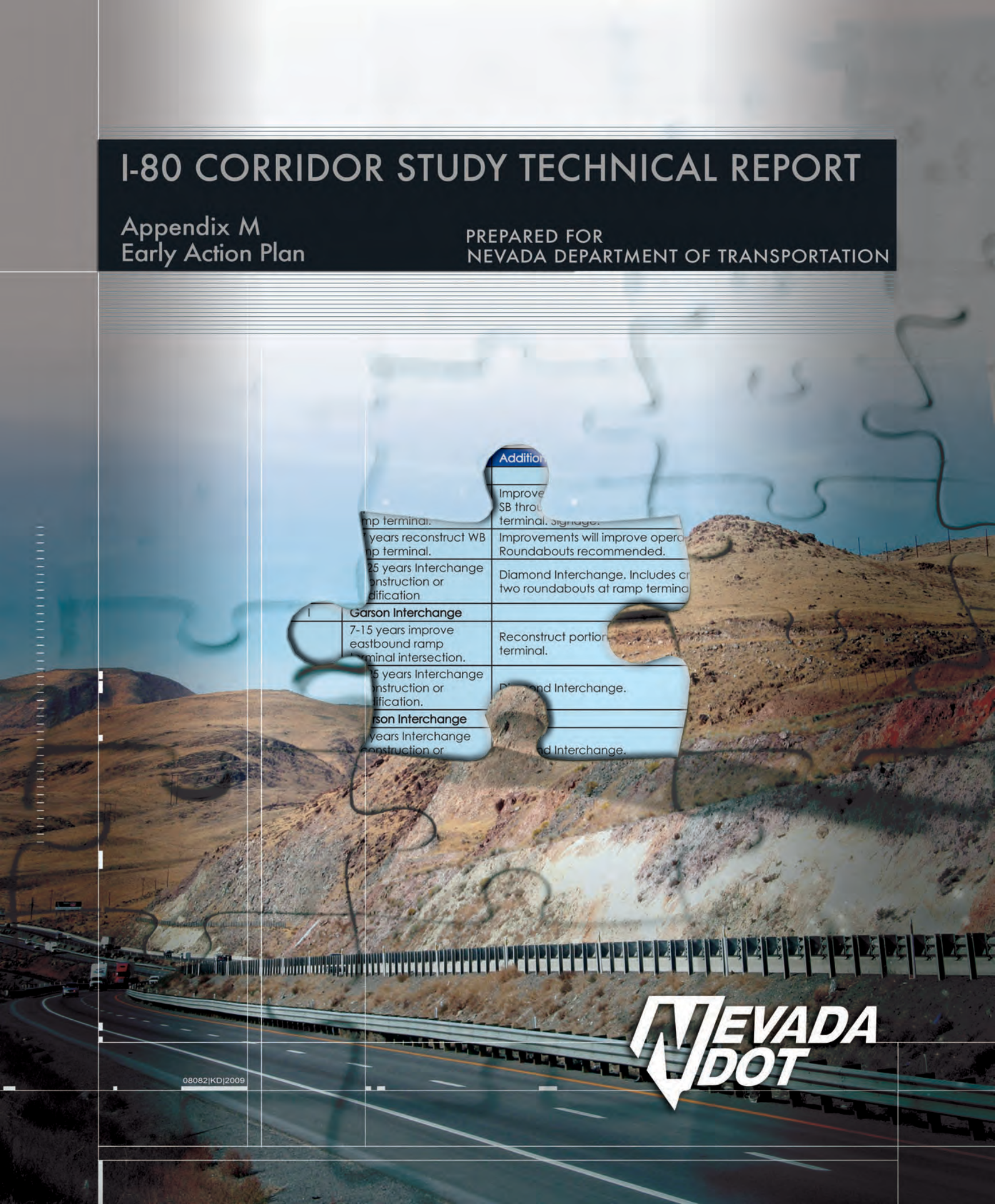
I-80 CORRIDOR STUDY TECHNICAL REPORT

Appendix M
Early Action Plan

PREPARED FOR
NEVADA DEPARTMENT OF TRANSPORTATION



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1. Introduction

The I-80 Corridor Study area encompasses I-80 west from the California State Line to the West McCarran Boulevard (SR 651) Interchange, and I-80 east from the East McCarran Boulevard (SR650) Interchange in the City of Sparks to east of the Wadsworth-Pyramid (SR 427) Interchange. The intent of this study is to provide decision makers within the I-80 Corridor an action plan that will define future transportation needs along the corridor. Furthermore, this study is intended to provide participating agencies with a range of workable and cost effective transportation alternatives that address current and future needs along the corridor. These alternatives will be assessed for their socioeconomic, community, environmental, and fiscal impacts.

2. Purpose of the Memo

The I-80 Corridor Study will address concerns related to the need for improving transportation along this corridor by evaluating the future land use demands while protecting and utilizing existing resources. This study is primarily a long range transportation plan. Many of the re recommended potential solutions are capital intensive requiring more detailed studies as well as identification of funds for implementation. The engineering assessment of the existing conditions and operations on the corridor and input from stakeholders, public and study group provided information regarding the operational deficiencies and need for improvement in several areas along the corridor. This technical memo will summarize the existing and short term deficiencies that should be addressed and provide an action plan that will list the immediate actions that should be taken to initiate some of the elements of the long term plan.

3. Short -Term Transportation Improvements

