.5
wM128e	Residential	NAC-1	55	50	B	70	**65.8**	**58.7**	**66.5**	**60.0**	0.7	1.3	**67.2**	**61.1**	1.4	2.4
wM221	Residential	NAC-1	55	50	B	70	**63.8**	**62.1**	**64.4**	**62.9**	0.6	0.8	**65.4**	**63.6**	1.6	1.5
wM222	Residential	NAC-1	55	50	B	70	**63.3**	**61.7**	**64.0**	**62.5**	0.7	0.8	**65.0**	**63.1**	1.7	1.4
wM222	Residential	NAC-1	55	50	B	70	**63.3**	**61.7**	**64.0**	**62.5**	0.7	0.8	**65.0**	**63.1**	1.7	1.4
wM223	Residential	NAC-1	55	50	B	70	**63.2**	**61.7**	**63.9**	**62.5**	0.7	0.8	**65.0**	**63.2**	1.8	1.5
wM225	Residential	NAC-1	55	50	B	70	**63.0**	**61.5**	**63.7**	**62.3**	0.7	0.8	**64.7**	**62.9**	1.7	1.4
wM226	Residential	NAC-1	55	50	B	70	**63.2**	**61.8**	**63.9**	**62.5**	0.7	0.7	**64.8**	**63.1**	1.6	1.3
wM227	Residential	NAC-1	55	50	B	70	**64.0**	**61.4**	**64.6**	**62.2**	0.6	0.8	**65.1**	**62.8**	1.1	1.4
wM229	Residential	NAC-1	55	50	B	70	**63.3**	**61.4**	**63.9**	**62.2**	0.6	0.8	**64.5**	**62.7**	1.2	1.3
wM231	Residential	NAC-1	55	50	B	70	**62.9**	**61.3**	**63.5**	**62.1**	0.6	0.8	**64.2**	**62.6**	1.3	1.3
wM321	Residential	NAC-1	55	50	B	70	**61.8**	**60.4**	**62.5**	**61.2**	0.7	0.8	**63.3**	**61.7**	1.5	1.3
wM322	Residential	NAC-1	55	50	B	70	**61.8**	**60.4**	**62.4**	**61.1**	0.6	0.7	**63.2**	**61.7**	1.4	1.3
wM323	Residential	NAC-1	55	50	B	70	**61.7**	**60.4**	**62.4**	**61.2**	0.7	0.8	**63.2**	**61.7**	1.5	1.3
wM324	Residential	NAC-1	55	50	B	70	**62.0**	**60.6**	**62.6**	**61.4**	0.6	0.8	**63.3**	**61.8**	1.3	1.2
wM324b	Residential	NAC-1	55	50	B	70	**61.9**	**60.6**	**62.6**	**61.3**	0.7	0.7	**63.1**	**61.7**	1.2	1.1
wM324b2	Residential	NAC-1	55	50	B	70	**63.4**	**62.1**	**64.0**	**62.8**	0.6	0.7	**64.5**	**63.2**	1.1	1.1
wM324b3	Residential	NAC-1	55	50	B	70	**64.8**	**63.5**	**65.4**	**64.2**	0.6	0.7	**65.9**	**64.6**	1.1	1.1
wM324b4	Residential	NAC-1	55	50	B	70	**66.5**	**65.3**	**67.1**	**66.0**	0.6	0.7	**67.5**	**66.3**	1.0	1.0
wM421	Residential	NAC-1	55	50	B	70	**60.7**	**59.4**	**61.4**	**60.1**	0.7	0.7	**61.9**	**60.5**	1.2	1.1

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N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
wM422	Residential	NAC-1	55	50	B	70	**60.8**	**59.5**	**61.4**	**60.2**	0.6	0.7	**61.9**	**60.5**	1.1	1.0
wM423	Residential	NAC-1	55	50	B	70	**61.2**	**59.7**	**61.8**	**60.4**	0.6	0.7	**62.1**	**60.7**	0.9	1.0
wM424	Residential	NAC-1	55	50	B	70	**61.6**	**60.0**	**62.2**	**60.7**	0.6	0.7	**62.5**	**61.0**	0.9	1.0
wM141	Residential	NAC-1	55	50	B	70	**64.6**	**60.7**	**65.1**	**61.7**	0.5	1.0	**65.6**	**62.4**	1.0	1.7
wM141b1	Residential	NAC-1	55	50	B	70	**63.5**	**61.7**	**64.1**	**62.5**	0.6	0.8	**64.7**	**63.0**	1.2	1.3
wM141b2	Residential	NAC-1	55	50	B	70	**67.2**	**65.6**	**67.8**	**66.4**	0.6	0.8	**68.2**	**66.7**	1.0	1.1
wM141b3	Residential	NAC-1	55	50	B	70	**71.0**	**69.4**	**71.6**	**70.2**	0.6	0.8	**71.8**	**70.3**	0.8	0.9
wM142b1	Residential	NAC-1	55	50	B	70	**63.1**	**61.6**	**63.7**	**62.3**	0.6	0.7	**64.2**	**62.7**	1.1	1.1
wM142b2	Residential	NAC-1	55	50	B	70	**66.2**	**64.8**	**66.9**	**65.5**	0.7	0.7	**67.2**	**65.8**	1.0	1.0
wM142b3	Residential	NAC-1	55	50	B	70	**69.3**	**67.8**	**69.9**	**68.5**	0.6	0.7	**70.1**	**68.7**	0.8	0.9
wM143b1	Residential	NAC-1	55	50	B	70	**62.8**	**61.3**	**63.4**	**62.1**	0.6	0.8	**63.9**	**62.5**	1.1	1.2
wM143b2	Residential	NAC-1	55	50	B	70	**65.6**	**64.1**	**66.2**	**64.9**	0.6	0.8	**66.6**	**65.2**	1.0	1.1
wM143b3	Residential	NAC-1	55	50	B	70	**68.1**	**66.6**	**68.7**	**67.4**	0.6	0.8	**69.0**	**67.6**	0.9	1.0
wM341	Residential	NAC-1	55	50	B	70	**62.3**	**60.8**	**62.9**	**61.5**	0.6	0.7	**63.3**	**61.8**	1.0	1.0
wM342	Residential	NAC-1	55	50	B	70	**62.9**	**61.4**	**63.5**	**62.1**	0.6	0.7	**63.9**	**62.4**	1.0	1.0
wM441	Residential	NAC-1	55	50	B	70	**62.6**	**60.7**	**63.2**	**61.4**	0.6	0.7	**63.3**	**61.6**	0.7	0.9
wM442	Residential	NAC-1	55	50	B	70	**66.6**	**64.1**	**67.1**	**64.8**	0.5	0.7	**67.0**	**64.7**	0.4	0.6
Receivers - North side Block D (Nicollet Avenue to 1st Avenue)																
nD001	Commercial	NAC-2	70	65	E	75	**78.2**	**74.3**	**78.7**	**75.0**	0.5	0.7	**78.6**	**74.9**	0.4	0.6
nD002	Residential	NAC-1	55	50	B	70	**71.9**	**69.2**	**72.3**	**69.8**	0.4	0.6	**72.3**	**69.7**	0.4	0.5
nD002C	Residential	NAC-1	55	50	B	70	**73.8**	**70.8**	**74.3**	**71.5**	0.5	0.7	**74.2**	**71.4**	0.4	0.6
nD101	Commercial	NAC-2	70	65	E	75	69.5	60.7	**70.1**	61.5	0.6	0.8	**70.1**	61.4	0.6	0.7
nD201	Commercial	NAC-2	70	65	E	75	63.3	59.7	63.7	60.4	0.4	0.7	63.6	60.3	0.3	0.6
nD202	Commercial	NAC-2	70	65	E	75	61.2	58.0	61.6	58.6	0.4	0.6	61.5	58.6	0.3	0.6
Receivers - North side Block E (1st Avenue to 3rd Avenue)																
nE101	Commercial	NAC-2	70	65	E	75	69.9	**67.5**	**70.4**	**68.0**	0.5	0.5	**70.3**	**68.0**	0.4	0.5
nE102	Commercial	NAC-2	70	65	E	75	64.3	62.6	64.8	63.2	0.5	0.6	64.8	63.2	0.5	0.6
Receivers - North side Block F (3rd Avenue to Downtown)																
nF101	General	NAC-2	70	65	C	70	64.4	61.5	65.5	62.7	1.1	1.2	65.5	62.7	1.1	1.2
nF102	General	NAC-2	70	65	C	70	64.1	61.0	65.2	62.2	1.1	1.2	65.3	62.2	1.2	1.2
nF103	General	NAC-2	70	65	C	70	62.6	59.6	63.6	60.7	1.0	1.1	63.8	60.7	1.2	1.1
nF201	General	NAC-2	70	65	C	70	59.5	57.7	60.4	58.6	0.9	0.9	60.4	58.6	0.9	0.9
Receivers - North side Block G (Downtown to Portland Avenue)																
nG001	General	NAC-2	70	65	C	70	**71.9**	**69.3**	**72.7**	**70.2**	0.8	0.9	**72.5**	**70.1**	0.6	0.8
nG002	General	NAC-2	70	65	C	70	**72.9**	**70.4**	**73.7**	**71.4**	0.8	1.0	**73.6**	**71.3**	0.7	0.9
nG003	General	NAC-2	70	65	C	70	**70.7**	**69.0**	**71.3**	**69.7**	0.6	0.7	**71.2**	**69.6**	0.5	0.6
nG004	General	NAC-2	70	65	C	70	**72.0**	**70.2**	**72.5**	**70.9**	0.5	0.7	**72.4**	**70.8**	0.4	0.6
nG005	General	NAC-2	70	65	C	70	**73.6**	**71.2**	**74.1**	**71.8**	0.5	0.6	**73.8**	**71.7**	0.2	0.5
nG006	General	NAC-2	70	65	C	70	68.4	**66.7**	69.1	**67.5**	0.7	0.8	69.0	**67.4**	0.6	0.7
nG101	Commercial	NAC-2	70	65	E	75	66.3	61.7	67.4	63.2	1.1	1.5	67.3	63.1	1.0	1.4
nG201	Residential	NAC-1	55	50	B	70	**59.5**	**55.9**	**60.5**	**57.1**	1.0	1.2	**60.4**	**57.0**	0.9	1.1
nG102	Residential	NAC-1	55	50	B	70	**65.7**	**62.6**	**66.7**	**63.8**	1.0	1.2	**66.6**	**63.8**	0.9	1.2
nG103	Residential	NAC-1	55	50	B	70	**66.6**	**63.1**	**67.4**	**64.2**	0.8	1.1	**67.3**	**64.2**	0.7	1.1
nG202	Residential	NAC-1	55	50	B	70	**60.4**	**57.9**	**61.1**	**58.9**	0.7	1.0	**61.1**	**58.9**	0.7	1.0
nG203	Residential	NAC-1	55	50	B	70	**60.7**	**58.0**	**61.5**	**59.0**	0.8	1.0	**61.4**	**59.0**	0.7	1.0
nG204	Residential	NAC-1	55	50	B	70	**59.1**	**57.0**	**59.9**	**57.9**	0.8	0.9	**59.8**	**57.9**	0.7	0.9
nG205	Residential	NAC-1	55	50	B	70	**59.6**	**57.3**	**60.3**	**58.2**	0.7	0.9	**60.3**	**58.1**	0.7	0.8
nG206	Residential	NAC-1	55	50	B	70	**61.0**	**57.6**	**61.6**	**58.5**	0.6	0.9	**61.5**	**58.5**	0.5	0.9
nG207	Residential	NAC-1	55	50	B	70	**64.7**	**56.4**	**65.4**	**57.5**	0.7	1.1	**65.4**	**57.4**	0.7	1.0
nG301	General	NAC-2	70	65	C	70	55.8	53.6	56.6	54.5	0.8	0.9	56.6	54.5	0.8	0.9
nG302	Residential	NAC-1	55	50	B	70	**56.2**	**54.3**	**56.9**	**55.1**	0.7	0.8	**56.8**	**55.1**	0.6	0.8
nG303	Residential	NAC-1	55	50	B	70	**57.7**	**54.7**	**58.2**	**55.6**	0.5	0.9	**58.2**	**55.5**	0.5	0.8
nG304	Residential	NAC-1	55	50	B	70	**56.1**	**54.3**	**56.7**	**55.1**	0.6	0.8	**56.7**	**55.0**	0.6	0.7
nG305	Residential	NAC-1	55	50	B	70	**57.3**	**54.9**	**57.8**	**55.7**	0.5	0.8	**57.8**	**55.6**	0.5	0.7
nG306	Residential	NAC-1	55	50	B	70	**58.2**	**56.0**	**58.7**	**56.7**	0.5	0.7	**58.7**	**56.6**	0.5	0.6

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N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
nG307	Residential	NAC-1	55	50	B	70	**61.4**	**56.4**	**61.9**	**57.3**	0.5	0.9	**61.9**	**57.2**	0.5	0.8
nG308	Residential	NAC-1	55	50	B	70	**63.0**	**55.9**	**63.6**	**56.8**	0.6	0.9	**63.5**	**56.7**	0.5	0.8
nG309	Residential	NAC-1	55	50	B	70	**58.6**	**56.6**	**59.1**	**57.3**	0.5	0.7	**59.1**	**57.2**	0.5	0.6
nG208	Residential	NAC-1	55	50	B	70	**61.6**	**58.8**	**62.2**	**59.6**	0.6	0.8	**62.1**	**59.5**	0.5	0.7
nG208C	Residential	NAC-1	55	50	B	70	**61.1**	**59.0**	**61.7**	**59.8**	0.6	0.8	**61.6**	**59.7**	0.5	0.7
nG209	Residential	NAC-1	55	50	B	70	**64.2**	**62.0**	**64.8**	**62.8**	0.6	0.8	**64.7**	**62.7**	0.5	0.7
nG105	Residential	NAC-1	55	50	B	70	**67.2**	**64.7**	**68.1**	**65.7**	0.9	1.0	**68.0**	**65.7**	0.8	1.0
Receivers - North side Block H (Portland Avenue to Park Avenue)																
nH101	Residential	NAC-1	55	50	B	70	**70.8**	**68.5**	**71.3**	**69.1**	0.5	0.6	**71.2**	**69.0**	0.4	0.5
nH102	General	NAC-2	70	65	C	70	68.2	**66.2**	68.6	**66.8**	0.4	0.6	68.6	**66.8**	0.4	0.6
nH102C	General	NAC-2	70	65	C	70	65.6	63.9	66.0	64.5	0.4	0.6	66.0	64.5	0.4	0.6
nH103	Commercial	NAC-2	70	65	E	75	**71.7**	**69.1**	**72.2**	**69.7**	0.5	0.6	**72.2**	**69.7**	0.5	0.6
nH104	Residential	NAC-1	55	50	B	70	**70.3**	**68.0**	**70.8**	**68.6**	0.5	0.6	**70.8**	**68.6**	0.5	0.6
nH201	Residential	NAC-1	55	50	B	70	**67.1**	**59.4**	**67.7**	**60.3**	0.6	0.9	**67.7**	**60.3**	0.6	0.9
nH202	Residential	NAC-1	55	50	B	70	**66.5**	**58.5**	**67.1**	**59.4**	0.6	0.9	**67.1**	**59.3**	0.6	0.8
nH203	Residential	NAC-1	55	50	B	70	**60.9**	**58.8**	**61.4**	**59.5**	0.5	0.7	**61.4**	**59.5**	0.5	0.7
nH203B	Residential	NAC-1	55	50	B	70	**62.0**	**60.2**	**62.5**	**60.8**	0.5	0.6	**62.5**	**60.8**	0.5	0.6
nH204	Residential	NAC-1	55	50	B	70	**61.6**	**59.8**	**62.1**	**60.5**	0.5	0.7	**62.1**	**60.4**	0.5	0.6
nH205	Commercial	NAC-2	70	65	E	75	68.5	62.1	69.0	62.8	0.5	0.7	69.0	62.9	0.5	0.8
nH206	Residential	NAC-1	55	50	B	70	**66.5**	**58.1**	**67.1**	**58.9**	0.6	0.8	**67.1**	**58.9**	0.6	0.8
nH301	Residential	NAC-1	55	50	B	70	**58.1**	**56.5**	**58.6**	**57.1**	0.5	0.6	**58.6**	**57.1**	0.5	0.6
nH302	Residential	NAC-1	55	50	B	70	**57.9**	**56.4**	**58.5**	**57.0**	0.6	0.6	**58.5**	**57.0**	0.6	0.6
nH303	Residential	NAC-1	55	50	B	70	**57.8**	**56.3**	**58.4**	**57.0**	0.6	0.7	**58.3**	**56.9**	0.5	0.6
nH304	Residential	NAC-1	55	50	B	70	**57.7**	**56.2**	**58.3**	**56.9**	0.6	0.7	**58.2**	**56.8**	0.5	0.6
nH305	Residential	NAC-1	55	50	B	70	**61.2**	**55.4**	**61.7**	**56.2**	0.5	0.8	**61.7**	**56.2**	0.5	0.8
Receivers - North side Block I (Park Avenue to Chicago Avenue)																
nI101	General	NAC-2	70	65	C	70	**71.8**	**68.5**	**72.2**	**69.1**	0.4	0.6	**72.2**	**69.2**	0.4	0.7
nI102	Residential	NAC-1	55	50	B	70	**71.0**	**68.6**	**71.4**	**69.2**	0.4	0.6	**71.5**	**69.2**	0.5	0.6
nI103	Residential	NAC-1	55	50	B	70	**70.6**	**68.4**	**71.1**	**68.9**	0.5	0.5	**71.1**	**69.0**	0.5	0.6
nI104	General	NAC-2	70	65	C	70	**72.0**	**69.0**	**72.5**	**69.6**	0.5	0.6	**72.5**	**69.6**	0.5	0.6
nI104C	General	NAC-2	70	65	C	70	69.5	**67.4**	69.9	**67.9**	0.4	0.5	69.9	**68.0**	0.4	0.6
nI201	Commercial	NAC-2	70	65	E	75	68.9	62.0	69.4	62.7	0.5	0.7	69.5	62.7	0.6	0.7
nI202	Residential	NAC-1	55	50	B	70	**67.2**	**59.0**	**67.8**	**59.7**	0.6	0.7	**67.8**	**59.8**	0.6	0.8
nI203	Residential	NAC-1	55	50	B	70	**66.9**	**58.4**	**67.5**	**59.2**	0.6	0.8	**67.5**	**59.2**	0.6	0.8
nI204	Residential	NAC-1	55	50	B	70	**62.7**	**61.0**	**63.1**	**61.4**	0.4	0.4	**63.1**	**61.5**	0.4	0.5
nI205	Residential	NAC-1	55	50	B	70	**61.1**	**59.2**	**61.5**	**59.7**	0.4	0.5	**61.6**	**59.7**	0.5	0.5
nI206	Residential	NAC-1	55	50	B	70	**60.9**	**59.2**	**61.3**	**59.7**	0.4	0.5	**61.3**	**59.7**	0.4	0.5
nI206C	Residential	NAC-1	55	50	B	70	**60.3**	**58.6**	**60.7**	**59.1**	0.4	0.5	**60.7**	**59.2**	0.4	0.6
nI207	Residential	NAC-1	55	50	B	70	**61.4**	**59.7**	**61.8**	**60.1**	0.4	0.4	**61.8**	**60.2**	0.4	0.5
nI208	Residential	NAC-1	55	50	B	70	**61.9**	**60.2**	**62.3**	**60.7**	0.4	0.5	**62.4**	**60.7**	0.5	0.5
nI208b2	Residential	NAC-1	55	50	B	70	**62.9**	**61.2**	**63.3**	**61.7**	0.4	0.5	**63.3**	**61.7**	0.4	0.5
nI208b3	Residential	NAC-1	55	50	B	70	**63.4**	**61.5**	**63.7**	**62.0**	0.3	0.5	**65.2**	**63.5**	1.8	2.0
nI209	Commercial	NAC-2	70	65	E	75	64.1	61.8	64.5	62.3	0.4	0.5	64.5	62.4	0.4	0.6
nI301	Residential	NAC-1	55	50	B	70	**60.3**	**55.6**	**60.8**	**56.2**	0.5	0.6	**60.8**	**56.2**	0.5	0.6
nI302	Residential	NAC-1	55	50	B	70	**57.7**	**56.0**	**58.1**	**56.5**	0.4	0.5	**58.1**	**56.6**	0.4	0.6
nI303	Residential	NAC-1	55	50	B	70	**57.9**	**56.1**	**58.3**	**56.6**	0.4	0.5	**58.3**	**56.6**	0.4	0.5
nI304	Residential	NAC-1	55	50	B	70	**60.5**	**55.8**	**60.9**	**56.4**	0.4	0.6	**60.9**	**56.4**	0.4	0.6
nI305	Residential	NAC-1	55	50	B	70	**61.6**	**54.6**	**62.1**	**55.3**	0.5	0.7	**62.1**	**55.3**	0.5	0.7
Receivers - North side Block J (Chicago Avenue to 11th Avenue)																
nJ101	Commercial	NAC-2	70	65	E	75	**70.2**	**67.4**	**70.6**	**67.9**	0.4	0.5	**70.6**	**68.0**	0.4	0.6
nJ102	Commercial	NAC-2	70	65	E	75	**70.7**	**68.3**	**71.2**	**68.9**	0.5	0.6	**71.2**	**68.9**	0.5	0.6
nJ103	Residential	NAC-1	55	50	B	70	**72.5**	**69.6**	**73.0**	**70.2**	0.5	0.6	**73.0**	**70.2**	0.5	0.6
nJ104	Residential	NAC-1	55	50	B	70	**72.3**	**69.5**	**72.8**	**70.1**	0.5	0.6	**72.8**	**70.1**	0.5	0.6
nJ105	Residential	NAC-1	55	50	B	70	**72.4**	**69.6**	**72.9**	**70.2**	0.5	0.6	**72.9**	**70.2**	0.5	0.6
nJ106	Residential	NAC-1	55	50	B	70	**72.3**	**69.6**	**72.8**	**70.2**	0.5	0.6	**72.8**	**70.3**	0.5	0.7

Table 5
Nighttime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
nJ107	Residential	NAC-1	55	50	B	70	**71.9**	**69.3**	**72.3**	**69.9**	0.4	0.6	**72.3**	**70.0**	0.4	0.7
nJ108	Residential	NAC-1	55	50	B	70	**71.9**	**69.4**	**72.3**	**69.9**	0.4	0.5	**72.3**	**70.0**	0.4	0.6
nJ108b1	Residential	NAC-1	55	50	B	70	**68.4**	**65.4**	**68.7**	**65.9**	0.3	0.5	**68.8**	**65.9**	0.4	0.5
nJ108b2	Residential	NAC-1	55	50	B	70	**72.6**	**69.5**	**72.9**	**70.0**	0.3	0.5	**73.0**	**70.1**	0.4	0.6
nJ109	Residential	NAC-1	55	50	B	70	**71.0**	**68.6**	**71.4**	**69.1**	0.4	0.5	**71.4**	**69.2**	0.4	0.6
nJ109C	Residential	NAC-1	55	50	B	70	**66.4**	**64.6**	**66.8**	**65.0**	0.4	0.4	**66.9**	**65.1**	0.5	0.5
nJ201	Commercial	NAC-2	70	65	E	75	67.4	59.3	67.9	60.0	0.5	0.7	67.9	60.1	0.5	0.8
nJ202	Commercial	NAC-2	70	65	E	75	67.7	59.9	68.2	60.6	0.5	0.7	68.3	60.7	0.6	0.8
nJ203	Commercial	NAC-2	70	65	E	75	68.2	61.1	68.7	61.8	0.5	0.7	68.7	61.8	0.5	0.7
nJ204	Residential	NAC-1	55	50	B	70	**64.4**	**62.5**	**64.8**	**63.0**	0.4	0.5	**64.8**	**63.0**	0.4	0.5
nJ205	Residential	NAC-1	55	50	B	70	**62.3**	**60.4**	**62.7**	**60.9**	0.4	0.5	**62.8**	**61.0**	0.5	0.6
nJ206	Residential	NAC-1	55	50	B	70	**65.2**	**63.2**	**65.6**	**63.7**	0.4	0.5	**65.7**	**63.8**	0.5	0.6
nJ206b2	Residential	NAC-1	55	50	B	70	**67.7**	**65.5**	**68.0**	**66.0**	0.3	0.5	**68.1**	**66.0**	0.4	0.5
nJ207	Residential	NAC-1	55	50	B	70	**62.5**	**60.6**	**62.9**	**61.1**	0.4	0.5	**63.0**	**61.1**	0.5	0.5
nJ208	Residential	NAC-1	55	50	B	70	**62.3**	**60.5**	**62.7**	**60.9**	0.4	0.4	**62.7**	**61.0**	0.4	0.5
nJ209	Residential	NAC-1	55	50	B	70	**65.1**	**62.9**	**65.5**	**63.4**	0.4	0.5	**63.5**	**61.4**	-1.6	-1.5
nJ301	Residential	NAC-1	55	50	B	70	**63.0**	**57.4**	**63.4**	**58.0**	0.4	0.6	**60.0**	**57.3**	-3.0	-0.1
nJ302	Residential	NAC-1	55	50	B	70	**58.2**	**56.5**	**58.6**	**56.9**	0.4	0.4	**58.6**	**57.0**	0.4	0.5
nJ303	Residential	NAC-1	55	50	B	70	**58.7**	**56.9**	**59.1**	**57.4**	0.4	0.5	**60.6**	**58.9**	1.9	2.0
nJ304	Residential	NAC-1	55	50	B	70	**61.3**	**59.5**	**61.7**	**60.0**	0.4	0.5	**61.8**	**60.1**	0.5	0.6
nJ305	Residential	NAC-1	55	50	B	70	**58.3**	**56.6**	**58.7**	**57.1**	0.4	0.5	**58.8**	**57.1**	0.5	0.5
nJ306	Residential	NAC-1	55	50	B	70	**58.8**	**57.0**	**59.2**	**57.5**	0.4	0.5	**59.2**	**57.6**	0.4	0.6
nJ307	Residential	NAC-1	55	50	B	70	**59.2**	**57.5**	**59.6**	**57.9**	0.4	0.4	**59.6**	**58.0**	0.4	0.5
nJ308	Residential	NAC-1	55	50	B	70	**59.9**	**58.1**	**60.3**	**58.6**	0.4	0.5	**60.4**	**58.6**	0.5	0.5
nJ309	Residential	NAC-1	55	50	B	70	**58.8**	**57.2**	**59.2**	**57.6**	0.4	0.4	**59.2**	**57.7**	0.4	0.5
nJ310	Residential	NAC-1	55	50	B	70	**59.4**	**57.7**	**59.8**	**58.2**	0.4	0.5	**59.8**	**58.2**	0.4	0.5
nJ311	Residential	NAC-1	55	50	B	70	**60.1**	**58.3**	**60.4**	**58.8**	0.3	0.5	**60.5**	**58.8**	0.4	0.5
nJ312	Residential	NAC-1	55	50	B	70	**60.3**	**58.7**	**60.7**	**59.1**	0.4	0.4	**60.8**	**59.2**	0.5	0.5
nJ313	Residential	NAC-1	55	50	B	70	**63.4**	**59.5**	**63.7**	**60.0**	0.3	0.5	**63.8**	**60.1**	0.4	0.6
Receivers - South side Block D (Nicollet Avenue to 1st Avenue)																
sD101	Commercial	NAC-2	70	65	E	75	64.7	60.2	65.2	60.9	0.5	0.7	65.2	60.9	0.5	0.7
sD301	Commercial	NAC-2	70	65	E	75	59.9	57.0	60.4	57.7	0.5	0.7	60.3	57.7	0.4	0.7
sD302	Residential	NAC-1	55	50	B	70	**59.2**	**56.7**	**59.7**	**57.3**	0.5	0.6	**59.7**	**57.3**	0.5	0.6
Receivers - South side Block E (1st Avenue to 3rd Avenue)																
sE101	Residential	NAC-1	55	50	B	70	**69.4**	**64.5**	**69.8**	**65.3**	0.4	0.8	**69.8**	**65.2**	0.4	0.7
sE102	Residential	NAC-1	55	50	B	70	**72.5**	**69.6**	**73.0**	**70.2**	0.5	0.6	**72.9**	**70.2**	0.4	0.6
sE103	Residential	NAC-1	55	50	B	70	**65.1**	**62.7**	**65.6**	**63.3**	0.5	0.6	**65.6**	**63.3**	0.5	0.6
sE104	Residential	NAC-1	55	50	B	70	**71.2**	**68.4**	**71.6**	**69.0**	0.4	0.6	**71.6**	**69.0**	0.4	0.6
sE104a1	Residential	NAC-1	55	50	B	70	**64.1**	**61.6**	**64.6**	**62.2**	0.5	0.6	**64.6**	**62.2**	0.5	0.6
sE104a2	Residential	NAC-1	55	50	B	70	**65.8**	**63.2**	**66.2**	**63.8**	0.4	0.6	**66.2**	**63.8**	0.4	0.6
sE104a3	Residential	NAC-1	55	50	B	70	**66.7**	**64.2**	**67.2**	**64.8**	0.5	0.6	**67.1**	**64.7**	0.4	0.5
sE104b1	Residential	NAC-1	55	50	B	70	**64.2**	**61.6**	**64.6**	**62.3**	0.4	0.7	**64.6**	**62.3**	0.4	0.7
sE104b2	Residential	NAC-1	55	50	B	70	**65.7**	**63.1**	**66.1**	**63.8**	0.4	0.7	**66.1**	**63.8**	0.4	0.7
sE104b3	Residential	NAC-1	55	50	B	70	**66.6**	**64.1**	**67.1**	**64.7**	0.5	0.6	**67.0**	**64.7**	0.4	0.6
sE105	Residential	NAC-1	55	50	B	70	**71.0**	**68.2**	**71.5**	**68.8**	0.5	0.6	**71.5**	**68.9**	0.5	0.7
sE106	Residential	NAC-1	55	50	B	70	**71.7**	**68.8**	**72.2**	**69.4**	0.5	0.6	**72.2**	**69.5**	0.5	0.7
sE107	Residential	NAC-1	55	50	B	70	**72.0**	**69.0**	**72.5**	**69.7**	0.5	0.7	**72.5**	**69.7**	0.5	0.7
sE108	Commercial	NAC-2	70	65	E	75	**71.3**	**68.1**	**71.8**	**68.8**	0.5	0.7	**71.8**	**68.8**	0.5	0.7
sE109	Residential	NAC-1	55	50	B	70	**72.1**	**69.1**	**72.6**	**69.8**	0.5	0.7	**72.6**	**69.8**	0.5	0.7
sE201	Residential	NAC-1	55	50	B	70	**61.5**	**57.6**	**61.9**	**58.4**	0.4	0.8	**61.9**	**58.4**	0.4	0.8
sE202	Residential	NAC-1	55	50	B	70	**59.9**	**57.7**	**60.4**	**58.4**	0.5	0.7	**60.4**	**58.4**	0.5	0.7
sE203	Residential	NAC-1	55	50	B	70	**60.7**	**58.5**	**61.2**	**59.1**	0.5	0.6	**61.2**	**59.2**	0.5	0.7
sE204	Residential	NAC-1	55	50	B	70	**57.5**	**55.4**	**58.0**	**56.0**	0.5	0.6	**58.0**	**56.1**	0.5	0.7
sE205	Residential	NAC-1	55	50	B	70	**62.1**	**59.8**	**62.6**	**60.4**	0.5	0.6	**62.6**	**60.5**	0.5	0.7
sE206	Residential	NAC-1	55	50	B	70	**60.7**	**58.6**	**61.2**	**59.2**	0.5	0.6	**61.3**	**59.3**	0.6	0.7

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Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
sE207	Residential	NAC-1	55	50	B	70	**56.5**	**54.5**	**57.0**	**55.2**	0.5	0.7	**57.1**	**55.3**	0.6	0.8
sE208	Residential	NAC-1	55	50	B	70	**59.9**	**57.7**	**60.4**	**58.3**	0.5	0.6	**60.5**	**58.5**	0.6	0.8
sE209	Residential	NAC-1	55	50	B	70	**65.7**	**56.8**	**66.2**	**57.7**	0.5	0.9	**66.3**	**57.8**	0.6	1.0
sE210	Residential	NAC-1	55	50	B	70	**60.9**	**58.1**	**61.4**	**58.8**	0.5	0.7	**61.5**	**59.0**	0.6	0.9
sE210a2	Residential	NAC-1	55	50	B	70	**61.5**	**58.9**	**62.0**	**59.6**	0.5	0.7	**62.1**	**59.8**	0.6	0.9
sE210a3	Residential	NAC-1	55	50	B	70	**62.6**	**60.3**	**63.1**	**60.9**	0.5	0.6	**63.2**	**61.1**	0.6	0.8
sE210a4	Residential	NAC-1	55	50	B	70	**64.0**	**61.6**	**64.5**	**62.2**	0.5	0.6	**64.7**	**62.4**	0.7	0.8
sE210b2	Residential	NAC-1	55	50	B	70	**62.0**	**59.5**	**62.5**	**60.2**	0.5	0.7	**62.6**	**60.4**	0.6	0.9
sE210b3	Residential	NAC-1	55	50	B	70	**63.2**	**60.9**	**63.7**	**61.6**	0.5	0.7	**63.9**	**61.7**	0.7	0.8
sE210b4	Residential	NAC-1	55	50	B	70	**64.8**	**62.3**	**65.3**	**63.0**	0.5	0.7	**65.5**	**63.2**	0.7	0.9
sE210c2	Residential	NAC-1	55	50	B	70	**64.0**	**58.4**	**64.5**	**59.3**	0.5	0.9	**64.6**	**59.5**	0.6	1.1
sE210c3	Residential	NAC-1	55	50	B	70	**64.8**	**60.3**	**65.2**	**61.1**	0.4	0.8	**65.3**	**61.3**	0.5	1.0
sE210c4	Residential	NAC-1	55	50	B	70	**65.6**	**62.1**	**66.0**	**62.9**	0.4	0.8	**66.2**	**63.1**	0.6	1.0
sE210d2	Residential	NAC-1	55	50	B	70	**63.1**	**56.8**	**63.6**	**57.7**	0.5	0.9	**63.8**	**58.0**	0.7	1.2
sE210d3	Residential	NAC-1	55	50	B	70	**63.8**	**58.5**	**64.3**	**59.4**	0.5	0.9	**64.4**	**59.7**	0.6	1.2
sE210d4	Residential	NAC-1	55	50	B	70	**64.4**	**60.3**	**64.8**	**61.1**	0.4	0.8	**65.0**	**61.3**	0.6	1.0
sE211	Residential	NAC-1	55	50	B	70	**65.1**	**54.8**	**65.6**	**55.6**	0.5	0.8	**65.7**	**55.7**	0.6	0.9
sE212	Residential	NAC-1	55	50	B	70	**58.0**	**55.9**	**58.5**	**56.6**	0.5	0.7	**58.6**	**56.7**	0.6	0.8
sE301	Residential	NAC-1	55	50	B	70	**59.6**	**50.0**	**60.1**	**50.9**	0.5	0.9	**60.1**	**50.9**	0.5	0.9
sE302	Residential	NAC-1	55	50	B	70	**56.3**	**53.7**	**56.8**	**54.4**	0.5	0.7	**56.8**	**54.4**	0.5	0.7
sE303	Residential	NAC-1	55	50	B	70	**55.6**	**53.7**	**56.2**	**54.3**	0.6	0.6	**56.3**	**54.5**	0.7	0.8
sE304	Residential	NAC-1	55	50	B	70	**59.2**	**52.6**	**59.7**	**53.5**	0.5	0.9	**59.9**	**53.7**	0.7	1.1
Receivers - South side Block H (Portland Avenue to Park Avenue)																
sH102	Residential	NAC-1	55	50	B	70	**70.9**	**68.7**	**71.3**	**69.3**	0.4	0.6	**71.3**	**69.3**	0.4	0.6
sH103	Residential	NAC-1	55	50	B	70	**71.2**	**69.0**	**71.6**	**69.5**	0.4	0.5	**71.7**	**69.5**	0.5	0.5
sH104	Residential	NAC-1	55	50	B	70	**71.5**	**69.1**	**71.9**	**69.6**	0.4	0.5	**71.9**	**69.6**	0.4	0.5
sH203	General	NAC-2	70	65	C	70	67.6	60.4	68.2	61.2	0.6	0.8	68.2	61.3	0.6	0.9
sH303	Residential	NAC-1	55	50	B	70	**65.7**	**57.6**	**66.3**	**58.4**	0.6	0.8	**66.3**	**58.4**	0.6	0.8
sH304	Residential	NAC-1	55	50	B	70	**64.9**	**56.4**	**65.5**	**57.3**	0.6	0.9	**65.5**	**57.3**	0.6	0.9
sH305	Residential	NAC-1	55	50	B	70	**63.2**	**54.8**	**63.8**	**55.6**	0.6	0.8	**63.9**	**55.7**	0.7	0.9
Receivers - South side Block I (Park Avenue to Chicago Avenue)																
sI101	Residential	NAC-1	55	50	B	70	**69.2**	**65.5**	**69.6**	**66.2**	0.4	0.7	**69.7**	**66.2**	0.5	0.7
sI102	Residential	NAC-1	55	50	B	70	**70.5**	**68.2**	**70.9**	**68.7**	0.4	0.5	**70.9**	**68.8**	0.4	0.6
sI103	Residential	NAC-1	55	50	B	70	**70.3**	**68.1**	**70.7**	**68.6**	0.4	0.5	**70.7**	**68.6**	0.4	0.5
sI104	Commercial	NAC-2	70	65	E	75	**70.9**	**68.6**	**71.2**	**69.1**	0.3	0.5	**71.3**	**69.1**	0.4	0.5
sI201	Residential	NAC-1	55	50	B	70	**67.4**	**61.5**	**67.9**	**62.3**	0.5	0.8	**67.9**	**62.4**	0.5	0.9
sI202	Residential	NAC-1	55	50	B	70	**64.4**	**62.6**	**64.9**	**63.1**	0.5	0.5	**64.9**	**63.2**	0.5	0.6
sI301	Residential	NAC-1	55	50	B	70	**64.6**	**57.8**	**65.2**	**58.6**	0.6	0.8	**65.2**	**58.7**	0.6	0.9
sI302	Residential	NAC-1	55	50	B	70	**64.2**	**56.7**	**64.8**	**57.5**	0.6	0.8	**64.8**	**57.6**	0.6	0.9
sI302b2	Residential	NAC-1	55	50	B	70	**64.3**	**57.9**	**64.9**	**58.7**	0.6	0.8	**64.9**	**58.8**	0.6	0.9
sI303	Residential	NAC-1	55	50	B	70	**61.3**	**53.9**	**61.9**	**54.8**	0.6	0.9	**61.9**	**54.8**	0.6	0.9
sI303b2	Residential	NAC-1	55	50	B	70	**61.4**	**55.3**	**61.9**	**56.1**	0.5	0.8	**61.9**	**56.2**	0.5	0.9
sI303b3	Residential	NAC-1	55	50	B	70	**61.8**	**56.5**	**62.3**	**57.3**	0.5	0.8	**62.3**	**57.3**	0.5	0.8
sI304	Residential	NAC-1	55	50	B	70	**59.9**	**58.1**	**60.4**	**58.7**	0.5	0.6	**60.4**	**58.8**	0.5	0.7
sI305	Residential	NAC-1	55	50	B	70	**59.2**	**57.4**	**59.7**	**58.0**	0.5	0.6	**59.7**	**58.0**	0.5	0.6
sI306	Residential	NAC-1	55	50	B	70	**63.6**	**55.1**	**64.2**	**55.9**	0.6	0.8	**64.2**	**56.0**	0.6	0.9
Receivers - South side Block J (Chicago Avenue to 11th Avenue)																
sJ101	Commercial	NAC-2	70	65	E	75	**71.7**	**69.0**	**72.0**	**69.5**	0.3	0.5	**72.0**	**69.5**	0.3	0.5
sJ102	Residential	NAC-1	55	50	B	70	**73.0**	**70.1**	**73.2**	**70.5**	0.2	0.4	**73.3**	**70.6**	0.3	0.5
sJ102C	Residential	NAC-1	55	50	B	70	**71.0**	**68.4**	**71.3**	**68.9**	0.3	0.5	**71.4**	**68.9**	0.4	0.5
sJ103	Residential	NAC-1	55	50	B	70	**69.8**	**67.1**	**70.1**	**67.6**	0.3	0.5	**70.1**	**67.6**	0.3	0.5
sJ104	Residential	NAC-1	55	50	B	70	**72.3**	**69.6**	**72.6**	**70.0**	0.3	0.4	**72.6**	**70.1**	0.3	0.5
sJ105	Residential	NAC-1	55	50	B	70	**70.3**	**67.5**	**70.6**	**67.9**	0.3	0.4	**70.7**	**68.0**	0.4	0.5
sJ107	Residential	NAC-1	55	50	B	70	**66.6**	**62.9**	**66.9**	**63.4**	0.3	0.5	**66.9**	**63.5**	0.3	0.6
sJ106	Residential	NAC-1	55	50	B	70	**67.8**	**64.3**	**68.1**	**64.8**	0.3	0.5	**68.1**	**64.9**	0.3	0.6

Table 5
Nighttime Noise Analysis Summary
Existing and Future Scenarios

Noise Level Comparison to Standards	
XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards
N/A	Receptor does not exist in Scenario

Receiver		MN State Standards (dBA)			FHWA Standards (dBA)		2012		2038							
							Existing Conditions		No Build Conditions		Difference - Existing and No Build		Build (Replace In-Kind)		Difference - Existing and Build	
Receptor ID	Land Use	Code	L10	L50	Code	L10	L10	L50	L10	L50	L10	L50	L10	L50	L10	L50
sJ108	Residential	NAC-1	55	50	B	70	**65.6**	**62.0**	**65.9**	**62.5**	0.3	0.5	**65.9**	**62.6**	0.3	0.6
sJ109	Residential	NAC-1	55	50	B	70	**72.3**	**69.6**	**72.6**	**70.0**	0.3	0.4	**72.6**	**70.0**	0.3	0.4
sJ109C	Residential	NAC-1	55	50	B	70	**68.7**	**65.4**	**69.0**	**65.8**	0.3	0.4	**69.0**	**65.9**	0.3	0.5
sJ110	Residential	NAC-1	55	50	B	70	**72.3**	**69.6**	**72.6**	**69.9**	0.3	0.3	**72.6**	**70.0**	0.3	0.4
sJ110b1	Residential	NAC-1	55	50	B	70	**67.0**	**62.6**	**67.3**	**63.1**	0.3	0.5	**67.4**	**63.2**	0.4	0.6
sJ110b2	Residential	NAC-1	55	50	B	70	**71.7**	**68.1**	**72.0**	**68.5**	0.3	0.4	**72.0**	**68.6**	0.3	0.5
sJ110c2	Residential	NAC-1	55	50	B	70	**60.2**	**58.6**	**60.5**	**59.1**	0.3	0.5	**60.5**	**59.1**	0.3	0.5
sJ201	Commercial	NAC-2	70	65	E	75	61.3	57.5	61.7	58.2	0.4	0.7	61.7	58.2	0.4	0.7
sJ202	Residential	NAC-1	55	50	B	70	**62.3**	**60.2**	**62.7**	**60.7**	0.4	0.5	**62.7**	**60.8**	0.4	0.6
sJ203	Residential	NAC-1	55	50	B	70	**62.8**	**60.3**	**63.2**	**60.8**	0.4	0.5	**63.2**	**60.8**	0.4	0.5
sJ204	Residential	NAC-1	55	50	B	70	**60.7**	**58.4**	**61.1**	**58.9**	0.4	0.5	**61.1**	**59.0**	0.4	0.6
sJ205	Residential	NAC-1	55	50	B	70	**60.1**	**58.0**	**60.5**	**58.5**	0.4	0.5	**60.5**	**58.5**	0.4	0.5
sJ206	Residential	NAC-1	55	50	B	70	**63.3**	**61.0**	**63.6**	**61.5**	0.3	0.5	**63.7**	**61.5**	0.4	0.5
sJ207	Residential	NAC-1	55	50	B	70	**62.5**	**60.3**	**62.8**	**60.8**	0.3	0.5	**62.9**	**60.9**	0.4	0.6
sJ208	Residential	NAC-1	55	50	B	70	**59.2**	**57.3**	**59.6**	**57.8**	0.4	0.5	**59.6**	**57.8**	0.4	0.5
sJ208C	Residential	NAC-1	55	50	B	70	**59.4**	**57.3**	**59.8**	**57.9**	0.4	0.6	**59.8**	**57.9**	0.4	0.6
sJ209	Residential	NAC-1	55	50	B	70	**67.5**	**64.8**	**67.9**	**65.3**	0.4	0.5	**67.9**	**65.4**	0.4	0.6
sJ210	Residential	NAC-1	55	50	B	70	**62.0**	**59.4**	**62.4**	**59.8**	0.4	0.4	**62.4**	**59.9**	0.4	0.5
sJ211	Residential	NAC-1	55	50	B	70	**59.9**	**57.7**	**60.2**	**58.1**	0.3	0.4	**60.3**	**58.2**	0.4	0.5
sJ212	Residential	NAC-1	55	50	B	70	**59.6**	**57.6**	**59.9**	**58.1**	0.3	0.5	**60.0**	**58.1**	0.4	0.5
sJ213	Residential	NAC-1	55	50	B	70	**59.2**	**57.3**	**59.6**	**57.8**	0.4	0.5	**59.6**	**57.9**	0.4	0.6
sJ214	Residential	NAC-1	55	50	B	70	**67.3**	**60.9**	**67.7**	**61.4**	0.4	0.5	**67.7**	**61.5**	0.4	0.6
sJ215	Residential	NAC-1	55	50	B	70	**66.6**	**59.9**	**67.0**	**60.5**	0.4	0.6	**67.1**	**60.6**	0.5	0.7
sJ216	Residential	NAC-1	55	50	B	70	**64.8**	**56.9**	**65.2**	**57.5**	0.4	0.6	**65.3**	**57.6**	0.5	0.7
sJ217	Residential	NAC-1	55	50	B	70	**63.9**	**56.3**	**64.3**	**56.9**	0.4	0.6	**64.4**	**57.0**	0.5	0.7
sJ218	Residential	NAC-1	55	50	B	70	**62.8**	**56.1**	**63.3**	**56.7**	0.5	0.6	**63.3**	**56.7**	0.5	0.6
sJ301	Commercial	NAC-2	70	65	E	75	55.1	53.3	55.6	53.9	0.5	0.6	55.6	53.9	0.5	0.6
sJ302	General	NAC-2	70	65	C	70	57.6	55.7	58.1	56.3	0.5	0.6	58.1	56.3	0.5	0.6
sJ303	General	NAC-2	70	65	C	70	57.5	55.6	58.0	56.2	0.5	0.6	58.0	56.2	0.5	0.6
sJ304	Residential	NAC-1	55	50	B	70	**55.3**	**53.5**	**55.7**	**54.0**	0.4	0.5	**55.7**	**54.0**	0.4	0.5
sJ305	Residential	NAC-1	55	50	B	70	54.8	**53.1**	**55.3**	**53.6**	0.5	0.5	**55.3**	**53.7**	0.5	0.6
sJ306	Residential	NAC-1	55	50	B	70	**58.9**	**56.9**	**59.3**	**57.4**	0.4	0.5	**59.3**	**57.5**	0.4	0.6
sJ307	Residential	NAC-1	55	50	B	70	**58.7**	**56.7**	**59.1**	**57.2**	0.4	0.5	**59.2**	**57.3**	0.5	0.6
sJ317	Residential	NAC-1	55	50	B	70	**57.1**	**55.3**	**57.5**	**55.8**	0.4	0.5	**57.5**	**55.8**	0.4	0.5
sJ318	Residential	NAC-1	55	50	B	70	**57.3**	**55.4**	**57.7**	**55.9**	0.4	0.5	**57.7**	**55.9**	0.4	0.5
sJ325	Residential	NAC-1	55	50	B	70	**60.4**	**54.8**	**60.8**	**55.3**	0.4	0.5	**60.8**	**55.4**	0.4	0.6

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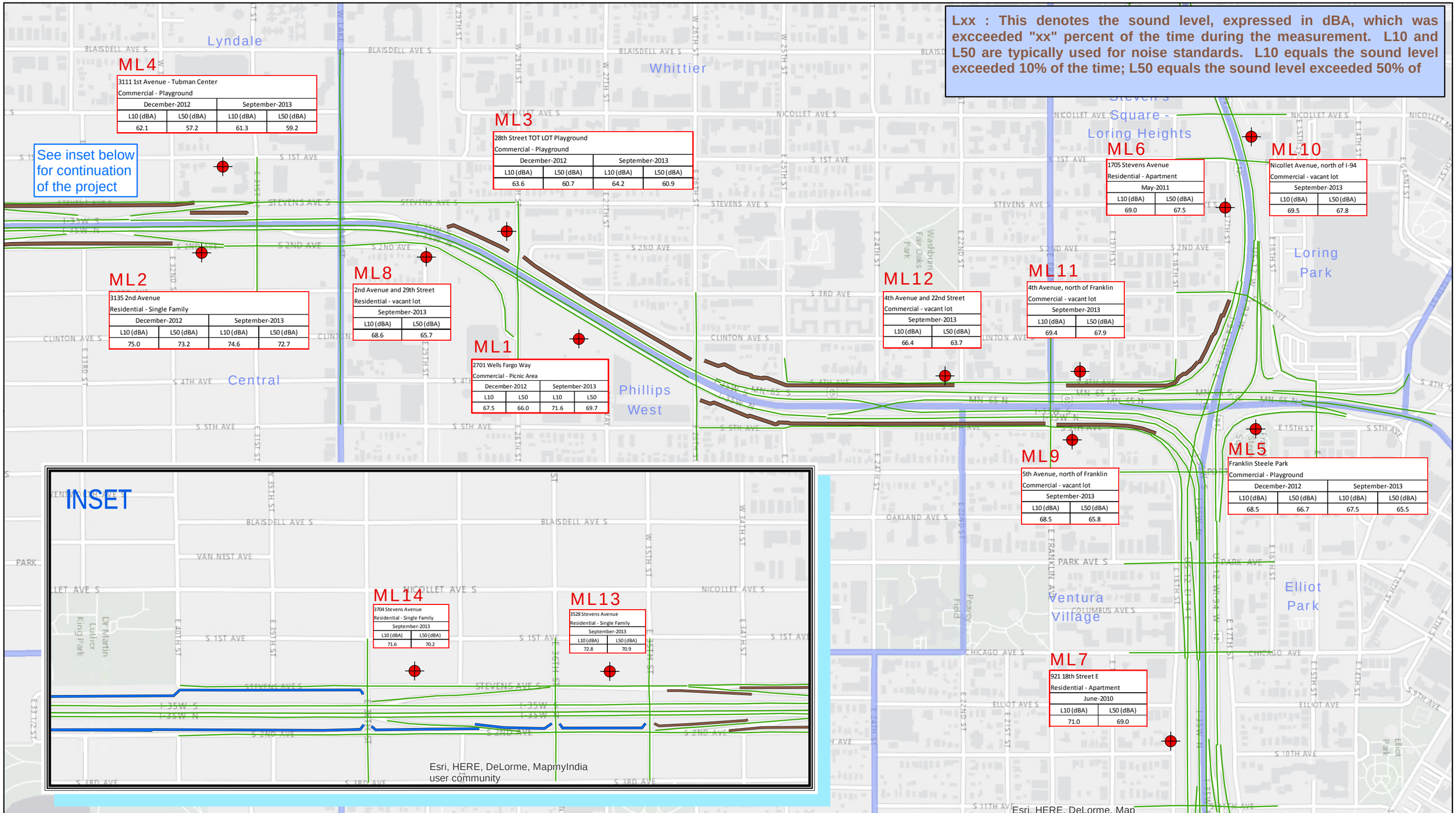

SEH

0 0.075 0.15 Miles

Print Date: 1/11/2016

Map by: MSS
Projection: Hennepin County Coordinates
Source: Hennepin County, BING City of Minneapolis, SEH

Monitoring Locations

Existing Modeled Roadway
Existing Noise Barrier (UPA / Crosstown Project)
Existing Noise Barrier (Old)

MN Standards		Daytime	
Land Use	Code	L10 (dBA)	L50 (dBA)
Residential	NAC-1	65	60
Commercial	NAC-2	70	65
Industrial	NAC-3	80	75

Existing Conditions

I-35W Transit Access Project

Minneapolis, MN

Figure 1

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

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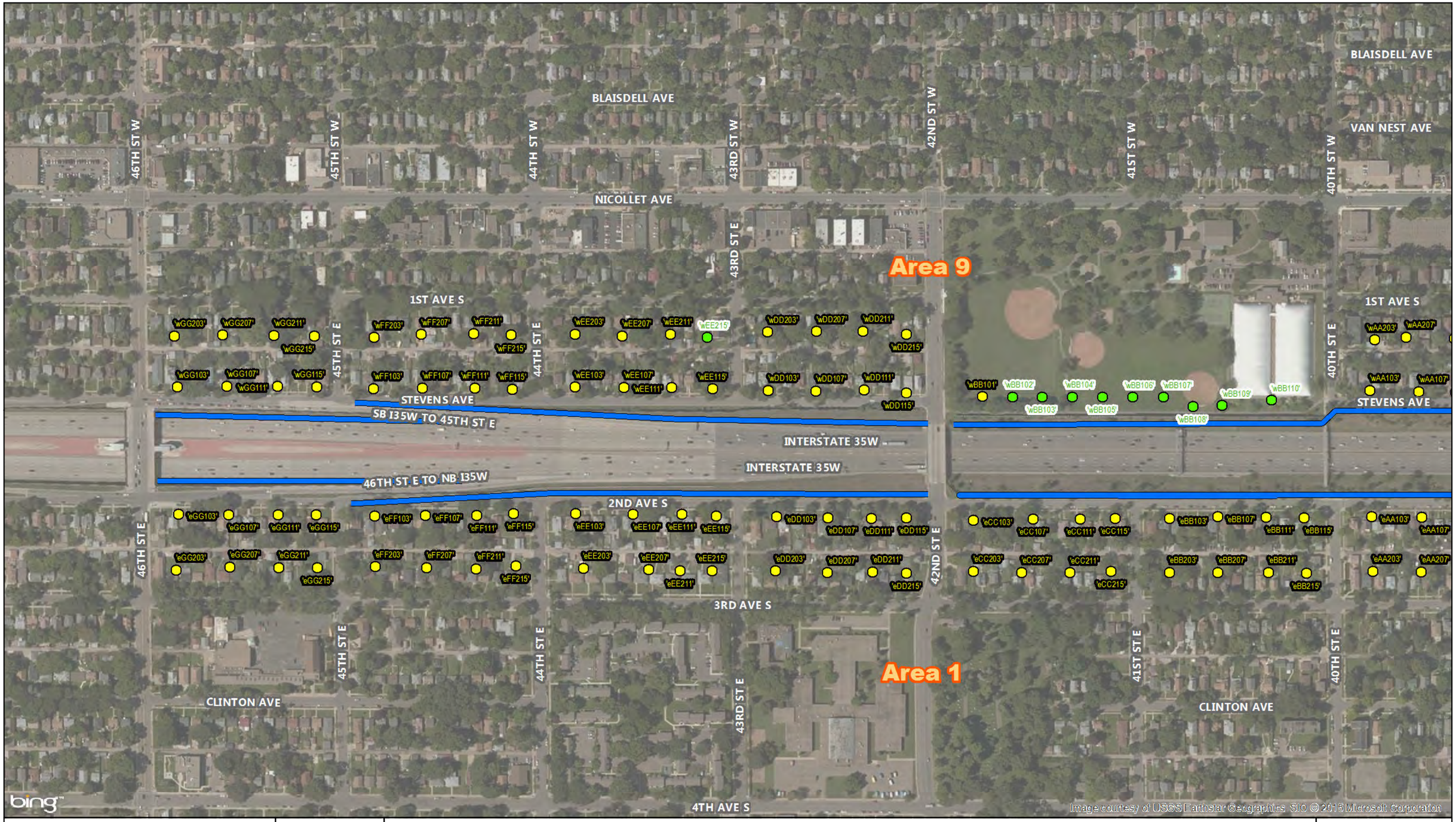

SEH

0 150 300 Feet

Print Date: 10/5/2015

Map by: MSS
Projection: Hennepin County Coordinates
Source: Hennepin County, BING City of Minneapolis, SEH

IMPACTED
NOT IMPACTED
Existing Noise Barrier (New Crosstown Project)
Existing Noise Barriers (Old)

Existing Conditions - Noise Analysis

I-35W Transit Access Project
Minneapolis, MN

Figure 2

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

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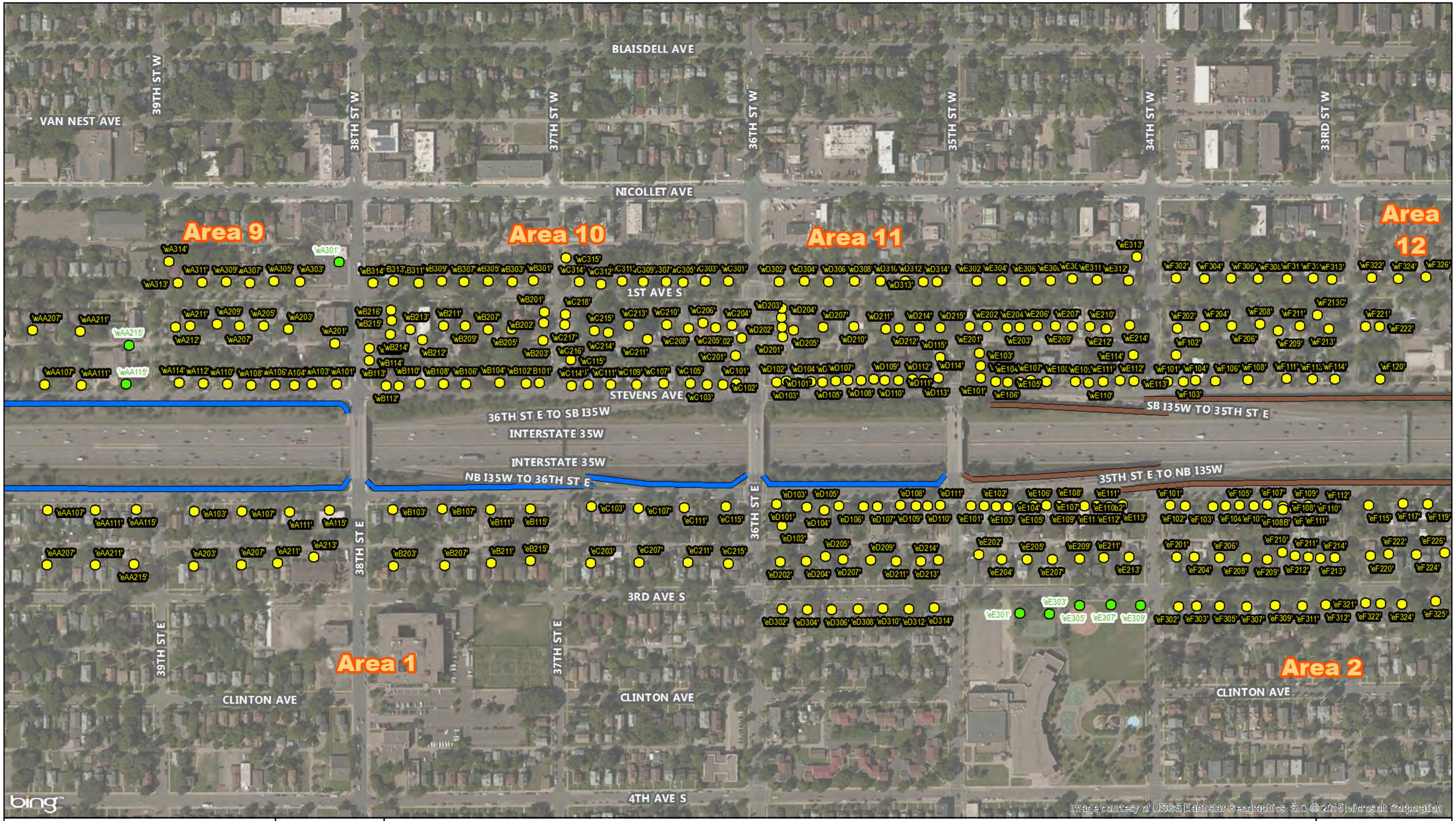


