FEBRUARY 2019

TRUCKEE 2040
general plan + downtown specific plan



EXISTING CONDITIONS REPORT

Town of Truckee | 2040 General Plan

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LIST OF ABBREVIATIONS

°F	degrees Fahrenheit
µg/m^3	micrograms per cubic meter
AAGR	average annual growth rate
AB	Assembly Bill
AB 939	California Integrated Waste Management Act of 1989
ABAU	adjusted business-as-usual
ACBM	asbestos-containing building materials
ACS	American Community Survey
ADT	average daily traffic
AHSC	Affordable Housing and Sustainable Communities
ALUC	airport land use commission
ALUCP	airport land use compatibility plan
APSA	Aboveground Petroleum Storage Act
BAU	business-as-usual
BMP	best management practices
Board	California Board of Forestry and Fire Protection
CAA	Federal Clean Air Act
CAAQS	California ambient air quality standards
CAFE	corporate average fuel economy
CAL FIRE	California Department of Forestry and Fire Protection
Cal OES	California Governor's Office of Emergency Services
Cal/OSHA	California Division of Occupational Safety and Health
CalEnviroScreen	California Communities Environmental Health Screening Tool
CalEPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CAP	Climate Action Plans
CARB	California Air Resources Board
CASP	California Aviation System Plan
CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	methane
CMLUCA	California Military Land Use Compatibility Analyst
CNDDB	California Natural Diversity Database

CNEL	community noise equivalent level
CNRA	California Natural Resources Agency's
CO	carbon monoxide
CO_2	carbon dioxide
CRPR	California Rare Plant Rank
CRS	Community Rating System
CWA	Clean Water Act
CWPP	Community Wildfire Protection Plan
DAC	disadvantaged communities
dB	decibels
dBA	A-weighted sound levels
DC	direct current
DoD	Department of Defense
DOF	California Department of Finance
DOI	U.S. Department of the Interior
DTSC	California Department of Toxic Substances Control
DUC	disadvantaged unincorporated communities
DWR	California Department of Water Resources
EIR	Environmental Impact Report
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
ESO	Emergency Services Organization
F+I	fatalities and injuries
FAR	Federal Aviation Regulations
FEMA	Federal Emergency Management Agency
FHSZ	Fire Hazard Severity Zone
FHWA	Federal Highway Administration
FLAME	Federal Land Assistance, Management, and Enhancement
GHG	Greenhouse gas
GWP	global warming potential
HAP	hazardous air pollutants
HDI	Health Disadvantage Index
HFCs	hydrofluorocarbons
HFRA	Healthy Forest Restoration Act
HHW	household hazardous waste
HMIS	Hazardous Materials Inventory Statement
HMMP	Hazardous Material Management Plan
HRA	Health Risk Assessment
I-80	Interstate 80
ICT	Innovative Clean Transit
in/sec	inches per second

IPCC	Intergovernmental Panel on Climate Change
LAFCo	Local Agency Formation Commission
LCT	Lahontan cutthroat trout
LEHD	Longitudinal Household Employer Dataset
L_{eq}	equivalent continuous sound level
LHMP	Local Hazard Mitigation Plan
LOS	level of service
LRA	local responsibility areas
MCAB	Mountain Counties Air Basin
$MMTCO_2e$	million metric tons of carbon dioxide equivalent
MOU	Memorandum of Understanding
mpg	miles per gallon
mph	miles per hour
MRZ	Mineral Resource Zone
MS4	Municipal Separate Storm Sewer System
MSR	Municipal Service Reviews
$MTCO_2e$	metric tons of carbon dioxide equivalent
MVGB	Martis Valley Groundwater Basin
N_2O	nitrous oxide
NAAQS	national ambient air quality standards
NCLHMP	*Nevada County Local Hazard Mitigation Plan*
NFIP	National Flood Insurance Program
NHTSA	National Highway Traffic Safety Administration
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NSAQMD	Northern Sierra Air Quality Management District
OPR	California Governor's Office of Planning and Research
OSFM	Office of the State Fire Marshal
OSHA	Occupational Safety and Health Administration
PACE	Property Assessed Clean Energy
PCB	polychlorinated biphenyls
PEIR	programmatic environmental impact report
PFCs	perfluorocarbons
PM	Particulate matter
PM_{10}	respirable particulate matter with an aerodynamic diameter of 10 micrometers or less
$PM_{2.5}$	fine particulate matter with an aerodynamic diameter of 2.5 micrometers or less
Porter-Cologne Act	Porter-Cologne Water Quality Control Act of 1970
ppm	parts per million
PPV	Peak particle velocity

PRC	Public Resources Code
Protocol	*Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects*
RCP	Representative Concentration Pathways
RMS	Root-mean-square
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SF_6	sulfur hexafluoride
SHMA	Seismic Hazards Mapping Act
SIP	State Implementation Plan
SMARA	Surface Mining and Reclamation Act of 1975
SOI	Sphere of Influence
SRA	State Responsibility Area
SWE	snow water equivalent
SWITRS	Statewide Integrated Traffic Records System
SWMP	Storm Water Management Program
SWRCB	State Water Resources Control Board
TACs	toxic air contaminants
TART	Truckee Area Regional Transit
TCR	Transportation Concept Reports
TDP	*Transit Development Plan*
TDPUD	Truckee Donner Public Utility District
TFPD	Truckee Fire Protection District
TIMS	Transportation Injury Mapping System
TMDL	Total Maximum Daily Load
TTALUC	Truckee Tahoe Airport Land Use Commission
TTSD	Tahoe Truckee Sierra Disposal
UPRR	Union Pacific Railroad
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFS	United States Forest Service
VdB	vibration decibels
VdB	vibration decibels
VHFHS	Very High Fire Hazard Severity
VMT	vehicle miles traveled
VTP	vegetation treatment program
WUI	Wildland Urban Interface
ZEB	zero-emissions buses
ZEV	zero-emission vehicles
µ in/sec	micro

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CHAPTER 1 Introduction

This chapter describes the purpose and organization of the General Plan and provides an overview of what a General Plan is, why it is prepared, and why it is important. This chapter also provides an overview of the purpose, format, and organization of the General Plan Existing Conditions Report.

This chapter is organized into the following sections:

1.1 What is a General Plan? 1-3
1.2 Using the General Plan 1-4
1.3 Regional Setting and Planning Boundaries 1-5
1.4 Format of the Existing Conditions Report 1-5
1.5 Organization of the Existing Conditions Report 1-6

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1.1 What is a General Plan?

California State Law requires each city and county in the state to adopt a general plan "for the physical development of the county or city, and of any land outside its boundaries which bears relation to its planning." A general plan serves as the jurisdiction's "constitution" or "blueprint" for future decisions concerning a variety of issues, including land use, health and safety, and resource conservation. All specific plans, area plans, subdivisions, public works projects, and zoning decisions must be consistent with the local jurisdiction's general plan. The General Plan contains the goals and policies upon which the Town Council, Planning Commission, and Town staff base their land use decisions. The General Plan also represents the community's vision for the future as it relates to a variety of issues and expresses the community's development goals. Typically, the time horizon for a general plan ranges from 15 to 25 years. The horizon year for the Town of Truckee General Plan Update is 2040 and thus, will have a planning horizon of about 20 years.

A general plan has four defining features:

- **General.** As the name implies, a general plan provides general guidance for future land use, transportation, environmental, and resource decisions.
- **Comprehensive.** A general plan addresses a wide range of social, economic, infrastructure, and natural resource topics. These topics include land use, urban development, housing, transportation, public facilities and services, recreation, agriculture, biological resources, and many other issues that impact the community.
- **Long-Range.** A general plan provides guidance on achieving a long-range vision of future growth and development for a jurisdiction. To achieve this vision, the general plan includes goals, policies, and implementation programs that address both near-term and long-term needs.
- **Integrated and Coherent.** The goals, policies, and implementation programs in a general plan present a comprehensive, unified approach to development, resource conservation, and other issues that impact the health and wellness of the community. A general plan uses a consistent set of assumptions and projections to assess future demands for housing, employment, and public services (e.g., infrastructure). For instance, projections prepared at the State level (California Department of Finance) or regional level (Nevada County Local Agency Formation Commission) provide the basis for assessing potential demand for different uses. Land use density and intensity standards specify how the Town expects land to develop and what the holding capacity of the land is (in dwelling units or square footage). This information combines with unit-based assumptions for employment and population (e.g., square footage per employee, population per household) to provide the basis for determining how well a plan is addressing potential demand. A general plan has a coherent set of policies and implementation programs that enables citizens to understand the vision of the Town and enables landowners, businesses, and industry to be more certain about how policies will be implemented.

A general plan is made up of a collection of "elements," or chapters, of which eight are mandatory. The eight State-mandated elements are (1) land use, (2) circulation, (3) housing, (4) conservation, (5) open space, (6) noise, (7) safety, and (8) environmental justice (if a city or county has disadvantaged communities). Local jurisdictions may include other elements that address issues of particular local concern, such as agriculture or climate change. Jurisdictions can also organize their general plan any way they choose, as long as the required topics are addressed.

The general plan is not to be confused with zoning. Although both the general plan and the zoning ordinance designate how land may be developed, they do so in different ways. The general plan has a long-term outlook. It identifies the types of development that will be allowed, the spatial relationships among land uses, and the general pattern of future development. Zoning regulates development through specific standards such as lot size, building setback, and allowable uses. However, the land uses shown on the general plan diagrams will typically be reflected in the local zoning maps as well, as they are required to be consistent with one another per state law. Development must not only meet the specific requirements of a zoning ordinance, but also the broader policies set forth in a general plan.

1.2 Using the General Plan

The Town Council, Planning Commission, and Town staff use the General Plan on a daily basis to make decisions with direct or indirect land use implications. The General Plan also provides a framework for inter-jurisdictional coordination of planning efforts among Town officials and staff and other government agencies (e.g., federal, state, and local). Truckee residents, property owners, and businesses also use the General Plan for guidance on Town policies for particular geographic areas or for subjects of interest to them.

The General Plan is the basis for a variety of regulatory measures and administrative procedures. California planning law requires consistency between the general plan and its implementing programs, such as zoning and subdivision ordinances, capital improvement programs, specific plans, area plans, environmental impact assessment procedures, and building codes.

Over time the town's population will change, its goals will evolve, and the physical environment in which its residents live and work will be altered. In order for the General Plan to be a useful document it must be monitored and revised periodically to respond to and reflect changing conditions and needs over time. The General Plan should be reviewed annually to ensure that the document continues to align with the community's vision for the future. A more comprehensive review and revision should be done every five to ten years to document changes in local conditions based on new data. State law permits the General Plan to be amended up to four times in any calendar year, unless special conditions apply as defined by Government Code Sections 65358 (c) and (d). Each amendment may contain more than one change to the General Plan.

The General Plan is divided into two documents: the Existing Conditions Report and the Policy Document. The Existing Conditions Report is further divided into eight chapters so that information can be easily referenced by subject or issue. The two components are summarized below:

- **Existing Conditions Report**. The Existing Conditions Report takes a "snapshot" of current (2018) conditions and trends in Truckee. It provides a detailed description of a wide range of topics within the town, such as demographic and economic conditions, land use, public services, and environmental resources. The report provides decision-makers, the public, and local agencies with context for making policy decisions. Unlike the Policy Document, the Existing Conditions Report is objective and policy-neutral. The Existing Conditions Report also serves as the "Environmental Setting" section of the Environmental Impact Report (EIR) prepared for the General Plan.
- **Policy Document**. The Policy Document is the essence of the General Plan. It contains the policy framework that will guide future development decisions within the town. It also identifies implementation programs that will ensure the goals and policies of the General Plan are carried out.

As part of the General Plan Update Process the Town will also prepare an EIR pursuant to the requirements of the California Environmental Quality Act (CEQA) as set forth in Public Resources Code (PRC) 21100 and 21157 and CEQA Guidelines Sections 15126, 15175, and 15176. The Town Council and Planning Commission will use the EIR during the General Plan Update Process to consider potential environmental implications associated with implementation of the General Plan and to identify feasible mitigation measures.

1.3 Regional Setting and Planning Boundaries

As shown on Figure 1-1, the Town of Truckee sits near the California-Nevada boundary on the southeastern end of Nevada County and directly north of Placer County. The town is approximately 12 miles north of Lake Tahoe, 30 miles west of Reno, and 100 miles east of Sacramento.

The Town of Truckee, officially incorporated in 1993, encompasses approximately 34 square miles and has an average elevation of 5,817 feet. The town is characterized by distinct topography and terrain including the mountain peaks and ridges of the Sierra Nevada and Carson Range, just outside of the town limits; the forested uplands within and bordering the town; meadowland; and the valleys of the Truckee River and Martis Creek watersheds.

The General Plan uses several terms to describe the town and areas beyond, including the following:

- **Town Limits**. The jurisdictional boundary of the town. The Town limits include the area within the Town's corporate boundary over which cities exercise land use authority and provide public services. State law requires each city and county to adopt a general plan that at minimum addresses physical development within this boundary. The Town Limits encompass approximately 34 square miles.
- **Sphere of Influence.** A sphere of influence (SOI) is the probable physical boundary and service area of a local agency, as adopted by a Local Agency Formation Commission (LAFCo). An SOI typically includes both incorporated and unincorporated areas within a city or special district that will have primary responsibility for the provision of public facilities and services. In 2010, the Nevada County LAFCo approved the Town of Truckee Final Sphere of Influence Plan Update which identifies a near-term and long-term SOI. The near-term SOI includes territory that LAFCo expected Truckee to develop and annex within five years (years 2010 to 2015), and a long-term SOI for territory that LAFCo expects to be eligible for annexation between five to 20 years (years 2015 to 2030).
- **Planning Area.** A general plan, pursuant to State law, must address all areas within the jurisdictions planning area. The planning area encompasses all incorporated and unincorporated territory that bears a relationship to the long-term planning of the jurisdiction. The Planning Area for the Truckee 2040 General Plan is the same area as the 2025 General Plan, which encompasses a large area that extends beyond the existing Town limits and SOI. As shown on Figure 1-2, the Planning Area extends north to the Sierra County line, east to the State of Nevada line, south to the Tahoe Regional Planning Agency boundary, and west to include Soda Springs. This broader area includes the Northstar, Alpine Meadows, and Squaw Valley ski areas.

1.4 Format of the Existing Conditions Report

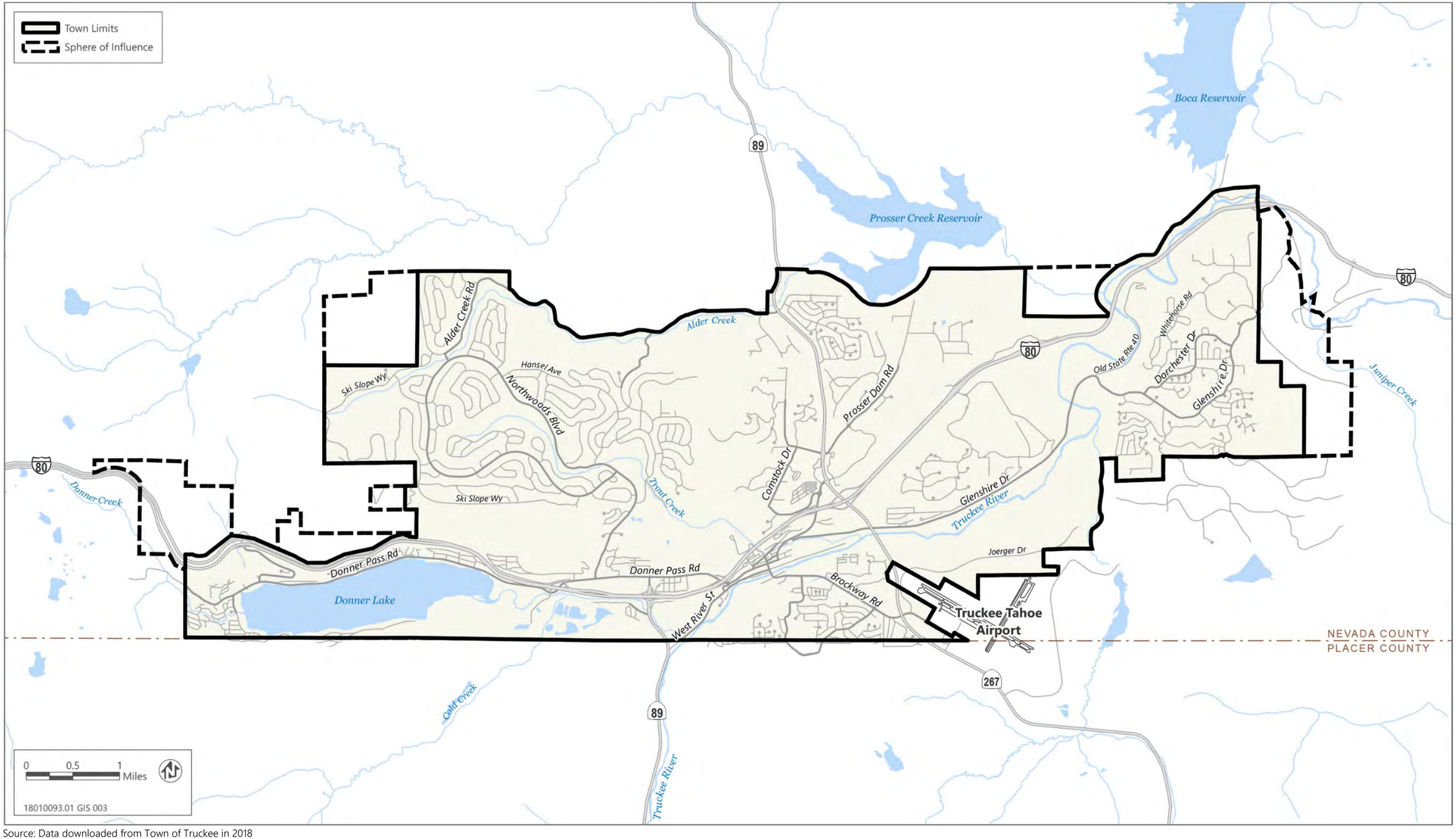
Each topical section of each Existing Conditions Report chapter includes the following:

- **Introduction.** The introduction provides a brief description of the issues covered in the section.
- **Major Findings.** Each section contains a brief summary of key findings. The findings present key facts and preliminary issues from the section. These findings serve as the basis for the identification of issues to be addressed in the Policy Document.
- **Existing Conditions**. This section describes existing conditions for each resource or issue area.
- **Regulatory Setting.** Each section summarizes the laws and regulations pertaining to the topics identified. Federal, State, and local regulations are described, as applicable. In the case of local regulations, as applicable.
- **Key Terms**. Each section contains a list of terms that are unique to the topical areas within each chapter in the Existing Conditions Report.
- **References**. Each section contains a list of documents and websites referenced and persons consulted in preparing the Existing Conditions Report.

1.5 Organization of the Existing Conditions Report

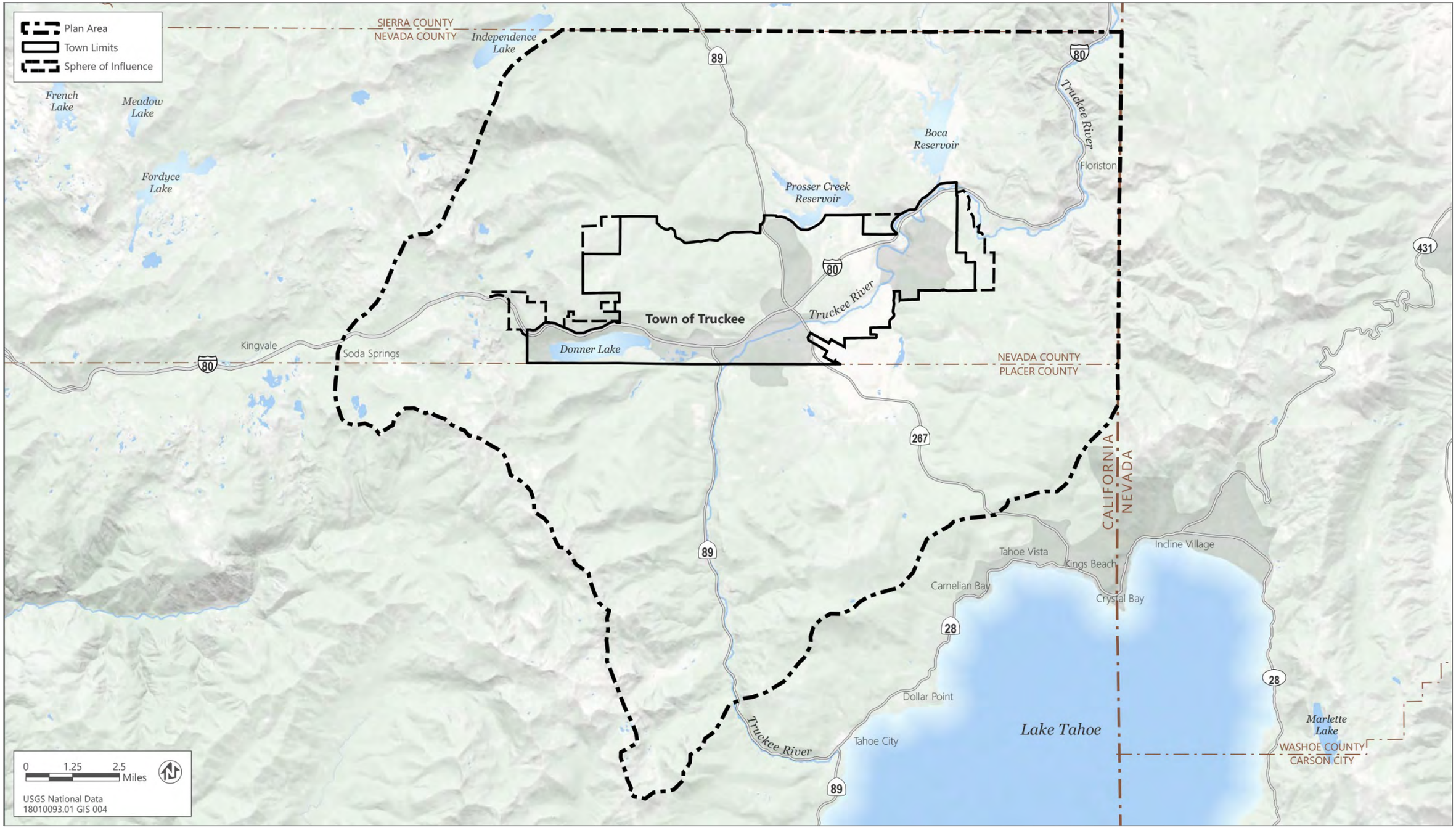
The Existing Conditions Report is divided into eight chapters:

- **1 - Introduction.** This chapter provides background information on the purpose of the General Plan, describes the regional setting, and outlines the organization and content of the General Plan.
- **2 - Population, Employment, and Housing.** This chapter summarizes the population, employment, and housing conditions in Truckee.
- **3 - Land Use and Community Character.** This section summarizes the land use patterns, policies, and regulations for the Town of Truckee.
- **4 - Circulation and Transportation.** This chapter summarizes the existing circulation and transportation conditions in Truckee, including roadways, active transportation, and aviation facilities.
- **5 - Natural Resources.** This chapter summarizes natural resources issues for the Town, including air quality, water resources, biological resources, open space and land cover, scenic resources, and mineral resources.
- **6 - Hazards and Safety.** This chapter describes geologic, seismic, flood, wildfire, and human-made hazards, as well as noise and aviation hazards in Truckee.
- **7 - Climate Change and Resiliency.** This chapter describes greenhouse gas emissions and climate change vulnerability and adaptation for the Town.
- **8 - Public Facilities, Services, and Infrastructure.** This chapter summarizes the existing public facilities, services, and infrastructure for the Town, including water supply, utilities, law enforcement, schools, and other local services.
- **9 – Cultural Resources.** This chapter summarizes existing cultural resources in Truckee, including a historic overview of the plan area and the regulatory setting and protocol for the preservation and management of cultural resources.



Source: Data downloaded from Town of Truckee in 2018

FIGURE 1-1 TOWN LIMITS AND SPHERE OF INFLUENCE



Source: Data downloaded from Town of Truckee in 2018

FIGURE 1-2 GENERAL PLAN PLANNING AREA

TRUCKEE 2040
general plan + downtown specific plan



CHAPTER 2 Population, Employment, and Housing

This chapter summarizes the population, employment, and housing conditions for the town of Truckee. Demographic, economic, and housing information from the U.S. Census Bureau, California Department of Finance (DOF), and other sources is used to identify existing conditions, trends, and projections. The U.S. Census Bureau conducts the American Community Survey (ACS) to provide estimates between decennial census data. Generally, the most recent (2012–2016) ACS is used. The conditions focus on the town of Truckee and, where appropriate, include more detailed information about the cities and unincorporated areas in Nevada County.

This chapter is organized into the following sections:

2.1 Population and Household Characteristics 2-3
2.2 Housing Conditions and Trends 2-6
2.3 Employment and Industry Trends 2-9
2.4 Population and Employment Projections 2-15
2.5 Environmental Justice 2-19
2.6 Key Terms 2-24
2.7 References 2-24

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2.1 Population and Household Characteristics

This section discusses the relevant demographic and household characteristics and trends of the town. It describes population and household growth, ethnicity, education, poverty rates, and household income. The most recently available data from either DOF or the 2012–2016 5-year average ACS are used.

2.1.1 Major Findings

- Truckee is the largest incorporated area in Nevada County, with a total estimated population of 16,681 in 2018. It makes up roughly 16.8 percent of the county's population of almost 100,000.
- Truckee's population has remained fairly constant from 2010 to 2018, with a moderate average annual growth rate (AAGR) of 0.2 percent. The county population has also remained constant from 2010 to 2018, with an AAGR of less than 0.1 percent.
- The racial composition of the population in Truckee and Nevada County is similar. An estimated 96 percent of the 2016 population in Truckee identifies as white, which is similar to the county's percentage of 94 percent. In Truckee, an estimated 18 percent of the population is ethnically Hispanic or Latino, with the county having a slightly lower percentage of 9 percent.
- In general, the educational attainment of Truckee residents is slightly higher than the countywide average. An estimated 44.5 percent of Truckee residents 25 years or older have at least a bachelor's degree, and 90.7 percent have at least a high school diploma, compared to 34.4 percent and 93.3 percent countywide.
- The poverty rate in Truckee averaged 6.7 percent during the 5-year period of 2012–2016, which is below both the statewide (i.e., 15.8 percent) and countywide (i.e., 12.1 percent) average.
- Truckee's household count grew moderately from 2010 to 2018, by 187 households (i.e., AAGR of 0.2 percent), to a total of 6,530 households in 2018. This low growth trend is very similar to that in the other incorporated areas. The number of households in the county remained constant over the 8-year period, with an AAGR of less than 0.1 percent.
- Truckee has a large proportion of higher-income households and overall higher household incomes than found in the county. The overall household median income for the 5-year period of 2012–2016 was $79,971 in Truckee, which is higher than both the countywide median income of $57,429 and statewide median income of $63,783. The distribution of income in the town shows high concentrations of households earning more than $75,000 (i.e., 53.9 percent). An estimated 38.3 percent of households earn more than a $100,000 annually, which is significantly higher than the countywide rate of 10.6 percent. By comparison, 16.6 percent of Truckee households earn less than $35,000 annually.

2.1.2 Existing Conditions

POPULATION CHARACTERISTICS AND TRENDS

Population Growth

Truckee is one of three incorporated cities in Nevada County. With an estimated 2018 population of 16,681, Truckee is the largest incorporated area, making up roughly 16.8 percent of the countywide population of 99,155. As shown in Table 2-1, the population in Truckee from 2010 to 2018 has remained constant, with a moderate AAGR of 0.4 percent. Nevada City, the smallest incorporated area in the county, has a slightly higher AAGR of 0.6 percent, with a total population of 3,226 in 2018. The total population in the county has also remained fairly constant from 2010 to 2018, with an AAGR of around 0 percent.

Table 2-1 Population Growth Trends in Town of Truckee and Nevada County Cities, 2010–2018			
Location	2010 Population	2018 Population	AAGR (2010–2018)
Grass Valley	12,860	13,041	0.2%
Nevada City	3,068	3,226	0.6%
Truckee	**16,180**	**16,681**	**0.4%**
Balance of County (unincorporated)	66,656	66,207	-0.1%
Incorporated	32,108	32,948	0.3%
Nevada County total	**98,764**	**99,155**	**0.0%**

Note: AAGR = average annual growth rate.
Source: DOF 2018a

Race and Ethnicity

As shown in Table 2-2, the racial composition of Truckee and Nevada County is similar. An estimated 96 percent of the 2016 population in Truckee identifies as white, which is similar to the countywide percentage of 94 percent. In Truckee, an estimated 18 percent of the 2016 population is ethnically Hispanic or Latino, with the county having a slightly lower percentage of 9 percent. Asian residents make up 1.8 percent of Truckee's population and 1.4 percent of the county's population.

Table 2-2 Population by Race and Ethnicity in Town of Truckee and Nevada County, 2012-2016 (5-Year Average)				
Race or Ethnicity	Truckee		Nevada County	
	Population	Percent of Total	Population	Percent of Total
Not Hispanic or Latino	**13,251**	**82%**	**89,620**	**91%**
White alone	12,682	95.7%	84,469	94.3%
Black or African American alone	71	0.5%	472	0.5%
American Indian/Alaska Native alone	27	0.2%	876	1.0%
Asian alone	233	1.8%	1,246	1.4%
Native Hawaiian/other Pacific Islander	15	0.1%	57	0.1%
Some other race alone	0	0.0%	100	0.1%
Two or more races	223	1.7%	2,400	2.7%
Hispanic or Latino (of any race)	**2,980**	**18%**	**9,019**	**9%**
Total	***16,231***	**100.0%**	***98,639***	**100.0%**

Source: U.S. Census Bureau 2016

Educational Attainment

Table 2-3 shows the educational attainment of residents in Truckee and Nevada County. As shown in the table, an estimated 44.5 percent of Truckee residents 25 years or older have at least a bachelor's degree, and 90.7 percent have at least a high school diploma. In the county, an estimated 34.4 percent of residents have at least a bachelor's degree, and 93.3 percent have at least a high school diploma. An estimated 78 percent of the town's population over 25 years or older has at least some college education. Roughly 9.3 percent of residents in the town do not have a high school diploma, as compared to 6.7 percent in the county. In general, the educational attainment in the town is slightly higher than the county average.

Table 2-3 Educational Attainment in Town of Truckee and Nevada County, 2012–2016 (5-Year Average)

Educational Attainment (2012–2016)	Truckee		Nevada County	
	Population	Percent of Total	Population	Percent of Total
Population 25 years and over	**11,154**	**100%**	**74,327**	**100%**
Less than ninth grade	468	4.2%	1,552	2.1%
Ninth to 12th grade, no diploma	568	5.1%	3,404	4.6%
High school graduate (includes equivalency)	1,414	12.7%	14,568	19.6%
Some college, no degree	2,644	23.7%	21,289	28.6%
Associate's degree	1,106	9.9%	7,944	10.7%
Bachelor's degree	3,497	31.4%	16,694	22.5%
Graduate or professional degree	1,457	13.1%	8,876	11.9%

Source: U.S. Census Bureau 2016

Poverty Rate

The poverty rate in Truckee, as shown in Table 2-4, averaged 6.7 percent during the 5-year period of 2012–2016. This rate was below the statewide average of 15.8 percent and the countywide average of 12.1 percent.

Table 2-4 Poverty Rate in Town of Truckee, Nevada County, and California, 2012–2016 (5-Year Average)

Location	Poverty Rate
Truckee	6.7%
Nevada County	12.1%
California	15.8%

Source: U.S. Census Bureau 2016

HOUSEHOLD TRENDS

Household Growth

Truckee's household count grew moderately from 2010 to 2018, to a total of 6,530 households in 2018 (as shown in Table 2-5). This represents an AAGR of 0.2 percent and a total growth of an estimated 187 households during this period. This low growth trend is very similar to that in the other incorporated areas, with Grass Valley growing at 0.1 percent to a total of 6,156 households and Nevada City at 0.3 percent to a total of 1,422 households. The number of households in the unincorporated county decreased slightly during this period, and the countywide household count remained constant over the 8-year period, with an AAGR of less than 0.1 percent. The average number of persons per household in 2018 was 2.54 in Truckee and 2.35 countywide.

Table 2-5 Household Growth Trends in Town of Truckee and Nevada County Cities, 2010–2018

Location	2010 Households	2018 Households	AAGR (2010–2018)
Grass Valley	6,076	6,156	0.1%
Nevada City	1,356	1,422	0.3%
Truckee	**6,343**	**6,530**	**0.2%**
Balance of County (unincorporated)	27,708	27,540	0.0%
Incorporated	13,757	14,110	0.1%
Nevada County total	**41,527**	**41,647**	**0.0%**

Note: AAGR = average annual growth rate.
Source: DOF 2018a; growth projections prepared by Ascent Environmental in 2018

Income Distribution

Truckee has a large proportion of higher-income households, and overall higher household incomes than the county. The overall median household income for the 5-year period of 2012–2016 was $79,971 in Truckee. This amount is higher than both the countywide median income of $57,429 and statewide median income of $63,783. The distribution of income in the town shows high concentrations of households earning more than $75,000, with an estimated 53.9 percent of households in this group. This percentage is higher than the countywide percentage of 38.6. Of the 53.9 percent earning more than $75,000 in Truckee, 38.3 percent of the households earn more than $100,000 annually. This amount is significantly higher than the county's rate of 10.6 percent. For comparison, 16.6 percent of households in Truckee earn less than $35,000 annually, while the countywide rate is 9.8 percent.

Table 2-6 Annual Household Income Distribution in Town of Truckee and Nevada County, 2012–2016 (5-Year Average)

Income Range	Truckee Percent of Households	Nevada County Percent of Households
Less than $10,000	3.5%	4.6%
$10,000 to $14,999	3.0%	4.7%
$15,000 to $24,999	1.9%	9.0%
$25,000 to $34,999	8.2%	11.5%
$35,000 to $49,999	12.3%	14.4%
$50,000 to $74,999	17.2%	17.1%
$75,000 to $99,999	15.6%	12.6%
$100,000 to $149,999	19.7%	15.4%
$150,000 to $199,999	8.6%	5.7%
$200,000 or more	10.0%	4.9%
Total	**100%**	**100%**
Median household income	**$79,971**	**$57,429**
State median income	***$63,783***	***$63,783***

Source: U.S. Census Bureau 2016

2.1.3 Regulatory Setting

No regulatory setting is included because no regulations apply to population and household characteristics.

2.2 Housing Conditions and Trends

This section describes housing conditions and trends in Truckee and, where appropriate, for the county. Data from DOF and the U.S. Census Bureau's ACS for 2012–2016 were primarily used. DOF annually estimates housing units, vacancy rates, and occupancy rates for the state as well as for each county and city in California.

2.2.1 Major Findings

- From 2010 to 2018, there has been a steady increase in the number of housing units in Truckee, with a 4.1-percent increase in the overall housing stock since 2010. During this time, the town's proportion of the county's housing increased slightly from 24.3 to 24.8 percent.

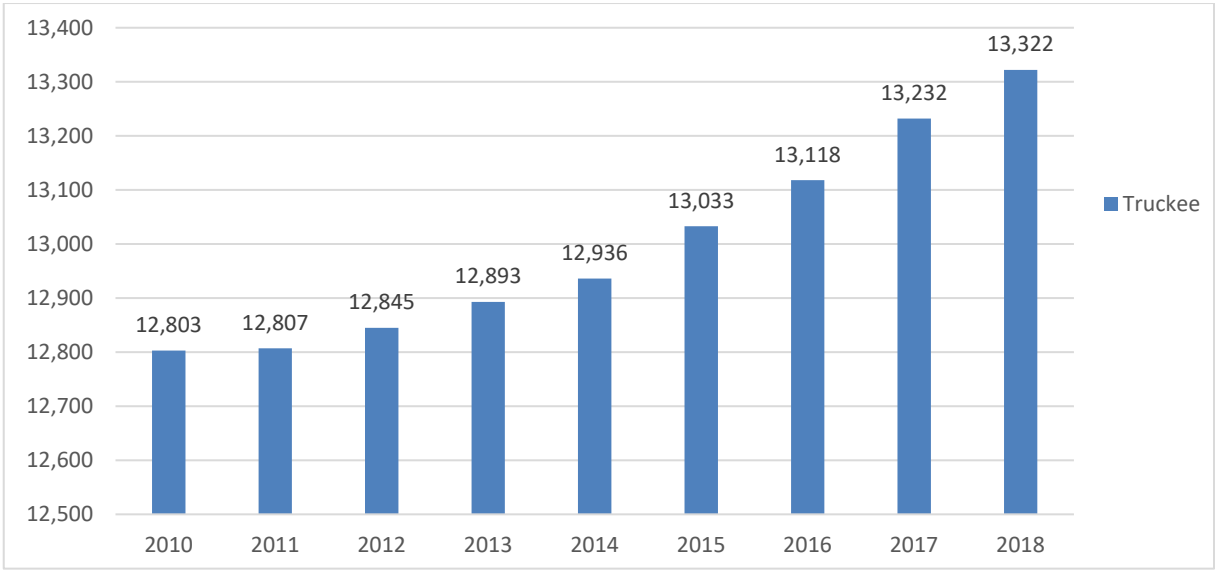
- There was an increase in all housing unit types from 2010 to 2018 in the town and in the county. Single-family detached units were the largest housing type, accounting for 84 percent of the total units in Truckee in 2018 and nearly 83 percent countywide.
- Vacancy rates in both the town and county are driven by the high numbers of units left vacant "for seasonal, recreational, or occasional use." Of the estimated 7,491 housing units in Truckee reported as vacant, 7,059, or more than 94 percent, were vacant for seasonal or occasional use. Excluding these units from the vacancy rate calculations results in a functional vacancy rate of 3.5 percent, which is within the "normal" range for vacancy rates.

2.2.2 Existing Conditions

NUMBER OF HOUSING UNITS

DOF data for 2018 show an estimated 13,322 housing units within the town, a 4.1-percent increase in the overall housing stock since 2010. Figure 2-1 shows a steady increase in the number of housing units in the town over time, from 2010 to 2018.

FIGURE 2-1 NUMBER OF HOUSING UNITS IN TRUCKEE



Source: DOF 2018a

Table 2-7 compares the number of housing units in the town with the number of total housing units in the county from 2010 to 2018. In 2010, the number of housing units in Truckee represented 24.3 percent of the countywide housing stock. This number has remained consistent over the years. In 2018, the town's 13,322 housing units accounted for 24.8 percent of housing units countywide.

Table 2-7 Number of Housing Units in Town of Truckee and Nevada County, 2010–2018

Year	Truckee	Nevada County	Truckee as Percent of Region
2010	12,803	52,590	24.3%
2011	12,807	52,677	24.3%
2012	12,845	52,766	24.3%
2013	12,893	52,879	24.4%
2014	12,936	52,987	24.4%

Table 2-7 Number of Housing Units in Town of Truckee and Nevada County, 2010–2018			
Year	Truckee	Nevada County	Truckee as Percent of Region
2015	13,033	53,182	24.5%
2016	13,118	53,347	24.6%
2017	13,232	52,557	25.2%
2018	13,322	53,745	24.8%

Source: DOF2018a

HOUSING UNITS BY TYPE

Of the 12,803 housing units reported by DOF in 2010, single-family detached units were the largest housing type, accounting for 84 percent of total housing units in the town (Table 2-8). The second largest group was multifamily units, making up 10.9 percent of total housing units in Truckee. There was an increase in all housing unit types from 2010 to 2018 in the town and the county. In 2018 single-family detached units continued to be the largest housing type in Truckee, accounting for 84 percent of the total units. Multifamily units continued to be the second largest group, accounting for 11 percent of the total units in 2018. The number of single-family detached housing units increased by 4.1 percent from 2010 in Truckee, and the number of single-family attached units increased by 7.4 percent. The number of multifamily housing units increased by 4.6 percent between 2010 and 2018, while the number of mobile home housing units remained essentially unchanged with only one unit added between 2010 and 2018. Countywide, the number of single-family attached housing units increased the most (5.7 percent). The numbers of single-family detached, multifamily, and mobile homes all increased by around 2 percent.

Table 2-8 Housing Units by Type in Town of Truckee and Nevada County										
Housing Type	Truckee					Nevada County				
	Number of Units in 2010	Percent of Total	Number of Units in 2018	Percent of Total	Percent Change (2010–2018)	Number of Units in 2010	Percent of Total	Number of Units in 2018	Percent of Total	Percent Change (2010– 2018)
Single-family, detached	10,758	84.0%	11,196	84.0%	4.1%	43,577	82.9%	44,523	82.8%	2.2%
Single-family, attached	203	1.6%	218	1.6%	7.4%	806	1.5%	852	1.6%	5.7%
Multifamily	1,401	10.9%	1,466	11.0%	4.6%	5,093	9.7%	5,194	9.7%	2.0%
Mobile homes	441	3.4%	442	3.3%	0.2%	3,114	5.9%	3,176	5.9%	2.0%
Total	**12,803**	**100.0%**	**13,322**	**100.0%**	**4.1%**	**52,590**	**100.0%**	**53,745**	**100.0%**	**2.2%**

Source: DOF 2018a

VACANCY RATES AND TYPE OF VACANCY

Vacancy rates are an indicator of both housing supply and demand. Low vacancy rates indicate an undersupply of housing, suggesting that housing costs may be inflated and that households may find it difficult to find housing with an affordable monthly payment. Meanwhile, a high number of vacant units indicate an oversupply of housing. A vacancy rate between 4 and 6 percent is considered "normal" for most communities.

As shown in Table 2-9, ACS data for 2012–2016 show a residential vacancy rate of 54.9 percent in Truckee, as compared to 23.7 percent countywide. However, the vacancy rates in both areas are driven by the high numbers of

units left vacant "for seasonal, recreational, or occasional use." Of the estimated 7,491 housing units reported as vacant in Truckee, 7,059, or 94.2 percent, were vacant for seasonal or occasional use. Excluding these units from the vacancy rate calculations results in a functional vacancy rate of 3.5 percent, which better reflects vacancy among housing units that are available. The same can be said for the county; of the estimated 12,602 housing units reported as vacant, 78 percent were vacant for seasonal or occasional use. The vacancy rate changes to 2.6 percent if these units are excluded from the vacancy rate calculations. After excluding vacation homes, both the town and the county are within the "normal" range for vacancy rates.

Table 2-9 Vacancy Rates and Housing Stock by Type of Vacancy in Town of Truckee and Nevada County, 2012–2016 (5-Year Average)

Housing Stock	Truckee		Nevada County	
	Housing Units	Percent of Total	Housing Units	Percent of Total
Total occupied housing units	**6,146**	**45.1%**	**40,587**	**76.3%**
Total vacant housing units	**7,491**	**54.9%**	**12,602**	**23.7%**
For rent	91	0.7%	481	0.9%
Rented, not occupied	99	0.7%	241	0.5%
For sale only	141	1.0%	618	1.2%
Sold, not occupied	81	0.6%	204	0.4%
For seasonal, recreational, or occasional use	7,059	51.8%	9,824	18.5%
All other vacant	20	0.1%	1,234	2.3%
Total housing units	**13,637**	**100.0%**	**53,189**	**100.0%**
Vacancy Rates	**Percent**		**Percent**	
Vacancy rate	54.9%		23.7%	
Homeowner vacancy rate	3.3%		2.1%	
Rental vacancy rate	4.1%		4.0%	
Vacancy rate minus seasonal	3.5%		2.6%	

Source: U.S. Census Bureau 2016

2.2.3 Regulatory Setting

No regulatory setting is included because no regulations apply to housing conditions and trends.

2.3 Employment and Industry Trends

This section discusses the industry and occupational characteristics and trends of the local labor force that lives in Truckee, and presents information about those who work in Truckee, including the number and types of jobs available. Commuting patterns are discussed, along with an analysis of the distance and direction from home to work for the local labor force and the distance and direction from work to home for workers employed in the town. Primary data include the ACS for 2012–2016 (U.S. Census Bureau 2016) and the Center for Economic Studies' Longitudinal Household Employer Dataset (LEHD) (U.S. Census Bureau 2017), which reports data for 2002–2015.

2.3.1 Major Findings

- An estimated 21.1 percent of the local labor force in Truckee is employed in educational services, health care, and social assistance industries; the construction and mining industries combined account for 17 percent of the local labor force; and the arts, entertainment, recreation, and accommodation and food service industry account for the largest percentage of the labor force in the town, with 22.3 percent. These trends mirror the trends of the labor force in Nevada County as a whole.
- An estimated 23.4 percent of the Truckee labor force is in service occupations, with the 9.8 percent working in occupations related to food preparation and serving. Countywide, 20 percent of the local labor force is involved with food preparation and serving.
- Commute patterns show a relatively even distribution of those commuting to the town for work (34.8 percent) and Truckee residents who commute outside of the town (39.4 percent). Fewer people in the local labor force live and work in Truckee (25.8 percent).
- The majority of the local labor force (51.7 percent) travels less than 10 miles to work, staying in and around the town. The next largest group is commuters from Truckee who are traveling greater than 50 miles to get to work (25 percent), most of whom are commuting southwest to Placer County and as far as Sacramento County. Additionally, 17.7 percent of the local labor force commutes 10–24 miles, mostly south and southeast toward Olympic Valley, Tahoe City, and other areas near Lake Tahoe. A smaller proportion of the local labor force (5.6 percent) travels 25–50 miles northeast toward Reno to work. Of the commuters from Truckee that are traveling in a northeast direction towards Reno, almost half are traveling 10–24 miles.
- An estimated 46.9 percent of those who work in Truckee live in and around the town and travel less than 10 miles to get home. For 22.6 percent of the workers employed in the town, home is more than 50 miles away, with the majority traveling southwest toward Placer County and Sacramento County. A large proportion of the 15.2 percent who have a 25- to 50-mile commute travel northeast toward home in Reno.

2.3.2 Existing Conditions

INDUSTRY AND OCCUPATIONAL CHARACTERISTICS OF LOCAL LABOR FORCE

Distribution of Local Labor Force by Industry

According to the 2012–2016 ACS, the local labor force living in Truckee and Nevada County mostly work in similar industries (U.S. Census Bureau 2016), as shown in Table 2-10. An estimated 21.1 percent of Truckee's local labor force and 22.6 percent of the county's labor force are employed in educational services, health care, and social assistance industries. The arts, entertainment, recreation, and accommodation and food service industry account for the largest percentage of the labor force in Truckee (22.3 percent). This industry is the third highest countywide, with 12.2 percent of the local force. The construction and mining industries combined account for 17 percent of the Truckee local labor force and 16 percent of the county labor force. Many residents in the town also work in the professional, scientific, management, administrative, and waste management service (12.1 percent). This industry is the third largest industry in the county, accounting for 13.2 percent of the local labor force.

Table 2-10 Distribution of Local Labor Force by Industry in Town of Truckee and Nevada County, 2012–2016 (5-Year Average)

Industry	Truckee		Nevada County	
	Population	Percent of Total	Population	Percent of Total
Civilian employed population 16 years old and older	8,754	100%	41,251	100%
Agriculture, forestry, fishing and hunting, and mining	26	0.3%	562	1.4%
Construction	1,145	13.1%	3,592	8.7%
Manufacturing	343	3.9%	3,002	7.3%
Wholesale trade	81	0.9%	715	1.7%
Retail trade	603	6.9%	4,337	10.5%
Transportation and warehousing, and utilities	321	3.7%	1,477	3.6%
Information	88	1.0%	754	1.8%
Finance and insurance, and real estate and rental and leasing	691	7.9%	2,231	5.4%
Professional, scientific, and management, and administrative and waste management services	1,056	12.1%	5,450	13.2%
Educational services, and health care and social assistance	1,850	21.1%	9,317	22.6%
Arts, entertainment, and recreation, and accommodation and food services	1,951	22.3%	5,030	12.2%
Other services, except public administration	336	3.8%	2,575	6.2%
Public administration	263	3.0%	2,209	5.4%

Source: U.S. Census Bureau 2016

Occupational Distribution of Local Labor Force

The occupational distribution of workers living in the town is also similar to the countywide distribution, as shown in Table 2-11. ACS data for 2012-2016 show that of those who live in the town and county who are 16 years old and older, the majority of the labor force work in the management, business, science, and arts occupations (U.S. Census Bureau 2016). This accounts for 38.6 percent of the Truckee labor force and 39.5 of the countywide labor force. Within this occupational category, the majority in Truckee (12.8 percent) and countywide (11.4 percent) work in management occupations. An estimated 23.4 percent of the town's labor force works in service occupations, with 9.8 percent working in occupations related to food preparation and serving. This is higher than the countywide trend that shows 20 percent of the local labor force in these occupations and 6.5 percent working in occupations related to food preparation and serving. Additionally, 20.7 percent of the town's labor force work in sales and office occupations, while 23.8 percent of the countywide labor force is in these occupations.

Table 2-11 Occupational Distribution of Local Labor Force in Town of Truckee and Nevada County, 2012–2016 (5-Year Average)

Occupation	Truckee		Nevada County	
	Population	Percent of Total	Population	Percent of Total
Civilian employed population 16 years old and older	8,754	100%	41,251	100%
Management, business, science, and arts occupations:	3,378	38.6%	16,275	39.5%
Management, business, science, and financial occupations:	1,536	17.5%	6,275	15.2%
Management occupations	*1,122*	*12.8%*	*4,718*	*11.4%*
Business and financial operations occupations	*414*	*4.7%*	*1,557*	*3.8%*
Computer, engineering, and science occupations:	358	4.1%	2,492	6.0%
Computer and mathematical occupations	*131*	*1.5%*	*961*	*2.3%*
Architecture and engineering occupations	*130*	*1.5%*	*1,024*	*2.5%*
Life, physical, and social science occupations	*97*	*1.1%*	*507*	*1.2%*
Education, legal, community service, arts, and media occupations:	861	9.8%	4,619	11.2%
Community and social services occupations	*96*	*1.1%*	*728*	*1.8%*
Legal occupations	*163*	*1.9%*	*490*	*1.2%*
Education, training, and library occupations	*294*	*3.4%*	*2,134*	*5.2%*
Arts, design, entertainment, sports, and media occupations	*308*	*3.5%*	*1,267*	*3.1%*
Healthcare practitioner and technical occupations:	623	7.1%	2,889	7.0%
Health diagnosing and treating practitioners and other technical occupations	*574*	*6.6%*	*2,169*	*5.3%*
Health technologists and technicians	*49*	*0.6%*	*720*	*1.7%*
Service occupations:	2,048	23.4%	8,242	20.0%
Healthcare support occupations	45	0.5%	845	2.0%
Protective service occupations:	220	2.5%	931	2.3%
Firefighting and prevention, and other protective service workers, including supervisors	*172*	*2.0%*	*594*	*1.4%*
Law enforcement workers, including supervisors	*48*	*0.5%*	*337*	*0.8%*
Occupations related to food preparation and serving	860	9.8%	2,701	6.5%
Building and grounds cleaning and maintenance occupations	487	5.6%	1,992	4.8%
Personal care and service occupations	436	5.0%	1,773	4.3%
Sales and office occupations:	1,816	20.7%	9,802	23.8%
Sales and related occupations	712	8.1%	4,195	10.2%
Office and administrative support occupations	1,104	12.6%	5,607	13.6%
Natural resources, construction, and maintenance occupations:	1,047	12.0%	3,803	9.2%
Farming, fishing, and forestry occupations	0	0.0%	104	0.3%
Construction and extraction occupations	854	9.8%	2,554	6.2%
Installation, maintenance, and repair occupations	193	2.2%	1,145	2.8%
Production, transportation, and material moving occupations:	465	5.3%	3,129	7.6%
Production occupations	237	2.7%	1,842	4.5%
Transportation occupations	71	0.8%	787	1.9%
Material moving occupations	157	1.8%	500	1.2%

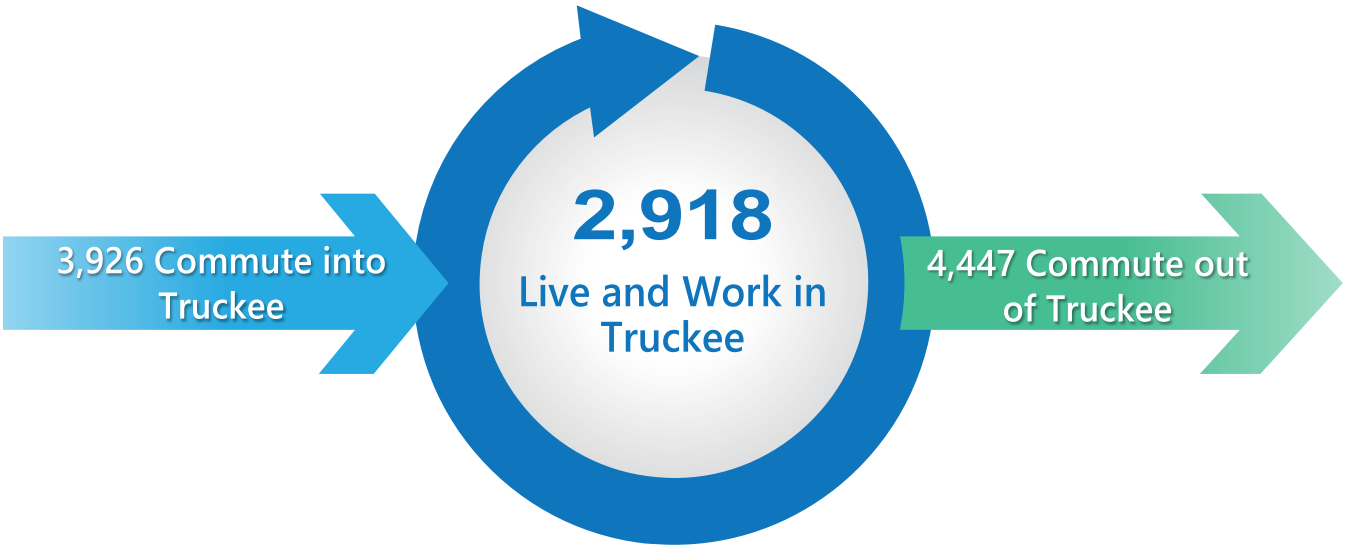
Source: U.S. Census Bureau 2016

COMMUTING PATTERNS

Commuting Inflow and Outflow

Based on LEHD data for 2015, the commute patterns show a relatively even distribution of those commuting to the town for work and those residents who commute outside of the town (Figure 2-2). An estimated 4,447 Truckee residents commute out of town for work, while 2,918 residents live and work in town. Of the people working in Truckee, 3,926 people live outside of the town and commute in for work. For more information about commute patterns for the local labor force in the town, see Section 4.3, "Traffic Patterns and Characteristics."

FIGURE 2-2 COMMUTING INFLOW AND OUTFLOW, 2015



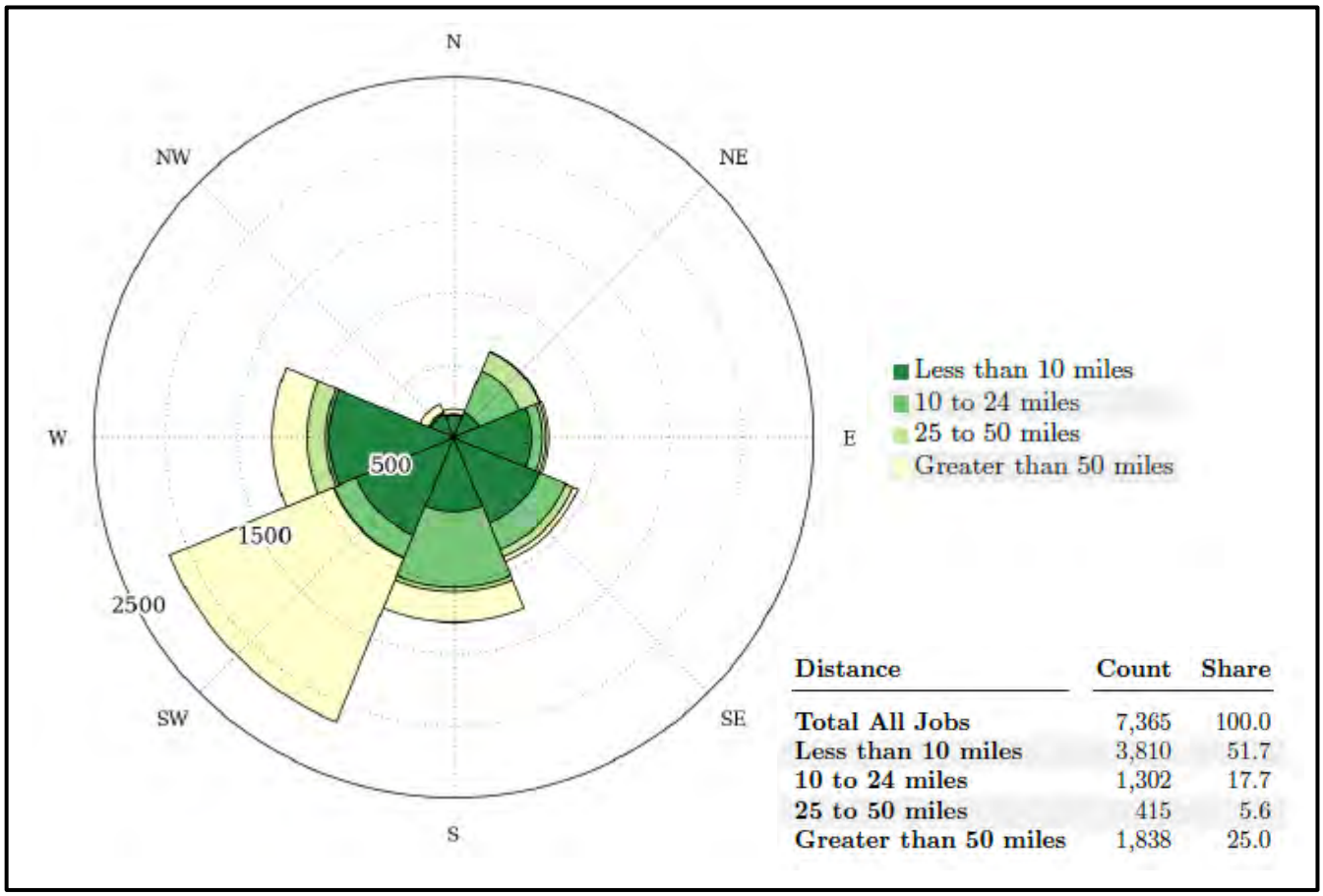
Source: Ascent Environmental 2019 and U.S. Census Bureau 2017

Distance and Direction Analysis

Local Truckee Labor Force: Distance and Direction from Home in Town to Work

LEHD data for 2015 show how far (i.e., distance) and where (i.e., direction) the local labor force is traveling to work. Figure 2-3 shows the distance and direction of the Truckee resident labor force as a radar chart. Of the estimated 7,365 jobs accounted for in the figure, the majority of the local labor force (51.7 percent) is traveling less than 10 miles to work and staying in and around the town boundaries. The next largest group is commuters from Truckee who are traveling greater than 50 miles to get to work (25 percent); the majority are commuting southwest to Placer County and as far as Sacramento County. Additionally, 17.7 percent of the local labor force is commuting 10–24 miles, mostly south and southeast toward Olympic Valley, Tahoe City, and other areas near Lake Tahoe. A smaller proportion of the local labor force (5.6 percent) travels 25–50 miles northeast toward Reno to work. Of the commuters from Truckee that are traveling in a northeast direction towards Reno, almost half are traveling 10–24 miles.

FIGURE 2-3 DISTANCE AND DIRECTION FROM HOME TO WORK FOR LOCAL TRUCKEE LABOR FORCE, 2015



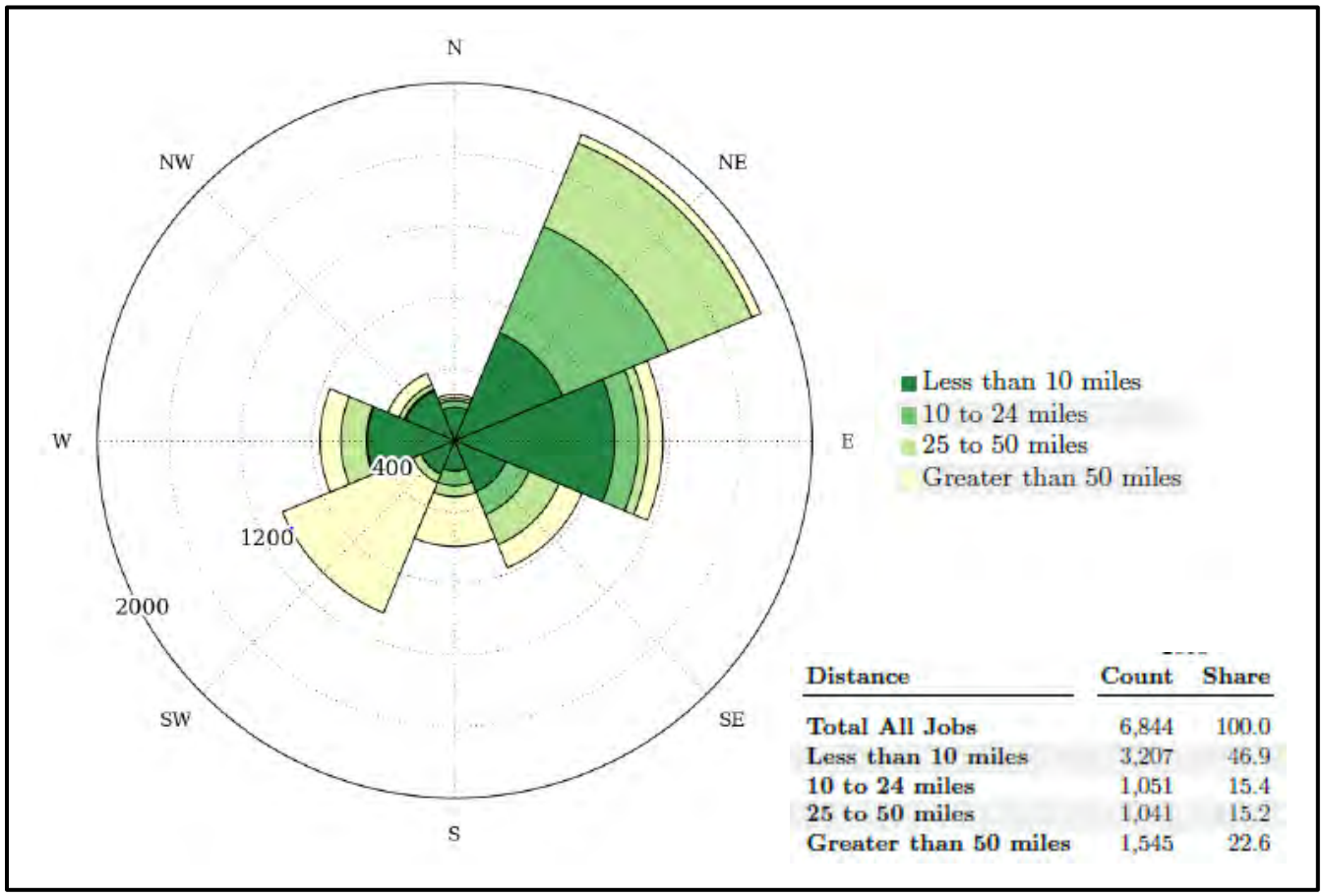
Distance	Count	Share
Total All Jobs	7,365	100.0
Less than 10 miles	3,810	51.7
10 to 24 miles	1,302	17.7
25 to 50 miles	415	5.6
Greater than 50 miles	1,838	25.0

Source: U.S. Census Bureau 2017

Workers Employed in the Town: Distance and Direction from Work in Town to Home

Figure 2-4 shows how far and where those who work in Truckee travel from work to home. Of the estimated 6,844 jobs accounted for in the figure, 46.9 percent of those who work in Truckee live in and around the town boundaries and travel less than 10 miles to get home. For 22.6 percent of the workers employed in the town, home is more than 50 miles away, with the majority traveling southwest toward Placer County and Sacramento County. A large proportion of the 15.2 percent who have a 25- to 50-mile commute travel northeast toward home in Reno.

FIGURE 2-4 DISTANCE AND DIRECTION FROM WORK TO HOME FOR WORKERS EMPLOYED IN TRUCKEE, 2015



Distance	Count	Share
Total All Jobs	6,844	100.0
Less than 10 miles	3,207	46.9
10 to 24 miles	1,051	15.4
25 to 50 miles	1,041	15.2
Greater than 50 miles	1,545	22.6

Source: U.S. Census Bureau 2017

2.3.3 Regulatory Setting

No regulatory setting is included because no regulations apply to employment and industry trends.

2.4 Population and Employment Projections

This section summarizes population and employment projections for Truckee and, where appropriate, Nevada County through 2040. Projections were developed using current population, household, and employment numbers from the U.S. Census Bureau and DOF. Data from the LEHD, which come from the U.S. Census Bureau's Center for Economic Studies, were used to determine the number of jobs in Truckee. For population and household projections, low- and high-range projections for 2030 and 2040 were calculated using AAGRs for two different time frames (i.e., 2000–2018 and 2010–2018). Low- and high-range employment projections were calculated for 2018, 2030, and 2040.

2.4.1 Major Findings

- Based on historical growth rates, the town population is projected to grow to between 17,500 and 18,900 residents by 2030 and between 18,200 and 21,000 residents by 2040.
- Current (2018) DOF projections show that the county will grow at an AAGR of 0.5 percent from 2018 to 2040, which is within the lower AAGR range for the town (0.39 percent).

- Based on a historical AAGR of 0.58 percent, employment in Truckee is projected to increase to 7,468 jobs by 2030 and 7,916 jobs by 2040, a total increase of 951 jobs from 2018 estimates.

2.4.2 Existing Conditions

POPULATION PROJECTIONS

Table 2-12 shows a range of population projections for Truckee that were calculated using a low AAGR of 0.39 percent (based on the growth rate between 2010 and 2018) and a high AAGR of 1.06 percent (based on the growth rate between 2000 and 2018). The town's population is projected to grow between 17,500 and 18,900 residents by 2030, with an increase in the number of residents ranging from 800 to 2,200 over the 2018 population of 16,700. By 2040, the population is projected to continue to grow from 18,200 to 21,000 residents, for an increase of 1,500–4,300 residents from the 2018 population. Figure 2-5 shows the town's population from 2000–2018, alongside the low and high projected populations.

DOF produces population projections for the state and counties in California on a regular basis. Current (2018) DOF projections show the county population growing at an AAGR of 0.54 percent from 2018 to 2040, which is within the lower AAGR range for the town (0.39 percent). The population in the county is expected to increase from 98,757 in 2018 to 105,318 by 2030 and to 111,007 by 2040. This translates into an increase in population of 6,561 by 2030 and 12,250 by 2040, as compared to the population in 2018.

Table 2-12 Population Growth Projections in Town of Truckee and Nevada County, 2018–2040

Population	Town of Truckee		Nevada County
	Low Projected Population (AAGR 0.39%)	High Projected Population (AAGR 1.06%)	Projected Population (AAGR 0.54%)
2018	16,700	16,700	98,757
2030	17,500	18,900	105,318
2040	18,200	21,000	111,007

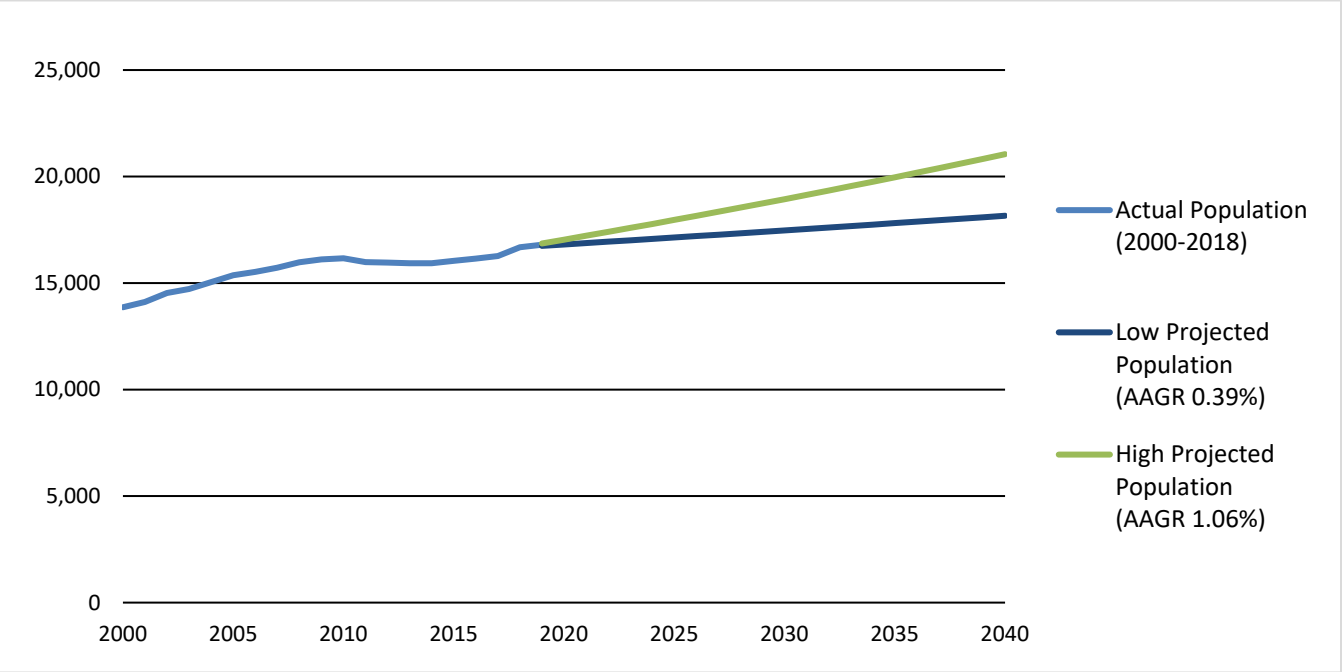
Notes:

AAGR = average annual growth rate.

For Truckee projections, the low projected population represents an AAGR for 2010–2018 and the high projected population an AAGR for 2000–2018. Projections are rounded to the nearest hundredth.

Sources: DOF 2018a, 2018b; town projections prepared by Ascent Environmental in 2018

FIGURE 2-5 POPULATION GROWTH PROJECTIONS FOR TRUCKEE



Sources: DOF 2012, 2018a, 2018b; growth projections prepared by Ascent Environmental in 2018

HOUSEHOLD PROJECTIONS

As with population projections, the same timeframe (i.e., 2000-2018 and 2010-2018) was used to determine low- and high-range household projections for Truckee and Nevada County. The number of households in Truckee is expected to increase from 6,500 households to between 6,800 and 7,700 households by 2030, with an AAGR ranging from 0.37 percent to 1.37 percent. Assuming households continue to increase at the same rate, by 2040 Truckee is projected to have between 7,100 and 8,800 households. Figure 2-6 shows the town's household growth from 2000 to 2018, alongside the low and high household projections.

Based on historical trends, the number of households in the county is projected to grow to between 41,800 and 45,300 by 2030, as compared to 41,700 households in 2018. By 2040, the number of households is projected to increase to between 42,000 and 48,500 households, with an increase in households ranging from 300 to 6,800 over the number of households in 2018.

Table 2-13 Household Growth Projections in Town of Truckee and Nevada County, 2018–2040

Population	Town of Truckee		Nevada County	
	Low Projected Household Growth (AAGR 0.37%)	High Projected Household Growth (AAGR 1.37%)	Low Projected Household Growth (AAGR 0.04%)	High Projected Household Growth (AAGR 0.69%)
2018	6,500	6,500	41,700	41,700
2030	6,800	7,700	41,800	45,300
2040	7,100	8,800	42,000	48,500

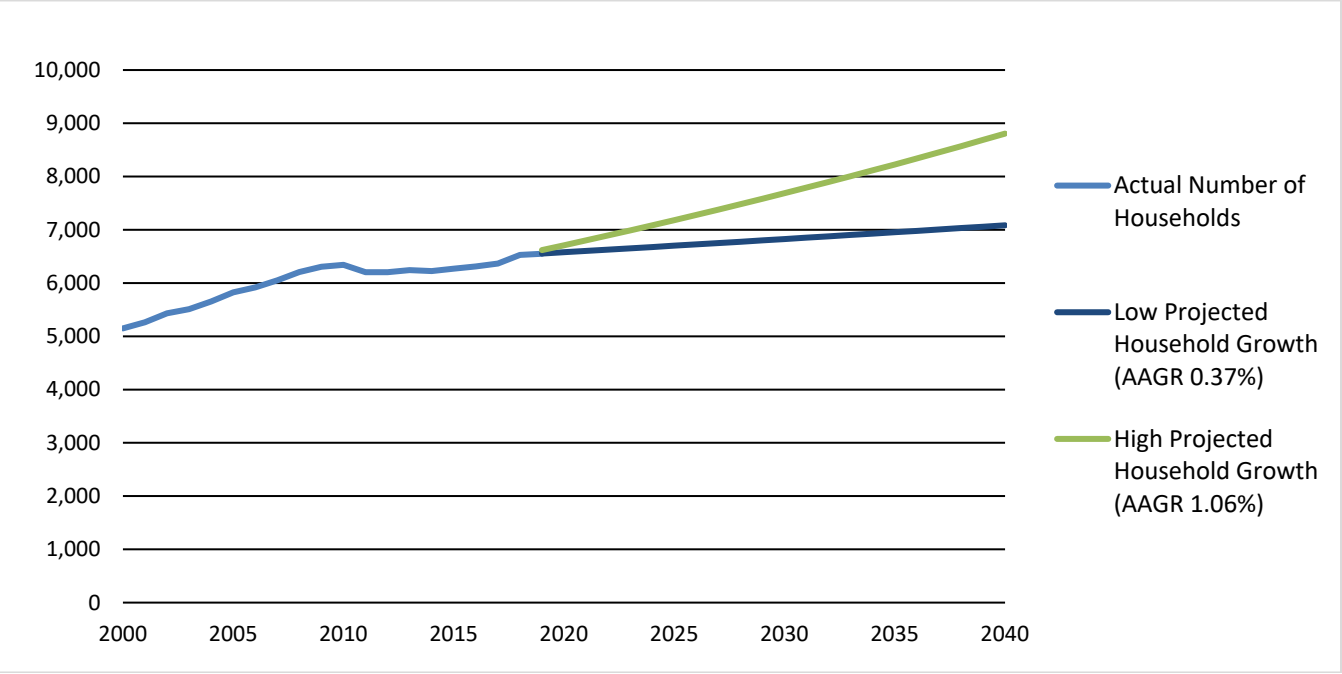
Notes:

AAGR = average annual growth rate.

For town and county projections, the low projected household growth represents an AAGR for 2010–2018 and the high projected household growth an AAGR for 2000–2018. Projections are rounded to the nearest hundredth.

Sources: DOF 2012, 2018a, 2018b; growth projections prepared by Ascent Environmental in 2018

FIGURE 2-6 HOUSEHOLD GROWTH PROJECTIONS FOR TRUCKEE



Sources: DOF 2012, 2018a, 2018b; growth projections prepared by Ascent Environmental in 2018

EMPLOYMENT PROJECTIONS

The total number of jobs in the town for 2002–2015 from the U.S. Census Bureau's Center for Economic Studies was used to calculate employment projections for 2018, 2030, and 2040. Based on the growth rate observed between 2002 and 2015 (0.58 percent AAGR), employment in the town is projected to increase to 7,500 jobs by 2030 (Table 2-14). By 2040, the number of jobs in the town is projected to increase to 7,900, an increase of 900 jobs from 2018 projections.

Table 2-14 Employment Growth Projections in Town of Truckee and Nevada County, 2018–2040

Population	Town of Truckee
	Projected Employment Growth AAGR 0.58%)
2018	7,000
2030	7,500
2040	7,900

Notes:

AAGR = average annual growth rate.

For town and county projections, the projected employment growth represents an AAGR for 2002–2015.

Sources: U.S. Census Bureau 2017; growth projections prepared by Ascent Environmental in 2018

2.4.3 Regulatory Setting

No regulatory setting is included because no regulations apply to population and employment projections.

2.5 Environmental Justice

State law requires local governments in California to address the needs of disadvantaged communities (DACs). This section addresses Senate Bill 1000 (SB 1000), which was adopted in 2016 and focuses on environmental justice concerns. Using a variety of screening methods, including the California Communities Environmental Health Screening Tool (CalEnviroScreen) from the California Environmental Protection Agency (CalEPA), the California Health Disadvantage Index (HDI) from the Public Health Institute, and median income data from the U.S. Census Bureau ACS, this section evaluates whether Truckee contains DACs, per the definition of the legislation.

2.5.1 Major Findings

- According to CalEnviroScreen, there are no census tracts within the town that qualify as a CalEPA-defined DAC.
- While none of the census tracts in Truckee meet the conditions to qualify as a DAC, per the definition of SB 1000, the 2012–2016 ACS shows that block group 2 within census tract 12.06, which includes the central portion of the town including I-80 and SR 89, is a lower-income community. While none of the referenced data sources point to a disproportionate pollution burden or other environmental justice issues in this area, this block group will be an area to target outreach efforts as part of the General Plan Update process.

2.5.2 Existing Conditions

SENATE BILL 1000 AND DISADVANTAGED COMMUNITIES

To address the statewide problem that DACs bear a disproportionate burden of pollution and environmental hazards, SB 1000 was signed into State law in 2016. Many Californians live in communities or neighborhoods that are affected by a range of environmental pollution and other health hazards that are compounded by social vulnerabilities, such as unemployment and poverty. Residents in DACs tend to face higher rates of asthma, birth defects, cancer, and other health problems. SB 1000 was passed to ensure that local governments in California proactively plan for and address environmental justice when developing long-term goals and policies for land use and future growth.

SB 1000 defines a DAC as "[a]n area identified by CalEPA pursuant to Section 39711 of the Health and Safety Code or an area that is a low-income area that is disproportionately affected by environmental pollution and other hazards that can lead to negative health effects, exposure, or environmental degradation."

The first part of the SB 1000 definition references the Health and Safety Code and establishes DACs as those identified by CalEPA as the top 25 percent of the highest-scoring in CalEPA's CalEnviroScreen. CalEnviroScreen is a science-based tool that helps identify communities that are disproportionately burdened by multiple sources of pollution and vulnerabilities. The second part of the definition allows for a secondary approach to identifying DACs, which includes identifying low-income areas disproportionately affected by environmental pollution and other hazards (CEJA 2017).

CALENVIROSCREEN

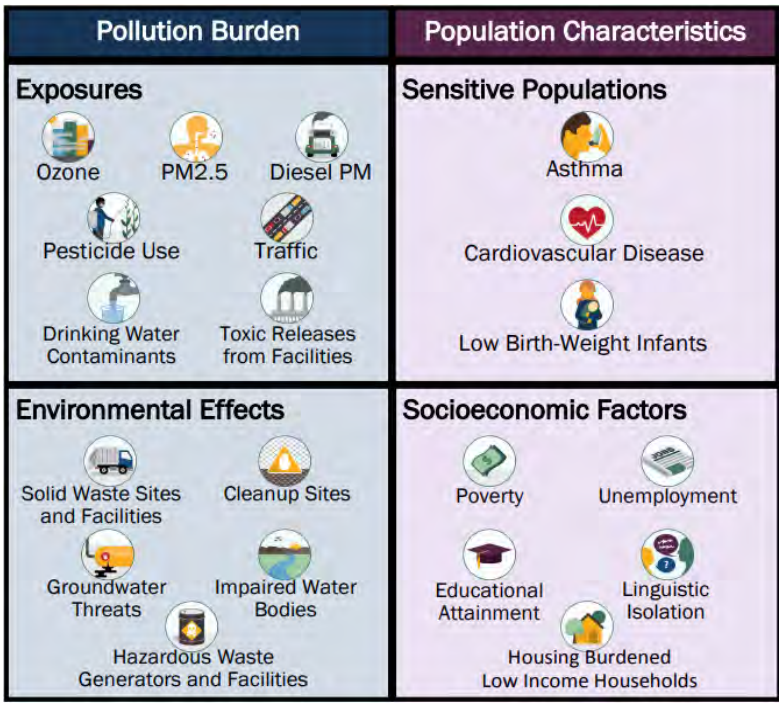
CalEnviroScreen identifies low-income census tracts in California that are disproportionately burdened by and vulnerable to multiple sources of pollution. CalEPA released Version 3.0 in January 2017 and most recently updated it in June 2018. DACs identified using CalEnviroScreen 3.0 are targeted for investment proceeds under SB 535, the State's cap-and-trade program. These investments are aimed at improving public health, quality of life, and economic opportunity in California's most burdened communities while at the same time reducing pollution that causes climate change. Scores are generated using 20 statewide indicators to characterize both pollution burden and population characteristics. There are four components (i.e., exposures, environmental effects, sensitive populations, and socioeconomic factors) with associated indicators that are ranked by percentile. These components are placed within

either the Pollution Burden or Population Characteristics category to be scored. Pollution burden and population characteristics are then multiplied to generate the CalEnviroScreen score. Higher scores indicate a higher burden.

Figure 2-7 shows the 20 indicators, organized by the Pollution Burden and Population Characteristics categories and the four components.

According to CalEnviroScreen, there are no census tracts within the town that qualify as a CalEPA-defined DAC.

FIGURE 2-7 CALENVIROSCREEN 3.0 INDICATORS



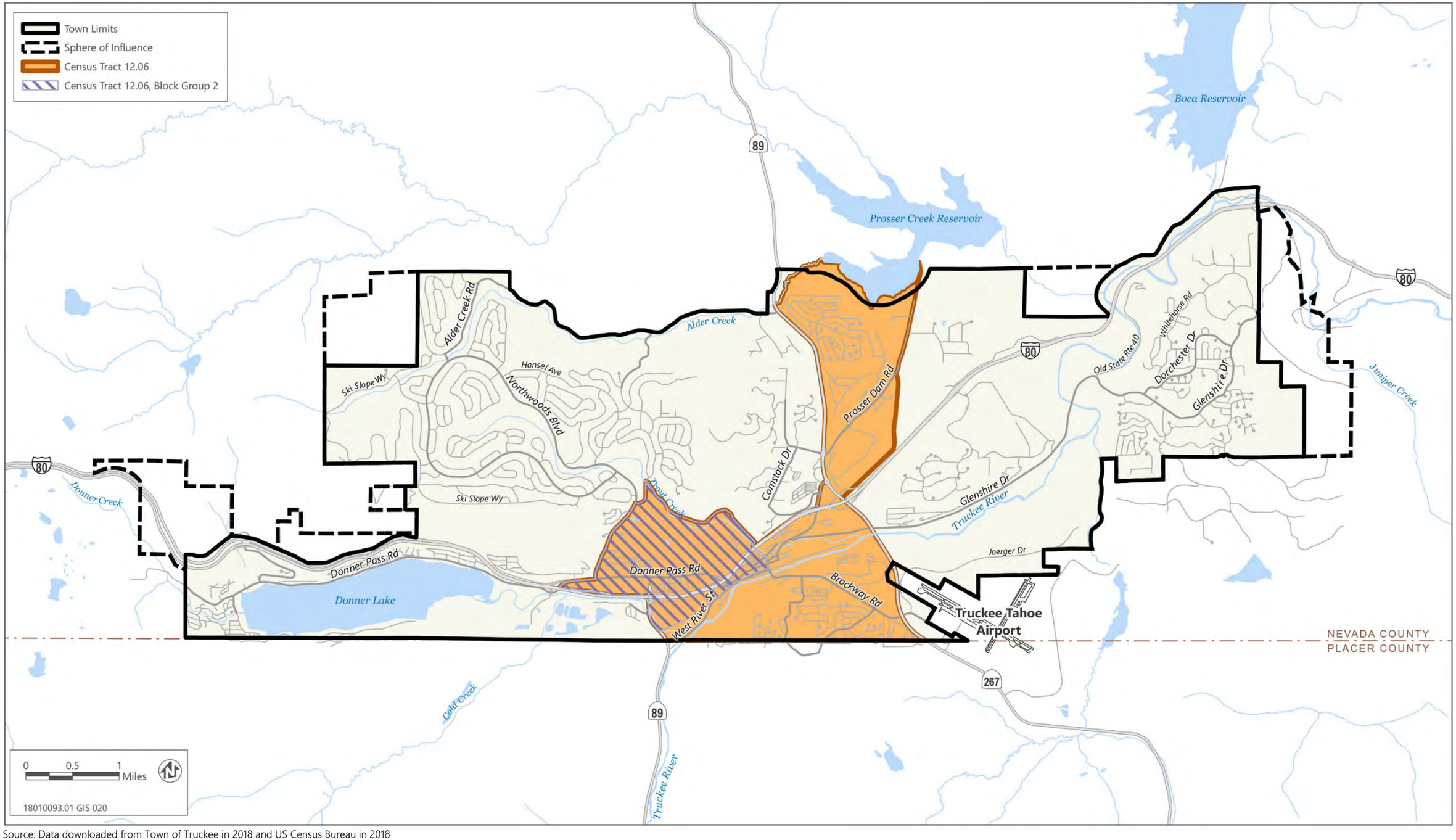
Source: OEHHA 2018

LOW-INCOME AREAS

SB 1000 allows for additional identification methods of DACs by identifying areas that are both low income and disproportionately affected by environmental pollution and other hazards that can lead to negative health effects, exposure, and/or environmental degradation (CEJA 2017). These additional definitions were included in the legislation to give jurisdictions the flexibility to adapt DAC identification to their local context. To identify DACs under these two definitions, planners must screen for areas that meet the conditions of both definitions.

Low-income areas per statewide median income are determined using ACS 5-year estimates for California census tracts. A census tract in the General Plan planning area with a median household income at or below 80 percent of the statewide median household income would be considered a low-income area. The town of Truckee consists of four census tracts (12.03, 12.04, 12.05, and 12.06), with each census tract divided into three block groups (1, 2, and 3). Census tract and block group information was used to determine whether the town contains lower-income areas. According to the 2012–2016 ACS, no census tract within the town qualifies as a DAC, as defined by SB 1000.

However, ACS data for 2012-2016 show that while Census Tract 12.06 as a whole does not qualify as a low-income area, Block Group 2 in the census tract does, falling below the threshold of 80 percent of the statewide median household income (Table 2-15). Figure 2-8 shows Block Group 2 in Census Tract 12.06 as a low-income area. Census Tract 12.06 includes the central portion of the town including I-80 and SR 89.



Source: Data downloaded from Town of Truckee in 2018 and US Census Bureau in 2018

FIGURE 2-8 LOW-INCOME AREA, CENSUS TRACT 12.06, BLOCK GROUP 2

Table 2-15 Median Household Income in Town of Truckee and California, 2012–2016 (5-Year Average)

Area	Median Household Income	Percent of State Median Income
Census Tract 12.06	$71,828	89%
Census Tract 12.06: Block Group 2	$45,786	72%
California	$63,783	-

Note: Median household income reported in 2016 inflation-adjusted dollars.

Source: U.S. Census Bureau 2016

A closer look at each of the 20 indicators in CalEnviroScreen for Census Tract 12.06 confirms that for 19 of the 20 indicators, the tract does not score in the top 25th percentile in terms of exposure. However, the Solid Waste Sites and Facilities indicator score for Census Tract 12.06 is in the 94th percentile. Solid waste facilities are places where household, industry, or commercial garbage and other types of waste are collected, processed, or stored. They include landfills, transfer stations, and composting facilities. Regulated facilities, as well as illegal sites (which are included in the score), can harm the environment and expose communities to hazardous chemicals; solid waste facilities can release toxic gases into the air even after they are closed. The chemicals in waste can leach into the soil around the facility, posing a risk to communities nearby. Moreover, composting, recycling, and waste treatment facilities may produce odors, attract pests, and increase local truck traffic. With three solid waste facilities in Census Tract 12.06 that are close to Block Group 2, a score in the 94th percentile indicates that the number and type of facilities are higher than in 94 percent of census tracts in California. Because this is the only indicator that ranks high on exposure, the overall CalEnviroScreen score is within the bottom 25th percentile and therefore does not meet the definition of a DAC.

The Public Health Institute's HDI is another screening tool that can be used to determine DACs. It includes economic, social, and health data indicators to illustrate which communities are considered the most and least disadvantaged. Sample HDI indicators include economic security, educational and employment opportunity, civic engagement, neighborhood quality, and premature mortality. Based on the HDI, none of the census tracts and block groups within the town are considered a DAC.

While Truckee does not meet the conditions to qualify as a DAC, per the definition of SB 1000, Block Group 2 within Census Tract 12.06 is considered lower income. Furthermore, the Town will be updating the Downtown Specific Plan as part of the General Plan Update, and Census Tract 12.06 is within the downtown planning area. For these reasons, this census tract is an area to target outreach efforts as part of the General Plan Update process.

A key environmental justice principle is involving communities that may be underrepresented or are more heavily burdened by other factors. An inclusive outreach strategy will promote fair and equitable civil engagement in land use decisions and planning projects. Input from local residents of a specific area can bring knowledge, information, and ideas that the Town may not be aware of or anticipate. Community members that are affected by environmental issues on the ground can share their firsthand knowledge of the problems and can provide leadership on the solutions, which can lead to more effective planning decisions to remedy those burdens.

2.5.3 Regulatory Setting

SENATE BILL 1000

SB 1000 was signed into State law in 2016 to address the statewide problem that DACs bear a disproportionate burden of exposure to pollution and other environmental hazards. It requires local governments with DACs to address environmental justice when they update two or more general plan elements on or after January 1, 2018. The law requires that an environmental justice element be added to the general plan or that relevant environmental justice goals be integrated into other required elements identifying DACs and providing policies and objectives to reduce the disproportionate health risks in DACs. Objectives and policies should promote civic engagement in the

public decision-making process. The purpose is to promote policies that improve the health and overall well-being of vulnerable and at-risk communities through reductions in pollution exposure, access to healthy foods, healthy homes, improved air quality, and increased physical activity.

SB 1000 defines a DAC as "[a]n area identified by the California Environmental Protection Agency (CalEPA) pursuant to Section 39711 of the Health and Safety Code or an area that is a low-income area that is disproportionately affected by environmental pollution and other hazards that can lead to negative health effects, exposure, or environmental degradation."

2.6 Key Terms

Average Annual Growth Rate. The average annual growth rate is the average annual growth rate during a period of time.

Disadvantaged Community. An area identified by the California Environmental Protection Agency pursuant to Section 39711 of the Health and Safety Code or an area that is a low-income area that is disproportionately affected by environmental pollution and other hazards that can lead to negative health effects, exposure, or environmental degradation.

Environmental Justice. The fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies.

Labor Force. All persons classified in the civilian labor force plus members of the U.S. Armed Forces (persons on active duty with the U.S. Army, Air Force, Navy, Marine Corps, or Coast Guard).

Low-Income Area. An area with household incomes at or below 80 percent of the statewide median income.

Multifamily. A building containing two or more individual dwelling units with separate cooking and toilet facilities for each dwelling.

Single-Family Attached. Two dwelling units located on an individual lot but joined along a single lot line, each of which is totally separated from the other by an unpierced wall extending from the ground to roof.

Single-Family Detached. A dwelling unit located on an individual lot that is not attached to any other dwelling unit and is designed for and occupied exclusively by one family.

Vacancy Rate. The vacancy rate is the number of vacant housing units divided by the total number of housing units for a given year or period.

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CEJA. *See* California Environmental Justice Alliance.

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TRUCKEE 2040
general plan + downtown specific plan



CHAPTER 3 Land Use and Community Character

This section summarizes the land use patterns, policies, and regulations for the Town of Truckee. This chapter is organized into the following sections:

3.1 Community Character 3-3
3.2 Existing General Plan Land Use Designations 3-21
3.3 Existing Zoning 3-35
3.4 Previous Planning Efforts 3-44
3.5 Other Agency Plans 3-50
3.6 Military Institutions and Installations 3-52
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3.9 Key Terms 3-61
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3.1 Community Character

Community character can be defined as the sum of the tangible and intangible elements that make a community unique and establish a sense of place for its residents. Community character influences how one experiences and perceives the community. While community character is often associated with the aesthetics of the natural or urban form, it can also influence economic development, community health, safety, public services, and the circulation elements of a place.

An understanding of how the current community character and design influences the quality of life of residents and the factors contributing or detracting from it, will inform decisions about how the Town develops in the future. Truckee has been changing and evolving from single use commercial and industrial areas and rural residential neighborhoods to a community with a thriving Downtown, vibrant mixed-use centers, and varied and distinct neighborhoods.

This section addresses the overall character of Truckee defined by its natural features, topography, built form and character, and experiential qualities.

3.1.1 Major Findings

- The current physical form of the Town of Truckee consists of terrain, distinguished by topography and vegetation, including mountains, forested upland areas, meadows and tree covered lowlands, and valleys.
- The axis of the Truckee River through the town has delineated the linear form of the town's historic Downtown, bound between the railroad and Interstate 80.
- Open space throughout the town is a valued community resource, providing opportunities for scenic vistas, outdoor recreation and access opportunities, and habitat for a rich diversity of plants and animals.
- Truckee's varied topography provides different scenic vantage points and ample opportunities for scenic views throughout town. These scenic views are produced by the natural landscape features, including Donner Lake and the Truckee River, that serve as a backdrop to the town, as well as Truckee's changing topography that afford for a scenic driving experience.
- Views of the night sky are important to the natural environment in Truckee. Light pollution is an issue of increasing concern with new development within the town's borders, as well as, sky glow, associated with development of the Reno/Sparks metropolitan area.
- Truckee is rich in historic resources, primarily located in the Downtown, and has one of the highest concentrations of structures of historic significance of any community in the state. Truckee's historic buildings and sites reflect the town's dynamic past and role in the history of California and the west. Residential, commercial, civic, and industrial buildings in town, dating back from the late 19th and early 20th centuries, represent a diversity of architectural styles. These structures are subject to the Town's Historic Preservation Program, adopted in 2003, which includes a comprehensive series of standards and guidelines for the preservation and demolition of historic structures; design guidelines for rehabilitation and new construction; and guidance in the application of historic preservation standards.
- Residential neighborhoods comprise approximately 25 percent of the land within the Town limits, spread throughout the town. New development in the Railyard Master Plan Area provides an opportunity to introduce higher density housing in the Downtown.

3.1.2 Existing Conditions

NATURAL ENVIRONMENT AND SCENIC RESOURCES

Truckee's unique natural environment is the most defining and important aspect of the town's community character. Truckee lies in a river valley amidst a dramatic and varied natural landscape, with mountains on its edges, forested hillsides, and meadows. The natural environment has been and continues to be Truckee's primary attraction. Founded as a naturally-defined stopping point along trans-Sierra transportation routes, Truckee has evolved to include a historic town center and continues to grow with new residents that desire to live among the town's unique mountain environment.

Natural Setting

Truckee's landscape is comprised of a series of distinct terrain, characterized by their topography and vegetation. As graphically illustrated in Figure 3-1, these include the mountain peaks and ridges of the Sierra Nevada and Carson Ridge, just outside of the Town limits; the forested uplands within and bordering the Town; meadowland; and the valleys of the Truckee River and Martis Creek watersheds.



The Truckee River is a distinct element of the Town's landscape.

The mountains surrounding Truckee are the dominant landscape feature and scenic resource for the town, visible from many places within Truckee. The mountains and ridgelines are thickly forested and vegetated at lower elevations and rocky and snow-capped at their peaks.

Forested upland areas, just within the Town limits, define the form of the town, and provide a transition to the gentler landscapes of the Truckee River valley and meadowland areas. Forested upland areas are primarily concentrated in the north and west portions of the town and include Alder Hill, areas south of Prosser Lake, Tahoe Donner's upland, and the steep slopes north of the Interstate 80 corridor. More modest slopes occur at McIver Hill and Hilltop.

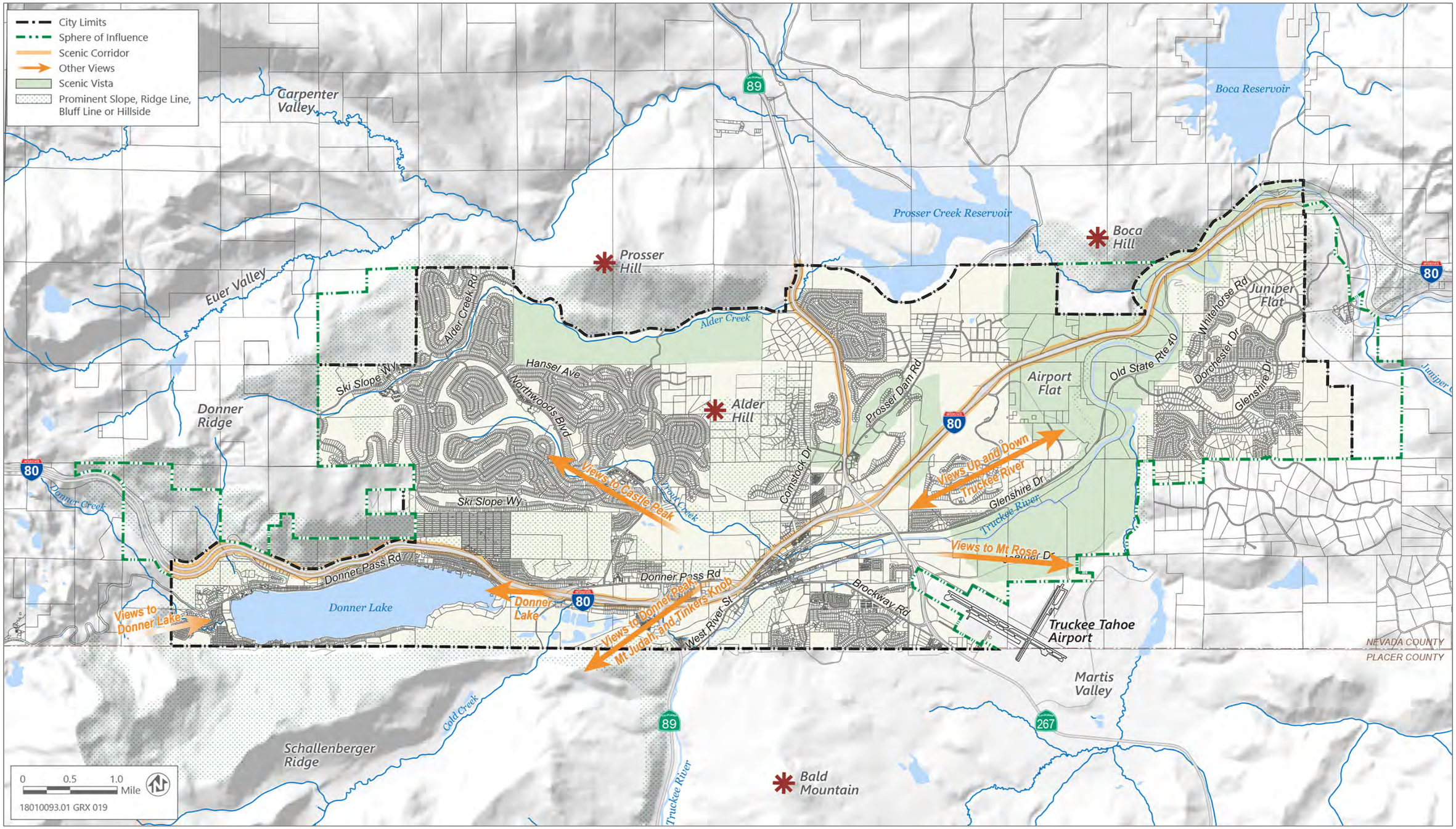
More moderate terrain, best characterized as open meadows and tree covered lowlands, consisting of rolling terrain, scattered trees, and denser stands, extends through Truckee to the east and southeast.

The Truckee River valley, traveling in a southeast to northeast direction through the town, is a natural corridor and unifying visual and physical element of the town's landscape. The river has defined the linear form of the historic Downtown and its alignment along the railroad and interstate.

Other waterways, including Donner Creek, Trout Creek, and Alder Creek, that weave through the Town are also important landscape components within Truckee and provide naturally defined corridors for open space and riparian habitat. Donner Lake, with its open waters flanked on three sides by steep, forested mountain ridges, is one of the most distinctive natural landscape elements in the town.

Open Space

Open space is integral to Truckee's landscape and community character. It is a valued resource of the Truckee community, offering a visual and physical connection to the natural environment in the form of scenic vistas and outdoor recreational access opportunities. It also provides habitat for a rich diversity of plant and animal species. This feature is critical to Truckee's community character and local and regional economy.



Source: Data downloaded from Town of Truckee in 2018

FIGURE 3-1 SCENIC RESOURCES

Scenic Resources

Figure 3-1 illustrates significant scenic resources in Truckee, including scenic vistas and open space areas, prominent slope exposures, ridge and bluff lines, and designated scenic corridors. Each of these are defining features of the town, contributing to Truckee's sense of place and community character.

Scenic Views and Vistas

Truckee has a varied topography, ranging from a low elevation of approximately 5,500 feet near Boca Reservoir to an elevation of nearly 7,500 feet in Tahoe Donner. The valleys, hillsides, and ridgelines of Truckee provide a rich array of scenic resources, with opportunities for many lookout points. Views to peaks and high mountain ridges can be experienced from many locations within the town, as shown in Figure 3-1, including from Downtown Truckee, looking to the east. Another sweeping open space vista occurs from north of the Truckee River looking south to Martis Valley.

Roadways connecting into Downtown Truckee provide a vista of the townscape set against the river valley and of forested hills flanking it. The Highway 267 Bridge, 90 feet above the valley floor, provides a scenic perspective for drivers crossing the bridge.

In general, the views and landscapes associated with the Truckee River and the numerous creeks and drainages that flow through the town are key scenic resources within the town. Other scenic resources include Donner Lake, including its shoreline, and views across Donner Lake's open waters to forested Schallenberger Ridge to the south; Donner Ridge to the north; and the Sierra crest to the west.



View of Donner Lake and its shoreline.

Scenic Corridors

There are currently two locally-designated scenic corridors in Truckee – one that encompasses the length of Interstate 80, where it passes through the Town limits, and the other a portion of State Route (SR) 89 North (Figure 3-1). The scenic corridor designation recognizes the high scenic value of the landscape along these thoroughfares and the need to protect them from encroachment of visually incompatible development and advertising signage that could impair the scenic quality within each roadway's viewshed.

The alignment of Interstate 80 and its elevation above the Truckee River valley affords numerous viewpoints to the south and southeast across the valley and beyond. The Interstate hugs the northern edge of the Downtown through central Truckee, providing important views of the town to millions of motorists that travel the highway annually.

SR 89 North, north of Prosser Dam Road, is a designated scenic corridor, in recognition of the need to protect the scenic, rural quality and character of the highway corridor. Preservation of the highway viewshed is particularly critical, in light of development allowed under the General Plan, including the Gray's Crossing Planned Community, which flanks the roadway along much of its length within the town and the Prosser neighborhoods just south of the Town limit line.



State Route 89 North is a designated scenic corridor.

Light Pollution

Light pollution refers to all forms of unwanted light in the night sky, including glare, light trespass, sky glow, and over-lighting. Views of the night sky are an important part of the natural environment, particularly for a mountain community like Truckee. Excessive light and glare can also be visually disruptive to humans and nocturnal animal species and often reflects an unnecessarily high level of energy consumption. Light pollution has the potential to become an issue of increasing concern as new development contributes additional outdoor lighting. Truckee is

threatened not only by light pollution from development within the town's own borders, but also from sky glow associated with development within the Reno/Sparks metropolitan area, about 20 miles to the northeast.

TOWN DESIGN

An understanding of community character comes, to some extent, through understanding the composite parts and building blocks of Truckee's built environment, which in addition to open space previously described, includes the centers, neighborhoods, districts, corridors, and gateways that comprise the fabric of the town, as follows:

- **Centers**. Commercial and mixed-use areas of the Town that serve as the focus for community life and commercial activity.
- **Residential neighborhoods.**: Constitutes the majority of Truckee's developed areas.
- **Employment districts.**, Include the few places in Truckee where job-generating use dominate.
- **Corridors and Gateways**. The linear features of the Town that provide both connectivity and identity to the community at its entry points.

These areas are shown on Figure 3-2. Growth in Truckee continues to expand upon these building blocks of the community.

Centers

Centers are the focal point of the Truckee community and are locations that provide points of convergence and social interaction. Truckee's existing and future centers are mapped in Figure 3-2. These include centers ranging in size and type from the Downtown, the Gateway Area, and the future Railyard Master Plan development to the smallest, which are neighborhood nodes or focal points centered on community amenities.

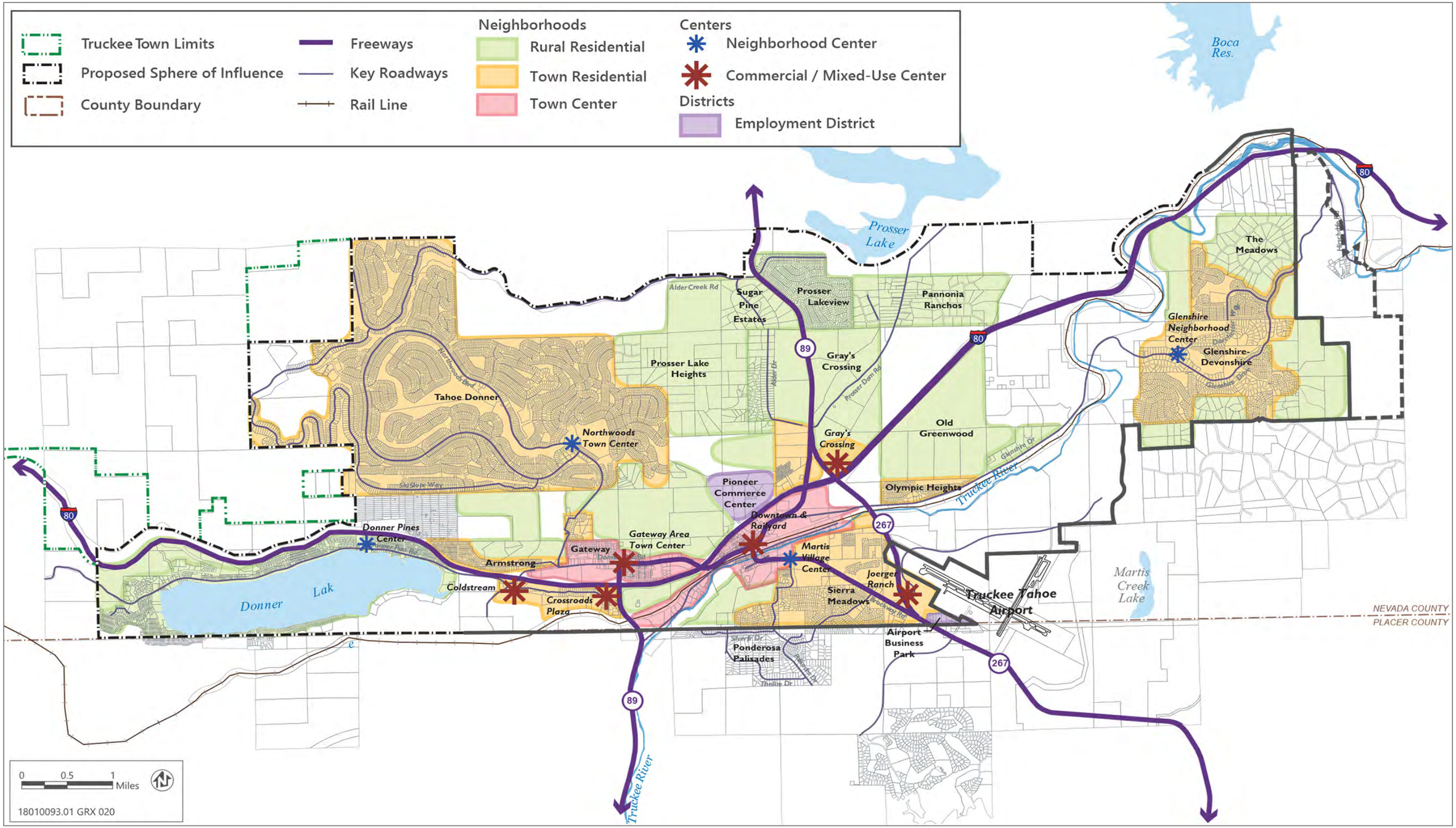
Downtown

Downtown is the historic and commercial heart of the community. Its linear form is derived by its orientation along the Truckee River and the railroad. Downtown is roughly bound by West River Street and the railroad to the south, Interstate 80 to the north, the Railyard to the east, and State Route Highway 89 South to the west. The Railyard Master Plan development will extend the Downtown further east on approximately 75 acres of land, historically occupied by railyards and lumber mills.



Commercial Row in the Downtown Core

The Downtown core consists of commercial and residential uses, many of which are housed in well-preserved historic buildings and with civic uses, such as the Visitor Center, post office, and Old Jail Museum, located prominently throughout the area. Downtown is a local and visitor attraction for its window-shopping, one-of-a-kind restaurants and stores, architecture, and historic character. The small-scale, narrow streets and modified grid pattern of Downtown, combined with the diversity of architecture and streetscape features, creates an inviting, pedestrian environment. Commercial Row which is located along a single-sided stretch of Donner Pass Road facing the railway station, is considered an important element in the Downtown. This compact assembly of historic storefront buildings, built to the edge of the public right-of-way with wide sidewalks and covered walkways, is a key center of community activity.



Source: Data downloaded from Town of Truckee and Truckee 2025 General Plan and modified by Ascent in 2018

FIGURE 3-2 NEIGHBORHOODS, CENTERS, AND DISTRCITS

Hilltop Area

The Hilltop Area is an undeveloped subarea of Downtown planned for medium-density residential, single-family residential, open space, and commercial development that is designed to create a walkable neighborhood/village with access to open space and trails connecting the community, as shown in the land use concept in Figure 3-3.

FIGURE 3-3 HILLTOP MASTER PLAN LAND USE PLAN



Source: Hilltop Master Plan, 2008

The Railyard

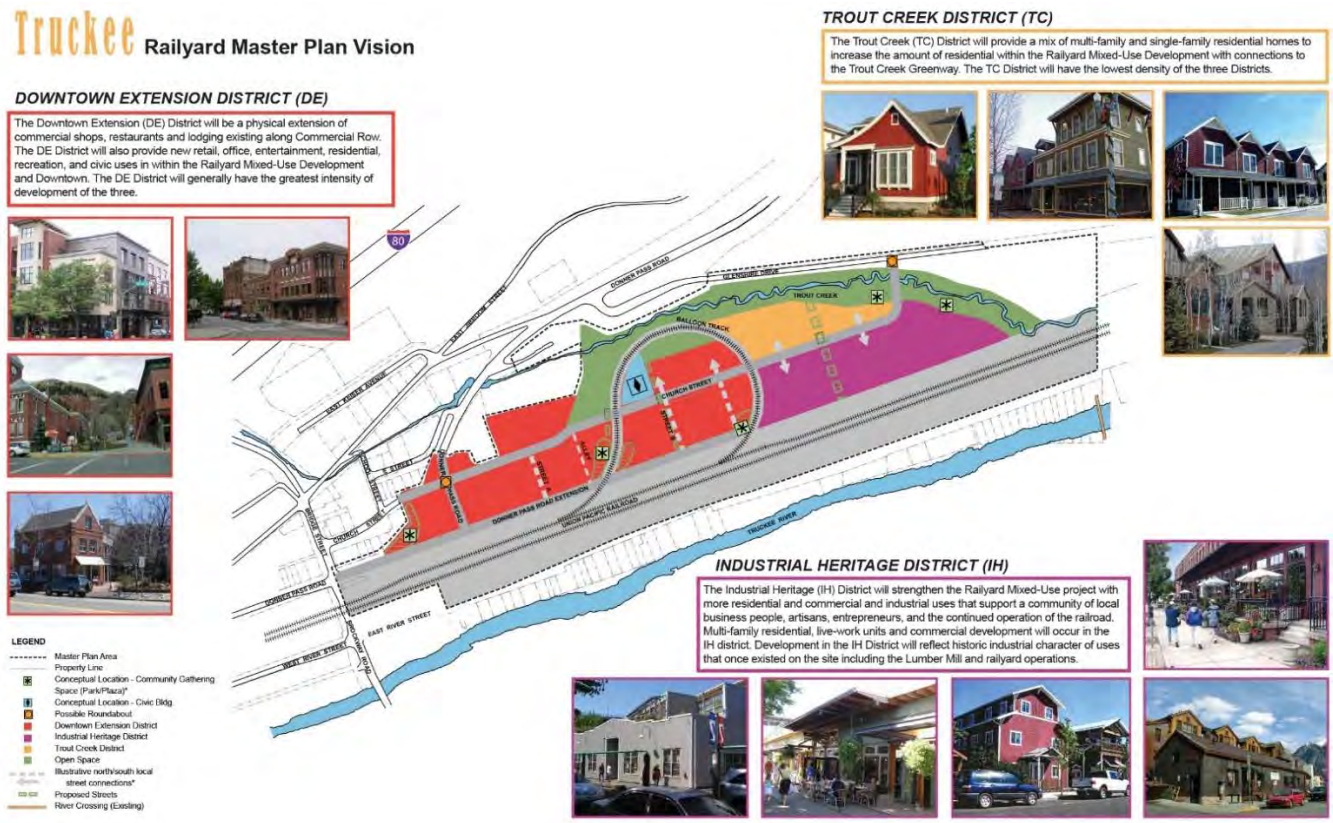
The Railyard Master Plan focuses on redeveloping the Railyard into three districts that encourage development that is designed to integrate with Downtown. As identified in Figure 3-4, these districts include the:



The Railyard Site

- **Downtown Extension District**. The DE District is designed to be a physical extension of the commercial shops, restaurants, and lodging existing along Commercial Row, but with greater densities and modern interpretation of the Town's historic character. A mixed-use development pattern, including retail, office, entertainment, residential, recreation, and civic/community uses is envisioned.
- **Industrial Heritage District.** The IH District will extend the mixed-use development pattern beyond the balloon track and support the connection with the Master Plan area with Glenshire Drive to the east. Multi-family residential, live-work and work-live units, and commercial and light industrial development, such as handcraft industries, small scale manufacturing, or metal fabrication; machine and welding shops are envisioned in the district, honoring the industrial character of uses that once existed on the site.
- **Trout Creek District**, The TC District is envisioned with primarily multi-family and single-family residential homes and a mix of complimentary uses interspersed, such as bed and breakfast inns, art studios, health and fitness facilities, retail, and accessory office space.

FIGURE 3-4 RAILYARD MASTER PLAN



Source: Truckee Railyard Mixed-Use Development Master Plan, 2016

Gateway Area Town Center

The Gateway Area is a strip commercial corridor along Donner Pass Road, between the Coldstream Road/Interstate 80 interchange and the Central Truckee Interstate 80 interchange. Businesses in the Gateway Area primarily cater to the daily shopping needs of Truckee's local residents and include a large grocery and drug store, hardware store, and a variety of smaller businesses. Local-serving uses along this corridor are reinforced with community-serving use and public facilities, including four school sites, the Tahoe Forest Hospital, fire station, Nevada County Government Center, and the Department of Motor Vehicles.



Gateway Area Town Center is an auto-oriented commercial center that serves the local community.

The Gateway Area, developed in the 1970s and 1980s, is an auto-oriented development, with retail development set back from the road and fronted by large parking areas. Numerous shopping opportunities are provided in the Gateway Area within a one-half mile walking distance of several residential areas.

Truckee Crossroads

Truckee's other existing major commercial center is the Crossroad Plaza, which includes the nearby commercial uses at the east end of Deerfield Drive and along Highway 89, provides a combination of local shopping and services, highway-oriented commercial development, a gas station, and a motel.



Truckee Crossroads provides local shopping and services and highway-oriented commercial development.

Neighborhood Centers

Neighborhood centers are small local-serving centers, typically providing between 4,000 to 6,000 square feet of commercial space, although sometimes larger when serving a broader customer base. Uses consist of convenience-oriented retail, small business offices, and residential uses. There are four primary neighborhood centers in Truckee:

- Donner Pines Center, a 4,200 square foot commercial center at the intersection of Donner Pass Road and Moraine Road.
- Glenshire Neighborhood Center, a small neighborhood center at the intersection of Glenshire Drive and Dorchester Drive.
- Northwoods Town Center, located along Northwood Boulevard in Tahoe Donner, serves Tahoe Donner residents, as well as visitors to the Tahoe Donner golf course and ski area.
- Martis Village Center, located at Brockway Road and Palisades Drive, is strategically located to serve as both a neighborhood center for the residential neighborhoods south of Downtown and to capture patronage from drive-by traffic on Brockway Road.
- The Rock, one of Truckee's newest neighborhood centers, is located on Brockway Road adjacent to the Ponderosa Golf Course and across from Sierra Meadows. The center provides a mix of office, retail, and dining.

Residential Neighborhoods

With its favored location adjacent to urban centers and multiple modes of transportation, the Truckee area has become a focal point of mountain residential development. Truckee's residential neighborhoods comprise most of the developed areas (25 percent of the land) within the Town limits, characterized with a historic downtown core and several dispersed residential subdivisions. They consist of one of two types: town residential and rural residential neighborhoods, as mapped in Figure 3-2.

Town Residential Neighborhoods

Town residential neighborhoods include Downtown, Donner Lake, Gateway, and many of the residential neighborhoods built in the 1960s and 1970s, such as Sierra Meadows and Ponderosa Palisades, Tahoe Donner, much of Glenshire/Devonshire, and Olympic Heights. These neighborhoods consist mostly of single-family homes, with some duplexes and triplexes, and a few larger multi-family developments. These neighborhoods are typically built at medium densities with winding streets and cul-de-sacs. Homes are built fronting the street and relatively close to one another. Open space is provided in the form of neighborhoods parks and greenways, and through the landscaping associated with individual properties.



Single family home in the Glenshire/Devonshire neighborhood

Donner Lake

Donner Lake is flanked along its north, west, and south sides by a series of subdivisions containing second homes, vacation rentals, and condominium developments. Donner Memorial State Park and the Tahoe Donner Association beach and marina occupy the lake's east end featuring recreational facilities that include a public beach, boat rental and launching facilities, hiking/biking trails, campground, and visitor center and museum. The Truckee Donner Parks and Recreation District operates a public beach at the lake's west end. Residential subdivisions along Donner Lake date to the 1910s. Most of these lots were developed by the mid-1950s to 1960s.

