two

Project Description

The Interstate 80 (I-80) East Widening project proposes to widen I-80 from two to three lanes in each direction for 13 miles, from the Vista Boulevard interchange to the USA Parkway interchange in Northern Nevada. The project would include safety improvements, such as constructing standard twelve-foot-wide outside shoulders throughout the project and widening the inside shoulders (as allowed by project constraints). The project will also replace functionally obsolete structures and improve interchange geometries and ramp termini configurations at the Vista, Lockwood, Mustang, and Patrick interchanges.

2.1 PROJECT INTRODUCTION

Significant industrial, commercial, and technological developments have generated tens of thousands of new jobs near the corridor. The continuous growth and development in the Reno/Sparks area is causing increased pressures on I-80. As the second longest interstate highway in the United States, it provides a critical freight route between California and Utah.

Furthermore, I-80 is essential for Northern Nevada mobility. The area between Reno/Sparks and Fernley is rapidly developing. The most significant development, the Tahoe Reno Industrial Center (TRIC), encompasses 102,000 acres (approximately 160 square miles). This development is larger than the Reno/Sparks area (which cumulatively comprises 141.8 square miles), making the TRIC one of the largest industrial developments in the world. The TRIC has sold out with over 30,000 developable acres, slated to accommodate over 300 million square feet of building space (see Exhibit 2.1). Some of the major companies with land ownership in the TRIC include TESLA, Google, Blockchains, and Switch, with other companies and developments under construction or planned in or around the area, such as the Apple Data Center. The TRIC has created over 15,000 jobs and is estimated to produce 35,000 to 50,000 jobs in the next 20 years. In January 2023, TESLA announced they will be investing $3.6 billion to expand their factory to include an additional 4 million square feet for electric semi-trucks and a battery factory.

Exhibit 2.1

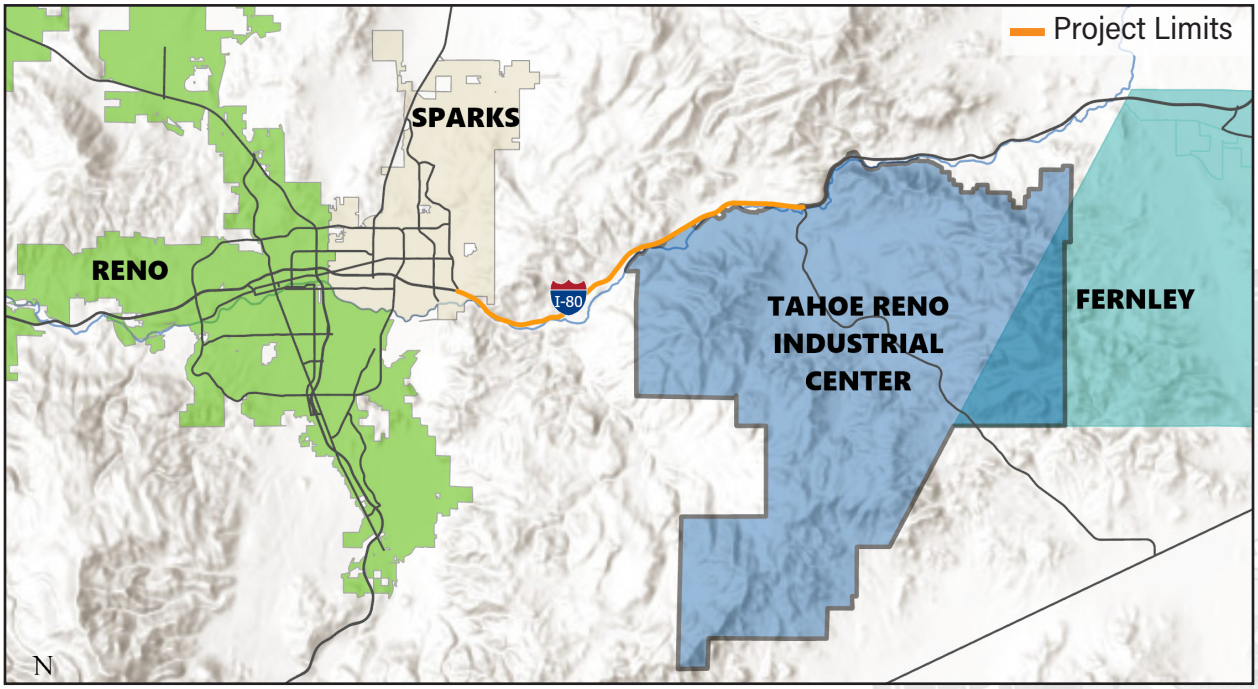
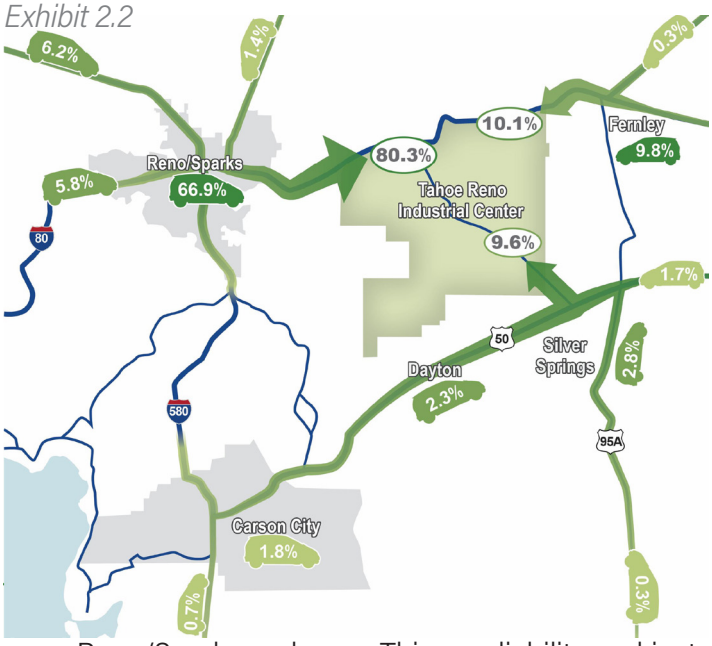


