



PLANNING AND ENVIRONMENTAL LINKAGES STUDY

I-11 LAS VEGAS METROPOLITAN AREA

July 2022



Nevada Department of Transportation

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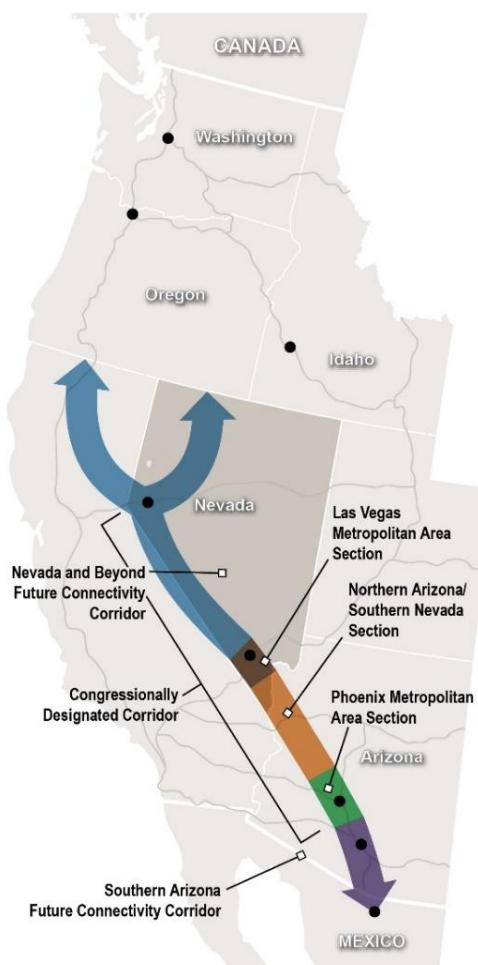
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1 INTRODUCTION

The Nevada Department of Transportation (NDOT), in cooperation with the Federal Highway Administration (FHWA), has prepared the Interstate 11 (I-11) Las Vegas Metropolitan Area Planning and Environmental Linkages (PEL) Study. The Congressionally designated I-11 corridor is envisioned as a new major north-south multimodal corridor that will provide enhanced transportation mobility while creating a foundation for robust economic vitality in the Las Vegas metropolitan area. In 2014, NDOT and the Arizona Department of Transportation (ADOT) jointly completed the I-11 and Intermountain West Corridor Study (IWCS) that encompassed a broad study area for the Intermountain West region from Mexico to Canada. The I-11 and Intermountain West Corridor was identified as a critical piece of multimodal infrastructure that would diversify, support, and connect the economies of Arizona and Nevada. The I-11 and Intermountain West Corridor could also be connected to a larger north-south transportation corridor, linking Mexico and Canada. The push for an improved, north-south transportation corridor between Mexico and Canada traces back to the 1993 North American Free Trade Agreement (NAFTA).

Figure 1-1. I-11 & Intermountain West Corridor Study Scope



WHAT IS A PEL STUDY?

PEL studies are conducted to link transportation planning and the environmental process. Through coordination with local, regional, state, and federal partners, including regulatory agencies and public stakeholders, a PEL recognizes potential risks that may be related to the identified corridor alternatives. By linking the planning and environmental processes the results can be incorporated into future documents prepared in accordance with the National Environmental Policy Act (NEPA) process, and by doing so it thereby promotes efficiency and potentially accelerates project delivery.

The Nevada Department of Transportation (NDOT), in cooperation with the Federal Highway Administration (FHWA), has prepared the Interstate 11 (I-11) Las Vegas Metropolitan Area Planning and Environmental Linkages (PEL) Study. The Congressionally designated I-11 corridor is envisioned as a new major north-south multimodal corridor that will provide enhanced transportation mobility while creating a foundation for robust economic vitality in the Las Vegas metropolitan area. In 2014, NDOT and the Arizona Department of Transportation (ADOT) jointly completed the I-11 and Intermountain West Corridor Study (IWCS) that encompassed a broad study area for the Intermountain West region from Mexico to Canada. The I-11 and Intermountain West Corridor was identified as a critical piece of multimodal infrastructure that would diversify, support, and connect the economies of Arizona and Nevada. The I-11 and Intermountain West Corridor could also be connected to a larger north-south transportation corridor, linking Mexico and Canada. The push for an improved, north-south transportation corridor between Mexico and Canada traces back to the 1993 North American Free Trade Agreement (NAFTA).

In the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA), Congress designated high-priority corridors to be upgraded or constructed and become part of the Interstate Highway System. As amended through the 2015 Fixing America's Surface Transportation (FAST) Act, the high-priority corridors included designation of the I-11 corridor from Nogales, Arizona, at the U.S.-Mexico border, through Phoenix and Las Vegas, to Interstate 80 (I-80). Figure 1-1 provides an overview of the general I-11 corridor, the Congressionally designated portion from Las Vegas through Phoenix, and future connections north and south. With respect to the alignment of I-11 through the Las Vegas metropolitan area, the FAST Act defines a route that will follow US 93 to the south and US 95 to the north of Las Vegas. No guidance relative to the location of I-11 in the Las Vegas metropolitan area is provided in the legislation.

1.1 WHAT IS THE LEGISLATIVE FOUNDATION FOR THE CORRIDOR?

The following chronology of legislative actions laid the groundwork for the current study:



**DEC
1991**

Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA)

PUBLIC LAW 102-240

- United States Federal law that posed a major change to transportation planning and policy.
- First U.S. Federal legislation on the subject in the post-Interstate National Highway System (NHS) era of the 1950s.
- Section 1105 of ISTEA identified 21 High Priority Corridors to be part of the NHS and therefore eligible for assistance with funds appropriated through the Highway Trust Fund.

**NOV
1995**

National Highway Systems Designation Act of 1995 (NHSDA)

PUBLIC LAW 104-59

- Amended Section 1105 of ISTEA to include eight additional High Priority Corridors.
- Corridor 26 (CANAMEX) was identified as extending from "Nogales, Arizona, through Las Vegas, Nevada, to Salt Lake City, Utah, to Idaho Falls, Idaho, to Montana, to the Canadian Border...".
- Subsection (26)(B) of the Act prescribed that in Nevada, "...the CANAMEX Corridor shall follow:
 - "(i) United States Route 93 from the Arizona Border to Las Vegas; and
 - "(ii) I-15 from Las Vegas to the Utah Border."

**AUG
2005**

Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)

PUBLIC LAW 109-59

- Further amended Section 1105 of ISTEA to redefine a number of High Priority Corridors and to add Corridors 46 through 80.
- Corridor 68 in SAFETEA-LU was defined as "The Washoe County corridor, along Interstate Route 580/United States Route 95/United States Route 95A, from Reno, Nevada, to Las Vegas, Nevada".

**JUL
2012**

Moving Ahead for Progress in the 21st Century Act (MAP-21)

PUBLIC LAW 112-141

- Amended TEA-21-defining US 93 between Phoenix and Las Vegas as a high priority corridor and designating it as future Interstate 11 (I-11).
- Nevada and Arizona DOTs begin a study of the proposed I-11 and Intermountain West Corridor.

**DEC
2015**

High Priority Corridors on National Highway System of Fixing America's Surface Transportation Act of 2014 (FAST)

PUBLIC LAW 114-95

- Amended ISTEA Public Law 102-240 Inserting the following:
 - "(68)(B) for the Intermountain West Corridor, from the vicinity of Las Vegas, Nevada, north along United States Route 95 terminating at Interstate Route 80."
 - "The routes referred to in subparagraphs (A) and (B)(i) of Subsection (c)(26) and in subsection (c)(68)(B) are designated as Interstate Route I-11."

1.2 WHAT IS THE PROJECT BACKGROUND?

Following the Moving Ahead for Progress in the 21st Century Act (MAP-21) designation of US 93 between Arizona and Nevada as the future I-11, NDOT and ADOT advanced a number of studies and projects to realize the vision of I-11.



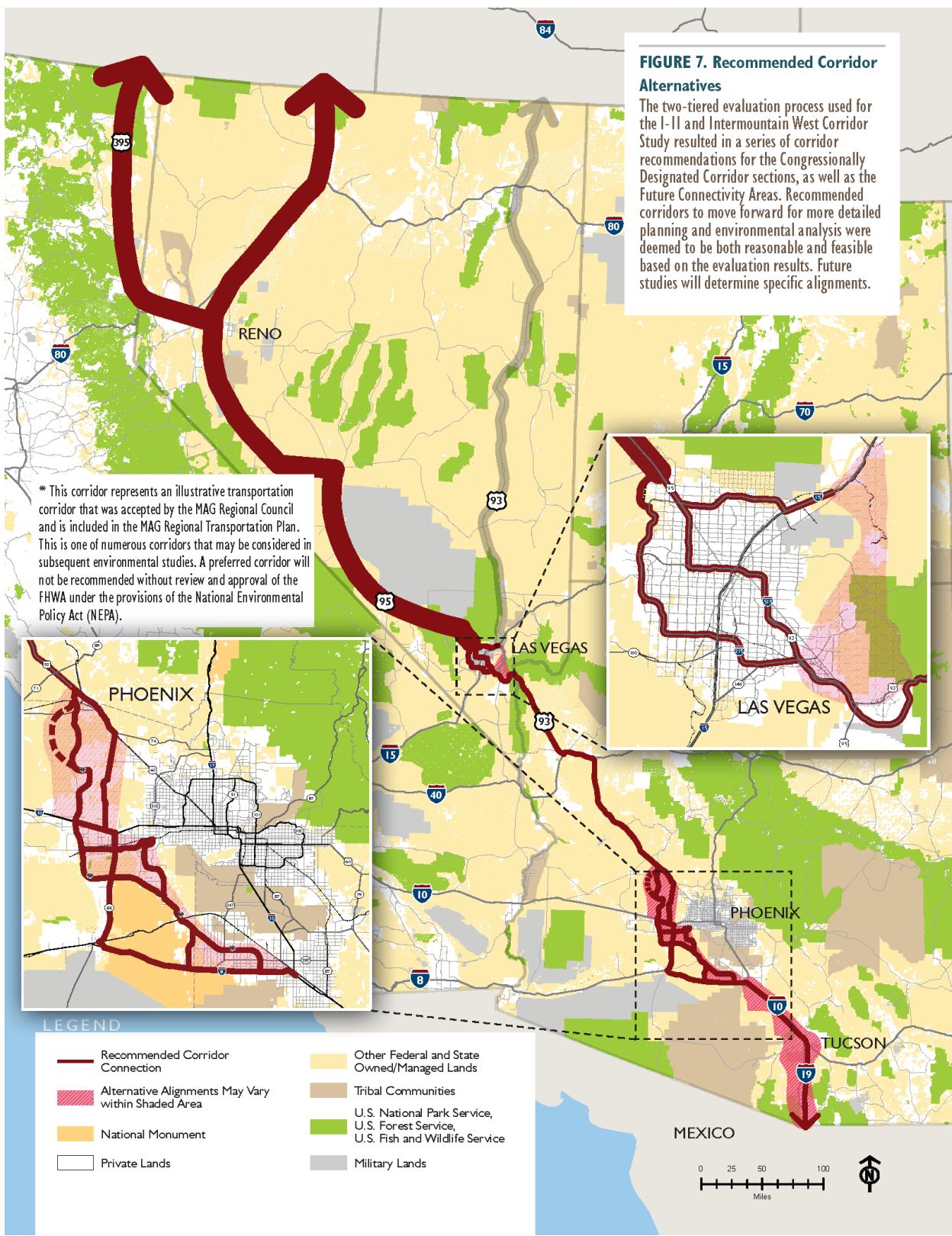
From 2012 through 2014, NDOT and ADOT jointly developed the IWCS. On January 15, 2015, FHWA's Nevada Division approved the IWCS PEL, which identified a western corridor and a central corridor through the Las Vegas metropolitan area, as well as a general eastern corridor area. The IWCS concludes that all three alternatives would be reasonable and feasible and should be carried forward for further study.

Figure 1-2 identifies the IWCS corridor recommendations through the Las Vegas metropolitan area and connections north and south of the Las Vegas region. At the completion of the IWCS, ADOT initiated the *I-11 Tier 1 Draft Environmental Impact Statement (Wickenburg to Nogales)* to evaluate potential corridors through the Phoenix metropolitan area and points both north and south. The corridor alternatives through the Phoenix region are also identified in Figure 1-2. The Draft Environmental Impact Statement (EIS) was released for public review in summer 2019 and the Final EIS and Record of Decision were released in November 2021.

Within Nevada, NDOT initiated an alternatives analysis effort for the I-11 corridor between the northwestern edge of Las Vegas and I-80 in western Nevada in 2017. The I-11 Northern Nevada Alternatives Analysis study was completed in December 2018, recommending an I-11 corridor following the existing US 95 between Las Vegas and Tonopah and two corridor alternatives north of Tonopah connecting with I-80, one through Fallon and the other through Fernley.



Figure 1-1. Recommended Corridor Alternatives in the I-11 and IWCS Scope



Source: I-11 and Intermountain West Corridor Study, November 2014

1.3 WHY ARE NDOT AND FHWA COMPLETING A PEL STUDY?

Initially begun as a Tier 1 EIS in 2019, NDOT and FHWA determined in late 2020 that a PEL study was more appropriate to accomplish the goal of selecting a corridor for I-11 through the Las Vegas metropolitan area—achieving the same objectives more quickly. The PEL study would be used to identify transportation issues and environmental concerns in the proposed corridor alternatives and refine the corridor alternatives. The 2014 IWCS, also a PEL study, was conducted on a larger, more regional scale and did not specifically focus on the Las Vegas metropolitan area. The I-11 Las Vegas Metropolitan Area PEL study considers corridor alternatives through Las Vegas to further the progress beyond the 2014 IWCS. The I-11 PEL study identifies and recommends a single corridor for designation as I-11 through the Las Vegas metropolitan area.

