



WEST DAVIS  
CORRIDOR

# Purpose and Need Comparison

---

Technical Memorandum 11  
in support of the  
Environmental Impact Statement

## West Davis Corridor Project

Federal Highway Administration  
Utah Department of Transportation



UDOT Project No. SP-0067(14)0

Prepared by  
HDR Engineering, Inc.  
3949 South 700 East, Suite 500  
Salt Lake City, UT 84107

**March 1, 2010**





## Revision Dates

[dates]

## Contents

<b>1.0</b>	<b>SOUTHERN CORRIDOR (WASHINGTON COUNTY, UTAH).....</b>	<b>1</b>
1.1	Description.....	1
1.2	Purpose .....	1
1.3	Need.....	1
<b>2.0</b>	<b>WEBER COUNTY TO SALT LAKE CITY COMMUTER RAIL PROJECT (UTAH) .....</b>	<b>2</b>
2.1	Description.....	2
2.2	Purpose .....	2
2.3	Need.....	2
<b>3.0</b>	<b>I-355 SOUTH EXTENSION (NORTHEASTERN ILLINOIS).....</b>	<b>3</b>
3.1	Description.....	3
3.2	Purpose .....	3
3.3	Need.....	3
<b>4.0</b>	<b>SOUTH I-25 CORRIDOR AND US 85 CORRIDOR (DOUGLAS COUNTY, COLORADO).....</b>	<b>4</b>
4.1	Description.....	4
4.2	Purpose .....	4
4.3	Need.....	4
<b>5.0</b>	<b>SOUTH MOUNTAIN EIS (MARICOPA COUNTY, ARIZONA) .....</b>	<b>5</b>
5.1	Description.....	5
5.2	Purpose .....	5
5.3	Need.....	5
<b>6.0</b>	<b>WEST CORRIDOR (DENVER, COLORADO).....</b>	<b>6</b>
6.1	Description.....	6
6.2	Purpose .....	6
6.3	Need.....	7
<b>7.0</b>	<b>SOUTHEAST CORRIDOR MULTI-MODAL PROJECT (DENVER, COLORADO) .....</b>	<b>7</b>
7.1	Description.....	7
7.2	Purpose .....	7
7.3	Need.....	7



<b>8.0</b>	<b>LEGACY PARKWAY (SALT LAKE CITY, UTAH).....</b>	<b>8</b>
8.1	Description.....	8
8.2	Purpose .....	8
8.3	Need.....	8
<b>9.0</b>	<b>MOUNTAIN VIEW CORRIDOR (SALT LAKE AND UTAH COUNTIES, UTAH) .....</b>	<b>9</b>
9.1	Description.....	9
9.2	Purpose .....	9
9.3	Need.....	10
<b>10.0</b>	<b>PROVO WESTSIDE CONNECTOR EIS .....</b>	<b>10</b>
10.1	Description.....	10
10.2	Purpose .....	11
10.3	Need.....	11
	<b>APPENDIX A. CORE PURPOSE AND NEED MEASURES.....</b>	<b>12</b>



## 1.0 Southern Corridor (Washington County, Utah)

### 1.1 Description

Construct a four-lane, limited-access, divided highway extending from I-15 northeastward between 20 and 26 miles to connect with SR 9 near Hurricane, including 10 to 12 interchanges and a pedestrian, bicycle, and equestrian trail that would parallel the highway.

### 1.2 Purpose

- Provide a regional transportation facility between St. George, Washington City, and Hurricane that complements local land use plans.
- Accommodate areas of future growth.
- Reduce some traffic on the existing and future network of arterial and city streets.
- Improve traffic conditions in areas already developed.

### 1.3 Need

- The study area lacks a regional transportation facility to accommodate travel in areas where future growth will occur and to provide a linkage between St. George, Washington City, and Hurricane.
- With the continued expected growth in the region, many arterial roads would reach an unacceptable level of service by 2030.
- High growth rates in the cities are expected during the planning period. As new development is constructed to accommodate this growth, a well-planned transportation system will be needed to meet the increase in demand and provide access to the new development currently planned by the cities.
- The regional linkage system in the study area is currently limited, primarily because of geographic and environmental constraints. St. George and surrounding areas have been unable to build an efficient grid system to facilitate traffic movement and provide system linkage with arterial routes because of topographical constraints.



