



# Reasonably Foreseeable Effects Report



LEMMON DRIVE  
PROJECT

Washoe Regional Transportation Commission &  
Nevada Department of Transportation

## Lemmon Drive Traffic Improvements and Resiliency Project

June 2025

# Acronyms and Abbreviations

RTC	Regional Transportation Commission
NDOT	Nevada Department of Transportation
FHWA	Federal Highway Administration
FEMA	Federal Emergency Management Agency
CEQ	Council on Environmental Quality
ACS	American Community Survey
NCHRP	National Cooperative Highway Research Program
NEPA	National Environmental Policy Act
CDP	Census Designated Place
BLM	Bureau of Land Management
CFR	Code of Federal Regulations
AASHTO	American Association of State Highway and Transportation Officials
RTP	Regional Transportation Plan
ESA	Endangered Species Act
USFWS	United States Fish and Wildlife Service
MBTA	Migratory Bird Treaty Act
BGEPA	Bald and Golden Eagle Protection Act
NDEP	National Department of Environmental Protection
BMP	Best Management Practice
SWPPP	Stormwater Pollution Prevention Plan

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# Introduction

## Project Overview

The Regional Transportation Commission of Washoe County (RTC Washoe), in cooperation with the Nevada Department of Transportation (NDOT) and the Federal Highway Administration (FHWA) are proposing improvements to Lemmon Drive in the City of Reno, Washoe County, Nevada. The Lemmon Drive Traffic Improvements and Resiliency Project involves realigning Lemmon Drive to reconstruct a safer and more resilient roadway between Fleetwood Drive and Ramsey Way. The project proposes to realign Lemmon Drive to the west on an existing berm, elevating the roadway to mitigate flooding impacts. The project also includes the reconstruction of a multi-use path within the project limits and the construction of a new path connecting Lemmon Drive to Lemmon Valley Elementary School. Additionally, the project would eliminate residential driveway connections to a regional road, implement required earthwork balancing to avoid altering the base flood elevation, and stormwater improvements, including the construction of retention and equalization basins. These comprehensive measures collectively enhance safety, connectivity, and transportation resiliency in Lemmon Valley.

The purpose of this report is to describe the potential reasonably foreseeable environmental effects that could result from the implementation of the Lemmon Valley Traffic Improvements and Resiliency Project, as required by the National Environmental Policy Act (NEPA).



**Figure 1: Project Location**

# Purpose and Need for the Project

## Why is the Project Needed?

In 2017, Lemmon Drive was overtopped by floodwaters and faced emergency closures and an extensive mitigation response which disrupted the community's access highlighting the need for a more resilient roadway. Washoe County has limited financial and human resources to continuously provide flood mitigation for Lemmon Drive and private property. The total cost for maintenance, HESCO barrier placement, and continuous pumping for the 2017-2019 flood event was \$11.6 million (Washoe County, 2022).

In addition, multimodal enhancements were identified as a community need in the RTC's North Valleys Regional Transportation Study.

## What is the Purpose of the Project?

The purpose of the project is to provide a safe and reliable regional road with at least one dry lane in each direction of travel during a 100-year flood event and provide safe access for all multi-modal users.

# Proposed Action and Alternatives

## Build Alternative

The Build Alternative would reconstruct and raise the profile of the existing roadway from Fleetwood Drive to Palace Drive along the existing alignment. The section of roadway would provide two through lanes in each direction with a raised median. Dedicated left- and right-turn lanes would be provided at the intersections of Fleetwood Drive, Patrician Drive, and Palace Drive.

As the roadway extends to the north it would transition to provide one lane in each direction with a raised center median. In the northbound direction, dedicated right turn pockets would be provided at Arkansas Street, Chickadee Drive, Arizona Street, and Oregon Drive. Just north of Deodar Way the roadway alignment would shift west of the existing roadway. This realigned segment of roadway would run along the east side of an existing berm allowing the roadway to be constructed above the existing Federal Emergency Management Agency (FEMA) 100-year flood elevation. Arkansas Street, Chickadee Drive, and Arizona Street would be extended to tie into the new, realigned roadway. Near Oregon Drive the roadway alignment would tie into the existing roadway alignment with full reconstruction extending to Ramsey Way.