1.4 WHAT ARE THE ADVANTAGES OF DESIGNATING AN I-11 CORRIDOR IN THE LAS VEGAS METROPOLITAN AREA?

The designation of I-11 through the Las Vegas metropolitan area would benefit local, regional, and interstate travelers in the following ways:

- **Improved Wayfinding** – Consistent signage on the designated I-11 corridor within the Las Vegas freeway system would help travelers who are both familiar and unfamiliar with the highway system better navigate the area.
- **Reliability** – The designated I-11 would meet Interstate standards and provide travel reliability because Interstate facilities provide for a minimum four-lane (two travel lanes minimum in each direction) access-controlled highway with an acceptable level of service (LOS).
- **Improved Connectivity** – I-11 through the Las Vegas metropolitan area is one segment of the greater vision for I-11 that would connect Las Vegas to destinations north (for example, Tonopah, Reno, Canada) and south (for example, Kingman, Phoenix, Tucson, and Mexico).

2 PURPOSE AND NEED

The greater I-11 and Intermountain West Corridor would provide a critical north-south transportation corridor, linking Mexico and Canada. The push for an improved north-south transportation corridor is based on the legislative actions discussed in Section 1.1, with the inclusion of I-11 through the Las Vegas metropolitan area.

As part of the collaborative PEL process, understanding the need for the proposed improvements is important in developing criteria to be used to evaluate the corridor options. The sections below summarize the need for the I-11 project and the resulting purpose that directly informs this evaluation, based on the IWCS corridor vision.

2.1 WHAT IS THE NEED FOR THE I-11 PROJECT?

Favorable transportation infrastructure is one key component for attracting and retaining industry and increasing an area's competitiveness and economic vitality. As discussed in the 2014 IWCS, the Intermountain West Corridor is one of the fastest-growing regions in the U.S. Nevada and Arizona want to ensure that infrastructure is in place to support planned growth in the corridor and in the "Southwest Megapolitan Triangle" formed by the Southern California Megapolitan (of which Las Vegas is a part) and the Arizona Sun Corridor¹. More than 160,000 jobs in Nevada and Arizona rely on trade with Mexico.

An analysis of the economic return on investment conducted for the IWCS predicted that I-11 has the potential to make major contributions to the economic well-being of the region's residents, bringing up to an additional 240,000 jobs and \$22 billion in economic output to the region over the next 25 years. I-11 would connect regional economies to each other and to global markets, creating opportunities for integrated manufacturing and advancement of the economic development initiatives of Nevada and Arizona.

The Las Vegas metropolitan area consists of separate and distinct activity centers for residents and visitors, such as Red Rock Canyon National Conservation Area, the West Henderson Industrial Area, Historic Water Street in Henderson, Springs Preserve, and North Las Vegas including Vegas Industrial Park and Nellis Air Force Base. The area also includes Downtown Las Vegas which is home to Fremont Street Experience and the Arts District, Allegiant Stadium, the Las Vegas Strip, Harry Reid International Airport, and the 200-acre Las Vegas Convention Center, which account for over \$57 billion in total annual output, supporting approximately 42 percent of private employment in Southern Nevada and generating over \$15 billion in wages and salaries (Las Vegas Economic Impact Series Report, 2019). The disparate locations of these facilities result in a variety of travel patterns during peak and off-peak travel. Major routes through the Las Vegas metropolitan area, including Interstate 215 (I-215), Clark County (CC) 215, Interstate 515 (I-515), US 95, and Interstate 15 (I-15), experience bottlenecks during peak travel periods. Decreased mobility during periods of peak demand is expected to increase through 2040 as a result of planned activity center expansions and other development.

¹ The Arizona Sun Corridor is a megaregion in southern Arizona that includes the Phoenix and Tucson metropolitan areas and extends to the U.S.-Mexico border.

Existing congestion in the Las Vegas metropolitan area hinders access for emergency services and is of concern regarding efficiency for evacuations during natural or human-made disasters, including flash floods, earthquakes, and wildfires. With Nellis Air Force Base, the premier training facility for the Air Force, located northeast of the city, mobility in support of national defense is also of concern.

2.2 WHAT IS THE PURPOSE OF THE I-11 PROJECT?

This PEL will identify a recommended I-11 corridor through the Las Vegas metropolitan area that would be a part of the overall I-11 as envisioned in the IWCS and the legislation that preceded that study.

With the location of this corridor unknown at the initiation of the PEL, several overall driving purposes of the I-11 were developed in collaboration with agency stakeholders (that is, the Technical Advisory Committee [TAC] and the cooperating and participating agencies). The following describes the six purposes of the project, based on the goals identified in the IWCS, needs discussed above, input from stakeholder agencies, and requirements founded in the Congressional designation of I-11 through the region. The purposes of the project are to:



Provide a high-capacity, access-controlled transportation corridor



Improve access to activity centers within the Las Vegas metropolitan area



Support enhanced regional mobility for people and freight by improving travel time, reliability, and efficiency



Enhance opportunities within the Las Vegas metropolitan area for economic development



Facilitate efficient mobility for emergency access, evacuation, and national defense



Provide a designated interstate facility through the Las Vegas metropolitan area for a continuous I-11 Corridor that connects major metropolitan areas and markets in the Intermountain West Corridor with Mexico and Canada

Each of these study purposes is described more fully below:

- **Provide a high-capacity, access-controlled transportation corridor**

The National System of Interstate and Defense Highways is the most important transportation corridor in the U.S. It carries more traffic per mile than any other comparable national system and includes the roads of greatest significance to the nation's economic welfare and defense. The highways of this system are designed in keeping with their importance as the backbone of the nation's highway systems. To this end, they are designed to ensure safety, permanence, utility, and flexibility to provide for predicted traffic growth.

All Interstate highways should meet minimum American Association of State Highway and Transportation Officials (AASHTO) standards for segments constructed on new right-of-way and segments undergoing complete reconstruction along existing right-of-way. Each section of Interstate highway is designed to accommodate the estimated volumes of passenger vehicles, buses, trucks (including tractor-trailer and semi-trailer combinations), and corresponding military equipment safely and efficiently for the design year. The width of right-of-way should be sufficient to accommodate the roadway cross section elements and requisite appurtenances necessary for an adequate facility in the design year and for known future improvements. Access to the Interstate system should be fully controlled. The Interstate highway is grade-separated at all railroad crossings and selected public crossroads. At-grade intersections are not allowed. The identification of a corridor as an Interstate in the Las Vegas area should indicate that the corridor meets minimum interstate system design standards, is fully access-controlled with a minimum four lanes of traffic (minimum two lanes in each direction) and is designed to meet traffic needs for the design year.

- **Improve access to activity centers within the Las Vegas metropolitan area**

The Las Vegas metropolitan area features separate and distinct activity centers for residents and visitors, including Downtown Las Vegas, the Las Vegas Strip, Harry Reid International Airport, and the Las Vegas Convention Center, which account for over \$57 billion in total output, supporting approximately 42 percent of private employment in Southern Nevada, and generating over \$15 billion in wages and salaries (Las Vegas Economic Impact Series Report, 2019). The disparate locations of these facilities result in a variety of travel patterns during peak and off-peak travel. Major routes through the Las Vegas metropolitan area, including I-215, CC 215, I-515, US 95, and I-15, experience bottlenecks and failing LOS²—LOS E and F—during peak travel periods. Congestion is expected to increase through 2040 independent of a potential I-11 designation as a result of planned activity center expansions and other development. Identification of a unified Interstate corridor would provide access to major activity centers in the Las Vegas area and would connect the northern and southern segments of the existing I-11, encouraging more Interstate travel. The identification of I-11 with improved signage and wayfinding along the corridor would provide Interstate travelers easier access to destinations in the Las Vegas area. Travelers going north or south of the study area would have the assurance of a contiguous four-lane, access-controlled highway.

² Level of service (LOS) is a term used to qualitatively describe the operating conditions of a roadway based on factors such as speed, travel time, maneuverability, delay, and safety

- **Support enhanced regional mobility for people and freight by improving travel time reliability and efficiency**

Completed traffic analyses documented the modest volume (1 to 2 percent of overall regional demand) of additional traffic trips that would be attracted to a western or central corridor alternative following completion of I-11 improvements north and south of metropolitan Las Vegas in the 2040 horizon year³. These analyses also documented that most regional travel demand on the corridor alternatives at the 2040 horizon year is attributable to valley-wide growth resulting from increases in population and development. Unique and consistent Interstate signage throughout the Las Vegas area would mitigate potential driver confusion, thereby enhancing mobility and travel time efficiency.

- **Enhance opportunities within the Las Vegas metropolitan area for economic development**

Interstate and other highways influence the growth of the economy by improving mobility for economic and social activities. Benefits of the Interstate system include those received by people while using highways and benefits accruing to people and communities indirectly as a consequence of highway use. The Intermountain West Corridor is one of the fastest-growing regions in the U.S. and, to maintain pace with the region's development, the state needs to have infrastructure in place to support inevitable growth. Identification of an I-11 Interstate corridor in the Las Vegas metropolitan area would connect regional economies to each other and to global markets.

- **Facilitate efficient mobility for emergency access, evacuation, and national defense**

As one of the components of the National Highway System, Interstate highways improve the mobility of military troops to and from airports, seaports, rail terminals, and other military bases. Interstate highways also connect to other roads that are a part of the Strategic Highway Network, a system of roads identified as critical to the U.S. Department of Defense. The system has also been used to facilitate evacuations in the face of natural disasters. The identification of I-11 in Las Vegas with access control, a minimum four-lane highway, and better signage and wayfinding would provide improved access for emergency, evacuation, and national defense purposes.

- **Provide the Congressional designated link through the Las Vegas metropolitan area for a continuous I-11 corridor that connects major metropolitan areas and markets in the Intermountain West Corridor with Mexico and Canada**

The Congressionally designated I-11 corridor is envisioned as a new major north-south multimodal corridor that will provide enhanced transportation mobility while creating a foundation for robust economic vitality in the Las Vegas metropolitan area. In 2014, NDOT and ADOT jointly completed the IWCS, which encompassed a broad study area for the Intermountain West region from Mexico to Canada. The I-11 and Intermountain West Corridor was identified as a critical piece of multimodal infrastructure that would diversify, support, and

³ The Regional Transportation Commission of Southern Nevada model was used to evaluate the project with external trips entering/exiting the region adjusted to reflect improvements to I-11 outside the Las Vegas region.

connect the economies of Arizona and Nevada. The I-11 and Intermountain West Corridor could also be connected to a larger north-south transportation corridor, linking Mexico and Canada. The push for an improved, north-south transportation corridor between Mexico and Canada traces back to NAFTA.

Through ISTEA, Congress designated high-priority corridors to be upgraded or constructed and become part of the Interstate Highway System. As amended through the FAST Act, the high-priority corridors included designation of the I-11 corridor from Nogales, Arizona, at the U.S.-Mexico border, through Phoenix and Las Vegas, and continuing along US 95 to I-80.



3 AGENCY COORDINATION AND PUBLIC INVOLVEMENT

The public involvement efforts for the PEL study were consistent with the NEPA process used by FHWA and NDOT. Planning for the public information meetings and other key outreach events was a collaborative effort between the consultant public involvement team and the NDOT project team.

The agency coordination and public involvement processes below were followed for this PEL study:

- Documented Public Involvement Plan
- Early and continuous public involvement opportunities
- Defined procedures, strategies, and outcomes, such as time for public review and comment at key decision points and making public information available in electronically accessible formats and means
- In-person public meetings held at convenient and accessible locations and times, supplemented by virtual public meeting engagement
- Timely notice and reasonable access to information
- Use of visualization techniques, as appropriate
- Reasonable public access to technical and policy information
- Consideration of and response to input received
- Identification and consideration of the needs of traditionally underserved populations (including low-income and minority households)
- Periodic review of the effectiveness of procedures and strategies to ensure a full and open participation process

3.1 PUBLIC ENGAGEMENT APPROACH

An open and transparent communication process was followed to gain input throughout the study to develop a transportation solution to meet the study's needs and goals. Figure 3-1 summarizes public outreach for the study and key public comment periods.

Several strategies were employed as part of the public engagement approach:

- Build early awareness of the study through stakeholder, public communication, and public relation tactics
- Inform and involve a diverse group of stakeholders, including residents of potentially affected areas around the corridor alternatives, by connecting with representatives of area businesses and chambers of commerce
- Communicate project information and opportunities in an accessible and transparent public information process; participants to be made aware that all opportunities will be available with bilingual (Spanish/English) options and all materials can be translated upon request if not already completed
- Provide a variety of options to reach the broadest audiences possible
- Respond in a timely manner to all project-related inquiries and comments

Figure 3-1. Public Engagement Timeline

Appendix C provides a Public Involvement Summary that presents the details of the multiagency coordination and public outreach completed during development of the PEL. The attachments to Appendix C include all agency and organization groups engaged, dates of meetings, contact lists, outreach materials, and comments received for all public involvement activities throughout the PEL study.