SEH

0 150 300 Feet

Print Date: 10/5/2015

Map by: MSS
Projection: Hennepin County Coordinates
Source: Hennepin County, BING
City of Minneapolis, SEH

IMPACTED
NOT IMPACTED
Existing Noise Barrier (New Crosstown Project)
Existing Noise Barriers (Old)

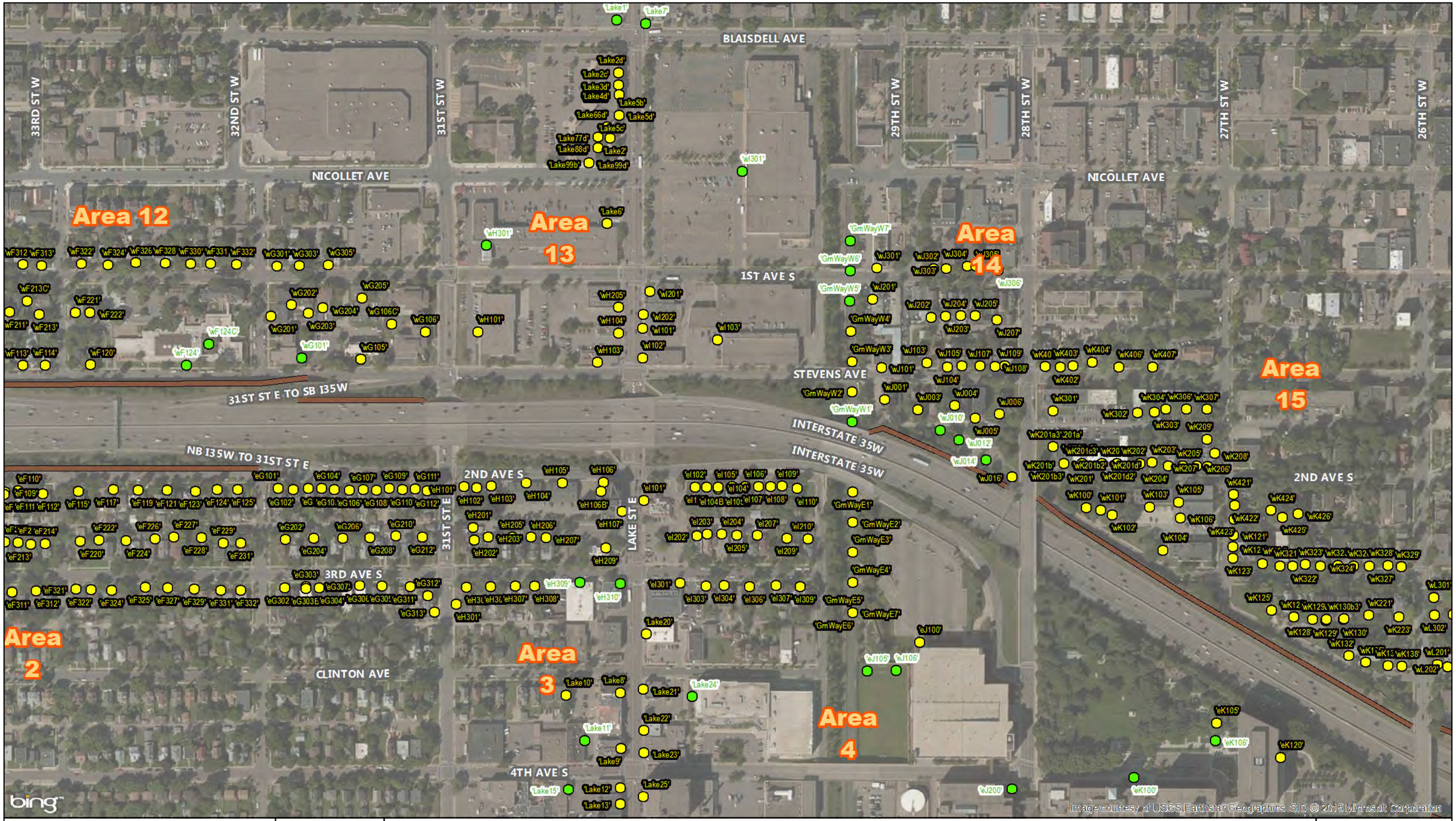
Existing Conditions - Noise Analysis

I-35W Transit Access Project
Minneapolis, MN

Figure 3

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

Path: P:\F:\DH\Hennc\113114\GIS\data\Noise\FinalEA_Oct2015\Fig2_8_Existing_NoiseMonitors_Impact.mxd



SEH

0 150 300 Feet

Print Date: 10/5/2015

Map by: MSS
Projection: Hennepin County Coordinates
Source: Hennepin County, BING
City of Minneapolis, SEH

IMPACTED
NOT IMPACTED
Existing Noise Barrier (New Crosstown Project)
Existing Noise Barriers (Old)

Existing Conditions - Noise Analysis

I-35W Transit Access Project
Minneapolis, MN

Figure 4

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

Path: P:\F-D\H\Hennc\113114\GIS\data\Noise\Final\EA_Oct2015\Fig2_8_Existing_NoiseMonitors_Impact.mxd

0 150 300 Feet

Print Date: 10/5/2015

Map by: MSS
Projection: Hennepin County Coordinates
Source: Hennepin County, BING
City of Minneapolis, SEH

IMPACTED
NOT IMPACTED
Existing Noise Barrier (New Crosstown Project)
Existing Noise Barriers (Old)

Existing Conditions - Noise Analysis

I-35W Transit Access Project
Minneapolis, MN

Figure 5

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

Path: P:\F:D\H\Hennc\113114\GIS\data\Noise\Final\EA_Oct2015\Fig2_8_Existing_NoiseMonitors_Impact.mxd

SEH

0 150 300 Feet

Print Date: 10/5/2015

Map by: MSS
Projection: Hennepin County Coordinates
Source: Hennepin County, BING City of Minneapolis, SEH

IMPACTED
NOT IMPACTED
Existing Noise Barrier (New Crosstown Project)
Existing Noise Barriers (Old)

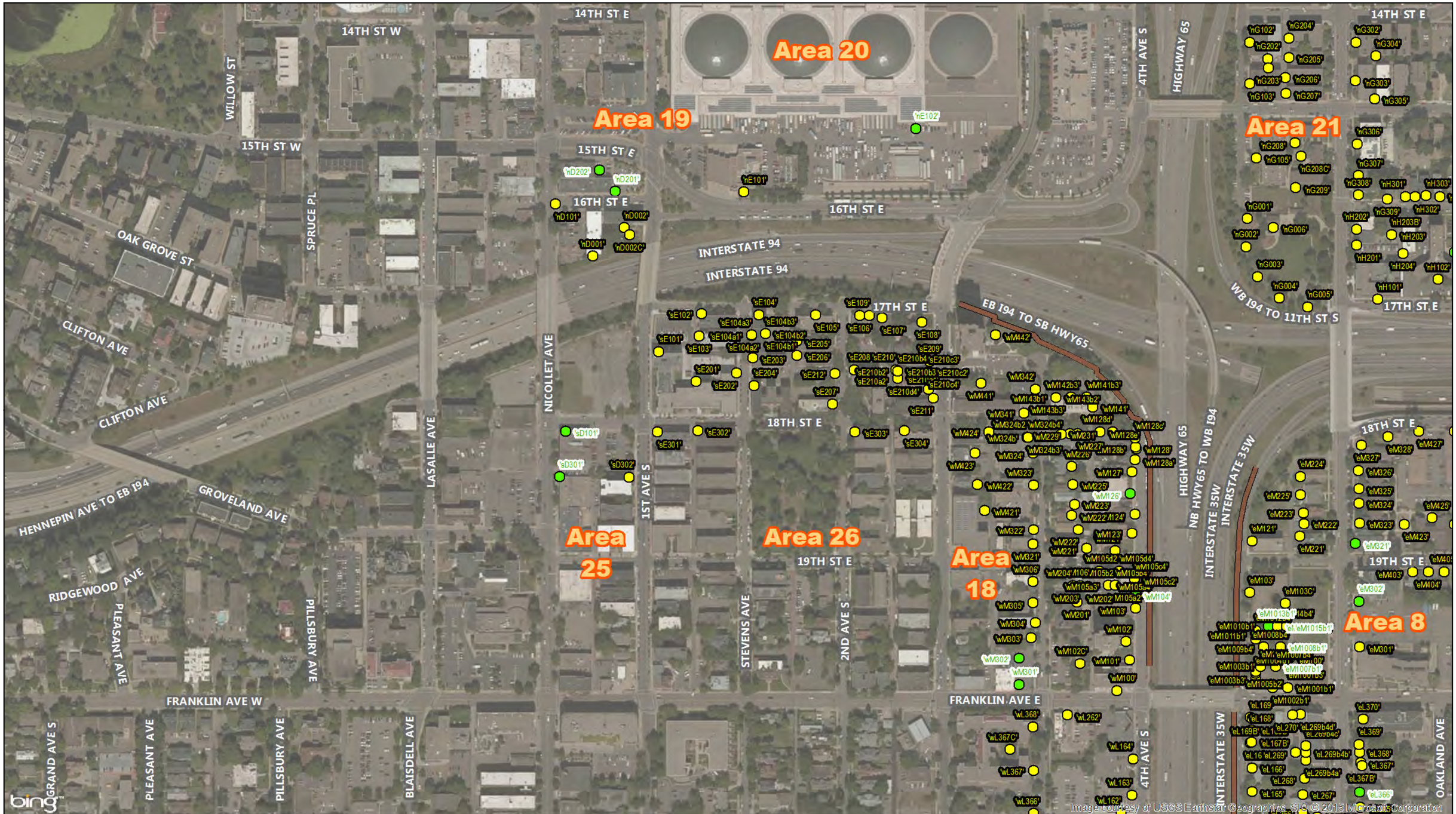
Existing Conditions - Noise Analysis

I-35W Transit Access Project
Minneapolis, MN

Figure 6

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

Path: P:\F:D\H\Henn\113114\GIS\data\Noise\FinalEA_Oct2015\Fig2_8_Existing_NoiseMonitors_Impact.mxd



SEH

0 150 300 Feet

Print Date: 10/5/2015

Map by: MSS
Projection: Hennepin County Coordinates
Source: Hennepin County, BING
City of Minneapolis, SEH

IMPACTED
NOT IMPACTED
Existing Noise Barrier (New Crosstown Project)
Existing Noise Barriers (Old)

Existing Conditions - Noise Analysis

I-35W Transit Access Project
Minneapolis, MN

Figure 7

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

Path: P:\F:D\H\Henn\113114\GIS\data\Noise\Final\EA_Oct2015\Fig2_8_Existing_NoiseMonitors_Impact.mxd

SEH

0 150 300 Feet

Print Date: 10/5/2015

Map by: MSS
Projection: Hennepin County Coordinates
Source: Hennepin County, BING City of Minneapolis, SEH

IMPACTED
NOT IMPACTED
Existing Noise Barrier (New Crosstown Project)
Existing Noise Barriers (Old)

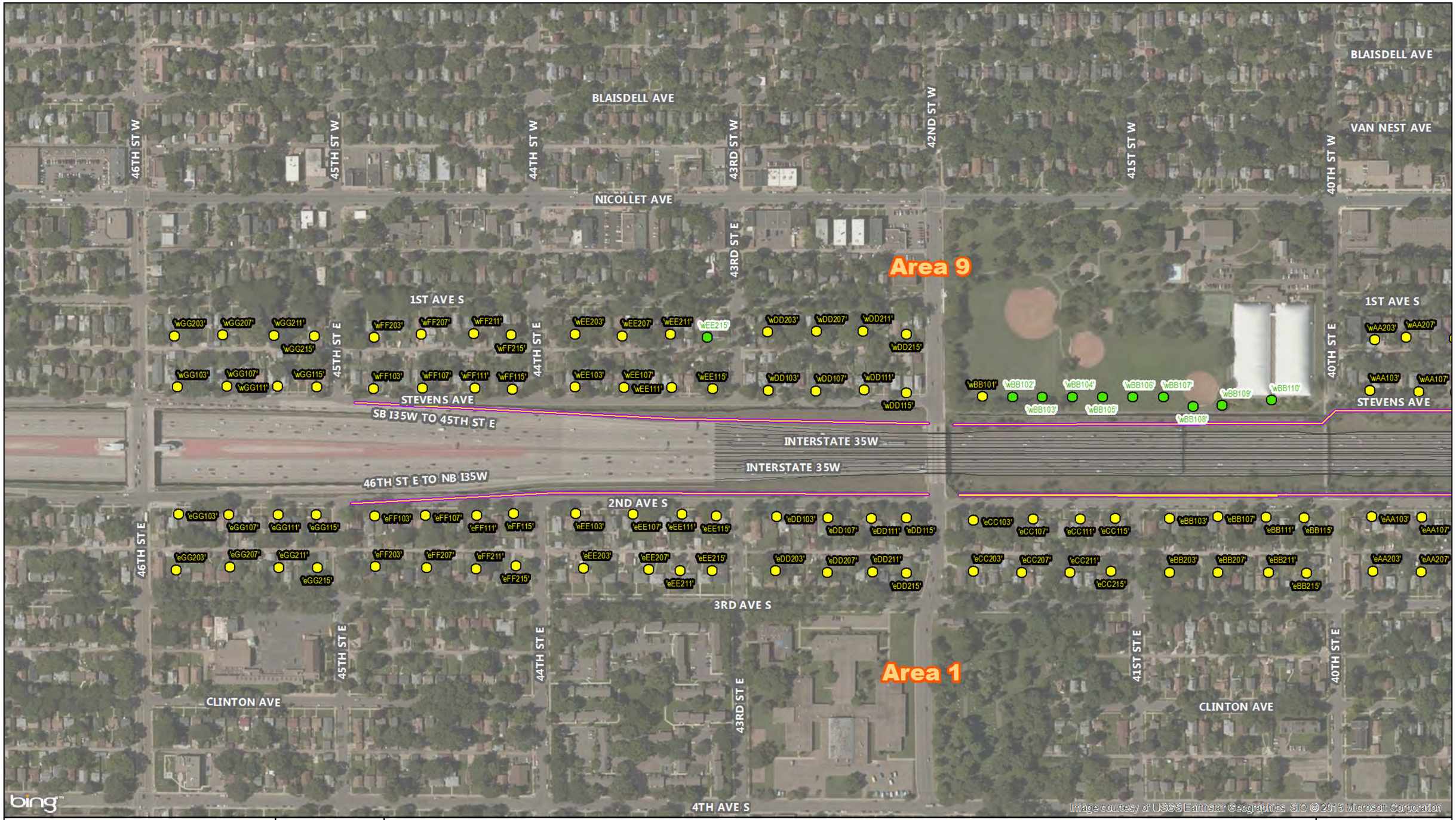
Existing Conditions - Noise Analysis

I-35W Transit Access Project
Minneapolis, MN

Figure 8

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

Path: P:\F-J\HHenn\113114\GIS\data\Noise\FinalEA_Oct2015\Fig9_15 BUILD_NoiseMonitors3.mxd



SEH

0 150 300 Feet

Print Date: 10/5/2015

Map by: MSS
Projection: Hennepin County Coordinates
Source: Hennepin County, BING
City of Minneapolis, SEH

NOT IMPACTED
IMPACTED
BENEFITED; IMPACT-BENEFIT
No Wall
Proposed Wall
Replace In Kind
Existing Noise Wall (UPA / Crosstown Project)
Proposed Geometrics

Build Conditions - Noise Analysis

I-35W Transit Access Project
Minneapolis, MN

Figure 9

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

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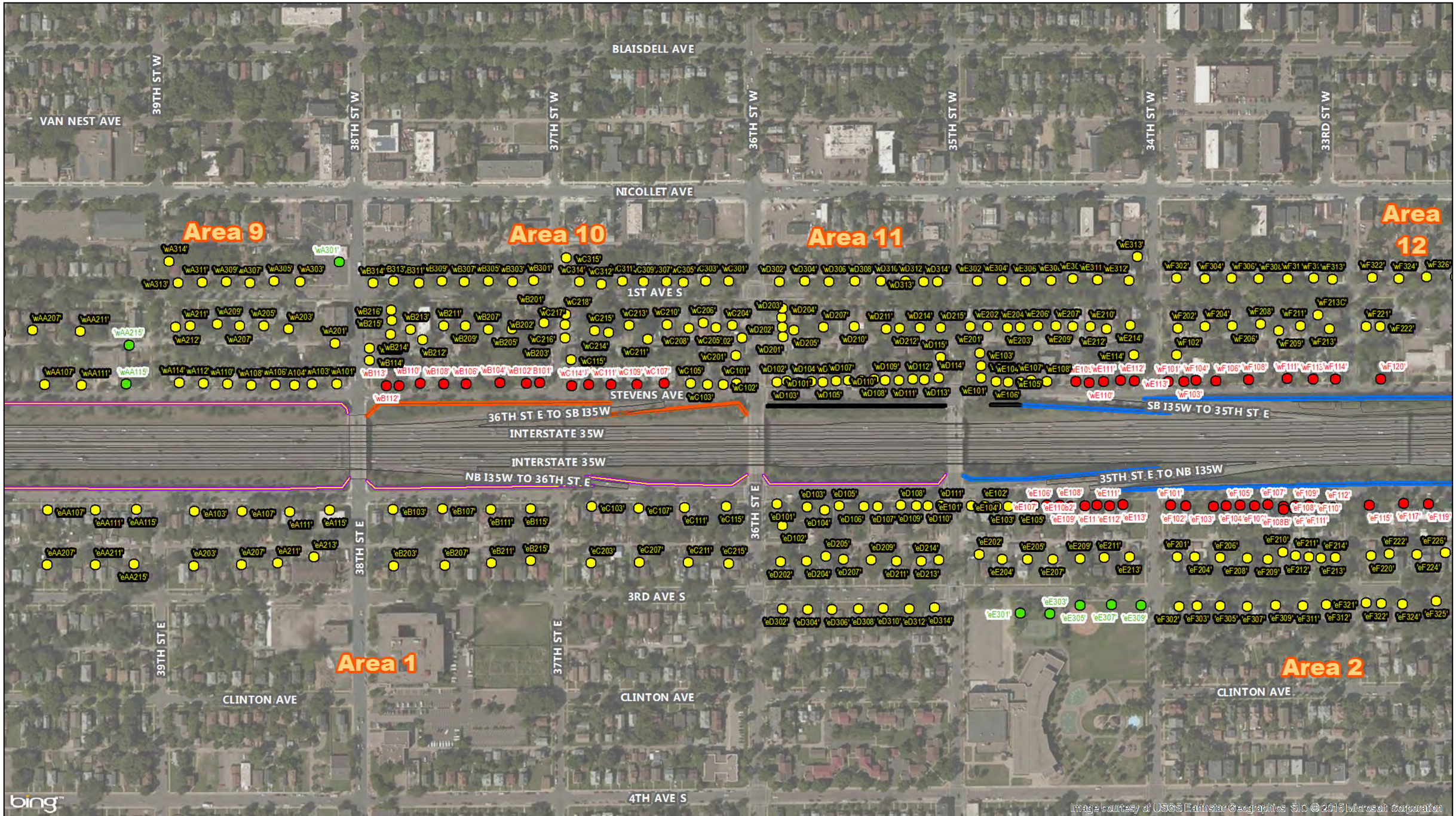


SEH

0 150 300 Feet

Print Date: 10/5/2015

Map by: MSS
Projection: Hennepin County Coordinates
Source: Hennepin County, BING
City of Minneapolis, SEH

NOT IMPACTED
IMPACTED
BENEFITED; IMPACT-BENEFIT
No Wall
Proposed Wall
Replace In Kind
Existing Noise Wall (UPA / Crosstown Project)
Proposed Geometrics

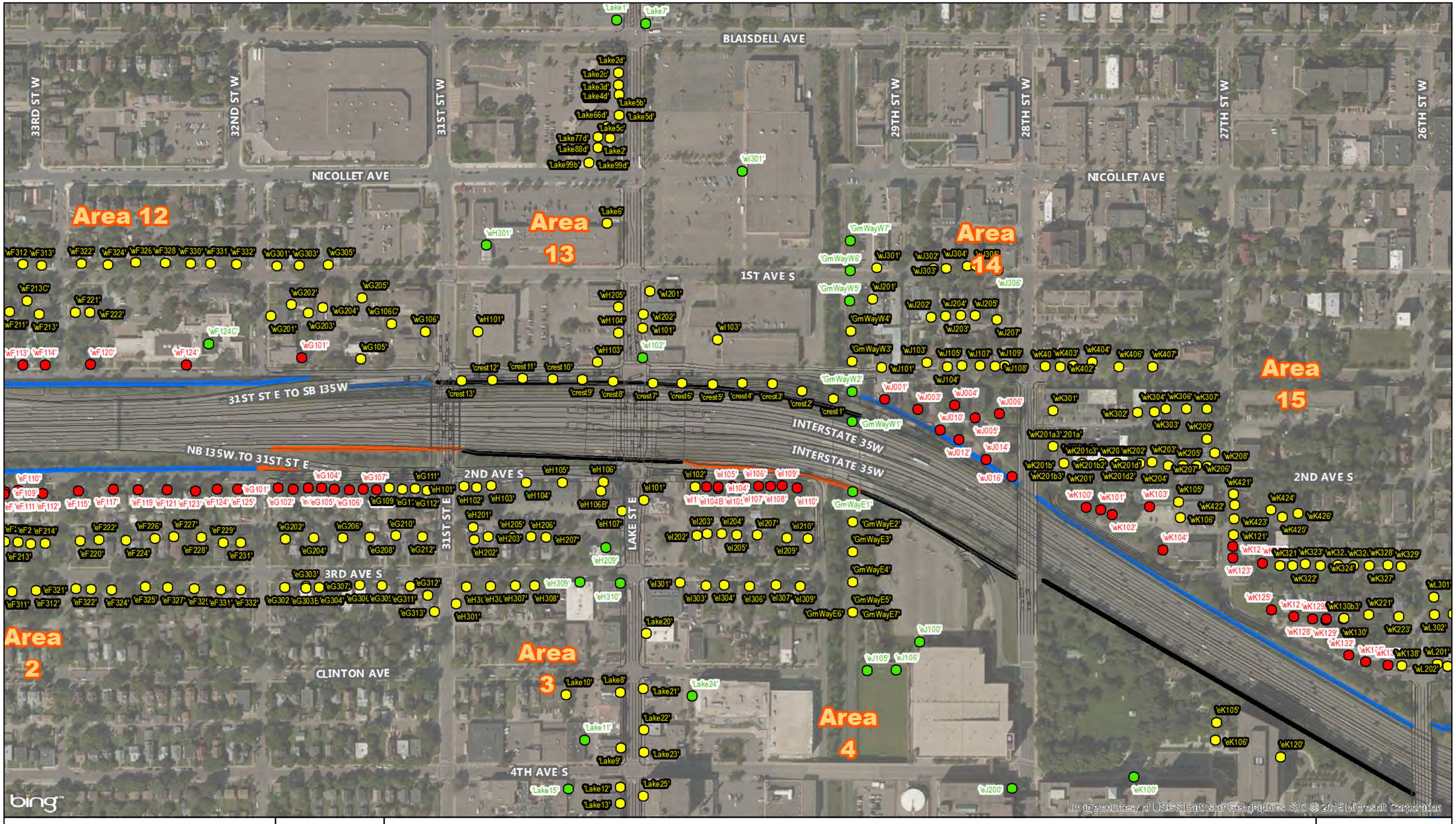
Build Conditions - Noise Analysis

I-35W Transit Access Project
Minneapolis, MN

Figure 10

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

Path: P:\F-2\HHennc\113114\GIS\data\Noise\FinalEA_Oct2015\Fig9_15 BUILD_NoiseMonitors3.mxd



SEH

0 150 300 Feet

Print Date: 10/5/2015

Map by: MSS
Projection: Hennepin County Coordinates
Source: Hennepin County, BING
City of Minneapolis, SEH

NOT IMPACTED
IMPACTED
BENEFITED; IMPACT-BENEFIT
No Wall
Proposed Wall
Replace In Kind
Existing Noise Wall (UPA / Crosstown Project)
Proposed Geometrics

Build Conditions - Noise Analysis

I-35W Transit Access Project
Minneapolis, MN

Figure 11

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

Path: P:\F-J\HHennc\113114\GIS\data\Noise\FinalEA_Oct2015\Fig9_15 BUILD_NoiseMonitors3.mxd

SEH

0 150 300 Feet

Print Date: 10/5/2015

Map by: MSS
Projection: Hennepin County Coordinates
Source: Hennepin County, BING City of Minneapolis, SEH

NOT IMPACTED
IMPACTED
BENEFITED; IMPACT-BENEFIT
No Wall
Proposed Wall
Replace In Kind
Existing Noise Wall (UPA / Crosstown Project)
Proposed Geometrics

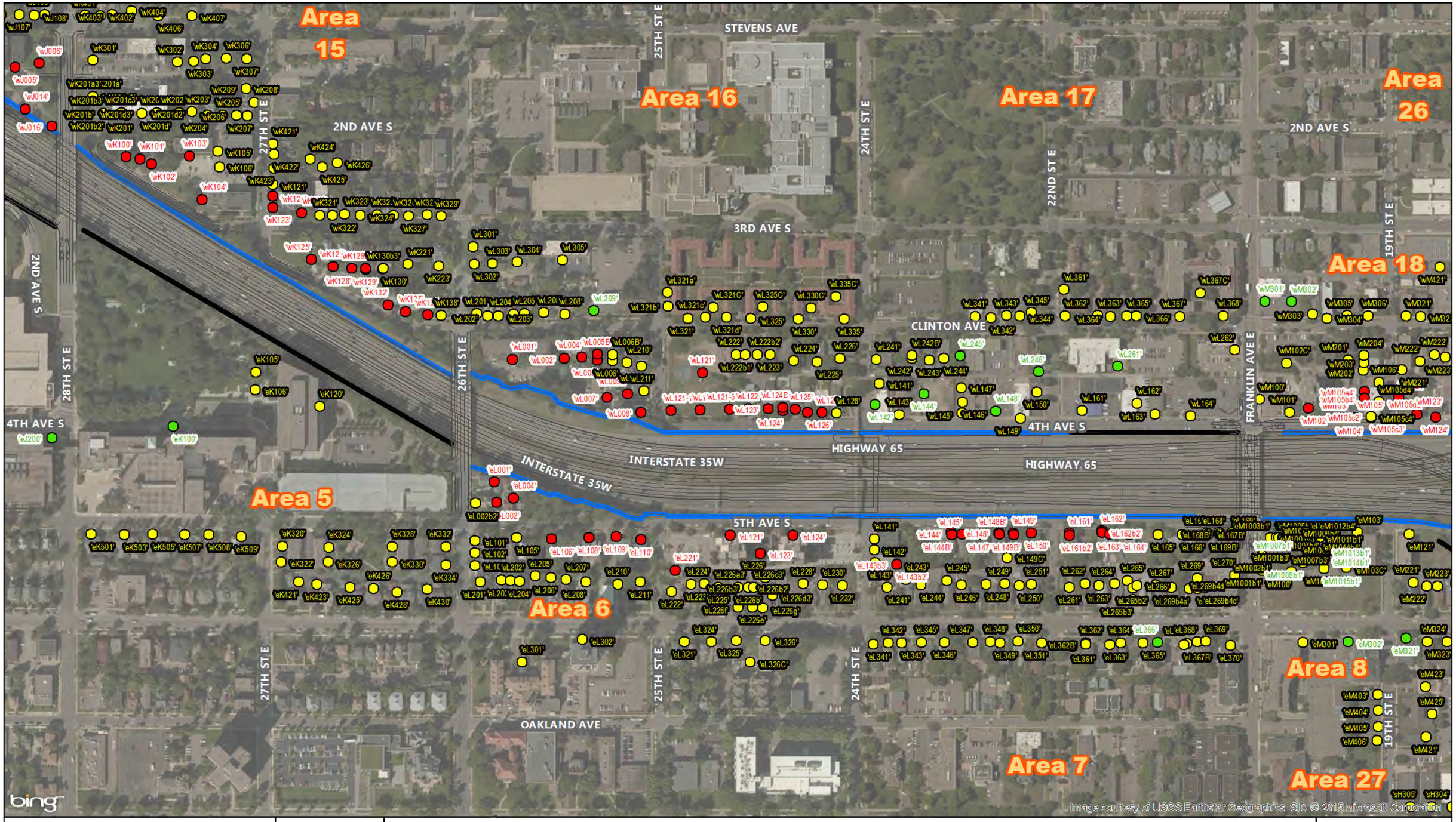
Build Conditions - Noise Analysis

I-35W Transit Access Project
Minneapolis, MN

Figure 12

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

Path: P:\F-2\HHennc\113114\GIS\data\Noise\FinalEA_Oct2015\Fig9_15 BUILD_NoiseMonitors3.mxd



SEH

0 150 300 Feet

Print Date: 10/5/2015

Map by: MSS
Projection: Hennepin County Coordinates
Source: Hennepin County, BING
City of Minneapolis, SEH

NOT IMPACTED
IMPACTED
BENEFITED; IMPACT-BENEFIT
No Wall
Proposed Wall
Replace In Kind
Existing Noise Wall (UPA / Crosstown Project)
Proposed Geometrics

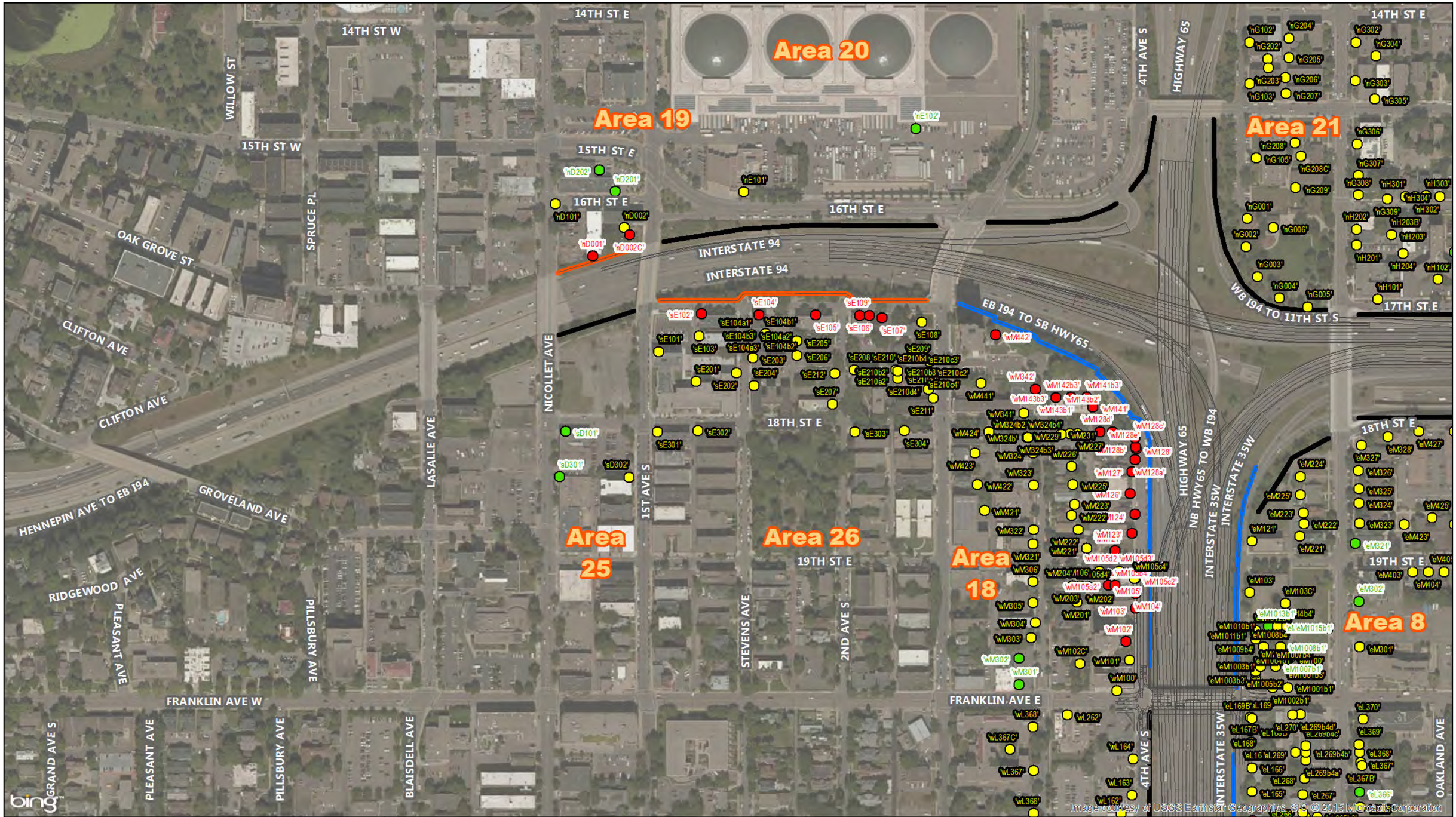
Build Conditions - Noise Analysis

I-35W Transit Access Project
Minneapolis, MN

Figure 13

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

Path: P:\F-2\HHennc\113114\GIS\data\Noise\FinalEA_Oct2015\Fig9_15 BUILD_NoiseMonitors3.mxd



SEH

0 150 300 Feet

Print Date: 10/5/2015

Map by: MSS
Projection: Hennepin County Coordinates
Source: Hennepin County, BING
City of Minneapolis, SEH

NOT IMPACTED
IMPACTED
BENEFITED; IMPACT-BENEFIT
No Wall
Proposed Wall
Replace In Kind
Existing Noise Wall (UPA / Crosstown Project)
Proposed Geometrics

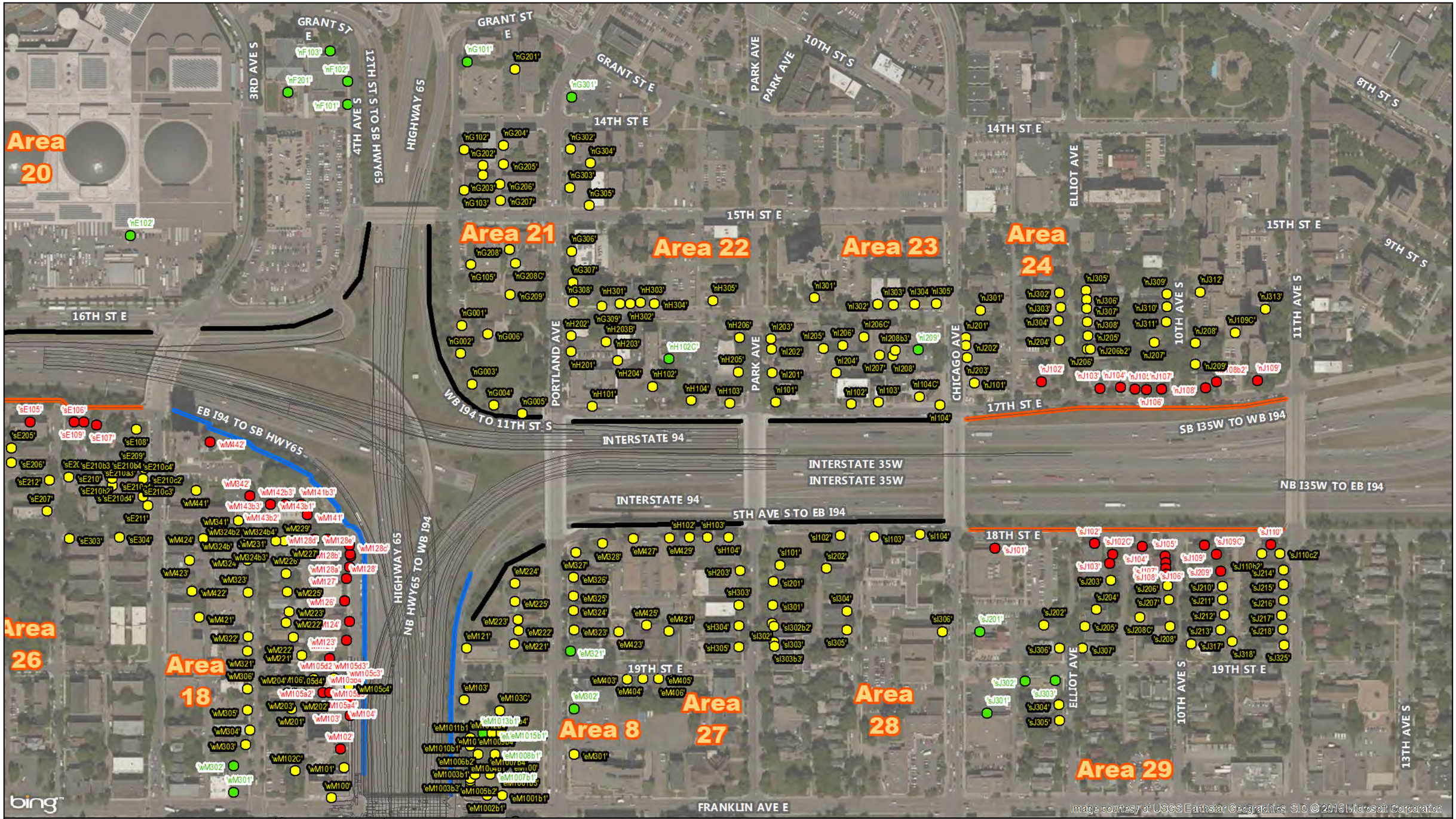
Build Conditions - Noise Analysis

I-35W Transit Access Project
Minneapolis, MN

Figure 14

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

Path: P:\F-DHHennc\113114\GIS\data\Noise\FinalEA_Oct2015\Fig9_15 BUILD_NoiseMonitors3.mxd



SEH

0 150 300 Feet

Print Date: 10/5/2015

Map by: MSS
Projection: Hennepin County Coordinates
Source: Hennepin County, BING City of Minneapolis, SEH

NOT IMPACTED
IMPACTED
BENEFITED; IMPACT-BENEFIT
No Wall
Proposed Wall
Replace In Kind
Existing Noise Wall (UPA / Crosstown Project)
Proposed Geometrics

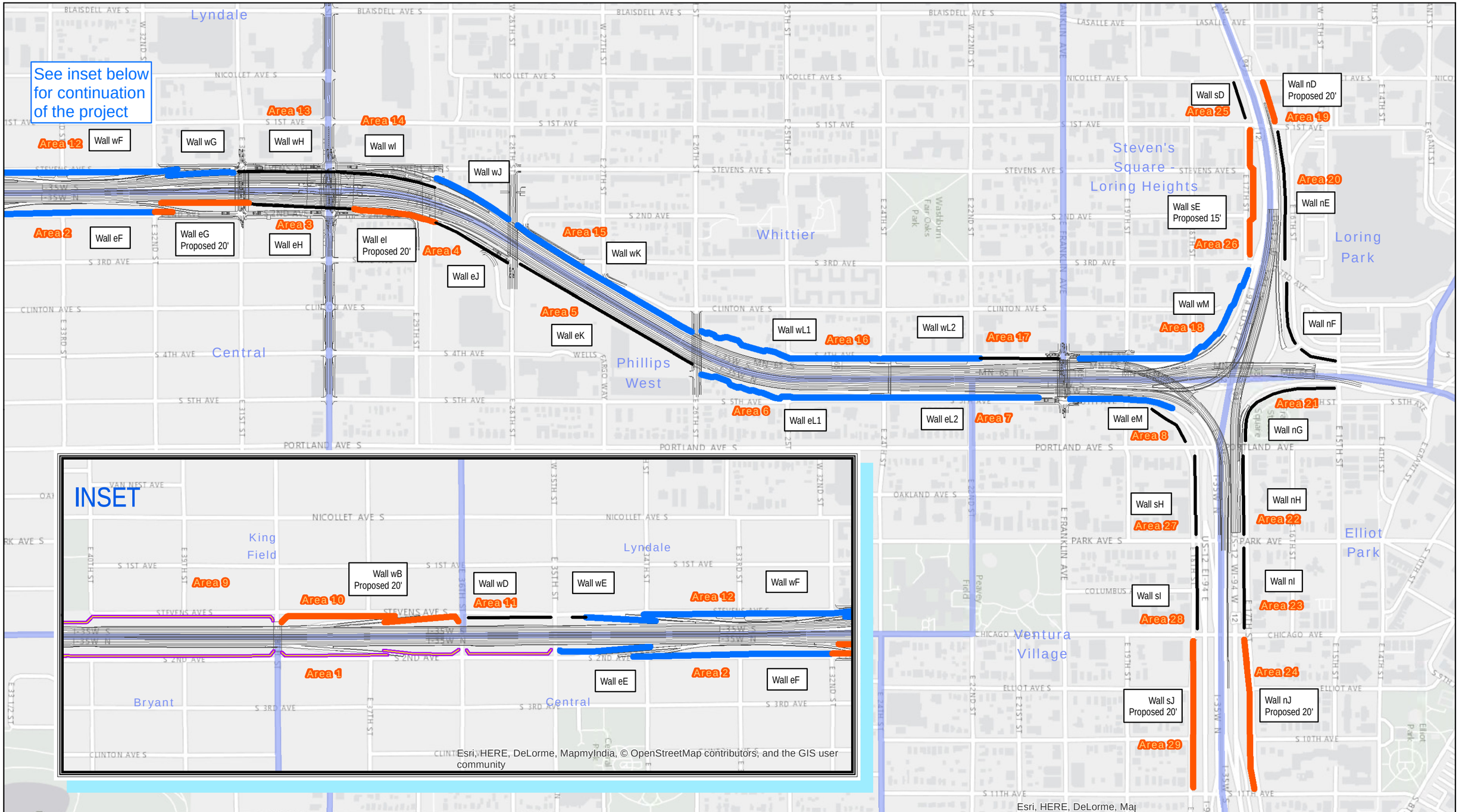
Build Conditions - Noise Analysis

I-35W Transit Access Project
Minneapolis, MN

Figure 15

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

Path: P:\FJH\Hennc\113114\GIS\data\Noise\Final\EA_Oct2015\Fig 16_NoiseWall_Public.mxd



SEH

0 0.075 0.15 Miles

Print Date: 10/6/2015

Map by: MSS
Projection: Hennepin County Coordinates
Source: Hennepin County, BING City of Minneapolis, SEH

Not Proposed
Replace
Proposed
Existing Noise Wall (UPA / Crosstown Project)
Proposed Geometrics

Noise Wall Analysis Summary

I-35W Transit Access Project
Minneapolis, MN

Figure 16

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

Appendix A

Noise Barrier Tables

Table A1
Build Noise Barrier Cost Effectiveness - REPLACE IN KIND
East Wall E - NB I-35W between 35th St and 35th Street Entrance Ramp

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (Varied ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "East E"	eE101	Residential	Day	65	70	**74.8**	**71.8**	-3.0	1	0	**13**	**YES**	**YES**	648	13,501	$270,020	**$20,771**	**REPLACE IN-KIND**
	eE102	Residential	Day	65	70	**75.0**	**71.2**	-3.8	1	0								
	eE103	Residential	Day	65	70	**74.8**	**70.7**	-4.1	1	0								
	eE104	Residential	Day	65	70	**74.9**	**70.5**	-4.4	1	0								
	eE105	Residential	Day	65	70	**75.0**	**70.3**	-4.7	1	0								
	eE106	Residential	Day	65	70	**75.5**	**70.4**	**-5.1**	1	1								
	eE107	Residential	Day	65	70	**75.8**	**70.3**	**-5.5**	2	2								
	eE108	Residential	Day	65	70	**75.9**	**70.3**	**-5.6**	1	1								
	eE109	Residential	Day	65	70	**75.6**	**69.9**	**-5.7**	1	1								
	eE110	Residential	Day	65	70	**75.7**	**69.6**	**-6.1**	2	2								
	eE110b2	Residential	Day	65	70	**79.1**	**72.0**	**-7.1**	1	1								
	eE111	Residential	Day	65	70	**75.8**	**69.2**	**-6.6**	2	2								
	eE112	Residential	Day	65	70	**75.5**	**68.6**	**-6.9**	2	2								
	eE113	Residential	Day	65	70	**75.4**	**67.9**	**-7.5**	1	1								
	eE202	Residential	Day	65	70	**68.7**	**68.7**	0.0	3	0								
	eE204	Residential	Day	65	70	**65.4**	**65.4**	0.0	2	0								
	eE205	Residential	Day	65	70	**65.5**	**65.5**	0.0	1	0								
	eE207	Residential	Day	65	70	**65.9**	**65.9**	0.0	2	0								
	eE209	Residential	Day	65	70	**66.3**	**65.8**	-0.5	3	0								
	eE211	Residential	Day	65	70	**66.3**	**65.5**	-0.8	3	0								
	eE213	Residential	Day	65	70	**65.8**	64.9	-0.9	2	0								
Wall "East E"	eE101	Residential	Night	55	70	**74.5**	**71.4**	-3.1	1	0	**12**	**YES**	**YES**	648	13,501	$270,020	**$22,502**	**REPLACE IN-KIND**
	eE102	Residential	Night	55	70	**74.8**	**71.0**	-3.8	1	0								
	eE103	Residential	Night	55	70	**74.6**	**70.6**	-4.0	1	0								
	eE104	Residential	Night	55	70	**74.8**	**70.5**	-4.3	1	0								
	eE105	Residential	Night	55	70	**74.8**	**70.3**	-4.5	1	0								
	eE106	Residential	Night	55	70	**75.3**	**70.5**	-4.8	1	0								
	eE107	Residential	Night	55	70	**75.6**	**70.4**	**-5.2**	2	2								
	eE108	Residential	Night	55	70	**75.7**	**70.3**	**-5.4**	1	1								
	eE109	Residential	Night	55	70	**75.5**	**69.9**	**-5.6**	1	1								
	eE110	Residential	Night	55	70	**75.5**	**69.7**	**-5.8**	2	2								
	eE110b2	Residential	Night	55	70	**78.8**	**71.9**	**-6.9**	1	1								
	eE111	Residential	Night	55	70	**75.6**	**69.3**	**-6.3**	2	2								
	eE112	Residential	Night	55	70	**75.4**	**68.6**	**-6.8**	2	2								
	eE113	Residential	Night	55	70	**75.2**	**68.0**	**-7.2**	1	1								
	eE202	Residential	Night	55	70	**67.6**	**67.6**	0.0	3	0								
	eE204	Residential	Night	55	70	**64.8**	**64.8**	0.0	2	0								
	eE205	Residential	Night	55	70	**65.0**	**65.0**	0.0	1	0								
	eE207	Residential	Night	55	70	**65.4**	**65.4**	0.0	2	0								
	eE209	Residential	Night	55	70	**65.8**	**65.6**	-0.2	3	0								
	eE211	Residential	Night	55	70	**65.8**	**65.3**	-0.5	3	0								
	eE213	Residential	Night	55	70	**65.3**	**64.8**	-0.5	2	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ -

Table A2a
Build Noise Barrier Cost Effectiveness - REPLACE IN KIND
East Wall F - NB I-35W between 35th St Entrance Ramp and 31st Street Exit Ramp

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (Varied ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "East F"	eF101	Residential	Day	65	70	**74.7**	**65.8**	**-8.9**	1	1	**40**	**YES**	**YES**	1,424	28,635	$572,700	**$14,318**	**REPLACE IN-KIND**
	eF102	Residential	Day	65	70	**74.7**	**65.7**	**-9.0**	1	1								
	eF103	Residential	Day	65	70	**74.6**	**65.4**	**-9.2**	1	1								
	eF104	Residential	Day	65	70	**74.8**	**65.6**	**-9.2**	1	1								
	eF105	Residential	Day	65	70	**74.9**	**65.6**	**-9.3**	2	2								
	eF106	Residential	Day	65	70	**74.8**	**65.6**	**-9.2**	1	1								
	eF107	Residential	Day	65	70	**75.1**	**65.8**	**-9.3**	1	1								
	eF108	Residential	Day	65	70	**75.0**	**65.6**	**-9.4**	1	1								
	eF108B	Residential	Day	65	70	**78.8**	**68.4**	**-10.4**	1	1								
	eF109	Residential	Day	65	70	**75.2**	**65.7**	**-9.5**	1	1								
	eF109B	Residential	Day	65	70	**79.0**	**68.6**	**-10.4**	1	1								
	eF110	Residential	Day	65	70	**75.4**	**65.9**	**-9.5**	1	1								
	eF111	Residential	Day	65	70	**74.9**	**65.3**	**-9.6**	1	1								
	eF112	Residential	Day	65	70	**74.9**	**65.2**	**-9.7**	2	2								
	eF201	Residential	Day	65	70	**65.2**	64.1	-1.1	4	0								
	eF204	Residential	Day	65	70	**65.2**	63.9	-1.3	2	0								
	eF206	Residential	Day	65	70	**65.3**	63.8	-1.5	2	0								
	eF208	Residential	Day	65	70	**65.5**	63.8	-1.7	2	0								
	eF209	Residential	Day	65	70	**65.7**	63.9	-1.8	1	0								
	eF210	Residential	Day	65	70	**66.2**	64.0	-2.2	2	0								
	eF211	Residential	Day	65	70	**66.2**	64.1	-2.1	1	0								
	eF212	Residential	Day	65	70	**66.3**	64.2	-2.1	2	0								
	eF213	Residential	Day	65	70	**66.5**	64.4	-2.1	1	0								
	eF214	Residential	Day	65	70	**66.6**	64.6	-2.0	2	0								
	eF115	Residential	Day	65	70	**75.6**	**65.4**	**-10.2**	1	1								
	eF117	Residential	Day	65	70	**76.2**	**65.6**	**-10.6**	2	2								
	eF119	Residential	Day	65	70	**76.1**	**65.4**	**-10.7**	2	2								
	eF121	Residential	Day	65	70	**76.0**	**65.7**	**-10.3**	2	2								
	eF123	Residential	Day	65	70	**75.8**	**66.2**	**-9.6**	2	2								
	eF124	Residential	Day	65	70	**75.9**	**67.5**	**-8.4**	2	2								
	eF125	Residential	Day	65	70	**75.8**	**69.9**	**-5.9**	1	1								
	eF220	Residential	Day	65	70	**67.5**	62.8	-4.7	1	0								
	eF222	Residential	Day	65	70	**68.0**	63.0	**-5.0**	4	4								
	eF224	Residential	Day	65	70	**68.5**	63.3	**-5.2**	4	4								
	eF226	Residential	Day	65	70	**68.9**	63.8	**-5.1**	4	4								
	eF227	Residential	Day	65	70	**69.3**	64.4	-4.9	2	0								
	eF228	Residential	Day	65	70	**69.4**	**65.3**	-4.1	1	0								
	eF229	Residential	Day	65	70	**69.2**	**66.1**	-3.1	3	0								
	eF231	Residential	Day	65	70	**69.2**	**66.9**	-2.3	2	0								

Table A2a
Build Noise Barrier Cost Effectiveness - REPLACE IN KIND
East Wall F - NB I-35W between 35th St Entrance Ramp and 31st Street Exit Ramp

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (Varied ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "East F"	eF101	Residential	Night	55	70	**74.4**	**66.5**	**-7.9**	1	1	**40**	**YES**	**YES**	1,424	28,635	$572,700	**$14,318**	**REPLACE IN-KIND**
	eF102	Residential	Night	55	70	**74.4**	**66.3**	**-8.1**	1	1								
	eF103	Residential	Night	55	70	**74.3**	**66.0**	**-8.3**	1	1								
	eF104	Residential	Night	55	70	**74.6**	**66.2**	**-8.4**	1	1								
	eF105	Residential	Night	55	70	**74.6**	**66.3**	**-8.3**	2	2								
	eF106	Residential	Night	55	70	**74.6**	**66.2**	**-8.4**	1	1								
	eF107	Residential	Night	55	70	**74.8**	**66.4**	**-8.4**	1	1								
	eF108	Residential	Night	55	70	**74.8**	**66.2**	**-8.6**	1	1								
	eF108B	Residential	Night	55	70	**78.5**	**68.2**	**-10.3**	1	1								
	eF109	Residential	Night	55	70	**74.9**	**66.3**	**-8.6**	1	1								
	eF109B	Residential	Night	55	70	**78.7**	**68.4**	**-10.3**	1	1								
	eF110	Residential	Night	55	70	**75.2**	**66.5**	**-8.7**	1	1								
	eF111	Residential	Night	55	70	**74.6**	**65.8**	**-8.8**	1	1								
	eF112	Residential	Night	55	70	**74.6**	**65.7**	**-8.9**	2	2								
	eF201	Residential	Night	55	70	**64.7**	**63.8**	-0.9	4	0								
	eF204	Residential	Night	55	70	**64.7**	**63.6**	-1.1	2	0								
	eF206	Residential	Night	55	70	**64.8**	**63.4**	-1.4	2	0								
	eF208	Residential	Night	55	70	**65.0**	**63.4**	-1.6	2	0								
	eF209	Residential	Night	55	70	**65.2**	**63.5**	-1.7	1	0								
	eF210	Residential	Night	55	70	**65.7**	**63.7**	-2.0	2	0								
	eF211	Residential	Night	55	70	**65.7**	**63.7**	-2.0	1	0								
	eF212	Residential	Night	55	70	**65.9**	**63.9**	-2.0	2	0								
	eF213	Residential	Night	55	70	**66.0**	**64.0**	-2.0	1	0								
	eF214	Residential	Night	55	70	**66.2**	**64.2**	-2.0	2	0								
	eF115	Residential	Night	55	70	**75.3**	**66.1**	**-9.2**	1	1								
	eF117	Residential	Night	55	70	**76.0**	**66.3**	**-9.7**	2	2								
	eF119	Residential	Night	55	70	**75.9**	**66.0**	**-9.9**	2	2								
	eF121	Residential	Night	55	70	**75.8**	**66.3**	**-9.5**	2	2								
	eF123	Residential	Night	55	70	**75.6**	**66.6**	**-9.0**	2	2								
	eF124	Residential	Night	55	70	**75.8**	**67.8**	**-8.0**	2	2								
	eF125	Residential	Night	55	70	**75.7**	**69.9**	**-5.8**	1	1								
	eF220	Residential	Night	55	70	**67.0**	**62.4**	-4.6	1	0								
	eF222	Residential	Night	55	70	**67.6**	**62.6**	**-5.0**	4	4								
	eF224	Residential	Night	55	70	**68.1**	**62.9**	**-5.2**	4	4								
	eF226	Residential	Night	55	70	**68.5**	**63.4**	**-5.1**	4	4								
	eF227	Residential	Night	55	70	**68.9**	**64.0**	-4.9	2	0								
	eF228	Residential	Night	55	70	**69.0**	**64.9**	-4.1	1	0								
	eF229	Residential	Night	55	70	**68.8**	**65.7**	-3.1	3	0								
	eF231	Residential	Night	55	70	**68.9**	**66.5**	-2.4	2	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ -

Table A2b
Build Noise Barrier Cost Effectiveness - REPLACE IN KIND plus 106 Foot Extended Length at 20 Foot High (combined with Barrier eG)
East Wall F - NB I-35W between 35th St Entrance Ramp and 31st Street Exit Ramp

				Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				
Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	MnDOT	FHWA	Build with Existing Barriers	Build with Barriers (20 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	NOISE WALL RESULTS
Wall "East F"	eF101	Residential	Day	65	70	**65.8**	**65.8**	0.0	1	0	**0**	NO	NO	1,530	31,473	$629,460	N/A	NOT ACOUSTICALLY EFFECTIVE
	eF102	Residential	Day	65	70	**65.7**	**65.7**	0.0	1	0								
	eF103	Residential	Day	65	70	**65.4**	**65.4**	0.0	1	0								
	eF104	Residential	Day	65	70	**65.6**	**65.6**	0.0	1	0								
	eF105	Residential	Day	65	70	**65.6**	**65.6**	0.0	2	0								
	eF106	Residential	Day	65	70	**65.6**	**65.5**	-0.1	1	0								
	eF107	Residential	Day	65	70	**65.8**	**65.8**	0.0	1	0								
	eF108	Residential	Day	65	70	**65.6**	**65.6**	0.0	1	0								
	eF108B	Residential	Day	65	70	**68.4**	**68.4**	0.0	1	0								
	eF109	Residential	Day	65	70	**65.7**	**65.7**	0.0	1	0								
	eF109B	Residential	Day	65	70	**68.6**	**68.5**	-0.1	1	0								
	eF110	Residential	Day	65	70	**65.9**	**65.9**	0.0	1	0								
	eF111	Residential	Day	65	70	**65.3**	**65.3**	0.0	1	0								
	eF112	Residential	Day	65	70	**65.2**	**65.1**	-0.1	2	0								
	eF201	Residential	Day	65	70	64.1	63.9	-0.2	4	0								
	eF204	Residential	Day	65	70	63.9	63.6	-0.3	2	0								
	eF206	Residential	Day	65	70	63.8	63.4	-0.4	2	0								
	eF208	Residential	Day	65	70	63.8	63.3	-0.5	2	0								
	eF209	Residential	Day	65	70	63.9	63.2	-0.7	1	0								
	eF210	Residential	Day	65	70	64.0	63.4	-0.6	2	0								
	eF211	Residential	Day	65	70	64.1	63.3	-0.8	1	0								
	eF212	Residential	Day	65	70	64.2	63.3	-0.9	2	0								
	eF213	Residential	Day	65	70	64.4	63.3	-1.1	1	0								
	eF214	Residential	Day	65	70	64.6	63.3	-1.3	2	0								
	eF115	Residential	Day	65	70	**65.4**	**65.4**	0.0	1	0								
	eF117	Residential	Day	65	70	**65.6**	**65.5**	-0.1	2	0								
	eF119	Residential	Day	65	70	**65.4**	**65.2**	-0.2	2	0								
	eF121	Residential	Day	65	70	**65.7**	**65.4**	-0.3	2	0								
	eF123	Residential	Day	65	70	**66.2**	**65.2**	-1.0	2	0								
	eF124	Residential	Day	65	70	**67.5**	**65.6**	-1.9	2	0								
	eF125	Residential	Day	65	70	**69.9**	**65.9**	-4.0	1	0								
	eF220	Residential	Day	65	70	62.8	62.8	0.0	1	0								
	eF222	Residential	Day	65	70	63.0	63.0	0.0	4	0								
	eF224	Residential	Day	65	70	63.3	63.3	0.0	4	0								
	eF226	Residential	Day	65	70	63.8	63.8	0.0	4	0								
	eF227	Residential	Day	65	70	64.4	64.1	-0.3	2	0								
	eF228	Residential	Day	65	70	**65.3**	64.3	-1.0	1	0								
	eF229	Residential	Day	65	70	**66.1**	64.4	-1.7	3	0								
	eF231	Residential	Day	65	70	**66.9**	64.7	-2.2	2	0								