The Build Alternative would also involve modifications to cross-street direct access realigned Lemmon Drive at Nectar Street, Tupelo Street, Waterash Street, Idaho Street, Pompe Way, and Dillon Way. Pompe Way and Dillon Way would be connected via a new frontage road which provides access to Lemmon Drive at Ramsey Way. Idaho Street and Waterash Street would utilize rehabilitated existing Lemmon Drive as local frontage road access to Arizona Street or

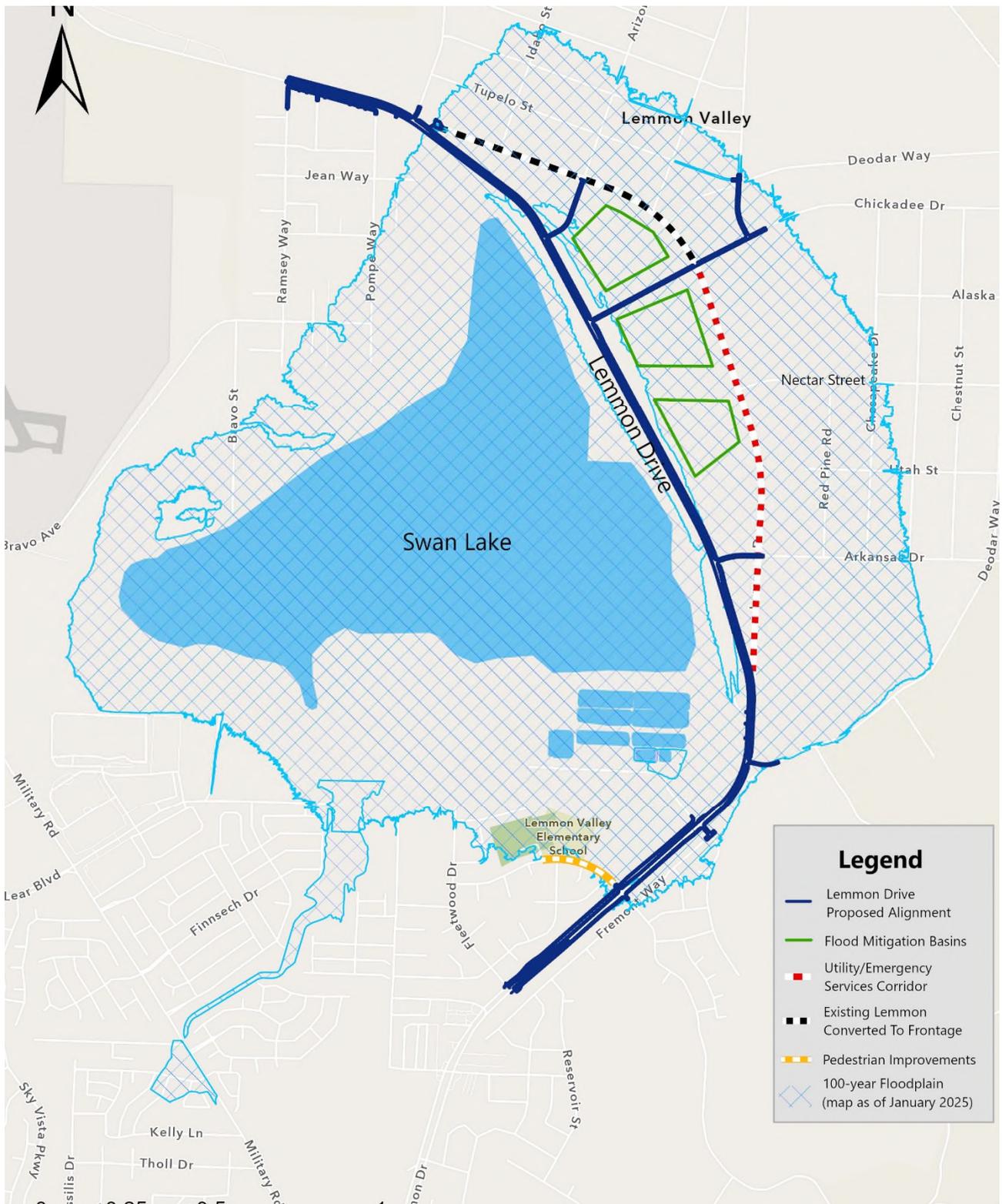
Chickadee Drive which would then provide access to the realigned Lemmon Drive. A new connection from the Matterhorn Drive and Tupelo Street intersection to Chickadee Drive would provide access to the realigned Lemmon Drive also.

In addition to roadway improvements, substantial drainage improvements would also be constructed under the Build Alternative. Key drainage features would include rehabilitation of the existing drainage channel from Fleetwood Drive to Palace Drive. Equalization culverts would be constructed to replicate existing drainage between the east and west side of the existing berm during higher Swan Lake water elevations. These equalization culverts would be located at existing breaks in the berm north of Deodar Way and near Idaho Street. Volumetric mitigation basins would also be constructed between the new, realigned Lemmon Drive and existing Lemmon Drive within the FEMA floodplain. This mitigation would provide 1.3 cubic yards of basin excavation for every one 1 cubic yard of embankment placed within the FEMA 100-year floodplain.