## 2.0 Weber County to Salt Lake City Commuter Rail Project (Utah)

### 2.1 Description

Provide commuter rail transit service between Pleasant View and Salt Lake City, Utah, a distance of about 45 miles, including nine rail stations.

### 2.2 Purpose

- To facilitate the safe and efficient movement of people and goods within the project corridor now and through the design year 2030
- To provide efficient, high-capacity transit service in the project corridor
- To enhance economic potential in the corridor by improving access to existing and planned employment and activity centers and by creating transit-oriented development opportunities
- To support regional plans and policies that call for the provision of a balanced transportation system
- To support regional air quality goals

### 2.3 Need

- The Wasatch Front is growing rapidly in population and employment.
- Population and employment development patterns are increasingly dispersed, with a greater number of activity centers and employment areas.
- Growth rates and an increase in interregional travel patterns are creating additional travel demand for both roadways and transit.
- Travel demand exceeds the capacity of the existing transportation infrastructure.
  - North-south roadway network is heavily congested.
  - Demand for express transit service exceeds supply.
  - Interregional trips are forecasted to increase in the future.
- Physical constraints in the corridor limit opportunities for physical expansion of existing infrastructure.
- There is a need to develop and evaluate regional transportation improvements from an integrated, multimodal perspective.



### 3.0 I-355 South Extension (Northeastern Illinois)

#### 3.1 Description

Provide a “transportation system improvement.”

#### 3.2 Purpose

Provide a transportation system improvement that will enhance north-south mobility between I-55 and I-80 to accommodate projected year 2020 travel demand within northeastern Illinois and the project corridor.

#### 3.3 Need

A transportation system improvement is needed to:

- Improve access between residential areas and regional job centers.
- Achieve land use and transportation planning goals.
- Improve regional mobility.
- Address local system deficiencies.

## 4.0 South I-25 Corridor and US 85 Corridor (Douglas County, Colorado)

### 4.1 Description

The Preferred Alternative focuses on mainline I-25 and US 85 widening to add one general-purpose lane in each direction and improvements to the Schweiger Interchange and the Survey Ridge Road Interchange along I-25 and the State Highway 67 Intersection along US 85.

### 4.2 Purpose

- The South I-25 Corridor and US 85 Corridor EIS project objective is to improve north-south mobility and travel safety in northern Douglas County in a manner that enhances efficient management and maintenance of transportation facilities and is sensitive to the environment, wildlife resources, and quality of life within Douglas County.
- The I-25 Corridor should be maintained as the primary north-south travel corridor in northern Douglas County. I-25 improvements should reduce congestion during peak periods and improve safety on the interstate.

### 4.3 Need

- The north-south peak travel demand in northern Douglas County has grown faster than the surrounding metropolitan area. These trips have overtaxed the existing infrastructure. North-south travel options beyond the use of automobiles on I-25 and US 85 are limited.
- *I-25 Corridor Problem Statement*
  - Traffic volumes on I-25 exceed the design during the AM and PM peak hours. The result is congestion, delays, and crashes, exacerbated by adverse weather.
  - I-25 is the focus for interregional travel and the majority of commuter trips originating in Douglas County.
  - Forecasts of future demand show continued overtaxing of the I-25 facility, resulting in more hours of congestion, longer delays, and more crashes.
- *US 85 Corridor Problem Statement*
  - The US 85 Corridor has one lane in each direction. In many locations, left- and right-turn lanes do not exist. This results in a high number of crashes and dangerous driving, such as passing slower vehicles on the shoulders.





- US 85 provides for some short-distance regional trips and many local trips. US 85 is the local street for communities such as Sedalia and Louviers. Turning onto and off of US 85 is difficult because of the speed and volume of the mainline traffic.
- Forecasts of future demand show increased driver frustration, resulting in increased crashes and reduced accessibility.

