TRAFFIC NOISE STUDY AND ABATEMENT POLICY
ILLINOIS STATE TOLL HIGHWAY AUTHORITY

1.0 PURPOSE AND OVERVIEW

The Illinois Tollway's (Tollway's) Traffic Noise Study and Abatement Policy update provides an opportunity to evaluate traffic noise throughout the implementation of projects proposed as part of the Tollway's capital improvement programs.

The Tollway's current policy addresses guidelines and procedures for initiating traffic noise studies and considering traffic noise abatement. The policy first establishes the eligibility requirements for a Traffic Noise Study. The policy then establishes the requirements for considering the construction of traffic noise abatement structures and when traffic noise abatement is feasible and reasonable.

The traffic noise analysis guidance provided in this policy is based largely on the regulatory material found in Title 23 Code of Federal Regulations Part 772 (23 CFR Part 772) entitled "Procedures for Abatement of Highway Traffic Noise and Construction Noise."

If initial traffic noise impact screening assessments indicate the possibility of future traffic noise impacts, then a Traffic Noise Study will be performed. A detailed technical memorandum will be prepared to document the assumptions, data, procedures, results and traffic noise abatement considerations and recommendations from the Traffic Noise Study.

2.0 DEFINITIONS

Adjacent Land Use – The land use that is within 500 feet of the Tollway highway proposed edge of pavement.

Approach - For the purpose of this policy, approaching means within 1 decibel (dB(A)) of the appropriate Federal Highway Administration (FHWA) Noise Abatement Criteria (NAC) as adopted by the Tollway.

dB(A) – A weighted decibel. The decibel is a unit of measurement on a logarithmic scale that describes the relative magnitude of sound levels with respect to a standard reference value. Decibels are defined as ten times the base-10 logarithm of the square of the ratio of the mean-square sound pressure to the reference mean-square sound pressure of 20 micro-Pascals, the threshold of human hearing. The A-weighting network is an electronic filter defined by the American National Standards Institute (ANSI) and the International Organization for Standardization (ISO) that closely simulates the relative response of the human ear.

Date of Public Knowledge – This is the date that the Tollway's capital improvement program from which the project is funded received Board approval for project construction. This date establishes the "Date of Public Knowledge" and determines when the Tollway is no longer

responsible for providing noise abatement for new developments adjacent to projects included in the capital improvement program.

Exterior Traffic-Generated Noise – This is traffic-generated noise that is measured on the exterior of the receptor as opposed to the interior. The noise model (TNM®) and Policy generally refer to exterior noise only.

L_{eq} – The Equivalent Sound Level, denoted by L_{eq}, is the steady-state sound having the same A-weighted sound energy as that contained in the time-varying sound over a specific period of time. The L_{eq} correlates reasonably well the effects of noise on people.

$L_{eq(h)}$ – The Equivalent Sound Level over a one-hour period.

Noise Abatement Criteria – Noise impact thresholds for considering abatement. (Abatement must be considered when predicted traffic noise levels for the design year approach [i.e., are within 1 decibel of], equal to, or exceed the noise abatement criteria, or when the predicted traffic noise levels are substantially higher [i.e., are more than 14 decibels greater] than the existing noise level.) The Noise Abatement Criteria are not attenuation design criteria or targets. The goal of noise abatement measures is to achieve a substantial reduction in future noise levels. The reductions may or may not result in future noise levels at or below the Noise Abatement Criteria.

Noise Abatement – A structure, land configuration, object or other measure that attenuates or is intended to attenuate traffic noise. Generally considered to be a barrier or wall, abatement could also be in the form of earth berms, landscaping, or any combination of the aforementioned.

Noise Sensitive Receptor – Receptor locations with identified outdoor human activity including: residences, picnic areas, recreation areas, playgrounds, active sports areas, parks, motels, hotels, schools, churches, libraries, hospitals and other land uses detailed in Table 1.

Receptor – A point used in a traffic noise study for which the traffic-generated noise level is determined. A receptor is generally placed in an area of active outdoor human use. Normally, the areas of active outdoor human use include areas such as patios, swimming pools, porches, balconies, etc. Sites considered include homes, condominiums, apartments, permanent mobile home communities and parks. The associated type of outdoor human activity and the sensitivity to traffic noise will define which parks are considered receptors.

