



South Mountain Transportation Corridor Study

Citizens Advisory Team
Technical Report Summary

Draft Energy Impacts

Why study energy consumption in the Environmental Impact Statement (EIS)?

Recent international events and recent national disasters clearly demonstrate the need to make wise decisions when considering current and future energy consumption in our country. Considering our population continues to grow rapidly in the West, demand for energy (for heating, cooling, travel, and manufacturing) will also continue to grow.

A project like the proposed South Mountain Freeway is a major transportation investment. It is important to consider if such an investment would account for prolonged energy savings or if no project at all would provide better energy savings.

For the purposes of the EIS, the study team analyzes the energy consumption to construct and operate the proposed South Mountain Freeway and compares the projected consumption against the No Action Alternative over a 20 year period.

How is energy consumption calculated?

Several factors are considered when estimating energy consumption over a 20-year period. Examples of such factors are:

- The estimated *total* vehicle miles traveled over that course of time.
- The estimated *total* vehicle *hours* traveled over that course of time.
- The anticipated vehicle mix (i.e., cars, light trucks, heavy trucks) that would use the facility if constructed.
- Anticipated fuel economy (in miles per gallon) of the vehicle types as provided by the Bureau of Transportation Statistics

What were the results of the analysis?

The No Action Alternative would have the least vehicle miles traveled of any of the alternatives. However, this alternative would also have the highest vehicle hours traveled of any of the alternatives because of the increased congestion on the remainder of the regional freeway system and local arterial street network. Because fuel efficiency diminishes at slower speeds (i.e., fuel consumption increases approximately 30 percent when speeds drop from 30 miles per hour (mph) to 20 mph), the No Action Alternative is projected to consume the most energy of any of the alternatives. The No Action Alternative is estimated to consume approximately 734 million gallons of fuel per year; the action alternatives (Western + Eastern sections) were estimated to consume between 545 million to 564 million gallons of fuel per year.

Are the conclusions presented in this summary final?

It is quite likely that quantitative findings relative to impacts are subject to change. The reasons for future changes which will be presented to the public during the Draft EIS, Final EIS and Final Design stages are based on the following:



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- 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.
- On-going communications with the City of Phoenix regarding measures to minimize harm to South Mountain Park/Preserve.
- On-going communications with GRIC in regards to granting permission to study action alternatives on GRIC lands.
- Potential updates to traffic forecasts as updated regularly by MAG.
- Potential updates with regards to the special 2005 survey to augment the 2000 Census.
- As design progresses, cost estimates for construction, right-of-way acquisition, relocation and mitigation will be updated on a regular basis.

However, even with these factors affecting findings, it is anticipated the affects would be equal among the alternatives and consequently impacts would be comparatively the same. 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 or Ralph Ellis at 602-712-7545.