3.2 How DID NDOT SEEK INPUT ON THIS PEL?

NDOT sought to obtain input through public comment and key outreach periods following the guidelines and requirements of Title VI of the Civil Rights Act, environmental justice [1] guidance, the ADA, and limited English proficiency guidance. This was accomplished by using newspaper ads, targeted social media posts in the study area, stakeholder emails, and U.S. Postal Service mailer/postcards. All households within ¼ mile of either side of each corridor alternative received a bilingual mailer (English/Spanish) with information on how to participate in the study. In addition, the study team collaborated with local chambers of commerce, neighborhood liaisons, and organizations as advocates of their communities to encourage their audiences and members to participate and provide feedback on the PEL study.

Throughout the corridor alternatives development process, public and agency involvement was thoroughly documented and can be considered in any subsequent NEPA studies.

Environmental Justice outreach was done using a variety of methods and techniques, including:

- Compliance with Title VI of the Civil Rights Act of 1964 and Title II of the Americans with Disabilities Act (ADA)
- Advertising the public meetings where traditionally underrepresented populations exist
- Achieving inclusivity on the mailing list (i.e., adding individuals to the mailing list who are traditionally underrepresented)
- Using translated materials and translation services
- Verifying that Study outreach is exhaustive and inclusive by requesting that Community Stakeholder Members assist in outreach efforts
- Holding public meetings at convenient and accessible locations and various time frames
- Seeking out and considering the needs of those traditionally underserved (including low income and minority) Telephone Town Halls were added to accommodate those populations that may not have internet access, which was required for the public virtual meeting.

^[1] According to FHWA, Environmental Justice (EJ) means “identifying and addressing disproportionately high and adverse effects of the agency’s programs, policies, and activities on minority populations and low-income populations to achieve an equitable distribution of benefits and burdens.” From https://www.fhwa.dot.gov/environment/environmental_justice/.

3.2.1 Public and Agency Scoping

November 2019 through December 2020: The initial goal of public engagement was to educate and build awareness for the study and initiate conversations with local agencies and the community regarding the three corridor alternatives under consideration for I-11: the Western Corridor Alternative (I-215 and CC 215), the Central Corridor Alternative (I-515 and US 95), and the Eastern Corridor Alternative. Early collaboration with partner agencies, stakeholders, and the public was a critical study component.

Because of the COVID-19 pandemic and state mandates that restricted the capacity of in-person gatherings, NDOT, FHWA, and the study team determined that an online meeting and a telephone meeting would be the most effective course of action for public engagement. The online meeting was active for 30 days between July 31 and August 31, 2020, on the study website (i11nv.com) and was available for participants 24/7 from the convenience of their homes or offices. There were no in-person public meetings until the project transitioned to a PEL study in early 2021, when state mandates lifted restrictions on in-person gatherings.

3.2.2 Corridor Alternatives Development

January 2021 through September 2021: Upon completion of the Alternatives Development Report in June 2021 that eliminated the Eastern Corridor Alternative and identified Central and Western Corridor Alternatives to advance in the PEL analysis, NDOT resumed public outreach for the study. Ongoing coordination with stakeholders included regular emails, social media marketing, a telephone town hall, an online public meeting, newspaper advertising, and in-person public meetings. Public engagement materials informed the public of the transition from the Tier 1 EIS to a PEL study and the elimination of the Eastern Corridor Alternative and presented information on the two remaining corridor alternatives. Stakeholders, agencies, and community members were informed that the current CC 215, US 95, and I-515 routes may require improvements, including potential lane widenings, to support future travel demand. Traffic analysis conducted for this study demonstrated that the I-11 designation would not generate the demand for lane widenings on existing routes. During this phase, the public involvement team continued to respond to community and partner agency concerns.

3.2.3 Draft and Final PEL Study Report

October 2021 through August 2022: The final phase of public engagement allowed for a 30-day public review of the draft PEL report including a virtual public meeting and telephone town hall for those without access to wi-fi or the internet. The virtual meeting which began on June 23, 2022, and ended on July 22, 2022 allowed the public to review detailed information to better understand the data behind the recommendation of the Central Corridor Alternative as the preferred corridor for I-11 for the Las Vegas metropolitan area. Participants without access to the internet or phone were encouraged to view hard copies of the draft PEL report at convenient public locations such as public libraries or the Regional Transportation Commission (RTC) of Southern Nevada. Public involvement was encouraged to provide education, clarification, and to solicit important feedback during this phase. Comments were collected and could be submitted

via the virtual meeting website (accessible at www.i11nv.com), e-mail to info@i11nv.com, via USPS mail to David Bowers, NDOT Project Manager at 123 E. Washington Avenue, Las Vegas, NV 89101, and by offering verbal comments through the telephone hotline to (702) 472-8018 or as part of a telephone town hall on July 7, 2022.

3.3 STAKEHOLDER WORKING GROUP MEETINGS

Three stakeholder working groups were developed and were central to the I-11 PEL process: the Cooperating and Participating Agency Group (Agency) formed in response to invitations provided in April 2020, Technical Advisory Committee (TAC), and Community Working Group (CWG). On October 12, 2021, the TAC and Agency groups were combined for future meetings as a “Stakeholders” group. These groups consisted of federal, state, and local agencies, elected officials, homeowner association and residential representatives, community leaders, civic organizations, community advocacy groups, and the public. Group meetings held are listed below.

Meeting	Date
TAC Meeting 1	November 20, 2019
TAC Meeting 2	March 12, 2020
Agency Meeting 1	May 12, 2020
CWG Meeting 1	May 28, 2020
Agency Meeting 2	June 16, 2021
TAC Meeting 3	June 24, 2021
CWG Meeting 2	June 29, 2021
Stakeholders Meeting (TAC+Agency)	October 12, 2021
CWG Meeting 3	October 19, 2021
Stakeholders Meeting (TAC+Agency)	July 12, 2022
City of Las Vegas Meeting	July 12, 2022
CWG Meeting 4	July 14, 2022

Input included:

- Early concerns regarding who owns the land in the eastern study area
- Concerns regarding environmental and recreational resources in the eastern study area
- Concerns regarding existing traffic congestion and whether the new alignment would contribute even more
- Concerns regarding endangered species, particularly the desert tortoise
- Concerns related to the impact on property values surrounding the corridor alternatives
- Concerns regarding air and noise impacts

- Suggestions to be mindful of impacts on water resources for each corridor alternative
- Mentions of the intergovernmental agreement with the Paiute Tribe to allow development through the reservation to connect Sheep Mountain Parkway between Nu-Wav-Kaiv and the Kyle Canyon interchange
- Concerns regarding displacement and potential environmental justice impacts for all areas

Messaging to stakeholders:

- Resource identification corridors shown during presentations are not representative of rights-of-way that may be required
- The Eastern Corridor Alternative was eliminated from further study as part of the ADR
- NDOT requested from all agencies a documented position statement
- The [Regional Transportation Plan](#) serves as a broad blueprint for Southern Nevada to address regional growth (e.g. future lane widenings) and ensure the local community has access to goods and services while implementing equitable and safe growth strategies through 2050

The project team also presented to and obtained input into the planning process through Clark County Town Advisory Board (TAB) meetings and Citizens Advisory Council (CAC) meetings, as follows:

Meeting	Date
Lower Kyle Canyon CAC	November 9, 2021
Lone Mountain CAC	November 9, 2021
Clark County Commissioner Michael Naft Briefing	November 9, 2021
Enterprise TAB	December 1, 2021
Whitney TAB	December 2, 2021
Paradise TAB	December 14, 2021
Indian Springs TAB	December 16, 2021
Sunrise Manor TAB	December 30, 2021
Winchester TAB	January 11, 2022
Spring Valley TAB	January 25, 2022
Downtown Access Project Public Information Meeting	January 25, 2022

Comment topics included:

- Clarification that the study will include a name change of one of the existing corridors
- Comments in favor of the Central Corridor Alternative; comments mentioned it being the path of least resistance because it is shorter in length
- Comments in favor of the Western Corridor Alternative because it avoids the Spaghetti Bowl, referencing words such as “congestion” and “traffic”
- Mentions of I-515 and US 95 being able to better support truck traffic
- Concerns that I-515 and US 95 cannot handle added freight because of the current state of repair
- Potential concerns that designation of CC 215 as I-11 would result in a negative impact on residential neighborhoods
- Concerns regarding I-515 and US 95 and current traffic flow near the Spaghetti Bowl
- Concerns regarding the future carbon footprint of both corridor alternatives
- Mentions that both corridors need improvements such as added lanes, truck lanes, or high-occupancy vehicle lanes

A detailed summary of comments and minutes from the TAC, CWG, Agency, TAB, and CAC meetings can be found in the attachments to Appendix C.

3.4 PUBLIC INFORMATION MEETINGS

An initial NDOT I-11 PEL Study public comment period commenced on August 17, 2021 and closed on September 30, 2021. During this 45-day period, the study team hosted five in-person public information meetings to share project information and solicit public feedback regarding the corridor alternatives. The team continued to foster dialogue with members of the community and further develop project support through transparent communication. Public information meetings were held throughout the Las Vegas metropolitan area at familiar locations including libraries and community centers that are ADA-compliant and easily accessible via local transit routes. Interpretation and materials in Spanish were available at each meeting. The meeting schedule was as follows:

Public Meeting Date	Location
Meeting 1: August 31, 4–7 p.m.	Sahara West Library: 9600 W. Sahara Ave., Las Vegas, NV 89117
Meeting 2: September 1, 4–7 p.m.	Centennial Hills Community Center YMCA: 6601 N. Buffalo Dr., Las Vegas, NV 89131
Meeting 3: September 7, 4–7 p.m.	Lifeguard Arena: 222 S. Water St., Henderson, NV 89015
Meeting 4: September 14, 4–7 p.m.	RTC Southern Nevada: 600 S. Grand Central Pkwy., Las Vegas, NV 89106
Meeting 5: September 16, 2:30–5:30 p.m.	Windmill Library: 7060 W. Windmill Ln., Las Vegas NV 89113

3.4.1 Telephone Town Halls

Bilingual telephone town halls were used to engage the various communities in the Las Vegas metropolitan area, specifically those without access to the Internet.

- Bilingual Telephone Town Hall 2020 (August 27, 2020)
- Bilingual Telephone Town Hall 2021 (September 2, 2021)
- Bilingual Telephone Town Hall 2022 (July 7, 2022)

3.4.2 Virtual Public Informational Meetings

The study team used both in-person and virtual engagement methods to allow for inclusive, accessible, equitable, and convenient dialogue with interested stakeholders and community members. Virtual meetings allow for broader discussion and increased participation as they allow parties to participate from the safety of their home, without the inconvenience of travel, and the ability to log in from virtually any device.

An initial virtual public meeting was launched on August 17, 2021 and was hosted on the project website at i11nv.com. The virtual public meeting and public comment period were active through September 30, 2021.

A final virtual public meeting was launched on June 23, 2022 and was hosted on the project website at i11nv.com. The virtual public meeting ended on July 22, 2022.

3.5 PUBLIC COMMENTS

Comments expressed during all public information meetings included those supportive of and opposed to the planning effort, neutral comments, and questions about the corridor alternatives. Most commenters, however, wanted to have their preference noted for one corridor over another. A handful of comments expressed interest in the Eastern Corridor Alternative that had been eliminated from further consideration through the Alternatives Development Report.

Comment topics included:

- Comments in favor of Central Corridor as it is most direct and better for truck/freight movement
- Comments in favor of Central Corridor as it provides better support for trucking industry
- Comments in favor of Central Corridor as it is closer to existing businesses
- Comments in favor of Western Corridor as it appears a safer route and bypasses downtown area
- General concerns as they relate to potential land loss / right-of-way
- General positive input and mentions increased connectivity for goods and freight movement
- General concerns about necessary roadway improvements needed to accommodate volume
- Concerns about potential noise and air quality impacts due to increased traffic volume
- Concern regarding the influx of traffic/volume by way of a designated Interstate
- Negative impacts on residential areas and property values near the corridor

- Concerns related to safety along the Central Corridor, specifically around the downtown area
- Added greenhouse gases with increase in traffic volume
- Concerns with the existing intergovernmental agreement with the Las Vegas Paiute Tribe in the area of the Sheep Mountain Parkway and US 95

Strong opposition to Sheep Mountain option was received due to perceived increases in traffic, pollution, noise, environmental impacts, and property values. The first two virtual public meetings held during development of the corridor alternatives included an interactive map of the study area where visitors could leave comments tagged to specific locations. Meeting visitors were also able to view and indicate whether they agreed or disagreed with previously submitted comments. A sample of the comment map with comment locations is shown in Figure 3-3.

In response, the study team incorporated consideration of public comments in developing the Evaluation of Corridor Alternatives presented in Section 6.