Exhibit 2.2



The I-80 corridor between Reno/Sparks and USA Parkway is the primary access corridor to the TRIC and accommodates most of the traffic from development. Recent survey results indicate that over 80% of TRIC's employees utilize this segment (Exhibit 2.2). The majority of the corridor is within the Truckee River Canyon with steep terrain, a sinuous roadway alignment, and close proximity to the Truckee River and Union Pacific Railroad. The current roadway can not accomodate future traffic volumes and has shoulders that do not meet current design standards. Congestion and safety concerns will continue to increase with unpredictable travel delays lasting hours. This causes concerns for TRIC's employees, as even minor accidents can immensely disrupt the system and make it difficult for emergency vehicles to navigate the roadway efficiently (see Exhibit 2.3).

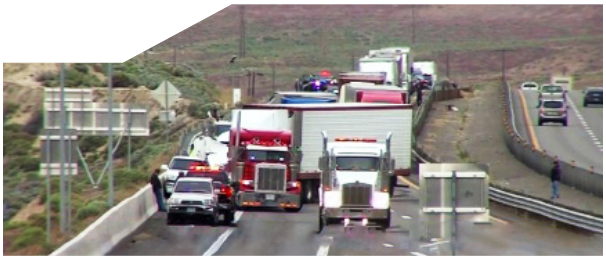


Exhibit 2.3

This unreliability and instability adversely impacts the most significant freight corridor between California and Utah.

Early Action

The Nevada Department of Transportation (NDOT) and other local agencies recognized this situation and have been implementing early action projects to relieve congestion and improve safety. Although these improvements provide some immediate benefits, they cannot accommodate the steady increase in traffic.

2.2 PROJECT HISTORY

NDOT and other stakeholders have evaluated the corridor, generating more than 30 studies and possible solutions. Ideas included developing alternative routes; improving contributing routes; and altering I-80 with widening, reversible lanes, and efficiency advancements (ridesharing, vanpools, carpools, and new bus routes). In 2019/2020, NDOT performed a comprehensive evaluation of the studies and ideas for feasibility and to establish a performance-based prioritization.

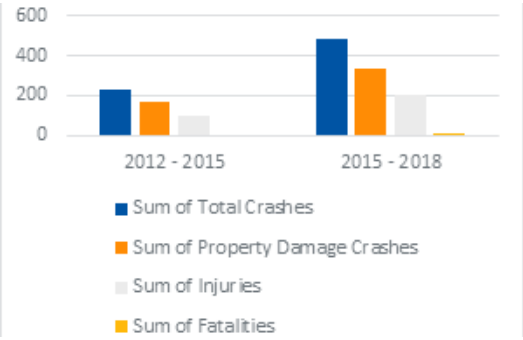
This effort included scoring each alternative for safety, optimizing mobility, preserving assets, transforming economies, resource and environmental sustainability, and benefit/cost analysis. The I-80 Corridor Study concluded widening I-80 between Vista Boulevard and USA Parkway as the best option. NDOT initiated National Environmental Policy Act (NEPA) efforts to evaluate this corridor. A Finding of No Significant Impact (FONSI) is anticipated in late 2024/early 2025.

2.3 TRANSPORTATION CHALLENGES AND SOLUTIONS

CHALLENGE 1 - IMPROVE SAFETY:

Safety is the highest concern. NDOT's Safety Division collected and evaluated crash data for the corridor. Exhibit 2.4 summarizes the data from the three-year period of June 2015 to May 2018 and compares it to the previous three-year period of October 2012 to September 2015. Crashes have nearly doubled, and fatalities have significantly increased. The corridor's instability can result in a complete failure, even with minor incidents, and delay emergency responders from reaching crashes. As congestion increases, so will vehicle friction and, most likely, crash rates.

