



# I-80 Corridor Study

North McCarran Boulevard to USA Parkway

## RENO / SPARKS FREEWAY SYSTEM

### Executive Summary

January 2020

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**RENO / SPARKS FREEWAY SYSTEM**

### Executive Summary

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## Executive Summary

Continuous population and development growth in western Nevada is increasing pressures on the existing roadway systems. The I-80 corridor west of the City of Sparks to SR 439 (USA Parkway) has seen a significant increase in congestion and safety issues primarily due to the development of the Tahoe Reno Industrial Center (TRIC). TRIC is reportedly the largest industrial park in the world, encompassing 107,000 privately owned, industrially zoned acres in Storey County, Nevada. The vast commercial/industrial space currently has over 100 businesses on its property and plans to employ 35,000 to 50,000 people.

Portions of this I-80 corridor are complicated with steep terrain within the Truckee River canyon, sinuous alignment, and minimal shoulders. Combined with high traffic volumes, the system is sensitive to even minor incidences (weather, accidents, vehicle breakdown, etc.) and routinely breaks down with delays lasting hours. The need to improve the corridor is apparent. Consequently, many studies, reports, and presentations have been prepared by various public agencies and private stakeholders to better understand and address the changes and developing needs within the I-80 corridor.

This study was prepared to collect documents and compile a list of all the presented alternatives, then evaluate them to determine the most feasible and effective options to create the most positive impacts along the corridor.

The Nevada Department of Transportation (NDOT) and consulting firm CA Group, Inc. have completed the collection, review, and evaluation of existing studies performed for transportation improvements for the I-80 corridor between the North McCarran Interchange and USA Parkway, as well as along the Reno/Sparks freeway system. Several meetings were held with the affected private and public stakeholders to ensure all ideas and alternatives were considered for evaluation.

The alternatives were ranked for their holistic impacts on the corridor enhancement and improved the overall commuter journey to work. Scores were assigned against the specific performance criteria to; improve safety, preserve infrastructure, support economic development, reduce congestion, be forward compatible with ultimate designs, minimize environmental impacts, and provide a positive benefit/cost ratio. These scores were then used to recommend a prioritized list of beneficial I-80 improvement projects.

The recommendations from this study only identify the best return on investment projects for the I-80 corridor from North McCarran Boulevard (also known as East McCarran Boulevard) to USA Parkway. All projects will have to compete within the statewide transportation program for overall priority and funding availability. The overall scoring results are included in the appendix, and are summarized here in order of their ranking:

1. Reno Spaghetti Bowl (Design Underway)
2. US 395 Widening (Clear Acre Lane to Red Rock Road– Design Underway)
3. I-80 East Widening (McCarran Boulevard to USA Parkway)
4. Pyramid Connector (Overall – Environmental Clearance Complete)
5. I-80 East Reversible Lane - (McCarran Boulevard to USA Parkway)
6. McCarran Boulevard Interchange Improvements
7. Sparks Boulevard Interchange Improvements
8. Vista Boulevard Interchange Improvements
9. I-80 westbound from Vista Boulevard to McCarran Boulevard Additional Lane
10. Patrick Interchange Improvements

11. I-80 Freight Plan Safety Improvements (Ramp improvements and signal at USA Pkwy., Constructed 2019)
12. Lockwood Interchange Improvements
13. I-80 eastbound McCarran Boulevard to Vista Boulevard Additional Lane
14. I-580 Auxiliary Lanes, Moana Lane to Neil Road
15. I-80 USA Parkway Interchange Improvements
16. I-80 westbound Sparks Boulevard to McCarran Boulevard Aux Lane (Constructed)
17. Clean Water Way Eastbound Bypass
18. I-80 eastbound McCarran Boulevard to Sparks Boulevard Auxiliary lane
19. Autonomous Vehicle Pilot Program (Research on-going)
20. La Posada Drive Alignment
21. South Meadows Connector
22. Eagle Canyon Connector

More detailed descriptions of projects are included in the report text.

The overall list of projects above was also screened to see which projects may be constructed in the near term. Projects were considered to be eligible for near term implementation if they could be under construction within three years, considered to be fundable with construction costs less than \$30 to \$40 million, the need for right-of-way is not expected, and environmental clearances are expected to be a Categorical Exclusion or Environmental Assessment.