Sierra Meadows/Ponderosa Palisades

The area consists of a series of subdivisions first developed in the 1960s-1970s and comprising about 1,500 housing units on about two square miles in the south-central area of Truckee. There are no commercial services except the homeowners' association club house/pool, although the Martis Village center and The Rock both serve Sierra Meadows/Ponderosa Palisades residents.

Tahoe Donner

Tahoe Donner is a large residential area consisting of 6,200 lots spread across seven square miles and covering about 7,000 acres in northwest Truckee, developed in 1970. Most properties are second homes. Commercial services include a small convenience store/deli and several restaurants. Extensive recreational facilities include a downhill and cross-country ski area, two golf courses, two recreational facilities with pool and gym, and new "Adventure Center" that serves as a hub for miles of hiking/biking/equestrian trails.

Glenshire/Devonshire

Originally referenced as "Innisfree," the three-square mile Glenshire/Devonshire development is made up of several subdivisions along the eastern boundary of Truckee with approximately 1,500 home lots mostly occupied by full-time residents. Commercial services are contained in a small neighborhood center.

Armstrong Tract

The Armstrong Tract is located above Donner Lake and bordering the north side of I-80. It is adjacent to shopping and restaurants in Downtown Truckee.

Olympic Heights

Olympic Heights is an older subdivision dating from the 1960s-1970s that adjoins the Old Greenwood subdivision to the north and is accessed by Glenshire Drive on the south. Olympic Heights is mostly occupied by full-time residents. This neighborhood is served by on-site septic systems which limits the ability to substantially modify the density (i.e.- second units are not permitted).

Gray's Crossing

Gray's Crossing was developed during 2000s as a new luxury home subdivision south of the Prosser Area. Gray's Crossing owners have access to an 18-hole championship golf course, an extensive trail system, pool, and restaurant.

Coldstream (PC-1)

Coldstream is a planned community on 179 acres in the General Plan designated Planned Community 1 (PC-1), adjacent to Donner Memorial State Park and at a key gateway into Truckee. The community has been sensitively designed to respond to the area's scenic qualities and surrounding neighborhood uses. The community is proposed to include 300 residential units, 75 secondary units, and some retail and commercial uses that will be centered on and surrounded by over 100 acres of open space. The network of open space will be preserved as habitat for local wildlife and recreational trails will connect to the Truckee River Legacy Trail.



Coldstream planned community vision

Rural Residential Neighborhoods

The 2025 General Plan describes rural residential neighborhoods as those where the natural environment dominates over the built environment. Homes appear to be set "in the trees" and adjacent stretches of open space. Large lots balance the built environment and the landscape. Except for the connectors that serve them, roadways within rural residential neighborhoods typically lack sidewalks and are narrow winding lanes and rural roads. Rural residential neighborhoods in Truckee include the residential areas on the outskirts of Glenshire/Devonshire, such as The Meadows neighborhood; the Prosser Area (Prosser Lake Heights, Sugar Pine Estates, Pannonia Ranchos); and the Old Greenwood planned community.

Prosser Area

The Prosser Area includes a grouping of residential subdivisions (Prosser Heights/Sugar Pine Estates/Pannonia Ranchos) along the east and west sides of SR 89 in north-central Truckee.

Old Greenwood

This luxury home subdivision and golf course in northeast Truckee, developed in the early 2000s, adjoins the south side of I-80 near Airport Flats. The community includes access to a pool, tennis courts, spa, and restaurant/bar. Many of the homes in this subdivision are under fractional ownership.

Planned Residential Neighborhoods

Coldstream is a planned community on 179 acres in the General Plan designated Planned Community 1 (PC-1), adjacent to Donner Memorial State Park. The community is proposed to include 300 residential units, 75 secondary units, and some retail and commercial uses, centered on and surrounded by over 100 acres of preserved open space as habitat for local wildlife and to provide a network of open space and recreational trails, including connections to the Truckee River Legacy Trail.



Coldstream planned community vision

Employment Districts

Employment districts in Truckee are the places where non-retail job-generating uses, such as light industrial, office, warehousing, and other commercial activity are concentrated. These include the Pioneer Commerce Center and adjacent industrially designated lands and the commercial and light industrial zones located near the Truckee-Tahoe Airport. The Pioneer Commerce Center, though originally intended to provide an area for industrial and service commercial type uses, has evolved into a site with a mixture of professional offices, research and development, service commercial businesses, and more general commercial uses, including a fitness center.



Pioneer Commerce Center

The airport commercial and light industrial areas consist of a number of office, distribution, retail and professional office buildings, located just east of Highway 267 near the Placer County/Nevada County line. Truckee's Town Hall is housed within this area, sharing an office building with several corporate tenants. Development in this area is predominantly auto-oriented and reflects a variety of architectural styles. Buildings constructed in the last several years reflect the Town's high design standards expressed through the Town's (2000) adopted Development Code and subsequent amendments. Older development tends to reflect the more typical style of office and warehouse buildings found in many cities in the U.S., with limited detail, blocky facades, and prominent parking lots.



Truckee Town Hall within the airport commercial and light industrial area

Joerger Ranch Specific Plan (PC-3)

Joerger Ranch is designated as PC-3 in the General Plan. The approximately 67-acre site is located adjacent to and south of the Truckee Tahoe Airport and is subject to airport operation, noise, and land use constraints, such as limiting the amount of residential uses on the site. The Specific Plan Area is envisioned with a mix of commercial/retail, office, industrial, and workforce housing that is both local and regional serving. The plan is envisioned to be organized into three economic clusters of related businesses, suppliers, and associated land uses, including:

- **Lifestyle.** Businesses planned along the Brockway corridor that are associated with the historic mountain town character of Truckee, such as outdoor gear; health/ fitness/wellness; conservation/sustainability businesses or communities that keep Truckee competitive with adjacent ski resorts in attracting local- and community-serving uses.
- **Business Innovation.** Proposed at the northwest portion of the Plan Area, this cluster is envisioned to create a concentration of high-tech, research and development, culinary, green technology, and similar industries in a campus setting, as well as workforce housing.



Joerger Ranch Economic Clusters

- **Regional.** Proposed on lands along Soaring Way, adjacent to the airport, this cluster creates opportunities for businesses with regional-serving products and services and the potential location for large floorplate businesses that may not be appropriate or feasible elsewhere in Truckee.

Corridors and Gateways

Corridors are linear features along major thoroughfares that connect the various parts of the community. While Truckee has many corridors, there are several that specifically contribute to the visual character and quality in Truckee. Gateways are also defined as a particular type of corridor, with special status in conveying first impressions to visitors and providing a sense of arrival or transition from one place to another. Gateways provide a point of orientation into the town, guiding motorists to areas of interest and providing insights into the historical, cultural, and economic foundations of the area. Truckee's existing and future corridors and gateway are mapped in Figure 3-5.

Corridors

This section describes several other key arterial roadway corridors in Truckee, in addition to the scenic corridors, described earlier.

- **The Brockway Road Corridor.** This key arterial through town extends from the Truckee River to the intersection with Highway 267. Open space areas interspersed with residential and commercial developments are found along the length of the corridor, contributing to a varied and mixed-use character. Open spaces, including the Ponderosa Golf Course, Truckee River Regional Park, and meadowland areas, are also strung along the corridor.

  There are no sidewalks along Brockway Road, but Class I and Class II bike lanes, pedestrian crossing enhancements, and construction of landscape medians has recently been completed along the corridor, between Estates Drive and Joerger Drive to connect development along the road with the Truckee River Regional Park, the Downtown, and surrounding neighborhoods, as well as to the airport area and the planned Joerger Ranch Specific Plan area (PC-3) adjacent to Highway 267.

- **The West River Street Corridor.** This corridor connects the Downtown from Bridge Street to Highway 89 South, parallel to the Truckee River. A variety of land uses occur along West River Street, including residential, office, commercial, mixed-use, industrial, and automotive repair businesses. The Downtown River Revitalization Strategy, adopted in 2005, addresses a wide range of improvements along the corridor, including relocation of existing industrial uses, extension of commercial development and medium- and high-density housing along the corridor, new public open spaces, and opportunities to improve the physical and visual connections to the river.



The West River Street corridor consists of a mix of land uses.

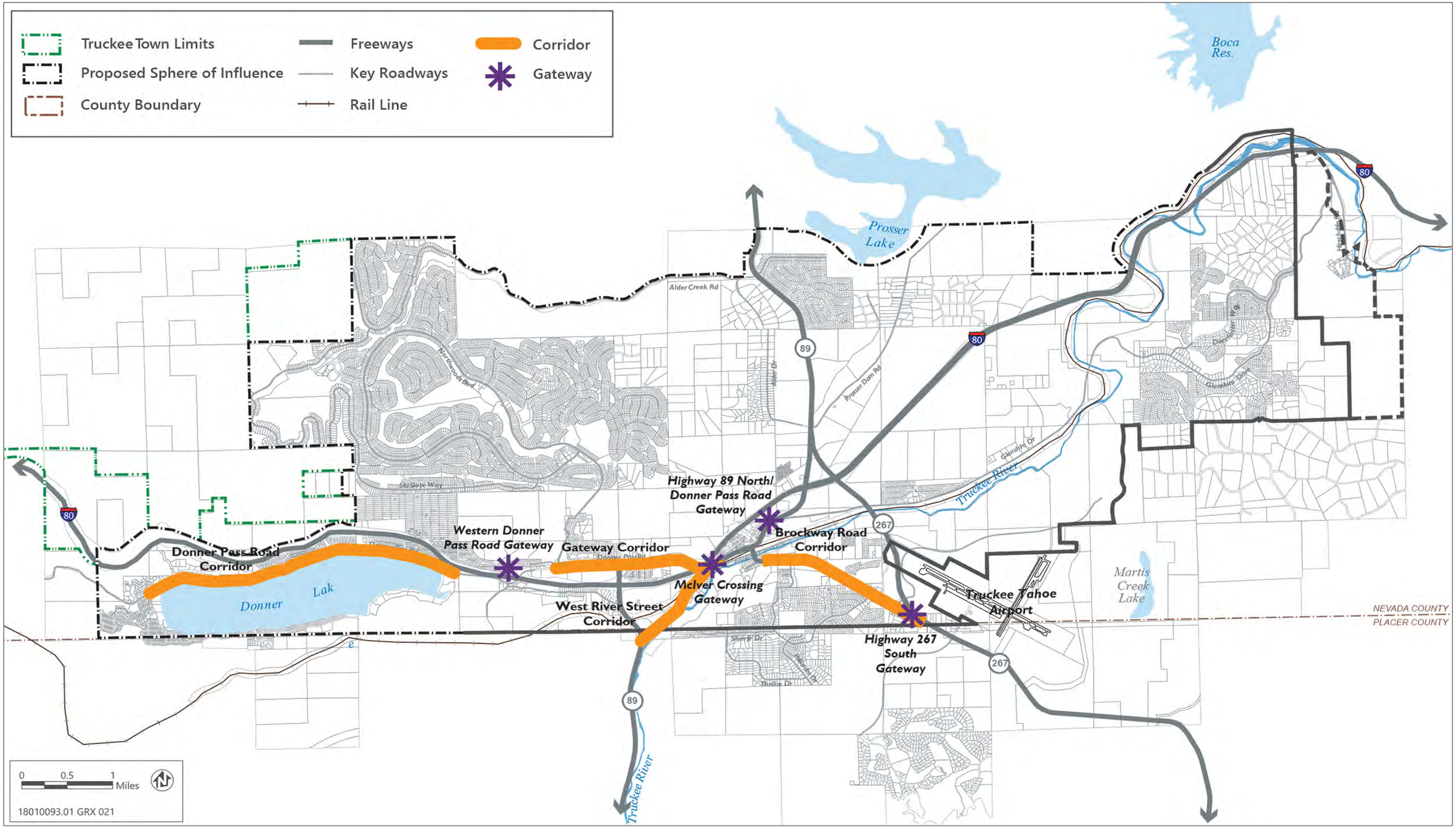
- **Donner Pass Road Corridor.** Donner Pass Road in the Donner Lake area follows the alignment of old Highway 40, connecting the Gateway Area and Downtown Truckee to Donner Summit. This road provides access to Donner Memorial State Park, public and private beaches, and boat launch areas for fishing and summer recreation. Lakeside neighborhoods have been developing in an area ranging from modest cabins and cottage to large second homes, permanent residences, and a variety of commercial establishment. This corridor is unique in its open and expansive views across Donner Lake to the mountain ridges beyond.

- **Gateway Corridor.** This corridor on Donner Pass Road connects the Gateway Area to Downtown Truckee, making it a key western gateway into the city. This corridor provides a variety of local community and regional serving uses, including the Gateway Area Town Center, described earlier, schools, the Nevada County Government Center, and the major medical center for the County with hospital, cancer center, and numerous specialty health clinics.

Gateways

Important gateways in Truckee are:

- **Highway 89 North/Donner Pass Road Gateway.** This gateway entering into central Truckee from Interstate 80 and Highway 89, along Donner Pass Road, provides an interesting perspective of Downtown as one travels downward into the river valley. With future development of the Railyard site, this gateway will increase in prominence and importance as it comes into Downtown Truckee from the west.
- **Highway 267 South Gateway.** The Brockway Road/Highway 267 is the most significant gateway in Truckee from the South. Development of the Joerger Ranch Specific Plan (PC-3) will help define the character of this gateway to create a sense of arrival at this location.
- **West River Street Gateway.** This gateway marks the entry into Downtown from the south, paralleling the alignment of the Truckee River and railway. As noted earlier, efforts to upgrade the visual character of this corridor have been initiated, which will provide an opportunity to enhance its role as a gateway.
- **Highway 89 South Gateway.** This gateway entrance from Placer County into Truckee is marked by the Mousehole railroad undercrossing. Safety improvements, such as sidewalks and the "mini Mousehole" at this location have enhanced the character of this gateway. The Sierra College campus has its primary entrance off Highway 89 on the east at this gateway.
- **Western Donner Pass Road Gateway.** The westernmost Donner Pass Road exit from Interstate 80 serves as the gateway into Truckee from the west, providing access to Donner Lake and Donner Memorial State Park to the west, and the Gateway Area to the east. It also provides a gateway to the major highway commercial area of the town. Opportunities to better define this gateway will be presented with development of the Coldstream Specific Plan (PC-1), and with implementation of streetscape improvements along Donner Pass Road, as well as with improvements to Cold Stream Road.



Source: Data downloaded from Town of Truckee and Truckee 2025 General Plan and modified by Ascent in 2018

FIGURE 3-5 CORRIDORS AND GATEWAYS

3.1.1 Regulatory Setting

LOCAL

Historic Design Guidelines

Projects within the Historic Preservation (-HP) Overlay District in Downtown Truckee are subject to the Historic Design Guidelines in Volume III of the Downtown Specific Plan. The Design Guidelines, in conjunction with the Historic Preservation development standards in the Town's Development Code and the Secretary of the Interior's Standards for the Treatment of Historic Properties, are the primary regulatory tool the Town has chosen to protect its historical heritage, resources, and old-town character, by ensuring future development is sensitive to and compatible with the historic character of the Downtown area.

The Historic Design Guidelines and Secretary of the Interior's Standards govern the review of improvements that involve additions, modification, alterations, preservation, rehabilitation, restoration reconstruction, and relocation of historic buildings, as well as, within the boundaries of the Historic Preservation Overlay District. New construction and modifications to non-historic buildings and structures are also reviewed under the Historic Design Guidelines. Unlike Historic Preservation development standards, the Design Guidelines are applied to projects with greater flexibility than zoning standards, recognizing that not all design criteria may be workable or appropriate for each project. In some cases, a guideline may need to be relaxed to accomplish another guideline that the project review body determines is more important to the specific project. The overall objective is to ensure that the intent and spirit of the Historic Preservation Overlay District Design Guidelines are followed.

The Historic Design Guidelines are applied during the land use/development permit review process as additional criteria for project review. All exterior improvements, other than paint modifications, to structures located within Truckee's Historic Preservation District, require the submittal of a Historic Design Review application to be reviewed by the Historic Preservation Advisory Commission and approved by the Community Development Director or the final review authority.

The Design Guidelines contain general guidelines for preservation and new development and special guidelines related to the differing design context of individual neighborhoods. The historic area of Downtown Truckee is divided into nine geographic "character areas," with special guidelines related to each distinct area, including:

- Brickelltown
- Bruckhaulter
- Church Street
- Railroad
- Hilltop
- Commercial District
- River
- McGlashan
- South River

3.2 Existing General Plan Land Use Designations

The Town of Truckee General Plan guides how land in the town shall be developed and used by designating each parcel for a particular use and by establishing broad development policies. Land use designations identify both the types of development (e.g., residential, commercial, industrial) that are permitted and the density or intensity of development allowed, such as the minimum or maximum number of housing units permitted on an acre of land or the amount of building square footage allowed. Figure 3-6 shows the existing 2025 General Plan map.

3.2.1 Major Findings

- Many of the land use designations provide an average density or intensity standard, rather than prescribing a minimum or maximum like many other jurisdictions. While this approach does not provide as much certainty, it provides flexibility based on environmental constraints, availability of infrastructure and public services, and provision of community benefits (e.g., affordable housing or public open space), and focuses on ensuring that new development has a similar density/intensity to existing surrounding development.
- The Town has several "Areas for Special Consideration," which are shown as Special Study Area, Planned Community, or Plan Area on the General Plan Land Use Map. The development standards for these areas are either at the discretion of the Town on a project-by-project basis or are prescribed by Specific Plans and Area Plans.

3.2.2 Existing Conditions

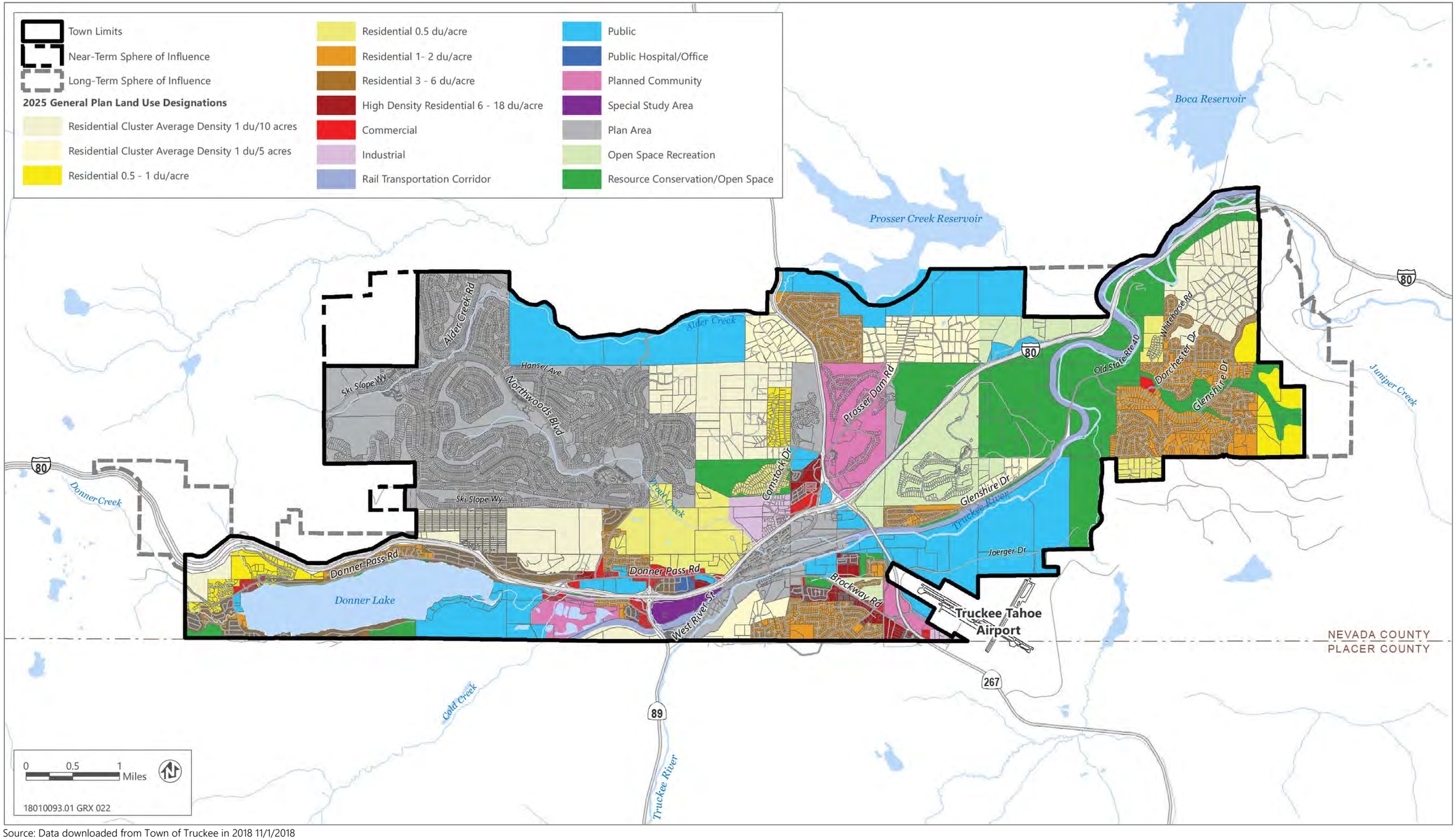
The 2025 Truckee General Plan provides land use designations that set forth the community's desired outcome for the type and intensity of land uses within Town limits. The Truckee General Plan land use designations are broad and intended to indicate the general type of activity that may occur on a site, whereas the Development Code establishes specific standards for development, such as height, setbacks, and lot coverage. The designations described in the Land Use Element align with the Land Use Map. A breakdown of the amount land per land use designation is shown in Table 3-1 below, depicted in Figure 3-6, and summarized in the following section. Land uses outside the Town limits but within the SOI are shown on a separate diagram (Figure 3-4) and described later in this section.

Table 3-1 Existing General Plan Land Use Designations Town of Truckee

Land Use Designation	Acres	Percent of Total Acreage
Residential Cluster Average Density 1du/10acres	2,160	11%
Residential Cluster Average Density 1du/5acres	812	4%
Residential 0.5 -1 du/acre	546	3%
Residential 0.5 du/acre	838	4%
Residential 1-2 du/acre	1,966	10%
Residential 3-6 du/acre	417	2%
High Density Residential 6-18 du/acre	260	1%
Commercial	209	1%
Industrial	180	1%
Rail Transport Corridor	432	2%
Public	3,058	15%
Public/Hospital/Office	22	0%
Planned Community	809	4%
Special Study Area	75	0%
Open Space Recreation	1,011	5%
Resource Conservation/ Open Space	2,327	12%
Plan Area[1]	4,827	24%
Total	**19,946**	**100%**

1. The Town has designated three areas as Plan Area in the General Plan, which are the Downtown Specific Plan Area, the Gray's Crossing Specific Plan Area, and Tahoe Dinner Plan Area. A Specific Plan or Area Plan exists for each of these areas and provides detailed land use mapping.

Source: Town of Truckee GIS, October 2018.



Source: Data downloaded from Town of Truckee in 2018 11/1/2018

FIGURE 3-6 EXISTING (2025) GENERAL PLAN LAND USE DESIGNATIONS

Many of the land use designations provide an average density or intensity for the entire town, rather than prescribing a minimum or maximum. This approach provides flexibility for individual projects to take outside considerations into account, including:

- Environmental constraints such as steep slopes and wetlands;
- Availability of infrastructure and public services such as sewer, public water, and public roads, and proximity to existing developed areas; and
- Provision of community benefits (e.g., affordable housing or public open space).

This approach also focuses on ensuring that new development has a similar density/intensity to existing surrounding development.

RESIDENTIAL LAND USE DESIGNATIONS

As described in the 2025 General Plan, development within all residential land use designations must be clustered. Clustered residential uses are those located on a portion of a site, with the remainder of the site essentially free of development and largely devoted to uses that do not involve structures or significant paved areas. Clustering is intended to protect important resource areas, to avoid areas with significant hazards, and to maximize preservation of open space. The type, location, and quality of open space areas preserved through clustering is expected to be an integral and primary element in the overall site planning for a residential project and may necessitate design that includes smaller units or lot sizes to accommodate clustering.

Residential Cluster - 5 acres (RC-5) and 10 acres (RC-10)

The Residential Cluster land use designation applies to areas subject to development constraints including steeper slopes and limited availability of infrastructure and services, where clustered development is appropriate, and to lands already subdivided into lots of 4 to 15 acres.

The Town has applied the RC-5 designation to subdivisions that have existing lots in the four- to eight-acre size range, and to lands which would be appropriate for clustered low-density development, such as the area west? of the Sierra Meadows subdivision.

The Town has applied the RC-10 designation to subdivisions that have existing lots in the 8 to 15-acre size range, and to areas that would be appropriate for clustered development in this density range, such as the area between Tahoe Donner and Highway 89 North.

The Town requires new subdivisions outside of existing subdivided areas under the RC-5 and RC-10 designations to cluster development away from environmentally sensitive or constrained development areas, to minimize infrastructure costs and minimize environmental impacts, and to maximize open space preservation. As noted above, policies relating to clustered development are applicable to development in areas under the RC-5 and RC-10 designation.

This designation also allows further subdivisions near existing subdivisions such as Sugar Pine Estates. Clustering concepts may not be possible to implement in areas which are already subdivided with lots less than 20 acres in size, although every effort should be made to do so.

Land Uses Allowed: This designation allows clustered residential uses.

Density/Intensity: Residential uses are allowed at an average density of one dwelling unit per five acres (for RC-5) or an average density of one dwelling unit per 10 acres (for RC-10).

Residential (RES)

This land use designation applies to areas of existing residential land uses and to areas which, based on their proximity to existing residential areas, are determined appropriate for new clustered residential development.

Land Uses Allowed: Land uses allowed in this designation include all residential uses, including home occupations. Neighborhood-serving commercial uses are also allowed in this designation where existing commercial uses directly abut single-family residential uses and adequate buffers are not available.

Density/Intensity: For undeveloped areas, densities ranging from 0.5 to 6 dwelling units per acre. For developed areas, the density applied to new infill development shall have densities similar to those of the existing surrounding development.

A minimum density of 50 percent of the maximum density identified in the Land Use Map must be achieved in all new development in the RES designation unless such development would conflict with other General Plan goals and policies. For example, the minimum allowed development density in areas designated RES-4 would be two dwelling units per acre. The Land Use Map divides the RES designation into the four sub-categories listed below:

- Residential 0.5 -1 du/acre
- Residential 0.5 du/acre
- Residential 1-2 du/acre
- Residential 3-6 du/acre

High Density Residential (RH) 6-18 du/acre

This land use designation applies to residential areas near existing developed areas and to infill development areas with access to community services and existing infrastructure.

Land Uses Allowed: This land use designation allows higher density single and multi-family residential uses. Limited neighborhood commercial and small office uses are also allowed in this designation where appropriate, as specified in Land Use Element Policy 5.2, which states:

> *Allow transitional uses such as office/professional in areas where existing commercial uses directly abut single-family residential uses and adequate buffers are not available, and permit neighborhood serving commercial uses in residential land use designations. These uses can be found consistent with the residential land use designation when they are applied based upon these circumstances and when it is found that adequate roads and other infrastructure are available to serve all uses.*

Density/Intensity: Residential densities ranging from six to 18 dwelling units per acre are allowed. A minimum density of six units per acre must be achieved in all new development in the RH designation, unless such development would conflict with other General Plan goals and policies.

COMMERCIAL AND INDUSTRIAL LAND USE DESIGNATIONS

The Town intends for the land use designation under this heading to provide opportunities for a diverse range of industrial and commercial uses, employment opportunities, and to serve the commercial and service needs of residents and guests.

Commercial (C)

The Town has applied this land use designation to existing and planned areas of commercial uses. The Town has applied the designation based on location of existing commercial uses and the suitability of areas for places for commercial uses in areas close to the Town core.

Land Uses Allowed: Land uses allowed in this designation are the full range of commercial uses, including retail, offices, hotel/motel/inn uses, service commercial, mixed commercial (office, retail, service)/residential uses, and large multi-family residential development. Live-work residential uses are also permitted in this designation.

Density/Intensity: An average FAR of 0.20. Residential uses are allowed at densities ranging from four to 12 dwelling units per acre. A minimum density of six dwelling units per acre must be achieved for all stand-alone residential development within the Commercial designation.

Industrial (IND)

The Town has applied this land use designation to areas with existing industrial uses and areas deemed appropriate for new industrial development. Sites determined appropriate for new industrial development are based on their proximity to existing industrial development, major transportation facilities, and their distance from incompatible land uses. Additional lands, beyond those where existing industrial development is located, are designated Industrial to provide appropriate places for relocation of industrial uses now located near Downtown along the Truckee River, and to accommodate projected industrial growth.

Land Uses Allowed: This land use designation allows all industrial uses, including manufacturing, processing, distribution, and storage. Non-industrial uses, including commercial uses, are also allowed in this designation, if they demonstrate that they directly support the primary industrial use. Residential uses are permitted in the context of providing live/work opportunities and employee housing.

Density/Intensity: An average FAR of 0.2.

Rail Transportation Corridor (RTC)

This land use designation includes all areas within the Union Pacific Railroad right-of-way outside of the Downtown Specific Plan Area.

Land Uses Allowed: This land use designation allows railroad operations and facilities, surface and subsurface utility lines, and land uses allowed immediately adjacent to the respective side of the railroad right-of-way.

Density/Intensity: An average FAR of 0.2.

PUBLIC AND QUASI-PUBLIC LAND USE DESIGNATIONS

The Town intends for the land use designations under this heading to provide opportunities for a wide range of public and quasi-public uses, including local and County government services, public parks, educational facilities, and facilities associated with provision of community services and infrastructure.

Public (PUB)

The Town has applied this land use designation to areas under public ownership by local, regional, State, and Federal government agencies.

Land Uses Allowed: This land use designation allows public parks and public facilities, including recreational facilities, government offices, schools and educational facilities, and mining where appropriate and compatible with adjacent and affected public uses.

Density/Intensity: An average FAR of 0.2.

Public Hospital/Office [PUB (H/O)]

The Town has applied this land use designation to areas occupied by the Tahoe Forest Hospital, associated private offices, and public offices in the same area, as well as existing residential uses within the immediate vicinity of the facilities. It also applies to the area immediately west of the hospital, to allow for possible expansion of the hospital and/or development of new medical office uses in this area.

Land Uses Allowed: This land use designation allows hospital facilities and associated and related public and private offices, along with some residential uses.

Density/Intensity: An average FAR of 0.2.

OPEN SPACE LAND USE DESIGNATIONS

The purpose of the land use designation under this heading is to preserve Truckee's important open space areas and the key benefits they provide to the community in terms of natural resources, preservation of biological resources, passive and active recreation, and preservation of scenic values.

Resource Conservation/Open Space (RC/OS)

The Town has applied this land use designation to areas containing significant natural resources, including forest and rangeland; bikeways, trails, and public areas with access to the Truckee River; land with environmentally sensitive features such as important wildlife habitat, wetlands, and wildlife movement corridors; areas with scenic vistas; and areas with important mineral resources.

Open Space and Recreation (OSR)

The Town has applied this land use designation to areas where developed recreational uses would be compatible with the natural resources in the area. The Town intends for this designation to minimize suburban and rural residential sprawl; to protect significant vistas, wildlife movement corridors, and biological resource areas; and to accommodate recreational uses. Lands designated OSR serve as a buffer between the more intensive development in the Gray's Crossing Specific Plan Area and the RC/OS uses in the eastern portion of town. This designation differs from the RC/OS designation in that it allows for more intensive, clustered recreational/residential development.

Land Uses Allowed: This land use designation allows recreational uses that are compatible with the natural surroundings, such as skiing, camping, existing and currently approved golf courses, horseback riding, as well as clustered residential or lodging uses.

Density/Intensity: Any proposed development in this land use designation, including residential, non-residential, and recreational facilities, such as campgrounds and resort ranches, shall preserve at least 90 percent of the land area on the subject parcels as open space. Acceptable uses in such open space areas include those that do not involve structures or large paved areas, such as primitive campgrounds without facilities, picnic areas, trails, equestrian corrals, and other non-enclosed structures. The open space area requirement may be reduced below 90 percent if the proposed development substantially furthers other General Plan goals, policies, and/or implementing actions.

Residential uses are allowed at an average density of one dwelling unit per 10 acres. Residential uses are required to be clustered in small defined areas so as to preserve open space. Non-residential uses found to be compatible with maintaining open space values, as well as residential uses are permitted within this designation. An average FAR of 0.2 shall apply to non-open space lands. If non-residential land uses are developed in association with residential development, the total number of permitted residential units is to be reduced by a ratio of one unit per 8,712 square feet of non-residential development. This requirement does not apply in cases where the proposed residential units promote mixed-use development goals or provide affordable or workforce housing.

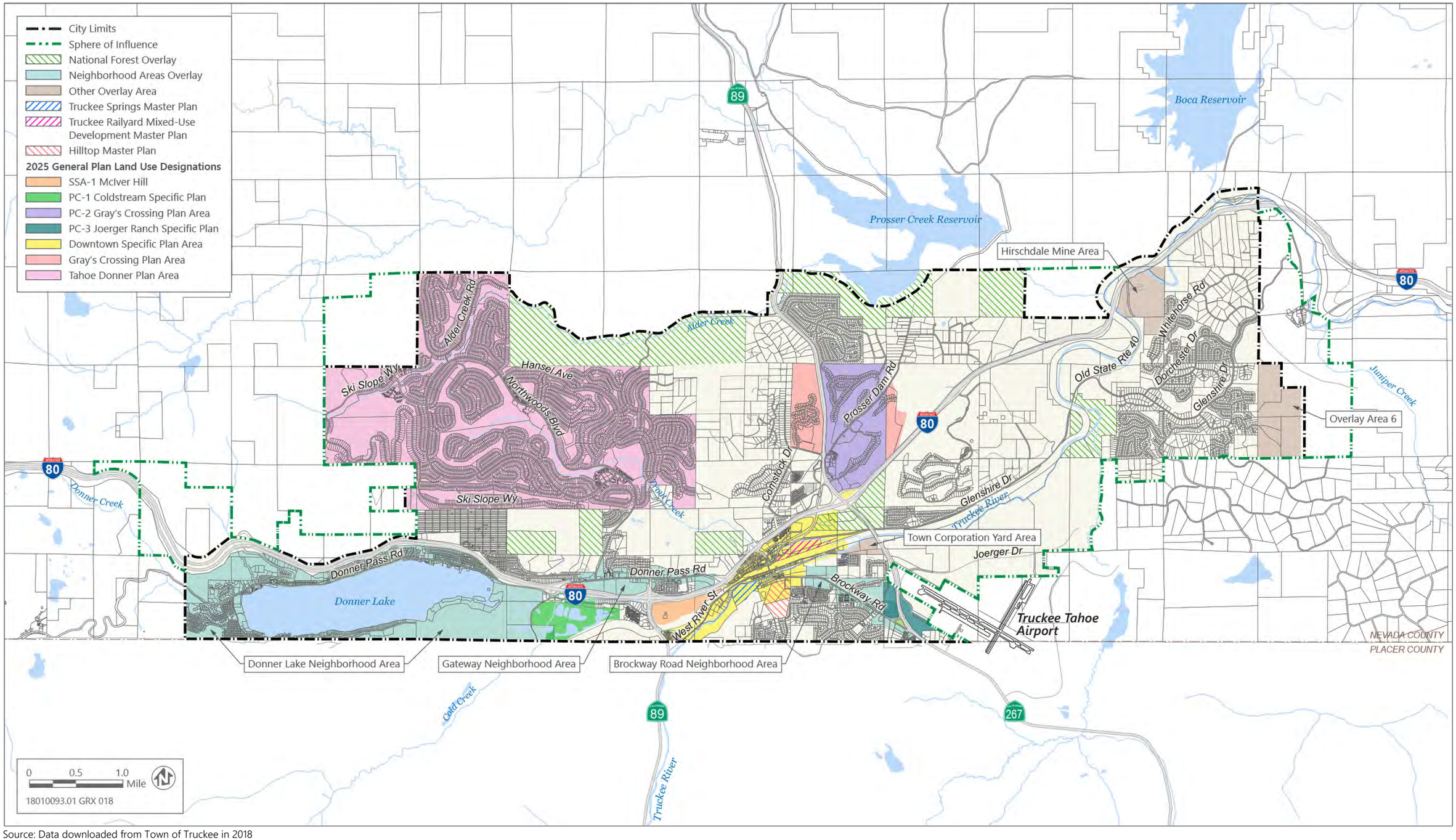
AREAS FOR SPECIAL CONSIDERATION

The General Plan Land Use Map also includes several areas for special consideration when planning for future development, which are identified in Figure 3-7 and described in more detail below.

Special Study Areas

One Special Study Area (McIver Hill: SSA-1) was established in the 2025 General Plan as a site for future study. The McIver Hill (SSA-1) area covers 83 acres and is located at the southeast corner of the intersection of Interstate 80 and Highway 89 South.

Since the 2025 General Plan's adoption, Sierra College was constructed within this area and no further special consideration is needed.



Source: Data downloaded from Town of Truckee in 2018

FIGURE 3-7 AREAS FOR SPECIAL CONSIDERATION

Land Uses Allowed: While the Town requires additional evaluation of the area before permitting development, land uses allowed in this area may include institutional uses, including a community college campus; open space for passive recreation, preservation of habitat, and scenic values; and certain commercial uses. These commercial uses may include limited retail development uses associated with an educational institution, an office park, or a destination resort. The Town may also permit limited clustered residential uses.

Density/Intensity: A maximum development density of 50 dwelling units and intensity of 80,000 square feet of commercial or institutional uses.

Planned Communities

The Town has designated three planned communities: Teichert Coldstream site (PC-1), Gray's Crossing (PC-2), and the Joerger Site (PC-3). The Town has adopted specific plans for all three areas, which are described in Section 3.4, below. All three plans have been adopted and have either been developed, such as Gray's Crossing, or have land use entitlements for specific projects that are anticipated to initiate construction in 2019.Development within these areas must be consistent with its respective specific plan pursuant to Government Code Section 65450 - 65457.

Plan Areas

In addition to Planned Community Areas, the Town has designated two plan areas: The Downtown Specific Plan Area and the Tahoe Donner Plan Area. A specific plan or area plan exists for each of these areas and provides detailed land use mapping, goals, and policy direction. The Tahoe Donner Plan Area designation is for the existing Tahoe Donner community. Buildout of the Tahoe Donner planned community is estimated to result in a total of 7,000 dwelling units and 70,000 square feet of non-residential uses, which would be mostly recreational facilities.

See discussion of Downtown Specific Plan in Section 3.4.

Overlay Designations

The 2025 General Plan includes seven overlay designations, shown on Figure 3-7:

- Three Neighborhood Areas: Donner Lake, Gateway, and the Brockway Road Corridor.
- Three additional sites where specific additional policy guidance for development applies.
- Lands throughout Truckee that are under the ownership of the United States Forest Service.

Donner Lake Neighborhood Area

The Donner Lake Neighborhood Area has been designated to address the unique mix and character of land uses in the area surrounding Donner Lake.

Land Uses Allowed: Land uses allowed in this designation are residential, commercial, mixed residential/commercial uses, and public/institutional uses.

Density/Intensity: Residential densities within this designation range from 0.5 to 6 dwelling units per acre.

Gateway Neighborhood Area

The Town has applied the Gateway Neighborhood Area overlay designation in recognition of the role of the Gateway Area as a central hub of the community because of its rich mixture of residential, commercial, and public uses. The focus of the Gateway Neighborhood Area is the Donner Pass Road corridor, which is one of the most important thoroughfares in Truckee. The 2025 General Plan contains specific policies for this area to enhance its character, livability, walkability, and safety for pedestrians and cyclists to make the area a true town center for Truckee.

Land Uses Allowed: Land uses allowed in this designation are those uses permitted in the underlying land use designations.

Density/Intensity: Density/intensity standards are based on the underlying land use designations.

Brockway Road Neighborhood Area

The Town has applied the Brockway Road Neighborhood Area designation to the Brockway Road Corridor, in recognition of this important thoroughfare as a key gateway to Truckee from the south. It also recognizes the potential for significant change in this area with conversion of the roadway from a State Highway to a local road, following the completion of the Highway 267 Bypass. The 2025 General Plan contains specific policies for this area to preserve and improve its character, including its open qualities that provide a transition from developed areas to open space, status as a town gateway, and use as a bicycle and pedestrian route.

Land Uses Allowed: Allowable land uses in this designation are those uses permitted in the underlying land use designations.

Density/Intensity: Density/intensity standards are based on the underlying land use designations.

Town Corporation Yard Area

This designation is applied to the area around the existing corporation yard, in consideration of the possible cessation of use of this site as a maintenance and equipment facility. The 2025 General Plan contains specific policies for this area to respect the mix of uses in the area and immediately adjacent to the area to limit incompatibility conflicts.

Land Uses Allowed: Limited Public uses are permitted within this Overlay Area, including a Town or Special District maintenance or equipment yard and open space recreation uses.

Density/Intensity: Public facilities are allowed at an average FAR of 0.2.

Hirschdale Mine Site

The 2025 General Plan identifies the Hirschdale Cindercone Mine, which is located just to the west of Glenshire, adjacent to the railroad corridor, Truckee River, and Interstate 80. The 2025 General Plan contains a policy to establish that the residential density standards on the General Plan Land Use Map only apply to unmined areas,

Overlay Area 6

The 2025 General Plan also identifies Overlay Area 6, which includes an area between Glenshire and the eastern Town limit. The 2025 General Plan contains a policy to require that a planned development is adopted for all of the properties in the area before the Town can approve a tentative map or subdivision.

National Forest [NF]

The Town has applied the National Forest overlay designation to lands under the jurisdiction of the United States Forest Service (USFS). In the areas with the NF designation that the Town has identified potential for disposal by the USFS, the Town has applied an underlying designation to express the Town's intent for future land uses should they enter private ownership.

Land Uses Allowed: Land uses allowed in this designation are those uses permitted in the underlying land use designations.

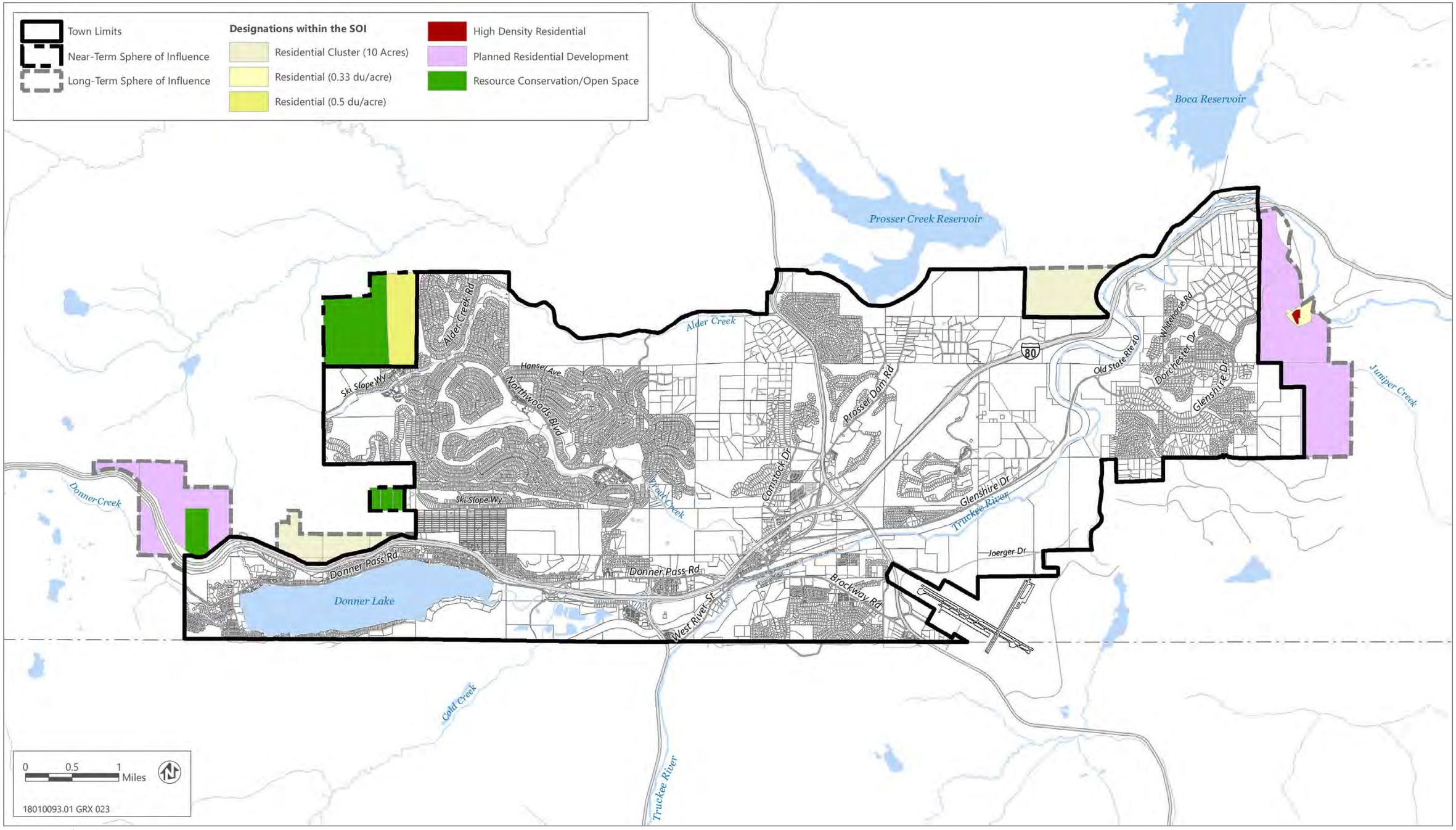
Density/Intensity: Density/intensity standards are based on the underlying land use designations.

Designations for Land Outside of Town Limits and within the SOI

The Town has designated land outside of Town limits and within the SOI as Planned Residential Development (PRD), Resource Conservation/Open Space (RC/OS), Residential Cluster 10 (RC-10), and Residential (RES) (see Figure 3-8).

Planned Residential Development (PRD)

The PRD designation is unique to the area outside of Town limits and within the SOI and is intended to recognize the development intensities established by the Nevada County General Plan. The intent of this land use designation is to allow clustered residential development with supporting commercial uses while preserving land in undeveloped open space. A planned development must be approved before subdivision or development of the property. The Town will use the planned development approval process to implement Town General Plan policies including, but not limited to, protection of steep slopes, drainage courses, wetlands, key wildlife habitat, sensitive view corridors, and other environmentally sensitive areas.



Source: Town of Truckee, 2018.

FIGURE 3-8 LAND USES WITHIN THE SPHERE OF INFLUENCE

Land Uses Allowed: Land uses allowed in this designation are clustered residential uses. Commercial uses supporting clustered residential development and residential recreational uses. Clustered residential uses are those located on a portion of a site, with the remainder of the site preserved in open space. Clustering shall be planned so as to leave areas of significant resources or hazard in open space and to maximize preservation of open space areas.

Density/Intensity: Density/intensity standards shall be established through the planned development. The 2025 General Plan establishes the maximum number of dwelling units and the types of development that may be considered through the planned development:

- Planned Residential Development 1 (the western area within the SOI): The land use designation allows for a maximum of 38 clustered residential units. Design issues include avoidance of steep slopes, wildlife movement corridors, protection and restoration of creeks and drainages, and protection of scenic vistas.
- Planned Residential Development 2 (the eastern area within the SOI): The land use designation allows for a maximum of 275 clustered residential units and approximately 10 acres of neighborhood commercial uses. Design issues include establishing an appropriate relationship with the adjacent residential areas, wildlife movement corridors, protection of creeks and drainages, and ridge line protection.

3.2.3 Regulatory Setting

STATE

General Plan Law

California Government Code Section 65300, et al., regulates the substantive and topical requirements of general plans. State law requires each city and county to adopt a general plan "for the physical development of the county or city, and any land outside its boundaries which bears relation to its planning." The California Supreme Court has called the general plan the "constitution for future development." The general plan expresses the community's development goals and embodies public policy relative to the distribution of future land uses, both public and private.

3.3 Existing Zoning

This section describes the Town's zoning ordinance, which is referred to as the Development Code and is contained in Title 18 of the Municipal Code. Zoning is the primary tool used to implement the General Plan. A major difference between the Town's General Plan and the Development Code is that the General Plan provides broad guidance on the location, type, and density of new growth and development over a long-term planning horizon, while the Development Code provides detailed development and use standards for each parcel. The Development Code divides the community into zoning districts and specifies the uses that are permitted, conditionally permitted, or prohibited within each district. Each zoning district includes development standards that are intended to protect and promote the health, safety, and general welfare of the community and to implement the policies of the General Plan. In 2018, the Town is in the process of updating the Development Code.

3.3.1 Major Findings

- About one-half of the land within town limits is zoned for residential uses. Of these residentially-zoned lands, over 95 percent are zoned for single-family residential.
- About 25 percent of the land is zoned for resource conservation, open space, and recreation uses.
- Approximately 18 percent of land is zoned for public facilities. Much of this area is land is open space or other undeveloped land under public ownership.

- Less than 3 percent of land is zoned for commercial or manufacturing uses.
- The Zoning Code includes several provisions and incentives that allow for and encourage increased densities in residential zones. In multifamily zones, the allowed number of dwelling units is based on the number of bedrooms within each unit, which encourages smaller and more affordable multifamily units. Other provisions in the code allow for increased density for affordable housing (State density bonus), sites within preferred infill areas (currently identified as an area along Donner Pass Road), and projects that provide community benefits such as public open space or enhanced public facilities.

3.3.2 Existing Conditions

The following section describes the zoning districts established by the Town of Truckee Development Code. A breakdown of the amount land per zone is shown in Table 3-2 below, depicted in Figure 3-9, and summarized in the following section.

Table 3-2 Zoning Town of Truckee

Zone	Acres	Percent of Total Acreage
Residential Districts		
Rural Residential District (RR)	3,573.5	17.9%
Single-Family Residential (RS)	6,428.8	32.2%
Multi-Family Residential District (RM)	354.1	1.8%
Downtown Single-Family Residential District (DRS)	27.9	0.1%
Downtown Medium-Density Residential District (DRM)	28.6	0.1%
Downtown High Density Residential District (DRH)	50.7	0.3%
Commercial and Manufacturing Zoning Districts		
Neighborhood Commercial District (CN)	62.7	0.3%
General Commercial District (CG)	177.0	0.9%
Highway Commercial District (CH)	15.3	0.1%
Service Commercial District (CS)	34.7	0.2%
Manufacturing/Industrial District (M)	105.7	0.5%
Downtown Mixed Use District (DMU)	37.7	0.2%
Downtown Commercial District (DC)	20.0	0.1%
Downtown Visitor Lodging District (DVL)	15.0	0.1%
Downtown Manufacturing/Industrial District (DM)	77.3	0.4%
Special Purpose Districts		
Resource Conservation (RC)	1,771.7	8.9%
Open Space (OS)	527.2	2.6%
Recreation (REC)	2,581.9	12.9%
Public Facilities (PF)	3,658.3	18.3%
Planned Community (PC)	135.1	0.7%
Downtown Master Plan (DMP)	100.7	0.5%
Downtown Railroad (DRR)	39.1	0.2%
Planned Community 1 – Coldstream Specific Plan[1]		
Lakeside Residential (LR)	37.5	0.2%

Table 3-2 Zoning Town of Truckee		
Zone	Acres	Percent of Total Acreage
Village Green Residential (VGR)	17.1	0.1%
Village Mixed-Use Commercial (MUC)	8.9	0.0%
Planned Community 3 – Joerger Ranch Specific Plan		
Lifestyle Commercial (CL)	4.9	0.0%
Regional Commercial (CR)	16.3	0.1%
Manufacturing/Industrial (M1)	9.4	0.0%
Business Innovation Zone (BIZ)	10.8	0.1%
Open Space Protected (OS-P)	21.9	0.1%
Total	**19,953.8**	**100%**

Source: Town of Truckee GIS, October 2018.

Notes: [1] Coldstream Specific Plan (PC-1) also includes 7.0 acres of Recreation and 108.6 acres of Open Space, which are included in the acreage for the Recreation and Open Space zones above.

RESIDENTIAL DISTRICTS

Rural Residential District (RR)

The purpose of this district is to provide for rural living, including the keeping of animals, with supporting corals and barns. The parcels in this district are appropriate for clustered infill development away from environmentally sensitive areas and open space preservation. The density of development for this zoning district generally includes properties with a minimum area of five acres for each dwelling unit. The RR zoning district implements the Residential Cluster - 5 acres and 10 acres, Residential, and Open Space Recreation land use designations of the General Plan.

Single Family Residential District (RS)

The purpose of this district is to provide for residential and residential clustered development. Allowable densities range from 0.5 to 4.0 dwelling units per acre. The RS zoning district implements the Residential, Residential Cluster, Open Space Recreation, Public (Hospital/Office), and Planned Community land use designations of the General Plan.

Residential Multi-Family District (RM)

The purpose of this district is to provide for multi-family residential uses. Appropriate densities range from four to 18 housing units per acre. The RM zoning district implements the Residential, High Density Residential, and Planned Community land use designations of the General Plan.

Downtown Single-Family Residential District (DRS)

This district applies to areas in the Downtown Study Area with existing residential uses or that are appropriate for new single-family infill and clustered development. Allowable densities range from one to five dwelling units per acre. The DRS zoning district implements the Single-Family Residential land use designation of the Downtown Specific Plan.

Downtown Medium Density Residential District (DRM)

This district applies to areas in the Downtown Study Area with existing residential uses or that are appropriate for medium-density infill residential and clustered single family and multifamily development. The maximum allowable density is 14 dwelling units per acre. The DRM zoning district implements the Single-Family Residential land use designation of the Downtown Specific Plan.

Downtown High-Density Residential District (DRH)

The purpose of this district is to provide for multifamily residential uses. The maximum allowable density is 24 dwelling units per acre. The DRH zoning district implements the High Density Residential land use designation of the Downtown Specific Plan.

The Zoning Code includes several provisions and incentives that allow for and encourage increased densities in residential zones. In multifamily zones (RM, DRM, and DRH), the allowed number of dwelling units is based on the number of bedrooms within each unit. A three-bedroom unit is counted as one dwelling unit, while a two-bedroom unit is counted as 0.8 units, a one-bedroom unit is 0.67 units, and a studio counts as 0.5 units. This encourages smaller and more affordable multifamily units. Other provisions in the code allow for increased density for affordable housing (State density bonus), sites within preferred infill areas (currently identified as an area along Donner Pass Road), and projects that provide community benefits such as public open space or enhanced public facilities.

COMMERCIAL AND MANUFACTURING DISTRICTS

Neighborhood Commercial District (CN)

This district is intended to provide areas appropriate for retail sales, offices, and services serving the daily needs of nearby residents. This district may also accommodate mixed-use developments with residential and commercial uses. The development standards and permit requirements of the CN district are intended to create a pedestrian-oriented environment. The floor area ratio for commercial development is 0.20, and the density for residential development within the CN district is four dwelling units per acre for mixed use developments and 12 dwelling units per acre for stand-alone multifamily residential projects. The CN zoning district implements the Residential, Residential High Density, Commercial, Public (Hospital/Office), and Planned Community land use designations of the General Plan.

General Commercial District (CG)

This district applies to areas appropriate for a wide range of commercial uses including retail trade and service uses such as restaurant, office, and personal service uses. This district may also accommodate mixed-use developments with residential uses. The floor area ratio for commercial development is 0.20, and the density for residential development is four dwelling units per acre for mixed-use developments and 12 dwelling units per acre for stand-alone multi-family residential projects. The CG zoning district implements the Commercial and Public (Hospital/Office) land use designations of the General Plan and the Commercial land use designation of the Downtown Specific Plan.

Highway Commercial District (CH)

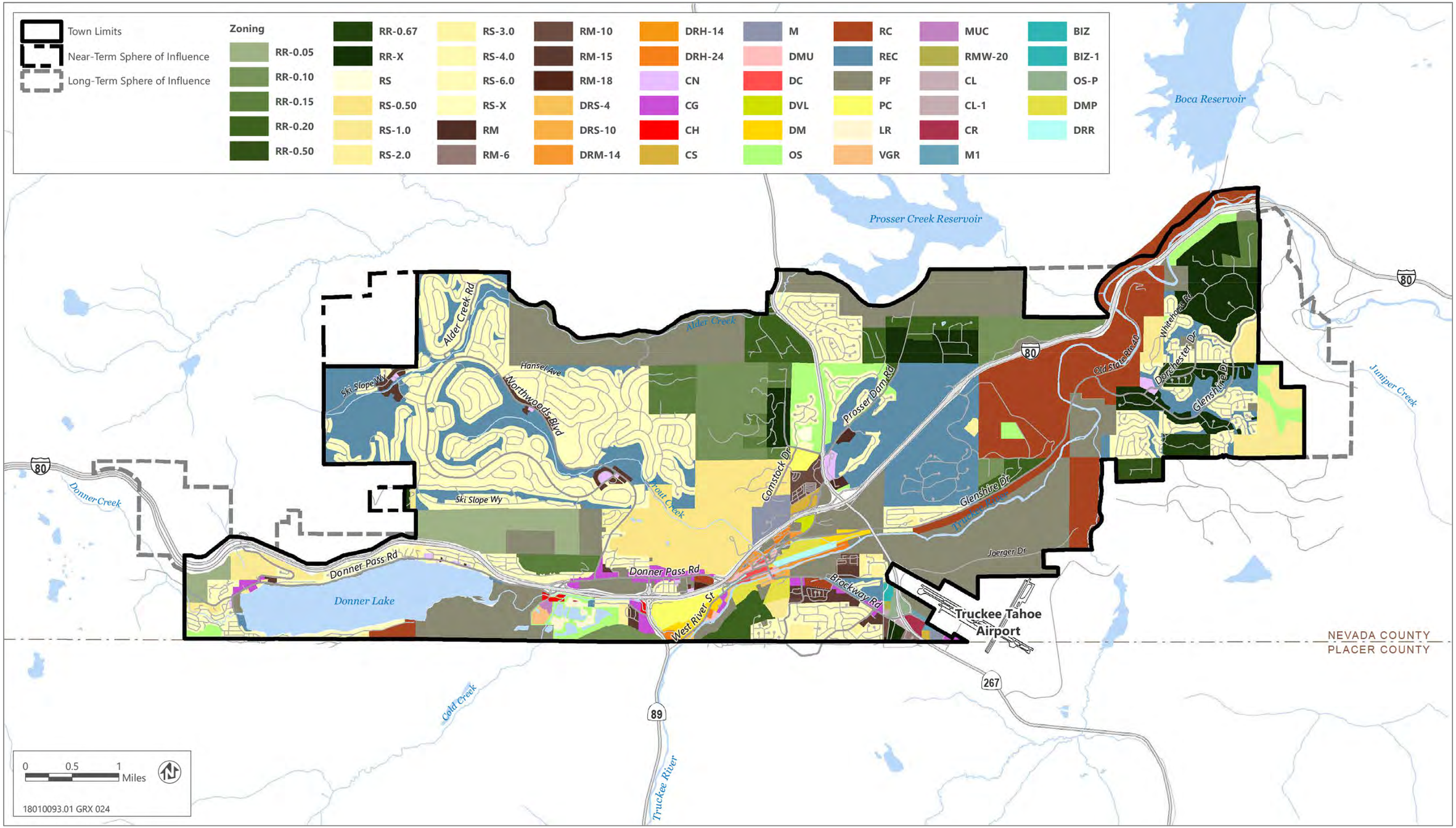
This district applies to areas along highways and it is intended to provide highway and tourist related services. The floor area ratio for commercial development in the CH zoning district is 0.20. The CH zoning district implements the Commercial land use designation of the General Plan.

Service Commercial District (CS)

This district applies to areas appropriate for more intensive commercial uses. The floor area ratio for commercial development in the CS zoning district is 0.20, and the density for residential development within the CS district is four dwelling units per acre for mixed-use developments. The CS zoning district implements the Commercial and Industrial land use designations of the General Plan.

Manufacturing/Industrial District (M)

This district applies to areas appropriate for manufacturing/industrial uses including processing, distributions, and storage. The floor area ratio for industrial development in the M zoning district is 0.20. The M zoning district implements the Industrial land use designation of the General Plan.



Source: Data downloaded from Town of Truckee in 2018

FIGURE 3-9 ZONING MAP

Downtown Mixed-Use District (DMU)

This district applies to areas in the Downtown Study Area appropriate for a combination of retail sales, offices, services, lodging, and residential uses. The development standards and permit requirements of the DMU district are intended to create a pedestrian-oriented mixed-use environment. In general, most non-retail related uses are prohibited in ground floor spaces along Commercial Row within this district. There is no maximum floor area ratio. The maximum density for residential development is 24 dwelling units per acre. The DMU zoning district implements the Mixed-Use land use designation of the Downtown Specific Plan.

Downtown Commercial District (DC)

This district applies to areas in the Downtown Study Area appropriate for a wide range of commercial uses in or near the Downtown Core, including retail sales, restaurants, and offices. There is no maximum floor area ratio. The DC zoning district implements the Commercial land use designation of the Downtown Specific Plan.

Downtown Visitor Lodging District (DVL)

This district is applied to the "gateway property" at the southwest corner of the I-80/Highway 267 interchange. The purpose of the district is to accommodate lodging as a primary use. Secondary and appurtenant uses such as a restaurant, meeting rooms and a visitor center are allowed. High-density residential, with a minimum density of 16 dwelling units per acre is encouraged in the DVL district through the use of incentives. The maximum floor area ratio is 0.25. Residential uses are not counted toward the maximum floor area ratio. The DVL district implements the Visitor Lodging land use designation of the Downtown Specific Plan.

Downtown Manufacturing District (DM)

This district applies to areas in the Downtown Study Area appropriate for manufacturing/industrial uses. The purpose of the district is to provide for appropriate manufacturing/industrial uses. There is no maximum floor area ratio. The DM zoning district implements the Industrial land use designation of the Downtown Specific Plan.

SPECIAL PURPOSE ZONING DISTRICTS

Open Space District (OS)

This district is applied to areas of the town with significant natural resources, including forest land, rangeland, mineral resources, and areas suitable for passive recreational uses. The purpose of the district is to: permanently protect open space, maintain environmentally sensitive areas, preserve wildlife habitat and corridors, and preserve scenic views. The Development Code states that the OS zoning district is consistent with all land use classifications of the General Plan.

Resource Conservation District (RC)

This district applies to areas appropriate for protection as open space because of significant environmental resources, but where limited development may be appropriate if clustered. Land uses in this district include open space, passive recreational uses, and single family homes. Development must be clustered and/or integrated with the natural environment to minimize site disturbances, and to preserve open space and other significant natural resources. The RC zoning district implements the Resource Conservation/Open Space land use designation of the General Plan.

Recreation District (REC)

This district applies to areas appropriate for active recreational activities that would be compatible with natural resource areas. Typical uses include camping, skiing, golfing, clustered lodging, residences, and support services. The REC zoning district implements the Open Space Recreation, Resource Conservation/Open Space, Residential, and Planned Community land use designations of the General Plan.

Public Facilities District (PF)

This district applies to areas appropriate for public, institutional and auxiliary uses that are established in response to the public recreational, safety, cultural, and social needs of the Town. Allowable land uses may include public parks and facilities, schools, hospitals and government offices, and other appropriate uses for public agencies. The PF zoning district implements the Public and Public (Hospital/Office) land use designations.

Planned Community District (PC)

This district applies to specific areas identified in the General Plan that define the type, amount, and mixture of land uses. The subareas include development of residential, commercial, recreational, mixed use and industrial uses. The PC zoning district implements the Special Study Area and Planned Community land use designations of the General Plan.

Planned Community 1 – Coldstream Specific Plan

The zoning districts within the Planned Community 1 boundary are contained in the Coldstream Specific Plan. See discussion of Coldstream Specific Plan below in Section 3.4.

Planned Community 3 – Joerger Ranch Specific Plan

The zoning districts within the Planned Community 3 boundary are contained in the Joerger Ranch Specific Plan. See discussion of Joerger Ranch Specific Plan below in Section 3.4.

Downtown Master Plan District (DMP)

The district applies to specific subareas identified in the Downtown Specific Plan that define the type, amount, and mixture of land use allowed. The subareas include development of residential, commercial, and mixed uses. The intent of this district is to provide for development in Master Plan Areas consistent with the applicable policies and land uses identified for the Master Plan Areas in the Downtown Specific Plan. The DMP district implements the Master Plan Area land use designation of the Downtown Specific Plan.

Downtown Railroad District (DRR)

The district applies to portions of the Union Pacific Railroad right-of-way and operating properties within the Downtown Study Area which are not considered suitable for lease or sale to private parties for new non-railroad related land uses. The intent of this district is to identify areas which are limited to land uses dedicated to railroad and railroad related operations and facilities, and surface and subsurface utility lines, utility related installations, and other subsurface uses.

OVERLAY ZONING DISTRICTS

Airport Operations Overlay District (AO)

This district is intended to regulate land uses in the vicinity of the Truckee-Tahoe Airport and below airspace where aircraft perform approach and departure maneuvers, recognizing that certain land uses and site development characteristics may conflict with the safe and efficient operation of airports and aircraft. The intent of this overlay district is to protect people and property both in the air and on the ground by regulating buildings and structures that may affect navigable airspace, consistent with Federal regulations, and to minimize noise and other conflicts between airport operations and surrounding land uses.

Historic Preservation Overlay District (HP)

This district is intended to protect the town's unique cultural heritage as embodied and reflected in the town's architectural history and patterns of cultural development; to preserve diverse architectural styles, patterns of development, and design preferences reflecting phases of the town's history and to encourage complementary contemporary design and construction and inspire a more livable urban environment; to protect and enhance the town's attraction to tourists and visitors, thereby stimulating business and industry; to identify as early as possible and resolve conflicts between the preservation of cultural resources and alternative land uses; and to integrate the

preservation of cultural resources into public and private land use management and development processes. Development standards and guidelines for this district address new development; alterations, additions, and modifications to existing buildings and structures; demolition of historic buildings and structures; and the identification and protection of subsurface historic and archaeological resources.

The HP overlay district may be combined with any residential, commercial, manufacturing/industrial, or special purpose zoning district. The HP overlay district applies to areas of the Downtown Specific Plan Area with concentrations of historic buildings and structures that contribute to the downtown's historic character. However, the HP overlay district does *not* apply to railroad and railroad-related operations, activities and facilities within the Union Pacific Railroad right-of-way and operating properties if the application of such requirements would interfere with the railroad, railroad-related operation, activity or facility.

River Protection Overlay District (RP)

The district is intended for areas of the Downtown Study Area adjacent to the Truckee River where sensitivity and special attention is required in project design, including but not limited to setbacks from the Truckee River, additional landscaping and screening to protect views from the river corridor, building designs compatible with the river's natural environment, preservation of public access to the river corridor, and protection of natural environmental features such as riparian vegetation, wetlands, and wildlife habitat.

Snow Avalanche Overlay District (SA)

The SA overlay district applies to areas identified as subject to potential avalanche danger because of steepness of slope, exposure, snow pack composition, wind, temperature, rate of snowfall, and other interacting factors. Classifications of the SA boundaries are identified by hazard potential severity, and the overlay locations are delineated as: High Hazard; Moderate Hazard; and Low Hazard. Additional requirements apply to development within the High Hazard Zone, including review and certification by a licensed structural engineer and avalanche expert and a written statement signed by the property owner that acknowledges the danger of building in the area and reduces liability of the Town. Other requirements within the SA Overlay include the undergrounding of new utilities.

Commercial Overlay District (CR)

The purpose of this district is to provide for and protect the mix of retail uses along Commercial Row; to inspire a more livable urban and pedestrian-oriented environment; to protect and enhance Commercial Row's attraction to visitors and local residents, thereby stimulating business; and to contribute to the downtown historic community character. Development standards and guidelines for this district address change of use, alterations, and additions to existing buildings.

3.3.3 Regulatory Setting

STATE

Government Code Section 65803

Because the Town of Truckee is a charter city with a population of under two million, the Town is exempt from the zoning consistency with the general plan requirement (Government Code Section 65803). However, the Town recognizes that consistency between the general plan and zoning is a common-sense approach to planning. As described in Development Code Section 18.01.030, the Town uses the Development Code as the primary tool for carrying out the goals, objectives, and policies in the General Plan. The Town Council intends that the Development Code be consistent with the General Plan, and that any land use, subdivision, or development be compliant and consistent with both planning documents.

3.4 Previous Planning Efforts

Since the Town incorporated in 1993, the Town has engaged in several key planning efforts to provide a framework for orderly growth and development. These past planning efforts influence the town's current land use patterns and this General Plan Update.

3.4.1 Major Findings

- The Town has adopted several pertinent specific plans, master plans, and strategies to guide the development of particular areas, including Downtown and Joerger Ranch, as well as for town-wide priorities, including trails and bikeways.
- The 2025 General Plan directs the Town to accommodate a majority of its growth within the Downtown Study Area in a manner that "preserves and enhances the historic mountain character" of the area.

3.4.2 Existing Conditions

DOWNTOWN SPECIFIC PLAN

The Town adopted the Downtown Specific Plan in November 1997 to implement the General Plan within the boundaries of the Downtown Study Area. The Specific Plan area includes the downtown area along both sides of the Truckee River with Highway 89 to the west and the Railyard Master Plan area to the east. The General Plan directs the Town to accommodate most of its growth within the Downtown Study Area in a manner that "preserves and enhances the historic mountain character" of the area. The Specific Plan contains a map and description for 10 land use designations. In 2018, the Town is in the process of updating the Downtown Specific Plan as part of the 2040 General Plan Update.

DOWNTOWN RIVER REVITALIZATION STRATEGY

The Town adopted the Downtown River Revitalization Strategy in October 2005 to provide strategic direction to implement the Downtown Specific Plan. The purpose of the strategy is to provide overall direction for public and private investment, to establish priorities for phasing and for public actions, to identify areas of teamwork and collaboration, and to coordinate implementation strategies. The strategy covers the segment of the Truckee River that runs through downtown, which extends from the confluence of Donner Creek at the western end to the intersection with Trout Creek on the eastern end. It is important to note that this strategy is not a regulatory plan or document and does not have a legally binding effect on later actions and activities that the Town may take. It is a study/report that assists the Town Council, Planning Commission, other Town review bodies, and Town staff in identifying, analyzing, prioritizing, and implementing future actions that the Council may consider.

HILLTOP MASTER PLAN AREA

The Town adopted the Hilltop Master Plan on August 7, 2008. The Plan required the Town to amend the Downtown Specific Plan. The master-planned community is immediately south of the historic downtown core, on the south side of Brockway Road between Palisades Drive and South River Street. The area is approximately one-quarter mile wide and extends approximately one-third of a mile south of Brockway Road. The site is accessed from Brockway Road, Pine Cone Road, and Palisades Drive near Ponderosa Drive. The Master Plan incorporates a mixed-use concept intended to create a walkable neighborhood/village. The design fits within the Town's regulatory design framework, while adding additional use-restrictive concepts to promote the creation of a distinct village within the town. The Town used the following themes in designing the community: human-scale architecture, emphasis on craftsmanship and detailing, and pedestrian-friendly streets. The Master Plan also includes improved connections to the Legacy Trail

and improvements to Ponderosa Drive, Palisades Drive intersection, and the installation of a roundabout entrance on Brockway Road. Project development standards are shown in Table 3-3. As of 2018, no development has occurred within the Hilltop Master Plan Area.

Table 3-3 Development Standards Hilltop Master Plan Area

Parcels (Acres)	Land Use District	Maximum Allowable Development			
		Commercial (sq. ft.)	Lodging (rooms)	Dwelling Units	
				Multifamily	Single
Young (.95 ac)	DMU	7,000	0	4	0
Silverwood in Truckee (.99 ac)		7,000	0	4	0
Intrawest (3.67 ac)	DMU / DRM	19,180	0	18	
Davies/Fitch Partners (8.08 ac)	DRM	0	0	94	
JAR-Hilltop North (19.83 ac)	DC	19,085	60	129	28
JAR-Hilltop South (24.03 ac)	DRH	0	0	0	18
Estimated Total		**52,265**	**60**	**249**	**46**

Source: Town of Truckee Hilltop Master Plan, 2008.

TRUCKEE RAILYARD MIXED-USE DEVELOPMENT MASTER PLAN

The Town adopted the Truckee Railyard Mixed-Use Development Master Plan in 2009. The Plan goals and polices create a strong connection between the Railyard and the historic core with a mix of uses at varying intensities within a walkable area. Desired uses in the Plan include mixed-use with housing, retail, restaurant, local services, and entertainment. The Master Plan area includes redeveloping the Railyard into three primary districts: Downtown Extension, Industrial Heritage, and Trout Creek. It also included extending Church Street east across the balloon tracks to Glenshire Drive and extending Donner Pass Road east through the center of the Master Plan Area and into the center of the balloon track. The Plan anticipates that the project will be completed in two phases. Phase One focuses on buildout of land west of the balloon track including roadways, right-of-way, and utilities. Phase Two requires the completion of the Church Street extension. As of the writing of this report, implementation of Master Plan Phase I is underway. Developer Truckee Development Associates realigned Donner Pass Road (now Truckee Way), extended Donner Pass Road east, built new downtown parking lots and street parking, demolished the Union Pacific Railroad maintenance and operations building and constructed a new 11,000-square foot maintenance and operation building, as well as completed infrastructure improvements. The California Public Utilities Commission granted approval of three at-grade track crossings in 2018 which will allow development in Phase II to move forward.

There are currently two entitled development projects within the Downtown Extension District. The first is the Truckee Artist Lofts, a 90-unit affordable rental housing project and the second is a 35,000 square foot grocery store.

COLDSTREAM SPECIFIC PLAN (PC-1)

The Truckee Town Council certified the EIR and adopted the Coldstream Specific Plan on September 23, 2014. The Coldstream Specific Plan is a tool to implement the Truckee General Plan policies for Planned Community 1 (PC-1) and to guide development within the approximate 179-acre plan area. PC-1 is a master-planned community located south of Interstate 80, east of Donner Memorial State Park, and west of State Route 89. The purpose of the Specific Plan is to establish a community with a range of land uses, quality architecture, and enhanced open space areas. The project includes residences, open space, a mix of dirt and paved paths, and a mixed-use village. The Plan will provide up to 30,000 square feet of retail and commercial uses, 300 residential units, as well as up to 75 accessory dwelling units, the total number of which may change based on the number of affordable housing units provided.

The Land Use Plan contains the following land uses that allow for development (see Figure 3-10):

- **Lakeside Residential (LR).** The purpose of this district is to provide areas for unique housing opportunities for single-family housing with expansive views allowing for slope enhancement and revegetation along the existing ponds.
- **Village Green Residential (VGR).** The purpose of this district is to provide areas for a variety of attractive detached and attached homes that are clustered along a common green that serves as the central activity center for the Coldstream Plan Area.
- **Village Mixed-Use Commercial (MUC).** The purpose of this district is to provide a centralized, pedestrian-oriented Neighborhood Village Center that offers a variety of retail, commercial, entertainment, office, and residential land uses.

FIGURE 3-10 COLDSTREAM SPECIFIC PLAN LAND USE DIAGRAM



Source: Coldstream Specific Plan, 2014

The Plan also established circulation improvements, including a link to the Truckee River Legacy Trail and several miles of Class II and III bikeways. Additionally, open connections will be made from Cold Stream Road to Deerfield Drive. The project provides an array of community benefits, such as the preservation of 100 acres of permanent publicly accessible open space. Open Spaces areas include ponds, trails, and areas for passive recreation. In fiscal year 2015-2016, the Coldstream Mixed Use Village was awarded $10.7 million from the Strategic Growth Council through the Affordable Housing and Sustainable Communities (AHSC) grant program. The AHSC program focuses on reducing greenhouse gas emissions by locating housing, jobs, and key destinations in areas accessible by walking, biking, and transit. As of 2018, no development has occurred within the Coldstream Specific Plan area, although a 48-unit affordable rental housing project received land use approvals at the end of 2017.

GRAY'S CROSSING SPECIFIC PLAN (FORMERLY PC-2)

The Town adopted the Gray's Crossing Specific Plan in January 2004 for the area formerly identified as Planned Community 2. Gray's Crossing is a master-planned community covering 757 acres north of Interstate 80 that spans both sides of State Route 89. The purpose of the plan is to direct the development of the destination recreation community that includes golf, passive open space, recreational amenities, and residential and mixed-use development.

Table 3-4 shows the maximum amount of development (dwelling units and square feet of non-residential development) allowed in the Gray's Crossing Specific Plan per the General Plan.

Table 3-4 Maximum Density/Intensity Standard Gray's Crossing Specific Plan

Land Use	Maximum Square Feet/Dwelling Units
Residential Uses	
Single-Family	408 du
Cottage	89 du
Attached Housing	115 du
Live-Work	21 du
Employee Housing	92 du
Non-Residential Uses	
Commercial	40,700 square feet
Lodging	300 rooms, plus conference facility (5,000 square feet)
Community Center	10,000 square feet
18-Hole Golf Course	193 acres
Religious Facilities	2 churches, located on one 8-acre and one 1-acre site
Undeveloped Open Space	417 acres

Source: Town of Truckee 2025 General Plan.

JOERGER RANCH SPECIFIC PLAN (PC-3)

The Town adopted the Joerger Ranch Specific Plan on March 24, 2015. The Specific Plan serves as the zoning and land use authority for all development within the planning area. The purpose of the plan is to diversify the Town economy through development that can fulfil the General Plan economic principles. Principles include strengthening the local economy with respect to its existing natural features, developing high-wage jobs within the town, and expanding economic sectors that have the greatest possibility of success.

The Specific Plan is divided into three cluster areas for development: Business and Economic Cluster, Regional Economic Cluster, and Lifestyle Economic Cluster. Each cluster has specific land use polices and goals, and zones. The Clusters with accompanying zones are listed below and shown on Figure 3-11:

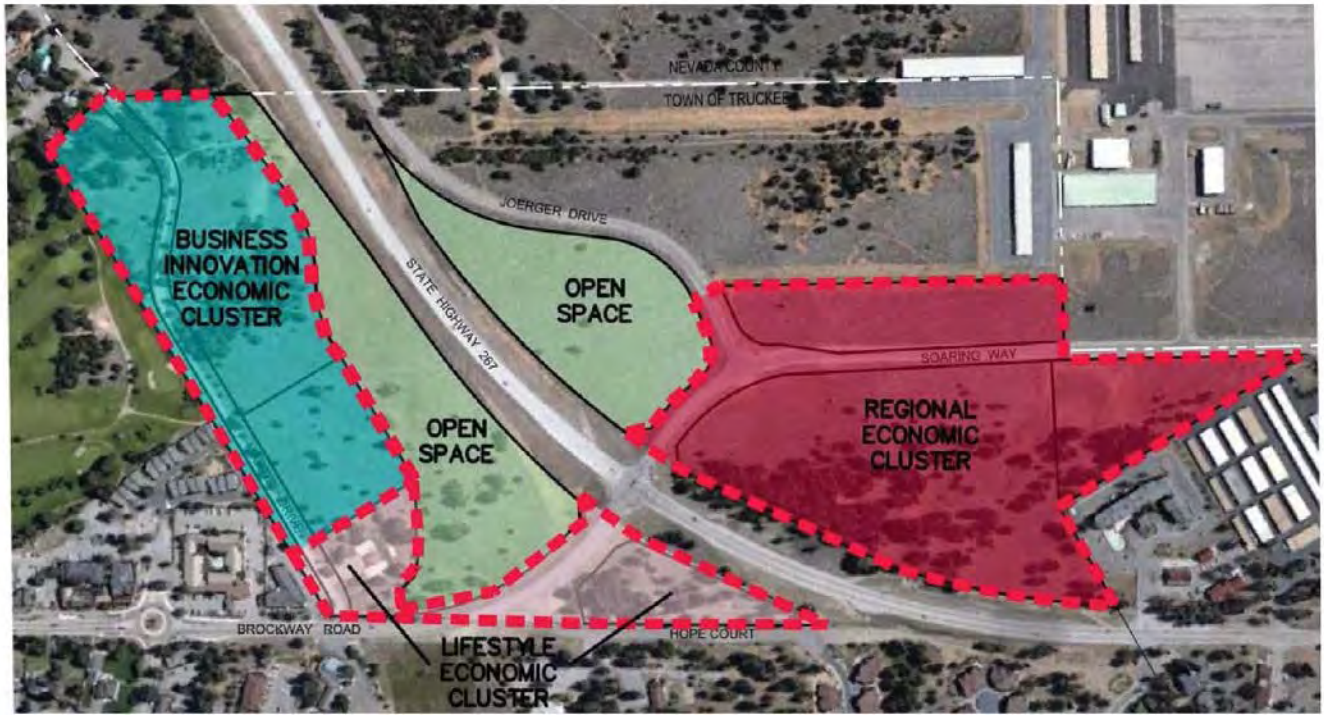
- Lifestyle Economic Cluster
  - Lifestyle Commercial Zone (CL)
  - Lifestyle Commercial Zone (CL-1)
- Business Innovation Cluster
  - Business Innovation Zone (BIZ)
  - Workforce Multi-Family Residential, 20 dwelling units per acre (RMW-20)

- Regional Economic Cluster
  - Regional Commercial Zone (CR)
  - Manufacturing/Industrial (M1)

The Specific Plan describes the following land uses, shown on Figure 3-12:

- **Workforce Multi-Family Residential (RMW- 20).** This district is located along Martis Drive and is intended to provide areas for workforce housing units near employee-generating commercial and industrial uses. The RMW-20 Zoning District is the primary workforce housing location for the Joerger Ranch Specific Plan. Development within this zone is limited to high density residential units between 18 and 20 dwelling units per acre and will provide most of the projected workforce housing for buildout of the Specific Plan Area.
- **Lifestyle Commercial (CL).** The purpose of this district is to cluster uses that reflect Truckee's outdoor lifestyle and desire for social connectivity. The Town has applied the CL zone to areas that are appropriate for businesses that promote the varied and interesting mix of land uses and architecture that currently exist within the Brockway Road Corridor. Desired uses include unique locally-owned and operated retail, service, non-profit and recreation uses, particularly those with outdoor display and/or activity. The maximum FAR is 0.25.
- **Regional Commercial (CR).** This district designates areas that are appropriate for large floorplate commercial and office uses that serve both local and regional markets, including limited restaurant and specialty retail uses. The typical uses for the CR zoning district include grocery and/or specialty food markets; and large floor plate commercial, office and retail businesses with building footprints 5,000 square feet or larger. The Town discourages national retail chains unless it can be demonstrated through an economic analysis that such a use will benefit the Town as a whole and avoid or minimize economic impacts to Downtown. The maxim. m FAR is 0.25.
- **Manufacturing/Industrial (M1).** This district is intended to provide areas for a variety of manufacturing/industrial uses, such as warehousing space, specialty food production, manufacturing, lumber yard, home improvement center, and auto repair. The maximum FAR is 0.25.
- **Business Innovation Zone (BIZ).** This district is intended to provide areas for Research and Development, production of local products (custom wood furniture, specialty food/spirit products), green construction design and material production and other similar uses. This zone would support more light industrial uses in a campus setting in support of the business innovation economic cluster. The maximum FAR is 0.25.
- **Open Space Protected (OS-P).** This district is intended to protect natural resources and provide permanent, undeveloped open space in perpetuity and establish a visual open space corridor along State Route 267. This district is limited to public trails, drainage, road and utility infrastructure, snow storage, and similar land uses.

FIGURE 3-11 JOERGER RANCH ECONOMIC DEVELOPMENT CLUSTERS



Source: Joerger Ranch Specific Plan, 2015

FIGURE 3-12 JOERGER RANCH ZONING MAP



Source: Joerger Ranch Specific Plan, 2015

3.4.3 Regulatory Setting

STATE

Specific Plans (California Government Code Section 65451)

California Government Code Section 65451 regulates the substantive and topical requirements of specific plans. A specific plan is a tool for the systematic implementation of the general plan and establishes a link between implementing policies of the general plan and the individual development proposals in a defined area. A specific plan may be as general as setting forth broad policy concepts, or as detailed as providing direction on every facet of development from the type, location, and intensity of uses to the design and capacity of infrastructure.

3.5 Other Agency Plans

This section discusses the plans, policies, and regulations of other agencies that affect growth and development within Truckee. Regional, State, and Federal agencies are generally not subject to the policies and plans adopted by local governments. Therefore, understanding the roles and responsibilities of these agencies is vital to ensure effective inter-jurisdictional cooperation and coordination.

3.5.1 Major Findings

- Nevada County has designated the majority of land around Truckee as forest with a few areas adjacent to town limits as lower-density residential or commercial uses.
- Placer County has designated the majority of the land south of the town of Truckee as agriculture/timberland.

3.5.2 Existing Conditions

NEVADA COUNTY GENERAL PLAN

Nevada County has two incorporated cities, Grass Valley and Nevada City, and the incorporated Town of Truckee. Incorporated cities/towns are home to approximately 33 percent of county population, while the remaining 67 percent reside in unincorporated areas. Truckee is located in the eastern portion of the county where commercial development is centralized. About 169,045 acres of land in Nevada County is owned by the Federal government and the Tahoe National Forest, operated by the U.S. Forest Service.

The County of Nevada adopted its General Plan in 1996. Since adoption, the County has amended elements of the General Plan: 2008 Safety Element in 2008; Circulation and Housing (4th Cycle) Elements in 2010; and Land Use, Safety, Noise, and Housing (5th Cycle) Elements in 2014. The County has designated the majority of the land around Truckee as a Forest (FOR), with a few areas adjacent to town limits as Planning Residential Community (PRC), Community Commercial (CC), Rural (RUR), and Open Space (OS). The County has also designated the land adjacent to the Tahoe-Truckee Airport and to the north along Highway 89 as Industrial (IND).

The General Plan divides the county into Rural and Community Regions. The County identifies Truckee as a Community Region. The policies under Goal 1.4 emphasize Community Regions by providing an adequate supply and range of uses that support communities and neighborhoods. In contrast, the policies under Goal 1.3 focus on Rural Regions by limiting land uses within this area to types and densities/intensities that are consistent with the open, pastoral character. The County has also adopted four Area Plans for Higgins Corner, Loma Rica, North San Juan, and Penn Valley—none of which are within the Town of Truckee General Plan Planning Area.

PLACER COUNTY GENERAL PLAN

The County of Placer adopted its General Plan in August 1994 and updated it in May 2013. Truckee sits to the north of Placer County. The General Plan establishes 14 designations to depict the types of land uses that will be allowed in the different geographic areas of the unincorporated county, including residential, commercial, business/industrial, resorts and recreation, public facility, water influence, greenbelt/open space, forestry, and agriculture/timberland. The County designates the majority of the land south of the town of Truckee as agriculture/timberland – 80 ac min. lot area. In addition to the General Plan, the County has adopted 15 Community Plans. Of these 15 plans, three are in the Truckee Planning Area: the Martis Valley, Squaw Valley, and Alpine Meadows Community Plans.

Martis Valley Community Plan

The Martis Valley Community Plan, which updates and supersedes the 1975 Martis Valley General Plan, provides overall direction for future growth within Martis Valley. The Plan envisions that Martis Valley will continue to provide a range of services and facilities which create opportunities for people to live, work, and play in the Sierras. The urban core of Martis Valley is the Town of Truckee. Outlying areas will continue to support and be supported by the services found within the town. The Placer County portion of the Valley will provide expanded and enhanced opportunities for summer and winter recreation, first home, second home, and to a lesser degree, workforce housing. This includes the continued development and expansion of Northstar-at-Tahoe, located just six miles south of downtown Truckee. Improved transportation facilities will both relieve longstanding traffic congestion and increase capacity of the area's circulation system. Future population growth in the Martis Valley is based largely on the availability of land permitted for development. The vast majority of land in the Plan area is not suitable for development because of sensitive natural resources. The Plan estimates that the plan area will be 40 to 60 percent built-out in the year 2020, based on an ultimate holding capacity of 8,600 residential units.

Squaw Valley General Plan and Land Use Ordinance

The County adopted the Squaw Valley General Plan and Land Use Ordinance in 1983. The plan area encompasses the 4,700-acre drainage basin in the central Sierra Nevada Mountain range. The purpose of the Plan is to establish a planning framework to ensure that Squaw Valley is developed into a top quality, year-round, destination resort. The plan area has a holding capacity of 11,000 to 12,000 residents overnight during the seasonal-peak.

Alpine Meadows General Plan

The County completed the Alpine Meadows General Plan in 1968, which is now regarded as the area's community plan. A key theme in the Plan is maintaining the open, natural, mountain-recreational nature, and establishing a balance of land uses.

TRUCKEE TAHOE AIRPORT LAND USE COMPATIBILITY PLAN

An Airport Land Use Compatibility Plan seeks to protect the public from adverse effects of airport noise, avoid the concentration of people and facilities in areas susceptible to aircraft accidents, and to ensure that no structures or activities encroach upon or adversely affect the use of navigable airspace. The Truckee Tahoe Airport Land Use Commission adopted the Truckee Tahoe Airport Land Use Compatibility Plan in 2016. The airport influence area extends approximately 3.6 statute miles from the airport runways and encompasses lands within three local government jurisdictions: Town of Truckee, Nevada County, and Placer County. The Hazards and Safety chapter of this Existing Conditions Report contains additional information regarding airport hazards.

3.5.3 Regulatory Setting

STATE

Airport Land Use Commission Plans (Public Utilities Code Section 21674.7 (b) and 21675(a))

The purpose of Airport Land Use Commission Plans (ALUCPs) is to discourage incompatible land uses near existing airports. All local agency decisions regarding the renovation or remodeling of an existing building, structure, or facility, or the construction of a new building, must be compatible with the height, use, noise, safety, and density criteria established by the ALUCP.

Government Code Section 65302.3

The General Plan and applicable specific plans shall be consistent with the ALUCP required under PUC Section 21675.

3.6 Military Institutions and Installations

The Department of Defense (DoD) has a significant presence throughout California. The California Military Land Use Compatibility Analyst (CMLUCA) is used by planners to determine if their project has the potential to affect areas important to military readiness. California Government Code section 65352 requires cities and counties which are adopting or substantially amending a general plan to refer the proposed actions to the branches of the United State Armed Forces when the proposed action is within one thousand feet of a military installation, lies within special airspace, or is beneath a low-level flight path within the county.

3.6.1 Major Findings

- The Town of Truckee is not located near any military air space or flight path necessary for military operations.

3.6.2 Existing Conditions

The CMLUCA helps planners and local governments like Truckee determine if their project has the potential to affect areas important to military readiness. The CMLUCA was developed by the California Natural Resources Agency in conjunction with the California Governor's Office of Planning and Research (OPR). The CMLUCA can help easily determine if a project, in this case the General Plan, triggers the military notification requirement. Specifically, the Truckee General Plan Planning Area would need to include land operated by a military branch or within a Military Training Route or a Special Use Airspace. Based on the information from CMLUCA, there are no military branches, Military Training Routes, or Special Use Airspaces in or near Truckee.

3.6.3 Regulatory Setting

STATE

SB 1468

Codified in the California Government Code Sections 65302 and 65560, SB 1468 outlines how cities and counties must consider the impact of development on military readiness activities when preparing or updating their general plan. The intention of the law is to encourage cooperation between military installations and local communities to reduce land use conflicts between civilian development and military readiness activities. SB 1468 identifies specific requirements about when and where local governments must incorporate military readiness activities into the general plan.

3.7 Development Capacity

The purpose of this section is to determine the potential amount of residential, commercial, and industrial development that could occur within the town under current plans.

3.7.1 Major Findings

- The theoretical development capacity in the town based on adopted plans and capacity on vacant land is 4,705 additional residential units with a year-round population of 6,708, and 1,256,683 square feet of new commercial or industrial development within town limits. The analysis also estimates that there is the potential for 340 new lodging units and 165 live-work units.

3.7.2 Existing Conditions

Development capacity is the theoretical amount of new residential, commercial, and industrial development that could potentially occur in the town based on "build-out" of the adopted General Plan, specific plans, and master plans. This information establishes the baseline of planned capacity of land for both jobs and housing in the current General Plan. Establishing the holding capacity of the current General Plan is the starting point for the development of land use alternatives to accommodate future projected employment and population growth in the 2040 General Plan. The capacity of existing and future housing is expressed in the number of dwelling units and the resulting population. Non-residential capacity is expressed in the amount of building square footage of commercial and industrial uses.

The development capacity analysis describes the capacity for residential and non-residential development in two different categories:

- Capacity within adopted specific plans and master plans; and
- Capacity on all other vacant land outside of these planning areas.

Figure 3-13 shows the vacant land and specific plan/master plan areas that are included in the capacity analysis.

SPECIFIC PLAN AND MASTER PLAN AREAS

The development capacity analysis includes capacity within the following approved specific plans and master plans, which are all still undeveloped: the Hilltop Master Plan, Truckee Springs Master Plan, Truckee Railyard Mixed-Use Development Master Plan, Coldstream Specific Plan, and Joerger Ranch Specific Plan. For these plan areas that are completely undeveloped, the analysis includes the maximum buildout potential as stated in the area's respective specific plan or master plan.

Gray's Crossing is the one specific plan area that has begun to build out. Table 3-6 shows the remaining capacity within the Gray's Crossing Specific Plan Area after accounting for units and non-residential square footage that has already been built.

The Downtown Specific Plan is not included in this category because the Downtown is largely developed. The capacity on vacant sites within the Downtown is included in the "Vacant Land" category.

OTHER VACANT LAND

For vacant land that is not within a specific plan or master plan area, the analysis applies buildout assumptions (e.g., density/intensity standards) largely based on what was used to calculate capacity in the existing 2025 General Plan. For residential development potential, this analysis uses the average density permitted under the existing General Plan. Consistent with the methodology used in the 2025 General Plan, this analysis also makes an assumption about

the prevalence of accessory dwelling units. The Town allows accessory dwelling units on parcels with a primary single-family dwelling unit. The number of dwelling units assumes that at full buildout one primary single-family dwelling unit in every 15 new units has an accessory dwelling unit, which results in an effective allowed density that is 20 percent greater than the stated average. This assumption does not apply to parcels designated for High Density Residential. For commercial and industrial development, this analysis uses the average floor-area ratio (FAR) for each designation. *(Note: Several residential designations and all of the commercial, industrial, open space recreation, and public and quasi-public designations are expressed in average density/intensity rather than minimums and maximums.)*

The following formula was used to calculate dwelling units:

Dwelling Units = Vacant Acreage x Average Density x 1.07

note: 1.07 only applied to designations allowing single-family units

To estimate the population, the development capacity analysis considers the average household size (2.64 according to the 2012-2016 American Community Survey) and the proportion of dwelling units that are used as second homes (54 percent, based on the existing 2025 General Plan). The following is the formula used to calculate population:

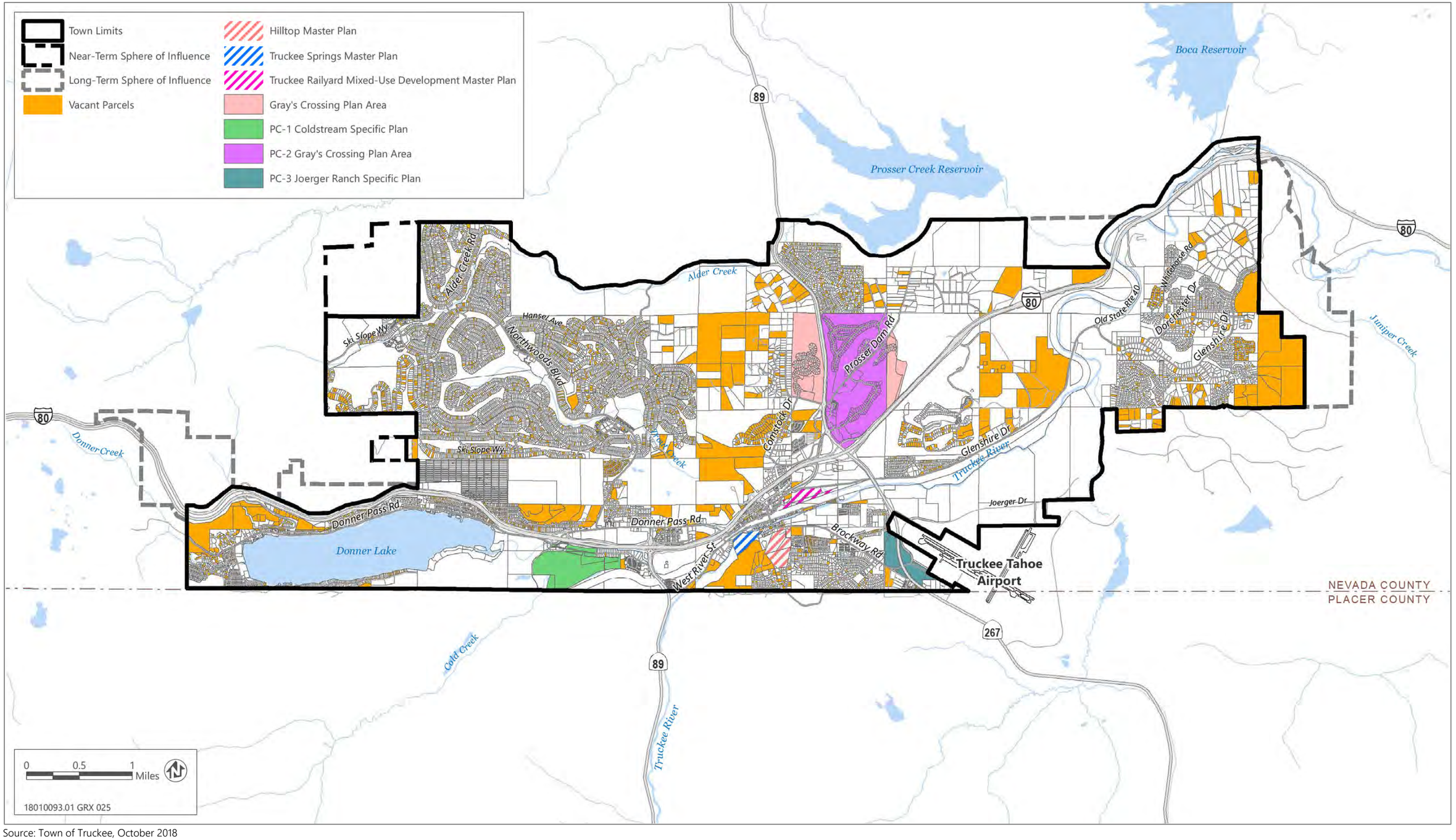
Population = (Dwelling Units x 2.64) x 0.54

SUMMARY OF ESTIMATED CAPACITY

As shown in Table 3-6, the development potential analysis yielded an estimated 4,705 additional residential units with a resulting year-round population of 6,708, and an additional 1,256,683 square feet of commercial or industrial development within town limits. The analysis also estimates that there is the potential for 340 new lodging units and 165 new live-work units.

3.7.3 Regulatory Setting

None.



Source: Town of Truckee, October 2018

FIGURE 3-13 VACANT LAND INCLUDED IN THE DEVELOPMENT CAPACITY ANALYSIS

Table 3-5 Existing General Plan Remaining Development Capacity Town of Truckee

Land Use Designation	Vacant Acreage	Assumed Density/ Intensity	Estimated Development Capacity				
			Dwelling Units	Year-Round Population	Lodging Units	Live-Work Units	Square Footage
Specific Plan and Master Plan Areas							
Hilltop Master Plan	37.8	--	295	421	60	--	52,265
Truckee Springs Master Plan [1]	27.8	--	44	63	--	--	--
Truckee Railyard Mixed-Use Development Master Plan	75.0	--	405	577	60	165	145,000
Coldstream Specific Plan	178.9	--	300	428	100	--	70,000
Joerger Ranch Specific Plan	66.7	--	120	171	--	--	441,045
Gray's Crossing Specific Plan (remaining capacity)	50.4	_	193	275	120	--	52,900
Subtotal	*436.6*	--	*1,357*	*1,935*	*340*	*165*	*761,210*
Other Vacant Land							
Residential							
Residential Cluster - 5 acres [RC-5]	215.3	0.4 du/ac	92	131	--	--	--
Residential Cluster - 10 acres [RC-10]	571.7	0.2 du/ac	122	174	--	--	--
Residential 0.5 – 1 du/acre	457.6	0.8 du/ac	366	522	--	--	--
Residential 0.5 du/acre	316.5	0.5 du/ac	169	241	--	--	--
Residential 1-2 du/acre	238.8	1.5 du/ac	382	545	--	--	--
Residential 3-6 du/acre	58.5	4.5 du/ac	281	401	--	--	--
High Density Residential [RH]	56.1	12.0 du/ac	674	961	--	--	--
Commercial							
Commercial [C]	4.8	0.2 FAR	--	--	--	--	42,225
Rail Transportation Corridor [RTC]	0.0	0.2 FAR	--	--	--	--	0
Planned Community							
Tahoe Donner Plan Area	340.1	--	851	1,213	--	--	--
Downtown Specific Plan Area [2]							
Downtown Single Family Residential – 4 du/ac	6.4	4.0	26	37			
Downtown Single Family Residential - 10 du/ac	1.3	10.0	13	18			

Table 3-5 Existing General Plan Remaining Development Capacity Town of Truckee

Land Use Designation	Vacant Acreage	Assumed Density/ Intensity	Estimated Development Capacity				
			Dwelling Units	Year-Round Population	Lodging Units	Live-Work Units	Square Footage
Downtown Medium Density Residential - 14 du/ac	3.7	14.0	52	75			
Downtown High Density Residential - 24 du/ac	7.7	24.0	184	262			
Downtown Mixed Use [3]	8.4	24.0 du/ac 1.0 FAR	135	192			122,067
Downtown Commercial	0.6	1.0 FAR					28,053
General Commercial	7.0	0.2 FAR					60,969
Industrial							
Industrial [IND]	23.8	0.2	--	--	--	--	207,045
Open Space							
Resource Conservation/Open Space [RC/OS]	255.5	0.0			--	--	--
Open Space Recreation [OSR] [4]	161.2	0.1	1	1	--	--	35,114
Public and Quasi-Public							
Public [PUB]	24.0	--	--	--	--	--	--
Public, Hospital/Office [PUB (H/O)]	0.0	--	--	--	--	--	--
Subtotal	*2,759.0*		*3,348*	*4,773*	*0*	*0*	*495,473*
		TOTAL	**4,705**	**6,708**	**340**	**165**	**1,256,683**

[1] The density guidelines for the TS-LR zone within the Truckee Springs Master Plan area is 40 single-family residential units. Multi-family residential may be allowed at a density of two units in place of one single-family residential unit (i.e., 80 multifamily units). Lodging units may be allowed at a density of three lodging units in place of one-single family residential unit (i.e., 120 lodging units). Another 4 units are permitted in the TS-R zone.

[2] The development standards for parcels within the Downtown Specific Plan area are based on their respective zoning designation. The breakdown of vacant acreage within the plan area is shown in the table below "Downtown Specific Plan" in italicized text. The Development Code only lists maximum density and intensity standards, therefore the maximum number of dwelling units per acre or Floor Area Ratio is shown in the "Assumed Density/Intensity" column.

[3] There is no estimate for square footage for the Downtown Mixed Use zoning designation because the Development Code states: "There is no maximum floor area ratio." This analysis assumes the building is three stories, with the bottom floor commercial and the top two floors as residential. Based on recent development projects, it assumes an overall FAR of 1.0, which becomes an FAR of 0.33 for the bottom floor. The max density for this zone is 24 du/ac, which becomes 16 du/ac for the top two floors.

[4] The General Plan requires that 90 percent of OSR lands are preserved as open space, which means 10 percent of OSR lands are permitted for development. The development capacity analysis assumes that half of the developable acreage is developed as residential and half as non-residential.

Source: Town of Truckee 2025 General Plan; Town of Truckee Tahoe Donner Plan; Town of Truckee Downtown Specific Plan; Town of Truckee Hilltop Master Plan; Truckee Springs Master Plan; Truckee Railyard Mixed-Use Development Master Plan; and Town of Truckee Development Code.

3.8 Disadvantaged Unincorporated Communities (SB 244)

State law requires Truckee to determine if there are any disadvantaged unincorporated communities (DUCs) inside the Town's SOI and outside the Town limits boundary. If any communities are identified, then the Town must provide an analysis of water, wastewater, stormwater drainage, and structural fire protection needs or deficiencies for each community. The Population and Employment chapter of this Existing Conditions Report contains a discussion of disadvantaged communities within the Town limits to address SB 1000 (environmental justice).

3.8.1 Major Findings

- Based on an analysis of parcel density within the Town's SOI and outside of Town limits and consideration of analyses from other agencies, there are no DUCs within the Truckee SOI.

3.8.2 Existing Conditions

The State codified Senate Bill (SB) 244 in 2011 to address the complex legal, financial, and political barriers that contribute to regional inequality and infrastructure deficits within DUCs. The goal of SB 244 is to include disadvantaged unincorporated communities in a jurisdiction's long-range planning to eventually result in a more efficient delivery system of services and infrastructure to enhance and protect public health and safety for these communities. A disadvantaged unincorporated community is a fringe, island, or legacy community in which the median household income is 80 percent or less than the statewide median household income. A fringe community is an inhabited, unincorporated territory within the Town's Sphere of Influence (SOI). An island community is any inhabited and unincorporated territory that is surrounded or substantially surrounded by one or more cities or by one or more cities and a county boundary. A legacy community is a geographically isolated community that is inhabited and has existed for at least 50 years.

This analysis began by seeking to identify a grouping of parcels that were outside of town limits and inside the SOI and resemble the density of suburban and urban communities. Based on a Google maps satellite review of land outside of town limits and within both the short-term and long-term SOIs, there was not a cluster of more than 10 dwelling units in any given part of the SOI. Therefore, there are no DUCs in the Truckee SOI.

ANALYSES FROM OTHER AGENCIES

In addition to the analysis described above, this section also considers DUC analyses from other agencies. In January 2014, Nevada County LAFCo approved Resolution 14-11 to amend Commission policies to implement SB 244. Major amendments to Commission policies include the DUC identification criteria and an action for LAFCo to identify DUCs in Municipal Service Reviews (MSRs), and policies and procedures that direct when LAFCo would approve an annexation proposal of any area contiguous to a DUC.

Nevada County LAFCo published the Public Review Draft of the Wastewater Services in Eastern Nevada County MSR in 2018. The MSR references DUC analyses published in the Nevada County and Placer County General Plans.

Nevada County updated its Land Use Element of the General Plan in 2014. As part of this process, the County identified five legacy communities pursuant to SB 244. Of these communities, Soda Springs is the closest to Truckee. Soda Springs is in eastern Nevada County approximately three miles west of Donner Pass. Based on the County's analysis, there are no water, wastewater, fire protection, or emergency services deficiencies in Soda Springs.

Placer County updated its General Plan in 2013 and addressed SB 244 as part of this update. To comply with SB 244, the County analyzed parcel density in combination with economic data to determine the presence of legacy communities. As described in the Land Use Element, the County did not identify any legacy communities because none of the areas exceeding the 250 parcels/square mile threshold were low-income.

CALIFORNIA DEPARTMENT OF WATER RESOURCES DISADVANTAGED COMMUNITIES MAPPING TOOL

The California Department of Water Resources also provides a Disadvantaged Communities Mapping Tool (https://gis.water.ca.gov/app/dacs). The mapping tool uses 2012-2016 American Community Survey (five-year estimates) data to identify low-income Census block groups. The Disadvantaged Communities Mapping Tool identifies one disadvantaged community at the Census block group level within the town of Truckee. This block group is in the center of the town surrounding the railroad tracks that has previously been used for industrial development and is the center of redevelopment into residential, commercial, and mixed-use development. The mapping tool did not identify any other disadvantaged communities within or near Truckee at the block group, tract, or place level. Because the identified community is within town limits, it is not subject to SB 244.

POTENTIAL FUNDING SOURCES

While this section does not identify any DUCs within the Truckee SOI, it does nonetheless identify potential mechanisms for remedying infrastructure deficiencies. Financing mechanisms can range from bonds, development impact fees, taxes, to the formation of assessment districts which levy an assessment on affected properties to pay for infrastructure service improvements. The following is a list of additional funding sources:

- California Department of Public Health Safe Drinking Water State Revolving Fund
- State Water Resources Control Board Revolving Fund Program
- State Water Resources Control Board Small Community Wastewater Grant Program
- Department of Water Resource Integrated Regional Water Management Grant Program
- Sustainable Communities Planning Grant and Incentive Program
- United States Department of Agriculture Rural Development Grants and Loans
- Community Development Block Grant Funds

3.8.3 Regulatory Setting

STATE

Senate Bill 244 Disadvantaged Communities (Government Code Section 65302.10)

SB 244, enacted in 2011, requires, on or before the due date for the next adoption of the Housing Element, the Town to review and update the Land Use Element to identify each unincorporated island or fringe community within the Town's SOI. The general plan must include for identified communities a description of the community; a map designating its location; an analysis of water, wastewater, stormwater drainage, and structural fire protection needs or deficiencies; and an analysis of benefit assessment districts or other financing alternatives that could make the extension of services financially feasible.

3.9 Key Terms

The following key terms used in this chapter are defined as follows:

Annexation. The process by which land is incorporated into an existing district or municipality, with a resulting change in the boundaries of the annexing jurisdiction.

Community Character. Community character is the essence of a place, as shaped by physical and intangible elements. The natural and built environment are the key features that define the image and spirit of Truckee.

Density. The number of permanent residential dwelling units per acre of land. Densities specified in the existing General Plan are expressed in units per gross acre.

Development Capacity. The theoretical amount of development that could occur in the town based on "build-out" of the existing General Plan.

Development Code. The adopted zoning, subdivision, and planning regulations of a city or county that establish development standards for each zone, such as minimum lot size, maximum height of structures, building setbacks, and yard size.

Disadvantaged Unincorporated Community (DUC). A fringe, island, or legacy community in which the median household income is 80 percent or less than the statewide median household income.

Dwelling Unit. A room or group of rooms (including sleeping, eating, cooking, and sanitation facilities, but not more than one kitchen) that constitutes an independent housekeeping unit, occupied or intended for occupancy by one household on a long-term basis.

Floor Area Ratio (FAR). The relationship between the total amount of usable floor area of a building and the total area of the building site.

General Plan. A document designed to guide the future growth and change of a city, town, or county and typically includes a vision for the future, with long-range goals, policies, and programs for all activities that affect the local agency.

Glare. The uncomfortable brightness of a light sources when viewed against a dark background.

Land Use Designation. A specific geographic designation with associated land use or management policies and regulations.

Land Use Regulation. A term encompassing the regulation of land in general and often used to mean those regulations incorporated in the general plan, as distinct from zoning regulations (which are more specific).

Light trespass. The spilling of light from beyond the property where the light is located.

Local Agency Formation Commission (LAFCo). A commission within each county that reviews and evaluates all proposals for formation of special districts, incorporation of cities, annexation to special districts or cities, consolidation of districts, and merger of districts with cities. The Nevada County LAFCo is empowered to approve, disapprove, or conditionally approve such proposals.

Master Planned Community. A master-planned community is a large-scale residential neighborhood that is designed for self-sufficiency by including a large number of educational, recreational, and commercial facilities for its residents.

Military Installation. A military base, camp, post, station, yard, center, or other activity under the jurisdiction of the U.S. Secretary of Defense.

Mixed Use. Parcels of land on which a variety of uses such as office, commercial, institutional, and residential are combined in a single building or on a single site in an integrated development project with a coherent physical design.

Municipal Services Review. A study conducted for a city, county, or special district that examines all public service needs for the area and recommends action to promote the efficient provision of public services.

Planning Area. An area that generally encompasses all incorporated and unincorporated territory that bears a relationship to the long-term planning of the Town of Truckee.

Sky glow. Conditions where excess and poorly designed lighting obscures views of the night sky.

Specific Plan. A planning tool authorized by Government Code Section 65450, et seq., for the systematic implementation of the general plan for a defined portion of a community's planning area. A specific plan must specify in detail the land uses, public and private facilities needed to support the land uses, phasing of development, standards for the conservation, development, and use of natural resources, and a program of implementation measures, including financing measures.

Sphere of Influence. An area that includes the probable ultimate physical boundaries and service area of the Town of Truckee, as determined by the Nevada County Local Agency Formation Commission.

Town Limits. A political boundary that defines land that has been incorporated into the town.

Zoning. The division of a city into districts and the application of different regulations in each district.

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TRUCKEE 2040
general plan + downtown specific plan



CHAPTER 4 Circulation and Transportation

4.1 Introduction

This chapter summarizes the existing circulation and transportation conditions in Truckee. It is organized into the following sections:

4.1 Introduction 4-1
4.2 Roadways and Functional Classifications 4-3
4.3 Traffic Patterns and Characteristics 4-15
4.4 Active Transportation (Bikeways, Trails, and Pedestrian Facilities) 4-18
4.5 Transit and Rail Services 4-26
4.6 Air Transportation 4-31
4.7 Parking 4-32
4.8 Goods Movement 4-33
4.9 Planned Transportation System Improvements 4-37
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4.2 Roadways and Functional Classifications

This section describes the streets and highways serving Truckee. An understanding of the existing conditions of streets and highways provides the baseline from which the existing and future circulation and transportation needs can be identified and addressed.

4.2.1 Major Findings

- Traffic volumes on Truckee roadways can vary widely over the course of the year depending on the degree to which individual roadways serve residents versus visitors. While volumes on roadways serving residential neighborhoods are relatively constant over the course of the year, volumes on roadways with a higher proportion of visitor traffic vary significantly by season. Traffic volumes are greatest in July. In comparison, volumes in the busiest winter month (February) are 22 percent lower than the summer peak volume, while the volume of the off-season's lowest month (April) is 39 percent lower than the summer peak volume.
- During the summer, all roadways operate at level of service (LOS) E or better, while a few intersections operate at LOS F.
- The Nevada County Transportation Commission is conducting a study that will provide recommended vehicle miles traveled (VMT) standards for consideration by the jurisdictions within Nevada County, including the Town of Truckee, consistent with Senate Bill (SB) 743.

4.2.2 Existing Conditions

Truckee is served by an existing network of roadways, including regional, arterial, collector, and local roadways. The average daily traffic (ADT) volume of the study segments provides an indication of the key corridors serving both regional through traffic and local access. This section includes a description and analysis of the existing traffic volumes and level of service.

FUNCTIONAL CLASSIFICATION SYSTEM

A functional classification system provides a hierarchy of roadways to meet access and mobility needs. Each of these roadways can be described by classification and function as presented in the hierarchy of roadway classifications shown in Figure 4-1. The classification system shown in Figure 4-1 is based on the 2025 General Plan Circulation and Transportation Chapter.

Interregional and intraregional travel is provided by freeways and major arterials, such as state routes and state highways. I-80 is the only freeway in Truckee, with SR 89 and SR 267 providing major arterial access to the region. These roadways provide for high-speed travel with limited access and no to few intersections.

Freeways

Interstate 80

I-80 provides interregional highway connections east to Reno, Nevada, and beyond and west to Sacramento and the San Francisco Bay Area. The Truckee area lies along both sides of I-80, 34 miles west of Reno and 90 miles east of Sacramento. This section of I-80 has a posted speed limit of 65 miles per hour (mph). It currently is a largely four-lane divided highway with limited truck climbing lanes, with a third westbound lane between the eastern Donner Pass Road interchange and the SR 89 South interchange. Eight interchanges serve Truckee on I-80, including the Donner Lake Road interchange at the western end and the Hirschdale Road interchange at the eastern edge of town. Peak-month ADT on this roadway is as high as 38,000 vehicles per day.

Major Arterial Roadways

State Route 267

SR 267 is a two-lane highway running in a general northwest-southeast alignment between the I-80/SR 89 north/SR 267 interchange in Truckee and SR 28 in Kings Beach. SR 267 is of local and regional significance, providing access to residential, industrial, commercial, and recreational land uses. It serves as one of two major routes between the I-80 corridor in Truckee and the North Lake Tahoe communities of Kings Beach and Incline Village, Nevada. It also serves as the sole existing access to the Martis Valley and Northstar California Resort areas. Peak-month ADT on this roadway is 20,900 vehicles per day.

State Route 89

SR 89, a major arterial, is one of three primary California routes that provide access to Lake Tahoe (the other two are SR 267 and U.S. Highway 50), providing access between I-80 in Truckee and Tahoe City. This two-lane portion of SR 89, known as the "south" segment, travels through the "Mousehole" (a restricted narrow undercrossing of the Union Pacific Railroad (UPRR) tracks and provides access to the Squaw Valley and Alpine Meadows ski areas, as well as other residential, commercial, and recreational land uses. From Tahoe City, SR 89 follows the West Shore of Lake Tahoe to South Lake Tahoe, eventually connecting to U.S. Highway 395 near Topaz, Nevada. Peak-month ADT on this roadway is as high as 12,930 vehicles per day between Deerfield Drive and West River Street.

Minor Arterial Roadways

Minor arterials provide more land access while still providing mobility for longer-distance trips. Many arterials, such as Donner Pass Road and Glenshire Drive, also have Class II bicycle lanes.

Donner Pass Road

Donner Pass Road extends from the Railyard (at Truckee Way) on the east to Donner Lake and Soda Springs on the west. This minor arterial provides a vital link for local circulation by providing access to historic downtown Truckee; public and commercial uses in the Gateway area, such as the Tahoe Forest Hospital, Gateway Commercial Center, and several school facilities; and Donner Lake State Park and the Donner Lake residential area. This roadway provides a single through lane in each direction, with a continuous center left-turn lane along the segment between Levon Avenue and Northwoods Boulevard. The section in the downtown area between Bridge Street and Spring Street is locally known as "Commercial Row." The peak summer ADT along this roadway averages at approximately 11,200 vehicles per day. The lowest peak ADT along Donner Pass Road is just west of South Shore Drive (1,880 vehicles per day) and the highest peak ADT is between Northwoods Drive and SR 89 South (17,380 vehicles per day).