Substantial Increase – Traffic noise levels that are predicted to be more than 14 dB(A) over existing traffic noise levels.

Traffic Noise – Noise generated from vehicles traveling on the roadway. Noise is usually generated at the tire/pavement interface, from vehicle/truck engines, and from heavy truck exhaust systems.

Traffic Noise Study – A study of traffic-generated noise to determine: the existing traffic noise level conditions at receptors representative of normal outside human use; potential future traffic noise levels; an assessment of traffic noise impacts; and consideration of potential, feasible and effective economically reasonable traffic noise abatement. The study is conducted through the use of computer modeling. These studies would utilize the FHWA Traffic Noise Model (TNM® 2.5) or the most recent version. The methodology is consistent with 23 CFR 772 which explains processes to be followed in noise analyses and studies.

Type I Projects – A proposed project for the construction of a roadway in a new location or the physical alteration of an existing roadway which significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes. The following is obtained from the FHWA *"Procedures for Abatement of Highway Traffic Noise and Construction Noise,"* (23 CFR Part 772).

1. The construction of a highway on new location; or,

2. The physical alteration of an existing highway where there is either:

    a. *Substantial Horizontal Alteration*. A project that halves the distance between the traffic noise source and the closest receptor between the existing condition to the future build condition; or,

    b. *Substantial Vertical Alteration*. A project that removes shielding, therefore exposing the line-of-sight between the receptor and the traffic noise source. This is done by either altering the vertical alignment of the highway or by altering the topography between the highway traffic noise source and the receptor; or,

3. The addition of a through-traffic lane(s). This includes the addition of a through-traffic lane that functions as a HOV lane, High-Occupancy Toll (HOT) lane, bus lane, or truck climbing lane; or,

4. The addition of an auxiliary lane, except for when the auxiliary lane is a turn lane; or,

5. The addition or relocation of interchange lanes or ramps added to a quadrant to complete an existing partial interchange; or,

6. Restriping existing pavement for the purpose of adding a through-traffic lane or an auxiliary lane; or,

7. The addition of a new or substantial alteration of a weigh station, rest stop, ride-share lot or toll plaza.

If a project is determined to be a Type I project under this definition, then the entire project area, as defined in the environmental documentation, is a Type I project.

Type II Projects – A Community Noise Abatement Project proposed for traffic noise abatement on an existing roadway which is not associated with any Type I improvement.

Type III Projects – A project that does not meet the classifications of a Type I or Type II project. Type III projects do not require a noise analysis.

Undeveloped Properties – Property that is currently vacant or is likely to be redeveloped into an approved-for-construction land use by the local governmental body having jurisdiction. To be considered eligible for a traffic noise analysis and noise abatement, the undeveloped property must have secured permits for construction by a governing body prior to the Date of Public Knowledge.

3.0 PROCESS FOR DETERMINING WHEN A TRAFFIC NOISE STUDY AND ABATEMENT WILL BE CONSIDERED

3.1. Projects Eligible for a Traffic Noise Study

A Traffic Noise Study is warranted when **all** of the following conditions are present:

3.1.1. When the Tollway undertakes engineering studies or projects that meet the definition of a Type I project, ***or*** project locations that meet two criteria: 1)the initial roadway construction did not consider the effect of traffic noise **and** 2) the traffic volumes have, or are projected to at least double from the initial construction.

3.1.2. When the adjacent land use consists of identified outdoor human activity that are identified within Activity Category A, B, C, D or E, detailed in Table 1. Also considered are locations where undeveloped adjacent properties have secured permits for construction of the above outdoor human activity land uses by the jurisdiction or municipality having permit and zoning authority prior to the Date of Public Knowledge.

3.1.3. When the location of noise sensitive receptors is within 500 feet from the proposed or existing edge of shoulder, as highway traffic noise impacts are not typical for receptors more than 500 feet from heavily traveled roadways.

3.1.4. The considerations for Type II projects are discussed in Section 6.0.

3.2. Projects Not Eligible for Traffic Impact Analysis

A Traffic Noise Study is not warranted for Type III projects.