Additional items to be constructed with the Build Alternative include a 10-foot shared use path along the reconstructed and realigned Lemmon Drive roadway, intersection lighting, signing, striping, and reconstruction of the Patrician Drive rectangular rapid flashing beacon (RRFB). Additional pedestrian enhancements would be constructed from Lemmon Drive to the Lemmon Valley Elementary School along Patrician Drive.

## **No Build Alternative**

The No Build Alternative would not construct any improvements to Lemmon Drive and only routine maintenance would continue. Lemmon Drive would remain below the 100-year floodplain. The No Build Alternative would eliminate the costs associated with construction of the project but would not meet the project's purpose and need.



**Figure 2: Lemmon Drive Build Alternative**

## Indirect Impacts Analysis

The Council on Environmental Quality (CEQ) defines indirect effects as project impacts "... caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems" (*Code of Federal Regulations* [CFR] Title 40, Section 1508.1(g)).<sup>1</sup>

The analysis was conducted using the following guidance:

- American Association of State Highway and Transportation Officials (AASHTO), *Practitioner's Handbook 12: Assessing Indirect Effects and Reasonably foreseeable Impacts Under NEPA* (2016)
- FHWA, "Secondary and Cumulative Impact Assessment in the Highway Development Process" (1992)
- National Cooperative Highway Research Program (NCHRP), Report 466, Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects (2002)

AASHTO's *Practitioner's Handbook 12* (2016) describes two broad categories of indirect effects, as follows:

- Effects caused by the proposed project or plan that are separated from direct effects by time and/or distance (sometimes referred to as encroachment-alteration effects)—One example is a long-term decline in the viability of a population of a particular species as a result of habitat fragmentation caused by the project.
- Effects from project-influenced development and related environmental impacts (sometimes referred to as induced-growth effects)—Project-influenced development refers to improved accessibility to an area, which may change land use, promote development, or increase the rate of development. One example of an induced-growth impact identified is commercial development around a new freeway interchange and the environmental effects associated with this development.

## Methodology

There is no single, standard method for analyzing indirect impacts. NDOT and RTC considered the magnitude of potential induced-growth impacts and the data and tools available. A combination of "collaborative judgment" and "planning judgment" provided the most appropriate methodology for analyzing indirect impacts. These terms are defined as follows:

- The NCHRP Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects (2002) identifies "collaborative judgment" or the "expert panel technique" as one method to assess indirect effects. This technique helps assess indirect effects by providing local insight from experts on regional development. Local

perspective that relates to the growth potential within the area of potential effect (hereafter referred to as the study area), both with and without the project, is invaluable. In addition, these experts provide a regional understanding of general strategies that have worked for managing growth and development. An expert panel allows for input outside of the study team, which helps improve the quality of the analysis.

- The “planning judgment” method relies on the experience of the practitioner, the relevant planning literature, and an assessment of local trends and forecasts to assess indirect land use impacts.

NDOT and RTC assessed indirect impacts using the following six steps:

- **Step 1:** Perform scoping to identify the study area and the analysis timeframe.
- **Step 2:** Identify the goals for the study area as described in local and regional plans.
- **Step 3:** Inventory notable features in the study area.
- **Step 4:** Identify impact-causing activities.
- **Step 5:** Assess potentially substantial indirect impacts.
- **Step 6:** Assess potential minimization and mitigation measures.

The following sections describe the six steps in more detail.

## Step 1: Perform Scoping to Identify Study Area and Analysis Timeframe

The first step of the analysis had three goals, as follows:

- Gather information on the issues to evaluate in the analysis.
- Determine the location and extent of the indirect impacts study area.
- Determine the time horizon for the analysis.

### Gathering Information from Agency Coordination Meetings

Several Agency Coordination Meetings were held during the study process in which the following key elements were identified:

- Study area
- Traffic needs
- Study needs
- Alternatives development
- NEPA status
- Transit and rideshare considerations

- Project Schedule
- Opportunities for involvement

No agency comments on indirect impacts were received.