Truckee Way (Previously a Segment of Donner Pass Road)

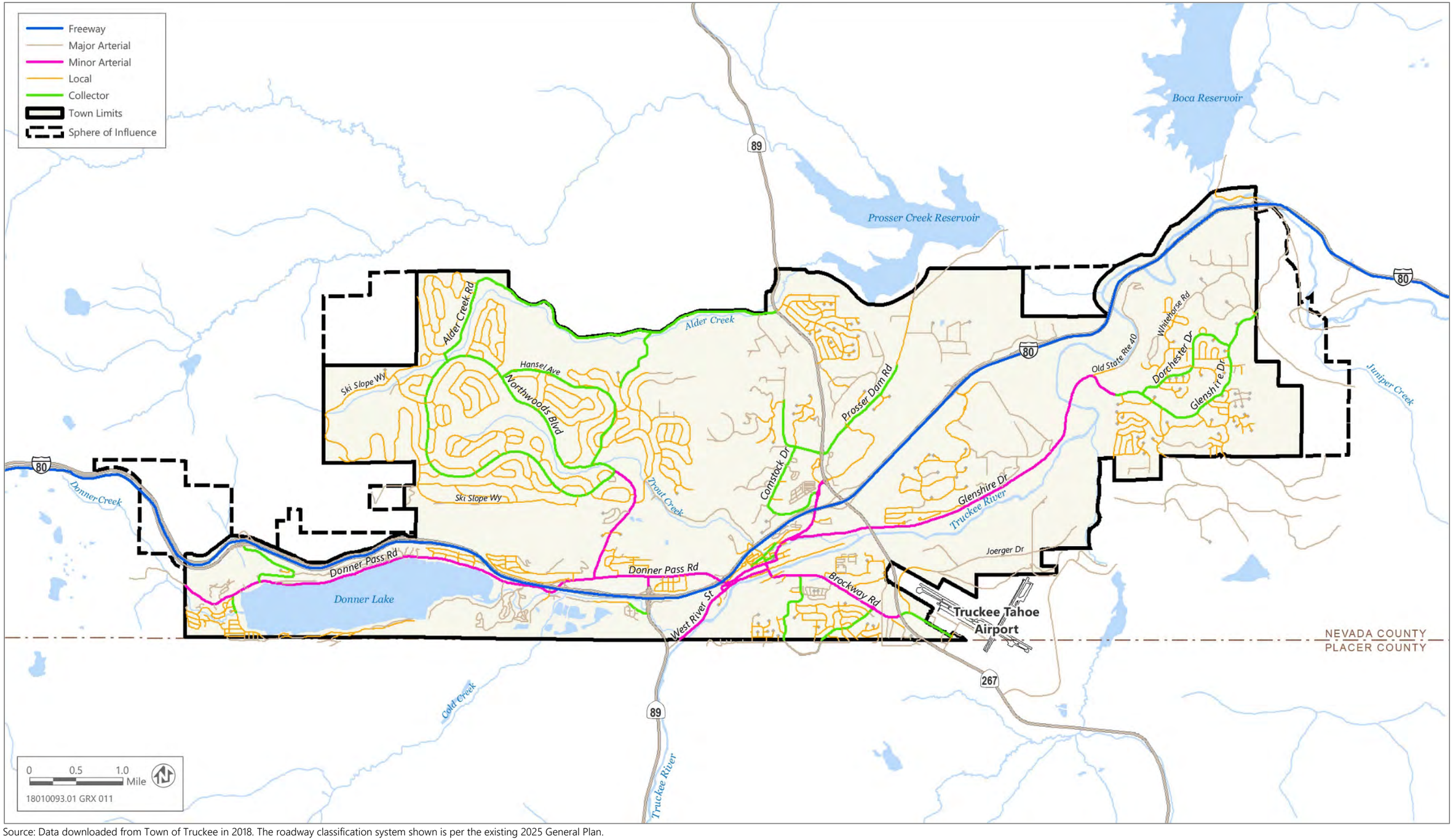
Truckee Way begins at the roundabout intersection of Henness Road and SR 89 north and travels southwestward to Donner Pass Road one block east of Bridge Street in the Railyard. This portion of road was previously a segment of Donner Pass Road and was recently (2017) renamed with the Town's adoption of Resolution 2017-68.

Northwoods Boulevard

Northwoods Boulevard travels north-south from Donner Pass Road and provides loop access to the Tahoe Donner Subdivision, Tahoe Donner Downhill Ski Resort, Nordic and Equestrian Centers, and Coyote Moon Golf Course. Northwoods Boulevard is classified as a minor arterial south of the Northwoods Boulevard/Northwoods Boulevard loop intersection. North of this intersection, the roadway is classified as a major collector. Northwoods Boulevard has a peak summer ADT of approximately 18,510 vehicles per day.

Deerfield Drive

Deerfield Drive is a two-lane local roadway that formerly connected Cold Stream Road and SR 89. It is now a cul-de-sac as a result of flooding that washed away a bridge and supporting fill. Within 1,000 feet of SR 89, Deerfield Drive is classified as a minor arterial that serves adjacent commercial land uses. Farther west, the lanes narrow slightly, and its classification changes to local roadway, where it serves a residential neighborhood and "The Boulders" multifamily development. The peak summer ADT along this roadway is approximately 10,100 vehicles per day.



Source: Data downloaded from Town of Truckee in 2018. The roadway classification system shown is per the existing 2025 General Plan.

FIGURE 4-1 EXISTING ROADWAY CLASSIFICATIONS

West River Street

West River Street is a two-lane minor arterial roadway that connects SR 89 South eastward to Bridge Street in downtown Truckee. It provides access to several industrial, commercial, and residential land uses located along the Truckee River. West River Street (along with the McIver Crossing underpass) provides a potential diversion route around the Bridge Street at-grade rail/highway crossing for traffic that would otherwise use Bridge Street. The average peak summer ADT along this roadway is approximately 10,500 vehicles per day. The lowest peak ADT along West River Street is just east of SR89 (6,200 vehicles per day) and the highest peak ADT is just east of McIver Drive (14,040 vehicles per day).

Pioneer Trail

This minor arterial roadway begins at Donner Pass Road north of I-80 and continues in a westerly direction. It serves a mixture of residential, industrial, and commercial uses. At its intersection with Donner Pass Road, Pioneer Trail is controlled by a roundabout. There are long-term plans to extend this roadway westward to Northwoods Boulevard in the Tahoe Donner development. The peak summer ADT along this roadway is approximately 17,010 vehicles per day.

Glenshire Drive

Glenshire Drive is a two-lane minor arterial roadway providing access between central Truckee, the Glenshire residential area, and Hirschdale Road to the east. This roadway also provides primary access to the Olympic Heights subdivision. It provides the only non-freeway access from central Truckee to residential neighborhoods in the eastern part of the town where it turns into a collector. The posted speed limit on this roadway from the Donner Pass Road intersection to the entrance to the Glenshire neighborhood is 45 mph. The speed limit on the remaining segment of Glenshire Drive to the east varies between 25 and 30 mph. The peak summer ADT along this roadway is approximately 8,380 vehicles per day on the segment of Glenshire Drive south of Donner Pass Road and 3,370 vehicles west of Hirschdale Road.

Brockway Road

Brockway Road, a minor arterial, travels from South River Street through the Palisades Drive signal to its intersection with SR 267. It serves a variety of commercial and residential areas, along with the regional park. The peak ADT along this roadway is approximately 19,680 vehicles per day between West River Street and Palisades Drive. This roadway was formerly SR 267. However, with the completion of the SR 267 bypass in November 2002, ownership of the roadway was transferred to the Town of Truckee.

Bridge Street

This minor arterial roadway is located in central Truckee. From the north, it travels from its I-80 undercrossing through the Commercial Row area and the at-grade crossing of the UPRR tracks. The roadway becomes Brockway Road at its intersection with South River Street. The major intersections on this roadway are Donner Pass Road and West River Street. At the intersection with Donner Pass Road, the eastbound and westbound Donner Pass Road approaches, as well as the southbound Bridge Street approach, are controlled by stop signs, while the northbound approach is uncontrolled. The peak summer ADT along this roadway is approximately 11,710 vehicles per day just east of McIver Crossing.

Hirschdale Road

Hirschdale Road is a two-lane roadway in Nevada County (outside the Town boundaries) that provides a connection from the Glenshire neighborhood to I-80. It also serves residences east of Glenshire. The peak summer ADT along this roadway is approximately 3,100 vehicles per day.

McIver Crossing

McIver Crossing is a two-lane roadway connecting West River Street to the roundabout serving Donner Pass Road.

Collector Streets

The collector street system provides both property access and traffic circulation between residential neighborhoods, commercial areas, and industrial zones. Collector streets extend into residential neighborhoods, distributing trips from the arterials through the area to their ultimate destinations.

The following streets and street segments have been designated as collector streets in Truckee:

- South Shore Drive
- Comstock Drive
- Alder Creek Road (portion)
- Rainbow Drive
- Palisades Drive
- Dorchester Drive
- The Strand
- Manchester Drive
- Deerfield (portion)
- Donner Lake Interchange
- Ponderosa Drive
- Soaring Way
- Hansel Drive
- Alder Drive (from SR 89 to Beacon Drive)
- Prosser Dam Road (portion)
- East River Street
- Martis Valley Drive
- Pioneer Trail
- Schussing Way
- Fjord Road
- Jibboom Street
- Church Street
- Spring Street
- Truckee Airport Road (portion)

Local Roadways

All facilities not within the higher classifications are local roadways. These roads ultimately allow direct access to abutting property and connections to the collector and arterial roadways. They provide the lowest level of vehicle mobility and usually are not served by bus routes.

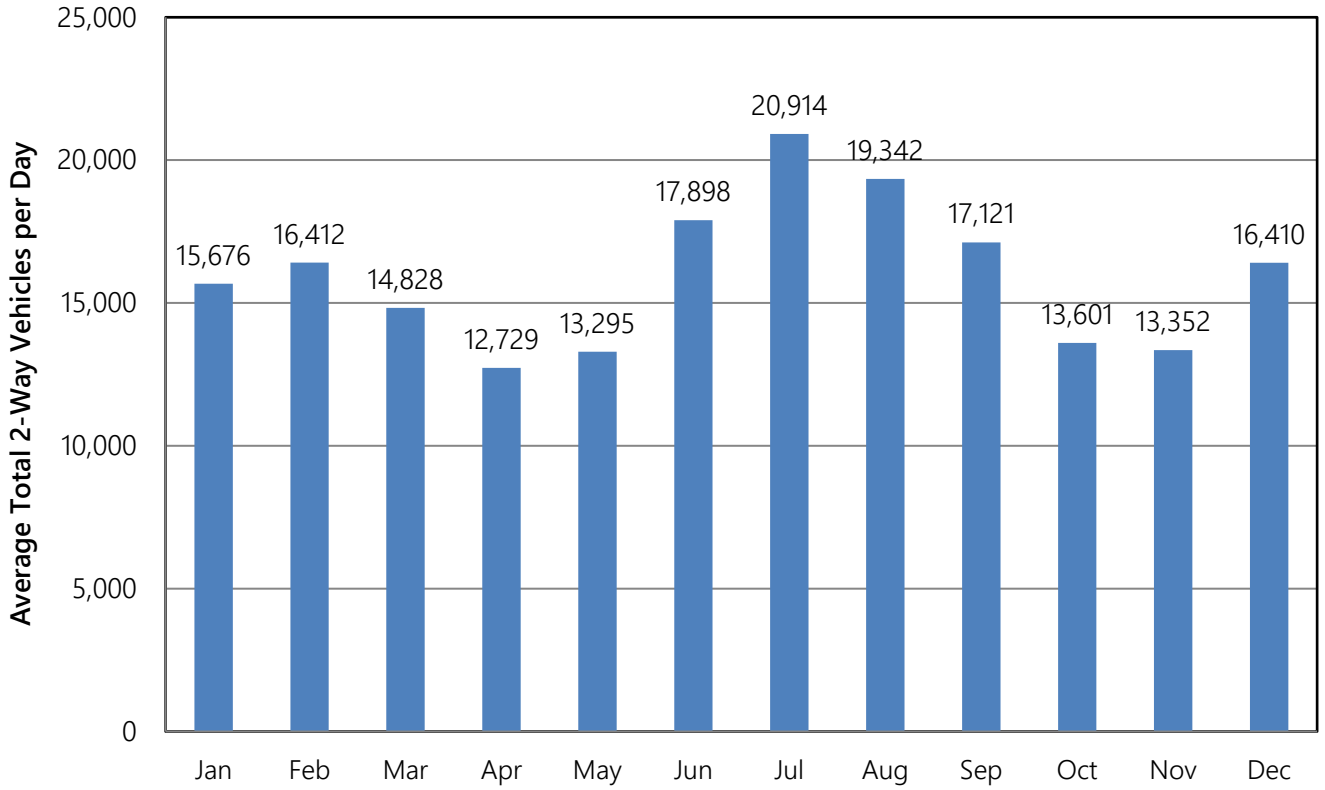
TRAFFIC VOLUMES

Seasonal Variation in Traffic Volumes

Variation in traffic volumes on Truckee roadways over the course of the year depends on the degree to which individual roadways serve residents or visitors. While volumes on roadways serving residential neighborhoods are relatively constant over the course of the year, volumes on roadways with a higher proportion of visitor traffic vary significantly by season. Figure 4-2 depicts monthly traffic volumes on SR 267 between Brockway Road and Airport Road (as monitored by the California Department of Transportation [Caltrans]), which reflects a roadway with a high proportion of visitor traffic. As shown, volumes peak in July. In comparison, volumes in the busiest winter month (February) are 22 percent lower than the summer peak volume, while the volume of the off-season's lowest month (April) is 39 percent lower than the summer peak volume.

Considering traffic volumes by day of week at this SR 267 location in the peak summer season, the busiest traffic volume was recorded on Friday (23,552) and lowest on Sunday (18,473), with the daily volume on the remainder of the days of the week ranging from 19,532 to 21,493.

FIGURE 4-2 AVERAGE DAILY TRAFFIC VOLUME ON SR 267 SOUTH OF BROCKWAY ROAD BY MONTH 2016



Source: Caltrans District 3 Sacramento/Marysville Office, October, 2018

Summer Daily Traffic Volumes

The summer daily traffic volumes for major roadways in Truckee are shown in Table 4-1. SR 267, Northwoods Boulevard, Donner Pass Road, and Pioneer Trail had the highest summer daily two-way traffic volumes.

Table 4-1 Town of Truckee Summer Daily Traffic Volumes, 2018

Roadway	Segment	Two-Way Daily Traffic Volume
Donner Lake Road	I-80 to McGlashan Drive	1,660
SR 89 South	Deerfield Drive to West River Street	12,930
SR 89 South	Just south of West River Street	12,090
Deerfield Drive	Just west of SR 89 to SR 89	10,100
Cold Stream Road	Donner Pass Road to Deerfield Drive	3,140
West River Street	Just east of SR 89	6,200
West River Street	Just west of Bridge Street	11,400
West River Street	Just east of McIver Crossing	14,040
East River Street	Bridge Street to Commercial Zone	1,470
Bridge Street	Just east of McIver Crossing	11,710
Donner Pass Road	Just west of South Shore Drive	1,880
Donner Pass Road	Just east of South Shore Drive	2,890
Donner Pass Road	Just west of Cold Stream Road	7,650

Table 4-1 Town of Truckee Summer Daily Traffic Volumes, 2018		
Roadway	Segment	Two-Way Daily Traffic Volume
Donner Pass Road	Cold Stream Road to I-80 westbound ramp	12,230
Donner Pass Road	West of Northwoods Drive to Northwoods Drive	15,820
Donner Pass Road	Northwoods Drive to SR 89 South	17,380
Donner Pass Road	SR 89 South to I-80 central interchange	13,300
Donner Pass Road	Spring Street to McIver Crossing	6,000
Donner Pass Road	Spring Street to Bridge Street	9,460
Donner Pass Road	Bridge Street to Truckee Way	9,980
Truckee Way	Church Street to Glenshire Drive	11,300
Truckee Way	Glenshire Drive to I-80 eastern interchange	12,010
Truckee Way	Pioneer Trail to SR 89 North	14,040
SR 89 North	I-80/SR 267 interchange to Truckee Way	12,190
SR 89 North	Prosser Dam Road/Alder Drive to Rainbow Drive	8,420
SR 89 North	Alder Creek Road to north town limit	2,490
SR 267	Brockway Road to I-80 interchange	21,610
SR 267	Town limit to Brockway Road	21,910
Brockway Road	West River Street to Palisades Drive	19,680
Brockway Road	Palisades Drive to Martis Valley Road	12,270
Brockway Road	Just east of Martis Valley Road	13,080
Brockway Road	Just west of SR 267	14,510
Martis Valley Road	Brockway Road to Old Mill Road	6,440
Palisades Drive	Brockway Road to Pine Cone Drive	7,930
Palisades Drive	Pine Cone Drive to Torrey Pine Road	4,560
Glenshire Drive	Truckee Way to Olympic Boulevard	8,380
Glenshire Drive	Just west of Dorchester Drive (West)	7,540
Glenshire Drive	Just east of Martis Peak Road	3,370
Northwoods Boulevard	Just north of Bull Pine Trail	18,510
Pioneer Trail	Just west of Truckee Way	17,010

Source: Counts conducted by LSC Transportation Consultants in summer 2018.

Recent Traffic Volume Trends

Traffic trends on state highways (including I-80) between 2006 and 2017 (the most recent available data) are shown in Table 4-2. I-80 volumes dropped substantially between 2006 and 2010 but have since climbed to exceed the 2006 levels. From 2011 to 2017, peak-month daily traffic volumes on I-80 east of Truckee increased by 19 percent, while those on I-80 west of Truckee increased by 39 percent. SR 267 volumes dipped slightly between 2006 and 2009 but have grown by 38 percent between 2009 and 2017. While the most recent available data on SR 89 south of Truckee is only from 2014, these volumes indicate a 49-percent increase since 2006. Finally, volumes on SR 89 north of Truckee have been essentially flat over the last 10 years.

Table 4-2 Town of Truckee Traffic Trends, 2006-2017

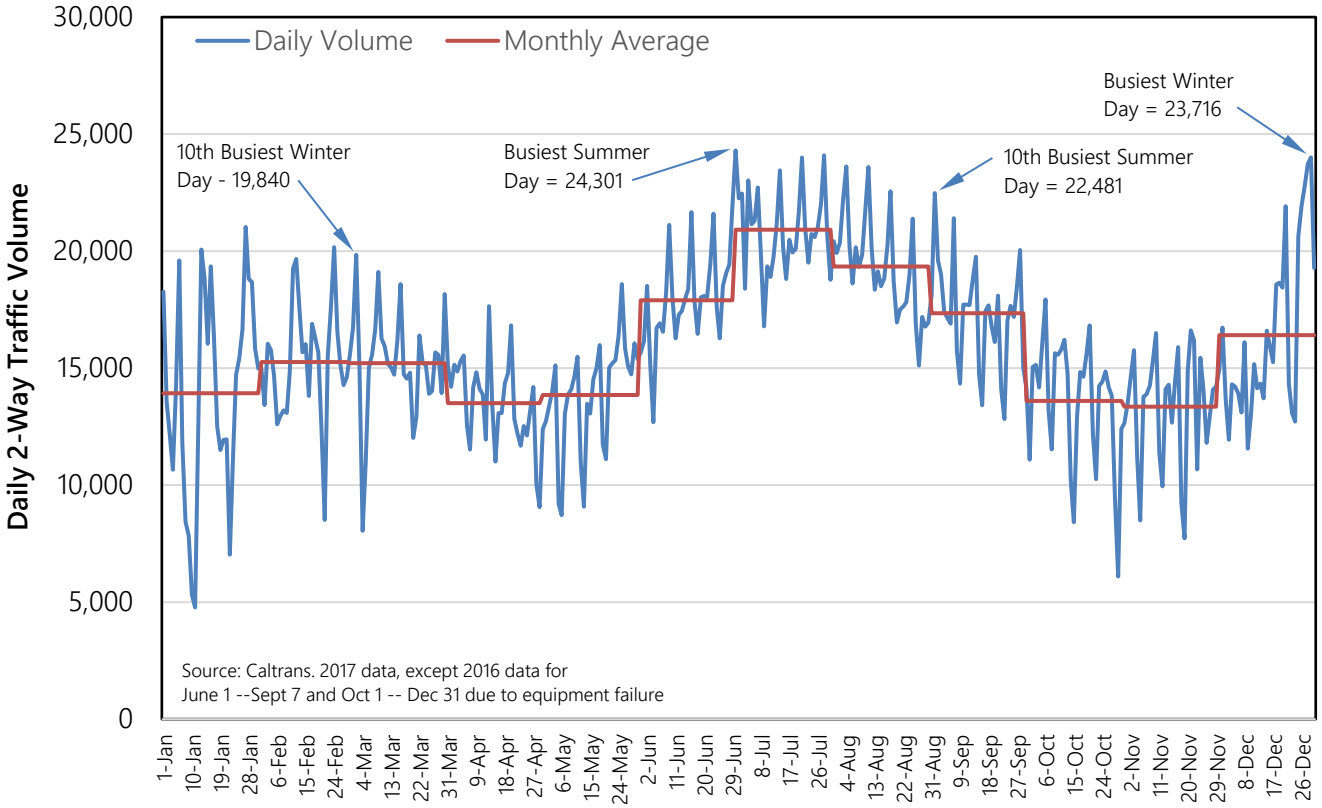
Location	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
I-80 west of Donner Lake Interchange	36,500	33,500	30,000	30,000	28,500	28,500	33,000	35,500	34,000	38,000	39,500	39,500
I-80 west of Hirschdale Road	36,000	33,500	30,000	31,000	30,500	32,000	35,000	34,000	35,000	35,500	38,000	38,000
SR 89 south of Placer/Nevada County line	17,100	17,100	17,600	17,600	25,000	25,000	25,000	25,000	25,500	N/A	N/A	N/A
SR 89 south of Prosser Dam Road/Alder Drive	6,500	6,500	6,700	6,700	6,700	6,700	6,700	6,700	6,700	6,700	6,700	6,700
SR 267 north of Placer/Nevada County line	17,200	16,600	16,100	15,200	16,200	16,400	16,600	16,600	19,000	19,500	21,000	21,000

Source: Caltrans 2018

Traffic Variation Over the Course of the Year

Caltrans maintains a permanent count station on SR 267 at Brockway Road/Soaring Way (this is the only location in Truckee with available year-round count data). The most recent available approved counts were obtained from Caltrans. Due to equipment failure in 2017, this data reflects counts conducted in 2016 from June 1 to September 7 and from October 1 to the end of the year, and 2017 counts in other periods. Figure 4-3 depicts the daily variation in total two-way traffic volumes on the busier segment of 267 just to the south of Brockway Road/Soaring Way. As shown, the largest volume (on Friday, July 1) was 24,301 vehicles. In comparison, the largest winter volume (24,001 on Friday December 30th) was 1 percent lower. Peak winter volumes were limited to a fewer number of days than were summer volumes; as an example, the 10th-highest summer daily volume was 22,481 while the 10th-highest winter volume was 19,840, or 12 percent lower. Summer volumes are also higher on a monthly basis, as the busiest summer monthly average daily volume (20,914 in July) is 37 percent higher than the busiest winter month (15,256 in March).

FIGURE 4-3 DAILY 2-WAY TRAFFIC VOLUME ON SR 267 SOUTH OF BROCKWAY POND



Town of Truckee Level of Service

The analysis of intersections relies on qualitative measures known as level of service (LOS) to describe traffic operating conditions along a roadway or at an intersection. Roadway LOS is based upon a comparison of the traffic volume along the roadway to the capacity of that roadway, whereas intersection LOS is based on the delay associated with vehicles making specific movements at an intersection. LOS ranges from "A" (with no congestion) to "F" (where the system fails with gridlock or stop-and-go conditions prevailing). These levels of service are further described in Tables 4-3 and 4-4.

Table 4-3 Signalized Intersection Level of Service Definition

Level of Service	Delay Conditions and Maneuverability
A	Free flow or insignificant delays. Drivers unimpeded in their ability to maneuver within traffic. Minimal delay at signalized intersections.
B	Stable operation, minimal delays. Drivers are only slightly restricted within platoons of traffic. Insignificant delays at signalized intersections.
C	Stable operation, acceptable delays. Ability to maneuver more restricted. Major approach phases at signalized intersections are fully utilized and drivers experience lower travel speeds.
D	Restricted flow, regular delays. Drivers may have to wait through more than one red signal indication. Queues may develop but dissipate rapidly without excessive delays.
E	Maximum capacity, extended delays. Volumes at or near capacity with significant delays. Vehicles may wait through several signal cycles with long queues at signalized intersections.
F	Forced flow, excessive delays. Represents jammed conditions. Intersections operated below capacity with low volumes. Queues may block upstream intersections.

Source: Transportation Research Board 2000

Table 4-4 Intersection Level of Service Delay Criteria

Grade	Signalized Intersection	Unsignalized Intersection
A	< or = 10 seconds	< or = 10 seconds
B	10–20 seconds	10–15 seconds
C	20–35 seconds	15–25 seconds
D	35–55 seconds	25–35 seconds
E	55–80 seconds	35–50 seconds
F	>80 seconds	>50 seconds

Source: Transportation Research Board, 2016

LOS Methodology

Intersection LOS conditions were evaluated using the methodologies documented in the *Highway Capacity Manual 2016* (Transportation Research Board 2000), as applied in the TRAFFIX software package (Dowling Associates 2000), with the exception of the Bridge Street/Donner Pass Road intersection. The Bridge Street/Donner Pass Road intersection is unconventional in that it contains stop signs on three of four approaches, with no control (free flow) on the northbound approach. The *Highway Capacity Manual 2000* does not provide a methodology for calculating LOS for this type of intersection. In addition, there appears to be no established way to calculate delay at this type of intersection per the HCM methodologies. Therefore, it was determined that the best way to evaluate the operations of this intersection is through computer simulation. Simulation allows the intersection to be modeled by randomly "feeding" traffic into the intersection to replicate how it would operate in real-world conditions. Synchro/SimTraffic (Version 5.0, Trafficware, 2001) was used to feed each vehicle into the network and to track and summarize the statistical data for the simulation run. The LOS presented in this report is based upon the average of the results of five simulation runs.

Existing Summer Level of Service

Roadway Level of Service

The summer LOS for all roadways within the study area of Truckee is E or greater. Therefore, all roadways in Truckee attain the LOS standard.

Intersection Level of Service

The summer LOS at all study intersections is summarized in Table 4-5. Currently, two intersections are not attaining the Town's existing General Plan LOS standard: West River Street/Bridge Street and Donner Pass Road/Bridge Street.

Table 4-5 Town of Truckee Summer Intersection Level of Service, 2018

Main Street	Cross Street	Level of Service
Donner Pass Road	Cold Stream Road/I-80 eastbound ramps	E
Donner Pass Road	I-80 westbound western interchange	C
SR 89 South	Donner Pass Road/Frates Lane	D
SR 89 South	I-80 westbound ramps	C
SR 89 South	I-80 eastbound ramps	B
SR 89 South	Deerfield Drive	B
West River Street	Bridge Street	F
Donner Pass Road	Bridge Street	F
Truckee Way	Glenshire Drive	D

Table 4-5 Town of Truckee Summer Intersection Level of Service, 2018		
Main Street	Cross Street	Level of Service
SR 267	Brockway Road/Soaring Way	D
SR 89 North/SR 267	I-80 eastbound ramps	E
SR 89 North/SR 267	I-80 westbound ramps	D
Donner Pass Road	SR 89 North	A

Source: Modeling conducted by LSC Transportation Consultants in 2018

4.2.3 Regulatory Setting

The planning, operations, and maintenance of the streets and highways are regulated by State, regional, and local agencies.

STATE

California Department of Transportation

Caltrans is responsible for planning, design, construction, and maintenance of all interstate freeways and State highway routes. The department sets design standards that are often used by local governments. Caltrans requirements are described in its *Guide for Preparation of Traffic Impact Studies*, which covers the information needed for Caltrans to review the impacts on State highway facilities, including freeway segments, on- and off-ramps, and signalized intersections.

California Complete Street Act of 2008

The purpose of the Complete Street Act is to require cities and counties to include circulation elements within general plan policies and programs supporting the development of a well-balanced, connected, safe, and convenient multimodal transportation network. This network should consist of complete streets designed and constructed to serve all users of streets, roads, and highways, regardless of their age or ability, or whether they are driving, walking, bicycling, or taking transit. The network should allow for all users to effectively travel by motor vehicle, foot, bicycle, and transit to reach key destinations within their community and the larger region.

Senate Bill 743

SB 743 requires the Office of Planning and Research to update the State CEQA Guidelines and establish "criteria for determining the significance of transportation impacts of projects within transit priority areas." As part of the new State CEQA Guidelines, the new criteria "shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." The new criteria eliminate the use of LOS measures in favor of VMT for CEQA environmental review purposes. It does not preclude the use of LOS for review purposes at the local level. The Nevada County Transportation Commission is conducting a study that will provide recommended VMT standards for the jurisdictions within Nevada County to consider, including the Town of Truckee, consistent with SB 743.

REGIONAL

Nevada County Regional Transportation Plan 2015–2035

The Nevada County Transportation Commission prepared its most recent *Nevada County Regional Transportation Plan* in 2018. The plan has four goals: (1) provide for the save and efficient movement of people, goods, and services; (2) create and maintain a comprehensive, multimodal transportation system; (3) reduce adverse impacts on the natural, social, cultural, and historical environmental; and (4) develop an economically sustainable transportation system.

LOCAL

Town Of Truckee

The existing Town of Truckee policy on LOS is stated in the *Town of Truckee 2025 General* as follows:

- Policy P2.1: Establish and maintain a Level of Service D or better on road segments and for total intersection movements in portions of the Town outside of the Downtown Study Area. Establish and maintain a Level of Service E or better on arterial and collector road segments and for total intersection movements within the Downtown Specific Plan Area. Throughout the town, individual turning movements at unsignalized intersections shall not be allowed to reach LOS F and to exceed a cumulative vehicle delay of four vehicle hours. Both of these conditions shall be met for traffic operations to be considered unacceptable.

4.3 Traffic Patterns and Characteristics

This section provides an overview of travel characteristics in Truckee, including commute patterns, mode share, and crash data.

4.3.1 Major Findings

- Many people commute into and out of Truckee. Depending on the dataset, between 6 and 15 percent of Truckee residents are estimated to commute from Reno/Sparks.
- The private automobile is used by 84 percent of Truckee residents to commute to their job, while another 10 percent telecommute, 3 percent walk to work, and 1 percent bicycle and use public transit.
- Total crashes from 2013 to 2017 have varied between 44 and 83 per year.
- Only 2 percent of all crashes resulted in a fatality.
- The year of 2016 saw the highest number of crashes at nearly 50 percent of total crashes over the past 5 years.

4.3.2 Existing Conditions

COMMUTE PATTERNS

The workplace destinations for residents of Truckee are summarized in Table 4-6, as reported by the U.S. Census Department's Longitudinal Household Employer Dataset.[1] This dataset indicates that nearly 40 percent of employed Truckee residents work within Truckee. Over 60 percent of employed residents leave Truckee for work, with 6 percent commuting to Reno, Nevada, and 7.8 percent commuting to jobs on the North Shore of Lake Tahoe.

Table 4-6 Where Truckee Residents Work

Location	Number	Percent
Truckee, CA	2,584	39.2%
Reno, NV	407	6.2%
Sunnyside-Tahoe City, CA	208	3.2%
Sacramento, CA	129	2.0%
Dollar Point, CA	85	1.3%

[1] This dataset is synthesized from U.S. Census Bureau and U.S. Bureau of Labor Statistics and Unemployment Insurance files, along with federal administrative records. It can include persons who receive their paycheck at one address but work at another and those who telecommute or do not regularly commute to their identified work location. As a result, it does not specifically represent day-to-day commute patterns.

Table 4-6 Where Truckee Residents Work		
Location	Number	Percent
San Francisco, CA	81	1.2%
Incline Village, NV	78	1.2%
Sparks, NV	59	0.9%
Kings Beach, CA	57	0.9%
Roseville, CA	53	0.8%
North Auburn, CA	47	0.7%
Nevada City, CA	43	0.7%
Carnelian Bay, CA	40	0.6%
Tahoe Vista, CA	40	0.6%
South Lake Tahoe, CA	39	0.6%
All other locations	2,637	40%
Total populations	**6,587**	**100%**

Source: U.S. Census Bureau, October 19, 2018

Table 4-7 shows estimates of where employees who work in Truckee reside. As shown, 13 percent of persons employed in Truckee live in Reno, 2.6 percent live on the North Shore of Lake Tahoe, and another 2.5 percent live in Sparks.

Another source of data regarding the commute pattern for persons working in the Truckee area is the *Truckee North Tahoe Truckee Housing Study Final Report* completed in 2016 by BAE Urban Economics for the Tahoe Truckee Community Foundation. This included a survey of 1,627 persons employed in the Truckee/North Tahoe area. It indicated that 90 percent of Truckee/North Tahoe region employees live in the region, with 6 percent living in the Reno Area.

Table 4-7 Where Employees Working Within Truckee Live		
Location	Number	Percent
Town of Truckee, CA	2,584	42.4%
Reno, NV	794	13.0%
Sparks, NV	155	2.5%
South Lake Tahoe, CA	86	1.4%
Incline Village, NV	69	1.1%
Carson City, NV	62	1.0%
Kings Beach, CA	61	1.0%
Roseville, CA	52	0.9%
San Francisco, CA	46	0.8%
Spanish Springs, NV	35	0.6%
Sun Valley, NV	34	0.6%
Sacramento, CA	32	0.5%
Sunnyside-Tahoe City, CA	32	0.5%
Rocklin, CA	26	0.4%
Lincoln, CA	25	0.4%
All other locations	2,007	33%
Total populations	**6,100**	**100%**

Source: U.S. Census Bureau, October 19, 2018

COMMUTE MODE SHARE

The commute mode shares from the U.S. Census Bureau's 2016 American Community Survey are summarized in Table 4-8. Of all Truckee residents, 77 percent of commuters drive alone. It bears noting that these data often do not reflect seasonal residents/workers.

Table 4-8 Truckee Resident Commute Mode Shares

Location	Town of Truckee	Nevada County
Drive Alone	77%	76%
Carpool	9%	8%
Public Transit	1%	1%
Bike	2%	1%
Walk	2%	3%
Telecommute	8%	10%
Other	1%	1%

Source: U.S. Census Bureau 2016

CRASH DATA

Crash statistics in Truckee for the most recent available 5-year period (2013–2017) were compiled from the Transportation Injury Mapping System (TIMS) maintained by the University of California at Berkeley, based on the Statewide Integrated Traffic Records System (SWITRS). The SWITRS data include the number, type, and severity of crashes, possible contributing factors, and involvement of bicycles or pedestrians. Unlike the full SWITRS data, the TIMS data do not include property damage–only crashes. Figure 4-4 shows the location of concentrations of collisions in Truckee between 2013 and 2017, indicating a concentration at the I-80 interchanges, along Donner Pass Road, along Bridge Street, and at the SR 267/Brockway Road intersection. Figure 4-5 shows the location of each pedestrian crash that was reported between 2013 and 2017. While pedestrians were struck in various locations, there was a concentration in the downtown area along Bridge Street. None of the pedestrian collisions during this time period resulted in fatality.

Crash Severity

The number of crashes involving fatalities and injuries (F+I) by year and level of severity are summarized in Table 4-9. There was a total of 311 F+I crashes reported for the 5-year period. These crashes resulted in five deaths and 306 injuries within the town. Table 4-10 shows the vehicle type of each of these crashes by year.

Table 4-9 Town of Truckee Crash Severity, 2013–2017

Crash Severity	2013	2014	2015	2016	2017	Total	Percent
Fatal	0	0	1	2	2	5	2%
Injury (severe)	8	5	13	10	6	42	12%
Injury (other visible)	23	13	24	27	25	112	37%
Injury (complaint of pain)	18	26	38	44	26	152	49%
Total populations	**49**	**44**	**76**	**83**	**59**	**311**	**100%**

Source: UC Berkeley 2018

Table 4-10 Crash by Vehicle Type, 2013–2017

Vehicle Involvement	2013	2014	2015	2016	2017	Total	Percent
Pedestrian	0	3	5	5	4	17	5%
Bicycle	6	4	8	12	2	32	10%
Motorcycle	3	0	5	6	2	16	5%
Truck	3	4	6	4	4	21	7%
Auto	37	33	52	56	47	225	72%
Total	**49**	**44**	**76**	**83**	**59**	**311**	**100%**

Source: UC Berkeley 2018

4.3.3 Regulatory Setting

No regulatory setting information relates to traffic patterns and characteristics.

4.4 Active Transportation (Bikeways, Trails, and Pedestrian Facilities)

This section describes the active transportation facilities serving Truckee, including on-street and off-street bikeways. Trail systems, pedestrian facilities, and activity areas are also included in this section.

4.4.1 Major Findings

- Truckee has a growing network of protected Class I, II, and III trails. The *Truckee Trails & Bikeways Master Plan* (2015) proposed 35 miles of paved trails throughout the town at build out. Sidewalks are primarily limited to commercial districts and are less common within residential neighborhoods.

4.4.2 Existing Conditions

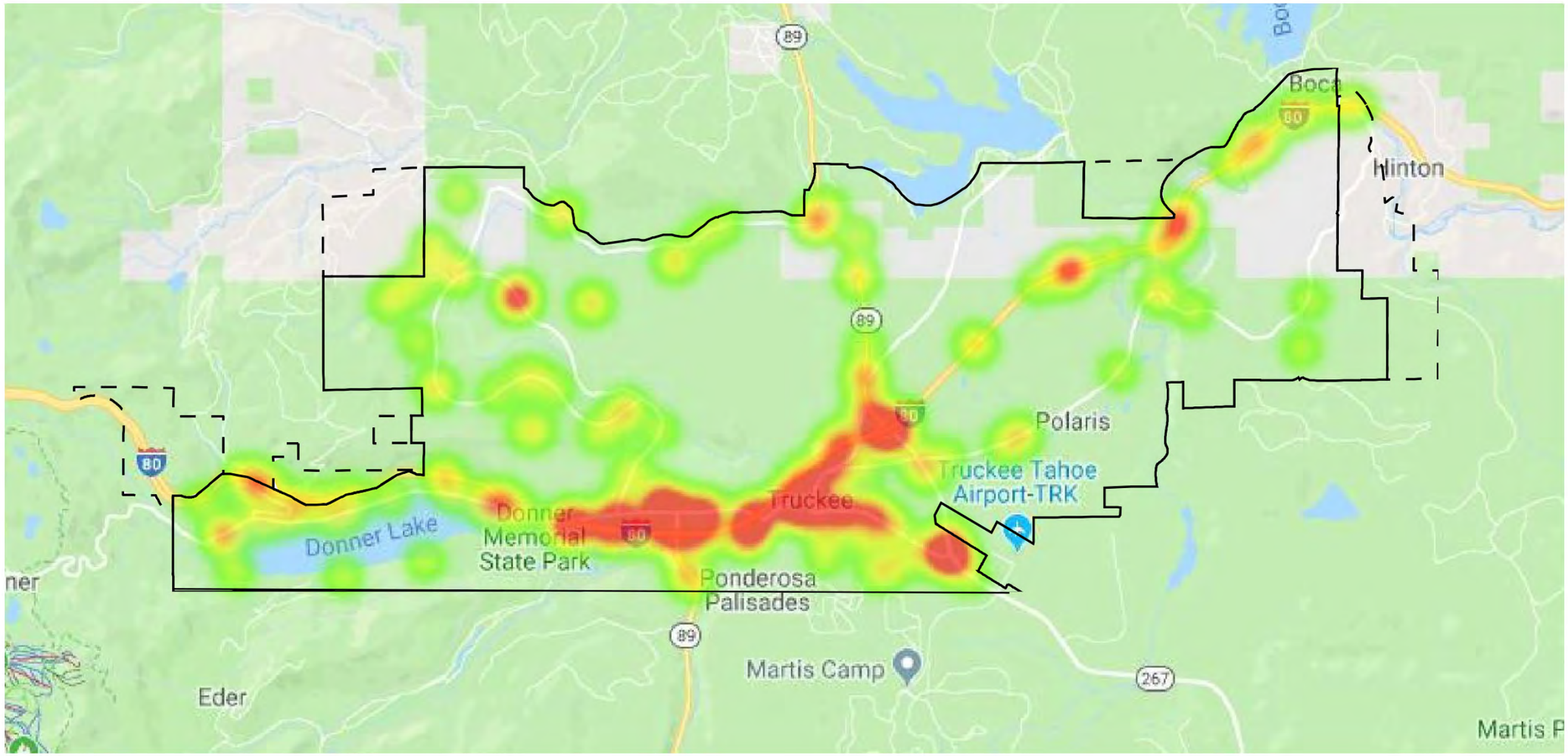
Bicycle and Multiuse Facilities

The topography of the town of Truckee ranges from relatively flat terrain along the Truckee River and downtown area to rolling and steep terrain north and south of the downtown area. The network of bicycle and multiuse bicycle/pedestrian facilities in Truckee is designed to connect all major commercial, residential, and recreational areas. Figure 4-6 shows existing bicycle and multiuse paths spanning west and east from downtown Truckee. Table 4-11 describes various paths by class and type.

Table 4-11 Types of Bikeways, Trails, and Pedestrian Facilities

Facility Type	Delay Conditions and Maneuverability
Paved trail (Class I)	Paved trails are used exclusively by bicyclists, pedestrians, and other nonmotorized users, with minimal cross-flow by motor vehicles. Paved trails have a hard surface (asphalt or concrete) and are almost always located in an exclusive right-of-way.
Bike lane (Class II)	Bike lanes are areas within paced streets that are identified with striping, stencils, and signs for preferential (semi-exclusive) bicycle use.
Bike route (Class III)	Bike routes are on-street routes intended to provide continuity to the bikeway system. They are designed by signs or permanent marking and are shared by motorists. Many bike routes provide shoulders that can be used by bicyclists or pedestrians.
Dirt trail	Dirt trails are facilities for use exclusively by nonmotorized users, such as bicyclists, pedestrians, equestrians, and other nonmotorized users, with minimal cross-flow by motor vehicles.

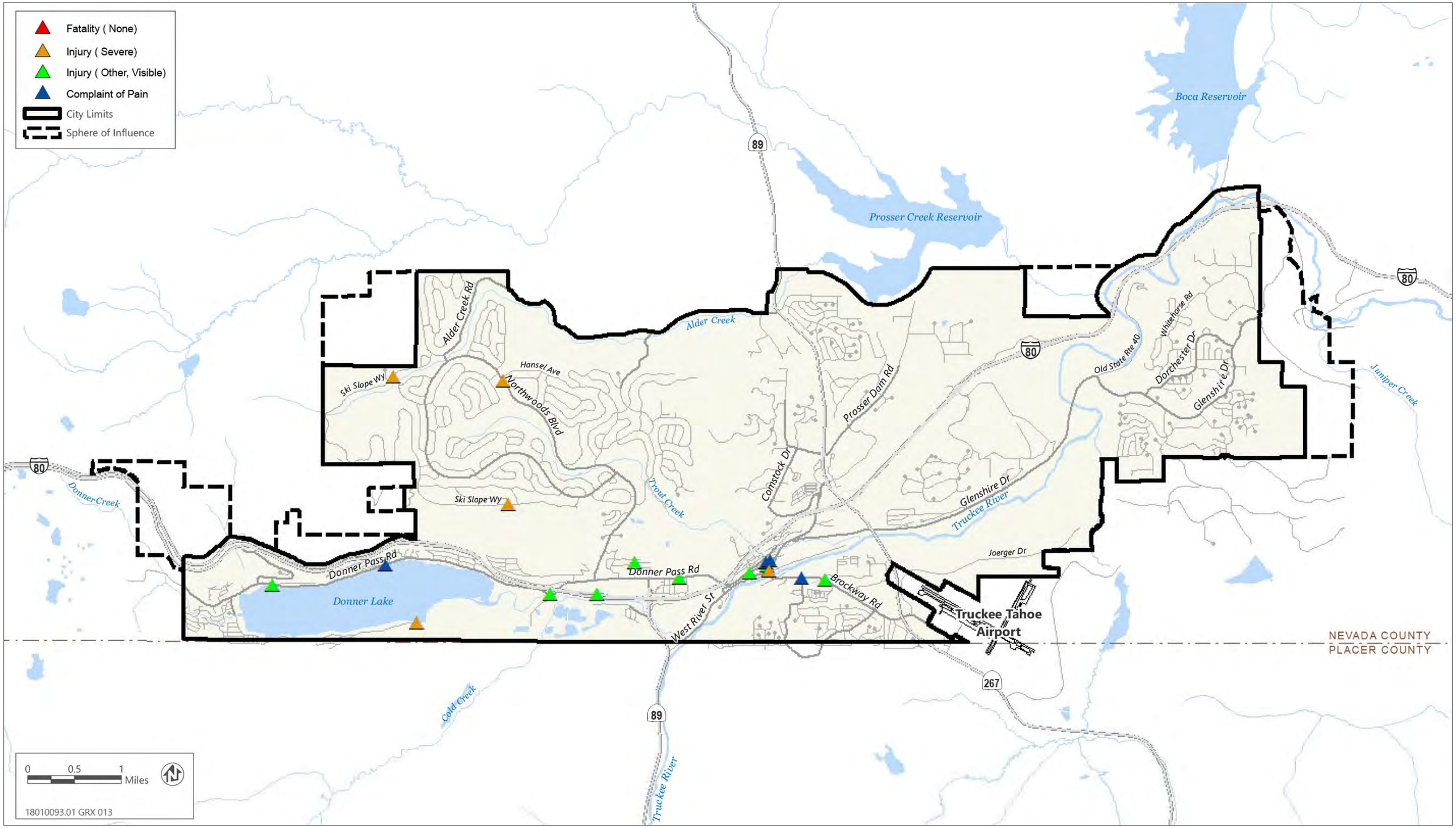
Source: Town of Truckee 2015



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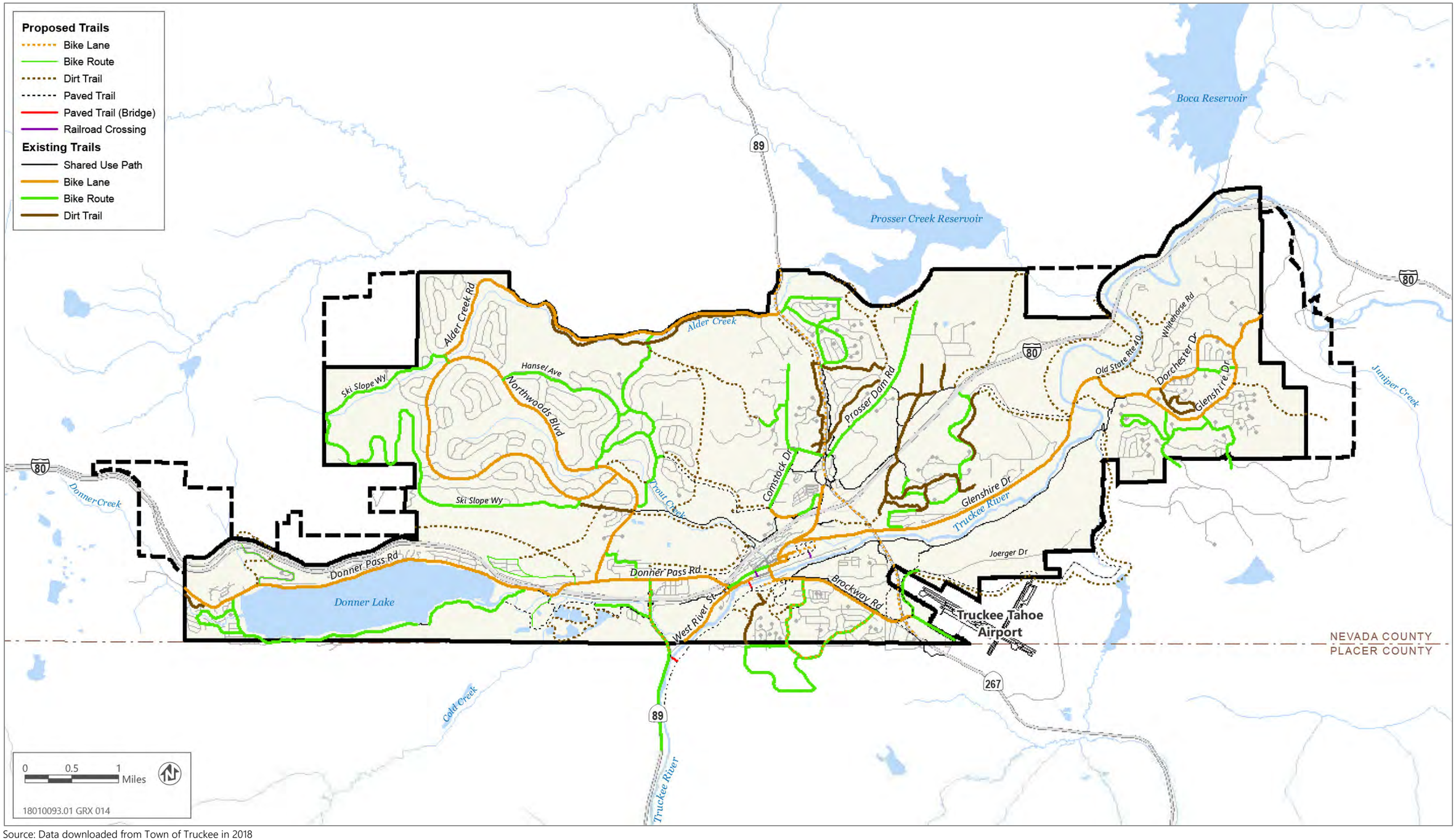
Source: Transportation Injury Mapping System (TIMS), UC Berkeley, accessed October 19, 2018

FIGURE 4-4 TOTAL CRASHES HEATMAP WITHIN THE TOWN OF TRUCKEE, 2013-2017



Source: Data downloaded from Town of Truckee in 2018

FIGURE 4-5 PEDESTRIAN CRASHES WITHIN THE TOWN OF TRUCKEE, 2013-2017



Source: Data downloaded from Town of Truckee in 2018

FIGURE 4-6 EXISTING BICYCLE TRAIL NETWORK

At present, the trail and bikeway network within the town limits is relatively limited. Existing trails include recreational trails/Class I bike trails that are in place through the Truckee River Regional Park between Brockway Road and SR 267, in short sections north of the Pioneer Commerce Center, along Brockway Road, and along Deerfield Drive. These multiuse trails connect downtown with the Gateway area and south Truckee neighborhoods.

Class II bike lanes are located along the length of Donner Pass Road, Northwoods Boulevard, Alder Creek Road, West River Street, Brockway Road, and Glenshire Drive. Class III bike routes are located within several of Truckee's residential neighborhoods, including Tahoe Donner, Glenshire, Olympic Heights, Gateway, and Prosser Lakeview Estates.

Additional bike routes have been approved for construction within the Ponderosa Palisades/Brockway Road area and west of SR 89. Additional dirt trails have been proposed throughout Truckee residential neighborhoods including Tahoe Donner, Glenshire, and west of SR 89. Table 4-12 shows currently existing and proposed facility mileage by classification.

Table 4-12 Length of Bikeway Facilities by Classification

Classification	Existing Mileage	Proposed Mileage
Paved Trail (Class I)	20.1	16.3
Bike Lane (Class II)	30.6	8
Bike Route (Class III)	39.5	3.3
Dirt Trail	13.5	31.7
Total	**104.3**	**59.3**

Source: Town of Truckee, 2019

Pedestrian Facilities

Pedestrian facilities include sidewalks, paths, trails, curb ramps, and crossings. Amenities such as street furniture, pedestrian-scale lighting, and landscaping provide an inviting environment that is conducive to walking. Most streets within, and connecting to, the downtown and commercial areas of Truckee have sidewalks on both sides of the street. Most residential neighborhoods do not have sidewalks.

4.4.3 Regulatory Setting

FEDERAL

Americans with Disabilities Act

The Americans with Disabilities Act (ADA) provides comprehensive rights and protections to individuals with disabilities. The goals of the ADA are to ensure equality of opportunity, full participation, independent living, and economic self-sufficiency. The guidelines address various issues, including roadway design practices; slope and terrain issues; and pedestrian access to streets, sidewalks, curb ramps, street furnishings, pedestrian signals, parking, and other components of public right-of-way.

STATE

California Bicycle Transportation Act

The California Bicycle Transportation Act is part of the California Streets and Highways Code (Sections 890–894.2). This legislation, adopted in 1994, established the responsibilities of State and local agencies with regard to bicycle safety, signage, traffic control, right-of-way, and other matters related to nonmotorized bicycle transportation. The act objective is to "establish a bicycle transportation system designed and developed to achieve the functional commuting needs of the employee, student, business person, and shopper as the foremost consideration in route

selection, have the physical safety of the bicyclist and bicyclist's property as a major planning component, and have the capacity to accommodate bicyclists of all ages."

LOCAL

Truckee Trails & Bikeways Master Plan

The *Truckee Trails & Bikeways Master Plan* was completed by the Town in 2015. Trails, bikeways, and walkways provide a comprehensive active transportation network by offering recreational opportunities for residents, visitors, and employees. The Master Plan identifies different types of trails, bikeways, and walkways, including dirt trails, paved trails, bike lanes, bike routes, and sidewalks. It also identifies major planning goals aimed at improving trail and bikeway connectivity and continuity throughout the town through design, community resources, and plan support. The plan detailed existing facilities and methods in which to prioritize proposed projects. The criteria for prioritizing projects emphasized existing trail connectivity, direct access to key destinations, safe access to schools, and most frequent locations of vehicle-pedestrian collision.

4.5 Transit and Rail Services

This section describes the transit services serving Truckee, including scheduled services, shuttles, and paratransit.

4.5.1 Major Findings

- Truckee is served by Tahoe Truckee Area Regional Transit (TART) (both the element operated by the Town of Truckee and the element operated by Placer County), holiday and special event shuttles, Greyhound, Amtrak throughway bus and rail, and the North Lake Tahoe Express airport shuttle.

4.5.2 Existing Conditions

TRUCKEE'S TAHOE TRUCKEE AREA REGIONAL TRANSIT PROGRAM

The Town of Truckee and Placer County both operate elements of the TART system. The Town of Truckee's program consists of both fixed route service and complementary paratransit service known as Dial-A-Ride operating within the Truckee area. These services provide a range of options for travelers to access recreational, employment, shopping, and social service opportunities while helping to reduce auto use and the community's carbon footprint. A free-fare hourly fixed-route service is provided along the Donner Pass Road and Brockway Road corridors from 9:05 a.m. to 5:05 p.m. on weekdays and Saturdays, during the non-winter seasons. In winter, town services are expanded to include runs to the Donner Summit area through an agreement with summit ski resorts and Placer County. These winter services operate from 6:05 a.m. to 6:05 p.m., 7 days a week including holidays. Over the course of a year, this service carries approximately 14,600 passengers, of which 55 percent board during winter.

The Truckee Dial-A-Ride service is offered year-round to the general public with priority service for seniors and persons with disabilities. Dial-A-Ride is available for trips within the town limits, Monday through Friday, 8:00 a.m. to 5:00 p.m., and Saturday and Sunday, 9:00 a.m. to 5:00 p.m. Reservations are required 24 hours in advance of a trip on the weekdays and by 5:00 p.m. on Friday for weekend trips. Fare for this service is $6 per one-way trip for adults, and $2.00 for seniors and children, although persons eligible under the ADA are not charged a fare. This program serves approximately 7,600 passenger-trips annually.

Holiday Shuttle

During select weeks within the holiday season, the Town of Truckee partners with local agencies and businesses to provide free shuttles. This daily service provides shuttles to and from local neighborhoods, Northstar California and Squaw Valley Resorts, and downtown Truckee between 6:00 p.m. and 2:00 a.m.

Special Event Shuttle

For special events such as anniversary celebrations, Truckee Thursdays, and Town Community Picture Day, the Town provides free shuttles to residents and visitors. These event shuttles are specifically coordinated by location and ridership need.

Placer County TART

Placer County operates a separate but coordinated element of the TART program, consisting of transit services in the North Tahoe region in both California and Nevada. This program also connects the North Lake Tahoe area to Truckee via SR 89 and SR 267. Placer TART operates hourly route service between Tahoe City, Squaw Valley, and Truckee along SR 89 with additional runs during the winter and summer months for peak commute periods. Service is offered generally between 6:30 a.m. and 6:30 p.m. year-round between Tahoe City and Truckee. Bus service is also offered on SR 267 between Crystal Bay, Kings Beach and Truckee year-round, with hourly service to Northstar Ski Resort provided between 6:00 a.m. and 6:00 p.m. Fares are $1.75 per one-way trip, with discounts for seniors, persons with disabilities, and youth. A variety of day, weekly, and monthly passes are also available. Total ridership on the two routes serving Truckee (including passengers not traveling in Truckee) is approximately 113,000 passengers per year, of which 60 percent is on the SR 89 route and the remaining 40 percent is on the SR 267 route. These services are partially funded by the Town of Truckee. Existing TART scheduled services serving Truckee are shown in Figure 4-7.

INTERCITY SERVICES

Greyhound Lines

Greyhound provides regional and long-distance service to and from Truckee 7 days a week, including westbound service along I-80 to Sacramento and the Bay Area and eastbound service to Reno, Salt Lake City, and points beyond. Passengers are served in Truckee at the Truckee Train Depot in downtown. Five westbound runs and three eastbound runs are available daily.

Amtrak Rail Service

The railroad is a defining feature of Truckee's local history and character. Today, the Union Pacific Railroad line through Truckee provides both passenger and freight rail service. Daily Amtrak passenger rail service stops in Truckee as part of the California Zephyr route between the Bay Area and Chicago. Because of delays along the route, this service often operates substantially behind schedule, particularly in the westbound direction. The rail route is also heavily used for freight service, providing a vital transcontinental route for transportation of all types of cargo. Total rail passenger boardings at the Truckee Train Station in 2017 were 14,879.

North Lake Tahoe Express

The North Lake Tahoe Express is operated under contract with a private transportation company and the Truckee North Tahoe Transportation Management Association (TNT/TMA) with funding provided by area lodging establishments, resort associations and public agencies (including the Town of Truckee) under a separate funding agreement with the TNT/TMA. Transit service is provided to and from the Reno Airport from the northern Lake Tahoe region and Truckee. Truckee stops include the Village at Northstar, the Truckee Train Depot, and the Truckee Tahoe Airport. A one-way fare for a single rider is $49 to/from the Reno Tahoe International Airport, and groups of 10 or more are charged $32 per one-way passenger-trip.

4.5.3 Regulatory Setting

REGIONAL

Systems Plan Update for the Tahoe Truckee Area Regional Transit in Eastern Placer County

The *Systems Plan Update for the Tahoe Truckee Area Regional Transit in Eastern Placer County* was completed in 2016 by LSC Transportation Consultants for the County of Placer. This document focuses on services provided in eastern Placer County, as well as connecting services in Truckee and Washoe County in Nevada. The Plan Update identifies existing services and major changes in TART over the last 10 years, as well as the desired expansion of services. The town of Truckee would be served by expansions to SR 89 and SR 267, including evening services and more frequent service. The Plan Update also recommends funding methods to allow for expanding management, dispatch, and maintenance capacity (Placer County 2016).

LOCAL

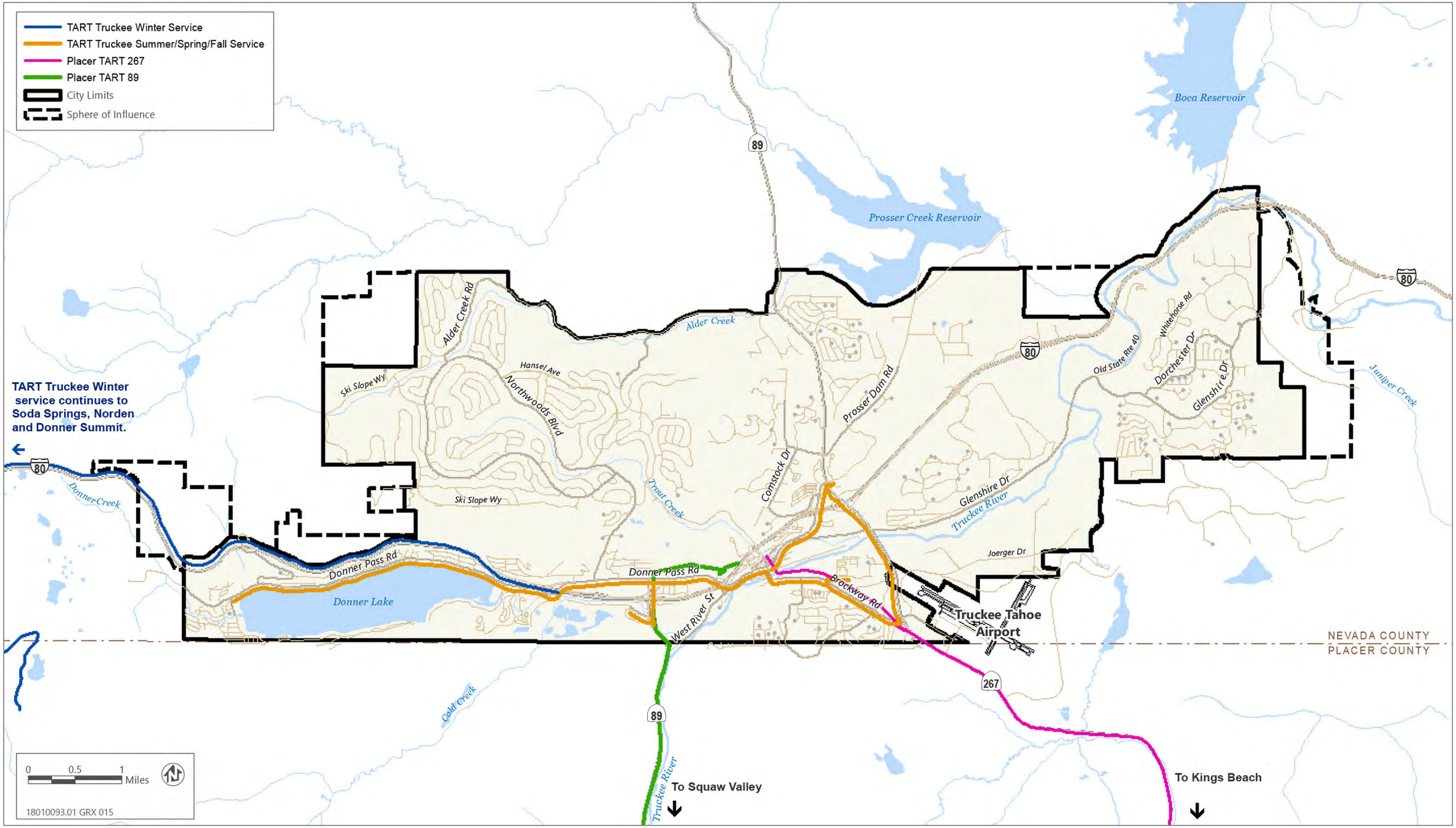
Eastern Nevada County Short Range Transit Development Plan

LSC Transportation Consultants prepared the *Eastern Nevada County Short Range Transit Development Plan* (TDP) in 2017 for the Nevada County Transportation Commission. The primary objective of the TDP was to review public transit services located within eastern Nevada County, as well as portions of eastern Placer County. The TDP identifies unmet transit needs over a three fiscal-year period related to limited parking around Tahoe Forest Hospital, the need for 15 minute TART service frequency along SR 267 and SR 89, the need for additional transit stops throughout the eastern Nevada County region, and a fare free transit system.

The TDP presents service programs, capital improvements, institutional strategies, and financial strategies to guide the improvement of public transit services within the region. The three service plans described in the TDP vary depending on the level of funding available from existing sources, additional local transportation funds, and new local funding sources (LSC Transportation Consultants 2017a).

Truckee Long-Range Transit Plan

The *Truckee Long-Range Transit Plan* was completed in 2017 by LSC Transportation Consultants. The objective of the plan was to present a conceptual long-range expansion of transit services in the Truckee area, including both the incorporated town of Truckee and the Donner Summit area. The proposed expansion includes additional routes to the Glenshire, Prosser-Lakeview, Sierra Meadows, and Tahoe-Donner neighborhoods. It also recommends elimination of fares, increased service frequency along the Donner Pass Road corridor, and the provision of later evening services (LSC Transportation Consultants 2017b). The implementation of plan elements is dependent on new funding or increases to existing revenue sources.



Source: Data downloaded from Town of Truckee in 2018

FIGURE 4-7 EXISTING TRANSIT SERVICES

4.6 Air Transportation

This section describes the aviation facilities serving Truckee. Airport safety regulations per the *Truckee Tahoe Airport Land Use Compatibility Plan* are described in Section 6.4, "Aviation Hazards," of Chapter 6, "Hazards and Safety."

4.6.1 Major Findings

- The Truckee Tahoe Airport serves an average of 92 aircraft operations per day. It also provides important medical transportation, wildfire, and other public safety functions.
- The Truckee Tahoe Airport District has been pursuing efforts to reduce aircraft noise on nearby residential areas, such as by imposing flight curfews and coordinating more efficient flight patterns.

4.6.2 Existing Conditions

TRUCKEE TAHOE AIRPORT

The Truckee Tahoe Airport is operated by the Truckee Tahoe Airport District. The airport is located in unincorporated Nevada County, but the *Truckee Tahoe Airport Land Use Compatibility Plan* applies safety regulations to lands within Nevada County, Placer County, and the town of Truckee (Truckee Tahoe Airport Land Use Commission 2016). It is a general aviation facility that serves the entire north Lake Tahoe region. Most aircraft served by the airport are small, privately owned piston and light turbine aircraft; a much smaller number of medium and large turbine aircraft, including corporate jets, also are served. The Tahoe Truckee Airport District is responsible for conducting operations at the airport, including maintenance of runways, hangars, and other facilities, as well as offering tie-downs for aircraft, fuel sales, and other aviation services. Over recent years, the Airport District has taken steps to reduce the impacts on adjacent neighborhood residents by coordinating flight patterns and imposing curfews.

Facilities

A terminal building built in 2012 includes a pilot lounge, a pilot kitchen, a flight planning room, public meeting rooms, a customer service/UNICOM desk, and the Red Truck Café. A children's playground and park are adjacent to the terminal building. Aircraft services include fueling from 7:00 a.m. to 7:00 p.m. and self-serve from 7:00 a.m. to 9:00 p.m. Ramp services, such as ground power units, potable water, a lavatory, and tugging services, are also available from 7:00 a.m. to 5:00 p.m. There are 210 paved tie-downs for transient parking. The airport has 230 hangars: 200 T-hangars and 30 executive or larger box hangars. On-field business Sierra Aero, found in Hangar 1, offers flight instruction, aircraft rentals, preheating, oxygen services, and aircraft maintenance. Sky diving and soaring operations are also available at the Truckee Tahoe Airport.

Annual Enplanements

During the 2017 calendar year, the airport had 33,580 aircraft operations: 14,978 piston engine, 1,145 piston twin, 6,942 turbo prop, 4,140 jet, 1,229 helicopter, and 5,146 glider operations. As of 2017, the airport saw an average of about 92 aircraft operations per day. The busiest aircraft traffic is typically over holiday weekends and busy periods during the summer and winter peak tourist seasons with the record being 532 operations in 1 day. Peak use of the airport occurs in the summer months. There is a voluntary but strongly requested flying curfew between 10:00 p.m. and 7:00 a.m. as part of the airport's good neighbor policy.

4.6.3 Regulatory Setting

FEDERAL

Federal Aviation Regulations

Federal Aviation Regulations (FARs) are the rules established by the Federal Aviation Administration governing all civilian and, to a lesser extent, military aviation activities in the United States. FARs are designed to promote aviation safety. They are developed and approved through a formal Federal rule-making process and address a wide variety of aviation activities, including aircraft design, flight procedures, pilot training requirements, and airport design. FARs concerning aircraft flight generally preempts any State or local regulations.

STATE

California Aviation System Plan – Policy Element

The *California Aviation System Plan* – Policy Element (2016) guides the business of the Division of Aeronautics that is housed in Caltrans. The Division's primary duties and functions are defined by statute codified in the State Aeronautics Act (originally the State Aeronautics Commission Act of 1947) and published in the California Public Utilities Code, Section 21001 et seq. The Policy Element is one of multiple elements that make up the larger California Aviation System Plan (CASP), the means by which continuous aviation system planning is conducted by the State. CASP elements are revised on an approximately 5-year cycle with the last Policy Element update published in 2016.

LOCAL

Truckee Tahoe Airport Land Use Compatibility Plan

The *Truckee Tahoe Airport Land Use Compatibility Plan* was completed by the Truckee Tahoe Airport Land Use Commission with support by the Nevada County Transportation Commission in 2016. The plan promotes compatibility between the airport and surrounding land uses while serving as a tool to review adjacent land use developments. The Truckee Tahoe Airport, located in the eastern portion of Nevada County, encompasses lands within Nevada County, Placer County, and the town of Truckee. The plan outlines criteria for land use and airport development actions as they relate to the *Town of Truckee General Plan*.

4.7 Parking

This section describes the present public parking facilities in the town, as well as programs and policies to manage parking.

4.7.1 Major Findings

- Truckee has a paid parking program within the downtown commercial area.
- During the winter months (November 1 to April 30), no on-street overnight parking is allowed in Truckee because it can interfere with snow removal activities.

4.7.2 Existing Conditions

Parking in the majority of Truckee consists of private parking facilities, as well as curbside and shoulder parking in the non-winter months. Parking fees apply at Donner Lake State Park. In addition, the Town manages a paid parking program in the downtown area.

SEASONAL PARKING RESTRICTIONS

Town of Truckee Ordinance Section 10.17.030 describes the parking prohibitions during seasonal snow removal. During the winter months (November 1 to April 30), no overnight on-street parking is allowed because it can interfere with snow removal activities.

DOWNTOWN TRUCKEE PAID PARKING PROGRAM

Parking within the downtown area is enforced by the Truckee Police Department daily between 10:00 a.m. and 6:00 p.m., including weekends and most holidays. The meter rates vary between 25 cents for 10 or 15 minutes and $1.00 or $1.50 per hour. The fees generated by the downtown meters fund the Town of Truckee's parking capital improvements, leases, maintenance, and snow removal.

EMPLOYEE AND LONG-TERM PARKING

The Town provides reserved employee parking areas for downtown employees. By applying for a permit, employees may park in one of three designated parking areas: the "Beacon" lot (recently relocated to the Railyard area), Jibboom Street, some portions of the south side of Donner Pass Road in Brickelltown, or the Truckee Diner lot. Spaces are also available downtown, in the Railyard area, for persons taking intercity bus or rail trips, with a 7-day maximum. Long-term parking options are provided at the Truckee Tahoe Airport at the Main Terminal Building on Airport Road. Figure 4-8 shows the parking available in the downtown area.

4.7.3 Regulatory Setting

LOCAL

Town of Truckee Municipal Code

Under Ordinance 10.17.030 of the Truckee Municipal Code, it is unlawful for any person to park, abandon, or otherwise leave unattended any vehicle within the town right-of-way at any time or in any manner that will obstruct, hinder, delay or otherwise inconvenience any Town officer, employee, or Town contractor during snow removal operations or that will leave the vehicle in such a position that it is subject to damage by Town officers, employees, or Town contractors engaged in snow removal operations. This provision does not prohibit the stopping of passenger vehicles for periods sufficient to load or discharge passengers from their vehicles. Owners of vehicles parked in violation of this ordinance may be subject to citation or towing. Owners of vehicles parked in violation of this ordinance also will be held liable for any damage to snow removal equipment that comes into contact with the vehicles. Under this ordinance, the Town is not liable for damage to any vehicles or property parked in violation of the ordinance.

4.8 Goods Movement

This section describes goods movement in Truckee

4.8.1 Major Findings

- Commercial vehicle weights are limited to 6,000 pounds or less on all streets not declared to be truck routes. While the town does not have designated truck routes, Caltrans has designated truck networks in this region. I-80 is designated as a National Network Route, and SR 89 (both south and north of Truckee) is a Terminal Access Route for trucks conforming to the Surface Transportation Assistance Act. SR 267 is a California Legal Route within the area.
- State plans forecast freight travel to increase by 266 percent between 2013 and 2040 (from 18 to 66 daily freight trains)—the greatest percentage growth in any rail corridor in the state.

4.8.2 Existing Conditions

TRUCK ROUTES

Ordinance 10.15.010 of the Town of Truckee Municipal Code states that streets allowing vehicle weights of 6,000 pounds or greater are considered to be "truck routes." Commercial vehicles exceeding 14,000 pounds traveling southbound on Northwoods Boulevard are restricted per the County Nevada Code Section G-IV3.B.3 F No. 18. Beyond this restriction, the Town does not have a formal network of truck routes.

There are no major truck traffic generators in Truckee aside from typical deliveries to commercial retail and residential delivery and two operating quarries located within the town. While the Boca and Martis quarries contribute to the total truck traffic within the region, actual truck activities vary by market demand. Caltrans Traffic Census Program shows annual average daily truck traffic on I-80 to be between 5,600 and 6,700 trucks per day, which is between 15 and 18 percent of the peak month ADT of 38,000 vehicles per day (Caltrans 2018).

FREIGHT RAIL

UPRR provides freight rail service through Truckee, although there are no freight loading facilities in the Truckee area. UPRR's California operations originate from two central hubs: the Roseville Service Unit in northern California and the Los Angeles Service Unit in southern California. The *2018 California State Rail Plan* forecasts that the total daily number of freight trains through Truckee will expand by 266 percent between 2013 and 2040 (from 18 to 66)—the greatest percentage growth in any rail corridor in the state (California State Transportation Agency 2018).

PIPELINE

The Kinder-Morgan high-pressure Donner Pipeline traverses Truckee in and east-west alignment, carrying fuels and other petroleum products between the Bay Area and Reno/Fallon.

4.8.3 Regulatory Setting

FEDERAL

Surface Transportation Assistance Act

The Federal Surface Transportation Assistance Act passed in 1982, allowing large trucks to operate on the interstate and certain primary routes collectively called the National Network. These routes, referred to as Surface Transportation Assistance Act routes, provide a larger turning radius than most local roads can accommodate.

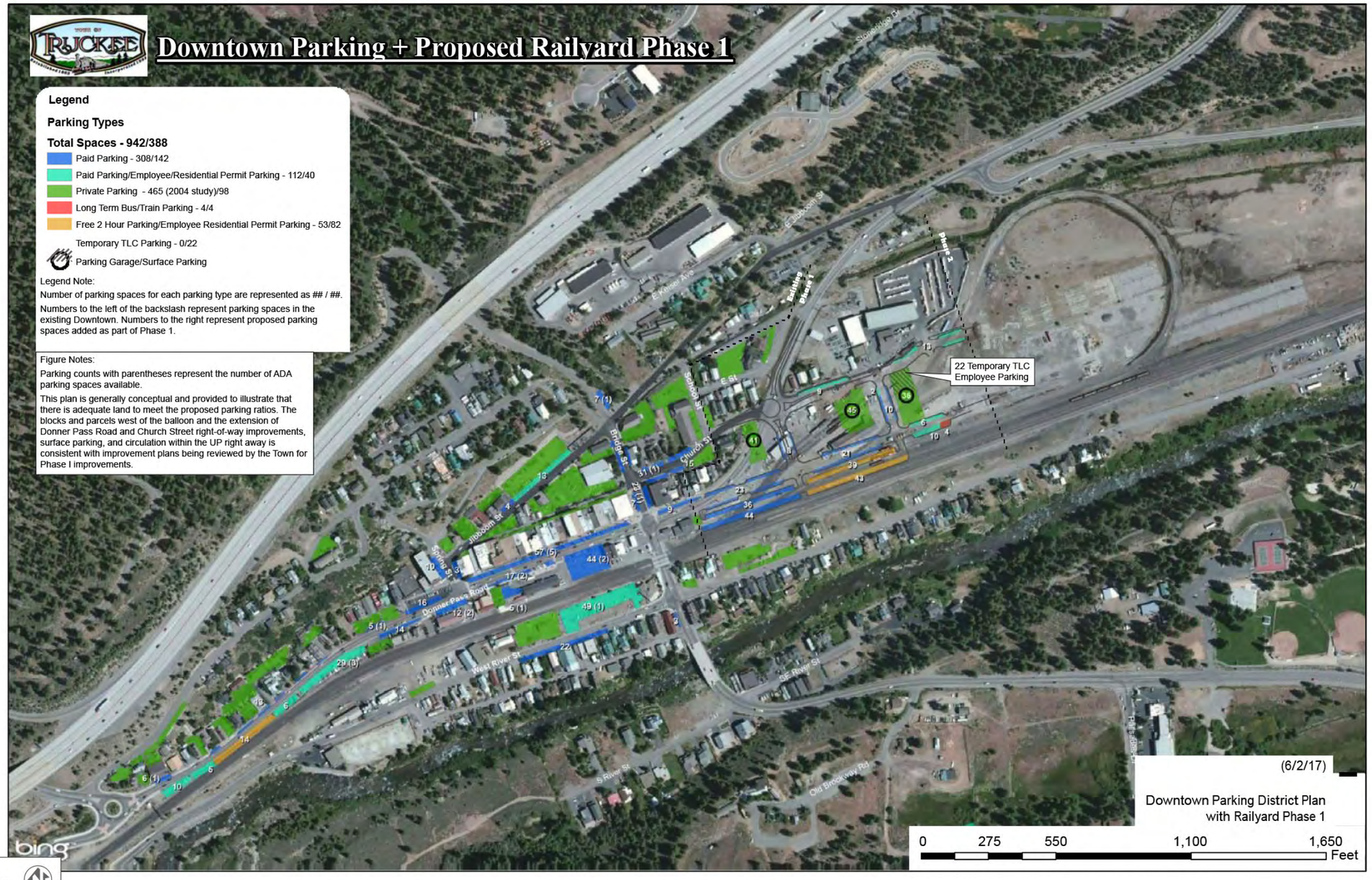
STATE

California Department of Transportation

Caltrans has designated truck networks. I-80 is designated as a National Network Route, and SR 89 (both south and north of Truckee) is a Terminal Access Route for trucks conforming to the Surface Transportation Assistance Act. SR 267 is a California Legal Route.

2018 California State Rail Plan

The California State Rail Plan was updated in 2018. The plan includes information regarding the increase in freight within the UPRR Roseville subdivision from Sacramento to Reno.



Source: Data downloaded from Town of Truckee in 2018

FIGURE 4-8 DOWNTOWN PARKING DISTRICT PLAN

4.9 Planned Transportation System Improvements

Transportation improvements are listed in this section as an overall summary of future projects within the town of Truckee.

4.9.1 Major Findings

- The Town has plans for improvements at 15 Truckee intersections, along six Truckee roadways, and along one Nevada County roadway.
- Truckee and Caltrans have proposed roundabouts at the following locations: Cold Stream Road, western Donner Pass Road, eastern Donner Pass Road, and SR 267 at both I-80 interchange intersections.

4.9.2 Existing Conditions

PLANNED IMPROVEMENTS

Town of Truckee

The 2016 *Truckee Area AB 1600 Traffic Impact Fee Study* describes four major types of planned roadway improvements: new travel lanes, roundabout or equivalent improvements, intersection improvements, and the addition of paved shoulders (LSC Transportation Consultants 2016). These improvements are shown in Figure 4-9.

California Department of Transportation

Caltrans improvement plans are summarized for individual highways in Transportation Concept Reports (TCRs). A review of the TCRs for highways serving Truckee indicated the following:

- There are no planned improvements to the I-80 mainline travel lanes through Truckee. The roundabouts at the Cold Stream Road, western Donner Pass Road, and eastern Donner Pass Road interchanges identified in the Truckee improvement list are also identified in the Caltrans TCR.
- On SR 89 North, planned improvements consist of intersection improvements at Rainbow Road and at Alder Creek Road. The Class II bike lanes identified in the Bicycle Master Plan are also included in the SR 89 TCR.
- Provision of Class II bicycle lanes between Truckee and Squaw Valley is identified for SR 89 South.
- SR 267 plans consist of the construction of two-lane roundabouts at both I-80 interchange intersections, construction of a "roundabout or equivalent improvement" at Brockway Road, and widening to four travel lanes from Brockway Road to the Placer County line and continuing on until Northstar Drive.

4.9.3 Regulatory Setting

STATE

Caltrans Program Review Final Report

The Caltrans Program Review Final Report was written in 2014. While the report identified improvement projects within District 3 and Nevada County, no projects within Truckee were reported.

REGIONAL

Nevada County Capital Improvement Program 2018 Annual Update

The 2018 Update approved under Resolution 18-030 approved the retrofitting of the Hirschdale Road bridges south of Glenshire Drive. However, this repair is outside the town of Truckee's boundary, and no other county projects for the town have been identified.

LOCAL

Truckee Area AB 1600 Traffic Impact Fee Study

A Traffic Impact Fee program was introduced by the Impact Fee Study conducted by LSC Transportation Consultants in 2016. In this study, potential traffic capacity and safety improvement projects were identified and analyzed. By studying various intersections and road levels of service, the plan identifies and recommends the improvements shown in Figure 4-9.

4.10 Key Terms

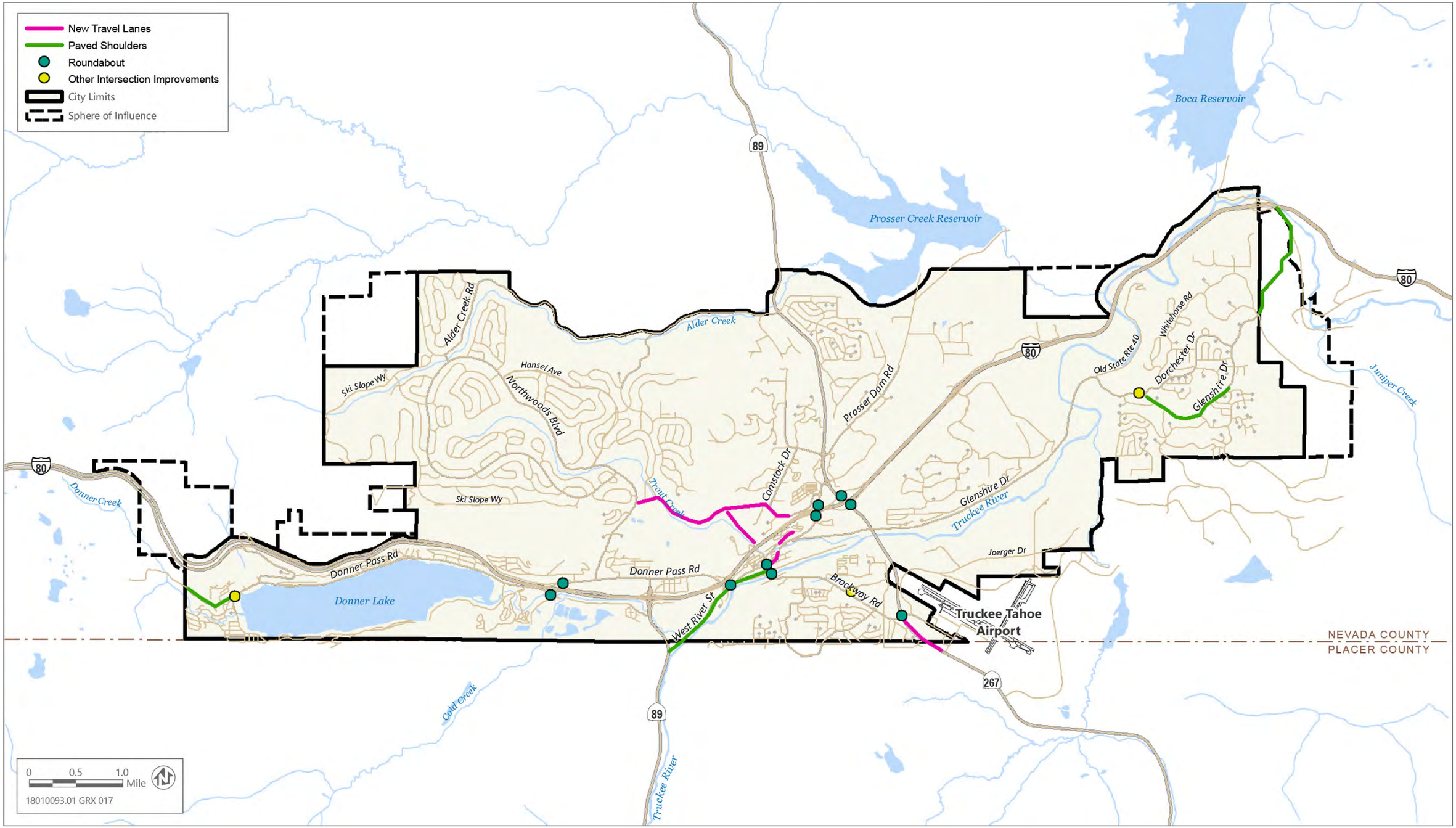
Average Daily Traffic: Average number of vehicle trips (in both directions) per day.

Complete Street: A street corridor that accommodates all types of travelers.

Level of Service: A scale used to characterize traffic conditions, ranging from A (no delays) to F (stop-and-go traffic congestion).

Paratransit: Demand-response transit services designed to serve persons with mobility limitations.

Vehicle Miles Traveled: The total mileage traveled by all vehicles within a defined geographic area and time.



Source: Data downloaded from Town of Truckee in 2018

FIGURE 4-9 PLANNED ROADWAY IMPROVEMENTS

4.11 References

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TRUCKEE 2040
general plan + downtown specific plan



CHAPTER 5 Natural Resources

This chapter summarizes natural resource issues for the Town. It is organized into the following sections:

5.1 Air Quality 5-3
5.2 Water Resources and Quality 5-13
5.3 Biological Resources 5-25
5.4 Open Space and Land Cover 5-39
5.5 Scenic Resources 5-44
5.6 Mineral Resources 5-50
5.7 Key Terms 5-52
5.8 References 5-54

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5.1 Air Quality

This section summarizes the existing air quality conditions and the applicable regulatory framework within the town of Truckee. Air quality is described as the concentration of various pollutants in the atmosphere for a specific location or area. Air quality conditions at a particular location are a function of the type and amount of air pollutants emitted into the atmosphere, the size and topography of the regional air basin, and the prevailing weather conditions. Air quality is an important natural resource that influences public health and welfare, the economy, and quality of life. Air pollutants have the potential to adversely impact public health, the production and quality of agricultural crops, native vegetation, visibility, buildings, and other structures and materials.

Regarding public health impacts from poor air quality, some people are more sensitive to poor air quality than others. These people include children, the elderly, and persons with asthma and other respiratory conditions. Land uses where these people are likely to be located are defined as sensitive receptors. Sensitive receptors include long-term healthcare facilities, hospitals, rehabilitation centers, retirement homes, convalescent homes, residences, schools, childcare centers, and playgrounds. Sensitive receptors are located throughout the Town of Truckee.

Climate change and sources of greenhouse gas emissions often are associated with air quality. These topics are addressed in Chapter 8 ("Climate Change and Resilience").

5.1.1 Major Findings

- Currently, air quality within the Nevada County including the town of Truckee is typically moderate to good. Overall, reactive organic gases (ROG) and oxides of nitrogen (NO_X) emissions are declining countywide, continuing the County's progress towards meeting the California ambient air quality standards (CAAQS) and national ambient air quality standards (NAAQS) for ozone.
- Truckee is located in the Mountain Counties Air Basin (MCAB) and is under the jurisdiction of the Northern Sierra Air Quality Management District (NSAQMD). Nevada County is currently designated as a nonattainment area for ozone under the CAAQS and NAAQS and nonattainment for respirable particulate matter with an aerodynamic diameter of 10 micrometers or less (PM_{10}). A nonattainment area is defined as an area or air basin that does not meet the CAAQS or NAAQS for a given pollutant.
- Within Nevada County, mobile sources (e.g., cars and trucks) are the largest contributor of ozone precursor emissions, which include ROG and NO_X. Areawide sources (e.g., paved road dust, agriculture, construction and demolition activities) in Nevada County are the largest contributor of PM_{10} and fine particulate matter with an aerodynamic diameter of 2.5 micrometers or less ($PM_{2.5}$) emissions.
- According to the most recent Annual Report to the Town of Truckee *Particulate Matter Air Quality Management Plan,* PM emissions have improved dramatically since 1993 as a result of a substantial reduction in $PM_{2.5}$ emissions from woodburning appliances (Town of Truckee 2009).
- Approximately three stationary sources in the town of Truckee emit toxic substances and are subject to the Air Toxics Hot Spots reporting requirement under Assembly Bill (AB) 2588 (CARB 2016).

5.1.2 Existing Conditions

Air quality conditions and pollutant concentrations found in Truckee result from the combination of pollutant emissions and meteorological conditions. Air pollutant emissions generated in Truckee affect both residents of Truckee and those downwind. Likewise, emissions generated upwind of the town can affect town residents. Short-term changes in air pollutant concentrations are mostly determined by changes in meteorology; however, long-term trends are primarily affected by rates of air pollutant emissions.

TOPOGRAPHY, CLIMATE, AND ATMOSPHERIC CONDITIONS

Truckee is located in the MCAB, which encompasses all of Plumas, Sierra, Nevada, Amador, Calaveras, Tuolumne, and Mariposa Counties, as week as the middle portion of Placer County and the western portion of El Dorado County. The town historically experiences mild summers characterized by clear skies with warm daytime temperatures and cool nights. Cold temperatures coupled with changeable weather conditions characterize winters. Most precipitation occurs during the months of November through April in the form of snow.

Based on a 112-year period from 1904 to 2016, average maximum temperatures are 39.2 degrees Fahrenheit (°F) and 82.3°F for January and July, respectively. Average minimum temperatures for January and July are 14.6°F and 41.7°F, respectively. Average total snowfall is 201.8 inches and average precipitation (i.e., rain) is 30.15 inches totaling 231.95 inches per year (WRCC 2016). The prevailing wind direction comes from the south (WRCC 2002). See Chapter 7, "Climate Change and Resiliency" for additional detail regarding climate trends and projections.

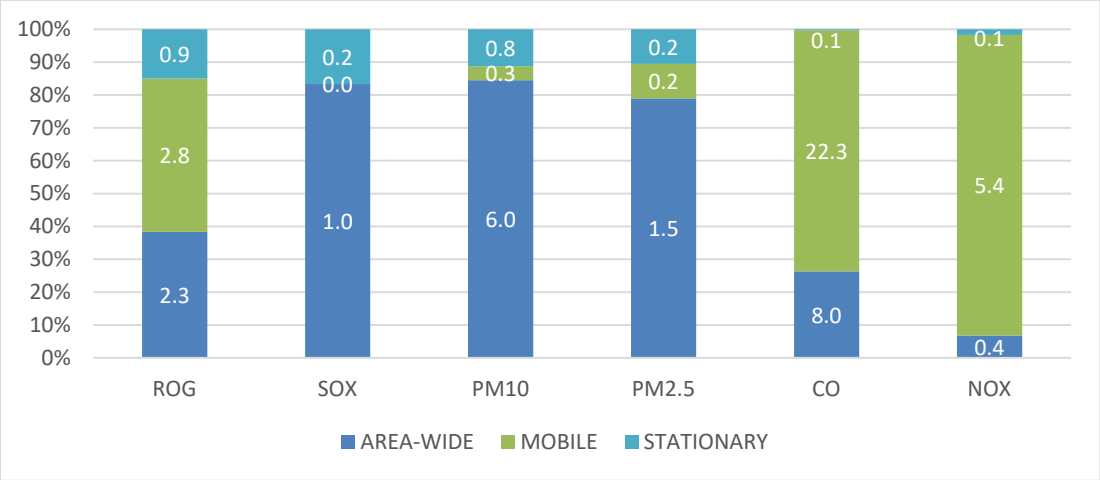
EXISTING SOURCES OF CRITERIA AIR POLLUTANT AND PRECURSOR EMISSIONS

The California Air Resources Board (CARB) estimated annual average emissions in Nevada County for 2015. The county inventory is generally representative of the types of emissions sources that occur within the county boundaries. The county emissions inventory is summarized in Figure 5-1.

According to the CARB inventory of human-related air emissions, mobile sources, such as automobiles and trucks, are the largest contributor to the estimated air pollutants of ROG, NO_X, and carbon monoxide (CO) accounting for approximately 46 percent of total ROG emissions, 92 percent of total NO_X emissions, and 73 percent of total CO emissions (CARB 2013). Areawide sources, such as the household, commercial, and institutional use of solvents, agricultural pesticides and fertilizers, architectural coatings, consumer products, and other activities, account for approximately 38 percent of ROG emissions; while stationary sources, such as industrial and manufacturing activities, generate approximately 15 percent of ROG emissions. The aforementioned activities contribute 8 percent of the county's total NO_X emissions (CARB 2013).

Areawide sources account for approximately 83 percent and 79 percent of the county's PM_{10} and $PM_{2.5}$ emissions, respectively, most of which result from construction and demolition, vehicle travel on unpaved roads, vehicle travel of paved roads, residential fuel combustion activity, and fugitive windblown dust (CARB 2013).

FIGURE 5-1 CRITERIA AIR POLLUTANTS AND OZONE PRECURSORS (TONS PER DAY) EMITTED IN NEVADA COUNTY, 2015



Notes: ROG=reactive organic gases, SO_X=sulfur oxides, PM_{10}=respirable particulate matter with an aerodynamic diameter of 10 micrometers or less, $PM_{2.5}$=fine particulate matter with an aerodynamic diameter of 2.5 microns or less, CO=carbon monoxide, NO_X=oxides of nitrogen.

Source: CARB 2013.

AIR QUALITY MONITORING AND EXISTING POLLUTANT CONCENTRATIONS

There are three active air quality monitoring stations in Nevada County that monitor ozone and $PM_{2.5}$ concentrations. Concentrations of PM_{10}, CO, and sulfur dioxide are not measured anywhere within the County. The U.S. Environmental Protection Agency (EPA) and CARB use air pollutant monitoring data to designate area according to attainment status for criteria air pollutants establish by the agencies (see further discussion regarding attainment of the CAAQS and NAAQS under the "Regulatory Setting" section below).

As stated previously, ambient air quality is determined from a combination of emissions sources and meteorology. Notably, the station closest to the Town of Truckee within Nevada County that measures ozone (i.e., White Cloud Mountain Station) is located over 30 miles west of the town boundary. As such, measurements taken at the White Cloud Mountain Station do not provide an appropriate representation of ambient air quality within the Truckee and thus are not reported here. Table 5-1 displays concentrations of $PM_{2.5}$ from 2012-2017 at the Truckee Fire Station monitoring station, located at 10049 Donner Pass Road.

Table 5-1 Summary of $PM_{2.5}$ Concentrations at the Truckee Fire Station (2012–2017)[1,2]

Truckee Fire Station Monitoring Station	2012	2013	2014	2015	2016	2017
Fine Particulate Matter ($PM_{2.5}$) – 24 Hour						
California Maximum Concentration (µg/m3)	27.5	61.2	253.0	49.2	23.8	58.7
National Maximum Concentration (µg/m3)	13.5	31.8	13.2	12.8	22.1	31.8
# Days > National Standard (measured3)	0	0	0	0	0	0

Notes: $\mu g/m^3$ = micrograms per cubic meter.

[1] Monitoring stations within Nevada County that measure ozone are located approximately 30 miles west of the Truckee town border and are not representative of ambient air pollutant concentrations in Truckee.

[2] PM_{10}, carbon monoxide, nitrogen dioxide, and sulfur dioxide data are not collected at any monitoring station in Nevada County.

Source: CARB 2018

Each pollutant is summarized further below.

Ozone/Smog

Ozone is a photochemical oxidant—a secondary pollutant formed under the influence of sunlight by complex photochemical reactions in air that contain oxides of nitrogen and reactive hydrocarbon precursors—and the primary component of smog. Ozone is a pungent, colorless, toxic gas created in the atmosphere. Ozone is not directly emitted into the air but is formed through complex chemical reactions between emissions of ozone precursors, including ROG and NO_X in the presence of sunlight. Ozone precursors occur either naturally, or as a result of human activities such as the use of combustion engines.

Smog is a yellowish/black haze that forms in the atmosphere (near ground level) through the mixing of air pollutants and fog (i.e., industrial smog) or sunlight (i.e., photochemical smog). Photochemical smog is a condition that develops when primary pollutants (NOx and volatile organic compounds) created from fossil fuel combustion (e.g., from automobiles) interact under the influence of sunlight to produce a mixture of hundreds of different hazardous chemicals known as secondary pollutants. Smog can make it difficult for some people to breathe and it greatly reduces air visibility.

The presence of smog in the atmosphere is more likely to increase as ozone increases. Truckee is located in Nevada County, which is currently in nonattainment for the CAAQS and NAAQS with respect to ozone.

Currently, the air quality within Nevada County is typically moderate to good. Overall, ROG and NOx emissions are declining countywide, as they have for many years, continuing Nevada County's progress towards meeting the CAAQS and NAAQS for ozone. However, it is foreseeable that as population increases and the county and region continue to grow, additional pollution sources (e.g., mobile- and-stationary sources) could result in increased emissions of ozone precursors and more smog.

PARTICULATE MATTER

Particulate matter (PM), also known as particle pollution, is a complex mixture of extremely small particles and liquid droplets. Particle pollution is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. Dust and other particulates exhibit a range of particle sizes. The size of particles is directly linked to their potential for causing health problems. PM_{10} (also known as respirable particulate matter) is made up of dust and particulates that are 10 microns in diameter or smaller. $PM_{2.5}$ (also known as fine particulate matter) is made up of dust and particulates that are 2.5 microns in diameter or smaller. These particles can be directly emitted from sources such as forest fires, or they can form when gases emitted from power plants, industries, and automobiles react in the air. Fine particulate matter is considered a toxic air contaminant (see below for further discussion) and creates the greatest health problems because it can get deep into lung tissue and may even get into the bloodstream.

5.1.3 Regulatory Setting

Air quality within the Town of Truckee is regulated by EPA, CARB, and NSAQMD. Each of these agencies develops rules, regulations, policies, and/or goals to comply with applicable legislation. Although EPA regulations may not be superseded, State and local regulations may be more stringent.

FEDERAL

U.S. Environmental Protection Agency

EPA is in charge of implementing national air quality programs. EPA's air quality mandates are drawn primarily from the Federal Clean Air Act (CAA), enacted in 1970. Congress made the most recent major amendments to the CAA in 1990.

Criteria Air Pollutants

The CAA required EPA to establish the NAAQS. EPA established primary and secondary NAAQS for several different pollutants, expressed in maximum allowable concentrations generally defined in units of parts per million (ppm) or in

micrograms per cubic meter (µg/m^3). The primary standards protect the public health and the secondary standards protect public welfare. The CAA also required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP).

The Federal Clean Air Act Amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. EPA is responsible for reviewing all SIPs to determine whether they conform to the mandates of the CAA and its amendments, and whether implementation will achieve air quality goals. If EPA determines a SIP to be inadequate, a Federal implementation plan that imposes additional control measures may be prepared for the nonattainment area. If an approvable SIP is not submitted or implemented within the mandated time frame, sanctions may be applied to transportation funding and stationary air pollution sources in the basin. The NSAQMD has an approved SIP.

Toxic Air Contaminants/Hazardous Air Pollutants

Air quality regulations also focus on toxic air contaminants (TACs), which are also referred to as hazardous air pollutants (HAPs) by Federal agencies. In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. In other words, there is no threshold level below which adverse health impacts may not be expected to occur. (By contrast, for the criteria air pollutants, acceptable levels of exposure are determinable). Instead, EPA and, in California, CARB, regulate HAPs and TACs, respectively, through statutes and regulations that generally require the use of the maximum achievable control technology or best available control technology for toxics to limit emissions. (See the discussion of TACs in the "State" section below for a description of CARB's efforts.) These, in conjunction with additional rules set forth by NSAQMD, described below under "Northern Sierra Air Quality Management District," establish the regulatory framework for TACs.

General Conformity Rule

The CAA requires that Federal actions conform to the appropriate SIP so that they do not interfere with strategies employed to attain the NAAQS. The rule applies to Federal actions in areas designated as nonattainment areas for any of the six criteria pollutants and in some areas designated as maintenance areas. Project level conformance with the SIP is demonstrated through a general conformity applicability analysis as a first step. A general conformity determination would be required if a proposed action's total direct and indirect emissions for each affected pollutant for which the region is classified as a maintenance or nonattainment area for the national standards are above the de minimis levels established by the conformity rule. If the condition above is not met, a general conformity determination must be performed to demonstrate that total direct and indirect emissions for each affected pollutant for which the region is classified as maintenance or nonattainment for the national standards would conform to the applicable SIP.

STATE

California Air Resources Board

Criteria Air Pollutants

CARB is responsible for preparing and enforcing the Federally required SIP to achieve and maintain NAAQS, as well as the CAAQS, which were developed as part of the California Clean Air Act (CCAA) in 1988. The CAAQS for criteria pollutants either equal or surpass the NAAQS and include other pollutants for which there are no NAAQS. CARB is also responsible for assigning air basin attainment and nonattainment designations in California. Air basins are designated as being in attainment if the levels of a criteria air pollutant meet the CAAQS for the pollutant and are designated as being in nonattainment if the concentration of a criteria air pollutant exceeds the CAAQS. CARB is the oversight agency responsible for regulating statewide air quality, but implementation and administration of the CAAQS is delegated to 35 regional air pollution control districts and air quality management districts. These districts have been created for specific air basins, and have principal responsibility for developing plans to comply with the NAAQS and CAAQS; developing control measures for non-vehicular sources of air pollution necessary to achieve and

maintain NAAQS and CAAQS; implementing permit programs established for the construction, modification, and operation of air pollution sources; enforcing air pollution statutes and regulations governing non-vehicular sources; and developing employer-based trip reduction programs.

Toxic Air Contaminants/Hazardous Air Pollutants

TACs in California are regulated primarily through the Tanner Air Toxics Act (AB 1807, Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588, Chapter 1252, Statutes of 1987). AB 1807 sets forth a formal procedure for CARB to designate substances as TACs. Research, public participation, and scientific peer review are required before CARB can designate a substance as a TAC. To date, CARB identified more than 21 TACs and adopted EPA's list of HAPs as TACs. CARB added diesel PM to the list of TACs in 1998.

Once a TAC is identified, CARB then adopts an airborne toxics control measure for sources that emit that particular TAC. If a safe threshold exists for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If no safe threshold exists, the measure must incorporate best available control technology for toxics to minimize emissions.

The Air Toxic Hot Spots Information and Assessment Act requires that existing facilities that emit toxic substances above a specified level prepare an inventory of toxic emissions, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures.

CARB adopted diesel exhaust control measures and more stringent emission standards for various on-road mobile sources of emissions, including transit buses, and off-road diesel equipment (e.g., tractors and generators). In February 2000, CARB adopted a new public-transit bus fleet rule and emissions standards for new urban buses. These rules and standards included more stringent emission standards for some new urban bus engines, beginning with the 2002 model year; zero-emission bus demonstration and purchase requirements for transit agencies; and reporting requirements, under which transit agencies must demonstrate compliance with the public-transit bus fleet rule. Recent milestones included the low-sulfur diesel fuel requirement, and tighter emissions standards for heavy-duty diesel trucks (effective in 2007 and subsequent model years) and off-road diesel equipment (2011) nationwide. Over time, replacing older vehicles will result in a vehicle fleet that produces substantially lower levels of TACs as compared to current conditions. Mobile-source emissions of TACs (e.g., benzene, 1-3-butadiene, diesel PM) in California have been reduced significantly over the last decade and such emissions will be reduced further through a progression of regulatory measures (e.g., Low Emission Vehicle/ Clean Fuels and Phase II reformulated-gasoline regulations) and control technologies. These efforts to reduce mobile-sources of TACs, in addition to criteria air pollutants and greenhouse gas emissions, were furthered in December 2018 with the passage of CARB's Innovative Clean Transit (ICT) regulation. The ICT regulation establishes a statewide goal of gradually transitioning to a 100 percent zero-emission (i.e., electric and hydrogen fuel cell) bus fleet by 2040 (CARB 2019).

With implementation of CARB's Diesel Risk Reduction Plan, adopted in 2000, it is expected that concentrations of diesel PM will be reduced statewide by 75 percent in 2010 and 85 percent in 2020 from the estimated year-2000 level. Adopted regulations are also expected to continue to reduce formaldehyde emissions from cars and light-duty trucks. As emissions are reduced, it is expected that risks associated with exposure to the emissions will also be reduced.

Recommended Setback Distances from Sources of Air Toxics

CARB research substantiates the health risks to sensitive populations from exposure to high levels of TACs. CARB recommends local jurisdictions adopt land use policies to separate sensitive land uses a minimum of 500 to 1,000 feet from air toxic sources (CARB 2005). CARB's recommendations for siting new sensitive land uses for both mobile and stationary sources of air toxics is presented in Table 5-2 and published in "Air Quality and Land Use Handbook: A Community Health Perspective." The recommended setback distances in Table 5-2 are advisory and should not be interpreted as defined "buffer zones." CARB recognizes the opportunity for more detailed site-specific analyses and that land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues (CARB 2005).

Table 5-2 Recommendations for Siting New Sensitive Land Uses

Source Category	Advisory Recommendations
Freeways and High-Traffic Roads	Avoid siting new sensitive land uses within 500 feet from a freeway or urban road with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.
Distribution Centers	Avoid siting new sensitive land uses within 1,000 feet. Avoid location new sensitive land uses near entry and exit points.
Rail Yards	Avoid siting new sensitive land uses within 1,000 feet. Within 1 mile, consider siting limitation and mitigation approaches.
Ports	Avoid siting new sensitive land uses immediately downwind. Consult local air district.
Refineries	Avoid siting new sensitive land uses immediately downwind. Consult local air district.
Chrome Platers	Avoid siting new sensitive land uses within 1,000 feet.
Dry Cleaners Using Perchloroethylene	Avoid siting new sensitive land uses within 300 to 500 feet.
Gasoline Dispensing Facilities	Avoid siting new sensitive land uses within 300 feet.

Source: CARB 2005

In April 2017, CARB released a Technical Advisory to the Air Quality and Land Use Handbook titled "Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways." The Technical Advisory includes strategies that can be implemented by planners and stakeholders to reduce exposure to mobile-source emissions at development sites. Such strategies include, but are not limited to, speed reduction mechanisms, traffic signal management, urban design features that reduce air pollutant concentrations (e.g., vegetation), and indoor filtration systems (CARB 2017a).

Nevada County Attainment Status

As described above, EPA and CARB adopted the NAAQS and CAAQS to regulate air quality within air basins in the state and nation. Both agencies make determinations about the status of each air basin relative to these standards, known as attainment designations. The purpose of these designations is to identify those areas with area pollution problems and initiate planning efforts for improvement. The three basic designation categories are "nonattainment," "attainment," and "unclassified." Nonattainment areas are areas that do not meet the NAAQS or CAAQS, whereas attainment areas meet the NAAQS and CAAQS. "Unclassified" is a term used for areas that cannot be classified as attainment or nonattainment due to insufficient available data.

Attainment, nonattainment, or unclassified status is determined for air basins and counties. Truckee is located in Nevada County within the MCAB. The most current NAAQS and CAAQS designations for Nevada County are presented in Table 5-3 for each pollutant.

Table 5-3 Attainment Status Designations for Nevada County

Pollutant	California Designation	National Designation
Ozone	Nonattainment	Nonattainment
PM^{10}	Nonattainment	Unclassified
$PM^{2.5}$	Unclassified	Unclassified/Attainment
Carbon Monoxide	Unclassified	Unclassified/Attainment
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Lead	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Unclassified/Attainment
Sulfates	Attainment	No National Standard
Hydrogen Sulfide	Unclassified	No National Standard
Visibility Reducing Particles	Unclassified	No National Standard

Source: CARB 2017b

REGIONAL

Northern Sierra Air Quality Management District

NSAQMD, the lead air quality regulatory agency for Nevada County including the town of Truckee, is charged with maintaining air quality conditions through comprehensive programs of planning, regulations, enforcement, technical innovation incentive programs, and promotion of the understanding of air quality issues. NSAQMD also inspects stationary sources to ensure that such sources abide by permit requirements, responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements other programs and regulations required under the CAA and CCAA.

In 2017, NSAQMD released the "Portola Fine Particulate Matter Attainment Plan" to address the nonattainment status of Plumas County, which NSAQMD oversees; however, NSAQMD has not released an air quality plan to address the nonattainment status of Nevada County for ozone or PM_{10}.

Criteria Air Pollutants

NSAQMD provides regulations and rules to CARB that regulate emissions from construction activities and stationary sources (CARB 2017c). Regulations and rules pertaining to construction and land development are listed below:

- Regulation II: Prohibitions. Provides general and source-specific regulations. Examples of pertinent rules included under this regulation are listed below.
  - **Rule 202: Visible Emissions.** Prohibits persons from discharging any air contaminant for a period or periods aggregating more than three minutes in any one hour that is (1) dark or darker in shade as compared to Number 1 on the Ringlemann Chart or (2) have opacity such that an observer's view would be obstructed.
  - **Rule 205: Nuisance.** Prohibits discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endangers the comfort, repose, health or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property. This rule does not apply to odors emanating from agriculture operations.
  - **Rule 207: Particulate Matter.** Sets limits for discharging particulate matter of no more than 0.1 grains per cubic foot of dry exhaust gas at standard conditions.
  - **Rule 209: Fossil Fuel-Steam Generator Facility.** Prohibits building, erecting, installing, or expanding any fossil fuel fired stream generating facilities in exceedance of 200 pound per hour of sulfur compounds, 140 pounds per hours of oxides of nitrogen, and 10 pounds per hours of combustion contaminants.
  - **Rule 210: Specific Contaminants.** Sets limits on discharge of sulfur dioxide and carbon dioxide.
  - **Rule 226: Dust Control.** Reduces and controls fugitive dust emissions to the atmosphere from the demolition of buildings, construction, mining, processing of bulk materials, and operation of machines, equipment, unpaved parking facilities, livestock arenas, feed lots, and raceways.
  - **Rule 228: Surface Coating of Metal Parts and Products.** Sets limits for volatile organic compounds in architectural coatings.
- **Regulation III: Open Burning.** Provides definitions and specifics regarding what is allowable and unallowable burning practices. Examples of pertinent rules included under this regulation are listed below:
  - **Rule 302: Prohibited Open Burning.** Prohibits the burning of treated wood, tires, tar, plastics (except polyethylene sheeting), petroleum wastes, demolition debris, garbage, offal, carcasses of dead animals, or salvage of metal.
  - **Rule 303: Allowed Open Burning.** Outlines exceptions to Rule 302 (i.e., Rule 304, Rule 305, Rule 306, Rule 307, Rule 308, Rule 309, Rule 310, Rule 311, Rule 317, and Health and Safety Code Section 41804.5).

- **Regulation IV: Authority to Construct Regulations.** Specifies the requirements for authorities for operation and construction and new source review permits. Examples of pertinent rules included under this regulation are listed below:
  - **Rule 401: Permit Required.** Specifies that any person building, altering, or replacing any source of air contaminants shall obtain a permit of the criteria defined by Rule 404.
  - **Rule 407: Pollutant Modeling.** Defines appropriate modeling procedure for determining air quality impacts of emissions from new and existing facilities and modifications.
  - **Rule 418: Attainment Pollutant Control Technology.** Specifies that facilities must apply best available control technology to reduce emissions of pollutants and precursors.
  - **Rule 423: Power Plants**. Specifies requirements for power plants operating within the Town.
  - **Rule 428: New Source Review Requirements for New and Modifies Major Sources in Federally designated Nonattainment Areas.** Specifies the New Source Review provisions that are applicable to new, replacements, modified, or relocated emissions units in areas under the purview of NSAQMD.

Toxic Air Contaminants/Hazardous Air Pollutants

At the regional or local level, air pollution control or management districts may adopt and enforce CARB-recommended control measures. NSAQMD Regulative IV, Rule 418 requires the use of best available control technology when necessary. Regulation IV, Rule 249 specifies New Source Review provisions as they apply to new, replacements, modified, or relocated emissions units. Sources of fugitive dust are regulated under NSAQMD Regulation II, Rule 226 ("Dust Control").

Odors

NSAQMD developed Rule 205 ("Nuisance") to place limitations on "the discharge from any source whatsoever such quantifies of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons, or to the public, or which endanger the comfort, repose, health or safety of any such persons, or the public, or which cause to have a natural tendency to cause injury or damage to business or property." Odiferous emissions would be captured under Rule 205.

The NSAQMD Guidelines for Assessing and Mitigating Air Quality Impacts of Land Use Projects does not have qualitative or quantitative guidance for identifying and mitigating potential odor impacts (NSAQMD 2009).

NSAQMD Guidelines for Assessing and Mitigating Air Quality of Land Use Projects

The NSAQMD Guidelines for Assessing and Mitigating Air Quality of Land Use Projects (Guidelines) is an advisory document that provides lead agencies, consultants, and project applicants with a framework and methodologies for preparing air quality evaluations in environmental documents. The Guidelines, adopted in 2009, are applicable to land use projects within the town of Truckee. NSAQMD recommends a three-tiered approach to evaluating whether a project is required to evaluate air quality impacts in an environmental impact report.

Using the recommended guidance from NSAQMD, a project with emissions meeting Level A Thresholds (i.e., less than 24 pounds per day [lb/day] of NO_X and ROG, and 79 lb/day of PM_{10}) would require the most basic mitigations. Projects with projected emissions in the Level B range (i.e., 24 to 136 lb/day of NO_X and ROG, and 79 to 136 lb/day of PM_{10}) would more extensive mitigation. Projects with projected emissions above the Level C Thresholds (i.e., above 136 lb/day of NO_X and ROG, and above 136 lb/day of PM_{10}) would require the most extensive mitigations. Using this guidance, projects that cannot mitigate emissions below the levels specified in Level C would have a potentially significant and unavoidable impact. NSAQMD does not have a threshold of significance for $PM_{2.5}$ emissions (NSAQMD 2009).

NSAQMD does not provide guidance for evaluating TAC impacts (NSAQMD 2009).

LOCAL

2025 General Plan

The Conservation and Open Space Element of the *Town of Truckee 2025 General Plan* contains the following goals and policies that would affect ambient air quality within the town (Town of Truckee 2006):

- GOAL COS-6: Protect economically viable mineral resources and related industries in Truckee while avoiding land use conflicts and environmental impacts from mining activities.
  - P6.4: New or expanded mining operations within the Town limits shall adhere to the following guidelines:
    - Demonstrate no substantial increase in hazards to neighboring uses, water quality, air quality, agricultural resources or biological resources.
- GOAL COS-13: Reduce particulate matter pollution in Truckee to meet State and federal ambient air quality standards.
  - P13.1: Require multi-family residential, commercial, industrial, subdivisions and other discretionary development to maintain consistency with the goals, policies and control strategies of the Town's *Particulate Matter Air Quality Management Plan*.
  - P13.2: Existing non-paved roads within new development and subdivision, and existing off-site non-paved roads that serve new development and subdivisions shall be paved to the extent necessary to offset emissions generated by the development and subdivision traffic to the degree feasible. New non-paved roads shall not be allowed for new development and subdivisions except for single family residences, secondary residential units and duplexes on existing lots. New paving shall take into consideration the policies under Goal COS-11 concerning minimization of impacts to water quality and groundwater recharge that may result from increases in paved areas.
  - P13.3: Require all construction projects to implement dust control measures to reduce particulate matter emissions due to disturbance of exposed top-soils. Such measures would include watering of active areas where disturbance occurs, covering haul loads, maintaining clean access roads, and cleaning the wheels of construction vehicles accessing disturbed areas of the site.
- GOAL COS-14: Reduce emissions of air contaminants and minimize public exposure to toxic, hazardous and odoriferous air pollutants.
  - P14.1: Minimize potential impacts created by unpleasant odors, as well as other airborne pollutants from industrial and commercial developments.
  - P14.2: Prohibit sensitive receptors such as residential uses, schools and hospitals, from locating in the vicinity of industrial and commercial uses known to emit toxic, hazardous or odoriferous air pollutants, and prohibit the establishment of such uses in the vicinity of sensitive receptors.
  - P14.3: Reduce automobile dependence, thereby reducing greenhouse gas emissions, by encouraging mixed land use patterns that locate services such as banks, child care facilities, schools, neighborhood shopping centers and restaurants in close proximity to employment centers and residential neighborhoods.
  - P14.4: Review all discretionary development applications to determine the need for pedestrian/bike paths connecting to adjacent development and services, in order to provide alternatives to automobile transportation.
  - P14.5: Encourage the use of alternative fuels in vehicle fleets operated by local ski resorts, local Special Districts, and by the Town.
  - P14.6: Work with the NSAQMD to accurately monitor PM10, Carbon Monoxide, and other regulated air pollutants in Truckee, and to upgrade its facilities as needed in the future to ensure that accurate monitoring is maintained.

- **P14.7:** Promote the use of public and private transit services within Truckee and between the Town and ski resorts and other destinations in the Tahoe area.
- **P14.8:** Require developers of projects that would locate sensitive receptors such as residences within the California Air Resource Board's recommended buffer of 500 feet of I-80 and the railway to prepare a health risk assessment to determine the significance of the impact, and to incorporate project-specific mitigations to minimize or avoid this risk.
- **P14.9:** Require new development with the potential to generate significant quantities of ozone precursor air pollutants to be analyzed in accordance with guidelines provided by the NSAQMD and appropriate mitigation be applied to the project to minimize these emissions.

Town of Truckee Particulate Matter Air Quality Management Plan

The Town of Truckee prepared the local *Particulate Matter Air Quality Management Plan* (Plan) in 1999 in response to high concentrations of PM_{10} and $PM_{2.5}$ within the town. The Plan is not a comprehensive air quality management plan for the Truckee region; however, the Plan serves as a mechanism for the Town to implement local PM reduction control strategies to further the town, and Nevada County, towards meeting the CAAQS for PM (Town of Truckee 1999). According to the *2009 Annual Report Particulate Matter Air Quality*, concentrations of $PM_{2.5}$ and PM_{10} in the town have dramatically decreased since 1993 due to reductions in PM emissions associated with woodburning appliances (Town of Truckee 2009).

5.2 Water Resources and Quality

This section describes the existing conditions and regulatory framework related to water resources and quality in the town of Truckee. For information on water supply sources, water distribution system facilities, water use, and water conservation programs please refer to Chapter 8, "Public Facilities, Services, and Infrastructure."