The following is a list of the top I-80 corridor projects that could be implemented in the near term:

1. Westbound I-80 Additional lane from McCarran Boulevard to Vista Boulevard
2. Patrick Interchange Improvements
3. I-80 Freight Plan Safety Improvements (Constructed 2019)
4. Lockwood Interchange Improvements
5. I-80 eastbound McCarran Boulevard to Vista Boulevard Additional Lane
6. I-580 Auxiliary Lanes, Moana Lane to Neil Road
7. I-80 westbound Sparks Boulevard to McCarran Boulevard Aux Lane (Constructed)
8. I-80 eastbound McCarran Boulevard to Sparks Boulevard Auxiliary lane

### Recommendations:

**Overall Recommendation 1:** Proceed with the overall **Widening of I-80 from Vista Boulevard to USA Parkway**. The median widening alternative to provide one additional lane in each direction was determined to be preferable to the reversible lane alternative, as it allows for the needed capacity at all times of day, and a lane in each direction will be needed as congestion increases.

If funding were available for a large construction project, the recommendation would be to select the common crown alternative (eastbound lanes would be re-profiled to match westbound profile) because it is slightly more economical and the most flexible to optimize retaining walls and slope cuts. Widening to a common crown does not lend itself well to phasing the project into multiple contracts, especially in the areas where the eastbound and westbound vertical profiles are different.

Since funding would not likely allow the common crown widening alternative to be constructed as a single project, the **I-80 median widening (without profile modifications) from Vista Boulevard to USA Parkway** alternative is

recommended. This project could be easily broken down into phases/early action projects to allow earlier implementation and flexibility for funding. The early phases are not expected to need right-of-way, and environmental clearances are expected to be a Categorical Exclusion or Environmental Assessment. These early action projects would provide an immediate benefit to the corridor and are considered the first phase to the long term projects, and are forward compatible with the overall plan for the I-80 corridor. A potential phasing packaging is outlined and shown in **Figure 1** below:

1. **Phase 1A** - I-80 Vista Boulevard to Mustang - Construct median retaining walls and widen westbound to provide three 12 foot lanes, an interim three-foot inside shoulder, and eight-foot outside shoulder. Construct a ten-foot wide inside shoulder eastbound. This phase is recommended as this first phase because it would provide immediate benefits in the most critical and restricted areas, addressing the highest need for improvements in the corridor. This would provide additional needed capacity in the westbound direction and improved emergency access for both directions.

**Conceptual construction cost:** \$43 Million

**Phase 1B** – I-80 Mustang to Patrick Interchange - construct similar median widening

**Conceptual construction cost:** \$45 Million

**Phase 1C** – I-80 Patrick to USA Parkway - construct similar median widening

**Conceptual construction cost:** \$33 Million

**Phase 2A** - I-80 Vista Boulevard to Mustang - Widen eastbound to three lanes and provide ten-foot wide inside shoulders and 12-foot wide outside shoulders. Widen westbound to include ten-foot inside and 12-foot outside shoulders. Improvements to the interchanges would include geometric enhancements such as parallel entrance ramps and longer exit ramps. New bridge structures would replace structures with insufficient vertical clearances over I-80 or with substandard shoulders.

**Conceptual construction cost:** \$127 Million

**Phase 2B** - I-80 Mustang to Patrick Interchange – provide full widening similar to Phase 2A

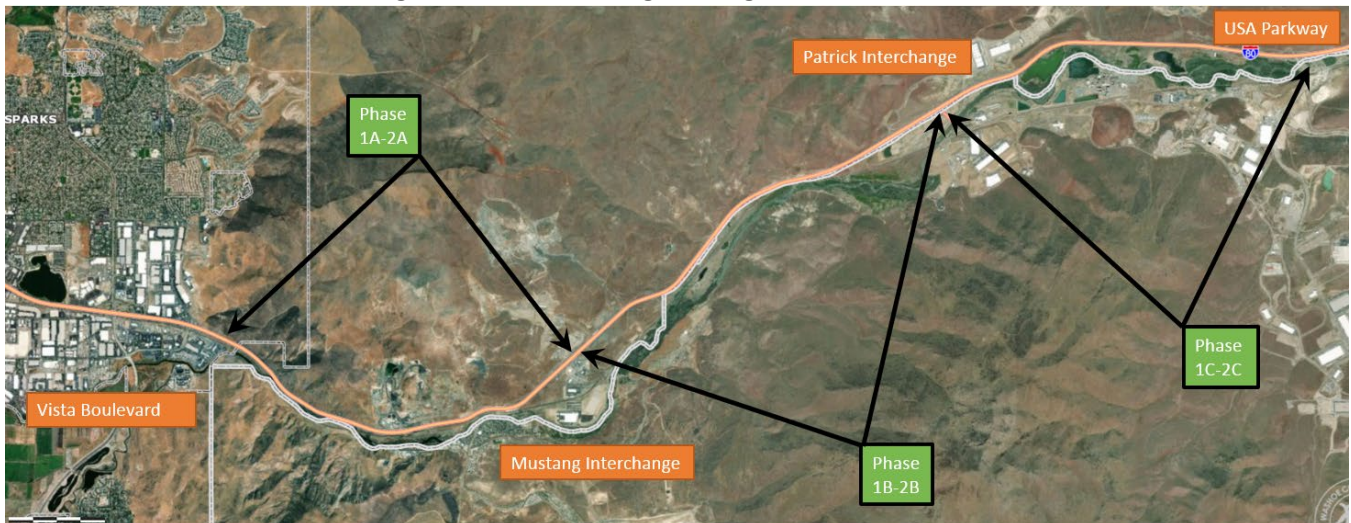
**Conceptual construction cost:** \$81 Million.