Table A2b
Build Noise Barrier Cost Effectiveness - REPLACE IN KIND plus 106 Foot Extended Length at 20 Foot High (combined with Barrier eG)
East Wall F - NB I-35W between 35th St Entrance Ramp and 31st Street Exit Ramp

				Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				
Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	MnDOT	FHWA	Build with Existing Barriers	Build with Barriers (20 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	NOISE WALL RESULTS
Wall "East F"	eF101	Residential	Night	55	70	**66.5**	**66.4**	-0.1	1	0	**0**	NO	NO	1,530	31,473	$629,460	N/A	NOT ACOUSTICALLY EFFECTIVE
	eF102	Residential	Night	55	70	**66.3**	**66.3**	0.0	1	0								
	eF103	Residential	Night	55	70	**66.0**	**66.0**	0.0	1	0								
	eF104	Residential	Night	55	70	**66.2**	**66.2**	0.0	1	0								
	eF105	Residential	Night	55	70	**66.3**	**66.2**	-0.1	2	0								
	eF106	Residential	Night	55	70	**66.2**	**66.2**	0.0	1	0								
	eF107	Residential	Night	55	70	**66.4**	**66.4**	0.0	1	0								
	eF108	Residential	Night	55	70	**66.2**	**66.2**	0.0	1	0								
	eF108B	Residential	Night	55	70	**68.2**	**68.1**	-0.1	1	0								
	eF109	Residential	Night	55	70	**66.3**	**66.3**	0.0	1	0								
	eF109B	Residential	Night	55	70	**68.4**	**68.3**	-0.1	1	0								
	eF110	Residential	Night	55	70	**66.5**	**66.5**	0.0	1	0								
	eF111	Residential	Night	55	70	**65.8**	**65.8**	0.0	1	0								
	eF112	Residential	Night	55	70	**65.7**	**65.7**	0.0	2	0								
	eF201	Residential	Night	55	70	**63.8**	**63.6**	-0.2	4	0								
	eF204	Residential	Night	55	70	**63.6**	**63.3**	-0.3	2	0								
	eF206	Residential	Night	55	70	**63.4**	**63.1**	-0.3	2	0								
	eF208	Residential	Night	55	70	**63.4**	**62.9**	-0.5	2	0								
	eF209	Residential	Night	55	70	**63.5**	**62.8**	-0.7	1	0								
	eF210	Residential	Night	55	70	**63.7**	**63.0**	-0.7	2	0								
	eF211	Residential	Night	55	70	**63.7**	**62.9**	-0.8	1	0								
	eF212	Residential	Night	55	70	**63.9**	**62.9**	-1.0	2	0								
	eF213	Residential	Night	55	70	**64.0**	**62.9**	-1.1	1	0								
	eF214	Residential	Night	55	70	**64.2**	**62.9**	-1.3	2	0								
	eF115	Residential	Night	55	70	**66.1**	**66.1**	0.0	1	0								
	eF117	Residential	Night	55	70	**66.3**	**66.2**	-0.1	2	0								
	eF119	Residential	Night	55	70	**66.0**	**65.9**	-0.1	2	0								
	eF121	Residential	Night	55	70	**66.3**	**66.0**	-0.3	2	0								
	eF123	Residential	Night	55	70	**66.6**	**65.7**	-0.9	2	0								
	eF124	Residential	Night	55	70	**67.8**	**66.2**	-1.6	2	0								
	eF125	Residential	Night	55	70	**69.9**	**66.5**	-3.4	1	0								
	eF220	Residential	Night	55	70	**62.4**	**62.4**	0.0	1	0								
	eF222	Residential	Night	55	70	**62.6**	**62.6**	0.0	4	0								
	eF224	Residential	Night	55	70	**62.9**	**62.9**	0.0	4	0								
	eF226	Residential	Night	55	70	**63.4**	**63.4**	0.0	4	0								
	eF227	Residential	Night	55	70	**64.0**	**63.7**	-0.3	2	0								
	eF228	Residential	Night	55	70	**64.9**	**63.9**	-1.0	1	0								
	eF229	Residential	Night	55	70	**65.7**	**64.0**	-1.7	3	0								
	eF231	Residential	Night	55	70	**66.5**	**64.3**	-2.2	2	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ -

Table A3
Build Noise Barrier Cost Effectiveness - 20 Foot Noise Wall (10 Foot on Bridge Structure)
East Wall G - NB I-35W between 31st St Entrance Ramp and 31st Street

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with Existing Barriers	Build with Barriers (20 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "East G"	eG101	Residential	Day	65	70	**75.3**	**67.3**	**-8.0**	1	1	**9**	**YES**	**YES**	719	12,680	$363,600	**$40,400**	**PROPOSE TO CONSTRUCT**
	eG102	Residential	Day	65	70	**75.4**	**68.1**	**-7.3**	1	1								
	eG103	Residential	Day	65	70	**75.7**	**69.0**	**-6.7**	1	1								
	eG104	Residential	Day	65	70	**75.6**	**69.4**	**-6.2**	1	1								
	eG105	Residential	Day	65	70	**75.5**	**69.6**	**-5.9**	1	1								
	eG106	Residential	Day	65	70	**75.4**	**69.8**	**-5.6**	1	1								
	eG107	Residential	Day	65	70	**75.3**	**69.9**	**-5.4**	1	1								
	eG108	Residential	Day	65	70	**75.2**	**69.9**	**-5.3**	2	2								
	eG109	Residential	Day	65	70	**75.3**	**70.4**	-4.9	2	0								
	eG110	Residential	Day	65	70	**74.9**	**70.4**	-4.5	1	0								
	eG111	Residential	Day	65	70	**74.8**	**71.0**	-3.8	1	0								
	eG112	Residential	Day	65	70	**74.7**	**71.9**	-2.8	1	0								
	eG202	Residential	Day	65	70	**67.9**	**65.7**	-2.2	2	0								
	eG204	Residential	Day	65	70	**68.4**	**66.3**	-2.1	2	0								
	eG206	Residential	Day	65	70	**68.3**	**66.8**	-1.5	3	0								
	eG208	Residential	Day	65	70	**68.1**	**67.3**	-0.8	2	0								
	eG210	Residential	Day	65	70	**68.1**	**68.1**	0.0	2	0								
	eG212	Residential	Day	65	70	**68.5**	**68.5**	0.0	2	0								
Wall "East G"	eG101	Residential	Night	55	70	**75.2**	**67.6**	**-7.6**	1	1	**7**	**YES**	**YES**	719	12,680	$363,600	$51,943	NOT COST EFFECTIVE
	eG102	Residential	Night	55	70	**75.3**	**68.3**	**-7.0**	1	1								
	eG103	Residential	Night	55	70	**75.6**	**69.3**	**-6.3**	1	1								
	eG104	Residential	Night	55	70	**75.6**	**69.7**	**-5.9**	1	1								
	eG105	Residential	Night	55	70	**75.5**	**69.9**	**-5.6**	1	1								
	eG106	Residential	Night	55	70	**75.4**	**70.1**	**-5.3**	1	1								
	eG107	Residential	Night	55	70	**75.3**	**70.3**	**-5.0**	1	1								
	eG108	Residential	Night	55	70	**75.2**	**70.5**	-4.7	2	0								
	eG109	Residential	Night	55	70	**75.5**	**71.2**	-4.3	2	0								
	eG110	Residential	Night	55	70	**75.1**	**71.1**	-4.0	1	0								
	eG111	Residential	Night	55	70	**74.9**	**71.4**	-3.5	1	0								
	eG112	Residential	Night	55	70	**74.4**	**71.3**	-3.1	1	0								
	eG202	Residential	Night	55	70	**67.6**	**65.5**	-2.1	2	0								
	eG204	Residential	Night	55	70	**68.1**	**66.2**	-1.9	2	0								
	eG206	Residential	Night	55	70	**68.1**	**66.6**	-1.5	3	0								
	eG208	Residential	Night	55	70	**67.8**	**67.0**	-0.8	2	0								
	eG210	Residential	Night	55	70	**67.8**	**67.7**	-0.1	2	0								
	eG212	Residential	Night	55	70	**67.5**	**67.5**	0.0	2	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ 110,000.00

Additional costs for TL-4 Noise Barrier on Bridge Structure; 100 feet at an additional $110 sqft

Table A4
Build Noise Barrier Cost Effectiveness - 20 Foot Noise Wall (10 Foot on Bridge Structure)
East Wall H - NB I-35W between 31st Street and Lake Street

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (20 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "East H"	eH101	Residential	Day	65	70	**74.5**	**71.7**	-2.8	2	0	**0**	NO	NO	740	11,210	$570,700	N/A	NOT ACOUSTICALLY EFFECTIVE
	eH102	Residential	Day	65	70	**73.4**	**70.1**	-3.3	0	0								
	eH103	Residential	Day	65	70	**73.4**	**70.0**	-3.4	1	0								
	eH104	Commercial	Day	70	75	**73.4**	**70.3**	-3.1	5	0								
	eH105	Commercial	Day	70	75	**73.4**	**70.5**	-2.9	5	0								
	eH106	Commercial	Day	70	75	**74.0**	**72.2**	-1.8	1	0								
	eH106B	Residential	Day	65	70	**74.4**	**72.1**	-2.3	2	0								
	eH107	Commercial	Day	70	75	**76.3**	**75.3**	-1.0	5	0								
	eH201	Residential	Day	65	70	**70.1**	**69.7**	-0.4	1	0								
	eH202	Residential	Day	65	70	**69.7**	**69.2**	-0.5	1	0								
	eH203	Residential	Day	65	70	**66.9**	**66.9**	0.0	2	0								
	eH205	Residential	Day	65	70	**66.2**	**66.2**	0.0	4	0								
	eH207	Residential	Day	65	70	**65.9**	**65.9**	0.0	2	0								
	eH206	Residential	Day	65	70	**66.0**	**66.0**	0.0	2	0								
	eH209	Commercial	Day	70	75	68.0	68.0	0.0	1	0								
Wall "East H"	eH101	Residential	Night	55	70	**74.4**	**71.5**	-2.9	2	0	**0**	NO	NO	740	11,210	$570,700	N/A	NOT ACOUSTICALLY EFFECTIVE
	eH102	Residential	Night	55	70	**73.8**	**70.7**	-3.1	0	0								
	eH103	Residential	Night	55	70	**74.0**	**71.1**	-2.9	1	0								
	eH104	Commercial	Night	70	75	**74.4**	**72.1**	-2.3	5	0								
	eH105	Commercial	Night	70	75	**74.4**	**72.2**	-2.2	5	0								
	eH106	Commercial	Night	70	75	**74.7**	**73.1**	-1.6	1	0								
	eH106B	Residential	Night	55	70	**74.3**	**71.9**	-2.4	2	0								
	eH107	Commercial	Night	70	75	**74.7**	**72.9**	-1.8	5	0								
	eH201	Residential	Night	55	70	**68.1**	**67.7**	-0.4	1	0								
	eH202	Residential	Night	55	70	**67.7**	**67.1**	-0.6	1	0								
	eH203	Residential	Night	55	70	**66.4**	**66.4**	0.0	2	0								
	eH205	Residential	Night	55	70	**65.9**	**65.9**	0.0	4	0								
	eH207	Residential	Night	55	70	**65.6**	**65.6**	0.0	2	0								
	eH206	Residential	Night	55	70	**65.7**	**65.7**	0.0	2	0								
	eH209	Commercial	Night	70	75	66.9	66.9	0.0	1	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ 346,500.00

Additional costs for TL-4 Noise Barrier on Bridge Structure; 315 feet at an additional $110 sqft

Table A5
Build Noise Barrier Cost Effectiveness - 20 Foot Noise Wall (10 foot on Bridge Structure)
East Wall I - NB I-35W between Lake Street and the Greenway

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (20 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "East I"	eI101	Commercial	Day	70	75	**75.4**	**74.8**	-0.6	1	0	**14**	**YES**	**YES**	590	10,300	$305,000	**$21,786**	**PROPOSE TO CONSTRUCT**
	eI102	Residential	Day	65	70	**72.8**	**68.6**	-4.2	1	0								
	eI103	Residential	Day	65	70	**73.0**	**67.6**	**-5.4**	1	1								
	eI104	Residential	Day	65	70	**73.2**	**66.7**	**-6.5**										
	eI104B	Residential	Day	65	70	**76.5**	**69.2**	**-7.3**	4	4								
	eI105	Residential	Day	65	70	**73.3**	**66.1**	**-7.2**										
	eI105B	Residential	Day	65	70	**76.6**	**68.7**	**-7.9**	4	4								
	eI106	Residential	Day	65	70	**73.8**	**65.9**	**-7.9**	1	1								
	eI107	Residential	Day	65	70	**74.1**	**65.9**	**-8.2**	1	1								
	eI108	Residential	Day	65	70	**74.3**	**65.9**	**-8.4**	1	1								
	eI109	Residential	Day	65	70	**74.9**	**66.1**	**-8.8**	1	1								
	eI110	Residential	Day	65	70	**75.3**	**66.7**	**-8.6**	1	1								
	eI202	Residential	Day	65	70	**68.2**	**68.2**	0.0	2	0								
	eI203	Residential	Day	65	70	**67.0**	**67.0**	0.0	1	0								
	eI204	Residential	Day	65	70	**67.1**	**67.1**	0.0	2	0								
	eI205	Residential	Day	65	70	**67.1**	**67.1**	0.0	2	0								
	eI207	Residential	Day	65	70	**67.5**	**67.5**	0.0	4	0								
	eI209	Residential	Day	65	70	**68.0**	**68.0**	0.0	3	0								
	eI210	Residential	Day	65	70	**70.3**	**69.3**	-1.0	3	0								
	GrnWayE1	General	Day	70	70	66.9	65.0	-1.9	1	0								
	GrnWayE2	General	Day	70	70	**70.4**	68.2	-2.2	1	0								
	GrnWayE3	General	Day	70	70	69.8	67.9	-1.9	1	0								
	GrnWayE4	General	Day	70	70	69.1	67.7	-1.4	1	0								
	GrnWayE5	General	Day	70	70	67.2	65.6	-1.6	1	0								
	GrnWayE6	General	Day	70	70	67.2	65.6	-1.6	1	0								
	GrnWayE7	General	Day	70	70	67.2	65.6	-1.6	1	0								
Wall "East I"	eI101	Commercial	Night	70	75	**74.1**	**73.1**	-1.0	1	0	**14**	**YES**	**YES**	590	10,300	$305,000	**$21,786**	**PROPOSE TO CONSTRUCT**
	eI102	Residential	Night	55	70	**72.7**	**68.7**	-4.0	1	0								
	eI103	Residential	Night	55	70	**72.9**	**67.6**	**-5.3**	1	1								
	eI104	Residential	Night	55	70	**73.0**	**66.5**	**-6.5**										
	eI104B	Residential	Night	55	70	**76.3**	**68.9**	**-7.4**	4	4								
	eI105	Residential	Night	55	70	**73.2**	**65.9**	**-7.3**										
	eI105B	Residential	Night	55	70	**76.4**	**68.4**	**-8.0**	4	4								
	eI106	Residential	Night	55	70	**73.7**	**65.7**	**-8.0**	1	1								
	eI107	Residential	Night	55	70	**74.0**	**65.6**	**-8.4**	1	1								
	eI108	Residential	Night	55	70	**74.2**	**65.7**	**-8.5**	1	1								
	eI109	Residential	Night	55	70	**74.8**	**65.9**	**-8.9**	1	1								
	eI110	Residential	Night	55	70	**75.2**	**66.5**	**-8.7**	1	1								
	eI202	Residential	Night	55	70	**67.2**	**67.2**	0.0	2	0								
	eI203	Residential	Night	55	70	**66.6**	**66.6**	0.0	1	0								
	eI204	Residential	Night	55	70	**66.8**	**66.8**	0.0	2	0								
	eI205	Residential	Night	55	70	**66.8**	**66.8**	0.0	2	0								
	eI207	Residential	Night	55	70	**67.2**	**67.1**	-0.1	4	0								
	eI209	Residential	Night	55	70	**67.7**	**67.7**	0.0	3	0								
	eI210	Residential	Night	55	70	**70.0**	**68.9**	-1.1	3	0								
	GrnWayE1	General	Night	70	70	66.9	64.9	-2.0	1	0								
	GrnWayE2	General	Night	70	70	**70.3**	68.0	-2.3	1	0								
	GrnWayE3	General	Night	70	70	69.6	67.6	-2.0	1	0								
	GrnWayE4	General	Night	70	70	68.8	67.2	-1.6	1	0								
	GrnWayE5	General	Night	70	70	66.9	65.2	-1.7	1	0								
	GrnWayE6	General	Night	70	70	66.9	65.2	-1.7	1	0								
	GrnWayE7	General	Night	70	70	66.9	65.2	-1.7	1	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ 99,000.00

Additional costs for TL-4 Noise Barrier on Bridge Structure; 90 feet at an additional $110 sqft

Table A6a
Build Noise Barrier Cost Effectiveness - 20 Foot Noise Wall
East Wall K - NB I-35W between 28th Street and 26th Street

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (20 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "East K"	eK100	Commercial	Day	70	75	63.2	59.8	-3.4	1	0	2	YES	YES	1,440	27,900	$558,000	$279,000	NOT COST EFFECTIVE
	eK105	General	Day	70	70	68.8	61.6	**-7.2**	1	1								
	eK106	General	Day	70	70	67.5	60.9	**-6.6**										
	eK120	Commercial	Day	70	75	**72.4**	62.7	**-9.7**	1	1								
	eK501	Residential	Day	65	70	56.9	56.9	0.0	2	0								
	eK503	Residential	Day	65	70	56.9	56.9	0.0	2	0								
	eK505	Residential	Day	65	70	57.0	57.0	0.0	3	0								
	eK507	Residential	Day	65	70	57.1	57.1	0.0	2	0								
	eK508	Residential	Day	65	70	57.3	57.3	0.0	1	0								
	eK509	Residential	Day	65	70	57.6	57.6	0.0	1	0								
	eK320	Residential	Day	65	70	57.8	57.8	0.0	2	0								
	eK322	Residential	Day	65	70	57.5	57.5	0.0	2	0								
	eK324	Residential	Day	65	70	58.4	58.4	0.0	2	0								
	eK326	Residential	Day	65	70	58.1	58.1	0.0	2	0								
	eK328	Residential	Day	65	70	60.0	60.0	0.0	2	0								
	eK330	Residential	Day	65	70	59.6	59.6	0.0	2	0								
	eK332	Residential	Day	65	70	**66.4**	**66.4**	0.0	2	0								
	eK334	Residential	Day	65	70	**65.9**	**65.9**	0.0	2	0								
	eK421	Residential	Day	65	70	55.9	55.9	0.0	2	0								
	eK423	Residential	Day	65	70	56.1	56.1	0.0	3	0								
	eK425	Residential	Day	65	70	56.5	56.5	0.0	2	0								
	eK426	Residential	Day	65	70	57.0	57.0	0.0	2	0								
	eK428	Residential	Day	65	70	57.7	57.7	0.0	3	0								
	eK430	Residential	Day	65	70	59.6	59.6	0.0	3	0								
Wall "East K"	eK100	Commercial	Night	70	75	62.7	59.3	-3.4	1	0	2	YES	YES	1,440	27,900	$558,000	$279,000	NOT COST EFFECTIVE
	eK105	General	Night	70	70	68.4	61.2	**-7.2**	1	1								
	eK106	General	Night	70	70	67.1	60.4	**-6.7**										
	eK120	Commercial	Night	70	75	**72.1**	62.3	**-9.8**	1	1								
	eK501	Residential	Night	55	70	**56.3**	**56.3**	0.0	2	0								
	eK503	Residential	Night	55	70	**56.3**	**56.3**	0.0	2	0								
	eK505	Residential	Night	55	70	**56.4**	**56.4**	0.0	3	0								
	eK507	Residential	Night	55	70	**56.4**	**56.4**	0.0	2	0								
	eK508	Residential	Night	55	70	**56.6**	**56.6**	0.0	1	0								
	eK509	Residential	Night	55	70	**56.9**	**56.9**	0.0	1	0								
	eK320	Residential	Night	55	70	**57.1**	**57.1**	0.0	2	0								
	eK322	Residential	Night	55	70	**56.9**	**56.9**	0.0	2	0								
	eK324	Residential	Night	55	70	**57.7**	**57.7**	0.0	2	0								
	eK326	Residential	Night	55	70	**57.4**	**57.4**	0.0	2	0								
	eK328	Residential	Night	55	70	**59.0**	**59.0**	0.0	2	0								
	eK330	Residential	Night	55	70	**58.7**	**58.7**	0.0	2	0								
	eK332	Residential	Night	55	70	**64.5**	**64.5**	0.0	2	0								
	eK334	Residential	Night	55	70	**64.0**	**64.0**	0.0	2	0								
	eK421	Residential	Night	55	70	**55.2**	**55.2**	0.0	2	0								
	eK423	Residential	Night	55	70	**55.4**	**55.4**	0.0	3	0								
	eK425	Residential	Night	55	70	**55.8**	**55.8**	0.0	2	0								
	eK426	Residential	Night	55	70	**56.2**	**56.2**	0.0	2	0								
	eK428	Residential	Night	55	70	**56.7**	**56.7**	0.0	3	0								
	eK430	Residential	Night	55	70	**58.2**	**58.2**	0.0	3	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ -

Table A6b
Build Noise Barrier Cost Effectiveness - 15 Foot Noise Wall
East Wall K - NB I-35W between 28th Street and 26th Street

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (20 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "East K"	eK100	Commercial	Day	70	75	63.2	60.5	-2.7	1	0	2	YES	YES	1,440	21,140	$422,800	$211,400	NOT COST EFFECTIVE
	eK105	General	Day	70	70	68.8	63.1	**-5.7**	1	1								
	eK106	General	Day	70	70	67.5	62.3	**-5.2**										
	eK120	Commercial	Day	70	75	**72.4**	65.1	**-7.3**	1	1								
	eK501	Residential	Day	65	70	56.9	56.9	0.0	2	0								
	eK503	Residential	Day	65	70	56.9	56.9	0.0	2	0								
	eK505	Residential	Day	65	70	57.0	57.0	0.0	3	0								
	eK507	Residential	Day	65	70	57.1	57.1	0.0	2	0								
	eK508	Residential	Day	65	70	57.3	57.3	0.0	1	0								
	eK509	Residential	Day	65	70	57.6	57.6	0.0	1	0								
	eK320	Residential	Day	65	70	57.8	57.8	0.0	2	0								
	eK322	Residential	Day	65	70	57.5	57.5	0.0	2	0								
	eK324	Residential	Day	65	70	58.4	58.4	0.0	2	0								
	eK326	Residential	Day	65	70	58.1	58.1	0.0	2	0								
	eK328	Residential	Day	65	70	60.0	60.0	0.0	2	0								
	eK330	Residential	Day	65	70	59.6	59.6	0.0	2	0								
	eK332	Residential	Day	65	70	**66.4**	**66.4**	0.0	2	0								
	eK334	Residential	Day	65	70	**65.9**	**65.9**	0.0	2	0								
	eK421	Residential	Day	65	70	55.9	55.9	0.0	2	0								
	eK423	Residential	Day	65	70	56.1	56.1	0.0	3	0								
	eK425	Residential	Day	65	70	56.5	56.5	0.0	2	0								
	eK426	Residential	Day	65	70	57.0	57.0	0.0	2	0								
	eK428	Residential	Day	65	70	57.7	57.7	0.0	3	0								
	eK430	Residential	Day	65	70	59.6	59.6	0.0	3	0								
Wall "East K"	eK100	Commercial	Night	70	75	62.7	59.9	-2.8	1	0	2	YES	YES	1,440	21,140	$422,800	$211,400	NOT COST EFFECTIVE
	eK105	General	Night	70	70	68.4	62.7	**-5.7**	1	1								
	eK106	General	Night	70	70	67.1	61.9	**-5.2**										
	eK120	Commercial	Night	70	75	**72.1**	64.6	**-7.5**	1	1								
	eK501	Residential	Night	55	70	**56.3**	**56.3**	0.0	2	0								
	eK503	Residential	Night	55	70	**56.3**	**56.3**	0.0	2	0								
	eK505	Residential	Night	55	70	**56.4**	**56.4**	0.0	3	0								
	eK507	Residential	Night	55	70	**56.4**	**56.4**	0.0	2	0								
	eK508	Residential	Night	55	70	**56.6**	**56.6**	0.0	1	0								
	eK509	Residential	Night	55	70	**56.9**	**56.9**	0.0	1	0								
	eK320	Residential	Night	55	70	**57.1**	**57.1**	0.0	2	0								
	eK322	Residential	Night	55	70	**56.9**	**56.9**	0.0	2	0								
	eK324	Residential	Night	55	70	**57.7**	**57.7**	0.0	2	0								
	eK326	Residential	Night	55	70	**57.4**	**57.4**	0.0	2	0								
	eK328	Residential	Night	55	70	**59.0**	**59.0**	0.0	2	0								
	eK330	Residential	Night	55	70	**58.7**	**58.7**	0.0	2	0								
	eK332	Residential	Night	55	70	**64.5**	**64.5**	0.0	2	0								
	eK334	Residential	Night	55	70	**64.0**	**64.0**	0.0	2	0								
	eK421	Residential	Night	55	70	**55.2**	**55.2**	0.0	2	0								
	eK423	Residential	Night	55	70	**55.4**	**55.4**	0.0	3	0								
	eK425	Residential	Night	55	70	**55.8**	**55.8**	0.0	2	0								
	eK426	Residential	Night	55	70	**56.2**	**56.2**	0.0	2	0								
	eK428	Residential	Night	55	70	**56.7**	**56.7**	0.0	3	0								
	eK430	Residential	Night	55	70	**58.2**	**58.2**	0.0	3	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ -

Table A6a
Build Noise Barrier Cost Effectiveness - 10 Foot Noise Wall
East Wall K - NB I-35W between 28th Street and 26th Street

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (20 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "East K"	eK100	Commercial	Day	70	75	63.2	61.5	-1.7	1	0	**0**	NO	NO	1,440	14,300	$286,000	N/A	NOT ACOUSTICALLY EFFECTIVE
	eK105	General	Day	70	70	68.8	65.3	-3.5	1	0								
	eK106	General	Day	70	70	67.5	64.4	-3.1										
	eK120	Commercial	Day	70	75	**72.4**	68.3	-4.1	1	0								
	eK501	Residential	Day	65	70	56.9	56.9	0.0	2	0								
	eK503	Residential	Day	65	70	56.9	56.9	0.0	2	0								
	eK505	Residential	Day	65	70	57.0	57.0	0.0	3	0								
	eK507	Residential	Day	65	70	57.1	57.1	0.0	2	0								
	eK508	Residential	Day	65	70	57.3	57.3	0.0	1	0								
	eK509	Residential	Day	65	70	57.6	57.6	0.0	1	0								
	eK320	Residential	Day	65	70	57.8	57.8	0.0	2	0								
	eK322	Residential	Day	65	70	57.5	57.5	0.0	2	0								
	eK324	Residential	Day	65	70	58.4	58.4	0.0	2	0								
	eK326	Residential	Day	65	70	58.1	58.1	0.0	2	0								
	eK328	Residential	Day	65	70	60.0	60.0	0.0	2	0								
	eK330	Residential	Day	65	70	59.6	59.6	0.0	2	0								
	eK332	Residential	Day	65	70	**66.4**	**66.4**	0.0	2	0								
	eK334	Residential	Day	65	70	**65.9**	**65.9**	0.0	2	0								
	eK421	Residential	Day	65	70	55.9	55.9	0.0	2	0								
	eK423	Residential	Day	65	70	56.1	56.1	0.0	3	0								
	eK425	Residential	Day	65	70	56.5	56.5	0.0	2	0								
	eK426	Residential	Day	65	70	57.0	57.0	0.0	2	0								
	eK428	Residential	Day	65	70	57.7	57.7	0.0	3	0								
	eK430	Residential	Day	65	70	59.6	59.6	0.0	3	0								
Wall "East K"	eK100	Commercial	Night	70	75	62.7	60.9	-1.8	1	0	**0**	NO	NO	1,440	14,300	$286,000	N/A	NOT ACOUSTICALLY EFFECTIVE
	eK105	General	Night	70	70	68.4	64.9	-3.5	1	0								
	eK106	General	Night	70	70	67.1	64.0	-3.1										
	eK120	Commercial	Night	70	75	**72.1**	67.9	-4.2	1	0								
	eK501	Residential	Night	55	70	**56.3**	**56.3**	0.0	2	0								
	eK503	Residential	Night	55	70	**56.3**	**56.3**	0.0	2	0								
	eK505	Residential	Night	55	70	**56.4**	**56.4**	0.0	3	0								
	eK507	Residential	Night	55	70	**56.4**	**56.4**	0.0	2	0								
	eK508	Residential	Night	55	70	**56.6**	**56.6**	0.0	1	0								
	eK509	Residential	Night	55	70	**56.9**	**56.9**	0.0	1	0								
	eK320	Residential	Night	55	70	**57.1**	**57.1**	0.0	2	0								
	eK322	Residential	Night	55	70	**56.9**	**56.9**	0.0	2	0								
	eK324	Residential	Night	55	70	**57.7**	**57.7**	0.0	2	0								
	eK326	Residential	Night	55	70	**57.4**	**57.4**	0.0	2	0								
	eK328	Residential	Night	55	70	**59.0**	**59.0**	0.0	2	0								
	eK330	Residential	Night	55	70	**58.7**	**58.7**	0.0	2	0								
	eK332	Residential	Night	55	70	**64.5**	**64.5**	0.0	2	0								
	eK334	Residential	Night	55	70	**64.0**	**64.0**	0.0	2	0								
	eK421	Residential	Night	55	70	**55.2**	**55.2**	0.0	2	0								
	eK423	Residential	Night	55	70	**55.4**	**55.4**	0.0	3	0								
	eK425	Residential	Night	55	70	**55.8**	**55.8**	0.0	2	0								
	eK426	Residential	Night	55	70	**56.2**	**56.2**	0.0	2	0								
	eK428	Residential	Night	55	70	**56.7**	**56.7**	0.0	3	0								
	eK430	Residential	Night	55	70	**58.2**	**58.2**	0.0	3	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ -

Table A7
Build Noise Barrier Cost Effectiveness - REPLACE IN KIND
East Wall L1 - NB I-35W between 26th Street and 24th Street Pedestrian Bridge

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (Varied ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "East L1"	eL001	Residential	Day	65	70	**77.0**	**67.8**	**-9.2**	1	1	**266**	**YES**	**YES**	1,355	32,286	$645,720	**$2,428**	**REPLACE IN-KIND**
	eL002	Residential	Day	65	70	**72.6**	**67.6**	**-5.0**	2	2								
	eL002b2	Residential	Day	65	70	**75.4**	**72.3**	-3.1	1	0								
	eL004	Residential	Day	65	70	**74.2**	**65.6**	**-8.6**	2	2								
	eL101	Residential	Day	65	70	**70.2**	**70.2**	0.0	2	0								
	eL102	Residential	Day	65	70	**69.9**	**69.9**	0.0	2	0								
	eL103	Residential	Day	65	70	**69.8**	**69.8**	0.0	2	0								
	eL105	Residential	Day	65	70	**69.0**	**67.7**	-1.3	4	0								
	eL106	General	Day	70	70	**72.9**	67.2	**-5.7**	1	1								
	eL108	Residential	Day	65	70	**74.1**	**67.2**	**-6.9**	2	2								
	eL109	Commercial	Day	70	75	**74.7**	67.2	**-7.5**	1	1								
	eL110	Residential	Day	65	70	**74.7**	**66.8**	**-7.9**	1	1								
	eL201	Residential	Day	65	70	**68.5**	**68.5**	0.0	1	0								
	eL202	Residential	Day	65	70	64.0	64.0	0.0	1	0								
	eL203	Residential	Day	65	70	63.8	63.8	0.0	2	0								
	eL204	Residential	Day	65	70	63.8	63.8	0.0	3	0								
	eL205	Residential	Day	65	70	**65.3**	62.8	-2.5	2	0								
	eL206	Residential	Day	65	70	64.5	64.5	0.0	3	0								
	eL207	Residential	Day	65	70	**65.8**	62.1	-3.7	2	0								
	eL208	Residential	Day	65	70	64.8	64.0	-0.8	2	0								
	eL210	Residential	Day	65	70	65.0	63.5	-1.5	4	0								
	eL211	Residential	Day	65	70	**65.3**	63.6	-1.7	1	0								
	eL121	Residential	Day	65	70	**74.2**	**67.7**	**-6.5**	1	1								
	eL123	Residential	Day	65	70	**70.8**	64.6	**-6.2**	253	253								
	eL124	Residential	Day	65	70	**72.5**	**67.8**	-4.7	1	0								
	eL221	Residential	Day	65	70	**70.4**	62.4	**-8.0**	2	2								
	eL222	Residential	Day	65	70	64.5	63.0	-1.5	1	0								
	eL223	Residential	Day	65	70	64.2	61.3	-2.9	1	0								
	eL224	Residential	Day	65	70	63.9	61.2	-2.7	1	0								
	eL225	Residential	Day	65	70	64.3	63.3	-1.0	1	0								
	eL226	Residential	Day	65	70	64.5	64.1	-0.4	18	0								
	eL226a	Residential	Day	65	70	64.2	63.4	-0.8	1	0								
	eL226a2	Residential	Day	65	70	**65.8**	64.1	-1.7	1	0								
	eL226a3	Residential	Day	65	70	**67.4**	64.9	-2.5	1	0								
	eL226b	Residential	Day	65	70	64.0	63.4	-0.6	1	0								
	eL226b2	Residential	Day	65	70	**65.6**	64.1	-1.5	1	0								
	eL226b3	Residential	Day	65	70	**67.1**	64.9	-2.2	1	0								
	eL226c	Residential	Day	65	70	64.0	63.5	-0.5	1	0								
	eL226c2	Residential	Day	65	70	**65.6**	64.1	-1.5	1	0								
	eL226c3	Residential	Day	65	70	**67.1**	64.9	-2.2	1	0								
	eL226d2	Residential	Day	65	70	64.8	63.7	-1.1	1	0								
	eL226d3	Residential	Day	65	70	**66.1**	64.5	-1.6	1	0								
	eL226e	Residential	Day	65	70	62.9	62.4	-0.5	2	0								
	eL226f	Residential	Day	65	70	63.0	62.3	-0.7	1	0								
	eL226g	Residential	Day	65	70	62.7	62.4	-0.3	4	0								
	eL228	Residential	Day	65	70	63.5	63.5	0.0	3	0								
	eL230	Residential	Day	65	70	64.3	62.0	-2.3	1	0								
	eL232	Residential	Day	65	70	64.1	62.2	-1.9	2	0								

Table A7
Build Noise Barrier Cost Effectiveness - REPLACE IN KIND
East Wall L1 - NB I-35W between 26th Street and 24th Street Pedestrian Bridge

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (Varied ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "East L1"	eL001	Residential	Night	55	70	**76.7**	**66.6**	**-10.1**	1	1	**267**	**YES**	**YES**	1,355	32,286	$645,720	**$2,418**	**REPLACE IN-KIND**
	eL002	Residential	Night	55	70	**72.0**	**66.4**	**-5.6**	2	2								
	eL002b2	Residential	Night	55	70	**74.2**	**70.4**	-3.8	1	0								
	eL004	Residential	Night	55	70	**73.8**	**64.6**	**-9.2**	2	2								
	eL101	Residential	Night	55	70	**67.1**	**67.1**	0.0	2	0								
	eL102	Residential	Night	55	70	**66.7**	**66.7**	0.0	2	0								
	eL103	Residential	Night	55	70	**66.4**	**66.4**	0.0	2	0								
	eL105	Residential	Night	55	70	**68.2**	**66.3**	-1.9	4	0								
	eL106	General	Night	70	70	**72.2**	66.0	**-6.2**	1	1								
	eL108	Residential	Night	55	70	**73.6**	**65.9**	**-7.7**	2	2								
	eL109	Commercial	Night	70	75	**74.2**	65.8	**-8.4**	1	1								
	eL110	Residential	Night	55	70	**74.2**	**65.4**	**-8.8**	1	1								
	eL201	Residential	Night	55	70	**65.8**	**65.8**	0.0	1	0								
	eL202	Residential	Night	55	70	**62.9**	**62.9**	0.0	1	0								
	eL203	Residential	Night	55	70	**62.9**	**62.9**	0.0	2	0								
	eL204	Residential	Night	55	70	**63.0**	**63.0**	0.0	3	0								
	eL205	Residential	Night	55	70	**64.8**	**61.8**	-3.0	2	0								
	eL206	Residential	Night	55	70	**64.0**	**63.5**	-0.5	3	0								
	eL207	Residential	Night	55	70	**65.4**	**61.2**	-4.2	2	0								
	eL208	Residential	Night	55	70	**64.3**	**62.9**	-1.4	2	0								
	eL210	Residential	Night	55	70	**64.5**	**62.4**	-2.1	4	0								
	eL211	Residential	Night	55	70	**64.8**	**62.3**	-2.5	1	0								
	eL121	Residential	Night	55	70	**73.2**	**65.0**	**-8.2**	1	1								
	eL123	Residential	Night	55	70	**70.1**	**62.9**	**-7.2**	253	253								
	eL124	Residential	Night	55	70	**71.1**	**65.0**	**-6.1**	1	1								
	eL221	Residential	Night	55	70	**70.0**	**61.1**	**-8.9**	2	2								
	eL222	Residential	Night	55	70	**63.9**	**61.5**	-2.4	1	0								
	eL223	Residential	Night	55	70	**63.8**	**60.0**	-3.8	1	0								
	eL224	Residential	Night	55	70	**63.4**	**59.9**	-3.5	1	0								
	eL225	Residential	Night	55	70	**63.7**	**61.7**	-2.0	1	0								
	eL226	Residential	Night	55	70	**63.8**	**62.4**	-1.4	18	0								
	eL226a	Residential	Night	55	70	**63.6**	**61.8**	-1.8	1	0								
	eL226a2	Residential	Night	55	70	**65.2**	**62.5**	-2.7	1	0								
	eL226a3	Residential	Night	55	70	**66.8**	**63.5**	-3.3	1	0								
	eL226b	Residential	Night	55	70	**63.4**	**61.8**	-1.6	1	0								
	eL226b2	Residential	Night	55	70	**65.0**	**62.5**	-2.5	1	0								
	eL226b3	Residential	Night	55	70	**66.6**	**63.5**	-3.1	1	0								
	eL226c	Residential	Night	55	70	**63.3**	**61.8**	-1.5	1	0								
	eL226c2	Residential	Night	55	70	**65.0**	**62.6**	-2.4	1	0								
	eL226c3	Residential	Night	55	70	**66.5**	**63.6**	-2.9	1	0								
	eL226d2	Residential	Night	55	70	**64.2**	**62.3**	-1.9	1	0								
	eL226d3	Residential	Night	55	70	**65.5**	**63.2**	-2.3	1	0								
	eL226e	Residential	Night	55	70	**62.2**	**60.8**	-1.4	2	0								
	eL226f	Residential	Night	55	70	**62.4**	**60.8**	-1.6	1	0								
	eL226g	Residential	Night	55	70	**62.1**	**60.9**	-1.2	4	0								
	eL228	Residential	Night	55	70	**62.8**	**62.2**	-0.6	3	0								
	eL230	Residential	Night	55	70	**63.7**	**60.9**	-2.8	1	0								
	eL232	Residential	Night	55	70	**63.5**	**61.1**	-2.4	2	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ -

Table A8a
Build Noise Barrier Cost Effectiveness - REPLACE IN KIND
East Wall L2 - NB I-35W between 24th Street Pedestrian Bridge and Franklin Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (Varied ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "East L2"	eL141	Residential	Day	65	70	**71.8**	**69.6**	-2.2	1	0	**26**	**YES**	**YES**	1,177	26,558	$531,160	**$20,429**	**REPLACE IN-KIND**
	eL142	Residential	Day	65	70	**69.8**	**66.9**	-2.9	1	0								
	eL143	Residential	Day	65	70	**68.4**	65.0	-3.4	2	0								
	eL143b2	Residential	Day	65	70	**70.7**	**66.9**	-3.8	2	0								
	eL143b3	Residential	Day	65	70	**72.6**	**68.0**	-4.6	2	0								
	eL144	Residential	Day	65	70	**74.7**	**69.3**	**-5.4**	1	1								
	eL144B	Residential	Day	65	70	**77.3**	**70.3**	**-7.0**	1	1								
	eL145	Residential	Day	65	70	**74.2**	**68.7**	**-5.5**	3	3								
	eL147	Residential	Day	65	70	**74.2**	**68.3**	**-5.9**	4	4								
	eL148	Residential	Day	65	70	**74.5**	**68.7**	**-5.8**	2	2								
	eL148B	Residential	Day	65	70	**77.4**	**69.7**	**-7.7**	1	1								
	eL149	Residential	Day	65	70	**74.6**	**68.6**	**-6.0**	2	2								
	eL149B	Residential	Day	65	70	**77.2**	**69.5**	**-7.7**	1	1								
	eL149C	Residential	Day	65	70	65.0	64.5	-0.5	10	0								
	eL150	Residential	Day	65	70	**74.7**	**68.6**	**-6.1**	2	2								
	eL161	Residential	Day	65	70	**74.7**	**68.6**	**-6.1**	1	1								
	eL161b2	Residential	Day	65	70	**77.7**	**69.7**	**-8.0**	1	1								
	eL162	Residential	Day	65	70	**75.3**	**69.4**	**-5.9**	3	3								
	eL162b2	Residential	Day	65	70	**78.0**	**70.1**	**-7.9**	1	1								
	eL163	Residential	Day	65	70	**74.2**	**68.3**	**-5.9**	2	2								
	eL164	Residential	Day	65	70	**73.4**	**68.4**	**-5.0**	1	1								
	eL165	Residential	Day	65	70	**72.9**	**69.0**	-3.9	1	0								
	eL166	Residential	Day	65	70	**73.1**	**70.1**	-3.0	4	0								
	eL167	Residential	Day	65	70	**73.7**	**72.4**	-1.3	1	0								
	eL167B	Residential	Day	65	70	**76.3**	**75.1**	-1.2	1	0								
	eL168	Residential	Day	65	70	**74.2**	**73.5**	-0.7	1	0								
	eL168B	Residential	Day	65	70	**76.9**	**76.2**	-0.7	1	0								
	eL169	Residential	Day	65	70	**74.9**	**74.5**	-0.4	1	0								
	eL169B	Residential	Day	65	70	**77.2**	**76.7**	-0.5	1	0								
	eL261	Residential	Day	65	70	**65.3**	64.6	-0.7	2	0								
	eL262	Residential	Day	65	70	**65.5**	64.8	-0.7	2	0								
	eL263	Residential	Day	65	70	63.3	63.3	0.0	1	0								
	eL264	Residential	Day	65	70	63.4	63.4	0.0	3	0								
	eL265	Residential	Day	65	70	63.5	63.5	0.0	1	0								
	eL265b2	Residential	Day	65	70	**65.4**	**65.4**	0.0	1	0								
	eL265b3	Residential	Day	65	70	64.4	64.4	0.0	1	0								
	eL266	Residential	Day	65	70	**65.1**	**65.1**	0.0	1	0								
	eL267	Residential	Day	65	70	63.1	63.1	0.0	1	0								
	eL268	Residential	Day	65	70	63.2	63.2	0.0	4	0								
	eL269	Residential	Day	65	70	**66.3**	**66.3**	0.0	12	0								
	eL269b4a	Residential	Day	65	70	**65.4**	**65.4**	0.0	1	0								
	eL269b4b	Residential	Day	65	70	**66.0**	**66.0**	0.0	1	0								
	eL269b4c	Residential	Day	65	70	**66.5**	**66.5**	0.0	1	0								
	eL269b4d	Residential	Day	65	70	**71.5**	**71.5**	0.0	1	0								
	eL270	Commercial	Day	70	75	**71.5**	**71.5**	0.0	1	0								

Table A8a
Build Noise Barrier Cost Effectiveness - REPLACE IN KIND
East Wall L2 - NB I-35W between 24th Street Pedestrian Bridge and Franklin Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (Varied ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "East L2"	eL141	Residential	Night	55	70	**70.6**	**67.9**	-2.7	1	0	**28**	**YES**	**YES**	1,177	26,558	$531,160	**$18,970**	**REPLACE IN-KIND**
	eL142	Residential	Night	55	70	**68.8**	**65.5**	-3.3	1	0								
	eL143	Residential	Night	55	70	**67.7**	**63.7**	-4.0	2	0								
	eL143b2	Residential	Night	55	70	**69.9**	**65.4**	-4.5	2	0								
	eL143b3	Residential	Night	55	70	**71.9**	**66.8**	**-5.1**	2	2								
	eL144	Residential	Night	55	70	**73.5**	**66.6**	**-6.9**	1	1								
	eL144B	Residential	Night	55	70	**76.5**	**68.4**	**-8.1**	1	1								
	eL145	Residential	Night	55	70	**73.1**	**66.2**	**-6.9**	3	3								
	eL147	Residential	Night	55	70	**73.1**	**65.7**	**-7.4**	4	4								
	eL148	Residential	Night	55	70	**73.4**	**65.7**	**-7.7**	2	2								
	eL148B	Residential	Night	55	70	**76.6**	**67.4**	**-9.2**	1	1								
	eL149	Residential	Night	55	70	**73.4**	**65.5**	**-7.9**	2	2								
	eL149B	Residential	Night	55	70	**76.5**	**67.3**	**-9.2**	1	1								
	eL149C	Residential	Night	55	70	**64.3**	**63.0**	-1.3	10	0								
	eL150	Residential	Night	55	70	**73.5**	**65.4**	**-8.1**	2	2								
	eL161	Residential	Night	55	70	**73.6**	**65.6**	**-8.0**	1	1								
	eL161b2	Residential	Night	55	70	**77.1**	**67.5**	**-9.6**	1	1								
	eL162	Residential	Night	55	70	**74.0**	**66.1**	**-7.9**	3	3								
	eL162b2	Residential	Night	55	70	**77.4**	**67.8**	**-9.6**	1	1								
	eL163	Residential	Night	55	70	**73.1**	**65.6**	**-7.5**	2	2								
	eL164	Residential	Night	55	70	**72.2**	**65.8**	**-6.4**	1	1								
	eL165	Residential	Night	55	70	**71.5**	**66.8**	-4.7	1	0								
	eL166	Residential	Night	55	70	**71.7**	**68.2**	-3.5	4	0								
	eL167	Residential	Night	55	70	**72.2**	**70.7**	-1.5	1	0								
	eL167B	Residential	Night	55	70	**75.3**	**73.9**	-1.4	1	0								
	eL168	Residential	Night	55	70	**72.7**	**71.9**	-0.8	1	0								
	eL168B	Residential	Night	55	70	**75.9**	**75.1**	-0.8	1	0								
	eL169	Residential	Night	55	70	**73.3**	**72.8**	-0.5	1	0								
	eL169B	Residential	Night	55	70	**76.2**	**75.6**	-0.6	1	0								
	eL261	Residential	Night	55	70	**64.4**	**63.1**	-1.3	2	0								
	eL262	Residential	Night	55	70	**64.6**	**63.3**	-1.3	2	0								
	eL263	Residential	Night	55	70	**62.4**	**62.4**	0.0	1	0								
	eL264	Residential	Night	55	70	**62.5**	**62.5**	0.0	3	0								
	eL265	Residential	Night	55	70	**62.6**	**62.6**	0.0	1	0								
	eL265b2	Residential	Night	55	70	**64.7**	**64.7**	0.0	1	0								
	eL265b3	Residential	Night	55	70	**63.6**	**63.6**	0.0	1	0								
	eL266	Residential	Night	55	70	**64.1**	**63.8**	-0.3	1	0								
	eL267	Residential	Night	55	70	**62.1**	**62.1**	0.0	1	0								
	eL268	Residential	Night	55	70	**62.1**	**62.1**	0.0	4	0								
	eL269	Residential	Night	55	70	**64.3**	**64.3**	0.0	12	0								
	eL269b4a	Residential	Night	55	70	**63.5**	**63.5**	0.0	1	0								
	eL269b4b	Residential	Night	55	70	**64.0**	**64.0**	0.0	1	0								
	eL269b4c	Residential	Night	55	70	**64.4**	**64.4**	0.0	1	0								
	eL269b4d	Residential	Night	55	70	**68.5**	**68.5**	0.0	1	0								
	eL270	Commercial	Night	70	75	68.5	68.5	0.0	1	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ -

Table A8b
Build Noise Barrier Cost Effectiveness - REPLACE IN KIND plus 79 Foot Extended Length at 20 Foot High
East Wall L2 - NB I-35W between 24th Street Pedestrian Bridge and Franklin Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with Existing Barriers	Build with Barriers (Varied ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "East L2"	eL141	Residential	Day	65	70	**69.6**	**67.6**	-2.0	1	0	**0**	NO	NO	1,197	28,698	$573,960	N/A	NOT ACOUSTICALLY EFFECTIVE
	eL142	Residential	Day	65	70	**66.9**	**65.4**	-1.5	1	0								
	eL143	Residential	Day	65	70	65.0	63.6	-1.4	2	0								
	eL143b2	Residential	Day	65	70	**66.9**	**65.9**	-1.0	2	0								
	eL143b3	Residential	Day	65	70	**68.0**	**66.8**	-1.2	2	0								
	eL144	Residential	Day	65	70	**69.3**	**68.9**	-0.4	1	0								
	eL144B	Residential	Day	65	70	**70.3**	**69.8**	-0.5	1	0								
	eL145	Residential	Day	65	70	**68.7**	**68.3**	-0.4	3	0								
	eL147	Residential	Day	65	70	**68.3**	**68.1**	-0.2	4	0								
	eL148	Residential	Day	65	70	**68.7**	**68.6**	-0.1	2	0								
	eL148B	Residential	Day	65	70	**69.7**	**69.5**	-0.2	1	0								
	eL149	Residential	Day	65	70	**68.6**	**68.5**	-0.1	2	0								
	eL149B	Residential	Day	65	70	**69.5**	**69.4**	-0.1	1	0								
	eL149C	Residential	Day	65	70	64.5	64.1	-0.4	10	0								
	eL150	Residential	Day	65	70	**68.6**	**68.5**	-0.1	2	0								
	eL161	Residential	Day	65	70	**68.6**	**68.5**	-0.1	1	0								
	eL161b2	Residential	Day	65	70	**69.7**	**69.6**	-0.1	1	0								
	eL162	Residential	Day	65	70	**69.4**	**69.3**	-0.1	3	0								
	eL162b2	Residential	Day	65	70	**70.1**	**69.9**	-0.2	1	0								
	eL163	Residential	Day	65	70	**68.3**	**68.1**	-0.2	2	0								
	eL164	Residential	Day	65	70	**68.4**	**68.0**	-0.4	1	0								
	eL165	Residential	Day	65	70	**69.0**	**68.3**	-0.7	1	0								
	eL166	Residential	Day	65	70	**70.1**	**68.9**	-1.2	4	0								
	eL167	Residential	Day	65	70	**72.4**	**70.2**	-2.2	1	0								
	eL167B	Residential	Day	65	70	**75.1**	**72.1**	-3.0	1	0								
	eL168	Residential	Day	65	70	**73.5**	**71.2**	-2.3	1	0								
	eL168B	Residential	Day	65	70	**76.2**	**73.2**	-3.0	1	0								
	eL169	Residential	Day	65	70	**74.5**	**73.1**	-1.4	1	0								
	eL169B	Residential	Day	65	70	**76.7**	**74.6**	-2.1	1	0								
	eL261	Residential	Day	65	70	64.6	63.9	-0.7	2	0								
	eL262	Residential	Day	65	70	64.8	64.2	-0.6	2	0								
	eL263	Residential	Day	65	70	64.8	64.2	-0.6	1	0								
	eL264	Residential	Day	65	70	**65.1**	64.4	-0.7	3	0								
	eL265	Residential	Day	65	70	**65.4**	64.7	-0.7	1	0								
	eL265b2	Residential	Day	65	70	**66.3**	**65.5**	-0.8	1	0								
	eL265b3	Residential	Day	65	70	**65.7**	64.8	-0.9	1	0								
	eL266	Residential	Day	65	70	**65.3**	64.6	-0.7	1	0								
	eL267	Residential	Day	65	70	**65.7**	64.9	-0.8	1	0								
	eL268	Residential	Day	65	70	**66.1**	**65.3**	-0.8	4	0								
	eL269	Residential	Day	65	70	**67.7**	**66.9**	-0.8	12	0								
	eL269b4a	Residential	Day	65	70	**66.8**	**66.0**	-0.8	1	0								
	eL269b4b	Residential	Day	65	70	**67.3**	**66.5**	-0.8	1	0								
	eL269b4c	Residential	Day	65	70	**67.7**	**67.0**	-0.7	1	0								
	eL269b4d	Residential	Day	65	70	**72.3**	**71.8**	-0.5	1	0								
	eL270	Commercial	Day	70	75	**72.3**	**71.8**	-0.5	1	0								

Table A8b
Build Noise Barrier Cost Effectiveness - REPLACE IN KIND plus 79 Foot Extended Length at 20 Foot High
East Wall L2 - NB I-35W between 24th Street Pedestrian Bridge and Franklin Avenue

				Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				
Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	MnDOT	FHWA	Build with Existing Barriers	Build with Barriers (Varied ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	NOISE WALL RESULTS
Wall "East L2"	eL141	Residential	Night	55	70	**67.9**	**65.3**	-2.6	1	0	**0**	NO	NO	1,197	28,698	$573,960	N/A	NOT ACOUSTICALLY EFFECTIVE
	eL142	Residential	Night	55	70	**65.5**	**63.6**	-1.9	1	0								
	eL143	Residential	Night	55	70	**63.7**	**62.0**	-1.7	2	0								
	eL143b2	Residential	Night	55	70	**65.4**	**64.1**	-1.3	2	0								
	eL143b3	Residential	Night	55	70	**66.8**	**65.2**	-1.6	2	0								
	eL144	Residential	Night	55	70	**66.6**	**65.9**	-0.7	1	0								
	eL144B	Residential	Night	55	70	**68.4**	**67.7**	-0.7	1	0								
	eL145	Residential	Night	55	70	**66.2**	**65.4**	-0.8	3	0								
	eL147	Residential	Night	55	70	**65.7**	**65.3**	-0.4	4	0								
	eL148	Residential	Night	55	70	**65.7**	**65.4**	-0.3	2	0								
	eL148B	Residential	Night	55	70	**67.4**	**67.1**	-0.3	1	0								
	eL149	Residential	Night	55	70	**65.5**	**65.3**	-0.2	2	0								
	eL149B	Residential	Night	55	70	**67.3**	**67.1**	-0.2	1	0								
	eL149C	Residential	Night	55	70	**63.0**	**62.4**	-0.6	10	0								
	eL150	Residential	Night	55	70	**65.4**	**65.3**	-0.1	2	0								
	eL161	Residential	Night	55	70	**65.6**	**65.4**	-0.2	1	0								
	eL161b2	Residential	Night	55	70	**67.5**	**67.3**	-0.2	1	0								
	eL162	Residential	Night	55	70	**66.1**	**65.8**	-0.3	3	0								
	eL162b2	Residential	Night	55	70	**67.8**	**67.5**	-0.3	1	0								
	eL163	Residential	Night	55	70	**65.6**	**65.3**	-0.3	2	0								
	eL164	Residential	Night	55	70	**65.8**	**65.3**	-0.5	1	0								
	eL165	Residential	Night	55	70	**66.8**	**65.7**	-1.1	1	0								
	eL166	Residential	Night	55	70	**68.2**	**66.5**	-1.7	4	0								
	eL167	Residential	Night	55	70	**70.7**	**67.8**	-2.9	1	0								
	eL167B	Residential	Night	55	70	**73.9**	**70.2**	-3.7	1	0								
	eL168	Residential	Night	55	70	**71.9**	**68.9**	-3.0	1	0								
	eL168B	Residential	Night	55	70	**75.1**	**71.4**	-3.7	1	0								
	eL169	Residential	Night	55	70	**72.8**	**70.8**	-2.0	1	0								
	eL169B	Residential	Night	55	70	**75.6**	**72.9**	-2.7	1	0								
	eL261	Residential	Night	55	70	**63.1**	**62.3**	-0.8	2	0								
	eL262	Residential	Night	55	70	**63.3**	**62.5**	-0.8	2	0								
	eL263	Residential	Night	55	70	**63.4**	**62.5**	-0.9	1	0								
	eL264	Residential	Night	55	70	**63.6**	**62.8**	-0.8	3	0								
	eL265	Residential	Night	55	70	**63.9**	**63.0**	-0.9	1	0								
	eL265b2	Residential	Night	55	70	**65.1**	**64.1**	-1.0	1	0								
	eL265b3	Residential	Night	55	70	**64.5**	**63.4**	-1.1	1	0								
	eL266	Residential	Night	55	70	**63.8**	**62.9**	-0.9	1	0								
	eL267	Residential	Night	55	70	**64.2**	**63.2**	-1.0	1	0								
	eL268	Residential	Night	55	70	**64.5**	**63.5**	-1.0	4	0								
	eL269	Residential	Night	55	70	**65.9**	**64.9**	-1.0	12	0								
	eL269b4a	Residential	Night	55	70	**65.2**	**64.1**	-1.1	1	0								
	eL269b4b	Residential	Night	55	70	**65.5**	**64.5**	-1.0	1	0								
	eL269b4c	Residential	Night	55	70	**65.9**	**64.9**	-1.0	1	0								
	eL269b4d	Residential	Night	55	70	**69.6**	**68.8**	-0.8	1	0								
	eL270	Commercial	Night	70	75	69.7	68.9	-0.8	1	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ -