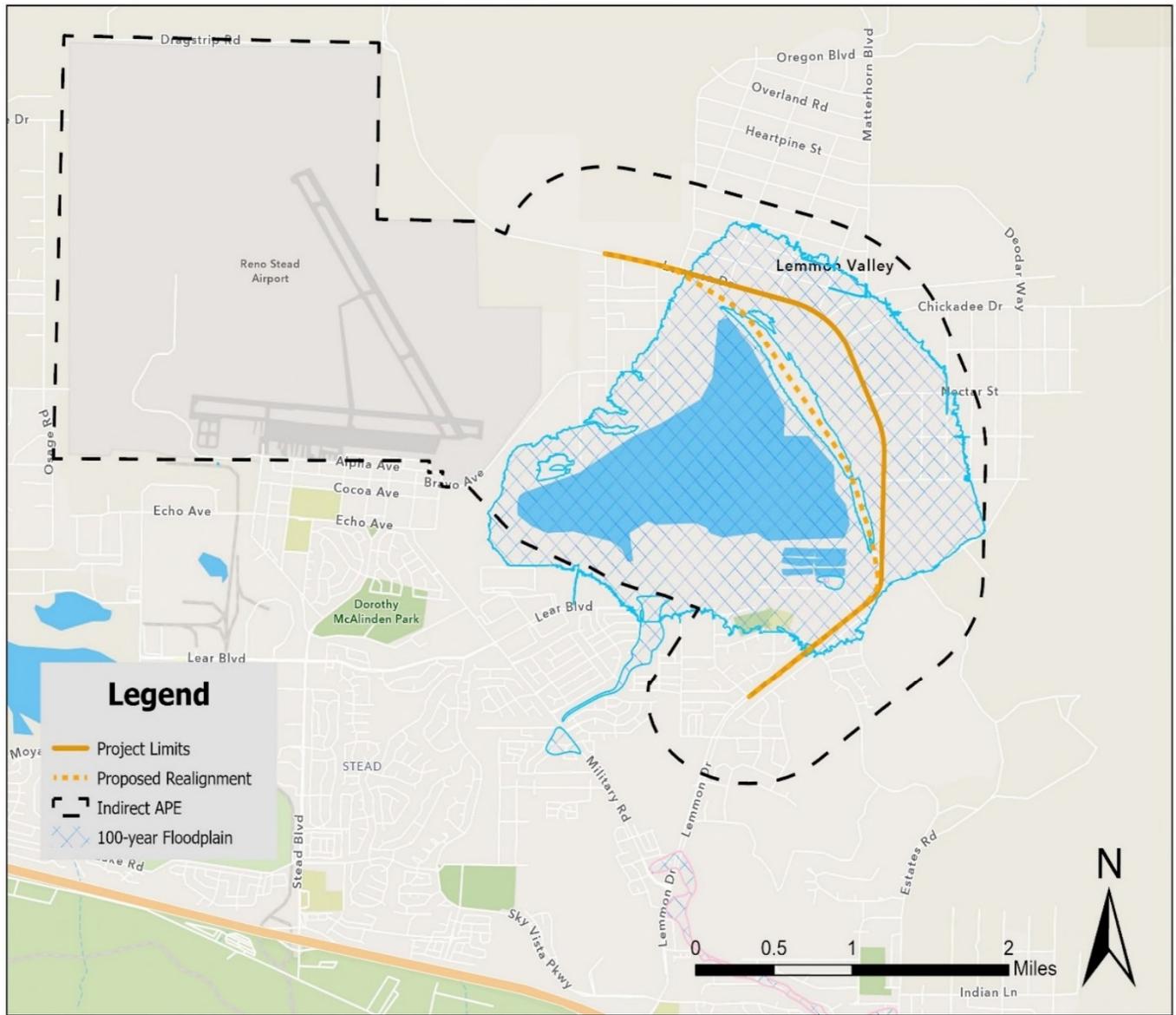
NDOT and RTC consulted with local and regional agencies who are knowledgeable about growth and development in the region. Some of these agencies included:

- Bureau of Land Management (BLM)
- Regional Transportation Commission of Washoe County (RTC)
- Washoe County
- City of Reno

### **Determining the Indirect Impacts Study Area**

The study area is the geographic area that may experience indirect impacts from the proposed project. The boundaries for the analysis need to extend beyond the construction footprint of the improvements, because indirect impacts can occur at some distance from a proposed project. NDOT and RTC considered a combination of accepted approaches for delineating the indirect impacts study area, including political boundaries, resource boundaries, stakeholder input, professional judgment, and data collection.

The study area, shown on **Figure 3**, has the greatest likelihood for indirect impacts that occur later in time or farther away than direct impacts. The study area is a 0.5-mile buffer from Lemmon Drive and follows the route northwest to encompass the Reno-Stead Airport area as well as southwest to include the entirety of Swan Lake.



