



South Mountain Transportation Corridor Study

Citizens Advisory Team
Draft Technical Report Summary

Noise

Why study noise in the Environmental Impact Statement (EIS)?

For the purposes of this proposed project, noise is defined as unwanted or excessive sound. In many ways noise is undesirable, but it is a real by-product of today's way of life. Noise can be intrusive, interfering with sleep, work or recreation. Noise, in today's society, comes from many sources; a vacuum cleaner, for example, can disrupt a family member trying to read a book. Transportation noise is perhaps the most pervasive and difficult source to avoid in society today. Noise from airplanes flying overhead, from trains passing by, from motorized boats on a lake and cars and trucks traveling on the nation's roads and highways has become a daily part of our lives. Of these, traffic noise is the major contributor to overall transportation noise.

Therefore, construction and operation of a freeway like the proposed South Mountain Freeway would introduce a major noise source into an area where such noise may not have existed in the past. The proposed freeway would pass by residences, schools, parks, churches and other land uses sensitive to traffic noise. The study team, using federal and state guidance, analyzed how the proposed South Mountain Freeway would increase noise levels in adjacent areas. For areas qualifying for protection from the expected noise, the Arizona Department of Transportation (ADOT) and Federal Highway Administration (FHWA) will propose ways to reduce those levels to legally acceptable levels.

What kind of impacts would occur from construction?

Bulldozers, graders, scrapers, dump trucks, cranes and other heavy construction equipment operating at or around the same time can generate substantial noise in adjacent areas. The South Mountain Freeway would likely be constructed in phases with various segments of the freeway constructed sequentially. So construction and the related noise for one segment would only occur until the segment was completed. Then a new segment of the freeway would undergo construction, and so on until the entire freeway was constructed.

How do the action alternatives differ in construction-related impacts?

For any of the action alternatives being considered for the South Mountain Freeway, construction techniques and construction sequencing and durations would be relatively the same. Therefore, there would be no distinctive differences in how the project would be constructed. The main difference would be the location of construction noise in the Western Section of the Study Area, which would depend on which of the three alignments were eventually selected for implementation, if an action alternative were selected.

What kinds of freeway operational impacts (postconstruction) would occur?

Once the proposed freeway was completed and open to traffic, it is anticipated that residents near a freeway may experience undesirable noise levels. Through use of the industry-standard noise model, the threshold (with some exceptions) for residential areas is 64 decibels (similar to the noise produced by an operating washer/dryer or a vacuum cleaner). Residential areas with projected noise levels at or above 64 decibels are considered affected and potentially qualify for noise mitigation.



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The study team monitored 44 locations along the proposed freeway alignments to determine existing noise levels. These ranged from 44 to 64 decibels. To determine likely noise level impacts from implementation of the proposed South Mountain Freeway, 139 locations were selected for modeling to determine noise levels once the proposed freeway was completed. The predicted noise levels ranged from 61 to 79 decibels at residential areas near the freeway.

How do the action alternatives differ in operational impacts?

For any of the action alternatives being considered for the South Mountain Freeway, noise level impacts on residential and other sensitive properties would be relatively the same. Therefore, the alternatives would have no distinctive differences regarding traffic noise level impacts. However, the main difference would be that different residences and other sensitive uses would be affected by freeway noise in the Western Section of the Study Area, depending on which of the three action alternatives eventually were selected for implementation, if an action alternative were chosen.

What if the project were not constructed?

Noise level impacts from the No-Action Alternative would be caused by vehicle traffic along arterial and other area surface streets. Based on projected growth throughout the region, traffic congestion would increase under this alternative, which would reduce travel speeds and thereby reduce traffic noise levels. The No-Action Alternative would, thus, result in lower noise levels at the 139 receiver locations than would any of the action alternatives, but would cause increased noise levels at other locations, such as along arterial streets.

Are there any specific and/or unique impacts from implementation of any of the action alternatives?

For a project the magnitude of the proposed South Mountain Freeway, there are no known unique noise level impacts that would occur from implementation of any of the action alternatives. However, as currently proposed, the South Mountain Freeway would pass through the far southern portion of Phoenix South Mountain Park/Preserve. The freeway in this location would introduce freeway noise into a small portion of a park known for its scenic, natural and passive setting.



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What could ADOT do to reduce or avoid impacts?

ADOT could reduce or avoid noise level impacts by:

- avoiding sensitive noise receivers
- reducing speed limits on the proposed freeway
- constructing noise barriers
- where feasible, constructing the freeway below ground level (would likely still require noise barriers)

ADOT and FHWA would evaluate these types of measures to determine the most appropriate ways to reduce noise impacts on surrounding communities.

What could ADOT do to reduce construction impacts?

To minimize noise levels on surrounding areas caused by construction activities, ADOT or its contractor could take the following measures:

- where feasible, construct noise barriers to limit construction noise
- ensure all exhaust systems on construction equipment would be in good working order (properly designed engine enclosures and intake silencers would be used where appropriate)
- ensure construction equipment would meet new product emission standards
- locate stationary, noise-generating equipment as far away from residential areas as possible
- notify the public of the scheduled construction activity

What could ADOT do to reduce noise impacts once the freeway were operational?

ADOT has a mandate to reduce noise levels to acceptable levels defined in federal and state regulations and policies. Preliminary mitigation measures will be presented in the Draft EIS. If an action alternative were to be the selected alternative, the measures would be specified in the Record of Decision and implemented, as appropriate, as part of project development in right-of-way acquisition and in construction, operation and maintenance phases of that selected alternative. Initial noise barrier installation would be designed to reduce noise levels to the range of 56 to 68 decibels, although most receivers would have noise levels ranging from 60 to 63 decibels. ADOT would respond to public complaints regarding perceived excessively high traffic noise levels and monitor and evaluate any need for additional noise mitigation. Actions that could be taken include installing additional noise barriers or raising the height of existing barriers. If monitored noise levels were found to be acceptable, ADOT would take no action.



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Are the conclusions presented in this summary final?

Quantitative findings relative to impacts could change. Potential changes would be based on outcomes related to the following issues and will be presented to the public as part of publication of the Draft EIS, Final EIS and, if an action alternative were selected, in the final design process. The issues include:

- refinement in design features through the design process
- updated aerial photography as it relates to rapid growth in the Western Section of the Study Area
- ongoing communications with the City of Phoenix regarding measures to minimize harm to Phoenix South Mountain Park/Preserve
- ongoing communications with the Gila River Indian Community (GRIC) regarding granting permission to study action alternatives on GRIC land
- ongoing consideration of public comments
- potential updates to traffic forecasts as regularly revised by the Maricopa Association of Governments
- potential changes regarding updated census data
- regularly updated cost estimates for construction, right-of-way acquisition, relocation and mitigation

Even with these factors possibly affecting findings, the study team anticipates effects would be equal among the alternatives and, consequently, impacts would be roughly comparable. This assumption would be confirmed if, and when, such changes were to occur.

As a member of the Citizens Advisory Team, how can you review the entire technical report?

The complete technical report is available for review by making an appointment with Mike Bruder at 602-712-6836 or Mark Hollowell at 602-712-6819.