Table A9a
Build Noise Barrier Cost Effectiveness - REPLACE IN KIND
East Wall M - NB I-35W between Franklin Avenue and Portland Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (Varied ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "East M"	eM100	Residential	Day	65	70	62.0	60.8	-1.2	90	0	**0**	NO	NO	753	7,530	$150,600	N/A	NOT ACOUSTICALLY EFFECTIVE
	eM1001b1	Commercial	Day	70	75	**71.9**	**71.4**	-0.5	1	0								
	eM1001b3	Residential	Day	65	70	**72.0**	**71.5**	-0.5	1	0								
	eM1002b1	Commercial	Day	70	75	**72.5**	**72.0**	-0.5	1	0								
	eM1003b1	Commercial	Day	70	75	**74.4**	**72.7**	-1.7	1	0								
	eM1003b3	Residential	Day	65	70	**75.2**	**74.7**	-0.5	1	0								
	eM1004b1	Commercial	Day	70	75	**74.3**	**72.4**	-1.9	1	0								
	eM1005b2	Residential	Day	65	70	**75.0**	**73.8**	-1.2	1	0								
	eM1006b2	Residential	Day	65	70	**71.7**	**70.1**	-1.6	1	0								
	eM1007b1	Commercial	Day	70	75	62.8	62.1	-0.7	1	0								
	eM1007b3	Residential	Day	65	70	**68.5**	**67.2**	-1.3	1	0								
	eM1007b4	Residential	Day	65	70	**69.9**	**69.2**	-0.7	1	0								
	eM1008b1	Commercial	Day	70	75	61.9	61.2	-0.7	1	0								
	eM1008b4	Residential	Day	65	70	**69.3**	**68.6**	-0.7	1	0								
	eM1009b4	Residential	Day	65	70	**72.4**	**71.9**	-0.5	1	0								
	eM1010b1	Commercial	Day	70	75	**74.7**	**72.3**	-2.4	1	0								
	eM1011b1	Commercial	Day	70	75	**74.8**	**72.3**	-2.5	1	0								
	eM1012b2	Residential	Day	65	70	**74.8**	**72.3**	-2.5	1	0								
	eM1012b4	Residential	Day	65	70	**74.9**	**74.5**	-0.4	1	0								
	eM1013b1	Commercial	Day	70	75	69.8	67.3	-2.5	1	0								
	eM1014b1	Commercial	Day	70	75	68.5	65.9	-2.6	1	0								
	eM1014b3	Residential	Day	65	70	**69.4**	**68.2**	-1.2	1	0								
	eM1014b4	Residential	Day	65	70	**70.1**	**69.2**	-0.9	1	0								
	eM1015b1	Commercial	Day	70	75	67.6	64.9	-2.7	1	0								
	eM1015b2	Residential	Day	65	70	**68.2**	**66.3**	-1.9	1	0								
	eM1015b4	Residential	Day	65	70	**69.1**	**68.2**	-0.9	1	0								
	eM103	Residential	Day	65	70	**76.5**	**73.4**	-3.1	4	0								
	eM103C	Residential	Day	65	70	**68.8**	**65.6**	-3.2	27	0								
	eM301	Residential	Day	65	70	60.6	60.6	0.0	4	0								
	eM302	General	Day	70	70	61.2	61.2	0.0	1	0								
	eM403	Residential	Day	65	70	59.2	59.2	0.0	2	0								
	eM404	Residential	Day	65	70	58.9	58.9	0.0	1	0								
	eM405	Residential	Day	65	70	58.7	58.7	0.0	2	0								
	eM406	Residential	Day	65	70	58.5	58.5	0.0	2	0								
	eM121	Residential	Day	65	70	**76.4**	**73.4**	-3.0	2	0								
	eM221	Residential	Day	65	70	**67.8**	**66.5**	-1.3	3	0								
	eM222	Residential	Day	65	70	**66.6**	**66.3**	-0.3	3	0								
	eM223	Residential	Day	65	70	**69.5**	**66.9**	-2.6	2	0								
	eM224	Residential	Day	65	70	**71.5**	**71.0**	-0.5	2	0								
	eM225	Commercial	Day	70	75	**70.2**	67.9	-2.3	1	0								

Wall "East M"	eM100	Residential	Night	55	70	**61.3**	**60.0**	-1.3	90	0	**0**	NO	NO	753	7,530	$150,600	N/A	NOT ACOUSTICALLY EFFECTIVE
	eM1001b1	Commercial	Night	70	75	69.2	68.3	-0.9	1	0								
	eM1001b3	Residential	Night	55	70	**69.9**	**69.2**	-0.7	1	0								
	eM1002b1	Commercial	Night	70	75	**70.1**	69.3	-0.8	1	0								
	eM1003b1	Commercial	Night	70	75	**73.0**	**71.0**	-2.0	1	0								
	eM1003b3	Residential	Night	55	70	**74.4**	**73.8**	-0.6	1	0								
	eM1004b1	Commercial	Night	70	75	**73.0**	**70.7**	-2.3	1	0								
	eM1005b2	Residential	Night	55	70	**74.1**	**72.5**	-1.6	1	0								
	eM1006b2	Residential	Night	55	70	**71.1**	**69.0**	-2.1	1	0								
	eM1007b1	Commercial	Night	70	75	62.2	61.4	-0.8	1	0								
	eM1007b3	Residential	Night	55	70	**68.1**	**66.6**	-1.5	1	0								
	eM1007b4	Residential	Night	55	70	**69.5**	**68.6**	-0.9	1	0								
	eM1008b1	Commercial	Night	70	75	61.2	60.3	-0.9	1	0								
	eM1008b4	Residential	Night	55	70	**68.9**	**68.0**	-0.9	1	0								
	eM1009b4	Residential	Night	55	70	**71.9**	**71.4**	-0.5	1	0								
	eM1010b1	Commercial	Night	70	75	**73.6**	**70.5**	-3.1	1	0								
	eM1011b1	Commercial	Night	70	75	**73.6**	**70.6**	-3.0	1	0								
	eM1012b2	Residential	Night	55	70	**73.7**	**70.6**	-3.1	1	0								
	eM1012b4	Residential	Night	55	70	**74.4**	**73.9**	-0.5	1	0								
	eM1013b1	Commercial	Night	70	75	69.1	66.1	-3.0	1	0								
	eM1014b1	Commercial	Night	70	75	68.0	64.9	-3.1	1	0								
	eM1014b3	Residential	Night	55	70	**69.0**	**67.7**	-1.3	1	0								
	eM1014b4	Residential	Night	55	70	**69.7**	**68.8**	-0.9	1	0								
	eM1015b1	Commercial	Night	70	75	67.1	64.1	-3.0	1	0								
	eM1015b2	Residential	Night	55	70	**67.8**	**65.6**	-2.2	1	0								
	eM1015b4	Residential	Night	55	70	**68.7**	**67.7**	-1.0	1	0								
	eM103	Residential	Night	55	70	**75.1**	**70.8**	-4.3	4	0								
	eM103C	Residential	Night	55	70	**68.3**	**64.6**	-3.7	27	0								
	eM301	Residential	Night	55	70	**59.9**	**59.9**	0.0	4	0								
	eM302	General	Night	70	70	60.7	60.7	0.0	1	0								
	eM403	Residential	Night	55	70	**58.8**	**58.8**	0.0	2	0								
	eM404	Residential	Night	55	70	**58.5**	**58.5**	0.0	1	0								
	eM405	Residential	Night	55	70	**58.2**	**58.2**	0.0	2	0								
	eM406	Residential	Night	55	70	**58.0**	**58.0**	0.0	2	0								
	eM121	Residential	Night	55	70	**75.0**	**71.2**	-3.8	2	0								
	eM221	Residential	Night	55	70	**67.3**	**66.2**	-1.1	3	0								
	eM222	Residential	Night	55	70	**66.3**	**66.2**	-0.1	3	0								
	eM223	Residential	Night	55	70	**69.1**	**66.7**	-2.4	2	0								
	eM224	Residential	Night	55	70	**71.0**	**70.5**	-0.5	2	0								
	eM225	Commercial	Night	70	75	69.8	67.8	-2.0	1	0								
	wC213	Residential	Night	55	70	**61.8**	**61.6**	-0.2	3	0								
	wC214	Residential	Night	55	70	**62.1**	**62.0**	-0.1	2	0								
	wC215	Residential	Night	55	70	**62.0**	**61.9**	-0.1	2	0								
	wC216	Residential	Night	55	70	**62.7**	**62.7**	0.0	1	0								
	wC217	Residential	Night	55	70	**62.1**	**62.0**	-0.1	1	0								
	wC218	Residential	Night	55	70	**59.8**	**59.7**	-0.1	1	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ -

Table A9b
Build Noise Barrier Cost Effectiveness - 20 Foot Noise Wall
East Wall M - NB I-35W between Franklin Avenue and Portland Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with Existing Barriers	Build with Barriers (20 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "East M"	eM100	Residential	Day	65	70	60.8	58.0	-2.8	90	0	**3**	**YES**	NO	1,087	20,840	$717,800	$239,267	DESIGN GOAL AND COST EFFECTIVENESS NOT MET
	eM1001b1	Commercial	Day	70	75	**71.4**	**71.0**	-0.4	1	0								
	eM1001b3	Residential	Day	65	70	**71.5**	**71.0**	-0.5	1	0								
	eM1002b1	Commercial	Day	70	75	**72.0**	**71.6**	-0.4	1	0								
	eM1003b1	Commercial	Day	70	75	**72.7**	**71.6**	-1.1	1	0								
	eM1003b3	Residential	Day	65	70	**74.7**	**73.7**	-1.0	1	0								
	eM1004b1	Commercial	Day	70	75	**72.4**	**71.1**	-1.3	1	0								
	eM1005b2	Residential	Day	65	70	**73.8**	**72.1**	-1.7	1	0								
	eM1006b2	Residential	Day	65	70	**70.1**	**67.2**	-2.9	1	0								
	eM1007b1	Commercial	Day	70	75	62.1	59.2	-2.9	1	0								
	eM1007b3	Residential	Day	65	70	**67.2**	64.5	-2.7	1	0								
	eM1007b4	Residential	Day	65	70	**69.2**	**67.8**	-1.4	1	0								
	eM1008b1	Commercial	Day	70	75	61.2	58.5	-2.7	1	0								
	eM1008b4	Residential	Day	65	70	**68.6**	**67.0**	-1.6	1	0								
	eM1009b4	Residential	Day	65	70	**71.9**	**71.0**	-0.9	1	0								
	eM1010b1	Commercial	Day	70	75	**72.3**	**70.3**	-2.0	1	0								
	eM1011b1	Commercial	Day	70	75	**72.3**	**70.3**	-2.0	1	0								
	eM1012b2	Residential	Day	65	70	**72.3**	**70.3**	-2.0	1	0								
	eM1012b4	Residential	Day	65	70	**74.5**	**73.8**	-0.7	1	0								
	eM1013b1	Commercial	Day	70	75	67.3	65.1	-2.2	1	0								
	eM1014b1	Commercial	Day	70	75	65.9	63.8	-2.1	1	0								
	eM1014b3	Residential	Day	65	70	**68.2**	**66.3**	-1.9	1	0								
	eM1014b4	Residential	Day	65	70	**69.2**	**68.3**	-0.9	1	0								
	eM1015b1	Commercial	Day	70	75	64.9	62.7	-2.2	1	0								
	eM1015b2	Residential	Day	65	70	**66.3**	63.7	-2.6	1	0								
	eM1015b4	Residential	Day	65	70	**68.2**	**67.0**	-1.2	1	0								
	eM103	Residential	Day	65	70	**73.4**	**72.5**	-0.9	4	0								
	eM103C	Residential	Day	65	70	**65.6**	63.6	-2.0	27	0								
	eM301	Residential	Day	65	70	61.6	59.9	-1.7	4	0								
	eM302	General	Day	70	70	63.1	60.6	-2.5	1	0								
	eM403	Residential	Day	65	70	62.8	60.0	-2.8	2	0								
	eM404	Residential	Day	65	70	62.5	59.7	-2.8	1	0								
	eM405	Residential	Day	65	70	62.2	59.5	-2.7	2	0								
	eM406	Residential	Day	65	70	62.0	59.3	-2.7	2	0								
	eM121	Residential	Day	65	70	**73.4**	**72.3**	-1.1	2	0								
	eM221	Residential	Day	65	70	**66.5**	63.0	-3.5	3	0								
	eM222	Residential	Day	65	70	**66.3**	62.0	-4.3	3	0								
	eM223	Residential	Day	65	70	**66.9**	62.0	-4.9	2	0								
	eM224	Residential	Day	65	70	**71.0**	64.2	**-6.8**	2	2								
	eM225	Commercial	Day	70	75	67.9	61.7	**-6.2**	1	1								

Wall "East M"	eM100	Residential	Night	55	70	**60.0**	**57.1**	-2.9	90	0	**5**	**YES**	NO	1,087	20,840	$717,800	$143,560	DESIGN GOAL AND COST EFFECTIVENESS NOT MET
	eM1001b1	Commercial	Night	70	75	68.3	67.7	-0.6	1	0								
	eM1001b3	Residential	Night	55	70	**69.2**	**68.4**	-0.8	1	0								
	eM1002b1	Commercial	Night	70	75	69.3	68.6	-0.7	1	0								
	eM1003b1	Commercial	Night	70	75	**71.0**	69.5	-1.5	1	0								
	eM1003b3	Residential	Night	55	70	**73.8**	**72.5**	-1.3	1	0								
	eM1004b1	Commercial	Night	70	75	**70.7**	68.9	-1.8	1	0								
	eM1005b2	Residential	Night	55	70	**72.5**	**70.4**	-2.1	1	0								
	eM1006b2	Residential	Night	55	70	**69.0**	**65.6**	-3.4	1	0								
	eM1007b1	Commercial	Night	70	75	61.4	58.3	-3.1	1	0								
	eM1007b3	Residential	Night	55	70	**66.6**	**63.3**	-3.3	1	0								
	eM1007b4	Residential	Night	55	70	**68.6**	**66.9**	-1.7	1	0								
	eM1008b1	Commercial	Night	70	75	60.3	57.5	-2.8	1	0								
	eM1008b4	Residential	Night	55	70	**68.0**	**66.1**	-1.9	1	0								
	eM1009b4	Residential	Night	55	70	**71.4**	**70.3**	-1.1	1	0								
	eM1010b1	Commercial	Night	70	75	**70.5**	67.9	-2.6	1	0								
	eM1011b1	Commercial	Night	70	75	**70.6**	67.9	-2.7	1	0								
	eM1012b2	Residential	Night	55	70	**70.6**	**67.9**	-2.7	1	0								
	eM1012b4	Residential	Night	55	70	**73.9**	**73.0**	-0.9	1	0								
	eM1013b1	Commercial	Night	70	75	66.1	63.6	-2.5	1	0								
	eM1014b1	Commercial	Night	70	75	64.9	62.3	-2.6	1	0								
	eM1014b3	Residential	Night	55	70	**67.7**	**65.3**	-2.4	1	0								
	eM1014b4	Residential	Night	55	70	**68.8**	**67.5**	-1.3	1	0								
	eM1015b1	Commercial	Night	70	75	64.1	61.4	-2.7	1	0								
	eM1015b2	Residential	Night	55	70	**65.6**	**62.6**	-3.0	1	0								
	eM1015b4	Residential	Night	55	70	**67.7**	**66.3**	-1.4	1	0								
	eM103	Residential	Night	55	70	**70.8**	**69.1**	-1.7	4	0								
	eM103C	Residential	Night	55	70	**64.6**	**62.1**	-2.5	27	0								
	eM301	Residential	Night	55	70	**60.7**	**58.6**	-2.1	4	0								
	eM302	General	Night	70	70	62.6	60.0	-2.6	1	0								
	eM403	Residential	Night	55	70	**62.6**	**59.6**	-3.0	2	0								
	eM404	Residential	Night	55	70	**62.3**	**59.3**	-3.0	1	0								
	eM405	Residential	Night	55	70	**62.0**	**59.1**	-2.9	2	0								
	eM406	Residential	Night	55	70	**61.7**	**58.9**	-2.8	2	0								
	eM121	Residential	Night	55	70	**71.2**	**69.2**	-2.0	2	0								
	eM221	Residential	Night	55	70	**66.2**	**62.5**	-3.7	3	0								
	eM222	Residential	Night	55	70	**66.2**	**61.7**	-4.5	3	0								
	eM223	Residential	Night	55	70	**66.7**	**61.7**	**-5.0**	2	2								
	eM224	Residential	Night	55	70	**70.5**	**63.9**	**-6.6**	2	2								
	eM225	Commercial	Night	70	75	67.8	61.5	**-6.3**	1	1								
	wC213	Residential	Night	55	70	**61.6**	**61.6**	0.0	3	0								
	wC214	Residential	Night	55	70	**62.0**	**62.0**	0.0	2	0								
	wC215	Residential	Night	55	70	**61.9**	**61.9**	0.0	2	0								
	wC216	Residential	Night	55	70	**62.7**	**62.7**	0.0	1	0								
	wC217	Residential	Night	55	70	**62.0**	**62.0**	0.0	1	0								
	wC218	Residential	Night	55	70	**59.7**	**59.7**	0.0	1	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ 301,000.00

Table A10
Build Noise Barrier Cost Effectiveness - 20 Foot Noise Wall
West Wall B - SB I-35W between 36th Street and 38th Street

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (20 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "West B"	wB101	Residential	Day	65	70	**74.0**	**65.5**	**-8.5**	1	1	**24**	**YES**	**YES**	1,367	26,440	$528,800	**$22,033**	**PROPOSE TO CONSTRUCT**
	wB102	Residential	Day	65	70	**74.0**	**65.6**	**-8.4**	1	1								
	wB104	Residential	Day	65	70	**73.5**	**65.3**	**-8.2**	4	4								
	wB106	Residential	Day	65	70	**73.6**	**65.6**	**-8.0**	3	3								
	wB108	Residential	Day	65	70	**73.5**	**65.8**	**-7.7**	2	2								
	wB110	Residential	Day	65	70	**74.1**	**66.6**	**-7.5**	2	2								
	wB112	Residential	Day	65	70	**73.6**	**67.5**	**-6.1**	1	1								
	wB113	Residential	Day	65	70	**73.5**	**68.6**	-4.9	1	0								
	wB114	Residential	Day	65	70	**71.7**	**71.1**	-0.6	2	0								
	wB115	Residential	Day	65	70	**68.0**	**68.0**	0.0	1	0								
	wB201	Residential	Day	65	70	61.6	61.6	0.0	1	0								
	wB202	Residential	Day	65	70	62.3	62.3	0.0	1	0								
	wB203	Residential	Day	65	70	63.4	63.4	0.0	1	0								
	wB205	Residential	Day	65	70	62.6	62.6	0.0	2	0								
	wB207	Residential	Day	65	70	62.6	62.6	0.0	3	0								
	wB209	Residential	Day	65	70	62.4	62.4	0.0	2	0								
	wB211	Residential	Day	65	70	62.3	62.3	0.0	2	0								
	wB212	Residential	Day	65	70	63.4	63.4	0.0	2	0								
	wB213	Residential	Day	65	70	62.9	62.9	0.0	1	0								
	wB214	Residential	Day	65	70	**67.2**	**67.2**	0.0	1	0								
	wB215	Residential	Day	65	70	**66.5**	**66.5**	0.0	1	0								
	wB216	Residential	Day	65	70	**66.1**	**66.1**	0.0	1	0								
	wC101	Residential	Day	65	70	**74.4**	**72.5**	-1.9	2	0								
	wC102	Residential	Day	65	70	**74.1**	**71.3**	-2.8	2	0								
	wC103	Residential	Day	65	70	**73.7**	**70.1**	-3.6	2	0								
	wC105	Residential	Day	65	70	**73.4**	**69.1**	-4.3	2	0								
	wC107	Residential	Day	65	70	**73.0**	**67.9**	**-5.1**	2	2								
	wC109	Residential	Day	65	70	**73.0**	**66.8**	**-6.2**	3	3								
	wC111	Residential	Day	65	70	**73.4**	**65.9**	**-7.5**	2	2								
	wC113	Residential	Day	65	70	**73.6**	**65.6**	**-8.0**	2	2								
	wC114	Residential	Day	65	70	**74.0**	**65.7**	**-8.3**	1	1								
	wC115	Residential	Day	65	70	**65.3**	64.5	-0.8	1	0								
	wC201	Residential	Day	65	70	**70.3**	**70.3**	0.0	1	0								
	wC202	Residential	Day	65	70	**71.0**	**71.0**	0.0	1	0								
	wC204	Residential	Day	65	70	**68.6**	**68.6**	0.0	4	0								
	wC205	Residential	Day	65	70	64.3	64.3	0.0	2	0								
	wC206	Residential	Day	65	70	63.4	63.4	0.0	1	0								
	wC208	Residential	Day	65	70	63.1	63.1	0.0	4	0								
	wC210	Residential	Day	65	70	62.4	62.4	0.0	2	0								
	wC211	Residential	Day	65	70	62.6	62.6	0.0	1	0								
	wC213	Residential	Day	65	70	61.9	61.9	0.0	3	0								
	wC214	Residential	Day	65	70	62.3	62.3	0.0	2	0								
	wC215	Residential	Day	65	70	62.3	62.3	0.0	2	0								
	wC216	Residential	Day	65	70	63.1	63.1	0.0	1	0								
	wC217	Residential	Day	65	70	62.4	62.4	0.0	1	0								
	wC218	Residential	Day	65	70	60.2	60.2	0.0	1	0								

	wB101	Residential	Night	55	70	**73.5**	**65.2**	**-8.3**	1	1								
	wB102	Residential	Night	55	70	**73.5**	**65.2**	**-8.3**	1	1								
	wB104	Residential	Night	55	70	**73.1**	**64.9**	**-8.2**	4	4								
	wB106	Residential	Night	55	70	**73.1**	**65.1**	**-8.0**	3	3								
	wB108	Residential	Night	55	70	**73.0**	**65.3**	**-7.7**	2	2								
	wB110	Residential	Night	55	70	**73.5**	**66.0**	**-7.5**	2	2								
	wB112	Residential	Night	55	70	**73.0**	**66.6**	**-6.4**	1	1								
	wB113	Residential	Night	55	70	**72.8**	**67.3**	**-5.5**	1	1								
	wB114	Residential	Night	55	70	**68.5**	**67.5**	-1.0	2	0								
	wB115	Residential	Night	55	70	**65.3**	**65.3**	0.0	1	0								
	wB201	Residential	Night	55	70	**61.2**	**61.2**	0.0	1	0								
	wB202	Residential	Night	55	70	**62.0**	**62.0**	0.0	1	0								
	wB203	Residential	Night	55	70	**63.0**	**63.0**	0.0	1	0								
	wB205	Residential	Night	55	70	**62.2**	**62.2**	0.0	2	0								
	wB207	Residential	Night	55	70	**62.2**	**62.2**	0.0	3	0								
	wB209	Residential	Night	55	70	**61.9**	**61.9**	0.0	2	0								
	wB211	Residential	Night	55	70	**61.6**	**61.6**	0.0	2	0								
	wB212	Residential	Night	55	70	**62.6**	**62.6**	0.0	2	0								
	wB213	Residential	Night	55	70	**61.7**	**61.7**	0.0	1	0								
	wB214	Residential	Night	55	70	**64.3**	**64.3**	0.0	1	0								
	wB215	Residential	Night	55	70	**63.6**	**63.6**	0.0	1	0								
	wB216	Residential	Night	55	70	**63.2**	**63.2**	0.0	1	0								
Wall "West B"	wC101	Residential	Night	55	70	**74.5**	**72.6**	-1.9	2	0	**23**	**YES**	**YES**	1,367	26,440	$528,800	**$22,991**	**PROPOSE TO CONSTRUCT**
	wC102	Residential	Night	55	70	**74.4**	**71.7**	-2.7	2	0								
	wC103	Residential	Night	55	70	**74.0**	**70.6**	-3.4	2	0								
	wC105	Residential	Night	55	70	**73.6**	**69.6**	-4.0	2	0								
	wC107	Residential	Night	55	70	**73.1**	**68.4**	-4.7	2	0								
	wC109	Residential	Night	55	70	**72.9**	**66.9**	**-6.0**	3	3								
	wC111	Residential	Night	55	70	**73.2**	**65.6**	**-7.6**	2	2								
	wC113	Residential	Night	55	70	**73.3**	**65.3**	**-8.0**	2	2								
	wC114	Residential	Night	55	70	**73.6**	**65.3**	**-8.3**	1	1								
	wC115	Residential	Night	55	70	**65.0**	**64.2**	-0.8	1	0								
	wC201	Residential	Night	55	70	**70.1**	**70.1**	0.0	1	0								
	wC202	Residential	Night	55	70	**70.7**	**70.7**	0.0	1	0								
	wC204	Residential	Night	55	70	**68.3**	**68.3**	0.0	4	0								
	wC205	Residential	Night	55	70	**64.2**	**64.2**	0.0	2	0								
	wC206	Residential	Night	55	70	**63.3**	**63.3**	0.0	1	0								
	wC208	Residential	Night	55	70	**63.0**	**63.0**	0.0	4	0								
	wC210	Residential	Night	55	70	**62.2**	**62.2**	0.0	2	0								
	wC211	Residential	Night	55	70	**62.5**	**62.5**	0.0	1	0								
	wC213	Residential	Night	55	70	**61.8**	**61.8**	0.0	3	0								
	wC214	Residential	Night	55	70	**62.1**	**62.1**	0.0	2	0								
	wC215	Residential	Night	55	70	**62.0**	**62.0**	0.0	2	0								
	wC216	Residential	Night	55	70	**62.7**	**62.7**	0.0	1	0								
	wC217	Residential	Night	55	70	**62.1**	**62.1**	0.0	1	0								
	wC218	Residential	Night	55	70	**59.8**	**59.8**	0.0	1	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ -

Table A11
Build Noise Barrier Cost Effectiveness - 20 Foot Noise Wall
West Wall D - SB I-35W between 35th Street and 36th Street

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (20 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "West D"	wD101	Residential	Day	65	70	**75.1**	**71.8**	-3.3	1	0	**0**	NO	NO	640	11,900	$238,000	N/A	NOT ACOUSTICALLY EFFECTIVE
	wD102	Residential	Day	65	70	**74.7**	**71.0**	-3.7	1	0								
	wD103	Residential	Day	65	70	**75.1**	**71.1**	-4.0	2	0								
	wD104	Residential	Day	65	70	**74.8**	**70.5**	-4.3	1	0								
	wD105	Residential	Day	65	70	**75.1**	**70.5**	-4.6	1	0								
	wD106	Residential	Day	65	70	**74.9**	**70.3**	-4.6	1	0								
	wD107	Residential	Day	65	70	**74.7**	**70.0**	-4.7	1	0								
	wD108	Residential	Day	65	70	**74.8**	**70.1**	-4.7	1	0								
	wD109	Residential	Day	65	70	**74.5**	**69.7**	-4.8	1	0								
	wD110	Residential	Day	65	70	**74.3**	**69.9**	-4.4	1	0								
	wD111	Residential	Day	65	70	**74.5**	**70.3**	-4.2	2	0								
	wD112	Residential	Day	65	70	**74.1**	**70.2**	-3.9	1	0								
	wD113	Residential	Day	65	70	**74.3**	**70.9**	-3.4	1	0								
	wD114	Residential	Day	65	70	**74.8**	**72.0**	-2.8	2	0								
	wD115	Residential	Day	65	70	**69.2**	**69.2**	0.0	1	0								
	wD201	Residential	Day	65	70	**68.3**	**68.3**	0.0	1	0								
	wD202	Residential	Day	65	70	**68.0**	**68.0**	0.0	1	0								
	wD203	Residential	Day	65	70	**67.7**	**67.7**	0.0	1	0								
	wD204	Residential	Day	65	70	**67.2**	**67.2**	0.0	1	0								
	wD205	Residential	Day	65	70	64.9	64.9	0.0	2	0								
	wD207	Residential	Day	65	70	64.3	64.3	0.0	3	0								
	wD210	Residential	Day	65	70	64.3	64.3	0.0	2	0								
	wD211	Residential	Day	65	70	64.6	64.6	0.0	2	0								
	wD212	Residential	Day	65	70	64.7	64.7	0.0	2	0								
	wD214	Residential	Day	65	70	**65.3**	**65.3**	0.0	2	0								
	wD215	Residential	Day	65	70	**70.4**	**70.4**	0.0	3	0								
Wall "West D"	wD101	Residential	Night	55	70	**74.3**	**70.7**	-3.6	1	0	**7**	**YES**	NO	640	11,900	$238,000	**$34,000**	DESIGN GOAL NOT MET
	wD102	Residential	Night	55	70	**73.9**	**69.8**	-4.1	1	0								
	wD103	Residential	Night	55	70	**74.2**	**69.6**	-4.6	2	0								
	wD104	Residential	Night	55	70	**74.0**	**69.0**	**-5.0**	1	1								
	wD105	Residential	Night	55	70	**74.2**	**69.0**	**-5.2**	1	1								
	wD106	Residential	Night	55	70	**74.1**	**68.8**	**-5.3**	1	1								
	wD107	Residential	Night	55	70	**73.9**	**68.5**	**-5.4**	1	1								
	wD108	Residential	Night	55	70	**74.0**	**68.6**	**-5.4**	1	1								
	wD109	Residential	Night	55	70	**73.7**	**68.3**	**-5.4**	1	1								
	wD110	Residential	Night	55	70	**73.5**	**68.4**	**-5.1**	1	1								
	wD111	Residential	Night	55	70	**73.6**	**68.8**	-4.8	2	0								
	wD112	Residential	Night	55	70	**73.2**	**68.8**	-4.4	1	0								
	wD113	Residential	Night	55	70	**73.5**	**69.4**	-4.1	1	0								
	wD114	Residential	Night	55	70	**73.9**	**70.5**	-3.4	2	0								
	wD115	Residential	Night	55	70	**68.3**	**68.3**	0.0	1	0								
	wD201	Residential	Night	55	70	**68.1**	**68.1**	0.0	1	0								
	wD202	Residential	Night	55	70	**67.8**	**67.8**	0.0	1	0								
	wD203	Residential	Night	55	70	**67.5**	**67.5**	0.0	1	0								
	wD204	Residential	Night	55	70	**66.9**	**66.9**	0.0	1	0								
	wD205	Residential	Night	55	70	**64.6**	**64.6**	0.0	2	0								
	wD207	Residential	Night	55	70	**63.8**	**63.8**	0.0	3	0								
	wD210	Residential	Night	55	70	**63.8**	**63.8**	0.0	2	0								
	wD211	Residential	Night	55	70	**64.1**	**64.1**	0.0	2	0								
	wD212	Residential	Night	55	70	**64.0**	**64.0**	0.0	2	0								
	wD214	Residential	Night	55	70	**64.5**	**64.5**	0.0	2	0								
	wD215	Residential	Night	55	70	**69.0**	**69.0**	0.0	3	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ -

Table A12a
Build Noise Barrier Cost Effectiveness - REPLACE IN KIND
West Wall E - SB I-35W between 35th St Exit Ramp and 35th Street

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (Varied ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "West E"	wE101	Residential	Day	65	70	**74.3**	**73.2**	-1.1	1	0	**4**	**YES**	NO	592	13,419	$268,380	$67,095	DESIGN GOAL AND COST EFFECTIVENESS NOT MET
	wE102	Residential	Day	65	70	**69.9**	**69.9**	0.0	1	0								
	wE103	Residential	Day	65	70	**69.3**	**69.3**	0.0	1	0								
	wE104	Residential	Day	65	70	**75.4**	**73.4**	-2.0	1	0								
	wE105	Residential	Day	65	70	**75.8**	**72.9**	-2.9	1	0								
	wE106	Residential	Day	65	70	**75.9**	**72.3**	-3.6	2	0								
	wE107	Residential	Day	65	70	**75.4**	**71.4**	-4.0	3	0								
	wE108	Residential	Day	65	70	**76.0**	**71.6**	-4.4	2	0								
	wE109	Residential	Day	65	70	**75.9**	**71.2**	-4.7	2	0								
	wE110	Residential	Day	65	70	**75.9**	**71.1**	-4.8	1	0								
	wE111	Residential	Day	65	70	**75.4**	**70.3**	**-5.1**	2	2								
	wE112	Residential	Day	65	70	**75.2**	**69.5**	**-5.7**	1	1								
	wE113	Residential	Day	65	70	**75.3**	**69.0**	**-6.3**	1	1								
	wE114	Residential	Day	65	70	**67.6**	**67.6**	0.0	1	0								
	wE201	Residential	Day	65	70	**69.6**	**69.6**	0.0	2	0								
	wE202	Residential	Day	65	70	**65.3**	**65.3**	0.0	4	0								
	wE203	Residential	Day	65	70	64.9	64.9	0.0	1	0								
	wE204	Residential	Day	65	70	64.8	64.8	0.0	2	0								
	wE206	Residential	Day	65	70	65.0	65.0	0.0	2	0								
	wE207	Residential	Day	65	70	**67.3**	**66.8**	-0.5	2	0								
	wE209	Residential	Day	65	70	**67.6**	**66.7**	-0.9	2	0								
	wE210	Residential	Day	65	70	**65.6**	**65.6**	0.0	2	0								
	wE212	Residential	Day	65	70	**65.7**	**65.7**	0.0	2	0								
	wE214	Residential	Day	65	70	**65.5**	**65.5**	0.0	2	0								
Wall "West E"	wE101	Residential	Night	55	70	**73.5**	**72.2**	-1.3	1	0	**7**	**YES**	NO	592	13,419	$268,380	**$38,340**	DESIGN GOAL NOT MET
	wE102	Residential	Night	55	70	**69.1**	**69.1**	0.0	1	0								
	wE103	Residential	Night	55	70	**68.3**	**68.3**	0.0	1	0								
	wE104	Residential	Night	55	70	**74.5**	**72.3**	-2.2	1	0								
	wE105	Residential	Night	55	70	**74.9**	**71.6**	-3.3	1	0								
	wE106	Residential	Night	55	70	**75.0**	**71.0**	-4.0	2	0								
	wE107	Residential	Night	55	70	**74.6**	**70.2**	-4.4	3	0								
	wE108	Residential	Night	55	70	**75.2**	**70.3**	-4.9	2	0								
	wE109	Residential	Night	55	70	**75.2**	**69.9**	**-5.3**	2	2								
	wE110	Residential	Night	55	70	**75.2**	**69.9**	**-5.3**	1	1								
	wE111	Residential	Night	55	70	**74.7**	**69.3**	**-5.4**	2	2								
	wE112	Residential	Night	55	70	**74.6**	**68.6**	**-6.0**	1	1								
	wE113	Residential	Night	55	70	**74.7**	**68.3**	**-6.4**	1	1								
	wE114	Residential	Night	55	70	**67.0**	**66.7**	-0.3	1	0								
	wE201	Residential	Night	55	70	**68.4**	**68.4**	0.0	2	0								
	wE202	Residential	Night	55	70	**64.6**	**64.6**	0.0	4	0								
	wE203	Residential	Night	55	70	**64.2**	**64.2**	0.0	1	0								
	wE204	Residential	Night	55	70	**64.1**	**64.1**	0.0	2	0								
	wE206	Residential	Night	55	70	**64.3**	**64.3**	0.0	2	0								
	wE207	Residential	Night	55	70	**66.7**	**65.9**	-0.8	2	0								
	wE209	Residential	Night	55	70	**67.0**	**65.8**	-1.2	2	0								
	wE210	Residential	Night	55	70	**65.1**	**65.1**	0.0	2	0								
	wE212	Residential	Night	55	70	**65.1**	**65.1**	0.0	2	0								
	wE214	Residential	Night	55	70	**65.0**	**64.9**	-0.1	2	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ -

Table A12b
Build Noise Barrier Cost Effectiveness - REPLACE IN KIND plus 114 Foot Extended Length at 20 Foot High
West Wall E - SB I-35W between 35th St Exit Ramp and 35th Street

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA) MnDOT	Noise Standard (L_{10} dBA) FHWA	Noise Levels (L_{10} dBA) Build with Existing Barriers	Noise Levels (L_{10} dBA) Build with Barriers (Varied ft)	Acoustic Effectiveness: dBA Reduction	Acoustic Effectiveness: Number of Receptors	Acoustic Effectiveness: Benefitted Receptors (-5dBA)	Acoustic Effectiveness: **Total Benefitted Receptors**	Acoustic Effectiveness: **Acoustically Effective**	Acoustic Effectiveness: **Design Goal (-7dBA)**	Cost Effectiveness ($20/SF): Barrier Length (ft)	Cost Effectiveness ($20/SF): Area of Barrier (SF)**	Cost Effectiveness ($20/SF): Total Cost	Cost Effectiveness ($20/SF): Cost per Benefited Receptor	NOISE WALL RESULTS
Wall "West E"	wE101	Residential	Day	65	70	**73.2**	**70.5**	-2.7	1	0	**0**	NO	NO	706	15,869	$317,380	N/A	NOT ACOUSTICALLY EFFECTIVE
	wE102	Residential	Day	65	70	**70.8**	**68.4**	-2.4	1	0								
	wE103	Residential	Day	65	70	**71.1**	**69.6**	-1.5	1	0								
	wE104	Residential	Day	65	70	**73.4**	**70.9**	-2.5	1	0								
	wE105	Residential	Day	65	70	**72.9**	**71.0**	-1.9	1	0								
	wE106	Residential	Day	65	70	**72.3**	**70.9**	-1.4	2	0								
	wE107	Residential	Day	65	70	**71.4**	**70.3**	-1.1	3	0								
	wE108	Residential	Day	65	70	**71.6**	**70.8**	-0.8	2	0								
	wE109	Residential	Day	65	70	**71.2**	**70.8**	-0.4	2	0								
	wE110	Residential	Day	65	70	**71.1**	**70.8**	-0.3	1	0								
	wE111	Residential	Day	65	70	**70.3**	**70.2**	-0.1	2	0								
	wE112	Residential	Day	65	70	**69.5**	**69.4**	-0.1	1	0								
	wE113	Residential	Day	65	70	**69.0**	**68.9**	-0.1	1	0								
	wE114	Residential	Day	65	70	**67.6**	**67.0**	-0.6	1	0								
	wE201	Residential	Day	65	70	**71.0**	**69.7**	-1.3	2	0								
	wE202	Residential	Day	65	70	**68.8**	**67.4**	-1.4	4	0								
	wE203	Residential	Day	65	70	**67.6**	**66.2**	-1.4	1	0								
	wE204	Residential	Day	65	70	**67.2**	**65.7**	-1.5	2	0								
	wE206	Residential	Day	65	70	**66.9**	**65.5**	-1.4	2	0								
	wE207	Residential	Day	65	70	**66.8**	**65.4**	-1.4	2	0								
	wE209	Residential	Day	65	70	**66.7**	**65.5**	-1.2	2	0								
	wE210	Residential	Day	65	70	**66.5**	**65.4**	-1.1	2	0								
	wE212	Residential	Day	65	70	**66.3**	**65.3**	-1.0	2	0								
	wE214	Residential	Day	65	70	**65.7**	64.8	-0.9	2	0								
Wall "West E"	wE101	Residential	Night	55	70	**72.2**	**69.0**	-3.2	1	0	**0**	NO	NO	706	15,869	$317,380	N/A	NOT ACOUSTICALLY EFFECTIVE
	wE102	Residential	Night	55	70	**70.0**	**67.2**	-2.8	1	0								
	wE103	Residential	Night	55	70	**70.2**	**68.4**	-1.8	1	0								
	wE104	Residential	Night	55	70	**72.3**	**69.3**	-3.0	1	0								
	wE105	Residential	Night	55	70	**71.6**	**69.3**	-2.3	1	0								
	wE106	Residential	Night	55	70	**71.0**	**69.2**	-1.8	2	0								
	wE107	Residential	Night	55	70	**70.2**	**68.8**	-1.4	3	0								
	wE108	Residential	Night	55	70	**70.3**	**69.4**	-0.9	2	0								
	wE109	Residential	Night	55	70	**69.9**	**69.6**	-0.3	2	0								
	wE110	Residential	Night	55	70	**69.9**	**69.6**	-0.3	1	0								
	wE111	Residential	Night	55	70	**69.3**	**69.1**	-0.2	2	0								
	wE112	Residential	Night	55	70	**68.6**	**68.4**	-0.2	1	0								
	wE113	Residential	Night	55	70	**68.3**	**68.2**	-0.1	1	0								
	wE114	Residential	Night	55	70	**66.7**	**66.0**	-0.7	1	0								
	wE201	Residential	Night	55	70	**69.9**	**68.2**	-1.7	2	0								
	wE202	Residential	Night	55	70	**67.9**	**66.2**	-1.7	4	0								
	wE203	Residential	Night	55	70	**66.7**	**65.0**	-1.7	1	0								
	wE204	Residential	Night	55	70	**66.3**	**64.6**	-1.7	2	0								
	wE206	Residential	Night	55	70	**66.0**	**64.4**	-1.6	2	0								
	wE207	Residential	Night	55	70	**65.9**	**64.3**	-1.6	2	0								
	wE209	Residential	Night	55	70	**65.8**	**64.4**	-1.4	2	0								
	wE210	Residential	Night	55	70	**65.6**	**64.3**	-1.3	2	0								
	wE212	Residential	Night	55	70	**65.4**	**64.3**	-1.1	2	0								
	wE214	Residential	Night	55	70	**64.9**	**63.8**	-1.1	2	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ -

Table A13
Build Noise Barrier Cost Effectiveness - REPLACE IN KIND
West Wall F - SB I-35W between 31st St Entrance Ramp and 35th St Exit Ramp

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (20 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "West F"	wF101	Residential	Day	65	70	**75.8**	**67.0**	**-8.8**	1	1	**26**	**YES**	**YES**	1,503	35,456	$709,120	**$27,274**	**REPLACE IN-KIND**
	wF102	Residential	Day	65	70	**67.8**	**66.1**	-1.7	1	0								
	wF103	Residential	Day	65	70	**75.9**	**66.8**	**-9.1**	2	2								
	wF104	Residential	Day	65	70	**75.1**	**66.1**	**-9.0**	2	2								
	wF106	Residential	Day	65	70	**75.1**	**66.0**	**-9.1**	3	3								
	wF108	Residential	Day	65	70	**75.3**	**65.9**	**-9.4**	6	6								
	wF111	Residential	Day	65	70	**75.2**	**65.8**	**-9.4**	2	2								
	wF113	Residential	Day	65	70	**75.4**	**66.1**	**-9.3**	4	4								
	wF114	Residential	Day	65	70	**75.6**	**66.3**	**-9.3**	1	1								
	wF202	Residential	Day	65	70	**65.4**	64.7	-0.7	3	0								
	wF204	Residential	Day	65	70	**65.3**	64.1	-1.2	2	0								
	wF206	Residential	Day	65	70	**65.4**	63.7	-1.7	2	0								
	wF208	Residential	Day	65	70	**65.5**	63.5	-2.0	3	0								
	wF209	Residential	Day	65	70	**66.1**	63.7	-2.4	2	0								
	wF211	Residential	Day	65	70	**66.2**	63.6	-2.6	3	0								
	wF213	Residential	Day	65	70	**66.9**	63.9	-3.0	3	0								
	wF213C	Residential	Day	65	70	**65.9**	63.4	-2.5										
	wF120	Residential	Day	65	70	**76.0**	**66.3**	**-9.7**	4	4								
	wF124	General	Day	70	70	**76.8**	66.5	**-10.3**	1	1								
	wF124C	General	Day	70	70	**70.6**	65.7	-4.9										
	wF221	Residential	Day	65	70	**65.8**	63.8	-2.0	1	0								
	wF222	Residential	Day	65	70	**66.1**	63.9	-2.2	2	0								
Wall "West F"	wF101	Residential	Night	55	70	**75.2**	**67.5**	**-7.7**	1	1	**26**	**YES**	**YES**	1,503	35,456	$709,120	**$27,274**	**REPLACE IN-KIND**
	wF102	Residential	Night	55	70	**67.2**	**65.6**	-1.6	1	0								
	wF103	Residential	Night	55	70	**75.3**	**67.4**	**-7.9**	2	2								
	wF104	Residential	Night	55	70	**74.6**	**66.8**	**-7.8**	2	2								
	wF106	Residential	Night	55	70	**74.6**	**66.7**	**-7.9**	3	3								
	wF108	Residential	Night	55	70	**74.8**	**66.6**	**-8.2**	6	6								
	wF111	Residential	Night	55	70	**74.7**	**66.5**	**-8.2**	2	2								
	wF113	Residential	Night	55	70	**74.8**	**66.8**	**-8.0**	4	4								
	wF114	Residential	Night	55	70	**75.0**	**66.9**	**-8.1**	1	1								
	wF202	Residential	Night	55	70	**64.8**	**64.1**	-0.7	3	0								
	wF204	Residential	Night	55	70	**64.8**	**63.6**	-1.2	2	0								
	wF206	Residential	Night	55	70	**64.9**	**63.3**	-1.6	2	0								
	wF208	Residential	Night	55	70	**65.0**	**63.2**	-1.8	3	0								
	wF209	Residential	Night	55	70	**65.6**	**63.4**	-2.2	2	0								
	wF211	Residential	Night	55	70	**65.6**	**63.3**	-2.3	3	0								
	wF213	Residential	Night	55	70	**66.3**	**63.6**	-2.7	3	0								
	wF213C	Residential	Night	55	70	**65.4**	**63.1**	-2.3										
	wF120	Residential	Night	55	70	**75.4**	**66.9**	**-8.5**	4	4								
	wF124	General	Night	70	70	**76.1**	67.1	**-9.0**	1	1								
	wF124C	General	Night	70	70	**70.0**	65.5	-4.5										
	wF221	Residential	Night	55	70	**65.2**	**63.5**	-1.7	1	0								
	wF222	Residential	Night	55	70	**65.5**	**63.6**	-1.9	2	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ -

Table A14a
Build Noise Barrier Cost Effectiveness - REPLACE IN KIND
West Wall G - SB I-35W between 31st St and 31st Street Entrance Ramp

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA) MnDOT	Noise Standard (L_{10} dBA) FHWA	Noise Levels (L_{10} dBA) Build with No Barriers	Noise Levels (L_{10} dBA) Build with Barriers (Varied ft)	Acoustic Effectiveness dBA Reduction	Acoustic Effectiveness Number of Receptors	Acoustic Effectiveness Benefitted Receptors (-5dBA)	Acoustic Effectiveness **Total Benefitted Receptors**	Acoustic Effectiveness **Acoustically Effective**	Acoustic Effectiveness **Design Goal (-7dBA)**	Cost Effectiveness ($20/SF) Barrier Length (ft)	Cost Effectiveness ($20/SF) Area of Barrier (SF)**	Cost Effectiveness ($20/SF) Total Cost	Cost Effectiveness ($20/SF) Cost per Benefited Receptor	NOISE WALL RESULTS
Wall "West G"	wG101	General	Day	70	70	**75.3**	68.8	**-6.5**	1	1	**1**	**YES**	NO	534	9,145	$182,900	$182,900	DESIGN GOAL AND COST EFFECTIVENESS NOT MET
	wG105	Residential	Day	65	70	**74.4**	**71.3**	-3.1	3	0								
	wG106	General	Day	70	70	**73.2**	**71.9**	-1.3	1	0								
	wG106C	General	Day	70	70	66.7	66.7	0.0										
	wG201	Residential	Day	65	70	**69.3**	**66.4**	-2.9	1	0								
	wG202	Residential	Day	65	70	**68.4**	**66.7**	-1.7	1	0								
	wG203	Residential	Day	65	70	**68.3**	**67.4**	-0.9	1	0								
	wG204	Residential	Day	65	70	**67.9**	**67.7**	-0.2	2	0								
	wG205	General	Day	70	70	67.0	67.0	0.0	1	0								
Wall "West G"	wG101	General	Night	70	70	**74.5**	68.0	**-6.5**	1	1	**1**	**YES**	NO	534	9,145	$182,900	$182,900	DESIGN GOAL AND COST EFFECTIVENESS NOT MET
	wG105	Residential	Night	55	70	**73.3**	**69.9**	-3.4	3	0								
	wG106	General	Night	70	70	**71.5**	69.8	-1.7	1	0								
	wG106C	General	Night	70	70	65.7	65.7	0.0										
	wG201	Residential	Night	55	70	**68.5**	**65.6**	-2.9	1	0								
	wG202	Residential	Night	55	70	**67.5**	**65.7**	-1.8	1	0								
	wG203	Residential	Night	55	70	**67.5**	**66.4**	-1.1	1	0								
	wG204	Residential	Night	55	70	**67.0**	**66.6**	-0.4	2	0								
	wG205	General	Night	70	70	66.0	66.0	0.0	1	0								

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

$43,500 MnDOT Threshold

Table A14b
Build Noise Barrier Cost Effectiveness - 20 Foot Noise Wall (replaces existing noise barrier)
West Wall G - SB I-35W between 31st St and 31st Street Entrance Ramp

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (dBA) MnDOT	Noise Standard (dBA) FHWA	Noise Levels (dBA) Build with Existing Barriers	Noise Levels (dBA) Build with Barriers (20 ft)	Acoustic Effectiveness dBA Reduction	Acoustic Effectiveness Number of Receptors	Acoustic Effectiveness Benefitted Receptors (-5dBA)	Acoustic Effectiveness **Total Benefitted Receptors**	Acoustic Effectiveness **Acoustically Effective**	Acoustic Effectiveness **Design Goal (-7dBA)**	Cost Effectiveness ($20/SF) Barrier Length (ft)	Cost Effectiveness ($20/SF) Area of Barrier (SF)	Cost Effectiveness ($20/SF) Total Cost	Cost Effectiveness ($20/SF) Cost per Benefited Receptor	NOISE WALL RESULTS
Wall "West G"	wG101	General	Day	70	70	68.8	67.7	-1.1	1	0	**0**	NO	NO	534	9,440	$188,800	N/A	NOT ACOUSTICALLY EFFECTIVE
	wG105	Residential	Day	65	70	**71.3**	**70.2**	-1.1	3	0								
	wG106	General	Day	70	70	**71.9**	69.8	-2.1	1	0								
	wG106C	General	Day	70	70	68.5	66.0	-2.5										
	wG201	Residential	Day	65	70	**66.4**	65.0	-1.4	1	0								
	wG202	Residential	Day	65	70	**66.7**	64.9	-1.8	1	0								
	wG203	Residential	Day	65	70	**67.4**	**65.7**	-1.7	1	0								
	wG204	Residential	Day	65	70	**67.7**	**65.8**	-1.9	2	0								
	wG205	General	Day	70	70	68.5	66.0	-2.5	1	0								
Wall "West G"	wG101	General	Night	70	70	68.0	66.9	-1.1	1	0	**0**	NO	NO	534	9,440	$188,800	N/A	NOT ACOUSTICALLY EFFECTIVE
	wG105	Residential	Night	55	70	**69.9**	**68.8**	-1.1	3	0								
	wG106	General	Night	70	70	69.8	66.9	-2.9	1	0								
	wG106C	General	Night	70	70	67.4	64.5	-2.9										
	wG201	Residential	Night	55	70	**65.6**	**64.1**	-1.5	1	0								
	wG202	Residential	Night	55	70	**65.7**	**63.9**	-1.8	1	0								
	wG203	Residential	Night	55	70	**66.4**	**64.7**	-1.7	1	0								
	wG204	Residential	Night	55	70	**66.6**	**64.6**	-2.0	2	0								
	wG205	General	Night	70	70	67.3	64.5	-2.8	1	0								

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

$43,500 MnDOT Threshold

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ -

Table A15
Build Noise Barrier Cost Effectiveness - 20 Foot Noise Wall
West Wall H - SB I-35W between Lake St and 31st Street

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (20 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "West H"	wH101	Commercial	Day	70	75	**72.7**	67.7	**-5.0**	1	1	**1**	**YES**	NO	916	9,850	$197,000	$197,000	DESIGN GOAL AND COST EFFECTIVENESS NOT MET
	wH103	Commercial	Day	70	75	**73.5**	**71.1**	-2.4	1	0								
	wH104	Commercial	Day	70	75	**74.9**	**73.3**	-1.6	1	0								
	wH205	Commercial	Day	70	75	**74.4**	**73.9**	-0.5	1	0								
	crest8	General	Day	70	70	**74.5**	**74.4**	-0.1	1	0								
	crest9	General	Day	70	70	**73.9**	**73.8**	-0.1	1	0								
	crest10	General	Day	70	70	**73.8**	**73.7**	-0.1	1	0								
	crest11	General	Day	70	70	**74.2**	**74.1**	-0.1	1	0								
	crest12	General	Day	70	70	**73.8**	**73.7**	-0.1	1	0								
	crest13	General	Day	70	70	**75.0**	**74.8**	-0.2	1	0								
Wall "West H"	wH101	Commercial	Night	70	75	**71.4**	65.3	**-6.1**	1	1	**1**	**YES**	NO	916	9,850	$197,000	$197,000	DESIGN GOAL AND COST EFFECTIVENESS NOT MET
	wH103	Commercial	Night	70	75	**71.8**	68.9	-2.9	1	0								
	wH104	Commercial	Night	70	75	**72.8**	**70.3**	-2.5	1	0								
	wH205	Commercial	Night	70	75	**71.8**	**71.0**	-0.8	1	0								
	crest8	General	Night	70	70	**71.8**	**71.7**	-0.1	1	0								
	crest9	General	Night	70	70	**71.4**	**71.3**	-0.1	1	0								
	crest10	General	Night	70	70	**71.3**	**71.2**	-0.1	1	0								
	crest11	General	Night	70	70	**71.7**	**71.6**	-0.1	1	0								
	crest12	General	Night	70	70	**71.4**	**71.3**	-0.1	1	0								
	crest13	General	Night	70	70	**72.2**	**72.0**	-0.2	1	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ -

Table A16
Build Noise Barrier Cost Effectiveness - 20 Foot Noise Wall
West Wall I - SB I-35W between the Greenway and Lake Street

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (20 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "West I"	wl101	Commercial	Day	70	75	**75.3**	**74.8**	-0.5	1	0	**1**	**YES**	NO	436	9,940	$198,800	$198,800	DESIGN GOAL AND COST EFFECTIVENESS NOT MET
	wl102	Commercial	Day	70	75	**76.0**	**74.6**	-1.4	1	0								
	wl103	Commercial	Day	70	75	**70.7**	65.4	**-5.3**	1	1								
	wl201	Commercial	Day	70	75	**73.0**	**73.0**	0.0	1	0								
	wl202	Commercial	Day	70	75	**74.9**	**74.9**	0.0	2	0								
	GrnWayW1	General	Day															
	GrnWayW2	General	Day	70	70	66.7	66.5	-0.2	1	0								
	GrnWayW3	General	Day	70	70	**70.9**	67.7	-3.2	1	0								
	GrnWayW4	General	Day	70	70	68.8	64.6	-4.2	1	0								
	GrnWayW5	General	Day	70	70	67.5	62.9	-4.6	1	0								
	GrnWayW6	General	Day	70	70	66.2	61.5	-4.7	1	0								
	GrnWayW7	General	Day	70	70	65.2	60.4	-4.8	1	0								
	crest1	General	Day	70	70	**73.4**	**73.4**	0.0	1	0								
	crest2	General	Day	70	70	**73.1**	**73.0**	-0.1	1	0								
	crest3	General	Day	70	70	**72.6**	**72.2**	-0.4	1	0								
	crest4	General	Day	70	70	**70.2**	69.9	-0.3	1	0								
	crest5	General	Day	70	70	**70.0**	69.9	-0.1	1	0								
	crest6	General	Day	70	70	**70.7**	**70.4**	-0.3	1	0								
	crest7	General	Day	70	70	**72.2**	**72.1**	-0.1	1	0								
Wall "West I"	wl101	Commercial	Night	70	75	**72.4**	**71.5**	-0.9	1	0	**1**	**YES**	NO	436	9,940	$198,800	$198,800	DESIGN GOAL AND COST EFFECTIVENESS NOT MET
	wl102	Commercial	Night	70	75	**73.6**	**71.5**	-2.1	1	0								
	wl103	Commercial	Night	70	75	69.4	63.8	**-5.6**	1	1								
	wl201	Commercial	Night	70	75	**70.3**	**70.2**	-0.1	1	0								
	wl202	Commercial	Night	70	75	**71.9**	**71.9**	0.0	2	0								
	GrnWayW1	General	Night															
	GrnWayW2	General	Night	70	70	64.6	64.3	-0.3	1	0								
	GrnWayW3	General	Night	70	70	69.3	65.6	-3.7	1	0								
	GrnWayW4	General	Night	70	70	67.7	63.3	-4.4	1	0								
	GrnWayW5	General	Night	70	70	66.5	61.8	-4.7	1	0								
	GrnWayW6	General	Night	70	70	65.3	60.5	-4.8	1	0								
	GrnWayW7	General	Night	70	70	64.3	59.4	-4.9	1	0								
	crest1	General	Night	70	70	**72.3**	**72.2**	-0.1	1	0								
	crest2	General	Night	70	70	**71.8**	**71.7**	-0.1	1	0								
	crest3	General	Night	70	70	**70.6**	**70.2**	-0.4	1	0								
	crest4	General	Night	70	70	67.6	67.2	-0.4	1	0								
	crest5	General	Night	70	70	67.4	67.3	-0.1	1	0								
	crest6	General	Night	70	70	67.9	67.6	-0.3	1	0								
	crest7	General	Night	70	70	69.3	69.0	-0.3	1	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ -

Table A17a
Build Noise Barrier Cost Effectiveness - REPLACE IN KIND
West Wall J - SB I-35W between 28th Street and the Greenway

