

MnDOT Metro District Standalone Noise Barrier Program



**DEPARTMENT OF
TRANSPORTATION**

September 2019

Program Background

The Minnesota Department of Transportation (MnDOT) has been constructing noise walls and barriers during roadway construction projects since the mid-1970s. In 1974, the Minnesota State Legislature directed the Minnesota Pollution Control Agency (MPCA) to adopt state noise standards (M.S. 116.07, Subdivision 2). Federal noise standards specific to highway traffic noise are codified in 23 CFR 772. Both standards are used to determine noise impacts and mitigation in Minnesota.

In 1995, the Minnesota State Legislature directed MnDOT (MN Statute 161.125 Sound abatement along highways) to develop a statewide priority list to direct state resources to mitigate traffic noise for locations not adjacent to new roadway construction, when mitigation may be required by federal law.

MnDOT has developed the Standalone Noise Barrier Program in order to address the legislative directive and provide funding for construction of noise barriers along state highways in areas where no noise abatement measures currently exist and no major construction projects are currently programmed. The Metro District currently provides \$2 million in annual discretionary funding to this program. Selected standalone noise barrier projects require a 10% cost share from the city where the noise barrier is being proposed.

In order to determine areas that may be eligible for the Standalone Noise Barrier Program, MnDOT Metro maintains a list of areas within the Metro District where federal residential noise standards are exceeded. These areas are ranked based on existing noise levels, number of homes adjacent to the highway, and cost effectiveness of a noise barrier. The ranking list is updated every five years. The next update is anticipated to occur in 2021.

The most recent ranking list can be found here:

[MnDOT Metro Standalone Noise Barrier Study](#)

In 2018, MnDOT Metro started using a solicitation-based process to select standalone noise barrier projects. Interested cities must fill out an application form and provide information about the area where a noise barrier is being requested. MnDOT then conducts a noise study and ranks the applications received based on existing noise levels, length of barrier, number of benefited homes, and cost effectiveness of a noise barrier. The top ranking noise barrier project(s) is then programmed into the MnDOT 4-year STIP. Applications are received annually from September 1 to December 31 and projects are selected before June of the following calendar year. Projects would typically be constructed 4-5 years out from the time of selection. **The 2019/2020 Solicitation process will be selecting a project to be constructed in fiscal year 2025.**

This document outlines the MnDOT Metro District process for local governmental authorities to apply to receive funding for standalone noise barriers in the Metro area.

Noise Abatement Criteria and Standards

Any noise barriers constructed under this program must meet the criteria for feasibility, reasonableness, and cost effectiveness identified in our policy which can be found here:

[MnDOT's 2017 Noise Requirements](#)

The Federal Highway Administration (FHWA) noise abatement criteria (NAC) differ by the type of land use, apply to all hours of the day and night, and identify where noise abatement should be considered. The FHWA NAC is based on the hourly L_{eq} . The L_{eq} is the sound level in dBA, equivalent to the total sound energy over a stated period of time. The $L_{eq}(h)$ designates the hourly value of the L_{eq} . In effect, the L_{eq} is analogous to a time averaged sound level over a given period of time.

A residence is considered impacted by traffic noise when noise levels approach or exceed the Federal NAC. In Minnesota, approaching is defined as being within 1 dBA of the Federal NAC (e.g., 66 dBA for residential land uses).

Feasible Noise Mitigation Measures

Earthen berms and noise walls, or a combination of the two, are eligible to use as mitigation through this program. Earth berms can be very cost effective but are less common because sufficient land is not commonly available.

Noise walls are normally the most cost effective and constructible form of noise mitigation. However, even noise walls are not effective in all cases because of limitations on controlled highway access, topography, and right of way.

Application for MnDOT Metro Standalone Noise Barrier

1. Name of governmental authority submitting application and agreeing to local cost share:

2. Highway/Interstate adjacent to area for which the application is being made:

3. Current ranking on 2016 Metro District Highway Noise Abatement Study: _____

4. Limits of area of application: a map is required; aerial photo is preferred:

Side of Highway:
(N, S, E, W, Both)

Beginning Point:
(Cross roads, etc.)

Ending Point:

Estimated length of proposed noise barrier (in feet):

5. Are the residential units located in an incorporated area? Yes / No

Note: Only incorporated areas are eligible.

6. Were the majority of the residential units constructed prior to 1997? Yes / No

Note: Only residential areas constructed prior to 1997 are eligible.