## 5.0 South Mountain EIS (Maricopa County, Arizona)

### 5.1 Description

Construct the South Mountain Freeway as part of the proposed 232-mile Regional Freeway System (RFS) approved by Maricopa County, Arizona, voters in 1985.

### 5.2 Purpose

- To provide a regional system linkage with the remainder of the RFS, which was approved by Maricopa County voters in 1985.
- To meet the objectives of adopted local land use plans, which have been developed around the concept of a major transportation facility in the southwest part of the region.
- To serve part of regional mobility needs resulting from rapid population growth and associated travel demand, much of which will occur in the southwest part of the region.

### 5.3 Need

- In 2025, the Maricopa Association of Governments (MAG) area is projected to have a population of about 5 million, almost 2 million dwelling units, and an employment level of 2.4 million. These projections would result in increased travel demand that would further burden the existing and planned regional transportation system.
- The result of the traffic analyses is a need for a major regional roadway in the South Mountain Transportation Corridor (SMTTC) for the following reasons:
  - Current operating conditions on the regional network in the study area and its vicinity are congested, with much of the network operating at unacceptable level of service.
  - Travel within the MAG region is projected to increase about 58 percent over the next 20 years. The majority of metropolitan-area freeways and arterials are

projected to operate at LOS E or worse without a major regional roadway in the SMTC.

- The length of travel time during peak periods of travel in the same areas will increase substantially.
- Without a major regional roadway in the SMTC, the planned facility and services improvements would accommodate about 65 percent of the total demand (operating at an acceptable LOS D) that is projected in 2021.
- Best-case non-freeway modal transportation improvements, including transit, TDM/TSM, roadway improvements (not including a major regional roadway in the SMTC), alone and cumulatively, are not enough to adequately address the projected 2021 capacity deficiencies. Further, such best-case scenarios are not planned for or funded.
- A freeway in the SMTC would reduce projected volumes on the remaining RFS and the local roadway network compared to the RFS and network without a freeway in the SMTC.
- A freeway in the SMTC in 2021 would enhance travel times and reduce congested areas compared to the SMTC without a freeway.
- A major regional roadway in the SMTC is a major component in the MAG RFS, which is intended to function as an integrated freeway network. The system linkage provided by such a facility optimizes the system continuity, which is important for overall RFS operation.
- A major regional roadway in the SMTC is an important component of past and current planning efforts. Maricopa County, Phoenix, Laveen, Estrella, Tolleson, and Avondale have all made transportation, land use, and economic planning decisions within the context of having a major regional roadway in the study area.

## 6.0 West Corridor (Denver, Colorado)

### 6.1 Description

Enhance mass transit (bus and light rail service).

### 6.2 Purpose

- Offer transportation options to single-occupant vehicle travel.
- Increase Denver regional connectivity and transit effectiveness.
- Increase people-carrying capacity in the corridor.
- Support local and regional planning objectives.



### 6.3 Need

- West 6th Avenue currently carries the second-highest traffic volumes in the Denver region, second only to I-25, with forecasts indicating a greater than 20% increase in traffic volumes by 2025.
- The corridor has relatively high percentages of low-income, minority, and non-vehicle households that are transit-dependent.
- Travel time delay and congestion levels in the corridor are increasing.
- Regional and local planning have identified the need for transportation improvements in the corridor.

## 7.0 Southeast Corridor Multi-Modal Project (Denver, Colorado)

### 7.1 Description

Improve 16 miles of two interstate highways (I-25 and I-225) and add 19 miles of a new light rail transit line, including 13 new stations.

### 7.2 Purpose

- Improve travel time and enhance safety along I-25 and I-225 while causing the least disruption to neighboring residents and businesses.
- The Southeast Corridor Multi-Modal Project would improve transit and motorist travel time and reliability, attract additional transit riders, enhance safety for motorists, and support rapidly growing residential and commercial areas served by the Southeast Corridor.

### 7.3 Need

- The Southeast Corridor is one of the Denver region's highest-priority travel corridors. With employment centers at both ends of the corridor, traffic congestion occurs in both directions during the morning and evening rush hours. Traffic volumes in the Southeast Corridor continue to rise faster than increases in population and employment, and the length of the peak rush hours has grown over the years. All of these factors combine to make the Southeast Corridor the highest-volume, most-congested corridor in the region.