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (20 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "West J"	wJ001	Commercial	Day	70	75						**12**	**YES**	**YES**	625	11,600	$232,000	**$19,333**	**REPLACE IN-KIND**
	wJ003	Residential	Day	65	70	**77.0**	**65.1**	**-11.9**	2	2								
	wJ004	Residential	Day	65	70	**73.8**	**65.9**	**-7.9**	2	2								
	wJ005	Residential	Day	65	70	**74.2**	65.0	**-9.2**	2	2								
	wJ006	Residential	Day	65	70	**72.4**	**66.4**	**-6.0**	2	2								
	wJ010	General	Day	70	70	**78.2**	63.9	**-14.3**	1	1								
	wJ012	General	Day	70	70	**80.0**	63.9	**-16.1**	1	1								
	wJ014	General	Day	70	70	**81.2**	64.8	**-16.4**	1	1								
	wJ016	General	Day	70	70	**79.3**	68.8	**-10.5**	1	1								
	wJ101	Commercial	Day	70	75	**74.8**	**71.9**	-2.9	1	0								
	wJ103	Residential	Day	65	70	**73.4**	**69.7**	-3.7	3	0								
	wJ104	Residential	Day	65	70	**73.5**	**69.9**	-3.6	3	0								
	wJ105	Residential	Day	65	70	**72.9**	**69.5**	-3.4	1	0								
	wJ107	Residential	Day	65	70	**72.7**	**69.3**	-3.4	4	0								
	wJ108	Residential	Day	65	70	**72.5**	**69.2**	-3.3	1	0								
	wJ109	Residential	Day	65	70	**72.2**	**69.0**	-3.2	2	0								
	wJ201	Commercial	Day	70	75	70.0	68.1	-1.9	1	0								
	wJ202	Residential	Day	65	70	**70.2**	**67.0**	-3.2	2	0								
	wJ203	Residential	Day	65	70	**69.8**	**66.5**	-3.3	3	0								
	wJ204	Residential	Day	65	70	**69.5**	**66.1**	-3.4	2	0								
	wJ205	Residential	Day	65	70	**69.2**	**65.7**	-3.5	1	0								
	wJ207	Residential	Day	65	70	**68.8**	**65.3**	-3.5	4	0								
Wall "West J"	wJ001	Commercial	Night	70	75						**12**	**YES**	**YES**	625	11,600	$232,000	**$19,333**	**REPLACE IN-KIND**
	wJ003	Residential	Night	55	70	**76.1**	**63.6**	**-12.5**	2	2								
	wJ004	Residential	Night	55	70	**73.0**	**64.4**	**-8.6**	2	2								
	wJ005	Residential	Night	55	70	**73.5**	**64.0**	**-9.5**	2	2								
	wJ006	Residential	Night	55	70	**71.7**	**65.6**	**-6.1**	2	2								
	wJ010	General	Night	70	70	**77.4**	62.9	**-14.5**	1	1								
	wJ012	General	Night	70	70	**79.2**	63.0	**-16.2**	1	1								
	wJ014	General	Night	70	70	**80.4**	64.0	**-16.4**	1	1								
	wJ016	General	Night	70	70	**78.5**	68.2	**-10.3**	1	1								
	wJ101	Commercial	Night	70	75	**73.3**	**70.1**	-3.2	1	0								
	wJ103	Residential	Night	55	70	**72.1**	**67.9**	-4.2	3	0								
	wJ104	Residential	Night	55	70	**72.0**	**67.8**	-4.2	3	0								
	wJ105	Residential	Night	55	70	**71.4**	**67.4**	-4.0	1	0								
	wJ107	Residential	Night	55	70	**71.2**	**67.3**	-3.9	4	0								
	wJ108	Residential	Night	55	70	**71.0**	**67.2**	-3.8	1	0								
	wJ109	Residential	Night	55	70	**70.8**	**67.1**	-3.7	2	0								
	wJ201	Commercial	Night	70	75	69.0	67.0	-2.0	1	0								
	wJ202	Residential	Night	55	70	**69.2**	**65.9**	-3.3	2	0								
	wJ203	Residential	Night	55	70	**68.9**	**65.4**	-3.5	3	0								
	wJ204	Residential	Night	55	70	**68.6**	**65.0**	-3.6	2	0								
	wJ205	Residential	Night	55	70	**68.3**	**64.6**	-3.7	1	0								
	wJ207	Residential	Night	55	70	**68.0**	**64.2**	-3.8	4	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ -

Table A17b
Build Noise Barrier Cost Effectiveness - 20 Foot Noise Wall
West Wall J - SB I-35W between 28th Street and the Greenway

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with Existing Barriers	Build with Barriers (20 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "West J"	wJ001	Commercial	Day	70	75						**0**	NO	NO	625	11,600	$232,000	N/A	NOT ACOUSTICALLY EFFECTIVE
	wJ003	Residential	Day	65	70	**65.1**	**65.1**	0.0	2	0								
	wJ004	Residential	Day	65	70	**65.9**	**65.9**	0.0	2	0								
	wJ005	Residential	Day	65	70	65.0	65.0	0.0	2	0								
	wJ006	Residential	Day	65	70	**66.4**	**66.4**	0.0	2	0								
	wJ010	General	Day	70	70	63.9	63.9	0.0	1	0								
	wJ012	General	Day	70	70	63.9	63.9	0.0	1	0								
	wJ014	General	Day	70	70	64.8	64.6	-0.2	1	0								
	wJ016	General	Day	70	70	68.8	67.3	-1.5	1	0								
	wJ101	Commercial	Day	70	75	**71.9**	**71.9**	0.0	1	0								
	wJ103	Residential	Day	65	70	**69.7**	**69.7**	0.0	3	0								
	wJ104	Residential	Day	65	70	**69.9**	**69.9**	0.0	3	0								
	wJ105	Residential	Day	65	70	**69.5**	**69.5**	0.0	1	0								
	wJ107	Residential	Day	65	70	**69.3**	**69.3**	0.0	4	0								
	wJ108	Residential	Day	65	70	**69.2**	**69.2**	0.0	1	0								
	wJ109	Residential	Day	65	70	**69.0**	**69.0**	0.0	2	0								
	wJ201	Commercial	Day	70	75	68.1	68.1	0.0	1	0								
	wJ202	Residential	Day	65	70	**67.0**	**67.0**	0.0	2	0								
	wJ203	Residential	Day	65	70	**66.5**	**66.5**	0.0	3	0								
	wJ204	Residential	Day	65	70	**66.1**	**66.1**	0.0	2	0								
	wJ205	Residential	Day	65	70	**65.7**	**65.7**	0.0	1	0								
	wJ207	Residential	Day	65	70	**65.3**	**65.3**	0.0	4	0								
Wall "West J"	wJ001	Commercial	Night	70	75						**0**	NO	NO	625	11,600	$232,000	N/A	NOT ACOUSTICALLY EFFECTIVE
	wJ003	Residential	Night	55	70	**63.6**	**63.6**	0.0	2	0								
	wJ004	Residential	Night	55	70	**64.4**	**64.4**	0.0	2	0								
	wJ005	Residential	Night	55	70	**64.0**	**64.0**	0.0	2	0								
	wJ006	Residential	Night	55	70	**65.6**	**65.6**	0.0	2	0								
	wJ010	General	Night	70	70	62.9	62.9	0.0	1	0								
	wJ012	General	Night	70	70	63.0	63.0	0.0	1	0								
	wJ014	General	Night	70	70	64.0	63.8	-0.2	1	0								
	wJ016	General	Night	70	70	68.2	66.5	-1.7	1	0								
	wJ101	Commercial	Night	70	75	**70.1**	**70.1**	0.0	1	0								
	wJ103	Residential	Night	55	70	**67.9**	**67.9**	0.0	3	0								
	wJ104	Residential	Night	55	70	**67.8**	**67.8**	0.0	3	0								
	wJ105	Residential	Night	55	70	**67.4**	**67.4**	0.0	1	0								
	wJ107	Residential	Night	55	70	**67.3**	**67.3**	0.0	4	0								
	wJ108	Residential	Night	55	70	**67.2**	**67.2**	0.0	1	0								
	wJ109	Residential	Night	55	70	**67.1**	**67.1**	0.0	2	0								
	wJ201	Commercial	Night	70	75	67.0	67.0	0.0	1	0								
	wJ202	Residential	Night	55	70	**65.9**	**65.9**	0.0	2	0								
	wJ203	Residential	Night	55	70	**65.4**	**65.4**	0.0	3	0								
	wJ204	Residential	Night	55	70	**65.0**	**65.0**	0.0	2	0								
	wJ205	Residential	Night	55	70	**64.6**	**64.6**	0.0	1	0								
	wJ207	Residential	Night	55	70	**64.2**	**64.2**	0.0	4	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ -

Table A18
Build Noise Barrier Cost Effectiveness - REPLACE IN KIND
West Wall K - SB I-35W between 26th Street and 28th Street

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (Varied ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "West K"	wK100	Residential	Day	65	70	**72.3**	64.5	**-7.8**	1	1	**37**	**YES**	**YES**	1,456	25,266	$505,320	**$13,657**	**REPLACE IN-KIND**
	wK101	Residential	Day	65	70	**71.4**	64.3	**-7.1**	1	1								
	wK102	Residential	Day	65	70	**71.1**	64.1	**-7.0**	1	1								
	wK103	Residential	Day	65	70	**68.3**	62.3	**-6.0**	6	6								
	wK104	Residential	Day	65	70	**72.1**	63.8	**-8.3**	4	4								
	wK105	Residential	Day	65	70	62.2	61.4	-0.8	2	0								
	wK106	Residential	Day	65	70	63.1	61.8	-1.3	4	0								
	wK201	Residential	Day	65	70	**65.6**	63.7	-1.9	0	0								
	wK201a	Residential	Day	65	70	**70.6**	**66.8**	-3.8	2	0								
	wK201a2	Residential	Day	65	70	**73.8**	**69.1**	-4.7	2	0								
	wK201a3	Residential	Day	65	70	**74.9**	**70.1**	-4.8	2	0								
	wK201b	Residential	Day	65	70	**69.9**	**65.7**	-4.2	2	0								
	wK201b2	Residential	Day	65	70	**73.4**	**68.5**	-4.9	2	0								
	wK201b3	Residential	Day	65	70	**74.6**	**69.9**	-4.7	2	0								
	wK201c	Residential	Day	65	70	**67.3**	**65.8**	-1.5	2	0								
	wK201c2	Residential	Day	65	70	**69.2**	**66.9**	-2.3	2	0								
	wK201c3	Residential	Day	65	70	**70.4**	**68.2**	-2.2	2	0								
	wK201d	Residential	Day	65	70	64.3	64.3	0.0	2	0								
	wK201d2	Residential	Day	65	70	**66.1**	**65.6**	-0.5	2	0								
	wK201d3	Residential	Day	65	70	**67.3**	**66.8**	-0.5	2	0								
	wK201e	Residential	Day	65	70	63.7	63.7	0.0	2	0								
	wK201e2	Residential	Day	65	70	**65.3**	64.8	-0.5	2	0								
	wK201e3	Residential	Day	65	70	**66.5**	**65.9**	-0.6	2	0								
	wK202	Residential	Day	65	70	62.8	62.5	-0.3	0	0								
	wK203	Residential	Day	65	70	62.6	62.1	-0.5	2	0								
	wK204	Residential	Day	65	70	62.1	61.3	-0.8	1	0								
	wK205	Residential	Day	65	70	61.7	61.0	-0.7	1	0								
	wK206	Residential	Day	65	70	61.5	60.8	-0.7	1	0								
	wK207	Residential	Day	65	70	61.2	60.6	-0.6	1	0								
	wK208	Residential	Day	65	70	59.3	59.3	0.0	1	0								
	wK209	Residential	Day	65	70	59.3	59.3	0.0	1	0								
	wK121	Residential	Day	65	70	64.6	60.9	-3.7	1	0								
	wK122	Residential	Day	65	70	**68.3**	61.2	**-7.1**	1	1								
	wK123	Residential	Day	65	70	**69.2**	61.6	**-7.6**	2	2								
	wK124	Residential	Day	65	70	**68.6**	61.2	**-7.4**	1	1								
	wK125	Residential	Day	65	70	**72.2**	63.0	**-9.2**	2	2								
	wK127	Residential	Day	65	70	**72.3**	63.3	**-9.0**	4	4								
	wK128	Residential	Day	65	70	**71.8**	63.4	**-8.4**	1	1								
	wK129	Residential	Day	65	70	**71.1**	63.2	**-7.9**	2	2								
	wK129b2	Residential	Day	65	70	**72.1**	64.5	**-7.6**	2	2								
	wK129b3	Residential	Day	65	70	**74.3**	**66.2**	**-8.1**	2	2								
	wK130	Residential	Day	65	70	**67.2**	62.9	-4.3	2	0								
	wK130b2	Residential	Day	65	70	**68.0**	64.7	-3.3	2	0								
	wK130b3	Residential	Day	65	70	**70.1**	**66.0**	-4.1	2	0								
	wK132	Residential	Day	65	70	**73.3**	64.3	**-9.0**	3	3								
	wK135	Residential	Day	65	70	**72.9**	64.8	**-8.1**	3	3								
	wK137	Residential	Day	65	70	**71.6**	**66.2**	**-5.4**	1	1								
	wK138	Residential	Day	65	70	**71.8**	**68.3**	-3.5	2	0								
	wK221	Residential	Day	65	70	64.9	64.9	0.0	2	0								
	wK223	Residential	Day	65	70	**65.9**	**65.9**	0.0	2	0								

Table A18
Build Noise Barrier Cost Effectiveness - REPLACE IN KIND
West Wall K - SB I-35W between 26th Street and 28th Street

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (Varied ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "West K"	wK100	Residential	Night	55	70	**71.9**	**64.0**	**-7.9**	1	1	**37**	**YES**	**YES**	1,456	25,266	$505,320	**$13,657**	**REPLACE IN-KIND**
	wK101	Residential	Night	55	70	**71.1**	**63.8**	**-7.3**	1	1								
	wK102	Residential	Night	55	70	**70.8**	**63.6**	**-7.2**	1	1								
	wK103	Residential	Night	55	70	**68.0**	**61.9**	**-6.1**	6	6								
	wK104	Residential	Night	55	70	**71.7**	**63.4**	**-8.3**	4	4								
	wK105	Residential	Night	55	70	**61.9**	**61.0**	-0.9	2	0								
	wK106	Residential	Night	55	70	**62.8**	**61.4**	-1.4	4	0								
	wK201	Residential	Night	55	70	**65.2**	**63.1**	-2.1	0	0								
	wK201a	Residential	Night	55	70	**70.0**	**66.2**	-3.8	2	0								
	wK201a2	Residential	Night	55	70	**73.3**	**68.5**	-4.8	2	0								
	wK201a3	Residential	Night	55	70	**74.4**	**69.7**	-4.7	2	0								
	wK201b	Residential	Night	55	70	**69.3**	**65.1**	-4.2	2	0								
	wK201b2	Residential	Night	55	70	**72.8**	**67.9**	-4.9	2	0								
	wK201b3	Residential	Night	55	70	**74.1**	**69.4**	-4.7	2	0								
	wK201c	Residential	Night	55	70	**66.7**	**65.2**	-1.5	2	0								
	wK201c2	Residential	Night	55	70	**68.7**	**66.3**	-2.4	2	0								
	wK201c3	Residential	Night	55	70	**70.0**	**67.7**	-2.3	2	0								
	wK201d	Residential	Night	55	70	**63.8**	**63.8**	0.0	2	0								
	wK201d2	Residential	Night	55	70	**65.6**	**65.1**	-0.5	2	0								
	wK201d3	Residential	Night	55	70	**66.9**	**66.3**	-0.6	2	0								
	wK201e	Residential	Night	55	70	**63.2**	**63.2**	0.0	2	0								
	wK201e2	Residential	Night	55	70	**64.8**	**64.3**	-0.5	2	0								
	wK201e3	Residential	Night	55	70	**66.1**	**65.5**	-0.6	2	0								
	wK202	Residential	Night	55	70	**62.3**	**61.9**	-0.4	0	0								
	wK203	Residential	Night	55	70	**62.0**	**61.5**	-0.5	2	0								
	wK204	Residential	Night	55	70	**61.6**	**60.7**	-0.9	1	0								
	wK205	Residential	Night	55	70	**61.2**	**60.4**	-0.8	1	0								
	wK206	Residential	Night	55	70	**61.0**	**60.1**	-0.9	1	0								
	wK207	Residential	Night	55	70	**60.7**	**59.9**	-0.8	1	0								
	wK208	Residential	Night	55	70	**58.8**	**58.8**	0.0	1	0								
	wK209	Residential	Night	55	70	**58.8**	**58.8**	0.0	1	0								
	wK121	Residential	Night	55	70	**64.3**	**60.5**	-3.8	1	0								
	wK122	Residential	Night	55	70	**68.0**	**60.8**	**-7.2**	1	1								
	wK123	Residential	Night	55	70	**68.9**	**61.2**	**-7.7**	2	2								
	wK124	Residential	Night	55	70	**68.4**	**60.8**	**-7.6**	1	1								
	wK125	Residential	Night	55	70	**71.9**	**62.6**	**-9.3**	2	2								
	wK127	Residential	Night	55	70	**72.0**	**62.9**	**-9.1**	4	4								
	wK128	Residential	Night	55	70	**71.5**	**63.0**	**-8.5**	1	1								
	wK129	Residential	Night	55	70	**70.8**	**62.7**	**-8.1**	2	2								
	wK129b2	Residential	Night	55	70	**71.8**	**63.8**	**-8.0**	2	2								
	wK129b3	Residential	Night	55	70	**74.1**	**65.7**	**-8.4**	2	2								
	wK130	Residential	Night	55	70	**66.9**	**62.3**	-4.6	2	0								
	wK130b2	Residential	Night	55	70	**67.7**	**63.7**	-4.0	2	0								
	wK130b3	Residential	Night	55	70	**69.8**	**65.2**	-4.6	2	0								
	wK132	Residential	Night	55	70	**73.0**	**63.7**	**-9.3**	3	3								
	wK135	Residential	Night	55	70	**72.5**	**63.9**	**-8.6**	3	3								
	wK137	Residential	Night	55	70	**71.2**	**64.7**	**-6.5**	1	1								
	wK138	Residential	Night	55	70	**70.9**	**66.3**	-4.6	2	0								
	wK221	Residential	Night	55	70	**64.4**	**64.0**	-0.4	2	0								
	wK223	Residential	Night	55	70	**64.6**	**64.6**	0.0	2	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ -

Table A19
Build Noise Barrier Cost Effectiveness - REPLACE IN KIND
West Wall L1 - SB I-35W between 24th St Pedestrian Bridge and 26th Street

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (Varied ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "West L1"	wL001	Residential	Day	65	70	**71.0**	64.4	**-6.6**	6	6	**45**	**YES**	**YES**	1,296	28,212	$564,240	**$12,539**	**REPLACE IN-KIND**
	wL002	Residential	Day	65	70	**69.2**	61.7	**-7.5**	3	3								
	wL004	Residential	Day	65	70	**68.8**	61.2	**-7.6**	2	2								
	wL005	Residential	Day	65	70	**68.5**	60.7	**-7.8**	2	2								
	wL005B	Residential	Day	65	70	**70.2**	62.9	**-7.3**	1	1								
	wL006	Residential	Day	65	70	**65.2**	60.4	-4.8	2	0								
	wL006B	Residential	Day	65	70	**66.8**	62.4	-4.4	1	0								
	wL007	Residential	Day	65	70	**73.1**	62.1	**-11.0**	3	3								
	wL008	Residential	Day	65	70	**74.7**	62.3	**-12.4**	3	3								
	wL009	Residential	Day	65	70	**68.5**	63.6	-4.9										
	wL009C	Residential	Day	65	70	**69.0**	62.5	**-6.5**	9	9								
	wL201	Residential	Day	65	70	**67.6**	**67.6**	0.0	2	0								
	wL202	Residential	Day	65	70	**65.9**	**65.9**	0.0	1	0								
	wL203	Residential	Day	65	70	63.3	63.3	0.0	1	0								
	wL204	Residential	Day	65	70	62.4	62.4	0.0	1	0								
	wL205	Residential	Day	65	70	62.1	62.1	0.0	1	0								
	wL206	Residential	Day	65	70	61.4	61.4	0.0	1	0								
	wL208	Residential	Day	65	70	62.2	62.2	0.0	3	0								
	wL209	Commercial	Day	70	75	60.1	60.1	0.0	1	0								
	wL210	Residential	Day	65	70	62.2	61.7	-0.5	2	0								
	wL211	Residential	Day	65	70	62.3	62.2	-0.1	3	0								
	wL121	General	Day	70	70	69.0	60.8	**-8.2**										
	wL121-1	General	Day	70	70	**73.7**	65.1	**-8.6**	1	1								
	wL121-2	General	Day	70	70	**73.5**	63.5	**-10.0**	1	1								
	wL121-3	General	Day	70	70	**73.5**	63.4	**-10.1**	1	1								
	wL123	Residential	Day	65	70	**72.2**	63.2	**-9.0**	2	2								
	wL122	Residential	Day	65	70	**72.3**	62.9	**-9.4**	2	2								
	wL124	Residential	Day	65	70	**71.9**	63.6	**-8.3**	2	2								
	wL124B	Residential	Day	65	70	**75.0**	65.0	**-10.0**	1	1								
	wL125	Residential	Day	65	70	**71.7**	63.7	**-8.0**	2	2								
	wL126	Residential	Day	65	70	**72.3**	64.9	**-7.4**	2	2								
	wL127	Residential	Day	65	70	**71.9**	**66.0**	**-5.9**	2	2								
	wL128	Residential	Day	65	70	**71.1**	**66.9**	-4.2	3	0								
	wL222	Residential	Day	65	70	63.6	62.0	-1.6	4	0								
	wL222b1	Residential	Day	65	70	**65.1**	63.2	-1.9	2	0								
	wL222b2	Residential	Day	65	70	**65.1**	63.5	-1.6	2	0								
	wL223	Residential	Day	65	70	63.4	62.5	-0.9	1	0								
	wL224	Residential	Day	65	70	63.2	62.8	-0.4	2	0								
	wL225	Residential	Day	65	70	63.1	63.1	0.0	1	0								
	wL226	Residential	Day	65	70	62.3	62.3	0.0	4	0								
	wL321	Residential	Day	65	70	62.4	59.2	-3.2										
	wL321C	Residential	Day	65	70	61.9	59.1	-2.8	24	0								
	wL321a	Residential	Day	65	70	60.9	58.4	-2.5	2	0								
	wL321b	Residential	Day	65	70	61.5	58.6	-2.9	2	0								
	wL321c	Residential	Day	65	70	61.9	59.1	-2.8	24	0								
	wL321d	Residential	Day	65	70	62.4	59.5	-2.9	2	0								

Table A19
Build Noise Barrier Cost Effectiveness - REPLACE IN KIND
West Wall L1 - SB I-35W between 24th St Pedestrian Bridge and 26th Street

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (Varied ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "West L1"	wL001	Residential	Night	55	70	**70.5**	**63.5**	**-7.0**	6	6	**45**	**YES**	**YES**	1,296	28,212	$564,240	**$12,539**	**REPLACE IN-KIND**
	wL002	Residential	Night	55	70	**68.8**	**61.1**	**-7.7**	3	3								
	wL004	Residential	Night	55	70	**68.4**	**60.6**	**-7.8**	2	2								
	wL005	Residential	Night	55	70	**68.2**	**60.2**	**-8.0**	2	2								
	wL005B	Residential	Night	55	70	**69.8**	**62.2**	**-7.6**	1	1								
	wL006	Residential	Night	55	70	**64.8**	**60.0**	-4.8	2	0								
	wL006B	Residential	Night	55	70	**66.3**	**61.9**	-4.4	1	0								
	wL007	Residential	Night	55	70	**72.5**	**61.6**	**-10.9**	3	3								
	wL008	Residential	Night	55	70	**74.1**	**62.7**	**-11.4**	3	3								
	wL009	Residential	Night	55	70	**68.1**	**64.0**	-4.1										
	wL009C	Residential	Night	55	70	**68.5**	**62.5**	**-6.0**	9	9								
	wL201	Residential	Night	55	70	**66.1**	**66.1**	0.0	2	0								
	wL202	Residential	Night	55	70	**64.7**	**64.7**	0.0	1	0								
	wL203	Residential	Night	55	70	**62.3**	**62.3**	0.0	1	0								
	wL204	Residential	Night	55	70	**61.6**	**61.6**	0.0	1	0								
	wL205	Residential	Night	55	70	**61.4**	**61.4**	0.0	1	0								
	wL206	Residential	Night	55	70	**60.9**	**60.9**	0.0	1	0								
	wL208	Residential	Night	55	70	**61.7**	**61.7**	0.0	3	0								
	wL209	Commercial	Night	70	75	59.7	59.7	0.0	1	0								
	wL210	Residential	Night	55	70	**61.8**	**61.5**	-0.3	2	0								
	wL211	Residential	Night	55	70	**62.0**	**62.0**	0.0	3	0								
	wL121	General	Night	70	70	68.6	60.6	**-8.0**										
	wL121-1	General	Night	70	70	**73.3**	64.3	**-9.0**	1	1								
	wL121-2	General	Night	70	70	**73.0**	63.9	**-9.1**	1	1								
	wL121-3	General	Night	70	70	**73.0**	63.8	**-9.2**	1	1								
	wL123	Residential	Night	55	70	**71.7**	**63.6**	**-8.1**	2	2								
	wL122	Residential	Night	55	70	**71.8**	**63.3**	**-8.5**	2	2								
	wL124	Residential	Night	55	70	**71.4**	**63.9**	**-7.5**	2	2								
	wL124B	Residential	Night	55	70	**74.5**	**65.3**	**-9.2**	1	1								
	wL125	Residential	Night	55	70	**71.2**	**64.1**	**-7.1**	2	2								
	wL126	Residential	Night	55	70	**71.8**	**65.2**	**-6.6**	2	2								
	wL127	Residential	Night	55	70	**71.5**	**66.1**	**-5.4**	2	2								
	wL128	Residential	Night	55	70	**70.7**	**67.0**	-3.7	3	0								
	wL222	Residential	Night	55	70	**63.2**	**61.7**	-1.5	4	0								
	wL222b1	Residential	Night	55	70	**64.7**	**62.8**	-1.9	2	0								
	wL222b2	Residential	Night	55	70	**64.7**	**63.1**	-1.6	2	0								
	wL223	Residential	Night	55	70	**63.0**	**62.1**	-0.9	1	0								
	wL224	Residential	Night	55	70	**62.8**	**62.4**	-0.4	2	0								
	wL225	Residential	Night	55	70	**62.7**	**62.7**	0.0	1	0								
	wL226	Residential	Night	55	70	**61.8**	**61.8**	0.0	4	0								
	wL321	Residential	Night	55	70	**62.0**	**58.7**	-3.3										
	wL321C	Residential	Night	55	70	**61.6**	**58.7**	-2.9	24	0								
	wL321a	Residential	Night	55	70	**60.6**	**57.9**	-2.7	2	0								
	wL321b	Residential	Night	55	70	**61.1**	**58.2**	-2.9	2	0								
	wL321c	Residential	Night	55	70	**61.6**	**58.7**	-2.9	24	0								
	wL321d	Residential	Night	55	70	**62.0**	**59.1**	-2.9	2	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ -

Table A20a
Build Noise Barrier Cost Effectiveness - REPLACE IN KIND
West Wall L2 - SB I-35W between Franklin Avenue and 24th Street Pedestrian Bridge

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (Varied ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "West L2"	wL141	Residential	Day	65	70	65.0	64.3	-0.7	1	0	**0**	NO	NO	744	6,840	$136,800	N/A	NOT ACOUSTICALLY EFFECTIVE
	wL142	Commercial	Day	70	75	69.6	66.1	-3.5	1	0								
	wL143	Residential	Day	65	70	**72.1**	**68.0**	-4.1	1	0								
	wL144	Commercial	Day	70	75	69.3	65.3	-4.0	1	0								
	wL145	Residential	Day	65	70	**72.1**	**67.4**	-4.7	1	0								
	wL146	Residential	Day	65	70	**70.6**	**66.2**	-4.4	2	0								
	wL147	Residential	Day	65	70	**69.0**	**65.1**	-3.9	2	0								
	wL148	Commercial	Day	70	75	**71.6**	66.9	-4.7	1	0								
	wL149	Commercial	Day	70	75	**72.7**	68.3	-4.4	1	0								
	wL150	Residential	Day	65	70	**69.3**	**66.5**	-2.8	1	0								
	wL241	Residential	Day	65	70	61.9	61.9	0.0	2	0								
	wL242	Residential	Day	65	70	61.9	61.9	0.0	2	0								
	wL242B	Residential	Day	65	70	63.1	63.1	0.0	2	0								
	wL243	Residential	Day	65	70	62.1	62.1	0.0	1	0								
	wL244	Residential	Day	65	70	62.0	62.0	0.0	1	0								
	wL245	Commercial	Day	70	75	61.8	61.8	0.0	1	0								
	wL246	General	Day	70	70	62.9	62.9	0.0	1	0								
	wL161	Commercial	Day	70	75	**71.6**	**70.9**	-0.7	1	0								
	wL162	Commercial	Day	70	75	**70.5**	**70.4**	-0.1	1	0								
	wL163	Residential	Day	65	70	**72.2**	**72.2**	0.0	2	0								
	wL164	Commercial	Day	70	75	**72.2**	**72.2**	0.0	1	0								
	wL261	Commercial	Day	70	75	62.8	62.1	-0.7	1	0								
	wL262	Commercial	Day	70	75	**70.6**	**70.4**	-0.2	1	0								
Wall "West L2"	wL141	Residential	Night	55	70	**64.5**	**63.8**	-0.7	1	0	**0**	NO	NO	744	6,840	$136,800	N/A	NOT ACOUSTICALLY EFFECTIVE
	wL142	Commercial	Night	70	75	69.1	65.9	-3.2	1	0								
	wL143	Residential	Night	55	70	**71.7**	**68.2**	-3.5	1	0								
	wL144	Commercial	Night	70	75	68.8	64.9	-3.9	1	0								
	wL145	Residential	Night	55	70	**71.7**	**67.6**	-4.1	1	0								
	wL146	Residential	Night	55	70	**70.1**	**65.9**	-4.2	2	0								
	wL147	Residential	Night	55	70	**68.5**	**64.6**	-3.9	2	0								
	wL148	Commercial	Night	70	75	**71.1**	67.0	-4.1	1	0								
	wL149	Commercial	Night	70	75	**72.5**	68.5	-4.0	1	0								
	wL150	Residential	Night	55	70	**68.8**	**66.0**	-2.8	1	0								
	wL241	Residential	Night	55	70	**61.4**	**61.4**	0.0	2	0								
	wL242	Residential	Night	55	70	**61.4**	**61.4**	0.0	2	0								
	wL242B	Residential	Night	55	70	**62.6**	**62.6**	0.0	2	0								
	wL243	Residential	Night	55	70	**61.6**	**61.6**	0.0	1	0								
	wL244	Residential	Night	55	70	**61.6**	**61.6**	0.0	1	0								
	wL245	Commercial	Night	70	75	61.3	61.3	0.0	1	0								
	wL246	General	Night	70	70	62.4	62.4	0.0	1	0								
	wL161	Commercial	Night	70	75	**71.1**	**70.4**	-0.7	1	0								
	wL162	Commercial	Night	70	75	70.0	69.8	-0.2	1	0								
	wL163	Residential	Night	55	70	**71.8**	**71.7**	-0.1	2	0								
	wL164	Commercial	Night	70	75	**71.8**	**71.8**	0.0	1	0								
	wL261	Commercial	Night	70	75	62.2	61.5	-0.7	1	0								
	wL262	Commercial	Night	70	75	67.5	67.2	-0.3	1	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ -

Table A20b
Build Noise Barrier Cost Effectiveness - 20 Foot Noise Wall (replaces existing noise barrier)
West Wall L2-1 - SB I-35W between 22nd Street and 24th Street Pedestrian Bridge

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with Existing Barriers	Build with Barriers (20 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "West L2-1"	wL141	Residential	Day	65	70	64.3	60.5	-3.8	1	0	**1**	**YES**	NO	744	14,430	$603,330	$603,330	DESIGN GOAL AND COST EFFECTIVENESS NOT MET
	wL142	Commercial	Day	70	75	66.1	62.5	-3.6	1	0								
	wL143	Residential	Day	65	70	**68.0**	64.3	-3.7	1	0								
	wL144	Commercial	Day	70	75	65.3	61.0	-4.3	1	0								
	wL145	Residential	Day	65	70	**67.4**	63.6	-3.8	1	0								
	wL146	Residential	Day	65	70	**66.2**	61.8	-4.4	2	0								
	wL147	Residential	Day	65	70	**65.1**	60.6	-4.5	2	0								
	wL148	Commercial	Day	70	75	66.9	63.1	-3.8	1	0								
	wL149	Commercial	Day	70	75	68.3	64.8	-3.5	1	0								
	wL150	Residential	Day	65	70	**66.5**	60.9	**-5.6**	1	1								
	wL241	Residential	Day	65	70	63.3	60.0	-3.3	2	0								
	wL242	Residential	Day	65	70	63.5	59.9	-3.6	2	0								
	wL242B	Residential	Day	65	70	64.9	60.9	-4.0	2	0								
	wL243	Residential	Day	65	70	63.7	60.0	-3.7	1	0								
	wL244	Residential	Day	65	70	63.8	60.0	-3.8	1	0								
	wL245	Commercial	Day	70	75	63.2	59.8	-3.4	1	0								
	wL246	General	Day	70	70	65.3	60.8	-4.5	1	0								
Wall "West L2-1"	wL141	Residential	Night	55	70	**63.8**	**60.3**	-3.5	1	0	**2**	**YES**	NO	744	14,430	$603,330	$301,665	DESIGN GOAL AND COST EFFECTIVENESS NOT MET
	wL142	Commercial	Night	70	75	65.9	62.8	-3.1	1	0								
	wL143	Residential	Night	55	70	**68.2**	**64.0**	-4.2	1	0								
	wL144	Commercial	Night	70	75	64.9	61.1	-3.8	1	0								
	wL145	Residential	Night	55	70	**67.6**	**63.6**	-4.0	1	0								
	wL146	Residential	Night	55	70	**65.9**	**62.1**	-3.8	2	0								
	wL147	Residential	Night	55	70	**64.6**	**60.5**	-4.1	2	0								
	wL148	Commercial	Night	70	75	67.0	63.3	-3.7	1	0								
	wL149	Commercial	Night	70	75	68.5	63.4	**-5.1**	1	1								
	wL150	Residential	Night	55	70	**66.0**	**60.9**	**-5.1**	1	1								
	wL241	Residential	Night	55	70	**62.9**	**59.8**	-3.1	2	0								
	wL242	Residential	Night	55	70	**63.0**	**59.7**	-3.3	2	0								
	wL242B	Residential	Night	55	70	**64.5**	**60.6**	-3.9	2	0								
	wL243	Residential	Night	55	70	**63.3**	**59.8**	-3.5	1	0								
	wL244	Residential	Night	55	70	**63.3**	**59.7**	-3.6	1	0								
	wL245	Commercial	Night	70	75	62.8	59.6	-3.2	1	0								
	wL246	General	Night	70	70	64.9	60.5	-4.4	1	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ 314,730.00

Reinforce existing Retaining Walls to support Noise Barrier; 585 ft at $538 Linear Foot

Table A20c-1
Build Noise Barrier Cost Effectiveness - 20 Foot Noise Wall (replaces existing noise barrier)
West Wall L2-2 - SB I-35W between Franklin Avenue and 22nd Street

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with Existing Barriers	Build with Barriers (20 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "West L2-2"	wL161	Commercial	Day	70	75	**70.9**	63.2	**-7.7**	1	1	**5**	**YES**	**YES**	557	10,690	$544,670	$108,934	NOT COST EFFECTIVE
	wL162	Commercial	Day	70	75	**70.4**	62.4	**-8.0**	1	1								
	wL163	Residential	Day	65	70	**72.2**	64.4	**-7.8**	2	2								
	wL164	Commercial	Day	70	75	**72.2**	65.5	**-6.7**	1	1								
	wL261	Commercial	Day	70	75	62.1	61.9	-0.2	1	0								
	wL262	Commercial	Day	70	75	**70.4**	**70.4**	0.0	1	0								
Wall "West L2-2"	wL161	Commercial	Night	70	75	**70.4**	63.3	**-7.1**	1	1	**5**	**YES**	**YES**	557	10,690	$544,670	$108,934	NOT COST EFFECTIVE
	wL162	Commercial	Night	70	75	69.8	62.5	**-7.3**	1	1								
	wL163	Residential	Night	55	70	**71.7**	**64.0**	**-7.7**	2	2								
	wL164	Commercial	Night	70	75	**71.8**	65.0	**-6.8**	1	1								
	wL261	Commercial	Night	70	75	61.5	61.1	-0.4	1	0								
	wL262	Commercial	Night	70	75	67.2	67.2	0.0	1	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

Table A20c-2
Build Noise Barrier Cost Effectiveness - 15 Foot Noise Wall (replaces existing noise barrier)
West Wall L2-2 - SB I-35W between Franklin Avenue and 22nd Street

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (dBA)		Noise Levels (dBA)		Acoustic Effectiveness						Cost Effectiveness ($/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with Existing Barriers	Barriers (**Noise barrier	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)	Total Cost	Cost per Benefited Receptor	
Wall "West L2-2"	wL161	Commercial	Day	70	75	**70.9**	64.5	**-6.4**	1	1	**5**	**YES**	NO	557	7,905	$488,970	$97,794	DESIGN GOAL AND COST EFFECTIVENESS NOT MET
	wL162	Commercial	Day	70	75	**70.4**	63.7	**-6.7**	1	1								
	wL163	Residential	Day	65	70	**72.2**	**65.5**	**-6.7**	2	2								
	wL164	Commercial	Day	70	75	**72.2**	66.3	**-5.9**	1	1								
	wL261	Commercial	Day	70	75	62.1	62.1	0.0	1	0								
	wL262	Commercial	Day	70	75	**70.4**	**70.4**	0.0	1	0								
Wall "West L2-2"	wL161	Commercial	Night	70	75	**70.4**	64.8	**-5.6**	1	1	**5**	**YES**	NO	557	7,905	$488,970	$97,794	DESIGN GOAL AND COST EFFECTIVENESS NOT MET
	wL162	Commercial	Night	70	75	69.8	63.7	**-6.1**	1	1								
	wL163	Residential	Night	55	70	**71.7**	**65.6**	**-6.1**	2	2								
	wL164	Commercial	Night	70	75	**71.8**	66.2	**-5.6**	1	1								
	wL261	Commercial	Night	70	75	61.5	61.5	0.0	1	0								
	wL262	Commercial	Night	70	75	67.2	67.2	0.0	1	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ 330,870.00

Reinforce existing Retaining Walls to support Noise Barrier; 615 ft at $538 Linear Foot

Table A21a
Build Noise Barrier Cost Effectiveness - REPLACE IN KIND
West Wall M - EB I-94 / SB I-35W between 3rd Avenue and Franklin Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (Varied ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "West M"	wM100	Commercial	Day	70	75	**74.7**	**74.4**	-0.3	5	0	**209**	**YES**	**YES**	1,564	20,723	$414,460	**$1,983**	**REPLACE IN-KIND**
	wM101	Commercial	Day	70	75	**72.2**	**71.0**	-1.2	4	0								
	wM102	Residential	Day	65	70	**71.4**	**69.2**	-2.2	1	0								
	wM102C	Residential	Day	65	70	**68.4**	**67.5**	-0.9										
	wM103	General	Day	70	70	**73.4**	**70.3**	-3.1	1	0								
	wM104	Commercial	Day	70	75	**73.3**	**70.3**	-3.0	1	0								
	wM105	Residential	Day	65	70	**73.2**	**70.4**	-2.8	2	0								
	wM105a2	Residential	Day	65	70	**72.2**	**69.3**	-2.9	1	0								
	wM105a3	Residential	Day	65	70	**74.3**	**71.4**	-2.9	1	0								
	wM105a4	Residential	Day	65	70	**74.9**	**73.8**	-1.1	1	0								
	wM105b2	Residential	Day	65	70	**73.2**	**70.0**	-3.2	1	0								
	wM105b3	Residential	Day	65	70	**75.0**	**72.6**	-2.4	1	0								
	wM105b4	Residential	Day	65	70	**75.4**	**74.8**	-0.6	1	0								
	wM105c2	Residential	Day	65	70	**76.8**	**73.3**	-3.5	1	0								
	wM105c3	Residential	Day	65	70	**77.4**	**76.7**	-0.7	1	0								
	wM105c4	Residential	Day	65	70	**77.7**	**77.3**	-0.4	1	0								
	wM105d2	Residential	Day	65	70	**74.0**	**70.5**	-3.5	1	0								
	wM105d3	Residential	Day	65	70	**75.4**	**73.7**	-1.7	1	0								
	wM105d4	Residential	Day	65	70	**75.7**	**75.2**	-0.5	1	0								
	wM106	Residential	Day	65	70	64.2	64.2	0.0	2	0								
	wM121	Residential	Day	65	70	**70.4**	**67.9**	-2.5	2	0								
	wM123	Residential	Day	65	70	**72.6**	**70.3**	-2.3	3	0								
	wM124	Residential	Day	65	70	**73.3**	**71.0**	-2.3	2	0								
	wM126	Commercial	Day	70	75	**72.5**	70.0	-2.5	1	0								
	wM127	Residential	Day	65	70	**73.3**	**70.1**	-3.2	2	0								
	wM128	Residential	Day	65	70	**74.5**	**69.9**	-4.6	0	0								
	wM128a	Residential	Day	65	70	**73.9**	**70.1**	-3.8	1	0								
	wM128b	Residential	Day	65	70	**74.4**	**70.0**	-4.4	2	0								
	wM128c	Residential	Day	65	70	**74.7**	**69.8**	-4.9	2	0								
	wM128d	Residential	Day	65	70	**72.1**	**68.5**	-3.6	2	0								
	wM128e	Residential	Day	65	70	**71.2**	**67.9**	-3.3	2	0								
	wM141	Residential	Day	65	70	**70.5**	**66.4**	-4.1	0	0								
	wM141b1	Residential	Day	65	70	**70.4**	**65.1**	**-5.3**	2	2								
	wM141b2	Residential	Day	65	70	**74.3**	**68.6**	**-5.7**	2	2								
	wM141b3	Residential	Day	65	70	**76.1**	**72.0**	-4.1	2	0								
	wM142b1	Residential	Day	65	70	**69.5**	64.6	-4.9	2	0								
	wM142b2	Residential	Day	65	70	**73.0**	**67.6**	**-5.4**	2	2								
	wM142b3	Residential	Day	65	70	**74.8**	**70.3**	-4.5	2	0								
	wM143b1	Residential	Day	65	70	**69.0**	64.2	-4.8	2	0								
	wM143b2	Residential	Day	65	70	**72.2**	**66.9**	**-5.3**	2	2								
	wM143b3	Residential	Day	65	70	**73.9**	**69.2**	-4.7	2	0								
	wM341	Residential	Day	65	70	**66.2**	63.7	-2.5	6	0								
	wM342	Residential	Day	65	70	**69.2**	64.1	**-5.1**	2	2								
	wM441	Residential	Day	65	70	**66.5**	63.6	-2.9	4	0								
	wM442	Residential	Day	65	70	**75.1**	**66.8**	**-8.3**	199	199								

Table A21a
Build Noise Barrier Cost Effectiveness - REPLACE IN KIND
West Wall M - EB I-94 / SB I-35W between 3rd Avenue and Franklin Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (Varied ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "West M"	wM100	Commercial	Night	70	75	**72.6**	**72.3**	-0.3	5	0	**217**	**YES**	**YES**	1,564	20,723	$414,460	**$1,910**	**REPLACE IN-KIND**
	wM101	Commercial	Night	70	75	**71.4**	70.0	-1.4	4	0								
	wM102	Residential	Night	55	70	**70.7**	**68.2**	-2.5	1	0								
	wM102C	Residential	Night	55	70	**67.3**	**66.2**	-1.1										
	wM103	General	Night	70	70	**72.4**	69.3	-3.1	1	0								
	wM104	Commercial	Night	70	75	**72.4**	69.4	-3.0	1	0								
	wM105	Residential	Night	55	70	**72.3**	**69.4**	-2.9	2	0								
	wM105a2	Residential	Night	55	70	**71.6**	**68.7**	-2.9	1	0								
	wM105a3	Residential	Night	55	70	**73.7**	**70.9**	-2.8	1	0								
	wM105a4	Residential	Night	55	70	**74.3**	**73.3**	-1.0	1	0								
	wM105b2	Residential	Night	55	70	**72.6**	**69.3**	-3.3	1	0								
	wM105b3	Residential	Night	55	70	**74.5**	**72.1**	-2.4	1	0								
	wM105b4	Residential	Night	55	70	**74.9**	**74.3**	-0.6	1	0								
	wM105c2	Residential	Night	55	70	**76.1**	**72.5**	-3.6	1	0								
	wM105c3	Residential	Night	55	70	**76.7**	**76.1**	-0.6	1	0								
	wM105c4	Residential	Night	55	70	**76.9**	**76.6**	-0.3	1	0								
	wM105d2	Residential	Night	55	70	**73.4**	**69.9**	-3.5	1	0								
	wM105d3	Residential	Night	55	70	**74.8**	**73.2**	-1.6	1	0								
	wM105d4	Residential	Night	55	70	**75.1**	**74.7**	-0.4	1	0								
	wM106	Residential	Night	55	70	**63.5**	**63.5**	0.0	2	0								
	wM121	Residential	Night	55	70	**69.8**	**67.3**	-2.5	2	0								
	wM123	Residential	Night	55	70	**71.8**	**69.3**	-2.5	3	0								
	wM124	Residential	Night	55	70	**72.4**	**70.0**	-2.4	2	0								
	wM126	Commercial	Night	70	75	**71.7**	69.1	-2.6	1	0								
	wM127	Residential	Night	55	70	**72.5**	**69.2**	-3.3	2	0								
	wM128	Residential	Night	55	70	**73.6**	**69.0**	-4.6	0	0								
	wM128a	Residential	Night	55	70	**73.1**	**69.2**	-3.9	1	0								
	wM128b	Residential	Night	55	70	**73.5**	**69.1**	-4.4	2	0								
	wM128c	Residential	Night	55	70	**73.9**	**68.9**	**-5.0**	2	2								
	wM128d	Residential	Night	55	70	**71.3**	**67.7**	-3.6	2	0								
	wM128e	Residential	Night	55	70	**70.4**	**67.2**	-3.2	2	0								
	wM141	Residential	Night	55	70	**70.2**	**65.6**	-4.6	0	0								
	wM141b1	Residential	Night	55	70	**70.3**	**64.7**	**-5.6**	2	2								
	wM141b2	Residential	Night	55	70	**74.1**	**68.2**	**-5.9**	2	2								
	wM141b3	Residential	Night	55	70	**76.2**	**71.8**	-4.4	2	0								
	wM142b1	Residential	Night	55	70	**69.5**	**64.2**	**-5.3**	2	2								
	wM142b2	Residential	Night	55	70	**72.9**	**67.2**	**-5.7**	2	2								
	wM142b3	Residential	Night	55	70	**74.8**	**70.1**	-4.7	2	0								
	wM143b1	Residential	Night	55	70	**69.0**	**63.9**	**-5.1**	2	2								
	wM143b2	Residential	Night	55	70	**72.2**	**66.6**	**-5.6**	2	2								
	wM143b3	Residential	Night	55	70	**74.0**	**69.0**	**-5.0**	2	2								
	wM341	Residential	Night	55	70	**66.0**	**63.3**	-2.7	6	0								
	wM342	Residential	Night	55	70	**69.4**	**63.9**	**-5.5**	2	2								
	wM441	Residential	Night	55	70	**66.4**	**63.3**	-3.1	4	0								
	wM442	Residential	Night	55	70	**75.7**	**67.0**	**-8.7**	199	199								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ -

Table A21b
Build Noise Barrier Cost Effectiveness - REPLACE IN KIND plus Extended Length at 20 Foot High
West Wall M - EB I-94 / SB I-35W between 3rd Avenue and Franklin Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with Existing Barriers	Build with Barriers (Varied ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "West M"	wM100	Commercial	Day	70	75	**74.4**	**73.2**	-1.2	5	0	**13**	**YES**	NO	1,651	34,770	$962,000	$74,000	DESIGN GOAL AND COST EFFECTIVENESS NOT MET
	wM101	Commercial	Day	70	75	**71.0**	67.8	-3.2	4	0								
	wM102	Residential	Day	65	70	**69.2**	**66.1**	-3.1	1	0								
	wM102C	Residential	Day	65	70	**67.5**	**65.4**	-2.1										
	wM103	General	Day	70	70	**70.3**	65.7	-4.6	1	0								
	wM104	Commercial	Day	70	75	**70.3**	65.4	-4.9	1	0								
	wM105	Residential	Day	65	70	**70.4**	**65.3**	**-5.1**	2	2								
	wM105a2	Residential	Day	65	70	**69.3**	**65.2**	-4.1	1	0								
	wM105a3	Residential	Day	65	70	**71.4**	**66.9**	-4.5	1	0								
	wM105a4	Residential	Day	65	70	**73.8**	**69.0**	-4.8	1	0								
	wM105b2	Residential	Day	65	70	**70.0**	**65.8**	-4.2	1	0								
	wM105b3	Residential	Day	65	70	**72.6**	**67.7**	-4.9	1	0								
	wM105b4	Residential	Day	65	70	**74.8**	**70.0**	-4.8	1	0								
	wM105c2	Residential	Day	65	70	**73.3**	**68.6**	-4.7	1	0								
	wM105c3	Residential	Day	65	70	**76.7**	**71.6**	**-5.1**	1	1								
	wM105c4	Residential	Day	65	70	**77.3**	**75.5**	-1.8	1	0								
	wM105d2	Residential	Day	65	70	**70.5**	**66.2**	-4.3	1	0								
	wM105d3	Residential	Day	65	70	**73.7**	**68.3**	**-5.4**	1	1								
	wM105d4	Residential	Day	65	70	**75.2**	**70.8**	-4.4	1	0								
	wM106	Residential	Day	65	70	**66.6**	63.4	-3.2	2	0								
	wM121	Residential	Day	65	70	**67.9**	63.4	-4.5	2	0								
	wM123	Residential	Day	65	70	**70.3**	**65.1**	**-5.2**	3	3								
	wM124	Residential	Day	65	70	**71.0**	64.9	**-6.1**	2	2								
	wM126	Commercial	Day	70	75	70.0	64.9	**-5.1**	1	1								
	wM127	Residential	Day	65	70	**70.1**	**65.2**	-4.9	2	0								
	wM128	Residential	Day	65	70	**69.9**	64.9	**-5.0**	0	0								
	wM128a	Residential	Day	65	70	**70.1**	65.0	**-5.1**	1	1								
	wM128b	Residential	Day	65	70	**70.0**	65.0	**-5.0**	2	2								
	wM128c	Residential	Day	65	70	**69.8**	65.0	-4.8	2	0								
	wM128d	Residential	Day	65	70	**68.5**	64.9	-3.6	2	0								
	wM128e	Residential	Day	65	70	**67.9**	64.6	-3.3	2	0								
	wM141	Residential	Day	65	70	**66.4**	64.3	-2.1	0	0								
	wM141b1	Residential	Day	65	70	**65.1**	62.8	-2.3	2	0								
	wM141b2	Residential	Day	65	70	**68.6**	**65.7**	-2.9	2	0								
	wM141b3	Residential	Day	65	70	**72.0**	**68.7**	-3.3	2	0								
	wM142b1	Residential	Day	65	70	64.6	62.3	-2.3	2	0								
	wM142b2	Residential	Day	65	70	**67.6**	**65.2**	-2.4	2	0								
	wM142b3	Residential	Day	65	70	**70.3**	**67.6**	-2.7	2	0								
	wM143b1	Residential	Day	65	70	64.2	62.0	-2.2	2	0								
	wM143b2	Residential	Day	65	70	**66.9**	64.9	-2.0	2	0								
	wM143b3	Residential	Day	65	70	**69.2**	**66.9**	-2.3	2	0								
	wM341	Residential	Day	65	70	63.7	62.8	-0.9	6	0								
	wM342	Residential	Day	65	70	64.1	62.5	-1.6	2	0								
	wM441	Residential	Day	65	70	63.6	63.6	0.0	4	0								
	wM442	Residential	Day	65	70	**66.8**	**66.8**	0.0	199	0								

Table A21b
Build Noise Barrier Cost Effectiveness - REPLACE IN KIND plus Extended Length at 20 Foot High
West Wall M - EB I-94 / SB I-35W between 3rd Avenue and Franklin Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with Existing Barriers	Build with Barriers (Varied ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "West M"	wM100	Commercial	Night	70	75	**72.3**	**70.3**	-2.0	5	0	**20**	**YES**	NO	1,651	34,770	$962,000	$48,100	DESIGN GOAL AND COST EFFECTIVENESS NOT MET
	wM101	Commercial	Night	70	75	70.0	66.4	-3.6	4	0								
	wM102	Residential	Night	55	70	**68.2**	**64.9**	-3.3	1	0								
	wM102C	Residential	Night	55	70	**66.2**	**63.5**	-2.7										
	wM103	General	Night	70	70	69.3	64.3	**-5.0**	1	1								
	wM104	Commercial	Night	70	75	69.4	64.0	**-5.4**	1	1								
	wM105	Residential	Night	55	70	**69.4**	**63.9**	**-5.5**	2	2								
	wM105a2	Residential	Night	55	70	**68.7**	**64.2**	-4.5	1	0								
	wM105a3	Residential	Night	55	70	**70.9**	**66.2**	-4.7	1	0								
	wM105a4	Residential	Night	55	70	**73.3**	**68.6**	-4.7	1	0								
	wM105b2	Residential	Night	55	70	**69.3**	**64.8**	-4.5	1	0								
	wM105b3	Residential	Night	55	70	**72.1**	**67.0**	**-5.1**	1	1								
	wM105b4	Residential	Night	55	70	**74.3**	**69.5**	-4.8	1	0								
	wM105c2	Residential	Night	55	70	**72.5**	**67.6**	-4.9	1	0								
	wM105c3	Residential	Night	55	70	**76.1**	**70.8**	**-5.3**	1	1								
	wM105c4	Residential	Night	55	70	**76.6**	**75.0**	-1.6	1	0								
	wM105d2	Residential	Night	55	70	**69.9**	**65.2**	-4.7	1	0								
	wM105d3	Residential	Night	55	70	**73.2**	**67.7**	**-5.5**	1	1								
	wM105d4	Residential	Night	55	70	**74.7**	**70.3**	-4.4	1	0								
	wM106	Residential	Night	55	70	**65.8**	**62.2**	-3.6	2	0								
	wM121	Residential	Night	55	70	**67.3**	**62.4**	-4.9	2	0								
	wM123	Residential	Night	55	70	**69.3**	**64.0**	**-5.3**	3	3								
	wM124	Residential	Night	55	70	**70.0**	**63.7**	**-6.3**	2	2								
	wM126	Commercial	Night	70	75	69.1	63.9	**-5.2**	1	1								
	wM127	Residential	Night	55	70	**69.2**	**64.2**	**-5.0**	2	2								
	wM128	Residential	Night	55	70	**69.0**	**63.6**	**-5.4**	0	0								
	wM128a	Residential	Night	55	70	**69.2**	**63.9**	**-5.3**	1	1								
	wM128b	Residential	Night	55	70	**69.1**	**63.8**	**-5.3**	2	2								
	wM128c	Residential	Night	55	70	**68.9**	**63.7**	**-5.2**	2	2								
	wM128d	Residential	Night	55	70	**67.7**	**64.0**	-3.7	2	0								
	wM128e	Residential	Night	55	70	**67.2**	**63.8**	-3.4	2	0								
	wM141	Residential	Night	55	70	**65.6**	**63.6**	-2.0	0	0								
	wM141b1	Residential	Night	55	70	**64.7**	**62.3**	-2.4	2	0								
	wM141b2	Residential	Night	55	70	**68.2**	**65.2**	-3.0	2	0								
	wM141b3	Residential	Night	55	70	**71.8**	**68.5**	-3.3	2	0								
	wM142b1	Residential	Night	55	70	**64.2**	**62.0**	-2.2	2	0								
	wM142b2	Residential	Night	55	70	**67.2**	**64.8**	-2.4	2	0								
	wM142b3	Residential	Night	55	70	**70.1**	**67.4**	-2.7	2	0								
	wM143b1	Residential	Night	55	70	**63.9**	**61.9**	-2.0	2	0								
	wM143b2	Residential	Night	55	70	**66.6**	**64.6**	-2.0	2	0								
	wM143b3	Residential	Night	55	70	**69.0**	**66.7**	-2.3	2	0								
	wM341	Residential	Night	55	70	**63.3**	**62.3**	-1.0	6	0								
	wM342	Residential	Night	55	70	**63.9**	**62.4**	-1.5	2	0								
	wM441	Residential	Night	55	70	**63.3**	**63.3**	0.0	4	0								
	wM442	Residential	Night	55	70	**67.0**	**67.0**	0.0	199	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ 266,600.00

Reinforce existing Retaining Walls to support Noise Barrier; 496 ft at $538 Linear Foot

Table A22
Build Noise Barrier Cost Effectiveness - 20 Foot Noise Wall
North Wall D - WB I-94 between 1st Avenue and Nicollet Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (20 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "North D"	nD001	Commercial	Day	70	75	**78.2**	63.8	**-14.4**	1	1	**31**	**YES**	**YES**	302	5,140	$102,800	**$3,316**	**PROPOSE TO CONSTRUCT**
	nD002	Residential	Day	65	70	**71.9**	**68.0**	-3.9										
	nD002C	Residential	Day	65	70	**73.8**	**68.5**	**-5.3**	30	30								
	nD101	Commercial	Day	70	75	**73.2**	**72.9**	-0.3	1	0								
	nD201	Commercial	Day	70	75	64.1	64.1	0.0	1	0								
	nD202	Commercial	Day	70	75	62.2	62.2	0.0	1	0								
Wall "North D"	nD001	Commercial	Night	70	75	**78.6**	62.8	**-15.8**	1	1	**31**	**YES**	**YES**	302	5,140	$102,800	**$3,316**	**PROPOSE TO CONSTRUCT**
	nD002	Residential	Night	55	70	**72.3**	**68.2**	-4.1										
	nD002C	Residential	Night	55	70	**74.2**	**68.6**	**-5.6**	30	30								
	nD101	Commercial	Night	70	75	**70.1**	69.4	-0.7	1	0								
	nD201	Commercial	Night	70	75	63.7	63.7	0.0	1	0								
	nD202	Commercial	Night	70	75	61.6	61.6	0.0	1	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ -

Table A23a
Build Noise Barrier Cost Effectiveness - 20 Foot Noise Wall
North Wall E - WB I-94 between 3rd Avenue and 1st Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (20 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "North E"	nE101	Commercial	Day	70	75	69.9	60.1	**-9.8**	1	1	**1**	**YES**	**YES**	1,022	19,540	$390,800	$390,800	NOT COST EFFECTIVE
	nE102	Commercial	Day	70	75	64.5	61.8	-2.7	1	0								
Wall "North E"	nE101	Commercial	Night	70	75	**70.3**	60.4	**-9.9**	1	1	**1**	**YES**	**YES**	1,022	19,540	$390,800	$390,800	NOT COST EFFECTIVE
	nE102	Commercial	Night	70	75	64.8	62.0	-2.8	1	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