7. Number of residential units (homes and/or apartments) adjacent to the roadway:

8. Existing noise level:

Note: Contact Natalie Ries at MnDOT Metro or use MnDOT's Flat Earth Noise Level Estimator Excel Spreadsheet available at [MnDOT's Noise Analysis Homepage](#)

9. What type of noise barrier is being requested?

Concrete

Wood

TBD

10. Additional comments:

11. I certify that the application information provided is correct. City approval/resolution is attached.

Print name and title of local official Date

Signature and title of local official Date

Instructions for Completing Application for MnDOT Metro Standalone Noise Barrier

1. Name of governmental authority making application and agreeing to 10% cost share:

Name of the township, city, county, etc. applying for a noise mitigation project and accountable for 10% of total cost of the project. For estimating noise barrier costs, use \$36/ft² for concrete barriers and \$25/ ft² for wood barriers*. If noise barrier material is unknown at this time, use higher cost.

Example: length of barrier x 20 foot height x \$36

**Note: these costs should only be used for purposes of estimating the city's 10% cost share; only \$36/ft² can be used to determine if the noise barrier meets MnDOT's cost effectiveness criteria of \$78,500 per benefited receptor.*

2. Highway/interstate adjacent to area for which application is being made:

Identification number for the limited access freeway thought to be the source of the noise. Per Statute 161.125, standalone noise barrier mitigation is available only for limited access freeways or expressways. Note: gaps from driveways, etc., reduce the effectiveness of the noise barriers.

3. Current ranking:

Provide current site ranking from [2016 Metro District Highway Noise Abatement Study](#)

If site is not on current ranking list, contact Natalie Ries, MnDOT Metro District Noise Supervisor, to determine if site is eligible for program funding. Natalie.Ries@state.mn.us or 651-234-7681.

4. Limits of area of application on a map (required) or aerial photo (preferred):

Side of Freeway:

The side of the freeway along which the noise mitigation is desired. If there are eligible residents on both sides of the freeway, enter "Both."

Beginning Point:

A landmark or feature, such as a cross road, distinguishing the beginning point of the area to be mitigated by the potential noise barrier. Mile or reference point is preferred.

Ending Point:

See Beginning Point information above.

Estimated length of proposed noise barrier (in feet):

The estimated length of the proposed noise barrier in feet.

5. Are the residential units in an incorporated area?

Confirm that the residential units are within the official city limits with a governmental authority. Per MN Statute 161.125, standalone noise barrier mitigation is available only in incorporated areas.

6. Were the majority of the residential units built prior to 1997?

This is a confirmation of the number and location of the dwelling units which were constructed prior to 1997 as documented in County records. In order for areas to be eligible for this program, MnDOT requires dwelling units to be constructed prior to 1997 as MN Statue 161.125 was passed in 1997.

7. Number of residential units adjacent to the roadway:

This is the number of dwelling units immediately adjacent to the roadway; no intervening structures.

8. Existing noise levels:

Existing noise levels must approach or exceed 67.0 dBA L_{eq} . Approaching is defined as being within 1 dBA of the Federal Noise Abatement Criteria (e.g., 66 dBA L_{eq} for residential land uses).

Contact Natalie Ries for current noise measurement data or use MnDOT's Flat Earth Noise Level Estimator Excel spreadsheet available at [MnDOT's Noise Analysis Homepage](#)

9. Type of noise barrier:

Indicate type of noise barrier material that is being requested by city. If unknown at this time, select TBD.

10. Additional comments:

Provide any additional information about the noise barrier site, including notable site characteristics or timing considerations for upcoming LGU projects.

11. Signature and Title of local official and Date:

Signature and title of the official validating that the included information is accurate and the City Council funding resolution/project support are approved. Include copies of official approval documents. Example city resolution is provided.

MnDOT Metro Standalone Barrier Project Procedures and Rules

1. Applications will be accepted annually from September 3rd through December 31st.
2. Applications not selected will need to resubmit to be considered again for future years.
3. The proposed area must not be adjacent to a future Type I project identified in the 10 year work plan or other projects where MnDOT funding will be used.
4. The proposed area must not be adjacent to a past Type I project for which a noise analysis was completed and noise mitigation for this area was determined not be feasible or reasonable.
5. Existing noise levels must approach (66.0 dBA) or exceed 67.0 dBA L_{eq} .
6. For screening, the applicant can compute this cost by taking the assumed barrier cost (length x 20 feet in height x \$36/ sq. ft.) and then dividing that number by the number of homes and/or apartments adjacent to the barrier. MnDOT uses a maximum cost effectiveness value of \$78,500 /benefited receptor.
7. MnDOT will verify the area to decide the number of eligible dwelling units (i.e., benefited receptors) and the approximate the cost of noise abatement. As needed, MnDOT will complete noise modeling to create a ranked eligibility list of applications received using both the cost effectiveness of the barrier and the loudness of the noise. MnDOT will release results of all noise studies to the applicants.
8. MnDOT will propose noise barrier project(s) for the highest ranked location(s) from the eligibility list of applications received. MnDOT may use its discretion to balance fiscal year funding limitations as needed.
9. Final project costs will be developed through MnDOT's project scoping and cost estimating process. If costs greatly exceed the application estimates, MnDOT will coordinate with cities to determine if project is still desired.
10. Projects would typically be constructed 4-5 years out from the time of selection.
11. All noise mitigation will be designed by MnDOT following MnDOT design specifications.
12. MnDOT will maintain the structural soundness of the noise mitigation structure and will be accountable for the aesthetic quality of the structure on the freeway facing side only. The local governmental authority is required to maintain the resident side of the barrier.

