



I-25 Corridor Improvements Project

The I-25 Corridor Safety Improvements Project is a deliberate strategy to upgrade an outdated, aging interstate facility through the construction of improved interchanges and roadways.



Challenges

- Interstate 25 was opened in early 1961 with a capacity of 40,000 cars a day.
- Today, I-25 serves more than 100,000 cars a day (north of Bijou Street).
- Colorado Springs lacks sufficient alternative north-south routes.
- Alternatives to single-passenger automobile transportation, such as mass transit and car pooling, are not used effectively.

Solution

- straightening severely curved segments of the highway
- lengthening on ramps and off ramps
- improving shoulder along the median and outside edge of travel
- providing continuous acceleration/deceleration lanes
- improving capacity at major interchanges
- mitigating noise and environmental issues repairing damaged areas.

Web site information: interstate25.com

Lessons Learned related to Planning and Constructing Transportation Projects

- ✦ Clearly establish and communicate the need for and scale of the facility, as well as the project's importance to the community.
- ✦ Gather community input on design issues.
- ✦ Create rapport with the community during project planning through early communication with the community. DOT's, cities, and agencies must hire public information specialists specifically assigned to the project that have an ability to communicate in words the community can understand, rather than technical, engineering terms.
- ✦ Communicating with the public using a variety of approaches. Reach out to all segments of the population, including those who did not attend meetings.
- ✦ Helpful to use
 - ✦ architectural models or simulations of proposed designs on display in high traffic areas of the communities
 - ✦ information packages placed on the "doors" of residences
 - ✦ Tours of the project site for the community
 - ✦ Newsletters
- ✦ Having Project Manager and Project Staff available to and prepared to interact effectively with the public to provide technical expertise and agency credibility.
- ✦ Maintain a continuous dialogue with the community--their needs and desires can change over time. As people move in and out of the affected areas between planning and through construction, the community's position on the project could shift. Changes within the community must be recognized for effective collaboration between transportation officials and the affected community.
- ✦ Share and celebrate every phase of construction with the community to encourage a sense of ownership. For example, engineers and construction professionals conduct community tours of the project. The professional's enthusiasm and excitement at the technical achievements seems to instill a feeling of pride and ownership in the project for local participants. The close interaction also personalizes the project and its staff for the community.

Flexibility in Highway Design; US Department of Transportation and Federal Highway Administration



the New Pueblo Freeway

The Pueblo Freeway Improvement Projects are becoming a reality, with the purpose of upgrading the outdated, aging interstate facility through the construction of an improved freeway and interchanges.



Challenges

- Interstate 25 was opened in mid-1959 with a capacity of 40,000 cars a day.
- Today, I-25 serves more than 57,000 cars a day (south of SH 50).
- The Pueblo Freeway lacks sufficient alternative north-south routes.
- Availability of alternatives to single-passenger automobile transportation, such as mass transit and car pooling, are limited.

Solution

- Straightening severely curved segments of the highway.
- Lengthening on ramps and off ramps.
- Improving local network streets to provide alternatives to the interstate for local trips.
- Improve the connections between the major local streets and the interchanges.
- mitigating noise and environmental issues repairing damaged areas.

Lessons Learned

"The simple needs of automobiles are more easily understood and satisfied than the complex needs of cities, and a growing number of planners and designers have come to believe that if they can only solve the problems of traffic, they will thereby have solved the major problems of cities. Cities have much more intricate economic and social concerns than automobile traffic. How can you know what to try with traffic until you know how the city itself works, and what else it needs to do with its streets? You can't."

---Jane Jacobs

"The Death and Life of Great American Cities"
Vintage, 1961





Innovative Contracting Provisions are methods project owners use to gain specific benefits from the execution of a construction project. The provisions help owners and competitors tailor resources, project schedule, and contract prices appropriately to satisfy project requirements.

Incentive/Disincentive (I/D) Contracting is a method used when the value of time to complete the contract work is high. Incentives/Disincentives (I/D) contracting is similar to Liquidated Savings, where a DOT recognizes the value of early completion of contract work. Incentives are provided for completion times prior to the contract time. However, with I/D, at the end of the contract time the incentive turns to a disincentive paid by the contractor. Contract time is adjusted for circumstances beyond the contractor's control as described in the Standard Specifications. The amount of disincentives is based on user and Department costs to administer the contract. Typical liquidated damages are applied and added to the disincentive for not meeting the contract time. The I/D provisions can be applied to meet intermediate milestones prior to the end of the contract time. The disincentive could be applied for not reaching the milestone date and accumulated to the contract time when the liquidated damages are added to it.



Specific Types:

- ✦ **Early Completion Bonus.** \$X/day for finishing early. Usually used on tight schedule projects.
- ✦ **Value Engineering Cost Savings Bonus.** The General Contractor (GC) splits with the Owner for coming up with savings during the construction. Owner usually gets most of the split (70/30 or better).
- ✦ **Performance Incentives.** The General Contractor gets additional profit based on his performance evaluation of the work completed.
- ✦ **Risk Sharing.** The owner, e.g., buys a blanket construction insurance policy(s) for all of this work. The results in a cost savings for the GC.



