



STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
84 HOLLAND AVENUE
ALBANY, NEW YORK 12208

Thomas C. Werner
Regional Director

Joseph H. Boardman
Commissioner

December 20, 2002

Mr. Don Reeb, President,
McKownville Improvement Association
5 Norwood Street
McKownville, NY 12203

Dear Mr. Reeb:

Commissioner Boardman forwarded your letter to me concerning noise levels along the McKownville section of I-87. The Department of Transportation is well aware of the growing concern about highway noise, especially with the increasing levels of traffic volumes over the last several years.

Unfortunately, there are no highway funds available for noise barriers unless they are built as part of a project to construct a new highway, substantially re-align an existing highway, or add travel lanes to an existing highway. No such work is contemplated along this section of I-87 at this time. NYSDOT can undertake separate noise barrier projects if funds become available from another source, such as a special appropriation by the New York State Legislature.


Last summer the Department of Transportation completed an extensive noise study that investigated the noise levels along the toll-free interstate highway system of the Capital Region. The noise study was intended to determine if noise barriers at certain location were appropriate and effective, as well as to estimate their approximate cost (for planning and proposed legislative purposes). I-87 in Albany County was studied. The stretch of highway bordering Providence, Mercer and Warren Streets was identified as an area where a noise barrier would reduce noise levels but would not be cost-effective to build for the number of houses benefitted.

I have enclosed a copy of the Executive Summary from the Department's Noise Study Plan, as well as the section that pertains to I-87 in Albany County.

Regarding your suggestions of planting trees or building a berm to shield the noise, federal studies have confirmed that, generally, planting trees is ineffective in reducing noise levels. Vegetation provides only a psychological effect to neighboring residents. Ideally, 200 feet of very dense, tall trees are needed to reduce the noise levels by half. We do not have the needed space for such extensive planting, or for the construction of a berm. There will be several smaller construction projects scheduled in this area over the next several years and we will investigate the possibility of adding some vegetation along the east side of I-87 at that time.

Thank you for sharing your concerns and please share this information with your neighbors. If you have additional question, please contact Daniel P. Hitt, Regional Landscape Architecture/ Environmental Services Manager, at (518) 473-8676.

Very truly yours,

A handwritten signature in cursive script that reads "Mark Silo".

Mark Silo, P.E.

Enclosure

cc: Daniel P. Hitt, Design, Region 1

EXECUTIVE SUMMARY

This Noise Barrier Planning Study was undertaken by the New York State Department of Transportation (NYSDOT) in response to requests by elected officials and the public to determine if noise barriers at certain locations were appropriate and effective as well as to estimate their approximate cost (for planning and proposed legislative purposes). Rather than respond on a piecemeal basis, the Department decided to evaluate all the potential noise abatement sites on the toll-free portions of the Interstate Highway System in NYSDOT Region 1 as well as adjacent state expressway routes with full access control at the right-of-way (NY 85, I-/NY 87, I-88, I-90, I-787, I-890). Note the portions of I-87 and I-90 under the jurisdiction of the New York State Thruway Authority (NYSTA) were not included in the study.

The Federal Highway Administration's (FHWA) regulation concerning procedures for the abatement of highway traffic noise (23 CFR 772) provide for two categories of projects. Type I projects are those involving the construction of a new highway on a new location or major reconstruction or physical alteration of an existing highway with significant changes to horizontal or vertical alignment or increases to the number of through-traffic lanes (not including turning lanes, on-off ramps, or climbing lanes). For these projects a noise study is required. Should the study determine that a noise impact is likely to occur and that abatement is both feasible and reasonable, the abatement must be included as a part of the highway project. On the other hand, Type II projects are those for noise abatement on an existing highway absent major reconstruction which are not mandatory or required under the regulation. The New York State Department of Transportation (NYSDOT) can not assign a priority to Type II noise abatement projects since funding for maintenance, safety improvement, bridge, and other critical infrastructure projects is severely limited. Thus, the development and implementation of Type II (or "retrofit") projects will not be considered by the Department without separate, additional funding provided by the Legislature for that specific purpose.