4.0 TRAFFIC NOISE IMPACT ANALYSIS

- **Cursory Review:** The initial traffic noise impact assessment for all projects will be a cursory review. This assessment would determine if noise sensitive receptors are within the project limits' adjacent land use, if traffic noise impacts are already present, and if future traffic noise levels are likely to increase. This review would include assessment of existing and proposed land use plans, review of aerial photography, and a review of prior studies.

- **Identifying Noise Sensitive Receptors:** Receptors shall be identified based on the activity categories and described land use listed in Table 1.

Table 1
Noise Abatement Criteria
[Hourly A-Weighted Sound Level-decibels (dB(A))]

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

***** Title 23 Code of Federal Regulations Part 772 (*23 CFR Part 772*)

****** Use of interior noise levels shall be limited (on a case-by-case basis) to land uses within Activity Category D where exterior noise levels are not applicable, i.e., where there are no exterior activities to be affected by traffic noise, or where exterior activities are far from or physically shielded from the roadway in a manner that prevents an impact on exterior activities.

Note: *The Noise Abatement Criteria (NAC) are noise* ***impact*** *thresholds for considering abatement. (Abatement must be considered when predicted traffic noise levels for the design year approach [i.e., are within 1 decibel of] or exceed the noise abatement criteria, or when the predicted traffic noise levels are substantially higher [i.e., are more than 14 decibels greater] than the existing noise level.) The Noise Abatement Criteria are* ***not*** *attenuation design criteria or targets. The goal of noise abatement measures is to achieve a substantial reduction in future noise levels. The reductions may or may not result in future noise levels at or below the Noise Abatement Criteria.*

- **Field Noise Monitoring:** A representative number of short-term 10-minute to 15-minute L_{eq} field monitoring traffic noise measurements shall be taken. The existing scenario traffic noise model shall be validated through a comparison of the field measured noise levels and the TNM predicted noise levels.

- **Determination of Traffic Noise Levels:** All viable alternatives for all study years (existing and design) will be examined using approved procedures incorporating the best available information and current professional judgment. Existing noise levels at noise sensitive receptor locations shall be determined by using modeling using the most current version of the FHWA-approved TNM (TNM) and/or field measurements. TNM modeling may not be representative of existing conditions if the roadway project is the construction

of a new roadway on new alignment and there is no existing traffic noise contribution. Traffic noise monitoring results should be used to represent existing noise levels in these scenarios. Future condition noise levels shall be predicted using TNM for both the build and no-build conditions. Existing noise levels predicted by TNM shall be validated through comparison of the field noise monitored noise levels and the predicted noise levels. Traffic noise levels should be predicted based on the traffic characteristics that yield the worst traffic noise, typically peak-hour traffic levels or level of service C. The $L_{eq(h)}$ noise metric shall be used to quantify the measurements of both existing and predicted noise levels.

- **Determination of Traffic Noise Impacts:** When determining traffic noise impacts, primary consideration shall be given to exterior areas of frequent human use. Noise impacts occur when the predicted build scenario traffic noise levels approach, meet, or exceed the Noise Abatement Criteria (NAC) provided in Table 1. The other potential noise impact occurs when predicted build year traffic noise levels substantially increase (increase by more than 14 dB(A)) over the predicted existing traffic noise levels. Some Tollway locations will involve existing traffic noise levels that already approach or exceed the NAC. Under these conditions, even if the proposed project will not cause the traffic noise levels to increase above existing levels, traffic noise abatement will be considered. If, after preparing a computerized traffic noise modeling and the corresponding Traffic Noise Study, it is determined that traffic noise levels will approach or exceed the NAC or the project will cause a substantial traffic noise increase, then traffic noise abatement measures will be considered. The feasibility and reasonableness factors for noise abatement consideration are outlined in Section 5.

5.0 Traffic Noise Abatement Considerations

Once a traffic noise impact has been determined at a noise sensitive receptor, the following feasibility and reasonableness factors will be evaluated and considered in order to determine if traffic noise abatement is warranted.