Figure 3-3. Virtual Comment Map: August to September 2021 Corridor Alternatives Development

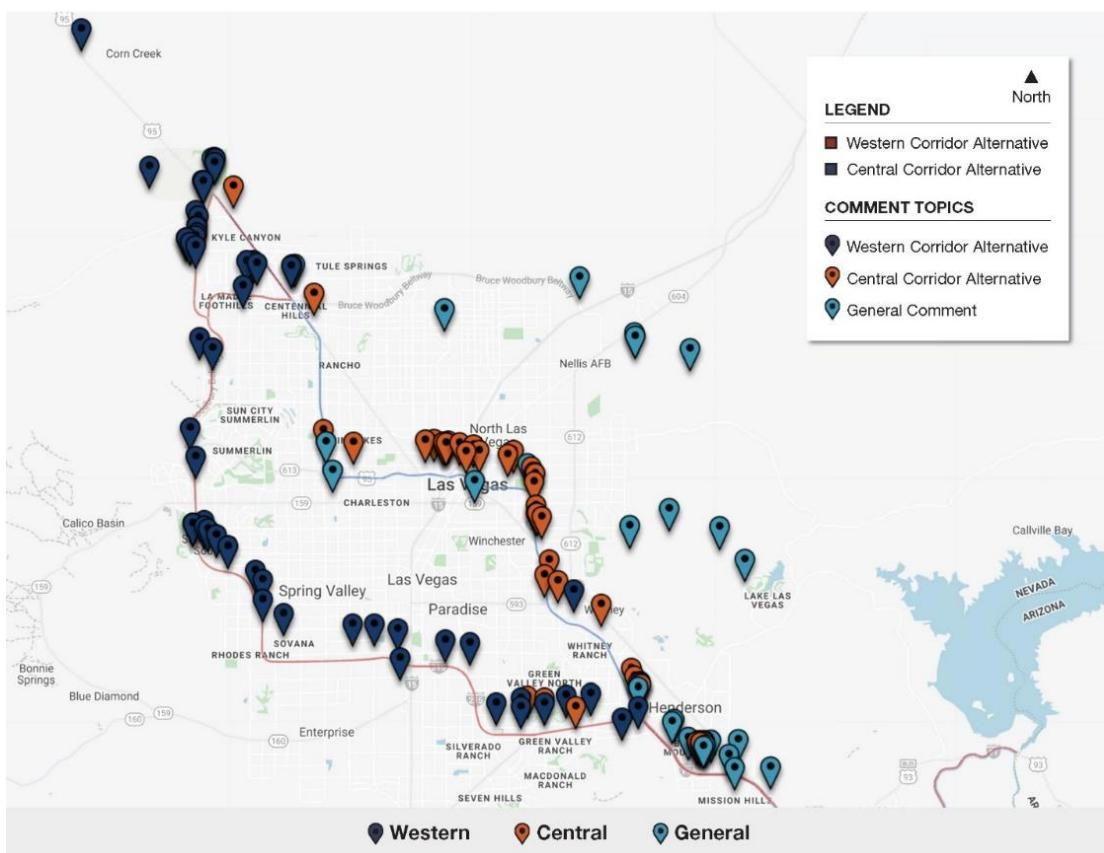


Figure 3-4 Virtual Public Meeting Themes by Corridor: October 2021 through August 2022 Finalization of Draft PEL Study Report

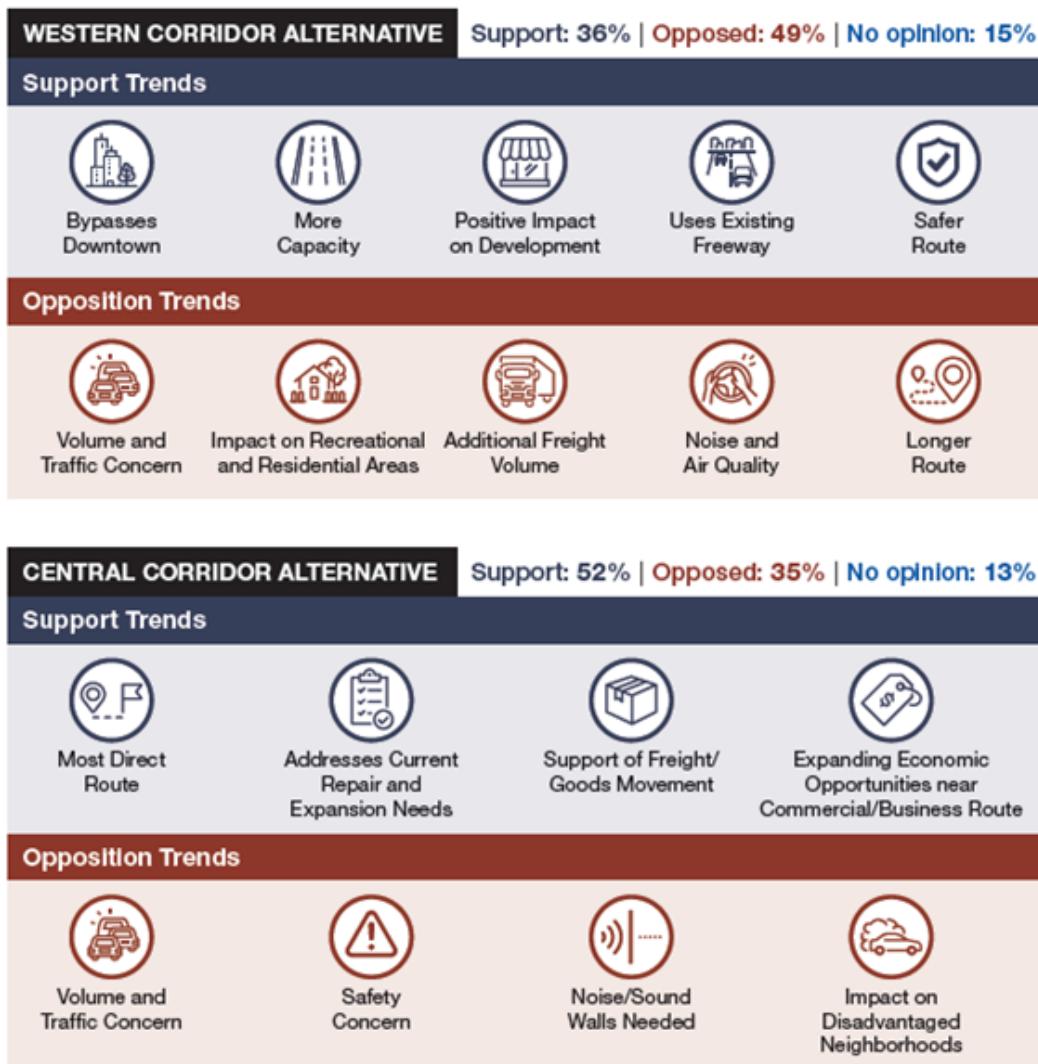
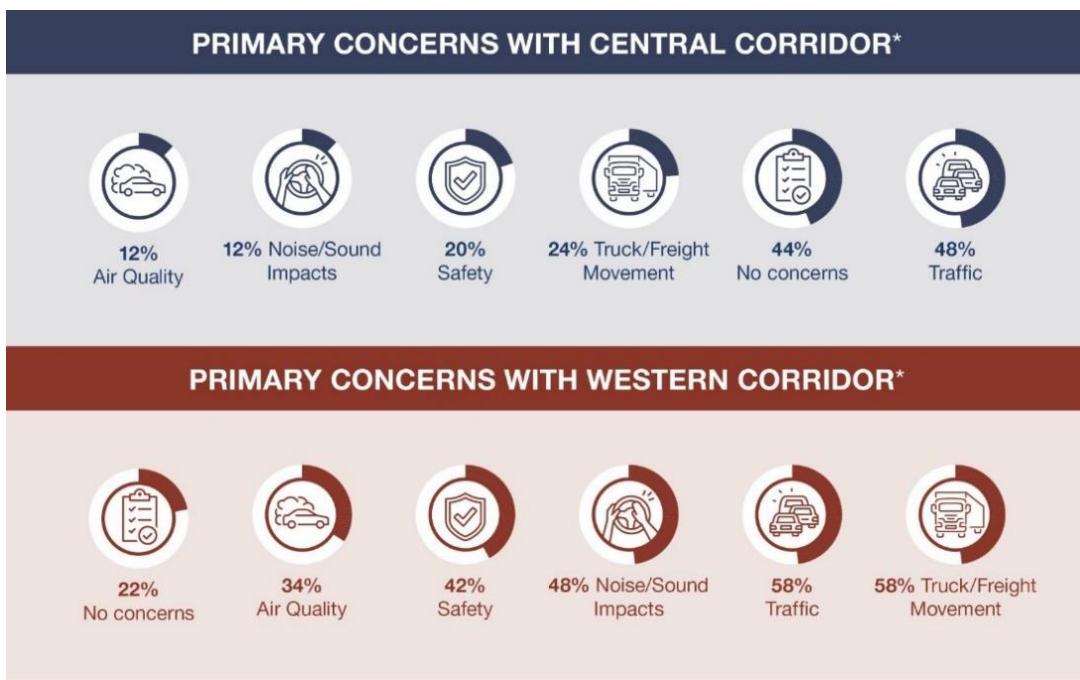


Figure 3-5 displays the primary comment themes and concerns that were received throughout the final public review period for the draft PEL report and the final virtual public meeting. The concerns listed are arranged in order of least to most mentioned.

Figure 3-5 Primary Comment Themes by Corridor: June 2022 through July 2022 Draft PEL Report

*Totals do not equal 100%, as participants could choose more than one option

See the attachments to Appendix C for a full summary of all public meetings (in-person, telephone, and virtual), including items discussed and comments received.

4 AFFECTED ENVIRONMENT

The I-11 Las Vegas Metropolitan Area PEL considers alternative options for the designation of I-11 through the study area. A description of the study area, corridor alternatives considered, and potential deficiencies of the existing highway system with respect to Interstate standards is provided below. A full description of the affected environment in proximity to the alternatives under consideration is included in Appendix A, *Conditions Assessment Report*.

4.1 PROJECT STUDY AREA

The I-11 Las Vegas Metropolitan Area PEL Study Area (Study Area) includes the Las Vegas metropolitan area from the I-215/I-515/I-11 “Henderson Interchange” in the city of Henderson to just north of the Kyle Canyon Road (State Route [SR] 157) interchange along US 95 to the northwest (Figure 5-1). Currently, I-11 is designated in Nevada just south of the study limits, extending from the Arizona border to the Henderson interchange.

This PEL process informs the identification and recommendation of a corridor that would be designated as I-11 through the Las Vegas metropolitan area, extending from the present northerly terminus of existing I-11 at the Henderson interchange to the vicinity of Kyle Canyon Road interchange along US 95. During the initial phases of this planning process, Eastern Corridor segments in undeveloped greenfield and urbanized areas were considered for I-11. At that time, the Study Area included the existing I-11 and the area east of the Las Vegas metropolitan area to the Lake Mead National Recreation Area (see the *Alternatives Development Report* in Appendix B) and some alternative segments considered I-11 not continuing along the corridor currently designated as I-11. At the conclusion of that phase of the study, all Eastern Corridor Alternatives were eliminated from further consideration, as described in the *Alternatives Development Report*. With the elimination of an Eastern Corridor Alternative, the existing designated I-11 corridor south of the Henderson interchange shall remain. The corridor identification decision informed by this PEL process is for a recommended route north or west of the Henderson interchange. As such, while the existing I-11 is a component of both corridor alternatives under consideration in this PEL, the existing I-11 is not part of the Study Area and is not further evaluated in this PEL study.

5 ALTERNATIVES

5.1 ALTERNATIVES UNDER CONSIDERATION

The Alternatives Development Report (ADR), included as Appendix B, develops and evaluates three full-length corridor alternatives for I-11 through the Las Vegas metropolitan area. The ADR eliminates the Eastern Corridor Alternative for a number of reasons, including potential impact to sensitive environmental resources, access and mobility, financial feasibility, and public opposition. The report identifies two potentially feasible full-length corridor alternatives for further study—a Western Corridor Alternative with two options and a Central Corridor Alternative. The Western and Central Corridor Alternatives and options are illustrated in Figures 5-1 through 5-2.

Central Corridor Alternative

From the Henderson interchange, the Central Corridor Alternative would follow the generally six-lane I-515 through Downtown Las Vegas to the Las Vegas Spaghetti Bowl (US 95/I-15/I-515) interchange. The Central Corridor Alternative would continue west on the generally eight-lane US 95 corridor from downtown Las Vegas to the CC 215/US 95 interchange (Centennial Bowl) where the Corridor would continue along the four-lane US 95 to north of the Kyle Canyon Road interchange.

The I-515 portion of this Corridor is approximately 14.4 miles, and the US 95 portion of this Corridor is approximately 17.8 miles. In total, the Central Corridor Alternative is approximately 32.2 miles.

Western Corridor Alternative

From the Henderson interchange, the Western Corridor Alternative would turn west and follow the Southern and Western Beltway (I-215 and CC 215), which is generally a six- to eight-lane corridor. At approximately one-half mile north of the Ann Road interchange, and before the Beltway turns east (to the Northern Beltway portion), the Western Corridor Alternative can then follow two optional routes in the northwest. The section of the Western Corridor Alternative along the Southern and Western Beltway before the decision point of the two options (start of the Sheep Mountain Parkway alignment) is 32.9 miles. The two Western Corridor Alternative options are shown in Figure 5-2.

WESTERN CORRIDOR ALTERNATIVE – SHEEP MOUNTAIN OPTION

The Western Corridor Alternative – Sheep Mountain Option would follow a proposed highway facility that originates near Sheep Mountain Parkway and travels north from the northwest elbow of CC 215, connecting to US 95 just north of Kyle Canyon Road (SR 157). The Sheep Mountain portion of this option is approximately 5.5 miles, with the balance of this option using the existing I-215 and CC 215. The Western Corridor Alternative – Sheep Mountain Option is 38.4 miles in length.