Table A23b
Build Noise Barrier Cost Effectiveness - 15 Foot Noise Wall
North Wall E - WB I-94 between 3rd Avenue and 1st Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (dBA)		Modeled Noise Levels (dBA)		Acoustic Effectiveness						Cost Effectiveness ($/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (**Noise barrier	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)	Total Cost	Cost per Benefited Receptor	
Wall "North E"	nE101	Commercial	Day	70	75	69.9	61.9	**-8.0**	1	1	**1**	**YES**	**YES**	1,022	14,870	$297,400	$297,400	NOT COST EFFECTIVE
	nE102	Commercial	Day	70	75	64.5	62.0	-2.5	1	0								
Wall "North E"	nE101	Commercial	Night	70	75	**70.3**	62.2	**-8.1**	1	1	**1**	**YES**	**YES**	1,022	14,870	$297,400	$297,400	NOT COST EFFECTIVE
	nE102	Commercial	Night	70	75	64.8	62.2	-2.6	1	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

Table A23c
Build Noise Barrier Cost Effectiveness - 10 Foot Noise Wall
North Wall E - WB I-94 between 3rd Avenue and 1st Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (dBA)		Modeled Noise Levels (dBA)		Acoustic Effectiveness						Cost Effectiveness ($/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (**Noise barrier	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)	Total Cost	Cost per Benefited Receptor	
Wall "North E"	nE101	Commercial	Day	70	75	69.9	64.1	**-5.8**	1	1	**1**	**YES**	NO	1,022	10,120	$202,400	$202,400	DESIGN GOAL AND COST EFFECTIVENESS NOT MET
	nE102	Commercial	Day	70	75	64.5	62.5	-2.0	1	0								
Wall "North E"	nE101	Commercial	Night	70	75	**70.3**	64.5	**-5.8**	1	1	**1**	**YES**	NO	1,022	10,120	$202,400	$202,400	DESIGN GOAL AND COST EFFECTIVENESS NOT MET
	nE102	Commercial	Night	70	75	64.8	62.7	-2.1	1	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ -

Table A24a
Build Noise Barrier Cost Effectiveness - 20 Foot Noise Wall
North Wall G - WB I-94 between Portland Avenue and 15th Street

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (20 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "North G"	nG001	General	Day	70	70	**72.7**	61.6	**-11.1**	1	1	**11**	**YES**	**YES**	865	16,400	$645,400	$58,673	NOT COST EFFECTIVE
	nG002	General	Day	70	70	**73.7**	61.8	**-11.9**	1	1								
	nG003	General	Day	70	70	**71.2**	62.6	**-8.6**	1	1								
	nG004	General	Day	70	70	**72.3**	64.0	**-8.3**	1	1								
	nG005	General	Day	70	70	**73.8**	66.5	**-7.3**	1	1								
	nG006	General	Day	70	70	69.1	63.1	**-6.0**										
	nG101	Commercial	Day	70	75	67.7	67.5	-0.2	1	0								
	nG105	Residential	Day	65	70	**68.0**	61.9	**-6.1**	6	6								
	nG201	Residential	Day	65	70	60.9	60.2	-0.7	2	0								
	nG102	Residential	Day	65	70	**67.0**	**66.6**	-0.4	2	0								
	nG103	Residential	Day	65	70	**67.2**	**66.3**	-0.9	2	0								
	nG202	Residential	Day	65	70	61.2	59.8	-1.4	2	0								
	nG203	Residential	Day	65	70	61.4	59.9	-1.5	2	0								
	nG204	Residential	Day	65	70	60.1	58.6	-1.5	2	0								
	nG205	Residential	Day	65	70	60.3	58.5	-1.8	2	0								
	nG206	Residential	Day	65	70	61.2	59.4	-1.8	2	0								
	nG207	Residential	Day	65	70	**65.2**	63.7	-1.5	2	0								
	nG208	Residential	Day	65	70	61.8	61.8	0.0	9	0								
	nG208C	Residential	Day	65	70	61.6	61.6	0.0	52	0								
	nG209	Residential	Day	65	70	64.8	63.2	-1.6	9	0								
Wall "North G"	nG001	General	Night	70	70	**72.5**	61.6	**-10.9**	1	1	**11**	**YES**	**YES**	865	16,400	$645,400	$58,673	NOT COST EFFECTIVE
	nG002	General	Night	70	70	**73.6**	61.8	**-11.8**	1	1								
	nG003	General	Night	70	70	**71.2**	62.7	**-8.5**	1	1								
	nG004	General	Night	70	70	**72.4**	64.1	**-8.3**	1	1								
	nG005	General	Night	70	70	**73.8**	66.6	**-7.2**	1	1								
	nG006	General	Night	70	70	69.0	63.0	**-6.0**										
	nG101	Commercial	Night	70	75	67.3	67.1	-0.2	1	0								
	nG105	Residential	Night	55	70	**68.0**	**62.1**	**-5.9**	6	6								
	nG201	Residential	Night	55	70	**60.5**	**59.7**	-0.8	2	0								
	nG102	Residential	Night	55	70	**66.6**	**66.2**	-0.4	2	0								
	nG103	Residential	Night	55	70	**67.3**	**66.4**	-0.9	2	0								
	nG202	Residential	Night	55	70	**61.1**	**59.7**	-1.4	2	0								
	nG203	Residential	Night	55	70	**61.4**	**59.9**	-1.5	2	0								
	nG204	Residential	Night	55	70	**59.8**	**58.3**	-1.5	2	0								
	nG205	Residential	Night	55	70	**60.3**	**58.5**	-1.8	2	0								
	nG206	Residential	Night	55	70	**61.5**	**59.7**	-1.8	2	0								
	nG207	Residential	Night	55	70	**65.4**	**63.7**	-1.7	2	0								
	nG208	Residential	Night	55	70	**62.1**	**62.1**	0.0	9	0								
	nG208C	Residential	Night	55	70	**61.6**	**61.6**	0.0	52	0								
	nG209	Residential	Night	55	70	**64.7**	**63.2**	-1.5	9	0							$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ 317,400.00

Reinforce existing Retaining Walls to support Noise Barrier; 384 ft at $827 Linear Foot

Table A24b
Build Noise Barrier Cost Effectiveness - 15 Foot Noise Wall
North Wall G - WB I-94 between Portland Avenue and 15th Street

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (15 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "North G"	nG001	General	Day	70	70	**72.7**	63.0	**-9.7**	1	1	**5**	**YES**	**YES**	865	12,475	$566,900	$113,380	NOT COST EFFECTIVE
	nG002	General	Day	70	70	**73.7**	63.3	**-10.4**	1	1								
	nG003	General	Day	70	70	**71.2**	63.8	**-7.4**	1	1								
	nG004	General	Day	70	70	**72.3**	64.9	**-7.4**	1	1								
	nG005	General	Day	70	70	**73.8**	66.9	**-6.9**	1	1								
	nG006	General	Day	70	70	69.1	64.2	-4.9										
	nG101	Commercial	Day	70	75	67.7	67.5	-0.2	1	0								
	nG105	Residential	Day	65	70	**68.0**	63.2	-4.8	6	0								
	nG201	Residential	Day	65	70	60.9	60.3	-0.6	2	0								
	nG102	Residential	Day	65	70	**67.0**	**66.6**	-0.4	2	0								
	nG103	Residential	Day	65	70	**67.2**	**66.4**	-0.8	2	0								
	nG202	Residential	Day	65	70	61.2	60.0	-1.2	2	0								
	nG203	Residential	Day	65	70	61.4	60.1	-1.3	2	0								
	nG204	Residential	Day	65	70	60.1	58.8	-1.3	2	0								
	nG205	Residential	Day	65	70	60.3	58.8	-1.5	2	0								
	nG206	Residential	Day	65	70	61.2	59.7	-1.5	2	0								
	nG207	Residential	Day	65	70	**65.2**	63.9	-1.3	2	0								
	nG208	Residential	Day	65	70	61.8	61.8	0.0	9	0								
	nG208C	Residential	Day	65	70	61.6	61.6	0.0	52	0								
	nG209	Residential	Day	65	70	64.8	64.0	-0.8	9	0								
Wall "North G"	nG001	General	Night	70	70	**72.5**	62.9	**-9.6**	1	1	**5**	**YES**	**YES**	865	12,475	$566,900	$113,380	NOT COST EFFECTIVE
	nG002	General	Night	70	70	**73.6**	63.3	**-10.3**	1	1								
	nG003	General	Night	70	70	**71.2**	63.8	**-7.4**	1	1								
	nG004	General	Night	70	70	**72.4**	65.0	**-7.4**	1	1								
	nG005	General	Night	70	70	**73.8**	67.0	**-6.8**	1	1								
	nG006	General	Night	70	70	69.0	64.1	-4.9										
	nG101	Commercial	Night	70	75	67.3	67.1	-0.2	1	0								
	nG105	Residential	Night	55	70	**68.0**	**63.2**	-4.8	6	0								
	nG201	Residential	Night	55	70	**60.5**	**59.8**	-0.7	2	0								
	nG102	Residential	Night	55	70	**66.6**	**66.3**	-0.3	2	0								
	nG103	Residential	Night	55	70	**67.3**	**66.5**	-0.8	2	0								
	nG202	Residential	Night	55	70	**61.1**	**59.9**	-1.2	2	0								
	nG203	Residential	Night	55	70	**61.4**	**60.2**	-1.2	2	0								
	nG204	Residential	Night	55	70	**59.8**	**58.6**	-1.2	2	0								
	nG205	Residential	Night	55	70	**60.3**	**58.8**	-1.5	2	0								
	nG206	Residential	Night	55	70	**61.5**	**60.0**	-1.5	2	0								
	nG207	Residential	Night	55	70	**65.4**	**64.0**	-1.4	2	0								
	nG208	Residential	Night	55	70	**62.1**	**62.1**	0.0	9	0								
	nG208C	Residential	Night	55	70	**61.6**	**61.6**	0.0	52	0								
	nG209	Residential	Night	55	70	**64.7**	**63.9**	-0.8	9	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ 317,400.00

Reinforce existing Retaining Walls to support Noise Barrier; 384 ft at $827 Linear Foot

Table A24c
Build Noise Barrier Cost Effectiveness - 10 Foot Noise Wall
North Wall G - WB I-94 between Portland Avenue and 15th Street

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (10 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "North G"	nG001	General	Day	70	70	**72.7**	65.9	**-6.8**	1	1	3	YES	YES	865	8,550	$488,400	$162,800	NOT COST EFFECTIVE
	nG002	General	Day	70	70	**73.7**	66.6	**-7.1**	1	1								
	nG003	General	Day	70	70	**71.2**	66.5	-4.7	1	0								
	nG004	General	Day	70	70	**72.3**	67.4	-4.9	1	0								
	nG005	General	Day	70	70	**73.8**	68.5	**-5.3**	1	1								
	nG006	General	Day	70	70	69.1	66.1	-3.0										
	nG101	Commercial	Day	70	75	67.7	67.6	-0.1	1	0								
	nG105	Residential	Day	65	70	**68.0**	65.0	-3.0	6	0								
	nG201	Residential	Day	65	70	60.9	60.5	-0.4	2	0								
	nG102	Residential	Day	65	70	**67.0**	**66.8**	-0.2	2	0								
	nG103	Residential	Day	65	70	**67.2**	**66.7**	-0.5	2	0								
	nG202	Residential	Day	65	70	61.2	60.4	-0.8	2	0								
	nG203	Residential	Day	65	70	61.4	60.5	-0.9	2	0								
	nG204	Residential	Day	65	70	60.1	59.2	-0.9	2	0								
	nG205	Residential	Day	65	70	60.3	59.3	-1.0	2	0								
	nG206	Residential	Day	65	70	61.2	60.1	-1.1	2	0								
	nG207	Residential	Day	65	70	**65.2**	64.4	-0.8	2	0								
	nG208	Residential	Day	65	70	61.8	61.8	0.0	9	0								
	nG208C	Residential	Day	65	70	61.6	61.6	0.0	52	0								
	nG209	Residential	Day	65	70	64.8	64.8	0.0	9	0								
Wall "North G"	nG001	General	Night	70	70	**72.5**	65.7	**-6.8**	1	1	4	YES	YES	865	8,550	$488,400	$122,100	NOT COST EFFECTIVE
	nG002	General	Night	70	70	**73.6**	66.4	**-7.2**	1	1								
	nG003	General	Night	70	70	**71.2**	66.4	-4.8	1	0								
	nG004	General	Night	70	70	**72.4**	67.3	**-5.1**	1	1								
	nG005	General	Night	70	70	**73.8**	68.6	**-5.2**	1	1								
	nG006	General	Night	70	70	69.0	66.0	-3.0										
	nG101	Commercial	Night	70	75	67.3	67.2	-0.1	1	0								
	nG105	Residential	Night	55	70	**68.0**	**64.9**	-3.1	6	0								
	nG201	Residential	Night	55	70	**60.5**	**60.0**	-0.5	2	0								
	nG102	Residential	Night	55	70	**66.6**	**66.4**	-0.2	2	0								
	nG103	Residential	Night	55	70	**67.3**	**66.7**	-0.6	2	0								
	nG202	Residential	Night	55	70	**61.1**	**60.3**	-0.8	2	0								
	nG203	Residential	Night	55	70	**61.4**	**60.5**	-0.9	2	0								
	nG204	Residential	Night	55	70	**59.8**	**58.9**	-0.9	2	0								
	nG205	Residential	Night	55	70	**60.3**	**59.3**	-1.0	2	0								
	nG206	Residential	Night	55	70	**61.5**	**60.5**	-1.0	2	0								
	nG207	Residential	Night	55	70	**65.4**	**64.4**	-1.0	2	0								
	nG208	Residential	Night	55	70	**62.1**	**62.1**	0.0	9	0								
	nG208C	Residential	Night	55	70	**61.6**	**61.6**	0.0	52	0								
	nG209	Residential	Night	55	70	**64.7**	**64.7**	0.0	9	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ 317,400.00

Reinforce existing Retaining Walls to support Noise Barrier; 384 ft at $827 Linear Foot

Table A25a
Build Noise Barrier Cost Effectiveness - 20 Foot Noise Wall
North Wall H - WB I-94 between Park Avenue and Portland Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (20 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "North H"	nH101	Residential	Day	65	70	**71.2**	64.5	**-6.7**	6	6	**9**	**YES**	**YES**	590	10,900	$759,500	$84,389	NOT COST EFFECTIVE
	nH102	General	Day	70	70	68.8	62.2	**-6.6**	1	1								
	nH102C	General	Day	70	70	66.4	61.9	-4.5										
	nH103	Commercial	Day	70	75	**72.3**	68.6	-3.7	1	0								
	nH104	Residential	Day	65	70	**70.8**	63.5	**-7.3**	2	2								
	nH201	Residential	Day	65	70	**68.2**	**68.2**	0.0	1	0								
	nH202	Residential	Day	65	70	**67.7**	**67.7**	0.0	2	0								
	nH203	Residential	Day	65	70	61.7	61.7	0.0	2	0								
	nH203B	Residential	Day	65	70	62.8	62.8	0.0	2	0								
	nH204	Residential	Day	65	70	62.4	62.4	0.0	2	0								
	nH205	Commercial	Day	70	75	**70.4**	69.9	-0.5	1	0								
	nH206	Residential	Day	65	70	**69.1**	**69.1**	0.0	2	0								
Wall "North H"	nH101	Residential	Night	55	70	**71.2**	**64.7**	**-6.5**	6	6	**9**	**YES**	**YES**	590	10,900	$759,500	$84,389	NOT COST EFFECTIVE
	nH102	General	Night	70	70	68.6	62.1	**-6.5**	1	1								
	nH102C	General	Night	70	70	66.1	61.5	-4.6										
	nH103	Commercial	Night	70	75	**72.2**	67.9	-4.3	1	0								
	nH104	Residential	Night	55	70	**70.8**	**63.3**	**-7.5**	2	2								
	nH201	Residential	Night	55	70	**67.7**	**67.7**	0.0	1	0								
	nH202	Residential	Night	55	70	**67.2**	**67.2**	0.0	2	0								
	nH203	Residential	Night	55	70	**61.5**	**61.5**	0.0	2	0								
	nH203B	Residential	Night	55	70	**62.6**	**62.6**	0.0	2	0								
	nH204	Residential	Night	55	70	**62.2**	**62.2**	0.0	2	0								
	nH205	Commercial	Night	70	75	69.1	68.4	-0.7	1	0								
	nH206	Residential	Night	55	70	**67.1**	**67.1**	0.0	2	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ 541,500.00

Reinforce existing Retaining Walls to support Noise Barrier; 567 ft at $955 Linear Foot

Table A25b
Build Noise Barrier Cost Effectiveness - 15 Foot Noise Wall
North Wall H - WB I-94 between Park Avenue and Portland Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (15 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "North H"	nH101	Residential	Day	65	70	**71.2**	**65.2**	**-6.0**	6	6	**9**	**YES**	NO	590	8,350	$708,500	$78,722	DESIGN GOAL AND COST EFFECTIVENESS NOT MET
	nH102	General	Day	70	70	68.8	63.3	**-5.5**	1	1								
	nH102C	General	Day	70	70	66.4	62.6	-3.8										
	nH103	Commercial	Day	70	75	**72.3**	68.9	-3.4	1	0								
	nH104	Residential	Day	65	70	**70.8**	64.4	**-6.4**	2	2								
	nH201	Residential	Day	65	70	**68.2**	**68.2**	0.0	1	0								
	nH202	Residential	Day	65	70	**67.7**	**67.7**	0.0	2	0								
	nH203	Residential	Day	65	70	61.7	61.7	0.0	2	0								
	nH203B	Residential	Day	65	70	62.8	62.8	0.0	2	0								
	nH204	Residential	Day	65	70	62.4	62.4	0.0	2	0								
	nH205	Commercial	Day	70	75	**70.4**	**70.1**	-0.3	1	0								
	nH206	Residential	Day	65	70	**69.1**	**69.1**	0.0	2	0								
Wall "North H"	nH101	Residential	Night	55	70	**71.2**	**65.3**	**-5.9**	6	6	**9**	**YES**	NO	590	8,350	$708,500	$78,722	DESIGN GOAL AND COST EFFECTIVENESS NOT MET
	nH102	General	Night	70	70	68.6	63.1	**-5.5**	1	1								
	nH102C	General	Night	70	70	66.1	62.3	-3.8										
	nH103	Commercial	Night	70	75	**72.2**	68.3	-3.9	1	0								
	nH104	Residential	Night	55	70	**70.8**	**64.2**	**-6.6**	2	2								
	nH201	Residential	Night	55	70	**67.7**	**67.7**	0.0	1	0								
	nH202	Residential	Night	55	70	**67.2**	**67.2**	0.0	2	0								
	nH203	Residential	Night	55	70	**61.5**	**61.5**	0.0	2	0								
	nH203B	Residential	Night	55	70	**62.6**	**62.6**	0.0	2	0								
	nH204	Residential	Night	55	70	**62.2**	**62.2**	0.0	2	0								
	nH205	Commercial	Night	70	75	69.1	68.7	-0.4	1	0								
	nH206	Residential	Night	55	70	**67.1**	**67.1**	0.0	2	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ 541,500.00

Reinforce existing Retaining Walls to support Noise Barrier; 567 ft at $955 Linear Foot

Table A26a
Build Noise Barrier Cost Effectiveness - 20 Foot Noise Wall
North Wall I - WB I-94 between Chicago Avenue and Park Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (20 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "North I"	nI101	General	Day	70	70	**72.8**	**70.3**	-2.5	1	0	**8**	**YES**	**YES**	590	10,900	$786,000	$98,250	NOT COST EFFECTIVE
	nI102	Residential	Day	65	70	**71.3**	62.4	**-8.9**	6	6								
	nI103	Residential	Day	65	70	**71.0**	62.8	**-8.2**	2	2								
	nI104	General	Day	70	70	**73.4**	**70.8**	-2.6										
	nI104C	General	Day	70	70	**70.1**	66.0	-4.1	1	0								
	nI201	Commercial	Day	70	75	**71.0**	**70.4**	-0.6	1	0								
	nI202	Residential	Day	65	70	**69.8**	**69.8**	0.0	3	0								
	nI203	Residential	Day	65	70	**69.5**	**69.5**	0.0	1	0								
	nI204	Residential	Day	65	70	63.5	63.5	0.0	6	0								
	nI205	Residential	Day	65	70	62.1	62.1	0.0	2	0								
	nI206	Residential	Day	65	70	61.8	61.8	0.0										
	nI206C	Residential	Day	65	70	61.2	61.2	0.0	123	0								
	nI207	Residential	Day	65	70	62.3	62.3	0.0	2	0								
	nI208	Residential	Day	65	70	62.9	62.9	0.0	2	0								
	nI208b2	Residential	Day	65	70	63.8	63.8	0.0	2	0								
	nI208b3	Residential	Day	65	70	**65.5**	**65.5**	0.0	2	0								
	nI209	Commercial	Day	70	75	65.7	65.7	0.0	1	0								
Wall "North I"	nI101	General	Night	70	70	**72.3**	69.4	-2.9	1	0	**8**	**YES**	**YES**	590	10,900	$786,000	$98,250	NOT COST EFFECTIVE
	nI102	Residential	Night	55	70	**71.5**	**62.4**	**-9.1**	6	6								
	nI103	Residential	Night	55	70	**71.1**	**62.8**	**-8.3**	2	2								
	nI104	General	Night	70	70	**72.5**	69.5	-3.0										
	nI104C	General	Night	70	70	69.9	65.1	-4.8	1	0								
	nI201	Commercial	Night	70	75	69.5	68.8	-0.7	1	0								
	nI202	Residential	Night	55	70	**67.8**	**67.8**	0.0	3	0								
	nI203	Residential	Night	55	70	**67.5**	**67.5**	0.0	1	0								
	nI204	Residential	Night	55	70	**63.2**	**63.2**	0.0	6	0								
	nI205	Residential	Night	55	70	**61.6**	**61.6**	0.0	2	0								
	nI206	Residential	Night	55	70	**61.4**	**61.4**	0.0										
	nI206C	Residential	Night	55	70	**60.8**	**60.8**	0.0	123	0								
	nI207	Residential	Night	55	70	**61.8**	**61.8**	0.0	2	0								
	nI208	Residential	Night	55	70	**62.4**	**62.4**	0.0	2	0								
	nI208b2	Residential	Night	55	70	**63.3**	**63.3**	0.0	2	0								
	nI208b3	Residential	Night	55	70	**65.3**	**65.3**	0.0	2	0								
	nI209	Commercial	Night	70	75	64.6	64.4	-0.2	1	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ 568,000.00

Reinforce existing Retaining Walls to support Noise Barrier; 569 ft at $998 Linear Foot

Table A26b
Build Noise Barrier Cost Effectiveness - 15 Foot Noise Wall
North Wall I - WB I-94 between Chicago Avenue and Park Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (15 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "North I"	nI101	General	Day	70	70	**72.8**	**70.5**	-2.3	1	0	**8**	**YES**	**YES**	590	8,350	$735,000	$91,875	NOT COST EFFECTIVE
	nI102	Residential	Day	65	70	**71.3**	63.6	**-7.7**	6	6								
	nI103	Residential	Day	65	70	**71.0**	63.9	**-7.1**	2	2								
	nI104	General	Day	70	70	**73.4**	**71.0**	-2.4										
	nI104C	General	Day	70	70	**70.1**	66.4	-3.7	1	0								
	nI201	Commercial	Day	70	75	**71.0**	**70.6**	-0.4	1	0								
	nI202	Residential	Day	65	70	**69.8**	**69.8**	0.0	3	0								
	nI203	Residential	Day	65	70	**69.5**	**69.5**	0.0	1	0								
	nI204	Residential	Day	65	70	63.5	63.5	0.0	6	0								
	nI205	Residential	Day	65	70	62.1	62.1	0.0	2	0								
	nI206	Residential	Day	65	70	61.8	61.8	0.0										
	nI206C	Residential	Day	65	70	61.2	61.2	0.0	123	0								
	nI207	Residential	Day	65	70	62.3	62.3	0.0	2	0								
	nI208	Residential	Day	65	70	62.9	62.9	0.0	2	0								
	nI208b2	Residential	Day	65	70	63.8	63.8	0.0	2	0								
	nI208b3	Residential	Day	65	70	**65.5**	**65.5**	0.0	2	0								
	nI209	Commercial	Day	70	75	65.7	65.7	0.0	1	0								
Wall "North I"	nI101	General	Night	70	70	**72.3**	69.6	-2.7	1	0	**8**	**YES**	**YES**	590	8,350	$735,000	$91,875	NOT COST EFFECTIVE
	nI102	Residential	Night	55	70	**71.5**	**63.6**	**-7.9**	6	6								
	nI103	Residential	Night	55	70	**71.1**	**63.9**	**-7.2**	2	2								
	nI104	General	Night	70	70	**72.5**	69.6	-2.9										
	nI104C	General	Night	70	70	69.9	65.5	-4.4	1	0								
	nI201	Commercial	Night	70	75	69.5	69.1	-0.4	1	0								
	nI202	Residential	Night	55	70	**67.8**	**67.8**	0.0	3	0								
	nI203	Residential	Night	55	70	**67.5**	**67.5**	0.0	1	0								
	nI204	Residential	Night	55	70	**63.2**	**63.2**	0.0	6	0								
	nI205	Residential	Night	55	70	**61.6**	**61.6**	0.0	2	0								
	nI206	Residential	Night	55	70	**61.4**	**61.4**	0.0										
	nI206C	Residential	Night	55	70	**60.8**	**60.8**	0.0	123	0								
	nI207	Residential	Night	55	70	**61.8**	**61.8**	0.0	2	0								
	nI208	Residential	Night	55	70	**62.4**	**62.4**	0.0	2	0								
	nI208b2	Residential	Night	55	70	**63.3**	**63.3**	0.0	2	0								
	nI208b3	Residential	Night	55	70	**65.3**	**65.3**	0.0	2	0								
	nI209	Commercial	Night	70	75	64.6	64.6	0.0	1	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ 568,000.00

Reinforce existing Retaining Walls to support Noise Barrier; 569 ft at $998 Linear Foot

Table A26c
Build Noise Barrier Cost Effectiveness - 10 Foot Noise Wall
North Wall I - WB I-94 between Chicago Avenue and Park Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (10 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "North I"	nI101	General	Day	70	70	**72.8**	**71.3**	-1.5	1	0	**6**	**YES**	NO	590	5,800	$684,000	$114,000	DESIGN GOAL AND COST EFFECTIVENESS NOT MET
	nI102	Residential	Day	65	70	**71.3**	**66.1**	**-5.2**	6	6								
	nI103	Residential	Day	65	70	**71.0**	**66.1**	-4.9	2	0								
	nI104	General	Day	70	70	**73.4**	**71.4**	-2.0										
	nI104C	General	Day	70	70	**70.1**	67.1	-3.0	1	0								
	nI201	Commercial	Day	70	75	**71.0**	**71.0**	0.0	1	0								
	nI202	Residential	Day	65	70	**69.8**	**69.8**	0.0	3	0								
	nI203	Residential	Day	65	70	**69.5**	**69.5**	0.0	1	0								
	nI204	Residential	Day	65	70	63.5	63.5	0.0	6	0								
	nI205	Residential	Day	65	70	62.1	62.1	0.0	2	0								
	nI206	Residential	Day	65	70	61.8	61.8	0.0										
	nI206C	Residential	Day	65	70	61.2	61.2	0.0	123	0								
	nI207	Residential	Day	65	70	62.3	62.3	0.0	2	0								
	nI208	Residential	Day	65	70	62.9	62.9	0.0	2	0								
	nI208b2	Residential	Day	65	70	63.8	63.8	0.0	2	0								
	nI208b3	Residential	Day	65	70	**65.5**	**65.5**	0.0	2	0								
	nI209	Commercial	Day	70	75	65.7	65.7	0.0	1	0								
Wall "North I"	nI101	General	Night	70	70	**72.3**	**70.6**	-1.7	1	0	**8**	**YES**	NO	590	5,800	$684,000	$85,500	DESIGN GOAL AND COST EFFECTIVENESS NOT MET
	nI102	Residential	Night	55	70	**71.5**	**66.1**	**-5.4**	6	6								
	nI103	Residential	Night	55	70	**71.1**	**66.1**	**-5.0**	2	2								
	nI104	General	Night	70	70	**72.5**	**70.1**	-2.4										
	nI104C	General	Night	70	70	69.9	66.3	-3.6	1	0								
	nI201	Commercial	Night	70	75	69.5	69.5	0.0	1	0								
	nI202	Residential	Night	55	70	**67.8**	**67.8**	0.0	3	0								
	nI203	Residential	Night	55	70	**67.5**	**67.5**	0.0	1	0								
	nI204	Residential	Night	55	70	**63.2**	**63.2**	0.0	6	0								
	nI205	Residential	Night	55	70	**61.6**	**61.6**	0.0	2	0								
	nI206	Residential	Night	55	70	**61.4**	**61.4**	0.0										
	nI206C	Residential	Night	55	70	**60.8**	**60.8**	0.0	123	0								
	nI207	Residential	Night	55	70	**61.8**	**61.8**	0.0	2	0								
	nI208	Residential	Night	55	70	**62.4**	**62.4**	0.0	2	0								
	nI208b2	Residential	Night	55	70	**63.3**	**63.3**	0.0	2	0								
	nI208b3	Residential	Night	55	70	**65.3**	**65.3**	0.0	2	0								
	nI209	Commercial	Night	70	75	64.6	64.6	0.0	1	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ 568,000.00

Reinforce existing Retaining Walls to support Noise Barrier; 569 ft at $998 Linear Foot

Table A27
Build Noise Barrier Cost Effectiveness - 20 Foot Noise Wall
North Wall J - WB I-94 between 11th Avenue and Chicago Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (20 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "North J"	nJ101	Commercial	Day	70	75	**71.6**	69.6	-2.0	1	0	**12**	**YES**	**YES**	1,065	20,400	$459,600	**$38,300**	**PROPOSE TO CONSTRUCT**
	nJ102	Commercial	Day	70	75	**71.0**	63.1	**-7.9**	1	1								
	nJ103	Residential	Day	65	70	**72.6**	62.3	**-10.3**	1	1								
	nJ104	Residential	Day	65	70	**72.4**	62.2	**-10.2**	1	1								
	nJ105	Residential	Day	65	70	**72.5**	62.0	**-10.5**	3	3								
	nJ106	Residential	Day	65	70	**72.5**	61.9	**-10.6**	2	2								
	nJ107	Residential	Day	65	70	**72.0**	61.4	**-10.6**	2	2								
	nJ108	Residential	Day	65	70	**72.1**	62.0	**-10.1**										
	nJ108b1	Residential	Day	65	70	**68.7**	62.4	**-6.3**	1	1								
	nJ108b2	Residential	Day	65	70	**73.0**	**66.2**	**-6.8**	1	1								
	nJ109	Residential	Day	65	70	**71.3**	64.8	**-6.5**										
	nJ109C	Residential	Day	65	70	**66.9**	63.1	-3.8	198	0								
	nJ201	Commercial	Day	70	75	**70.5**	**70.5**	0.0	1	0								
	nJ202	Commercial	Day	70	75	**70.8**	**70.8**	0.0	1	0								
	nJ203	Commercial	Day	70	75	**71.0**	**71.0**	0.0	1	0								
	nJ204	Residential	Day	65	70	64.9	63.0	-1.9	2	0								
	nJ205	Residential	Day	65	70	62.8	62.4	-0.4	2	0								
	nJ206	Residential	Day	65	70	**65.6**	62.6	-3.0	1	0								
	nJ206b2	Residential	Day	65	70	**68.0**	63.9	-4.1	1	0								
	nJ207	Residential	Day	65	70	62.9	62.3	-0.6	3	0								
	nJ208	Residential	Day	65	70	62.7	62.7	0.0	2	0								
	nJ209	Residential	Day	65	70	63.4	63.0	-0.4	2	0								
Wall "North J"	nJ101	Commercial	Night	70	75	**70.6**	68.0	-2.6	1	0	**12**	**YES**	**YES**	1,065	20,400	$459,600	**$38,300**	**PROPOSE TO CONSTRUCT**
	nJ102	Commercial	Night	70	75	**71.2**	63.0	**-8.2**	1	1								
	nJ103	Residential	Night	55	70	**73.0**	**62.5**	**-10.5**	1	1								
	nJ104	Residential	Night	55	70	**72.8**	**62.3**	**-10.5**	1	1								
	nJ105	Residential	Night	55	70	**72.9**	**62.1**	**-10.8**	3	3								
	nJ106	Residential	Night	55	70	**72.8**	**62.0**	**-10.8**	2	2								
	nJ107	Residential	Night	55	70	**72.3**	**61.6**	**-10.7**	2	2								
	nJ108	Residential	Night	55	70	**72.3**	**62.1**	**-10.2**										
	nJ108b1	Residential	Night	55	70	**68.8**	**62.5**	**-6.3**	1	1								
	nJ108b2	Residential	Night	55	70	**73.0**	**66.2**	**-6.8**	1	1								
	nJ109	Residential	Night	55	70	**71.4**	**64.8**	**-6.6**										
	nJ109C	Residential	Night	55	70	**66.9**	**63.1**	-3.8	198	0								
	nJ201	Commercial	Night	70	75	68.0	68.0	0.0	1	0								
	nJ202	Commercial	Night	70	75	68.3	68.3	0.0	1	0								
	nJ203	Commercial	Night	70	75	68.8	68.7	-0.1	1	0								
	nJ204	Residential	Night	55	70	**64.9**	**62.5**	-2.4	2	0								
	nJ205	Residential	Night	55	70	**62.8**	**62.1**	-0.7	2	0								
	nJ206	Residential	Night	55	70	**65.7**	**62.3**	-3.4	1	0								
	nJ206b2	Residential	Night	55	70	**68.1**	**63.8**	-4.3	1	0								
	nJ207	Residential	Night	55	70	**63.0**	**62.3**	-0.7	3	0								
	nJ208	Residential	Night	55	70	**62.7**	**62.7**	0.0	2	0								
	nJ209	Residential	Night	55	70	**63.5**	**63.1**	-0.4	2	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ 51,600.00

Reinforce existing Retaining Walls to support Noise Barrier; 96 ft at $538 Linear Foot

Table A28
Build Noise Barrier Cost Effectiveness - 20 Foot Noise Wall
South Wall D - EB I-94 between Nicollet Avenue and 1st Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (20 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "South D"	sD101	Commercial	Day	70	75	66.6	65.5	-1.1	1	0	**0**	NO	NO	266	4,420	$88,400	N/A	NOT ACOUSTICALLY EFFECTIVE
	sD301	Commercial	Day	70	75	61.3	61.3	0.0	4	0								
	sD302	Residential	Day	65	70	60.6	60.6	0.0	4	0								
Wall "South D"	sD101	Commercial	Night	70	75	65.3	63.9	-1.4	1	0	**0**	NO	NO	266	4,420	$88,400	N/A	NOT ACOUSTICALLY EFFECTIVE
	sD301	Commercial	Night	70	75	60.7	60.7	0.0	4	0								
	sD302	Residential	Night	55	70	**60.2**	**60.2**	0.0	4	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ -

Table A29a
Build Noise Barrier Cost Effectiveness - 20 Foot Noise Wall
South Wall E - EB I-94 between 1st Avenue and 3rd Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (20 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "South E"	sE101	Residential	Day	65	70	**70.2**	**67.4**	-2.8	4	0	**12**	**YES**	**YES**	903	17,160	$594,000	$49,500	NOT COST EFFECTIVE
	sE102	Residential	Day	65	70	**72.5**	64.1	**-8.4**	1	1								
	sE103	Residential	Day	65	70	**65.4**	63.5	-1.9	2	0								
	sE104	Residential	Day	65	70	**71.2**	62.0	**-9.2**	2	2								
	sE104a1	Residential	Day	65	70	64.3	61.9	-2.4	1	0								
	sE104a2	Residential	Day	65	70	**65.8**	63.1	-2.7	1	0								
	sE104a3	Residential	Day	65	70	**66.6**	64.8	-1.8	1	0								
	sE104b1	Residential	Day	65	70	64.4	61.8	-2.6	1	0								
	sE104b2	Residential	Day	65	70	**65.7**	63.0	-2.7	1	0								
	sE104b3	Residential	Day	65	70	**66.5**	64.7	-1.8	1	0								
	sE105	Residential	Day	65	70	**71.1**	61.8	**-9.3**	3	3								
	sE106	Residential	Day	65	70	**71.8**	62.5	**-9.3**	1	1								
	sE107	Residential	Day	65	70	**72.1**	64.0	**-8.1**	4	4								
	sE108	Commercial	Day	70	75	**72.4**	69.2	-3.2	1	0								
	sE109	Residential	Day	65	70	**72.2**	63.0	**-9.2**	1	1								
	sE201	Residential	Day	65	70	62.8	62.8	0.0	4	0								
	sE202	Residential	Day	65	70	60.9	60.9	0.0	2	0								
	sE203	Residential	Day	65	70	61.6	61.6	0.0	2	0								
	sE204	Residential	Day	65	70	58.7	58.7	0.0	1	0								
	sE205	Residential	Day	65	70	63.0	62.3	-0.7	2	0								
	sE206	Residential	Day	65	70	61.9	61.9	0.0	1	0								
	sE207	Residential	Day	65	70	58.8	58.8	0.0	1	0								
	sE208	Residential	Day	65	70	62.1	62.1	0.0	4	0								
	sE209	Residential	Day	65	70	**70.0**	**69.4**	-0.6	1	0								
	sE210	Residential	Day	65	70	63.9	63.9	0.0	2	0								
	sE210a2	Residential	Day	65	70	64.6	64.6	0.0	1	0								
	sE210a3	Residential	Day	65	70	**65.4**	**65.4**	0.0	1	0								
	sE210a4	Residential	Day	65	70	**66.4**	**66.4**	0.0	1	0								
	sE210b2	Residential	Day	65	70	65.0	65.0	0.0	1	0								
	sE210b3	Residential	Day	65	70	**65.9**	**65.9**	0.0	1	0								
	sE210b4	Residential	Day	65	70	**66.9**	**66.9**	0.0	1	0								
	sE210c2	Residential	Day	65	70	**67.7**	**67.7**	0.0	1	0								
	sE210c3	Residential	Day	65	70	**68.1**	**68.1**	0.0	1	0								
	sE210c4	Residential	Day	65	70	**68.5**	**68.5**	0.0	1	0								
	sE210d2	Residential	Day	65	70	**66.9**	**66.9**	0.0	1	0								
	sE210d3	Residential	Day	65	70	**67.3**	**67.3**	0.0	1	0								
	sE210d4	Residential	Day	65	70	**67.6**	**67.6**	0.0	1	0								
	sE211	Residential	Day	65	70	**69.6**	**69.2**	-0.4	1	0								
	sE212	Residential	Day	65	70	60.0	60.0	0.0	1	0								

Table A29a
Build Noise Barrier Cost Effectiveness - 20 Foot Noise Wall
South Wall E - EB I-94 between 1st Avenue and 3rd Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (20 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "South E"	sE101	Residential	Night	55	70	**69.8**	**66.9**	-2.9	4	0	**12**	**YES**	**YES**	903	17,160	$594,000	$49,500	NOT COST EFFECTIVE
	sE102	Residential	Night	55	70	**73.0**	**64.5**	**-8.5**	1	1								
	sE103	Residential	Night	55	70	**65.6**	**63.7**	-1.9	2	0								
	sE104	Residential	Night	55	70	**71.7**	**62.4**	**-9.3**	2	2								
	sE104a1	Residential	Night	55	70	**64.7**	**62.2**	-2.5	1	0								
	sE104a2	Residential	Night	55	70	**66.3**	**63.4**	-2.9	1	0								
	sE104a3	Residential	Night	55	70	**67.2**	**65.1**	-2.1	1	0								
	sE104b1	Residential	Night	55	70	**64.8**	**62.0**	-2.8	1	0								
	sE104b2	Residential	Night	55	70	**66.2**	**63.2**	-3.0	1	0								
	sE104b3	Residential	Night	55	70	**67.1**	**65.0**	-2.1	1	0								
	sE105	Residential	Night	55	70	**71.6**	**62.1**	**-9.5**	3	3								
	sE106	Residential	Night	55	70	**72.4**	**62.8**	**-9.6**	1	1								
	sE107	Residential	Night	55	70	**72.7**	**64.1**	**-8.6**	4	4								
	sE108	Commercial	Night	70	75	**72.6**	68.7	-3.9	1	0								
	sE109	Residential	Night	55	70	**72.8**	**63.2**	**-9.6**	1	1								
	sE201	Residential	Night	55	70	**62.3**	**62.3**	0.0	4	0								
	sE202	Residential	Night	55	70	**61.0**	**61.0**	0.0	2	0								
	sE203	Residential	Night	55	70	**61.7**	**61.7**	0.0	2	0								
	sE204	Residential	Night	55	70	**58.7**	**58.7**	0.0	1	0								
	sE205	Residential	Night	55	70	**63.1**	**62.2**	-0.9	2	0								
	sE206	Residential	Night	55	70	**62.0**	**61.9**	-0.1	1	0								
	sE207	Residential	Night	55	70	**58.7**	**58.7**	0.0	1	0								
	sE208	Residential	Night	55	70	**62.1**	**62.1**	0.0	4	0								
	sE209	Residential	Night	55	70	**68.7**	**67.7**	-1.0	1	0								
	sE210	Residential	Night	55	70	**63.8**	**63.8**	0.0	2	0								
	sE210a2	Residential	Night	55	70	**64.5**	**64.5**	0.0	1	0								
	sE210a3	Residential	Night	55	70	**65.5**	**65.5**	0.0	1	0								
	sE210a4	Residential	Night	55	70	**66.5**	**66.4**	-0.1	1	0								
	sE210b2	Residential	Night	55	70	**65.1**	**65.1**	0.0	1	0								
	sE210b3	Residential	Night	55	70	**66.0**	**66.0**	0.0	1	0								
	sE210b4	Residential	Night	55	70	**67.1**	**66.9**	-0.2	1	0								
	sE210c2	Residential	Night	55	70	**67.1**	**67.1**	0.0	1	0								
	sE210c3	Residential	Night	55	70	**67.7**	**67.7**	0.0	1	0								
	sE210c4	Residential	Night	55	70	**68.2**	**68.2**	0.0	1	0								
	sE210d2	Residential	Night	55	70	**66.1**	**66.1**	0.0	1	0								
	sE210d3	Residential	Night	55	70	**66.7**	**66.7**	0.0	1	0								
	sE210d4	Residential	Night	55	70	**67.1**	**67.1**	0.0	1	0								
	sE211	Residential	Night	55	70	**67.4**	**66.8**	-0.6	1	0								
	sE212	Residential	Night	55	70	**59.9**	**59.9**	0.0	1	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ 250,800.00

Reinforce existing Retaining Walls to support Noise Barrier; 900 ft at $279 Linear Foot

Table A29b
Build Noise Barrier Cost Effectiveness - 15 Foot Noise Wall
South Wall E - EB I-94 between 1st Avenue and 3rd Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (15 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "South E"	sE101	Residential	Day	65	70	**70.2**	**69.1**	-1.1	4	0	**12**	**YES**	**YES**	903	13,045	$511,700	**$42,642**	**PROPOSE TO CONSTRUCT**
	sE102	Residential	Day	65	70	**72.5**	65.0	**-7.5**	1	1								
	sE103	Residential	Day	65	70	**65.4**	64.7	-0.7	2	0								
	sE104	Residential	Day	65	70	**71.2**	63.4	**-7.8**	2	2								
	sE104a1	Residential	Day	65	70	64.3	63.4	-0.9	1	0								
	sE104a2	Residential	Day	65	70	**65.8**	65.0	-0.8	1	0								
	sE104a3	Residential	Day	65	70	**66.6**	**66.6**	0.0	1	0								
	sE104b1	Residential	Day	65	70	64.4	63.2	-1.2	1	0								
	sE104b2	Residential	Day	65	70	**65.7**	64.9	-0.8	1	0								
	sE104b3	Residential	Day	65	70	**66.5**	**66.5**	0.0	1	0								
	sE105	Residential	Day	65	70	**71.1**	63.1	**-8.0**	3	3								
	sE106	Residential	Day	65	70	**71.8**	63.6	**-8.2**	1	1								
	sE107	Residential	Day	65	70	**72.1**	64.8	**-7.3**	4	4								
	sE108	Commercial	Day	70	75	**72.4**	69.4	-3.0	1	0								
	sE109	Residential	Day	65	70	**72.2**	64.0	**-8.2**	1	1								
	sE201	Residential	Day	65	70	62.8	62.8	0.0	4	0								
	sE202	Residential	Day	65	70	60.9	60.9	0.0	2	0								
	sE203	Residential	Day	65	70	61.6	61.6	0.0	2	0								
	sE204	Residential	Day	65	70	58.7	58.7	0.0	1	0								
	sE205	Residential	Day	65	70	63.0	63.0	0.0	2	0								
	sE206	Residential	Day	65	70	61.9	61.9	0.0	1	0								
	sE207	Residential	Day	65	70	58.8	58.8	0.0	1	0								
	sE208	Residential	Day	65	70	62.1	62.1	0.0	4	0								
	sE209	Residential	Day	65	70	**70.0**	**69.8**	-0.2	1	0								
	sE210	Residential	Day	65	70	63.9	63.9	0.0	2	0								
	sE210a2	Residential	Day	65	70	64.6	64.6	0.0	1	0								
	sE210a3	Residential	Day	65	70	**65.4**	**65.4**	0.0	1	0								
	sE210a4	Residential	Day	65	70	**66.4**	**66.4**	0.0	1	0								
	sE210b2	Residential	Day	65	70	65.0	65.0	0.0	1	0								
	sE210b3	Residential	Day	65	70	**65.9**	**65.9**	0.0	1	0								
	sE210b4	Residential	Day	65	70	**66.9**	**66.9**	0.0	1	0								
	sE210c2	Residential	Day	65	70	**67.7**	**67.7**	0.0	1	0								
	sE210c3	Residential	Day	65	70	**68.1**	**68.1**	0.0	1	0								
	sE210c4	Residential	Day	65	70	**68.5**	**68.5**	0.0	1	0								
	sE210d2	Residential	Day	65	70	**66.9**	**66.9**	0.0	1	0								
	sE210d3	Residential	Day	65	70	**67.3**	**67.3**	0.0	1	0								
	sE210d4	Residential	Day	65	70	**67.6**	**67.6**	0.0	1	0								
	sE211	Residential	Day	65	70	**69.6**	**69.6**	0.0	1	0								
	sE212	Residential	Day	65	70	60.0	60.0	0.0	1	0								

Table A29b
Build Noise Barrier Cost Effectiveness - 15 Foot Noise Wall
South Wall E - EB I-94 between 1st Avenue and 3rd Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (15 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "South E"	sE101	Residential	Night	55	70	**69.8**	**68.7**	-1.1	4	0	**12**	**YES**	**YES**	903	13,045	$511,700	**$42,642**	**PROPOSE TO CONSTRUCT**
	sE102	Residential	Night	55	70	**73.0**	**65.4**	**-7.6**	1	1								
	sE103	Residential	Night	55	70	**65.6**	**65.0**	-0.6	2	0								
	sE104	Residential	Night	55	70	**71.7**	**63.7**	**-8.0**	2	2								
	sE104a1	Residential	Night	55	70	**64.7**	**63.6**	-1.1	1	0								
	sE104a2	Residential	Night	55	70	**66.3**	**65.2**	-1.1	1	0								
	sE104a3	Residential	Night	55	70	**67.2**	**67.2**	0.0	1	0								
	sE104b1	Residential	Night	55	70	**64.8**	**63.5**	-1.3	1	0								
	sE104b2	Residential	Night	55	70	**66.2**	**65.1**	-1.1	1	0								
	sE104b3	Residential	Night	55	70	**67.1**	**67.1**	0.0	1	0								
	sE105	Residential	Night	55	70	**71.6**	**63.4**	**-8.2**	3	3								
	sE106	Residential	Night	55	70	**72.4**	**63.8**	**-8.6**	1	1								
	sE107	Residential	Night	55	70	**72.7**	**64.9**	**-7.8**	4	4								
	sE108	Commercial	Night	70	75	**72.6**	68.9	-3.7	1	0								
	sE109	Residential	Night	55	70	**72.8**	**64.2**	**-8.6**	1	1								
	sE201	Residential	Night	55	70	**62.3**	**62.3**	0.0	4	0								
	sE202	Residential	Night	55	70	**61.0**	**61.0**	0.0	2	0								
	sE203	Residential	Night	55	70	**61.7**	**61.7**	0.0	2	0								
	sE204	Residential	Night	55	70	**58.7**	**58.7**	0.0	1	0								
	sE205	Residential	Night	55	70	**63.1**	**63.1**	0.0	2	0								
	sE206	Residential	Night	55	70	**62.0**	**62.0**	0.0	1	0								
	sE207	Residential	Night	55	70	**58.7**	**58.7**	0.0	1	0								
	sE208	Residential	Night	55	70	**62.1**	**62.1**	0.0	4	0								
	sE209	Residential	Night	55	70	**68.7**	**68.3**	-0.4	1	0								
	sE210	Residential	Night	55	70	**63.8**	**63.8**	0.0	2	0								
	sE210a2	Residential	Night	55	70	**64.5**	**64.5**	0.0	1	0								
	sE210a3	Residential	Night	55	70	**65.5**	**65.5**	0.0	1	0								
	sE210a4	Residential	Night	55	70	**66.5**	**66.5**	0.0	1	0								
	sE210b2	Residential	Night	55	70	**65.1**	**65.1**	0.0	1	0								
	sE210b3	Residential	Night	55	70	**66.0**	**66.0**	0.0	1	0								
	sE210b4	Residential	Night	55	70	**67.1**	**67.1**	0.0	1	0								
	sE210c2	Residential	Night	55	70	**67.1**	**67.1**	0.0	1	0								
	sE210c3	Residential	Night	55	70	**67.7**	**67.7**	0.0	1	0								
	sE210c4	Residential	Night	55	70	**68.2**	**68.2**	0.0	1	0								
	sE210d2	Residential	Night	55	70	**66.1**	**66.1**	0.0	1	0								
	sE210d3	Residential	Night	55	70	**66.7**	**66.7**	0.0	1	0								
	sE210d4	Residential	Night	55	70	**67.1**	**67.1**	0.0	1	0								
	sE211	Residential	Night	55	70	**67.4**	**67.4**	0.0	1	0								
	sE212	Residential	Night	55	70	**59.9**	**59.9**	0.0	1	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ 250,800.00

Reinforce existing Retaining Walls to support Noise Barrier; 900 ft at $279 Linear Foot

Table A30a
Build Noise Barrier Cost Effectiveness - 20 Foot Noise Wall
South Wall H - EB I-94 between Portland Avenue and Park Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA) MnDOT	Noise Standard (L_{10} dBA) FHWA	Noise Levels (L_{10} dBA) Build with No Barriers	Noise Levels (L_{10} dBA) Build with Barriers (20 ft)	Acoustic Effectiveness: dBA Reduction	Acoustic Effectiveness: Number of Receptors	Acoustic Effectiveness: Benefitted Receptors (-5dBA)	Acoustic Effectiveness: **Total Benefitted Receptors**	Acoustic Effectiveness: **Acoustically Effective**	Acoustic Effectiveness: **Design Goal (-7dBA)**	Cost Effectiveness ($20/SF): Barrier Length (ft)	Cost Effectiveness ($20/SF): Area of Barrier (SF)**	Cost Effectiveness ($20/SF): Total Cost	Cost Effectiveness ($20/SF): Cost per Benefited Receptor	NOISE WALL RESULTS
Wall "South H"	eM327	Residential	Day	65	70	**72.2**	**70.3**	-1.9	1	0	**9**	**YES**	**YES**	587	10,840	$559,100	$62,122	NOT COST EFFECTIVE
	eM328	Residential	Day	65	70	**71.2**	**66.1**	**-5.1**	3	3								
	eM427	Residential	Day	65	70	**68.1**	63.3	-4.8	2	0								
	eM429	Residential	Day	65	70	**69.3**	63.8	**-5.5**	2	2								
	eM326	Residential	Day	65	70	**68.9**	**68.9**	0.0	2	0								
	eM325	Residential	Day	65	70	**68.5**	**68.4**	-0.1	2	0								
	sH102	Residential	Day	65	70	**71.4**	63.9	**-7.5**	2	2								
	sH103	Residential	Day	65	70	**71.8**	**65.2**	**-6.6**	2	2								
	sH104	Residential	Day	65	70	**72.2**	**68.4**	-3.8	2	0								
	sH203	General	Day	70	70	69.9	69.9	0.0	1	0								
Wall "South H"	eM327	Residential	Night	55	70	**72.1**	**70.2**	-1.9	1	0	**11**	**YES**	**YES**	587	10,840	$559,100	$50,827	NOT COST EFFECTIVE
	eM328	Residential	Night	55	70	**71.0**	**65.8**	**-5.2**	3	3								
	eM427	Residential	Night	55	70	**67.9**	**62.9**	**-5.0**	2	2								
	eM429	Residential	Night	55	70	**69.1**	**63.2**	**-5.9**	2	2								
	eM326	Residential	Night	55	70	**68.6**	**68.6**	0.0	2	0								
	eM325	Residential	Night	55	70	**68.1**	**68.0**	-0.1	2	0								
	sH102	Residential	Night	55	70	**71.3**	**63.6**	**-7.7**	2	2								
	sH103	Residential	Night	55	70	**71.7**	**64.8**	**-6.9**	2	2								
	sH104	Residential	Night	55	70	**72.0**	**67.7**	-4.3	2	0								
	sH203	General	Night	70	70	68.3	68.3	0.0	1	0								
																	$43,500	MnDOT Threshold

Table A30b
Build Noise Barrier Cost Effectiveness - 15 Foot Noise Wall
South Wall H - EB I-94 between Portland Avenue and Park Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (dBA) MnDOT	Noise Standard (dBA) FHWA	Noise Levels (dBA) Build with No Barriers	Noise Levels (dBA) Build with Barriers (15 ft)	Acoustic Effectiveness: dBA Reduction	Acoustic Effectiveness: Number of Receptors	Acoustic Effectiveness: Benefitted Receptors (-5dBA)	Acoustic Effectiveness: **Total Benefitted Receptors**	Acoustic Effectiveness: **Acoustically Effective**	Acoustic Effectiveness: **Design Goal (-7dBA)**	Cost Effectiveness ($/SF): Barrier Length (ft)	Cost Effectiveness ($/SF): Area of Barrier (SF)	Cost Effectiveness ($/SF): Total Cost	Cost Effectiveness ($/SF): Cost per Benefited Receptor	NOISE WALL RESULTS
Wall "South H"	eM327	Residential	Day	65	70	**72.2**	**70.4**	-1.8	1	0	**6**	**YES**	NO	587	8,305	$508,400	$84,733	DESIGN GOAL AND COST EFFECTIVENESS NOT MET
	eM328	Residential	Day	65	70	**71.2**	**66.6**	-4.6	3	0								
	eM427	Residential	Day	65	70	**68.1**	63.7	-4.4	2	0								
	eM429	Residential	Day	65	70	**69.3**	64.2	**-5.1**	2	2								
	eM326	Residential	Day	65	70	**68.9**	**66.2**	-2.7	2	0								
	eM325	Residential	Day	65	70	**68.5**	**65.2**	-3.3	2	0								
	sH102	Residential	Day	65	70	**71.4**	64.9	**-6.5**	2	2								
	sH103	Residential	Day	65	70	**71.8**	**65.9**	**-5.9**	2	2								
	sH104	Residential	Day	65	70	**72.2**	**68.7**	-3.5	2	0								
	sH203	General	Day	70	70	69.9	69.9	0.0	1	0								
Wall "South H"	eM327	Residential	Night	55	70	**72.1**	**70.4**	-1.7	1	0	**6**	**YES**	NO	587	8,305	$508,400	$84,733	DESIGN GOAL AND COST EFFECTIVENESS NOT MET
	eM328	Residential	Night	55	70	**71.0**	**66.4**	-4.6	3	0								
	eM427	Residential	Night	55	70	**67.9**	**63.3**	-4.6	2	0								
	eM429	Residential	Night	55	70	**69.1**	**63.7**	**-5.4**	2	2								
	eM326	Residential	Night	55	70	**68.6**	**66.2**	-2.4	2	0								
	eM325	Residential	Night	55	70	**68.1**	**65.1**	-3.0	2	0								
	sH102	Residential	Night	55	70	**71.3**	**64.7**	**-6.6**	2	2								
	sH103	Residential	Night	55	70	**71.7**	**65.6**	**-6.1**	2	2								
	sH104	Residential	Night	55	70	**72.0**	**68.1**	-3.9	2	0								
	sH203	General	Night	70	70	68.3	68.3	0.0	1	0								
																	$43,500	MnDOT Threshold

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ 342,300.00

Reinforce existing Retaining Walls to support Noise Barrier; 568 ft at $603 Linear Foot

Table A31a
Build Noise Barrier Cost Effectiveness - 20 Foot Noise Wall
South Wall I - EB I-94 between Park Avenue and Chicago Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA) MnDOT	Noise Standard (L_{10} dBA) FHWA	Noise Levels (L_{10} dBA) Build with No Barriers	Noise Levels (L_{10} dBA) Build with Barriers (ft)	Acoustic Effectiveness dBA Reduction	Acoustic Effectiveness Number of Receptors	Acoustic Effectiveness Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Cost Effectiveness ($20/SF) Barrier Length (ft)	Cost Effectiveness ($20/SF) Area of Barrier (SF)**	Cost Effectiveness ($20/SF) Total Cost	Cost Effectiveness ($20/SF) Cost per Benefited Receptor	NOISE WALL RESULTS
Wall "South I"	sI101	Residential	Day	65	70	**70.5**	**68.4**	-2.1	3	0	**5**	**YES**	**YES**	582	10,740	$520,100	$104,020	NOT COST EFFECTIVE
	sI102	Residential	Day	65	70	**70.9**	63.0	**-7.9**	2	2								
	sI103	Residential	Day	65	70	**70.7**	63.1	**-7.6**	2	2								
	sI104	Commercial	Day	70	75	**71.3**	66.3	**-5.0**	1	1								
	sI201	Residential	Day	65	70	**69.2**	**69.2**	0.0	1	0								
	sI202	Residential	Day	65	70	**65.3**	65.0	-0.3	2	0								
Wall "South I"	sI101	Residential	Night	55	70	**69.7**	**67.3**	-2.4	3	0	**5**	**YES**	**YES**	582	10,740	$520,100	$104,020	NOT COST EFFECTIVE
	sI102	Residential	Night	55	70	**70.9**	**62.8**	**-8.1**	2	2								
	sI103	Residential	Night	55	70	**70.7**	**62.9**	**-7.8**	2	2								
	sI104	Commercial	Night	70	75	**71.3**	65.6	**-5.7**	1	1								
	sI201	Residential	Night	55	70	**68.0**	**68.0**	0.0	1	0								
	sI202	Residential	Night	55	70	**65.0**	**64.1**	-0.9	2	0								