5.1. Feasibility

- **Noise Reduction Design Goal**: The traffic noise reduction design goal will be 8 dB(A) or more at a minimum of one receptor location. However, the minimum acceptable noise reduction on the first row of receptors will be 5 dB(A) at a minimum of one receptor location. The more noise reduction achieved the better the traffic noise abatement, as long as the cost, visual impact, etc., do not become excessive. If a minimum 5 dB(A) noise reduction cannot be achieved, a noise barrier will not be considered to be feasible.
- **Constructability**: The noise barrier conceived could actually be constructed using routine standard construction methods and techniques. Factors affecting this will include terrain, utilities, safety, bridges, overpasses, and similar difficulties.
- **Maintainability**: The noise barrier cannot be constructed in a location that inhibits or complicates proper maintenance.
- **Safety**: A critical factor in determining whether abatement is viable is the impact it may have on safety.

- **Utilities**: The impact of noise barriers on utilities and the reverse must be addressed early in the process. Overhead power lines, underground water, sewer, gas, oil, fiber optics, etc. can have a significant impact on costs and design options.
- **Drainage**: One of the most important elements in the physical location and design of noise abatement is drainage. Directing water along, under, or away from a noise abatement structure can be expensive and cause construction and long-term maintenance problems.

5.2. Reasonableness

5.2.1. Cost Effectiveness Evaluation: Cost factors will include the cost of construction (material and labor), the cost of the right-of-way (ROW) (including easements, etc.), and any other associated costs. The estimated cost of $30 per square foot of noise barrier will be used for the cost of construction for noise barriers. This unit cost value will be re-evaluated at least every 5 years by the Tollway. Traffic noise abatement must be cost-effective. The Traffic Noise Study will include a cost per benefited residence analysis that will be used to assist in the final determination of traffic noise abatement recommendations. If traffic noise abatement cannot be achieved in a cost effective and economically reasonable manner, traffic noise abatement will not be included in the project. ROW impacts can include the cost to obtain access rights, easements and land. It also includes the consideration of purchase, donation, etc. If access rights and easements are required, these will typically be by donation. This is in consideration of the construction of the traffic noise abatement wall being for the benefit of the property owners.

The consideration of the reasonableness factors, including the relationship of future noise levels to abatement criterion, noise level change from the existing condition to the future build condition, and antiquity are factors within the cost-effective evaluation. The cost-effective evaluation will be based on a base value of $30,000 per benefited receptor. In addition, each of the following factors can be considered in the cost-effective evaluation to increase the base value up to a maximum value of $45,000.

- **Relationship of Future Levels to Abatement Criterion**: Is the predicted future noise level from the project approaching or above 67 dB(A) $L_{eq(h)}$? Will it be within 1 dB(A) of the NAC or is it more on the order of 5 dB(A) or more above the NAC?

- **Noise Level Change from the Existing Condition to the Future Build Condition**: Is the future noise level substantially higher than the existing condition? Would the noise level be considered an impact by approaching the NAC or by increasing by greater than 14 dB(A)?

- **Antiquity**: Who was there first, the noise sensitive receptor or the roadway? How long has the noise sensitive receptor been there relative to elevated traffic noise levels? Is the Tollway dealing with original owners or recent purchasers? This implies that someone who builds or buys at a noise sensitive receptor location along

an existing roadway (or within the corridor where a roadway is planned for construction) probably doesn't consider traffic noise a significant factor in their selection of the location

Tables 2, 3, and 4 provide factors that allow for increases to be added to the base value for each of the three factors identified.

Table 2
Relationship of Future Noise Levels to Noise Abatement Criterion

Predicted Build Noise Level Above Noise Abatement Criterion	Dollars Added to Base Value Cost per Benefited Receptor
Less than 3 dB(A)	$0
4 to 5 dB(A)	$1,000
6 to 8 dB(A)	$2,000
Greater than 8 dB(A)	$5,000

Table 3
Noise Level Change from the Existing Noise Condition to the Future Build Noise Condition

Increase in Noise Levels from the Existing Condition to the Future Build Condition	Dollars Added to Base Value Cost per Benefited Receptor
Less than 3 dB(A)	$0
4 to 5 dB(A)	$1,000
6 to 8 dB(A)	$2,000
Greater than 8 dB(A)	$5,000

Table 4
Antiquity Consideration

Project is on new alignment OR the receptor existed prior to the original construction of the highway	Dollars Added to Base Value Cost per Benefited Receptor
No for both	$0
Yes for either	$5,000

***Example:** There is a residential receptor that existed prior to the original construction of the roadway. The receptor's Existing Condition noise level is 63 dB(A) and the Future Build Condition noise level is 71 dB(A). This receptor's adjustment factors are $1,000 from Table 2, $2,000 from Table 3, and $5,000 from Table 4, for a total adjustment of $8,000. This value of $8,000 is added to the base value of $30,000 for a total allowable cost of $38,000 for this receptor.