Figure 51. Corridor Alternatives Under Consideration

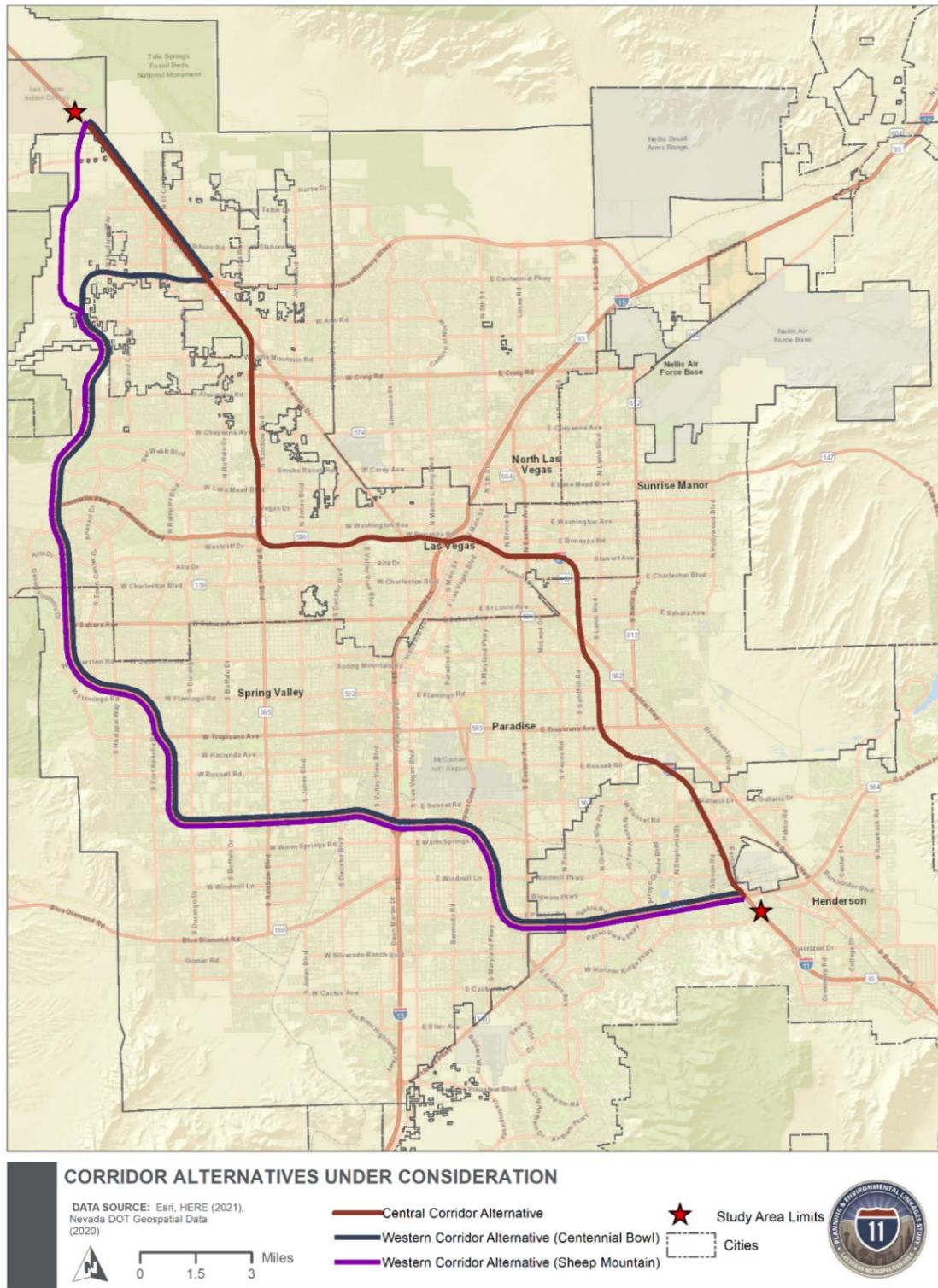
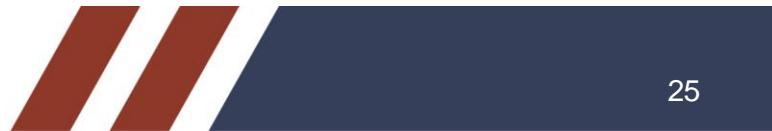
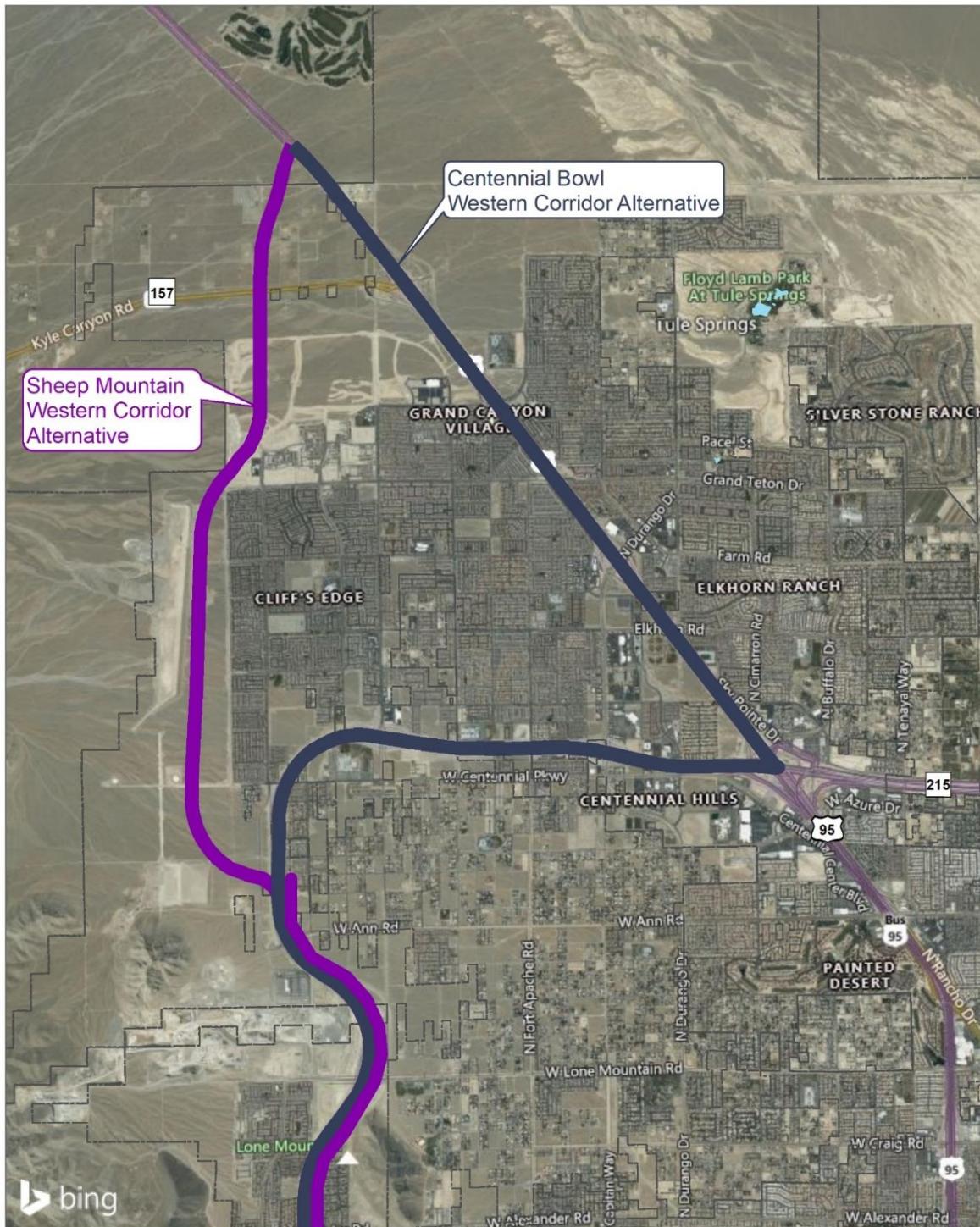


Figure 52. Western Corridor Alternative Options





DATA SOURCE: Esri, HERE (2021),
Nevada DOT Geospatial Data (2020),

Centennial Bowl

Sheep Mountain

WESTERN CORRIDOR ALTERNATIVE OPTIONS



0 0.4 0.8 Miles

CREATED ON: 2/17/2022

WESTERN CORRIDOR ALTERNATIVE – CENTENNIAL BOWL OPTION

The Western Corridor Alternative – Centennial Bowl Option would continue along CC 215 along the Northern Beltway to the CC 215/US 95 interchange (Centennial Bowl) where the Corridor would turn northwest and follow US 95 to the northwest, to a terminus approximately one-half mile north of the Kyle Canyon Road (SR 157) interchange. The Western Corridor Alternative – Centennial Bowl Option is 42.5 miles in length.

The infrastructure upgrades needed with the three proposed corridor alternatives are described in more detail in the next section.

5.2 CORRIDOR ALTERNATIVES INTERSTATE DESIGN STANDARDS

Interstate highways are subject to a uniform set of standards throughout the country. These design standards set the Interstate Highway System above all other components of the National Highway System and ensure consistent design, development, construction, and preservation of these important national highways. These minimum standards consider design traffic, right-of-way, geometric controls and criteria, cross section elements, interchanges, bridges, and other structures. *A Policy on Design Standards - Interstate System* (May 2016) states:

The following minimum standards apply to Interstate highway segments constructed on new right-of-way and segments undergoing complete reconstruction along existing right-of-way. The geometric design standards used for resurfacing, restoration, and rehabilitation (3R) projects may be the AASHTO interstate standards that were in effect at the time of original construction or inclusion into the interstate system.

A desktop survey of the existing infrastructure along the Central Corridor Alternative and Western Corridor Alternative and Options has identified a number of deficiencies observed along segments of the corridor alternatives as they relate to the AASHTO policy referenced above. Construction of new segments would be guided by these standards, and designation of existing segments into the Interstate system would need to address these standards as well. It is important to note that NDOT and FHWA have established processes for design exceptions; therefore, the deficiencies identified here are subject to review for potential exception as part of the Interstate highway designation process. Additionally, designation of I-11 could be phased along logical segments of the selected corridor alternative depending on the timing of when such segments meet the applicable standards.

Tables 5-1, 5-2, and 5-3 summarize the corridor alternative deficiencies noted by the project team with respect to the above policy. These tables also identify improvements, notable potential impacts, and other actions necessary to meet NDOT standards and FHWA requirements for potential Interstate designation of the selected corridor alternative and as may otherwise be necessary as part of the Interstate highway designation process.

Table 5-1. Central Corridor Alternative

Deficiency/ Action Item	Area/Limits	Potential Improvements/Impacts/ Actions Identified
NDOT Report with FHWA Review	Limits of proposed designation	NDOT to prepare a report to FHWA that documents where the corridor alternative conforms to the AASHTO Interstate Standards (2016) and AASHTO Green Book (2018), and that identifies any design exceptions with proposed mitigation along with project(s) to correct deficiencies
Signage and Pavement Markings	On I-515 from Henderson interchange to Spaghetti Bowl interchange, at Spaghetti Bowl interchange, and at service interchanges on I-515 and on local roadways approaching service interchanges as appropriate	Replace on- and off-system I-515 signage and pavement markings with I-11 signage and pavement markings as appropriate within existing rights-of-way
Signage and Pavement Markings	On US 95 from Spaghetti Bowl to logical northerly terminus (that is, US 95/SR 157 Kyle Canyon interchange), and at service interchanges on US 95 and local roadways approaching service interchanges as appropriate	Replace on- and off-system US 95 signage and pavement markings with I-11 signage and pavement markings as appropriate within existing rights-of-way
AASHTO design traffic, right-of-way, geometric controls and criteria, cross section elements, interchanges, and bridges and other structures	On I-515 from Henderson interchange to Spaghetti Bowl interchange, at Spaghetti Bowl interchange and at service interchanges on I-515 within the control of access as appropriate	Presently designated as an Interstate highway
AASHTO design traffic, right-of-way, geometric controls and criteria, cross section elements, interchanges, and bridges and other structures	On US 95 from Spaghetti Bowl to logical northerly terminus (that is, US 95/SR 157 Kyle Canyon interchange) and at service interchanges on US 95 within the control of access as appropriate	Exceptions approved for current designation as a U.S. route; subject to further review with NDOT and FHWA pending the results of this PEL Study

Table 5-2. Western Corridor Alternative – Centennial Bowl Option

Deficiency/ Action Item	Area/Limits	Potential Improvements/Impacts/ Actions Identified
NDOT Report with FHWA Review	Limits of proposed designation	NDOT to prepare a report to FHWA that documents where the corridor alternative conforms to the AASHTO Interstate Standards (2016) and AASHTO Green Book (2018), and that identifies any design exceptions with proposed mitigation along with project(s) to correct deficiencies
Signage and Pavement Markings	On I-215 from Henderson interchange to I-215/I-15/CC 215 interchange, at service interchanges on I-215, and on local roadways approaching service interchanges as appropriate	Replace on- and off-system I-215 signage and pavement markings with I-11 signage and pavement markings as appropriate within existing rights-of-way
Signage and Pavement Markings	On CC 215 from I-215/I-15/CC 15 interchange to Centennial Bowl interchange, at service interchanges on CC 215, and on local roadways approaching service interchanges as appropriate	Replace on- and off-system CC 215 signage and pavement markings with I-11 signage and pavement markings as appropriate within existing rights-of-way
Signage and Pavement Markings	On US 95 from Centennial Bowl interchange to logical northerly terminus (that is, US 95/SR 157 Kyle Canyon interchange), and at service interchanges on US 95 and local roadways approaching service interchanges as appropriate	Replace on- and off-system US 95 signage and pavement markings with I-11 signage and pavement markings as appropriate within existing rights-of-way
AASHTO design traffic, right-of-way, geometric controls and criteria, cross section elements, interchanges, and bridges and other structures	On I-215 from Henderson interchange to I-215/I-15/CC-215 interchange and at service interchanges on I-215 within the control of access as appropriate	Presently designated as an Interstate highway
AASHTO design traffic, right-of-way, geometric controls and criteria, cross section elements, interchanges, and bridges and other structures	On CC 215 from I-215/I-15/CC-215 interchange to Centennial Bowl interchange and at service interchanges on CC 215 within the control of access as appropriate	Subject to further review with NDOT and FHWA pending the results of this PEL Study
AASHTO design traffic, right-of-way, geometric controls and criteria, cross section elements, interchanges, and bridges and other structures	On US 95 from Centennial Bowl interchange to logical northerly terminus (that is, US 95/SR 157 Kyle Canyon interchange and at service interchanges on US 95 within the control of access as appropriate	Subject to further review with NDOT and FHWA pending the results of this PEL Study

