# GRADE SEPARATION

Description

Intersections that must carry vehicles, pedestrians and possibly railroad traffic limit the capacity of a road. Grade separating (providing overpasses or underpasses) these conflict points allow an uninterrupted flow of traffic while minimizing the safety threat posed by and to trains, pedestrians, or road vehicles. Removing road-railroad intersections can increase speed for road and rail traffic.

Target Market

Locations where grade separations can be considered on a major street are:

- High-volume intersections of major streets
- High-volume intersections having more than four approaches
- High-type major streets where all other principal intersections are grade-separated
- Active railroad crossings
- Sites where terrain conditions favor grade separation
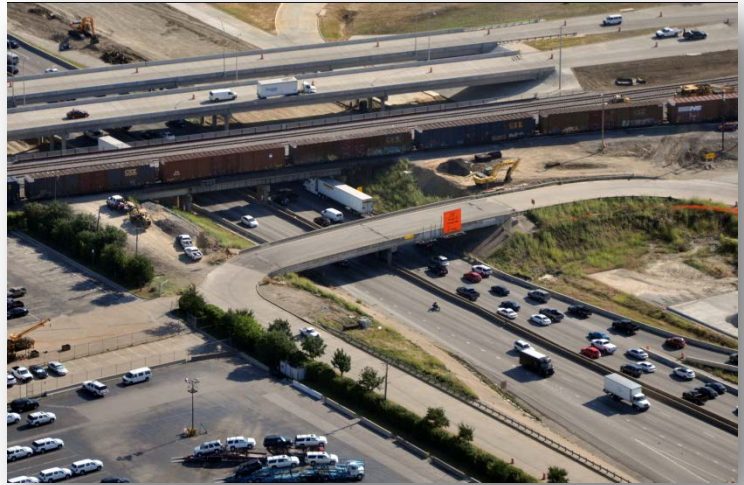
Cost:	●●●●○
Time:	**Moderate**
Impact:	**Spot**
Who:	**City/State**
Hurdles:	**Funding**

How Will This Help?

- <u>Significantly increases capacity</u> by eliminating delay caused by the previous intersection or rail crossing.
- <u>Improves safety</u> through the elimination of vehicle, rail, or pedestrian conflicts.

Grade separation works well when one or more directions has heavy volumes and experiences high levels of congestion even after other methods (such as signal optimization or additional turn lanes) have been exhausted.

Success Stories

- Example locations include US 281 at SH 46 and US 281 at FM 1863 in San Antonio

- The AASHTO *Highway Safety Manual* reports that converting an at-grade, four-leg intersection to a grade-separated interchange reduces injury crashes by 57 percent. Converting a signalized intersection into a grade-separated interchange reduces injury crashes by 28 percent.

Implementation Issues

Grade-separating streets or pedestrian facilities is expensive. Right-of-way acquisition and construction costs represent significant hurdles, even though the benefits may be dramatic. The needed right-of-way may be purchased during the intersection's initial construction when the land is typically less expensive if an overpass is forecasted for future traffic volumes.

For more information, please refer to: http://mobility.tamu.edu/mip/strategies.php.