



GRADE SEPARATION



More Information: tti.tamu.edu/policy/how-to-fix-congestion

Description

Intersections that must serve vehicles, pedestrians, and possibly railroad traffic limit the capacity of a road. Providing overpasses or underpasses—known as grade separation—at these crossing points allows traffic to flow freely. This in turn makes conditions safer for vehicles, pedestrians, and trains. Removing road–railroad intersections can increase speeds for both road and rail traffic.

Target Market

Grade separations work well on roads that have heavy volumes and congestion levels even after other methods (such as additional turn lanes) have been used. Locations where grade separation can be considered on a major street are:

- High-volume intersections.
- High-volume intersections with more than four approaches.
- Major streets where all other main intersections are grade separated.
- Active railroad crossings.
- Sites where land conditions favor grade separation.

How Will This Help?

- **Increases capacity** by removing delay caused by the previous intersection or rail crossing.
- **Improves safety** by reducing vehicle, pedestrian, and rail conflicts.

Implementation Issues

Grade separation is expensive. Right-of-way purchase and construction costs can be major issues, even though the benefits may be great. If a future overpass is expected at an intersection, then the needed right of way may be purchased during initial construction, when the land is often less expensive.

COST



TIME



IMPACT



WHO



CITY/STATE

HURDLES



FUNDING

SUCCESS STORIES



San Antonio, Texas

Example locations include **US 281 at SH 46** and **US 281 at FM 1863**.

The American Association of State Highway and Transportation Officials (**AASHTO**) *Highway Safety Manual* reports the benefits of changing to a grade-separated interchange.



Converting a four-way stop **reduces** injury crashes



Converting a signalized intersection **reduces** injury crashes