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

$43,500 MnDOT Threshold

Table A31b
Build Noise Barrier Cost Effectiveness - 15 Foot Noise Wall
South Wall I - EB I-94 between Park Avenue and Chicago Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (dBA) MnDOT	Noise Standard (dBA) FHWA	Noise Levels (dBA) Build with No Barriers	Noise Levels (dBA) Barriers (**Noise barrier	Acoustic Effectiveness dBA Reduction	Acoustic Effectiveness Number of Receptors	Acoustic Effectiveness Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Cost Effectiveness ($/SF) Barrier Length (ft)	Cost Effectiveness ($/SF) Area of Barrier (SF)	Cost Effectiveness ($/SF) Total Cost	Cost Effectiveness ($/SF) Cost per Benefited Receptor	NOISE WALL RESULTS
Wall "South I"	sI101	Residential	Day	65	70	**70.5**	**68.7**	-1.8	3	0	**4**	**YES**	**YES**	582	8,230	$469,900	$117,475	NOT COST EFFECTIVE
	sI102	Residential	Day	65	70	**70.9**	63.9	**-7.0**	2	2								
	sI103	Residential	Day	65	70	**70.7**	64.0	**-6.7**	2	2								
	sI104	Commercial	Day	70	75	**71.3**	66.7	-4.6	1	0								
	sI201	Residential	Day	65	70	**69.2**	**69.2**	0.0	1	0								
	sI202	Residential	Day	65	70	**65.3**	**65.3**	0.0	2	0								
Wall "South I"	sI101	Residential	Night	55	70	**69.7**	**67.6**	-2.1	3	0	**5**	**YES**	**YES**	582	8,230	$469,900	$93,980	NOT COST EFFECTIVE
	sI102	Residential	Night	55	70	**70.9**	**63.7**	**-7.2**	2	2								
	sI103	Residential	Night	55	70	**70.7**	**63.9**	**-6.8**	2	2								
	sI104	Commercial	Night	70	75	**71.3**	66.0	**-5.3**	1	1								
	sI201	Residential	Night	55	70	**68.0**	**68.0**	0.0	1	0								
	sI202	Residential	Night	55	70	**65.0**	**64.5**	-0.5	2	0								

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

$43,500 MnDOT Threshold

Table A31c
Build Noise Barrier Cost Effectiveness - 10 Foot Noise Wall
South Wall I - EB I-94 between Park Avenue and Chicago Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (dBA) MnDOT	Noise Standard (dBA) FHWA	Noise Levels (dBA) Build with No Barriers	Noise Levels (dBA) Barriers (**Noise barrier	Acoustic Effectiveness dBA Reduction	Acoustic Effectiveness Number of Receptors	Acoustic Effectiveness Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Cost Effectiveness ($/SF) Barrier Length (ft)	Cost Effectiveness ($/SF) Area of Barrier (SF)	Cost Effectiveness ($/SF) Total Cost	Cost Effectiveness ($/SF) Cost per Benefited Receptor	NOISE WALL RESULTS
Wall "South I"	sI101	Residential	Day	65	70	**70.5**	**69.5**	-1.0	3	0	**2**	**YES**	NO	0	5,720	$419,700	$209,850	DESIGN GOAL AND COST EFFECTIVENESS NOT MET
	sI102	Residential	Day	65	70	**70.9**	**65.8**	**-5.1**	2	2								
	sI103	Residential	Day	65	70	**70.7**	**65.9**	-4.8	2	0								
	sI104	Commercial	Day	70	75	**71.3**	67.5	-3.8	1	0								
	sI201	Residential	Day	65	70	**69.2**	**69.2**	0.0	1	0								
	sI202	Residential	Day	65	70	**65.3**	**65.3**	0.0	2	0								
Wall "South I"	sI101	Residential	Night	55	70	**69.7**	**68.6**	-1.1	3	0	**2**	**YES**	NO	0	5,720	$419,700	$209,850	DESIGN GOAL AND COST EFFECTIVENESS NOT MET
	sI102	Residential	Night	55	70	**70.9**	**65.8**	**-5.1**	2	2								
	sI103	Residential	Night	55	70	**70.7**	**65.8**	-4.9	2	0								
	sI104	Commercial	Night	70	75	**71.3**	67.0	-4.3	1	0								
	sI201	Residential	Night	55	70	**68.0**	**68.0**	0.0	1	0								
	sI202	Residential	Night	55	70	**65.0**	**65.0**	0.0	2	0								

**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

$43,500 MnDOT Threshold

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ 305,300.00

Reinforce existing Retaining Walls to support Noise Barrier; 569 ft at $537 Linear Foot

Table A32
Build Noise Barrier Cost Effectiveness - 20 Foot Noise Wall
South Wall J - EB I-94 between Chicago Avenue and 11th Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (20 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "South J"	sJ101	Commercial	Day	70	75	**72.0**	65.9	**-6.1**	1	1	**52**	**YES**	**YES**	1,092	20,940	$418,800	**$8,054**	**PROPOSE TO CONSTRUCT**
	sJ102	Residential	Day	65	70	**73.0**	60.9	**-12.1**										
	sJ102C	Residential	Day	65	70	**71.2**	60.8	**-10.4**	32	32								
	sJ103	Residential	Day	65	70	**70.0**	60.9	**-9.1**										
	sJ104	Residential	Day	65	70	**72.4**	61.0	**-11.4**	4	4								
	sJ105	Residential	Day	65	70	**70.5**	61.0	**-9.5**	1	1								
	sJ106	Residential	Day	65	70	**68.1**	61.0	**-7.1**	1	1								
	sJ107	Residential	Day	65	70	**66.8**	60.9	**-5.9**	1	1								
	sJ108	Residential	Day	65	70	**65.9**	60.9	**-5.0**	1	1								
	sJ109	Residential	Day	65	70	**72.4**	61.2	**-11.2**										
	sJ109C	Residential	Day	65	70	**69.0**	62.0	**-7.0**	7	7								
	sJ110	Residential	Day	65	70	**72.5**	**67.2**	**-5.3**	4	4								
	sJ110b1	Residential	Day	65	70	**67.3**	**65.8**	-1.5	1	0								
	sJ110b2	Residential	Day	65	70	**72.0**	**69.1**	-2.9	1	0								
	sJ110c2	Residential	Day	65	70	60.6	60.6	0.0	1	0								
	sJ201	Commercial	Day	70	75	63.3	63.3	0.0	1	0								
	sJ202	Residential	Day	65	70	63.0	63.0	0.0	2	0								
	sJ203	Residential	Day	65	70	63.2	61.6	-1.6	1	0								
	sJ204	Residential	Day	65	70	61.2	61.2	0.0	2	0								
	sJ205	Residential	Day	65	70	60.7	60.7	0.0	2	0								
	sJ206	Residential	Day	65	70	63.7	62.2	-1.5	2	0								
	sJ207	Residential	Day	65	70	62.9	62.1	-0.8	2	0								
	sJ208	Residential	Day	65	70	59.7	59.7	0.0										
	sJ208C	Residential	Day	65	70	59.9	59.9	0.0	20	0								
	sJ209	Residential	Day	65	70	**67.8**	62.9	-4.9	1	0								
	sJ210	Residential	Day	65	70	62.4	62.4	0.0	2	0								
	sJ211	Residential	Day	65	70	60.3	60.3	0.0	1	0								
	sJ212	Residential	Day	65	70	60.1	60.1	0.0	1	0								
	sJ213	Residential	Day	65	70	59.7	59.7	0.0	2	0								
	sJ214	Residential	Day	65	70	**68.0**	**68.0**	0.0	2	0								
	sJ215	Residential	Day	65	70	**67.4**	**67.4**	0.0	1	0								
	sJ216	Residential	Day	65	70	**65.8**	**65.8**	0.0	2	0								
	sJ217	Residential	Day	65	70	64.8	64.8	0.0	2	0								
	sJ218	Residential	Day	65	70	63.7	63.7	0.0	2	0								

Table A32
Build Noise Barrier Cost Effectiveness - 20 Foot Noise Wall
South Wall J - EB I-94 between Chicago Avenue and 11th Avenue

Noise Barrier	Receiver	Land Use	Timeframe (Day or Night)	Noise Standard (L_{10} dBA)		Noise Levels (L_{10} dBA)		Acoustic Effectiveness						Cost Effectiveness ($20/SF)				NOISE WALL RESULTS
				MnDOT	FHWA	Build with No Barriers	Build with Barriers (20 ft)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5dBA)	**Total Benefitted Receptors**	**Acoustically Effective**	**Design Goal (-7dBA)**	Barrier Length (ft)	Area of Barrier (SF)**	Total Cost	Cost per Benefited Receptor	
Wall "South J"	sJ101	Commercial	Night	70	75	**72.0**	64.9	**-7.1**	1	1	**52**	**YES**	**YES**	1,092	20,940	$418,800	**$8,054**	**PROPOSE TO CONSTRUCT**
	sJ102	Residential	Night	55	70	**73.3**	**61.0**	**-12.3**										
	sJ102C	Residential	Night	55	70	**71.4**	**60.8**	**-10.6**	32	32								
	sJ103	Residential	Night	55	70	**70.1**	**60.9**	**-9.2**										
	sJ104	Residential	Night	55	70	**72.6**	**61.0**	**-11.6**	4	4								
	sJ105	Residential	Night	55	70	**70.7**	**61.1**	**-9.6**	1	1								
	sJ106	Residential	Night	55	70	**68.1**	**61.1**	**-7.0**	1	1								
	sJ107	Residential	Night	55	70	**66.9**	**61.0**	**-5.9**	1	1								
	sJ108	Residential	Night	55	70	**65.9**	**61.0**	-4.9	1	0								
	sJ109	Residential	Night	55	70	**72.6**	**61.3**	**-11.3**										
	sJ109C	Residential	Night	55	70	**69.0**	**62.2**	**-6.8**	7	7								
	sJ110	Residential	Night	55	70	**72.6**	**67.2**	**-5.4**	4	4								
	sJ110b1	Residential	Night	55	70	**67.4**	**65.8**	-1.6	1	0								
	sJ110b2	Residential	Night	55	70	**72.0**	**69.1**	-2.9	1	0								
	sJ110c2	Residential	Night	55	70	**60.7**	**60.7**	0.0	1	0								
	sJ201	Commercial	Night	70	75	61.8	61.8	0.0	1	0								
	sJ202	Residential	Night	55	70	**62.8**	**62.2**	-0.6	2	0								
	sJ203	Residential	Night	55	70	**63.2**	**61.3**	-1.9	1	0								
	sJ204	Residential	Night	55	70	**61.1**	**61.1**	0.0	2	0								
	sJ205	Residential	Night	55	70	**60.6**	**60.6**	0.0	2	0								
	sJ206	Residential	Night	55	70	**63.7**	**62.2**	-1.5	2	0								
	sJ207	Residential	Night	55	70	**62.9**	**62.0**	-0.9	2	0								
	sJ208	Residential	Night	55	70	**59.7**	**59.7**	0.0										
	sJ208C	Residential	Night	55	70	**59.9**	**59.9**	0.0	20	0								
	sJ209	Residential	Night	55	70	**67.9**	**62.9**	**-5.0**	1	1								
	sJ210	Residential	Night	55	70	**62.4**	**62.4**	0.0	2	0								
	sJ211	Residential	Night	55	70	**60.3**	**60.3**	0.0	1	0								
	sJ212	Residential	Night	55	70	**60.0**	**60.0**	0.0	1	0								
	sJ213	Residential	Night	55	70	**59.7**	**59.7**	0.0	2	0								
	sJ214	Residential	Night	55	70	**67.7**	**67.7**	0.0	2	0								
	sJ215	Residential	Night	55	70	**67.1**	**67.1**	0.0	1	0								
	sJ216	Residential	Night	55	70	**65.3**	**65.3**	0.0	2	0								
	sJ217	Residential	Night	55	70	**64.4**	**64.4**	0.0	2	0								
	sJ218	Residential	Night	55	70	**63.4**	**63.4**	0.0	2	0								
																	$43,500	MnDOT Threshold

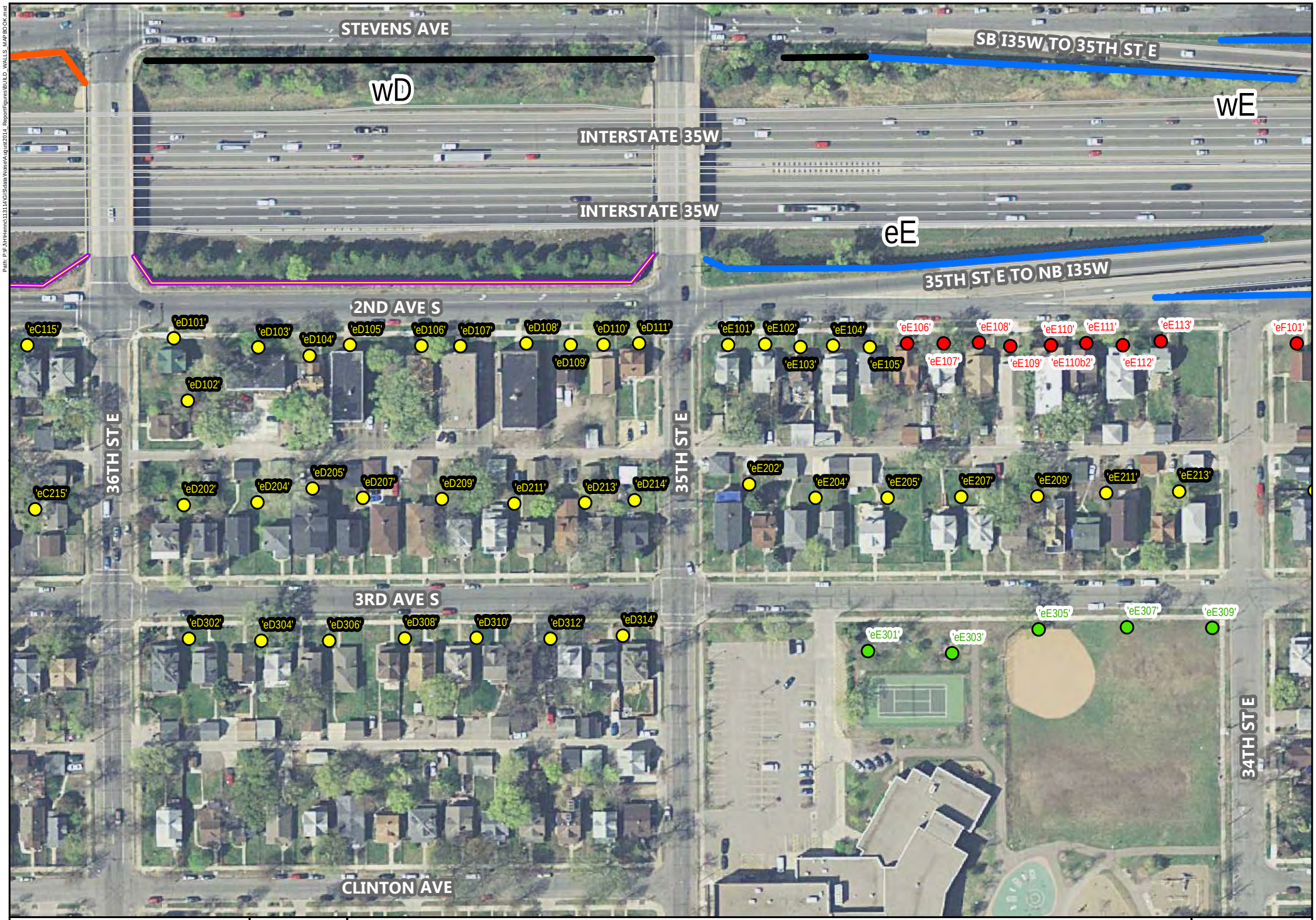
**Noise barrier tapers were included on all evaluated barriers; this area was removed from the calculated barrier area.

XX	**Bold**; Exceeds MN State Standards
XX	Underline; Approach or Exceeds FHWA Standards

ADDITIONAL COSTS INCLUDED WITH THIS NOISE BARRIER: $ -

Appendix B

Build Noise Wall Figures (1-25)



AERIAL BASE IS MNGEO WMS
2012 TWIN CITIES COLOR

0 70 140 Feet

Print Date: 1/11/2016

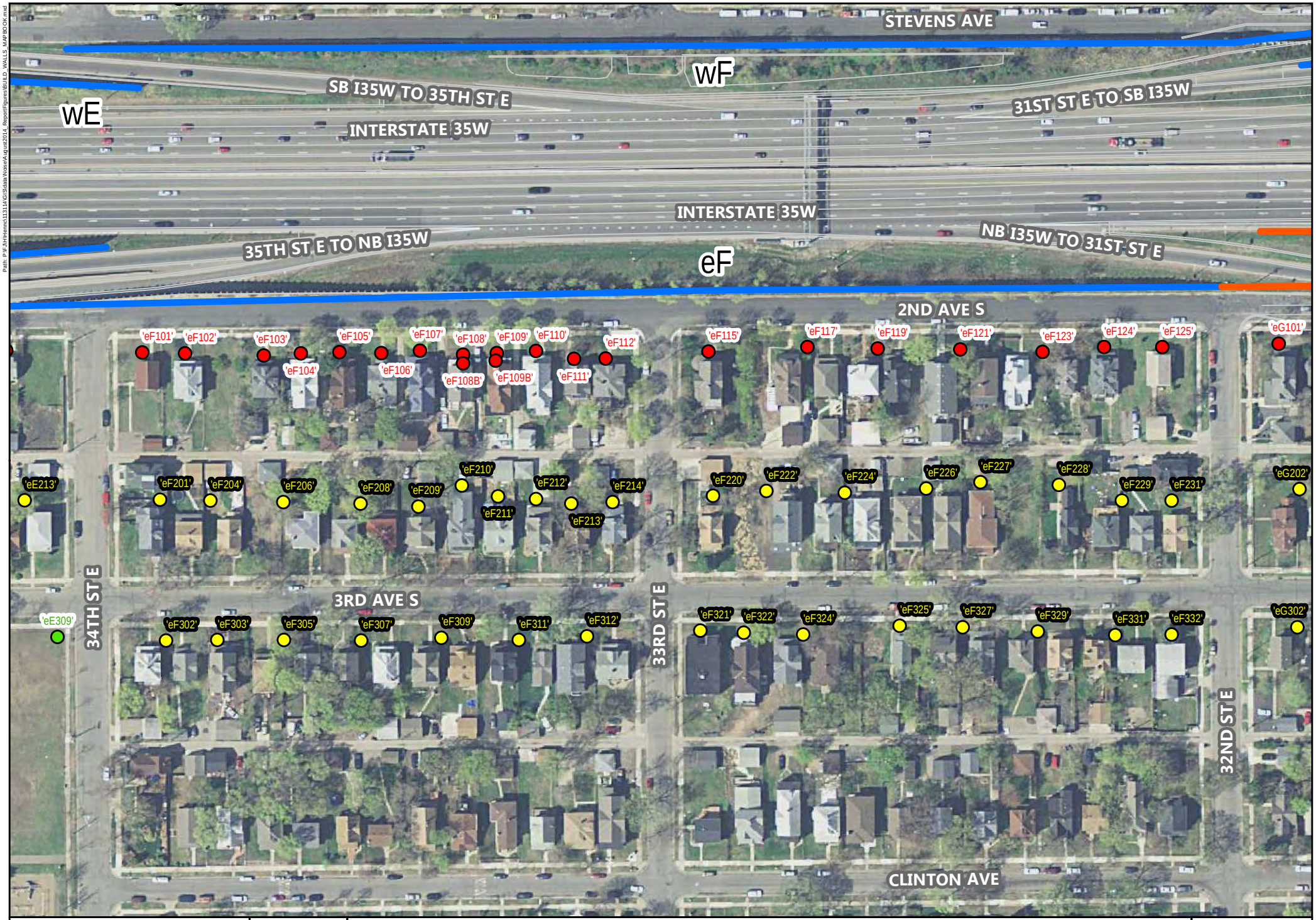
Map by: MSS
Projection: Hennepin County Coordinates
Source: Hennepin County, BING City of Minneapolis, SEH

Legend

- NOT IMPACTED
- IMPACTED
- BENEFITED; IMPACT-BENEFIT
- No Wall
- Proposed Wall
- Replace In Kind
- Existing Noise Wall
- Proposed Geometrics

Build Conditions - Noise Analysis

I-35W Transit Access Project
Minneapolis, MN



SEH

AERIAL BASE IS MNGEO WMS
2012 TWIN CITIES COLOR

0 70 140 Feet

Print Date: 1/11/2016

Map by: MSS
Projection: Hennepin County Coordinates
Source: Hennepin County, BING
City of Minneapolis, SEH

Legend

- NOT IMPACTED
- IMPACTED
- BENEFITED; IMPACT-BENEFIT
- No Wall
- Proposed Wall
- Replace In Kind
- Existing Noise Wall
- Proposed Geometrics

Build Conditions - Noise Analysis

I-35W Transit Access Project
Minneapolis, MN

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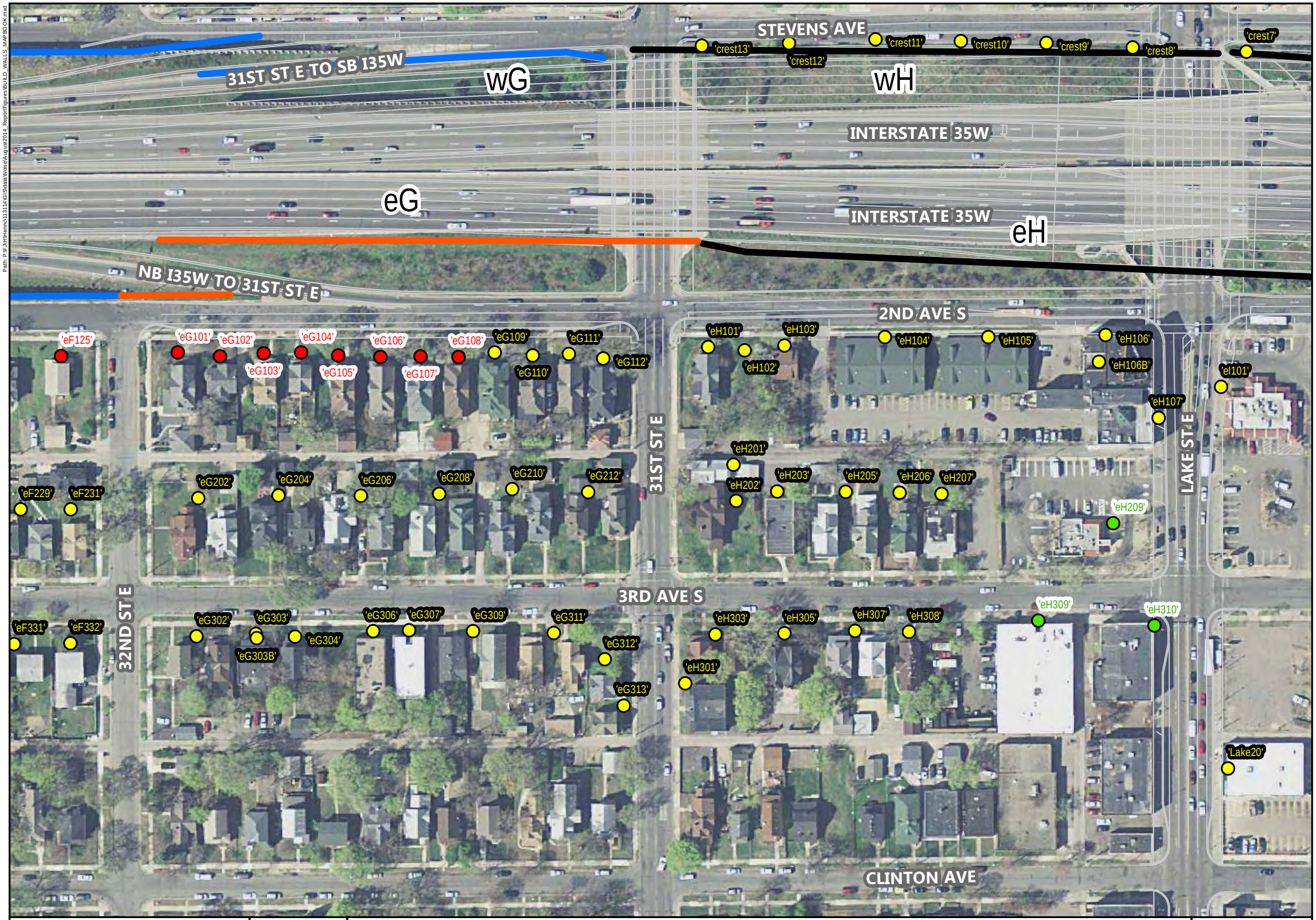

AERIAL BASE IS MNGEO WMS
2012 TWIN CITIES COLOR

0 70 140 Feet

Print Date: 1/11/2016

Map by: MSS
Projection: Hennepin County Coordinates
Source: Hennepin County, BING City of Minneapolis, SEH

Legend

- NOT IMPACTED
- IMPACTED
- BENEFITED; IMPACT-BENEFIT
- No Wall
- Proposed Wall
- Replace In Kind
- Existing Noise Wall
- Proposed Geometrics

Build Conditions - Noise Analysis

I-35W Transit Access Project
Minneapolis, MN

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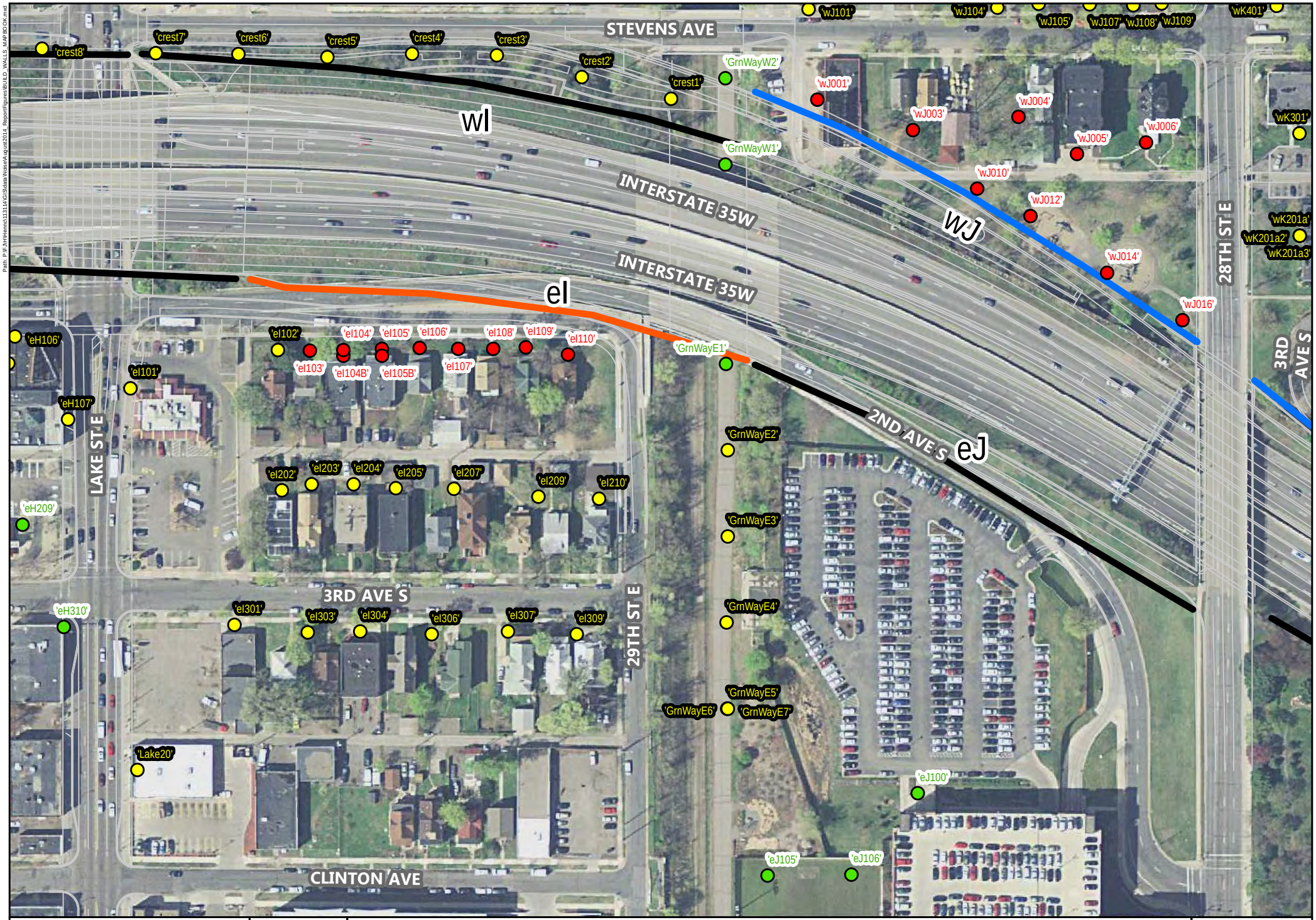

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Build Conditions - Noise Analysis

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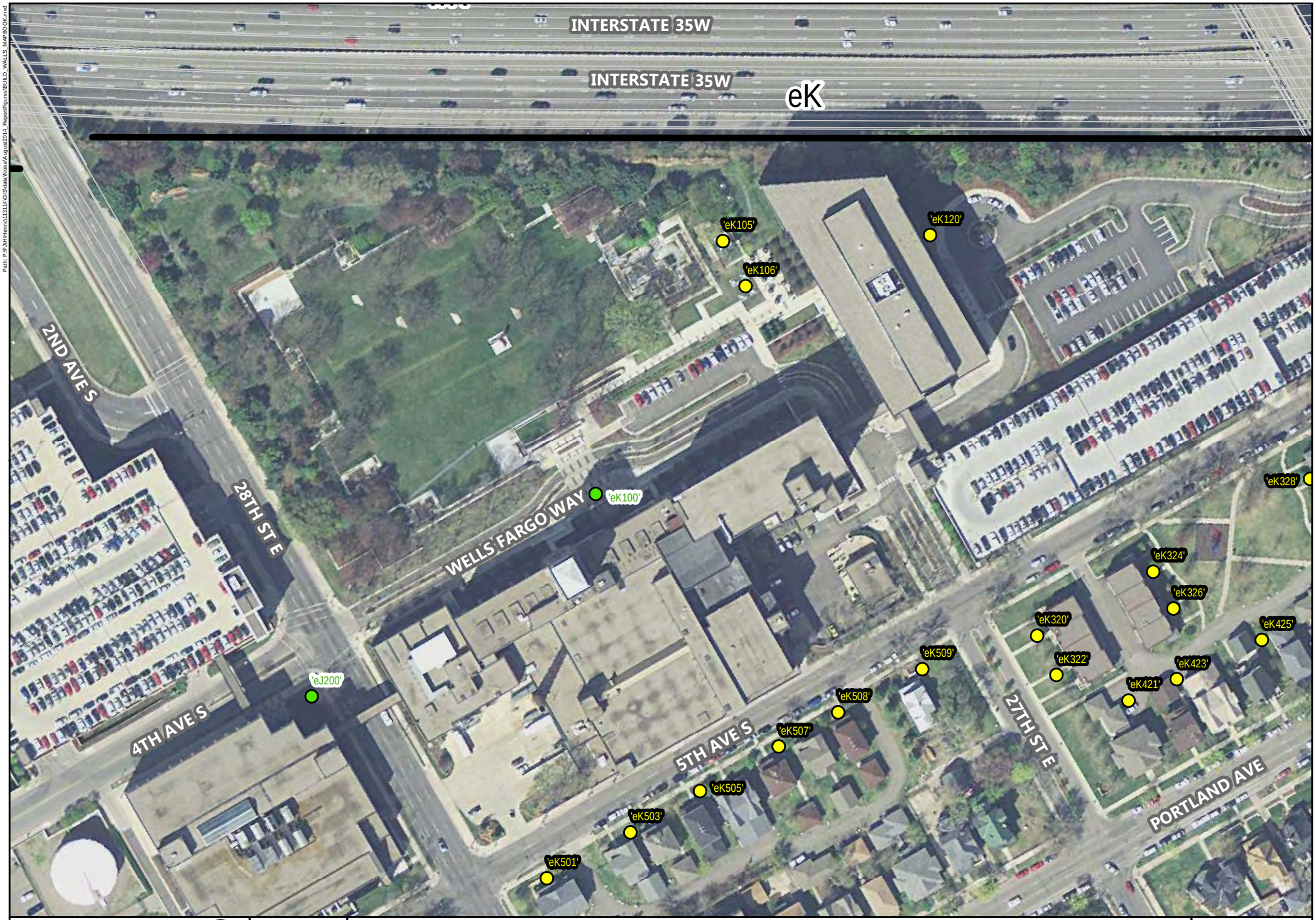

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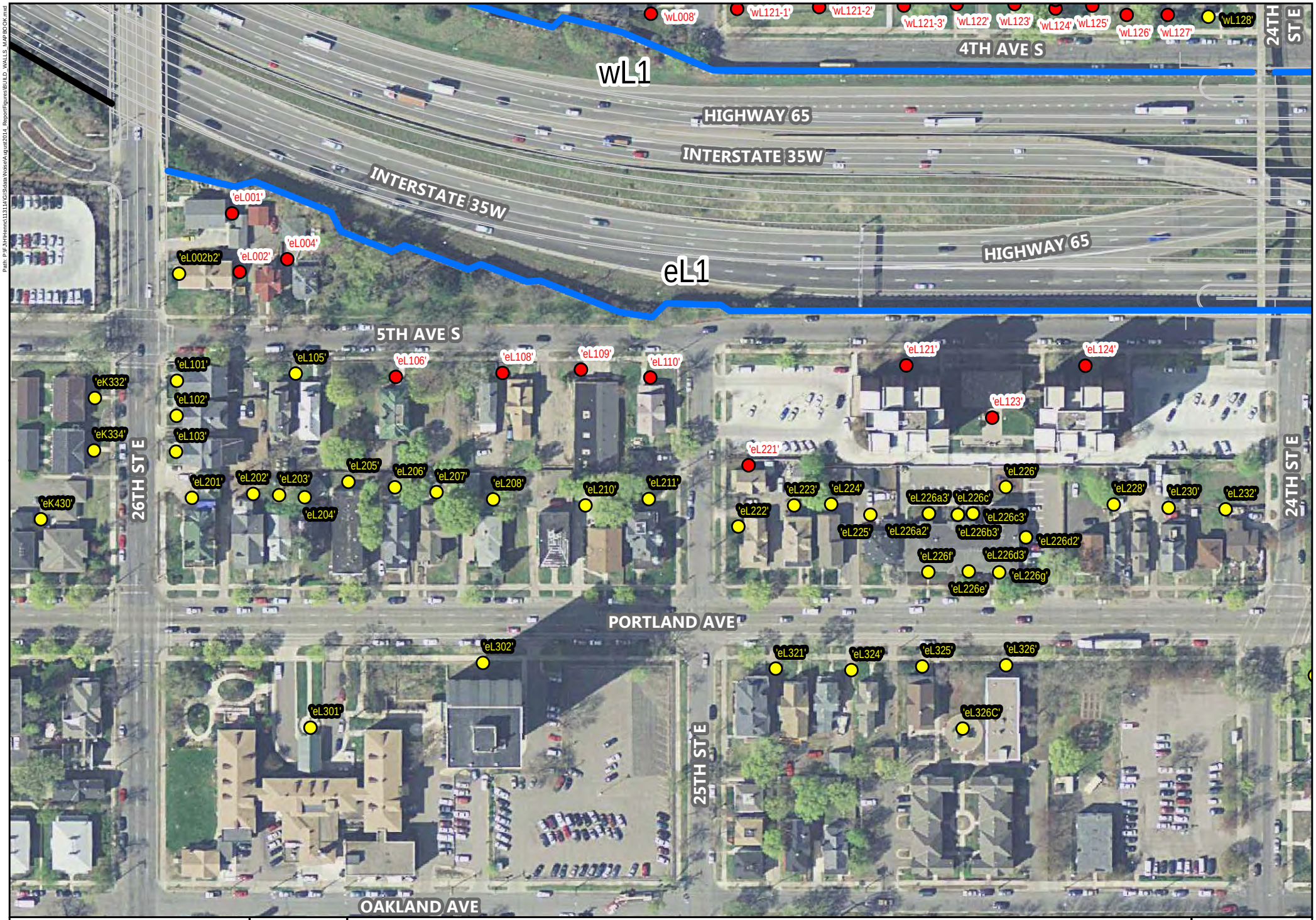

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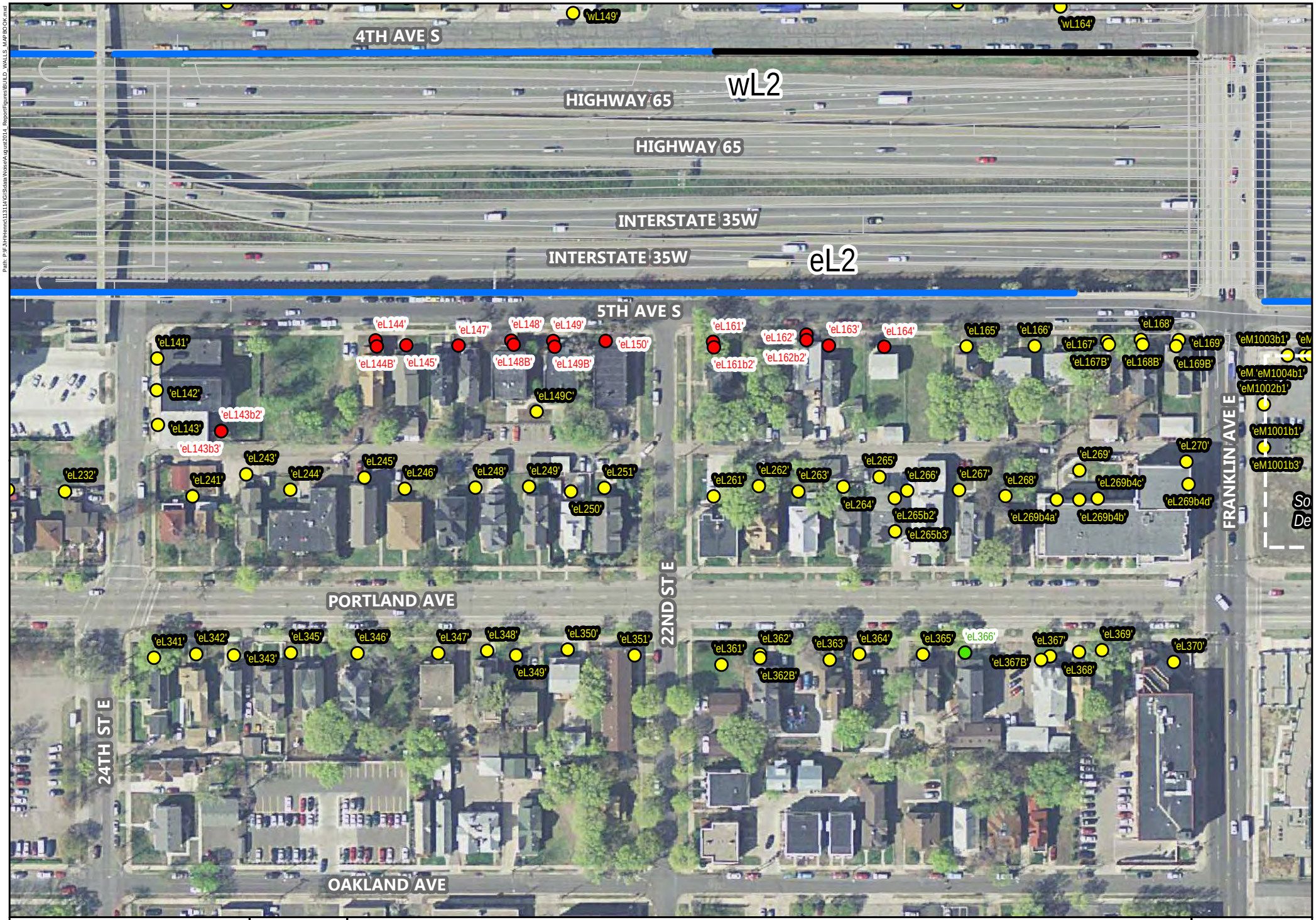

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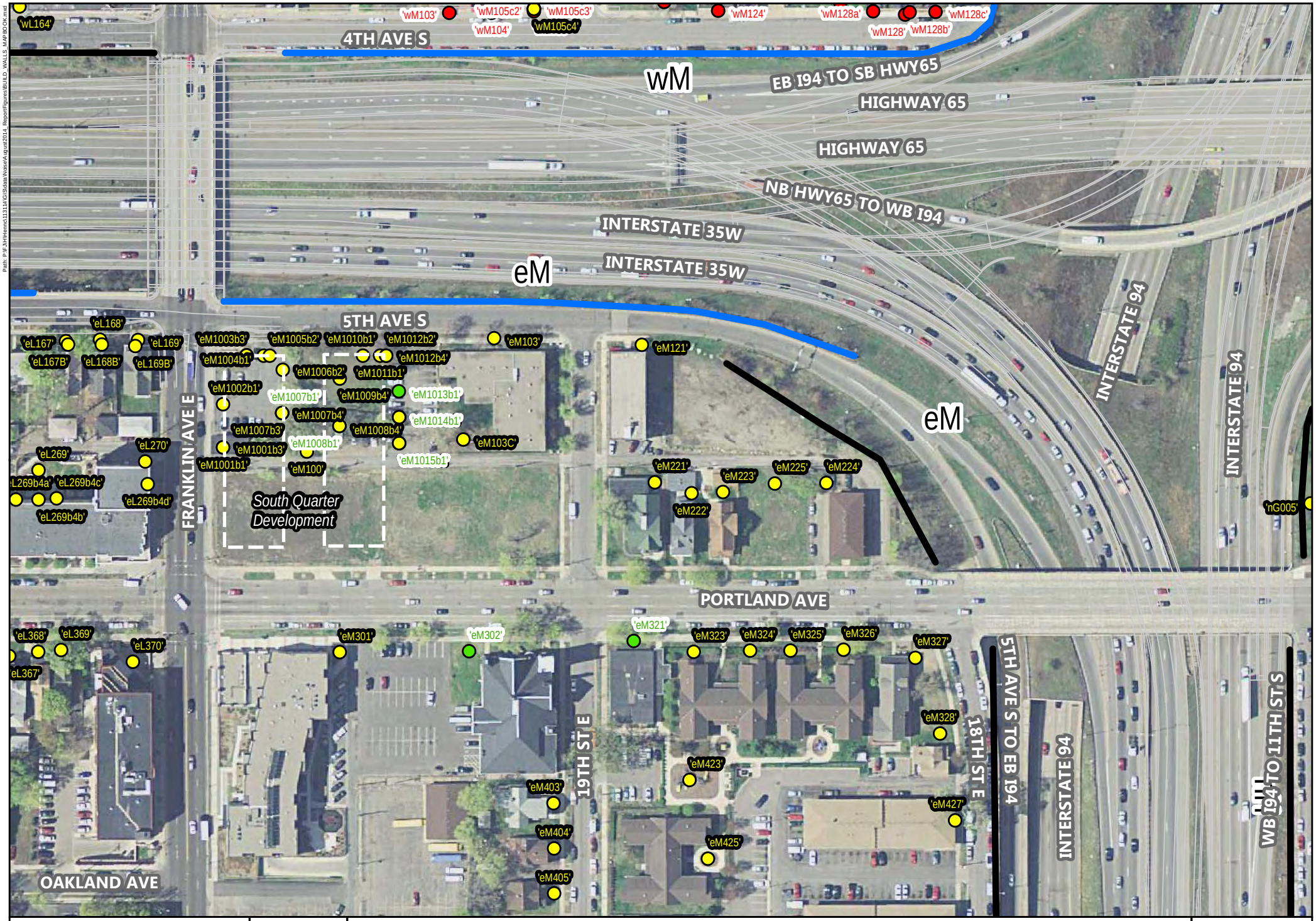

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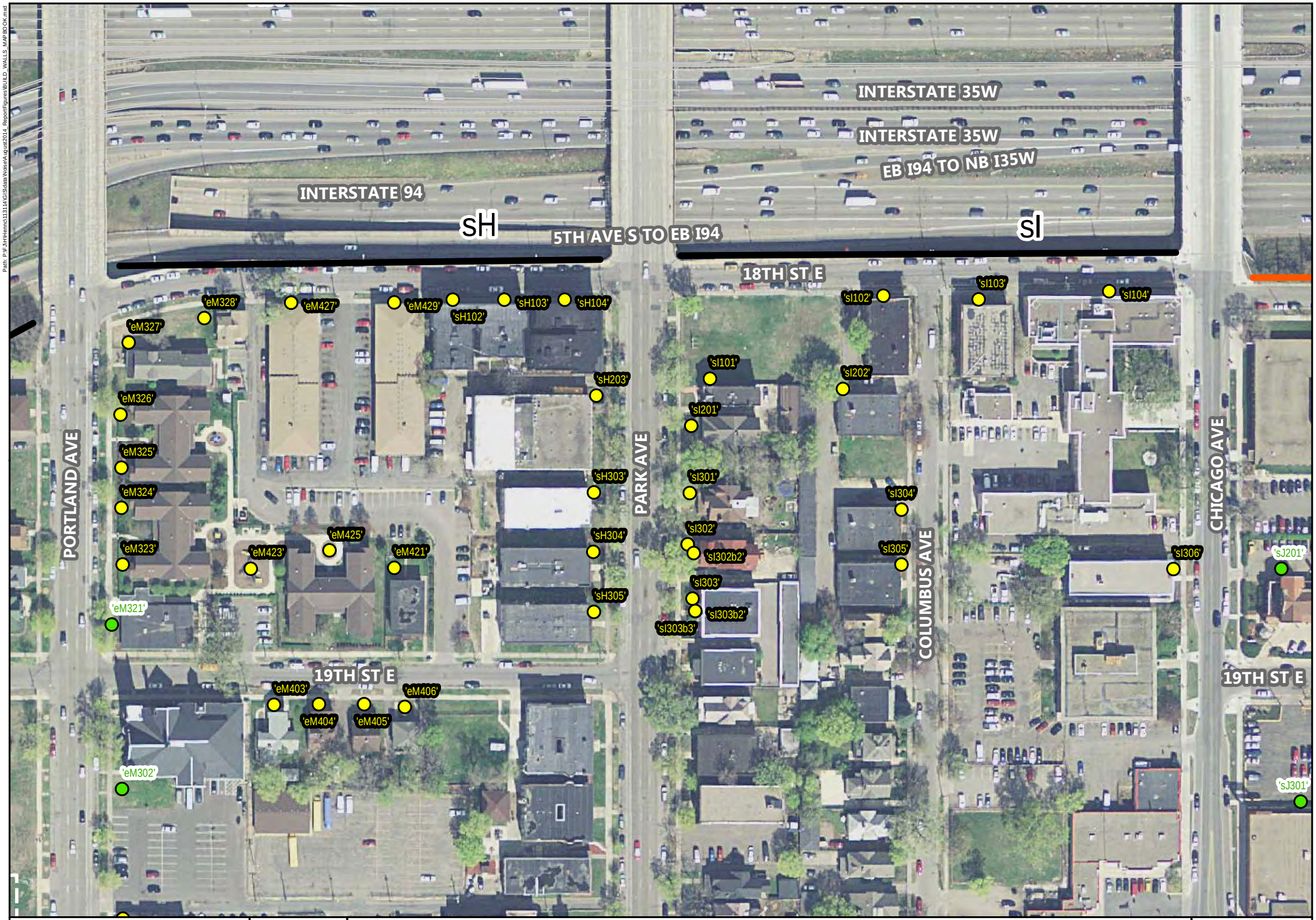

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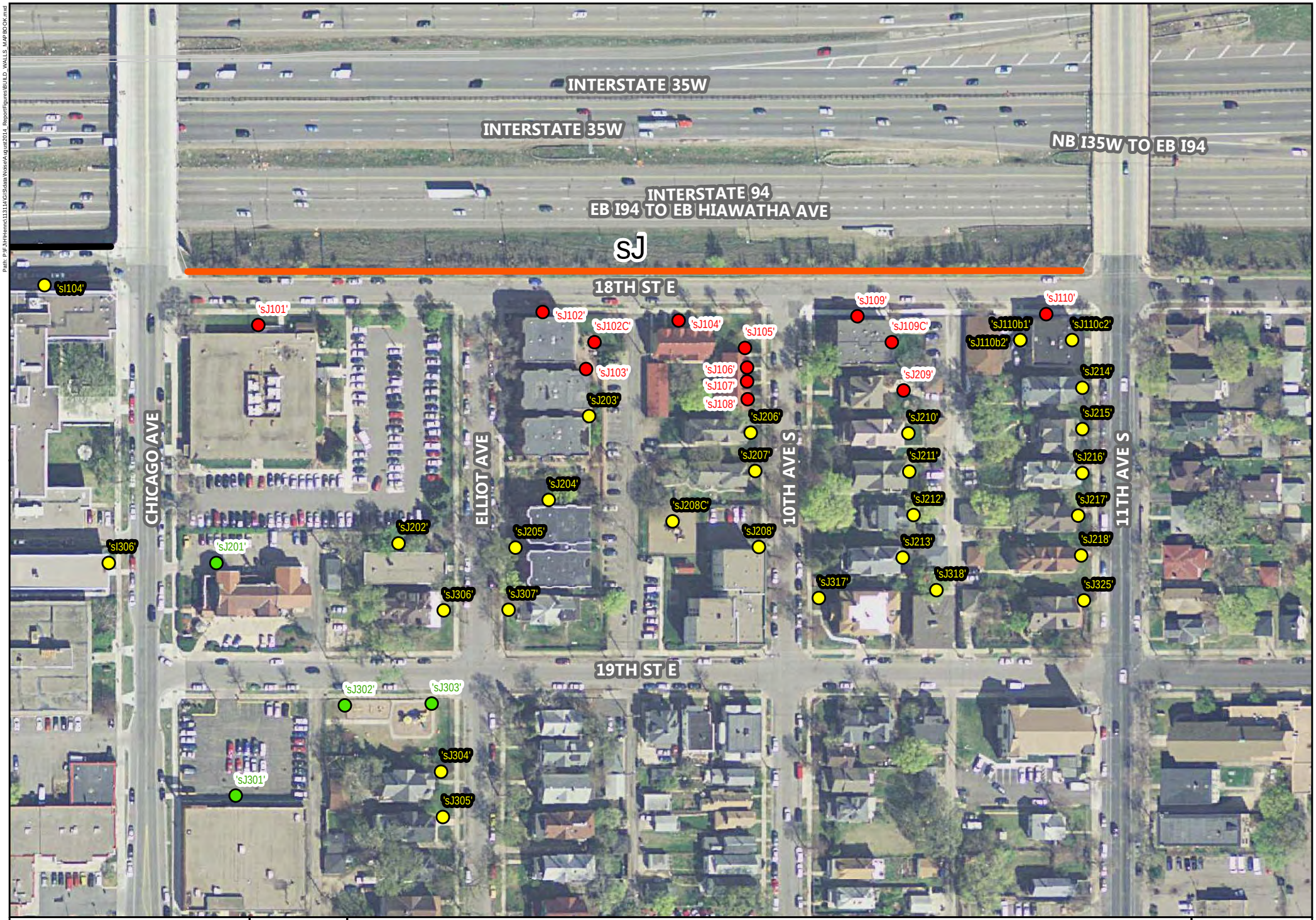

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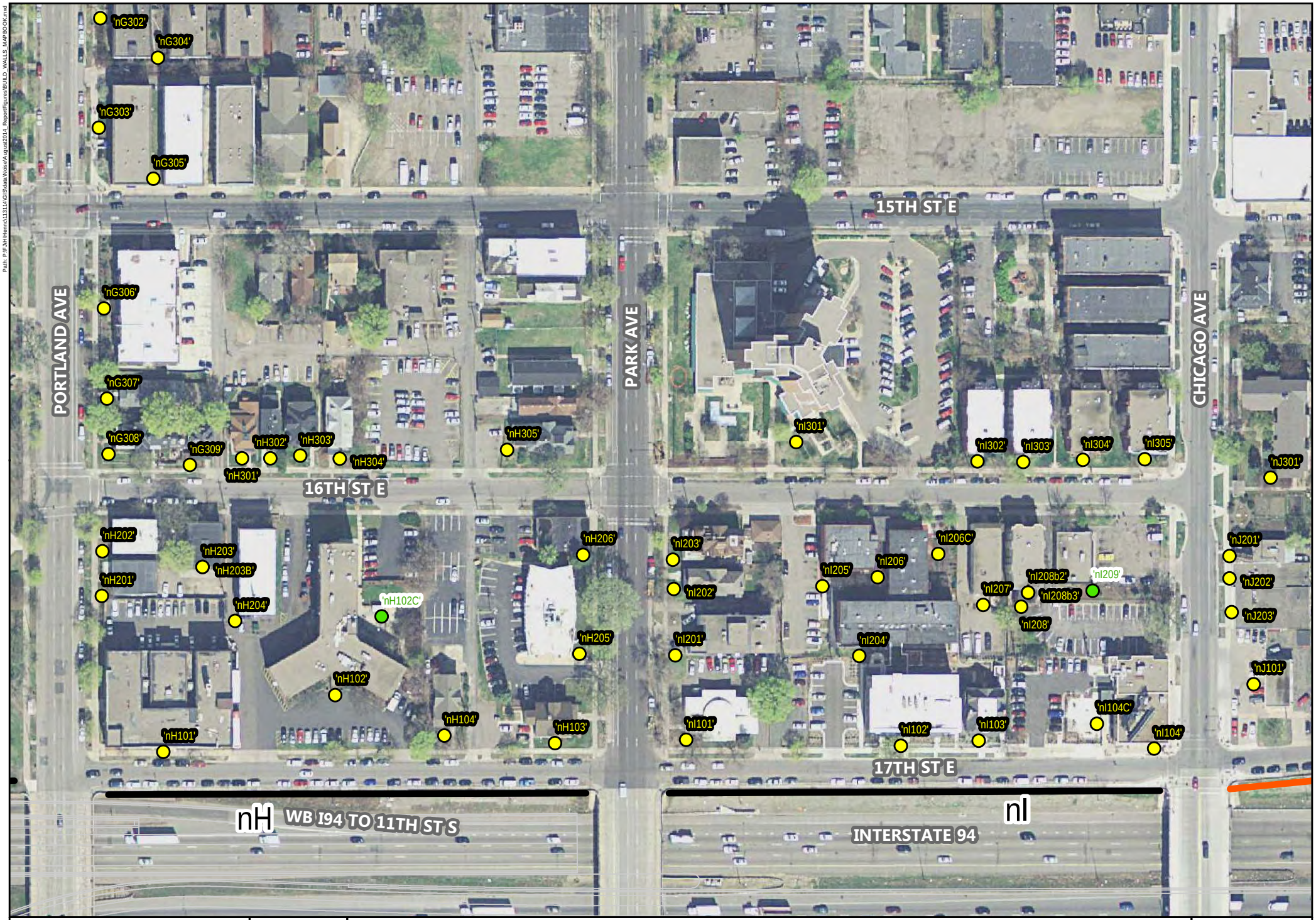

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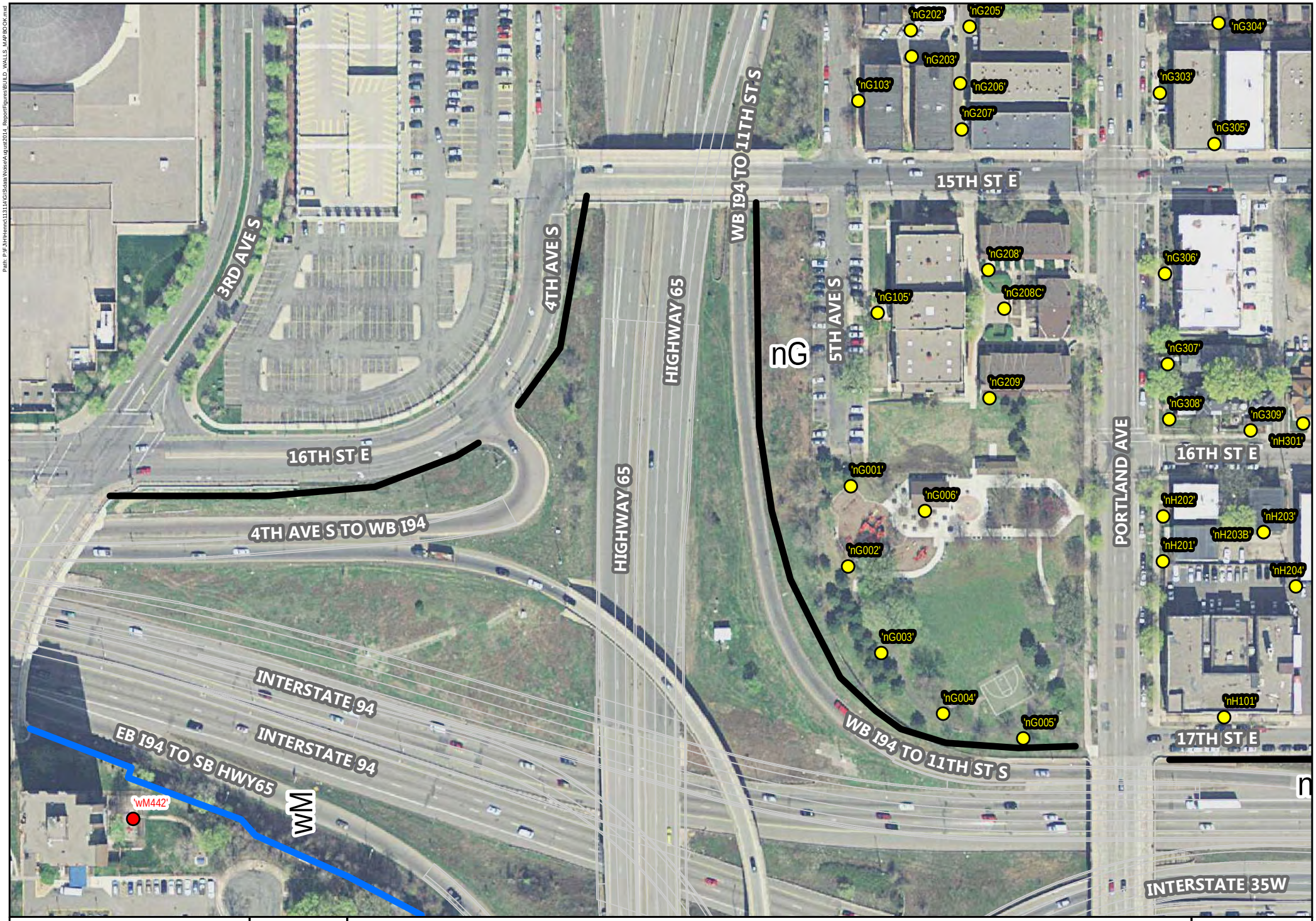