Exhibit 2.4



	2012 - 2015	2015 - 2018
	233	482
	171	334
	97	201
	0	7

SOLUTION: Using the Federal Highway Administration's (FHWA) Highway Safety Manual procedure, the proposed safety improvements were analyzed to determine anticipated crash reductions and crash reduction savings. This project's safety features include widening shoulders; adding a travel lane in each direction; improving signing (dynamic messaging systems), striping, and lighting; and enhancing geometry for interchange ramps. In the I-80 Corridor Study, each safety element was assigned a Crash Modification Factor (CMF) and Crash Reduction Factor (CRF) as established in the FHWA Crash Modification Clearinghouse. CRF values are estimated as follows:

Safety Modifications	CRF
Additional lane in each direction	26%
Increasing the outside shoulder widths from 3' to 10'	29%
Improved on and off ramps	26%
Lighting and signing	44%
Median Barrier*	97%
Wider Edge Lines*	22%

**FHWA Proven Safety Countermeasure*

Although benefits are expected from each improvement, the project used a conservative conglomerate CRF of 26% to estimate crash reductions and the benefit/cost analysis.

CHALLENGE 2 - REDUCE CONGESTION:

The Regional Transporation Commission of Washoe County (RTC) regional travel demand model's traffic forecasts predict major traffic growth in the corridor. Currently, most segments along I-80 between Vista Boulevard and USA Parkway operate at the desired level of service (LOS) or at capacity. However, ongoing development is causing congestion at the USA Parkway interchange, adversely impacting mainline performance. The high traffic volumes exiting and entering I-80 are

causing long queues on the ramps that extend onto the mainline and degrade the freeway's performance.

The forecast also estimates the population and employment relating to the I-80 corridor through the TRIC will increase by 36% from 2015 to 2040. The increase in traffic will produce unacceptable conditions, increasing congestion and resulting in very low speeds (seven to fifteen miles per hour). Furthermore, the Vista Boulevard interchange will fail (LOS F) as queues extend on I-80 for over a half mile. Most segments on I-80 will fail by 2040 if no improvements are made.

SOLUTION: NDOT's Reno Sparks Freeway Traffic Study (RSFTS) recommended two high-priority improvements: widening I-80 from two to three lanes in each direction and installing a traffic signal at the USA Parkway interchange. Traffic analysis demonstrates significant improvement in freeway operations and interchange performance with these improvements. Specifically, all freeway segments are expected to operate at the desired threshold of LOS D or better with a free flow speed of at least 55 miles per hour. NDOT has installed a traffic signal at the USA Parkway interchange as an early action project. Supporting Traffic Operations and forecast information from the RSFTS is included in Appendix I.

CHALLENGE 3 - PROMOTE ECONOMIC DEVELOPMENT: I-80 is vital to the area's economic development. Locally, it connects the Reno/Sparks area with the TRIC. From a regional perspective, it is a major freight connection from California's Port of Oakland to the central and eastern United States. NDOT's Nevada State Freight Plan provides "a strategic framework enhancing freight mobility and a statewide economy." Its associated freight study evaluated existing freight logistics and contributed to the vision of establishing a competitive advantage by creating crossroads of national commerce within a multimodal system of superior safety, condition, and performance. The I-80 corridor is vital to NDOT's overall objective. With approximately 20% of the total vehicles being trucks, this project corridor is considered a "critical freight project."

Exhibit 2.5

SOLUTION: The improvements to I-80 with this project would provide improved access and increased safety to those accessing TRIC. The ongoing growth of TRIC is vital to the economic development of Northern Nevada.

Overarching Improvements

The proposed project is expected to dramatically increase travel time reliability and reduce congestion by improving capacity with additional lanes, improving safety features, and creating space for incident management.

This project is supported by state and local agencies, in addition to the business community. Letters of support are included in Appendix II.

2.4 PROJECT CONTEXT

NDOT and local agencies are committed to improving the I-80 corridor and connecting routes through the Reno/Sparks area. Directly to the west of this project. NDOT recently completed the $182 million Phase 1 project, the Spaghetti Bowl Express project, to make much-needed early action improvements to the Spaghetti Bowl Interchange, primarily in the east-to-south and southbound movements along I-580 (Exhibit 2.6).

Exhibit 2.6

Other initiatives have been implemented by a combination of RTC and private groups in the TRIC for carpooling, private van and bus shuttles, and vanpooling. These efforts have resulted in significant ridership, estimated to be over 2,500 daily rides.

Exhibit 2.7

NDOT is also participating in the ongoing efforts under the FHWA Multistate Corridor Operations and Management Program (MCOM), specifically with the I-80 Winter Operations Coalition, a four-state coalition (California, Nevada, Utah, and Wyoming) organized to improve winter operations of the I-80 corridor (Exhibit 2.8).

Exhibit 2.8

As these projects and initiatives progress and other I-80 widening projects are developed, this project will seamlessly tie into those improvements. As additional developments, such as the Painted Rock area and Crossroads project, are planned and constructed, additional improvements to I-80 will likely be required. I-80 in this area will be monitored, and projects will be prioritized accordingly.