**Figure 3: Indirect Impacts Study Area**

## Establishing the Analysis Timeframe

Determining a timeframe for the analysis is important because land use and economic impacts of transportation projects can occur over time, and those impacts can appear at different times. According to NCHRP, the timeframe for an indirect effect analysis should be short enough in duration to anticipate reasonably foreseeable events but also long enough to capture changes that may occur over several business cycles (NCHRP 2002). The NCHRP *Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects* states that most indirect effects assessments set a time horizon equal to the typical transportation planning horizon of about 20 to 25 years (NCHRP 2002). Based on the guidance and information collected during the scoping process, the timeframe for the indirect impacts analysis is 2050, which is consistent with the planning horizon used for transportation planning in this NEPA study.

The relevant regional documents and plans used to anticipate conditions in 2050 include the following:

- *RTC 2050 Regional Transportation Plan (RTP)*
- *2019 Washoe County Parks Master Plan*
- *Washoe County, Master Plan: North Valleys Area Plan*
- *Washoe County, Master Plan: Land Use and Transportation Element*
- *Reimagine Reno: The City of Reno Master Plan*

## Step 2: Identify the Goals for the Study Area as Described in Local and Regional Plans

Comprehensive regional and local plans provide insight to the social, economic, ecological, and growth-related aspirations of a community. Understanding community goals and aspirations within the study area, particularly those that guide or restrict future development, provides a basis for assessing project compatibility and potential indirect impacts.

### Regional Transportation Commission of Washoe County

The RTC aims to improve the region's quality of life by achieving clean air, making roads accessible to all regardless of age or ability and providing transportation options. The 2050 RTP, adopted in March 2021, established the following goals (RTC 2021).

- Improve and promote safety.
- Integrate all types of transportation.
- Promote healthy communities and sustainability.
- Promote and foster equity and environmental justice.
- Integrate land use and economic development.
- Manage existing systems efficiently.
- Enhance regional connectivity.

- Improve freight and goods movement.
- Invest strategically.
- Engage the public and encourage community involvement.

The 2050 RTP identifies the Lemmon Drive Project between Fleetwood Drive and Ramsey Blvd as a project that could improve safety, accessibility and mobility in Lemmon Valley.

## **Washoe County Master Plan, Land Use and Transportation Element**

The purpose of the Land Use and Transportation Element, amended in November 2020, is to set goals, policies, and action items that will shape communities throughout Washoe County through the year 2025 (Washoe County 2020). Washoe County supports the following land use and transportation strategies:

- Mixed-use development
- Infill development, where infrastructure is available
- A range of housing choices
- Interconnected, walkable streets
- Conservation of natural resources and public lands, as well as access to open space

The Land Use and Transportation element identifies Lemmon Drive as an area that is increasing in density.

## **Washoe County Master Plan, North Valleys Area Plan**

The purpose of the North Valleys Area Plan, amended In July 2020, is to guide growth and development within the North Valleys planning area (Washoe County 2010). In the indirect impacts study area, the North Valleys include Lemmon Drive and Stead, which includes the Reno-Stead Airport. The majority of land within the indirect impacts study area is expected to be residential, however some commercial development, including the Reno-Stead Airport, may be anticipated as well.

## **ReImagine Reno: City of Reno Master Plan**

ReImagine Reno, adopted in 2017 and amended in December 2021, serves as the policy document to guide land use decisions in the City of Reno through 2036. It encourages well-managed resources, infill and redevelopment, strategies to support economic vitality, and multimodal transportation between land uses (City of Reno 2021). The City of Reno encompasses most of the study area. The portion of the City of Reno within the indirect impacts study area is partially developed residentially and some commercial development is expected in the future.

## Bureau of Land Management

The Bureau of Land Management manages nearly 48 million acres of public land for multiple uses in Nevada, which accounts for about 63% of the state's land. In Nevada, the Bureau of Land Management ensures that grazing, mining, and energy development on public land are sustainable and compatible with other land uses. The Bureau of Land Management also manages wildland fire, wild horse and burro populations, recreation, and National Conservation Lands. Other programs include Special Recreation Permits to facilitate unique land uses, such as commercial, competitive, and organized group events. The Bureau of Land Management also has a land and realty program that manages leases, sales, and exchanges of public land (Bureau of Land Management n.d.).

Bureau of Land Management lands are near Lemmon Drive within the indirect impacts study area on Swan Lake and are undevelopable because of federal land designation and being a water resource.

## Step 3: Inventory Notable Features in the Study Area

This section provides an overview of the general trends associated with social, economic, natural, and historic resources within the indirect impacts study area, and identifies features that could be affected by indirect impacts.

### Socioeconomic Data and Trends

#### *Population*

Between 2000 and 2024, population increased in the Lemmon Valley Census Designated Place (CDP), City of Reno, Washoe County and the State of Nevada, and is expected to continue growing (See **Table 1**).