5.2.1 Major Findings

- The Truckee River originates at Lake Tahoe and flows over 105 miles north and east into Nevada where it terminates at Pyramid Lake. Within Truckee, Donner Creek, Martis Creek, Prosser Creek, Trout Creek, and Little Truckee River are tributaries to the Truckee River.
- Martis Valley Groundwater Basin (MVGB) encompasses a surface area of approximately 57 square miles and has a total subsurface storage volume of 484,000 acre-feet.
- Sustainable groundwater yields are estimated at 22,000-afy or 7,168 million gallons. Future Truckee Donner Public Utility District (TDPUD) water demands are estimated to be 4,217 million gallons per year by 2035. Accordingly, there is sufficient groundwater available to meet TDPUD's needs.
- In 2007, the Town of Truckee was designated a regulated Small Municipal Separate Storm Sewer System (MS4) by the Lahontan Regional Water Quality Control Board (RWQCB). As a regulated MS4, the Town is required to develop and implement a Storm Water Management Program (SWMP).
- In compliance with MS4 requirements, the Town established a stormwater management program to (a) reduce the potential impact(s) of pollution from urban areas on waters of the state and waters of the United States and protect their beneficial uses; and (b) develop and implement an effective stormwater program that is well-understood and broadly supported by stakeholders.
- To evaluate the short- and long-term effectiveness of the stormwater program the Town developed the annual Program Effectiveness Assessment and Implementation Program.
- According to Total Maximum Daily Load (TMDL) requirements for the Truckee, suspended sediment concentration in the river should be less than or equal to 25 milligrams per liter. The Town reports a high

abrasive retrieval rate and the total suspended sediment values indicate improvement in sediment load. (High abrasive retrieval rate refers to the percentage of road abrasives recovered compared to the amount applied, and TMDL is the sum amount of a discards that a body of water can receive while still meeting water quality standards.)

- The Town provides annual spring training, to the public, in collaboration with Placer County, that specifically targets best management practice (BMP) implementation and post-construction BMP sizing and operation maintenance.
- The Town received two calls regarding illicit discharges for the 2017/2018 permit year.
- The Building Department and Engineering Division conduct inspections on temporary BMPs during routine building inspections. During the 2017/2018 inspection year the Engineering Division conducted 175 inspections and a total of 29 failed BMP requirements. Each failed inspection is required to correct any BMPs issues prior to project completion.
- Water quality in the MVGB is generally good with respect to drinking water standards. There are no large contaminant plumes identified within the basin, and naturally occurring constituents of concern, such as arsenic and manganese are being managed operationally via blending and pumping adjustments so that no drinking water standards are exceeded.

5.2.2 Existing Conditions

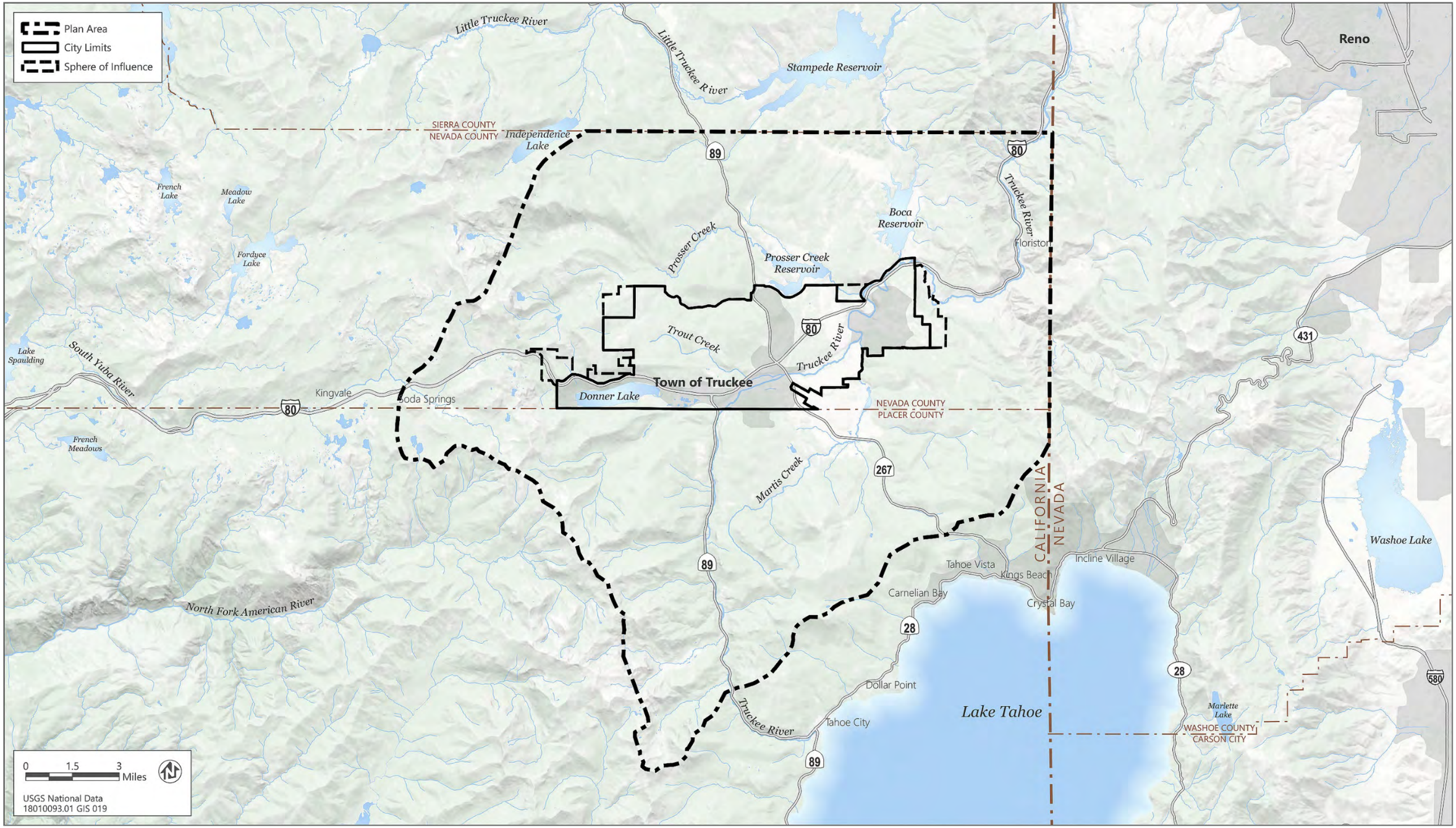
SURFACE WATER BODIES

The Truckee River originates at Lake Tahoe and flows over 105 miles north and east into Nevada where it terminates at Pyramid Lake (U.S. Department of the Interior 2018). Within Truckee, the Truckee River merges with Donner Lake, Martis Creek, Prosser Creek, Trout Creek, and Little Truckee River, as shown in Figure 5-2 (U.S. Department of the Interior 2016). In addition to the Truckee River and its tributaries, several prominent water bodies lie within the town's boundaries. Central to these are a series of reservoirs, created for water storage and controlled flows to lessen the impact of flooding in the region and further downstream. Table 5-4 includes a summary of the lakes and reservoirs within the Town of Truckee.

Table 5-4 Truckee Lakes and Reservoirs

Lake /Reservoir	Dam Owner	Dam Operator	Watershed Area (square miles)	Storage Capacity (acre feet)	High Water (elevation)
Donner Lake	Truckee Meadows Water Authority	Truckee Meadows Water Authority	14.3	9,500	5,935
Prosser Reservoir	US Bureau of Reclamation	U. Bureau of Reclamation	32	29,800	5,703
Stampeded Reservoir	US Bureau of Reclamation	US Bureau of Reclamation	136	226,500	5,949
Boca Reservoir	US Bureau of Reclamation	Washoe County Water Conservation District	172	41,110	5,609
Martis Creek Reservoir	US Army Corps of Engineers	US Army Corps of Engineers	42.7	20,391	5,808
Independence Lake	Truckee Meadows Water Authority	Truckee Meadows Water Authority	8	18,300	6,950

Source: Data provided by the Town of Truckee.



Source: Data downloaded from Truckee in 2018 and USFS in 2017

FIGURE 5-2 HYDROLOGY MAP

The streams and rivers that flow within Truckee are listed below along with the total watershed area for each surface water body.

- Donner Creek has water a watershed area of 30 square miles.
- Truckee River has a watershed area of 435 square miles.
- Trout Creek has a watershed area of 5 square miles.
- Alder Creek has a watershed area of 9 square miles.
- Prosser Creek has a watershed area of 44 square miles.
- Martis Creek has a watershed area of 42 square miles.

SURFACE WATER QUALITY

Small Municipal Storm Sewer System

In 2007, the Town of Truckee was designated a regulated MS4 by the Lahontan RWQCB. MS4 is defined as a system of conveyances owned by a state, county, or other public body, that is designed to collect or convey stormwater which is not a combined sewer or not a part of a publicly owned treatment works. As a regulated MS4, the Town is required to develop and implement an SWMP to reduce the discharge of pollutants and meet applicable WQOs. (RWQCB 2016) The Town complies with the Middle Truckee River TMDL through BMP based compliance.

Stormwater Management Program

In compliance with MS4 requirements, the Town established a stormwater management program to (a) reduce the potential impact(s) of pollution from urban areas on waters of the state and waters of the United States and protect their beneficial uses; and (b) develop and implement an effective stormwater program that is well-understood and broadly supported by stakeholders. The core objectives of the stormwater program are to (Town of Truckee 2018):

- Identify and control sediment ("road abrasives" pollutant of concern) in urban runoff that exceeds WQOs, as measured in the waters of the state and waters of the United States, and protect the beneficial uses of the receiving waters;
- Comply with the Federal and State regulations to eliminate or control, to the Maximum Extent Practical, the discharge of pollutants associated with urban runoff from the Town of Truckee's stormwater drainage system;
- Develop a cost-effective program which focuses on the prevention of pollution in urban stormwater;
- Seek cost-effective alternative solutions where prevention is not a practical solution for exceedances of WQOs; and
- Coordinate the implementation of control measures with other agencies.

Program Effectiveness Assessment and Implementation Program

In compliance with MS4 requirements, the Town established a stormwater management program and developed the annual Program Effectiveness Assessment and Implementation Program to evaluate its effectiveness. The program tracks the short- and long-term effectiveness of the stormwater program and specific BMPs implemented by the Town to reduce the amount of pollutants that enter the Truckee River. Specific BMP measures implemented by the Town are discussed in more detail below.

Road Abrasive Recovery

The Town implements an active road sand recovery program to comply with the Truckee River TMDL requirements. The middle Truckee River, which spans from the outlet of Lake Tahoe to the California and Nevada state line, has one established TMDL related to the protection of early life stage aquatic organisms. The TMDL addresses watershed-wide sediment load reductions to curtail substrate and habitat loss due to siltation. According to TMDL requirements, should equal to or less than 25 milligrams per liter, as an annual 90th percentile value to achieve desired in-stream

conditions. The Public Works department tracks implementation of the program through material retrieval during street sweeping, culvert flush, and winter spoils off-haul activities. In the 2017/2018 permit year, 801 tons of road abrasives were applied, and 892 tons were removed out of storm drains(Town of Truckee 2018). The Town measures load reduction based on BMP implementation. According to the Town's load reduction measurements, the total suspended sediment values indicate improvement in sediment load (Lahontan RWQCB 2009).

Legacy Issue Clean Up Projects

The Town has initiated several projects to improve drainage and run-off issues. The Church Street Extension project will replace an undersized culvert with a new bridge and restore the creek upstream from the project area. The Coldstream Culvert Replacement project is expected to replace an aging corrugated metal pipe culvert located under Coldstream Road with a new open bottom culvert across Donner Creek. The new crossing will increase the flood capacity and improve fish passage. The Paving and Drainage project is expected to improve overall drainage at various locations throughout the town, and the West River Street Streetscape project is designed to improve stormwater capture and treatment (Town of Truckee 2018).

Outreach Effectiveness to the Construction Industry

The Town provides annual spring training, in collaboration with Placer County that specifically targets temporary BMP implementation and post-construction BMP sizing and operation and maintenance. The Town also initiated an early warning message to contractors with open building and grading permits regarding wet season requirements and enforced BMP implementation by issuing warnings and violations (Town of Truckee 2018).

Illicit Discharge Occurrence and Reporting

The Town established an electronic stormwater reporting feature on their website to provide residents with the opportunity to report illicit discharges in the area. The Town also circulates brochures with detailed permit information and a contact number. The Town received two calls regarding illicit discharges for the 2017/2018 permit year (Town of Truckee 2018).

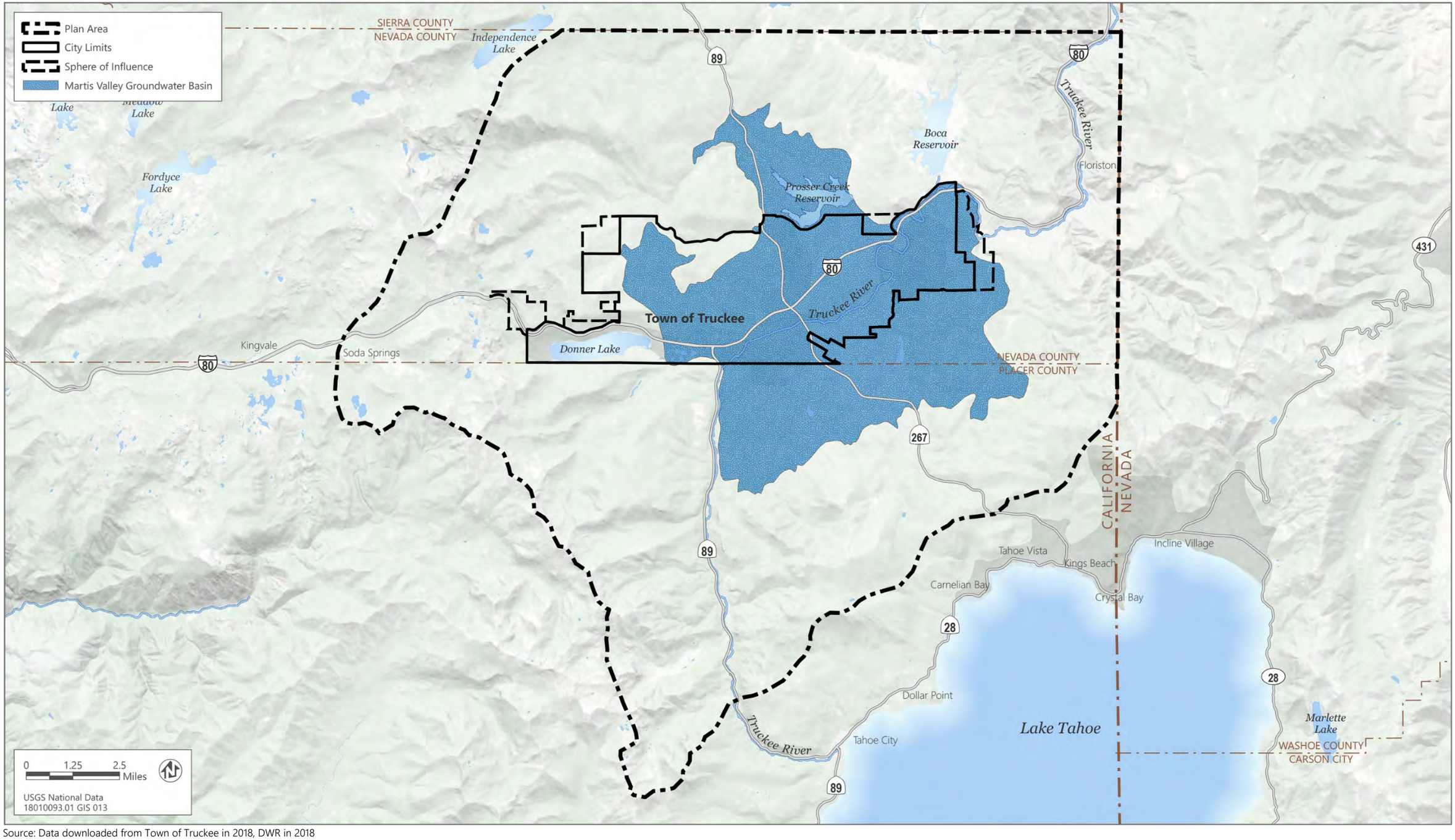
Construction Site BMP Compliance

In compliance with the Town's Storm Water Ordinance, the Engineering Division inspects construction sites prior to ground disturbance (during the wet season), during initial grading activities, and during final inspections. The Building Department conducts inspections on temporary BMPs during routine building inspections. During the 2017/2018 inspection year the Engineering Division conducted 175 inspections and issued29 failures of the BMP requirements. Each failed inspection is required to correct any BMPs issues prior to project completion (Town of Truckee 2018).

GROUNDWATER

TDPUD provides water service to portions of Truckee and adjacent unincorporated areas of Nevada and Placer counties. TDPUD operates two water systems in the Truckee area: the Hirshdale System and the Truckee System. The Hirshdale system serves 24 accounts and the Truckee system serves 12,473 accounts. The two systems are physically separate and not interconnected. There are small developed areas within Truckee that utilize private wells and are not supplied by TDPUD (TDPUD 2016a:2-4). Collectively, the TDPUD water system includes 15 active wells, 216 miles of pipeline, and 35 storage tanks (TDPUD 2016a). There is a total of 200 wells within the bounds of the MVGB. No specific breakdown of the number of wells by type is available for the basin given existing data. However, in 2001, approximately 130 private well owners were identified (TDPUD 2016b:6).

The Town obtains all water supplies from the MVGB (TDPUD 2016a:6-1). As shown in Figure 5-3, the MVGB encompasses approximately 57 square miles and lies within the Middle Truckee River Watershed. Elevations of the valley floor range from 5,700 to 5,900 feet above sea level. High points within or adjacent to MVGB include Bald Mountain at an elevation of 6,760 feet and Alder Hill at 6,733 feet. Groundwater basin recharge occurs during the winter season from snowfall and snowmelt. Snowfall can vary significantly on a yearly basis; however, below average precipitation is not expected to have a significant impact on water supply. Mean annual precipitation ranges from approximately 30 inches below 6,500 feet to 45 inches above 6,500 feet (Northstar Community Services District et al. 2013:2-1).



Source: Data downloaded from Town of Truckee in 2018, DWR in 2018

FIGURE 5-3 MARTIS VALLEY GROUNDWATER BASIN

The Truckee River crosses the basin from the southeast to the northwest in a shallow, incised channel. Principal tributaries to the Truckee River within the MVGB are Donner Creek, Martis Creek, Trout Creek, and Prosser Creek; as well as discharge from Boca Reservoir slightly before the Truckee River leaves the basin. Major surface water storage reservoirs inside MVGB include Martis Creek Lake and Prosser Creek Reservoir (TDPUD 2016b:6).

The MVGB has a total subsurface storage volume of 484,000 acre-feet. TDPUD, Placer County Water Agency, and the Northstar Community Services District, all depend on MVGB for potable water supplies. Sustainable water yields are estimated at 7,168 million gallons per year (TDPUD 2016b:27). Future TDPUD water demands are estimated to be 4,217 million gallons per year by 2035. Accordingly, there is sufficient groundwater available to meet TDPUD's needs. (TDPUD 2016a:6-7).

GROUNDWATER QUALITY

Water quality in the MVGB is generally good with respect to drinking water standards. There are no large contaminant plumes identified within the basin, and naturally occurring constituents of concern, such as arsenic and manganese are being managed operationally via blending and pumping adjustments so that no drinking water standards are exceeded. No induced migration of naturally occurring constituents of concern has been detected due to historic groundwater pumping (TPDUD 2016b:37). In 2007, the State Water Resources Control Board (SWRCB) samples 14 wells in the MVGB for a wide range of constituents. The concentration of most constituents measured below drinking water thresholds exception of arsenic and manganese. TDPUD wells that contain high levels of arsenic are used for non-potable water supplies (TDPUD 2016a:2-26).

5.2.3 Regulatory Setting

FEDERAL

Clean Water Act

The U.S. Environmental Protection Agency (EPA) is the lead Federal agency responsible for water quality management. The Clean Water Act (CWA) is the primary Federal law that governs and authorizes water quality control activities by EPA as well as the states. Various elements of the CWA address water quality. These are discussed below.

Water Quality Criteria/Standards

Pursuant to Federal law, EPA has published water quality regulations under Title 40 of the Code of Federal Regulations. Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by the act, water quality standards consist of designated beneficial uses of the water body in question and criteria that protect the designated uses. Section 304(a) requires EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. As described in the discussion of State regulations below, SWRCB and the nine regional water quality control boards (RWQCBs) have designated authority in California to identify beneficial uses and adopt applicable WQOs.

Section 303(d) Impaired Waters List

Under Section 303(d) of the CWA, states are required to develop lists of water bodies that do not attain WQOs after implementation of required levels of treatment by point source dischargers (municipalities and industries). Section 303(d) requires that the State develop a TMDL for each of the listed pollutants. The TMDL is the amount of the pollutant that the water body can receive and still comply with WQOs. The TMDL is also a plan to reduce loading of a specific pollutant from various sources to achieve compliance with WQOs. In California, implementation of TMDLs is achieved through water quality control plans, known as Basin Plans, of the State RWQCBs. See the discussion of plans and policies under "State" below.

CWA Section 404

In accordance with Section 404 of the CWA, the U.S. Army Corps of Engineers (USACE) regulates discharge of dredged or fill material into waters of the United States. Waters of the United States and their lateral limits are defined in Title 33, Part 328.3(a) of the Code of Federal Regulations to include navigable waters of the United States, interstate waters, all other waters where the use or degradation or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Any activity resulting in the placement of dredged or fill material within waters of the United States requires a permit from USACE. In accordance with Section 401 of the CWA, projects that apply for a USACE permit for discharge of dredged or fill material must also obtain water quality certification from the appropriate RWQCB indicating that the project will uphold water quality standards.

CWA National Pollutant Discharge Elimination System

The CWA-established National Pollutant Discharge Elimination System (NPDES) permit program regulates MS4 discharges to surface waters of the United States. Under the NPDES program, all facilities that discharge pollutants into waters of the United States are required to obtain an NPDES permit. Requirements for stormwater discharges are also regulated under this program. All counties with storm drain systems that serve a population of 100,000 or more, as well as construction sites 1 acre or more in size, must file for and obtain an NPDES permit. Another measure for minimizing and reducing pollutant discharges to a publicly owned conveyance or system of conveyances (including roadways, catch basins, curbs, gutters, ditches, human-made channels, and storm drains, designed or used for collecting and conveying stormwater) is the EPA's Storm Water Phase I Final Rule. The Phase I Final Rule requires an operator of a regulated MS4 (such as a city) to develop, implement, and enforce a program (e.g., BMPs, ordinances, or other regulatory mechanisms) to reduce pollutants in post construction runoff to the city's storm drain system from new development and redevelopment projects that result in the disturbance of land greater than or equal to 1 acre. The Town of Truckee was designated as a regulated MS4 by the Lahontan RWQCB in 2006.

STATE

Porter-Cologne Water Quality Control Act

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act). The Porter-Cologne Act grants SWRCB and each of the nine RWQCBs power to protect water quality and is the primary vehicle for implementation of California's responsibilities under the CWA. The Town of Truckee is under the jurisdiction of the Lahontan RWQCB. The SWRCB and the Lahontan RWQCB have the authority and responsibility to adopt plans and policies, regulate discharges to surface and groundwater, regulate waste disposal sites, and require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substances, sewage, or oil or petroleum products.

Each RWQCB must formulate and adopt a water quality control plan (Basin Plan) for its region. The Basin Plans must conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its State water policy. The Porter-Cologne Act also provides that an RWQCB may include within its Basin Plan water discharge prohibitions applicable to conditions, areas, or types of waste.

Lahontan RWQCB Basin Plan

The Lahontan RWQCB is one of the nine RWQCBs in California. The nine RWQCBs maintain Basin Plans that include comprehensive lists of water bodies in each area, as well as detailed language about the components of applicable WQOs. The Lahontan RWQCB implements its Basin Plan for the Lahontan Region which recognizes natural water quality, existing and potential beneficial uses, and water quality problems. The Lahontan RWQCB also has regulatory authority to enforce the requirements of the CWA and the California Water Code. This includes the regulatory authority to enforce the implementation of TMDLs, the adoption of waste discharge requirements to ensure compliance with surface WQOs, and groundwater management. Under the Basin Plan, discharge of material to "lands within the 100-year floodplain" is prohibited, with the intent of protecting floodplain functions such as conveyance

and storage, along with other hydrologic, geomorphic, biologic and ecologic processes such as groundwater recharge, floodwater filtration, sediment transport, spawning gravel replenishment, seed dispersal, and riparian vegetation maintenance (RWQCB 2016). Exemptions to this prohibition may be granted on a case by case basis, as long as discharges (a) do not reduce or adversely affect the existing floodplain function, or (b) restore and/or improve previously impacted floodplain functions.

NPDES Construction General Permit for Stormwater Discharges Associated with Construction Activity

SWRCB adopted the statewide NPDES General Permit in August 1999. The State requires that projects disturbing more than one acre of land during construction file a Notice of Intent with the RWQCB to be covered under this permit. Construction activities subject to the General Permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce non stormwater discharges to storm sewer systems and other waters. A storm water pollution prevention plan must be developed and implemented for each site covered by the permit. It must include BMPs designed to prevent construction pollutants from contacting stormwater and keep products of erosion from moving off-site into receiving waters throughout the construction and life of the project; the BMPs must address source control and, if necessary, pollutant control.

Water Code

The California Water Code is enforced by the California Department of Water Resources (DWR). The mission of DWR is "to manage the water resources of California in cooperation with other agencies, to benefit the state's people, and to protect, restore, and enhance the natural and human environments." DWR is responsible for promoting California's general welfare by ensuring beneficial water use and development statewide.

Groundwater Management

Groundwater Management is outlined in the California Water Code, Division 6, Part 2.75, Chapters 1–5, Sections 10750 through 10755.4. The Groundwater Management Act was first introduced in 1992 as Assembly Bill (AB) 3030 and has since been modified by Senate Bill (SB) 1938 in 2002, AB 359 in 2011, and the Sustainable Groundwater Management Act (SGMA) (SB 1168, SB 1319, and AB 1739) in 2014. The intent of the Act is to encourage local agencies to work cooperatively to manage groundwater resources within their jurisdictions and to provide a methodology for developing a Groundwater Management Plan.

The SGMA became law on January 1, 2015 and applies to all groundwater basins in the state (Water Code Section 10720.3). By enacting the SGMA, the legislature intended to provide local agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater within their jurisdiction (Water Code Section 10720.1).

The SGMA outlines four basic requirements: (1) development of a Groundwater Sustainability Agency, (2) development of a Groundwater Sustainability Plan or development of an Alternative Submittal, (3) implementation of the specific plan and management to meet quantifiable sustainability objectives, and (4) reporting of the implementation activities. Pursuant to the SGMA, the TDPUD submitted an Alternative Submittal to a Groundwater Sustainability Plan for approval by the DWR on behalf of the MVGB and its local SGMA agencies including TDPUD, Northstar Community Services District, Placer County Water Agency, the Town of Truckee, Nevada County, and Placer County.

LOCAL

Martis Valley Groundwater Management Plan

TDPUD, Northstar Community Services District, and Placer County Water Agency, prepared the Martis Valley Groundwater Management Plan (Martis Valley GMP) to meet the requirements of SB 1938. The Martis Valley GMP outlines the partner agencies' authority, physical setting including groundwater conditions, management goals and Basin Management Objectives, and implementation activities. The overall purpose of the Martis Valley GMP is to

improve the understanding and management of the groundwater resource in Martis Valley and provide a framework for partner agencies to align policy and implement effective groundwater management programs.

2025 General Plan

The Conservation and Open Space Element of the *Town of Truckee 2025 General Plan* contains the following goals and policies applicable to water resources and quality within the town (Town of Truckee 2006):

- Goal COS-2: Preserve and enhance the Truckee River and Donner Lake and the exceptional natural, scenic, economic, and recreational values they provide.
  - P2.1: Prohibit development within established setback areas from the Truckee River, except as otherwise allowed in the Development Code. Outside of the Downtown Specific Plan Area, development shall be set back a minimum of 100 feet from the edge of the Truckee River 100-year floodplain. Within the Downtown Specific Plan Area, development shall be set back a minimum distance from the edge of the 100-year floodplain that is equivalent to one foot above the base flood elevation. Grading, landscaping and drainage uses within the established setback area shall also be subject to strict controls. Improvements for public access and use may be allowed within the established setbacks.
  - P2.8: Prohibit development within the established setback areas from Donner Lake, except as otherwise allowed in the Development Code, and enhance degraded areas within the Donner Lake 100-year floodplain and setback, possibly in association with a related project approval, or as off-site mitigation for development projects.
- COS-11: Protect water quality and quantity in creeks, lakes, natural drainages and groundwater basins.
  - P11.4: Enforce guidelines set forth by the Regional Water Quality Control Board Lahontan Region (RWQCB) regarding waste discharge associated with domestic wastewater facilities such as septic tank leachfield systems.
  - P11.5: Require new development projects that have the potential to impact local water quality through increased stormwater runoff or erosion to include analysis of water quality impacts as a component of project review, and to integrate mitigation measures that would reduce identified impacts to an acceptable level.
  - P11.6: Utilize Low Impact Development and Best Management Practices established in the Regional Water Quality Control Board's Truckee River Hydrologic Unit Project Guidelines for Erosion Control, and the State of California Stormwater Best Management Practices Handbooks, and other resources such as the Practice of Low Impact Development (US Department of Housing and Urban Development) and Water Quality Model Code and Guidebook (State of Oregon, Department of Land Conservation and Development) as guidelines for water quality and erosion control measures required by the Town.

Truckee Municipal Code

Title 11 Storm Water Ordinance

This title sets forth stormwater quality requirements to regulate the entry of pollutants and non-stormwater discharges into the town stormwater conveyance system in compliance with the NPDES permit. Chapter 11.03, "Adoption of Best Management Practices," establishes BMPs for any activity, construction activity, operation or facility, which may cause or contribute to pollution or contamination of stormwater. Pursuant to Chapter 11.04, "Requirements for Construction Activities," persons requesting a grading or building permit demonstrate compliance with Town of Truckee Development Code, and, applicable permits, including, but not limited to, SWRCB's Construction General Permit; Industrial General Permit; SWRCB 401 Water Quality Certification; USACE Section 404 Permit; and California Department of Fish and Wildlife 1600 Agreement.

5.3 Biological Resources

This section discusses relevant information regarding common and special-status plants and animals, and other biological resources within the Town and the Planning Area.

5.3.1 Major Findings

- A large portion of the Town is composed of relatively undisturbed natural land cover types, although these habitats are subject to residential, recreation, and other uses. These natural land covers provide habitat for both common and special-status wildlife and plants.
- There are several sensitive habitat types located within the town and the Planning Area that provide high quality habitat for special-status and common species. These include aspen stands, wet meadows, Donner Lake, the Truckee River and its tributaries, and Montane Riparian that is often associated with these waters. Waters within the Town and Planning Area are subject to federal and state regulatory authority. Riparian habitats are often included under the authority of California Fish and Game Code 1602.
- The town and Planning Area contain habitat for special-status plant and animal species. There are 12 special-status plants that are known to occur or have occurred historically within one mile of the town. Of these special-status plants, only one is federally or state-listed. A total of 11 special-status animal species are known to occur or have occurred historically within one mile of the town. Four of these special-status animal species are listed, proposed for listing, or candidate for listing under the federal Endangered Species Act (ESA). Three of these federally listed animal species are also listed as threatened under the California Endangered Species Act (CESA). An additional two species that are listed as endangered under the CESA are also known to occur in the vicinity. Critical habitat for the Sierra Nevada yellow-legged frog (*Rana sierra*) is present within the portion of the town and Planning Area to the west of Donner Lake (USFWS 2016).
- Mule deer (*Odocoileus hemionus*) from the Verdi sub-unit of the Loyalton-Truckee Deer Herd migrate through portions of the town and Planning Area from the eastern Sierra Nevada foothills outside of Reno, Nevada, southwest into eastern Sierra, Nevada, and Placer Counties in California during the spring and summer months after breeding. The herd then returns to the winter range in the east in the late fall.

5.3.2 Existing Conditions

NATURAL LAND COVER AND HABITATS

The following natural land covers and habitat types are known to occur within the Planning Area (Figure 5-4), Town of Truckee and SOI (Figure 5-5). The broader Planning Area is included, because it provides context for habitats within the Town and SOI. Land covers present within these areas were determined by querying the U.S. Department of Agriculture EVEG dataset (USFS 2014). The descriptions of the various land covers follow the California Wildlife Habitat Relationship habitat descriptions (CHWR 1988). The Town of Truckee is located within the central Sierra Nevada just east of Donner Summit along the Truckee River. The Town is located within a transition zone from predominately tree dominated land covers closer to the crest of the Sierra, changing into more open shrub dominated and grassland land covers toward the east.

Tree-Dominated Land Cover and Habitat

Within the town and Planning Area, the various tree dominated land covers are habitat for common and special-status plant (Table 5-4) and wildlife (Table 5-5) species. Common bird and mammal species found within tree-dominated habitats in the Planning Area include: Clark's nutcracker (*Nucifraga columbiana*), mountain chickadee (*Poecile gambeli*), Steller's jay (*Cyanocitta stelleri*), western tanager (*Piranga ludoviciana*), white-headed woodpecker

(*Picoides albolarvatus*), black bear (*Ursus americanus*), Douglas squirrel (*Tamiasciurus douglasii*), mule deer, porcupine (*Erethizon dorsatum*), and yellow-pine chipmunk (*Tamias amoenus*).

Eastside Pine

East side pine is the most common land cover within the town and is common in the Planning Area as well. Ponderosa pine (*Pinus ponderosa*) is the dominant tree in these relatively open stands with less representation by Jeffrey pine (*Pinus jeffreyi*), lodgepole pine (*Pinus contorta*), white fir (*Abies concolor*), incense-cedar (*Calocedrus decurrens*), Douglas-fir (*Pseudotsuga menziesii*), California black oak (*Quercus kelloggii*) and western juniper (*Juniperus occidentalis*). Big sagebrush (*Artemisia tridentata ssp. tridentata*), antelope bitterbrush (*Purshia tridentata var. tridentata*), greenleaf manzanita (*Arctostaphylos patula*), ceanothus (*Ceanothus* spp.), and rubber rabbitbrush (*Ericameria nauseosa*) make up a shrub understory in many stands, and grasses and forbs may also be present such as mule ears (*Wyethia mollis*), arrowleaf balsamroot (*Balsamorhiza sagittata*), blue fescue (*Festuca idahoensis*), pinegrass (*Calamagrostis rubescens*), bluebunch wheatgrass (*Pseudoroegneria spicata*), and bottlebrush squirreltail (*Elymus elymoides*).

Sierran Mixed Conifer

Composing a large portion of the town and Planning Area, and common throughout the Sierra Nevada. Sierran mixed conifer is a dense forest type dominated by a mix of white fir, red fir (*Abies magnifica*), Jeffrey pine, sugar pine (*Pinus lambertiana*), and incense cedar (3 or more species co-dominant). Historic burning and logging have created wide variability in stand structure and composition in this community. Canopy cover varies from nearly 100 percent to a more open canopy. In open areas, the understory consists of a variety of shrubs, grasses, and forbs, including mahala mat (*Ceanothus prostratus*), tobacco brush (*Ceanothus velutinus*), pinemat manzanita (*Arctostaphylos nevadensis*), greenleaf manzanita, Sierra chinquapin (*Chrysolepis sempervirens*), huckleberry oak (*Quercus vacciniifolia*), and several currant species (*Ribes* spp.). At higher elevations, the vegetation community transitions from mixed conifer forest to white fir and then to red fir forest.

Red Fir

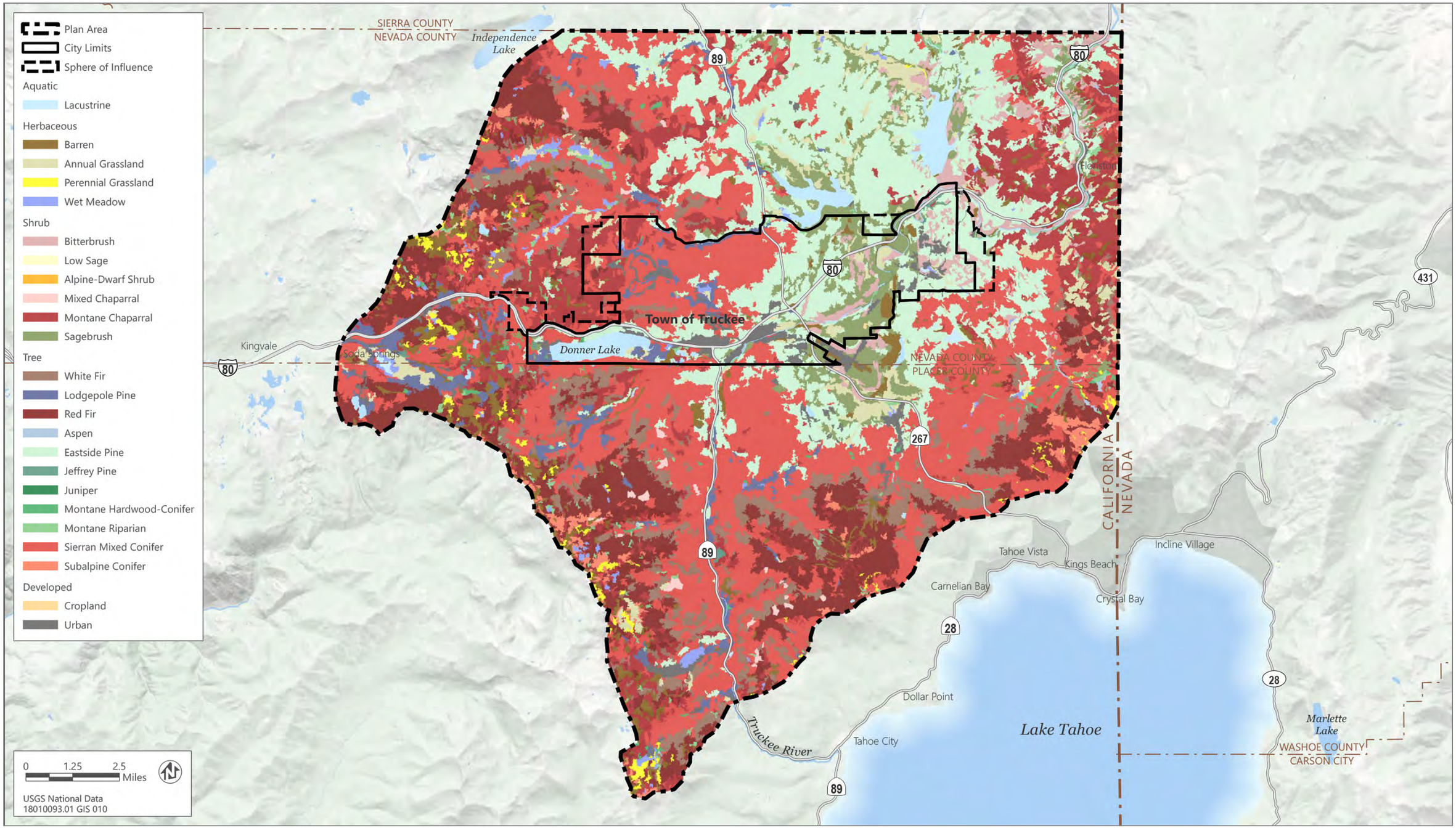
Red fir forest is abundant in the Planning Area and western portions of the town. Typically dominated by even-aged, monotypic stands of mature red fir, the understory is much more open than the mixed conifer forests, with the primary understory shrub species being pinemat manzanita. Common forbs include mountain mint (*Monardella odoratissima*), groundsmoke (*Gayophytum diffusum*), and white-veined wintergreen (*Pyrola picta*). The understory community is generally less diverse than in the lower elevation communities because of a heavy duff layer.

White Fir

Common in the Planning Area and present in the western portion of the town, this land cover type is dominated by white fir but with a strong red fir component and occasional Jeffery pine and incense cedar. Canopy cover is generally dense (greater than 60 percent) with multiple layers of trees ranging from large (>24 inches diameter at breast height [dbh]) overstory trees to saplings (<6 inches dbh). A variety of shrubs can be found in the understory including several currants, tobacco brush, and greenleaf manzanita. Common forbs include, groundsmoke, rockcress (*Arabis* spp.), and mountain mint. This community typically occurs as a transition zone between sierra mixed conifer and red fir.

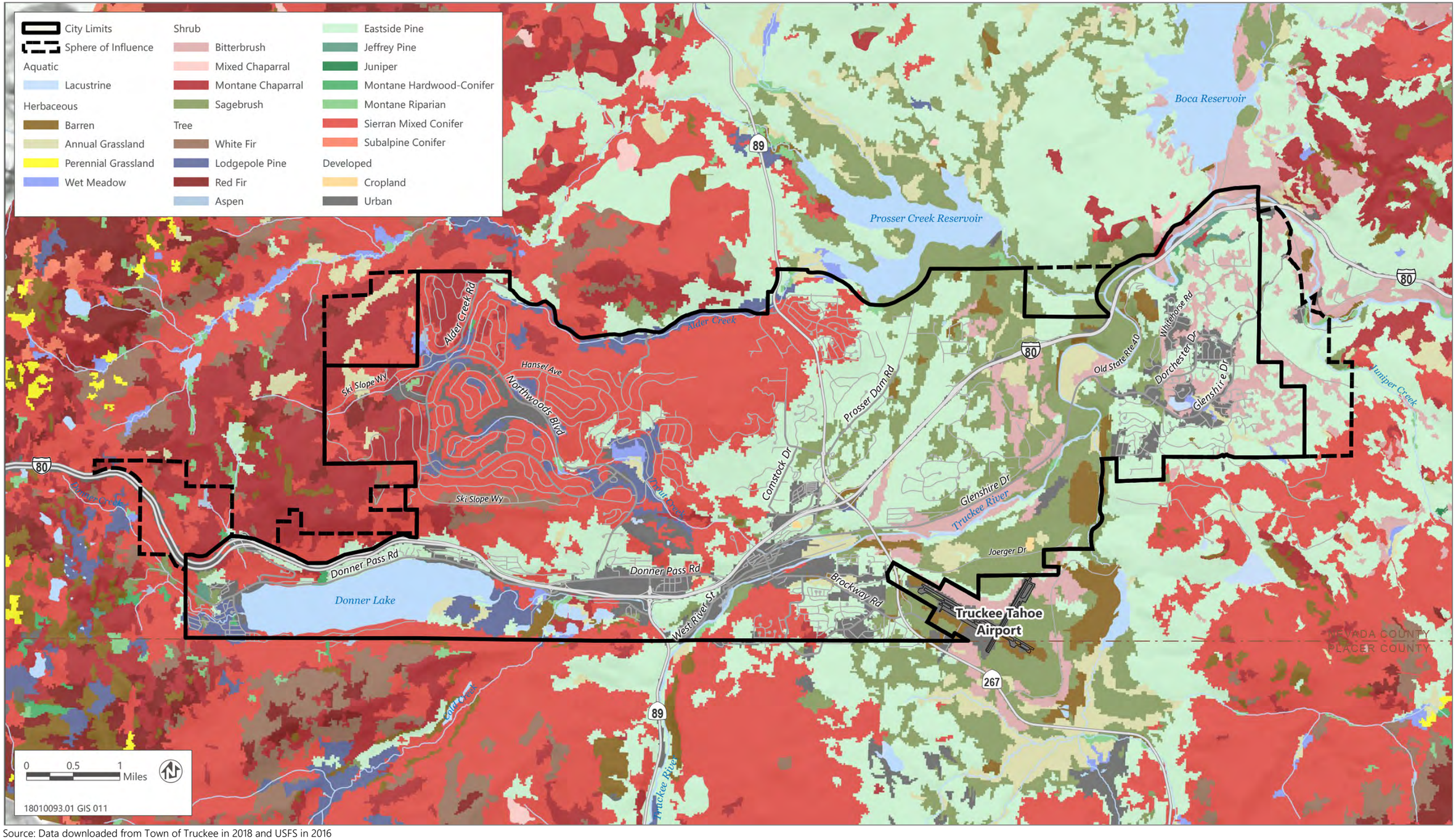
Jeffrey Pine

This open forest community is relatively uncommon in the town and Planning Area though common throughout the Sierra Nevada. This land cover is clearly dominated by Jeffrey pine but with occasional ponderosa pine, white fir, and incense cedar. Canopy cover is less dense than in other forest communities as Jeffrey pine tends to be more scattered throughout the community. This generally allows for the understory of the Jeffrey pine forest to contain plants requiring drier, sunnier conditions than in other conifer communities. These understory plants include big sagebrush, antelope bitterbrush, rabbitbrush, mule ears, and blue fescue.



Source: Data downloaded from USFS in 2016

FIGURE 5-4 LAND COVER WITHIN THE PLANNING AREA



Source: Data downloaded from Town of Truckee in 2018 and USFS in 2016

FIGURE 5-5 LAND COVER WITHIN THE TOWN OF TRUCKEE AND SPHERE OF INFLUENCE

Subalpine Conifer

Present in the higher elevations of the Planning area and absent from the town, subalpine conifer forest is dominated by red fir but with a strong component of sugar pine, western white pine (Pinus monticola), and mountain hemlock (Tsuga mertensiana). Like the red fir forest, the dense stands and heavy duff layer result in a sparse understory dominated by pinemat manzanita with scattered slender penstemon (Penstemon spp.) and white-veined wintergreen.

Lodgepole Pine

Common in the Planning Area and present in the western portions of the town, this land cover is dominated by lodgepole pine with occasional white fir and quaking aspen (*Populus tremuloides*). Lodgepole pine is associated with moist soils, and borders meadows or riparian areas within the town. Canopy cover varies from nearly 100 percent in dense thickets to 30 percent in the more open mature stands. In more open areas, the understory consists of shrubs such as currants, and wood rose (*Rosa gymnocarpa*) with a diverse herbaceous layer. In dense areas, the understory can be very limited.

Montane Riparian

Relatively uncommon in the Planning Area and found in isolated pockets within town, this land cover is often but not always found in association with riverine and lacustrine communities. Varies greatly in vegetative structure and species composition. In the Planning Area, characteristic species include creek alder (*Alnus incana* ssp. *tenuifolia*), willow (*Salix* spp.), aspen, black cottonwood (*Populus trichocarpa*), and dogwood (*Cornus sericea*). Many montane riparian areas at higher elevations within the Planning Area consist of extremely dense, shrub-like creek alder and willow with no standing or flowing water.

Montane Hardwood-Conifer

Montane hardwood-conifer stands are relatively uncommon in the Planning Area and only approximately 23 acres of the land cover type occurs within town. This land cover is made up of dense closed canopy stands where at least one-third of the trees are conifer species (e.g., white fir, red fir) and at least one-third must be broad-leaved hardwoods (e.g., aspen, alder).

Aspen

Aspen stands comprise a relatively small portion of the Planning Area and only approximately 13 acres of aspen stands are found within the town. Aspen stands often have open canopies with an understory of grasses and shrubs. Aspen stands also often contain a low percentage of other tree species (e.g., willows, alders, black cottonwood, lodgepole pine, Jeffrey pine); however, as stands mature aspen becomes more dominant.

Juniper

The juniper land cover makes up less than 5 acres of the Planning Area and is not found in the town. This land cover is comprised of western junipers in either open stands or dense clumps. Other tree and shrub species found in juniper stands include white fir, Jeffrey pine, curl leaf mountain-mahogany (*Cercocarpus ledifolius* var. *intermontanus*), antelope bitterbrush, and big sagebrush.

Shrub-Dominated Land Cover and Habitat

Shrub-dominated land covers within the Planning Area and town are habitat for many common bird and mammal species such as: bushtit (*Psaltriparus minimus*), chipping sparrow (*Spizella passerine*), green-tailed towhee (*Pipilo chlorurus*), red-tailed hawk (*Buteo jamaicensis*), turkey vulture (*Cathartes aura*), California ground squirrel (*Otospermophilus beecheyi*), and mule deer.

Bitterbrush

The bitterbrush land cover within both the Planning Area and Town is composed of antelope bitterbrush that is often not in pure stands but found with other shrub species such as big sagebrush and rubber rabbitbrush. Tree species such as Jeffrey pine and lodgepole pine may also occur in relatively small proportions, along with grasses and forbs such as buckwheat (*Eriogonum* spp.), and big galleta (*Hilaria rigida*).

Sagebrush
Common in both the Planning Area and the central and eastern portion of the Town, this land cover type is composed of soft-woody shrubs dominated by big sagebrush. Rubber rabbitbrush and antelope bitterbrush are the most common associates of this community within the Planning Area. Scattered western juniper can also be found associated within this community.

Montane Chaparral
The species composition of montane chaparral changes with elevation, soil type, and aspect. Montane chaparral is common within the Planning Area and western portion of the Town. This land cover is characterized by one or more of the following species: tobacco brush, greenleaf manzanita, pinemat manzanita, huckleberry oak, bush chinquapin, and bitter cherry. The herbaceous layer includes grasses such as the noxious weed cheatgrass, and native bottlebrush squirreltail and needle grass. Common forbs include yellow salsify, groundsmoke, and rockcress.

Low Sage
Low sage is a low-growing scrub community comprising a small portion (less than 5 acres) of the Planning Area, and not found in the Town. This type is dominated by low sage (*Artemisia arbuscula* ssp. *arbuscula*) and often associated with antelope bitterbrush, rabbitbrush, or big sagebrush.

Mixed Chaparral
This land cover type is relatively uncommon within the Planning Area and not found in the Town. Mixed chaparral may be composed of co-dominant woody shrub species such as greenleaf manzanita, and tobacco brush. After a disturbance such as wildfire this chaparral type may include an understory of grasses and forbs, which declines as the overstory shrubs mature and the canopy closes.

Alpine-Dwarf Shrub
This shrub community is found in a small (less than 3 acres) higher elevation portion of the Planning Area, but not within the Town. Low growing shrubs such as oceanspray (*Holodiscus discolor*), and mountain white heather (*Cassiope mertensiana*) occur along with non-shrub species. Ground cover reaches 100 percent in wetter or lower elevations and often becomes less dense in drier and higher elevation locations.

Herbaceous-Dominated Land Cover and Habitat
Herbaceous-dominated land covers within the planning area and Town are habitat for special-status plants (Table 5-4) and wildlife (Table 5-5) as well as many common bird and mammal species including: red-tailed hawk, northern harrier (*Circus cyaneus*), turkey vulture, mule deer, California ground squirrel, and voles (*Microtus* spp.). Wet meadows also provide habitat for common amphibians such as Pacific tree frog (*Pseudacris regilla*).

Annual Grassland
Found in Planning Area and relatively common in the Town (approximately 638 acres), annual grasslands are open habitats typically dominated by introduced annual grasses such as wild oats (*Avena occidentalis*), ripgut brome (*Bromus diandrus*), and red brome (*Bromus madritensis* ssp. *rubens*). This habitat also supports other plants such as popcorn flower (*Cryptantha leiocarpa*) and other species of wildflowers.

Perennial Grassland
Found within the Planning Area but not within the Town, perennial grasslands like annual grasslands are open habitats; however perennial grasslands are dominated by a different suite of species such as California oatgrass (*Danthonia californica*), and sweet vernal grass (*Anthoxanthum odoratum*).

Wet Meadow
Wet meadows are found within both the Planning Area and Town. At all elevations wet meadows generally have a simple structure consisting of a layer of herbaceous plants. Shrub or tree layers are usually absent or very sparse; they may, however, be an important feature of the meadow edge. Wet meadows have seasonally saturated soils and are usually associated with an adjacent riparian forest or scrub community, seep, or waterway. Common plants include sedges, rushes and various wildflower species.

Aquatic Habitat

Aquatic habitats within the Planning area provide important habitat for many common animal species including: pacific tree frog, waterfowl, great blue heron (*Ardea herodias*), osprey (*Pandion haliaetus*), red-winged blackbird (*Agelaius phoeniceus*), American beaver (*Castor canadensis*), muskrat (*Ondatra zibethicus*), as well as trout and other fish species. These habitats also provide the water for upland species such as mule deer.

Lacustrine

The lacustrine community within the Planning area and Town includes permanently flooded lakes and reservoirs. Donner Lake is the largest lacustrine water within the Town, and other large waterbodies are present within the Planning Area (e.g., Prosser Lake, Boca Reservoir). This community also includes intermittent lakes and ponds so shallow that rooted plants can grow over the bottom. Most permanent lacustrine systems support fish life.

Riverine

The riverine community within the Planning Area and Town is made up of perennial and intermittent rivers and streams. Riverine habitats may be associated with upland terrestrial habitats or be surrounded by montane riparian habitat as described above. In the Planning Area the riverine land cover type is composed of creeks and streams that are tributaries of the Truckee River that flows from Lake Tahoe through the Town of Truckee to Pyramid Lake as well as the Truckee River itself.

SENSITIVE NATURAL COMMUNITIES

Of the land cover types and habitats described above, several are considered sensitive natural communities and are given conservation and management priority by federal, state, and local agencies. This may be due to rarity on the landscape, sensitivity to disturbance, the relative importance of these habitats to common and special-status species, or a combination of these factors. The California Department of Wildlife maintains a list of sensitive natural communities (CDFW 2018). Sensitive natural communities within the Town and planning area include: aspen, montane riparian, montane hardwood-conifer, wet meadow, Donner Lake, and the Truckee River and its tributaries.

SPECIAL-STATUS SPECIES

Special-status species are defined as species that are legally protected or that are otherwise considered sensitive by federal, state, or local resource agencies. Special-status species are species, subspecies, or varieties that fall into one or more of the following categories, regardless of their legal or protection status:

- officially listed by California or the federal government as endangered, threatened, or rare;
- a candidate for state or federal listing as endangered, threatened, or rare;
- taxa (i.e., taxonomic category or group) that meet the criteria for listing, even if not currently included on any list, as described in California Code of Regulations (CCR) Section 15380 of the State CEQA Guidelines;
- species identified by CDFW as Species of Special Concern;
- species listed as Fully Protected under the California Fish and Game Code;
- species afforded protection under local planning documents; and
- Plants considered by the CDFW to be "rare, threatened, or endangered in California" and assigned a California Rare Plant Rank (CRPR) of 1A - Plants presumed to be extinct in California; 1B - Plants that are rare, threatened, or endangered in California and elsewhere; or 2 - Plants that are rare, threatened, or endangered in California but more common elsewhere.

A preliminary list of special-status species known to occur in the vicinity of the Town (Table 5-4 and Table 5-5) was created using a query of the California Natural Diversity Database (CNDDB) for special-status species within one mile of the Town boundary (CDFW 2018).

Plants

The results of the query of the CNDDB yielded 12 special-status plants that are known to currently occur or have historically occurred within one mile of the Town (Table 5-4). Of the species in Table 53-1 only one is protected under CESA, Tahoe yellow cress (*Rorippa subumbellata*), the remaining eleven plants have a CRPR of 1B or 2. While Tahoe yellow cress was found in the query of the CNDDB, it should be noted that the single occurrence within the area of the query is from the 1800's and when the area was resurveyed in 1981 the species was not found. This occurrence is possibly extirpated (CDFW 2018), and the current range of the species is limited to the shoreline of Lake Tahoe (CNPS 2018).

Table 5-4 Special-Status Plant Species Known to Occur Within One Mile of the Town of Truckee and SOI

Species	Status[1]			Habitat and Blooming Period
	Federal	State	CRPR	
common moonwort *Botrychium lunaria*	–	–	2B.3	Meadows and seeps, subalpine coniferous forest, upper montane coniferous forest. 6,398 to 11,204 ft in elevation. Blooms August.
starved daisy *Erigeron miser*	–	–	1B.3	Upper montane coniferous forest. Rocky, granitic outcrops. 5,085 to 9,104 ft in elevation. Blooms June-October.
Donner Pass buckwheat *Eriogonum umbellatum* var. *torreyanum*	–	–	1B.2	Upper montane coniferous forest, meadows and seeps. Steep slopes and ridgetops; rocky, volcanic soils; usually in bare or sparsely vegetated areas. 6,086 to 8,596 ft in elevation. Blooms July-September.
Plumas ivesia *Ivesia sericoleuca*	–	–	1B.2	Wetland Great Basin scrub, lower montane coniferous forest, meadows and seeps, vernal pools. Vernally mesic areas; usually volcanic substrates. 4,314 to 7,005 ft in elevation. Blooms May-October.
Santa Lucia dwarf rush *Juncus luciensis*	–	–	1B.2	Vernal pools, meadows and seeps, lower montane coniferous forest, chaparral, Great Basin scrub. Vernal pools, ephemeral drainages, wet meadow habitats and streamsides. 984 to 6,693 ft in elevation. Blooms April-July.
broad-nerved hump moss *Meesia uliginosa*	–	–	2B.2	Wetland. Meadows and seeps, bogs and fens, upper montane coniferous forest, subalpine coniferous forest. Moss on damp soil. Often found on the edge of fens or raised above the fen on hummocks/shrub bases. 3,593 to 9,203 ft in elevation. Blooms July-October.
Hiroshi's flapwort *Nardia hiroshii*	–	–	2B.3	Meadows and seeps. Damp soil with granitic bedrock. 7,201 to 7,201 ft in elevation.
Robbins' pondweed *Potamogeton robbinsii*	–	–	2B.3	Wetland. Marshes and swamps. Deep water, lakes. 5,020 to 10,827 ft in elevation. Blooms July-August.
alder buckthorn *Rhamnus alnifolia*	–	–	2B.2	Wetland. Meadows and seeps, lower montane coniferous forest, upper montane coniferous forest, riparian scrub. Mesic sites. 4,692 to 7,005 ft in elevation. Blooms May-July.
Tahoe yellow cress *Rorippa subumbellata*	–	E	1B.1	Historic occurrence from 1800's. Possibly Extirpated (CDFW 2018). Wetland Lower montane coniferous forest, meadows and seeps. Sandy beaches, on lakeside margins of Lake Tahoe and in riparian communities; on decomposed granite sand. 6,217 to 6,234 ft in elevation. Blooms May-September.
marsh skullcap *Scutellaria galericulata*	–	–	2B.2	Wetland. Marshes and swamps, lower montane coniferous forest, meadows and seeps. Swamps and wet places. 0 to 6,398 ft in elevation. Blooms June-September.
cut-leaf checkerbloom *Sidalcea multifida*	–	–	2B.3	Lower montane coniferous forest, meadows and seeps, Great Basin scrub, pinyon and juniper woodland. 5,741 to 9,186 ft in elevation. Blooms May-September.

Notes: CDFW = California Department of Fish and Wildlife; CRPR = California Rare Plant Rank; CESA = California Endangered Species Act; SOI = Sphere of Influence

Table 5-4 Special-Status Plant Species Known to Occur Within One Mile of the Town of Truckee and SOI

Species	Status[1]			Habitat and Blooming Period
	Federal	State	CRPR	

[1] Legal Status Definitions

State:

E Endangered (legally protected by CESA)

California Rare Plant Ranks:

1B Plant species considered rare or endangered in California and elsewhere (protected under CEQA, but not legally protected under ESA or CESA)

2 Plant species considered rare or endangered in California but more common elsewhere (protected under CEQA, but not legally protected under ESA or CESA

Threat Ranks

0.1-Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

0.2-Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

0.3-Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Animals

The results of the query of the CNDDB yielded one special-status fish, two special-status amphibians, four special-status birds and four special-status mammals that are known to currently occur or have historically occurred within one mile of the Town (Table 5-5). Mule deer was added to this list because it is of local concern to CDFW although the species has no formal state or federal status. Species listed, proposed for listing, or candidates for listing under the ESA in the vicinity of the Town are Lahontan cutthroat trout (*Oncorhynchus clarki henshawi*), Sierra Nevada yellow-legged frog (*Rana sierra*), California wolverine (*Gulo gulo*), and Sierra Nevada red fox (*Vulpes vulpes necator*). The Sierra Nevada yellow-legged frog, California wolverine, and Sierra Nevada red fox are also listed as threatened under the CESA. Bald eagle (*Haliaeetus leucocephalus*) and willow flycatcher (*Empidonax traillii*) are also listed as endangered under the CESA. Critical habitat for the Sierra Nevada yellow-legged frog is present within the western and southern portions of the Planning Area and within the western portion of the Town to the west of Donner Lake (USFWS 2016). Critical habitat of an endangered and threatened species is composed of the specific areas within the range of the species that contain the physical or biological features that are essential to its conservation and that may need special management or protection.

Table 5-5 Special-Status Wildlife Known to Occur Within One Mile of the Town of Truckee and SOI

Species	Listing Status		Habitat
	Federal	State	
Fish			
Lahontan cutthroat trout *Oncorhynchus clarki henshawi*	Threatened	–	In the Lower Truckee River watershed, Lahontan cutthroat trout (LCT) occurs in Pole Creek, a tributary of the Lower Truckee River approximately 8 miles downstream of Tahoe City; additionally, LCT were also released in the Lower Truckee River at Granite Flat Campground upstream from the Town of Truckee (Placer County 2015). Found in both lake and stream habitats, but spawn in stream environments. LCT requires gravels and riffles for spawning and generally does not persist or occur with nonnative salmonids.
Amphibians			
Sierra Nevada yellow-legged frog *Rana sierrae*	Endangered	Threatened	Aquatic. Always encountered within a few feet of water. Tadpoles may require 2 to 4 years to complete their aquatic development. An occurrence was documented in 1997 along Alder Creek in the vicinity of the Town (CDFW 2018).
southern long-toed salamander *Ambystoma macrodactylum sigillatum*	–	Species of Special Concern	High elevation meadows and lakes in the Sierra Nevada, Cascade, and Klamath mountains. Aquatic larvae occur in ponds and lakes. During non-breeding season adults are terrestrial and associated with underground burrows of mammals and moist areas under logs and rocks. Known from a 2015 occurrence in Coldstream Valley, Donner Memorial State Park (CDFW 2018).

Table 5-5 Special-Status Wildlife Known to Occur Within One Mile of the Town of Truckee and SOI

Species	Listing Status		Habitat
	Federal	State	
Birds			
bald eagle *Haliaeetus leucocephalus*	Delisted	Endangered, Fully Protected	Lower montane coniferous forest, old growth. Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water. Nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter. Known to nest on Donner Lake (CDFW 2018).
northern goshawk *Accipiter gentilis*	–	Species of Special Concern	North coast coniferous forest, subalpine coniferous forest, upper montane coniferous forest. Within, and in vicinity of, coniferous forest. Uses old nests and maintains alternate sites. Usually nests on north slopes, near water. Red fir, lodgepole pine, Jeffrey pine, and aspens are typical nest trees. Two historic nests within the vicinity of the Town on Prosser Creek and in Crabtree Canyon.
willow flycatcher *Empidonax traillii*	–	Endangered	Meadow and seep, riparian scrub, riparian woodland, and wetlands. Inhabits extensive thickets of low, dense willows on edge of wet meadows, ponds, or backwaters; 2,000-8,000 feet elevation Requires dense willow thickets for nesting/roosting. Low, exposed branches are used for singing posts/hunting perches. Two historical and one recent nesting pair within the Town along Prosser Creek and the Truckee River (CDFW 2018).
yellow warbler *Setophaga petechia*	–	Species of Special Concern	Riparian forest, riparian scrub, riparian woodland. Riparian plant associations in close proximity to water. Also nests in montane shrubbery in open conifer forests in Cascades and Sierra Nevada. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders. One historical occurrence in Donner Memorial State Park during breeding season, no nest was found (CDFW 2018).
Mammals			
California wolverine *Gulo*	Proposed Threatened	Threatened, Fully Protected	Alpine, alpine dwarf scrub, meadow and seep, montane dwarf scrub, north coast coniferous forest, riparian forest, subalpine coniferous forest, upper montane coniferous forest, wetland. Found in the north coast mountains and the Sierra Nevada. Found in a wide variety of high elevation habitats. Needs water source. Uses caves, logs, burrows for cover and den area. Hunts in more open areas. Can travel long distances. Known to occur in the vicinity of the Town from a historic occurrence along Prosser Creek (CDFW 2018). Species detected within the last 10 years on the Tahoe National Forest to the north of the Town.
Sierra Nevada snowshoe hare *Lepus americanus tahoensis*	–	Species of Special Concern	Riparian woodland. Boreal riparian areas in the Sierra Nevada. Thickets of deciduous trees in riparian areas and thickets of young conifers. The CNDDB contains a historic detection of the species within one mile of the Town (CDF2018).
Mule deer *Odocoileus hemionus*	–	No formal status; however, species is of high management concern to CDFW	In the Planning Area, early to mid-successional forests, woodlands, and riparian and brush habitats are preferred because of the greater diversity of shrubby vegetation and woody cover. Optimal deer fawning habitat has been described as having moderate to dense shrub cover near forest cover and water, such as riparian zones. A source of surface water (e.g., creek or river) is especially important to mule deer. Typical fawning habitat varies in size, but an area of 5–26 acres is adequate, with optimal fawn-rearing habitat of around 400 acres.

Table 5-5 Special-Status Wildlife Known to Occur Within One Mile of the Town of Truckee and SOI

Species	Listing Status		Habitat
	Federal	State	
Sierra Nevada red fox *Vulpes necator*	Candidate	Threatened	Alpine, alpine dwarf scrub, broadleaved upland forest, meadow and seep, riparian scrub, subalpine coniferous forest, upper montane coniferous forest, wetland. Historically found from the Cascades down to the Sierra Nevada. Found in a variety of habitats from wet meadows to forested areas. Use dense vegetation and rocky areas for cover and den sites. Prefer forests interspersed with meadows or alpine fell-fields. The CNDDB contains two historic detections within one mile of the Town (CDFW 2018).

Source CDFW 2018, Placer County 2015

MULE DEER MOVEMENT AND MIGRATORY CORRIDORS

Wildlife corridors are used for both movement and migration purposes. Movement corridors are used by wildlife to access food, cover, and water within their home range. The width of movement corridors varies depending on the topography, vegetation types, and surrounding land uses. Migration corridors support annual movement between summer and winter ranges. Movement and migration corridors are critical to wildlife, including the Verdi subunit of the Loyalton-Truckee mule deer herd.

The Verdi subunit of the Loyalton-Truckee mule deer herd migrates annually from Nevada along the Truckee River through the eastern portion of the Planning Area and disperses through Martis Valley in the spring season (CDFW 1982; CDFW 2010) to critical fawning habitat near Dry Lake southeast of the town, and Lookout Mountain at the southern edge of the Planning Area (Town of Truckee 2015). After fawning, this deer herd leaves the fawning habitat and disperses back into the Martis Valley to forage prior to migrating down the Truckee River into Nevada. Individuals migrate along the northern and southern sides of Interstate 80 (I-80) and a portion of the herd must cross I-80 in order to disperse into the Martis Valley in the spring season and migrate back to Nevada in the autumn. Over the last 15 plus years, migratory habitat loss and fragmentation has increased throughout the herds' range. The loss of wintering habitat due to livestock grazing, fires, and development, as well as reduced access to wintering areas may be the primary causes of the declining mule deer population (Town of Truckee 2015).

5.3.3 Regulatory Setting

FEDERAL

Federal Endangered Species Act

Pursuant to the ESA (16 U.S.C. Section 1531 et seq.), the USFWS and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) regulate the taking of species listed in the ESA as threatened or endangered. In general, persons subject to ESA (including private parties) are prohibited from "taking" endangered or threatened fish and wildlife species on private property, and from "taking" endangered or threatened plants in areas under federal jurisdiction or in violation of state law. Under Section 9 of the ESA, the definition of "take" is to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." USFWS has also interpreted the definition of "harm" to include significant habitat modification that could result in take.

Two sections of the ESA address incidental take. Section 10 regulates incidental take if a non-federal agency is the lead agency for an action that results in take and no other federal agencies are involved in permitting the action. However, if a project would result in take of a federally-listed species and federal discretionary action (even if a non-federal agency is the overall lead agency) is involved (i.e., a federal agency must issue a permit), the involved federal agency consults with USFWS or NMFS under Section 7 of the ESA. Section 7 of the ESA outlines procedures for

federal interagency cooperation to protect and conserve federally listed species and designated critical habitat. Section 7(a)(2) requires federal agencies to consult with USFWS and NMFS to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat.

Clean Water Act

Section 404 of the Clean Water Act (CWA) requires project proponents to obtain a permit from the U.S. Army Corps of Engineers (USACE) before performing any activity that involves any discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States include navigable waters of the United States, interstate waters, tidally influenced waters, and all other waters where the use, degradation, or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Many surface waters and wetlands in California meet the criteria for waters of the United States.

In accordance with Section 401 of the CWA, projects that apply for a USACE permit for discharge of dredged or fill material must obtain water quality certification from the appropriate regional water quality control board (RWQCB) indicating that the action would uphold state water quality standards.

Bald and Golden Eagle Protection Act

Under the Bald and Golden Eagle Protection Act, it is illegal to take bald eagles, including their parts, nests, or eggs unless authorized. "Take" is defined as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." Disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause (1) injury to an eagle; (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior; or (3) nest abandonment (USFWS 2007: 31156). In addition to immediate impacts, this definition also addresses impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death, or nest abandonment.

STATE

California Endangered Species Act

Pursuant to CESA, a permit from CDFW is required for projects that could result in the "take" of a plant or animal species that is listed by the state as threatened or endangered. Under CESA, "take" is defined as an activity that would directly or indirectly kill an individual of a species, but the CESA definition of take does not include "harm" or "harass," like the ESA definition does. As a result, the threshold for take is higher under CESA than under ESA. Authorization for take of state-listed species can be obtained through a California Fish and Game Code Section 2081 incidental take permit.

California Fish and Game Code Sections 3503 and 3503.5

Section 3503 of the Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 of the California Fish and Game Code states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders *Falconiformes* and *Strigiformes*), including their nests or eggs. Typical violations include destruction of active nests as a result of tree removal or disturbance caused by project construction or other activities that cause the adults to abandon the nest, resulting in loss of eggs and/or young.

California Fish and Game Code Fully Protected Species

Protection of fully protected species is described in Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code. These statutes prohibit take or possession of fully protected species and do not provide for authorization of incidental take. CDFW has informed nonfederal agencies and private parties that their actions must avoid take of any fully protected species.

California Fish and Game Code Section 1602—Streambed Alteration

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources are subject to regulation by CDFW under Section 1602 of the California Fish and Game Code. Under Section 1602, it is unlawful for any person, governmental agency, or public utility to do the following without first notifying CDFW:

- substantially divert or obstruct the natural flow of, or substantially change or use any material from, the bed, channel, or bank of any river, stream, or lake; or
- deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

The regulatory definition of a stream is a body of water that flows at least periodically or intermittently through a bed or channel that has banks and supports fish or other aquatic life. This definition includes watercourses with a surface or subsurface flow that supports or has supported riparian vegetation. CDFW's regulatory authority within altered or artificial waterways is based on the value of those waterways to fish and wildlife. A CDFW streambed alteration agreement must be obtained for any action that would result in an impact on a river, stream, or lake.

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Act, waters of the state within the Town and Planning Area are within the jurisdiction of the LRWQCB. The LRWQCB's jurisdiction includes federally protected waters as well as areas that meet the definition of "waters of the state." Waters of the state is defined as any surface water or groundwater, including saline waters, within the boundaries of the state. The LRWQCB has the discretion to take jurisdiction over areas not federally protected under Section 401 provided they meet the definition of waters of the state. Actions that affect waters of the state, including wetlands, must meet the LRWQCB's waste discharge requirements.

LOCAL

Town of Truckee Tree Preservation Ordinance

Section 18.30.155 of the Town of Truckee Development Code recognizes that trees provide benefits such as; soil stability, noise buffering, wind protection, temperature mitigation, enhancement of wildlife habitat and aesthetics. The ordinance provides protection for trees, while exempting certain activities from the tree permitting process. Unless otherwise exempt, development projects need approval to remove trees greater than 24 inches diameter at breast height. The ordinance also provides guidelines for preservation of trees and mitigation for trees that are removed.

5.4 Open Space and Land Cover

This section describes the existing open space resources and land cover in Truckee, along with the applicable regulatory framework. See Chapter 9, "Public Facilities, Services, and Infrastructure," for more information on exiting park and recreational facilities.

5.4.1 Major Findings

- A large portion of the town is composed of relatively undisturbed natural land cover types that provide habitat for both common and special-status wildlife and plants.
- Truckee has a variety of open space areas including pristine open space, managed resource areas, open space corridors, and scenic open space.

5.4.2 Existing Conditions

NATURAL LAND COVER

As shown in Figure 5-6, a large portion of Truckee is composed of relatively undisturbed natural land cover types, including tree-dominated land cover, such as east side pine, Sierran mixed conifer, and white fir; montane riparian, which is often associated with sources of water; shrub-dominated land cover, such as montane chaparral; and herbaceous-dominated land cover, such as perennial grassland. These natural areas provide high-quality habitat for special-status species and common species. See Section 5.3, "Biological Resources," for more information on natural land covers and habitat types within Truckee.

OPEN SPACE

The existing General Plan defines open space as "land that is essentially unimproved, that may be under public or private ownership, and that may be of any specific open space types…." The types of open space that occur in Truckee are further defined below.

Pristine Open Space

Pristine open space generally consists of large tracts of public land where development is highly restricted. Many of Truckee's important scenic and visual resources, such as mountain peaks, ridgelines, and forest lands are considered pristine open space.

Managed Resource Areas

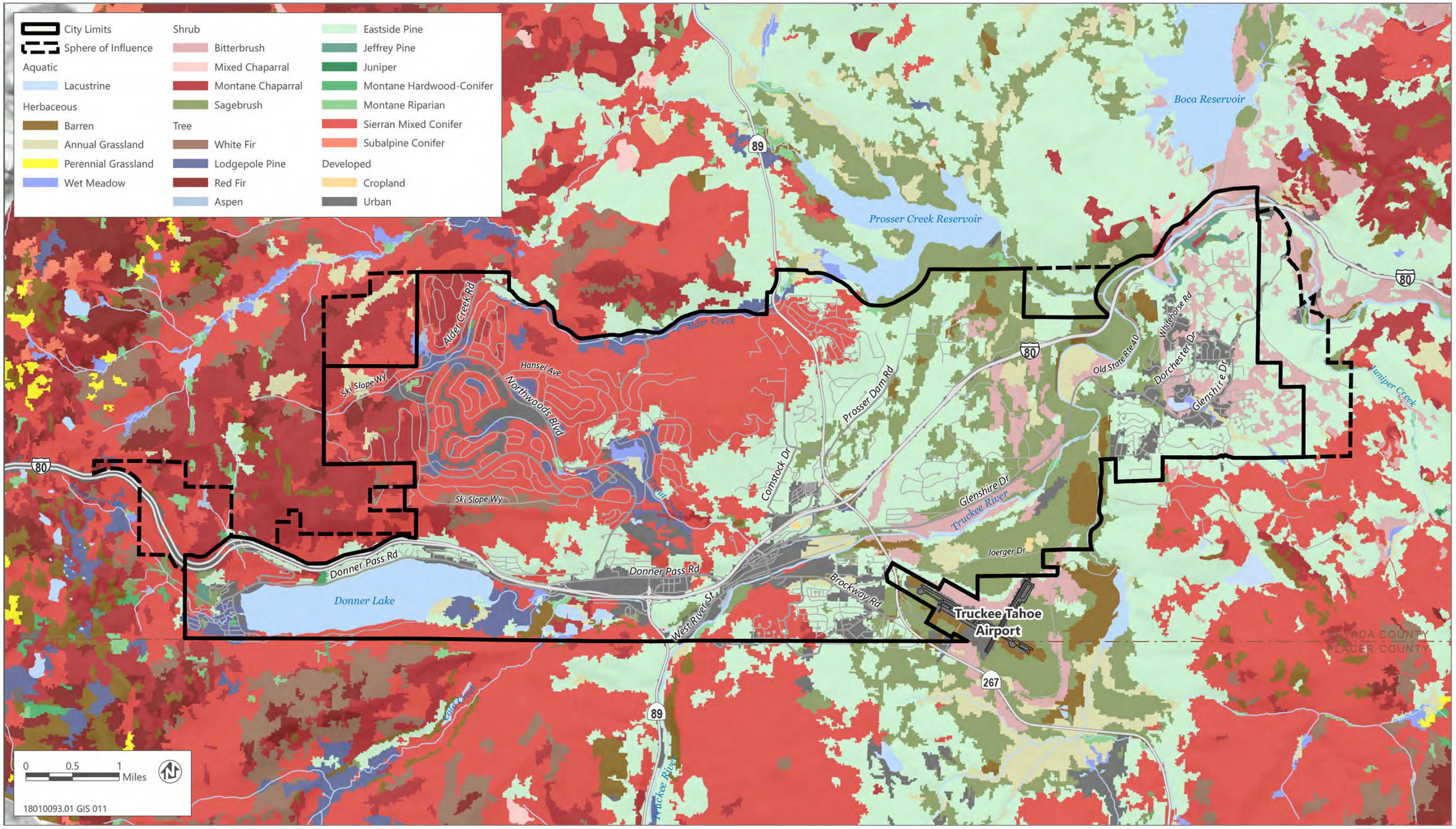
Managed resources areas within Truckee include mineral, grazing, and forestry resources. See Section 5.6, "Mineral Resources," for more information on existing mineral resource areas in Truckee. Open space areas that could potentially provide grazing and forestry resources generally coincide with rangeland vegetation areas and forest land, respectively. Despite the potential for these uses, there is no active grazing taking place in Truckee today, and no commercial forestry, although some timber harvesting for forest management does occur.

Open Space Corridors

Open space corridors have a linear form and provide important links and connections between other dispersed open space areas. Trails, paths and bikeways may be sited along such corridors, providing physical connections that facilitate travel between open space areas and connect disparate open spaces into an integrated network within the town and beyond. Existing Open Space Corridors in Truckee include the Truckee River and open linear areas adjacent to Tahoe-Donner and Glenshire/Devonshire.

Scenic Open Space

Truckee's open spaces areas are typically associated with some degree of scenic value. They frequently encompass places possessing scenic landscape qualities that contribute to Truckee's sense of place as a mountain community and offer sweeping vistas and largely uninterrupted views of surrounding ridgelines and peaks. Truckee's scenic open space areas are in almost all cases associated with another open space type or function, including habitat areas, pristine open space, forestry, or limited development recreation. However, it is mostly those places that are almost entirely undeveloped that are perceived as offering the highest degree of aesthetic value to the community. See Section 5.5, "Scenic Resources," for more information on open space vistas and scenic views of peaks, prominent slope exposures, and ridge and bluff lines.



Source: Data downloaded from Town of Truckee in 2018 and USFS in 2016

FIGURE 5-6 LAND COVER

PAVED TRAILS

Paved trails within Truckee are facilities uses by bicyclists, pedestrians and non-motorized users. They are generally located along the right-of-way and can serve as a buffer for open spaces, wetlands and wildlife habitat. According to the 2015 Truckee Trails and Bikeways Master Plan, there are 18 miles of existing paved trails throughout Truckee, and an additional 17 miles are proposed (Town of Truckee 2015: 38).

5.4.3 Regulatory Setting

LOCAL

2025 General Plan

The Conservation and Open Space Element of the *Town of Truckee 2025 General Plan* contains the following goals and policies applicable to open space and land cover within the town (Town of Truckee 2006):

- COS-1: Preserve existing open space in Truckee, and increase the amount of desired types of open space under permanent protection.
  - P1.4: Cluster new development where appropriate in order to maximize preservation of land in open space. Clustering shall conform to the guidelines established in Policies and Actions listed under Goal LU-7 in the Land Use Element.
  - P1.5: Adhere to the following criteria for open space preserved through direct actions of the Town, through open space and clustered development requirements and incentives, and through the development review process:
    - Provide the maximum possible degree of community benefit, as expressed through the Vision for Truckee and the guiding principles, goals and policies of the General Plan.
    - Preserve open space that, to the greatest possible extent, occurs in large blocks and is contiguous and connected.
    - Provide the greatest possible level of public access while respecting private property rights, sensitive habitat values, and safety concerns.
    - Provide maximum benefit in terms of habitat preservation.
    - Enhance the overall character of Truckee as a scenic, mountain community.
- COS-7: Protect and conserve managed resource open space for its productive resource values, including timber harvesting and grazing uses, and for its recreational, scenic, and biological values.
  - P7.3: Require a Conditional Use Permit for any proposed conversion of timberland to an alternate use not associated with an approved development project.
  - P7.6: Oppose commercial timber harvesting that involves clear cutting within Town limits and in visually and biologically sensitive areas of the Planning Area.

Truckee Municipal Code

Chapter 18.46 Open Space/Cluster Requirements

This chapter of the Truckee Municipal Code establishes open space and clustering requirements for all new development projects including, but not limited to, residential subdivisions. Section 18.46.050, "Open Space Standards" sets forth the minimum amount of open space required within a property. As indicated by Table 3-8, "Minimum Open Space Area," the required open space area for a given development project is calculated based on a

percentage of the gross site area of the project and ranges from 30 percent to 90 percent depending on the Zoning District. Section 18.46.060, Open Space and Clustering Guidelines," sets forth clustering requirements for new developments in order to maximum the amount of surrounding open space.

5.5 Scenic Resources

This section describes the existing scenic character of Truckee. Scenic resources include a variety of natural and built elements that serve as visual landmarks defining the important scenic qualities of Truckee. This section also describes the regulatory framework related to scenic resources.

5.5.1 Major Findings

- Significant scenic vistas in Truckee include views of mountain ranges, open space areas, the Truckee River, the historic Town Center, and Donner Lake.
- The Truckee Municipal Code designates two scenic corridors; the length of I-80 where it passes through the town limits, and a segment of SR 89 between Prosser Dam Road and the northern town limit.
- Truckee has numerous gateways located along key corridors that convey a sense of arrival and first impressions to visitors.

5.5.2 Existing Conditions

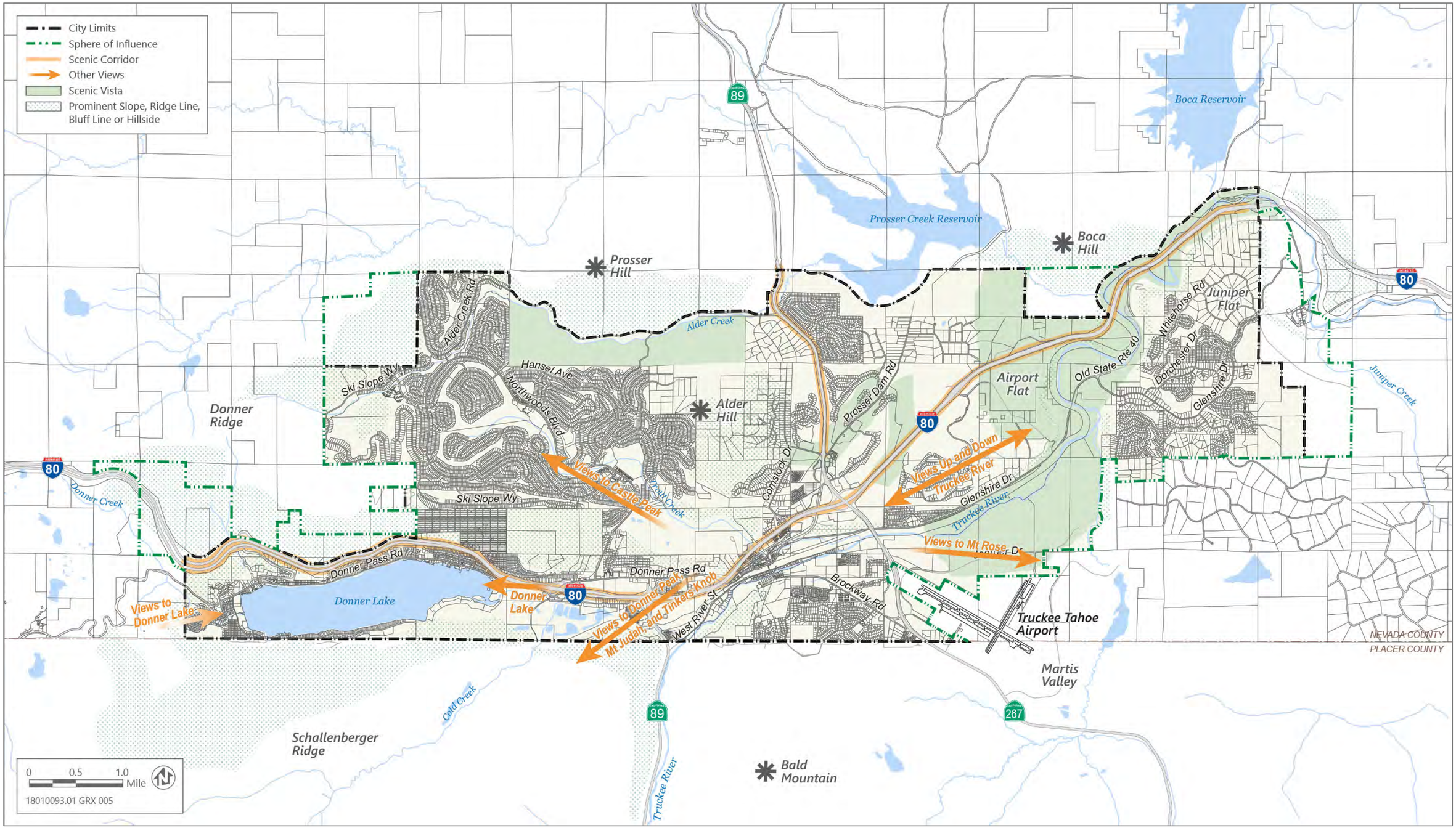
Scenic resources are an important component of the quality of life of any geographic area. Most communities identify scenic resources as important assets, although what is considered "scenic" may vary according to the environmental setting. Scenic resources can include natural open spaces, topographic formations, and landscapes. Scenic resources can also include open spaces and the built environment, including historical areas. Viewsheds constitute the range of vision in which scenic resources may be observed. They are defined by physical features that frame the boundaries or context to one or more scenic resources. Aesthetic value refers to the perception of the natural beauty of an area, as well as the elements that create or enhance its visual quality. While aesthetic value is subjective, it is typically included as a criterion for evaluating the elements that contribute to the quality that distinguishes the area.

VISUAL CHARACTER

Truckee is a mountain community situated in the valley containing the Truckee River and is surrounded by scenic views of mountain peaks and ridgelines, sweeping vistas of forested hillsides, and meadows. The Truckee town limit encompasses approximately 34 square miles; however, much of the town limit is composed of undeveloped open space. The broad visual character of Truckee's built environment is that of a series of discrete and dispersed neighborhoods and districts of individually varying character, separated by areas of open space. Developed areas within Truckee include the town's historic core, compact development of historic and newer buildings within the Truckee River Valley, commercial and public uses in the Gateway Area, residential and vacations homes in the Donner Lake Area, and a variety of residential and commercial areas distributed throughout the town. See Chapter 3, "Land Use and Community Character," for more information on the individual character of neighborhoods and districts.

Scenic Vistas

Scenic resources are an important component of the quality of life of any geographic area. Most communities identify scenic resources as important assets, although what is considered "scenic" may vary according to the environmental setting. Scenic vistas are generally interpreted as long-range views of a specific scenic resource. Significant scenic vistas in Truckee include views of mountain ranges, open space areas, the Truckee River, the historic Town Center, and Donner Lake. These scenic vistas are shown on Figure 5-7 and described in further detail below.



Source: Data downloaded from Town of Truckee in 2018

FIGURE 5-7 SCENIC RESOURCES IN AND AROUND THE TOWN OF TRUCKEE

Peaks and High Mountain Ridges

Scenic views of peaks, prominent slope exposures, and ridge and bluff lines can be viewed from numerous locations throughout the town and are most prominent when looking to the east from central Truckee, to the east and southeast from upland neighborhoods like Tahoe Donner towards Mount Rose, and to the west and northwest to Castle Peak.

Open Space Vistas

Scenic views of forested hillsides, meadows, and the river valley can be viewed from the bluffs north of the Truckee River, along I-80, and Glenshire Drive looking south towards Martis Valley. The high vantage point afforded by the SR 267 bridge also provides open space vistas across the Martis Valley and towards Northstar ski resort.

Truckee River

The Truckee River originates at the outlet of Lake Tahoe and flows approximately 110 miles to Pyramid Lake. Within the town, the river aligns with the railroad and I-80 as they pass through the town and reinforces the linear form of historic Downtown Truckee. The orientation and alignment of the Truckee River valley defines a natural corridor that provides a unifying visual and physical element of the town landscape.

Townscape

Roadways connecting into Downtown Truckee provide scenic views of the built environment, or townscape, with the natural setting of the river valley and the forested hills that surround it. These views are most prominent from I-80 and from Brockway Road as it descends into the Downtown. The SR 267 bridge also contributes to the townscape of Truckee and affords drivers views of the town and valley floor.

Donner Lake

Donner Lake, located in the southwestern area of the town, provides one of the most distinctive natural scenic landscape elements within Truckee. Scenic views of the Lake, its shoreline, the Lake's open waters to the forested Schallenberger Ridge to the south; Donner Ridge to the north, and the Sierra crest to the west, are key scenic resources for the town.

Scenic Highways

There are no State-designated scenic highways within Truckee; however, both I-80 and SR 89 are considered eligible but are not officially designated (Caltrans 2018). The Truckee Municipal Code designates two scenic corridors: the length of I-80 where it passes through the town limits, and a segment of SR 89 between Prosser Dam Road and the northern town limit. The scenic corridor designation recognizes the high scenic value of the landscape along corridor and the need to actively protect the landscape from encroachment of visually incompatible development and advertising signage that could impair the scenic quality within the roadway's viewshed. The alignment of I-80 and elevation above the Truckee River valley affords numerous viewpoints to the south and southeast across the valley. The segment of SR 89 north of Prosser Dam Road provides drivers with views of scenic and rural landscapes that are visible from the roadway.

Corridors and Gateways

Corridors are linear features located along major thoroughfares that connect parts of a community. Gateways are a type of corridor feature that provide a sense-of-place, arrival, or transition from one place to another. Truckee's important corridors are described in further detail below.

West River Street Corridor/McIver Crossing Gateway

The West River Street Corridor connects the Downtown from Brockway Road to SR 89 South, along the alignment of the Truckee River. This corridor serves an important entry point and transition into Downtown Truckee. McIver Crossing connect s West River Street to Donner Pass Road west of downtown via a railroad undercrossing.

State Route 89 South Gateway

The SR 89 is located at the west end of West River Street. Passage through the Mousehole railroad undercrossing on SR 89 South provides a distinctive entrance from Placer County into Truckee.

Donner Lake Corridor/Wester Donner Pass Road Gateway

The Donner Lake Corridor/Wester Donner Pass Road Gateway connects the Gateway Area and Downtown Truckee to Donner Summit. The unique corridor follows the alignment of old Highway 40 and affords open and expansive view across Donner Lake to the mountain ridges. The westernmost Donner Pass Road exit from I-80 serves as the gateway into Truckee from the west, providing access to Donner Lake and Donner Memorial State Park to the west, and to the Gateway Area to the east. This corridor also provides a gateway to the major highway commercial area of the town.

State Route 89 North/Truckee Way Gateway

The SR 89 North and Truckee Way gateway defines the entry into central Truckee from I-80 and SR 89 to the north, and from Glenshire to the east, traveling along Truckee Way. This gateway provides a unique perspective of the Downtown traveling downward into the river valley.

Brockway Road Corridor and Gateway

The Brockway Road Corridor, and the SR 267 and Brockway intersection provide a distinct and positive sense of arrival in Truckee.

Light and Glare

Light pollution refers to all forms of unwanted light in the night sky including glare, light trespass, sky glow, and over-lighting. Views of the night sky are an important part of the natural environment and contribute to the mountain-town character of Truckee. Excessive light and glare can also be visually disruptive to humans and nocturnal animal species and can often result in high energy consumption. Sources of light within the Truckee area include street lighting along streets, I-80, and SR 89, and night-time illumination of commercial buildings, shopping centers, and residential development. Light spillage from developed areas outside of the town border including the Reno-Sparks metropolitan area contribute to light pollution within Truckee. Truckee Municipal Code Section 18.30.060, establishes lighting standards and design criteria to minimize light pollution, glare, light trespass, and conserve energy while maintaining nighttime safety, utility, security, and productivity.

5.5.3 Regulatory Setting

STATE

Scenic Highway Program

In 1963, the State legislature established the California Scenic Highway Program through SB 1467. State Scenic Highways are designated by the California Department of Transportation to promote the protection and enhancement of the natural scenic beauty of California's highways and adjacent corridors. A scenic corridor is defined as the area of land generally adjacent to, and visible from, the designated highway. Local jurisdictions, with support of their citizens, must adopt programs to protect the scenic qualities of qualifying corridors, and zoning and land use along the highway must meet the State's minimum requirements for scenic highway corridor protection.

LOCAL

2025 General Plan

The Community Character Element of the *Town of Truckee 2025 General Plan* contains the following goals and policies applicable to mineral resources within the town (Town of Truckee 2006):

- Goal CC-2: Preserve the natural beauty of Truckee, including the Town's scenic resources, views and vistas, and the visual quality of the town's steep slopes, ridge and bluff lines and hillsides.

- P2.2: Prevent development along ridge and bluff lines that disrupts the natural skyline or silhouette of the landform.
- P2.3: Prohibit intensive and visually obtrusive development on prominent hillsides, ridges, bluffs and steep slope areas in Truckee.
- P2.7: Require electric, telecommunications and cable television facilities serving new development to be installed underground wherever possible. Where undergrounding is impractical, above ground antennae and telephone and high voltage transmission lines shall be located out of significant scenic vistas.

- Goal CC-3: Protect and enhance public views within and from Truckee's designated scenic corridors.
  - P3.1: Regulate the visual appearance and location of development within identified buffer areas along Interstate 80 and Highway 89 North in order to protect the visual quality of these corridors and the views that are available from them.
  - P3.2: Require that all buildings at the existing Interstate 80/Highway 89 North/Highway 267 interchange be substantially screened from sight from the interchange.
  - P3.4: Require preservation of existing vegetation on sites along I-80 to screen existing and new development visible from Interstate 80. Where necessary, require additional landscaping to screen buildings and other facilities. Accommodation shall be made to permit visibility of signage for approved Highway Commercial uses in areas where such uses are specifically permitted.
- Goal CC-4: Protect views of the night sky and minimize the effects of light pollution.
  - P4.2: Require light fixtures to be designed and sited so as to minimize light pollution, glare, and light trespass into adjoining properties.
- Goal CCC-16: Preserve the scenic qualities of the Donner Lake area.
  - P16.1: Regulate development in the Donner Lake area to avoid or mitigate the visual impacts created by construction of large homes on small lots along the lakefront and within adjacent neighborhoods.
  - P16.2: Regulate the design character of new discretionary development along Donner Pass Road in the Donner Lake area, to ensure compatibility with the character and scenic quality of the wooded lake shore, its rustic cabins, and the lake waters.

Truckee Municipal Code

Chapter 18.24, Design Guidelines

This chapter establishes procedures for the town's review of land use permit applications to ensure consistency with Truckee's unique small mountain-town character. The provisions in this chapter apply to all multi-family residential, commercial, industrial, and public/institutional projects. The design elements of each project including site design, architecture, landscaping, signs, and parking design are reviewed on a comprehensive basis.

Section 18.30.060, Exterior Lighting and Night Sky

This section establishes lighting standards and design criteria to minimize light pollution, glare, light trespass, and conserve energy while maintaining nighttime safety, utility, security, and productivity. The provisions in this section apply to new development and projects resulting in new uses, major additions, or modifications to existing development where the increase in floor area is greater than 50 percent for single-family residential or greater than 25 percent for other land uses. The provisions also apply to minor additions to existing development where the increase in floor area is 50 percent or less for single-family residential or 25 percent for all other land uses.

Chapter 18.36, Hillside Development

This chapter establishes requirements for development proposed within hillside areas to preserve and protect the views to and from the hillside. The standards for this chapter apply to all uses, subdivisions, and structures proposed on sites with an average slope of 10 percent or greater and any type of proposed development on sites with slopes of

20 percent or greater. Hillside developments, including roads, streets, and driveways, proposed on slopes of 20 percent or greater are subject to a use permit. Single-family dwellings in existing subdivisions, secondary residential units, and residential accessory structures are exempt from the provisions of this chapter.

Chapter 18.38, Lake and River/Stream Corridor Development
This chapter establishes requirements for development adjacent to Donner Lake, the Truckee River, and streams located within the town. These requirements are intended to protect valuable environmental, scenic, and recreational resources. The chapter includes specific setback requirements, criteria for use of setback areas, regulations for flood hazard areas, and drainage easements, that are applicable to each waterway.

Chapter 18.40, Landscape Standards
This chapter provides landscaping standards for development to enhance the visual appearance of the built environment, preserve neighborhood character, and promote the use of drought-tolerant and/or native vegetation. The provisions in this chapter apply to projects requiring approval of a zoning clearance, development permit, minor use permit, or conditional use permit.

Chapter 18.42, Landscape Design Guidelines
This chapter provides landscape design guidelines to promote the visual and functional quality of new development. The provisions outlined in this chapter apply to all development projects that include landscaping, and any addition, relocation, or construction project requiring a land use permit.

Section 18.46.080, Scenic Corridor Standards
This section of the Truckee Municipal Code includes development standards for new development located along scenic corridors identified in the current General Plan. The development standards require projects to include landscape screening, avoid native vegetation removal, and minimize disruption of hillside views, prominent slope exposures, ridgelines, scenic vistas, or other natural features. The Scenic Corridor development standards apply to the following scenic corridor areas:

- The areas that extend 300 feet on each side of the I-80 right-of-way except those areas located within the Downtown Study Area as shown on the existing General Plan Land Use Diagram.
- The areas that extend the following distances on each side of SR 89 right-of-way:
  - 300 feet along the west and east sides of SR 89 between Prosser Dam Road and Rainbow Drive.
  - 50 feet along the west side of SR 89 between Rainbow Drive and East Alder Creek Road.

20 feet on the east side of the SR 89 between Rainbow Drive and the northern Town limit.

5.6 Mineral Resources

This section describes the existing conditions and regulatory framework related to mineral resources in the town of Truckee.

5.6.1 Major Findings

- Existing sand, gravel, silt, and clay deposits, classified as Mineral Resource Zone (MRZ) 2b and MRZ-3a deposits under the California Surface Mining and Reclamation Act of 1975 (SMARA), are located within Truckee. Several of these deposits are presently mined for use as construction aggregate.

5.6.2 Existing Conditions

Mineral resources are naturally occurring, homogenous deposits of inorganic solids with highly ordered atomic structure and unique chemical characteristics, such as gold or salt. A less organized deposit of minerals, such as a rock formation, is an example of an aggregate resource. Mining activity in Nevada County dates to 1849 when gold was discovered in the rivers and creeks flowing through the area. Although Truckee is not known as a mining town, there are several important mineral resource areas within the area. More than half of the construction aggregate reserves in Nevada County are in the Truckee-Martis Valley region (CDMG 1990).

Existing sand, gravel, silt, and clay deposit, classified as MRZ-2b and MRZ-3a deposits under SMARA (see definitions below in Section 5.6.3), are located within Truckee. MRZ-2b deposits extend from SR 89 to the eastern edge of the Martis Valley along the course of the Truckee River. The material consists of sands, gravels, silts, and clays. Teichert Aggregates, an aggregate producer located in Truckee, produces construction aggregate from exposed deposits. Portions of this mineral deposit are covered by Truckee. Tioga-stage glacial outwash MRZ-2b deposits are known to occur near Gateway in the Donner-Truckee area of eastern Nevada County. In addition, Tioga-stage glacial outwash MRZ-3a deposits occur southwest of the I-80 and SR 89 intersection. Mineral deposits within Truckee are presently mined for use as construction aggregate (CDMG 1990).

5.6.3 Regulatory Setting

STATE

Public Resources Code Section 2207

This section requires mining operators to submit an annual report that identifies contact information for a designated representative, the location of the mining operation, an approved reclamation plan, status of mining operation, permitted size, and total production.

California Code of Regulations Section 3500

This section of the California Code of Regulations establishes State policy for the reclamation of mined lands and conduct of surface mining operations. All mining operations shall prepare and approve a reclamation plan that describes the all actions and procedures related to mineral processing.

Surface Mining and Reclamation Act

SMARA was enacted by the California legislature to promote the conservation of the state's mineral resources, ensure adequate reclamation of mined lands, and prevent or minimize the negative impacts of surface mining to public health, property, and environment. Among other provisions, SMARA directs the State to classify land based on the presence of economically significant mineral deposits. Areas known as MRZs are classified based on geologic factors, without regard to existing land use and land ownership. The areas are categorized into four general classifications (MRZ-1 through MRZ-4). Of the four, the MRZ-2 classification is recognized in land use planning because the likelihood for occurrence of significant mineral deposits is high, and the classification may be a factor in the discovery and development of mineral deposits that tend to be economically beneficial to society. Details of the MRZ designations are as follows:

- MRZ-1: Areas where adequate information indicates that significant mineral deposits are not present, or where it is judges that it is unlikely that they are present.
- MRZ-2a: Areas where geologic data indicate that significant mineral deposits are present.
- MRZ-2b: Areas where geologic data indicate that significant mineral resources may be present.
- MRZ-3a: Areas containing mineral deposits, the significance of which cannot be deduced from the available data.

- MRZ-3b: Areas inferred to contain mineral deposits, the significant of which cannot be deduced from the available data.
- MRZ-4: Areas where the available information is inadequate for assignment into any other MRZ.

LOCAL

2025 General Plan

The Conservation and Open Space Element of the *Town of Truckee 2025 General Plan* contains the following goals and policies applicable to mineral resources within the town (Town of Truckee 2006):

- Goal COS-6: Protect economically viable mineral resources and related industries in Truckee while avoiding land use conflicts and environmental impacts from mining activities.
  - P6.2: Restrict permitted uses on lands mapped as important Mineral Resource Areas within the RC/OS land use designation to those compatible with mineral resource extraction activities.
  - P6.3: Restrict permitted uses on lands containing important mineral resources within the PUB land use designation to those compatible with mineral extraction, except in cases where such uses offer public benefits that outweigh those of resource extraction.
  - P6.4: New or expanded mining operations within the Town limits shall adhere to the following guidelines:
    - Demonstrate no significant adverse impacts from the mining operations on adjoining areas and uses, including, but not limited to, those associated with noise, dust and vibration.
    - Demonstrate no substantial increase in hazards to neighboring uses, water quality, air quality, agricultural resources or biological resources.
    - Demonstrate that the proposed plan complies with existing applicable County and State waste management standards.
    - Incorporate sufficient buffering between mining operations and adjacent non-mining uses to minimize noise in accordance with guidelines described in the Noise Element.
    - Incorporate landscaping buffers and other measures to minimize visual impacts to the extent possible.

Truckee Municipal Code

Chapter 18.60, Surface Mining and Reclamation Standards

This chapter of the Truckee Municipal Code sets forth standards and procedures for mineral processing, prospecting/extraction, and solar evaporation of mineral resources to ensure the continued availability of important mineral resources within Truckee. The provisions of SMARA, Public Resources Code Section 2207, and California Code of Regulations Section 3500 et seq., are incorporated by reference. Prior to initiating surface mining operations, a permit, Reclamation Plan, and financial assurances for reclamation must be approved by the Town of Truckee and certified by the California Department of Conservation. Pursuant to Section 18.60.110, "Annual Report Requirements," surface mining operations shall provide an annual surface mining report to the Town and the State Department of Conservation a date established by the State Department of Conservation.

5.7 Key Terms

The following key terms used in this section are defined as follows:

Ambient Air Quality Standards. Maximum acceptable average concentrations of air pollutants during a specified period of time, calculated as described in the regulations specifying the standard.

Areawide Source. Pollution where the emissions are spread over a wide area, such as consumer product use; fireplaces and wood stoves; natural gas-fueled space heaters and water heaters; road dust; landscape maintenance equipment; architectural coatings; solvents; and farming operations. Areawide sources do not include mobile sources or stationary sources.

Carbon Monoxide. A colorless, odorless, tasteless gas that is slightly less dense than air. Carbon monoxide is a component of internal combustion engine exhaust and can be toxic to humans in concentrations above 35 parts per million.

Fine Particulate Matter, or $PM_{2.5}$. Dust and particulates that are 2.5 microns in diameter or smaller. $PM_{2.5}$ is also referred to as fine particulate matter.

Hazardous Air Pollutants. In Federal parlance, hazardous air pollutants are air pollutants known to cause cancer and other serious health impacts, also referred to as toxic air contaminants by the California Air Resources Board.

Mobile Source. On-road or off-road vehicles, boats, airplanes, lawn equipment and small utility engines.

Nonattainment Area. An area or air basin that does not meet California or National ambient air quality standards for a given pollutant.

Oxides of Nitrogen. A general term pertaining to compound of nitric oxide, nitrogen dioxide (NO_2), and other oxides of nitrogen. Oxides of nitrogen are typically created during combustion processes and are major contributors to smog formation and acid deposition. NO_2 is a criteria air pollutant and may result in numerous adverse health effects.

Ozone. A strong smelling, pale blue, reactive toxic chemical gas consisting of three oxygen atoms. It is a product of the photochemical process involving the sun's energy and ozone precursors such as hydrocarbons and oxides of nitrogen. Ozone exists in the upper atmosphere ozone layer (stratospheric ozone) as well as at the Earth's surface in the troposphere (ozone). Ozone in the troposphere causes numerous adverse health effects and is a criteria air pollutant. It is a major component of smog.

Ozone Precursors. Chemicals such a non-methane hydrocarbons and oxides of nitrogen, occurring either naturally or as a result of human activities, which contribute to the formation of ozone, a major component of smog.

Particulate Matter. Any material, except pure water, that exists in the solid or liquid state in the atmosphere. The size of particulate matter can vary from coarse, wind-blown dust particles to fine particle combustion products.

Respirable Particulate Matter, or PM_{10}. Dust and particulates that are 10 microns in diameter or smaller. PM_{10} is also referred to as respirable particulate matter.

Reactive Organic Gas. A photochemically reactive chemical gas, composed on non-methane hydrocarbons that may contribute to the formation of smog.

Sensitive Receptors. Populations or uses that are more susceptible to the effects of air pollution than the general population, such as long-term health care facilities, rehabilitation centers, retirement homes, convalescent homes, residences, schools, childcare centers, and playgrounds.

Stationary Source. A non-mobile source of air pollution such as a power plant, refinery, distribution center, chrome plating facility, dry cleaner, port, rail yard, or manufacturing facility.

Toxic Air Contaminants. The technical term applied in California for an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, also referred to as hazardous air pollutants. Examples of toxic air contaminants include benzene and formaldehyde.

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Caltrans. *See* California Department of Transportation.

CARB. *See* California Air Resources Board.

CDMG. *See* California Division of Mines and Geology.

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TRUCKEE 2040
general plan + downtown specific plan



CHAPTER 6 Hazards and Safety

This chapter summarizes the hazards and safety issues for the Town. It is organized into the following sections:

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6.2 Geologic and Seismic Hazards 6-14
6.3 Flood Hazards 6-25
6.4 Aviation Hazards 6-35
6.5 Hazardous Materials 6-41
6.6 Noise and Vibration 6-50
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6.1 Wildfire Hazards

This section addresses the wildfire hazard conditions in and around the town and the potential risk these conditions pose. Issues related to wildfire risk include fire hazard areas in and surrounding the town, fire hazard management, and emergency planning and response. This section summarizes the fire hazard conditions for the town based on information from the *Nevada County Local Hazard Mitigation Plan* (NCLHMP) and *Truckee Fire Protection District Community Wildfire Protection Plan* (CWPP). Consistent with the NCLHMP, each section includes explanations of the nature, history, location, extent, and probability associated with fire hazards. A discussion of fire protection services is included in Chapter 9 ("Public Facilities, Services, and Infrastructure") of this Existing Conditions Report.

6.1.1 Major Findings

- The majority of parcels, as well as critical facilities, such as a government building, fire department facilities, bridges, and a school facility, in the town are located in a Very High Fire Hazard Severity Zone (FHSZ). Eighty percent (12,256 acres) of the town is in a Very High FHSZ, 18 percent (3,571 acres) is in a High FHSZ, and 2 percent (495 acres) is in a Moderate FHSZ.
- Wildfire risk is increased by residents who choose not to manage the vegetation surrounding structures on their properties. Additionally, the large number of renters and second homes in the town results in properties that are less likely to receive any fire hazard mitigation treatments and thus results in an increase in overall wildfire risk.
- The Truckee Fire Protection District (TFPD) continues to work with local property owners and State and Federal agencies to conduct fuel management projects to reduce overall wildfire risk in and around the town.
- Projected increases in temperature and decreases in snowpack, related to climate change, in the Sierra Nevada region will very likely increase wildfire risk in the town.

6.1.2 Existing Conditions

A wildfire, or wildland fire, is a fire that can occur in an area of combustible vegetation, such as grasslands, forests, or brushlands. Wildfires can begin from various natural causes, such as lightning, as well as human-induced causes, such as arson, discarded cigarettes, powerlines, sparks from equipment, and campfires.

Wildfires often begin unnoticed, spread quickly, and are usually signaled by dense smoke that may be visible from great distances. Wildfires can be categorized into four types:

- Wildland fires occur mainly in areas under Federal control, such as national forests and parks, and are fueled primarily by natural vegetation.
- Interface or intermix fires occur in areas where both vegetation and structures provide fuel. These are also referred to as wildland-urban interface (WUI) fires.
- Firestorms occur during extreme weather (typically high temperatures, low humidity, and high winds) with such intensity that fire suppression is virtually impossible. These events typically burn until the conditions change or the fuel is exhausted.
- Prescribed fires and prescribed natural fires are intentionally set or natural fires that are allowed to burn for beneficial purposes. Benefits include reduced fuel loads, which reduces the severity of future wildfire events; improved wildlife habitat; and propagation of fire-dependent plant species (U.S. Forest Service 2018).

Wildfire behavior is dependent on several factors that, when identified and assessed, can help determine future wildfire characteristics. The three factors listed below contribute significantly to wildfire behavior and can be used to identify wildfire hazard areas (Nevada County 2017a):

- **Topography:** An area's terrain and land slopes affect its susceptibility to wildfire spread. Both fire intensity and rate of spread increase as slope increases because heat from a fire tends to rise through convection. The arrangement of vegetation throughout a hillside can also contribute to increased fire activity on slopes.
- **Fuel:** Fuel is the material that feeds a fire and is a key factor in wildfire behavior. Fuel is generally classified by type and by volume. Fuel sources are diverse and can include dead tree leaves, twigs, and branches of dead, standing trees; live trees; brush; and cured grasses. Buildings and other structures, such as homes and other associated combustibles, are also considered a fuel source. The type of prevalent fuel directly influences the behavior of wildfire. Fuel is the only factor that is under human control. Because of fire suppression, vegetation has accumulated in certain heavily fueled areas to the east and south of the town. The presence of these high-fuel hazards, coupled with a greater potential for ignitions, increases the susceptibility of the town to a catastrophic wildfire.
- **Weather:** Components such as temperature, relative humidity, wind, and occurrence of lightning affect the potential for wildfire. High temperatures and low relative humidity dry out fuels that feed wildfires, creating a situation where fuel will ignite more readily and burn more intensely. Thus, during periods of drought, the threat of wildfire increases. Wind is one of the most significant weather factors in the spread of wildfires. The greater a wind, the faster a fire will spread and the more intense it will be. Wind direction can also play a role in the spread of wildfires. In addition to wind speed, wind shifts can occur suddenly as a result of temperature changes or the interaction of wind with topographical features, such as slopes or steep hillsides.

Wildfires can have serious and long-term effects on the local environment. In addition to removing vegetation and destroying forest resources, large, intense fires can harm the soil, waterways, and local water quality. Soil exposed to intense heat may lose its capacity to absorb moisture and support life. Exposed soils erode quickly and enhance siltation of rivers and streams, thereby enhancing flood potential, harming aquatic life, and degrading water quality. Lands stripped of vegetation are also subject to increased debris flow hazards. The more immediate effects of wildfires include decreased air quality in the areas where a wildfire occurs, which can cause serious health impacts on local populations.

As identified in the NCLHMP, some key factors specific to Nevada County can contribute to wildfire risk within and the areas surrounding the town (Nevada County 2017a). These include:

- Overstocked forests, severely overgrown vegetation, and lack of defensible space around structures;
- Excessive vegetation along roadsides and hanging over roads, fire engine access, and evacuation routes;
- Drought and overstocked forests with increased beetle infestation or weakened and stressed trees; and
- Increasing population density, leading to more ignitions.

As mentioned previously, the specific weather conditions and ecosystem in and around the town contribute to wildfire risk. Winters in Truckee are snowy and cold, while summers are cool to warm and dry, with occasional periods of intense thunderstorms. Primary precipitation in the Truckee area occurs during the winter months, usually between November and April. During non-drought years, the amount of precipitation can be very low, but El Niño and La Nina weather patterns, such as that experienced in winter 2015-2016, have the potential to result in annual precipitation rates that are much higher than normal. A key element in the town's physical character is the abundance of undeveloped open space areas and natural features, including Donner Lake, in the western part of the town, and the Truckee River, which runs through the town. Open space areas in Truckee are numerous and encompass relatively flat alluvial areas in the eastern part of the town and areas of steeper slopes and more varied terrain around Donner Lake, in the Tahoe Donner area, and north of I-80. As mentioned above, portions of the town with steeper slopes are at increased risk of wildfire impacts. Vegetation in the open spaces in and around the town consist primarily of Jeffrey pines and white fir with an understory containing mountain snowberry, tobacco bush, sage brush, and bitterbrush cover.

HISTORY

Fire history plays a major role in assessing the potential for a future wildfire to affect a community. Between 1940 and 2015, Truckee has experienced several fires entirely or partially within the town boundaries (Table 6-1). Figure 6-1 illustrates the location of these and other fires that have occurred entirely or partially within the town or in the Town's Sphere of Influence between in 1910 and 2015.

Table 6-1 Five Largest Historic Fires in or near the Town of Truckee, 1940–2015

Name	Dates	Acres Affected[1]	Cause of Fire
Donner Ridge	August 1960	43,374	Debris
Martis	June 2001	14,126	Campfire
Hirschdale	August 1994	1,300	Equipment Use
Polaris	August 1978	387	Arson
No Name	1943	369	Unknown
Union Mill	August 1950	90	Railroad
Flash	September 1979	35	Arson

Notes: The fires occurred fully or partially in the town of Truckee.

1. Acres affected = total acreage.

Source: CAL FIRE 2018a.

In 2010, Truckee experienced a fire near the Union Pacific Railroad (UPRR) line that runs through the town. It was caused by railroad workers using tools within a locomotive that generated sparks that ignited nearby vegetation. Preventive measures are now implemented by UPRR, including performing industrial inspections at work sites, providing advice on improving firefighting ability of workers, and managing vegetation along the rail line (Nevada County 2017b).

LOCATION

Public Resources Code Sections 4201–4204 and Government Code Sections 51175–51189 directed the California Department of Forestry and Fire Protection (CAL FIRE) to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. These zones, referred to as Fire Hazard Severity Zones, are represented as Very High, High, or Moderate. The classification of a zone as a Moderate, High, or Very High FHSZ is based on a combination of how a fire would behave and the probability that flames and embers would threaten buildings. Zone boundaries and hazard levels are determined based on vegetation. The maps are divided into local responsibility areas (LRAs) and state responsibility areas (SRAs). LRAs generally include cities, cultivated agricultural lands, and portions of the desert. LRA fire protection is typically provided by city fire departments, fire protection districts, counties, and CAL FIRE under contract to the local government. The Town of Truckee and the Truckee Fire Protection District currently have a Wildland Fire Agreement with CAL FIRE for the agency to provide fire protection for 6,800 acres with the Town of Truckee's LRA (CAL FIRE 2018b). "State responsibility area" is a legal term defining the area where the State has financial responsibility for wildfire protection. Incorporated cities and areas under Federal ownership are not included. The prevention and suppression of fires in all areas that are not SRAs are primarily the responsibility of Federal or local agencies.

Figure 6-2 illustrates the areas in Truckee at the highest risk of wildfires, as well as the location of critical facilities in the town and surrounding area. As shown in Figure 6-2, most of the town is within a Very High FHSZ; several critical facilities, including a government building, fire department facilities, bridges, and a school facility, are within this zone. Additionally, areas directly adjacent to the town boundary that are under State or Federal responsibility are also within a Very High FHSZ. Based on information included in the NCLHMP, 9,271 residential parcels and 79 commercial

parcels are located within a Very High FHSZ. According to the NCLHMP, the total value of land, structures, and contents in the Very High FHSZ in Truckee is approximately $5,938,800,196 (Nevada County 2017b).

The town includes historical, cultural, and natural resources at risk of wildfire. As mentioned above, with Donner Lake, the Truckee River, and some of its tributaries located within the town, local surface water quality is at risk from wildfires and their effect on both flooding and erosion. The open space and recreation areas in Truckee are also at risk of wildfire. With tourism as a primary economic sector for the town, damage to recreation areas and aesthetic resources from wildfire may deter tourists from visiting or staying in the town and result in secondary economic impacts.

EXTENT

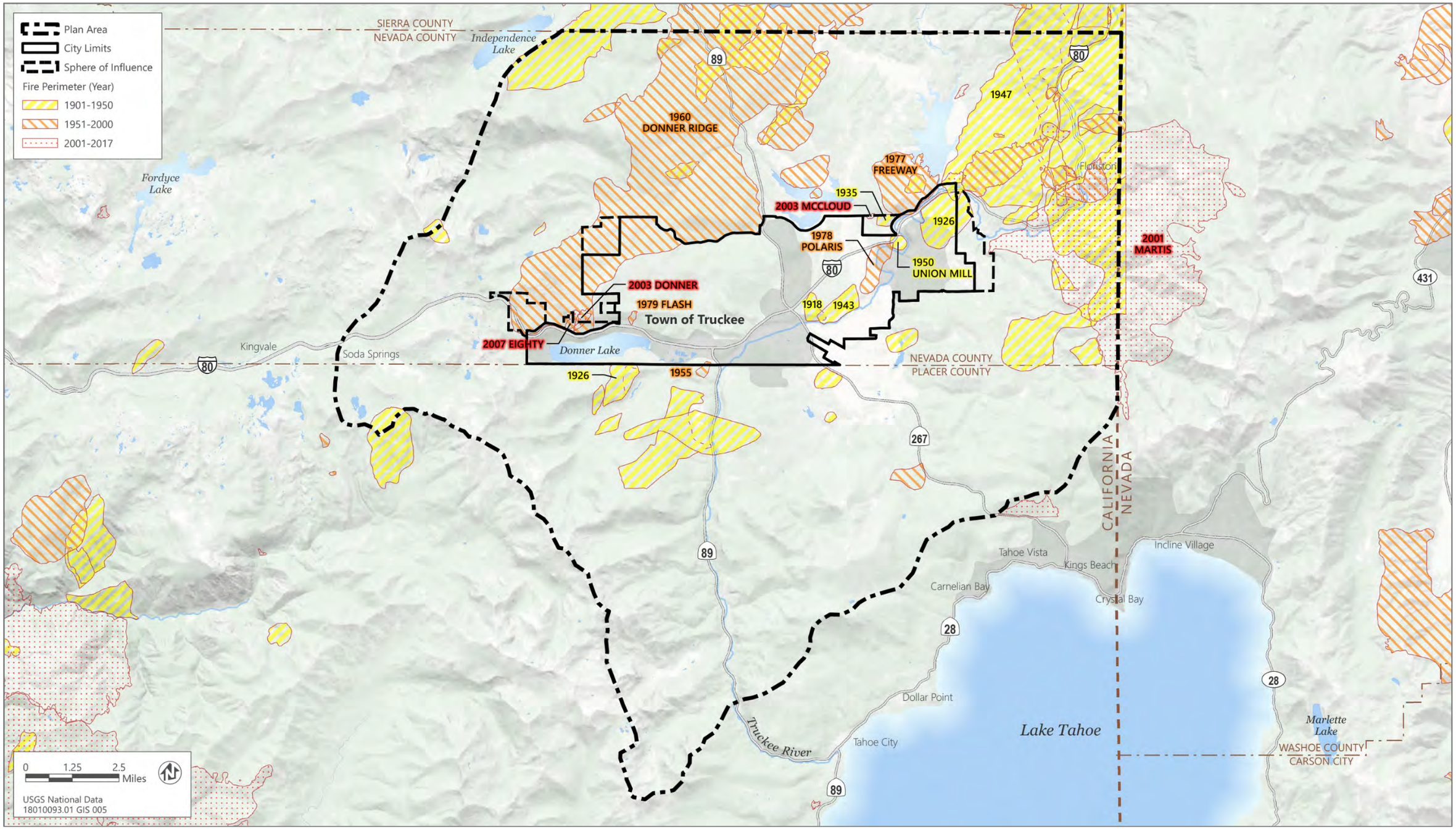
As illustrated in Figure 6-2, 80 percent (12,256 acres) of the town is in a Very High FHSZ, 18 percent (3,571 acres) is in a High FHSZ, and 2 percent (495 acres) is in a Moderate FHSZ. One hundred percent of the area within the Town's Sphere of Influence is in a Very High FHSZ.