## 8.0 Legacy Parkway (Salt Lake City, Utah)

### 8.1 Description

The Legacy Parkway is proposed as a four-lane, limited-access, divided highway extending from I-215 at 2100 North in Salt Lake City northward 14 miles to the interchange of I-15 and US 89 in Farmington.

### 8.2 Purpose

- Provide additional north-south transportation capacity in the North Corridor to help meet 2020 travel demands.
- Provide a single, continuous alternate north-south route through the North Corridor to reduce congestion and increase safety when I-15 is closed or congested because of accidents or other incidents and during the reconstruction of I-15.
- Provide an alternate north-south route for emergency vehicles through the North Corridor.

### 8.3 Need

- *Lack of Capacity.* Capacity needs are summarized in Figure 1-6 (Unmet Transportation Demand in 2020 with Existing System), which indicates that the existing system can meet only 57% of the 2020 corridor travel demand.
- *Lack of Alternate Routes.* Because of the demand on the existing I-15, and the fact that there is no other north-south high-capacity roadway through the corridor, I-15 capacity is strained and its safety and efficiency are decreased. This situation is worsened when I-15 is congested or closed due to incidents; trucks have no alternate route through the corridor and there is no other high-speed roadway for emergency vehicles.
- *Growing Demand.* These situations will worsen as increased travel demand occurs. The future demand will greatly exceed the existing capacity of I-15, resulting in a breakdown in vehicle flow with stop-and-go conditions during extended peak periods.
- *Design Deficiencies.* Portions of I-15 were constructed nearly 40 years ago, and it has numerous deficiencies according to current design standards. These deficiencies include substandard shoulder widths, median treatments, ramp exits and entrances, and interchanges. These deficiencies contribute to congestion, slower traffic speeds, and accidents.

## 9.0 Mountain View Corridor (Salt Lake and Utah Counties, Utah)

### 9.1 Description

The Mountain View Corridor, is a proposed transportation improvement project that includes both 2030 roadway and transit solutions for meeting travel demand in western Salt Lake County south of I-80 and west of Bangerter Highway and in northwestern Utah County west of I-15, south of the Salt Lake County line, and north of Utah Lake. As identified in the Record of Decision the project consists of a 35 miles of new freeway and 9 miles of a light rail option along 5600 West in Salt Lake County.

### 9.2 Purpose

The Mountain View Corridor project has both primary and secondary purposes. The primary purposes were used as the main criteria to screen or eliminate alternatives that were not reasonable or practicable. The secondary purposes were used to further refine project alternatives (for example, to make minor shifts to the alignments) but were not used to determine whether an alternative was not reasonable or practicable.

The MVC is primarily intended to achieve the following objectives:

- **Improve Regional Mobility by Reducing Roadway Congestion.** Improve regional mobility for automobile, transit, and freight trips by reducing roadway congestion compared to the No-Action conditions on roadways serving the major north-south travel movements in the Salt Lake County portion of the study area and the major east-west and north-south travel movements in the Utah County portion of the study area.
- **Improve Regional Mobility by Supporting Increased Transit Availability.** Improve regional mobility by supporting increased availability of transit compared to the No-Action conditions as an alternative to automobile trips for the major north-south travel movements in the Salt Lake County portion of the study area and the major east-west and north-south travel movements in the Utah County portion of the study area.

Other secondary objectives of the project are as follows:

- **Support Local Growth Objectives.** Support local economic development and growth objectives as expressed through locally adopted land-use and transportation plans and policies, including the principles reflected in the Growth Choices Vision (see Section 1.5.3, Growth Choices Vision) by providing transportation improvements that complement locally established land-use plans.
- **Increase Roadway Safety.** Reduce accident rates and the number of high-accident locations (compared to the No-Action conditions) on the roadways serving the major

north-south travel movements in the Salt Lake County portion of the study area and the major east-west and north-south travel movements in the Utah County portion of the study area.

- **Support Increased Bicycle and Pedestrian Options.** Support increased availability of bicycle and pedestrian options consistent with the adopted regional transportation plans in the portions of the study area in Salt Lake and Utah Counties.