**Phase 2C** - I-80 Patrick to USA Parkway – provide full widening similar to Phase 2A

**Conceptual construction cost:** \$41 Million.

**Total conceptual construction cost \$370 million.**

Figure 1. I-80 Widening Phasing Recommendation

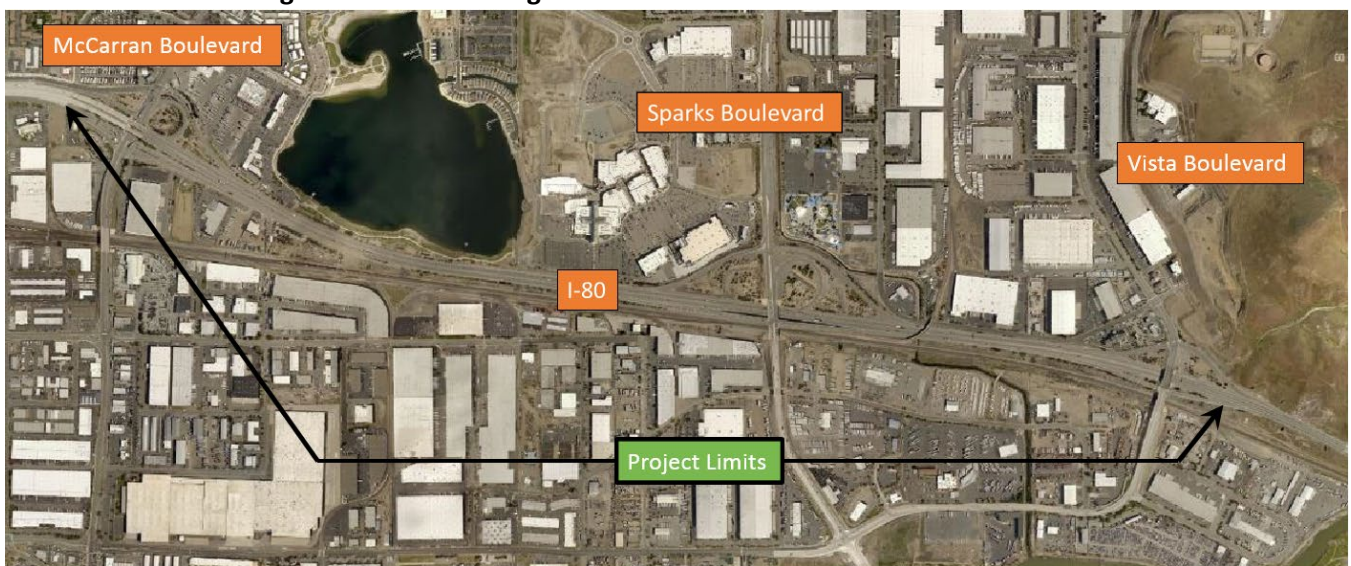


**Near Term Recommendation 1:** For projects available to be constructed in the near term, it is recommended to widen I-80 from McCarran Boulevard to Vista Boulevard.

I-80 Widening from McCarran Boulevard to Vista Boulevard - This alternative widens the roadway to provide three lanes eastbound and three lanes westbound (from Sparks Boulevard Interchange to Vista Boulevard Interchange) with full auxiliary lanes between interchanges and 12-foot wide outside shoulders and ten-foot inside shoulders. See **Figure 2**.

**Conceptual construction cost:** \$40 Million.

Figure 2. I-80 Widening from McCarran Boulevard to Vista Boulevard



The remaining alternatives are discussed further in the report in Section 6. As these alternatives were evaluated, it became apparent there are many phasing opportunities that can allow early implementation of project elements, providing immediate benefits to the system. The analysis also revealed there are congestion and operational issues on adjacent roadways, and improving those areas would be beneficial to the overall system. Those projects are also discussed in Section 6 of this report.