When proposing that funds be used for Type II noise barrier projects, the federal regulation requires that a noise analysis of sufficient scope be prepared to determine traffic noise impacts and the measures to abate these impacts. Several criteria must be met in this analysis:

- **A traffic noise impact exists, as defined by the regulation.** A traffic noise impact for residential land use occurs when the energy-equivalent sound level equals or exceeds sixty-six decibels (66 dba).
- **A substantial noise reduction is possible as a result of the noise abatement.** A desirable reduction is 10 decibels, which will be perceived by the public as a halving of the loudness. However, a minimum of 7 decibels must be obtained at the most benefitted receptor (the residence most impacted by noise).
- **The noise abatement is cost-effective.** The FHWA defines the upper limit of cost-effectiveness as \$50,000 per benefitted dwelling unit. A dwelling unit is considered benefitted if the proposed noise abatement reduces noise levels by 5 decibels or

more. A dwelling unit need not have an impact of 66 decibels or higher to be considered impacted if the abatement reduces noise levels by 5 decibels.

- **The residents impacted must concur with the noise abatement proposal.** If a majority of residents along a length of barrier prefer other values over noise reduction, such as maintaining sunlight into their yard or maintaining an existing view, a noise barrier will not be constructed at that location. Barriers must be continuous and cannot be split to address the different preferences along a length of barrier.

These four criteria are mandatory and must be met at any location under consideration. Failure to meet any one of these criteria will end further consideration of a barrier at that location. The following two criteria are to be adhered to as the first four unless overriding legislation is present:

- **Substantial construction of adjacent development must have predated the existence of the highway.** For Type II projects, noise abatement measures will only be approved for projects along lands where residential land development predated the existence of the highway. This means that development that occurred after construction of the highway is not eligible for federal funding of noise abatement.
- **No previous Type I project found such measures to be reasonable or feasible.** Noise abatement measures will not be approved at locations where such measures were previously determined not to be feasible and reasonable for a Type I project. This means that if a barrier did not qualify under a Type I noise study for a highway project, it cannot be subsequently added as a Type II project.

The costs developed during this study represent estimates based on many assumptions regarding noise barrier material, location, and size. Noise analysis to determine the final barrier heights and lengths will be needed as well as the structural design for the wall and its foundation. The analysis and design costs are approximately ten percent of the barrier cost. Additionally, cost will be incurred for earthwork, drainage, landscaping, and, most importantly, the maintenance and protection of traffic (MPT) during the construction period. These additional, related costs can increase the overall project cost anywhere from 25% to as much as one hundred percent over the base barrier figure. If bridge structures are involved, a one hundred percent increase can also occur for that portion of the barrier on a bridge.

Since these costs are in the range of millions of dollars, it is prudent to do as much noise abatement work as possible in connection with a Type I highway project. In this case, the barrier would be funded as part of the project and all the additional cost such as embankment, drainage, landscape development, and MPT would be included as well. Thus, it would be wise to consider potential, future Type I projects before funding a Type II at a particular location.

In anticipation of someone other than the Department building a noise barrier, the Department should consider including the design and construction costs of anticipated embankment, drainage, and landscaping on an adjacent, non-Type I project. It would be wise for the Department to consider and coordinate such work so as to reduce the Type II barrier project cost for others..

In summary, the development and implementation of retrofit noise abatement projects will not be considered by the Department without separate, additional funding provided by the Legislature for that specific purpose. The attached document is intended to be a planning tool only for the purpose of any potential funding by the legislature of projects at specific locations. It is not a list of noise abatement projects that the Department will initiate on its own. Current regulation does not require the ranking or prioritization of Type II projects, however a priority rating system ensures that noise impacts and complaints along existing highways are addressed systematically and equitably. Such a system maximizes the benefits of the funds expended. The next several steps, if they are undertaken by the legislators and local governments, is to review the report and determine which abatement locations are viable in their respective jurisdictions and neighborhoods. The Department will be available to provide guidance and technical assistance through the process.