**Table 1: Population**

Area	2010	2020	2023	2042	Average Annual Growth Rate (2000-2042)	Forecast Average Annual Growth Rate (2022-2042)
<b>Lemmon Valley CDP</b>	5,040	4,987	4,385	-	-	-
<b>City Of Reno</b>	225,221	264,165	268,959	-	-	-
<b>Washoe County</b>	421,407	486,492	498,022	587,479	1.7%	0.8%
<b>Nevada</b>	2,700,551	3,104,614	3,194,176	3,932,039	2.1%	1.1%

Sources: U.S. Census Bureau 2010; U.S. Census Bureau 2020; U.S. Census Bureau 2023 (ACS 5-year estimate 2018-2022); Nevada Department of Taxation 2023.

\*Comparable data on 2042 unavailable for the Lemmon Valley Census Designated Place (CDP) and City of Reno

*Employment*

Between 2018 and 2022, employment increased in Washoe County, and is expected to continue growing (**Table 2**).

**Table 2: Employment**

Area	2018	2022	2028	Average Annual Growth Rate (2018-2028)	Forecast Average Annual Growth Rate (2022-2042)
<b>Washoe County</b>	244,172	257,860	274,464	1.4%	1.0%

Sources: Nevada GOED 2025a, 2025b.

*Minority and Low-Income Populations*

Minority and low-income populations are present in the study area; however, the proposed action would not have a disproportionate and adverse effect on these populations (refer to the *Socioeconomic Technical Report*).

## Land Use and Development Trends

The Lemmon Valley area has a wide array of land uses and communities ranging from rural, industrial, and suburban. In the North Valleys area, the land is owned primarily by the Bureau of Land Management. This area is also characterized by its abundance of outdoor recreation activities, which require accommodation for various types of uses and multimodal transportation. A goal for this area is to minimize impacts to the natural environment, particularly ones related to generation of light, air, and water pollution to maintain habitats for wildlife and keep land use development blended to accommodate and preserve the scenic nature of this area.

A mix of land uses, including large and small lot residential, some higher density residential opportunities and some small-scale commercial properties characterize the Lemmon Valley Community. In some areas of Lemmon Valley, mixed-use projects that include both residential and commercial uses may be appropriate. The Swan Lake wetlands area defines a large area of open space that is valued for its habitat, educational, open space, recreational and other components. Many residents in the Lemmon Valley area have horses, mules, fowl and other animals, and the existence of these animals for recreational, educational, and economic purposes is recognized as a significant contributor to the local character. Outdoor recreational opportunities are also an important component of the community, especially as they relate to equestrian trails and multi-use trails. The availability of water has limited growth in this area, but as water resources become available, growth will again begin to impact the local landscape.

New development in the indirect impacts study area is both commercial and residential and includes the following:

- **Prado Ranch Residential Development.** The Prado Ranch Development is set to include transportation infrastructure improvements as well as an additional 700+ acres of single-family residential homes. This development is still in discussions with the Reno Planning Council and was initially rejected in 2021 due to concerns about traffic safety, housing affordability and volume mitigation.
- **Sierra Vista Residential Development.** This planned residential development at the southeast end of the indirect study area will encompass 67 to 165 home sites during its first phase. It is still under construction currently.
- **Lyten Lithium-Sulfur Battery Factory.** Located near the Reno-Stead Airport, this facility is scheduled to come online in 2027.
- **Reno Stead Water Reclamation Facility.** The Lemmon Valley Wastewater Treatment Facility is being closed and will be rerouted to the Reno Stead Water Reclamation Facility.

## Natural and Historic Resources

This section describes the notable natural and historic resources that may be subject to indirect impacts based on site visits, resource studies, and agency coordination.

### *Water Resources*

The Swan Lake west of the Lemmon Drive is a playa/wetland system that provides nesting and migratory bird stopover. This system can vary from 100 to 1,000 acres depending on precipitation. It is surrounded by sagebrush, greasewood, and other desert vegetation. This lake also includes a nature study area in the southwest portion.

### *Biological Resources*

The southwest portion of Swan Lake is a nature study area established as an official Important Bird Area (IBA). Over 150 bird species have also been recorded here. Burrowing Owls often nest in man-made boxes located at the west and north edges of the nature study area. Other birds observed in the Swan Lake area include Canada goose, northern shoveler, mallard, barn swallow, red-tailed hawk, killdeer, and white-crowned sparrow.

## **Step 4: Identify Impact-Causing Activities**

Step 4 of the analysis examines the No Build Alternative and the Build Alternative and identifies potential indirect-impact-causing activities that may be associated with the project from its construction, operation, and maintenance. Impact-causing activities have the potential to be substantial and could affect resources in the indirect impacts study area.