PROBABILITY OF FUTURE EVENTS

The risk and severity of future wildfires in Truckee depends on a variety of factors, including the vegetation characteristics of areas in and around the town, climate conditions, and fire behavior. In 2016, the TFPD adopted its CWPP, which included a risk analysis of areas served by the district, including the Town of Truckee. The current risk to property loss from wildland fires in the district has been classified as very high. This risk level is partially caused by a lack of intervention to control the accumulation of flammable vegetation in the WUI. See Section 7.1.3 for a detailed discussion of the WUI. As noted in the CWPP, wildfire risk is increased by residents who choose not to manage the vegetation surrounding structures on their properties, as well as by the rising number of renters in Nevada County and the town who do not have responsibility for vegetation management on their property. However, the Town does work closely with the TFPD on new construction plans to assess wildfire risk, reviewing plans for site access, grading, and brush removal (Truckee Fire Protection District 2016). The TFPD has established specific defensible space requirements for property owners undergoing the inspection and permitting process as part of TFPD Ordinance 02-2012, which is discussed in detail in the Regulatory Settings section below.

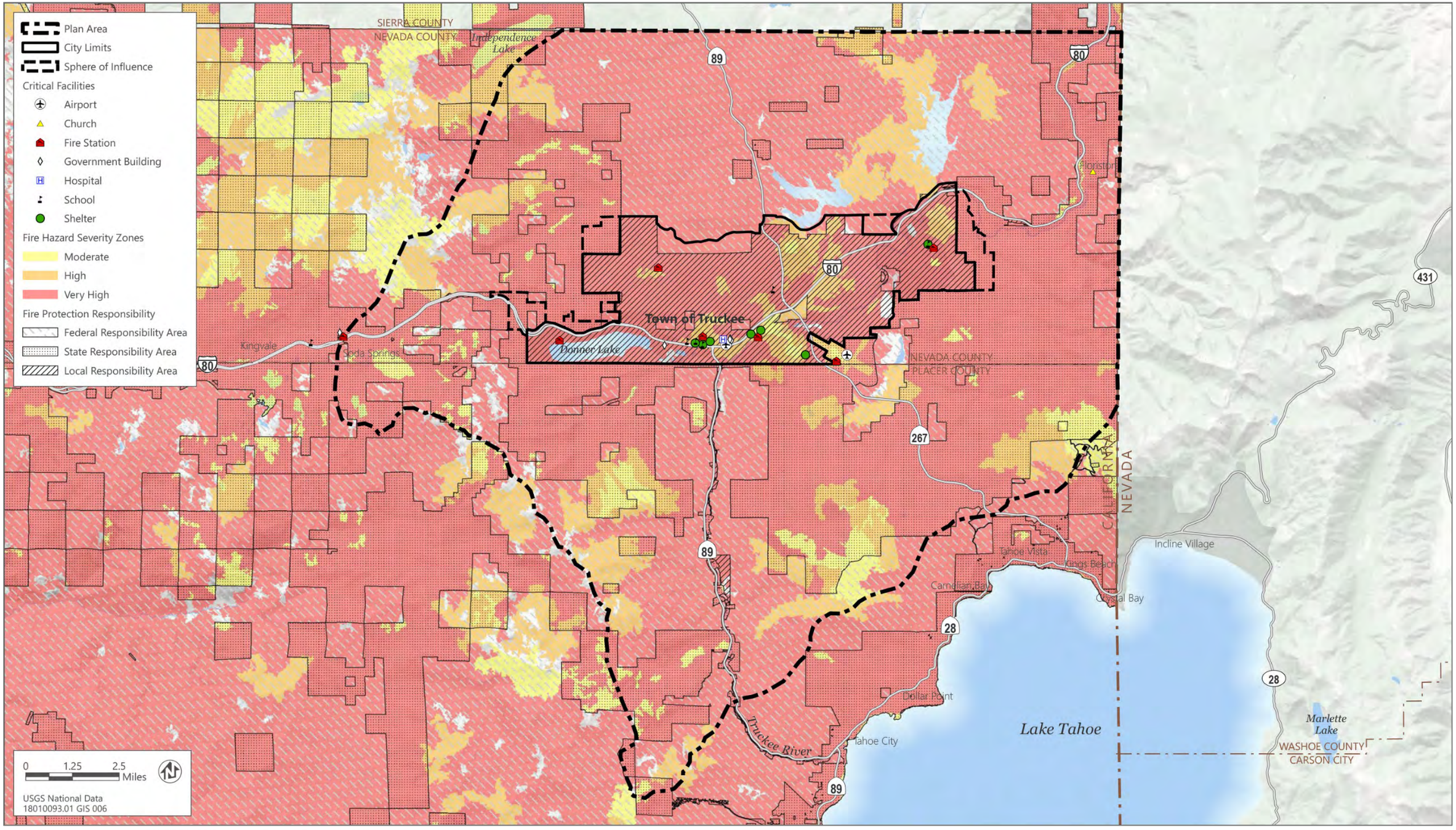
As noted above, large portions of the town, including areas with critical facilities, are within a Very High FHSZ. Additionally, High to Moderate FHSZs are located directly north and south of the town boundary. As noted in the NCLHMP, future development in the town could occur in a Very High FHSZ, which would increase overall wildfire risk in the town. Overall, the probability of future wildfire events in Truckee remains high because portions of the town are within a Very High FHSZ and because of the anticipated future population growth and development within the town.

Wildfire risk and the probability of future wildfire events in Truckee also are exacerbated by the impacts of climate change on the local climate and ecosystem. As discussed in California's Fourth Climate Change Assessment, projected increases in temperature and decreases in snowpack, related to climate change, in the Sierra Nevada are likely to continue the trend in the growing size of stand-replacing fires and the increasing proportion of landscape affected by those fires (OPR, CEC, and CNRA 2018:33) and is likely to increase fire risk in town. The impacts of climate change on wildfire risk for Truckee are discussed in detail in Chapter 8 ("Climate Change and Resilience") of this Existing Conditions Report.



Source: Data downloaded from CAL FIRE in 2018a

FIGURE 6-1 FIRE PERIMETER MAP



Source: Data downloaded from CAL FIRE in 2018b and the Town of Truckee in 2018

FIGURE 6-2 FIRE HAZARD SEVERITY ZONES

6.1.3 Regulatory Setting

FEDERAL

Federal Land Assistance, Management, and Enhancement Act

In 2009, Congress passed the Federal Land Assistance, Management, and Enhancement (FLAME) Act as the basis for the U.S. Department of Agriculture (USDA) and the U.S. Department of the Interior (DOI) to develop a national cohesive wildland fire management strategy. In response to the FLAME Act, USDA and DOI published the National Cohesive Wildland Fire Management Strategy, which includes the National Strategy and the National Action Plan, both completed in April 2014. Together, these documents address elements requested by Congress after the passage of the FLAME Act and represent an approach to wildland fire management based on the goal of achieving safer, more efficient, cost-effective public and resource protection goals and more resilient landscapes.

Healthy Forest Restoration Act

The Healthy Forest Restoration Act (HFRA), enacted by the U.S. Congress on January 7, 2003, established a protocol for the creation of a type of document that articulated a wildfire safety plan for communities at risk from wildland fires known as a Community Wildfire Protection Plan (CWPP). The TFPD has prepared a CWPP for the areas within the local responsibility of the District (see further description of the CWPP below under "Local").

STATE

Strategic Fire Plan for California

Public Resources Code Sections 4114 and 4130 authorize the California Board of Forestry and Fire Protection (Board) to establish a fire plan that, among other things, establishes the levels of statewide fire protection services for SRA lands. These levels of service recognize other fire protection resources at the Federal and local levels that collectively provide a regional and statewide emergency response capability. In addition, California's integrated mutual aid fire protection system provides fire protection services through automatic and mutual aid agreements for fire incidents across all ownerships. In 2018, the Board adopted the latest *Strategic Fire Plan for California*. This statewide fire plan was developed collaboratively by the Board and CAL FIRE, in consultation with a group of outside experts to complete a needs assessment and to form the Fire Plan Steering Committee. This Committee worked for more than a year preparing the 2018 Strategic Fire Plan. The Strategic Fire Plan seeks to protect lives, residential property, and natural resources. It is the basis for assessing California's complex and dynamic natural and built environment and identifying a variety of actions to minimize the negative effects of wildland fire. Implementation of the 2018 *Strategic Fire Plan for California* is intended to occur at all levels of CAL FIRE, as well as through partnerships with local, State, and Federal agencies; private organizations (e.g., fire safe councils, homeowners' associations, industry); and citizens (CAL FIRE 2018c).

Senate Bill 1704 (Vegetation Management Program)

Senate Bill (SB) 1704 establishes the basic processes and procedures consistent with the need to manage chaparral-covered and associated lands within California. The Vegetation Management Program allows private landowners to enter into a contract with CAL FIRE to use prescribed fire to accomplish a combination of fire protection and resource management goals. The main goals of the program are the reduction of conflagration fires, the optimization of soil and water productivity, and the protection and improvement of intrinsic floral and faunal values.

Senate Bill 1260 (Fire Prevention and Protection: Prescribed Burns)

SB 1260, passed in 2018, creates several changes to local wildfire planning, prescribed fire requirements, and fire mitigation strategies for local governments. The bill is intended to create a more collaborative process for forestry

management between Federal, State, and local agencies, as well as opportunities for public and private land managers to mitigate wildfire risk. The following updates to existing law in the bill are most pertinent to Truckee:

- Requires a local agency to transmit a copy of its adopted ordinance designating Very High FHSZs to the Board;
- Requires a city or county that contains either an SRA or Very High FHSZ to notify the Board if it takes action to adopt or amend the safety element of its general plan;
- Requires the local agency, upon approval of a tentative map or a parcel map for an area located in either the SRA or Very High FHSZ, to transmit a copy of the minimum fire safety standards findings required and accompanying maps to the Board;
- Authorizes a person with a CAL FIRE burn permit to use fire to abate a fire hazard;
- Requires CAL FIRE to establish a grant program, upon appropriation by the legislature, which may include a cost-share program with local governments;
- Requires CAL FIRE to cooperate with private and public landowners in prescribed fire activities, including, but not limited to, site preparation and other preburn planning and activities; and
- Requires, to the extent feasible and only in portions of the state, the Board's vegetation treatment program programmatic environmental impact report, when certified, to serve as the programmatic environmental document for prescribed fires initiated by CAL FIRE or by persons conducting prescribed fires with a CAL FIRE burn permit.

Public Resources Code Section 4291/Government Code Section 51182

Public Resources Code Section 4291 and Government Code Section 51182 require property owners in mountainous areas, forest-covered lands, or any land that is covered with flammable material to create a minimum 100-foot defensible space (or to the property line) around their homes and other structures. To meet this defensible space requirement, property owners or those who control property must establish a 30-foot clean zone and a 70-foot reduced fuel zone.

LOCAL

Nevada County Local Hazards Mitigation Plan

In August 2017, Nevada County adopted the most recent update to the NCLHMP to help reduce or eliminate long-term risk to people and property from hazards. The NCLHMP includes a risk assessment that identifies and profiles hazards that pose a risk to the County and participating jurisdictions, assesses the vulnerability of the planning area to these hazards, and examines the existing capabilities to mitigate them. As stated in the plan, Nevada County is vulnerable to several hazards, including floods, earthquakes, drought, liquefaction, landslides, wildfires, climate change, and other severe weather events.

The NCLHMP includes an Annex that details the hazard mitigation planning elements specific to the Town of Truckee, which was adopted by the Truckee Town Council on June 25, 2018 (Town of Truckee 2018a) The Annex identifies wildfire risks hazards in the town, populations and facilities at risk from wildfires, the history of wildfires in the town, and probability of future occurrence. The NCLHMP also includes a set of strategies specific to reduce the severity and intensity of fires in Nevada County. Listed below are the strategies in the NCLHMP specific to wildfires:

- **GOAL 4:** Reduce fire severity and intensity in Nevada County
  - **Objective 4.1:** Reduce the wildfire risk and vulnerability in Nevada County.
  - **Objective 4.2:** Reduce life safety issues, property loss, and damages associated with wildfires.
  - **Objective 4.3:** Develop a fuels management implementation strategy focusing on fuels reduction, education, and assistance.

- **Objective 4.4:** Promote implementation of fuels management activities by all landowners on both public and private lands.

Truckee Fire Protection District Community Wildfire Protection Plan

In 2016, the TFPD adopted the TFPD CWPP. The CWPP is required to be consistent with and tiered from the HFRA, which requires a CWPP to identify fuel-reduction projects to receive priority for funding requests from the California Fire Safe Council Clearinghouse and attain Federal agency consideration on recommendations identified in CWPPs (HFRA Section 103[b]) and implement those projects on Federal lands (HFRA Section 102[a]). The CWPP is also consistent with and tiered from the FLAME Act and includes a Cohesive Wildland Fire Management Strategy that provides comprehensive strategy for reducing wildfire risk and prepare communities for wildfire hazard events. The CWPP provides a comprehensive, scientifically based assessment of the wildfire hazards and risks within the TFPD and provides a set of strategies to reduce wildfire risk in the district. The CWPP includes a list of planned fuel treatment projects located in and surrounding the town to reduce wildfire risk in the WUI. These fuel management projects include collaboration with a variety of organizations, including the Tahoe Donner Homeowners Association, the Truckee Donner Land Trust, the Truckee Tahoe Airport District, and California Department of Parks and Recreation, which are the landowners for these projects (Truckee Fire Protection District 2016). Below is a brief discussion of two key concepts addressed in the CWPP:

- **Wildland-Urban Interface:** The U.S. Forest Service defines the WUI as the place where "homes and wildlands meet or intermingle" or, more specifically, where "humans and their development meet or intermix with wildland fuel" (U.S. Forest Service 2013). The WUI is most often broken into two distinct areas: the **defense zone** is the area within 0.5 mile of the urban (or developed) core, and the **threat zone** is the area within 1.25 miles of the defense zone. Wildfire risk in the WUI can be managed through risk management strategies implemented by various responsible parties. Land management agencies can help reduce wildfire size and intensity through fuel and vegetation management. Local governments can help reduce human development in areas of increased wildfire risk through proper land use management and zoning. Individual homeowners or other property owners can also reduce the risk of homes and other types of property loss by taking action to manage the risk of fire damage to their homes and surrounding areas on their property through creating defensible spaces around structures on their property.
- **Defensible Space:** Defensible space is the managed space around a structure that is designed and maintained to reduce the risk of damage to the structure from wildfires. Defensible space is achieved, most commonly, by reducing fuel (e.g., dead standing trees, live trees, brush, and cured grasses) within 100 feet in all directions from structures. Specifically, vegetation in the first 30 feet of the defensible space is kept to a minimum combustible mass. In the subsequent 70 feet, vegetation is separated vertically and horizontally depending on the vegetation type through thinning, pruning, and removing selected vegetation; limbing up trees from lower vegetation; and providing lateral separation of tree canopies (CAL FIRE 2018d).

The CWPP also includes strategies to help better prepare communities in the district for wildfire emergency scenarios, including procedures for communications and warnings during wildfire events; recommendations regarding wildfire public education, including sharing information about evacuation routes; and recommendations on how to prepare for wildfire emergencies (Truckee Fire Protection District 2016).

Greater Truckee Area Emergency Preparedness & Evacuation Guide

The *2014 Greater Truckee Area Emergency Preparedness & Evacuation Guide* provides area residents with practical advice for planning for emergency evacuation scenarios from a variety of natural and human-made hazards. The guide includes a checklist for a 4-day home survival kit, a guide to annual pre-emergency planning, instructions for an evacuation procedure, and an evacuation route map for the greater Truckee area. The guide also describes a series of strategies for property owners to decrease risk from wildfire, including specific actions to develop defensible space around structures (Town of Truckee 2014). In 2018, the Town of Truckee and TFPD published an updated Evacuation Guide for residents which includes evacuation routes for the town and important contact information for staying informed during emergency events including Nevada County Office of Emergency Services CodeRed system for residents to receive emergency information through their smart phones (Town of Truckee 2018b).

Town of Truckee 2025 General Plan

The *Town of Truckee 2025 General Plan* (Town of Truckee 2006b) includes several policies in the Safety Element specifically addressing fire hazards. Policy P4.1 focuses on continuing support for the TFPD, CAL FIRE, and the U.S. Forest Service in creating and promoting fire prevention education programs. Policy P4.2 promotes the use of fire-resistant building materials and the implementation of a fire safety ordinance to maintain "defensible spaces" on properties in the town. Policy P4.3 works to promote fire hazard reduction through cooperative fuel management activities in association with the TFPD, CAL FIRE, and the U.S. Forest Service. Policies P4.4, P4.5, and P4.7 ensure that all site plans for new development are reviewed by the TFPD and designed to allow for emergency vehicle access and include appropriate landscape designs for defensible space.

Town of Truckee Municipal Code

Chapter 18.40 (Landscape Standards) and Chapter 18.42 (Landscape Design Guidelines) of the Town of Truckee Municipal Code (Town of Truckee 2018c) includes a set of landscape standards and design guidelines for new development that are designed to increase compatibility between abutting land uses and public rights-of-way by providing landscape screening, buffers, and defensible space to decrease wildfire risk. As part of the Town of Truckee's Standard Condition for Fire Protection Services, before final approval, all zoning clearances, development permits, and use permits in the town must comply with all applicable TFPD ordinances, including fuel clearance requirements adopted as part of TFPD Ordinance 2-2012, which sets forth defensible space requirements within all areas of the district and are consistent Public Resources Code Section 4291 and Government Code Section 51182, discussed above.

6.2 Geologic and Seismic Hazards

This section addresses the geology and soils conditions within the town and the potential risk these conditions pose. Existing and potential problems related to geology and soils include seismic ground shaking, ground failure, slope stability, and unreinforced masonry structures. This section, which incorporates information from the NCLHMP, summarizes the geologic and seismic conditions for the town, which include the following areas of concern:

- Known earthquake faults
- Landslides
- Soil erosion
- Unstable geologic units and soil
- Expansive soils

6.2.1 Major Findings

- Several areas in Truckee have steep slopes and are at increased risk of landslides, including areas along the banks of the Truckee River, the ridges and hillsides north and west of downtown, the ridges north of Gateway and north and west of Donner Lake, and areas around Alder Hill.
- Approximately 30 buildings in the historic downtown area have unreinforced masonry and are at increased risk from seismic activity.
- Earthquake faults in or near the town include the Mohawk Valley Fault, located approximately 20 miles northeast of the town in Sierra County, and the Dog Valley Fault, which runs through Truckee from Prosser Reservoir past Boca Reservoir to Stampede Reservoir in Sierra County.

6.2.2 Existing Conditions

GEOLOGIC STRUCTURES

Truckee is located within the northern Sierra Nevada. The town is located within the Truckee Basin, which is part of the easternmost complex of the Sierra Nevada. The Truckee Basin is located between two mountain ranges that trend north: the 9,000-foot-high Sierra Nevada on the west and the 10,000-foot-high Carson Range on the east (Town of Truckee 2006a).

The Truckee Basin's bedrock consists primarily of Triassic period (230–190 million years ago) and Jurassic period (190–135 million years ago) metamorphic rock. This rock type is characterized as very dense with small grain structure and little capacity for water storage. On top of the bedrock sits a sequence of volcanic flows, glacial deposits, and stream and lake deposits from the late Tertiary period (from 63 million to 2 million years ago). The layer is characterized by horizontal beds of unconsolidated volcanic and sedimentary material, which is generally porous and has a large capacity for water storage.

Expansive Soils

The soils underlying the town consist primarily of glacial till, moraines, and outwash. These soils are characterized by silty/sandy gravels or gravelly/silty sands. The soils contain large amount of sediment, as well as cobbles and boulders that were transported to the Truckee Basin from the Sierra Nevada through glacial activity. Surface soils in the town are mapped by the U.S. Natural Resources Conservation Service as predominantly Inville-Riverwash-Aquolls complex, Fugawee-Tahoma complex, and Martis-Euer Variant complex. These are generally coarse-grained soils with cobbles and well drained (Town of Truckee 2006a).

Seismic Hazards

The town has a relatively low risk of seismic hazards. However, it is located within a seismically active region that has experienced seismic activity in the recent past. As a result, the town is primarily subject to several earthquake-related seismic hazards, including ground rupture, liquefaction, and ground shaking. The degree of damage an earthquake can cause depends on a variety of factors, such as the magnitude of the earthquake; focal depth; distance from the causative fault; source mechanism; duration of shaking; extent of high rock accelerations; type of surface deposits or bedrock; degree of consolidation of surface deposits; presence of high groundwater; topography; and the design, type, and quality of building construction. Seismic activity has the potential to damage structures and critical infrastructure networks, such as water, power, gas, and transportation infrastructure, as well as pose a risk to the health and safety of citizens (Nevada County 2017b).

The two most common measures of earthquake intensity used in the United States are the Modified Mercalli Intensity scale, which measures felt intensity, and peak ground acceleration, which measures instrumental intensity by quantifying how hard the earth shakes in a given location. Magnitude is measured by the amplitude of the earthquake waves recorded on a seismograph using a logarithmic scale (Nevada County 2017b). Table 6-2 illustrates a comparison between the various metrics used to measure seismic activity.

Table 6-2 Seismic Magnitude, Intensity, and Ground-Shaking Comparison

Magnitude	Instrumental Activity	Peak Ground Acceleration (% g)	Shaking	Potential Damage
0–4.3	I	<0.17	Not felt	Not felt except by a very few under especially favorable conditions
4.3–4.8	II–III	0.17–1.4	Weak	Felt quite noticeably by persons indoors, especially on upper floors of buildings
	IV	1.4–3.9	Light	Felt indoors by many, outdoors by few during the day
4.8–6.2	V	3.9–9.2	Moderate	Felt by nearly everyone; many awakened
	VI	9.2–18	Strong	Felt by all, many frightened; some heavy furniture moved
6.2–7.3	VII	18–34	Very strong	Damage negligible in buildings of good design and construction

Table 6-2 Seismic Magnitude, Intensity, and Ground-Shaking Comparison				
Magnitude	Instrumental Activity	Peak Ground Acceleration (% g)	Shaking	Potential Damage
7.3–8.9	VIII	34–65	Violent	Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse
	IX	65–124	Very violent	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; buildings shifted off foundations
	X	124+	Extreme	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; rails bent
	XI			
	XII			

Sources: USGS 2018a, 2018b

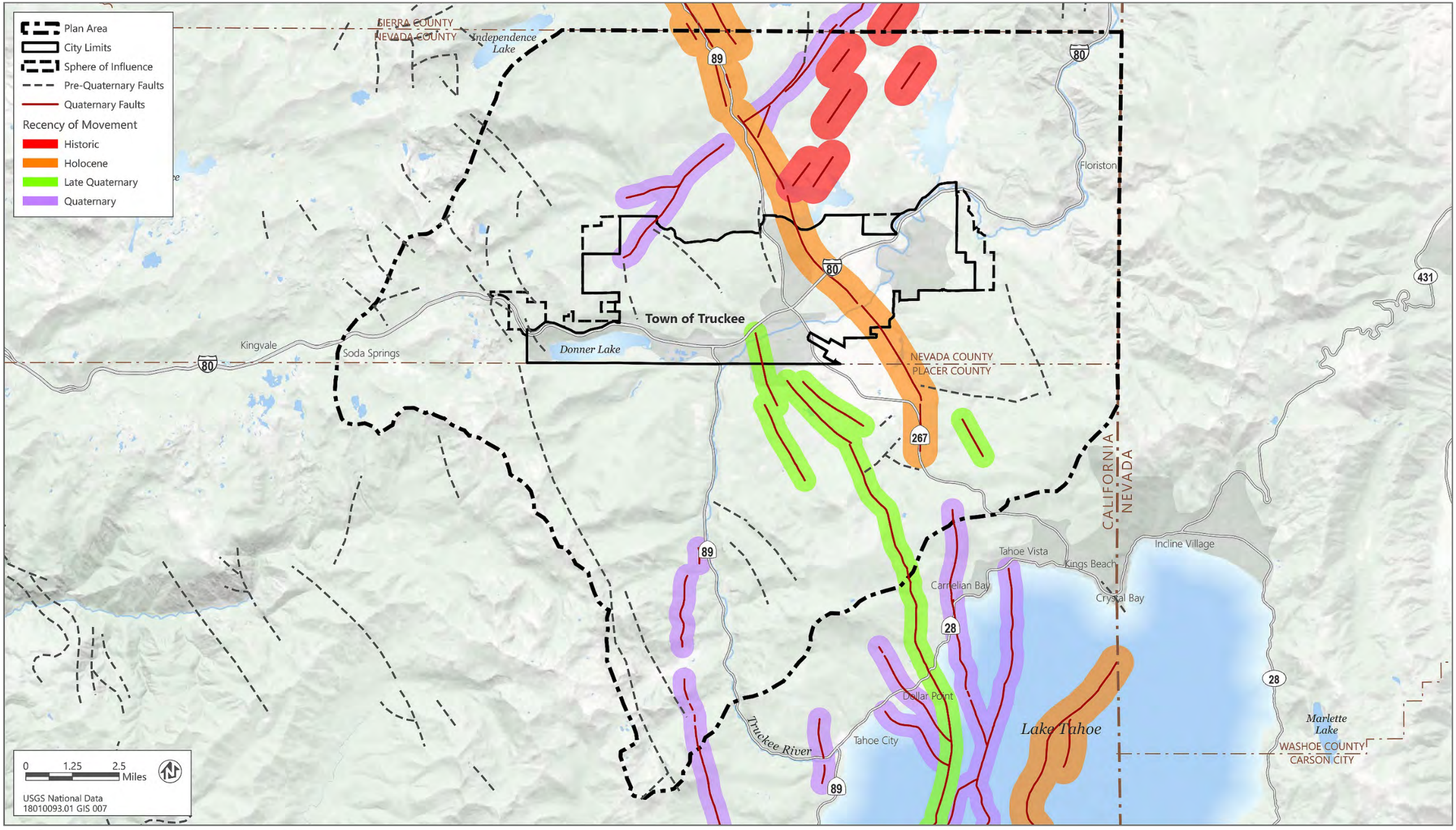
Earthquake Faults

An earthquake is caused by a sudden slip on a fault. Stresses in the earth's outer layer push the sides of the fault together. Stress builds up, and the rocks slip suddenly, releasing energy in waves that travel through the earth's crust and cause the shaking that is felt during an earthquake. An earthquake's magnitude is expressed in whole numbers and decimals based on the Richter scale, which is used to quantify the magnitude or strength of the seismic energy released by an earthquake.

As shown in Figure 6-3, earthquake faults in or near Truckee include the Dog Valley Fault, which runs through Truckee from Prosser Reservoir past Boca Reservoir to Stampede Reservoir in Sierra County and the Mohawk Valley Fault, located approximately 20 miles northeast of the town in Sierra County (Nevada County 2017b). Figure 6-3 also includes a previously unmapped fault, the Polaris Fault, which was discovered in 2008 and runs north-south through the town adjacent to Martis Creek Dam. The risk of seismic activity from the Polaris Fault is still being assessed but could represent a significant seismic hazard and is being actively monitored by the Town (Town of Truckee 2013). Flooding hazards associated with the Polaris Fault and other seismic activity are discussed in Section 7.3 "Flood Hazards." There are also a series of trace faults located within the town boundary. These faults are not included in the Alquist-Priolo Special Study Zone, which encompasses fault areas considered to pose the greatest risk in the state. Based on information in the NCLHMP, the Dog Valley, Mohawk and Polaris Faults pose the highest risk to Truckee. Based on a U.S. Bureau of Reclamation study, the Mohawk Valley Fault could result in a maximum earthquake of magnitude 7.0, while the Dog Valley Fault could result in a maximum earthquake of magnitude 6.75 (U.S. Bureau of Reclamation 1986).

Ground Shaking

Ground shaking is the motion that occurs as energy is released during earthquake events. It can cause structural damage the transmitting earthquake vibrations from the ground to the structure. The severity of ground shaking at any one location depends primarily upon the magnitude of the earthquake, the location of the fault with respect to the site, and the soil and/or rock conditions at the site. In the Sierra Nevada, the relatively shallow weathered material underlain by dense bedrock can lessen the seismic risk. However, as mentioned above, the area surrounding the town includes faults that could result in seismic activity. Seismic activity within the region could cause ground shaking to occur within the town and could be the source of structural damage during earthquake events. In certain circumstances, ground shaking can cause ground rupture, during which an earthquake breaks open the earth's surface. This can cause structural damage to buildings that lie directly on top of the location of ground rupturing. Ground shaking also has the ability to cause damage to levees and dams, resulting in levee or dam failure and creating significant flooding risks. This issue is discussed in detail in Section 7.3, "Flood Hazards."



Source: Data downloaded from California Geological Survey in 2013

FIGURE 6-3 FAULT LINES

Liquefaction

Liquefaction is the process in which soil is transformed to a fluid form during intense and prolonged ground shaking. Liquefaction most often occurs in areas where the water table is less than 30 feet below the surface, and soils are characterized by loose to medium density sand. Liquefaction can cause more extensive damage under a sloping soil mass, causing the entire mass to flow toward a lower elevation. The Seismic Hazards Mapping Act (SHMA) requires the California Geological Survey (CGS) to delineate regulatory "zones of required investigation" and provide local governments with seismic hazard maps for these zones that identify areas susceptible to liquefaction, earthquake-induced landslides and other ground failures. Truckee is not located within any of the zones of required investigation and thus is not considered susceptible to liquefaction.

Slope Stability and Landslides

"Landslide" is a general term for the dislodging and fall of a mass of soil or rocks along a sloped surface or for the dislodged mass itself. The term is used for varying phenomena, including mudflows, mudslides, debris flows, rock falls, rock slides, debris avalanches, debris slides, and slump-earth flows. Landslides may result from a wide range of combinations of natural rock, soil, or artificial fill. The susceptibility of hillside and mountainous areas to landslides depends on variations in geology, topography, vegetation, and weather. Landslides may also occur because of indiscriminate development of sloping ground or the creation of cut-and-fill slopes in areas of unstable or inadequately stable geologic conditions.

Additionally, landslides often occur together with other natural hazards, thereby exacerbating conditions, as described below:

- Shaking attributable to earthquakes can trigger events ranging from rock falls and topples to massive slides.
- Intense or prolonged precipitation that causes flooding can also saturate slopes and cause failures, leading to landslides.
- Wildfires can remove vegetation from hillsides, significantly increasing runoff and landslide potential.
- Landslides into a reservoir can indirectly compromise dam safety. A landslide can even affect the dam itself.

Another type of landslide occurs in areas cut by perennial streams. As floodwaters erode channel banks, rivers may undercut clay-rich sedimentary rocks along their banks, thereby destabilizing the ground and causing the ground above it to slide.

Steep slopes, defined as slopes of 30 percent or greater, limit areas suitable for development for many areas in Truckee. Specific locations identified in the *Town of Truckee Emergency Operations Plan* include areas along the Truckee River, the ridges and hillsides north and west of Downtown, the ridges north of Gateway and north and west of Donner Lake, and areas around Alder Hill. These areas are at increased risk of landslides during seismic events, particularly areas with weak soils (Town of Truckee 2008). Based on information in CGS's Landslide Inventory, the town and areas immediately surrounding the town have not experienced historic landslide events (California Department of Conservation 2015). As mentioned above, the occurrence of other natural hazards that affect sloped areas could increase the risk of landslides during seismic events.

History

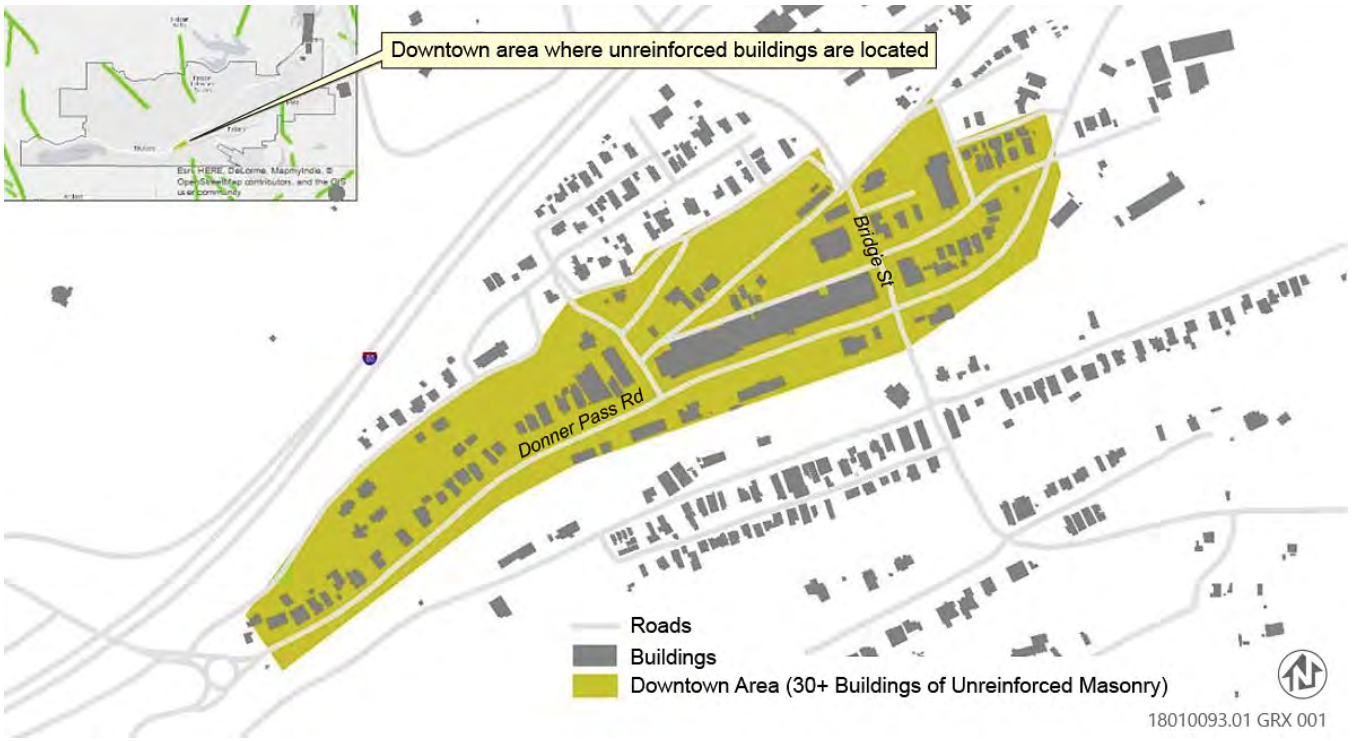
Based on information in the NCLHMP, there has been relatively recent seismic activity in the town. including a magnitude 6+ earthquake in 1966, a magnitude 3.6 earthquake in 1998, and a magnitude 4.5 earthquake centered 6 miles south of Truckee in June 2004. The town also experienced a swarm of 28 earthquakes in June 2017, with the largest being a magnitude 3.9. There have been no disaster declarations in the town related to seismic activity.

Extent

As shown in Figure 6-3, faults in or near the town include the Mohawk Valley Fault and the Dog Valley Fault. The extent of damage that would occur from seismic activity from these faults would depend on the magnitude of the seismic activity. (See Table 6-2 for seismic activity metrics.)

As noted in the NCLHMP, approximately 30 buildings in the historic downtown area of Truckee have unreinforced masonry and are at increased risk from seismic activity. The building footprints of these buildings and the boundaries of the historic downtown area can be seen in Figure 6-4. These unreinforced buildings are more susceptible to damage during seismic events; therefore, building occupants are at increased seismic hazard risk.

FIGURE 6-4 EARTHQUAKE FAULTS AND UNREINFORCED MASONRY BUILDINGS



Source: Image provided by the Town of Truckee in 2018

Probability of Future Events

As discussed above, based on a U.S. Bureau of Reclamation study, the Mohawk Valley Fault could result in a maximum earthquake of magnitude 7.0 and the Dog Valley Fault, a maximum earthquake of magnitude 6.75 (U.S. Bureau of Reclamation 1986). Based on information from the California Governor's Office of Emergency Services (Cal OES), the town is in an area that would experience moderate levels of ground shaking intensity and damage from an earthquake event (Cal OES 2018a). As shown by the scale in Table 6-2, an earthquake between 6.75 and 7 magnitude would cause significant damage to structures and critical infrastructure.

Snow Avalanche

An avalanche is a mass of snow, ice, and rocks that fall down a mountainside, usually during heavy winter storms. Snow avalanches are a natural phenomenon resulting from the interaction of site-specific terrain, weather, and snowpack conditions. Avalanches occur in the steep mountainous areas of the state that receive significant amounts of snow. There are a number of localized conditions which affect the overall risk of snow avalanches, including steepness of slope, exposure, snow pack composition, recent weather factors such as wind, temperature, and rate of snowfall and other interacting factors (Town of Truckee 2008).

History

Based on information from the Sierra Avalanche Center and Colorado Avalanche Information Center, there have been no avalanche incidents in the Town of Truckee causing injury or death (Sierra Avalanche Center 2019, Colorado Avalanche Information Center 2019).

Location

The town includes several areas which are at increased risk from snow avalanche events. These include an area at the west end of Donner Lake, and another south of the lake just west of the Donner Memorial State Park, as well as a smaller area at the southeast edge of Tahoe Donner. The presence of vegetation and tree in these areas serve as anchors for snowpack and decrease the overall risk of snow avalanche events in these areas (Town of Truckee 1998). These locations are mapped in the Safety Element of the *Town of Truckee 2025 General Plan* (Town of Truckee 2006b). These locations are also incorporated into the Town's Snow Avalanche (SA) Overlay District in Section 18.20.060 of the Town of Truckee Municipal Code which includes specific development standards for parcels with the overlay area. See Figure 6-5 for the locations of all areas within the Snow Avalanche (SA) Overlay District.

Extent and Probability of Future Events

The extent of avalanche risk is limited to the areas included in the Town's Snow Avalanche Overlay District. As noted above, the presence of vegetation and trees in these areas decrease the overall risk of snow avalanche events. The NCLHMP has identify the probability of future avalanche events as occasional and the magnitude of these events to be negligible (Nevada County 2017b). Climate change has the potential to worsen avalanche risks in the town. Warmer temperatures and/or rain weaken snowpack. These changes result from rainfall or warm spells weakening the snow pack or from formation of a crust due to early season rain (which is projected to increase due to climate change). Changes to the quality of snow cover could lead to increased frequency and severity of avalanche events (Cal OES 2018).

6.2.3 Regulatory Setting

STATE

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Special Studies Zones Act was signed into law in 1972 (renamed the Alquist-Priolo Earthquake Fault Zoning Act in 1994). The Act's primary purpose is to mitigate the fault rupture hazard on human life and property by limiting the potential for siting human occupancy structures across an active fault trace.

The Act requires the State Geologist (Chief of the CGS) to delineate Earthquake Fault Zones along faults that are "sufficiently active and well defined." These faults show evidence of Holocene surface displacement along one or more of their segments (sufficiently active) and are clearly detectable by a trained geologist as a physical feature at or just below the ground surface (well defined). The boundary of an Earthquake Fault Zone is generally about 500 feet from major active faults and 200–300 feet from well-defined minor faults. The Act dictates that cities and counties withhold development permits for sites within an Earthquake Fault Zone until geologic investigations demonstrate that the sites are not threatened by surface displacements from future faulting.

Alquist-Priolo maps are distributed to all affected cities and counties for planning and controlling new or renewed construction. Local agencies must regulate most development projects within these zones, including all land divisions and most structures for human occupancy. State law exempts single-family wood-frame and steel-frame dwellings less than three stories that are not part of a development of four units or more. However, local agencies can be more restrictive.

Seismic Hazards Mapping Act

The Alquist-Priolo Earthquake Fault Zoning Act addresses the hazard of surface fault rupture but is not directed toward other earthquake hazards. Recognizing this, in 1990 the State passed the SHMA, which addresses earthquake hazards that do not involve surface fault rupture, including strong ground shaking, liquefaction, and seismically induced landslides. CGS is the principal State agency charged with implementing the SHMA. Pursuant to the SHMA, CGS is directed to provide local governments with seismic hazard zone maps that identify areas susceptible to liquefaction, earthquake-induced landslides, and other ground failures. The goal is to minimize loss of life and property by identifying and mitigating seismic hazards. As stated previously, CGS delineates zones of required

investigation—areas of seismic hazards. Site-specific geological hazard investigations are required by the SHMA when construction projects fall within these areas.

California Building Code

The California Building Standards Law states that every local agency enforcing building regulations must adopt the provisions of the California Building Code (CBC) within 180 days of its publication; however, each jurisdiction can require more stringent regulations issued as amendments to the CBC. The publication date of the CBC is established by the California Building Standards Commission, and the code is known as Title 24 of the California Code of Regulations (CCR). In the past, the CBC was modeled on the Uniform Building Code; however, beginning with the 2007 version, the CBC is now modeled after the International Building Code. Building codes provide minimum requirements to prevent major structural failure and loss of life related to floods, fires, and earthquakes.

Truckee adopted the 2016 CBC in Chapter 15 of the Town of Truckee Code. The 2016 CBC bases its seismic design criteria on maximum considered ground motion through maps prepared by the U.S. Geological Survey for the National Seismic Hazard Mapping Program (see Section 1613). Pursuant to the CBC, soils reports are required to be submitted before issuance of a grading permit or, depending on the permit type, other permits that allow ground disturbance.

Real Estate Disclosure Act

Since June 1, 1998, the Natural Hazards Disclosure Act has required that sellers of real property and their agents provide prospective buyers with a Natural Hazard Disclosure Statement when the property being sold lies within one or more State-mapped hazard areas. If a property is located in a Seismic Hazard Zone as shown on a map issued by the State Geologist, the seller or the seller's agent must disclose this fact to potential buyers. The law specifies two ways that this disclosure can be made. One is to use the Natural Hazard Disclosure Statement as provided in Section 1102.6c of the California Civil Code. The other way is to use the Local Option Real Estate Disclosure Statement as provided in Section 1102.6a of the California Civil Code. The Local Option Real Estate Disclosure Statement can be substituted for the Natural Hazard Disclosure Statement only if the Local Option Statement contains substantially the same information and substantially the same warning as the Natural Hazard Disclosure Statement.

Unreinforced Masonry Laws

Enacted in 1986, the Unreinforced Masonry Law (Section 8875 et seq. of the California Government Code) required all cities and counties in Seismic Zone 4 (zones near historically active faults) to identify potentially hazardous unreinforced masonry buildings in their jurisdictions, establish an unreinforced masonry loss reduction program, and report their progress to the State by 1990. The owners of such buildings were to be notified of the potential earthquake hazard these buildings pose.

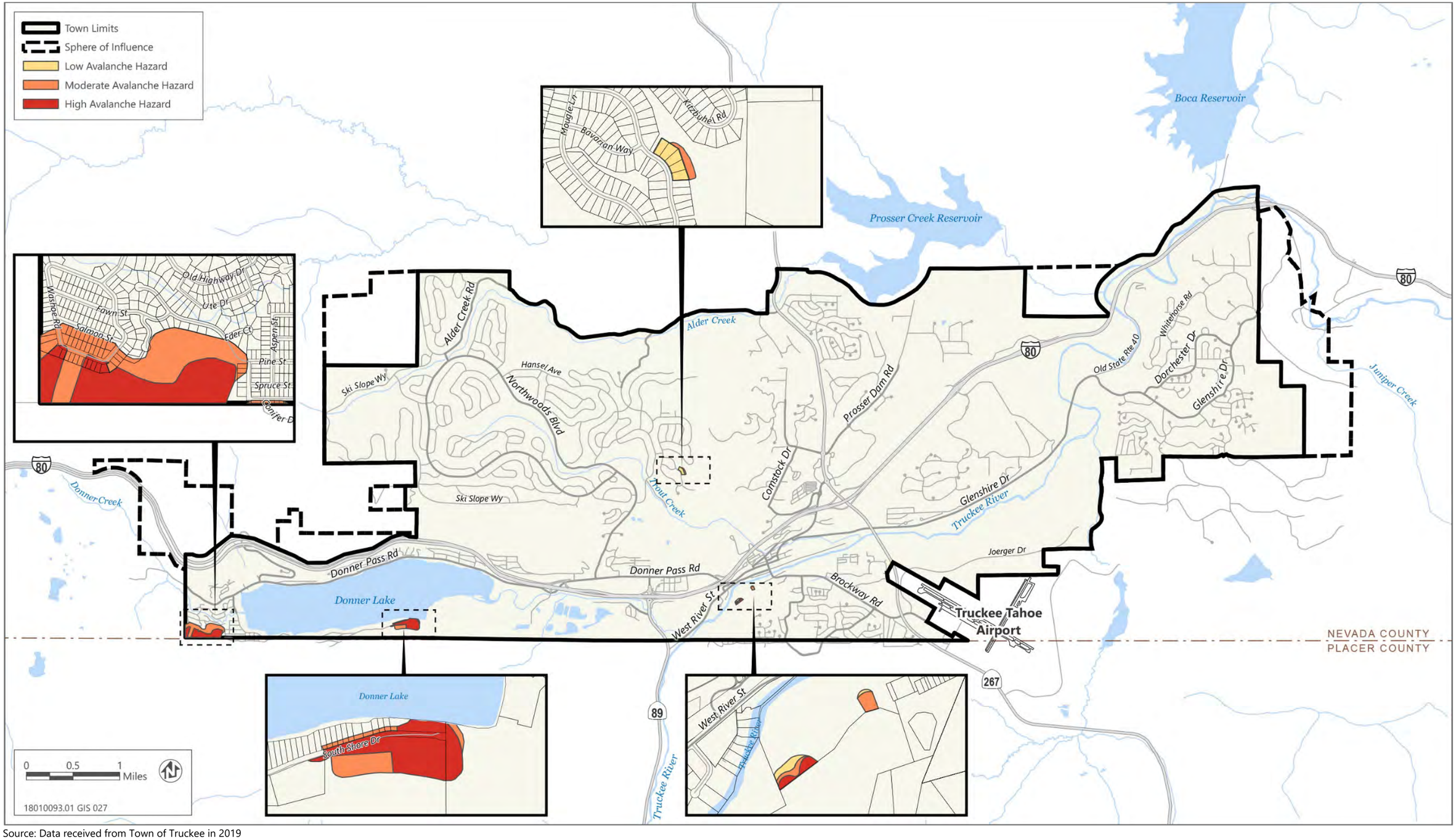
LOCAL

Nevada County Local Hazard Mitigation Plan

As discussed in greater detail above (Section 7.1.2), Nevada County adopted the most recent update to the NCLHMP in August 2017. In addition to addressing other hazards, the NCLHMP Annex identifies seismic hazards in the town, populations and facilities at risk from seismic hazards, the history of seismic activity in the town, and probability of future occurrence.

Town of Truckee 2025 General Plan

The *Town of Truckee 2025 General Plan* (Town of Truckee 2006b) includes several policies in the Safety Element specifically addressing earthquakes and geologic hazards. Policy P1.1 ensures that new development is located outside of hazard areas, including steep slopes and areas of unstable soils. Policy P1.2 encourages retrofitting of structures, particularly older buildings, to withstand earthquake shaking and landslides. Policy P1.3 requires soils reports for new development in areas where geologic risks are known to exist.



Source: Data received from Town of Truckee in 2019

FIGURE 6-5 AVALANCHE OVERLAY DISTRICT.

Town of Truckee Development Standards, Chapter 18.36, Hillside Development Standards

The Town of Truckee Development Standards include specific standards for new development on hillsides. The standards apply to all uses, subdivisions, and structures proposed on development sites with an average slope of 10 percent or greater or on development sites with any slopes of 20 percent or greater. The standards are designed to ensure that development in the hillside areas is concentrated on the most level portions of the site; it is located in areas that would experience the least environmental impact; and the intensity of development correlates with the steepness of terrain to minimize the impact of grading, unnecessary removal of vegetation, land instability, and fire hazards.

6.3 Flood Hazards

This section addresses the flood hazard conditions within the town and the potential risk these conditions pose. Existing and potential problems related to flood hazards include annual flooding, dam failure, and seismic-induced flooding. This section summarizes the flood hazard conditions for the town, which include the following areas of concern:

- General flooding
- Dam failure inundation
- Levee failure inundation
- Postfire debris flow

These summaries are derived from the NCLHMP and the *Town of Truckee Emergency Operations Plan*. Consistent with the NCLHMP, each section includes explanations of the nature, history, location, extent, and probability associated with each type of flood hazard.

6.3.1 Major Findings

- Approximately 193 acres within the town are in the 100- or 500-year floodplain. This includes 165 parcels within the Federal Emergency Management Agency (FEMA) 100-year floodplain and 70 parcels within the FEMA 500-year floodplain. A total residential population of 549 residents within these floodplains could be at risk from a flooding event (Nevada County 2017b).
- The Martis Dam, which is located just outside the town boundary, is ranked as one of the top six at-risk dams owned by the U.S. Army Corps of Engineers (USACE) because of structural issues and the large population within the dam's flood inundation zone. A failure of the dam would likely cut off the town's Glenshire subdivision, and at just about any level of water being held, dam failure would inundate the town's sewage treatment plant (Nevada County 2017b). USACE is currently conducting extensive analysis of the dam, its structural problems, associated environmental issues, and potential options for repairing the dam. USACE has already taken actions to reduce the risk of dam failure, including, most importantly, reducing the water level of the reservoir to its minimum pool level (USACE 2018).
- Climate change will continue to affect the Sierra Nevada region, including the town, resulting in changes to precipitation patterns, snowpack, and seasonal runoff. In particular, increases in winter rainfall and reduced snowpack, "cool"-season snowmelt episodes, and rain-on-snow events will result in increases in winter flooding events.

6.3.2 Existing Conditions

GENERAL FLOODING

Hazard Characteristics

A flood occurs when the existing channel of a stream, river, canyon, or other watercourse cannot contain excess runoff from rainfall or snowmelt, resulting in overflow onto adjacent lands. Flooding can also occur in areas in low-lying areas that have no outlet. A floodplain is the area adjacent to a watercourse or other body of water that is subject to recurring floods. Floodplains may change over time as a result of natural processes; changes in the characteristics of a watershed; or human activity, such as construction of bridges or channels. Floodwaters can transport large objects downstream that can damage or remove stationary structures, such as dam spillways. Ground saturation can result in instability, collapse, or other damage. Floodwaters can also break utility lines and interrupt services. Standing water can cause damage to crops, roads, foundations, and electrical circuits. In areas where flow contains a high sediment load, the course of a river or stream may shift dramatically during a single flood event (Nevada County 2017b). Secondary hazards from floods can include the following:

- Erosion or scouring of streambanks, roadway embankments, foundations, footings for bridge piers, and other features
- Impact damage to structures, roads, bridges, culverts, and other features from high-velocity flow and from debris carried by floodwaters; such debris may also accumulate on bridge piers and in culverts, increasing loads on these features or causing overtopping or backwater effects
- Destruction of crops, erosion of topsoil, and deposition of debris and sediment on croplands
- Release of sewage and hazardous or toxic materials when wastewater treatment plants are inundated, storage tanks are damaged, and pipelines are severed

Truckee is susceptible to various types of flood events as described below.

- **Riverine flooding:** Riverine flooding, defined as when a watercourse exceeds its "bank-full" capacity, generally occurs as a result of prolonged rainfall or rainfall that is combined with already saturated soils from previous rain events. This type of flood occurs in river systems whose tributaries may drain large geographic areas and include one or more independent river basins. The onset and duration of riverine floods may vary from a few hours to many days. Factors that directly affect the amount of flood runoff include precipitation amount, intensity and distribution, the amount of soil moisture, seasonal variation in vegetation, snow depth, and water resistance of the surface attributable to urbanization.
- **Flash flooding:** "Flash flooding" refers to localized floods of great volume and short duration. This type of flood usually results from a heavy rainfall on a relatively small drainage area. Precipitation of this sort usually occurs in winter and spring. Flash floods often require immediate evacuation within the hour; thus, early threat identification and warning are critical for saving lives.
- **Localized/stormwater flooding:** Localized flooding problems are often caused by flash flooding, severe weather, or an unusual amount of rainfall. Flooding from these intense weather events usually occurs in areas experiencing an increase in runoff from impervious surfaces associated with development and urbanization, as well as inadequate storm drainage systems.

As noted in the NCLHMP, flooding is a serious concern in certain parts of Truckee in areas designated within FEMA 1-percent-annual-chance (100-year) flood zones and 0.5-percent-annual-chance (500-year) flood zones. As seen in Figure 6-6 these include areas around the Donner Lake shore; along Donner Creek, lower Trout Creek, and Cold Creek; and along the Truckee River (Nevada County 2017b).

History

Based on the climate and location of Truckee, flooding has remained a consistent issue throughout the town's history. Recurring flooding events have occurred in specific areas of the town, specifically along Gregory Creek, Trout, Creek, Donner Lake Road, and South Shore Road, in 1995, 1997, and 2005. In 1997, the town experienced significant flooding in the downtown area and along Donner Creek near SR 89. More recently, localized flooding in 2006 and 2017 both resulted in State and Federal emergency declarations for the flood disasters (Nevada County 2017b). In 2018, the National Oceanic and Atmospheric Administration (NOAA) updated standard flood stages at the flood forecast monitoring station along the Truckee River just south of the Town's southern border. The updates was made to ensure the best quality river forecasts and resulting warnings. Changes included raising the Minor flood stage from 4.5' to 5.5', moderate flood stage from 5.5' to 6.5' and major Flood Stage from 6.5' to 7.5' above typical river water surface level (NOAA 2018).

As stated in the NCLHMP, Truckee joined the National Flood Insurance Program (NFIP) on May 17, 1995. As of August 19, 2016, there were 50 flood insurance policies in force in the town, with $15,303,900 of coverage from $44,230 in annual premiums. Of these 50 policies, 45 were residential (single-family homes) and five were nonresidential. There have been no historical claims for flood losses. Additionally, there have been no substantial damage claims in the town, and there are no repetitive loss or severe repetitive loss properties (Nevada County 2017b).

Location

As shown in Figure 6-6, portions of the town are located with the 100- and 500-year FEMA floodplains of the Truckee River. Figure 6-6 also identifies areas within the California Department of Water Resources (DWR) Awareness Flood Mapping Program, which is discussed in more detail below under "Unmapped Flood Hazards."

Based on information in the NCLHMP, 165 parcels in the town are located within the FEMA 100-year floodplain, and 70 parcels are within the FEMA 500-year floodplain. Of the 21,473 acres in the town, approximately 193 acres are within the 100- or 500-year floodplain. Based on total land value and property value of the 235 parcels within FEMA floodplains, a flood event would cause roughly $17.7 million in damages in the 100-year floodplain and $6.0 million in the 500-year floodplain.

Based on the analysis of parcels in the FEMA floodplains included in the NCLHMP, a total of 549 residents with homes located in these floodplains are at risk of flooding. Of these residents, 399 are located within the 100-year floodplain, and 150 are located in the 500-year floodplain. The town also has 16 bridges, which are considered critical facilities, located within the 100-year floodplain. There is also one emergency shelter (Truckee Community Arts Center) within the 500-year floodplain. A full list of critical facilities in the town is included in Appendix F of the NCLHMP. This list also includes details for each facility, including the critical facility definition, type, name, and address.

Unmapped Flood Hazards

As noted above, Figure 6-6 identifies areas within the DWR Awareness Flood Mapping Program. These locations are not within the FEMA floodplains but are mapped as potential flood hazard areas primarily along creeks, streams, and smaller waterways that are still at risk of causing flooding events and damage near infrastructure and population areas. These areas are delineated as having a 0.2-percent chance of having an annual flooding event. This improved awareness of flood risk can reduce exposure to flooding for new structures and promote increased protection for existing development.

The town has smaller creeks, specifically Donner Creek, Alder Creek, and Trout Creek, that are not included in the FEMA floodplains but are included in the DWR Awareness Zones, as shown in Figure 6-6. These creeks are particularly prone to flash flooding events because of the characteristically steep terrain and shallow soils in the vicinity. Extreme weather events in winter months tend to overwhelm drainage systems, and snowpack and frozen ground diminish the volume and flow capacity of these waterways. Table 6-3 lists areas in the town identified from past occurrences that are particularly vulnerable to localized flash flooding events and subsequent impacts on utilities infrastructure or roadways that provide ingress and egress for the community in emergency situations.

Table 6-3 Localized Flooding Problem Areas

Area or Road Name	Flooding	Pavement Deterioration	Washouts	Flood Debris	Downed Trees
Donner Lake vicinity	X	X	X	X	X
Trout Creek area	X	X	X	X	
Old Highway 40	X	X		X	
Glenshire neighborhood	X	X			
Tahoe Donner neighborhood	X	X			
Alder Creek Drive	X	X		X	X

Notes: X = Area or portions of the roadway is vulnerable to these impacts; Pavement Deterioration = deterioration of the structural integrity of roadway pavement; Washouts = erosion of soft soils near roadways, which can destroy sections of roadway; Flood Debris = materials and sediment that wash onto roadways during flooding events; Downed Trees = trees that have fallen during flooding events.

Source: Nevada County 2017b

Probability of Future Flood Events

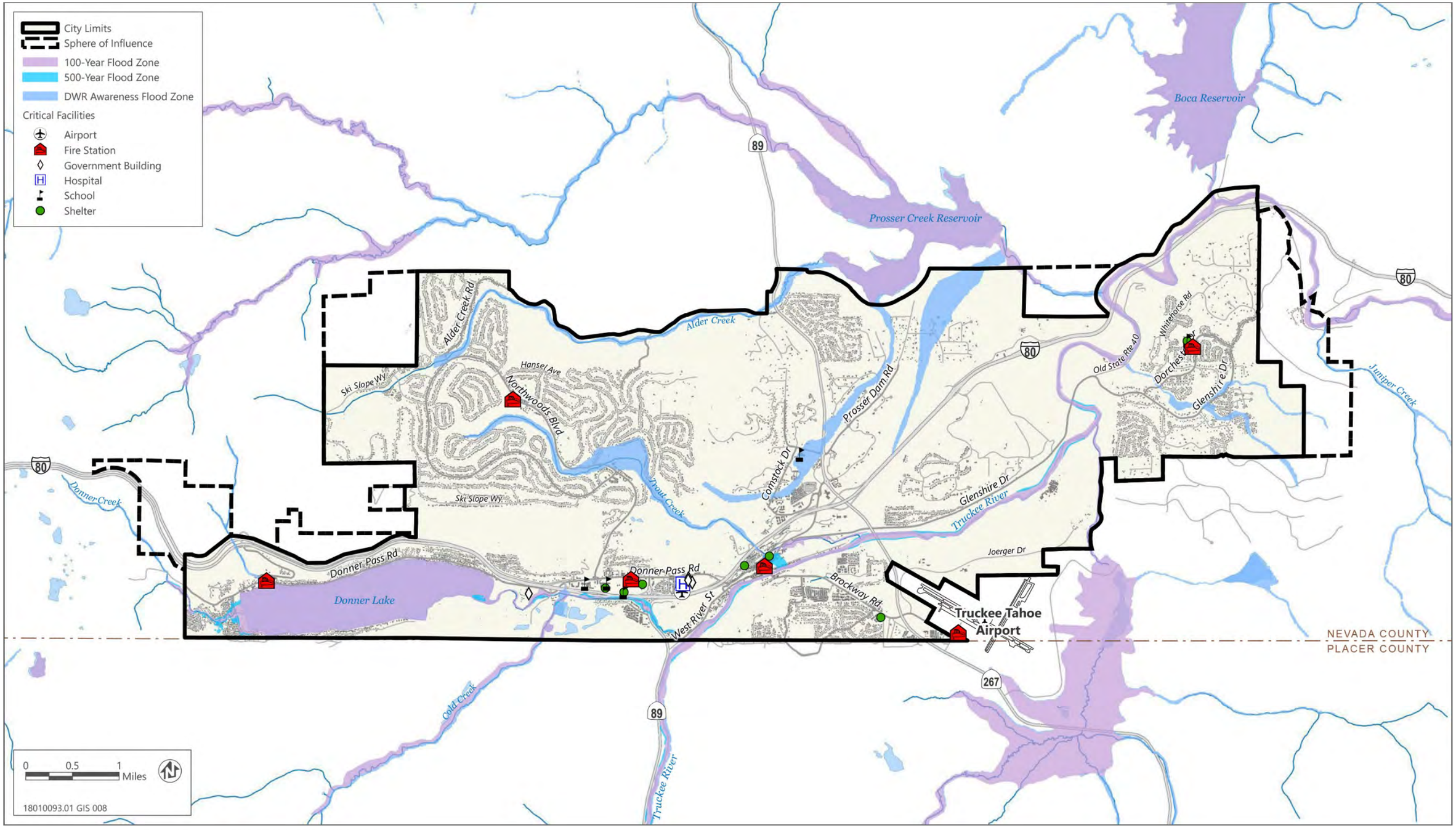
As noted above, flooding has historically been an issue for the community and will continue to be an issue in the future. Flood hazards to the town include not only the direct impacts of flooding events on residents within FEMA floodplains but also secondary impacts caused by flooding events, including potential dam failure inundation, upland flooding, and postfire debris failure. As the community continues to grow, Truckee can reduce overall flood hazard risks through various strategies. The Town of Truckee Municipal Code identifies procedures and standards for management of development with FEMA floodplain areas (Town of Truckee Municipal Code Chapter 18.34, Floodplain Management).

As highlighted in California's Fourth Climate Change Assessment report for the Sierra Nevada region, climate change has affected and will continue to affect the Sierra Nevada region, resulting in changes to precipitation patterns, snowpack, and seasonal runoff. The report notes that as a result of warmer temperatures with corresponding tendencies for more rainfall and less snowfall, and earlier snowmelt, water will tend to exit the mountain catchments earlier in the year. Additionally, the increase in winter rainfall, "cool"-season snowmelt episodes, and rain-on-snow events will result in increases in winter flooding events (OPR, CEC, and CNRA 2018). Truckee currently faces flooding issues, and the impacts of climate change will exacerbate these issues, with the frequency and intensity of flooding events increasing in the future. These issues are discussed in more detail in Chapter 7 ("Climate Change and Resilience") of this Existing Conditions Report.

Dam Failure Inundation

Hazard Characteristics

Dam failure involves unintended releases or surges of impounded water, resulting in downstream flooding. The high-velocity, debris-laden wall of water released from dam failure results in the potential for human casualties, economic loss, lifeline disruption, and environmental damage. Although dam failure may involve the total collapse of a dam, it also includes other, less extreme circumstances, including damaged spillways, overtopping from prolonged rainfall, or other problems, such as the unintended consequences from normal operations, that create a hazardous situation. Because they occur without warning, failures from natural events, such as earthquakes or landslides, may be particularly severe. Dam failure may be caused by a variety of natural events, human-caused events, or a combination. Dam failure usually occurs when the spillway capacity is inadequate and water overtops the dam or when internal erosion through the dam foundation occurs (also known as piping). Factors contributing to dam failure events may include structural deficiencies from poor initial design or construction, lack of maintenance or repair, and the gradual weakening of the dam through the normal aging process.



Source: Data downloaded from Town of Truckee in 2018, FEMA in 2018, DWR in 2018

FIGURE 6-6 FLOOD HAZARDS

History

There have been no disaster declarations related to dam failure in the town (Nevada County 2017b).

Location

Dams for Prosser, Boca, and Stampede Reservoirs could potentially affect the community if dam failure were to occur. All three reservoirs are located northeast of Truckee. Two smaller dams are located at Donner Lake and the Martis Creek Lake, south of the town. Based on the assessment conducted for the NCLHMP, dam failure at any of these five locations could result in severe short-term flooding but would not result in significant long-term effects on Truckee.

Extent

Based on modeling conducted by the U.S. Bureau of Reclamation, maximum outflow from failure of the Prosser, Boca, or Stampede Dam would backflow upstream into the Truckee River about 2 miles from its associated confluence. Flood inundation would be contained within the main channel of the Truckee River between 3 and 5 miles from the source, depending on the location of the dam.

Failure of the Prosser Dam would result in backflow approximately half a mile downstream of the Truckee sewage plant, which is approximately 3.5 miles from downtown Truckee. It also would result in inundation of a segment of I-80 and the railroad, near the confluence of Prosser Creek in the Truckee River Canyon. Failure of the Stampede Dam or Boca Dam would result in backflow to the confluence of Prosser Creek, which is approximately 5 miles south of downtown Truckee (Nevada County 2017b). Given the relatively small volume of water in Donner Lake (approximately 9,500 acre-feet) compared to the volume in the other nearby water bodies (41,000 acre-feet in Boca Reservoir), Donner Lake does not pose as serious threat to the community.

According to USACE, the Martis Creek Lake Dam is ranked as one of the top six at-risk dams in the United States owned by USACE. For this reason, USACE keeps the water volume in Martis Creek Lake at low levels. Screening-Level Portfolio Risk Assessments of Martis Creek Dam were completed by USACE in July 2005. Based on the results, the dam was classified as a Dam Safety Action Classification I dam (the highest risk category) (USACE 2018). The dam is considered high risk because of three issues (Town of Truckee 2013):

- Foundation seepage: Based on the composition of the soils, water held in the Martis Creek Lake is seeping into the ground and underneath the dam, which can destabilize the structure.
- Earthquake fault: The previously unmapped Polaris Fault was found adjacent to Martis Creek Dam in 2008, revealing a greater overall risk of dam failure than previously understood.
- Inadequate spillway capacity: During a large flood event, the Martis Creek Lake could overtop the dam by approximately 1 foot even with the floodgates open.

A failure of the dam would likely cut off the Glenshire subdivision in Truckee and, even if a low level of water were being held, would inundate the sewage treatment plant. A population of approximately 72,000 lives within the inundation zone for Martis Creek Dam, including large portions of the cities of Reno, Sparks, and Truckee Meadows (Nevada County 2017b). USACE is conducting Dam Safety Modification studies to identify possible future conditions for the dam, including increasing gross pool elevation, maintaining a minimum pool elevation, or removing the dam. USACE has already taken actions to reduce the risk of dam failure, including reducing the water level of the reservoir, keeping the floodgates open during flood events, purchasing equipment to help dam operators monitor water levels, and updating the Martis Creek Dam Emergency Action Plan (Town of Truckee 2013). USACE has stated that a large flood event could potentially lead to failure of the dam, but this scenario has a low probability of occurring (USACE 2018).

Probability of Future Events

Because the flood inundation areas associated with failure of the above-mentioned dams are not within FEMA floodplains, lands within the town limits could still be located in areas that would be flooded in the event of dam failure. The NCLHMP has estimated that future dam failure is unlikely. However, in the case of the Martis Creek Dam, although the likelihood of dam failure is low and USACE has taken actions to reduce the risk of dam failure, because

a large population is located in the dam failure inundation zone, the rare occurrence of a dam failure would have substantial consequences. USACE is conducting extensive analysis of the dam, its structural problems, associated environmental issues, and potential options for repairing the dam.

Postfire Debris Failure

Hazard Characteristics

Wildfires could create additional issues related to postfire debris failure in areas within and around Truckee. By reducing or destroying vegetative cover and altering soil characteristics, wildfires often create conditions that can significantly increase runoff and erosion when winter rains begin to fall. These conditions may result in a debris flow (also referred to as mud flow), which is a slurry of water, sediment, and rock that converges in a stream channel.

The threats of erosion, flooding, and debris flows are significantly increased by the following processes (Nevada County 2017b):

- **Reduced infiltration and increased runoff:** A fire's consumption of vegetative cover increases exposure of the soil surface to raindrop impact. Soil heating destroys organic matter that binds the soil together. Extreme heating may also cause the development of water-repellant, or "hydrophobic," soil conditions that further reduce infiltration.
- **Changes in hill slope conditions:** Fires remove obstructions to overland flow, such as trees, downed timber, and plants, increasing flow velocity and therefore erosive power. Increased sediment movement also fills depressions, reducing storage capacity and further contributing to increased velocity and an increased volume of flow. These factors combine to allow more of the watershed to contribute flow to the flood at the same time, increasing the volume of the flood.
- **Changes in channel conditions:** Increased overland flow and sediment transport result in increased velocity and volume of flow in defined channels. Under these conditions, channel erosion increases, as do peak discharges.

The occurrence of erosion, floods, and debris flows in burned areas is also dependent on precipitation intensity. Storms with a high intensity are more likely than less intense storms to initiate the processes described above and result in flood events. Additionally, easily eroded soils facilitate changes in hill slope conditions and increase the volume of runoff. In extreme situations, the conditions described above combine to form a debris flow. These flows are often the most destructive events resulting from heavy rainfall in fire-affected areas. They occur with little warning, carry vast quantities of rock and other material, and strike objects with extreme force (Nevada County 2017b).

History

As noted in the NCLHMP, there have been no disaster declarations associated with landslides in Truckee.

Location

Areas susceptible to debris flow include localities that are adjacent to and downslope of burn areas, especially in ravines and canyons and at the mouths of canyons. Areas in the town with steep slopes are at increased risk of wildfires and postfire debris flows. These areas include the ridges and hillsides north and west of downtown, the ridges north of Gateway and north and west of Donner Lake, and areas around Alder Hill (Nevada County 2017b).

Extent and Probability of Future Events

The NCLHMP notes that the risk assessment conducted for Truckee regarding this hazard found that if debris flow events were to occur, they could have potentially large economic impacts on certain areas. The extent of future landslides and debris flows in the town would be minor and considered a nuisance rather than a disaster. However, as discussed above, the impacts of climate change will very likely increase the risk of wildfire and flooding events in the town in the future. As a result, because debris flow events are highly dependent on these two related hazards, the likelihood of debris flow events is also likely to increase in the future, resulting in increased risk of damage to the community (Nevada County 2017b).

6.3.3 Regulatory Setting

FEDERAL

Federal Emergency Management Agency

FEMA is the Federal agency that oversees floodplains and manages the NFIP, as adopted under the National Flood Insurance Act of 1968. FEMA's regulations govern the delineation of floodplains and establish requirements for floodplain management. FEMA prepares Digital Flood Insurance Rate Maps that indicate the regulatory floodplain to assist communities such as Truckee with land use and floodplain management decisions to meet the requirements of the NFIP.

National Flood Insurance Program

The regulations of the NFIP, which is administered by FEMA, require that communities adopt land use restrictions for the 100-year floodplain to qualify for federally subsidized insurance. The NFIP was enabled by the National Flood Insurance Act of 1968 and Flood Disaster Protection Act of 1973. The type of restrictions communities must adopt are listed in some detail in Title 44 Code of Federal Regulations (CFR), Sections 59–70. Participation in the NFIP is virtually mandatory, since flood insurance (within identified "special flood hazard" areas) is a prerequisite for receiving mortgages or construction loans from federally regulated lending institutions. Disaster assistance is not available to public agencies in hazard areas if they do not participate in and remain compliant with the NFIP. Thus, Truckee must be (and is) a participating community in the NFIP to qualify for disaster assistance in the event of a declared natural disaster. Outside these limits, the prime responsibility for regulating activities in flood hazard areas lies with State and local governments.

Community Rating System for Flood Control

The Community Rating System (CRS) is a program administered by FEMA. The program offers financial incentives to cities and counties that voluntarily exceed the minimum requirements of the NFIP. The three goals of the CRS are to (1) reduce and avoid flood damage to insurable property, (2) strengthen and support the insurance aspects of the NFIP, and (3) foster comprehensive flood plan management. The CRS includes multiple programs or "activities" in which communities can participate to earn CRS points. These include providing public outreach and education on flood prevention measures, preserving open space, maintaining special certifications for staff members as certified floodplain managers, removing debris and sediment from flood control channels, and adopting an all-hazards mitigation plan. Each community receives a class rating based on the number of points earned; the number of points a community has earned determines whether a discount is available to property owners on their flood insurance policies. As of 2016, 5 percent of all NFIP member communities participate in the CRS program, and 15 percent of all NFIP California communities participate in the program (Nevada County 2017b). The Town does not currently participate in the program and, therefore, does not have a class rating.

Disaster Mitigation Act of 2000

On October 30, 2000, Congress passed the Disaster Mitigation Act of 2000 (DMA of 2000) (Public Law 106-390), which amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 (Title 42 of the United States Code [USC] Section 5121 et seq.) by repealing the act's previous mitigation planning section (409) and replacing it with a new mitigation planning section (322). This new section emphasized the need for State, tribal, and local entities to closely coordinate mitigation planning and implementation efforts. This new section also provided the legal basis for FEMA's mitigation plan requirements for mitigation grant assistance. Under DMA 2000, local governments throughout the United States must adopt and maintain mitigation plans to be eligible for specific types of grant assistance. DMA of 2000 is administered by FEMA (in California, Region IX) in collaboration with State Hazard Mitigation Officers (in California, CalOES).

U.S. Army Corps of Engineers: Martis Creek Dam Safety Modification Study

In 2002, a spillway adequacy study performed for the Martis Creek Dam identified the spillway capacity as inadequate. In 2005, USACE's Screening Portfolio Risk Assessment identified the dam as one of the top six USACE dams in the nation in terms of risk. The dam is experiencing underseepage and other failure patterns that lead experts at USACE to believe that a large flood event could potentially lead to failure of the dam. Given the presence of a large population downstream of the dam, the dam is considered a high risk. USACE is conducting extensive analysis of the dam, its structural problems, associated environmental issues, and potential options for repairing the dam. Because of the complexity of the investigation, construction or rehabilitation of the dam most likely will occur several years in the future (USACE 2018).

STATE

California Dam Safety Act

The California Dam Safety Act (Section 8589.5, California Emergency Services Act) requires preparation of dam inundation maps showing areas of potential flooding in the event of sudden or total dam failure, as well as emergency procedures for notification and evacuation of nearby residents.

LOCAL

Nevada County Local Hazards Mitigation Plan

In August 2017, Nevada County adopted the most recent NCLHMP to help reduce or eliminate long-term risk to people and property from hazards. The NCLHMP includes a risk assessment that identifies and profiles hazards that pose a risk to the County and participating jurisdictions, assessed the vulnerability of the planning area to these hazards, and examined the existing capabilities to mitigate them. As stated in the plan, Nevada County is vulnerable to several hazards, including floods, earthquakes, drought, liquefaction, landslides, wildfires, climate change, and other severe weather events.

The NCLHMP includes an Annex that details the hazard mitigation planning elements specific to the Town of Truckee. The Annex identifies wildfire risks hazards in the town, populations and facilities at risk from flood hazards, the history of flooding in the town, and the probability of future occurrence. The NCLHMP also includes a set of objectives specific to reducing the severity and intensity of flood hazards in Nevada County:

- GOAL 4: Improve community resiliency to flooding in Nevada County
  - Objective 5.1: Reduce the flood risk and vulnerability in Nevada County.
  - Objective 5.2: Reduce life safety issues, property loss, and damages associated with flooding.
  - Objective 5.3: Review appropriate flood protection infrastructure improvements and implement where feasible and economically viable.
  - Objective 5.4: Promote public awareness and education concerning the risks associated with creek, stream and river flooding.

Town of Truckee 2025 General Plan

The *Town of Truckee 2025 General Plan* (Town of Truckee 2006b) includes several policies in the Safety Element specifically addressing flooding hazards. Policies P2.1 and P2.2 support the continued use of FEMA flood hazard and floodplain mapping in project review, as well as continued participation in the NFIP. Policy P2.3 supports the incorporation of appropriate stormwater drainage systems in new development to decrease downstream flooding potential. Policy P2.4 discourages development within the Truckee River floodplain and adjacent waterways. Policies P2.1 and P2.2 in the Conservation and Open Space Element support the setback standards of 100 feet from the Truckee River 100-year floodplain. These policies are enacted through Chapter 18.38 of the Town of Truckee Development Code (Town of Truckee 2018e).

Town of Truckee Municipal Code

Chapter 18.32, Floodplain Management, of the Town of Truckee Municipal Code includes procedures and standards for management of development with FEMA floodplain areas. Chapter 18.38, Lake and River/Stream Corridor Development, includes development standards for new development adjacent to Donner Lake, the Truckee River, and other significant streams in the town. Chapter 18.34, Floodplain Management, of the Town's development code includes a series of standards intended to minimize public and private losses related to flood conditions in specific areas in Truckee.

Section 18.20.060, Snow Avalanche (-SA) Overlay District, of the Town of Truckee Municipal Code includes development standards specific to parcels include in the Snow Avalanche Overlay District. The Snow Avalanche Overlay District classifies different areas within the overlay area as High, Medium, or Low Hazard areas. The standards include specific requirements for each of hazard areas including requirements certain building restrictions, structural engineering specifications, new utility installation requirements, and written acknowledgment of danger by land owners.

Town of Truckee Emergency Operations Plan

Adopted in 2008, the *Town of Truckee Emergency Operations Plan* establishes the town's emergency planning, organization, and response policies and procedures. The plan also establishes protocol for coordination with county, State, and Federal agencies through the Standardized Emergency Management System, which is required by Government Code Section 8607(a) for managing response to multi-agency and multijurisdictional emergencies in California. The plan also identifies procedures for activation of the Town's Emergency Operations Center, which serves as the base of operations during emergency events. The plan includes procedural responses to both natural and human-made emergencies including all flood hazards in the town.

6.4 Aviation Hazards

This section summarizes aviation hazard issues for the town. It discusses the following issues pertaining to aviation:

- Airport setting
- Airport facilities
- Aircraft incidents

6.4.1 Major Findings

- The Truckee Tahoe Airport, located adjacent to the town limits in the southeast portion of the Planning Area, serves single-engine and multiengine piston turbine planes, turboprop planes, business jets, and helicopters. In 2013, the total aircraft operations (takeoffs and landings) count was approximately 26,470 operations. Average daily operations in 2013 were 73 with a peak season average of 164 operations per day.
- The Truckee Tahoe Airport Land Use Commission (TTALUC) adopted the most recent version of the *Truckee Tahoe Airport Land Use Compatibility Plan* (ALUCP) in October 2016. The plan was, in part, updated to ensure consistency with changes in the *2025 Truckee Tahoe Airport Master Plan* (Truckee Tahoe Airport District 2015). The ALUCP establishes a series of Compatibility Zones to regulate uses surrounding the airport to reduce overall risk exposure to surrounding land uses.
- The Town of Truckee's Development Code includes the Airport Operations overlay district, which regulates land uses in the vicinity of the Truckee Tahoe Airport, recognizing that certain land uses and site development characteristics may conflict with the safe and efficient operation of airports and aircraft.

6.4.2 Existing Conditions

AIRPORT SETTINGS AND FACILITIES

The Truckee Tahoe Airport is located at the floor of the Martis Valley in the eastern portion of Nevada County, directly adjacent to and southeast of the town. The airport property also straddles the county line between Nevada County on the north and Placer County on the south. Major portions of the airport environs are under the control of the Federal government—specifically, USACE (Martis Creek Lake National Recreation Area) and the U.S. Forest Service (Tahoe National Forest).

The airport includes two major intersection runways, aircraft hangars, apron areas, and a terminal and administration building. The primary runway is 7,000 feet in length and oriented northwest/southeast, and the secondary runway, oriented northeast/southwest, is 4,650 feet long. The total land area of the airport property is approximately 926 acres.

The airport is owned and operated by the Truckee Tahoe Airport District, a bicounty special district within Nevada and Placer Counties. The airport provides general aviation services for the town, communities in the northern Lake Tahoe region, and communities in the central Sierra Nevada. The principal measure of airport activity at general aviation airports is the number of aircraft operations (takeoffs and landings) that take place annually. In 2013, the total count was approximately 26,470 operations. Average daily operations in 2013 were 73 with a peak season average of 164 operations per day. Aircraft types that use the airport include single-engine and multiengine piston turbine planes, turboprop planes, business jets, and helicopters.

AIRPORT MASTER PLAN AND LAND USE COMPATIBILITY PLAN

In July 2015, the Truckee Tahoe Airport District adopted the *Truckee Tahoe Airport Master Plan*, which is intended to guide the airport's operation and development through the year 2025 (Truckee Tahoe Airport District 2015). Land use planning surrounding the airport is guided by TTALUC, which serves to protect public health, safety, and welfare by ensuring the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards within areas around the airport.

Land use decisions by the commission are guided by the ALUCP, which was most recently updated in October 2016 (TTALUC 2016). The function of the ALUCP is to promote compatibility between the airport and surrounding land uses and set compatibility criteria applicable to local agencies during their preparation or amendment of land use plans and ordinances. The plan includes policies that establish compatibility criteria for future land use development in the airport environs, as well as define the types of actions to be submitted for TTALUC review and establish the procedures that the TTALUC will follow in making compatibility determinations. As defined in the ALUCP, the influence area for the Truckee Tahoe Airport extends approximately 3.6 statute miles from the airport runways. This influence area encompasses three local government jurisdictions: Nevada County, Placer County, and Truckee. As shown in Figure 6-7, the ALUCP uses a series of compatibility zones to regulate uses surrounding the airport to reduce overall risk exposure to surrounding land uses (TTALUC 2016).

AIRCRAFT INCIDENTS

The most critical stages of the flight of an aircraft, when accidents occur more frequently than at other flight stages, are takeoff and landing, which places property in airport approach and departure zones at a higher risk of aircraft incidents than property in other locations. Section 5.2, "Safety Compatibility," of the ALUCP includes a series of policies designed to increase the safety of residents in land uses surrounding the airport and reduce the overall risk of incidents occurring at the airport. These policies include limits on the intensity of residential and nonresidential land uses surrounding the airport; restrictions on land uses of special concern, such as land uses with hazardous material storage; and requirements for open land surrounding the airport for emergency landing situations.

According to Federal Aviation Administration and National Transportation Safety Board databases, since 1982, there have been a total of 71 reported accidents and two incidents at the Truckee Tahoe Airport. Of these incidents, 11 involved fatalities, 14 involved serious injuries, and 10 involved minor injuries (National Transportation Safety Board 2018).

Damage to surrounding land uses from aircraft accidents varies depending on the weight, speed, and fuel load of the aircraft, as well as the actual land uses (i.e., structures) in the area. The risk to lives tends to increase with greater density in use (e.g., a school versus a single-family house).

6.4.3 Regulatory Setting

FEDERAL

Federal Aviation Regulation Part 77

Title 14, Regulation 49 of the CFR includes Federal Aviation Regulation Part 77 (FAR 77). FAR 77 establishes evaluation standards and notification requirements for objects affecting navigable airspace, including new construction, as well as alterations to developments in the vicinity of airports. FAR 77 allows the FAA to identify potential aeronautical hazards in advance, thus preventing or minimizing possible adverse impacts on the safe and efficient use of navigable airspace. The regulation also requires evaluation and determination about potential hazardous effects of proposed construction or alterations, identifies mitigating measures to enhance safe air navigation, and charts new potentially hazardous objects. FAR 77 establishes a series of "imaginary surfaces," or horizontal and vertical planes, around airports to provide the dimensions within which objects are considered hazardous to airport operating procedures and/or air navigation. These surfaces cover every angle of approach and departure and are based on the specific dimensions, runway types, and operations of a given airport.

STATE

California Public Utilities Code

The State of California Public Utilities Code, Section 21670 et seq., requires the County Board of Supervisors to establish an Airport Land Use Commission (ALUC) in each county with an airport operated for the benefit of the general public. The Public Utilities Code also sets forth the range of responsibilities, duties, and powers of the ALUC. Instead of creating a new body to serve as the ALUC, State law allows the county board of supervisors to authorize an appropriately designated body to fulfill ALUC responsibilities (Section 21670.1). Section 21675 requires the ALUC to formulate a comprehensive land use plan for the area surrounding each public use airport in the county. The ALUC is also tasked with formulating a plan for the area surrounding each Federal military airport located in the county. Section 21675 specifies that comprehensive land use plans shall provide for the orderly growth of each airport and the area surrounding the airport and safeguard the welfare of the inhabitants within the vicinity of the airport and the public in general. Section 21676 requires that local general plans conform with the ALUC's comprehensive airport land use plan and grants the ALUC authority to review amendments to general plans, specific plans and zoning ordinances, and building regulations that apply within the airport planning boundary.

The Truckee Tahoe Airport is an "intercounty" airport situated in both Nevada County and Placer County; therefore, a special ALUC with three representatives each from both counties was formed.

Senate Bill 1462

SB 1462 (Chapter 906, Statutes of 2004) expanded the requirements for local governments to notify military installations of proposed development and planning activities. This statute states that "prior to action by a legislative body to adopt or substantially amend a general plan, the planning agency shall refer the proposed action to the branches of the Armed Forces when the proposed project is located within 1,000 feet of a military installation, beneath a low-level flight path, or within Special Use Airspace…"

California Aviation System Plan Policy Element

The California Aviation System Plan Policy Element is the basis for implementing the State Aeronautics Act and identifying the Division of Aeronautics role in the California Department of Transportation mission, vision, and values for a multimodal, interregional transportation system. The Policy Element is updated on approximately a 5-year cycle with the last update published in October 2011.

NEVADA COUNTY

Nevada County Emergency Operations Plan

Adopted in June 2011, the Nevada County Emergency Operations Plan establishes procedures for preparing for, responding to, and recovering from natural and human-made incidents that occur in Nevada County. The plan delineates the roles and responsibilities of the Nevada County Emergency Services Organization (ESO), composed of various Nevada County agencies and departments, which supports the initial and extended responses to emergency incidents. The plan also establishes incident response procedures for the ESO for various emergency situations, as well as protocols for coordination with State and Federal agencies, if necessary. The plan also includes procedures concerning public awareness and education about emergency incidents.

Truckee Tahoe Airport Land Use Compatibility Plan

The most recent ALUCP was adopted in October 2016. The plan is intended to ensure compatibility between the Truckee Tahoe Airport and surrounding land uses, as well as set compatibility criteria applicable to local agencies in their preparation or amendment of land use plans and ordinances. The plan is developed and adopted by the TTALUC and is then used by the commission as a tool for fulfilling its duty to review airport and adjacent land use development proposals.

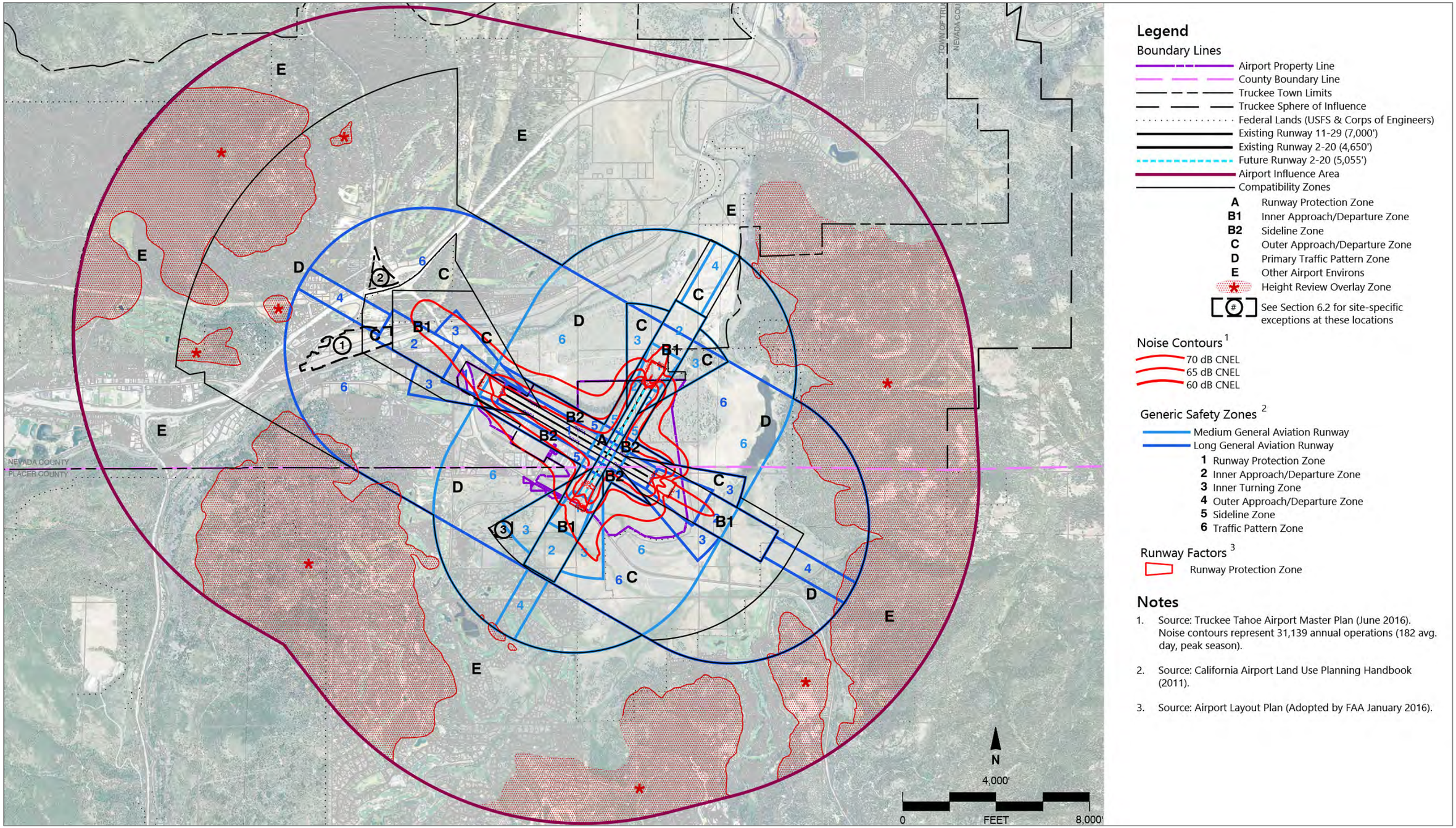
TOWN OF TRUCKEE

Town of Truckee 2025 General Plan

The Safety Element, Chapter 9, of the *Town of Truckee 2025 General Plan* (Town of Truckee 2006b) identifies goals, policies, and actions specifically related to aviation hazards to ensure that land use and development patterns in the vicinity of the Truckee Tahoe Airport are consistent with the adopted ALUCP.

Town of Truckee Development Code

The Town of Truckee's Development Code (Title 18 of the Truckee Municipal Code) includes the Airport Operations overlay district, which is intended to regulate land uses in the vicinity of the Truckee Tahoe Airport and adjacent areas over which aircraft perform approach and departure maneuvers, recognizing that certain land uses and site development characteristics may conflict with the safe and efficient operation of airports and aircraft. Chapter 18.64, Truckee-Tahoe Airport Area Restrictions, of the Town of Truckee's Development Code provides a series of development standards intended to ensure that the design of new development does not reduce the size of areas available for the landing, takeoff and maneuvering of aircraft at the Truckee Tahoe Airport. The Truckee-Tahoe Airport Area Restrictions apply to all areas located within the Airport Operations overlay zoning district. The chapter includes development standards regarding building height limits and nonconforming structures and land uses.



Source: Image provided by the Town of Truckee in 2018

FIGURE 6-7 TRUCKEE TAHOE AIRPORT LAND USE COMPATIBILITY AND NOISE FACTORS

6.5 Hazardous Materials

This section addresses hazardous materials, which include any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, and any material that the administering agency determines to be potentially injurious to the health and safety of persons or harmful to the environment. This section summarizes hazardous materials and hazardous waste programs that exist in the town, discusses the types of materials that are managed, and briefly discusses current and past hazardous waste cleanup efforts.

6.5.1 Major Findings

- I-80, the UPRR line, and the Kinder Morgan petroleum pipeline are the three major transportation routes by which hazardous materials are transported through Truckee. Notably, five schools are within a 2-mile buffer zone of these routes, as well as the Tahoe Forest Hospital, which is within 500 feet of I-80.
- Since 1973, there have been 186 hazardous material spill incidents in the town. However, there have been no Federal or State disaster declarations for hazardous materials in Truckee.
- Based on information included in the State Water Resources Control Board GeoTracker database, which contains records for hazardous material sites that require cleanup, and the California Department of Toxic Substances Control (DTSC) EnviroStor database, which contains records of sites undergoing hazardous materials mitigation, several sites in Truckee are at various stages of mitigation or monitoring.

6.5.2 Existing Conditions

A material is considered hazardous if it appears on a list of hazardous materials prepared by a Federal, State, or local agency. A hazardous material is defined in California Health and Safety Code Section 25501 as any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment.

Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, and any material that meets the definition according to the handler or the administering agency. For hazardous substances, the degree of hazard a substance poses is related to the chemical and physical properties of the substance, including properties of toxicity, ignitability, corrosiveness, and reactivity. These materials can pose a substantial present or future hazard risk to human health or the environment if improperly handled, stored, disposed of, remediated, or otherwise managed. If improperly handled, hazardous materials can result in public health hazards through direct human contact with contaminated soils or groundwater or through airborne releases in vapors, fumes, or dust. The accidental or unauthorized release of hazardous materials can also pose immediate public health concerns (e.g., drinking water contamination). The health effects of hazardous materials exposure are influenced by the dose to which a person is exposed, the frequency of exposure, the exposure pathway, and individual susceptibility.

Hazardous materials are governed by regulations that require proper storage and handling, business and environmental management plans, spill contingency plans, employee and public noticing, and other emergency preventive and response measures to minimize the risk of accidental releases and related environmental impacts. The presence of hazardous materials in soils of agricultural land or industrial sites as a result of current or past activity can also be a concern for public health. When development on such sites is considered, potentially hazardous materials are identified and evaluated through a Phase I and/or Phase II environmental site assessment review.

HAZARDOUS MATERIALS/WASTE GENERATION AND MANAGEMENT

The Nevada County Environmental Health Department is the Certified Unified Program Agency (CUPA) for Nevada County. The CUPA implements State and Federal laws, regulations, county codes, and local policies related to hazardous materials management. The Nevada County CUPA provides regulatory oversight for local participation in several statewide environmental programs.

Hazardous Materials Sites in Truckee

Information on hazardous materials and contaminated properties is maintained by both the State of California and Nevada County. This section explains the agencies and programs responsible for managing this information and explains the presence of hazardous materials and sites in Nevada County.

The California Environmental Protection Agency (CalEPA) maintains the State of California Hazardous Waste and Substances List (also known as the "Cortese List"). Government Code Section 65962.5 requires CalEPA to annually update the Cortese List. DTSC is responsible for providing a portion of the Cortese List information, while other State and local agencies provide the remaining information. The EnviroStor database, managed by DTSC, lists Brownfield sites (a U.S. Environmental Protection Agency [EPA] program for contaminated properties), sites undergoing hazardous materials mitigation, sites with known contamination that may require further investigation, Federal Superfund sites, State response sites, voluntary cleanup sites, and school cleanup sites.

The State Water Resources Control Board and the State's Regional Water Quality Control Boards maintain GeoTracker, which is a data management system for sites that affect, or have the potential to affect, water quality in California, with emphasis on groundwater. GeoTracker contains records for sites that require cleanup, as well as permitted facilities, such as irrigated lands, operating permitted underground storage tanks, and land disposal sites. GeoTracker portals retrieve and compile records from multiple State Water Resources Control Board programs and other agencies. Sites in Truckee that appeared in the State-maintained databases as of October 2018 included:

- five open cleanup program sites
- two open voluntary cleanup sites
- 50 leaking underground Storage tank cleanup sites labeled "Completed-Case Closed"
- three leaking underground storage tank cleanup sites labeled "Open-Eligible for Closure"
- 14 cleanup program Sites labeled "Completed-Case Closed"
- one cleanup Site labeled "Open-Eligible for Closure"
- one cleanup site labeled "Open- Inactive"
- three active cleanup Sites managed by the Department of Water Resources
- one draft cleanup site managed by the Department of Water Resources
- two historical cleanup sites managed by the Department of Water Resources

The following subsections summarize the status of the two largest hazardous materials sites in Truckee.

Truckee Regional Park

Truckee Regional Park is located north of Old Brockway Road and Estate Drive, adjacent to the Truckee River. It encompasses approximately 55 acres, including baseball diamonds, basketball courts, tennis courts, volleyball courts, an amphitheater, and parking areas. Approximately 17 acres of the park are located on the site of a former burn dump that operated from approximately the early 1940s to the late 1960s. It is identified by Assessor's Parcel Number 10-450-55. Between 2004 and 2009, subsurface investigations conducted at the site to characterize soil and groundwater conditions found levels of identified metals, pesticides, and dioxin/furans that pose a potentially unacceptable threat to human health and/or the environment as chemicals of concern. As for remediation, in 2009, approximately 5,000 cubic yards of soil and burn dump wastes containing chemicals of concern above remedial goals

were excavated, consolidated, and capped within a 1-acre area. Intermittent maintenance occurs as part of the site's Operations and Maintenance plan (Truckee Sanitary District 2010).

Former Truckee Dump Site

The site, located just south of I-80, between Donner Pass Road and SR 267, is a former burn dump located on Federal land under the jurisdiction of the U.S. Forest Service. Approximately 19 acres have been cleaned up and transferred to Truckee for development of the Town's Corporation Yard. CalRecycle identifies this site in its Solid Waste Information System database as site 29-CR-0031. Burn dump waste from the remaining area has been excavated and placed into an on-site repository (DTSC 2018). The site now contains the Town's Corporation Yard, the Humane Society of Truckee Tahoe, and the Truckee Ranger District Office for the U.S. Forest Service.

Truckee Railyards Site

In 2008, an Environmental Impact Report (EIR) was developed for the 2009 Railyard Master Plan. As part of the EIR, soil sampling for various contaminants at the project site were conducted and a Health Risk Assessment (HRA) was conducted for various parcels (Theater Parcel, Hotel Parcel, Balloon Track Site) included in the Railyard Master Plan area. The HRA for the Theater Parcel concluded that the risks for all receptors are at or below the level generally considered acceptable for non-cancer health hazards. The HRA for the Hotel Parcel concluded that the risks for all receptors are at or below the level generally considered acceptable for non-cancer health hazards. The sampling and analysis for the Balloon Track Site found that some soil samples from a few areas of the site contained concentrations of diesel- and oil-range petroleum hydrocarbons, PCBs, and some metals that exceed the screening criteria. The soil and groundwater site investigation report concludes that, depending on future site development plans, additional soil samples may be collected in some areas in order to support site development decisions. The EIR for the 2009 Railyard Master Plan EIR included Mitigation Measure HAZ-1 which requires that existing contamination would be remediated, or engineering controls and administrative controls would be implemented, to ensure that potential future occupants of the Master Plan Area are not exposed to site-related contamination that exceeds acceptable health standards. Mitigation Measure HAZ-2 is also include in the EIR to ensure that construction workers are not exposed to hazardous materials or wastes during development of the site.

Hazardous Materials in Structural Building Components

Hazardous materials are commonly found in structural building materials. Older buildings, in particular, can contain hazardous materials, such as asbestos, polychlorinated biphenyls (PCBs), lead, and mercury. Businesses that store, use, or handle hazardous materials at or above specified threshold amounts are required to prepare a hazardous materials business plan and submit it to the Nevada County CUPA.

Common Hazardous Materials in Structural Building Components

Asbestos. "Asbestos" is a general name for a group of naturally occurring minerals composed of small fibers. Structures built or remodeled between 1930 and 1981 could contain asbestos-containing building materials (ACBMs), such as floor coverings, drywall joint compounds, acoustic ceiling tiles, piping insulation, electrical insulation, and fireproofing materials. Cal/OSHA and EPA define any material with 1 percent or more asbestos by weight as an ACBM. Buildings that contain ACBM are not necessarily a health hazard as long as ACBMs within the building remain in good condition and are not disturbed or damaged. Exposure to asbestos most often occurs during building demolition activities. Structures in the town built or remodeled between 1930 and 1981 could contain ACBMs.

Regulations formulated by the California Division of Occupational Safety and Health (Cal/OSHA) restrict asbestos emissions from building demolition and renovation activities and specify safe work practices to minimize release of asbestos fibers. These regulations prohibit emissions of asbestos from asbestos-related manufacturing, demolition, and construction activities; require medical examinations and monitoring of employees engaged in activities that could disturb asbestos; specify precautions and safe work practices that must be followed to minimize the potential for release of asbestos; and require notice to Federal and local government agencies before building demolition or renovation activity that could disturb asbestos begin.

Polychlorinated Biphenyls. The manufacture and import of PCBs have been banned in the United States since 1978. Sources of PCBs include fluorescent light ballasts, electric transformers, and televisions, all of which are presumed to be present in Truckee. Such items are regulated as hazardous waste and must be transported and disposed of accordingly. DTSC classifies PCBs as hazardous waste when concentrations exceed 5 parts per million (ppm) in liquids or 50 ppm in nonliquids.

Lead. Lead is a highly toxic metal that was used in products found in and around residences. Lead exposure from paint is possible when paint peels or is removed, and lead can contaminate dust and soil. Construction workers can be exposed to airborne lead during demolition, renovation, or maintenance work. Although lead-based paints were banned from production in the 1970s, buildings in Truckee constructed before 1970 may still contain lead. In addition to residences, areas along older major roadways may contain aerially deposited lead, which could have been deposited from vehicle exhaust before 1996, when the sale of lead-based gasoline was banned.

Cal/OSHA standards establish a maximum safe exposure level for types of construction work where lead exposure may occur, including demolition of structures where materials containing lead are present; removal or encapsulation of materials containing lead; and new construction, alteration, repair, or renovation of structures with materials containing lead. Inspection, testing, and removal of lead-containing building materials must be performed by State-certified contractors who comply with applicable health and safety and hazardous materials regulations.

Mercury. Mercury is another toxic metal considered hazardous. It can be found in fluorescent light tubes and bulbs, thermostats, and other electrical equipment. If these items are disposed of in landfills, mercury could leach into the soil or groundwater. The mercury typically found in lighting tubes has been known to exceed regulatory thresholds and therefore must be managed in accordance with hazardous waste regulations. Mercury can also be present in traps in the plumbing of older buildings where mercury-containing equipment has been used. Any items that contain mercury must be disposed of according to applicable hazardous waste regulations.

Household Hazardous Waste

Residential households are another source of hazardous materials. Truckee contracts with Tahoe Truckee Sierra Disposal (TTSD) for the collection, hauling, and processing of commercial and residential solid waste and recycling. The TTSD also administers the household hazardous waste (HHW) collection program. On selected dates and with an appointment, residential customers of TTSD can self-haul their HHW to the processing facility located at the Eastern Material Recovery Facility. TTSD maintains information on the types of HHW that can be processed. These wastes may include paint, contaminated motor oil, contaminated gasoline, brake fluid, solvents, automotive chemicals, insecticides, herbicides, poisons, drain opener, oven cleaner, rug cleaner, ammonia, chlorine bleach, disinfectants, pool and spa chemicals, furniture polish, rubber cement, silver polish, tub/tile cleaner, toilet cleaner, pharmaceuticals, and syringes in rigid plastic containers.

Business Hazardous Waste

Commercial customers are not allowed to participate in the free residential self-hauling services offered by TTSD. However, commercial customers may make an appointment to self-haul hazardous materials to the Eastern Material Recovery Facility. Prices for commercial customers are available upon request. Businesses that generate, store, or haul larger quantities of hazardous material must complete and submit a hazardous materials business plan to the Nevada County Health Department. The specific quantities of hazardous materials requiring a hazardous materials business plan are defined by CalEPA and discussed in the "Regulatory Setting" section below.

Hazardous Materials Transportation

The transportation of hazardous materials along major roadways, rail lines, and pipelines through Truckee poses risks for residents and structures, particularly those close to the various rights-of-way. As shown in Figure 6-8, I-80, the UPRR, and the Kinder Morgan petroleum pipeline are the three major transportation routes in Truckee. Together, they transport tons of hazardous materials through the town. The UPRR line that runs through town is used to transport crude oil and other hazardous materials. Hazardous materials make up 7 percent of all commodities being transported by the railroad. As of 2016, approximately 15 trains pass through the Town over a 24-hour period at the Broad Street at-grade crossing (Federal Rail Administration 2018). As noted in the NCLHMP, an accidental release of hazardous material

is most likely to occur within the I-80 corridor because of the winding character of the interstate and the snow and ice that make the corridor especially dangerous during the winter months. Because of the relatively remote location of Truckee, during a hazardous spill event, assistance from areas outside the town would be unavailable for 4–8 hours, and the spill site could be potentially unreachable in the winter months. (Nevada County 2017b).

History

There have been no Federal or State disaster declarations for hazardous materials in Truckee. However, there have been several hazardous spills in the town. Table 6-4 lists all the recorded hazardous material incidents in Truckee since 1973 according to the U.S. Pipeline and Hazardous Materials Safety Administration, as well as relevant details about the incidents, including the type of hazardous material involved, total quantity released, and mode of transportation used when the material was released.

Table 6-4 Hazardous Materials Incidents in the Town of Truckee

Date of Incident	Incident Route	Mode of Transportation	Transportation Phase	Commodity Short Name	Quantity Released
10/12/1973	N/A	Highway	N/A	Gasoline	0 gallon
1/1/1976	N/A	Highway	N/A	Gasoline	260 gallons
11/28/1978	N/A	Highway	N/A	Gasoline	2,730 gallons
7/21/1980	N/A	Rail	N/A	Phosphoric acid solution	1 gallon
5/21/1986	N/A	Rail	N/A	Benzoyl chloride	0.12 gallon
4/15/1987	N/A	Highway	N/A	Toluene	1 gallon
7/1/1992	Eastbound I-80	Highway	In transit	Nitrogen – refrigerated	6,000 gallons
7/15/1998	Westbound I-80	Highway	In transit	Xylenes	5 gallons
5/24/2001	I-80 east of Yuba Gap	Highway	In transit	Hypochlorite solutions	1 gallon
6/19/2003	I-80	Highway	In transit	Hydrochloric acid	1 gallon
3/29/2005	Truckee Agricultural Station	Highway	In transit	Heptanes	350 gallons
11/12/2014	I-80, Milepost 183	Highway	In transit	Flammable liquids, not otherwise specified	10 gallons

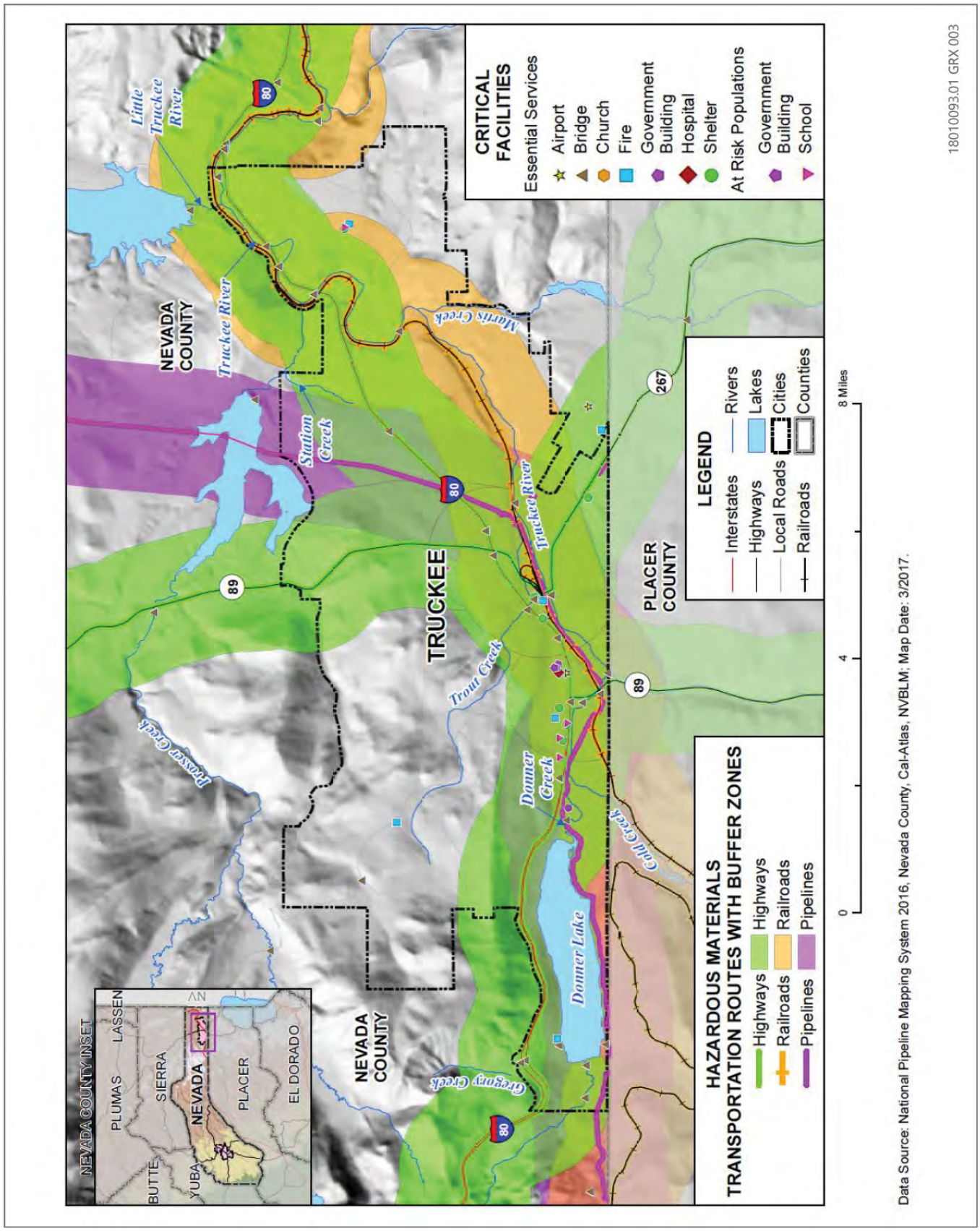
Note: N/A = not available.

Source: U.S. Pipeline and Hazardous Materials Safety Administration 2018

In addition to information from the U.S. Pipeline and Hazardous Materials Safety Administration, Cal OES keeps a database of hazardous material spill events. Between 2007 and 2018, Cal OES reports that the Town of Truckee had 145 incidents involving petroleum releases, 12 incidents of chemical releases, 9 incidents involving hazardous material vapors, 4 incidents involving sewage, 2 incidents involving radiological material, and 2 incidents involving hazardous materials specified as "Other" (Cal OES 2019).

Location

Figure 6-8 identifies highways, railroads, and pipelines located in Truckee that transport hazardous materials, as well as a 2-mile buffer surrounding these highways, railroads, and pipelines in which people would potentially be at risk following a hazardous materials spill. Figure 6-8 also identifies all critical facilities in the town within the 2-mile buffer zone.



Source: Nevada County 2017b

FIGURE 6-8 HAZARDOUS MATERIAL TRANSPORTATION ROUTES

Extent and Probability of Future Events

Based on analysis included in the NCLHMP, there are 52 facilities in Truckee within the 2-mile buffer zone shown in Figure 6-8. Notably, five schools are within this 2-mile buffer zone, as well as the Tahoe Forest Hospital, which is within 500 feet of I-80. The severity of impacts from a hazardous material spill within the 2-mile buffer zone depends substantially on the characteristics of the spill, including the type of material and the size of the spill, as well as external factors, such as weather. As noted in the NCLHMP, development in Truckee will continue within the 2-mile buffer zone, and the NCLHMP has designated the frequency of future hazardous material spills as occasional, which translates to between 1- and 10-percent chance of occurrence in the next year, or a recurrence interval of 11–100 years.

6.5.3 Regulatory Setting

FEDERAL

Federal agencies that regulate hazardous materials include EPA, the Occupational Safety and Health Administration (OSHA), the U.S. Department of Transportation, and the National Institutes of Health. The following Federal laws govern hazardous materials storage, handling, and remediation in Truckee:

- The Federal Insecticide, Fungicide, and Rodenticide Act (7 USC 136 et seq.) provides regulation for the distribution, sale, and use of insecticides, herbicides, fungicides, rodenticides, antimicrobials, and devices and extends to both intrastate and interstate commerce.
- The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (also called the Superfund Act or CERCLA) (42 USC 9601 et seq.) gives EPA authority to seek out parties responsible for releases of hazardous substances and ensure their cooperation in site remediation.
- The Superfund Amendments and Reauthorization Act of 1986 (Public Law 99-499; USC Title 42, Chapter 116), also known as SARA Title III or the Emergency Planning and Community Right-to-Know Act of 1986, imposes hazardous materials planning requirements to help protect local communities in the event of accidental release.
- The Resource Conservation and Recovery Act of 1976 (42 USC 6901 et seq.) is the law under which EPA regulates hazardous waste from the time the waste is generated until its final disposal ("cradle to grave").
- The Toxic Substances Control Act of 1976 (15 USC Section 2601 et seq.) regulates the manufacturing, inventory, and disposition of industrial chemicals, including hazardous materials. Section 403 of the Toxic Substances Control Act establishes standards for lead-based paint hazards in paint, dust, and soil.

U.S. Environmental Protection Agency

EPA is responsible for researching and setting national standards for a variety of environmental programs, and it delegates to states and local government responsibility for issuing permits and for monitoring and enforcing compliance. EPA Region IX has authority over the City of Truckee, regulating chemical and hazardous materials use, storage, treatment, handling, transport, and disposal practices; protects workers and the community (along with Cal/OSHA; see below); and integrates the Federal Clean Water Act and Clean Air Act into California legislation.

Federal Occupational Safety and Health Administration

The federal Occupational Safety and Health Administration (OSHA) is the agency responsible for assuring worker safety in the handling and use of chemicals identified in the Occupational Safety and Health Act of 1970 (Public Law 91-596, 9 USC 651 et seq.). OSHA has adopted numerous regulations pertaining to worker safety, contained in CFR Title 29. These regulations set standards for safe workplaces and work practices, including standards relating to the handling of hazardous materials and those required for excavation and trenching.

STATE

In 1972, California passed the Hazardous Waste Control Act, which created the California Hazardous Waste Control Program. The program surveyed existing hazardous waste generation to determine the need for new or expanded facilities for meeting future waste management demands. The facility permitting program, designed to protect public health and the environment through the issuance of operating permits for facilities that treat, store, or dispose of hazardous wastes, provided a mechanism for in-depth inspections and a permit review of each hazardous waste facility at least every 10 years.

California Environmental Protection Agency

In 1991, CalEPA was established to oversee and coordinate the activities of the California Air Resources Board, CalRecycle (which replaced the California Integrated Waste Management Board in 2010), the California Department of Pesticide Regulation, DTSC, the Office of Environmental Health Hazard Assessment, and the State Water Resources Control Board.

Certified Unified Program Agencies Program

In 1992, SB 1082 created the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program) to ensure consistency throughout the state regarding hazardous waste and materials standards. CalEPA oversees the entire Unified Program and certifies local government agencies to implement the program standards.

A local agency, such as a county or city, applies to CalEPA for certification as the Unified Program Agency, responsible for implementing the Unified Program within its jurisdiction. A CUPA must establish a program that consolidates, coordinates and makes consistent the administrative requirements, permits, inspection activities, enforcement activities, and hazardous waste and hazardous materials fees. The implementation of the Unified Program must not result in more fragmentation between jurisdictions than existed before the Unified Program, and the Unified Program must be consistent throughout the county or city.

The Unified Program is implemented at the local level, but the program is certified by the Secretary of CalEPA. Cal OES, DTSC, the Office of the State Fire Marshal, and the State Water Resources Control Board are also involved with the Unified Program.

California Governor's Office of Emergency Services

Cal OES supports and enhances emergency management, including preparedness, response, recovery, and mitigation needs, and assists local and tribal governments with hazard mitigation planning. It also develops the State Hazard Mitigation Plan and responds to and aids in the recovery from emergencies within the state. In addition, Cal OES is responsible for providing technical assistance and evaluation of the Hazardous Material Release Response Plan (Business Plan) and the Area Plan Programs.

California Department of Toxic Substances Control

DTSC regulates hazardous substances and wastes, oversees remedial investigations, protects drinking water from toxic contamination, and warns the public regarding exposure to listed carcinogens. DTSC also provides technical assistance and evaluation for the hazardous waste generator program, including on-site treatment (tiered permitting).

CAL FIRE Office of the State Fire Marshal

The Office of the State Fire Marshal (OSFM) is responsible for ensuring the implementation of the Hazardous Material Management Plan (HMMP) and Hazardous Materials Inventory Statement (HMIS) and the Aboveground Petroleum Storage Act (APSA) Programs. The HMMP and HMIS Program is closely tied to the Business Plan Program. In addition, OSFM also handles the oversight and enforcement for the aboveground storage tank program. It is also responsible for ensuring implementation of the California Fire Code HMMP/HMIS and the APSA program elements.

California Highway Patrol/California Department of Transportation

The California Highway Patrol and the California Department of Transportation have primary regulatory responsibility for the transportation of hazardous wastes and materials on state roads.

California Occupational Safety and Health Administration

Cal/OSHA is responsible for promulgating and enforcing State health and safety standards and for implementing Federal OSHA laws. Cal/OSHA has authority to set and enforce standards to minimize the potential for release of asbestos and lead during construction and demolition activities.