13. If the project meets MnDOT's Noise Policy standards for a stand-alone noise barrier, local authorities must agree to contribute 10% of the total cost of the construction (as noted in the agreement). In addition, local authorities will also be responsible for the construction contract costs, which is typically 8% of the local authority's share of the construction costs. (Example: local authority's total project cost is \$100,000, then $\$100,000 \times 8\% = \$8,000$ additional project contract costs)
14. Failure to comply with all of the above procedures and rules will make the noise barrier project ineligible for MnDOT funding.

Example Application

Application for MnDOT Metro Standalone Noise Barrier

1. Name of governmental authority making application and agreeing to 10% cost share:

City of Anywhere

2. Highway/Freeway adjacent to area for which application is being made:

Highway 900

3. Current ranking on 2016 Metro District Highway Noise Abatement Study

20

4. Limits of area of application: a map is required; aerial photo is preferred:

Side of Highway:
(N, S, E, W, Both)

North

Beginning Point:
(Cross roads, etc.)

1st Ave

Ending Point:

Main St

Estimated length of proposed noise barrier (in feet)

1400'

5. Are the residential units located in an incorporated area?

Yes/No

Note: Only incorporated areas are eligible.

6. Were the majority of the residential units constructed prior to 1997?

Yes/No

Note: Only residential areas constructed prior to 1997 are eligible.

7. Number of residential units (homes and/or apartment buildings) adjacent to the highway/freeway:

13

8. Existing noise level (use MnDOT's Flat Earth Noise Level Estimating Spreadsheet: available at: www.dot.state.mn.us/environment/noise/)

67.0 (Leq)

9. Which fiscal year are you applying for funding?

2023

2024

Both

10. What type of noise barrier is being requested?

Concrete

Wood

TBD

11. Additional comments:

Petition received from 15 homes supporting wall;
City plans to reconstruct Main St in 2024.

12. I certify that all the above information is correct.

Jane Doe, City Engineer
Print name and title of local official Date 9/1/2018

Jane Doe
Signature and title of local official Date 9/1/2018

Example Map



Example City Resolution

CITY OF EAGAN
RESOLUTION NO 17-80

APPROVING A RESOLUTION OF SUPPORT TO THE MINNESOTA DEPARTMENT OF TRANSPORTATION – NOISE WALL

WHEREAS, the State of Minnesota, acting through its Commissioner of Transportation (MnDOT) and in accordance with Statute 161.125 - Sound Abatement Along Highways, proposes to study, design, and construct a noise wall improvement along the east side of Interstate 35E, between Cedar Avenue Freeway (TH 77) and Cliff Road (CSAH 32) within the corporate City of Eagan (City) limits, tentatively scheduled in the year 2021; and

WHEREAS, the City supports the continued study and design of this noise wall improvement, and have agreed to consider the City's participation in the costs of the noise wall construction and associated construction engineering in future City Capital Improvement programming.

THEREFORE, BE IT RESOLVED, the City of Eagan provide this resolution of support for the construction of a noise wall along the east side of Interstate 35E, between Cedar Avenue Freeway (TH 77) and Cliff Road (CSAH 32) within the corporate City of Eagan (City) limits.

Approved this 21st day of November, 2017.

CITY OF EAGAN
CITY COUNCIL

By: Mike Rogusie
Mayor

Attest: Christina M. Scipioni
City Clerk

CERTIFICATION

I HEREBY CERTIFY that the above is a true and correct copy of a resolution presented to and adopted by the City of Eagan, County of Dakota, State of Minnesota, at a duly authorized City Council Meeting held in the City of Eagan, Minnesota, on the 21st day of November, 2017, as disclosed by the records of said City on file and of record in the office.

Christina M. Scipioni
Christina M. Scipioni
City Clerk