One adjustment value from each of the three factor tables can be added to the base value to increase the cost per benefited receptor value up to an increase of $15,000, or a total cost of $45,000. This adjustment procedure allows for extra consideration of these factors in order to determine a reasonable cost basis. If the actual build cost is less than the adjusted allowable cost per benefited receptor, and the noise abatement measure is determined to feasible, it would be considered for construction as part of the proposed project.

Noise abatement measures that are considered feasible and reasonable to implement into the project will be reviewed with the public through the public involvement process. The community desire for the noise wall will be considered as part of the final noise abatement measure implementation.

5.2.2. Community Desires: Important in determining if traffic noise abatement should be built at any location is whether the affected community really desires abatement. This may require that a survey or community outreach effort be conducted to assess the community desires. If the community is not in favor of the noise abatement, the Tollway may choose not to build traffic noise abatement features. If access rights are required, the Tollway will attempt to determine if the affected property owners are willing to trade those rights for the abatement without any exchange of money.

5.2.3. Views of Local Officials: Consideration should be given to the views of the local representative authorities who may be asked to represent the views of the citizens.

5.2.4. Other Considerations:

- **Seasonal Usage**: Some receptors are not occupied or utilized year round. The evaluation will consider usage rates throughout the year.
- **Land Use Stability**: Sometimes the land use for the area expected to change in the future. An example of this is the fact that commercial land uses or other land uses where visual exposure is integral to their existence and vitality may not warrant traffic noise abatement.
- **Local Controls**: In some instances, the local governing or jurisdictional body has not done anything to control noise sensitive land uses from building adjacent to the Tollway corridor or ROW. This implies that if no controls are used, traffic noise abatement is not a very high priority within the community.
- **Aesthetics**: This refers to the physical appearance of the wall from both the roadway side and the community side. It also incorporates the landscaping concept, the opinions of the property owners and the local community desires.
- **Other Environmental Issues**: This refers to impacts of traffic noise abatement installation that should be considered on a site-by-site basis. Examples include but not limited to unwanted reflection of sound, pedestrian, bicycle and trail disruption, wetland destruction, groundwater or surface water impacts, animal migration/flight paths, air quality, shading of vegetation, snow accumulation, etc.

6.0 Community Cost-Sharing Noise Abatement Projects

6.1. Type II Projects:

The following establishes a cost-shared policy to consider requests for retrofitting noise abatement for projects that are not associated with any Type I improvement. Retrofit projects are subject to available funding and will be evaluated for their merits on a case-by-case basis.

In order for a retrofit project to be considered for Type II funding, the project must have a state or local government sponsor, i.e., a unit of government with the authority to levy taxes. This includes general-purpose units of local governments (e.g., cities, counties and townships) as well as specialized governing districts (e.g., sanitary districts, school districts, forest preserve districts, park districts, airport authorities and publicly owned universities or colleges).

For a project to be considered for Type II funding, the local agency sponsor must prepare documentation in accordance with the traffic noise impact analysis and Traffic Noise Study requirements outlined in Section 4.0. The local agency sponsor must pass local zoning ordinances regarding land use, provide all necessary ROW, demonstrate the ability and commitment to provide a minimum of 50% of the funding for the project, and agree to maintain the traffic noise abatement structure and ROW on the community side of the structure.

The Tollway will give priority consideration to those communities where the roadway was constructed through an existing neighborhood and where 75 percent or more of the existing noise sensitive receptors within 500 feet of the edge of pavement preceded the roadway. Developments platted or approved after the date of public knowledge will not be eligible for Type II funding consideration.

6.2. Receptor Locations Not Achieving Cost Effectiveness Criterion

The following establishes a cost-sharing policy for receptor locations that did not meet the cost effectiveness criterion within a Tollway Type I project Traffic Noise analysis. Cost-share opportunities are subject to available funding and will be evaluated for their merits on a case-by-case basis. For noise abatement to be considered for cost-sharing, the receptor location needs to have been determined to be impacted by traffic noise, as determined by a completed Traffic Noise Analysis.