State Water Resources Control Board/Regional Water Quality Control Board

The State Water Resources Control Board provides technical assistance and evaluation for the underground storage tank program. The Lahontan Regional Water Quality Control Board is one of nine regional boards in the state charged with protecting surface water and groundwater quality from pollutants discharged or threatened to be discharged to the waters of the state. It issues and enforces National Pollutant Discharge Elimination System permits and regulates leaking underground storage tanks and other sources of groundwater contamination in the region, including Truckee.

NEVADA COUNTY

Nevada County Hazardous Material Area Plan

Nevada County maintains a Hazardous Material Area Plan (Area Plan), in accordance with the California Health and Safety Code (Division 20, Chapter 6.95, Section 25500 et seq.) and the CCR (Title 19, Article 3, Section 2270 et seq.). The Area Plan, which is updated every 3 years, establishes the policies, responsibilities, and procedures required to protect Nevada County's citizens, the environment, and public and private property from the effects of hazardous materials emergency incidents. The plan outlines the roles and responsibilities of Federal, State, County, and local agencies in responding to hazardous material releases and incidents. The Area Plan is used in conjunction with the Nevada County Emergency Operations Plan and the California Hazardous Materials Incident Contingency Plan.

The Nevada County Environmental Health Department monitors commercial storage and use of hazardous materials and issues permits regarding the use and storage of significant quantities of hazardous materials or substances.

Nevada County Emergency Operations Plan

Adopted in June 2011, the Nevada County Emergency Operations Plan establishes procedures for the preparation for, response to, and recovery from natural and human-made emergency incidents that occur in Nevada County. The plan delineates the roles and responsibilities of the ESO, composed of various Nevada County agencies and departments, which supports the initial and extended responses to emergency incidents. The plan also establishes incident response procedures for the ESO for various emergency situations, as well as protocols for coordination with State and Federal agencies, if necessary. It also identifies procedures concerning public awareness and education about emergency incidents. The plan is required to be updated every 3 years by the ESO.

Nevada County Local Hazard Mitigation Plan

In August 2017, Nevada County adopted the most recent NCLHMP to help reduce or eliminate long-term risk to people and property from hazards. The NCLHMP includes a risk assessment that identifies and profiles hazards that pose a risk to the County and participating jurisdictions, assessed the vulnerability of the planning area to these hazards, and examined the existing capabilities to mitigate them. As stated in the plan, Nevada County is vulnerable to several hazards, including floods, earthquakes, drought, liquefaction, landslides, wildfires, and other severe weather events.

The NCLHMP includes a section specific to hazardous material transport that discusses the characteristics and classification of various hazardous materials, identifies what hazardous material risks exist in the county, and describes past hazardous material incidents that have occurred in the county.

Nevada County Environmental Health Department

The Nevada County Environmental Health Department maintains a Memorandum of Understanding (MOU) with DTSC to complete all site inspections and to enforce State-established regulations concerning the handling, storage, transport, and disposal of hazardous materials. It also is responsible for responding to hazardous materials spill incidents in coordination with other agencies. During hazardous material spill incidents, in accordance with the Nevada County Emergency Operations Plan, the Nevada County Environmental Health Department is also responsible for providing technical information and assistance as a member of the multidisciplinary team responding to hazardous materials incidents, providing regulatory oversight of the disposal of hazardous materials/wastes, and providing oversight of mitigation actions at hazardous materials incidents. The department is also responsible for maintaining the Hazardous Materials Area Plan for the County. Recognized as the CUPA for the County, the department is tasked with assisting businesses that handle hazardous materials in receiving the appropriate permits and inspecting businesses on a regular basis.

Nevada County Hazardous Material Business Plan

Businesses operating in Nevada County that store or handle hazardous material equivalent to or greater than the minimum reportable quantities must complete and submit a Hazardous Material Business Plan to the Nevada County Health Department. The minimum reportable quantities for businesses are 55 gallons of a hazardous liquid, 200 standard cubic feet of a compressed gas (including oxygen), or 500 pounds of a hazardous solid. As required by CalEPA, the plans must at a minimum include three plan components: facility information, a hazardous materials inventory, and an emergency response plan.

TOWN OF TRUCKEE

Town of Truckee Emergency Operations Plan

The Town of Truckee Emergency Operations Plan, which establishes the town's emergency planning, organization, and response policies and procedures, is described in Section 7.3.3, "Regulatory Setting." The plan includes procedural responses to both natural and human-made emergencies, including earthquakes, hazardous materials events, snow emergencies, flooding, terrorist acts, and wildfires.

Truckee Fire Protection District

The TFPD has adopted several provisions of the Uniform Fire Code, which is established at the State level. Article 80 of the Code includes multiple provisions concerning the storage, transport, and accidental release of hazardous materials. The TFPD is responsible for overseeing enforcement of the provisions in Article 80 that it has adopted.

Truckee Municipal Code - Title 11 Storm Water Ordinance

This title sets forth stormwater quality requirements to regulate the entry of pollutants and non-stormwater discharges into the town stormwater conveyance system incompliance with the National Pollutant Discharge Elimination System (NPDES) permit. Chapter 11.03, "Adoption of Best Management Practices," establishes best management practices (BMPs) for any activity, construction activity, operation or facility, which may cause or contribute to pollution or contamination of stormwater. See Section 8.3 of the Existing Conditions Report for a more detailed discussion of stormwater facilities in the town.

6.6 Noise and Vibration

This section includes a description of relevant acoustical background information, including the fundamental principles of acoustics; discussions of the effects of noise and vibration on humans and the built environment; a description of the existing community noise environment in Truckee; a summary of applicable Federal, State, and local regulations; and key terms.

6.6.1 Major Findings

- Based on ambient noise level measurements taken throughout Truckee, the predominant sources of noise are traffic noise on local roadways, major roadways (i.e., I-80, SR 89, and SR 267), freight and passenger train movement on the UPRR line, and aircraft operations.
- Roadway traffic is the predominant source of noise affecting sensitive land uses in the town. Highways and major arterial roadways are the primary sources of traffic noise.
- In additional to traffic noise on local roadways and State highways, passenger and freight trains operating within the town contribute to community noise levels.
- The TTALUC regulates the Truckee Tahoe Airport, and the maximum community noise equivalent level (CNEL) for land uses within the vicinity of the airport is 60 decibels (dB).
- Noise generated by industrial facilities and other stationary sources contribute to the ambient noise environment in their immediate vicinities.

6.6.2 Existing Conditions

ACOUSTIC FUNDAMENTALS

Acoustics is the scientific study that evaluates perception, propagation, absorption, and reflection of sound waves. Sound is a mechanical form of radiant energy, transmitted by a pressure wave through a solid, liquid, or gaseous medium. Sound that is loud, disagreeable, unexpected, or unwanted is generally defined as noise. Common sources of environmental noise and noise levels are presented in Table 6-5.

Table 6-5 Typical Sound Levels

Common Outdoor Activities	Sound Level (dB)	Common Indoor Activities
	110	Rock band
Jet flyover at 1,000 feet	100	
Gas lawnmower at 3 feet	90	
Diesel truck moving at 50 mph at 50 feet	80	Food blender at 3 feet, garbage disposal at 3 feet
Noisy urban area, gas lawnmower at 100 feet	70	Vacuum cleaner at 10 feet, normal speech at 3 feet
Commercial area, heavy traffic at 300 feet	60	
Quiet urban daytime	50	Large business office, dishwasher in next room
Quiet urban nighttime	40	Theater, large conference room (background)
Quiet suburban nighttime	30	Library, bedroom at night, concert hall (background)
Quiet rural nighttime	20	Broadcast/Recording Studio
Threshold of human hearing	0	Threshold of Human Hearing

Notes: dB = decibels.

Source: Caltrans 2009.

Sound Properties

A sound wave is initiated in a medium by a vibrating object (e.g., vocal chords, the string of a guitar, or the diaphragm of a radio speaker). The wave consists of minute variations in pressure, oscillating above and below the ambient atmospheric pressure. The number of pressure variation cycles occurring per second is referred to as the frequency of the sound wave and is expressed in hertz.

Directly measuring sound pressure fluctuations would require the use of a very large and cumbersome range of numbers. To avoid this and have a more useable numbering system, the dB scale was introduced. A sound level expressed in dB is the logarithmic ratio of two like pressure quantities, with one pressure quantity being a reference sound pressure. For sound pressure in air, the standard reference quantity is generally considered to be 20 micropascals, which directly corresponds to the threshold of human hearing. The use of the dB is a convenient way to handle the millionfold range of sound pressures to which the human ear is sensitive. A dB is logarithmic; it cannot be measured using normal algebraic methods and cannot be directly summed. For example, a 65-dB source of sound, such as a truck, when joined by another 65-dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). A sound level increase of 10 dB corresponds to 10 times the acoustical energy, and an increase of 20 dB equates to a hundredfold increase in acoustical energy.

The loudness of sound perceived by the human ear depends primarily on the overall sound pressure level and frequency content of the sound source. The human ear is not equally sensitive to loudness at all frequencies in the audible spectrum. To better relate overall sound levels and loudness to human perception, frequency-dependent weighting networks were developed. The standard weighting networks are identified as A through E. There is a strong correlation between the way humans perceive sound and A-weighted sound levels (dBA). For this reason, dBA can be used to predict community response to noise from the environment, including noise from transportation and stationary sources. All sound levels discussed in this section are dBA unless otherwise noted.

Noise can be generated by a number of sources, including mobile (i.e., transportation) sources, such as automobiles, trucks, and airplanes, and stationary (i.e., nontransportation) sources, such as construction sites, machinery, and commercial and industrial operations. As acoustic energy spreads through the atmosphere from the source to the receiver, noise levels attenuate (i.e., decrease), depending on ground absorption characteristics, atmospheric conditions, and the presence of physical barriers. Noise generated from mobile sources generally attenuate at a rate of 4.5 dB per doubling of distance. Stationary noise sources spread with more spherical dispersion patterns that generally attenuate at a rate of 6 to 7.5 dB per doubling of distance.

Atmospheric conditions, such as wind speed, turbulence, temperature gradients, and humidity, may additionally alter the propagation of noise and affect levels at a receiver. Furthermore, the presence of a large object (e.g., barrier, topographic features, and intervening building façades) between the source and the receptor can provide significant attenuation of noise levels at the receiver. The amount of noise level reduction (i.e., shielding) provided by a barrier primarily depends on the size of the barrier, the location of the barrier in relation to the source and receivers, and the frequency spectra of the noise. Natural (e.g., berms, hills, and dense vegetation) and human-made features (e.g., buildings and walls) may be used as noise barriers.

All buildings provide some exterior-to-interior noise reduction. A building constructed with a wood frame and a stucco or wood sheathing exterior typically provides a minimum exterior-to-interior noise reduction of 25 dB with its windows closed, whereas a building constructed of a steel or concrete frame, a curtain wall or masonry exterior wall, and fixed plate glass windows of one-quarter-inch thickness typically provides an exterior-to-interior noise reduction of 30–40 dB with its windows closed (Caltrans 2009).

Effects of Noise on Humans

Excessive and chronic exposure to elevated noise levels can result in auditory and nonauditory impacts to humans. Auditory effects of noise on people are those related to temporary or permanent hearing loss caused by loud noises. Nonauditory effects of exposure to elevated noise levels are those related to behavioral and physiological effects. The nonauditory behavioral effects of noise on humans are associated primarily with the subjective effects of annoyance, nuisance, and dissatisfaction, which lead to interference with activities such as communications, sleep, and learning. The nonauditory physiological health effects of noise on humans have been the subject of considerable research attempting to discover correlations between exposure to elevated noise levels and health problems, such as hypertension and cardiovascular disease. The mass of research infers that noise-related health issues are predominantly the result of behavioral stressors and not a direct noise-induced response. The extent to which noise contributes to nonauditory health effects remains a subject of considerable research, with no definitive conclusions.

The degree to which noise results in annoyance and interference is highly subjective and may be influenced by several nonacoustic factors. The number and effect of these nonacoustic environmental and physical factors vary depending on individual characteristics of the noise environment, such as sensitivity, level of activity, location, time of day, and length of exposure. One key aspect in the prediction of human response to new noise environments is the individual level of adaptation to an existing noise environment. The greater the change in the noise levels that are attributed to a new noise source, relative to the environment an individual has become accustomed to, the less tolerable the new noise source will be perceived.

With respect to how humans perceive and react to changes in noise levels, a 1-dB increase is imperceptible, a 3-dB increase is barely perceptible, a 6-dB increase is clearly noticeable, and a 10-dB increase is subjectively perceived as approximately twice as loud (Egan 2007). Therefore, a doubling of sound energy (e.g., doubling the volume of traffic on a highway), which would result in a 3-dB increase in sound, would generally be perceived as barely detectable.

These subjective perceptions to changes in noise levels were developed based on test subjects' reactions to changes in the levels of steady-state pure tones or broad-band noise and to changes in levels of a given noise source. This scale of perceptibility is probably most applicable to noise levels in the range of 50 to 70 dB, as this is the usual range of voice and interior noise levels.

Negative effects of noise exposure include physical damage to the human auditory system, interference with activities, and disease. Exposure to noise may result in physical damage to the auditory system, which may lead to gradual or traumatic hearing loss. Gradual hearing loss is caused by sustained exposure to moderately high noise levels over time; traumatic hearing loss is caused by sudden exposure to extremely high noise levels over a short period. Gradual and traumatic hearing loss both may result in permanent hearing damage. In addition, noise may interfere with or interrupt sleep, relaxation, recreation, and communication. Although most interference may be classified as annoying, the inability to hear a warning signal may be considered dangerous. Noise may also be a contributor to diseases associated with stress, such as hypertension, anxiety, and heart disease. The degree to which noise contributes to such diseases depends on the frequency, bandwidth, level of the noise, and exposure time (Caltrans 2009).

Vibration

Vibration is the periodic oscillation of a medium or object with respect to a given reference point. Sources of vibration include non-human-caused phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) and those introduced by human activity (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous (e.g., operating factory machinery) or transient (e.g., explosions). Vibration levels can be depicted in terms of amplitude and frequency (relative to displacement), velocity, or acceleration.

Vibration amplitudes are commonly expressed in peak particle velocity (PPV) or root-mean-square (RMS) vibration velocity. PPV and RMS vibration velocity are normally described in inches per second (in/sec).

Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response. It takes some time for the human body to respond to vibration signals. In a sense, the human body responds to average vibration amplitude. The RMS of a signal is the average of the squared amplitude of the signal, typically calculated over a 1-second period. As with airborne sound, the RMS velocity is often expressed in decibel notation as vibration decibels (VdB), which serves to compress the range of numbers required to describe vibration (FTA 2006). This is based on a reference value of 1 micro (μ) in/sec.

The typical background vibration-velocity level in residential areas is approximately 50 VdB. Groundborne vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels (FTA 2006).

Typical outdoor sources of perceptible ground vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground vibration is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration-velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings. Construction activities can generate ground vibrations, which can pose a risk to nearby structures. Constant or transient vibrations can weaken structures, crack façades, and disturb occupants (FTA 2006).

Construction vibrations can be transient, random, or continuous. Transient construction vibrations are generated by events such as blasting, impact pile driving, and use of wrecking balls. Continuous vibrations result from activities such as use of vibratory pile drivers, large pumps, and compressors. Random vibration can result from use of jackhammers, pavement breakers, and heavy construction equipment. Table 6-6 describes the general human response to different levels of ground vibration-velocity levels.

Table 6-6 Human Response to Different Levels of Ground Noise and Vibration

Vibration-Velocity Level (VdB)	Human Reaction
65	Approximate threshold of perception
75	Approximate dividing line between barely perceptible and distinctly perceptible; many people find that transportation-related vibration at this level is unacceptable
85	Vibration acceptable only if there are an infrequent number of events per day

Note: VdB = vibration decibels referenced to 1 micro inch per second and based on the root mean square velocity.

Source: FTA 2006.

SENSITIVE LAND USES

Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Additional land uses, such as parks, schools, historic sites, cemeteries, sensitive habitats, and recreation areas, are also generally considered sensitive to increases in exterior noise levels. Places of worship, hotels and transient lodging, libraries, and other places where low interior noise levels are desirable are also considered noise-sensitive. These noise-sensitive uses are also considered vibration-sensitive land uses in addition to commercial and industrial buildings where vibration would interfere with operations within the building, including levels that may be well below those associated with human annoyance.

EXISTING COMMUNITY NOISE ENVIRONMENT

The predominant noise sources within Truckee are mobile sources, including motor vehicles on roadways, freight and passenger trains, and aircraft. Stationary sources do not substantially affect ambient noise levels in the town because most large noise-generating operations (e.g., aggregate mining) are located away from residential areas. A total of 12 ambient noise level measurements, consisting of eleven 15-minute short-term (ST) measurements and one 24-hour long-term (LT) measurement, were conducted to characterize the existing noise environment at different locations throughout the town (Table 6-7). Figure 6-9 shows the locations of each noise level measurement and summarizes the measured noise level at each location.

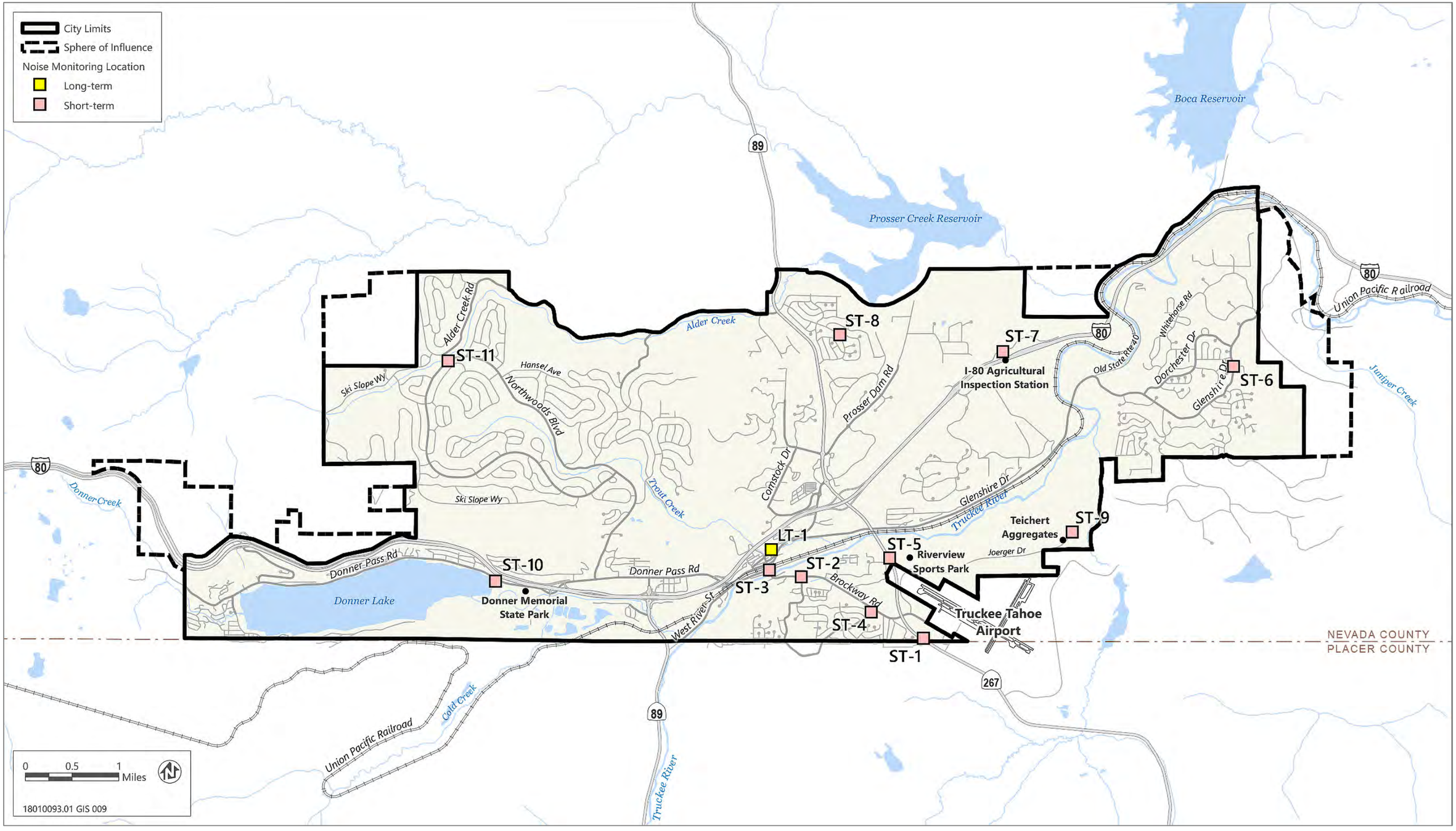


FIGURE 6-9 AMBIENT NOISE MEASUREMENT LOCATIONS

Table 6-7 Summary of Ambient Noise Level Measurements

Measurement Location	Start (Date/Time)	Stop (Date/Time)	A-Weighted Noise Level (dB)			Nearby Noise-Sensitive Land Uses
Short-Term			L_{eq}	L_{max}	L_{min}	
ST-1: North Shore Road (SR 267), outside Hampton Inn	October 19, 2018 8:52 a.m.	October 19, 2018 9:07 a.m.	55.7	70.0	49.1	Hotel
ST-2: Intersection of Old Brockway Road and Palisades	October 19, 2018 10:06 a.m.	October 19, 2018 10:21 a.m.	67.0	88.2	50.5	Single-family residential, recreational area
ST-3: Intersection of Martis Valley Road and Bridge Street, outside River Street Inn	October 19, 2018 10:30 a.m.	October 19, 2018 10:45 a.m.	68.1	83.9	54.4	Hotel, single-family residential
ST-4: Intersection of Martis Valley Road and Jeffrey Pine Road	October 19, 2018 9:45 a.m.	October 19, 2018 10:00 a.m.	63.9	89.7	42.8	None (commercial land uses)
ST-5: SR 267 west of the Truckee Bike Park	October 19, 2018 1:25 p.m.	October 19, 2018 1:40 p.m.	54.1	74.5	44.1	Recreational facilities (city park)
ST-6: Intersection of Glenshire Road and Woodbridge Court	October 19, 2018 12:53 p.m.	October 19, 2018 1:08 p.m.	61.4	83.3	27.8	Single-family residential
ST-7: I-80 near the California Agriculture Inspection Station	October 19, 2018 12:25 p.m.	October 19, 2018 12:40 p.m.	70.9	81.4	61.8	None (industrial land uses)
ST-8: Intersection of Rainbow Dr. and Snowshoe Circle	October 19, 2018 11:58 a.m.	October 19, 2018 12:13 p.m.	51.8	70.4	29.2	Single-family residential
ST-9: End of Joerger Road, outside Teichert Aggregates	October 19, 2018 9:17 a.m.	October 19, 2018 9:32 a.m.	62.7	77.3	47.4	None (industrial land uses)
ST-10: Donner Pass Road near Tahoe Donner Beach Club Marina	October 19, 2018 11:04 a.m.	October 19, 2018 11:19 a.m.	66.6	77.0	54.5	Single-family residential, open space
ST-11: Intersection of Fjord Road and Northwoods Blvd.	October 19, 2018 11:30 a.m.	October 19, 2018 11:45 a.m.	65.2	84.6	38.4	Single-family residential

Measurement Location	Start (Date/Time)	Stop (Date/Time)	CNEL/L_{dn}	Daytime			Nighttime			Nearby Sensitive Receptors
Long-Term				L_{eq}	L_{max}	L_{min}	L_{eq}	L_{max}	L_{min}	
LT-1: On the corner of Jibboom Street and Spring Street	October 18, 2018 3:45 p.m.	October 19 2018 5:50 p.m.	63.5/63.0	60.8	80.7	49.7	53.7	79.2	44.2	Mixed use

Notes: CNEL = community noise equivalent level; dB = decibel; L_{eq} = equivalent continuous sound level; L_{max} = maximum noise level; L_{min} = minimum noise level; LT = long term; ST = short term; SR = state route; Dr. = drive; Blvd. = boulevard.

See Figure 6-9 for map of locations.

Source: Field data collected by Ascent Environmental in October 2018.

As shown in Table 6-7, the equivalent continuous sound level (L_{eq}) measurements at ST-2, -3, -4, -6, -7, -9, -10, and -11 exceed 60 dB. Sensitive receptors near these measurements include residential land uses, open space, and recreational areas. Notably, these values were derived over a 15-minute period and are intended to reflect ambient sound levels during that period alone; therefore, these values do not represent CNEL at these locations. The measurement at LT-1, taken over a 24-hour period, provides a CNEL for that location of 63.5 dB, which does exceed 60 dB.

Existing Railroad Noise

A UPRR line bisects Truckee from east to west. The railroad supports freight and passenger trains that generate intermittent loud noise and vibration as they enter and exit the town. Levels of noise generated by an individual train are dependent on the train type, speed, length, and engine and whether the train uses a warning whistle. Train

engines typically generate maximum sound levels of approximately 80–85 dB, while train cars generate sound levels in a range of 70–75 dB at 100 feet from railway tracks.

Trains are required to sound their warning whistles near at-grade vehicle crossings, including the Bridge Street crossing in the Downtown Specific Plan area, to warn motorists of the oncoming train. Often, trains sound their warning whistles when entering or leaving a train station, such as the Amtrak Train Station in Truckee. At a distance of 100 feet, a train warning whistle can generate maximum sound levels of about 100–105 dB.

Existing Airport Noise

Truckee is located on the west and north sides of the Truckee Tahoe Airport. The airport spans the county line between Nevada County to the north and Placer County to the south and is located east of SR 267. It is used by a mix of general aviation and jet aircraft. The primary flight paths follow the highways in the area (i.e., I-80, SR 89, SR 267). Noise generated by the airport was measured during the noise monitoring survey performed for the background report (i.e., ST-1). The measured L_{max} at the Hampton Inn was 70.0 dB, which occurred during the takeoff of one discrete flight. Noise complaints from individuals are recorded and reported by the Truckee Tahoe Airport District, which operates the airport.

6.6.3 Regulatory Setting

FEDERAL

Federal Noise Control Act of 1972

The Federal Noise Control Act of 1972 established a requirement that all Federal agencies must comply with applicable Federal, State, interstate, and local noise control regulations. Federal agencies also are directed to administer their programs in a manner that promotes an environment free from noise that jeopardizes public health or welfare.

U.S. Department of Transportation

To address the human response to groundborne vibration, the Federal Transit Administration of the U.S. Department of Transportation has set forth guidelines for maximum-acceptable vibration criteria for different types of land uses, including the following guidelines:

- 65 VdB, referenced to 1 µ in/sec and based on the RMS velocity amplitude, for land uses where low ambient vibration is essential for interior operations (e.g., hospitals, high-tech manufacturing, and laboratory facilities);
- 80 VdB for residential uses and buildings where people normally sleep; and
- 83 VdB for institutional land uses with primarily daytime operations (e.g., schools, churches, clinics, and offices) (FTA 2006).

STATE

California requires each local government to implement a noise element as part of its general plan. Title 24 of the CCR has guidelines for evaluating the compatibility of various land uses as a function of community noise exposure.

Title 24 of the California Code of Regulations

California's noise insulation standards became effective in 1974. In 1988, the Building Standards Commission approved revisions to these standards (Title 24, Part 2, CCR). The ruling established that interior noise levels attributable to exterior sources shall not exceed 45 dB in any habitable room. The noise metric is measured in either CNEL or L_{dn}, consistent with the noise element of the local general plan. The commission also specifies that residential buildings or structures proposed to be located within exterior L_{dn} contours of 60 dB or greater, generated by an existing or planned freeway, expressway, parkway, major street, thoroughfare, rail line, rapid transit line, or industrial noise source, shall require an acoustical analysis showing that the building has been designed to limit intruding noise to an interior L_{dn} of 45 dB.

California Governor's Office of Planning and Research

The California Governor's Office of Planning and Research publishes the *State of California General Plan Guidelines* (OPR 2017), which provide recommended standards for the acceptability of various types of land uses within specific CNEL contours. The noise standards are intended to provide guidelines for the development of noise elements. These basic guidelines may be tailored to reflect the existing noise and land use characteristics of a particular community. The noise compatibility guidelines in Table 6-8 show the exterior noise standards recommended by the State for new development projects according to land use.

Table 6-8 State Land Use Compatibility Standards for Community Noise Environment

Land Use Category	Community Noise Exposure - L_{dn} or CNEL (db)							
	50	55	60	65	70	75	80	
Residential – Low-Density Single Family, Duplex, Mobile Homes								
Residential - Multi-Family								
Transient Lodging – Motels, Hotels								
Schools, Libraries, Churches, Hospitals, Nursing Homes								
Auditoriums, Concert Halls, Amphitheaters								
Sports Arenas, Outdoor Spectator Sports								
Playgrounds, Neighborhood Parks								
Golf Courses, Riding Stables, Water Recreation, Cemeteries								
Office Buildings, Business Commercial and Professional								
Industrial, Manufacturing, Utilities, Agriculture								

	Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
	Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.
	Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
	Clearly Unacceptable: New construction or development generally should not be undertaken.

Source: Derived from Figure 2 of the Office of Planning and Research General Plan Guidelines (OPR 2017).

California Department of Transportation

In 2004, the California Department of Transportation (Caltrans) published the *Transportation- and Construction-Guidance Manual* (Caltrans 2013), which provides general guidance on vibration issues associated with construction and operation of projects in relation to human perception and structural damage.

Table 6-9 presents recommended levels of vibration that could result in damage to structures exposed to continuous vibration.

Table 6-9 Caltrans-Recommended Vibration Levels

PPV (in/sec)	Effect on Buildings
0.4–0.6	Architectural damage and possible minor structural damage
0.2	Risk of architectural damage to normal dwellings
0.1	Virtually no risk of architectural damage to normal buildings
0.08	Recommended upper limit of vibration to which ruins and ancient monuments should be subjected
0.006–0.019	Vibration unlikely to cause damage of any type

Notes: PPV=peak particle velocity; in/sec=inches per second.

Source: Caltrans 2004.

Traffic Noise Analysis Protocol

In May 2011, Caltrans adopted the *Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects* (Protocol) pursuant to 23 CFR 772. The Protocol applies to any highway projects or multimodal project that (1) requires Federal Highway Administration (FHWA) approval regardless of funding sources or (2) is funded with Federal-aid highway funds. Application of the Protocol and the procedures it provides ensures compliance with FHWA noise standards (Caltrans 2011a).

LOCAL

Town of Truckee General Plan

The Noise Element of the *Town of Truckee 2025 General Plan* contains the following goals and policies that apply to noise in the town (Town of Truckee 2006).

- GOAL N-1: Minimize community exposure to excessive noise by ensuring compatible land uses relative to noise sources.
  - P1.1: Allow new development only if consistent with the ground transportation noise compatibility guidelines illustrated in [the policies of this Element]. Noise measurements used in establishing compatibility shall be measured in dBA CNEL and based on worst-case noise levels, either existing or future, with future noise levels to be predicted based on projected 2025 levels.
  - P1.2: Require new development to mitigate exterior noise to "normally acceptable" levels in outdoor areas where quiet is a benefit, such as in the backyards of single-family homes.
  - P1.3: Enforce the California Noise Insulation Standards for interior noise levels attributable to exterior sources for all proposed new single- and multi-family residences.
  - P1.4: Support retrofitting of homes exposed to existing unacceptable interior noise levels, and those that become exposed to unacceptable interior noise in the future, with sound insulating features.
  - P1.5: Allow land uses within Normally Unacceptable categories only where the allowed use can be shown to serve the greater public interests of the citizens of Truckee.

- **P1.6:** When considering development proposals in the environs of the Truckee Tahoe Airport, enforce the noise compatibility criteria and policies set forth in the adopted Truckee Tahoe Airport Land Use Compatibility Plan.
- **P1.7:** Reduce potential impacts from groundborne vibration associated with rail operations by requiring that vibration-sensitive buildings (e.g., residences) are sited at least 100-feet from the centerline of the railroad tracks whenever feasible and that development of vibration-sensitive buildings within 100-feet from the centerline of the railroad tracks require a study demonstrating that groundborne vibration issues associated with rail operations have been adequately addressed (i.e., through building siting or construction techniques).

- **GOAL N-2:** Address noise issues through the planning and permitting process.
  - **P2.1:** Require mitigation of all significant noise impacts as a condition of project approval.
  - **P2.2:** Require preparation of a noise analysis/acoustical study, which is to include recommendations for mitigation, for all proposed projects which may result in potentially significant noise impacts to nearby noise sensitive land uses such as residences.
  - **P2.3:** Require preparation of a noise analysis/acoustical study, which is to include recommendations for mitigation, for all proposed development within noise-impacted areas that may be exposed to levels greater than "normally acceptable."
  - **P2.4:** Discourage the construction of sound walls and require development projects to evaluate site design techniques, building setbacks, earthen berms, alternative architectural layouts and other means to meet noise reduction requirements.
  - **P2.5:** Require the application of the provisions in the California Building Code Appendix Chapter II, Sections 1208A.8: Exterior Sound Transmission Control, to apply to all new single-family residences.
- **GOAL N-3:** Reduce noise levels from sources such as domestic uses, construction and car stereos, and from mobile sources, including motor vehicle traffic and aircraft operations.
  - **P3.1:** Enforce provisions of the Municipal Noise Ordinance, which limits maximum permitted noise levels that cross property lines and impact adjacent land uses.
  - **P3.2:** Regulate noise from non-emergency construction activities through the Municipal Noise Ordinance.
  - **P3.3:** Control the sound of vehicle amplification systems (e.g., loud stereos) by enforcing Section 27007 of the California Motor Vehicle Code. This section prohibits amplified sound which can be heard 50 or more feet from a vehicle.
  - **P3.4:** Control excessive vehicle exhaust noise by enforcing Section 27150 of the California Vehicle Code. [This section requires that every motor vehicle subject to registration shall be equipped with an adequate muffler at all times.]
  - **P3.5:** Investigate other methods for reducing noise associated with vehicles and diesel equipment, and support efforts to reduce vehicle and equipment noise – e.g. through fleet and equipment modernization or retrofits, use of alternative fuel vehicles, and installation of mufflers or other noise reducing equipment.
  - **P3.6:** Encourage transportation providers to investigate and consider use of alternative road surfacing materials that minimize vehicle noise.
  - **P3.7:** Enforce posted speed limits on Town roads.
  - **P3.8:** Support federal and State legislation to attain lower operating noise levels on motor vehicles.
  - **P3.9:** Support the efforts of the Truckee Tahoe Airport District to educate pilots about appropriate flight paths to minimize flyovers of residential neighborhoods, and other District efforts to monitor, minimize, reduce and mitigate airport noise.

- **P3.10:** Cooperate with the Airport District to coordinate long-range planning and land use regulations that minimize community noise exposure associated with airport operations, while meeting Town goals concerning provision of housing and other uses.
- **P3.11:** Encourage the Union Pacific Railroad to reduce noise from its rail operations, particularly use of warning whistles, and support efforts to eliminate the need for these audible warnings, including upgrades to at-grade crossings.
- **P3.12:** Encourage CalTrans to incorporate noise reducing features during highway improvement projects when feasible and where consistent with Town policies.
- **P3.13:** Require the following standard construction noise control measures to be included as requirements at construction sites in order to minimize construction noise impacts.
    - Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
    - Locate stationary noise generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction project area.
    - Utilize "quiet" air compressors and other stationary noisegenerating equipment where appropriate technology exists.
    - The project sponsor shall designate a "disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented. The project sponsor shall also post a telephone number for excessive noise complaints in conspicuous locations in the vicinity of the project site. Additionally, the project sponsor shall send a notice to neighbors in the project vicinity with information on the construction schedule and the telephone number for noise complaints.

Town of Truckee Municipal Code

Section 18.44.030 of the Municipal Code (Exterior Noise Standards) states that it is unlawful "for any person, at any location within the Town, to create any noise or to allow the creation of any noise on property leased, occupied, owned, or otherwise controlled by the person which does not comply with the provisions of the Section, unless the provision of either Section 18.44.050 (Residential Interior Noise Standards) or 18.44.070 (Exceptions), below have been met." Exterior noise level criteria in Section 18.44.040 are show below in Table 6-10.

Table 6-10 Truckee Municipal Code Noise Standards by Receiving Land Use

Noise Level Standards (dB)		
Cumulative Number of Minutes in Any Hour	Day (7:00 a.m. to 10:00 p.m.)	Night (10:00 p.m. to 7:00 a.m.)
Hospital, Library, Religious Institution, Residential, or School Uses		
30	55	50
15	60	55
5	65	60
1	70	65
0	75	70
Commercial Uses		
30	65	60
15	70	65
5	75	70

Table 6-10 Truckee Municipal Code Noise Standards by Receiving Land Use

Noise Level Standards (dB)		
Cumulative Number of Minutes in Any Hour	Day (7:00 a.m. to 10:00 p.m.)	Night (10:00 p.m. to 7:00 a.m.)
1	80	75
0	85	80

Note: dB = decibels.

Source: Town of Truckee 2018.

Truckee Tahoe Airport Land Use Compatibility Plan

The State Aeronautics Act (Public Utilities Code, Section 21670 et seq.) requires the preparation of an airport land use compatibility plan (ALUCP) for nearly all public-use airports in the state. The intent of an ALUCP is to encourage compatibility between an airport and the various land uses surround it (Caltrans 2011b).

California State law requires the county board of supervisors to establish an airport land use commission (ALUC) in each county with an airport operated for the benefit of the general public. The Public Utilities Code also sets forth a range of responsibilities, duties, and powers of the ALUC. These include reviewing general plans, proposed changes to zoning code and ordinances, land use actions and development projects, and airport development plans for consistency with compatibility policies. California State law also dictates that the county and affected cities modify their general and specific plans to be consistent with the ALUC's plan or to take steps to overrule the ALUC. State law allows the county board of supervisors to authorize and appropriately designated body to fulfill ALUC responsibilities. Because the Truckee Tahoe Airport exists on the border of Nevada and Placer Counties, a special ALUC with representatives from both counties was formed. The Placer and Nevada Counties' Boards of Supervisors, City Selection Committees, and Airport Managers elect six members, one at a time, followed by a seventh member who is chosen by the aforementioned six members. This seven-member group comprises the TTALUC (TTALUC 2016).

The *Truckee Tahoe Airport Land Use Compatibility Plan*, which was adopted in 2016, sets forth a series of policies to avoid the establishment of noise-sensitive land uses within the vicinity of the airport that could be exposed to significant levels of aircraft noise. The maximum CNEL considered normally acceptable for new residential land uses near the Truckee Tahoe Airport is 60 dB, calculated for future busy-season aircraft activity levels. The airport noise contours are shown in Figure 6-6. See also additional discussion of aviation hazards under Section 7.4 of this chapter.

6.7 Key Terms

A-Weighted Sound Level. An A-weighted sound level is the frequency-response adjustment of a sound level meter that conditions the output signal to approximate human hearing response.

Airport Land Use Compatibility Plan. The California State Aeronautics Act (Public Utilities Code, Section 21670 et seq.) requires the preparation of an airport land use compatibility plan (ALUCP) for nearly all public-use airports in the state. The intent of an ALUCP is to encourage compatibility between airports and the various land uses that surround them.

Biohazard. An infectious agent or hazardous biological material that presents a risk or potential risk to the health of humans, animals, or the environment. The risk can be direct through infection or indirect through damage to the environment.

Carcinogen. Any substance that can cause cancer.

Community Noise Equivalent Level. A community noise equivalent level is similar to the day-night noise level with an additional 5-decibel penalty applied during the noise-sensitive hours of 7 p.m. to 10 p.m., which are typically reserved for relaxation, conversation, reading, and watching television.

Corrosiveness. The ability to eat away materials and destroy human and animal tissue by chemical action (e.g., oven cleaner).

Day-Night Noise Level. A day-night noise level is the 24-hour equivalent noise level with a 10-decibel penalty applied during the noise-sensitive hours of 10 p.m. to 7 a.m., which are typically reserved for sleeping.

Decibel. A decibel is a sound level expressed in decibels that is the logarithmic ratio of two like pressure quantities, with one pressure quantity being a reference sound pressure.

Defensible Space. Defensible space is the managed space around a structure that is designed and maintained to reduce the risk of damage to the structure from wildfires.

Equivalent Noise Level. An equivalent noise level is the equivalent steady-state noise level in a stated time period that would contain the same acoustic energy as the time-varying noise level during the same period (i.e., average noise level).

Exposure Pathway. The route through which a chemical can enter the body (e.g., through the skin, inhaling, ingesting).

Fuel: Fuel is the material that feeds a fire and is a key factor in wildfire behavior. Fuel sources are diverse and include everything from dead tree leaves, twigs, and branches to dead standing trees, live trees, brush, and cured grasses.

Groundwater. Water that exists beneath the land surface in openings (space) between soil and rock. It does not include water residue from underground mining.

Hazardous Material. Any item or agent (biological, chemical, physical) that has the potential to cause harm to humans, animals, or the environment, either by itself or through interaction with other factors.

Holocene. The geological epoch that began after the Pleistocene at approximately 9,700 BCE (before common era) and continues to the present time.

Ignitability. The ability to catch fire; flammable (e.g., lighter fluid, paint remover).

Inundation. To become covered with water, especially floodwaters.

Leach. The process by which soluble substances are dissolved and transported through the soil, which may result in hazardous substances entering surface water, groundwater, or nearby soil.

Levee. Levees are typically earthen embankments designed to contain, control, or divert the flow of water to provide some level of protection from flooding. Some levee systems are built for agricultural purposes and provide flood protection and flood loss reduction for farm fields and other land used for agricultural purposes. Urban levee systems are built to provide flood protection and flood loss reduction for population centers and the industrial, commercial, and residential facilities within them. Agricultural levee systems provide a level of protection that is appropriate based on the value of the assets being protected.

Liquefaction. The process by which water-saturated, unconsolidated sediments are transformed into a substance that acts like a liquid, often in an earthquake.

Maximum Noise Level. The maximum noise level is the highest instantaneous noise level during a specified time period.

Minimum Noise Level. The minimum noise level is the lowest instantaneous noise level during a specified time period.

National Flood Insurance Program. The National Flood Insurance Program aims to reduce the impact of flooding on private and public structures. It does so by providing affordable insurance to property owners and by encouraging communities to adopt and enforce floodplain management regulations. These efforts help mitigate the effects of flooding on new and improved structures. Overall, the program reduces the socioeconomic impact of disasters by promoting the purchase and retention of general risk insurance, but also of flood insurance, specifically.

Noise Exposure Contours. Noise exposure contours are noise exposure levels as a function of distance from the noise source.

Noise-Sensitive Land Use. A noise-sensitive land use is a specific land use for which, because of the sensitivity of persons who could occupy a site, noise exposure could result in health-related risks to individuals, or a specific land use typically considered a place where quiet is an essential element of the intended purpose. Examples can include (but are not limited to) residences, cemeteries, churches, and hospitals.

Peak Particle Velocity. Peak particle velocity (PPV) is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is typically used in the monitoring of transient and impact vibration and has been found to correlate well to the stresses experienced by buildings.

Pleistocene. The geological epoch that lasted from about 2,588,000 to 11,700 years ago, spanning the earth's recent period of recent glaciations.

Polychlorinated Biphenyls. Chemicals formerly manufactured for use as coolants and lubricants in transformers, and in other electrical equipment (e.g., fluorescent light ballasts, old televisions). In 1978, production of polychlorinated biphenyls was banned in the United States because accumulation in the environment can cause harmful health effects, including cancer.

Quaternary. The current and most recent of the three periods of the Cenozoic Era. It follows the Neogene Period and spans from 2.588 (±0.005) million years ago to the present time. The Quaternary period is divided into two epochs: the Pleistocene and the Holocene.

Reactivity. The ability to create an explosion or produce deadly vapors (e.g., bleach mixed with an ammonia-based cleaner).

Release/Occurrence. Any means by which a substance could harm the environment (e.g., spilling, leaking, dumping).

Remediate. To remove pollution or contaminants from the soil, groundwater, sediment, or surface water to protect human health and the environment.

Root-Mean-Square. Root-mean-square (RMS) is the average of the squared amplitude of a vibration signal, typically calculated over a 1-second period. As with airborne sound, the RMS velocity is often expressed in decibel notation as vibration decibels (VdB), which serves to compress the range of numbers required to describe vibration. Because the human body responds to average vibration amplitude, RMS velocity values as measured in VdB are used to estimate vibration effects on humans.

Solvent. A substance that dissolves another substance (or substances) to form a solution. Solvents are usually liquids. Liquid solutions that do not have water as a solvent are called nonaqueous solutions. For example, solvents can be used to dissolve greases, oils, and paints or thin or mix pigments, paints, glues, pesticides, and epoxy resins.

Toxic. Toxic materials have the ability to produce injury, illness, or damage to people, domestic animals, or wildlife through ingestion, inhalation, or absorption through the body (e.g., cleaning fluids, pesticides, bleach, drain cleaner).

Vibration Decibels. Average vibration amplitude is a more appropriate measure for human response because it takes time for the human body to respond. Average particle velocity over time is zero, so the root-mean-square amplitude velocity level, measured in vibration decibels, is used to quantify annoyance.

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TRUCKEE 2040
general plan + downtown specific plan



CHAPTER 7 Climate Change and Resiliency

This chapter summarizes climate change issues for the Town. It is organized into the following sections:

7.1 Greenhouse Gas Emissions 7-3
7.2 Climate Change Vulnerability and Adaptation 7-12
7.3 Key Terms 7-24
7.4 References 7-25

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7.1 Greenhouse Gas Emissions

This section provides a discussion of climate change science and greenhouse gas (GHG) emissions sources in California and the town. This section also provides a summary of applicable regulations with respect to local, regional, and statewide GHG emission sources. GHG emissions have the potential to adversely affect the environment because, on a cumulative basis, they contribute to global climate change. In turn, global climate change will result in increases in average global temperatures with the potential to affect changes in water supply, habitat, and biological and other resources. Because GHG emissions come from many different sources in both current and expected future activities, identification and reduction of GHG emissions is an important consideration in long-range planning efforts. A discussion of the impacts caused by global climate change in the town is included in Section 7.2 (Climate Change Vulnerability and Adaptation).

7.1.1 Major Findings

- In 2008, community-wide activities in the town generated an estimated 230,349 metric tons of carbon dioxide equivalent ($MTCO_2e$) with the largest sources of emissions in the residential energy usage and community transportation sectors. Between 2008 and 2016, community-wide emissions decreased by 33 percent. This decrease in emissions is largely attributable to the increased use of renewable energy sources in the energy portfolio of the town's primary electrical utility, Truckee Donner Public Utility District (TDPUD). In 2017, 79 percent of electricity provided by TDPUD came from renewable sources (CEC 2018a).
- In 2008, the Town's municipal operations generated 2,519 $MTCO_2e$. In 2016, these emissions decreased by 12 percent to 2,208 $MTCO_2e$. In both 2008 and 2016 the largest source in the Town's municipal operations emissions was the municipal vehicle fleet, followed by energy use in Town buildings and facilities.
- In 2017, the Town passed Resolution 2017-58 establishing the goal of reducing community-wide emissions 80 percent below baseline emissions (2008) by 2040, achieving 100 percent renewable electricity town-wide by 2030, achieving 100 percent renewable energy town-wide by 2050, achieving use of 100 percent renewable electricity in municipal facilities by 2020, and engaging in a transparent and robust community engagement process to help achieve the goals set forth in the resolution.

7.1.2 Existing Conditions

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface and a smaller portion of this radiation is reflected toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. The earth has a much lower temperature than the sun; therefore, the earth emits lower frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth.

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Human-caused emissions of these GHGs in excess of natural ambient concentrations are found to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic forcing (Intergovernmental Panel on Climate Change [IPCC] 2014).

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas most pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the lifetime of any GHG molecule is dependent on multiple variables and cannot be determined with any certainty, it is understood that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. Of the total annual human-caused CO_2 emissions, approximately 55 percent is estimated to be sequestered through ocean and land uptake every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO_2 emissions remains stored in the atmosphere (IPCC 2013:467).

STATEWIDE GHG EMISSIONS

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with on-road and off-road transportation, industrial/manufacturing, electricity generation by utilities and consumption by end users, residential and commercial on-site fuel usage, agriculture, high global warming potential (GWP) gases, and recycling and waste sectors (California Air Resources Board [CARB] 2017). The most recent California statewide GHG emissions inventory is summarized in Table 7-1. In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation (CARB 2017). Emissions of CO_2 are largely byproducts of fossil fuel combustion. CH_4, a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices, leaks from petroleum operations, and landfills. N_2O is also largely attributable to agricultural practices and soil management. Additionally, high-GWP gases have atmospheric insulative properties that are hundreds to tens of thousands of times greater than that of CO_2, meaning that high-GWP gases can trap far more heat in the atmosphere than the same amount of CO_2. HFCs, PFCs, and SF_6, are some of the most common types of high-GWP gases and result from a variety of industrial processes. HFCs and PFCs are used as refrigerants and can be emitted through evaporation and leakage. SF6 is a powerful electrical insulator used in power transmission and semiconductor manufacturing and is emitted through evaporation and leakage into the atmosphere (CARB 2017). Based on the latest statewide GHG inventory, statewide emissions in 2016 were 429 million metric tons of carbon dioxide equivalent ($MMTCO_2e$). As noted in the 2000-2016 GHG Emissions Trends Report, in 2016 California met the statewide 2020 GHG reduction target of 431 $MMTCO_2e$ four years ahead of the target year (CARB 2018a).

Table 7-1 California Statewide Greenhouse Gas Emissions Inventory

Emissions Sector	$MMTCO_2e$				Percent of Total (2016) (%)	Percent of Total (1990-2016) (%)
	1990[1]	2000	2010	2016		
Transportation	151	181	165	169	39%	12%
Electricity Generation[2]	111	105	90	67	16%	-38%
Industrial	103	97	92	90	21%	-13%
Commercial and Residential Fuel Use	44	43	45	39	9%	-11%
Agriculture	23	32	34	34	8%	48%
High GWP	-[3]	6	14	20	5%	n/a
Recycling and Waste	-[3]	7	8	9	2%	n/a
Total[4]	**431**	**471**	**448**	**429**	**100**	**n/a**

Note: MMTCO2e = Million Metric Tons of Carbon Dioxide Equivalent

1. California's first 1990 GHG emissions inventory was prepared in 2007 by CARB using GWP values from the IPCC Second Assessment Report. All other inventory years shown use GWP values from the IPCC Fourth Assessment Report.
2. Includes both in-state electricity generation and out-of-state imported electricity.
3. High GWP and Recycling and Waste sectors were included in the Industrial sector for the 1990 inventory only.
4. Totals may not sum exactly due to rounding.

Source: CARB 2007, CARB 2018b; data compiled by Ascent Environmental 2018.

Town of Truckee Greenhouse Gas Inventory

In 2016, the Town prepared baseline GHG emissions inventories for the year 2008 for both community activities and the Town of Truckee's municipal operations (Town of Truckee 2018). In 2017 and 2018, the Town prepared a GHG emissions inventory update for the year 2016 for both community activities and Truckee's municipal operations. The discussion below provides information on recent GHG emissions trends for the year 2016 as well as how emissions trends have changed between 2008 and 2016.

Table 7-2 Town of Truckee 2008 and 2016 GHG Inventories (Community-Wide and Municipal Operations)

Emissions Sector	2008 GHG Emissions ($MTCO_2e$)	Percent of Total (2008)	2016 GHG Emissions ($MTCO_2e$)	Percent of Total (2016)	Percent Change (2008 -2016)
Community-Wide Emissions					
Residential Energy Use	100,003	43%	64,679	42%	-35%
Non-Residential Energy Use	51,871	23%	25,216	16%	-51%
Community Transportation	64,044	28%	56,428	37%	-12%
Community-Generated Solid Waste	4,256	2%	3,804	2%	-11%
Wastewater Treatment and Potable Water Service	10,175	4%	3,140	2%	-69%
TOTAL COMMUNITY-WIDE[1]	230,349	100%	153,267	100%	-33%
Municipal Operations					
Buildings and Facilities	1,056	42%	796	36%	-25%
Vehicle Fleet	1,102	44%	960	43%	-13%
Government-Generated Solid Waste	7	0.3%	6	0%	-14%
Employee Commute	354	14%	447	20%	26%
TOTAL MUNICIPAL OPERATIONS[1]	2,519	100%	2,209	100%	-12%

Note: GHG = greenhouse gas; $MTCO_2e$ = metric tons of carbon dioxide equivalent

[1] Totals may not sum exactly due to rounding.

Source: Town of Truckee 2018

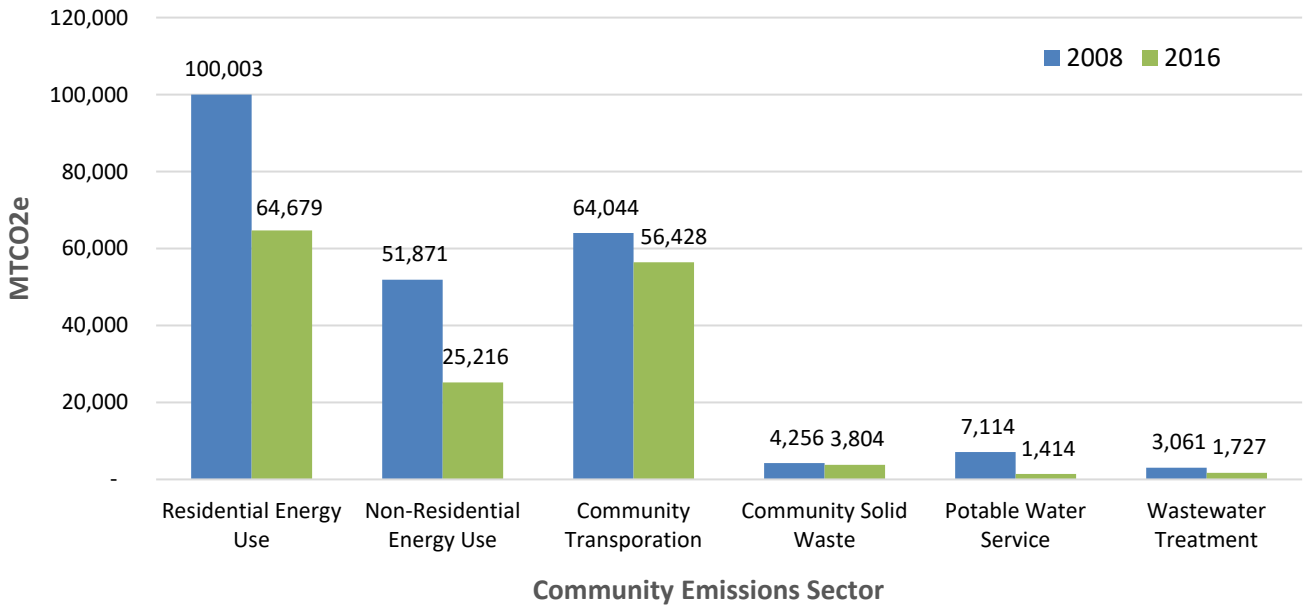
Community-Wide GHG Emissions

Community-wide emissions are attributed to a variety of activities conducted by residents and businesses in the town. These activities include residential and non-residential energy use (electricity and natural gas combustion), community transportation (activity from on-passenger, freights and transit vehicles), solid waste (waste generated by residents and businesses), and water use (emissions associated with the treatment and transport of potable water and wastewater). In 2008, activities from residents and businesses in the town generated an estimated 230,349 $MTCO_2e$. The largest contributor to community emissions in 2008 was residential energy use, followed by community transportation. In 2016, activities from residents and businesses in the town generated an estimated 153,628 $MTCO_2e$, a 33 percent decrease from 2008 emissions levels (Town of Truckee 2018).

From 2008 to 2016, Truckee's population decreased approximately 1 percent, from 15,975 to 15,779. In consideration of the small changes in the town's population over this period, the 33 percent decrease in community emissions levels between 2008 and 2016 can be largely attributed to an increase in the percent of renewable energy sources within the TDPUD energy portfolio, the primary energy utility which provides electricity to Truckee. In 2008, only 4.5 percent of electricity provided by TDPUD came from renewable sources. In 2017, 79 percent of electricity provided by TDPUD came from renewable sources (CEC 2018a). Although overall community electricity usage increased between 2008 and 2016, the increased procurement of renewable energy sources by TDPUD over this period resulted in a 35

percent reduction in emissions associated with residential energy use and a 51 percent decrease from non-residential energy use (Town of Truckee 2018). Community transportation emissions decreased by 12 percent between 2008 and 2016. This decrease was due to an increase in average fuel efficiency for most vehicle types, a 7 percent decrease in total vehicle miles traveled, and increase in electric vehicle miles traveled. Community solid waste emissions decreased 11 percent between 2008 and 2016 due to a 10 percent reduction in the total tonnage of community generated solid waste and a decrease in community generated organic waste over this period.

FIGURE 7-1 COMMUNITY-WIDE GHG EMISSIONS 2008 AND 2016



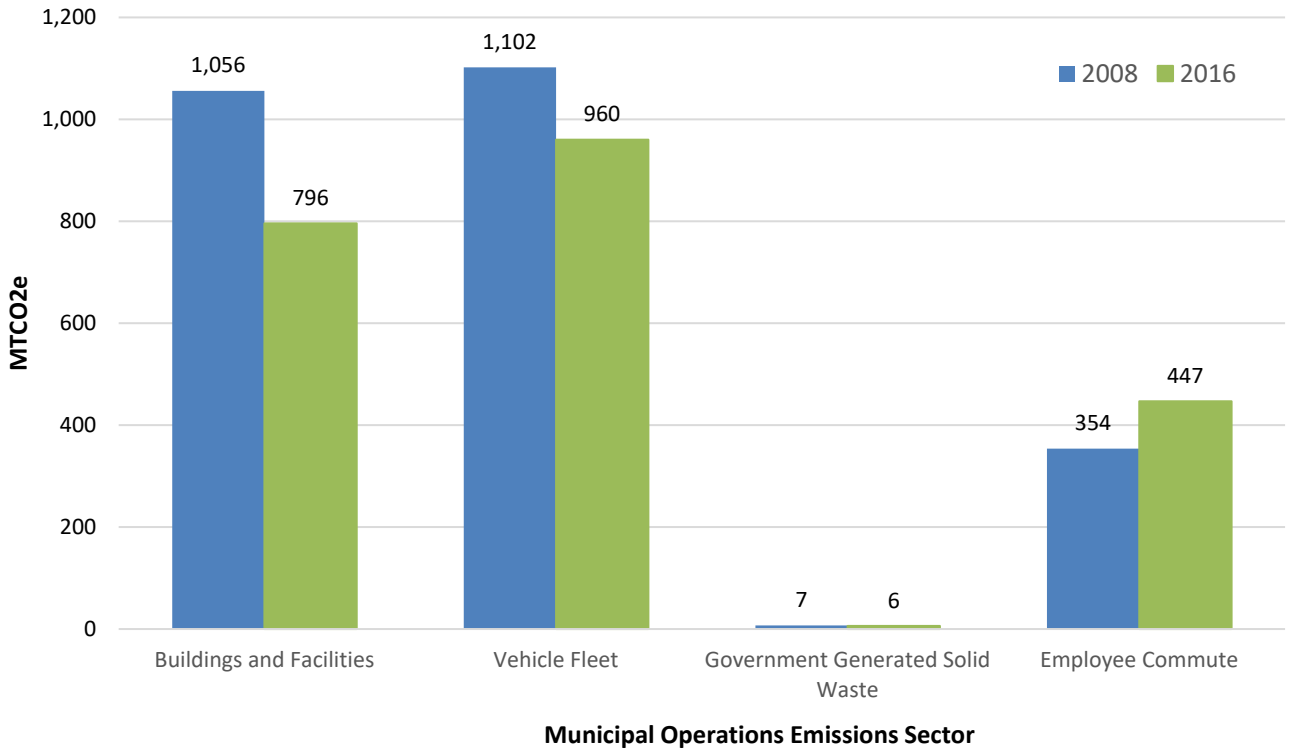
Source: Town of Truckee, 2018

Municipal Operations GHG Emissions

Municipal operations include a variety of activities conducted by the Town that result in the generation of GHG emissions. These include energy use (electricity and natural gas combustion) in municipal buildings and facilities, operation of the Town's municipal vehicle fleet, solid waste generated by municipal operations, and vehicle emissions from commute trips made by Town employees. In 2008, the Town's municipal operations generated 2,519 $MTCO_2e$. In 2016, these emissions decreased by 12 percent to 2,208 $MTCO_2e$. In both 2008 and 2011, the largest source of municipal operations emissions was associated with the use of the municipal vehicle fleet, followed by energy use in buildings and facilities.

The 12 percent decrease in municipal operation emissions between 2008 and 2016 is attributable to several changes over this period. Similar to the decrease in community-wide emissions, the largest decrease in municipal operations emissions is attributed to the increase in the percent of renewable energy sources within the TDPUD's energy portfolio, which provides electricity for the municipal buildings and facilities. As a result, emissions associated with electricity use in municipal buildings and facilities decreased by 55 percent between 2008 and 2016. Between 2008 and 2016, operation of the municipal vehicle fleet resulted in an emissions decrease of 13 percent, largely attributed to increases in the fuel efficiency of vehicles within the municipal vehicle fleet. However, between 2008 and 2016, municipal employee commute emissions increased by 26 percent largely because of a 34 percent increase in municipal employees.

FIGURE 7-2 TOWN OF TRUCKEE MUNICIPAL OPERATIONS GHG INVENTORY 2008 AND 2016



Source: Town of Truckee, 2018

Community-Wide GHG Emissions Forecast

The Town's 2016 GHG inventory included a community-wide emissions forecast which estimated the town's future annual emissions for the years 2020, 2030, 2040, and 2050. The forecast includes a business-as-usual (BAU) scenario and adjusted business-as-usual (ABAU) scenario for forecasted years. The BAU scenario estimates future annual emissions for the town based on key growth factors including projections of Nevada County's number of households, in-County employment in Nevada County, and in-County service population (combined resident and employee population) from Caltrans' Long-Term Socio-Economic Forecasts for Nevada County. As shown in Table 7-3, under the BAU forecast scenario, emissions would increase by nine percent to 250,973 $MTCO_2e$ by 2030 and 19 percent above 2008 baseline emissions by 2050 to 274,424 $MTCO_2e$.

The emissions forecast also included an ABAU scenario in which legislative GHG reductions are applied to the town's future emissions based on State legislation, which will continue to affect the town's annual emissions. The ABAU forecast scenario included the TDPUD's required increases in renewable electricity procurement rates of 20 percent by 2010, 33 percent by 2020 and 50 percent by 2030 mandated through the California Renewable Portfolio Standards. The ABAU forecast also included projected reductions in vehicle emissions rates through 2020 as a result of the California Advanced Clean Car Standards. Both the California Renewable Portfolio Standards and the California Advanced Clean Car Standards are discussed in detail in Section 7.1.3. As shown in Table 7-3, as a result of these legislative reductions, under the ABAU forecast scenario, emissions would decrease by 26 percent to 170,265 $MTCO_2e$ by 2030 and remain approximately 26 percent below 2008 baseline emissions by 2050.

Table 7-3 Town of Truckee GHG Emissions Forecast				
Year	BAU Forecast		ABAU Forecast	
	Metric Tons of CO_2e	% Change From 2008 Emissions	Metric Tons of CO_2e	% Change From 2008 Emissions
2008	230,349	--	230,349	--
2020	236,800	+3%	170,265	-26%
2030	250,973	+9%	159,845	-31%
2040	263,923	+15%	164,597	-29%
2050	274,424	+19%	170,490	-26%

Source: Town of Truckee 2018

The emissions forecast included in the Town's 2016 GHG Inventory provides valuable information regarding future emissions rates in the Town under both the BAU and ABAU scenarios. The ABAU Emissions Forecast for 2020 is projected to be 170,265 $MTCO_2e$ and 159,845 $MTCO_2e$ in 2030. As shown in Table 7-2, the communitywide emissions in 2016 were 153,267 $MTCO_2e$, approximately 10 percent lower than what was originally projected for 2020. This means the town emissions are below both the 2020 and 2030 emissions projections. As part of the General Plan Update process, a more refined community-wide emissions forecast scenario will be developed in future phases of the project that takes into account the town's 2016 emissions inventory as well as the land use policies and growth projections included in the General Plan Update, along with relevant State policies and goals summarized in the Regulatory Setting.

7.1.3 Regulatory Setting

FEDERAL

Supreme Court Ruling

The U.S. Environmental Protection Agency (EPA) is the Federal agency responsible for implementing the Federal Clean Air Act (CAA) and its amendments. The Supreme Court of the United States ruled on April 2, 2007, that carbon dioxide (CO_2) is an air pollutant as defined under the CAA, and that EPA has the authority to regulate emissions of GHGs. The ruling in this case resulted in EPA taking steps to regulate GHG emissions and lent support for state and local agencies' efforts to reduce GHG emissions.

Regulations for Greenhouse Gas Emissions from Passenger Cars and Trucks and Corporate Average Fuel Economy Standards

In October 2012, EPA and the National Highway Traffic Safety Administration (NHTSA), on behalf of the Department of Transportation, issued final rules to further reduce GHG emissions and improve corporate average fuel economy (CAFE) standards for light-duty vehicles for model years 2017 and beyond (77 FR 62624). NHTSA's CAFE standards have been enacted under the Energy Policy and Conservation Act since 1978. This national program requires automobile manufacturers to build a single light-duty national fleet that meets all requirements under both Federal programs and the standards of California and other states. This program would increase fuel economy to the equivalent of 54.5 miles per gallon (mpg) limiting vehicle emissions to 163 grams of CO_2 per mile for the fleet of cars and light-duty trucks by model year 2025 (77 FR 62630).

In January 2017, EPA signed a determination to maintain the current GHG emissions standards for model year 2022-2025 vehicles. However, on April 2, 2018, the new EPA Administrator and Department of Transportation announced a final determination that the current standards are not appropriate and should be revised. It is not yet known when these revisions are anticipated to occur (EPA 2018).

STATE

Executive Order S-3-05

In 2005, Executive Order (EO) S-3-05 was issued by Governor Schwarzenegger. It proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the EO established total GHG emission targets for the state. Specifically, statewide emissions are to be reduced to 2000 levels by 2010, 1990 levels by 2020, and to 80 percent below 1990 levels by 2050.

Assembly Bill 32, the California Global Warming Solutions Act of 2006

In September 2006, the California Global Warming Solutions Act of 2006, Assembly Bill (AB) 32, was signed into law. AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. AB 32 also requires that "(a) the statewide greenhouse gas emissions limit shall remain in effect unless otherwise amended or repealed. (b) It is the intent of the Legislature that the statewide greenhouse gas emissions limit continue in existence and be used to maintain and continue reductions in emissions of greenhouse gases beyond 2020. (c) The [California Air Resources Board (CARB)] shall make recommendations to the Governor and the Legislature on how to continue reductions of greenhouse gas emissions beyond 2020." [California Health and Safety Code, Division 25.5, Part 3, Section 38551]

Advanced Clean Cars Program

In January 2012, CARB approved the Advanced Clean Cars program which combines the control of GHG emissions and criteria air pollutants, as well as requirements for greater numbers of zero-emission vehicles, into a single package of regulatory standards for vehicle model years 2017 through 2025. The new regulations strengthen the GHG standard for 2017 models and beyond. This will be achieved through existing technologies, the use of stronger and lighter materials, and more efficient drivetrains and engines. The program's zero-emission vehicle regulation requires battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025. The program also includes a clean fuels outlet regulation designed to support the commercialization of zero-emission hydrogen fuel cell vehicles planned by vehicle manufacturers by 2015 by requiring increased numbers of hydrogen fueling stations throughout the state. The number of stations will grow as vehicle manufacturers sell more fuel cell vehicles. By 2025, when the rules will be fully implemented, the statewide fleet of new cars and light trucks will emit 34 percent fewer GHGs and 75 percent fewer smog-forming emissions than the statewide fleet in 2016 (CARB 2016).

Senate Bill X1-2, the California Renewable Energy Resources Act of 2011 and SB 100

SB X1-2 of 2011 established Renewable Energy Portfolio targets that require all California utilities generate 33 percent of their electricity from renewable sources by 2020. SB X1-2 set a three-stage compliance period requiring all California utilities, including independently-owned utilities, energy service providers, and community choice aggregators, to generate 20 percent of their electricity from renewables by December 31, 2013; 25 percent by December 31, 2016; and, 33 percent by December 31, 2020.

In 2018, SB 100 increased California's Renewable Energy Portfolio targets to 52 percent renewables by 2027 and 60 percent renewables by 2030. SB 100 also established a new 100 percent zero-carbon electricity mandate by 2040.

As of 2017, TDPUD procures 79 percent of their energy from renewable resources, thus achieving the 2020 and 2030 targets set in SB 100 ahead of schedule (CEC 2018a).

Executive Order B-30-15

On April 20, 2015, Governor Brown issued EO B-30-15 and established a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor's EO aligns California's GHG reduction targets with those of leading international governments such as the 28-nation European Union, which adopted the same target in October 2014. California is on track to meet or exceed the target of reducing GHG emissions to 1990 levels by 2020, as established

in the California Global Warming Solutions Act of 2006 (AB 32, discussed above). California's new emission reduction target of 40 percent below 1990 levels by 2030 sets the next interim step in the State's continuing efforts to pursue the long-term target expressed under Executive Order S-3-05 to reach the goal of reducing emissions 80 percent below 1990 levels by 2050. This is in line with the scientifically-established levels needed in the U.S. to limit global warming below 2 degrees Celsius, the warming threshold at which major climate disruptions are projected, such as super droughts and rising sea levels.

Senate Bill 32 and Assembly Bill 197 of 2016

In August 2016, SB 32 and AB 197 were signed into law and serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include Section 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the State's continued efforts to pursue the long-term target expressed in EOs S-3-05 and B-30-15 of 80 percent below 1990 emissions levels by 2050.

California Building Energy Efficiency Standards (Title 24, Part 6)

CCR, Title 24, Part 6, is California's Energy Efficiency Standards for Residential and Non-Residential Buildings. Title 24 Part 6 was established by CEC in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption and provide energy-efficiency standards for residential and nonresidential buildings. These standards are typically updated every three years as part of the State's triennial code update schedule and have resulted in substantial gains in energy efficiency in new construction with each code update cycle. For example, the 2013 Title 24 standards that became effective in 2014 are 23.3 percent more efficient than the previous 2008 standards for residential construction and 21.8 percent more efficient for nonresidential construction (CEC 2012). Similarly, the 2016 Title 24 standards that became effective in 2017 are 28 percent more efficient than the 2013 standards for residential construction and are approximately 5 percent more efficient for nonresidential construction (CEC 2015).

The 2019 Title 24 Part 6 Building Energy Efficiency Standards were adopted by CEC on May 9, 2018 and will take effect on January 1, 2020. The standards are designed to move the State closer to its zero net energy goals for new residential development. It does so by requiring all new residences to install enough renewable energy to offset all the site electricity needs of each residential unit (CCR, Title 24, Part 6, Section 150.1(c)14). CEC estimates that the combination of mandatory on-site renewable energy and prescriptively-required energy efficiency features will result in new residential construction that uses 53 percent less energy than the 2016 standards. Nonresidential buildings are anticipated to reduce energy consumption by 30 percent compared to the 2016 standards primarily through prescriptive requirements for high-efficiency lighting (CEC 2018b).

The Title 24 Building Energy Efficiency Standards are enforced through the local plan check and building permit process. Local government agencies may adopt and enforce additional energy standards for new buildings as reasonably necessary in response to local climatologic, geologic, or topographic conditions, provided that these standards are demonstrated to be cost effective and exceed the energy performance required by Title 24 Part 6.

California Integrated Waste Management Act

To minimize the amount of solid waste that must be disposed of in landfills, the State Legislature passed the California Integrated Waste Management Act of 1989 (AB 939), effective January 1990. According to AB 939, all cities and counties were required to divert 25 percent of all solid waste from landfill facilities by January 1, 1995, and 50 percent by January 1, 2000. Through other statutes and regulations, this 50 percent diversion rate also applies to State agencies. In order of priority, waste reduction efforts must promote source reduction, recycling and composting, and environmentally-safe transformation and land disposal.

In 2011, AB 341 modified the California Integrated Waste Management Act and directed CalRecycle to develop and adopt regulations for mandatory commercial recycling. The resulting Mandatory Commercial Recycling Regulation (2012) requires that on and after July 1, 2012, certain businesses that generate four cubic yards or more of commercial solid waste per week shall arrange recycling services. To comply with this requirement, businesses may either

separate recyclables and self-haul them or subscribe to a recycling service that includes mixed waste processing. AB 341 also established a statewide recycling goal of 75 percent; the 50 percent disposal reduction mandate still applies for cities and counties under AB 939, the Integrated Waste Management Act.

Senate Bill 1383

SB 1383 codifies the CARB's Short-Lived Climate Pollutant Reduction Strategy in an effort to reduce emissions of short-lived climate pollutants statewide. The bill directs CARB to begin implementing the plan by January 1, 2018 and begin a statewide reduction strategy to achieve a reduction in methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 statewide levels by 2030. SB 1383 also establishes targets to achieve a 50 percent reduction in the level of the statewide disposal of organic waste from the 2014 level by 2020 and a 75 percent reduction by 2025 and grants CalRecycle the regulatory authority required to achieve the reduction targets. The bill further requires CalRecycle, beginning in 2019, to offer ongoing support to local jurisdictions to help achieve these targets including providing technical tools, model ordinances, contracts, and case studies to local jurisdictions. The bill also establishes an additional target that not less than 20 percent of currently disposed edible food is recovered for human consumption by 2025.

Climate Change Scoping Plan

In December 2008, CARB adopted the initial *Climate Change Scoping Plan*, which contained the main strategies California is now implementing to achieve the mandate of AB 32 (2006) to reduce statewide GHG emissions to 1990 levels by 2020. CARB has since adopted several updates to the Scoping Plan, the latest version of which is titled *California's 2017 Climate Change Scoping Plan* (2017 Scoping Plan) (CARB 2017). The 2017 Scoping Plan lays out the framework for achieving the mandate of SB 32 of 2016 to reduce statewide GHG emissions to at least 40 percent below 1990 levels by the end of 2030 (CARB 2017). The 2017 Scoping Plan identifies the GHG reductions needed in each emissions sector.

Chapter 5 of the 2017 Scoping Plan includes guidance for local jurisdictions to reduce GHG emissions through local planning and permitting mechanisms. The guidance recommends that local governments evaluate and adopt robust and quantitative locally-appropriate GHG reduction goals that align with the statewide per capita targets of no more than six $MTCO_2e$ per capita by 2030 and no more than $MTCO_2e$ per capita by 2050. Recognizing that not all statewide emissions can be reduced at the local level, the guidance also states that it is appropriate for local jurisdictions to derive evidence-based local per capita goals based on local emissions sectors and population projections but must ensure that these targets are consistent with the methodology used to derive the statewide per capita targets. The guidance notes that local GHG reduction strategies to achieve the statewide targets can be implemented through standalone documents such Climate Action Plans (CAPs) or can be integrated into other planning documents with policies that include GHG emissions reduction targets. Once developed and adopted, these plans and policies which include locally-set GHG goals can serve as a performance metric for later projects. Additionally, plans which meet the requirements of Section 15183.5(b) of the California Environmental Quality Act (CEQA) Guidelines can provide local governments with a valuable tool for streamlining project-level environmental review.

Assembly Bill 1504 of 2010, Forest Resources: Carbon Sequestration

AB 1504 requires the Board of Forestry and Fire Protection to adopt district forest practice rules and regulations in accordance with specified policies to, among other things, assure the continuous growing and harvesting of commercial forest tree species (CARB 2017:4 to 5). AB 1504 also requires the Board of Forestry and Fire Protection to ensure that its rules and regulations that govern the harvesting of commercial forest tree species consider the capacity of forest resources to sequester CO_2 emissions sufficient to meet or exceed the sequestration target of 5 million MT CO_2e/year (net), as established in the first Climate Change Scoping Plan.

Executive Order B-48-18: Zero-Emission Vehicles

In January 2018, Executive Order B-48-18 was issued by Governor Brown and requires all State entities to work with the private sector to have at least 5 million zero-emission vehicles (ZEVs) on the road by 2030, as well as install 200 hydrogen fueling stations and 250,000 electric vehicle charging stations by 2025. It specifies that 10,000 of the electric vehicle charging stations should be direct current (DC) fast chargers. This order also requires all State entities to

continue to partner with local and regional governments to streamline the installation of ZEV infrastructure. The Governor's Office of Business and Economic Development is required to publish a *Plug-in Charging Station Design Guidebook* and update the *2015 Hydrogen Station Permitting Guidebook* (Eckerle and Jones 2015) to aid in these efforts. All State entities are required to participate in updating the *2016 Zero-Emissions Vehicle Action Plan* (Governor's Interagency Working Group on Zero-Emission Vehicles 2016) to help expand private investment in ZEV infrastructure with a focus on serving low-income and disadvantaged communities. Additionally, all State entities are to support and recommend policies and actions to expand ZEV infrastructure at residential land uses, through the Low Carbon Fuel Standard Program, and recommend how to ensure affordability and accessibility for all drivers.

CARB Innovative Clean Transit Regulation

In December 2018, CARB approved the Innovative Clean Transit (ICT) Regulation. Through the ICT Regulation, CARB is providing new zero-emission transit and mobility options across the state. The transformation of the transit fleet to zero emission is an important component of California reaching its air quality, climate change, and public health goals. Through the ICT Regulation, CARB will support the deployment of zero-emissions buses (ZEBs), secure commitments from local transit providers to transition to zero-emission technologies across all transit modes, and partner with transit agencies to pilot innovative approaches to improve access to transit systems with zero-emissions first- and last-mile solutions. The regulation requires that, starting January 1, 2026, 25 percent of the total number of new bus purchases in each calendar year must be zero-emission buses for all Small Transit Agencies. A Small Transit Agency, applicable to Tahoe Truckee Area Regional Transit, is defined as those agencies operating in the South Coast or the San Joaquin Valley Air Basin with less than 65 buses in annual maximum service; or, operating outside of these Air Basins with less than 100 buses in annual maximum service in an urbanized area with a population of at least 200,000.

LOCAL

Town of Truckee

In 2017, the Town passed Resolution 2017-58, which establishes a series of sustainability goals for the Town. These goals include achieving 100 percent renewable electricity for municipal facilities by 2020 and engaging with the town's special districts to shift towards using 100 percent renewable electricity by 2030, as well as engaging stakeholders and utility providers to achieve 100 percent renewable energy by 2050. The resolution also included the goal of reducing community-wide emissions to 80 percent below baseline emissions (2008) by 2040 and to focus on equitable community engagement when developing policy in achieving these goals.

The Town provides Property Assessed Clean Energy (PACE) financing services from five PACE program providers, which offer local residents and businesses an alternative means to finance energy, water, and seismic improvements to existing property by paying for energy efficient improvements via the property owner's tax bill over a period of time.

7.2 Climate Change Vulnerability and Adaptation

This section presents a summary of the current state of climate change science; the predicted effects of climate change and associated impacts in California, the Sierra Nevada region, and the town; and a summary of applicable Federal, State, and local regulations, policies, programs, and plans that address the effects of climate change.

Greenhouse gas (GHG) emissions associated with human activities are the primary cause of global climate change, and while the topic of GHG emissions is related to global warming and associated climate change effects, GHG emissions are addressed in detail in Section 7.1 of the chapter.

7.2.1 Major Findings

- The annual average maximum temperatures in the town will increase between 4.5 degrees Fahrenheit (°F) and 5.8 °F by mid-century and 6.4 °F and 9.5 °F by the end of the century, depending on future GHG emissions rates (Cal-Adapt 2018a).
- The annual mean snowpack (measured in snow water equivalent) in the town will decrease between 53 percent and 80 percent over the historic average by the end of the century depending on future GHG emissions rates (Cal-Adapt 2018b).
- The town will be at increased risk from wildfire and its associated impacts. The annual mean hectares burned during a wildfire event would increase between 32 percent and 99 percent from the historic averages by the end of the century, depending on future emissions rates.
- The total annual precipitation in the town will increase between 37.1" and 42.3" by the end of the century, a 10 to 25 percent increase, depending on future emissions rates (Cal-Adapt 2018a).
- Increased average temperatures and changes in precipitation patterns because of climate change will result in increased risk of flooding events in the town. Increases in winter rainfall, "cool" season snowmelt episodes, and rain-on-snow events will result in increases in winter flooding events (McCabe et al. 2007; Das et al. 2013). Additionally, because of the effects of warming, the largest storms in the Sierra Nevada region are projected to become even larger. The increased frequency and severity of flooding events in the town will place stresses on the town transportation system and storm water management systems.
- The impacts of climate change in and surrounding the town, including decreases in snowpack as well as increased risk of wildfire and flooding, will have a significant impact on the town's tourism industry, which is a major economic sector for the community.

7.2.2 Existing Conditions

EFFECTS OF CLIMATE CHANGE ON THE ENVIRONMENT

The global average temperature is expected to increase by 3 to 7 °F by the end of the century, depending on future GHG emission scenarios (IPCC 2007). According to California's Fourth Climate Change Assessment, depending on future GHG emissions scenarios, average annual maximum daily temperatures in California are projected to increase between 4.4 and 5.8 °F by 2050 and by 5.6 to 8.8 °F by 2100 (OPR, CEC, and CNRA 2018a).

Other environmental resources could be indirectly affected by the accumulation of GHG emissions and resulting rise in global average temperature. In recent years, California has been marked by extreme weather and its effects. Climate model projections for California demonstrate that impacts will vary throughout the state and show a tendency for the northern part of the state to become wetter while the southern portion of California will become drier (Pierce et al., 2018). According to California Natural Resources Agency's (CNRA) report, *Safeguarding California Plan: 2018 Update* (CNRA 2018), California experienced the driest four-year statewide precipitation on record from 2012 through 2015; the warmest years on average in 2014, 2015, and 2016; and the smallest and second smallest Sierra snowpack on record in 2015 and 2014 (CNRA 2018). Climate model projections included in California's Fourth Climate Change Assessment, demonstrate that seasonal summer dryness in California may be prolonged due to earlier spring soil drying and would last longer into the fall and winter rainy season. Increases in temperature are also predicted to result in changes to California's snowpack. Base on climate model projections, the mean snow water equivalent (SWE), a common measurement which indicates the amount of water contained within snowpack, in California is anticipated to decline to two-thirds of its historic average by 2050 and between less than half and less than one-third of historic average by 2100, depending on future emissions scenarios (OPR, CEC, and CNRA 2018a).

Climate model projections demonstrate that California will experience variation in precipitation patterns as well. The Northern Sierra Nevada range experienced its wettest year on record in 2016 (CNRA 2018). As temperatures increase, the increase in precipitation falling as rain rather than snow also could lead to increased potential for floods because water that would normally be held in the snowpack of the Sierra Nevada and Cascade mountains until spring will flow into the Central Valley concurrently with winter rainstorm events. This scenario will place more pressure on California's levee/flood control system (CNRA 2018). As the climate continues to warm, extreme precipitation events in California will increase and could, subsequently, increase the probability of 'mega-flood" events (Polade et al., 2017).

Climate change is also projected to result in tertiary impacts on energy infrastructure throughout the California. Changes in temperature, precipitation patterns, extreme weather events, and sea-level rise have the potential to affect and decrease the efficiency of thermal power plants and substations, decrease the capacity of transmission lines, disrupt electrical demand, and threaten energy infrastructure with the increased risk of flooding (CNRA 2018).

According to California's Fourth Climate Change Assessment, climate change will create impacts on the State's transportation network that will have 'ripple effects' including direct and indirect impacts on inter-dependent infrastructure networks as well as negative impacts on the economy. Without appropriate adaptations strategies for roadway materials (i.e., asphalt and pavement), researchers estimate that the median total cost to California for 2040-2070 will be between $1 billion and $1.25 billion (OPR, CEC, and CNRA 2018a). The California Department of Transportation (Caltrans) owns and operates more than 51,000 miles along 265 highways, as well as three of the busiest passenger rail lines in the nation. Sea level rise, storm surge, and coastal erosion are imminent threats to highways, roads, bridge supports, airports, transit systems and rail lines near sea level and seaports. Shifting precipitation patterns, increased temperatures, wildfires, and increased frequency in extreme weather events also threaten transportation systems across the state. Temperature extremes and increased precipitation can increase the risk of road and railroad track failure, decreased transportation safety, and increased maintenance costs (CNRA 2018). Modeling for flood events in California demonstrates that approximately 140 miles of highways are susceptible to flooding in a 100-year storm event by 2020, and approximately 370 miles by the year 2100 (OPR, CEC, and CNRA 2018a).

Water availability and changing temperatures affect the prevalence of pests, disease, and species, which will directly impact crop development, forest health, and livestock production. Other environmental concerns include decline in water quality, groundwater security, and soil health (CNRA 2018). Vulnerabilities of water resources also include risks to degradation of watersheds, alteration of ecosystems and loss of habitat, (OPR, CEC, and CNRA 2018a).

California's Fourth Climate Change Assessment also identifies the impacts climate change will have on public health and social systems. Average temperature increases in California are estimated to have impacts on human mortality, with 6,700 to 11,300 additional annual deaths in 2050, depending on higher or lower emissions scenarios (Ostro et al. 2011). Studies have also shown that impacts from climate change can also have indirect impacts on public health, such increased vector-borne diseases, and stress and mental trauma due to extreme events, economic disruptions, and residential displacement (Gould & Dervin, 2012; McMichael & Lindgren, 2011; United States Global Change Research Program, 2016).

Climate Change Impact Modeling and Projections

Based on the work of IPCC and research conducted by the State of California and partner agencies and organizations, climate change is already affecting and will continue to affect the physical environment throughout California and the town. To identify the local impacts of climate change in California, the scenario planning tool Cal-Adapt was developed by CEC and the University of California Berkeley Geospatial Innovation Facility. The Cal-Adapt tool uses global climate simulation model data downscaled to a local and regional resolution to identify localized impacts. The tool includes global climate simulation model data from two emissions scenarios known as Representative Concentration Pathways (RCP) which were used in the IPCC's Fifth Assessment Report. The RCPs included in the Cal-Adapt tool are the RCP 8.5 scenario which represents a business-as-usual future emissions scenario that would result in atmospheric CO_2 concentrations exceeding 900 parts per million (ppm) by 2100, and the RCP 4.5 scenario which represents a lower GHG emissions future, a scenario where GHG emissions rise until mid-21st century and then begin to decline, resulting in a CO_2 concentration of about 550 ppm by 2100. The emissions scenarios are dependent on global GHG emissions trends in the future and the efficacy of global GHG reduction

strategies. Because the efficacy if these GHG reduction strategies is not known, a discussion of both emissions scenarios and their subsequent impacts are included in this background report (OPR, CEC, and CNRA 2018a).

California's Fourth Climate Change Assessment includes an assessment of the impacts of climate change on various sectors throughout California as well as regional reports which provide information on the climate change impacts that will affect specific regions throughout the State including a report specific to the Sierra Nevada Region. Information from this report is included in the discussions below regarding the various impacts climate change will have on the town. Additionally, information included in the California's Fourth Climate Change Assessment statewide and regional reports is consistent with the climate model projections included in the Cal-Adapt tool (OPR, CEC, and CNRA 2018a).

Increased Temperature

In present-day California (1986-2016) temperatures in the state have increased above recorded temperatures over the first six decades of the 20th century (1901-1960). In many cases California temperature increases over most of the state have exceeded 1°F, with some areas exceeding 2°F. In the Sierra Nevada region, temperatures are projected to warm by 6 to 9ºF on average by the end of the 21st century (OPR, CEC, and CNRA 2018a).

According to Cal-Adapt, the historic annual (1950-2005) mean temperature in the town has been 57.8 °F. Based on climate model projections, the annual mean maximum temperatures in the town will increase by 4.5 °F by mid-century and 6.4 °F by the end of the century under the RCP 4.5 emissions scenario. Under the RCP 8.5 emission scenario, the annual mean maximum temperature in the town will increase by 5.8 °F by mid-century and 9.5 °F by the end of the century. Although the town will experience temperature increases over the coming century, the town has historically experienced a relatively cool climate and is not projected to experience the effects of extreme heat events. According to Cal-Adapt, the annual mean maximum temperature in the town will be 64.2 °F by the end of century under the RCP 4.5 emissions scenario and 67.3 °F under the RCP 8.5 emissions scenario (Cal-Adapt 2018a).

For the town, temperature increase over the coming century will have a larger effect on separate but related impacts as a result of temperature increase. These impacts are discussed in more detail below and include changes in precipitation patterns, loss of Sierra snowpack, increased wildfire risk, and increased flooding risk.

Changes to Precipitation Patterns

According to California's Fourth Climate Change Assessment Sierra Nevada report, projected changes in annual precipitation vary considerably across the Sierra Nevada region through end of the century, ranging from -5 percent to +10 percent with precipitation extremes (deluge and drought) projected to increase in frequency and severity. Climate models demonstrate that precipitation changes in the Sierra Nevada region will include a combination of increased numbers of dry days and increases in the amount of precipitation in the largest storms (i.e., maximum-annual 3-day precipitation totals) (Polade et al. 2017). Precipitation is projected to increase more in the Northern Range, which includes Truckee, compared to the Southern Range of the Sierra Nevada's. Higher increases in precipitation are projected at altitudes above approximately 5,000 feet (OPR, CEC, and CNRA 2018b).

According to Cal-Adapt, the historic annual (1950-2005) average precipitation in the town has been 33.8." Based on climate model projections, the total annual precipitation in the town will increase to 37.1" by mid-century, a ten percent increase, and will remain the same by the end of the century under the RCP 4.5 emissions scenario. Under the RCP 8.5 emission scenario, the annual mean precipitation in the town will increase to 37.9" by mid-century and to 42.3", a 25 percent increase, by the end of the century (Cal-Adapt 2018a).

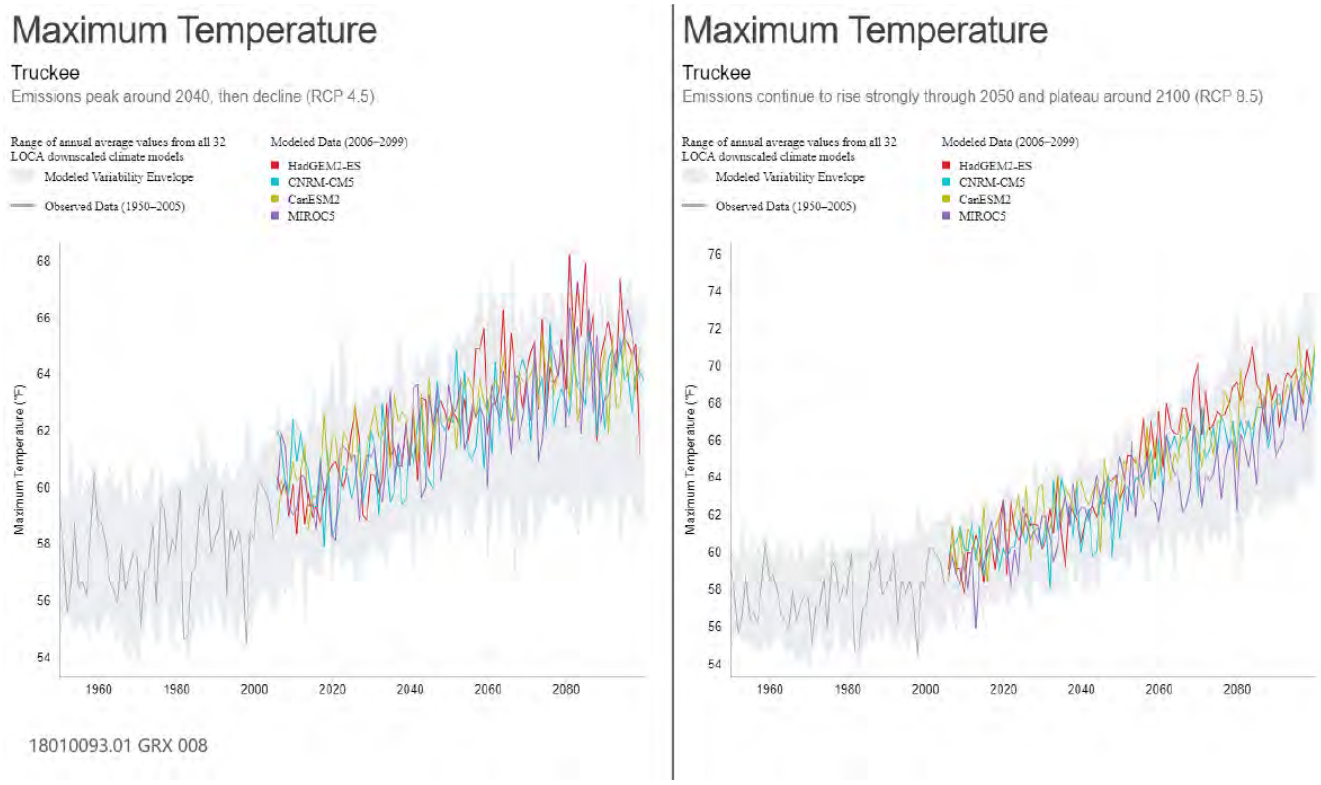
As a result of these changes in precipitation patterns, the hydrology (soil moisture, runoff, recharge) of the Sierra Nevada regions is projected to change considerably and impact geomorphology, flora and fauna, human communities as well as water resources in the region. As a result of warming temperatures, it is projected that although there will be increases in annual precipitation, there will be more rainfall and less snowpack as well as an earlier snowmelt (Harpold et al. 2015). Seasonal re-distribution of runoff from the Sierra Nevada will increase the winter (and spring) runoff and decrease summer runoff rates. Additionally, increased temperatures will result in plants using water more quickly and earlier in the year. As a result, soil and fuel moisture in the Sierra Nevada are projected to decline by 15 percent or more at the lower and highest elevations (OPR, CEC, and CNRA 2018b).

These changes in precipitation patterns will also result in increased magnitudes and frequencies of floods during the spring months while runoff, stream flows, soil moisture, and recharge are projected to decline in the summer months. This will increase the amount of vegetation that grows in the spring and the overall-drying impacts on vegetation and may result in increased wildfire risk in the spring and summer months. Changes in flood and wildfire risk are discussed in more detail below (OPR, CEC, and CNRA 2018b).

Loss of Snowpack

Increased temperatures in the Sierra Nevada region through the 21st century will very likely result in a loss of snowpack below 6,000 feet, and annual average snowpack will be reduced by more than 60 percent across nearly all regions in the Sierra Nevada Range. Warming temperatures will bring higher snow lines (the elevation above which rainfall gives way to snowfall during a storm) with precipitation below this line more likely to occur as rainfall rather than snowfall, resulting in less snowpack overall. The measured Sierra Nevada snowpack was only 5 percent of its historic normal in April 2015 during California's recent drought (2014-2016). If GHG concentrations continue to increase throughout the century, as projected in the RCP 8.5 emissions scenario, years with conditions similar to 2015 will be almost continual in the lower, warmer Northern Sierra Nevada. Under the RCP 4.5 emissions scenario, low snowpack years would still occur four times more often than under historical conditions in the Northern Sierra Nevada (OPR, CEC, and CNRA 2018b). It should be noted that a recent study by Walton et al. has shown that decreases in snowpack are likely to be underestimated. More recent sophisticated modeling efforts regarding snowpack-loss, which have accounted for the increased solar absorption from darker surfaces as a result of snowpack-loss, reveal that a feedback loop will occur that further increases ambient air temperatures and consequently melts even more snow (Walton et al. 2017).

FIGURE 7-3 TEMPERATURE INCREASE: PROJECTED MAXIMUM TEMPERATURE INCREASE BY 2090



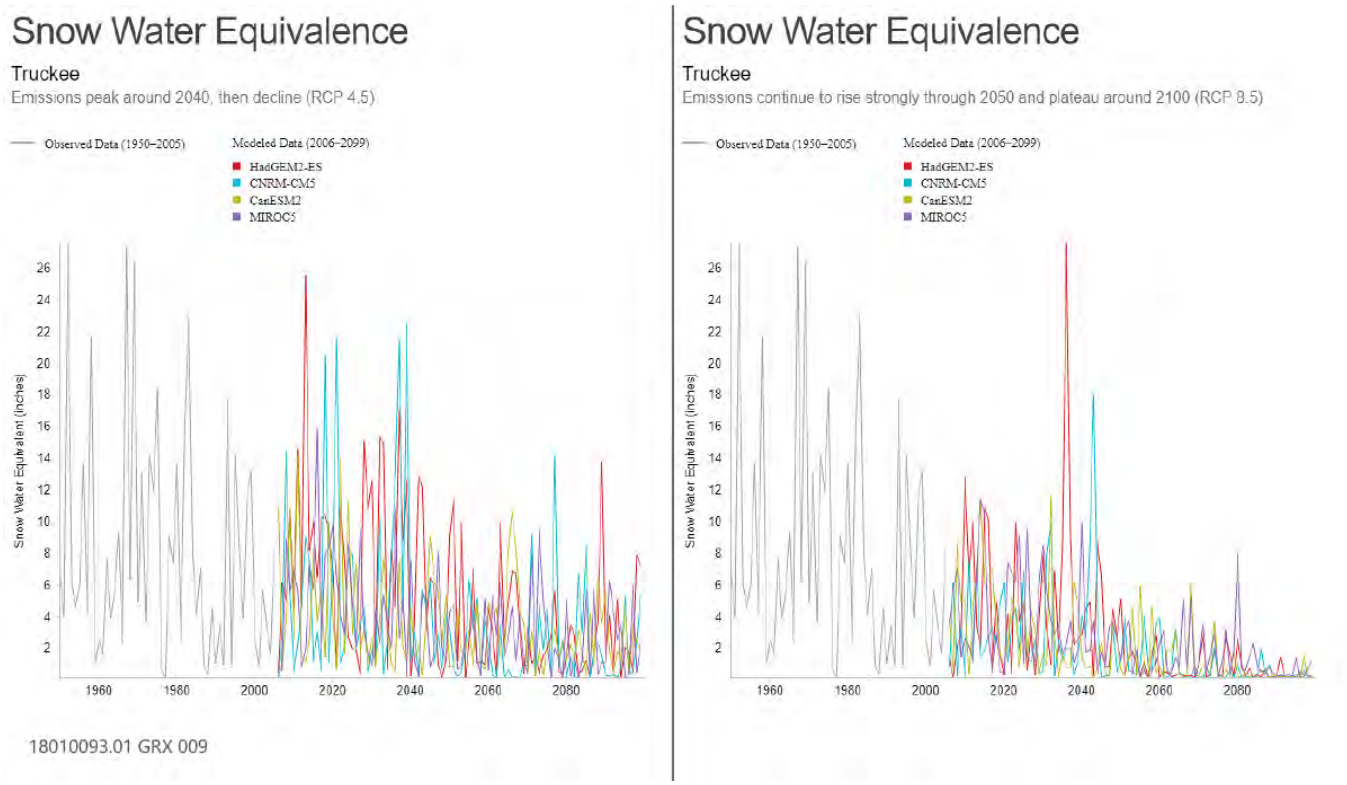
Source: Cal-Adapt 2018a

According to Cal-Adapt, the annual mean SWE in April in the Prosser Creek-Truckee River Watershed, which includes the town, is 17.9." Under the RCP 4.5 emissions scenario, the annual mean SWE would decrease to 11.3" by mid-century and decrease further to 8.4" by the end of the century, a net decrease of 53 percent from the historic average. Under the RCP 8.5 emissions scenario, the annual mean SWE would decrease to 9" by mid-century and decrease to 3.5" by the end of the century, a decrease of 80 percent over the historic average. (Cal-Adapt 2018b)

Loss of Snowpack: Vulnerabilities

The impacts of snowpack loss on local communities will vary considerably depending on the characteristics of the community. The town is located near recreation areas like Lake Tahoe, state parks, and ski resorts and as a result it relies heavily on tourism and related industries as an economic sector. According to the Truckee Demographic and Economic Profile report released by the Truckee Chamber of Commerce, the combined economic sectors of Accommodation and Food Services, Retail Trade, and Arts, Entertainment, and Recreations accounted for 36 percent of employment in 2012 (Truckee Chamber of Commerce 2012). Reductions in snowpack in the Northern Sierra Nevada region are likely to impact the winter sports, recreation, and tourism industries and result in secondary economic impacts on the Town of Truckee. As noted in the California's Fourth Climate Change Assessment Sierra Nevada report, drought and diminished snowpack will result in a loss of skiing days at nearby ski resorts and likely affect the availability of service jobs in the region. Additionally, a loss of snowpack would likely have an impact on other types of recreation in the region including boating and fishing which are all impacted by reduced snowpack, streamflow, and lake storage (OPR, CEC, and CNRA 2018b).

FIGURE 7-4 SNOWPACK: PROJECTED CHANGE IN SNOWPACK (SNOW WATER EQUIVALENT) BY 2090



Source: Cal-Adapt 2018b

Increased Wildfire Risk

As discussed previously, the Northern Sierra Nevada region over the century will experience increases in average temperature, changes in precipitation patterns, and a significant loss in annual snowpack. As a result, the increased frequency and severity of droughts and decline in forest health are expected to increase wildfire risk within the region. Additionally, the region has experienced over a century of fire suppression as population grew in the region,

resulting in increased wildfire risk. As noted in California's Fourth Climate Change Assessment Sierra Nevada report, regardless of the higher or lower emissions scenario, wildfire is expected to increase throughout the century (OPR, CEC, and CNRA 2018b).

Climate model projections for the Northern Sierra Nevada region, demonstrate that changes in precipitation patterns and a loss of snowpack in the Northern Sierra Nevada region will result in a much drier region overall, with shortened seasonal runoff periods and a prolonged dry summer period with reduced stream flow during these months. These shifts in precipitation patterns will lead to biogeographic shifts in vegetation types, shifts in species ranges, and increased susceptibility to non-native species. Shifts in precipitation, particularly during drought periods, will impact ecosystem composition and overall forest health due to water stress. Weakened trees during drought conditions are more susceptible to bark beetle outbreaks which can further weaken overall forest health, increase tree mortality rates, and increase fire risk by increasing the availability of fuel sources (Preisler et al. 2017). The recent 2012-2016 drought caused significant stress in the Sierra Nevada forests with drought-related mortality. As of 2017, tree mortality related to drought has killed almost 110 million trees in the Sierra Nevada region (Sierra Nevada Conservancy 2018). However, the Northern Range of the Sierra Nevada may be less susceptible to these impacts than the Southern Range. Between 2012 and 2017, it is estimated that there was a 26.5% loss of live trees in the South Range compared to 1.9% in the North Range (Lara et al. In review). All these changes have the ability result in increased wildfire risks, particularly during prolonged drought periods. Increases in wildfire hazard, drought frequency, and forest vulnerability will represent threats to the survival and growth of trees and in turn will compromise the carbon storage potential of Sierra Nevada forests (OPR, CEC, and CNRA 2018b).

The Cal-Adapt tool includes climate model projections for the annual average area burned from wildfires in a given area. According to Cal-Adapt, the historic (1950-2005) annual mean hectares burned within the town limits is 131.7 hectares. Under the RCP 4.5 emissions scenario, the annual mean hectares burned would increase to 168.2 hectares by mid-century and 195.9 hectares by the end of the century, an increase of 32 percent from the historic average. Under the RCP 8.5 emissions scenario, the annual mean hectares burned would increase to 185.1 hectares by mid-century and increase to 271.2 hectares by the end of the century, an increase of 99 percent from the historic average. The Wildfire tool in Cal-Adapt uses projections based on high, medium and low population growth and residential density scenarios. The projections included above are based on the medium population growth and residential density scenario. (Cal-Adapt 2018c)

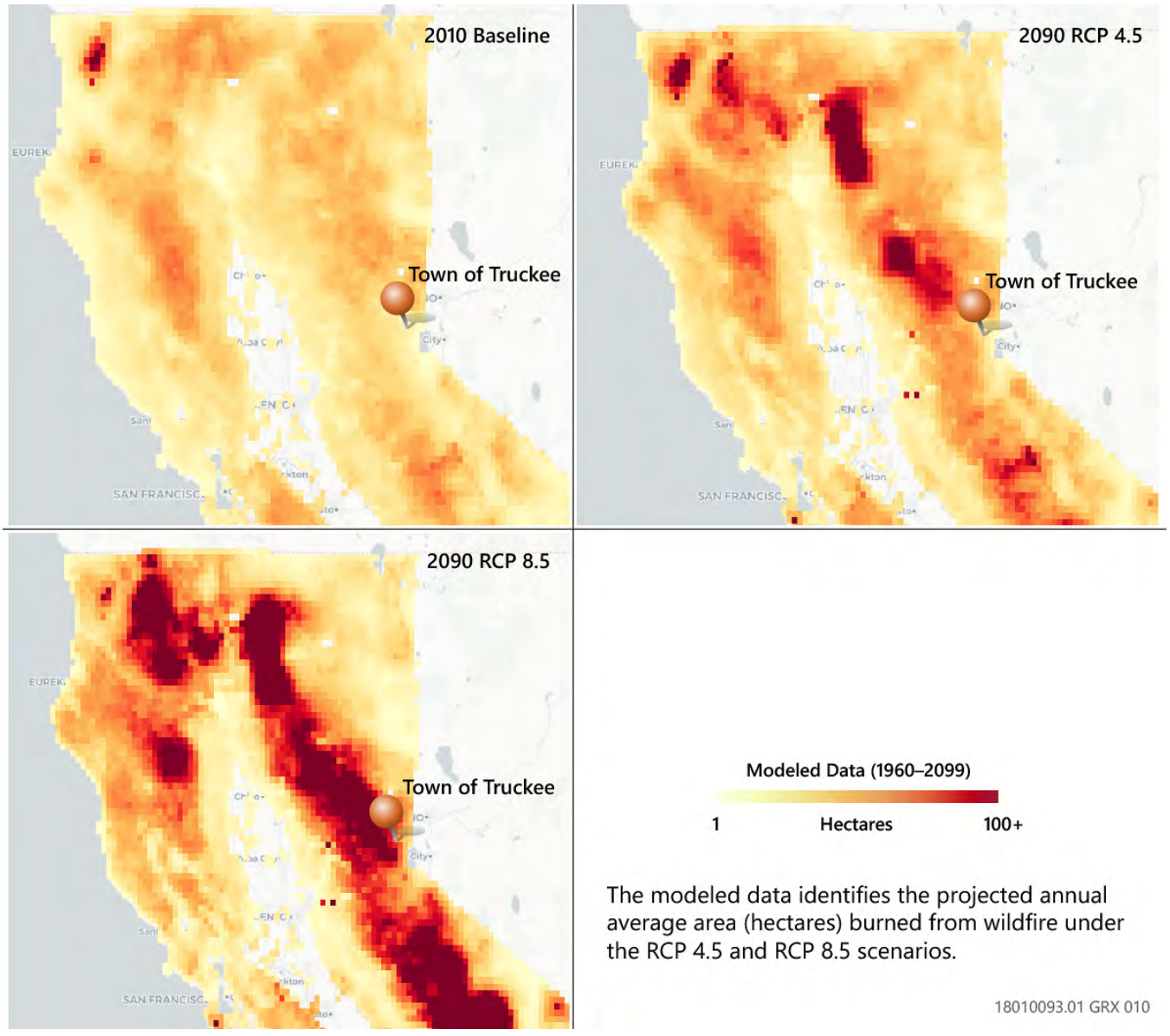
Increased Wildfire Risk: Local Vulnerabilities

As discussed in the Wildfire section of Chapter 6 (Hazards and Safety) in this report, the town already has a large amount of land area in the Very High Fire Hazard Severity (VHFHS) Zones designated by the California Department of Forestry and Fire Protection (CAL FIRE) as part of their Fire Resource and Assessment Program (see Figure 6-X). Wildfire risk in the town is also exacerbated by fire suppression which has allowed for fuels to accumulate, increasing the risk of a wildfire and the potential severity of wildfires if they occur. The issue of wildfire fuel management in the town remains complex with fuels accumulating on private properties contributing to overall wildfire risk. The Truckee Fire Protection District Community Wildfire Protection Plan (CWPP) discusses this issue, stating that "Some homeowners continue to be complacent, and the desire not to change the vegetation surrounding the community has allowed hazard fuel to accumulate. Other human impacts that add to the problem of homeowner complacency are: the increase in absentee ownership, the rising number of renters and…home foreclosures within the predominantly residential communities of the CWPP area. These properties are not likely to receive any fire hazard mitigation treatments." (Truckee Fire Protection District CWPP 2016: 28). Truckee residents in the Wildland Urban Interface (WUI) who are at the edge of surrounding forests are also at increased risk from the impact of wildfires. See Wildfire section of Chapter 6, Hazards and Safety for a detailed definition of the WUI.

The causes of increased wildfire risk, as discussed above, apply to both areas within the town boundary as well as the surrounding areas adjacent to the town boundary. This includes Tahoe National Forest which is located directly north of the town boundary. Wildfires occurring outside of the town but in the surrounding area can also still have a significant impact on the town and its residents. As discussed above, recreation tourism and its associated industries are an important part of the town economic base. Wildfire events can have an impact on tourism both during and after the events. Tourism-dependent communities suffer when active fire, smoke, and ash close facilities during the

high season, impacting a critical economic sector for tourism-based economies. As an example, the Chip Fires of 2012 in Plumas County generated thick smoke for several weeks in the Lake Almanor basin, shutting down tourism and businesses during peak tourism season in late summer (OPR, CEC, and CNRA 2018b). Wildfires near Truckee can also result in in physical and health impacts. Impacts on air quality from wildfire smoke can exacerbate asthmatic conditions, cause respiratory and cardiovascular illness, and increase rates of premature death (Wettstein et al. 2018). Elderly populations and children have increased vulnerability to air quality impacts from wildfires. Increased risk from wildfires caused by climate change and other climate change impacts can also result in increased stress levels, anxiety, and depression (Field et al, 2014).

FIGURE 7-5 WILDFIRE: PROJECTED INCREASE IN AREA BURNED FROM WILDFIRE BY 2090



Source: Cal-Adapt 2018c

Increased Flooding Risk

As discussed in Section 6.3 of the Existing Conditions Report regarding flood hazards, flooding hazards have historically been an issue in the town, specifically in areas surrounding the Truckee River which runs through portions of the town including the downtown area. Recurring flooding events occurred in specific areas of the town in 1995, 1997, and 2005 along Gregory Creek, Trout Creek, Donner Lake Road and South Shore Road. Significant flooding in

1997 also impacted the downtown area and along Donner Creek near State Route 89. More recently, localized flooding from the Truckee River and its tributaries in 2006 and 2017 both resulted in state and Federal emergency declarations for the flooding. Table 6-3 in the Section 6.3 provides a list of areas in the town prone to localized flooding events. Figure 6-5 in Section 6.3 illustrates areas in the town within the FEMA 100 and 500-year floodplain as well as flooding awareness areas mapped by the California Department of Water Resources (DWR) that are at increased risk of flooding but not included in the FEMA floodplains (Nevada County 2017).

California's Fourth Climate Change Assessment Sierra Nevada Regional Report notes that increased temperature and changes in precipitation patterns will result in increased risk of flooding events. In particular, the increase in winter rainfall, "cool" season snowmelt episodes, and rain-on-snow events will result in increases in winter flooding events (McCabe et al. 2007; Das et al. 2013). Additionally, because of the effects of warming, the largest storms in the Sierra Nevada region are projected to become even larger. At the same time, warming trends will result in more precipitation falling as rain. The combination of these two trends is projected to increase Sierra Nevada flood risks and magnitudes (OPR, CEC, and CNRA 2018b). As noted above, the annual average precipitation rate in the town is projected to increase between 3.3" and 4.1" by mid-century and between 3.3" and 8.5" by the end of the century depending on future emissions rates (Cal-Adapt 2018a).

Increased Flooding Risk: Local Vulnerabilities

As a result of these changes in temperature and precipitation patterns, local flooding hazards in the town are very likely to increase over the coming century. The areas already subject to flood hazards, as identified in Figure 6-5, will continue to experience flooding events but these events will likely increase in frequency and severity, particularly in the winter months, as a larger percentage of areas within or near the town will experience annual precipitation falling as rain rather than snow. Additionally, the DWR flood awareness areas will likely experience an increase in the frequency of flooding events as precipitation rates in the town increase through the century.

Increases in the severity and frequency of annual flooding events in the town will place increasing stress on transportation infrastructure in the town as well as the surrounding area. Increased monsoonal activity in the Sierra Nevada's Eastside subregion, which includes Truckee, may stress local storm water and flood management systems. Additionally, as discussed in detail in the Flooding discussion in Chapter 6, increased precipitation rates in the area surrounding the town could place increased stress on downstream conveyance systems and reservoirs as exemplified by the Oroville Dam crisis that occurred in February 2017. As discussed above, considering the town's reliance on tourism as a primary economic sector, long-term flooding impacts on transportation infrastructure in the town or along primary transportation routes leading to the town could result in secondary economic impacts for the town from decreased visitation and tourism activity (OPR, CEC, and CNRA 2018b).

7.2.3 Regulatory Setting

FEDERAL

Executive Order 13653

Executive Order (EO) 13653, signed by President Barack Obama on November 1, 2013, directs Federal agencies to take a series of steps to make it easier for American communities to strengthen their resilience to climate change. The EO requires agencies to modernize Federal programs to support climate resilient investments; manage lands and waters for climate preparedness and resilience; provide information, data, and tools for climate preparedness and resilience; and plan for climate change related risks. Among other steps, the EO established a State, Local, and Tribal Leaders Task Force on Climate Preparedness and Resilience (Task Force) to advise the Administration on how the Federal government can respond to the needs of communities nationwide that are dealing with the impacts of climate change. To implement these actions, the EO also established a Council on Climate Preparedness and Resilience (Council).

Executive Order 13690

EO 13690, signed by President Barack Obama on January 30, 2015, aims to reduce the risk and cost of future flood disasters by requiring all Federal investments in and affecting floodplains to meet higher flood risk management standards. The EO requires federally-funded buildings, roads, and other infrastructure be constructed to better withstand the impacts of flooding. The EO provides agencies with flexibility to use data and methods informed by best-available science or to build to a set height above the 100- or 500-year flood elevation.

Federal Land Assistance, Management, and Enhancement (FLAME) Act

In 2009, Congress passed the Federal Land Assistance, Management, and Enhancement (FLAME) Act as the basis for the U.S. Department of Agriculture (USDA) and the Department of the Interior (DOI) to develop a national cohesive wildland fire management strategy. In response to the FLAME Act, USDA and DOI published the National Cohesive Wildland Fire Management Strategy, which includes the National Strategy and the National Action Plan, both completed in April 2014. Together, these documents address elements requested by Congress after the passage of the FLAME Act and represent an approach to wildland fire management based on the goal of achieving safer, more efficient, cost-effective public, and resource protection goals and more resilient landscapes.

Healthy Forest Restoration Act (HFRA)

The Healthy Forest Restoration Act (HFRA), enacted by the U.S. Congress on January 7, 2003, established a protocol for the creation of a type of document that articulated a wildfire safety plan for communities at risk from wildland fires known as a Community Wildfire Protection Plan (CWPP). The Truckee Fire Protection District has prepared a CWPP for the areas within the Truckee Fire Protections District. As required by HFRA, the Truckee Fire Protection District CWPP was developed in collaboration with local, county, State, and Federal agencies. The CWPP identifies wildfire risks and clarifies priorities for funding and programs to reduce impacts of wildfire on the communities at risk within the Truckee Fire Protection District.

STATE

Executive Order S-13-08

EO S-13-08, signed by Governor Arnold Schwarzenegger on November 14, 2008, required CNRA to develop California's first Climate Adaptation Strategy in coordination with local, regional, State, and Federal public and private entities. Under the EO, the National Academy of Sciences was instructed to issue a report on sea-level rise to advise California planning efforts, which was released in June 2012. It also directed the Governor's Office of Planning and Research (OPR) to provide State land-use planning guidance related to sea-level rise and other climate change impacts. The Interim Guidance Document was released in November 2008, with an update released in 2013.

Executive Order B-30-15

On April 20, 2015, Governor Edmund G. Brown Jr. signed EO B-30-15 to establish a new California GHG reduction target of 40 percent below 1990 levels by 2030, as well as increase statewide efforts to address the need for increased climate change adaptation measures by State agencies. These measures include:

- incorporating climate change impacts into the State's Five-Year Infrastructure Plan;
- updating the Safeguarding California Plan to identify how climate change will affect California infrastructure and industry, and what actions the State can take to reduce the risks posed by climate change;
- factoring climate change into State agencies' planning and investment decisions;
- requiring OPR to establish a technical advisory group to help state agencies incorporate climate change impacts into planning and investment decisions; and,
- implementing measures under existing agency and departmental authority to reduce GHG emissions.

Senate Bill 379, Climate Change Adaptation in General Plan Safety Elements

Senate Bill (SB) 379 (Jackson, Chapter 608, Statutes of 2015), requires all cities and counties to include climate adaptation and resiliency strategies in the safety elements of their general plans, codified at Government Code section 65302(g)(4). The update must include the following:

- a climate change vulnerability assessment that identifies the risks that climate change poses to the local jurisdiction;
- a set of adaptation and resilience goals, policies, and objectives based on the results of the climate change vulnerability assessment;
- feasible implementation measures including feasible methods to avoid or minimize climate change impacts associated with new uses of land, the location, when feasible, of new essential public facilities outside of at-risk areas, the designation of adequate and feasible infrastructure located in an at-risk area, guidelines for working cooperatively with relevant local, regional, State, and Federal agencies, the identification of natural infrastructure that may be used in adaptation projects, where feasible;
- reference to or attachment of a separate adaptation plan, if it fulfills any of the above requirements.

The general plan safety element update is due at the time of a jurisdiction's first FEMA Local Hazard Mitigation Plan adopted after January 1, 2017, or if no such FEMA plan has been adopted, after January 1, 2022. The bill and corresponding section of the California Government Code reference specific sources of useful climate information to consult including as the Internet-based Cal-Adapt tool and the California Adaptation Planning Guide.

Senate Bill 246, Integrated Climate Adaptation and Resiliency Program

SB 246 (Wieckowski, Chapter 606, Statutes of 2015), establishes the Integrated Climate Adaptation and Resiliency Program, which is to be administered by OPR. The Program will coordinate regional and local adaptation planning efforts with statewide climate adaptation strategies. The bill also requires, within one year of an update to the Safeguarding California Plan, the California Governor's Office of Emergency Services (Cal OES) to review and update, as necessary, the Adaptation Planning Guide, in coordination with CNRA, OPR, and relevant public and private entities. The bill establishes an advisory council to support the goals of OPR and requires OPR to establish a clearinghouse for climate adaptation information.