Typical Capital Cost Range Per Mile (\$ millions)		
Technology	Lower Range	Upper Range
Add Bus/HOV Lanes (40 ft envelope)		
At-Grade	4	8
Grade Separated	12	20
Elevated Structure	18	28
Widen Freeway (1 lane per direction)		
At-Grade	3	6
Grade Separated	12	20
Elevated Structure	18	28
Widen Arterial (1 lane per direction)		
At-Grade	2	4
Grade Separated	5	10
Elevated Structures	8	15
Light Rail Transit (LRT)		
At-Grade	20	30
Grade Separated	40	55
Elevated	70	100
Commuter Rail		
Utilize Existing Track At-Grade	5	7
New Track At-Grade	7	9
Heavy Rail		
At-Grade	20	30
Elevated	70	100
Subway	200	250
Monorail	70	100
Automated Guideway Transit	50	70
Personal Rapid Transit	50	70
Vintage Streetcar	15	20
Electric Trolley Bus	8	12



Construction

Mitigation measures that can be taken to minimize impacts during construction

Disruption	Mitigation
Motorist delays due to detours and lane closures	Public Information: <ul style="list-style-type: none"> ✦ Web site with weekly updates on traffic conditions ✦ Newsletters with traffic layout maps ✦ Hotline number for questions ✦ Media coverage of new detours
Disruption of access	Design and signing of temporary access
Accidents involving motorists and highway construction workers	Clear signing— strict adherence to safety regulations



Roadway Safety

Medians - Primary functions are to:

-) Separate opposing traffic flows.
-) Provide a recovery area for out-of-control vehicles.
-) Allow space for speed changes and left-turning and U-turning vehicles.
-) Minimize headlight glare.
-) Provide width for future lanes (particularly in suburban areas).
-) Provide a space for landscape planting that is in keeping with safety needs and Improves the aesthetics of the facility.
-) Provide a space for barriers.

Medians can be depressed, raised, or flush with the surface of the traveled way, depending on agency practice and specific location requirements.

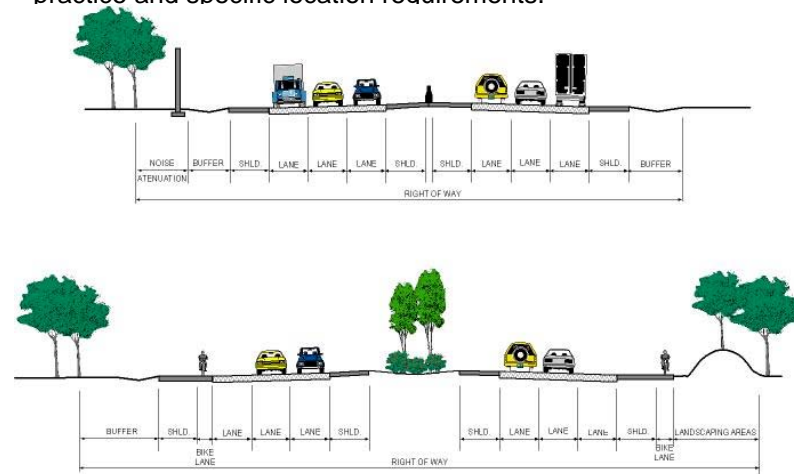


Shoulders are important from a number of perspectives.

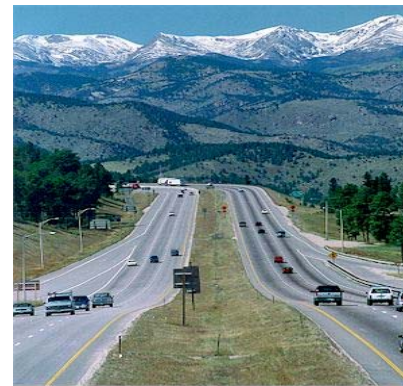
-) improved safety with areas for disabled vehicles and emergency responders.
-) Increased capacity of the highway section through driver comfort and therefore maintained speed.

On some facilities shoulders provide a separate traveled way for pedestrians, and non-motorized vehicles.

Highway Engineering and Roadway Safety



Arterial Strategy Design Features



Traffic Barriers , the Purpose . . .

A device used to prevent a vehicle from striking a more severe obstacle or feature located on the roadside or in the median, or to prevent crossover median accidents. There are four classes of traffic barriers, namely, roadside barriers, median barriers, bridge railings, and crash cushions.

Longitudinal Barriers are guardrails and concrete median barriers which are designed primarily to redirect errant vehicles to keep them from going beyond the edge of the roadway.

Crash Cushions primarily serve to decelerate errant vehicles to a complete stop such as impact attenuators at freeway exit gore areas.

Call Boxes –

These dedicated, emergency phones are located along freeways to allow stranded motorists to access assistance and provide phone service to witnesses or by-passers.

Closely Spaced Milepost Markers –

Closely spaced, clearly visible milepost markers could increase the accuracy of incident reports by by-passers or others by increasing the opportunity to correctly identify the location of an incident. This would improve incident verification and response.

Video Surveillance – video equipment, mounted along the freeway, provides detection, verification, and improved response and site management. Video equipment can be used with notification equipment to alert response agencies of changes in the flow of traffic that would indicate congestion. The video can also be used to verify the occurrence of an incident and identify the appropriate response equipment needed.

Video surveillance is also useful in site management for incidents that restrict access, such as hazardous materials incidents.