In order for cost-sharing to be considered, the project must have a state or local government sponsor, i.e., a unit of government with the authority to levy taxes. This includes general-purpose units of local governments (e.g. cities, counties and townships) as well as specialized governing districts (e.g. sanitary districts, school districts, forest preserve districts, park districts, airport authorities and publicly owned universities or colleges). The local agency sponsor must commit to providing, at a minimum, the difference between the adjusted allowable cost for noise abatement and the actual barrier cost for the respective receptor location (e.g. if the adjusted allowable cost is $35,000 per benefited receptor and the actual barrier cost is $40,000 per benefited receptor, the local agency sponsor would be responsible for $5,000 per benefited receptor).

7.0 Traffic Noise Abatement Techniques

Means and methods for implementation of traffic noise abatement shall be considered based on effectiveness of traffic noise attenuation and reasonableness of cost.

- **Noise Walls**: Noise walls are solid structures built between the highway and the noise sensitive receptors along the roadway. Noise walls are typically constructed of precast concrete panels, cast-in-place concrete, concrete masonry blocks, masonry or wood. Absorptive surfaces will also be considered in areas where noise sensitive receptors may be affected by reflected noise on either side of the wall, or in instances where wall heights can be reduced to provide comparable effectiveness. Noise walls can reduce traffic noise levels effectively.
- **Earth Berms**: Traffic noise barriers can be formed from earth mounds along the road typically called earth berms. Earth berms have a natural appearance and offer opportunities for landscaping; however, earth berms can require a considerable width across land to accommodate the height necessary to provide the amount of noise reduction required.
- **Vegetation**: If high enough, wide enough, deep enough and dense enough (cannot be seen through), vegetation can decrease the highway traffic noise at a noise sensitive receptor. A 200-foot thickness of effective dense vegetation can reduce noise by 10 dB(A), which can cut the noise volume in half. It is often impractical to plant enough dense vegetation along a road to achieve such reductions; however, if dense vegetation is already present, possibilities exist where it could be saved with some noise reductions achieved.
- **Encouraging Compatible Adjacent Land Use**: Traffic noise compatible land use planning is a community planning method and proactive responsibility that helps reduce or eliminate traffic noise levels at noise sensitive receptors along roadways. This type of planning means considering land use options and traffic noise issues more effectively so that compatible developments are set up next to the Tollway. Municipalities and counties have the power to encourage traffic noise compatible land use planning by developing effective land use plans, zoning or other legal means (such as subdivision or development standards, building or housing regulations), land or easement purchases and community education to inform citizens, developers and local planners about traffic noise compatible land use planning.
- **Promote Tollway Policy and Encourage Local Governments**: The Tollway encourages those who plan and develop land, and local governments controlling development or planning land use near existing or planned Tollway locations, to exercise their powers and responsibility to minimize the effect of roadway traffic noise on future sensitive receptors through appropriate land use control. Where such land use controls are not in place, municipalities, townships and counties may not be eligible for traffic noise abatement consideration for sensitive receptors by the Tollway.
- **Reduction of Traffic Noise at the Source**: Reduction of traffic noise impacts by design or treatment of the road surface is the most cost-effective traffic noise control available to the Tollway. Within the group of traffic noise abatement methods that are feasible and reasonable, and after life-cycle cost analysis have selected a pavement type and other technical and financial constraints, the Tollway will use the quietest surface texture available when repaving or reconstructing a roadway in traffic noise sensitive areas.

- **Traffic Noise Abatement by Others**: All future planned developments adjacent to the Tollway should include a provision in the Subdivision Plat approval requirements that mandates the developer to place a covenant running with the land notifying perspective purchasers that traffic noise abatement will not be provided by the Tollway. The Tollway encourages developers and local governments to coordinate their efforts to mitigate roadway traffic noise. This must be done without encroachment on the Tollway ROW, unless it is determined to be necessary, and authority is granted to permit others to construct a sound barrier, berm or landscape in the Tollway's ROW. The design must meet the Tollway's geometric, structural, safety and maintenance standards. The Tollway shall assume no liability review authority or responsibility of any kind for the structural integrity or acoustical effectiveness of traffic noise abatement sound barriers constructed by others.