### **No Build Alternative**

The impact-causing activities of the No Build Alternative relate to its lack of action. It does not address the purpose of and need for the project to reduce travel delay, improve safety, and address freeway design deficiencies along Lemmon Drive between Fleetwood Drive and Ramsey Way.

### **Build Alternative**

The components of the project that may have identifiable indirect impacts are as follows:

- Realignment of Lemmon Drive Roadway

The proposed action would reconfigure the roadway and frontage roads; however, this would not open up new land for development.

## **Step 5: Assess Potentially Substantial Indirect Impacts**

Step 5 identifies and analyzes the potential for project-influenced development (that is, induced growth) and project encroachment (that is, encroachment-alteration) impacts.

### **Induced Growth**

Transportation improvements can potentially induce growth in an urban area where there is vacant, undeveloped, or underused land. However, the availability of land alone is not enough to cause land use change. AASHTO's *Practitioner's Handbook 12: Assessing Indirect Effects and Reasonably foreseeable Impacts Under NEPA* identifies the following factors to consider in analyzing growth-related indirect impacts.

1. Does the project have an economic development purpose?

According to the project's purpose and need statement, the Lemmon Drive Traffic Improvements and Resiliency Project does not have an explicit economic development purpose (refer to page 3, Purpose and Need).

2. Does the project have the potential to increase mobility or accessibility?

The Lemmon Drive Traffic Improvements and Resiliency Project has the potential to increase accessibility for emergency services during flood events by realigning the roadway out of the current flood plain. This would increase safety and decrease travel delays in the case of a flood event.

3. Is the increased accessibility likely to cause changes in development patterns (that is, timing, type, locations or amount)?

The proposed project would increase safety and accessibility, but it is unlikely to substantially change development patterns.

4. What impacts are likely to result from changes in development patterns that are caused by the project?

The Build Alternative is unlikely to substantially change development patterns, as described in Question 3.

5. What are the growth trends in the absence of the project?

Based on available data, growth trends would remain similar with the No Build Alternative and the Build Alternative.

6. Are there constraints on potential growth?

Constraints on potential growth in the indirect impacts study area include utility constraints. The local sewer facility is set to shut down

### Induced Growth Conclusion

Land use patterns are not expected to change substantially if the project is built. The project is not likely to contribute to induced growth because of the following key reasons:

- The project does not have an explicit economic purpose.
- Growth trends are similar under the Build Alternative and the No Build Alternative.

## Project Encroachment-Alteration Impacts

This section examines project encroachment-alteration impacts (that is, impacts caused by the proposed action but that are separated from direct impacts by time or distance). No resources were identified with the potential for an indirect impact. Table 3 identifies the rationale for determining whether there would be an indirect impact.

**Table 3: Resources Analyzed For Indirect Impacts**

Resource	Would this Resource be Directly Affected?	Would this Resource Experience Encroachment-Alteration Impacts?
<b>Air Quality</b>	No. There are not expected to be adverse impacts to air quality within the study area. Long term air-quality effects are not anticipated, however short-term impacts may occur during the construction phase.	No. Encroachment-alteration impacts are not expected to occur.
<b>Community (Residences and Businesses, Community Resources, Socioeconomics)</b>	<i>Residences and Businesses:</i> No. The Build Alternative would not displace any residences or businesses. Access to and from businesses or residences would improve in the case of emergency or flood event.  <i>Community resources:</i> No. The Build Alternative would not displace any community resources. Access to and from community resources using Lemmon Drive would remain the same as today.	No. Encroachment-alteration impacts are not expected to occur.

Resource	Would this Resource be Directly Affected?	Would this Resource Experience Encroachment-Alteration Impacts?
<b>Socioeconomic</b>	<p><i>Socioeconomics:</i> No. The Build Alternative would not divide any neighborhoods or displace any residences or businesses.</p> <p>No. Disproportionately high and adverse impacts on minority or low income populations are not anticipated.</p>	No. Encroachment-alteration impacts are not expected to occur.
<b>Cultural Resources</b>	No. It is anticipated there will be No Adverse Effect to the cultural and historic properties within the indirect study area.	No. Indirect impacts to cultural resources are addressed as part of the Section 106 consultation process as direct impacts and are analyzed and mitigated, if necessary, as a direct impact.
<b>Traffic Noise</b>	No. Traffic noise is not anticipated to be affected within the indirect impacts study area.	The noise analysis considers future traffic volumes. Therefore, the noise levels predicted by traffic modeling already incorporate encroachment alteration impacts and are analyzed and mitigated for as a direct impact.
<b>Water Resources</b>	No. Negligible impacts to water resources and quality could arise from the addition pavement from roadway widening and its relocation to the top of berm.	No. Encroachment-alteration impacts are not expected to occur.
<b>Biological Resources</b>	No. There are minor temporary impacts during the construction phase that will be short-term duration.	No. Encroachment-alteration impacts are not expected to occur.
<b>Visual Resources</b>	No. The project would not alter existing views.	No. Encroachment-alteration impacts are not expected to occur.
<b>Hazardous Materials</b>	No. Hazardous materials were not identified within the study area and there are no anticipated contamination issues.	No. The project would not cause encroachment-alteration impacts.