Assembly Bill 1482, Climate Adaptation

AB 1482 requires CNRA to update the State's climate adaptation strategy every three years and use the State's climate adaptation strategy to maximize specified objectives, including, promoting the use of the climate adaptation strategy to inform planning decisions and ensure that State investments consider climate change impacts, as well as promote the use of natural systems and natural infrastructure when developing physical infrastructure to address adaptation.

Safeguarding California Plan: California's Climate Adaptation Strategy

Safeguarding California is California's overall plan for climate adaptation, originally released in 2014 and most recently updated in 2018, as directed by AB 1482 which requires the plan be updated every three years. The plan provides policy guidance for state decision-makers, and is part of continuing efforts to reduce impacts and prepare for climate risks. This plan establishes California's comprehensive climate strategy, discusses progress to date on the State's various climate adaptation efforts, highlights state agency adaptation initiatives and makes realistic sector-specific recommendations. Policy recommendations in the plan are presented in three main chapters: Social Systems and the Built Environment, Natural and Managed Resource Systems, and Parks, Recreation, and California Culture. The plan also includes a chapter focused specifically on Climate Justice and provides policy recommendations to ensure that the states adaptation strategies are implemented in and just and equitable manner that benefit California's most disadvantaged communities (CNRA 2018).

California Adaptation Planning Guide

Cal OES and CNRA prepared and adopted the California Adaptation Planning Guide in July 2012. The purpose of the Guide is to assist local and regional jurisdictions with proactively addressing unavoidable consequences of climate change. It provides a step-by-step process for conducting a local and regional climate vulnerability assessment, as well as developing and implementing adaptation strategies and other responses to the effects of climate change. The Guide allows for flexibility in the commitment of time, money, and effort when conducting adaptation planning efforts to suit the needs of a particular community. The Guide is also accompanied by three supporting documents which provide more in-depth guidance on analyzing local and regional impacts, identifying regional character, and identifying appropriate adaptation strategies (CNRA and CalOES 2012).

Senate Bill 1260 (Fire prevention and protection: prescribed burns)

SB 1260, passed in 2018, creates several changes to local wildfire planning, prescribed fire requirements, and fire mitigation strategies for local governments. The bill is intended to create a more collaborative process for forestry management between Federal, State, and local agencies as well as opportunities for public and private land managers to mitigate wildfire risk. Updates to existing law in the bill most pertinent to the Town include:

- Requires a local agency to transmit a copy of its adopted ordinance designating VHFHS zones to the Board of Forestry and Fire Protection (Board).
- Requires a city or county that contains either State Responsibility Area (SRA) or VHFHS zones to notify the Board if it takes action to adopt or amend the safety element of its general plan.
- Requires, upon approving a tentative map or a parcel map for an area located in either the SRA or VHFHS zone, the local agency to transmit a copy of the minimum fire safety standards findings required and accompanying maps to the Board.
- Authorizes a person with a CAL FIRE burn permit to use fire to abate a fire hazard.
- Requires CAL FIRE to establish a grant program, upon appropriation by the Legislature, which may include a cost-share program with local governments.
- Requires CAL FIRE to cooperate with private and public landowners in prescribed fire activities, including, but not limited to, site preparation, and other pre-burn planning and activities.
- Requires, to the extent feasible and only in portions of the state, the Board's vegetation treatment program (VTP) programmatic environmental impact report (PEIR), when certified, to serve as the programmatic environmental document for prescribed fires initiated by CAL FIRE or by persons conducting prescribed fires with a CAL FIRE burn permit.

LOCAL

Nevada County Local Hazard Mitigation Plan

In August 2017, Nevada County adopted the most recent Local Hazard Mitigation Plan (LHMP) to help reduce or eliminate long-term risk to people and property from hazards. The LHMP includes a risk assessment which identifies and profiles hazards that pose a risk to the County and participating jurisdictions, assessed the vulnerability of the planning area to these hazards, and examined the existing capabilities to mitigate them. As stated in the plan, Nevada County is vulnerable to several hazards including floods, earthquakes, drought, liquefaction, landslides, wildfires, climate change, and other severe weather events. The LHMP also includes climate change vulnerability assessment which identifies how climate change will exacerbate certain existing hazards in the County such as wildfire, drought, and flooding and how these risks may affect aspects of the built environment such as energy and transportation infrastructure. Based on the risk assessment, the LHMP includes a series of goals and objectives which are intended to help guide hazard mitigation planning to better protect the people and property in the County from the effects of hazard events.

7.3 Key Terms

Adjusted Business As Usual (ABAU). A scenario estimating future annual GHG emissions for a jurisdiction based on key growth factors such as projections for number of households and employment growth which also anticipated GHG reductions that are applied to a jurisdiction's future emissions based on State legislation, which will continue to affect a jurisdictions annual emissions.

Biogeography. The pattern of plants and animal species distributed across geographical areas.

Business As Usual (BAU). A scenario estimating future annual GHG emissions for a jurisdiction based on key growth factors such as projections for number of households and employment growth.

Carbon dioxide (CO_2). An odorless and colorless GHG emitted from natural sources, such as the decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic out-gassing. Anthropogenic (man-made) sources include the burning of fossil and other fuels (e.g., coal, oil, natural gas, wood).

Carbon dioxide equivalent (CO_2e). A unit for describing how much global warming a given type and amount of GHG may cause, normalized to a functionally equivalent amount or concentration of CO_2 as the reference. See Global Warming Potential.

Carbon Sequestration. Atmospheric CO_2 taken up through leaves and becomes carbon in the woody biomass of trees and other vegetation where it is stored.

Climate Adaptation. Adjustment or preparation of natural or human systems to a new or changing environment which moderates harm or exploits beneficial opportunities.

Climate Change. Long-term changes in temperature, precipitation, and other elements of the Earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to GHGs, particularly those generated from the human production and use of fossil fuels.

Global Warming Potential (GWP). One type of simplified index based upon properties of the GHG that can be used to estimate the effect on the climate system with reference to CO_2. For example, one ton of methane is as potent a GHG as 25 tons of CO_2. Therefore, Methane has a GWP of 25 CO_2e. See also Carbon dioxide equivalent.

Greenhouse Effect. The Earth's natural warming process. Certain atmospheric gases that trap heat in the atmosphere, causing the greenhouse effect, are referred to as GHGs.

Greenhouse Gases (GHGs). Gases that contribute to the greenhouse effect. Some GHGs such as carbon dioxide (CO_2) occur naturally, and are emitted to the atmosphere through natural processes and human activities. Other GHGs (e.g., fluorinated gases) are created and emitted solely through human activities. The principal GHGs that enter the atmosphere because of human activities include: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), chlorofluorocarbons (CFCs), and fluorinated gases (hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF6).

Greenhouse Gas (GHG) Inventory. An accounting of the amount of GHGs emitted to or removed from the atmosphere over a specific period of time (e.g., one year) for a specified area.

Hazard Mitigation. Hazard Mitigation is sustained action taken to reduce or eliminate long-term risk to people and their property from hazards and their effects.

Hydrofluorocarbon (HFCs). Organic compounds that contain fluorine and hydrogen atoms. HFCs are classified as GHG's by the IPCC and are frequently used in air conditioning and as refrigerants. HFCs have a GWP range from 4 to 12,400, depending on the type of HFC.

Methane (CH_4). A GHG with GWP of 25. Anthropogenic (human-caused) sources of methane emissions include agricultural activities, natural gas consumption, landfills, wastewater treatment plants, and mobile sources.

Nitrous oxide (N_2O). A GHG with GWP of 298. Nitrous oxide sources include wastewater treatment plants, fertilizer application and soil management in agricultural activities, and mobile sources.

Perfluorocarbons (PFCs). A group of human-made chemicals composed of carbon and fluorine only. PFCs are classified as GHG's by the IPCC and are used most commonly used in the manufacturing of semi-conductors and as refrigerants. PFCs have a GWP range from 6,630 to 23,500, depending on the type of PFC.

Representative Concentration Pathway (RCP). The IPCC Fifth Assessment Report uses future emissions scenarios known as Representative Concentration Pathways to estimate scenarios in which varying (higher or lower) levels of GHGs would be emitted in the future. The RCP scenarios take into account various socio-economic assumptions which affect GHG emissions with higher RCP scenarios assuming higher rates of GHG emissions through the end of the century.

Resilience. The ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organization, and the capacity to adapt to stress and change.

Snow Water Equivalent. The amount of water contained within the snowpack or the depth of water that would theoretically result if you melted the entire snowpack instantaneously.

Sulfur hexafluoride (SF_6). An inorganic, colorless, odorless, non-flammable gas. SF_6 is classified as a GHG by the IPCC and is primarily used in electronics industry. SF_6 have a GWP of 23,500.

Tertiary Impact. A third order impact caused by the results of the primary and secondary effects.

Vulnerability. The extent to which a natural or social system is susceptible to sustaining damage from climate change, and is a function of the magnitude of climate change, the sensitivity of the system to changes in climate and the ability to adapt the system to changes in climate.

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TRUCKEE 2040
general plan + downtown specific plan



CHAPTER 8 Public Facilities, Services, and Infrastructure

This chapter summarizes the existing public facilities, services, and infrastructure for the Town. It is organized into the following sections:

8.1 Water Supply and Delivery 8-3
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8.1 Water Supply and Delivery

This section describes the water supply sources, water distribution system facilities, water use, and water conservation programs in the town.

8.1.1 Major Findings

- The Truckee Donner Public Utility District (TDPUD) provides water service to portions of the town and adjacent unincorporated areas of Nevada and Placer counties. There are small developed areas within Truckee that use private wells and are not supplied by TDPUD.
- TDPUD obtains all water supplies from the Martis Valley Groundwater Basin (MVGB). MVGB encompasses approximately 57 square miles and lies within the Middle Truckee River Watershed. Groundwater basin recharge occurs during the winter season from snowfall and snowmelt. Sustainable water yields are estimated at 24,000-acre feet per year (afy) or 7,820 million gallons.
- TDPUD maintains 12 active wells that extract water from MVGB and supply potable water to customers. The wells are located throughout the distribution system and have a total production capacity of 14.3 million gallons per day (mgd).
- TDPUD distribution system consist of 216 miles of pipeline ranging in size from 2-inches to 24-inches in diameter.
- The Truckee System has 35 storage tanks, 32 of which are active. The total storage capacity of the active water tanks is 9.4 million gallons.
- The total MVGB water supply is estimated at 24,000-afy or 7,820 million gallons. In 2015, TDPUD pumped approximately 1,191 mgd of potable water and 193 mgd of untreated water from MVGB. Projected total demand for MVGB is 4,217 million gallons which is adequate to accommodate growth projections consistent with the 2006 General Plan in the service area through the year 2035 even if no recharge of the basin were to occur.
- In compliance with the Sustainable Groundwater Management Act (SGMA), the MVGB Annual Report prepared by TDPUD states that the MVGB has operated within sustainable yield for at least 25 years, despite several periods of drought. In addition, the groundwater elevations in the monitoring wells remained above minimum thresholds and measurable objectives.
- TDPUD would need an additional 2.5 mgd of production capacity over the next 20 years to meet projected demands under the 2006 General Plan. TDPUD expects to add two new water supply wells, with a capacity of 850 gallons per minute, between 2025 and 2035.

8.1.2 Existing Conditions

TRUCKEE DONNER PUBLIC UTILITY DISTRICT

TDPUD provides water service to portions of the town and adjacent unincorporated areas of Nevada and Placer counties. As shown on Figure 8-1, TDPUD operates two water systems in the Truckee area: the Hirschdale System and the Truckee System. The Hirschdale system serves 24 accounts and the Truckee system serves 12,473 accounts. The two systems are physically separate and not interconnected. There are small developed areas within Truckee that utilize private wells and are not supplied by TDPUD. Collectively, the TDPUD water system includes 15 active wells, 216 miles of pipeline, and 35 storage tanks (TDPUD 2016).

Water Supply

TDPUD obtains all water supplies from the MVGB. As shown on Figure 8-2, MVGB encompasses approximately 57 square miles and lies within the Middle Truckee River Watershed. Groundwater basin recharge occurs during the

winter season from snowfall and snowmelt. Snowfall can vary significantly on a yearly basis; however, below-average precipitation is not expected to have a significant impact on water supply. Sustainable water yields are estimated at 24,000-afy or 7,820 million gallons. In compliance with SGMA, the MVGB Annual Report prepared by TDPUD, the MVGB has operated within sustainable yield for at least 25 years, despite several periods of drought (TDPUD 2018:5).

In addition, TDPUD has extracted water supplies from natural springs within Truckee in the past and maintains water facilities at Greenpoint, McGlashen, Southside, and Tonini springs. TDPUD does not currently extract from these sources due to low capacity and the need for water treatment. Currently, TDPUD does not use recycled water and does not anticipate using recycled water in the future (TDPUD 2016).

As shown on Figure 8-3, TDPUD maintains 12 active wells that extract water from MVGB and supply potable water to customers. The wells are located throughout the distribution system and have a total production capacity of 14.3 mgd. Based on the MVGB Annual Report prepared, the groundwater elevations in the monitoring wells remained above minimum thresholds and measurable objectives (TDPUD 2018:8). All 12 active potable water wells are equipped with liquid chlorine disinfection systems in compliance with State and Federal standards. The additional three wells maintained by TDPUD supply non-potable water to contractors for use during the construction season, and to the Coyote Moon, Gray's Crossing, and Old Greenwood golf courses for irrigation (TDPUD 2016).

Water Distribution System

TDPUD's distribution system consists of 216 miles of pipeline ranging in size from two inches to 24 inches in diameter. The oldest piping in the system dates to the 1940s. Most of the distribution pipelines are steel with large portions of ductile iron pipe as well. The Truckee water distribution system includes 32 active storage tanks. The total storage capacity of the active water tanks is 9.4 million gallons (TDPUD 2016).

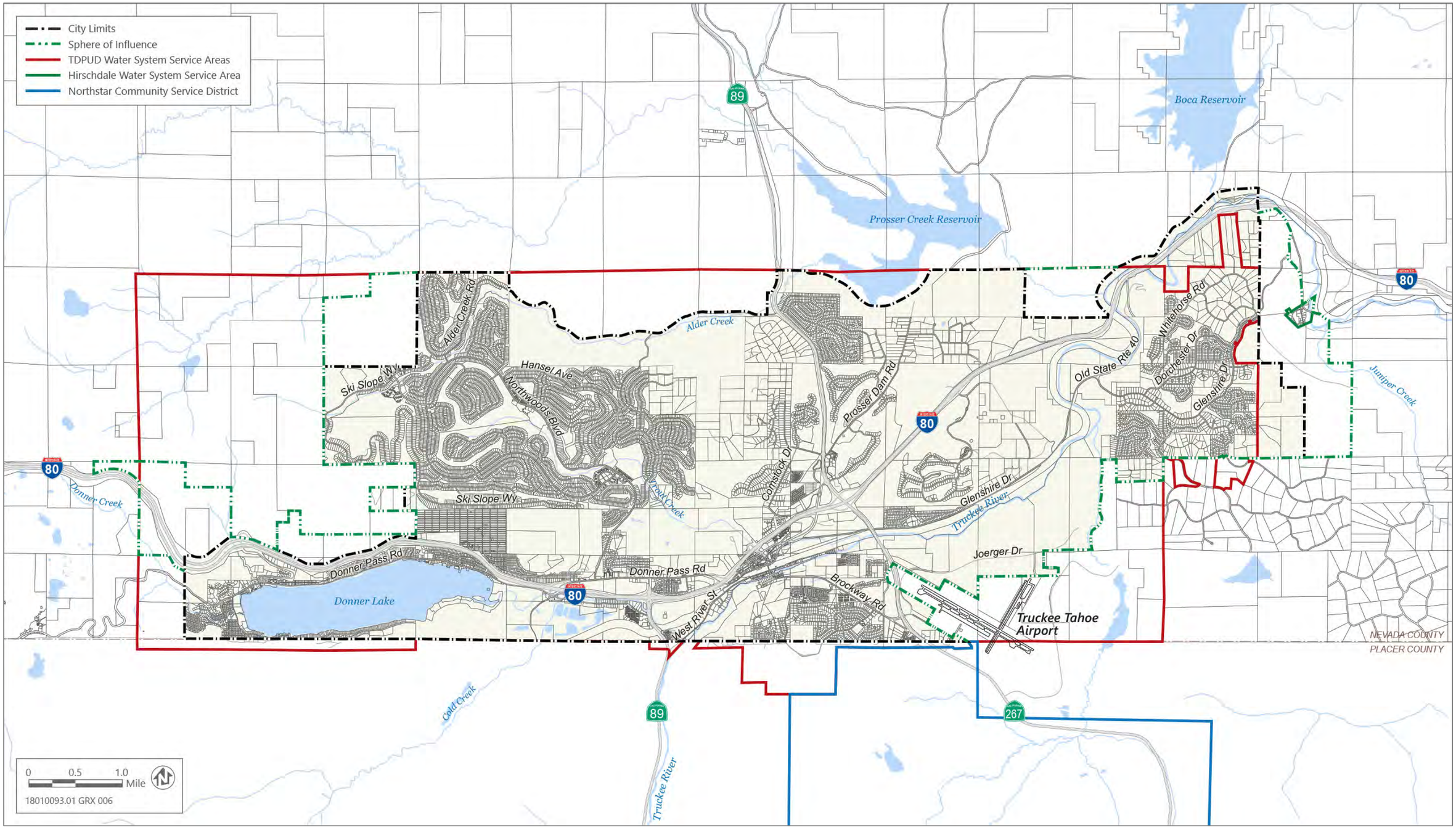
Water Use and Projected Demand

In 2015, TDPUD pumped approximately 1,191 mgd of potable water and 193 mgd of untreated water from MVGB. Total groundwater withdrawals from MVGB in 2015 are estimated at 2,411 million gallons. Projected growth in the TDPUD service area was estimated using the growth rate projections included in the 2006 Truckee General Plan, which anticipated an increase of approximately 2 percent each year and 24,089 permanent residents by the year 2035. Maximum buildout on each vacant parcel in the service area was also estimated using the land use type and size of the parcel. Based on these calculations, the Truckee System potable water demand was estimated to be 2,733 mgd by 2035. With respect to other uses of MVGB, total withdrawals were estimated to be 4,217 million gallons per year by 2035. As discussed above, the total MVGB water supply is estimated at 7,820 million gallons. Accordingly, there is sufficient groundwater available to meet TDPUD's needs through the year 2035, based on the 2006 General Plan growth projections. In addition, the projected total demand of 4,217 million gallons is equal to about three percent of the capacity of the MVGB. Therefore, MVGB has adequate water to accommodate projected growth in the service area through the year 2035 even if no recharge of the basin were to occur (TDPUD 2016).

With respect to production capacity, an additional 2.5 mgd of production capacity is needed over the next 20 years to meet projected demands. TDPUD expects to add four new water supply wells, with a capacity of 850 gallons per minute, to meet forecasted future demands. TDPUD currently owns property rights for one future groundwater well and plans to identify additional well sites in the future (TDPUD 2016:6-8).

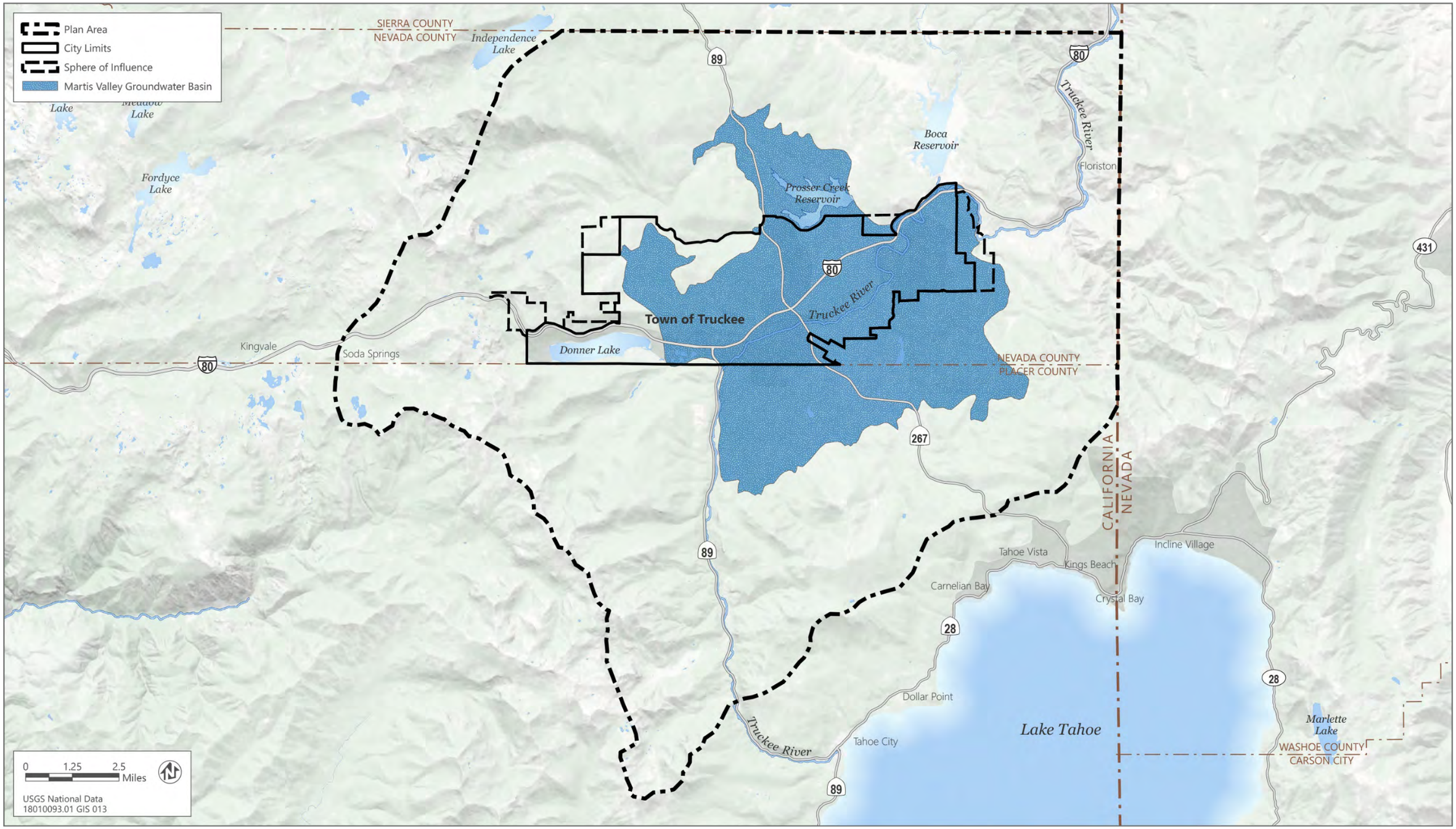
Water Conservation Programs

TDPUD implements a variety of water conservation programs including residential and commercial rebate programs for water efficient landscapes, irrigations systems, and appliances. TDPUD also provides energy saving tips, educational materials, and real time usage tracking on their website (TDPUD 2012).



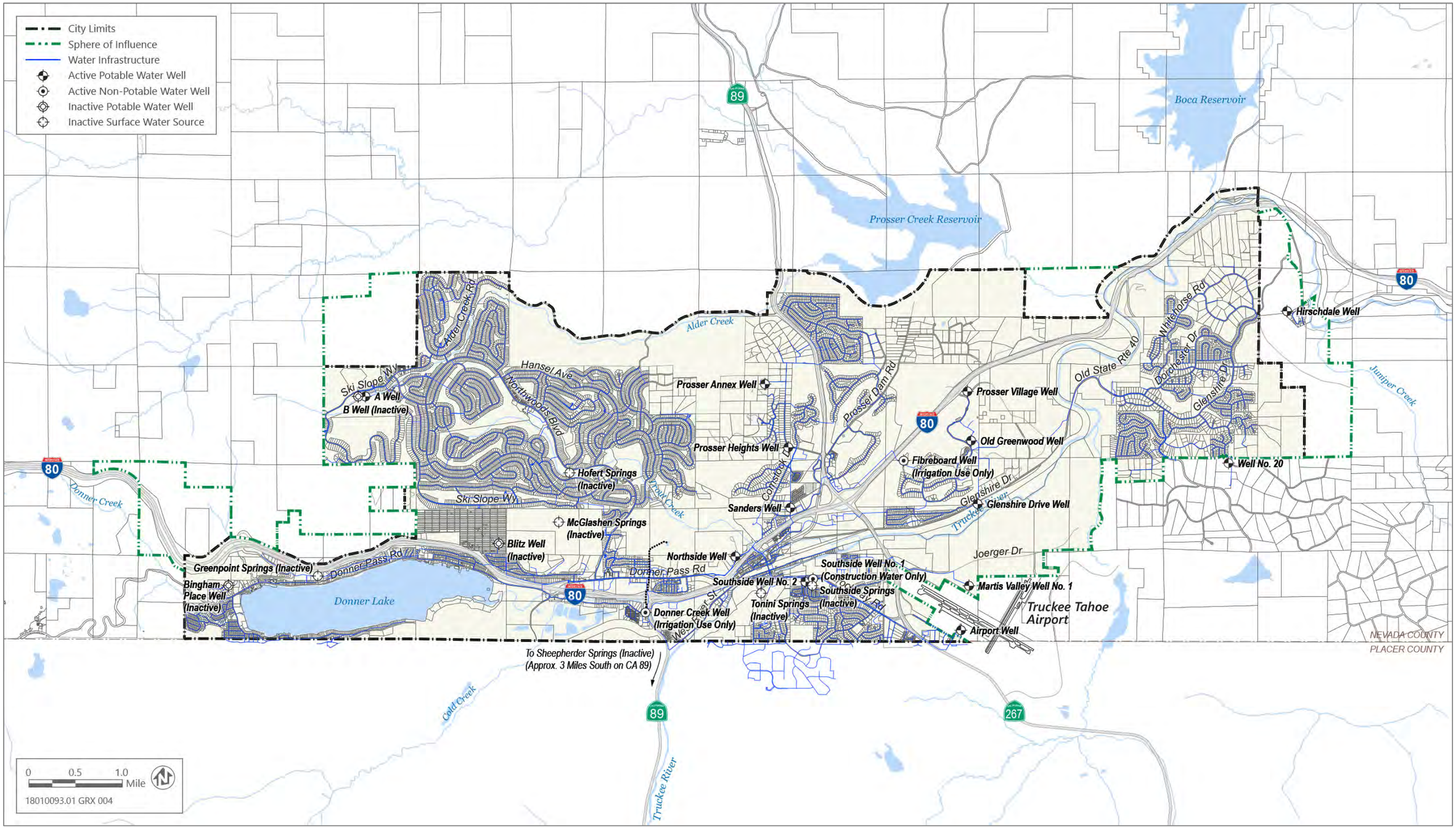
Source: Data downloaded from Town of Truckee in 2018

FIGURE 8-1 TRUCKEE DONNER PUBLIC UTILITY DISTRICT SERVICE AREA



Source: Data downloaded from Town of Truckee in 2018, DWR in 2018

FIGURE 8-2 MARTIS VALLEY GROUNDWATER BASIN



Source: Data downloaded from Town of Truckee in 2018, DWR in 2018

FIGURE 8-3 TRUCKEE DONNER PUBLIC UTILITY INFRASTRUCTURE

System Maintenance

TDPUD utilizes computer model simulation to evaluate adequacy of system pressures, pipeline velocities, water storage volumes, and fire-fighting capabilities (TDPUD 2012). Once system improvement needs are identified they are prioritized for inclusion in the capital improvement plan. TDPUD's capital improvement plan includes approximately $995,814 for fiscal year 2018 (FY 2018) and $1,066,925 for FY 2019 (TDPUD 2017). Notable capital projects include:

- supervisory control and data acquisition replacement project;
- pipeline replacement projects;
- pump station and well maintenance;
- meter installation; and,
- meter maintenance and replacement.

Capital expenditures are funded through rate fees and any remaining costs a paid from reserve funds. TDPUD's water budget proposed a 3 percent rate increase in FY 2018 and FY 2019 (TDPUD 2017).

8.1.3 Regulatory Setting

STATE

California Water Conservation Act

SBx7-7 was enacted in November 2009 and requires each urban water supplier to select one of four water conservation targets contained in California Water Code Section 10608.20 with the statewide goal of achieving a 20 percent reduction in urban per capita water use by 2020. Under SBx7-7, urban retail water suppliers (in this case, TDPUD), are required to develop water use targets and submit a water management plan to the California Department of Water Resources (DWR) by July 2011. The plan must include the baseline daily per capita water use, water use target, interim water use target, and compliance daily per capita water use. In addition, the state will make incremental progress towards this goal by reducing per capita water use by at least 10 percent by December 31, 2015.

Urban Water Management Planning Act

In 1983, the California Legislature enacted the Urban Water Management Planning Act (Water Code Sections 10610 – 10656). The act requires that every urban water supplier that provides water to 3,000 or more customers, or that provides over 3,000 acre-feet of water annually, prepare and adopt an urban water management plan. The act states that urban water suppliers should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years. The act also states that the management of urban water demands, and the efficient use of water shall be actively pursued to protect both the people of the state and their water resources.

California Water Code, Water Supply Wells and Groundwater Management

The California Water Code (CWC) is enforced by DWR. DWR's mission is "to manage the water resources of California in cooperation with other agencies, to benefit the State's people, and to protect, restore, and enhance the natural and human environments." DWR is responsible for promoting California's general welfare by ensuring beneficial water use and development statewide. The laws regarding groundwater wells are described in CWC Division 1, Article 2 and Articles 4.300 to 4.311; and Division 7, Articles 1-4. Further guidance is provided by bulletins published by DWR, such as bulletins 74-81 and 74-90 related to groundwater well construction and abandonment standards.

Groundwater Management is outlined in the CWC, Division 6, Part 2.75, Chapters 1-5, Sections 10750 through 10755.4. The Groundwater Management Act was first introduced in 1992 as Assembly Bill (AB) 3030 and has since been modified by Senate Bill (SB) 1938 in 2002, AB 359 in 2011, and AB 1739 in 2014. The intent of the Groundwater

Management Act is to encourage local agencies to work cooperatively to manage groundwater resources within their jurisdictions and to provide a methodology for developing a Groundwater Management Plan.

Sustainable Groundwater Management Act of 2014

The Sustainable Groundwater Management Act of 2014 (SGMA) became law on January 1, 2015 and applies to all groundwater basins in the State (Water Code Section 10720.3). By enacting the SGMA, the legislature intended to provide local agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater within their jurisdiction (Water Code Section 10720.1).

The SGMA outlines four basic requirements; 1) development of a Groundwater Sustainability Agency (GSA); 2) development of a Groundwater Sustainability Plan (GSP) or development of an Alternative Submittal; 3) implementation of the specific plan and management to meet quantifiable sustainability objectives; and 4) reporting of the implementation activities. Pursuant to the SGMA, TDPUD submitted an Alternative Submittal to a Groundwater Sustainability Plan for approval by DWR on behalf of the MVGB and its local SGMA agencies including TDPUD, Northstar Community Services District, Placer County Water Agency, the Town of Truckee, Nevada County, and Placer County.

LOCAL

Urban Water Management Plan

The Truckee Water System 2015 Urban Water Management Plan (2015 UWMP) describes water supply sources, historical and projected water use, and a comparison of water supply to projected water demands through the year 2035. The 2015 UWMP also addresses water use efficiency legislation, including the 2015 and 2020 water use targets, as required by the Water Conservation Act of 2009, and the implementation plan for meeting the 2020 water use targets. The 2015 UWMP documents the need for two new supply wells in the period of 2035 to 2035 to meet projected demands.

Truckee River Water Quality Monitoring Plan

In 2007, the Lahontan Regional Water Quality Control Board required both Placer County and the Town of Truckee to prepare a comprehensive monitoring program for the Truckee River. Placer County and Truckee chose to coordinate efforts to prepare and implement the 2008 Truckee River Water Quality Monitoring Plan (TRWQMP). The TRWQMP provides a framework to conduct performance assessments to evaluate the relative water quality condition of the receiving surface waters. Each jurisdiction is responsible for preparing and implementing Stormwater Management Program (SWMP) documents. The information and data generated can be used by public agencies, regulators and stakeholders to evaluate the performance and success of the local SWMPs in protecting water quality.

Martis Valley Groundwater Management Plan

TDPUD, Northstar Community Services District, and Placer County Water Agency, prepared the Martis Valley Groundwater Management Plan (Martis Valley GMP) to meet the requirements of Senate Bill 1938. The Martis Valley GMP outlines the partner agencies' authority, physical setting including groundwater conditions, management goals, basin management objectives, and implementation activities. The overall purpose of the Martis Valley GMP is to improve the understanding and management of the groundwater resource in Martis Valley and provide a framework for partner agencies to align policy and implement effective groundwater management programs.

Truckee Municipal Code

Section 18.40.060 Water Efficient Landscape Standards

This section establishes water efficient landscape standards to increase water efficiency of new or rehabilitated development. Residential projects that are not proposing any landscaping are required to sign and submit an exemption form; residential projects with less than 500 square feet of landscaping are required to submit an exemption form and a landscape plan for documentation. Projects with more than 500 square feet but less than

2,500 square feet of landscaping may use the prescriptive approach which requires applicants to identify specifications on landscape plans. Projects with more than 2,500 square feet of landscaping are required to meet performance requirements outlined in Section 18.40.060.

8.2 Wastewater Collection and Treatment

This section describes the wastewater collection, treatment facility, and disposal services in the town.

8.2.1 Major Findings

- Truckee Sanitary District (TSD) provides wastewater collection and conveyance services to Placer and Nevada Counties, including the Town of Truckee. TSD operates and maintains approximately 300 miles of gravity pipelines, 9 miles of pressure pipeline, 10 main lift stations, and 33 smaller lift stations.
- As of 2017, TSD served 16,838 equivalent dwelling units (EDUs), which equates to approximately 3.8 mgd. TSD facilities are designed to accommodate 28,933 EDUs, which is sufficient to accommodate the existing demand for wastewater collection services.
- Projected TSD wastewater service demands, calculated by the Nevada County Local Agency Formation Commission (Nevada LAFCo), apply two different growth scenarios: a slow growth scenario and a fast growth scenario. TSD's EDU capacity is sufficient to meet the total service population under the slow growth scenario through the year 2040. However, TSD EDU capacity would be adequate to meet projected growth under the fast growth scenario through the year 2025, if no other improvements were made.
- Tahoe-Truckee Sanitation Agency (T-TSA) provides conveyance, treatment, and sewage disposal services to eastern Placer County and Eastern Nevada County. T-TSA owns, operates, and maintains the Truckee River Interceptor (TRI) and Water Reclamation Plant (WRP).
- TSD has the most wastewater connections and the highest service population when compared to the other districts served by T-TSA. In 2015, TSD conveyed 394 million gallons of wastewater to the T-TSA regional water reclamation plant for treatment.
- The TRI was installed in the 1970s and is considered a relative new sewage system. When capacity deficiencies or rehabilitation work are identified, the T-TSA prepares design details and documents to meet the specific needs of individual projects.
- The WRP treatment capacity is 9.6 mgd, which is sufficient to serve the participating districts through 2025.
- Pursuant to Truckee Municipal Code Section 18.16.090, residential subdivision within a residential zoning districts creating four or less parcels may use on-site septic systems with approval of the zoning administrator and health and environmental agencies, as applicable.

8.2.2 Existing Conditions

TRUCKEE SANITARY DISTRICT

TSD provides wastewater collection and conveyance services to Placer and Nevada Counties, including the Town of Truckee. TSD operates and maintains approximately 300 miles of gravity pipelines, nine miles of pressure pipeline, 10 main lift stations, and 33 smaller lift stations. The service area encompasses 39 square miles and the collection system serves residential and commercial customers, but not heavy industrial customers (TSD 2015).

System Capacity

TSD uses the equivalent dwelling unit (EDU) metric to plan for wastewater treatment capacity. Although they do not directly operate a wastewater treatment plant, TSD calculates EDUs for planning purposes. One EDU is defined as the average wastewater discharge from a single-family dwelling. TSD assumes that one EDU is equal to 230 gallons per day (gpd). As of 2017, TSD served 16,838 EDUs which equates to 3.8 mgd (16,838 EDUs x 238 gallons per day = 3,872,740 gallons per day). All facilities are designed to accommodate 28,933 EDUs, which is sufficient to accommodate the existing demand for wastewater collection services (Nevada LAFCo 2018).

Projected Demand

Projected TSD wastewater service demands, calculated by the Nevada County LAFCo, apply two different growth scenarios: a slow growth scenario and a fast growth scenario. The slow growth scenario relies on the California Department of Finance (DOF) population projections and the fast growth scenario relies on the 2006 General Plan population projections (Nevada LAFCo 2018). Table 8-1 includes TSD full-time resident growth projections through the year 2040. Under the slow growth scenario, the 2040 full-time resident population is projected to be 19,665 people. Under the fast growth scenario, the 2040 full-time resident population is projected to be 64,709 people.

Table 8-1 Truckee Sanitary District Projected Population Growth

	2020	2025	2030	2035	2040
Slow Growth	17,642	18,099	18,660	19,221	19,665
Fast Growth	24,253	31,176	39,768	50,728	64,709

Source: LAFCo 2018:3-13.

In 2016, 55.3 percent of the homes in Truckee were classified as vacant because most residences serve as second homes or rental units during the summer and winter seasons. For projection purposes, TSD assumes the visitor population to be roughly proportionate to the full-time population. Therefore, the slow growth scenario anticipates the total 2040 TSD service population to be 39,330 people, including 19,665 full-time residents and 19,665 part-time residents. The fast growth scenario anticipates the total 2040 TSD service population to be 129,418 people, including 64,709 full-time residents and 64,709 part-time residents. Future population growth and associated demand for services could create the need for additional infrastructure. Historically, TSD has added approximately 100 to 200 EDUs per year within its service area. As discussed above, TSDs facilities are designed to accommodate 28,933 EDUs which is sufficient to meet the total service population under the slow growth scenario through the year 2040. With respect to the fast growth scenario, TSD EDU capacity would be adequate to meet projected growth through the year 2025, if no other improvements were made (Nevada LAFCo 2018).

System Maintenance

TSD cleans its gravity sewer mains on a three-year cleaning cycle. Pipes are cleaned by hydrojet via one of two larger combination vactor/jetter vehicles, or a smaller jetter truck where access by the larger vactor is not feasible. Pipes with recurring maintenance issues are defined as potential "hot spots." Hot spot pipes are first cleaned on a 12-month cleaning schedule and moved to a 6-month or 3-month cleaning schedule if issues persist. TSD generates an SSO hot spot list using on one or more of the following criteria: cleaning history, closed-circuit television inspection results, and/or the occurrence of SSOs. If the pipeline in question is rehabilitated, the pipe segment is removed from the hot spot list. The entire hot spot cleaning list is re-evaluated periodically. Overall, TSD infrastructure is currently in good condition and requires approximately $150,000 annually in rehabilitation budget to address ongoing pipeline issues (TSD 2015).

TSD's capital improvement plan includes approximately $905,000 for the fiscal year 2018 (FY 2018). Notable capital expenditures for FY 2018 include sewer improvements associated with the Railyard project, vehicle replacements, computer and network upgrades, and manhole repairs. Anticipated capital improvement projects expected to be completed through the year 2022 include the following (Nevada LAFCo 2018):

- Pipeline rehabilitation

- Donner Creek Bypass System
- Town paving manhole adjustment
- Railyard improvements
- Easement acquisitions
- Foxmead/River park lift station upgrade

Capital expenditures are funded through TSDs Capital Budget in Fund 4, Capital Reserve Fund, and Fund 5, Major Capital Improvements Reserve Fund. The Capital Reserve Fund is restricted to projects that increase the capacity of the sewer system. Revenue sources for this fund come from connection fees and interest earnings. The Major Capital Improvements Reserve Fund is a board designated fund for use on capital improvements. Money for this fund is derived from interest earnings and the transfer of any net revenues from the General Fund (Nevada LAFCo 2018).

TAHOE-TRUCKEE SANITATION AGENCY

Tahoe-Truckee Sanitation Agency (T-TSA) provides conveyance, treatment, and sewage disposal services to eastern Placer County and Eastern Nevada County. T-TSA owns, operates, and maintains the Truckee River Interceptor (TRI) and Water Reclamation Plant (WRP). The 19-mile long TRI runs along the Truckee River corridor and conveys untreated sewage from five-member districts and one non-member district to the T-TSA WRP for treatment (Nevada LAFCo 2018). Collection of untreated sewage is handled by each respective district.

Service Population

Table 8-2 includes wastewater connections and service populations for each district served by T-TSA in 2015. The total 2015 full-time service population was approximately 32,616 people and the part-time population was estimated at 62,811 for a total service population of 95,427 people. As shown in Table 8-2, TSD has the most wastewater connections and the highest service population when compared to the other districts served by T-TSA. In 2015, TSD conveyed 394 million gallons of wastewater to the T-TSA regional water reclamation plant for treatment (Nevada LAFCo 2018).

Table 8-2 Tahoe-Truckee Sanitation Agency 2015 Service Population

District	Wastewater Connections	Existing Full-time Population	Estimated Existing Part-time Population
Alpine Springs County Water District	653	191	1,546
North Tahoe Public Utility District	5,524	5,486	11,138
Squaw Valley Public Service District	1,073	950	3,500
Tahoe City Public Utility District	7,540	8,524	17,307
Truckee Sanitation District	16,838	17,329	17,320
Northstar Community Services District[1]	1,820	136	12,000
Total	**33,448**	**32,616**	**62,811**

1. The Northstar Community Services District is a non-member district. Wastewater from this district is treated at T-TSA through an agreement with TSD.

Source: Nevada LAFC0 2018:4-10.

Truckee River Interceptor

The TRI was installed in the 1970s and is considered a relative new sewage system. When capacity deficiencies or rehabilitation work are identified, the T-TSA prepares design details and documents to meet the specific needs of individual projects. In 2014, the TRI was rehabilitated using cured-in-place pipe to remove corrosion near Alpine

Meadows. Most other rehabilitation work involves installing corrosion control features and improving slope stability. Rehabilitation work is typically required after significant flood events (T-TSA 2017).

Wastewater Reclamation Plant

The WRP provides tertiary level treatment which consists of influent screening, grit removal, primary sedimentation, pure oxygen activated sludge, biological phosphorus removal, chemical treatment, mixed media filtration, biological nutrient removal, ion exchange ammonia removal, and final chlorination. Organic sludge is digested anaerobically, dewatered and transported to the Lockwood landfill and Bently Farm in Nevada. In 2008, T-TSA expanded the WRP to increase treatment capacity to 9.6 mgd and accommodate between 400 to 800 new connections per year. However, the rate of new connections did not increase as originally anticipated. As a result, T-TSA anticipates treatment capacity of 9.6 mgd is sufficient to serve the participating districts through 2025. In 2017, the daily average treatment plant influent was 3.18 million gallons. The maximum instantaneous flow rate was 5.49 million gallons and the average annual flow volume is 4.0 mgd (Nevada LAFCo 2018).

PRIVATE SEPTIC SYSTEMS

Prior to installation of the TSD wastewater collection system, residential dwellings within Truckee depended on septic tank/leach systems for household wastewater needs. Septic tanks are waste management systems that require regular maintenance for proper decomposition of waster-matter and sludge. The Town may require new subdivisions of three or less parcels to connect to TSD infrastructure if the project is located near existing or future sewer lines (Truckee Municipal Code Section 18.08.060). Pursuant to Truckee Municipal Code Section 18.16.090, residential subdivision within a residential zoning districts creating four or fewer parcels may use on-site septic systems with approval of the zoning administrator and health and environmental agencies.

8.2.3 Regulatory Setting

FEDERAL

CWA Section 401 and 402 National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit program was established in the CWA to regulate municipal and industrial discharges to surface waters of the US. NPDES permit regulations have been established for broad categories of discharges including point source waste discharges and nonpoint source stormwater runoff. Each NPDES permit identifies effluent and receiving water limits on allowable connections and/or mass emissions of pollutants contained in discharge; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger including pollution prevention, self-monitoring, and other activities. Wastewater discharge is regulated under the NPDES permit program for direct discharges into receiving waters and by the National Pretreatment Program for indirect discharges to a sewage treatment plant.

STATE

Statewide Waste Discharge Requirements for Sanitary Sewer Systems

In 2006, the State Water Resources Control Board adopted the Statewide Waste Discharge Requirements for Sanitary Sewer Systems (SSS WDR). SSS WDR mandates sanitary sewer agencies to enroll in the on-line Sanitary Sewer Overflow (SSO) tracking program and develop a Sewer System Management Plan (SSMP). The SSMP serves as a collection system management tool that documents SSO response, capital funding, operation and maintenance, and capacity planning among other aspects of comprehensive collection system management. TSD prepared an SSMP in May 2015.

LOCAL

2025 General Plan

The Land Use Element of the *Town of Truckee 2025 General Plan* contains the following goals and policies applicable to wastewater collection and treatment within the town (Town of Truckee 2006):

- Goal LU-4: Coordinate land development with provision of services and infrastructure.
  - P4.3: Approve rezoning and development permits only when adequate services are available, or when a program to provide services has been approved by the applicable District and the Town of Truckee. Standards of services for new development applicable to this policy are shown in Table LU-6. Require that sewer be provided for all new residential subdivisions creating more than four lots, and all new commercial and industrial uses. Existing legal lots and new subdivisions of four or fewer lots in areas currently without sewer may be developed with residential uses using septic systems with the approval of the appropriate health and environmental agencies. Such lots may be required to establish connections to the sewer system if they are located in close proximity to existing or future sewer lines.

Truckee Municipal Code

Section 18.16.090 Special Purpose District Performance Standards

Pursuant to this section of the Municipal Code, all land uses proposed within a Residential Zoning District shall include connections to the sewer system, no-onsite sewer shall be approved. Residential subdivisions creating four or fewer parcels and existing single-family lots may use on-site septic systems with approval of the appropriate the review authority and health and environmental agencies. However, the review authority may require connection to sewer infrastructure if the project is located near existing or future sewer lines. See Chapter 5, "Natural Resources," for more information on water quality.

8.3 Stormwater Drainage

This section describes stormwater drainage facilities in the Town of Truckee. Water quality issues related to stormwater are addressed in further detail in Section 5.2 (Water Resources and Quality) of Chapter 5 in this report.

8.3.1 Major Findings

- The Town of Truckee Public Works Department is responsible for maintenance of approximately 100 miles of drainage ditches and 15 miles of culverts, which involves culvert cleaning, brushing of roadside shrubs and trees, and reestablishing drainage ditches on a continuing basis.
- Existing stormwater infrastructure includes manholes, outlets, inlets, detention basins, and stormwater ditches.
- The Town has initiated several projects to improve drainage and run-off issues through the year 2024.

8.3.2 Existing Conditions

STORMWATER FACILITIES

Stormwater conveyance within Truckee occurs through a mix of culverts (some within drainage easements along property lines) and roadside ditches that discharge directly into the Truckee River. The Town of Truckee Public Works Department is responsible for maintenance of approximately 100 miles of drainage ditches and 15 miles of culvert, which involves culvert cleaning, brushing of roadside shrubs and trees, and reestablishing drainage ditches on a continuing basis (Truckee Public

Works 2018). As shown in Figure 8-4, existing stormwater infrastructure includes culverts, manholes, outlets, inlets, detention basins, and stormwater ditches.

The Town has initiated several projects to improve drainage and run-off within the town. The Church Street Extension project will replace an undersized culvert with a new bridge and restore the creek upstream from the project area, estimated completion date is 2020 or 2021. The Coldstream Culvert Replacement project is expected to replace an aging box culvert located under Coldstream Road with a new bridge across Donner Creek. The new bridge will increase the flood capacity and improve fish passage, estimated completion date is 2019. The annual Paving and Drainage projects are expected to improve overall drainage at various location throughout the town, and the West River Street project is designed to improve stormwater capture and treatment (Town of Truckee 2018c; Town of Truckee 2018d).

8.3.3 Regulatory Setting

LOCAL

2025 General Plan

The Land Use Element of the *Town of Truckee 2025 General Plan* contains the following goals and policies applicable to stormwater drainage within the town (Town of Truckee 2006):

- Goal LU-4: Coordinate land development with provision of services and infrastructure.
  - P4.5: Require new infrastructure and development to be designed and built to manage stormwater runoff and to minimize or eliminate harmful impacts to property prone to flooding, water quality, and riparian, wetland, and meadow habitats. When infrastructure is replaced or retrofitted, require the upgrading of stormwater management systems to minimize or eliminate these impacts.

Truckee Municipal Code

Title 11 Storm Water Ordinance

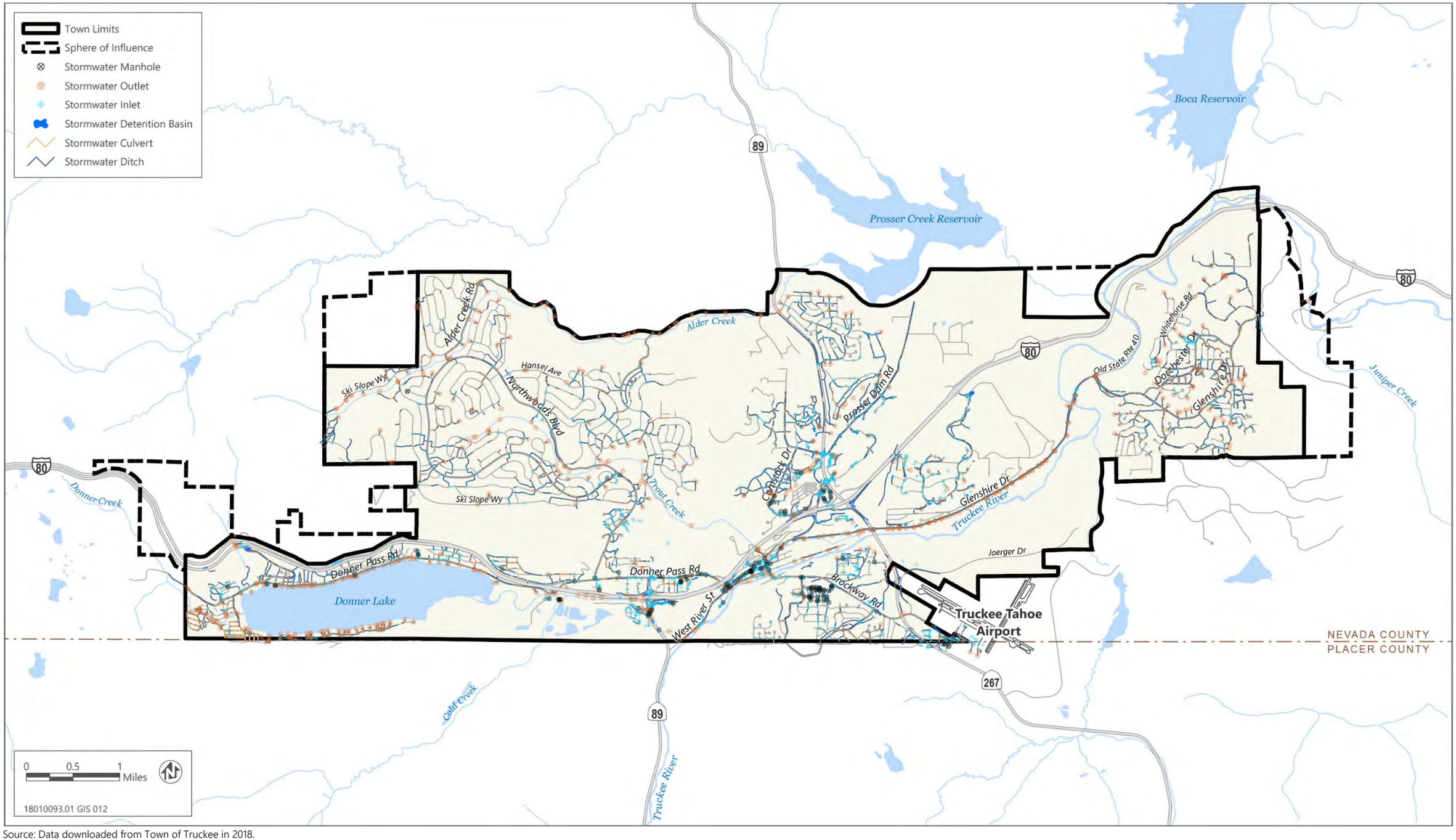
This title sets forth stormwater quality requirements to regulate the entry of pollutants and non-stormwater discharges into the town stormwater conveyance system in compliance with the NPDES permit. Chapter 11.03, "Adoption of Best Management Practices," establishes best management practices (BMPs) for any activity, construction activity, operation or facility, which may cause or contribute to pollution or contamination of stormwater. Pursuant to Chapter 11.04, "Requirements for Construction Activities," persons requesting a grading or building permit demonstrate compliance with Town of Truckee Development, BMPs, Code, and applicable permits, including, but not limited to: the State Water Board's Construction General Permit; Industrial General Permit; State Water Board 401 Water Quality Certification; United States Army Corps 404 Permit; and California Department of Fish and Game 1600 Agreement.

8.4 Snow Removal

This section describes existing snow removal operations in the Town.

8.4.1 Major Findings

- The Town of Truckee Department of Public Works is responsible for maintaining unobstructed roadways within the Town to ensure the safe and orderly movement of emergency equipment, vehicle traffic, and pedestrians during the snow season which is generally from November 1 through April 30.
- Private contractors within the Town offer snow removal services on private property.



Source: Data downloaded from Town of Truckee in 2018.

FIGURE 8-4 STORMWATER FACILITIES

8.4.2 Existing Conditions

The Town of Truckee Department of Public Works is responsible for maintaining unobstructed roadways within the Town to ensure the safe and orderly movement of emergency equipment, vehicle traffic, and pedestrians throughout the community. This includes snow removal during the snow season which is generally from November 1 through April 30 of each year. A winter parking ban prohibiting parking in or on Town roads is also enacted during this time. The Town's goal of safe and timely snow removal operation priorities are as follows:

- Support for emergency agency responses.
- Main arterial and school bus routes.
- Secondary residential streets
- High elevation areas subject to high winds.

Public Works has separated the Town into four service areas; Main Arterials/School Bus Routes, Residential Streets, Town Maintained Parking, and Maintained Trails and Sidewalks. Snow removal methods vary from service area to service area. Snow removal operation crews are broken into three work groups: Day Plow operations, Night Plow operations, and Sand Truck Operations. Daily shifts are staggered to accommodate 7 days a week, and 24 hours per day coverage. The Public Works Department coordinates with law enforcement to clear roadways during emergency situations and/or traffic accidents.

During the winter months, the Department of Public Works will monitor the weather and street conditions daily. Storm conditions vary due to temperature, wind, snow moisture content and snowfall amounts. As storm conditions vary, so will the response of the Department of Public Works to changing conditions. Snow accumulations on the roadways of 4 inches or greater are plowed from the roadway. Smaller events that produce less than 4 inches of accumulation may or may not be plowed based on conditions.

The public right-of-way is used for storage of snow plowed from the streets. It is not available for snow storage for individuals. The right-of-way varies in each subdivision; the average right-of-way is 60 feet (approximately 30 feet from the center of the roadway). Tahoe Donner has a 60-foot right-of-way with an additional 20 feet on each side for snow storage except for Northwoods Boulevard which has an 80-foot right-of-way with an additional 20 feet for snow storage.

Private contractors within the Town offer snow removal services on private property. The Town does not provide private snow removal. Contractors and private property owners generally store snow in areas outside the right-of-way and snow storage area such as front yards or side yards.

8.4.3 Regulatory Setting

STATE

California Vehicle Code 22510

Pursuant to California Vehicle Code 22510, local authorities may enact an ordinance or resolution to prohibit or restrict the parking or standing of vehicles on designated streets or within their jurisdiction for the purpose of snow removal.

LOCAL

Chapter 10.17 Snow Removal

This chapter of the Truckee Municipal Code prohibits parking along the public rights-of-way during snow season. For the purposes of snow removal, the Town right-of-way is defined as the area of the street and shoulder that is

maintained by and under the control of the Town as defined in the Nevada County Assessor Parcel maps. Snow poles are used as visual guides for snow plow equipment and are not representative of the Town right-of-way.

8.5 Solid Waste, Recycling, and Composting

This section describes existing solid waste, recycling, and composting services in the town.

8.5.1 Major Findings

- Tahoe Truckee Sierra Disposal (TTSD) operates the Eastern Regional Landfill Material Recovery Facility (MRF) and Transfer Station. TTSD collects household waste and recyclables and transports the refuse to the Eastern Regional Landfill MRF and Transfer Station where recyclables are sorted, bundled, and transported to recycling centers. Non-recyclable solid waste is transported to the Lockwood Regional Landfill. Commercial food scraps are collected by TTSD and transported to RT Donovan compost facility.
- The Eastern Regional Landfill MRF and Transfer Station is permitted to receive 800 tons of material and 832 vehicles daily. The processing capacity is approximately 40 tons of material per hour, and the daily processing capacity for an 8-hour period is approximately 320 tons per day.
- In 2017, the Town renegotiated a 10-year solid waste agreement with TTSD. As part agreement residents and commercial businesses are provided recycling and yard waste containers to facilitate with the materials sorting process and minimize contamination. The transition from bags to waste containers will prevent up to 2.5 million blue bags and 600,000 green bags from going to the landfill over the course of the 10-year contract.
- In 2016, the Lockwood Regional Landfill accepted an average of 2,960 tons of solid waste per day. The Lockwood regional Landfill has a remaining capacity of 267 million cubic yards and an estimated closure date of 2150.
- In 2017, the Town of Truckee exported 15,480 tons of solid waste.

8.5.2 Existing Conditions

Commercial and residential solid waste is collected and processed by TTSD. TTSD operates Eastern Regional Landfill MRF and Transfer Station. Tahoe Truckee Disposal collects household waste and recyclables and transports the refuse to the Eastern Regional Landfill MRF and Transfer Station where items are sorted. Recyclables are bundled and transported to recycling centers. Non-recyclable solid waste is transported to the Lockwood Regional Landfill (Town of Truckee 2018).

The Eastern Regional Landfill MRF and Transfer Station separates and recycles marketable materials such as cardboard, plastics, metals, and glass. In 2017, the Town renegotiated a 10-year solid waste agreement with TTSD. As part of the agreement residents and commercial businesses are provided recycling and yard waste containers to facilitate with the materials sorting process and minimize contamination. All containers, including, the mixed waste containers, are sorted and processed at the Eastern Regional Landfill MRF and Transfer Station to capture recyclable materials. The transition from bags to waste containers contributes to the Town's sustainability goals and will prevent up to 2.5 million blue bags and 600,000 green bags from going to the landfill over the course of the 10-year contract. The facility is owned by Place County; therefore, as part of the new materials sorting process, the Town negotiated a memorandum of understanding with Placer County, to ensure that he clean recyclables and clean yard waste materials will be handled separately from the mixed waste processing stream, which will also help yield a higher diversion rate and contribute to the Town's sustainability goals (Town of Truckee 2017:2).

The Eastern Regional Landfill MRF and Transfer Station also recycles source-separated wood waste, pine needles, and inert materials. Wood waste is chipped for mulch, woodchips, or biomass fuel, pine needles are used for slope stabilization, and inert materials are crushed for reuse as aggregate or in on-site land remediation (Eastern Regional MRF and Transfer Station 2015). The Eastern Regional Landfill MRF and Transfer Station, located in Alpine Meadows,

is permitted to receive 800 tons of material and 832 vehicles daily (Placer County Department of Public Works 2018). The processing capacity is approximately 40 tons of material per hour, and the daily processing capacity for an 8-hour period is approximately 320 tons per day (Eastern Regional MRF and Transfer Station 2017).

The Lockwood Regional Landfill, located in Nevada, covers 856 acres and has a waste volume of 302 million cubic yards (NDEP 2009). In 2016, the Lockwood Regional Landfill accepted an average of 2,960 tons of solid waste per day. The volume of waste conveyed to the Lockwood Regional Landfill from California communities accounts for 7.5 percent of municipal solid waste. The Lockwood regional Landfill has a remaining capacity of 267 million cubic yards and an estimated closure date of 2150 (State of Nevada 2017).

According to CalRecycle's jurisdiction disposal records the Town of Truckee exported 15,480 tons of solid waste in 2017. In 2016, Truckee's per capita waste disposal rate for residents was 5.4 pounds per day (lbs/day); the per-capita disposal rate target for residents according to CalRecycle is 10.7. The per-capita waste disposal rate for employees in 2015 was 10.1 lbs/day; the CalRecycle per capita disposal rate was 26.1 lbs/day.

Truckee administers a variety of waste reduction and recycling programs to divert the amount of waste transported to the landfill including curbside recycling, commercial recycling, commercial organics recycling, school waste programs, green waste disposal options, and universal waste recycling (Town of Truckee Solid Waste 2018).

8.5.3 Regulatory Setting

STATE

California Integrated Waste Management Act

To minimize the amount of solid waste that must be disposed of in landfills, the state legislature passed the California Integrated Waste Management Act of 1989 (AB 939), effective January 1990. According to AB 939, all cities and counties were required to divert 25 percent of all solid waste from landfill facilities by January 1, 1995 and 50 percent by January 1, 2000. Solid waste plans are required to explain how each city's AB 939 plan will be integrated with the county plan. In order of priority, the plans must promote source reduction, recycling and composting, and environmentally safe transformation and land disposal. SB 1016 (2007) amended portions of the California Integrated Waste Management Act. The Act allows the California Integrated Waste Management Board (CIWMB) to use per capita disposal as an indicator in evaluating compliance with the requirements of AB 939. Jurisdictions track and report their per capita disposal rates to CalRecycle. Per capita disposal rates for unincorporated Placer County are below the target disposal rates established by AB 939 (CalRecycle 2018).

In 2011, AB 341 modified the California Integrated Waste Management Act and directed CalRecycle to develop and adopt regulations for mandatory commercial recycling. The resulting Mandatory Commercial Recycling Regulation (2012) requires that on and after July 1, 2012, certain businesses that generate 4 cubic yards or more of commercial solid waste per week shall arrange for recycling services. To comply with this requirement, businesses may either separate recyclables and self-haul them or subscribe to a recycling service that includes mixed waste processing. AB 341 also established a statewide recycling goal of 75 percent; the 50 percent disposal reduction mandate still applies for cities and counties under AB 939 (1989). This law also requires certain businesses to recycle. To comply with this requirement, businesses may separate their recyclables and self-haul them to a recycling facility, recycle on-site, or subscribe to a mixed waste process service that diverts recyclables.

AB 1826 (2014) requires certain business, beginning in 2016, to recycle their organic waste. The law also requires jurisdictions to develop and implement an organics recycling program. To comply with this requirement, businesses may separate their organic waste and self-haul it to an organics recycling facility, recycle on-site, or subscribe to a service that recycles organic waste.

SB 605 (2014) directed the California Air Resources Board (CARB) to develop a comprehensive Short-Lived Climate Pollutant (SLCP) strategy in coordination with CalRecycle and other state and local agencies to reduce statewide emissions of SLCPs. SB 1383 (2016) directed the CARB to approve and start implementing the SLCP strategy by 2018.

Since methane is a SLCP produced from the decomposition of organic waste in landfills, the bill established targets to achieve a statewide 50-percent reduction in the level of the disposal of organic waste from the 2014 level by 2020 and 75-percent reduction in the level of the disposal of organic waste from the 2014 level by 2025. The bill required CalRecycle, in coordination with CARB, to adopt regulations to achieve the organic waste reduction targets. CARB approved a Short-Lived Climate Pollutant Strategy in 2017. CalRecycle is currently developing regulations.

California Building Standards Code (Title 24)

Where a local jurisdiction has not adopted a more stringent construction and demolition (C&D) ordinance, construction activities are required to implement Section 5.408 of the CALGreen Code. Under Section 5.408, construction activities are required to recycle and/or salvage for reuse a minimum of 65 percent of their nonhazardous C&D waste as of January 1, 2017. Applicable projects are required to prepare and implement a Construction Waste Management Plan, which is submitted to the local jurisdiction before issuance of building permits. Applicable projects include all newly constructed residential buildings or structures, existing residential buildings or structures with additions/alterations, all newly constructed nonresidential buildings or structures, existing nonresidential buildings with additions of 1,000 sq. ft. and larger and existing nonresidential alterations when permit valuation or estimated construction cost of alteration is $200,000 and greater.

LOCAL

Truckee Municipal Code

Section 6.01.060 Mandatory Commercial Recycling

This section establishes that each commercial generator, regardless of generation size, shall ensure segregation of recyclable materials in a separate container, provide adequate labeled receptacles, and provide adequate instruction to employees, contractors, volunteers, customers, visitors, and other persons on site segregate recyclable materials.. Commercial waste generators must subscribe to recycling services or self-haul the recyclables.

Section 6.01.070 Mandatory Commercial Organics Waste Recycling

This section establishes all businesses generating both four cubic yards or more of solid waste per week and one-half of a cubic yard or more of organic waste per week, must subscribe to organic waste recycling services or self-haul organic waste to a facility that accepts such materials for diversion by January 1, 2019. Each commercial organic waste generator shall ensure the segregation of recyclable organic waste in a separate designated container, and provide adequate instruction to employees, contractors, volunteers, customers, and visitors.

8.6 Dry Utilities and Telecommunications

This section describes existing electricity, natural gas, and telecommunications services in the town.

8.6.1 Major Findings

- The Truckee Donner Public Utility District (TDPUD) Electric Department and Liberty Utilities supply electricity to the Town of Truckee.
- Southwest Gas Corporation supply natural gas to Truckee.
- Telecommunications services are provided by a variety of companies including Suddenlink, Spectrum, Viasat, AT&T, New Edge Networks, and Plumas-Sierra Telecommunications.

8.6.2 Existing Conditions

ELECTRICITY

Truckee Donner Public Utility District

TDPUD Electric Department supplies electricity to the greater Truckee area, serving approximately 13,000 residential and commercial electrical customers in the Downtown, Gateway, Tahoe Donner, Donner Lake, Sierra Meadows, Armstrong Tract, Meadow Park, Ponderosa Palisades, Grays Crossing, Old Greenwood, Olympic Heights, the Meadows, Martis Valley, and Glenshire Neighborhoods. TDPUD owns and operates approximately 133 miles of overhead and 82 miles of underground electrical distribution circuits. Power is provided through four electrical substations, one metering point, and 15 distribution circuits throughout Truckee. The Tahoe-Donner substation serves the northwest area; the Donner Lake substations serve the area surrounding Donner Lake; the Truckee substation serves the Downtown area, Gateway, and northeast area; and the Martis substation serves the southeast area (Nevada LAFCo 2011).

TDPUD receives its power from Utah Associated Municipal Power Systems (UAMPS), Western Area Power Administration (WAPA), and Northern California Power Agency (NCPA). The energy is transmitted to TDPUD through the NV Energy transmission system (Nevada LAFCo 2011). In 2015, the estimated consumer energy consumption was estimated to at 164,729 Megawatts per hour (MWh) and the actual consumption of energy was 159,614 MWh which is 7.6 percent less energy than TDPUD allocated for the year (TDPUD 2016).

Liberty Utilities

Liberty Utilities supplies electricity to western portions of the Lake Tahoe Basin, serving 49,000 customers in Placer, El Dorado, Nevada, Sierra, Plumas, Mono, and Alpine Counties. Power to the eastern portions of Truckee area is supplied by Liberty Utilities. Liberty Utilities procures all its energy supply through a "full requirements" purchase agreement with NV Energy (CPUC 2015).

NATURAL GAS

Southwest Gas Corporation

Southwest Gas Corporation (Southwest Gas) supplies natural gas to residential, commercial, and industrial customers in California, Nevada, and Arizona. In 2017, Southwest Gas supplied 194,000 customers in Placer, El Dorado, Nevada, and San Bernardino counties (Southwest Gas 2017). Eastern portions of Truckee are serviced by Southwest Gas (CEC 2018). Total Southwest Gas natural gas supplies for residential customers in California was 512 MMCF/day in 2019 and forecast supplies in 2035 are 410 MMCF/day (CGEU 2018).

TELECOMMUNICATIONS

Suddenlink provides digital cable television, high-speed Internet, voice services, and home security/automation systems to residential and business customers in Truckee (SuddenLink 2018). Spectrum provides cable services, and Viasat provides Satellite options. DSL internet services within the Truckee area are provided by AT&T and New Edge Networks (HSI 2018).

Plumas-Sierra Telecommunications (PST) provides broadband services to Lasses, Plumas, Sierra, and Nevada counties in California. PST is a wholly-owned subsidiary of Plumas-Sierra Rural Electric Cooperative, which is member-owned and provides electric and internet services north of Truckee. In January 2018, PST entered into agreement with TDPUD to leverage existing TDPUD's existing fiber optic infrastructure and facilities to expand high-speed internet services in Truckee. PST currently serves commercial districts in Truckee where TDPUD infrastructure and fiber is present. The areas surrounding SR-89 North and I-801 are well covered by PST services as well as business districts (Plumas-Sierra Telecommunications 2018).

8.6.3 Regulatory Setting

FEDERAL

Federal Communications Commission

The Federal Communications Commission (FCC) regulates interstate and international communications by radio, television, wire, satellite, and cable in the United States. The FCC operates as an independent government agency and serves as the primary authority for communications law, regulations, and technological innovation. The FCC is organized into six separate bureaus; Consumer and Governmental Affairs, Enforcement, International, Media, Public Safety and Homeland Security, Wireless Telecommunications, and Wireline Competition.

Federal Energy Regulatory Commission

The Federal Energy Regulatory Commission (FERC) regulates the interstate transmission of electricity, natural gas, and oil. FERC also reviews proposals to build liquefied natural gas (LNG) terminals and interstate natural gas pipelines, as well as licenses hydropower projects. The Energy Policy Act of 2005 gave FERC additional responsibilities, including: promoting the development of a strong energy infrastructure; open access transmission tariff reform; and preventing market manipulation.

STATE

California Public Utilities Commission

The California Public Utilities Commission (CPUC) regulates privately owned telecommunications, electric, natural gas, water, and transportation companies. CPUC also regulates the safety of both publicly and privately-owned railroad and rail transit companies/agencies, and rail crossings. CPUC regulates the planning and approval for the physical construction of electric generation, transmission, or distribution facilities; and the local pipelines of natural gas. In addition, CPUC regulates rates and charges for basic telecommunication services, such as how much one pays for the ability to make and receive calls.

California Energy Commission

The California Energy Commission (CEC), created in 1974, is California's primary energy policy and planning agency responsible for developing energy forecasts, developing and recommending state energy policies, and managing certain energy research and renewable support mechanisms.

California Code of Regulations, Energy Efficiency Standards

Energy conservation standards for new residential and non-residential buildings in California is regulated by State Building Energy Efficiency Standards contained in the California Code of Regulations, Title 24, Part 6. The 2019 Building Energy Efficiency Standards, which go into effect on January 1, 2020 improve upon the 2016 standards for new construction of, and additions and alterations to, residential and nonresidential development. Title 24 applies to all new construction of both residential and nonresidential buildings and regulates energy consumed for heating, cooling, ventilation, water heating, and lighting. Single-family homes constructed with the 2019 standards will use about 7 percent less energy than those built under the 2016 standards. The 2019 standards also require photovoltaic systems for new homes, and once the rooftop solar generation is factored in, Under the 2016 Standards, residential and nonresidential buildings homes will use about 53 percent less energy than those constructed under the 2016 standards.

The California Green Building Standards Code, Title 24, Part 11, of the California Code of Regulations, also known as CALGreen, establishes mandatory minimum green building standards and includes more stringent optional provisions known as Tier 1 and Tier 2. Cities and counties, at their discretion, may adopt Tier 1 or Tier 2 as mandatory or adopt and enforce other standards that are more stringent than the CALGreen Code. Truckee adopted CALGreen building standards by reference in Chapter 15.01 of the Truckee Municipal Code.

LOCAL

Truckee Municipal Code

Chapter 13.06 Underground Utility Districts
This chapter establishes Underground Utility Districts within the Town of Truckee. Pursuant to Section 13.06.0209(b), the Town Council requires that poles, overhead lines and associated overhead structures used in supplying electric service, communications service or similar associated service located within an Underground Utility District be placed in underground locations. Underground Utility District 1 contains all the area encompassing Donner Pass Road between Coldstream Road and McIver Crossing Roundabout. No new poles, overhead lines, and associated structures shall be installed within established utility districts.

Section 18.30.160 Undergrounding of Utilities
Pursuant to this section of the Truckee Municipal Code, all development in Truckee is required to install all electric, telecommunications and cable television lines underground from the nearest above-ground utility service. All existing electric, telecommunication and cable television lines within the city limit shall also be installed underground from the nearest above-ground utility service. Residential parcels larger than 3 acres, and existing or proposed major electrical transmission lines are exempt.

Section 18.58.250 Telecommunications Facilities
This section of the municipal code establishes standards for the development and operation of telecommunications facilities in Truckee including cellular wireless communications and data network facilities, satellite antennas, single-pole/tower amateur radio antennas, and television and radio broadcasting towers.

Section 18.92.100 Public Utilities and Utility Easements
This section requires all subdivisions to install public utilities including electricity, gas, water, sewer, cable, television, and telecommunications. The installation of utilities may be waived by the review authority if the review authority if the authority finds that not installing the utilities as part of the subdivision improvements is in the public interest.

8.7 Fire Protection

This section describes existing fire protection and emergency services provided in the town.

8.7.1 Major Findings

- The Truckee Fire Protection District (TFPD) operates eight fire stations and covers approximately 125 miles.
- TFPD collects fire impact fees within the service area boundaries to finance the public facilities and equipment.
- TFPD purchased land for the proposed Station 90 on Stockrest Springs Road located in Truckee. Construction for the proposed facility is projected to begin in 2027.
- The TFPD Capital Improvement Plan (CIP) for the 2017/2018 fiscal year outlines the districts planned expenditures for improvements to Stations 92, 94, 96, 97.

8.7.2 Existing Conditions

TRUCKEE FIRE PROTECTION DISTRICT

Operations

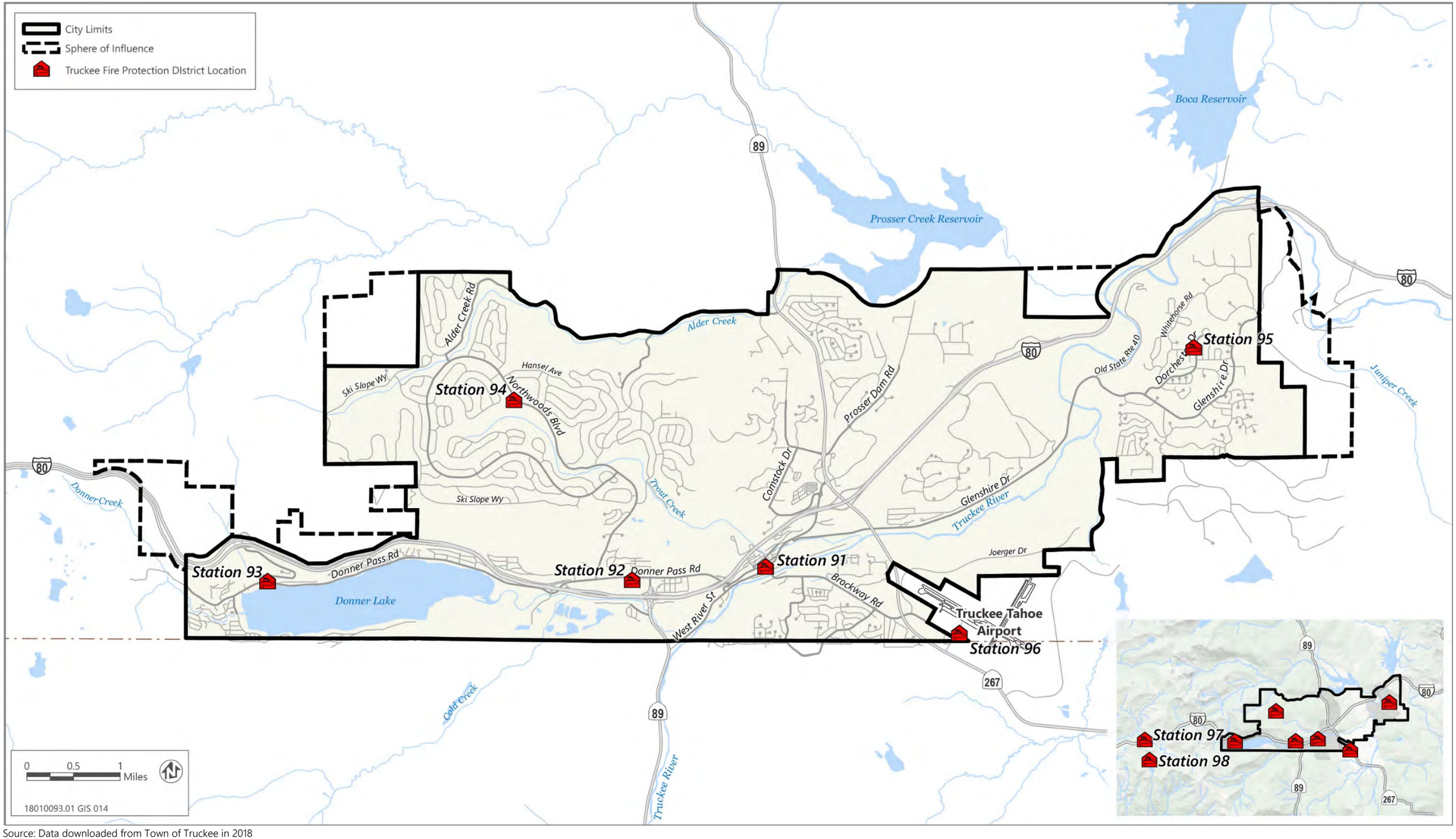
TFPD provides fire prevention, fire suppression, emergency medical care, rescue services, and public education services to the Town of Truckee. TFPD service boundary covers approximately 125 miles and includes the Town of Truckee, the unincorporated communities of Soda Springs and Kingvale Nevada County, and Serene Lakes and portions of the Martis Valley in Placer County. TFPD is one of the oldest fire districts in the Truckee Tahoe area and operates as an independent special district. TFPD is governed by a five-member Board of Directors who are responsible for setting policy and general administrative procedures (TFPD 2017).

Currently, the TFPD operates eight fire stations and is comprised of 51 full-time and 10 part-time employees. For equipment, the TFPD has seven structure engines, three brush engines, one ladder truck, eight advanced life support (ALS) ambulances, a reserve ambulance, a water tender, a heavy rescue, a dive rescue, a ranger utility task vehicle, an airboat, a heavy rescue, aircraft rescue, and firefighting airport capabilities. Fire station locations are shown on Figure 8-5, staffing and equipment information for each fire station is described in further detail below (TFPD 2018):

- Station 91, located at 10049 Donner Pass Road, serves as the Administration Office and Fire Prevention Bureau. This station includes offices for the Fire Chief, Fire Marshal, Division Chiefs, Public Information Officer, and Administrative Staff.
- Station 92, located at 11473 Donner Pass Road, serves as the main fire station. This station houses the Office of the Battalion Chief and is staffed on a full-time basis by a Fire Captain and three Firefighter/Paramedics. This station includes a structure engine, a brush engine, a ladder truck, a water tender, a heavy rescue, a dive rescue, a ranger utility task vehicle, and two ALS ambulances.
- Station 93, located at 11572 Donner Pass Road, is a residential station staffed on a part-time basis by a firefighter/paramedic. This station includes a reserve structure engine and an airboat.
- Station 94, located at 12986 Northwoods Boulevard, is a residential station staffed on a part-time basis by a firefighter/paramedic. This station includes a reserve structure engine.
- Station 95, located at 10900 Manchester Drive, is staffed full-time by a fire captain and a firefighter/paramedic. This station includes a structure engine, a brush engine, and two ALS ambulances.
- Station 96, located at 10277 Truckee Airport Road, is staffed full-time by a fire captain and three firefighter/paramedics. This station includes a structure engine, aircraft rescue and firefighting airport capabilities, two ALS ambulances, and the Place County Regional Office of Emergency Services Hazardous Materials vehicle. California Department of Forestry and Fire Protection (CAL Fire) Station 50 also occupies a portion of this station.
- Station 97, located at 53823 Sherrit Lane, is staffed full-time by a fire captain and a firefighter/paramedic. This station includes a structure engine, a brush engine, a heavy rescue, and two ALS ambulances.
- Station 98, located at 7300 Short Road, is a residential station staffed on a part-time basis by a firefighter/paramedic. This station also includes a reserve structure engine and a reserve ambulance.

Fire Impact Fees

TFPD collects fire impact fees within the service area boundaries which includes the Truckee, and portions Nevada and Placer counties. The TFPD Board of Directors first approved the collection of fire impact fees in 1995 to finance the public facilities and equipment. In 2016, the Board of Directors approved an increase in fire impact fees following the completion of a Fire Impact Fee Nexus Study (TFPD 2016). The purpose of the fee is to fund the one-time cost of improving and expanding TFPD facilities, apparatus, and equipment needed to accommodate new development. The current fee schedule is included in Table 8-3, below.



Source: Data downloaded from Town of Truckee in 2018

FIGURE 8-5 TRUCKEE FIRE PROTECTION DISTRICT LOCATIONS

Table 8-3 Truckee Fire Protection District Fire Impact Fee Schedule

Land Use	Fee (square foot)
Single-family residential	$0.79
Multi-family residential	$1.19
Industrial	$0.58
Retail and Commercial	$0.81
Office	$1.16

Source: TFPD. (2017-2018). Capital Improvement Plan.

Planned Facilities and Equipment

The TFPD CIP for the 2017/2018 fiscal year outlines the districts planned expenditures for new facilities, updates to existing facilities, and equipment. In 2011, TFPD purchased land for the proposed Station 90 on Stockrest Springs Road located in Truckee. Construction for the proposed facility is projected to begin in 2027. TFPD proposes to expand the existing Station 92 and add a new shop in 2020. TFPD proposes to add an apparatus bay to Station 94 and expand Station 97 apparatus bay by the year 2031. Planned improvements to Station 96 include apparatus bays by the year 2022. In addition, TFPD is participating with five regional fire districts to develop a central fire and rescue training facility at the Truckee Tahoe Airport (TFPD 2016).

CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION

The California Department of Forestry and Fire Protection (CAL FIRE) provides wildland fire protection to undeveloped forested area of the Sierra Nevada, including parts of the Town of Truckee. CAL FIRE is largely concerned with the prevention and control of wildland fires and deterring their spread into developed areas. Although CAL FIRE does not normally respond to structure fires, the Department provides protection to structures threatened by forest fires (TFPD 2016).

8.7.3 Regulatory Setting

STATE

Uniform Fire Code

The Uniform Fire Code (UFC) contains regulations relating to construction, maintenance, and use of buildings. Topics addressed in the code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises. The UFC contains specialized technical regulations related to fire and life safety.

California Occupational Safety and Health Administration

In accordance with California Code of Regulations, Title 8 Sections 1270 "Fire Prevention" and 6773 "Fire Protection and Fire Equipment," the California Occupational Safety and Health Administration (Cal/OSHA) has established minimum standards for fire suppression and emergency medical services. The standards include guidelines on the handling of highly combustible materials, fire hose sizing requirements, restrictions on the use of compressed air, access roads, and the testing, maintenance and use of all firefighting and emergency medical equipment.

California Health and Safety Code

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code, which includes regulations for building standards (as set forth in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers, smoke alarms, high-rise building, childcare facility standards, and fire suppression training.

California Building Code, Materials and Construction Methods for Exterior Wildfire Exposure

Chapter 7A of the California Building Code, establishes minimum standards for the protection of life and property by increasing the ability of a building located in any Fire Hazard Severity Zone within State Responsibility Areas or any Wildland-Urban Interface Fire Area to resist the intrusion of flames or burning embers projected by a vegetation fire and contributes to a systematic reduction in conflagration losses. This applies to new buildings located in any Fire Hazard Severity Zone within State Responsibility Areas.

LOCAL

Truckee Fire Protection District

Ordinance 01-2016 Adoption of 2016 California Fire Code

In 2016, the TFPD Board of Directors adopted Ordinance 01-2016 which establishes the California Fire Code, 2016 edition, and associated appendix chapters as the Fire Code for the TFPD. The Fire Code, as adopted and amended by the TFPD, regulates and governs the safeguarding of life and property from fire and explosion hazards arising from the storage, handling and use of hazardous substances, materials and devises, and from conditions hazardous to life or property in the occupancy of buildings and premises. The Fire Code also provides for the issuance of permits and collection of terms by the TFPD.

Ordinance 01-2018 Fire Prevention Service Fee Schedule

In 2018, the TFPD Board of Directors adopted Ordinance 01-2018 which established a fee schedule for services and costs of enforcement. Pursuant to the fee schedule, the TFPD bills for services rendered with respect to building and construction approvals, sprinkler and fire alarm system inspections, events, liquefied petroleum gas and tank installation, and miscellaneous fees.

Ordinance 02-2018 Charges and Fees for Providing Ambulance and Emergency Medical Services

In 2018, the TFPD Board of Directors adopted Ordinance 02-2018 which established a fee schedule for providing ambulance and emergency medical services. Pursuant to the fee schedule, the TFPD bills for basic life support, advanced life support, and critical care transport.

8.8 Law Enforcement

This section describes existing law enforcement facilities and services provided by the Town.

8.8.1 Major Findings

- The Truckee Police Department (TPD) is comprised of 33 full-time employees who provide services to 18,475 permanent residents within the 33 square mile service area.
- TPDs operation division consists of patrol, investigations, traffic, marine operations, reserves, and volunteers.
- In 2017, TPD saw a decrease in all crime categories except for assault and vehicle theft incidents.

8.8.2 Existing Conditions

TRUCKEE POLICE DEPARTMENT

Operations

TPD provides law enforcement services to the Town of Truckee. TPD operates out of the headquarters located at 10183 Truckee Airport Road and includes 33 full-time employees who provide services to 18,475 permanent residents within the 33 square mile service area. TPDs operation division consists of patrol, investigations, traffic, marine operations, reserves, and volunteers. The role and staffing information for each division unit is described in further detail below (TPD 2018):

- The patrol unit is staffed by 25 sworn officers trained to handle any call within the Truckee service area. Truckee police officers are required to attend specialized schools such as bike patrol officer, field training officer, dive rescue, defensive tactics, active shooter, rangemaster, and various other specialties.
- The investigations unit, also referred to as the major incident team, is staffed by a sergeant, one full-time detective, a school resource officer, a field and evidence specialist, four police officers, and a community service officer. The primary role of the major incident team is to conduct follow-up investigations on primarily felony cases that occur within Truckee. Officers receive training in a wide range of disciplines from crime scene processing and homicide investigation to narcotics trafficking and identity theft.
- The Traffic Unit's primary focus is to reduce traffic collisions within the Town of Truckee by maintaining high visibility, enforcement of traffic laws, and patrolling the streets. In addition to the various aspects of traffic enforcement, the Traffic Unit coordinates all traffic control and traffic issues in the Town of Truckee. Efforts to reduce traffic collisions also include educating the public in newspaper articles, public service announcements, community meetings, and bicycle safety classes in schools.
- The marine operations unit includes boat operations and a dive team. The marine unit patrols Donner Lake using a patrol boat on weekends and holidays during the summer months. Primary violations enforced include unsafe boating and unsafe towing. The patrol boat is also used as a diving platform for TPDs scuba dive and rescue team that operates in tandem with the fire department dive team.
- The reserve unit is comprised of paid reserve officers trained and equipped to serve as full peace officers when on duty. Reserve officers serve the community during special events, boat patrol in the summer time, and traffic control in the winter. They also supplement the patrol and investigations unit on an ongoing basis.
- The volunteers in police services (VIPS) program appoints volunteer residents to assist the TPD with routine police work. Volunteers receive training and assist with a variety of assignments including emergency callout, traffic surveys, handicap parking enforcement, stakeouts, radar trailer deployment, assisting officers at crime scenes and traffic accidents, assisting with boat patrol on Donner Lake, and vacation checks.

Crime Rates

Table 8-4 provides the number of crimes and ratio of crimes per 1,000 residents by type between 2014 and 2017. In 2017, California had a larceny ratio of 16.23 and a burglary ratio of 4.46 per 1,000 residents. In comparison, Truckee's crime rate is far lower than the Statewide average (California Department of Justice 2018; US Census Bureau 2018). As shown below, the number of residents steadily increased between 2014 and 2016. In 2017 there was a noticeable increase in the number of residents. As population increased so too have the numbers of calls and arrests. However, all crime categories except for assault, murder, burglary, and vehicle theft remained the same or decreased in 2017 (TPD 2017).

Table 8-4 Truckee Crime Statistics

	2014		2015		2016		2017	
	Number of crimes	Crimes per 1,000 (Ratio)[a]	Number of crimes	Crimes per 1,000 (Ratio)[a]	Number of crimes	Crimes per 1,000 (Ratio)[a]	Number of crimes	Crimes per 1,000 (Ratio)[a]
Population	16,165	-	16,211	-	16,229	-	18,475	-
Calls for Service	15,598	-	14,605	-	13,780	-	15,924	-
Arrests	577	35.7	425	26.2	394	24.3	437	23.6
Murder/Homicide	0	0	0	0	0	0	0	0
Rape	3	0.19	2	0.123	24	1.48	5	0.271
Robbery	3	0.19	1	0.062	2	0.123	1	0.054
Assault	84	5.20	77	4.75	79	4.87	90	4.87
Burglary	44	2.72	34	2.10	44	2.71	44	2.38
Larceny	104	6.43	119	7.34	122	7.52	114	6.17
Vehicle Theft	11	0.680	8	0.493	18	1.11	23	1.24
Drug Abuse Violations	61	3.77	59	3.64	37	2.28	32	1.73
Liquor Laws/Drunkenness	117	7.24	101	6.23	81	4.99	68	3.68

a: Ratio is calculated based on the number of crimes per 1,000 residents.

Source: Truckee Police Department, 2016-2017 Annual Report.

CALIFORNIA HIGHWAY PATROL

The California Highway Patrol (CHP) provides safety and enforcement services on State Highways and roads in unincorporated areas. CHP Truckee Area and Communications center, located at 10077 State Route 89 South, serves Nevada County, Placer County, and Sierra County. CHP patrols I-80, SR-89 South, SR-89 North, SR-267, and SR-28 (CHP 2018).

8.8.3 Regulatory Setting

LOCAL

Truckee Municipal Code

Chapter 2.19 Police Department

This chapter sets forth the guidelines for TPD and includes regulations regarding the powers and duties of the Chief of Police and Police Department.

8.9 Schools and Libraries

This section describes existing school and library facilities in the town.

8.9.1 Major Findings

SCHOOLS

- The Tahoe-Truckee Unified School District (TTUSD) covers approximately 723 square miles and operates 12 schools within Placer, Nevada, and El Dorado counties.
- TTUSD maintains an average student-to-teacher ratio of 24:1 for kindergarten to third grades, 28:1 for fourth and fifth grades, and 30:1 for sixth to twelve grades.
- Student enrollment rates for all schools located within Truckee are projected to fall within the school enrollment capacity through the 2019-2020 school year.
- There are several private charter schools within the regional that serve Truckee residents including Forest Charter, Tahoe Expedition Academy, Sugarbowl Academy, Creekside Charter.

LIBRARIES

- In 2017, Nevada County voters passed Measure A to renew a countywide sales tax increase of one-fourth of a cent for a period of 15 years to fund Nevada County Libraries.
- The Truckee Library, located at 10031 Levon Avenue, services eastern Nevada County and offers an extensive collection of materials, audio-visual materials, a children's room, and an adult non-fiction collection.

8.9.2 Existing Conditions

TAHOE-TRUCKEE UNIFIED SCHOOL DISTRICT

Enrollment

The TTUSD covers approximately 723 square miles within Placer, Nevada, and El Dorado counties. TTUSD operates 12 schools within the service area including five elementary schools, two middle schools, two high schools, and three alternative educational programs. TTUSD maintains an average student-to-teacher ratio of 24:1 for kindergarten to third grades, 28:1 for fourth and fifth grades, and 30:1 for sixth to twelve grades (TTUSD 2018).

There are seven schools located within Truckee: Donner Trail Elementary, Glenshire Elementary, Truckee Elementary, Alder Creek Middle, Sierra Continuation High, Truckee High, and Sierra Expeditionary Learning School (TTUSD 2018). Table 8-5 includes capacity, existing enrollment, and projected enrollment for schools located within Truckee. As shown below, student enrollment at Alder Creek Middle School and Truckee High School is projected to increase slightly through the 2019-2020 school year. However, future enrollment rates for all schools located within Truckee are projected to decrease (TTUSD 2018). Donner Trail Elementary school, which is currently over capacity, is the only school expected to exceed capacity in 2019-2020.

Table 8-5 Tahoe-Truckee Unified School District Enrollment Projections

School	Capacity	2016-2017[1]	2017-2018[1]	2018-2019[2]	2019-2020[2]
Donner Trail Elementary	52	70	66	58	58
Glenshire Elementary	564	531	495	490	471
Truckee Elementary	600	521	501	514	503
Alder Creek Middle	684	546	532	650	660
Sierra Continuation High	60	50	50	38	37
Truckee High	1,023	715	602	743	794

Table 8-5 Tahoe-Truckee Unified School District Enrollment Projections					
School	Capacity	2016-2017[1]	2017-2018[1]	2018-2019[2]	2019-2020[2]
Sierra Expeditionary Learning School (SELS)	236	210	212	210	210

1. Student enrollment for the 2016-2017 and 2017-2018 school years.

2. Projected student enrollment for the 2018-2019, and 2019-2020 school years.

Source: 2014 Facilities Master Plan, 2016-2017 School Accountability Report Cards; California Department of Education 2018.

Facility Improvements

The 2014 Facilities Master Plan (2014 FMP) outlines TTUSD's educational program goals facility improvements through the year 2029. As part of the process, the TTUSD prepared a facility needs assessment for each the of the 12 TTUSD schools to assess the existing conditions, identify needs, and estimate project costs. Projected improvements to schools within Truckee include new permanent classrooms, office expansion, improve internet connectivity, new audio-visual equipment, and fencing. In 2014, voters within the TTUSD passed Measure U, which provides $114 million to fund highest priority facilities needs of schools within the Truckee area. Many of the projected improvements to schools within Truckee area will be funded by Measure U.

PRIVATE CHARTER SCHOOLS

In 1992, California's elected officials enacted California's Charter School Act, which established public charter schools as an option for parents, students, teachers, and community members to design self-governing schools within the public-school system to meet the needs of their community. Charter schools were envisioned to provide more flexible and innovative opportunities for California students within the public-school system. Forest Charter, Tahoe Expedition Academy, Sugarbowl Academy, and Creekside Charter operate accredited Kindergarten through 12th grade schools within the Town of Truckee.

NEVADA COUNTY COMMUNITY LIBRARY

The Nevada County Community Library system was incorporated in 1972 with the Nevada City library serving as the main branch, along with the Grass Valley and Truckee library. Currently, the Nevada County Community Library system operates six library locations, one of which is in Truckee (Nevada County Community Library 2017). The Truckee Library, located at 10031 Levon Avenue, services eastern Nevada County and offers an extensive collection of materials, audio-visual materials, a children's room, and an adult non-fiction collection. The Truckee Library is open Monday through Saturday and has a variety of programming and workshop options for patrons to enjoy including kid's crafts, Lego club, story time, and local author showcases (Truckee Library 2018).

8.9.3 Regulatory Setting

STATE

California Government Code, Section 65995(b), and Education Code Section 17620

Senate Bill 50 (SB 50) amended Government Code Section 65995, which contains limitations on Education Code Section 17620, the statute that authorizes school districts to assess development fees within school district boundaries. SB 50 permits school districts to levy fees, based on justification studies, for the purposes of funding construction of school facilities, subject to established limits. In February 2016, the State Allocation Board (SAB) approved an increase in the allowable amount of statutory school facilities fees (Level I School Fees) from $3.36 to

$3.48 per square foot of assessable space for residential development of 500 square feet or more, and from $0.54 to $0.56 per square foot of chargeable covered and enclosed space for commercial/industrial development.

According to California Government Code Section 65995(3)(h), the payment of statutory fees is "deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property, or any change in governmental organization or reorganization on the provision of adequate school facilities." The school district is responsible for implementing the specific methods for mitigating school impacts under the Government Code.

Mitigation Fee Act (California Government Code 66000-66008)

Assembly Bill (AB) 1600, known as the Mitigation Fee Act, requires a local agency establishing, increasing, or imposing an impact fee as a condition of development to identify the purpose and use of the fee. The agency must also demonstrate a reasonable relationship between the fee and the purpose for which it is charged, and between the fee and the type of development project on which it is to be levied.

LOCAL

Tahoe-Truckee Unified School District

Measure U

In 2014, voters within the TTUSD passed Measure U, a general obligation bond. Measure U provides $114 million to fund highest priority facilities needs of schools within the Truckee area, including Alder Creek Middle School, Donner Trail Elementary, Glenshire Elementary, Sierra Expeditionary Learning School, Truckee Elementary, and Truckee High School. Funds from Measure U can be used for the following district improvements:

- Upgrades to existing school building systems
- Updating technology infrastructure and 21st Century learning
- Improve performing arts, multipurpose, food service, and physical education facilities
- Modernize and reconfigure classrooms and lab buildings
- Construct new classrooms, science labs, and career technical education facilities
- Improve outdoor learning and exterior play spaces
- Upgrade student safety and campus security
- Improve student support facilities

Measure AA

In 1989, TTUSD established Measure AA, a renewal measure, to fund programs that are underfunded by the State and ensure that students have access to a well-rounded curriculum that includes science, art, technology, physical education, honors, advanced placement classes, technical and vocational training, and college preparation courses. The measure was approved by voters in 2018, requiring residents to contribute $148 per parcel for a nine-year term.

Developer Fees

TTUSD levies developer fees for new construction and additions of residential and commercial development. The current residential fee rate is $3.69 per square foot. The residential fee is only assessed when the living area is over 500 square feet. TTUSD also established mutual aid agreements with specific subdivisions within the district boundary to levy individual rates (i.e., Gray's Crossing). Commercial development rates are $0.61 per square foot for all categories except restaurants, lodging, industrial parks, community shopping, and self-storage. TTUSD established individual rates for these types of uses that range from $0.01 to $0.59 per square foot.

Nevada County Community Library

Measure A

In 2017, Nevada County voters passed Measure A to renew a countywide sales tax increase of one-fourth of a cent for a period of 15 years. Funding received trough Measure A supports services, programming, and all aspect of library operations and planning.

8.10 Parks and Recreation

This section describes the existing parks and recreation facilities, trails, and other recreational facilities in the town and the Planning Area. Open space is addressed under Section 5.4 (Open Space and Land Cover) in Chapter 5 of this report.

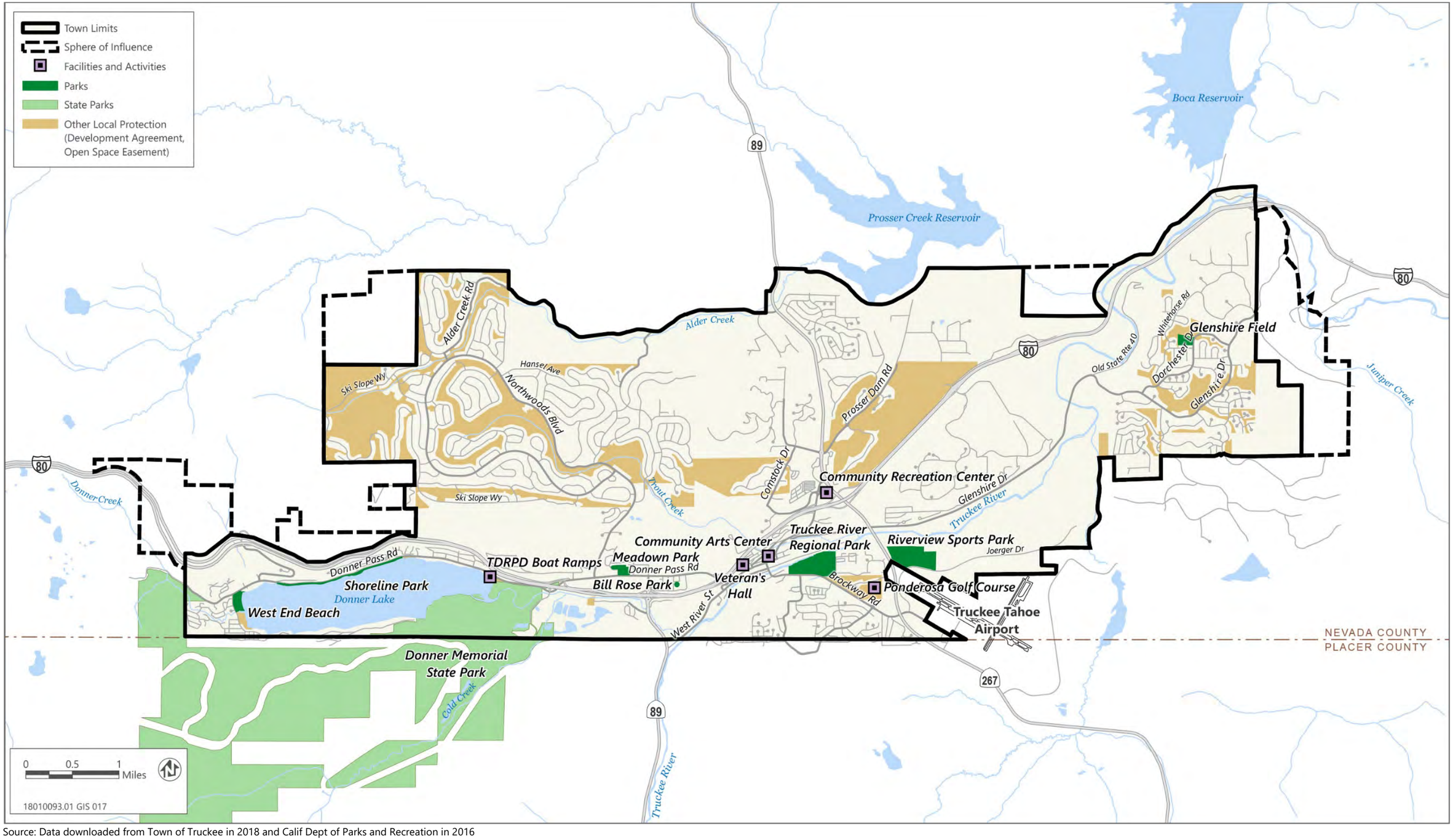
8.10.1 Major Findings

- The Truckee Donner Recreation and Park District (TDRPD) operates seven parks and five recreational facilities within Truckee.
- The amount of land required to be dedicated for park facilities as a condition of the approval of a tentative map or tentative parcel map for a subdivision is 5 acres per 1,000 estimated population in the subdivision.
- The Town of Truckee Facilities Maintenance Division maintains 12.5 miles of trails system which include the Legacy Trail, trails along Brockway Road, behind the Alder Creek Middle School, (Rue Ivy) Trout Creek Trail, and the Mousehole (SR 89 south) Trail.
- The Tahoe Donner Homeowner's Association (Tahoe Donner) operates a wide variety of recreational facilities including the Trout Creek Recreation Center, Northwoods Clubhouse, Alder Creek Adventure Center, and miles of multi-use trails. Tahoe Donner amenities are available to community residents and their guests, and members of public can access the recreational areas for a nominal fee.
- Donner Memorial State Park is located along the eastern end of Donner Lake within Truckee town limits as well as on land outside of the Town south/southwest of Donner Lake e and is maintained by the State Park District. The park offers opportunities for camping, picnicking, boating and jet skiing, swimming, fishing, non-motorized watersports (e.g.-kayaking, canoeing, paddleboarding, etc.), and hiking during the summer months.
- There are several ski resorts and snow parks located in Truckee, or nearby within the Planning Area, that offer a variety of winter sports activities and some year-round recreational and lodging opportunities. Tahoe Donner is located within the town limits in the Tahoe Donner community. Sugar Bowl, Boreal Mountain, and Soda Springs are located a few miles west of the Truckee town limits near Donner Summit. Larger facilities south of Truckee in the Planning Area include Northstar and Squaw Valley Alpine Meadows.

8.10.2 Existing Conditions

TRUCKEE DONNER RECREATION AND PARK DISTRICT

TDRPD, founded in 1963, operates parks and recreational facilities in Truckee and is governed by a five-member Board of Directors who are responsible for establishing use and maintenance policies. TDRPD also offers a wide range of activities throughout the year. These amenities are shown on Figure 8-6 and described in more detail below (TDRPD 2018).



Source: Data downloaded from Town of Truckee in 2018 and Calif Dept of Parks and Recreation in 2016

FIGURE 8-6 TRUCKEE PARKS AND RECREATION FACILITIES

Parks

TDRPD operates seven parks within the Truckee area that offer a wide variety of recreational opportunities for Truckee residents. TDRPD parks located in Truckee are described in more detail below (TDRPD 2018):

- Bill Rose Park, located behind Tahoe Forest Hospital in the Gateway Residential Area, offers walking trails, play areas, picnic tables, and a canopy of mature trees.
- Glenshire Field, located at 10990 Dorchester Drive, is a multi-use baseball and soccer field. The 2.0-acre park is shared with Glenshire Elementary and includes home and visitor dugouts.
- Meadow Park, located at 10115 Donner Trail Road, offers two small ball fields, picnic area, restrooms, and a playground. Meadow parks also hosts a variety of youth sports programs including soccer, baseball, and football.
- Riverview Sports Park, located at 12200 Joeger Drive, features five multi-sport fields including a regulation baseball field, a playground, bocce ball courts, an off-road terrain cycle track, picnic tables, a covered picnic shelter, and the western end of the existing Legacy Trail.
- Shoreline Park, located at 14551 Donner Pass Road, features bank fishing, picnic tables, and hand launching of small craft and windsurfers.
- Truckee River Regional Park, located at 10500 Brockway Road, is a 62-acre park that offers a variety of recreation facilities including ball fields, picnic areas, a rodeo arena, natural trail, amphitheater, tot lot, and playground equipment. The park also includes tennis, volleyball and basketball courts, a skate park, and a disc golf course.
- West End Beach, located at 15888 South Shore Drive, is a 10-acre day use beach open to the public from May through September. The beach offers non-motorized boat rentals, lifeguard swim areas, concessions, horseshoe pits, play areas, picnic areas, volleyball nets, and a tennis court.

Facilities and Activities

TDRPD operates five recreational facilities in Truckee that offer a variety of year-round programming options. These facilities are described in more detail below (TDRPD 2018):

- Community Arts Center, located at 10046 Church Street, offers large meetings rooms, an auditorium equipped with audio-visual equipment, and a kitchen. The auditorium is equipped with a large stage, theatrical lighting, and live audio production equipment. The Community Arts Center serves as a meeting location for summer camps, adventure camps, and camp rad. This location also hosts a variety of community events including science workshops, ceramics classes, martial arts, theatre performances, and youth chorus.
- Community Recreation Center, located at 8924 Donner Pass Road, offers a gym with a variety of workout equipment, an indoor fitness track, an indoor climbing wall, two large meeting rooms, a conference room, a dance room, TDRPD administrative offices, preschool programs, and an afterschool program. The Community Recreation Center also includes a lap pool and a heated recreation pool. The pool features 10 lanes, a diving board, kids slides, basketball, party room, and rope climb. The recreation pool includes a current channel, a water slide, and a water lounge. Programming opportunities include water volleyball, water basketball, swim lessons, swim team, water aerobics, and stand-up paddle yoga.
- TDRPD operates a boat ramp and 37 public piers along Donner Lake throughout the year. Visitors can enjoy the lake on a boat, kids sailing from shoreline park, and dip into the water from a pier. There is also a fish cleaning station available free of charge.
- TDRPD maintains and manages the Ponderosa Golf Course under a lease agreement with the Airport District. The golf course is open during the spring and summer months and features 9 holes, a chipping green, hitting station, putting green, kid's golf summer program, and a snack bar.
- Veteran's Hall, located at 10214 High Street, was built in 1939 and dedicated to the Veterans of World War I in 1941. The upstairs includes a large gym and auditorium that feature a basketball court, ping pong table, indoor soccer, magic workshops, math and science camp, explorers' expeditions, art activities, and yoga.

- West End Beach, located at 15888 South Shore Drive, is a 10-acre day use beach supervised by American Red Cross Certified lifeguards. The beach is open to the public and can be reserved for special events, such as weddings. Amenities include boat rentals, lifeguard swim areas, concessions, horseshoe pits, play areas, boat storage, picnic and barbeque, beach volleyball, and tennis court.

TRUCKEE TRAILS AND BIKEWAYS

The Town of Truckee Facilities Maintenance Division is also responsible for keeping the Town's trails system maintained and safe for public users. As shown on Figure 8-7, Facilities Maintenance is responsible for 12.5 miles of trails system which include the Legacy Trail, trails along Brockway Road, behind the Alder Creek Middle School (Rue Ivy) Trout Creek Trail, and the Mousehole (SR 89 south) Trail (Town of Truckee 2018e).

TAHOE DONNER HOMEOWNER'S ASSOCIATION

The Tahoe Donner Homeowner's Association (Tahoe Donner) operates a wide variety of recreational facilities in the Tahoe Donner area including 60-miles of multi-use tails, 4,000 acres of recreation space, and 1,300 acres of common area interspersed among residential neighborhoods.. Amenities that are available to Tahoe Donner members and their guests include the Trout Creek Recreation Center with pools, hot tubs, sauna and fitness center, Northwoods Clubhouse with pool and tennis, Alder Creek Adventure Center including Nordic skiing, Tahoe Donner Downhill Ski Area and Tahoe Donner campground. The public can access some recreational amenities for a fee such as the Alder Creek Adventure Center for Nordic skiing and horse boarding/trail riding and the Tahoe Donner Downhill Ski Resort for downhill skiing.

DONNER MEMORIAL STATE PARK

Donner Memorial State Park is located along the eastern end of Donner Lake within Truckee town limits as well as on land outside of the Town south/southwest of Donner Lake and is maintained by the State Park District. The park offers opportunities for camping, picnicking, boating and jet skiing, swimming, fishing, non-motorized watersports (e.g.-kayaking, canoeing, paddleboarding, etc.), and hiking during the summer months. In the winter, visitors can cross-country ski and snowshoe on trails. There is also a visitor's center located on-site which features exhibits on the Emigrant Experience, the Donner Party, the Land of the Washoe, Chinese construction of the railroad, and early motoring adventures over Donner Pass (California Department of Parks and Recreation 2018).

SKI RESORTS AND SNOW PARKS

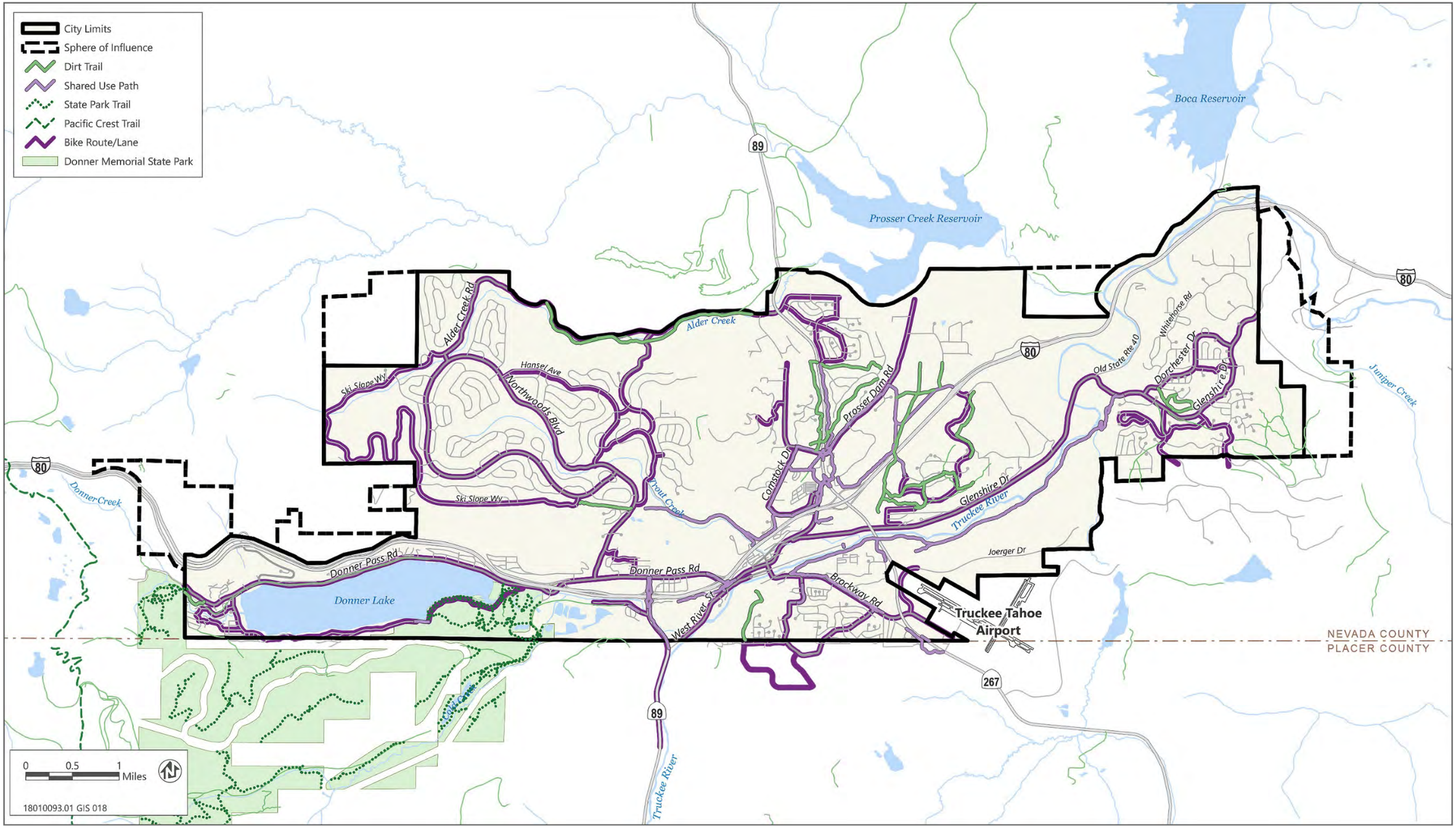
Several ski resorts and snow parks are located in Truckee or within the Planning Area. These resorts offer downhill skiing and a variety of other winter activities such as cross-country skiing, snow-play areas, tubing, other activities. Some of the larger facilities also offer on-site lodging and other recreational activities that extend beyond the winter season including golfing, hiking, and mountain biking.

Tahoe Donner Downhill Ski Resort

Tahoe Donner Downhill Ski Resort is located within the Tahoe Donner community in Truckee. The resort features 17 total trails with approximately 120 acres of skiable land. The primary peak, Eagle Rock Summit, has an elevation of 7,350 feet.

Sugar Bowl Resort

Sugar Bowl Resort is located off I-80 near the Donner Summit and features four peaks, 100 trails, and approximately 1,650 acres of skiable land. Peak elevations range from 7,000 to over 8,000 feet.



Source: Data downloaded from Town of Truckee in 2018, USFS in 2017, CA Department of Parks and Recreation in 2016

FIGURE 8-7 TRUCKEE TRAILS AND BIKEWAYS

Boreal Mountain California

Boreal Mountain California is located off I-80 near the Donner Summit and features 34 trails with approximately 380 acres of skiable land, with a peak elevation of 7,701 feet.

Soda Springs Resort

Soda Springs Mountain Resort is located off I-80 near the Donner Summit and offers Planet Kids, a dedicated snowplay area designed for children, tubing carousals, snow-tubing lanes, ski/snowboard specific learning areas, and snow volcanoes. Soda Springs resort also includes a snow tubing area with up to 20 runs and a 400 ft. surface lift.

Northstar California

Northstar is located off SR 267 approximately 5 miles south of Truckee. It features 100 runs and 3,170 skiable acres, with a peak elevation of 8,610 feet. The resort also offers a cross-country ski center, on-site lodging, and various summer activities including an 18-hole golf course and a mountain-bike park.

Squaw Valley Alpine Meadows

Squaw Valley Alpine Meadows is located approximately 12 miles south of Truckee off SR 89 near Lake Tahoe. Squaw Valley served as host site to the 1960 Winter Olympics. Originally separate resorts, Squaw Valley and Alpine Meadows have been jointly operated since 2012. The combined facilities offer 6,200 skiable acres, 43 lifts, and approximately 270 trails, with on-site lodging options and a variety of other winter and year-round activities onsite.

8.10.3 Regulatory Setting

THE QUIMBY ACT

The Quimby Act authorizes municipalities to pass ordinances requiring developers to set aside land, donate conservation easements or pay fees for park improvements. The Quimby Act sets a standard park space to population ration of up to 3 acres of park space per 1,000 persons. Cities with a ratio higher than three acres per 1,000 can set a standard of up to 5 acres per 1,000 persons for new development. The calculation of the municipality's park space to population ratio is based on a comparison of the population count of the last federal census to the amount of city- or town-owned parkland.

LOCAL

2025 General Plan

The Circulation, and Conservation and Open Space Elements of the *Town of Truckee 2025 General Plan* contains the following goals and policies applicable to parks and recreation within the town (Town of Truckee 2006):

- Goal P-10: Provide a safe, comprehensive, and integrated system of facilities for pedestrians and cyclists and other non-motorized modes of transportation.
  - P10.10: Require major development projects to include pedestrian facilities and bikeways.
- Goal COS-8: Provide or support a comprehensive, high quality system of parks and other recreational open space facilities in Truckee.
  - P8.1: Require land or in-lieu fees for parks to be provided by new development at a minimum ratio of five acres per thousand population, to conform with standards established by the Town in accordance with the Quimby Act.
- Goal COS-9: Link open space areas in Truckee through a well-connected network of open space corridors and trails.

- **P9.3**: Require new development to incorporate trail corridors identified in the Trails and Bikeways Master Plan into the overall project site plan.