Table 5-3. Western Corridor Alternative – Sheep Mountain Parkway Option

Deficiency/ Action Item	Area/Limits	Potential Improvements/Impacts/ Actions Identified
NDOT Report with FHWA Review	Limits of proposed designation	NDOT to prepare a report to FHWA that documents where the corridor alternative conforms to the AASHTO Interstate Standards (2016) and AASHTO Green Book (2018), and that identifies any design exceptions with proposed mitigation along with project(s) to correct deficiencies
Signage and Pavement Markings	On I-215 from Henderson interchange to I-215/I-15/CC-215 interchange, at service interchanges on I-215, and on local roadways approaching service interchanges as appropriate	Replace on- and off-system I-215 signage and pavement markings with I-11 signage and pavement markings as appropriate within existing rights-of-way
Signage and Pavement Markings	On CC-215 from I-215/I-15/CC 215 interchange to the point at which the proposed Sheep Mountain Parkway departs from CC 215	Replace on and off-system CC 215 signage and pavement markings with I-11 signage and pavement markings as appropriate within existing rights-of-way
Signage and Pavement Markings	Between the point at which the proposed Sheep Mountain Parkway departs from CC 215 to a point in the vicinity of the US 95 Kyle Canyon interchange	Provide on and off-system I-11 signage and pavement markings as appropriate within existing or new rights-of-way
AASHTO design traffic, right-of-way, geometric controls and criteria, cross section elements, interchanges, and bridges and other structures	On I-215 from Henderson interchange to I-215/I-15/CC-215 interchange and at service interchanges on I-215 within the control of access as appropriate	Presently designated as an Interstate highway
AASHTO design traffic, right-of-way, geometric controls and criteria, cross section elements, interchanges, and bridges and other structures	On CC 215 from I-215/I-15/CC-215 interchange to the point at which the proposed Sheep Mountain Parkway departs from CC 215	Subject to further review with NDOT and FHWA pending the results of this PEL Study
AASHTO design traffic, right-of-way, geometric controls and criteria, cross section elements, interchanges, and bridges and other structures	Between the point at which the proposed Sheep Mountain Parkway departs from CC 215 to a point in the vicinity of the US 95 Kyle Canyon interchange	Approximately five miles of new freeway on a new alignment will be required built to AASHTO standards. Any freeway alignment in this area will require the preparation of an Environmental Impact Statement or Environmental Assessment prior to construction

6 EVALUATION OF CORRIDOR ALTERNATIVES

Each of the corridor alternatives and options is evaluated using quantitative metrics and qualitative considerations. This analysis considers proposed improvements associated with the designation of I-11 along the two corridor alternatives and options:

- Central Corridor Alternative
- Western Corridor Alternative
 - Sheep Mountain Option
 - Centennial Bowl Option

6.1 CORRIDOR ALTERNATIVES METHODOLOGY

6.1.1 Evaluation Framework

The framework for the development of the proposed evaluation process consists of the following steps:

- Review existing available data for the corridor alternatives and options;
- Group the data into evaluation categories;
- Develop the appropriate evaluation criteria for each category;
- Develop one or more performance measures for each evaluation criterion;
- Identify appropriate quantitative metrics and/or qualitative considerations;
- Rate the performance for each corridor alternative and option against each performance measure; and
- Identify the corridor alternative and/or option that performs best.

6.1.2 Data Review

Data reviewed from the draft *Conditions Assessment Report* (see Appendix A) and included in the development of evaluation criteria and performance measures include:

- Transportation system characteristics
- Traffic information
- Population characteristics
- Land use and community resources
- Economic conditions
- Environmental conditions

The data from the draft *Conditions Assessment Report* is supplemented by information presented in the *Alternatives Development Report* on transportation access, mobility, and feasibility. Public and stakeholder input will be incorporated into the analysis following the release and review of the Draft Final PEL Study document.

Note that the results of this analysis are subject to change pending the results of the agency and public engagement process and stakeholder preferences incorporated into this evaluation.

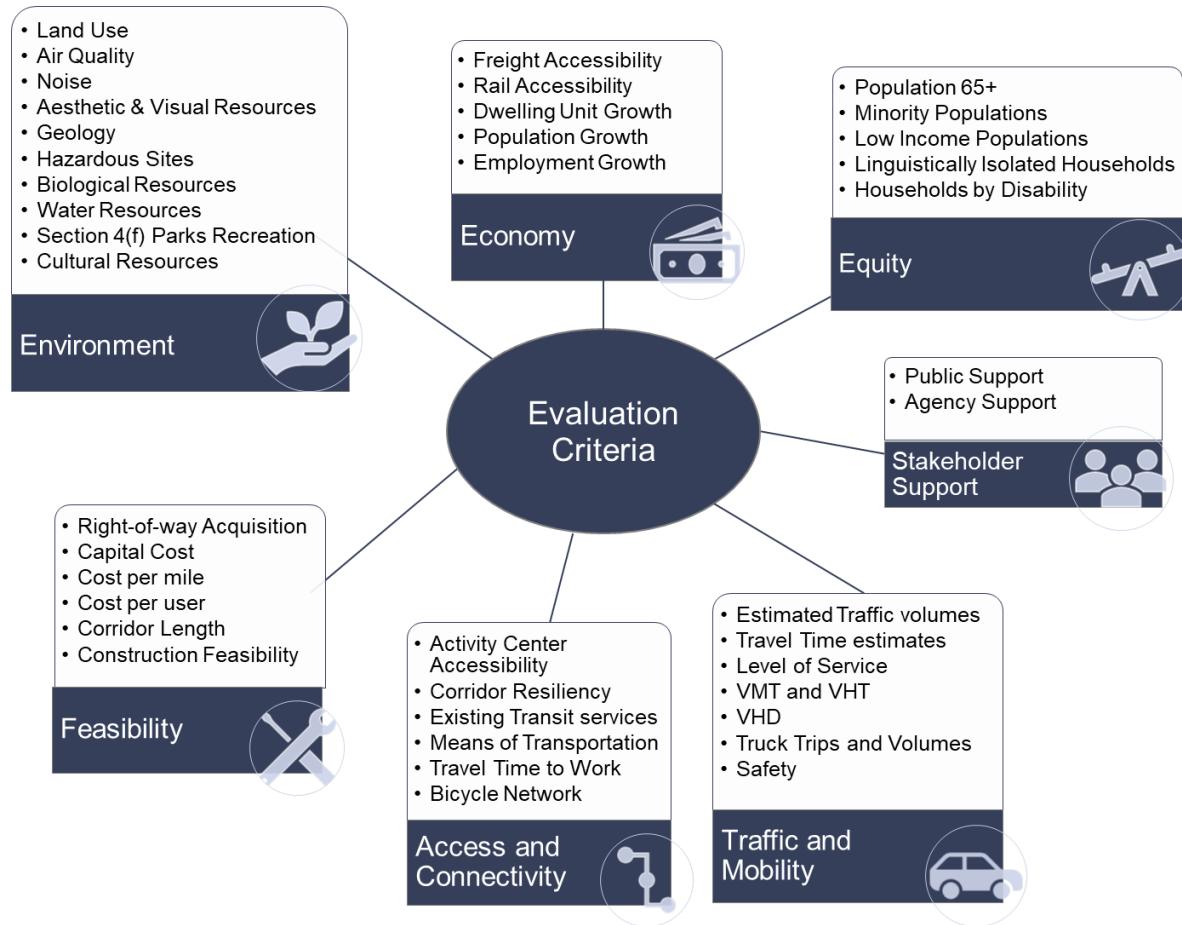
6.1.3 Evaluation Categories and Criteria

Seven evaluation categories are identified for this analysis and are shown in Figure 6-1.

- Environment
- Economy
- Feasibility
- Access and Connectivity
- Traffic and Mobility
- Equity
- Stakeholder Support (note: this is deferred to follow the release and review of the Draft Final PEL Study document)

For each evaluation category there are multiple evaluation criteria, as shown in Figure 6-1, that are measured as part of the I-11 PEL.

Figure 6-1. Evaluation Categories and Criteria



The evaluation considers the potential benefits and/or other impacts of future improvements of each corridor alternative against each of the criteria shown above.

The benefits and impacts of a corridor alternative's performance against each evaluation criterion were assessed using the results of quantitative and qualitative analyses. For each evaluation category, the evaluation criterion is described, and the results reported. In some instances, no meaningful benefits or impacts would occur, in which case this observation is noted.

6.2 EVALUATION

Since there are multiple evaluation criteria for each category, and the relative weights of the categories and criteria have not been defined to preserve an unbiased evaluation, individual criteria are not scored numerically. The corridor alternatives and options are scored at the category level, which considers the results of the analysis for each criterion evaluated. Results of the evaluation are provided in Section 6.3.

The following sections summarize the results of the analysis of the corridor alternatives: Central Corridor Alternative, Western Corridor Alternative – Sheep Mountain Option, and Western Corridor Alternative – Centennial Bowl Option.

6.2.1 Environmental

The PEL is a pre-NEPA activity that is meant to inform the NEPA process as potential future projects develop; the PEL is not intended to identify or assess specific environmental impacts. To inform the NEPA process, the PEL “Environment” category criteria address the topics that will be evaluated through NEPA. As with NEPA analysis, the emphasis is placed on identifying the major issues related to the proposed project—those issues where none of the corridor alternatives are anticipated to have negative impacts are noted as such.

For each criterion, after a description of the topic and performance measure, the risk of impacts is noted, and the corridor alternatives are ranked based on whether there is no impact, a potential impact, or a likely impact. In general, less risk of impact is preferred.

Environmental criterion impacts are noted as shown below:

- – no impact (empty circle)
- ◐ – potential impact (half-filled circle)
- – likely impact (completely filled circle)

Land Use

Description The Land Use criterion examines (1) the potential land use conversion associated with the Interstate designation and (2) whether any planned developments would be affected.				
Performance Measure	Central Corridor	Western Corridor Options		Notes
		Sheep Mountain	Centennial Bowl	
Land use change by number of properties: Potential land use conversion Land (number of parcels)	○	●	●	<ul style="list-style-type: none"> ▪ Central and Western Corridors are largely built out, with the exception of the Sheep Mountain Option. ▪ High concentration of multi-family developments in Central Corridor Western Corridor Sheep Mountain Option: <ul style="list-style-type: none"> ▪ Requires land use changes ▪ May impact Open Space ▪ Likely requires the acquisition of right-of-way
Concentrations of planned developments along the Corridor	○	●	●	<ul style="list-style-type: none"> ▪ Central Corridor growth anticipated in portions of Henderson and Clark County east of the I-515 ▪ Western Corridor Alternative and options have projected dwelling unit growth and planned developments that would benefit from improved access Western Corridor Sheep Mountain Option: <ul style="list-style-type: none"> ▪ Would benefit from new access

Air Quality

Description An increase in vehicle miles traveled (VMT) and its corresponding impact on air quality was evaluated. The resulting change in VMT based on the designation as I-11 alone is not substantial (2 – 3.2 percent, varies by alternative and option); therefore, the air quality criterion was not carried forward for evaluation of the corridor alternatives using existing routes. Subsequent improvements to address traffic capacity would be evaluated for air quality impacts since the Regional Transportation Commission (RTC) must quantitatively assess the air quality impacts of its plans and programs.				
Performance Measure	Central Corridor	Western Corridor Options		Notes
		Sheep Mountain	Centennial Bowl	
Air Quality	N/A	N/A	N/A	<ul style="list-style-type: none"> ▪ Any major capital improvement projects in the corridor (including congestion mitigation and new capacity) would be evaluated for air quality conformity at the time of design

Geology

Description				
Performance Measure	Central Corridor	Western Corridor Options		Notes
		Sheep Mountain	Centennial Bowl	
Presence of faults in the corridor and likelihood of impact	N/A	N/A	N/A	<ul style="list-style-type: none"> ▪ No faults identified along the corridor alternatives that would pose a risk to improvements necessary for interstate designation

Aesthetics and Visual Resources

Description				
Performance Measure	Central Corridor	Western Corridor Options		Notes
		Sheep Mountain	Centennial Bowl	
Existing Views: Qualitative review of visual resources near proposed areas of construction	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<ul style="list-style-type: none"> ▪ Central and Western Corridors have no changes noted other than signage replacement ▪ Western Corridor Sheep Mountain Option would encroach on viewshed of Kyle Canyon
Scenic Byways: Proximity of Scenic byways to the corridor near proposed areas of construction	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<ul style="list-style-type: none"> ▪ Eastern and Western Corridors have no changes noted other than signage replacement ▪ Western Corridor Sheep Mountain Option may impact Kyle Canyon during construction