The analysis of the existing conditions along the I-80 Corridor provided information regarding the current deficiencies and identified where immediate improvement and intervention is required to bring the operations and safety of the corridor within acceptable level of service. The analysis included an investigation of the Traffic Operations, Safety and Structures. The analysis was performed at a level that allows the identification of need as a placeholder for future projects. A detailed analysis would be required for each specific project for identifying the detailed improvement needs. Bridge replacements and reconstructions were not included into the improvements lists unless needed to accommodate the geometry therefore continuous monitoring of bridge structures is required for including them as part of improvements. A cost estimate of these alternatives is also provided for physical improvements.

The following table summarizes the identified deficiencies by location and provides recommendations for short term improvements.

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Option	Potential Solution	Additional Description	Estimated Cost
A	**West Verdi Interchange**		
	2-7 years reconstruct WB ramp terminals to improve operations and connectivity -- roundabouts recommended	Ramp terminal reconstructed with a roundabout.	$3,100,000
	0-2 years safety improvements to eliminate the conflict points for the SB right, SB through and NB left turn movement on the EB on-ramp terminal. Signage.		
II	***Garson Interchange**		
	2-7 years Interchange reconstruction or modification.	Diamond Interchange.	$24,900,000
	Mogul Interchange		
	2-7 years reconfigure to accommodate storage and improve connectivity.	Includes two new bridges at the Mogul Interchange (west and east) to provide space under. Reconstruct eastbound off ramp.	$12,000,000
	Robb Dr. Interchange		
	2-7 years reconstruct ramp terminals to improve operations, connectivity, and safety	Option #1: Includes adding an additional lane northbound from exit ramp to next intersection. Option #2: Includes adding an additional lane northbound from exit ramp to next intersection and improvements to south terminal relative to potential improvements needed by developer.	Option #1: $300,000 Option #2: $1,400,000
I	**West McCarran Interchange**		
	0-2 years signal retiming		
	2-7 years reconfigure WB ramp terminal	Option #1: Ramp reconstruction only. Option #2: Diamond Interchange including crossroad and bridge	Option #1: $10,000,000 Option #2: $24,900,000
II	**West McCarran Interchange**		