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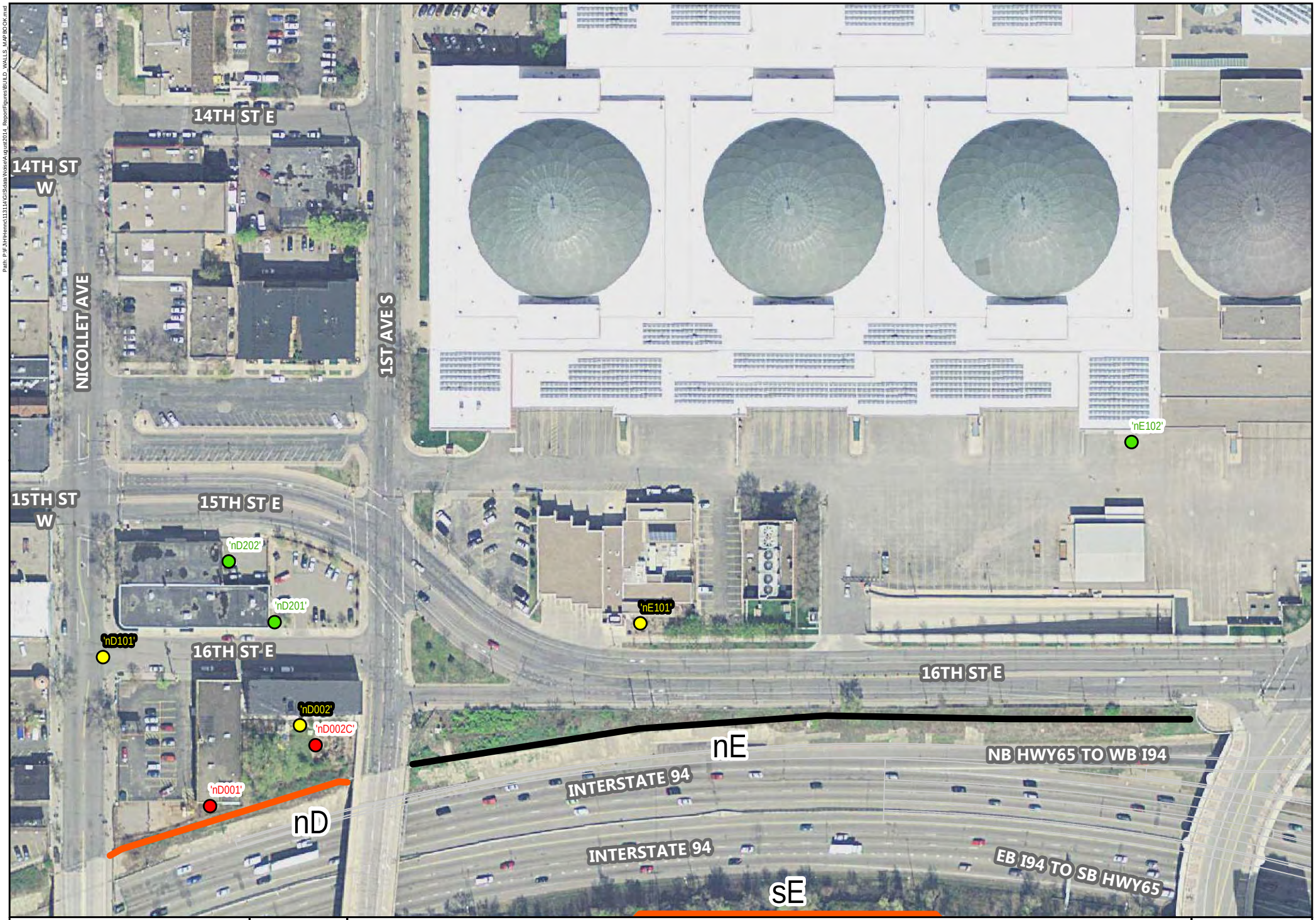

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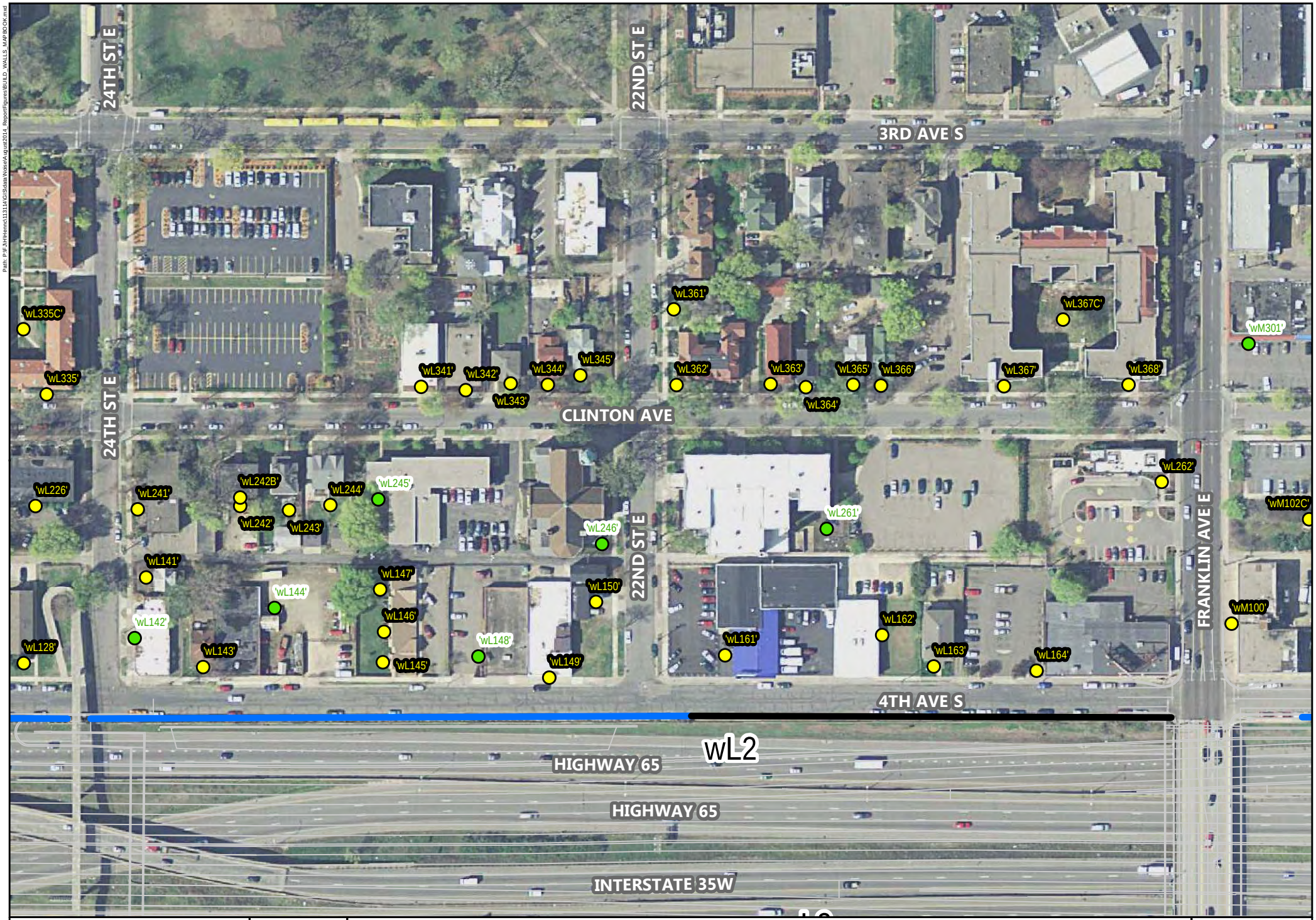

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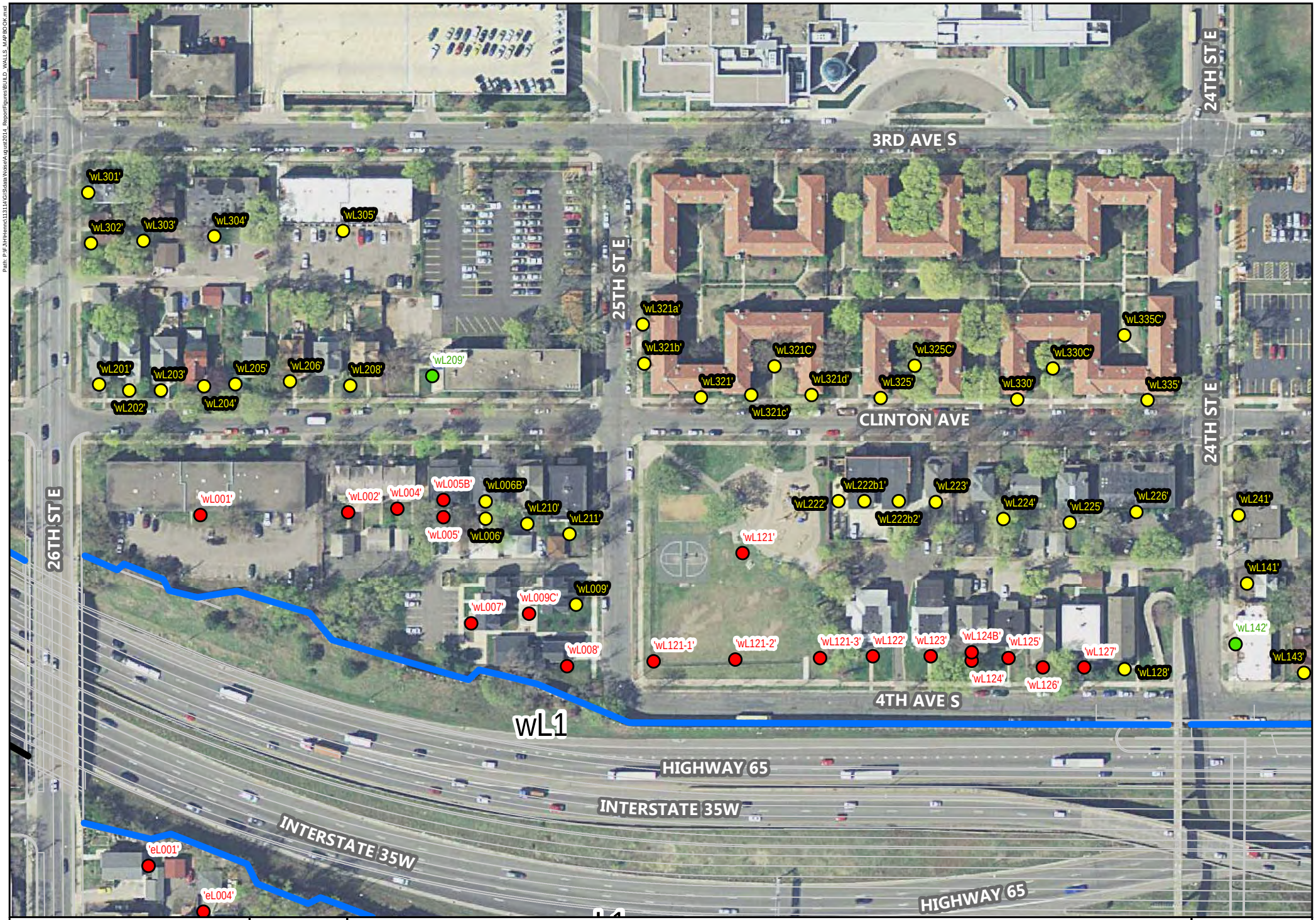

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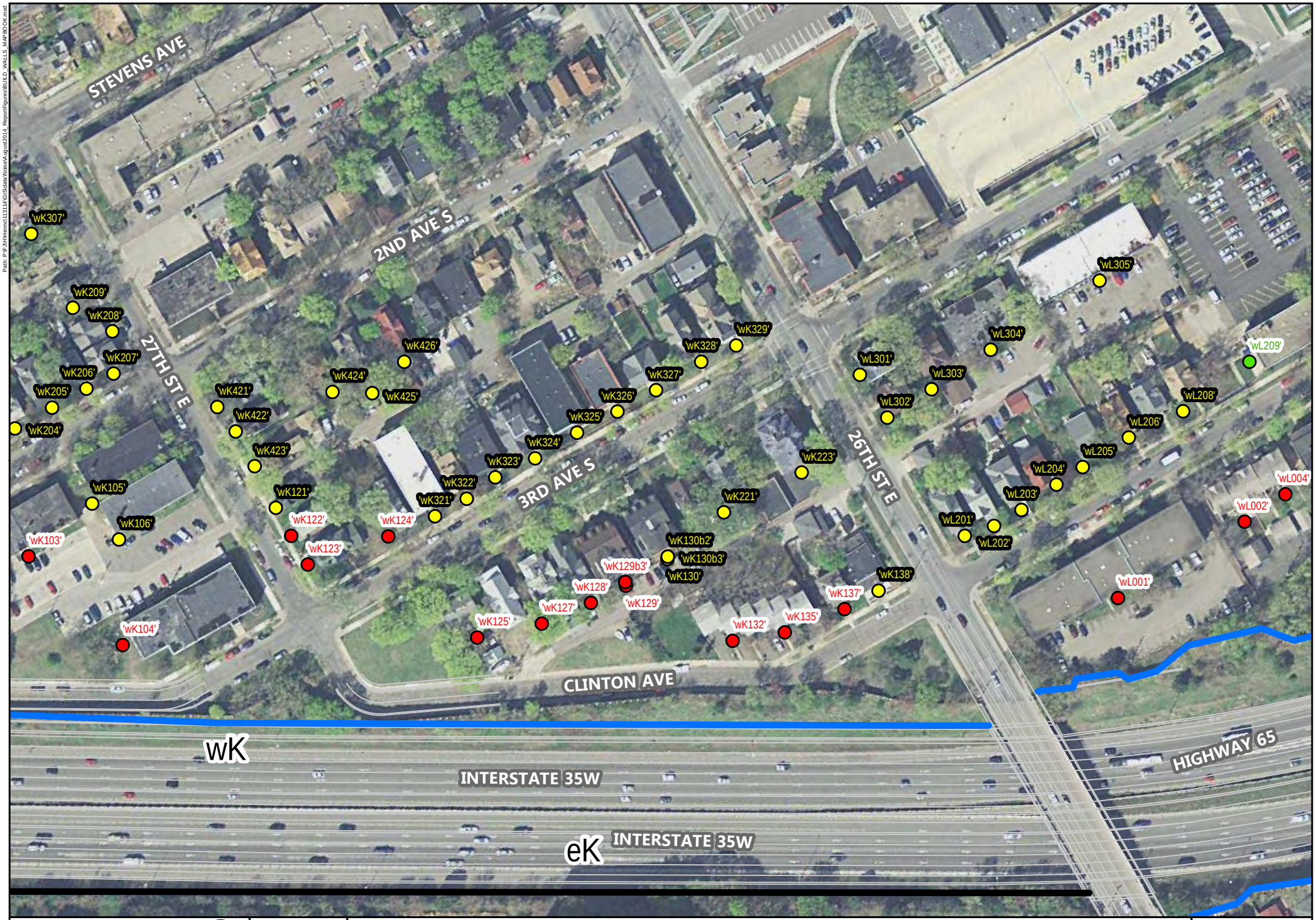

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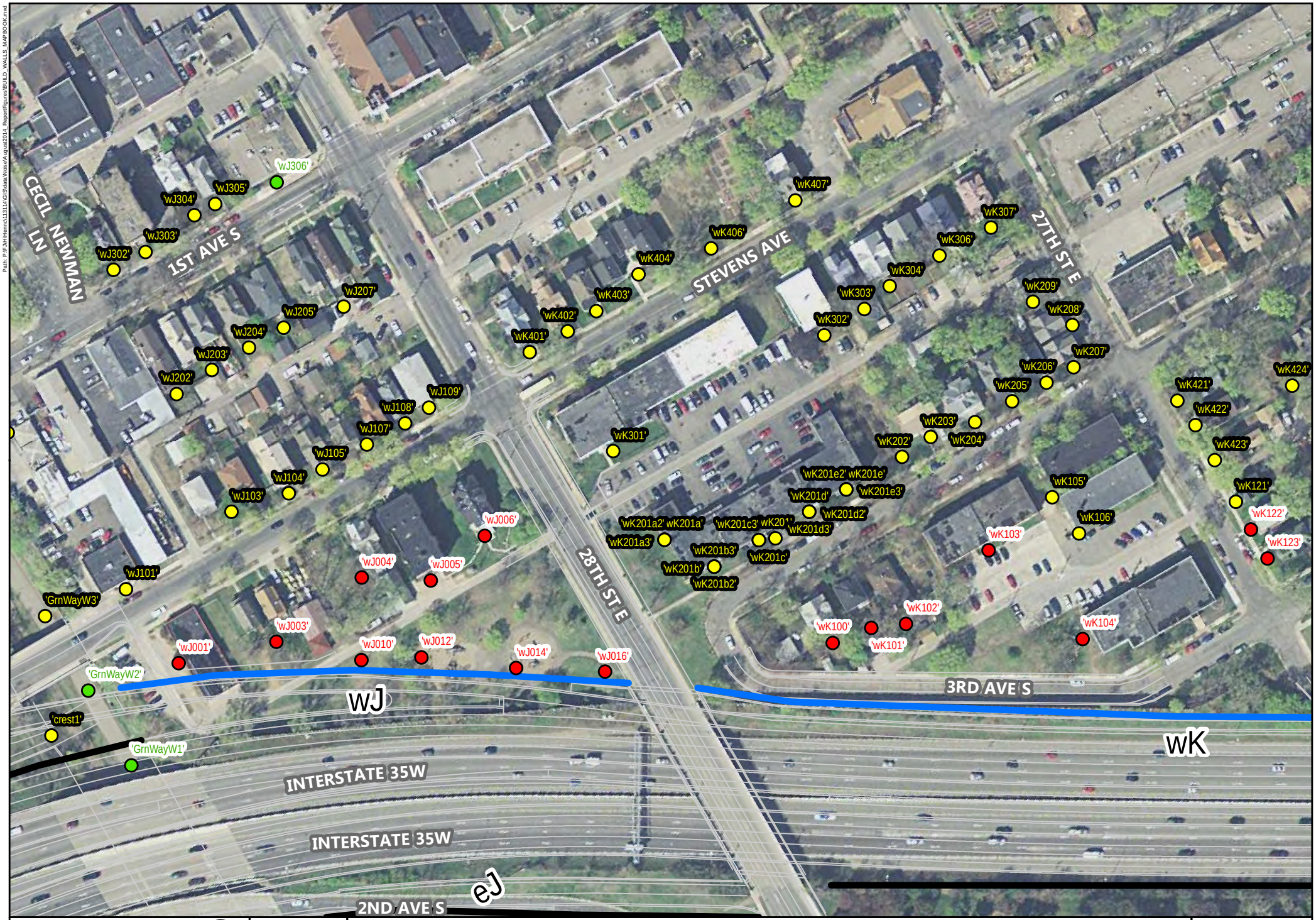

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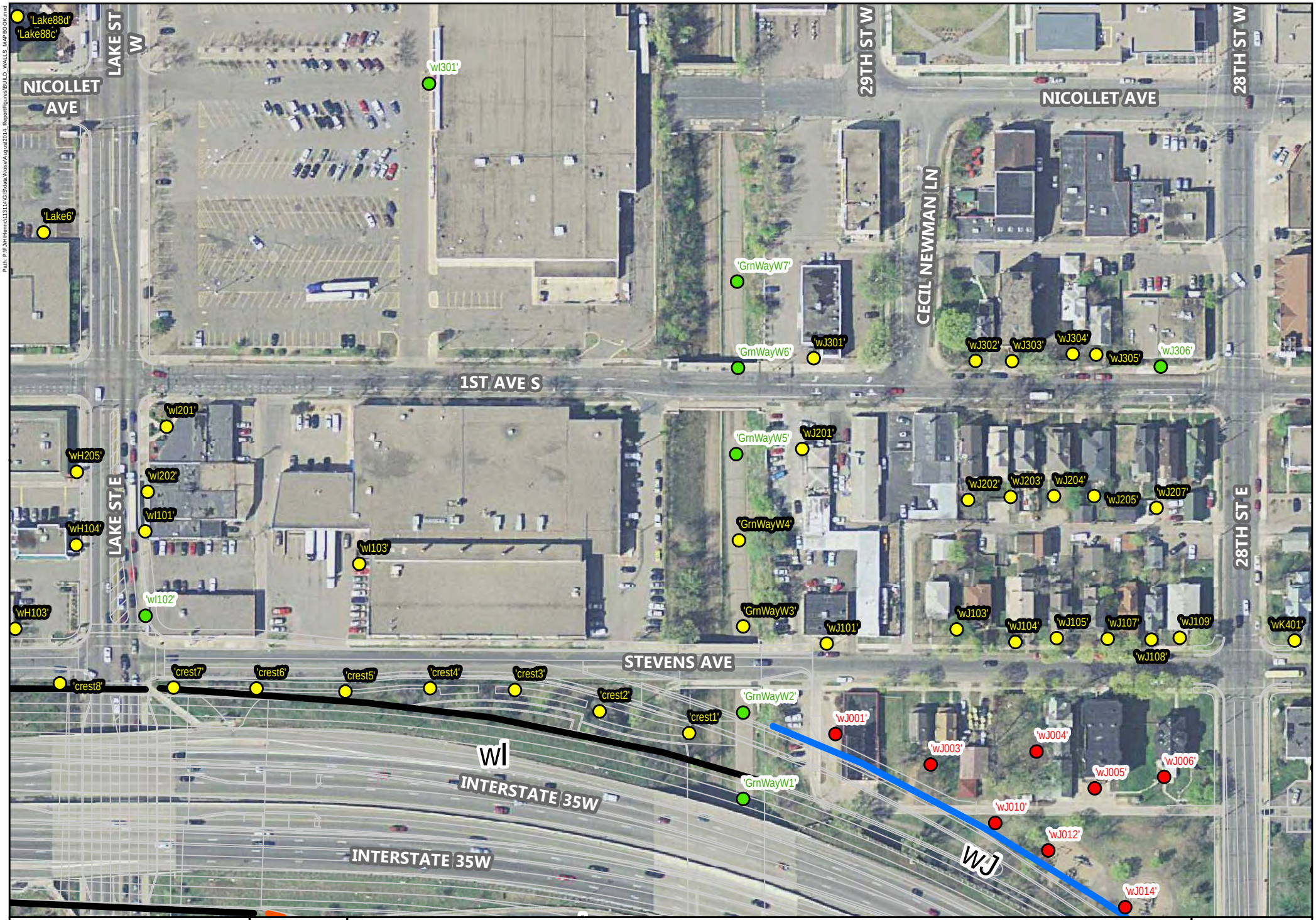

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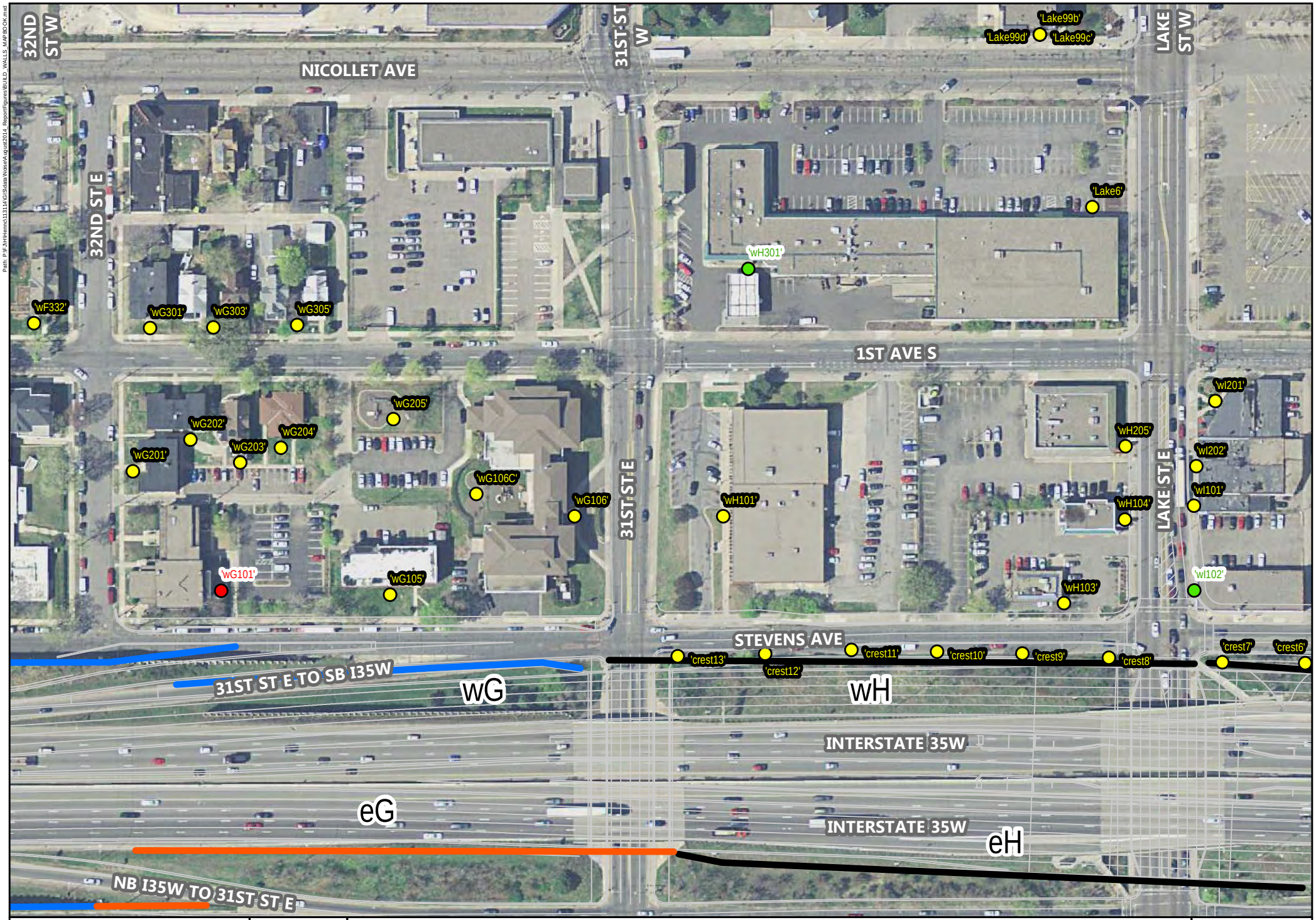

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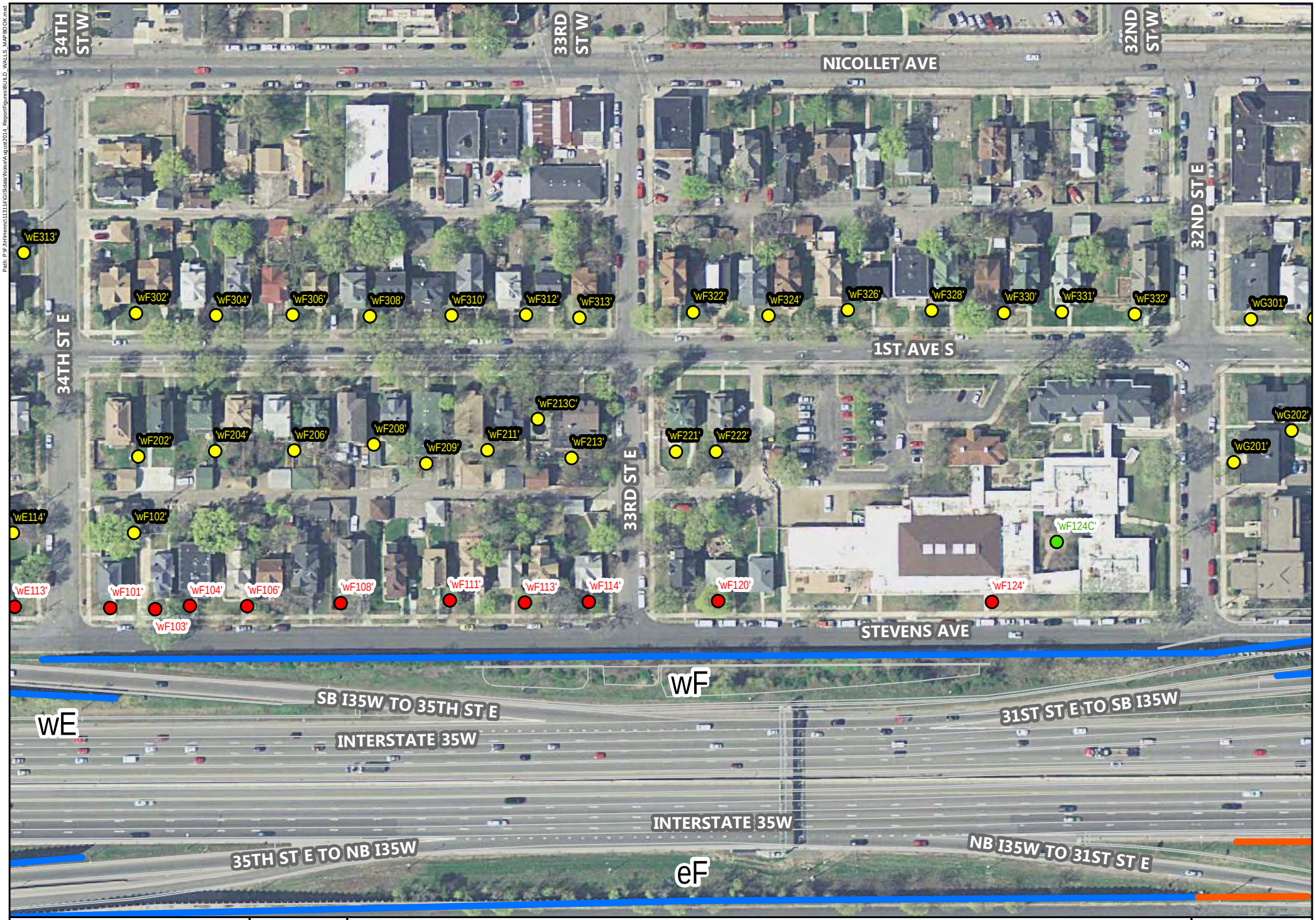

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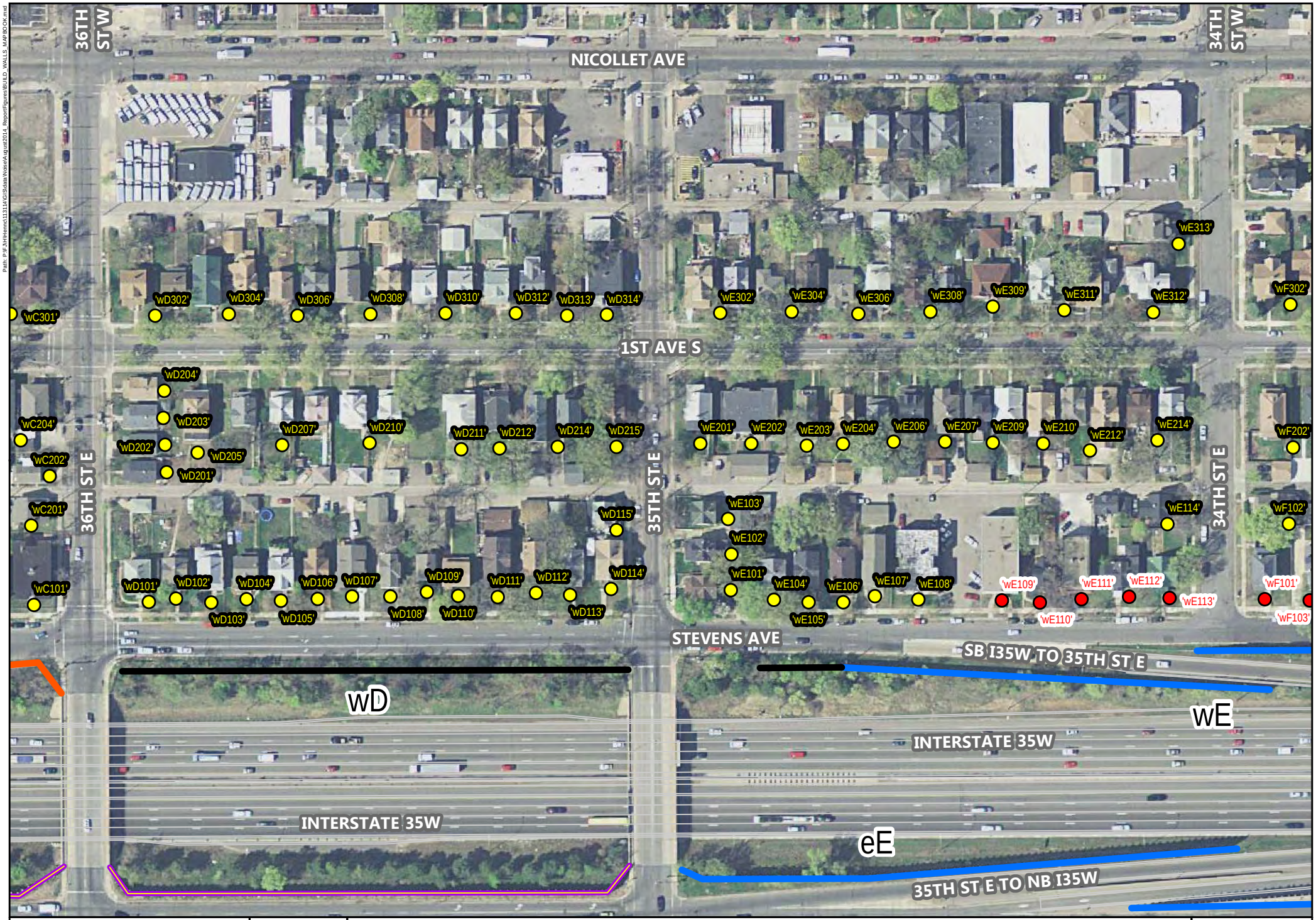

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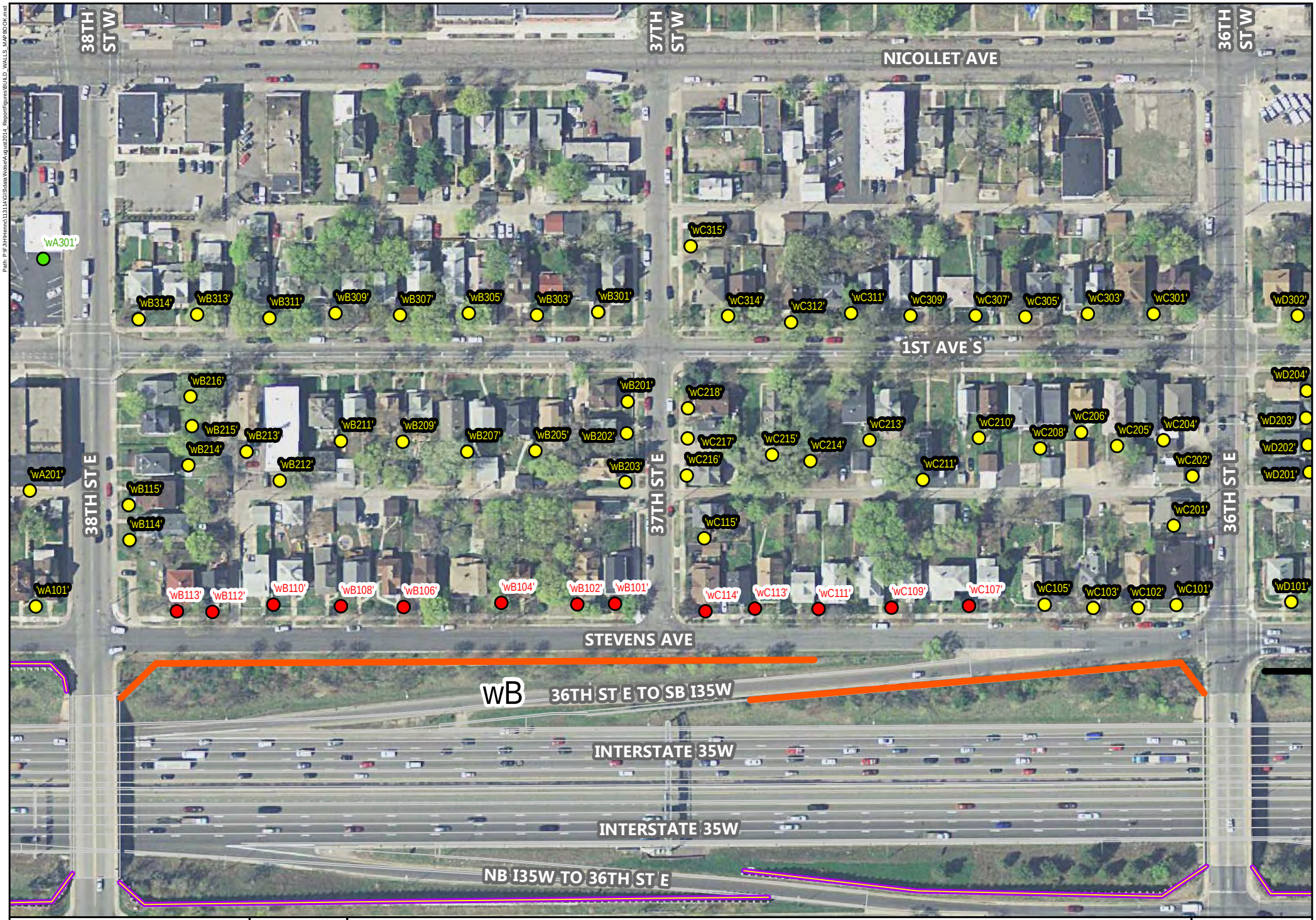

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Appendix C

AASHTO and MnDOT Bridge Reference Text

15.8.3—Earth Load

The provisions of Article 3.11 shall apply.

The possibility of difference between the actual finished grade and that shown on the contract documents should be considered in the design.

C15.8.3

Article 3.11.5.10 contains specific requirements for the determination of earth pressure on sound barrier foundation components.

Soil build-up against sound barriers has been observed in some locations. Owners may determine the earth loads for the worst load case assuming an allowance in the finished grade elevation.

15.8.4—Vehicular Collision Forces

Sound barrier systems consisting of a traffic railing and a sound barrier that have been successfully crash-tested may be used with no further analysis.

The depth of aesthetic treatments into the traffic face of sound barrier that may be subjected to vehicular collision shall be kept to a minimum.

Sound barrier materials shall be selected to limit shattering of the sound barrier during vehicular collision.

In lieu of crash-testing, the resistance of components and connections to Extreme Event II force effects may be determined based on a controlled failure scenario with a load path and sacrificial elements selected to ensure desirable performance of a structural system containing the soundwall. Vehicular collision forces shall be applied to sound barriers located within the clear zone as follows:

Case 1: For sound barriers on a crashworthy traffic railing and for sound barriers mounted behind a crashworthy traffic railing with a sound barrier setback no more than 1.0 ft: vehicular collision forces specified in Section 13 shall be applied to the sound barrier at a point 4.0 ft above the surface of the pavement in front of the traffic railing for Test Levels 3 and lower and 6.0 ft above the surface of the pavement in front of the traffic railing for Test Levels 4 and higher.

Case 2: For sound barriers behind a crashworthy traffic railing with a sound barrier setback of 4.0 ft: vehicular collision force of 4.0 kips shall be

C15.8.4

Minimizing the depth of aesthetic treatment into the traffic face of sound barriers that may be in contact with a vehicle during a collision reduces the possibility of vehicle snagging.

Sound barrier systems may contain sacrificial components or components that could need repair after vehicular collision. Limiting shattering of sound barriers is particularly important for sound barriers mounted on bridges crossing over other traffic. When reinforced concrete panels are utilized for structure-mounted sound barriers, it is recommended that two mats of reinforcement are used to reduce the possibility of the concrete shattering during vehicular collision. Restraint cables placed in the middle of concrete panels may be used to reduce shattering while avoiding the increased panel thickness required to accommodate two layers of reinforcement.

The bridge overhang or moment slabs need not to be designed for more force effects than the resistance of the base connection of the sound barrier.

The design strategy involving a controlled failure scenario is similar in concept to the use of capacity protected design to resist seismic forces. Some damage to the soundwall, traffic barrier, or connections is often preferable to designing an overhang or moment slab for force effects due to vehicular collision. The bridge overhang or moment slabs need not be designed for more force effects than the resistance of the base connection of the sound barriers.

Some guidance on desirable structural performance of sound barriers can be found in European Standard EN1794-2 (2003).

Very limited information is available on crash-testing of sound barrier systems. The requirements of this Article, including the magnitude of collision forces, are mostly based on engineering judgment and observations made during crash-testing of traffic railings without sound barriers.

In the absence of crash test results for sound barrier systems, sound barriers that have not been crash-tested are often used in conjunction with vehicular railings that have been crash-tested as stand-alone railings, i.e. without sound barriers. The collision forces specified

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applied. The collision force shall be assumed to act at a point 4.0 ft above the surface of the pavement in front of the traffic railing for Test Levels 3 and lower and 14.0 ft above the surface of the pavement in front of the traffic railing for Test Levels 4 and higher.

Case 3: For sound barriers behind a crashworthy traffic railing with a sound barrier setback between 1.0 ft and 4.0 ft: vehicular collision forces and the point of application of the force shall vary linearly between their values and locations specified in Case 1 and Case 2 above.

Case 4: For sound barriers behind a crashworthy traffic railing with a sound barrier setback more than 4.0 ft: vehicular collision forces need not be considered.

The setback of the sound barrier, S, shall be taken as shown in Figure 15.8.4-1.

herein are meant to be applied to the sound barriers portion of such systems.

Crash Test Levels 3 and lower are performed using small automobiles and pick-up trucks. Crash Test Levels 4 and higher include single unit, tractor trailer trucks, or both. The difference in height of the two groups of vehicles is the reason the location of the collision force is different for the two groups of sound barriers.

For crash Test Levels 3 and lower, the point of application of the collision force on the sound barriers is assumed to be always 4.0 ft above the pavement.

During crash-testing of traffic railings for crash Test Level 4 and higher, trucks tend to tilt above the top of the railing and the top of the truck cargo box may reach approximately 4.0 ft behind the traffic face of the traffic railing. For such systems, the point of application of the collision force is expected to be as high as the height of the cargo box of a truck, assumed to be 14.0 ft above the pavement surface.

For sound barriers mounted on crashworthy traffic barriers or with a small setback assumed to be less than 1.0 ft, the full crash force is expected to act on the sound barrier. The point of application of this force is assumed to be at the level of the cargo bed, taken as 6.0 ft above the surface of the pavement.

For a sound barrier mounted with a setback more than 1.0 ft behind the traffic face of the traffic railing, it is expected that the truck cargo box, not the cargo bed, will impact the sound barrier. It is expected that the top of the cargo box will touch the sound barrier first. Due to the soft construction of cargo boxes, it is assumed that they will be crushed and will soften the collision with the sound barrier. The depth of the crushed area will increase with the increase of the collision force, thus lowering the location of the resultant of the collision force. The magnitude of the collision force and the degree to which the cargo box is crushed are expected to decrease as the setback of the sound barrier increases.

In the absence of test results, it is assumed that a collision force of 4.0 kips will develop at the top of the cargo box when it impacts sound barriers mounted with a setback of 4.0 ft.

The collision force and the point of application are assumed to vary linearly as the sound barrier setback varies between 1.0 ft and 4.0 ft.

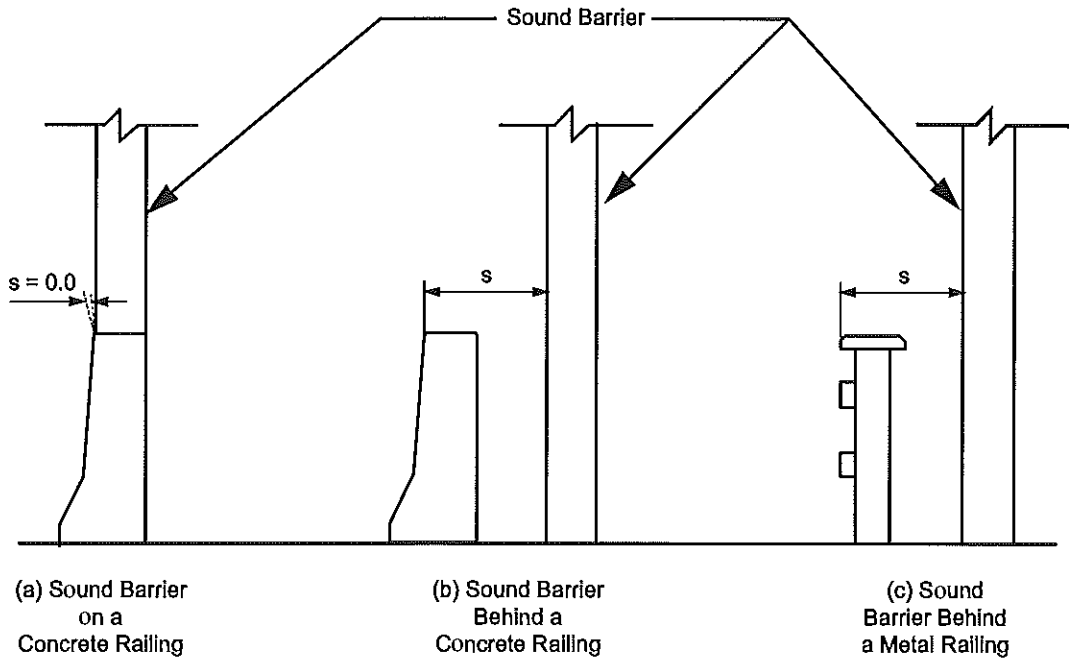

Figure 15.8.4-1—Sound Barrier Setback Distance

Collision forces on sound barriers shall be applied as a line load with a length equal to the longitudinal length of distribution of collision forces, L_t, specified in Appendix A13.

For sound barriers prone to vehicular collision forces, the wall panels and posts and the post connections to the supporting traffic barriers or footings shall be designed to resist the vehicular collision forces at the Extreme Event II limit state.

For post-and-panel construction, the design collision force for the wall panels shall be the full specified collision force placed on one panel between two posts at the location that maximizes the load effect being checked. For posts and post connections to the supporting components, the design collision force shall be the full specified collision force applied at the point of application specified in Cases 1 through 3 above.

The vehicular railing part of the sound barrier/railing system does not need to satisfy any additional requirements beyond the requirements specified in Section 13 of the Specifications for the stand-alone railings, including the height and resistance requirements.

Unless otherwise specified by the Owner, vehicular collision forces shall be considered in the design of sound barriers.

In some cases, the wall panel is divided into a series of horizontal elements. In these situations, each horizontal strip should be designed for the full design force.

Owners may select to ignore vehicular collision forces in the design of sound barriers at locations where the collapse of the sound barrier or portions of thereof has minimal safety consequences.

15.9—FOUNDATION DESIGN

15.9.1—General

Unless otherwise specified by the Owner, the geotechnical resistance of materials supporting sound barrier foundations shall be estimated using the procedures presented in Article 10.6 for spread footings, Article 10.7 for driven piles, and Article 10.8 for drilled shafts.

C15.9.1

Although sound barriers may be supported on spread footing or driven pile foundations, drilled shafts are more commonly used because drilled shafts facilitate controlling the vertical alignment of sound barrier structural wall supports and the lateral spacing between them.

15.9.2—Determination of Soil and Rock Properties

The provisions of Articles 2.4 and 10.4 shall apply.

15.9.3—Limit States

Sound barriers shall be designed to withstand lateral wind and earth pressures, self weight of the wall, vehicular collision loads, and earthquake loads in accordance with the general principles specified in this Section and in Sections 10 and 11.

Sound barriers shall be investigated for vertical and lateral displacement and for overall stability at the Service I Limit State. Tolerable deformation criteria shall be developed based on maintaining the required barrier functionality, achieving the anticipated service life, and the consequences of unacceptable movements.

Sound barrier foundations shall be investigated at the strength limit states using Eq. 1.3.2.1-1 for:

- Bearing-resistance failure,
- Overall stability, and
- Structural failure.

Sound barrier foundations shall be investigated at the extreme event limit states using the applicable load combinations and load factors specified in Table 3.4.1-1.

15.9.4—Resistance Requirements

The factored resistance, R_R, calculated for each applicable limit state shall be the nominal resistance, R_n, multiplied by an appropriate resistance factor, ϕ, specified in Articles 10.5.5.1, 10.5.5.2, 10.5.5.3, 11.5.6, or 11.5.7.

C15.9.4

Procedures for calculating nominal geotechnical resistance of footings, driven piles, and drilled shafts are provided in Articles 10.6, 10.7, and 10.8. These methods are generally accepted for barriers supported on spread footings or footings on two or more rows of driven piles or drilled shafts. The nominal geotechnical resistance of a single row of driven piles or drilled shafts or by a continuous embedded foundation wall (commonly referred to as a "trench footing") is more appropriately calculated using the provisions in Article 11.8 for nongravity cantilever walls.

Procedures for calculating nominal structural resistance for concrete and steel components are provided in Sections 5 and 6.

3.14 Extreme Event

The probability of extreme event loads occurring simultaneously is extremely small and therefore, is not to be applied concurrently. In some cases, extreme event loads are mutually exclusive. A vessel collision load can not occur when the waterway is iced over.

3.14.1 Vehicle Collision, CT [3.6.5]

Designers need to be concerned with vehicle collision loads. Unprotected structural elements that may be struck bluntly by a vehicle or train shall be protected by a Test Level 5 barrier or be designed to resist the collision force Review the Preliminary Plans to determine what is required. Also, see Section 11.2.4 of this manual for complete pier protection policy and requirements.

A large number of safety barriers were tested as part of NCHRP Report 350. The performance of the barriers was classified with different test levels ranging from TL-1 to TL-6.

Decks supporting safety barriers designed to contain errant vehicles on bridges shall be designed for collision forces consistent with roadway standards. In most cases, the minimum standard for safety barriers in Minnesota is Test Level 4 (TL-4). Under certain circumstances, (timber railings on secondary roads being an example) barriers may satisfy reduced test level requirements. See the preliminary design section of this manual for additional guidance.

3.14.2 Vessel Collision, CV [3.14]

Structures within reaches of the Mississippi, Minnesota, and St. Croix rivers, and Lake Superior deemed navigable by the Corps of Engineers shall be designed to resist vessel collision loads.

3.15 Uplift

[Table 3.4.1-2]

For curved bridges with skews or continuous bridges with spans that vary significantly, there is a possibility of uplift at the end supports. For situations where a sidespan is less than 70% of the adjacent continuous span, uplift should be considered. Uplift may occur during construction if deck placement is not sequenced properly or during service due to the application of live load if the spans are not balanced. If uplift occurs, the performance of the bearings and expansion joints may be compromised. When evaluating a structure for uplift the load factors for permanent load should be reviewed. Minimum and maximum factors shall be combined for different elements to generate the most conservative or largest uplift force effect.

Appendix D

Retaining Wall Reinforcement Assumptions

		Project	123521		
Project Description:	I-35W Transit way	Prepared by:	mhd	Checked by	
Calculations for:	Cost estimate of tie-backs, broken down for installation of noise walls on ret. walls	Date:	10/1/2014	Date:	

We are assuming that any wall stem over 20' is going to require an additional tie back anchor, wall stems that are less than 20' tall will only need a single tie-back anchor. These costs are for cost estimates only, actual number of tie-back anchors will be determined in final design.
The cost for a 2-anchor set (2 tie-back anchors per noise wall post) is assumed to be slightly less than double the cost of the a single anchor, due to less movement of the drill rig, setting up, etc…

SUMMARY

WALL	Length of wall (ft)	Cost of tie backs (PLF)	Total Additional Cost of Anchor System
nD	0	$0	$ -
nG	384	$827	$ 317,400.00
sH	568	$603	$ 342,300.00
sI	569	$537	$ 305,300.00
nJ	96	$538	$ 51,600.00
nH	567	$955	$ 541,500.00
nI	569	$998	$ 568,000.00
wL2	1296	$538	$ 696,600.00
wM	496	$538	$ 266,600.00
eM	565	$533	$ 301,000.00
sE	900	$279	$ 250,800.00

Average cost of tie-backs for ALL walls on per linear foot basis

$606 linear foot

WALL nD Northside of I-94; between Nicollet Avenue and 1st Avenue

Wall is sufficienty short. Posts for noise wall can be placed behind stem & foundation without using existing retaining wall for stability.

WALL nG Northside of I-94; Franklin Steele Park

Total Length of wall :	384	ft
Soil height on stem > 20'	240	ft
Soil height on stem < 20'	144	ft
Number of 2-anchor sets required :	30	
Number of 1-anchor sets required :	18	
Estimate cost of 2 anchor set :	$ 8,000.00	
Estimate cost of 1 anchor set :	$ 4,300.00	
Additional cost for noisewall	$317,400.00	

Cost premium for installation of soil anchors PLF of wall: $827

WALL sH Southside of I-94; between Portland Avenue and Park Avenue

Total Length of wall :	568	ft
Soil height on stem > 20'	80	ft
Soil height on stem < 20'	488	ft
Number of 2-anchor sets required :	10	
Number of 1-anchor sets required :	61	
Estimate cost of 2 anchor set :	$ 8,000.00	
Estimate cost of 1 anchor set :	$ 4,300.00	
Additional cost for noisewall	$342,300.00	

Cost premium for installation of soil anchors PLF of wall: $603

		Project	123521		
Project Description:	I-35W Transit way	Prepared by:	mhd	Checked by	
Calculations for:	Cost estimate of tie-backs, broken down for installation of noise walls on ret. walls	Date:	10/1/2014	Date:	

WALL sI Southside of I-94; between Park Avenue and Chicago Avenue

Total Length of wall :	569	ft
Soil height on stem > 20'	0	ft
Soil height on stem < 20'	569	ft
Number of 2-anchor sets required :	0	
Number of 1-anchor sets required :	71	
Estimate cost of 2 anchor set :	$ 8,000.00	
Estimate cost of 1 anchor set :	$ 4,300.00	
Additional cost for noisewall	$305,300.00	

Cost premium for installation of soil anchors PLF of wall: $537

WALL nJ Northside of I-94; eastside of Chicago Avenue Bridge

Total Length of wall :	96	ft
Soil height on stem > 20'	0	ft
Soil height on stem < 20'	96	ft
Number of 2-anchor sets required :	0	
Number of 1-anchor sets required :	12	
Estimate cost of 2 anchor set :	$ 8,000.00	
Estimate cost of 1 anchor set :	$ 4,300.00	
Additional cost for noisewall	$51,600.00	

Cost premium for installation of soil anchors PLF of wall: $538

WALL nH Northside of I-94; between Park Avenue and Portland Avenue

Total Length of wall :	567	ft
Soil height on stem > 20'	522	ft
Soil height on stem < 20'	45	
Number of 2-anchor sets required :	65	
Number of 1-anchor sets required :	5	
Estimate cost of 2 anchor set :	$ 8,000.00	
Estimate cost of 1 anchor set :	$ 4,300.00	
Additional cost for noisewall	$541,500	

Cost premium for installation of soil anchors PLF of wall: $955

WALL nI Northside of I-94; between Chicago Avenue and Park Avenue

Total Length of wall :	569	ft
Soil height on stem > 20'	569	ft
Soil height on stem < 20'	0	
Number of 2-anchor sets required :	71	
Number of 1-anchor sets required :	0	
Estimate cost of 2 anchor set :	$ 8,000.00	
Estimate cost of 1 anchor set :	$ 4,300.00	
Additional cost for noisewall	$568,000.00	

Cost premium for installation of soil anchors PLF of wall: $998

Project Description:	I-35W Transit way	Project	123521
		Prepared by:	mhd
Calculations for:	Cost estimate of tie-backs, broken down for installation of noise walls on ret. walls	Date:	10/1/2014
		Checked by	
		Date:	

WALL wL2 Westside of I-35W; between 24th Street and Franklin Avenue

Total Length of wall :	1296	ft
Soil height on stem > 20'	0	ft
Soil height on stem < 20'	1296	
Number of 2-anchor sets required :	0	
Number of 1-anchor sets required :	162	
Estimate cost of 2 anchor set :	$ 8,000.00	
Estimate cost of 1 anchor set :	$ 4,300.00	
Additional cost for noisewall	$696,600.00	

Cost premium for installation of soil anchors PLF of wall: $538

WALL wM Westside of I-35W; between 19th Street and 18th Street.

Total Length of wall :	496	ft
Soil height on stem > 20'	0	ft
Soil height on stem < 20'	496	
Number of 2-anchor sets required :	0	
Number of 1-anchor sets required :	62	
Estimate cost of 2 anchor set :	$ 8,000.00	
Estimate cost of 1 anchor set :	$ 4,300.00	
Additional cost for noisewall	$266,600.00	

Between Franklin and 19th Rebuilt with Project.

Cost premium for installation of soil anchors PLF of wall: $538

WALL eM Eastside of I-35W; between Franklin Avenue and 19th Street

Total Length of wall :	565	ft
Soil height on stem > 20'	0	ft
Soil height on stem < 20'	565	
Number of 2-anchor sets required :	0	
Number of 1-anchor sets required :	70	
Estimate cost of 2 anchor set :	$ 8,000.00	
Estimate cost of 1 anchor set :	$ 4,300.00	
Additional cost for noisewall	$301,000.00	

Cost premium for installation of soil anchors PLF of wall: $533

WALL sE Southside of I-94; between 1st Avenue and 3rd Avenue

Total Length of wall :	900	ft
Soil height on stem > 20'	100	ft
Soil height on stem < 20'	290	
Soil height on stem < 8' +-	510	<--- no anchorage needed.
Number of 2-anchor sets required :	12	
Number of 1-anchor sets required :	36	
Estimate cost of 2 anchor set :	$ 8,000.00	
Estimate cost of 1 anchor set :	$ 4,300.00	
Additional cost for noisewall	$250,800.00	

Cost premium for installation of soil anchors PLF of wall: $279