4. RESULTS

The results of this study are divided by Sub-Area as depicted in Figures 1A and 1B. Maps depicting the Noise Analysis Locations, a summary table, and a Noise Barrier Feasibility tabulation follow the narrative description of each Sub-Area.

4.1 Sub-Area 1 Sub-Area 1 consists of I-87 between Route 20 and the Albany County/Saratoga County Line. Eight sites were identified as potentially impacted during the initial screening. One site was eliminated after it was determined that the cost per dwelling unit of a potential barrier would exceed \$50,000. One site was eliminated after field measurements indicated that a noise impact did not exist. Noise modeling and barrier analysis was conducted for the following sites.

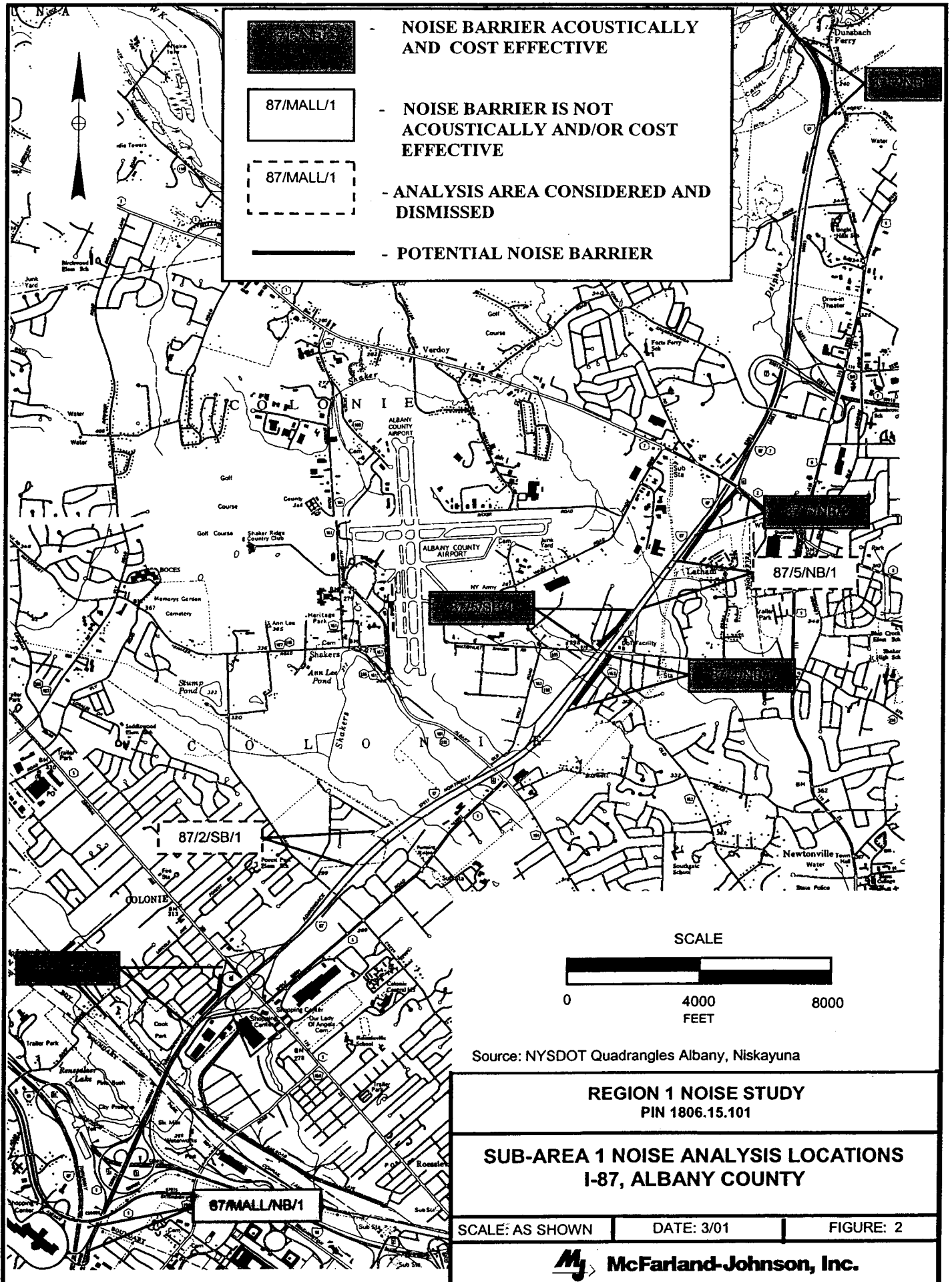
87/Mall/NB/1 – This Noise Analysis Location is a small residential area located on the east side of I-87, between the northbound on-ramp from Crossgates Mall and Washington Avenue. Modeling with peak hour traffic volumes indicates that there are 3 impacted dwelling units. A 410-meter long barrier, 6 meters in height, would provide an insertion loss of greater than 10 dB at 3 dwelling units, with a total of 6 benefited dwelling units. This barrier would cost approximately \$627,750, or \$104,625 per benefited dwelling unit, and is not cost-effective. A 410-meter long, 3.7-meter high barrier would provide an insertion loss of greater than 7 dB at 3 dwelling units, with a total of 5 benefited dwelling units. This barrier would cost approximately \$376,650, or \$75,330 per benefited dwelling unit. The barrier is not cost effective.