Option	Potential Solution	Additional Description	Estimated Cost
	2-7 years reconstruct Interchange	Diamond Interchange.	$24,900,000
	West Verdi, Garson, East Verdi, Mogul, and Robb Interchanges		
	2-7 years start implementing travel demand management strategies -- differential start times and work schedules, incentives, park-and-ride, and ride share.		-
	CA Stateline to West McCarran Interchange		
	2-7 years establish an express transit service		-
	2-7 years establish a bicycle facilities network		-
	East McCarran Interchange		
	0-2 years evaluate modern roundabouts for ramp terminal intersections	Roundabout Alternative Analysis only, no design or construction included.	$150,000
	2-7 years reconstruct east and westbound ramp terminals	Ramp terminals reconstructed with roundabouts.	$6,200,000
I	**Sparks Interchange**		
	0-2 years construct east to north triple left	Option #1: Reconstruct Sparks off ramp to accommodate enough lanes. Restriping and median shift on Sparks Structure to accept three turning lanes. No structure replacement or widening included. Option #2: Reconstruct Sparks off ramp to accommodate enough lanes. Widen Sparks Structure to accommodate new width needed for additional lane.	Option #1: $6,800,000 Option #2: $41,500,000
	2-7 years construct northbound double left and a separate storage lanes to accommodate southbound right turn movement.		TBD
II	**Sparks Interchange**		

Option	Potential Solution	Additional Description	Estimated Cost
	2-7 years reconstruct interchange		TBD
	Vista Interchange		
	0-2 years construct southbound free right turn lane and provide storage for the westbound left and right turn movement on the ramp		$1,300,000
	0-2 years construct eastbound to north triple left	Option #1: Reconstruct Vista off ramp to accommodate enough lanes. Restriping and median shift on Vista Structure to accept three turning lanes. No structure replacement or widening included. Option #2: Reconstruct Vista off ramp to accommodate enough lanes. Widen Vista Structure to accommodate new width needed for additional lane.	$3,200,000 34,900,000
	2-7 years construct southbound to east dual left turn	Option #1: Reconstruct Vista on Ramp to accept two turning lanes. Restriping (lane and shoulder width reductions) to accommodate additional left turn lane. No structure replacement or widening included. Option #2: Reconstruct Vista on Ramp to accept two turning lanes. Widen Vista Structure to accommodate new width needed for additional lane.	Option #1: $1,800,000 Option #2: $39,200,00
	East McCarran, Sparks, and Vista Interchanges		
	2-7 years start implementing travel demand management strategies -- differential start times and work schedules, incentives, park-and-ride, and ride share	No Estimate Required	-
	East McCarran Interchange to Wadsworth Interchange		
	2-7 years establish an express transit service	No Estimate Required	-
	2-7 years establish a bicycle facilities network	No Estimate Required	-
I	**Lockwood and Patrick**		

Option	Potential Solution	Additional Description	Estimated Cost
	Interchanges		
	7 years or upon development install roundabouts at slip ramp terminals	Ramp terminals reconstructed with roundabouts.	$6,200,000
	Mustang Interchange		
	Safety Improvements on the EB and WB on-ramp terminals. Signage		
	Mainline		
	East McCarran Interchange to Wadsworth Interchange		
	2-7 years eastbound McCarran to Sparks add on full auxiliary lane		$14,000,000
I	**Wadsworth Interchange to East McCarran Interchange**		
	0-2 years westbound Sparks on ramp extend	Includes extending the acceleration lane associated with the westbound Sparks on ramp +/- 1000'.	$2,100,000
	2-7 years westbound Sparks to McCarran add 1 full auxiliary lane		$14,000,000
	2-7 years westbound between McCarran on-ramps add 1 general purpose lane	Includes replacement of 1 major bridge (East McCarran) due to design life and widening needs.	$13,500,000
II	**Wadsworth Interchange to East McCarran Interchange**		
	0-2 years westbound Sparks to McCarran add 1 full auxiliary lane		$14,000,000
	2-7 years westbound between McCarran on-ramps add 1 general purpose lane	Includes replacement of 1 major bridge (East McCarran) due to design life and widening needs.	$13,500,000

(*) This improvement will occur if sufficiency rating of Garson Road Bridge will fall below the threshold level and the bridge becomes eligible for replacement**.**

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4. Early Action Plan

In addition to short-term projects, a number of the recommendations in the I-80 Corridor Transportation Plan (study) should be acted upon immediately. Recognizing that ongoing and future development can limit opportunities for improving the operations of the freeway and the corridor, NDOT and local governments should begin the process of implementing the following recommended steps:

Study Group Recommendations

- The I-80 Corridor Study Group recommends regional stakeholders continue exploring the coordination issues identified in this Study. It is recommended that a working group be formed to organize a regional visioning effort similar to Sacramento, California's Blueprint and Utah Wasatch front's Envision Utah. These regional visioning efforts are broad-based comprehensive citizen-driven processes focused on shaping a consensus view of a region's future. This visioning process could serve as means for establishing the requirements of state planning law XX which calls for a regional collaborative body.
- Monitor and periodically update Latent Capacity Analysis.
- Create a separate Emergency Response Plan for the East Truckee River for addressing issues with emergency vehicle access to incident locations. Without parallel routes, emergency vehicles are trapped behind vehicles stopped because of the propagating incident.
- Conduct a road safety audit on the mainline and interchange terminals to determine specific comprehensive measures for addressing dated design standards. A specific concern is the safe passage of wildlife.
- Local governments are recommended to incorporate Pyramid Tahoe bikeway in their transportation plans as an alternative mode that supports local circulation, provides alternative commute mode, and promotes pedestrian and bicycle recreational travel.
- In coordination with RTC, expand existing commute trip reduction programs to provide a comprehensive multi-strategy approach.
- RTC, with NDOT support, is recommended to convene a task force to explore resources and funding opportunities for establishing an express transit route, or similar, service along the I-80 corridor.
- The results of the Linking Conservation and Transportation Planning workshop are fully endorsed by the I-80 Corridor Study Group. Further, it is desirable to continue exploring ways to work collectively on planning efforts initially identified in the workshop.
- Perform an intersection alternative operational analysis at East McCarran eastbound interchange terminal considering a roundabout as a feasible long term alternative.

Support Team Recommendations

- To achieve the goals of access management in critical areas NDOT is recommended to begin pursuing and adopting regulatory methods. These methods may include:

  - Prohibiting access connections within a designated distance from a ramp meter or terminal.
  - Parcels not meeting the designated distance requirements from the ramp meter or terminal are required to negotiate joint driveway agreements to gain access.
  - Adopting service road policies that support an Access Management Plan.
  - Creating an Access Management Overlay District.
  - Incorporate policies into local land division and subdivision regulations.
- Finalize the process of creating a Traffic Incident Management Coalition for establishing a Regional Traffic Incident Management Program.
- Establish a Freeway Management Program that includes stakeholders from local jurisdictions and other private organizations. This group will generate regional goals, policies and strategies for establishing the components of the program including:
    - Surveillance and Incident Detection,
    - HOV treatments,
    - Ramp Management,
    - Information Dissemination, and
    - Land Use Control.
- Coordinate with Caltrans in establishing a dedicated communication link between NDOT ATMS and Caltrans ATMS. This link allows the exchange of travel information between NDOT and Caltrans, and provides better motorist notification and traffic handling.
- Expand the NDOT Traffic Operations Field Elements in compliance with the Regional ITS Architecture. These elements include but are not limited to closed circuit television(CCTV), highway advisory radio(HAR) systems and transmitters, road weather information systems (RWIS) and field sensors, dynamic message signs (DMS), flow detectors, communications infrastructure.
- Provide surveillance cameras along with communication, and other software that may be required to broadcast the images on the existing NDOT 511 site, at all the existing weather data collection sites.
- Establish dedicated communications link between the traffic operation centers to coordinate Arterial Operations with Freeway Management.
- Conduct a region-wide inventory of existing and potential future truck parking. This inventory will establish parking needs in detail and assist in developing a comprehensive operational strategy for incident response.
- Conduct a ramp management study including all stakeholders. Study elements to include but not be limited to justification for ramp metering deployment, justification of geographic extent, identification of metering flow, evaluation of adjacent facility operations. and provide an implementation plan.

- Develop a pilot study to explore the benefits of ramp metering for improve operations and provide an alternative to physical improvements at East McCarran, Sparks and Vista Boulevard Interchanges.

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