Noise

Description				
Performance Measure	Central Corridor	Western Corridor Options		Notes
		Sheep Mountain	Centennial Bowl	
Increase in average daily traffic and its impact on noise	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<ul style="list-style-type: none"> ▪ Western Corridor Sheep Mountain Option increases operational noise in the Sheep Mountain area due to the new interstate segment ▪ Western Corridor Centennial Bowl Option freeway ramps may impact existing residential

Hazardous Sites

Description				
Performance Measure	Central Corridor	Western Corridor Options		Notes
		Sheep Mountain	Centennial Bowl	
Number of Hazardous sites near proposed areas of construction	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<ul style="list-style-type: none"> ▪ Western Corridor Sheep Mountain Option contains 3 hazmat sites

Biological Resources

Description				
Performance Measure	Central Corridor	Western Corridor Options		Notes
		Sheep Mountain	Centennial Bowl	
Land cover changes near proposed areas of construction	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<ul style="list-style-type: none"> ▪ Western Corridor Sheep Mountain Option converts open space to roadway
Presence of special-status species near proposed areas of construction	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<ul style="list-style-type: none"> ▪ Western Corridor Sheep Mountain Option may require use of undeveloped land which has potential to affect protected habitat species

Water Resources

Description				
Performance Measure	Central Corridor	Western Corridor Options		Notes
		Sheep Mountain	Centennial Bowl	
Hydrology: Presence of natural hydraulic features near proposed areas of construction	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<ul style="list-style-type: none"> ▪ Western Corridor Sheep Mountain Option could alter existing drainage flows
Wetlands: Presence of wetlands near proposed areas of construction	N/A	N/A	N/A	<ul style="list-style-type: none"> ▪ Western Corridor Sheep Mountain Option would not impact wetlands



Section 4(f) Resources – Parks and Recreational Facilities

Description This criterion investigated the number of parks, type of usage, and acreage of usage associated with the two corridor alternatives and options.				
Performance Measure	Central Corridor	Western Corridor Options		Notes
		Sheep Mountain	Centennial Bowl	
Parks and recreational facilities near proposed areas of construction	N/A	N/A	N/A	<ul style="list-style-type: none"> ▪ No parks and recreational facilities are near proposed areas of construction, and no existing parks in the corridors

Section 4(f) Resources – Trails

Description Trails near proposed areas of construction.				
Performance Measure	Central Corridor	Western Corridor Options		Notes
		Sheep Mountain	Centennial Bowl	
Trails near proposed areas of construction	○	●	○	<ul style="list-style-type: none"> ▪ Western Corridor Sheep Mountain Option may impact a planned trail in the new segment.

Section 4(f) Resources – Schools with Recreation

Description This criterion analyzed whether an alternative would result in the use of a publicly accessible recreational feature associated with a school by identifying the number of schools within the two corridor alternatives and options.				
Performance Measure	Central Corridor	Western Corridor Options		Notes
		Sheep Mountain	Centennial Bowl	
Schools with public recreation near proposed areas of construction	N/A	N/A	N/A	<ul style="list-style-type: none"> ▪ Alternatives do not affect schools

Section 4(f) Resources – Historic Built Environment

Description This criterion analyzes whether any corridor alternative adversely affects any historic sites by identifying the number of historic sites.				
Performance Measure	Central Corridor	Western Corridor Options		Notes
		Sheep Mountain	Centennial Bowl	
Presence of historic resources in the corridor	N/A	N/A	N/A	<ul style="list-style-type: none"> ▪ Alternatives do not affect known historic resources

Section 4(f) Resources – Archaeological Resources

Description This criterion analyzes whether one of the alternatives would adversely affect an archaeological resource by identifying the number of archaeological sites within the two alternatives and options.				
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Performance Measure	Central Corridor	Western Corridor Options		Notes
		Sheep Mountain	Centennial Bowl	
Archaeological resources near proposed areas of construction	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	▪ Western Corridor Sheep Mountain Option has three archaeological sites within 500 feet

Tribal Lands

Description

This criterion identified potential effects to tribal lands within the two alternatives and options.

Performance Measure	Central Corridor	Western Corridor Options		Notes
		Sheep Mountain	Centennial Bowl	
Tribal properties near proposed areas of construction	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	▪ Western Corridor Sheep Mountain Option affects Las Vegas Paiute Indian Colony (reservation)

6.2.2 Economy

The “Economy” evaluation category considers four evaluation criteria. The following sections show the methodology for the evaluation criteria within the Economy evaluation category, along with the performance measures and quantitative and qualitative (where applicable) analysis for each criterion.

In lieu of the circles used in Section 6.2.1 to express the potential for environmental impacts, numerical measures and qualitative expressions are applied to the following criterion.

Freight Accessibility

Performance Measure	Central Corridor	Western Corridor Options																				
		Sheep Mountain	Centennial Bowl																			
Percentage of corridor alternative accessible by freight		<table border="1"> <tr> <td>commercial</td> <td>35%</td> </tr> <tr> <td>industrial</td> <td>7%</td> </tr> <tr> <td>mixed-use</td> <td>45%</td> </tr> </table>	commercial	35%	industrial	7%	mixed-use	45%	<table border="1"> <tr> <td>commercial</td> <td>39%</td> </tr> <tr> <td>industrial</td> <td>4%</td> </tr> <tr> <td>mixed-use</td> <td>19%</td> </tr> </table>	commercial	39%	industrial	4%	mixed-use	19%	<table border="1"> <tr> <td>commercial</td> <td>37%</td> </tr> <tr> <td>industrial</td> <td>4%</td> </tr> <tr> <td>mixed-use</td> <td>19%</td> </tr> </table>	commercial	37%	industrial	4%	mixed-use	19%
commercial	35%																					
industrial	7%																					
mixed-use	45%																					
commercial	39%																					
industrial	4%																					
mixed-use	19%																					
commercial	37%																					
industrial	4%																					
mixed-use	19%																					

Freight Rail Accessibility

Performance Measure	Central Corridor	Western Corridor Options		
		Sheep Mountain	Centennial Bowl	
Percentage of corridor alternative accessible by freight	8%	10%	10%	10%

Total Population Growth (2019 to 2050)**Description**

This criterion analyzes the projected population growth for each of the two corridor alternatives and options by examining the projected growth around the areas of the corridor alternatives. The analysis identifies the extent of population growth (projected by 2050) adjacent to or within the corridor alternatives. From an economic perspective, population growth is preferred. (Note that the criterion dwelling unit growth is inherent in population growth, so is not described further.)

Performance Measure	Central Corridor	Western Corridor Options	
		Sheep Mountain	Centennial Bowl
Population growth along/adjacent to the corridor alternative by 2050	Lower population growth; area is largely built out	Moderate population growth	Moderate population growth

Total Employment Growth**Description**

This criterion analyzes the projected employment growth for each of the two corridor alternatives and options by looking at the projected growth around the areas of the corridor alternatives. The analysis identifies the extent of employment growth (projected by 2050) adjacent to or within the corridor alternatives. From an economic perspective, employment growth is preferred

Performance Measure	Central Corridor	Western Corridor Options	
		Sheep Mountain	Centennial Bowl
Employment growth along/adjacent to the corridor alternative by 2050	Highest employment growth (compared to other alternatives)	Moderate employment growth	Moderate employment growth

6.2.3 Feasibility

The “Feasibility” evaluation category considers multiple evaluation criteria. The following sections show the methodology for the evaluation criteria within the feasibility evaluation category, along with the performance measures and quantitative and qualitative (where applicable) analysis for each criterion.

Right-of-Way Acquisition**Description**

This criterion analyzes whether right-of-way acquisition is likely required and identifies the number of parcels that may need to be acquired within the two corridor alternatives and options. Right-of-way acquisition should be avoided where feasible.

Performance Measure	Central Corridor	Western Corridor Options	
		Sheep Mountain	Centennial Bowl
Presence and number of parcel acquisitions needed	None	Several major parcels would likely be affected, resulting in acquisitions	One or more major parcels could potentially be affected, resulting in acquisitions

Corridor Length (miles)

Description			
Performance Measure	Central Corridor	Western Corridor Options	
		Sheep Mountain	Centennial Bowl
Corridor length (miles)	32.2	38.4	42.5

Capital Costs (\$)

Description			
Performance Measure	Central Corridor	Western Corridor Options	
		Sheep Mountain	Centennial Bowl
Capital cost (\$ millions)	\$1.2	\$190.8	\$116.4
Cost per mile (\$ 000s)	\$37	\$4,969	\$385

Volumes

Description			
Performance Measure	Central Corridor	Western Corridor Options	
		Sheep Mountain	Centennial Bowl
2040 AADT Bidirectional Volume (vehicles) / Percent of Overall Corridor Volume	5,400 / 3.1%	3,600 / 2.3%	4,100 / 2.6%

Note: AADT – average annual daily traffic

Construction Feasibility

Description This criterion examines the feasibility to construct the corridor alternatives and options. Greater construction feasibility is preferred.			
Performance Measure	Central Corridor	Western Corridor Options	
		Sheep Mountain	Centennial Bowl
Feasibility of construction improvements needed along corridor alternative	Feasible with minimal risks – primarily signage replacement	Feasible with potential for significant risks. Sheep Mountain Parkway (planned superarterial) to interstate conversion together with improvement of two-lane roadway segment north of Kyle Canyon Road (SR 157) to interstate standards and new system interchange at US 95	Feasible with potential for moderate risks due to interstate substandard connections planned at Centennial Bowl Interchange (planned connections meet standards for current US route designation)

6.2.4 Access and Connectivity

The “Access and Connectivity” evaluation category considers multiple evaluation criteria. The following sections show the methodology for the evaluation criteria within the Access and Connectivity evaluation category, along with the performance measures and quantitative and qualitative (where applicable) analysis for each criterion.

Activity Centers Accessibility

Description This criterion quantifies the number of activity centers within 3 miles of each corridor alternative and option that could benefit from improved access, such as universities, colleges, casinos, libraries, shopping centers, shopping malls, airports, cultural centers, community centers, and hospitals. Corridors with greater numbers of activity centers in close proximity to the facility are preferred.			
Performance Measure	Central Corridor	Western Corridor Options	
		Sheep Mountain	Centennial Bowl
Number of activity centers within 3 miles of corridor alternative	69	41	50

Corridor Resiliency/Parallel Routes

Description This criterion examines how resilient the two corridor alternatives and options are by identifying the number of parallel principal arterials per mile within 1 mile of each of the alternatives and options. Fewer alternate routes would result in the corridor alternative being less resilient and therefore less desirable.			
Performance Measure	Central Corridor	Western Corridor Options	
		Sheep Mountain	Centennial Bowl
Number of parallel routes per mile of the corridor	1.71	1.68	1.67

Existing Transit Service

Description This criterion identifies existing transit routes and stops within the two corridor alternatives and options. There is little risk of impacts on transit services that intersect or operate near the corridor alternatives and options. Risks to these types of facilities, if present, would be undesirable.			
Performance Measure	Central Corridor	Western Corridor Options	
		Sheep Mountain	Centennial Bowl
Existing transit services	The Centennial Express (CX) utilizes long stretches of the 95, which is a major portion of the Central Corridor	No routes utilize this corridor	The CX route utilizes a short section of this corridor, along the 95 between Elkhorn and the CC 215

Existing and Proposed Bicycle Network

Description This criterion identifies all existing and planned bicycle facilities within the two corridor alternatives and options. Alternatives and options with more bicycle facilities have a greater risk of temporary or permanent impacts to these facilities and, thus, affecting the bicycle network more. Risks to these types of facilities are undesirable.			
Performance Measure	Central Corridor	Western Corridor Options	
		Sheep Mountain	Centennial Bowl
Existing and proposed bicycle network	None	A new segment of the existing Beltway trail is proposed parallel to this corridor	None

Means of Transportation

Description This criterion analyzes the primary means of transportation to work in census tracts along the two corridor alternatives and options. The alternative and/or option with a higher percentage of alternative modes of transportation (bike, walk, and public transit) would not realize the same benefit as the corridor alternatives or options that use automobiles to get to work. A greater percentage of alternative mode usage is preferred.			
Performance Measure	Central Corridor	Western Corridor Options	
		Sheep Mountain	Centennial Bowl
Percentage of 'alternative mode of transportation to work' (transit, bike walk)	6.6%	2.2%	2.2%

Travel Times to Work

Description This criterion examines how long commute times are for census tracks within the two corridor alternatives and options, based on U.S. Census data. While exact benefits are unknown at this time, a modest improvement in freeway operations as a result of improved wayfinding is anticipated to improve travel time for commuters to a minor degree. Furthermore, commuters along the two Western Corridor Options experience a faster commute to work than those along the Central Corridor which would be preferable for I-11.			
Performance Measure	Central Corridor	Western Corridor Options	
		Sheep Mountain	Centennial Bowl
Travel time to work	No change	Minor benefit	Minor benefit

6.2.5 Traffic and Mobility

The “Traffic and Mobility” evaluation category considers multiple evaluation criteria. The following sections show the methodology for the evaluation criteria within the Traffic and Mobility evaluation category, along with the performance measures and quantitative and qualitative (where applicable) analysis for each criterion.