### 9.3 Need

The major transportation needs in the Mountain View Corridor study area are a result of rapidly growing population and employment in this area. The existing roadway network in the study area primarily consists of arterial streets that are not intended to accommodate a high volume of long-distance through trips and freight movements. The existing transit network consists primarily of local and express bus service. These conditions have resulted in the following deficiencies:

- Lack of adequate north-south transportation capacity in western Salt Lake County
- Lack of adequate transportation capacity in northwest Utah County
- Increased travel time and lost productivity
- Lack of transit availability
- Reduced roadway safety due to increased roadway congestion
- Lack of continuous pedestrian/bicycle facilities

## 10.0 Provo Westside Connector EIS

### 10.1 Description

The City of Provo, in conjunction with the Federal Highway Administration (FHWA), and the Utah Department of Transportation (UDOT), is proposing to construct a four-lane east-west arterial street connecting Interstate 15 (I-15) and 1860 South at the University Avenue Interchange to 3110 West near the Provo Airport (Proposed Action). This project is known as the “Provo Westside Connector” (PWC).

## 10.2 Purpose

The purpose of the Proposed Action is to improve roadway system linkage in southwest Provo, generally between the I-15/University Avenue interchange and the Provo Airport, in a manner that will:

- Support the City's planned residential development and land use changes in southwest Provo
- Support planned improvements in service at Provo Airport and related commercial and industrial development in the vicinity of the airport
- Support the continued economic viability of the commercial center of Provo east of I-15

This project purpose statement will be used in Chapter 2 as part of screening of alternatives.

## 10.3 Need

The primary project needs are:

1. Supporting planned residential development and land use changes in southwest Provo by extending the east-west arterial system to serve as part of an expanded street grid in this area
2. Supporting planned improvements in service at Provo Airport and related commercial and industrial development in the vicinity of the airport by providing a more direct roadway link between Provo Airport and the vicinity of the I-15 1860 South/University Avenue interchange
3. Supporting the continued economic viability of the commercial center of Provo by providing a more direct roadway connection between the residential areas west of I-15 and the commercial center of Provo east of I-15, including Provo Towne Center

Secondary needs that can reasonably be addressed in conjunction with the primary needs include:

1. Maintaining residential street traffic volumes within Provo City's livability standards
2. Improving emergency vehicle access and evacuation routes in southwest Provo
3. Facilitating trail, walkway, and bicycle path connectivity in southwest Provo
4. Accommodating access to recreation areas along the north shore of Provo Bay in Utah Lake
5. Supporting public transportation service routes in southwest Provo

## Appendix A. Core Purpose and Need Measures

Measures	Data	Analysis
Safety Hazard Correction	Crash data, e.g., number of crashes, injuries, fatalities, property data, hazards to nonmotorized traffic	Look for opportunities to improve safety and security.
Economic Development	Traffic counts; increases in the number of businesses, Enterprise or other economic development zone designation	Use to determine if new travel demands may be generated by increased economic activity.
Level(s) of service improvement	Increased demand on the facility or route, e.g., traffic counts, passenger boardings, etc.; lists of needed enhancements of pedestrian and bicycle facilities, crossings, bus stops, etc.	Look for alternatives to decrease congestion or add capacity, including increased nonmotorized travel.
Social Demand	Community requests for improvements, user complaints, suggestions; changes in education, human service, or religious facilities; residential relocations; aesthetics	Use to determine if new travel demands may be generated by changes in social activities.
System linkage, i.e., "fits" in the transportation system	Congestion on local roads, travel demand or volume sufficient to support highspeed or express facilities or services	Look for opportunities to provide links within modes.
Interface with other modes	Connectivity; level of quality for transit and nonmotorized traffic; bicycle and pedestrian facilities, sidewalk, path, and trail conditions, street crossings, universal design features	Look for opportunities to provide links between modes.
Transportation Demand	Average vehicle occupancy rates, congestion, crash data, energy consumption, nonmotorized travel, the number of zero vehicle households	Use to develop alternatives that may promote nonmotorized travel or improve access and mobility for nondrivers.