South Mountain Transportation Corridor Study

Citizens Advisory Team
Draft Technical Report Summary

Geotechnical

Why document the analysis of geotechnical conditions in the Environmental Impact Statement (EIS)?

Geotechnical conditions refer to the soil and bedrock characteristics of a particular area. These characteristics in the Study Area could influence how a project like the proposed South Mountain Freeway would be designed and ultimately constructed:

- Rock excavation and construction of rock slopes would be required as part of construction of the Eastern Section.
- Both expansive and consolidation-prone soils in the shallow profile may influence the design of freeway sections.
- Shallow groundwater may influence the design of freeway elements in the Western Section.

What kind of impacts would occur from construction?

- Excavation or placement of fill could alter existing ground slopes and materials.
- Excavation could alter existing rock slopes in the Eastern Section.

How do the alternatives differ in construction-related impacts?

- Despite variations in groundwater depths of from 9 to 134 feet, Western Section action alternatives appear to have no distinct differences in construction-related impacts.
- The Eastern Section alternative would require rock excavation.
- Construction of the Eastern Section alternative would likely not encounter shallow groundwater.

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

- The Western Section alternatives are not expected to cause operational impacts.
- Because Eastern Section rock slopes would be designed using industry-accepted guidelines, no operational impacts are expected.

How do the alternatives differ in operational-related impacts?

- Neither the Eastern Section alternative nor any one of the Western Section alternatives would differ in operational impacts.

What if the project were not constructed?

- No project-specific impacts would be experienced.

Would any of the action alternatives cause specific and/or unique impacts?

- None of the Western Section action alternatives would cause specific and/or unique impacts.

- The Eastern Section alternative would require substantial rock excavation and cuts through three of the South Mountains' ridges.

How could ADOT reduce or avoid construction-related impacts?

Examples of some of the measures ADOT could undertake to avoid, reduce or otherwise mitigate construction-related impacts include:

- The freeway could be designed to minimize and balance the volume of excavation and fill.
- The Eastern Section alternative could be designed to minimize the total volume of rock excavation.

How could ADOT reduce geotechnical impacts once the freeway were operating?

- ADOT would consider developing specific plans for rock slopes, including slope angles, falling rock protection measures and related design features.

Measures will be presented in the Draft EIS. If an action alternative were to be selected with the Record of Decision, measures would be finalized during the design process.

Are the conclusions presented in this summary final?

Quantitative findings relative to impacts could change. Potential changes would be based on the following and would be presented to the public during the Draft EIS, Final EIS and, if an action alternative were selected, in the final design process:

- 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 (Community) regarding granting permission to study action alternatives on Community land
- 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.

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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.