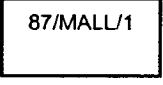
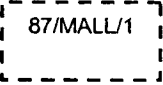

87/1/SB/1 – This Noise Analysis Location is the Tanglewood area, located on the west side of I-87 between Cook Park and Central Avenue. A 655-meter long, 6-meter high barrier would provide an insertion loss of 10 dB and the total number of benefited dwelling units is approximately 35. Benefits extend to the third row of dwelling units. This barrier would cost approximately \$1,000,000, or about \$28,575 per benefited dwelling unit. A barrier in this location is both acoustically- and cost-effective.

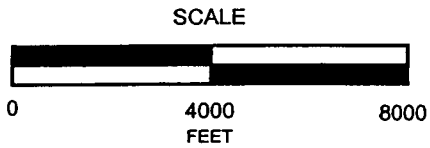
87/4/NB/1 – This residential area is located on the east side of I-87, just south of Interchange 5. Modeling indicates that there are 13 impacted dwelling units in this area. A 4-meter high barrier, approximately 820 meters long, provides insertion losses of 10 dB. A total of approximately 25 dwelling units would benefit. This barrier would cost approximately \$749,000, or about \$30,000 per benefited dwelling unit. A barrier in this area is both acoustically- and cost-effective.

87/5/NB/2 – This Noise Analysis Location is on the east side of I-87, south of Interchange 6. It includes relatively low-density, single-family residential development at the northern extent of the area (near the northbound off-ramp), and the Woodlands Housing Complex to the south. This area was modeled 3 different ways: 1) a barrier to protect the Woodlands Housing Complex, 2) a barrier to protect the single-family residential area to the north, and 3) a single barrier to protect both locations.


The Woodlands Housing Complex contains three 9-unit structures adjacent to I-87 with considerable space for exterior land use. There is also a recreation



-  - NOISE BARRIER ACOUSTICALLY AND COST EFFECTIVE
-  87/MALL/1 - NOISE BARRIER IS NOT ACOUSTICALLY AND/OR COST EFFECTIVE
-  87/MALL/1 - ANALYSIS AREA CONSIDERED AND DISMISSED
-  - POTENTIAL NOISE BARRIER



Source: NYS DOT Quadrangles Albany, Niskayuna

REGION 1 NOISE STUDY PIN 1806.15.101		
SUB-AREA 1 NOISE ANALYSIS LOCATIONS I-87, ALBANY COUNTY		
SCALE: AS SHOWN	DATE: 3/01	FIGURE: 2
 McFarland-Johnson, Inc.		