## Step 6: Assess Potential Minimization and Mitigation

### Measures

No encroachment-alteration impacts are anticipated; therefore, no minimization or mitigation measures are needed.

## Reasonably Foreseeable Effects

Reasonably foreseeable effects result from the effect of an action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions.

The following guidance documents were consulted for this analysis:

- AASHTO *Practitioner's Handbook 12: Assessing Indirect Effects and Cumulative Impacts Under NEPA* (2016)
- FHWA, "Secondary and Reasonably foreseeable Impact Assessment in the Highway Development Process" (1992)

The analysis involved a two-tiered process, as follows:

- Identification of the potential combined direct and indirect impacts of the proposed project and other past, present, and reasonably foreseeable future public and private activities with or without the proposed action taking place within the reasonably foreseeable effects study area

## Scoping Reasonably Foreseeable Effects

The resources assessed for reasonably foreseeable effects are typically a subset of the range of environmental resources considered in the assessment of direct and indirect effects and the number of topics warranting analysis is generally limited. Resources on which the proposed project would not have an impact, or those for which impacts could be mitigated, are not included in the reasonably foreseeable effects analysis.

The goal of a reasonably foreseeable effects analysis is to focus on the potential effects of a project and determine if those effects, when considered with other actions adjacent to or in the close vicinity of the project, will have an effect on issues of national, regional, or local importance.

### Reasonably Foreseeable Effects Issues

NDOT and RTC reviewed direct and indirect impacts, assessed stakeholder input, and considered demographics, land use, and natural, recreational, and historic resources and identified two resources for reasonably foreseeable effects analysis: water resources & biological resources.

## Reasonably Foreseeable Effects Study Area

The study area for the reasonably foreseeable effects analysis varies based on the resources that have been selected for analysis. NDOT and RTC employed the following strategies in determining the study area:

- Input from the NEPA scoping process
- Agency Coordination Meetings
- Review of boundaries that were established for a resource in the project-specific analysis

The study area for each resource is large enough to encompass the direct and indirect impacts of other past, present, and reasonably foreseeable future projects and reflects the scale of the project.

## Timeframe for the Analysis

One of the goals of scoping is to determine a timeframe for the analysis. The timeframe for the analysis generally coincides with the design year but also reflects the availability of data. This timeframe typically is consistent with the planning horizons used for regional land use and transportation planning purposes. In addition, this timeframe is long enough for reasonably foreseeable effects to unfold, but it is not so far into the future that the impacts become too difficult to reasonably anticipate. The analysis timeframe for reasonably foreseeable effects is 2050. No specific period for considering past actions is required; however, NDOT and RTC considered actions over the past 10 years in the analysis.

## Identify Past, Present, and Reasonably Foreseeable Future Actions

Table 4 lists past, present, and reasonably foreseeable future actions and Figure 4 illustrates the locations of these projects.

**Table 4: List of Past, Present, and Reasonably Foreseeable Future Actions**

Project	Status
<b>Road Projects</b>	
<b>Military Road Capacity Project</b>	On-going (2024-2025)
<b>Extension of Lear Boulevard</b>	On-going (2025)
<b>Bicycle and Pedestrian Projects</b>	
<b>Bicycle Lane on Lemmon Valley Road from N Virginia St to Deodar</b>	Future (year unknown)
<b>Land Use and Development</b>	
<b>Prado Ranch Development</b>	On-going (2019-2025)
<b>Sierra Vista Residential Development</b>	On-going (2025)
<b>Lyten Lithium-Sulfur Battery Factory</b>	On-going (2024-2027)



**Figure 4: Reasonably Foreseeable Effects Projects**

## Describe the Affected Environment and Determine the Environmental Consequences and Potential Mitigation Measures

An assessment of environmental resources for which post-mitigation, non-significant adverse impacts were possible was conducted, as documented in the Environmental Assessment. It was determined that the Lemmon Drive Traffic Improvements Project would not result in significant adverse direct, indirect, or reasonably foreseeable impacts to the environmental resources evaluated.

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