Average 2040 Volumes

Performance Measure	Central Corridor	Western Corridor Options	
		Sheep Mountain	Centennial Bowl
Average 2040 volume without I-11 (vehicles)	167,100	154,400	155,400
Average 2040 volume with I-11 (vehicles)	172,500	158,000	159,500
Percentage change in average 2040 volumes due to I-11 designation	3.1%	2.3%	2.6%

Travel Time Estimates

Performance Measure	Central Corridor	Western Corridor Options	
		Sheep Mountain	Centennial Bowl
2040 without I-11 (minutes)	Avg off-peak	39.1	52.6
	Avg PM peak	54.2	62.0
2040 with I-11 (minutes)	Avg off-peak	39.8	53.5
	Avg PM peak	58.5	68.2

Level of Service (LOS) in 2040 Build

Performance Measure	Central Corridor	Western Corridor Options		
		Sheep Mountain	Centennial Bowl	
LOS 2040 build *				
* Level of service (LOS) is a qualitative measure used to relate the quality of motor vehicle traffic service much like academic grading. LOS is used to analyze roadways and intersections by categorizing traffic flow and assigning quality levels of traffic based on performance measures like vehicle speed, density, mobility, etc.				

Change in Vehicle Hours Delay (VHD) in 2040

Performance Measure	Central Corridor	Western Corridor Options		
		Sheep Mountain	Centennial Bowl	
2040 daily VHD without I-11	17,560	7,150	7,730	
2040 daily VHD with I-11	17,910	7,300	7,950	
Additional VHD with I-11	350	150	220	

Vehicle Miles Traveled (VMT)/Vehicle Hours Traveled (VHT) in 2040

Performance Measure	Central Corridor	Western Corridor Options		
		Sheep Mountain	Centennial Bowl	
2040 without I-11	2040 VMT (millions)	7.3	6.0	6.6
	VHT (000s)	134.3	102.0	111.1
2040 with I-11	2040 VMT (millions)	7.5	6.2	6.9
	VHT (000s)	140.8	105.8	116.3
Change with I-11	2040 VMT (000s)	268.0	106.0	240.0
	VHT (000s)	6.5	3.8	5.2

Truck Trips

Description This criterion identifies the projected truck trips, as a percentage of total trips, along the two corridor alternatives and options. The higher the percentage of projected truck trips, the better that corridor is performing from a goods movement standpoint.			
Performance Measure	Central Corridor	Western Corridor Options	
		Sheep Mountain	Centennial Bowl
2040 without I-11 percent truck traffic	7.6%	6.9%	6.6%
2040 with I-11 percent truck traffic	7.8%	7.3%	6.9%
Change in percent trucks trips without I-11	0.2%	0.4%	0.3%

Average Daily Truck Volumes

Description This criterion examines the projected total daily truck volumes along each of the two alternatives and options in the year 2040. Due to the movement of fewer trucks, the Central Corridor and Western Corridor Alternative – Centennial Bowl Option score slightly worse than the Western Corridor Alternative – Sheep Mountain Option. Corridors that demonstrate the capability to serve greater truck volume are preferred as they can move more freight.			
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Performance Measure	Central Corridor	Western Corridor Options	
		Sheep Mountain	Centennial Bowl
Average 2040 Truck Traffic Without I-11 (trucks)	12,700	10,600	10,200
Average 2040 Truck Traffic With I-11 (trucks)	13,500	11,500	11,000
Additional 2040 Truck Volume with I-11 (trucks)	800	900	800

Safety and Reliability (Crash Rates)

Description This criterion analyzes the number of crashes over a three year period (2015 – 2017) divided by the (respective) corridor length for each of the alternatives and options. Corridors with lower crash rates are preferred.			
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Performance Measure	Central Corridor	Western Corridor Options	
		Sheep Mountain	Centennial Bowl
Crash Rate (crashes over 3 year period per corridor mile)	200	125	120

6.2.6 Equity

The “Equity” evaluation category considers multiple evaluation criteria. The following sections show the methodology for the evaluation criteria within the Equity evaluation category, along with the performance measures and quantitative and qualitative (where applicable) analysis for each criterion.

Equity Evaluation

Description			
Performance Measure	Central Corridor	Western Corridor Options	
		Sheep Mountain	Centennial Bowl
Percent older populations (65+)	13%	15%	15%
Percent people of color (minority) populations	42%	33%	33%
Percent low-income populations	19%	8%	8%
Percent linguistically isolated household	9%	3%	3%
Percent households with disability	28%	20%	20%

6.2.7 Stakeholder Support

The “Stakeholder Support” evaluation category considers the input received from the public and stakeholder agencies. As described in Section 3.5, the final virtual public meeting and review period for the draft PEL report began on June 23, 2022, and extended through July 22, 2022. 345 participants attended the Study’s final public outreach phase and virtual public meeting. A total of 99 surveys were received and the responses indicated 67% of participants favored the Central Corridor Alternative, 25% favored the Western Corridor Alternative, with 8% who indicated no preference. Included in Appendix C is the Agency Coordination and Public Involvement Summary, including Attachments providing a detailed summary of comments received via online survey, email, online comment card, and telephone town hall together with responses.

Positive feedback for the Central Corridor indicated that it is closer to existing businesses, can better accommodate truck traffic, has room for expansion if needed, and is the most direct route. Overall positive feedback for the Western Corridor suggested that it would reduce freight traffic through the center of the city, it is safer, that there is less traffic, and this corridor can better accommodate future traffic volumes. General concerns for both corridor alternatives included traffic, truck/freight movement, air quality, noise/sound, and “other” miscellaneous concerns. The majority of feedback for the Western Corridor (Sheep Mountain) option was negative and included mentions that it is not economically feasible, would increase traffic, and the proposed corridor alignment would have adverse environmental impacts and decrease nearby property values.

6.3 EVALUATION RESULTS

The evaluation results rank each corridor alternative and option relative to each other and the potential of impacts (positive or negative) within each evaluation category. Rankings are from low (0) to medium (1) to high (2), with a high ranking more favorable.

6.3.1 Evaluation Categories

Environmental

Alternatives	Central Corridor	Western Corridor	
		Sheep Mountain Option	Centennial Bowl Option
Rank	2	0	1
<ul style="list-style-type: none"> ▪ Due to the limited nature of proposed corridor alternative improvements for the Central Corridor and Western Corridor – Centennial Bowl Option Alternatives have little to no environmental impacts ▪ Central Corridor Alternative may impact areas of growth in portions of Henderson and east of the I-15 ▪ Western Corridor - Sheep Mountain Option Alternative introduces approximately 5.5 miles of corridor, as well as a new system-to-system interchange where the alternative connects with US 95, these improvements would have significant environmental impacts, relative to the Central Corridor and Western Corridor Alternative – Centennial Bowl 			

Economy

Alternatives	Central Corridor	Western Corridor	
		Sheep Mountain	Centennial Bowl
Rank	2	1	0
<ul style="list-style-type: none"> ▪ The Central Corridor Alternative ranks highest in terms of freight access and employment growth ▪ Western Corridor Alternative Options have similar results for freight and freight rail accessibility, population, and employment growth ▪ The Western Corridor Alternative – Sheep Mountain Option offers modestly better freight accessibility (61 percent), relative to the Western Corridor Alternative – Centennial Bowl Option (60 percent) 			

Feasibility

Alternatives	Central Corridor	Western Corridor	
		Sheep Mountain	Centennial Bowl
Rank	2	0	1
<ul style="list-style-type: none"> ▪ The Central Corridor Alternative has no right-of-way needs, shortest overall length, significantly lower cost, is the highest volume roadway and has minimal construction improvements necessary ▪ The Western Corridor Alternative – Centennial Bowl Option has moderate potential right-of-way needs, has the longest overall length, and second highest volume roadway ▪ The Western Corridor Alternative – Sheep Mountain Option ranks lower than the Central Corridor Alternative and the Western Corridor Alternative – Centennial Bowl Option in all categories (other than length) 			

Access and Connectivity

Alternatives	Central Corridor	Western Corridor	
		Sheep Mountain	Centennial Bowl
Rank	2	1	0
<ul style="list-style-type: none"> ▪ The Central Corridor Alternative has the highest activity centers, slightly greater resiliency, existing transit, and three times the percentage of alternative modes of transportation as the Western Corridor Alternative Options 			

Traffic and Mobility

Alternatives	Central Corridor	Western Corridor	
		Sheep Mountain	Centennial Bowl
Rank	2	0	1
<ul style="list-style-type: none"> ▪ The Central Corridor Alternative had the highest traffic volume, and greatest change in volume as a result of I-11 designation, greatest increase in PM Peak travel times, VMT, and truck trips and volume; however, the increased volume of the Central Corridor Alternative contributes to greatest failing LOS (E-F), greatest VHD and crash rate 			

Equity

Alternatives	Central Corridor	Western Corridor	
		Sheep Mountain	Centennial Bowl
Rank	2	1	1
<ul style="list-style-type: none"> ▪ The Central Corridor Alternative has higher concentrations of all RTC's Equity Communities (minority, low-income, linguistically isolated populations, and persons with disabilities) with the exception of Older Populations, which are modestly higher in the Western Corridor Alternative Options (which are indistinguishable in terms of the RTC's Equity Communities) 			

Stakeholder Support

- All formalized stakeholder input received (emails, voicemails, online surveys, and online comment cards) during the final phase of outreach resulted in a majority of those expressing a preference for the recommended Central Corridor Alternative. The feedback received identified specific concerns and issues and this information is an important element of the PEL process. The reader is referred to Appendix C, the Agency Coordination and Public Involvement Summary for more information on detailed public comments.

6.3.2 Summary

The corridor alternative (or corridor alternative option) that performs best based on the evaluation results herein is presented as the recommended corridor alternative in this PEL document.

The evaluation results presented herein indicate that the Central Corridor Alternative ranks higher than the Western Corridor Alternative and Options in the evaluation criteria of Environmental, Economy, Feasibility, Access and Connectivity, Traffic and Mobility, Equity, and Stakeholder Support.

The Central Corridor Alternative (currently I-515 and US 95) is identified as the best performing corridor alternative and is recommended for designation as I-11 through the Las Vegas metropolitan area. Future improvements associated with designation of the recommended corridor alternative are expected to be limited to construction of signage modifications and minor pavement markings and are not anticipated to include freeway widening or other major items of construction work.

7 CONCLUSION AND NEXT STEPS

7.1 WHAT ARE THE CONCLUSIONS FROM THIS ASSESSMENT?

Based on the assessments conducted across all evaluation criteria of each corridor alternative, the Central Corridor Alternative is identified as the best performing corridor alternative. The Central Corridor Alternative is recommended for future designation as I-11 through the Las Vegas metropolitan area due to the following reasons:

- **Feasibility:**
 - **Capital Cost (\$):** Although there are minor infrastructure improvements (besides the I-11 shields?) needed for the Central Corridor Alternative, there is the cost associated with modifying on- and off-system signage with the I-11 interstate route shield. With the lowest cost associated, the Central Corridor Alternative receives the best score compared to the other corridor alternatives.
 - **Corridor Length:** Shorter corridor length indicates less travel, and it is also important because freight movement by trucks prefer the shortest route. Due to its length, the Central Corridor Alternative receives the highest score in this criterion.
 - **Cost Per Mile:** The Central Corridor Alternative resulted in the lowest cost per mile due to shortest corridor length and lowest Capital cost.
- **Access and Connectivity**
 - **Activity Centers Accessibility:** The Central Corridor Alternative provides access to the most activity centers within three miles of each corridor alternative such as universities, colleges, casinos, libraries, shopping centers, shopping malls, airports, cultural centers, community centers, and hospitals.
 - **Corridor Resiliency/Parallel Routes:** Corridor resiliency is the number of parallel principal arterials⁴ per mile within one mile of each of the alternatives and options. Fewer alternate routes would result in the alternative being less resilient and thus score worse. With a greater number of parallel facilities, the Central Corridor Alternative scores the highest in this criterion.
- **Traffic and Mobility**
 - **Total Truck Trips:** This criterion identifies the projected truck trips, as a percentage of total trips, along the two corridor alternatives and options. The higher the percentage, the better that corridor is performing from a goods movement standpoint. Thus, that corridor is realizing a greater benefit and receives a better score than a corridor with a

⁴ Principal arterials are a functional classification for major highways intended to serve through traffic where access is carefully controlled, generally highways of regional importance, with moderate to high volumes of traffic traveling relatively long distances and at higher speeds.

lower percentage. The Central Corridor Alternative is projected to have a higher percentage of truck trips and receives a higher score than the other corridor alternatives.

- **Economy:**

- Freight accessibility is important because it reflects the ability of industries in the economy to move goods to their customers and to access material inputs from suppliers, which helps increase economic output. With a higher percentage of land use benefiting from freight accessibility, the Central Corridor Alternative has a greater benefit than the other corridor alternatives and options, which served far less industrial and mixed uses and scored neutral in this criterion.

- **Stakeholder Support:**

- Public and agency feedback received during the review of the draft PEL report indicated the Central Corridor Alternative showed a significant margin of support over the Western Corridor Alternative.

7.2 WHAT IS THE ANTECIPATED NEPA REVIEW PROCESS?

Compliance with NEPA will be required for construction of improvements anticipated following designation of I-11 through the Las Vegas metropolitan area on the recommended Central Corridor Alternative, since this construction would take place on a federal facility which triggers NEPA. Pending the approval of the Central Corridor as I-11 by NDOT, FHWA, and AASHTO, there would be minimal impact to the social and natural environment, as shown in Table 4-1. In coordination with FHWA, a NEPA class of Action would be determined; however, it is anticipated that the construction of signage and pavement marking improvements anticipated on the Central Corridor Alternative may potentially qualify for a Categorical Exclusion, if applicable.



Appendices

Appendix A – Conditions Assessment Report

Appendix B – Alternatives Development Report

Appendix C – Agency Coordination and Public Involvement Summary

Appendix D – I-11 Planning and Environmental Linkages Study for Las Vegas Questionnaire and Checklist