Truckee Municipal Code

Section 18.92.095 Parks and Recreation

This section of the Truckee Municipal Code establishes a park and recreational fee that shall be enforced as a condition of approval for any tentative map. Common area, open space, and similar parcels are exempt from the fee if enforceable restrictions are imposed on the parcel prohibiting residential development on the parcel. Condominium and townhouse parcels for which recreational facilities impact fees have been paid for the construction of the multi-family residential structure(s) on said parcels are also exempt from the fee. The amount of land required to be dedicated for park facilities as a condition of the approval of a tentative map or tentative parcel map for a subdivision shall be 5 acres per 1,000 estimated population in the subdivision based on the product of the following:

- The maximum number of dwelling permitted within the subdivision as determined from the zoning regulations and the conditionally approved tentative map or parcel map applicable to the subdivision; multiplied by:
  - The average number of residents per dwelling unit within the incorporated territory of the Town, as determined by the most recent Federal Census; multiplied by:
    - Five thousandths of an acre (.005 acre) per person.

If the subdivider provides park and recreational improvements to the dedicated land, the value of the improvements together with any equipment located thereon shall be credited against the payment of fees or dedication of land.

8.11 Key Terms

Equivalent dwelling units (EDU). One EDU is defined as the average wastewater discharge from a single-family dwelling.

Vactor/Jetter Vehicle. A tank trunk designed to remove wastewater.

Jetter Truck. A machine with high-pressure water jets to clean sewer systems.

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TRUCKEE 2040
general plan + downtown specific plan



CHAPTER 9 Cultural Resources

This chapter describes existing cultural resources in and around Truckee, including a historic overview of the plan area and the regulatory setting and protocol for the preservation and management of important cultural resources. Appendix A contains a more detailed description of the cultural setting in the Town of Truckee, including a more thorough accounting of the history of the railroad, mining, logging, and other industries that shaped the town.

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9.1 Cultural Resources

9.1.1 Major Findings

- The Town of Truckee is one of the richest locations in California in terms of the density and variety of recorded cultural resources. Virtually all areas within the town are considered extremely sensitive regarding the presence of cultural resources, with the downtown core area being home to a high concentration of structures that have historical significance.
- The Washoe are the applicable tribal authorities for lands encompassing the Town of Truckee. Numerous prehistoric sites dating from the last 9,000 years have been inventoried, and some are marked by ethnographic and ethnohistoric Washoe place names. Native American encampments were once distributed throughout the area encompassing the Town limits and a large historic Washoe settlement was established on the south side of the Truckee River directly across from the heart of the downtown.
- A history of the community of Truckee is marked by the arrival of Joseph Gray, who built a stage station near the present-day downtown in l863. Gray was soon joined by a blacksmith named S. S. Coburn, and the fledgling settlement of Gray's Toll Station was renamed Coburn's Station. This tiny way station grew from two structures into a thriving town that accommodated emigrants, stagecoach travelers and freight wagons in route westward to California's gold fields and eastward to the Comstock Lode in Nevada. In 1868 Coburn's Station burned and the name was changed to Truckee. Throughout the rest of the 19th century, Truckee thrived on the related fields of lumber, railroading and ice.
- Truckee had an especially large subpopulation of Chinese, the second-largest concentration of overseas Chinese in the West. By 1886 Chinatown disbanded as most Chinese were expelled from the community.
- By the 1920s, Truckee's economy and society had largely disappeared, due in large part to the relocation of the train's switching yard, the depletion of local timber supplies and the development of mechanical refrigeration. In its place, the community began to develop into a recreation-based economy. Historic Truckee was unique among turn-of-the-century mountain communities, in that summer recreationists and winter-sports enthusiasts could easily reach the town in summer or winter via the first transcontinental railroad or the first transcontinental highway. By the mid-1890s Truckee was host to ice carnivals, drawing people from both east and west of the Sierra to enjoy the mountain winters. Sleighing, tobogganing, dog races, two large ice palaces, and Hilltop's ski area and ski jump during the 1910s-1930s were some of the attractions offered to tourists, along with "Snow-Ball" special excursion trains. The 1960 Winter Olympics at nearby Squaw Valley secured Truckee's position as a center for year-round recreation.
- Recurrent and catastrophic fires plagued the town leaving layers of burned artifacts, charcoal, and ash. The commercial district burned in 1868 and three times in 1871. In 1873 a fire burned along Bridge and Church streets, but it was stopped before it crossed Front Street (modern-day Commercial Row). The entire Chinatown (north of the Truckee River) was burned in 1875. Fire broke out in 1878 and in 1881 another fire destroyed the whole of Commercial Row. The east half of Front Street's commercial district was again consumed by fire in 1882, followed by another fire in 1883. A fire in 1913 forced the rebuilding of most structures along Commercial Row. Additional infernos plagued other parts of the town during the 1920s.
- To date, no comprehensive survey of archaeological resources has been completed for the Town of Truckee. In 1996 it was estimated that only between eight and 20 percent of the Town had been inventoried for cultural resources; records associated with these earlier surveys document more than 100 historic, prehistoric, and ethnohistoric sites within the Town limits. An updated archaeological records search in 2009 encompassing the Town limits, disclosed approximately 200 archaeological studies have been conducted and up to 300 cultural resources have been recorded (Lindström 2009).

- Historic downtown Truckee is listed in the Office of Historic Preservation Historic Property Directory. The route of the Emigrant Trail, First Transcontinental Railroad and the Truckee Jail appear in the California Inventory and the historic Dutch Flat and Donner Lake Wagon/Lincoln Highway/Victory Highway/Old Highway 40 (i.e., Donner Pass Road) traverse through downtown. In addition, several California Historical Landmarks and Points of Historical Interest are included within or adjacent to Truckee town limits. The Town's commercial core area is listed on the National Register of Historic Places as a historic district. The "Kruger House" (i.e., "C.B. White House") is individually listed on the National Register of Historic Places. Numerous other buildings and features qualify as contributing elements of the National Register District.
- The early historic architectural face of Truckee was once dominated by modest, vernacular or frontier style, wood frame, front-gable buildings. As fire repeatedly passed through portions of the community, fire-resistant brick masonry construction quickly became the desired construction material, particularly along Commercial Row. Architectural style is consistent with and representative of a boomtown community largely populated by rough-and-ready loggers, millers, railroad-men, and ice harvesters. Supporting businesses included hotels, restaurants, laundries, saloons, dry goods, specialty retail stores, banks, and other businesses
- Additions and remodels to many individual buildings are an important part of downtown Truckee's architectural integrity, coinciding with the use of recycled materials salvaged from burned, discarded, or demolished railroad dunnage and buildings, when they became available. Truckee's architectural style is often referred to as "Truckee Funk." Truckee Funk is an expression of the community's history or working-class utilitarian design where function drives building forms. Key components of Truckee Funk include a combination of symmetry and asymmetry, physical texture, exposed construction methodology, authentic materials, and art in architecture.

9.1.2 Existing Conditions

SETTING

NATURAL SETTING

The Town is situated in the Tahoe Sierra region of northeastern California and due east of the Sierra Nevada's crest at Donner Pass. The Town occupies the Truckee Basin and surrounding mixed conifer uplands. It is doubtful that modern plant and animal communities closely resemble their pristine composition due to past disturbances. Potential human modifications to these habitat types and plant-animal associations began with the aboriginal management of plants and animals, followed by historic mining, transportation, logging, stock grazing and dairying activities, water reclamation, recreation, and residential and commercial development. The presence of tool stone-quality basalt on Alder Hill and in Martis Valley attracted prehistoric populations into the general area for stone tool manufacture. Oral histories from Native American Elders and with descendants of pioneer families document a variety of valued medicinal and edible plants within the Truckee River corridor. In former times, the area is thought to have supported a luxuriant growth of native bunch grasses which allowed an abundant large game population (including antelope) and provided a nutritious source of seeds for use by prehistoric peoples. Forests within the watershed were intensively harvested from the later 1860s into the 1960s. Since the 1860s excessive commercial fishing, dam construction, disturbance of spawning grounds, obstruction of spawning runs, pollution of the watershed, and competition from introduced species combined to cause the demise of the native fishery by the 1920s.

A key element that defines the Town's physical character is the Truckee River, which runs through the downtown. Geographically, Truckee's built environment evidences a linear spatial organization following the primary east-west corridor defined by the valley, river, and railroad. This artery through the high Sierra was a natural corridor for development of transportation routes that linked the United States such as the nation's first transcontinental Emigrant Trail, Transcontinental Railroad, and Transcontinental Highway (Christensen et al. 2004:27).

CULTURAL SETTING

In broadest terms, the archaeological signature of the Truckee-Donner area marks a trend from hunting-based societies in earlier times to populations that were increasingly reliant upon diverse resources by the time of historic contact. The shift in lifeways may be attributed partially to factors involving paleoclimate, a shifting subsistence base, and demographic change. Current understanding of northern Sierra Nevada and western Great Basin prehistory is framed within a chronological sequence spanning nearly 12,000 years that is drawn from paleoclimatic and archaeological studies throughout the western Great Basin, eastern Sierra front and the Tahoe-Truckee area.

Native American Period

Regional prehistory is marked by the protohistoric ancestors of the Washoe Indians who Washoe regard all "prehistoric" remains and sites within the Truckee-Tahoe basins as associated with their own history. It is estimated that the prehistoric Washoe had one of the highest population densities in the western Great Basin. Relatively high estimates are attributed to the bountiful environment in which they lived (Price 1962:2). Historic declines in Washoe population and traditional resource use were caused by disruptions imposed by incoming Euroamerican groups.

The project area falls within the center of Washoe (*Wa She Shu*) territory, with primary use by the northern Washoe or *Wel mel ti*. Traditional Washoe society and geography comprise a blend of Great Basin and California aboriginal cultures. Washoes are distinguished by a level of technological specialization and social complexity for that are non-characteristic of their surrounding neighbors in the Great Basin but typify many California groups (e.g., semi-sedentism and higher population densities, concepts of private property, and communal labor and ownership). During the mild season, small groups traveled through high mountain valleys collecting edible and medicinal roots, seeds and marsh plants. In the higher elevations, men hunted large game (mountain sheep, deer) and trapped smaller mammals. Suitable tool stone (such as basalt) was quarried at various locales around Truckee town. The Washoe have a tradition of making long treks across the sierran passes to hunt, trade and gather acorns.



Washoe women weaving baskets (courtesy University of Nevada, Reno, Getchell Library, Special Collections Department)

Into the early 20th century, Washoes survived by trading goods and services to the dominant Euroamerican population and establishing patronage relationships on ranches and resorts (selling baskets, catching fish and game, and working as domestic laborers, wood cutters, ice harvesters, caretakers, game guides, etc.). In exchange Washoes arranged for camping privileges on traditional lands with access to what resources remained. Into the 21st century, the Washoe have not been completely displaced from their traditional lands. In 1994 the Washoe Tribal Council developed a Comprehensive Land Use Plan that includes goals of reestablishing a presence within the Tahoe Sierra and re-vitalizing

Washoe heritage and cultural knowledge, including the harvest and care of traditional plant resources and the protection of traditional properties within the cultural landscape.

The noteworthy concentration of semi-permanent Washoe settlements reported along the Truckee River between Donner and Martis creeks suggests that this stretch of river was unusually productive. The settlement known as *Datsáshit mál'im detdéyi?* is located on Donner Creek 1/4 mile downstream from where the State Route 89 crosses the creek. These were the Washoe people who may have encountered the Donner Party, as recounted in Washoe oral tradition and documented by a February 28, 1847 diary entry by Patrick Breen, who wintered at the Donner Lake camps. *Dewbeyulélbeti?* is a fishing camp at the junction of Donner Creek and the Truckee. Donner Creek was better fishing than the Truckee River as it was smaller and could be dammed and diverted to capture stranded. *Dat'sa sut ma'lam detde'yi'* describes a Washoe encampment near Gateway and *Péle? má'lam detdéyi?* is the name of an old Washoe village at the confluence of Trout Creek and the Truckee River. *K'ubüna[u] detdéyi?* refers to the settlement on the south side of the river across from Commercial Row and the place where the Town of Truckee is located is known as *Dawbayóyabuk,* translated as "flowing through a narrow place or passage." In 1902 the Washoe camp was characterized by the sun-sheltered bedrock mills and marked by the sound of ponderous pestles of granite. Early commentators were impressed by unique patterns on Washoe basketry, and by Washoe fishing technology such as fish hooks, fish spears, and seines. Pioneer residents still recall the traditional Washoe camp at the west end of South Street; one Washoe family lived on the street into the 1970s.

Euroamerican Period

Truckee came into being as a gateway between California and Nevada and beyond, and it remains so today. The town occupies an intermountain valley in the heart of the Sierra Nevada and its strategic location along the Truckee River and in proximity to Donner Pass formed an ideal geographic passageway for travelers.

Transportation and Early Settlement

Some of the first Euroamerican visitors to the Truckee area were members of the Stephens-Murphy-Townsend emigrant party who ascended the Truckee River in mid-November of l844. This route, which passed through Truckee along present-day Donner Pass Road, has later become known as the Truckee Route of the Emigrant Trail. Hundreds of emigrant trains soon followed, the most notable being the ill-fated Donner Party.

A brief flurry of mining lasting only a few months and known as the Red, White, and Blue Mining District was staged out of Martis Valley during the summer of 1863 when several quartz ledges were discovered. While efforts were centered on hard rock mining and silver ore, some industrious miners in a search of free gold washed down from these ore deposits also engaged in limited placer mining along main Martis Creek and the Truckee River. During the 1870s and into the 20th century there was talk of reopening the mines, but no real investment was ever made.

A history of the community of Truckee is marked by the arrival of Joseph Gray, who built a stage station near present-day Downtown Truckee in l863. Gray was soon joined by a blacksmith named S. S. Coburn, and the fledgling settlement of Gray's Toll Station was renamed Coburn's Station. Coburn's Station grew from two structures into a thriving town that accommodated emigrants, stagecoach travelers and freight wagons in route westward to California's gold fields and eastward to the Comstock Lode in Nevada.

In 1864 the Dutch Flat and Donner Lake Wagon Road was opened over Donner Pass, following basically the same route through Truckee that the earliest emigrants had traveled, passing along Old Highway 40 and Donner Pass Road through Truckee's Downtown. The freight/passenger wagon road was situated near the proposed alignment of the Central Pacific's transcontinental to facilitate the transport of supplies and as a continuous freight and passenger road from Dutch Flat to the Comstock mines near Virginia City.

By the early 1860s, plans were formulated for a railroad crossing of the Sierra Nevada. The first rail was laid by the Central Pacific Railroad at Sacramento on October 27, l863. Heavy snow and tunneling through granite rock at Donner Pass presented major obstacles. By May of l868 the railroad was built between Truckee and Reno but the line over Donner Pass was not completed until June l868. That year Coburn's Station burned and soon after this major fire the town was renamed Truckee. The entire transcontinental route was finished in May l869, with the last rail joining the Central Pacific Railroad and the Union Pacific at Promontory, Utah.

The railroad gave rise to other developments in the transportation, lumbering, ice, dairying, and the tourism industries, all of which were to become the essential economic bases of Truckee. As the rails reached the summit in l866-1867, several mills established operations in the Truckee Basin to supply the railroad with cordwood for fuel and lumber for construction and ties for the roadbed. By the late 19th century, over 18 sawmills were operating in Truckee. Lumber companies soon diversified, expanding beyond saw milling and targeted such facilities as planing mills, box factories, sash and door establishments, furniture factories, and shingle mills. Cordwood and charcoal production formed principal adjunct industries to the lumber industry to meet the fuel demands of the railroad and mine smelters in Nevada and Utah and at Truckee's own smelter.



Overview of downtown Truckee 1876 (courtesy of Truckee Donner Historical Society Cat. No. OVR 1002)

Lumbermen released from seasonal logging work usually found employment in Truckee's ice industry. From 1868 through the 1920s, ice harvesting rivaled the economic importance of the lumber industry. Ice was shipped by rail throughout the West, sent to mines in the Comstock and kept California produce fresh on its journey to eastern markets. Several ice works were established along the Truckee River on or near the transcontinental main line. Competition from artificial ice gradually forced the closing of the ice ponds in the Truckee Basin in 1927.

Valleys and meadowlands surrounding Truckee town served as summer pasture for herds of dairy cows, beef cattle and sheep brought from the California and Nevada foothills. The dairy business in the Truckee Basin flourished on a large scale from the 1860s until about 1930. By the 1880s up to 20 dairies had been established within and surrounding Truckee. Butter was the chief product, since milk would spoil without refrigeration.

As a community at the crossroads over the Sierra, Truckee assumed a multi-cultural character. Early on residents struggled with violent discrimination against the Chinese. To meet the labor supply, up to l5,000 Chinese were employed by the Central Pacific. With the completion of the transcontinental railroad, Chinese immigrants were channeled into other regional occupations (logging, cordwood, charcoal production, domestic service, etc.), which forced them into direct competition with Euroamerican residents, especially during times of economic hardship. Truckee soon assumed a leadership role in the anti-Chinese movement in the West. A general boycott in l885-1886 of firms that continued to employ Chinese spelled the ultimate demise of a viable Chinese community as most were expelled from town in 1886.

Truckee's history is marked by several disastrous fires. Besides the 1868 fire that destroyed Coburn's Station, three massive fires swept through Truckee's residential and commercial districts in 1871. In 1873 a fire burned along Bridge and Church streets, being stopped before it crossed Front Street (modern-day Commercial Row). The entire Chinatown

(north of the Truckee River) was burned in 1875. Fire broke out in 1878, and in 1881 another fire destroyed the whole of Commercial Row. The east half of Front Street's commercial district was again consumed by fire in 1882, followed by another fire in 1883. A fire in 1913 forced the rebuilding of most structures along Commercial Row. The sector along River Street was nearly destroyed in the fire of 1895 and again in 1921.



Fire aftermath on Commercial Row ca. 1871 (courtesy of Truckee Donner Historical Society Cat. No. FTS 5)

Recreation and Community Development

By the 1920s the industrial economy and society of Truckee had largely disappeared, due in major part to the relocation of the central railroad switching yard to Roseville, the depletion of local timber supplies, and the introduction of artificial ice with the development of mechanical refrigeration. To replace the loss of its industrial base, the community began to develop into a recreation-based economy.

Small resorts and hotels developed in the region as the transcontinental railroad and the Dutch Flat Donner Lake Wagon Road rendered Truckee accessible by the 1860s. Tourism was further boosted by the designation of the Lincoln-Victory Highway through Truckee in 1913 and the subsequent completion of Old State Highway 40 over Donner Summit. Historic Truckee was unique among turn-of-the-century mountain communities, in that summer recreationists and winter-sports enthusiasts could easily reach the town in summer or winter via the nation's first transcontinental railroad or first transcontinental highway.

By the mid-1890s Truckee was host to winter carnivals that featured the ice palace, toboggan hill, and ski jump at Hilltop. Truckee was unique among turn-of-the-century mountain communities. While the rest of the Sierra Nevada was largely closed to transportation during the winter months, the transcontinental railroad encouraged people from California and Nevada to enjoy winters in Truckee.

Regional rail travel was expanded as several branch railroads tied into the main transcontinental line at Truckee. One of these branch lines, established by Lake Tahoe Railway and Transportation Company, operated its 15-mile-long narrow-gauge railroad between 1900 and 1943. The railroad followed the Truckee River between Truckee and the Tahoe Tavern resort at Tahoe City, which served as the major steamer stop for ports of call around Lake Tahoe. In 1925 the narrow-gauge railroad was leased to the Southern Pacific Railroad, which operated Pullmans with over-night service between the San Francisco area and Tahoe City.

Truckee's relative ease of access also attracted the new motion picture industry, and for a brief period (about 1910 to 1940), Truckee served as a Hollywood on-location set. California movie directors had been taking their castes to Canada and Colorado for snow scenes until they realized the cost savings and the varied and limitless selection of scenery Truckee had to offer, where movie-makers could simultaneously secure both summer and winter season scenes. Notable film epics featured renowned actors such as Charlie Chaplin, Clark Gable, Jack London, John Barrymore, Henry Fonda, Jeannette McDonald and Nelson Eddy, and John Wayne, to name a few.

Even though the character of Truckee was gradually changing, and tourism was fast providing a sounder economy, Truckee had gained a reputation as a rough-and-tough lumber and railroad town, with its brothels, saloons and sporting houses. Bootleg whiskey remained a prime source of community income throughout the era of prohibition

and the hey-day of the red-light district lasted until World War II. The Truckee Jail housed famous criminals like Baby-Face Nelson and Juanita "Ma" Spinelli. For Truckee to realize prosperity as a tourist center in the early 20th century, it had to endure "a most revolutionary clean-up", according to a State Board of Health report (Gillespie 1918:14). The town had an exceedingly rough-edged appearance. Homes along the river, "where the principal element was foreign," were described as "distressingly dilapidated." Buildings (mostly saloons) in the business section of town were "not at all modern." The absence of landscaping and of paved streets offset the initial positive impressions (formed at a distance) of a quaint, steeply-pitched roofed mountain town.

The growing needs of Truckee pressed for more organized municipal infrastructure and the establishment of utility and water companies and sewer systems. Small independent systems were unable to supply enough sanitary water to the growing town and most of these older systems were eventually consolidated in 1927 under the Truckee Donner Public Utility District. In the early days there was no organized refuse collection system nor was there an awareness of the potential hazards of chemical wastes. Trash littered backyards and alleyways and manure was piled along the river's edge. Contamination of the water supply resulted in an epidemic of typhoid fever during the nineteen teens prompting a state investigation in 1918 to report on the pollution and bacterial contamination of the Truckee River. The sewer collection system of the town, which was installed in 1908 by the Truckee Sanitary District (the oldest sanitary district in the State of California), remained basically unchanged until the 1960s. Settled sewage was later discharged to seven effluent ponds located across from town on the south side of the river, where it underwent oxidation and percolated into the soil. These stabilization ponds were abandoned with the opening of the Tahoe Truckee Sanitation Agency plant in 1978.



Overview of downtown Truckee ca. 1930 rom Hilltop (courtesy of Truckee Donner Historical Society Cat. No. OVR 1042)

The Town of Truckee is underlain by thick deposits of glacial outwash. Gravel deposits in the vicinity of Coldstream Canyon and Donner Lake were mined as early as 1874 to build the transcontinental railroad, with new quarries to support the development of subdivisions and roadways and improvements in the 1960s. In 1963-1964 portions of the two-lane U.S. 40 (former Lincoln-Victory Highway) were incorporated into the new interstate highway system and became the four-lane Interstate 80. The 1960 Winter Olympics at nearby Olympic Valley ultimately secured Truckee's position as a center point for year-round recreation and the area became a focal point of early mountain residential development.

KNOWN ARCHAEOLOGICAL AND ARCHITECTURAL RESOURCES

Virtually all areas within the town are considered extremely sensitive regarding the presence of cultural resources, with the downtown core area being home to a high concentration of structures that have historical significance. Areas in adjoining and outlying subdivisions are considered moderately to highly sensitive to contain cultural resources. Forests and meadowlands were fertile sources of food and subsistence for early populations. Topographic landforms

such as hill slopes and flats removed from water sources are less sensitive. Highly sensitive are areas along the Truckee River and its tributary streams and Donner Lake.

Prior ethnographic studies indicate that the Washoe are the applicable tribal authorities for lands encompassing the Town of Truckee planning area. Numerous prehistoric sites dating from the last 9,000 years have been inventoried, and some are marked by ethnographic and ethnohistoric Washoe place names. A large historic Washoe settlement was established on the south side of the Truckee River directly across from the heart of the downtown.

Concentrations of historic resources occur around the places with the longest history of permanent settlement and activity. Historic downtown Truckee is listed in the Office of Historic Preservation Historic Property Directory. The route of the Emigrant Trail, First Transcontinental Railroad and the Truckee Jail appear in the California Inventory and the historic Dutch Flat and Donner Lake Wagon/Lincoln Highway/Victory Highway/Old Highway 40 (i.e., Donner Pass Road) traverse through downtown. In addition, several California Historical Landmarks and Points of Historical Interest are included within in or adjacent to Truckee town. The Town of Truckee's commercial core area is listed on the National Register of Historic Places as a historic district. The "Kruger House" (i.e., "C.B. White House") is individually listed on the National Register of Historic Places. Numerous other buildings and features qualify as contributing elements of the National Register District.

Archaeological Resources

Truckee's downtown legacy is marked by its rich archaeological record, which has been enhanced by the casual trash disposal practices of the day and by the recurrent and catastrophic fires that plagued the town leaving layers of burned artifacts, charcoal and ash. While more localized fires were frequent occurrences, larger fires produced great quantities of debris and the burned refuse was not always removed but pushed aside and compacted to be built upon again.

To date, no comprehensive survey of prehistoric archaeological resources has been completed for the Town of Truckee. In 1996 it was estimated that only between eight and 20 percent of the Town had been inventoried for cultural resources; records associated with these earlier surveys document more than 100 historic, prehistoric and ethnohistoric sites within the Town limits (Town of Truckee 1996 General Plan, Volume II:P Technical Analysis). An archaeological records search for the entire water service area for the Truckee Donner Public Utility District in 2009 serves as an update to the 1996 estimate (Lindström 2009). The search radius, which encompassed the limits of the Town of Truckee and including the downtown area as well as surrounding subdivisions, disclosed approximately 200 archaeological studies have been conducted within the public utility district's overall service area and up to 300 cultural resources have been recorded.

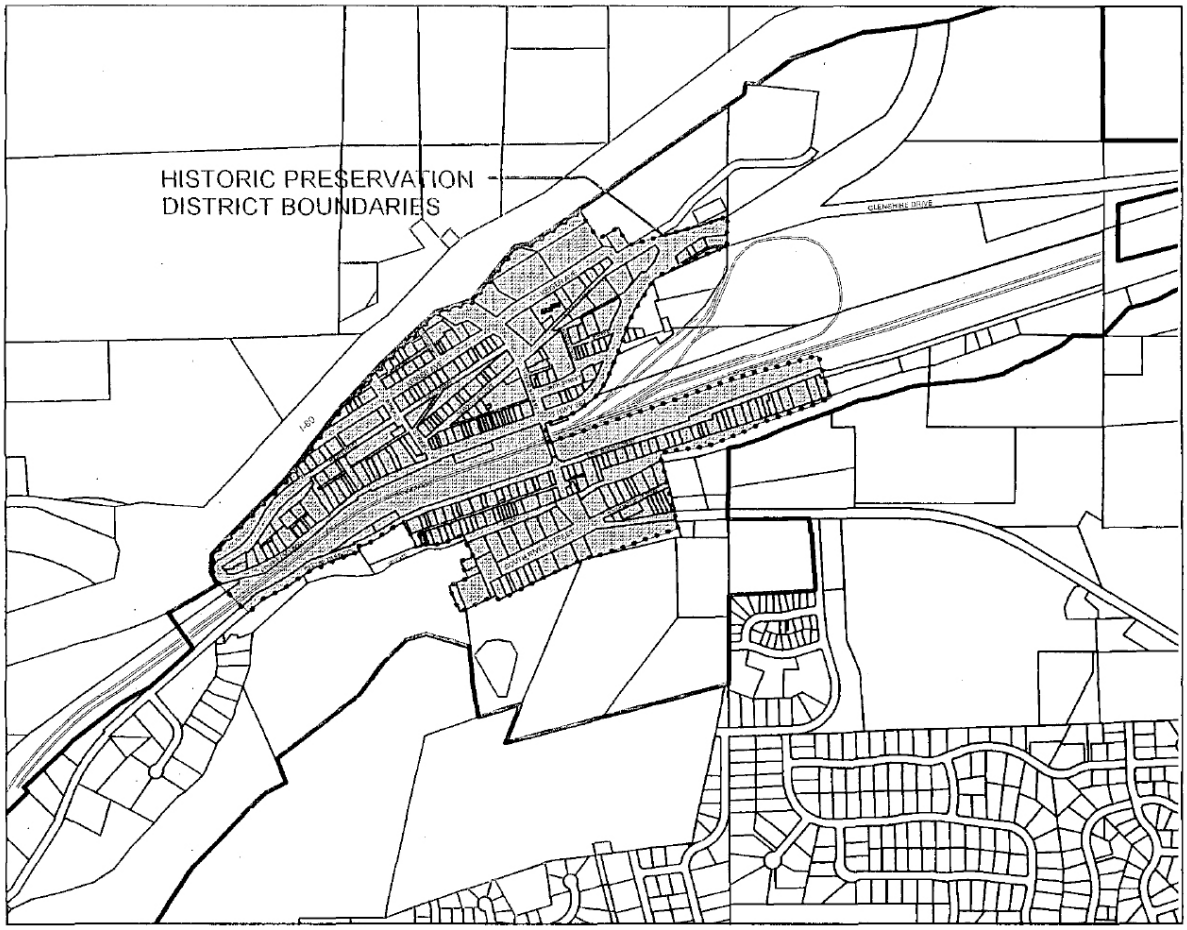
Architectural Resources

Operation Truckee was the first project to document a large and concentrated number of potentially significant historical buildings and formed the basis for the subsequent designation of Truckee's downtown commercial core as a National Register Historic Preservation District (Lord 1980). As an unincorporated town in Nevada County, local merchants and residents engaged in joint meetings in 1979 to re-evaluate the community's direction for the 1980s. Findings were published in a planning document entitled, Operation Truckee: A Community Plan, in which the county supervisors committed to initiating a new "Historic Preservation" ordinance written for the County Development Code. Adopted in 1980, the community was able to apply for certification as a local historic district and thereby be entitled to greater local political control over community development and protective zoning (see Figure 9-1). Restrictions on the building permit process within the historic district discouraged demolition of historic buildings and sensitized citizens to maintain the historical integrity of their community. Over 300 structures were addressed within the Operation Truckee study area, out of which 50 percent were included in the final historic architectural inventory. The inventory identified about 130 historic properties.

As a follow-up to Operation Truckee, beginning in 1998, the Town of Truckee sponsored a historical resources and architectural inventory of the downtown (Christensen et. al 1999, 2001, 2004:21). Together with the 1980 architectural inventory, it served as the foundation for establishing boundaries for the Truckee National Register Historic Preservation District. The District covers the core historic commercial area and portions of the surrounding historic

residential areas, including an area to the south commonly known as Hilltop. (Several properties identified in the 1980-1981 study were no longer in existence, having been demolished or destroyed by fire or other events and replaced by modern structures.)

FIGURE 9-1 TRUCKEE HISTORIC PRESERVATION DISTRICT



Source: Town of Truckee, Downtown Specific Plan, 1997

Survey results (Christensen et. al 2004:21) documented 229 historic resources within the Truckee Historic National Register District. Within this district, 267 buildings are identified, which include 213 historic age buildings and 54 buildings of contemporary age (post-1954). Of the 267 total buildings identified in the National Register district boundaries, 154 properties (153 buildings, one structure; 58 percent) are recommended as contributory to the National Register District and 113 properties (112 buildings, one structure; 42 percent), made up of 54 contemporary age and 59 historic age resources are recommended as non-contributing, and not eligible for the National Register. Of the 229 historic age resources recorded in the survey area, 60 are recommended as individually eligible for the National Register, an additional 71 are recommended eligible for the National Register as contributory properties within the Truckee Historic National Register District, and 98 are regarded as not eligible for the National Register on their own merits or as contributing buildings to the district.

An additional task associated with the architectural inventory project was to provide an evaluation of each building with respect to local (Truckee) rating categories as defined by the Town of Truckee. Of the 229 historic age resources documented, 60 are identified as Category A (Essential), 104 fall within Category B (Contributing), 39 are Category C (Supporting), and 26 have lost so much integrity as to be considered Category D (Nonessential).

According to Christensen et al. (2004:27), the early historic architectural face of Truckee is dominated by modest, vernacular or frontier style, wood frame, front-gable buildings. As fire repeatedly passed through portions of the community, brick masonry construction quickly became the desired construction material, particularly along

commercial row. Architectural style is consistent with and representative of a boomtown community largely populated by rough-and-ready loggers, millers, railroad-men, and ice harvesters. Supporting businesses included hotels, restaurants, laundries, saloons, dry goods, specialty retail stores, banks, and other businesses

Individual properties were further classified based on their periods of construction (Christensen et al. 2004:22):

- Late 19th Century/Late Victorian (44 percent);
- Late 19th-Early 20th Century (15 percent);
- Early 20th Century (32 percent);
- Early-Mid 20th Century (8 percent); and
- Mid-20th Century (2 percent).

Over half the buildings inventoried date from Truckee's earliest periods of significance – 23 percent from 1863-1889 and 46 percent from 1890-1910. Building development dropped between 1911-1940, as indicated by only 28 percent of the historic buildings in the district. Building during the early modern era, 1942-1954, is represented by only 3 percent of all historic-age buildings. By this time, most lots within the historic downtown were already occupied and development began shifting to the west (Christensen et al. 2004:22).

Dominant architectural styles are grouped as follows:

- Vernacular (56 percent);
- Commercial Vernacular (12 percent);
- Folk Victorian (9 percent);
- Craftsman (8 percent);
- Gothic Revival (3 percent);
- Italianate (3 percent);
- Queen Anne (2 percent);
- vernacular type Railroad and industrial buildings/structures (3 percent); and
- a mixed category represented by at least one each of Greek Revival, Shingle, Gambrel, Art Deco, Art Moderne, Colonial Revival, Minimal Traditional, and/or Tudor Revival (4 percent) (Christensen et al. 2004:22-23).
- Additions and remodels to many individual buildings are an important part of downtown Truckee's architectural integrity, coinciding with the use of recycled materials salvaged from burned, discarded, or demolished railroad dunnage and buildings, when they became available. Truckee's architectural style is often referred to as "Truckee Funk." Truckee Funk is an expression of the community's history or working-class utilitarian design where function drives building forms. Key components of Truckee Funk include a combination of symmetry and asymmetry, physical texture, exposed construction methodology, authentic materials, and art in architecture.

Primary or first historic functions or uses of all the buildings recorded comprise:

- "Domestic" (50 percent);
- "Commerce/Trade" (30 percent);
- "Recreation and Culture" (7 percent);
- "Industrial and Transportation" (3 percent);
- "Religion" (2 percent);
- "Social" (1 percent), and

- the remaining 6 percent represented by a few buildings with uses associated with "Education," Funeral/Mortuary," and the "Government" (Christensen et al. 2004:22).

The Truckee Historic National Register District is significant on a local and regional level as an example of an architecturally diverse, late 19th and early 20th century, western, mountainous, frontier community. The built and surrounding natural environment continues to reflect its rugged, working-class, early character. This historic district contains not only the core commercial center or focal area of early business and industry but also represented is the wide spectrum of residential properties that citizens of differing social and economic status built and occupied along the river's bank and low ridges that overlooked the railroad and river corridor at its heart (Christensen et al. 2004:27).

The buildings reflect development within the community over a broad time frame between 1863 and the 1950s. Fire was a constant factor affecting Truckee's facade and major conflagrations, which occurred in 1868, 1871, 1873, 1875, 1878, 1881, 1891, 1913, and during the 1920s eventually transformed most of the commercial area from wood structures to fire resistant brick.

9.1.3 Regulatory Setting

To balance planning and design objectives with historical preservation, the Town of Truckee has implemented federal and state laws, as well as county and local heritage regulations to assist planners in weighing the merits of preservation of cultural resources against meeting community development goals. Cultural resource is a broad term that includes prehistoric and historic archaeological remains, architectural buildings, structures and objects, and traditional cultural properties. Key cultural resource ordinances are summarized below.

FEDERAL GUIDELINES AND THE NATIONAL REGISTER OF HISTORIC PLACES

The National Historic Preservation Act of 1966, as amended (16 USC§ 470 *et seq*.), is the primary federal legislation that outlines the federal government's responsibility to cultural resources. Section 106 of the act requires the federal government to take into consideration the effects of an undertaking on cultural resources listed on or eligible for inclusion in the National Register of Historic Places. The National Register is an elite register of districts, sites, buildings, structures, and objects of significance in American history, architecture, archaeology, engineering, and culture that fall under the jurisdiction of the federal government and/or on private land. Properties can be significant on the national, state or local level. While state and local legislation is most applicable to the Town of Truckee General Plan and Downtown Truckee Specific Plan, National Register status does guarantee recognition in planning for federal or federally-assisted projects, eligibility for federal tax benefits, and qualification for federal historic preservation assistance.

The significance of a cultural resource is typically evaluated in terms of criteria established in the National Register of Historic Places. The regulations provided in 36 CFR Part 60.4 describe the criteria (A through D) that focus on a cultural property's associations with significant events (Criterion A) and personalities (Criterion B) in the nation's history and cultural heritage, its distinctive technical, architectural or artistic characteristics (Criterion C), and/or a property's information potential (Criterion D). Resources are evaluated within a specific and important time frame or period of significance during which time the property was occupied or used. (Sequential or overlapping periods of significance are possible.) Once a period of significance has been established, the property must be associated with an era that has been designated as "significant." Eligibility determinations also take into consideration the heritage theme(s) represented and the geographical space in which events occurred. A district, site, building, structure, or object must be at least 50 years old (unless it is an exceptional younger property). Properties that may not be individually eligible for listing on the National Register can meet the criteria of eligibility if they are integral parts or "contributing elements" of an eligible site or district.

To be listed in the National Register, a property must not only be shown to be eligible under one or more of these criteria, but it must also have integrity. The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and/or association. A property does not have to meet all seven criteria, but it must retain sufficient physical character, with key aspects present, so that it conveys an association or connectedness with

historic patterns, persons, designs, or technologies. The property must remain in its original location and the setting should be relatively free of modern-day intrusions.

STATE GUIDELINES AND THE CALIFORNIA REGISTER OF HISTORICAL RESOURCES

State antiquities mandates under the California Environmental Quality Act (CEQA Section 5024, Public Resource Code) also provide guidelines for the management, protection and preservation of cultural and historic resources. Under CEQA provisions the State Public Resource Code was amended (in 1992) with the addition of Section 5024.1, which authorized the establishment of the California Register of Historical Resources. The significance of a cultural resource is typically evaluated in terms of criteria established in the California Register, which are patterned after National Register eligibility criteria. For the purposes of CEQA (Section 15064.5), a significant cultural resource is one that is associated with important events [Criterion 1] or personalities [Criterion 2] that have made a significant contribution to the broad patterns of California's history and cultural heritage; that embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values [Criterion 3]; or that has yielded, or may be likely to yield, information important in prehistory or history [Criterion 4].

The California Register includes properties that are listed or have been formally determined eligible for listing in the National Register, as a State Historical Landmark, and as an eligible Points of Historical Interest. Other resources require nomination for inclusion in the California Register. These may include resources contributing to the significance of a local historic district, individual historical resources, historical resources identified in historic resource surveys conducted in accordance with State Historic Preservation Office procedures, historic resources or districts designated under a local ordinance consistent with Commission procedures, and local landmarks or historic properties designated under local ordinance.

NATIVE AMERICAN LEGISLATION

Health and Safety Code, Section 7052 and 7050.5 states that the disturbance of Native American cemeteries is a felony and requires that ground disturbance activities be stopped near discovered human remains until the County Coroner can determine whether the remains are those of a Native American. If the remains are determined to be of Native American origin, the County Coroner should notify the Native American Heritage Commission within 24 hours of determination, as required by Public Resource Code, Section 5097. The Commission should then notify designated *Most Likely Descendants* (in this case the Washoe Tribe), who should provide recommendations for the proper treatment of the burial remains within 24 hours. In addition to the above, the California Native American Historical, Cultural, and Sacred Sites Act, which applies to both State and private lands, further stipulates the procedures the descendants may follow for treating or disposing of the remains and associated grave accompaniments.

Senate Bill (SB) 18 sets forth requirements for local governments (town and county) to involve Native American tribes in the protection of traditional tribal cultural places and mitigate impacts through local land use planning. Consultation should occur in the context of broad local land use policy – applicable to the general plan or specific plan process -- before individual site-specific project-level land use designations are made by a local government.

Assembly Bill (AB) 52 specifies that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. The bill requires a lead agency to begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project before determining whether a negative declaration, mitigated negative declaration, or environmental impact report is required for a project. To complete the AB 52 requirements, the lead agency must consult with the Native American Heritage Commission to request a search of the Sacred Lands Files and implement follow-up communications with all groups/individuals on the Commission's contact list to incorporate their opinions, knowledge and sentiments regarding the project.

COUNTY GUIDELINES

Chapter II of the *Nevada County Land Use and Development Code* requires a site-specific inventory and analysis of significant cultural resources and that this evaluation include recommended mitigation and/or alternatives necessary to avoid or lessen impacts (Section L-II 4.3.3 General Provisions) by:

(1) avoiding the impact by designing so that the resource or constraint is fully protected and not disturbed;

(2) minimizing the impact through preparation and implementation of a county-approved management plan; and/or

(3) the use of compensatory mitigation.

Section L-II 4.3.6 lays out the purpose, definitions and standards regarding significant cultural resources. As a condition of project approval, a project sponsor is directed to conduct a records search at the North Central Information Center and initiate contact with the appropriate Native American group. Preservation and avoidance are the priority and projects shall only be approved when they do not remove or disturb cultural resources, unless a county-approved management plan is implemented according to professional standards. Significant cultural resources discovered during project construction are also protected until a qualified professional can develop an appropriate management plan for their treatment. The locations of significant cultural resources are confidential and are not circulated as part of public documents but are used for planning purposes only.

TOWN OF TRUCKEE GUIDELINES

Operation Truckee (Lord 1980) and the Historical Resources and Architectural Inventory (Christensen et al. 1999, 2001, 2004)

Operation Truckee was the first project to document a large and concentrated number of potentially significant historical buildings and formed the basis for the subsequent designation of Truckee's downtown commercial core as a National Register Historic Preservation District (Lord 1980). As an unincorporated town in Nevada County, local merchants and residents engaged in joint meetings in 1979 to re-evaluate the community's direction for the 1980s. Findings were published in a planning document entitled, Operation Truckee: A Community Plan, in which the county supervisors committed to initiating a new "Historic Preservation" ordinance written for the County Development Code. Adopted in 1980, the community was able to apply for certification as a local historic district and thereby be entitled to greater local political control over community development and protective zoning. Restrictions on the building permit process within the historic district discouraged demolition of historic buildings and sensitized citizens to maintain the historical integrity of their community. Over 300 structures were addressed within the Operation Truckee study area, out of which 50 percent were included in the final historic architectural inventory. The inventory identified about 130 historic properties.

As a follow-up to Operation Truckee, beginning in 1998, the Town of Truckee sponsored a historical resources and architectural inventory of the downtown (Christensen et. al 1999, 2001, 2004:21). Together with the 1980 architectural inventory, it served as the foundation for establishing a historic preservation program including boundaries for the Truckee National Register Historic Preservation District. The District covers the core historic commercial area, portions of the surrounding historic residential areas, and an area to the south commonly known as Hilltop.

Town of Truckee General Plan, 1995-2014, Volume 1 Goals and Policies, Chapter 4, "Conservation and Open Space Element"

The current Town General Plan provides clear direction for the management, protection and preservation of cultural and historical resources in Conservation and Open Space Goal 9 and supporting policies.

- "Conservation and Open Space Goal 9. Protect cultural and historic resources and accommodate public access as appropriate.
  - Conservation and Open Space Policy 9.1. Require evaluation of impacts to cultural resources for projects which involve substantial site disturbance.

- Conservation and Open Space Policy 9.2. Encourage appropriate reuse of historic structures for housing, public recreation, and commercial uses without compromising their historic character.
- Conservation and Open Space Policy 9.3. Maintain regulatory standards that protect and preserve the historic quality of the Downtown Historic District and other historic structures in Town.
- Conservation and Open Space Policy 9.4. Request the inclusion of significant sites or districts in the Federal or State Historical Register based on the recommendation of local historical societies or a qualified professional archaeologist/historian.
- Conservation and Open Space Policy 9.5. Encourage and cooperate with the private sector in the implementation of innovative techniques intended to preserve archaeological and historic sites by gift, private conservancies and easements.
- Conservation and Open Space Policy 9.6. Work with State Parks, the Recreation and Parks District, the Historical Society, the Truckee Donner Land Trust, and other appropriate entities to increase opportunities for public recreation and access to historic sites as appropriate.

Town of Truckee 2025 General Plan Environmental Impact Report (EIR) 2006

Recognizing the importance and concern for protection of cultural resources within the Town of Truckee, the Community Character Element of the 2025 General Plan EIR (4.4-14-15) includes several other stipulations for heritage preservation: Goal CC-19, which calls for the preservation and enhancement of the Town's historic and cultural. Implementation of these policies and actions and others specified in the Truckee 2025 General Plan is intended to reduce immediate impacts or cumulative impacts to historical and archaeological resources to a less-than-significant level.

- Policy P18.1 requires evaluation of impacts to historic resources for projects that involve substantial site disturbance, or demolition or alteration of known historic building. This policy applies to discretionary projects subject to CEQA, as well as ministerial projects with the potential to affect buildings that are 50 years older or more.
- Supporting Action A18.1 directs the Town to implement the Historic Preservation Program that seeks to protect and preserve the historic quality of the Downtown Historic District and other historic structures in Town.
- Other policies encourage the sensitive adaptive re-use of historic buildings in accordance with state and federal guidelines (P18.7), support cooperation with the public and private sector to preserve historic resources (P18.3) and provide incentives to pursue funding for historic preservation (P18.4).
- Policy P19.1 requires proper archaeological or paleontological surveying, testing, research, documentation, monitoring, and safe retrieval of archaeological and cultural resources as part of the development review process.
- Policy P19.2 requires an archaeological survey by a qualified professional whenever there is evidence of an archaeological or paleontological site within a proposed project area, or whenever a high likelihood for the occurrence of cultural resources is determined, or where a project involves substantial site disturbance.
- Whenever there is the potential for disturbance of sacred native burials during development, Policy P19.3 requires consultation with representatives of the Native American community as necessary to ensure the respectful treatment of Native American sacred places.

Truckee Downtown Specific Plan, Volume 2: Policies and Programs, Chapter 8: Historic Resources (November 1997, amended 2017, pages 14-15)

The plan recognizes that strong historic preservation policies and standards are important and necessary for the economic well-being of the Downtown area. Chapter 8 sets forth the framework for the historic preservation program for Truckee's Downtown Study Area (DSA). The historic resources element is designed to: preserve the amenity and unique character of Downtown Truckee, promote the tourism economy, conserve and enhance property values, and

foster and encourage the preservation, restoration, and rehabilitation of structures, areas, and neighborhoods. Key historic resources guiding policies aim to:

- Policy 1. Promote the preservation, rehabilitation and renovation of historic buildings;
- Policy 2. Discourage out-of-character alterations to historic buildings;
- Policy 3. Safeguard historic buildings from unnecessary removal and demolition;
- Policy 4. Ensure new structures and development are congruous with their historic surroundings;
- Policy 5. Provide mechanisms to identify and mitigate impacts to subsurface archaeological resources;
- Policy 6-8. Identify improvements and funding programs to implement protection strategies and mechanisms identified in the historic design guidelines.

Policies also pertain to updating the Historic Resources Inventory, Historic District Design Guidelines, and direction for building demolition. They lay out criteria for historic resource determination, requirements for archaeological investigations for new development projects, and implementation measures for enforcement programs and assistance programs available for historic resource protection. The section also contains policies regarding the local Historic Preservation Advisory Commission. In 1982 the Nevada County Board of Supervisors established a Historic Preservation District for the Truckee Downtown area and adopted historic design guidelines. At that time, the Historical Preservation Advisory Commission was established to provide oversight intended to preserve and protect existing historic structures and ensure that new buildings are compatible with the existing historic buildings.

Truckee Downtown Specific Plan, Volume 3: Historic Design Guidelines (2003)

The plan presents design review guidelines for the downtown "Truckee's Historic Preservation Overlay District." The publication supplements the Town's Development Code and provides direction for determining the appropriateness of proposed improvements involving alterations to historic and non-historic buildings as well as new construction. Guidelines are assessed by the Town's Historic Preservation Advisory Commission and implemented on a case-by-case-basis by a review board. In addition to general guidelines for preservation and new development, special guidelines are included for "Design Districts and Character Areas" that reflect differences in historical development and unique characteristics, problems and opportunities of individual neighborhoods (see Figure 9-2). Within this overlay district, nine geographic "Character Areas" have been established: Brickelltown; Commercial District; Burckhaulter; River; Church Street; McGlashan Addition; Railroad; South River; and Hilltop.

TOWN OF TRUCKEE DEVELOPMENT CODE

Several chapters and sections of the Town of Truckee Development Code provide procedures and standards for the treatment, preservation, restoration, rehabilitation, and demolition of historic resources in combination with the Downtown Specific Plan Vol. III and the Secretary of the Interior's Treatment of Historic Properties. Prior to the creation of these regulations, the Town had little authority to stop the demolition of historic buildings or preservation of historic properties and context. With these regulations in place, only five historic resources have been demolished:

- 10130 Trout Creek Road (Category B Historic Resource)—demolition permit issued after a vehicle crashed into the home
- 10189 East River Street—demolition permit issued though Certificate of Economic Hardship process
- 10002 Jibboom Street (Category B Historic Resource)—demolition permit issued on public health safety and welfare necessity
- 10167 West River Street—property classification modified by Council to Category D and structure demolished
- Union Pacific Railroad Warehouse Building (Category B)—demolished as part of Railyard Master Plan implementation

Historic Preservation (-HP) Overlay District – Development Code Section 18.20.040

The -HP overlay district applies to areas of the Downtown Specific Plan Area with concentrations of historic buildings and structures that contribute to the downtown's historic character. The -HP overlay district is intended to:

- protect the Town's unique cultural heritage as embodied and reflected in the Town's architectural history and patterns of cultural development;
- to preserve diverse architectural styles, patterns of development and design preferences reflecting phases of the Town's history and to encourage complementary contemporary design and construction and inspire a more livable urban environment;
- to protect and enhance the Town's attraction to tourists and visitors, thereby stimulating business and industry;
- to identify as early as possible and resolve conflicts between the preservation of cultural resources and alternative land uses; and
- to integrate the preservation of cultural resources into public and private land use management and development processes.

Development standards and guidelines for this district address new development, alterations, additions and modifications to existing buildings and structures, demolition of historic buildings and structures, and the identification and protection of subsurface historic and archaeological resources.

Historic Preservation Design Guidelines – Development Code Chapter 18.26

Development Code Chapter 18.26 – Historic Preservation Design Guidelines cross references Volume III of the Downtown Specific Plan. The guidelines are used as criteria against which projects in the Historic Preservation (-HP) Overlay are reviewed. The Guidelines apply to all projects (additions, modifications, alterations, rehabilitation, reconstruction, relocation, or new construction), including single-family dwellings and accessory structures and projects that do not require a building permit, in the -HP overlay district.

Historic Design Review – Development Code Chapter 18.77

All projects that require a land use or building permit or will affect the exterior appearance of any building or property within the -HP overlay district, and public projects such as sidewalk installation, traffic circle installation and other streetscape and pedestrian/bicycle improvement projects within the -HP district are subject to Historic Design Review in compliance with Chapter 18.77 of the Development Code. The Town has adopted lists of certain exterior changes or materials that are either "Green Light" (exempt), "Yellow Light" (possibly exempt), or "Red Light" (subject to Historic Design Review).

Projects that are subject to Historic Design Review must submit an application to the Director. Once the application is deemed complete, the Director prepares a report and forwards the application to the Historic Preservation Advisory Commission (HPAC) for review. The HPAC reviews the application in accordance with the requirements of the Historic Design Guidelines and makes a recommendation to the Director. The Director may exempt applications from review by the HPAC if the application is minor in nature or a quorum of the HPAC cannot be called within a reasonable period of time for the review authority to review the land use permit within the time limits imposed by this Development Code. The review authority may grant a Certificate of Appropriateness with or without conditions if certain findings can be made.

The following projects are considered exempt from HPAC review:

1. Color schemes acceptable for repainting, including acceptable trim combinations
2. Maintenance projects involving replacement with like materials and like colors
3. Replacement of doors and windows with doors or windows of the same size, like materials and similar style
4. Replacement of roof of similar color and material
5. Replacement of sign lettering which is similar is type style and color to previous sign lettering.

6. Other minor projects similar to those listed above, as determined by the Community Development Director.

Chapter 18.77 also includes procedures for granting a Certificate of Economic Hardship. It outlines the procedures for reviewing requests to reduce or waive the standard, guidelines, and findings for a Certificate of Appropriateness if such standards, guidelines, and findings will cause an immediate extreme hardship because of conditions peculiar to the particular structure and the damage to the property owner is unreasonable in comparison to the benefit conferred to the community.

Demolition Review – Development Code Chapter 18.83

Any action that will result in the removal, relocation, tearing down, or demolition of a historic resource are subject to the procedures and criteria for the review of demolition requests to historic resources contained in Development Code Chapter 18.83. The HPAC is responsible for reviewing Demolition Review applications in accordance with the requirements of the Historic Design Guidelines and forwarding a recommendation to the Director.

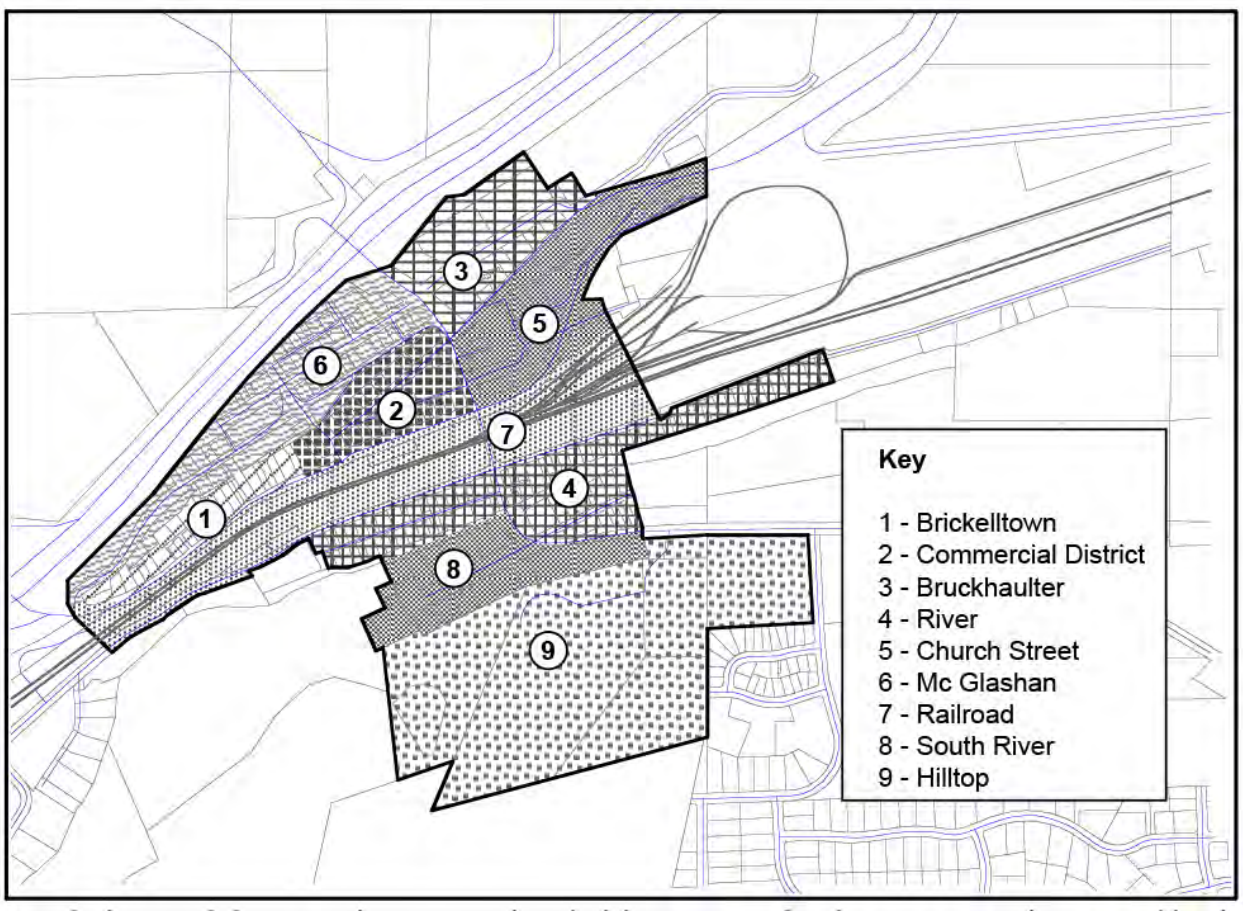
In conducting a Demolition Review for a particular project, the Director considers the classification category of the historic resource – Category A (Essential Rating), Category B (Contributing Rating), or Category C (Supporting Rating) – and the location and the overall effect of the proposed demolition upon surrounding properties and the Downtown Study Area in general.

The Director may exempt a Demolition Review application from the requirements of this Chapter and authorize the removal or demolition of a historic resource if the Director finds the historic resource poses an immediate danger to the health, safety, or welfare of the occupants, the owner, or that of the general public and immediate action must be taken on the application to safeguard the public health, safety and welfare. The Director may require that the materials of the demolished historic resource be used in a new development on the site and/or that the historic building form of the original historic resource be replicated in development on the site.

Historic Variances – Development Code Section 18.82.050

Development Code Section 18.82.050 provides for modifications and adjustments of the development standards of the Development Code only when the strict application of the Code may impair the ability of a historic resource to be properly used for adaptive reuse and/or to be altered in a manner that will have the least impact upon its historic character and the surrounding area. The HPAC reviews applications for Historic Variance in accordance with the Historic Preservation Design Guidelines and forwards a recommendation to the review authority.

FIGURE 9-2 DOWNTOWN DESIGN DISTRICTS AND CHARACTER AREAS



Source: Town of Truckee, Downtown Specific Plan, 1997

Truckee's downtown core area is listed in the National Register of Historic Places as a National Register District. As prelude to the Truckee National Register District designation and central to addressing historic preservation issues identified in the series of local regulations (e.g., *Town of Truckee General Plan and EIR 1995-2014 and 2025*; *Downtown Specific Plan, Volume 1 and 4*, 1997; and the *Downtown Specific Plan Volume 3*, 2003), an exhaustive inventory and evaluation of individual historic buildings, structures and objects in the downtown was conducted (Lord 1980-1981; Christensen et al. 1999, 2001, 2004). This work was done as part of the Town's Historic Preservation Program.

To augment eligibility criteria established under the National Register of Historic Places and the California Register of Historical Resources, the "Town of Truckee Local Rating System" was devised as an important element of the Historic Design Guidelines to address more nuanced patterns in the town's unique architectural resources within the National Register District and Truckee's Historic Preservation Overlay District. Four subcategories are used for classifying historic properties:

A. Essential ("Category A") – buildings that retain the highest degree of integrity and are individually eligible for the National Register;

B. Contributing ("Category B") - buildings that have experienced some alterations, yet still retain a relatively high degree of integrity;

C. Supporting ("Category C") – buildings that have had substantial alterations but retain their overall form and scale and have the potential to be restored; or

D. Non-essential ("Category D") – buildings altered so radically that they no longer retain sufficient integrity to have historical significance.

For planning purposes, buildings, structures or objects that are 50 years or older are considered "historic." The 50-year cut-off date is considered a sliding time-line however, one that changes yearly. For example, at the time of the 2018 general plan update, cultural resources dating from 1968 and earlier would be considered "historic" and must be inventoried and evaluated according to National and/or California Register criteria to assess their eligibility. If determined eligible, they warrant protection and preservation. That said, architectural buildings, structures and objects within Truckee's National Register Historic District, are assessed according to the historic period of significance upon which National Register status was based and dating from the 1860s until the 1950s (Christensen et al. 2004). The 1860s-1950s time-period provides the framework for the architectural design of new or remodeled structures within the Truckee's National Register Historic District.

Truckee's recent growth has resulted in substantial new construction in the town, and pressure for still more development in the historic district. Several prominent issues relating to the National Register integrity of the town's buildings, both individually and collectively, have been identified:

- the attempt to create a historic appearance by reconstructions and replicas where a modern building is designed to emulate or mimic an early frontier or period style; the replacement of non-exterior exterior materials;
- progressive deteriorating building conditions; and
- modern development in historic neighborhoods.

These changes have great potential to adversely impact the historic character of the historic community. Any building constructed less than 50 years ago is considered a "non-contributing" element in a historic district and degrades the integrity of the whole district. If the relative number of non-contributing buildings in a historic district continues to climb, the integrity of the district would eventually be degraded to the point where the district is no longer National Register eligible (Christensen et al. 2004:47-48). Historic guidelines and federal, state and local regulations are designed to prevent this from happening.

Mills Act

The Mills Act is a state law enacted in 1972 that encourages the preservation and maintenance of "qualified historic structures." The Town Council has approved the use of Mills Act agreements with owners of historic properties listed as a Category A, B, and C historic resource in the Town of Truckee's Historic Resources and Architectural Inventory. Mills Act agreements have a minimum term of 10 years and are automatically renewed annually for an additional year. The act is a tax incentive program that allows for property tax reduction in exchange for preserving and/or restoring qualified historic buildings. Property taxes are recalculated using a formula in the Mills Act and Revenue and Taxation Code. In Truckee, the Mills Act requires that historic property owners spend the property tax money that is saved through the Mills Act on preserving and/or restoring their property.

Cultural Resource Protocols

A series of cultural resource protocols are developed to avoid impacts to potentially important archaeological sites, historical buildings, structures and objects and traditional cultural properties. These protocols are consistent with general professional archaeological standards. Impacts to cultural resources may result from:

- disturbance or destruction of prehistoric or historic archaeological sites during project ground disturbance activities;
- disturbance of any human remains interred inside or outside of formal cemeteries;
- general changes in land use that may affect the integrity of the setting of cultural properties by introducing incompatible visual or audible elements into the setting of a potentially significant resource;
- increased public access and potential for damage and/or vandalism.

Important archaeological and architectural remains may warrant protection, preservation and eventual interpretation, apart from the implementation of broad-based cultural local, state and federal regulations summarized in this report. The completion of additional tasks would be required on a project-specific basis to assess impacts to potentially important cultural resources. Recommendations outlined below summarize standard protocols for the management

and protection of cultural resources. The relative level of effort and timing for completion of each of these tasks would be determined later as specific development proposals are considered.

(1) On-going Consultation and Outreach

- contact with tribal representatives regarding Native American presence within the Town of Truckee River general plan area
- oral history interviews with individuals knowledgeable in local history (Truckee Donner Historical Society)

(2) Archival Research

- update records search at the North Central Information Center, California State University, Sacramento, where prior records search is older than two to three years

(3) Archaeological Field Research

- field verification of known archaeological sites to assess their current content and integrity in areas not previously subject to archaeological coverage or where prior coverage is older than five-to-ten years
- a qualified archaeologist to conduct project-specific archaeological field reconnaissance to detect any newly discovered archaeological resources within the project area
- a qualified architectural historian to conduct project-specific architectural evaluations to assess eligibility to the National Register of Historic Places, California Register of Historical Resources or Town of Truckee's Local Rating System
- a local Native American representative maybe involved as appropriate

(4) Preparation of Final Report

- a final cultural resource study report to comply with guidelines established by Nevada County under the California Environmental Quality Act (CEQA Section 5024, Public Resource Code) and Chapter II of the *Nevada County Land Use and Development Code*; the *Town of Truckee General Plan, 1995-2014, Volume 1 Goals and Policies*, Chapter 4, "Conservation and Open Space Element," and the *Truckee Downtown Specific Plan, Volume 3: Historic Design Guidelines*
- review and concurrence of the study report by agency personnel, in consultation with the State Historic Preservation Officer (if appropriate) and other interested parties (including Native American representatives)

(5) Archaeological Monitoring

- due to increased public access into areas outlying the downtown core area, the potential for increased archaeological site vandalism should be monitored on a periodic basis
- monitoring of archaeological sites during the implementation of ground disturbing projects may be required; a Native American monitor may be required on or near prehistoric sites

(6) Public Interpretation

- selected archaeological sites (that have been studied/stabilized and where vandalism is not likely to occur) to be developed as part of a program to further educate the public regarding the prehistory and history of Truckee; details of any public outreach program would be developed on a project-specific basis.

(7) Unanticipated Discoveries

- In the event of unanticipated discoveries, project activities should cease near the find and the project sponsor should consult a qualified archaeologist (RPA) to evaluate the resource. If the discovered resource is determined to be significant, mitigation measures should be devised, and a mitigation plan submitted for approval by the reviewing agency. Mitigation (if appropriate) should be implemented before ground-disturbing work near the resource find can continue.

9.2 Key Terms

California Historical Landmarks. Buildings, sites, features, or events of statewide historical significance.

California Points of Historical Interest. Sites buildings, features, or events that are of local (city or county) significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value.

California Register of Historical Resources. A list of cultural resources determined by the State Historical Resources Commission to be of architectural, historical, archaeological, or cultural significance at the state-level.

Cultural Resources. Observable evidence of past human activities that is at least 45 years old, including prehistoric or historic archaeological sites, historic built-environment resources, traditional cultural properties and landscapes, and paleontological resources.

National Register of Historic Places. A list of cultural resources determined by the National Park Service to be of historic, cultural, architectural, archaeological, or engineering significance at the national level.

Paleontological Resources. Any fossilized remains, traces, or imprints of once living organisms preserved in rock or sediment.

9.3 References

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PERSONS CONSULTED

Chaun Mortier, Research Historian. Truckee Donner Historical Society. October-November 2018.

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APPENDIX A: DETAILED CULTURAL SETTING

This appendix supplements Chapter 9 (Cultural Resources) of the Existing Conditions Report with a more detailed description of the cultural setting in the Town of Truckee. Please see Chapter 9 for a more abbreviated version of the setting.

SETTING

Truckee is located in the eastern part of Nevada County, 12 miles north of Lake Tahoe, 30 miles west of Reno, Nevada, and 100 miles east of Sacramento. A key element that defines the Town's physical character is the Truckee River, which runs through the downtown core area. Geographically, Truckee's built environment evidences a linear spatial organization following the primary east-west corridor defined by the valley, river and railroad. This artery through the high Sierra was a natural corridor for development of transportation routes that linked the United States such as the nation's first transcontinental Emigrant Trail, Transcontinental Railroad and Transcontinental Highway (Christensen et al. 2004:27).

The Town is situated in the Tahoe Sierra region of northeastern California and due east of the Sierra Nevada's crest at Donner Pass. The Town occupies the Truckee Basin and surrounding mixed conifer uplands (Storer and Usinger 1971). Topography within the plan area ranges between level ground and steep slope, with elevations ranging from 5,540 along the river to about 7,500 feet in the Tahoe Donner Subdivision. Low hills and ridges are Tertiary and Pleistocene volcanic rocks (Birkeland l963) and valley floors are covered with relatively flat-laying alluvial, glacial and glacio-fluviatile deposits (Birkeland l964). It is doubtful that modern plant and animal communities closely resemble their pristine composition due to past disturbances. Potential human modifications to these habitat types and plant-animal associations began with the aboriginal management of plants and animals, followed by historic mining, transportation, ice production, logging, stock grazing and dairying activities, water reclamation, recreation, and residential and commercial development. The presence of tool stone-quality basalt on Alder Hill and in Martis Valley attracted prehistoric populations into the general area for stone tool manufacture. Oral histories from Native American Elders and descendants of pioneer families document a variety of valued medicinal and edible plants within the Truckee River corridor. In former times, the area is thought to have supported a luxuriant growth of native bunch grasses which allowed an abundant large game population (including antelope) and provided a nutritious source of seeds for use by prehistoric peoples. Forests within the watershed were intensively harvested from the later 1860s into the 1960s. Since the 1860s excessive commercial fishing, dam construction, disturbance of spawning grounds, obstruction of spawning runs, pollution of the watershed, and competition from introduced species combined to cause the demise of the native fishery by the 1920s.

PREHISTORY

In broadest terms, the archaeological signature of the Truckee-Donner area marks a trend from hunting-based societies in earlier times to populations that were increasingly reliant upon diverse resources by the time of historic contact. The shift in lifeways may be attributed partially to factors involving paleoclimate, a shifting subsistence base, and demographic change. Current understanding of northern Sierra Nevada and western Great Basin prehistory is framed within a chronological sequence spanning nearly 12,000 years that is drawn from paleoclimatic and archaeological studies throughout the western Great Basin, eastern Sierra front and the Tahoe-Truckee area.

Some of the oldest archaeological remains reported for the Truckee Region have been found in the Truckee River Canyon near Squaw Valley (Elston et al. 1977) and above Donner Creek near Gateway (Rondeau 1982), at Alder Hill in Truckee (McGuire et al. 2006), and at the mouth of Martis Valley (Lindström et al. 2007). These Pre-Archaic remains suggest occupation by at least 9,000 years ago in the Tahoe Sierra during the Late Pleistocene/Early Holocene (~12,500-8,000 years ago) as glaciers retreated, pluvial lakes shrank, and climates warmed (Elston's et al. 1977 "Tahoe Reach

Phase"). Technologically, this period is marked by large-stemmed Parman and Great Basin Stemmed projectile point styles. Early populations were highly mobile in the pursuit of large game animals.

Pre-Archaic to Early Archaic occupation dating from about 7,000-5,500 years ago during the Middle Holocene (~8,000 to 5,500 years ago) was first documented at Spooner Lake (Elston's et al. 1977 "Spooner Phase") near Spooner Summit overlooking Lake Tahoe. Increased warming and drying caused diminished creek flows and lake levels in Tahoe and other regional lakes to drop, allowing trees to grow in areas that were once inundated (Lindström et al. 2000). This period is characterized by a decrease in the number of archaeological sites that may reflect declining resources and populations in the Tahoe Sierra. Archaeological sites are relatively rare. Marker artifacts present during this time extend into later periods and so are difficult to distinguish (Rosenthal and McGuire 2004).

The "Early" Late Holocene" dating between 5,500 and 2,000 years ago (Elston's et al. 1977 "Early Martis Phase") witnessed the end of the Mid-Holocene droughts, with a consequent expansion of forests, woodlands (Wigand 2005) and a rise in Lake Tahoe and other regional lakes and streams that drowned ancient forests along the shoreline (Lindström et al. 2000). Palynological evidence from Taylor Marsh along Lake Tahoe's south shore reflects a rise in ground-water levels (West in Lindström 1985). This in turn meant more fish, waterfowl, and other food resources to support human populations. This was the most intensive period of prehistoric occupation in the region. The archaeology indicates an increase in the numbers of sites and diversity of habitats where Middle Archaic populations are found. Evidence of cultural complexity and elaboration (beginning around 4,000 years ago) is reflected in larger and more permanent house types, craft specialization, stylistic variety in projectile points ("Elko-Martis Series"), and basalt bifacing technology. Investigations at prehistoric basalt quarries at Alder Hill in Truckee suggest a lively trans-Sierra trade in this important toolstone. The hallmark of Middle Archaic prehistoric culture in the Tahoe Sierra is the use of basalt in the manufacture of stone tools and production of large bifaces.

A warming and drying trend with a decline in winter precipitation during the "Middle" Late Holocene between 2000 and 1000 years ago (Elston's et al. "Late Martis" / "Early Kings Beach" phases) coincided with profound cultural changes. The bow and arrow (represented by smaller projectile points) largely replaced the atlatl dart and spear and hunters shifted to finer-grained toolstones like chert and obsidian more commonly than basalt. Land use diversified, and people expanded into previously under-used habitats. Populations intensified their use of less favored resources (roots, seeds, small mammals) that required more time and effort to procure and process as they required the use of milling implements.

Around 1,000 years ago during the Late Holocene (Elston's et al 1977 "Kings Beach" Phase), much of the West was affected by frequent and dramatic fluctuations in temperature and precipitation marked by prolonged and severe droughts (Stine 1990). Water levels in lakes and streams dropped considerably. Late Archaic human populations continued to rise and stressed by periodic but extreme warm and dry conditions (known as the "Medieval Climatic Anomaly"), shifted away from large game hunting to the further pursuit of foods previously ignored, with a greater emphasis on plants, fish and small game. This period is reflected archaeologically in more intensive use of all parts of the Tahoe Sierra landscape. Such extreme climatic fluctuations may have allowed for year-round residence in the Tahoe highlands at sometimes and prohibited even seasonal occupation at other times. Some of these changes, especially the more dispersed and ephemeral settlement patterns and the introduction of small side-notched arrow points ("Desert Side-Notched" Series) towards the end of the prehistoric period, may reflect the arrival of in-coming Numic-speaking populations (e.g., Paiute groups) into an area that had been occupied for thousands of years by Hokan-speakers, the protohistoric ancestors of the Washoe Indians (Elston's et al 1977 "Late Kings Beach Phase"). The Washoe regard all "prehistoric" remains and sites within the Truckee-Tahoe basins as associated with their own history. In support of this contention, they point to the traditions of their neighbors (the Northern Paiute, California Indians, and non-Indian Americans) that include stories about migrations and movement, whereas theirs do not (Rucks 1996:6). It is estimated that the prehistoric Washoe had one of the highest population densities in the western Great Basin. Relatively high estimates are attributed to the bountiful environment in which they lived (Price 1962:2). Historic declines in Washoe population and traditional resource use were caused by disruptions imposed by incoming Euroamerican groups.

WASHOE HISTORY

Regional Communities

The project area falls within the center of Washoe (*Wa She Shu*) territory, with primary use by the northern Washoe or *Wel mel ti* (Downs 1966; Nevers l976; Steward 1966). Two general settlement areas – regional communities that include the Washoe descriptor "*detdéyi*" – have been reported from the confluence with Donner Creek, eastward to Martis Valley (d'Azevedo 1956; Rucks in Lindström et al. 2007). Rucks (2005) reported on this noteworthy concentration of settlements along the Truckee River, suggesting that this stretch of river was unusually productive. Washoe respondents also indicate that winter settlements were established up the Truckee River to Donner Lake in all but the most severe winters (d'Azevedo 1984:33).

The settlement known as *Datsáshit mál'im detdéyi?* is located on Donner Creek 1/4 mile downstream from where the highway crosses the creek; "on sunny side of hill" where the large lumber mill is located "on the spot of the settlement" (d'Azevedo 1956: #129). These were the Washoe people who may have encountered the Donner Party, as recounted in Washoe oral tradition and documented by a February 28, 1847 diary entry by Patrick Breen, who wintered at the Donner Lake camps.

Dewbeyulélbeti? is at the junction of Donner Creek and the Truckee River, "where *welmelti* [Northern Washoe] got much of their fish and game. Donner Creek was better fishing than Truckee; it was smaller and could be diverted (Freed 1966: #14). Families owned fish blinds and the reference to "*yutsim*" (a technique of capturing stranded fish by temporarily damming Donner Creek) refers to one of several communal fishing practices.

Dat'sa sut ma'lam detde'yi' describes a Washoe encampment near Gateway (d'Azevedo 1956:51, 55).

K'ubüna[u] detdéyi? refers to the settlement on the south side of the river across from Commercial Row (d'Azevedo 1956: #130). The place where the Town of Truckee is located is also known as *Dawbayóyabuk,* translated as "flowing through a narrow place or passage" (Merriam 1904). In 1902 the camp was described as: "Indian camp across the river. Washoe people. Bedrock mill and ponderous pestles of granite. The arbor shelter on the sun side." Early commentators were impressed by unique patterns on Washoe basketry, and by Washoe fishing technology such as fish hooks, fish spears, and seines (Hudson 1902).

Péle? má'lam detdéyi? is the name of an old Washoe village at the confluence of Trout Creek and the Truckee River (d'Azevedo 1956: #131).

The town and the river were named by non-natives for "Captain Truckee," the Northern Paiute Indian who famously guided the Stephens-Townsend-Murphy emigrant party (among others) from eastern Nevada over Donner Pass to California in 1844. The Truckee River which bears his name, was a travel corridor and conduit of resources (fish) and communication between Northern Washoe (*wélmelti')* and their Northern Paiute neighbors.

Land Use and Contact Period

The Washoe once embodied a blend of Great Basin and California in their geographical position and cultural attributes. While they were an informal and flexible political collectivity, Washoe ethnography hints at a level of technological specialization and social complexity for Washoe groups, non-characteristic of their surrounding neighbors in the Great Basin. Semi-sedentism and higher population densities, concepts of private property, and communal labor and ownership are reported and may have developed in conjunction with their residential and subsistence resource stability (Lindström 1996).

The ethnographic record suggests that during the mild season, small groups traveled through high mountain valleys collecting edible and medicinal roots, seeds and marsh plants. In the higher elevations, men hunted large game (mountain sheep, deer) and trapped smaller mammals. Suitable tool stone (such as basalt) was quarried at various locales north of Truckee town. The Washoe have a tradition of making long treks across the Sierra passes to hunt, trade and gather acorns. These aboriginal trek routes, patterned after game trails, are often the precursors of our historic and modern road systems. Archaeological evidence of these ancient subsistence activities is found along the mountain flanks as temporary small hunting camps containing flakes of stone and broken tools. In the high valleys permanent base camps are represented by stone flakes, tools, grinding implements, and house depressions.

Into the early 20th century, Washoes survived by trading goods and services to the dominant Euroamerican population and establishing patronage relationships on ranches (selling baskets, catching fish and game, and working as domestic laborers, wood cutters, ice harvesters, caretakers, game guides, etc.). In exchange Washoes arranged for camping privileges on traditional lands with access to what resources remained. Even today, Washoe Elders trace family ties to Martis Valley, where oral history accounts suggest that a kind of symbiotic relationship prevailed in terms of mutual resource management and trade relations. Washoe traded fish for dairy products; they harvested prolific patches of wild onion/garlic that tainted the rancher's milk; and they collected grasshoppers that were devastating to Martis Valley rangelands. Pioneer residents of South (west) River Street recall a traditional Washoe camp at the west end of the street where Washoes were "permitted" to use the spring for domestic purposes. One Washoe family lived on the street into the 1970s.



Washoe women weaving baskets (courtesy University of Nevada, Reno, Getchell Library, Special Collections Department)

Even into the 21st century, the Washoe were not completely displaced from their traditional lands. Contemporary Washoe have developed a Comprehensive Land Use Plan (Washoe Tribal Council 1994) that includes goals of reestablishing a presence within the Tahoe Sierra and re-vitalizing Washoe heritage and cultural knowledge, including the harvest and care of traditional plant resources and the protection of traditional properties within the cultural landscape (Rucks 1996:3).

HISTORIC PERIOD

Early Explorations

The growing interest in the American far west stimulated the U.S. government to dispatch expeditions to explore the region, produce accurate maps, and report back on the region's inhabitants and resources. One of the first of these expeditions to reach the Donner Pass region was that of John C. Fremont. His campaign of l845-1846 moved up the Truckee River, camping at Coldstream on December 3, l845. They passed along the northern periphery of Donner Lake, crossed Donner Pass and traveled down to Sutter's Fort. The party moved quickly through the area to avoid being caught by winter. Fremont returned to the west on his third expedition in the fall of 1845. He re-traced his steps westward over Donner Pass, reaching Sutter's Fort on December 9th.

Early Settlement and Community Development

A history of the community of Truckee is marked by the arrival of Joseph Gray, who built a stage station near present-day downtown Truckee in l863. Gray was soon joined by a blacksmith named S. S. Coburn, and the fledgling settlement of Gray's Toll Station was renamed Coburn's Station. Coburn's Station grew from two structures into a thriving town which accommodated emigrants, stagecoach travelers and freight wagons in route westward to California's gold fields and eastward to the Comstock Lode in Nevada. In 1868 Coburn's Station burned. Soon after this fire the town was renamed Truckee by Central Pacific Railroad officials. This fire was the first of many catastrophic infernos that plagued the town. Three massive fires swept through Truckee's residential and commercial districts in 1871. In 1873 a fire burned along Bridge and Church streets, being stopped before it crossed Front Street (modern-day Commercial Row). The entire Chinatown (north of the Truckee River) was burned in 1875. Fire broke out in 1878, and in 1881 another fire destroyed the whole of Commercial Row. The east half of Front Street's commercial district was again consumed by fire in 1882, followed by another fire in 1883. A fire in 1913 forced the rebuilding of most structures along Commercial Row. The sector along River Street was nearly destroyed in the fire of 1895 and again in 1921.



Front Street-Commercial Row ca. 1869 (courtesy Truckee Donner Historical Society: Front Street 1-55)

As a community at the crossroads over the Sierra, Truckee assumed a multi-cultural character and struggled with discrimination against the Chinese. Truckee also gained a reputation as a rough and tough lumber and railroad town, including brothels, saloons and sporting houses. Bootleg whiskey remained a prime source of community income throughout the era of prohibition and the hey-day of the red-light district lasted until World War II. The Truckee Jail housed famous criminals like Baby-Face Nelson and Juanita "Ma" Spinelli. Before the Truckee Jail was built in 1875, Constable Teeters used the basement of his home in Brickelltown to intern Chinese who were either brought on criminal charges or for their own protection.

Throughout the 19th and early 20th centuries, Truckee thrived on the related industries of lumbering, railroading, dairying, and ice. By the 1920s the industrial economy and society of Truckee had largely disappeared, due in major part to the relocation of the central railroad switching yard to Roseville, the depletion of local timber supplies, and the introduction of artificial ice with the development of mechanical refrigeration. To replace the loss of its industrial base, the community began to develop into a recreation-based economy. Small resorts and hotels developed in the region as the transcontinental railroad and the Dutch Flat Donner Lake Wagon Road rendered Truckee accessible by the 1860s.

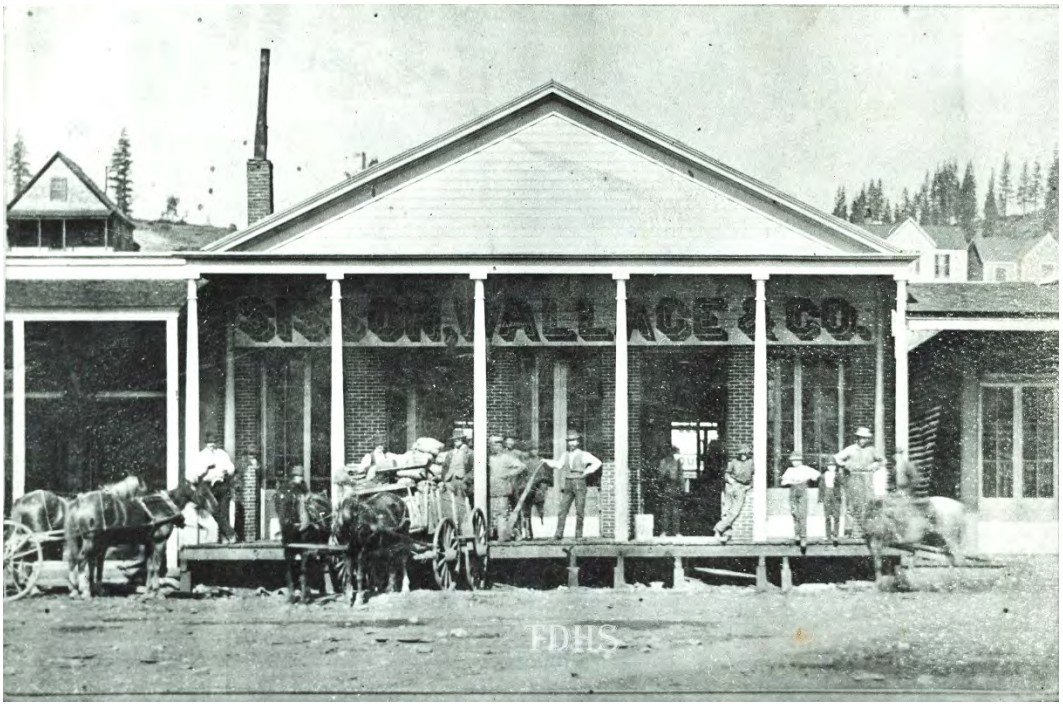


Donner Lake House (courtesy Truckee Donner Historical Society: no Cat. No.)

During the 1890s Truckee was host to winter carnivals. Tourism was further boosted by the designation of the Lincoln-Victory Highway through Truckee in 1913 and the subsequent completion of Old State Highway 40 over Donner Summit. Historic Truckee was unique among turn-of-the-century mountain communities, in that summer recreationists and winter-sports enthusiasts could easily reach the town in summer or winter via the nation's first transcontinental railroad or first transcontinental highway. Relative ease of access also attracted the new motion picture industry to Truckee. The character of Truckee was gradually changing, and tourism was fast providing a sounder economy. The 1960 Winter Olympics at nearby Squaw Valley ultimately secured Truckee's position as a center point for year-round recreation and the area became a focal point of early mountain residential development.

Truckee Chinatown

Thousands of Chinese, joined by the Irish and other ethnic groups, helped to build the transcontinental railroad. The organization of Sisson, Egbert and Company (later known as Sisson, Wallace and Company and Sisson, Crocker and Company) was a subsidiary of the Central Pacific Railroad and was established in l866 at Coburn's Station exclusively to import Chinese railroad workers. Their business was based out of their store along Front Street (Commercial Row).



Sisson and Egbert store on Front Street-Commercial Row (courtesy Truckee Donner Historical Society: FTS 8)

Truckee had an especially large subpopulation of Chinese and during the 1870s, Chinese residents comprised over one-third of the population. With the completion of the transcontinental railroad in 1869, Chinese immigrants were channeled into other regional occupations. This forced them into direct competition with Euroamerican residents, especially during times of economic hardship.

Prior to 1875 the location of Truckee's first Chinatown is reported along Jibboom Street, near the Old Truckee Jail and within the triangular parcel of land behind Commercial Row. Truckee's Chinese were driven from one location to another until they were finally burned-out and removed across the river in 1879. A general boycott in l885-1886 of firms that continued to employ Chinese (such as Sisson, Crocker and Company) spelled the ultimate demise of the Chinese community of Truckee and most were expelled from town in 1886.

Mining

A brief flurry of mining (lasting only a few months) was staged out of Martis Valley during the summer of 1863 when several quartz ledges were discovered (near the Northstar development). The initial focus of mining at the diggings in Martis Valley, known as the Red, White, and Blue Mining District, was along Middle Martis Creek where miners dug "coyote holes" and bored shafts and tunnels. While efforts were centered on hard rock mining and silver ore, some industrious miners in a search of free gold washed down from these ore deposits also engaged in limited placer mining along main Martis Creek and the Truckee River. Placer mining features survive near the mouth of Martis Creek, where bench deposits were once worked by ground sluicing and shallow placer mining (e.g., pans, rockers, long toms, and sluice boxes). During the 1870s (and for decades after) there was talk of reopening the mines, but no real investment was ever made. However, mining continued sporadically and unprofitably into the early 20th century, with minor workings reported in Truckee, at Donner Lake and along Prosser Creek.

The Town of Truckee is underlain by thick deposits of glacial outwash. Gravel deposits were mined as early as 1874 when the Central Pacific Railroad opened a quarry up Coldstream Valley. The development of subdivisions and roadway and improvements in the 1960s. The construction of Martis Dam in 1970 required massive amounts of sand and gravel materials and prompted ranchers to quarry gravels that were readily available on their Martis Valley properties. To build Interstate 80, Teichert Corporation opened a large gravel quarry in the eastern extension of historic Donner Meadow at the confluence of Cold and Donner creeks.

Transportation and Communication

Truckee came into being as a gateway between California and Nevada and it remains so today. The town occupies an intermountain valley in the heart of the Sierra Nevada and its strategic location along the Truckee River and in proximity to Donner Pass formed an ideal geographic passageway for travelers. Early on Truckee was connected by trans-sierra travel to major locales in California and Nevada. The Emigrant Trail, the Dutch Flat Donner Lake Wagon Road, America's first transcontinental railroad, and America's first transcontinental highway (the Lincoln Highway-Victory Highway) all pass through Truckee. The Pacific Railroad Bill of 1862 not only called for the construction of a railroad but also a telegraph line across the country. Donner Pass falls squarely within the major trans-sierran communications (telegraph and telephone) corridor and several generations of utility lines cross through the Town limits. Three major transmission lines crossed Donner Pass -- one in 1923, one in 1937 and one in 1949. The Truckee-Donner Pass communications corridor is further crowded with underground utility and fiberoptic lines and a vital petroleum fuel line that carries gasoline, diesel and jet fuel from Bay Area refineries to as far as Powell Air Force Base in Nevada.

Emigrant Travel

Some of the first Euroamerican visitors to the Truckee area were members of the Stephens-Murphy-Townsend emigrant party who ascended the Truckee River in mid-November of l844. This route, which passed through Truckee along present-day Donner Pass Road, has later become known as the Truckee Route of the Emigrant Trail. Hundreds of emigrant trains soon followed, the most notable being the Donner Party. The ordeal of starvation and cannibalism, endured by their members in the winter of l846-1847 at Alder Creek and Donner Lake, is a well-known and tragic episode in the American settlement of the West and is now memorialized at Donner Memorial State Historic Park. A branch of the Emigrant Trail is alleged to have passed through the Tahoe-Donner Subdivision; however, this alternate route along Northwoods Boulevard is controversial and remains unconfirmed.

Dutch Flat Donner Lake Wagon Road/Lincoln-Victory Highway/Old Highway 40

In 1864 the Dutch Flat and Donner Lake Wagon Road was opened over Donner Pass, following basically the same route through Truckee that the earliest emigrants had traveled. The freight/passenger wagon road was situated near the proposed alignment of the Central Pacific Railroad (later Southern Pacific Railroad and currently owned by the Union Pacific Railroad). It follows present-day Donner Pass Road /Old Highway 40 along the north side of Donner Lake and through Truckee's downtown. The wagon road was designed to facilitate the transport of supplies to points along the rail line. The road formed the final link in a continuous freight and passenger road from Dutch Flat to the Comstock mines near Virginia City. To facilitate overland travel through the region, the first bridge was constructed across the Truckee River in 1863. The bridge was essential to the development of Truckee town and the surrounding region and serves the community to the present day. The Dutch Flat Donner Lake Wagon Road eventually fell into disrepair and its usefulness as a trans-montane thoroughfare ended. However, it remained an important artery of local transportation and the respective counties controlled the road until it was taken into the state highway system in l909, when it was rebuilt as an auto and truck road.

An alternative route of the Dutch Flat Donner Lake Wagon was also charted through Martis Valley in 1863, but it was never built. In 1869 a new wagon (known as the "Truckee-Hot Springs Road") was built on the 1863 route, beginning at Truckee's transcontinental railroad stop and heading eastward through Martis Valley, over Brockway Summit, and on to Brockway Hot Springs (along the present-day State Route 267 alignment).

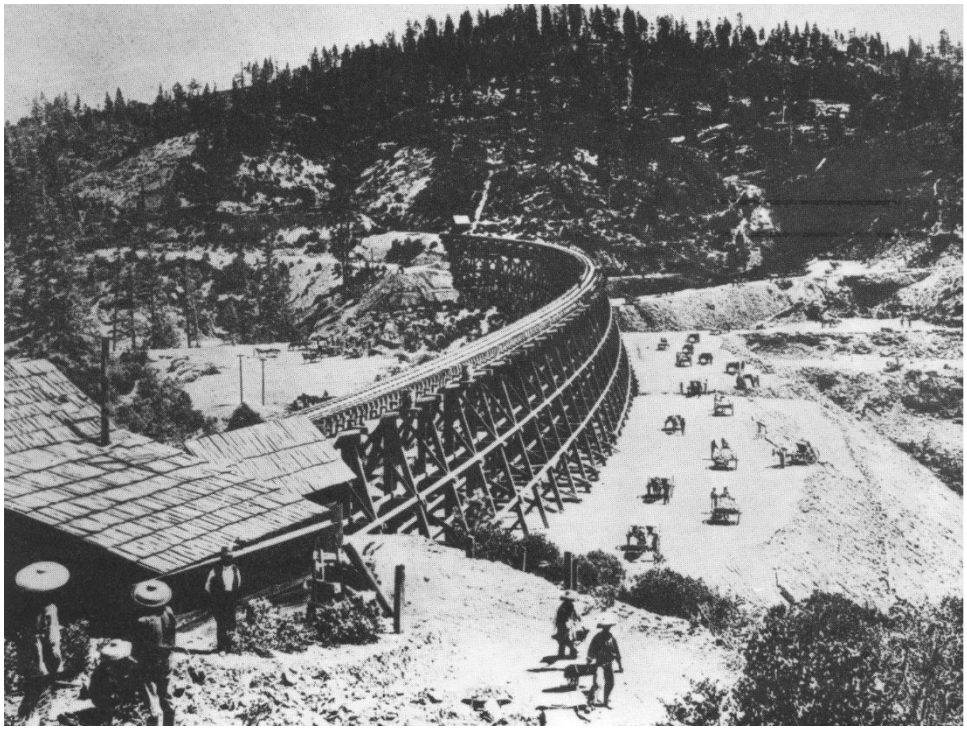


Freight Wagon on Truckee Hot Springs Road in Martis Valley (courtesy University of Nevada, Reno, Getchell Library, Special Collections Department)

In 1913 the old Dutch Flat Donner Lake Wagon Road was designated as a link in the Lincoln Highway, the nation's first transcontinental highway (Protteau 1988). This highway passed along modern-day Donner Pass Road and through the Truckee National Register District. The Lincoln Highway concept was conceived by the Lincoln Highway Association, in concert with the fledgling auto industry and its support industries. In 1923 portions of the Lincoln Highway were re-designated as the Victory Highway, as a memorial to veterans of World War I. While the Lincoln Highway was the first transcontinental motorway to be developed and promoted, the Victory Highway was the first cross country road to be constructed. A promotional campaign to abandon its original grade north of Truckee and relocate a new route through Truckee town and down the Truckee River Canyon was headed by prominent Truckee businessmen who realized the tourism potential of automobile travel along a nationally recognized highway. The Victory Highway through Truckee and down the Truckee River Canyon was completed in 1926, following the same route taken by the Stevens-Murphy-Townsend emigrant party in 1844. In 1928 the Lincoln Highway/Victory Highway was incorporated into the Federal Highway system and the route through Truckee was designated as U.S. Route 40. In 1963-1964 portions of the two-lane U.S. 40 were incorporated into the new interstate highway system and became the four-lane Interstate 80. However, a continuous segment of "old" U.S. 40 has survived, stretching from the Glenshire Bridge (five miles east of Truckee), westward over Donner Summit and down to Cisco Grove (approximately 20 to 25 miles), escaped impact by the new interstate freeway.

Transcontinental Railroad

In l852 the California legislature called upon the federal government to build a railroad to the Pacific and by l853 Congress had instructed the U.S. Army to survey feasible routes for a railroad. Theodore D. Judah made his first examination of a potential route for the railroad via Donner Pass and through Truckee in the fall of l860 and found it to be the most favorable. The Central Pacific Railroad Company (comprised of Leland Stanford, Charles Crocker, Mark Hopkins, and Collis P. Huntington) was chosen to build the rails east. The company was granted a strip of land on both sides of the right-of-way and one square mile of land for each mile of railroad completed, to be awarded in a checkerboard pattern on alternating sides of the track. The company could then sell this land to raise more money, which it proceeded to do for its Truckee holdings. The first rail was laid at Sacramento on October 27, l863. Up to l5,000 Chinese were employed to meet the inadequate labor supply (Kraus 1969).



Chinese railroad construction (adapted from Alfred A. Hart Collection 1864-1869)

Heavy snow and tunneling through granite rock near Donner Pass presented major obstacles. By the summer of l867 the railroad was still not completed between Cisco and Truckee and a second phase of construction, east of the summit, was worked simultaneously with that at the summit and locomotives, rails, cars, and parts were hauled eastward over the Dutch Flat and Donner Lake Wagon Road. By May of l868 the railroad was built between Truckee and Reno but the line between Cisco and Truckee was not completed until June l5, l868. The entire transcontinental route was finished on May l0, l869, with the last rail joining the Central Pacific Railroad and the Union Pacific at Promontory, Utah.

With the completion of the transcontinental railroad, the focus of Truckee's commercial activities shifted away from the back street behind Commercial Row, which was the initial artery of transportation through town (formerly the route of the Emigrant Trail, the Dutch Flat Donner Lake Wagon Road and now Jibboom Street). By 1868 when buildings were erected after the major fire at Coburn's Station, Commercial Row became the center of commerce, being renamed Front Street as it directly faced the railroad.

Lake Tahoe Railway and Transportation Company

Several branch railroads tied into the main line at Truckee. Family members of Tahoe lumber baron D. L. Bliss incorporated the Lake Tahoe Railway and Transportation Company railroad in December 1898. The necessary right-of-way was secured across lands of the Truckee Lumber Company and Bliss purchased the site of the Tahoe Tavern resort at Tahoe City, which served as the major steamer stop for ports of call around Lake Tahoe. Beginning in 1900 the railroad operated a 15-mile-long narrow-gauge railroad following the Truckee River between the main line at Truckee and the Tahoe Tavern. Unlike previous railroads in the Tahoe region, the Lake Tahoe Railway and Transportation Company line was intended primarily as a tourist railroad. In 1925 the narrow-gauge railroad was leased to the Southern Pacific Railroad. In exchange, Southern Pacific widened (i.e., standard-gauged) the tracks and operated Pullmans with over-night service between San Francisco and Tahoe City. An extensive publicity campaign was launched, and Tahoe was promoted as an all-year resort. The Southern Pacific Tahoe Branch Line standard gauge railroad line was abandoned in 1943, as more automobile traffic moved over the highways.



Railroad balloon track on Trout Creek floodplain; roundhouse-back right); East River Street -back center (courtesy Truckee Donner Historical Society: TRR 37))

Sierra Nevada Wood and Lumber Company Narrow Gauge/Hobart Southern Railroad Railway/Fiberboard Corporation Standard Gauge

A new standard gauge railroad was built between Truckee and the lumber town of Overton/Hobart Mills (located along State Route 89 about five miles north of town) to connect the new mill facilities with the main transcontinental line at Truckee. In 1917 the company disbanded, and holdings were transferred to the Hobart Estate Company and the railroad line between Hobart Mills and Truckee became the Hobart Southern Railway. From 1930 to 1937 the line not only transported wood products but also served as a common carrier. Two trains operated daily until 1936, when Hobart Mills closed after operating almost 40 years as one of the principal lumber operations in the Truckee Basin. Immediately following World War II, Fiberboard Paper Products Corporation commenced logging in the project vicinity. In l946 Fiberboard built a new standard gauge railroad on the old right-of-way of the former Hobart Southern Railway. The railroad was taken up in 1955.

Lumbering

Logging was first initiated in the Truckee area after the discovery of the Comstock Lode in l859 (Knowles 1942; Myrick 1962). When production began to fall in the mines in l867, the lumbering business also began to suffer. A new market for lumber was found in the railroad. As the rails reached the summit in l866-1867, several mills established operations in the Truckee Basin to supply the railroad with cordwood for fuel, lumber for construction and ties for the roadbed. Coburn's Station (Truckee) soon became one of the major lumbering centers. After the completion of the railroad in l868-1869 lumber companies diversified and grew as new markets were opened to them. The expansion beyond saw milling targeted such facilities as planing mills, box factories, sash and door establishments, a chair factory and furniture factory, shingle mills, and charcoal earthen and brick kilns. Over 18 sawmills were operating in the Truckee area during the late l9th century.

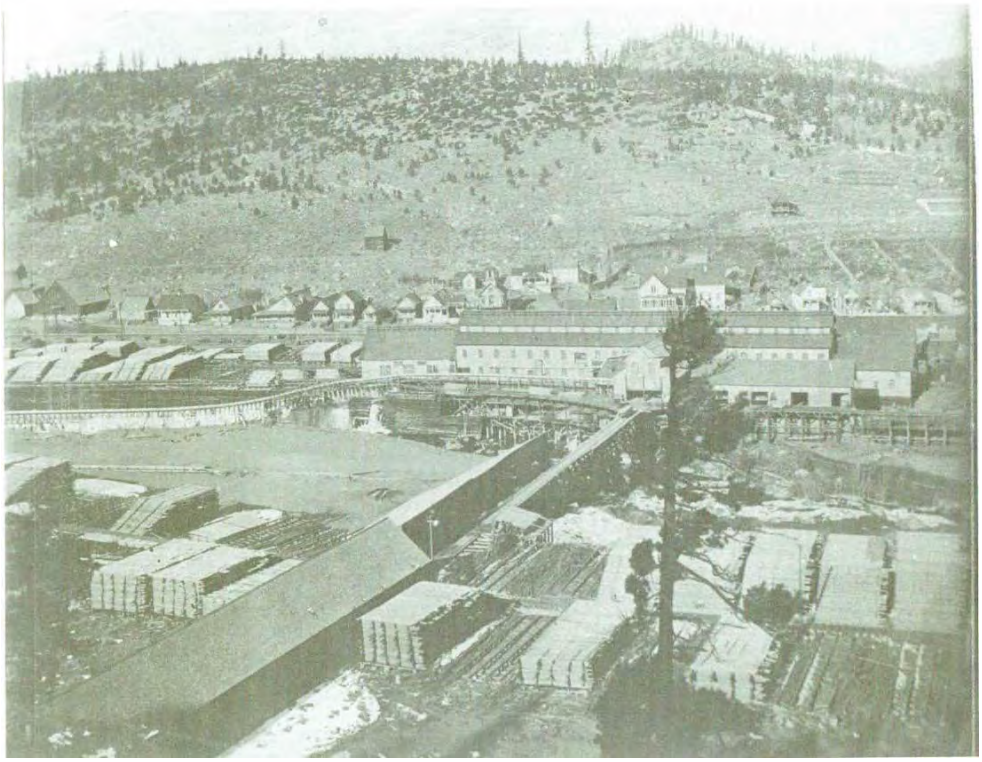
Joseph Gray and George Schaffer started the earliest sawmill in Truckee town in 1866-1867 (Edwards; 1883:21), located near the southwest side of the Bridge Street bridge. By 1871 Schaffer had purchased timber holdings in the west-central part of Martis Valley and established a sawmill (near the current Northstar and Lahontan/Martis Camp subdivisions). Until operations ceased in 1905, Schaffer transported mill products by V-flume down to the railroad's main line at Truckee.



Schaffer's Martis Valley sawmill (courtesy Truckee Donner Historical Society: L-1-115)

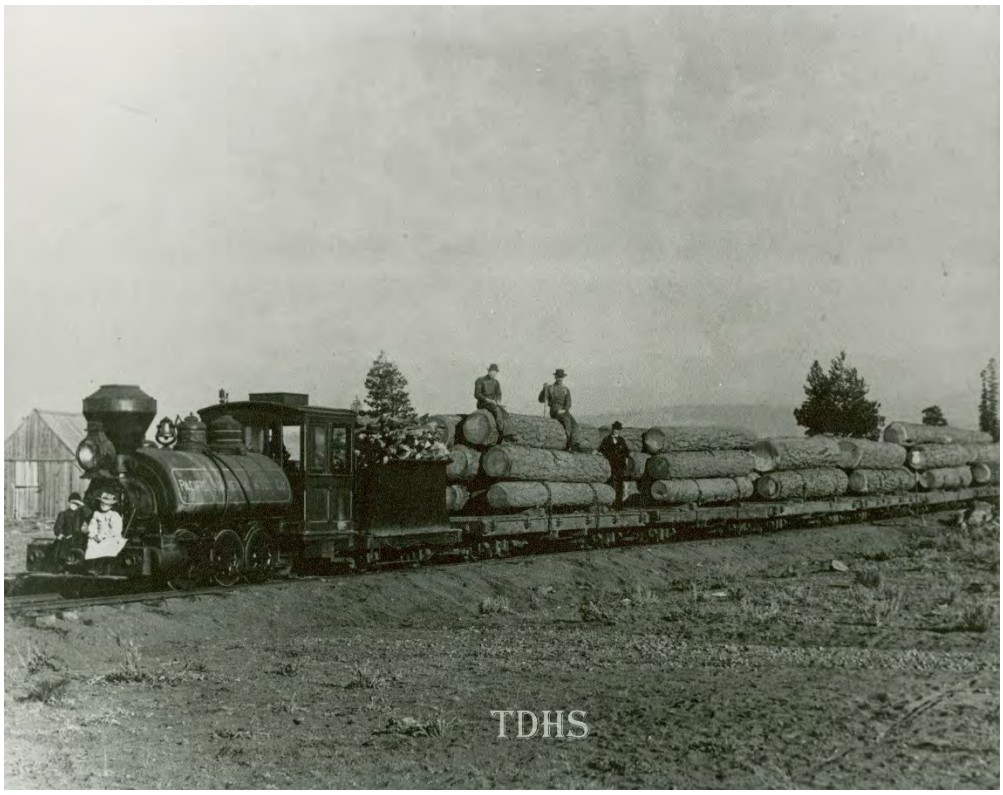
Warren Richardson and his older brother, George W. Richardson, built two mills in Martis Valley. Their first mill was in operation from 1874 to 1883 on West Martis Creek (within the current Northstar Subdivision) and the second mill on Middle Martis Creek cut lumber between 1883 and 1906. Lumber and cordwood were floated in a V-flume down to their lumber yard, planning mill and box factory at Martis Creek Station at the mouth of Martis Creek on the main rail line. They incorporated a unique logging railroad in the early 1870s using 10-inch-diameter pine logs (instead of iron rails) laid end-to-end and partly buried in the ground to maintain the gauge. In 1887 when their box factory burned at Martis Creek Station, Richardson Brothers built another box factory and lumber yard in Truckee town and hauled lumber by steam wagon.

The Truckee Lumber Company, established by E. J. Brickell and George Geisendorfer (and later W. H. Kruger), became the largest and longest-standing lumber firm in the Truckee region. The firm harvested timber throughout the Truckee Basin, and on Tahoe's northwest section along the elevated plateaus above the Truckee River. From 1867 through 1909, the company formed the economic base of Truckee town for nearly four decades.



Truckee Lumber Company lumber yard-South River Street (courtesy Truckee Donner Historical Society: L-1-113)

The Truckee Lumber Company also held considerable land holdings in the eastern end of Martis but had no means of accessing their timber tracts, so they negotiated a joint venture with F. Burchalter's Pacific Lumber and Wood Company, a competitor based out of Clinton (present-day Hirschdale). Established in 1870, the Pacific Lumber and Wood Company centered their railroad logging operations up Juniper Creek and on Juniper Flat (throughout the Glenshire/Devonshire Subdivision). The Clinton Railroad had been in operation since 1878 but by the early 1890s timber reserves were depleted. The railroad was re-commissioned for the Truckee Lumber Company as the Donner and Tahoe Railroad, hauling timber between 1893 and 1901. The 10- mile-line stretched from the Truckee Lumber Company millpond south of Truckee downtown, where it crossed the river, ascended to Hilltop and then paralleled the Old Brockway Road through Martis Valley to the end of the line at Klondike Meadows (Spohr 1990).



Donner & Tahoe Railroad logging train in Martis Valley (courtesy Truckee Donner Historical Society: L-1-70)

Elle Ellen's lumber operations encompassed the headwaters of Trout Creek and much of the modern Tahoe Donner Subdivision. His first mill site was at the north edge of Truckee near Trout Creek, where he operated between 1868 and 1876-1877. Ellen's relocated to his second mill site farther up on Trout Creek in 1876 near Bennett Flat. His millpond was surrounded by a boarding house (situated in the center of the present Tahoe Donner Golf Course) and cabins for workmen (including Chinese). The mill was connected to the side tracks of the Central Pacific Railroad at Truckee by a V-flume down Trout Creek (through modern-day coyote Moon Golf Course). Ellen opened his third mill on Alder Creek and sawed from 1883 to 1901. Mill products were floated in V-flume down to the railroad main line at the mouth of Prosser Creek.

The most intensive and extensive cutting in proximity to the Tahoe Donner Subdivision occurred during the early 20th century by the Sierra Nevada Wood and Lumber Company and Hobart interests. The company established their sawmill operation and company town at Overton (later Hobart Mills) in 1896 and a new narrow-gauge railroad was built to Truckee. A widespread system of logging railroads extended through Tahoe Donner and up many of the valleys branching along State Route 89 north of Truckee.

With the closure of Hobart Mills in 1936, Fiberboard Corporation based their lumber operations out of the old lumber town and upgraded the old Hobart Southern Railway bed in 1946 to better transport mill products to the main line at Truckee. The railroad was dismantled in 1955, about the same time that Fiberboard constructed its new mill east of Truckee. Foundations for the new Fiberboard mill were laid in 1953 and the creek was relocated northward and into the channel it occupies today. Further flood control measures were implemented along Trout Creek, as a retaining wall, built of salvaged box car siding supported with standard gauge rail irons, was established along the south bank of the creek in the vicinity of the mill. The Truckee Fiberboard Mill was torn down during the late 1980s.

Cordwood and Shingles

Cordwood formed a principal adjunct to the lumber business to meet the fuel demands of railroads and ore mills. Efficient procedures were developed to glean cutovers after a timber harvest and convert residues into cordwood. As a result, cordwood was cheap and plentiful. Sisson and Company, the principal employer of Chinese labor in the Truckee Basin, had substantial land holdings throughout the area and supported a network of Chinese wood camps in the forest surrounding the town. Cordwood was either floated down their V-flume or hauled by horse and wagon.

The shingle business in Truckee was brisk and operations were established in Martis Valley by 1869 (Edwards 1883:36). The Schaffer Lumber Company and Richardson Brothers and smaller outfits like Sam McFarland cut shingles at their mills and transported them in the Sisson V-flume. Shingle blocks were dumped into the Truckee River and floated down to the H. Hale and R. P. Ferguson's Pacific Shingle Company water-powered mill at Prosser Creek.

Charcoal

Like cordwood and shingles, charcoal production also formed an important aspect of the logging industry in the Truckee Basin. On their extensive land holdings, the firm of Sisson, Wallace and Crocker organized gangs of Chinese colliers in charcoal production. Tons of charcoal were transported on the transcontinental railroad to the mines of Nevada and Utah to fuel smelters there. In addition, ore was also shipped westward to the Tecoma Smelter located along the river in Truckee on present-day East River Street. During its active years between 1872 and 1875, the smelter could consume from 600 to 900 bushels of charcoal every 24 hours. In addition, Sisson and Wallace also shipped from 1,000 to 2,000 bushels weekly to Virginia City and had orders from Utah for about 8,000 bushels a day. The closure of the Tecoma Smelter in 1875 nearly broke-up Truckee's charcoal industry. However, up until 1883, Truckee was still poised to take advantage of changing markets, especially given Sisson and Wallace's construction of three new brick charcoal kilns at Martis Creek Station in 1877.



Tecoma Smelter along Truckee River and East River Street ((courtesy Truckee Donner Historical Society: L-1-99)

Ice

Lumbermen released from seasonal logging work usually found employment in Truckee's ice industry. From 1868 through the 1920s, ice harvesting rivaled the economic importance of the lumber industry (Macaulay 2002). Eastern ice and Alaskan ice were costly and not dependable, so closer sources were sought. With the completion of the first transcontinental railroad across Donner Pass in 1869, natural ice could be harvested and transported cost-effectively, and Truckee-Donner ice soon dominated the industry. Sawdust supplied by the many local sawmills was packed into the storage houses as insulation; ice blocks could be preserved for up to three years. Sierra ice was noted for its crystal purity and it was served in large hotels throughout the nation. In addition, it cooled the 140-degree temperatures deep in the shafts of the Comstock mines. Ice was also used to refrigerate California produce for rail shipment to the eastern markets. Competition from artificial ice gradually forced the closing of the ice ponds in the Truckee Basin in 1927. The Railroad Freight House, which bounds the Truckee National Register District on the south, was built in 1891 as a freight depot. Lumber and ice were shipped from here and Truckee's necessary imported mainstays were received here.

Several ice works were established along the Truckee River and on or near the transcontinental main line and sidings and spurs were constructed to access ice houses. Prominent ice works included: Trout Creek Ice Company in Truckee, Nevada Ice Company, Truckee Ice Company and Tahoe Ice Company in Martis Valley, and Summit Ice Company on Prosser Creek. In 1873-1874 the Summit and Nevada ice companies combined with Boca ice operations to form the Pacific Ice Company. The Sierra Lakes Ice Company took over the Pacific Ice Company holdings in 1890 until the Union Ice Company finally acquired these operations in 1901. While Donner Lake wasn't cold enough for consistent ice production, Donner Creek was dammed, and small ice works were set up at the foot of the lake beginning in 1969



Donner Ice Company ice harvest on Donner Lake (courtesy Truckee Donner Historical Society: ICE-5)

Fishing

The size and bounty of the Truckee River native fishery was renown and in historic times, fantastic caches were reported in the major tributary lakes and streams of the watershed. Commercial fishing on Donner Lake was given a boost by the completion of the transcontinental railroad as fish caught in the Sierra Nevada lakes and rivers could be quickly transported fresh to the Comstock mines, Sacramento and San Francisco. The trout-breeding farm of John Kelly and James Stewart was established in August 1871 below the outlet of Donner Lake at the junction of Donner Creek and Coldstream where trout, salmon, shad, black bass, and perch were reared. A commercial fishery thrived until 1917 when it was annihilated by over-fishing, pollution, dams, and the introduced non-native sport fishery.

Ranching and Dairying

The dairy business in the Truckee Basin flourished on a large scale from the 1860s until about 1930. During the 1880s up to 20 dairy farms had been established around Truckee that produced 60,000 pounds of mountain butter annually (Edwards 1883:69-70). Butter was the chief product, since milk would spoil without refrigeration. "Truckee Butter was touted on the menus of big city hotels…to lure sophisticated gourmand palates" (McGlashan 1982:13, 17). A livestock business also developed around the high-elevation meadows above the town and the growth of vegetation in recently logged areas provided temporary sources of stock feed. Sheep herders also grazed their flocks in surrounding mountain meadows and brought them to rail heads for shipping in the fall. Further incentive for sheepmen to bring their flocks into the high country was the fact that sheep bred better in cooler air, they remained cleaner, healthier and there were more multiple births.

Valleys and meadowlands surrounding Truckee town served as summer pasture for herds of dairy cows and beef cattle brought from the California and Nevada foothills. Although in the mountains, meadows still had to be irrigated later in the season. This was accomplished through a network of water impounding and diverting dams and wing walls, water gates, and miscellaneous earthen water works. After the turn of the century, the sons of pioneer dairymen took over operations and expanded the family business with modern machinery and equipment. Many converted their dairy cattle to beef stock. Descendants of these dairying dynasties continue to own and maintain ranches that bear prominent names in the cattle history.

Sophary Euer, "one of the leading dairymen of El Dorado County," drove his cattle into Euer Valley in about 1868 (now owned by the Tahoe Donner Subdivision). The Euer family soon acquired all land in the valley. Sons Robert, George and Frank Euer continued ranching, with the last cattle round up in 2014 (Lindström 2015).

Joe Marzen, Sr. began acquiring cattle herds in 1872. He leased the meadowlands at the foot of Donner Lake and fenced it to grazing cattle in the summer. Marzen continued his operation into the 1880s. In 1901 he leased portions of his meadow to Truckee dairyman Joseph Von Flue to graze his dairy cows. Cattle continued to graze on Marzen Meadow until 1905.

McIver Dairy is located in Gateway along Donner Pass Road and at the site of the former Varney Dairy, established in 1873. After closing his first dairy on South River Street, James McIver, Sr. purchased land in Gateway between 1893 and 1906 for his new dairy. The McIver Dairy supplied resident customers with milk and cream for 45 years (McGlashan 1982:16), whereas other dairies concentrated on the production of butter for export within and from the region. McIver's was the last dairy in Truckee to close. Building improvements eventually included such local landmarks as the white-painted milk house and red-painted barn (which were given a "facelift" in 1999). The two-story family home remains today along the north side of Donner Pass Road. In honor of Jim McIver, Jr., several local landmarks carry his namesake: the McIver undercrossing or "McIver's Crossing," which connects West River Street and Donner Pass Road; McIver Hill, now the site of Sierra Nevada College and Interstate-80 right-of-way; and the McIver (rodeo) Arena.

Swiss native, Joseph Von Flue, ran a dairy ranch on the south bank of the Truckee River and along present-day South (west) River Street. Von Flue commenced his dairy operations in 1901 and also supplied fresh milk and cream to local residents.



McIver Dairy on present-day Donner Pass Road between Gateway and Downtown (courtesy Truckee Donner Historical Society: no Cat. No.)

The rich meadowlands of Martis Valley became a center for dairying operations. Joseph Joerger, Sr. may have driven herds here as early as 1856, camping with his men and cattle before homesteading in 1876. He built a modest ranch complex on the east side of the valley, replaced by a second one on the west side in 1941. He grazed up to 150 dairy cattle and 600-700 young beef cattle (McMills 1994:11). The Joergers, as well as other ranching families, were forced to sell their land and livelihood due to high costs of cattle transport, increasing property taxes, and the influx of visitors with growing emphasis on recreation and subdivision development, which made the wanderings of stock particularly unwelcomed. With the construction of the Truckee-Tahoe Airport in 1929, cattle-raising in Martis Valley was ultimately phased out.

Water Reclamation

The earliest evidence for damming Donner's outlet relates to lumbering interests during the 1860s and 1870s. In 1889 a dam was built east of the outlet as part of a comprehensive plan to irrigate arid desert lands in western Nevada by Nevada Senator Francis Newlands (Lindström 1987). By 1929 a new dam of concrete was built by the Donner Lake Company in anticipation of resort and subdivision development around the lake. Partial water rights were transferred from the Donner Lake Company to Sierra Pacific Power Company and Truckee Carson Irrigation District between 1924 and 1943, whereby lake levels were fixed. In its function as a water storage reservoir, Donner Lake's level has fluctuated widely through the years for which records have been kept. Periodic dredging of the outlet channel has been done to better regulate the level, which normally entails a rise and fall of 12 feet.

Construction on the Martis Dam and Martis Lake in Martis Valley by the U.S. Army Corps of Engineers commenced ca. 1970, with completion in 1972. In advance of dam construction, during the mid-1960s, approximately 1,800 acres of Martis Valley and ranchland owned by the Joergers (and others) were procured by the government in this transaction under the right of eminent domain.

Recreation, Tourism, and Community Development

By the 1920s Truckee's industrial economy and society had largely disappeared, due in major part to the relocation of the train switching yard to Roseville, the depletion of local timber supplies, and the development of mechanical refrigeration. In its place, the community began to develop into a recreation-based economy. Historic Truckee was unique among turn-of-the-century mountain communities, in that summer recreationists and winter-sports enthusiasts could easily reach the town in summer or winter via the first transcontinental railroad and the first transcontinental highway. By the mid-1890s Truckee was host to ice carnivals, drawing people from both east and west of the Sierra to enjoy the mountain winters.



Ice Palace on Commercial Row ca. 1897 (courtesy Truckee Donner Historical Society: ICP-18)

Sleighing, tobogganing, dog races, two large ice palaces, and Hilltop's ski area and ski jump were some of the attractions offered to tourists, along with "Snow-Ball" special excursion trains. The development of the Hilltop ski hill and ski jump during the 1910s-1930s and the 1960 Winter Olympics at nearby Squaw Valley secured Truckee's position as a center point for year-round recreation.



Hilltop Ski Jump (courtesy Truckee Donner Historical Society: HTP-19)

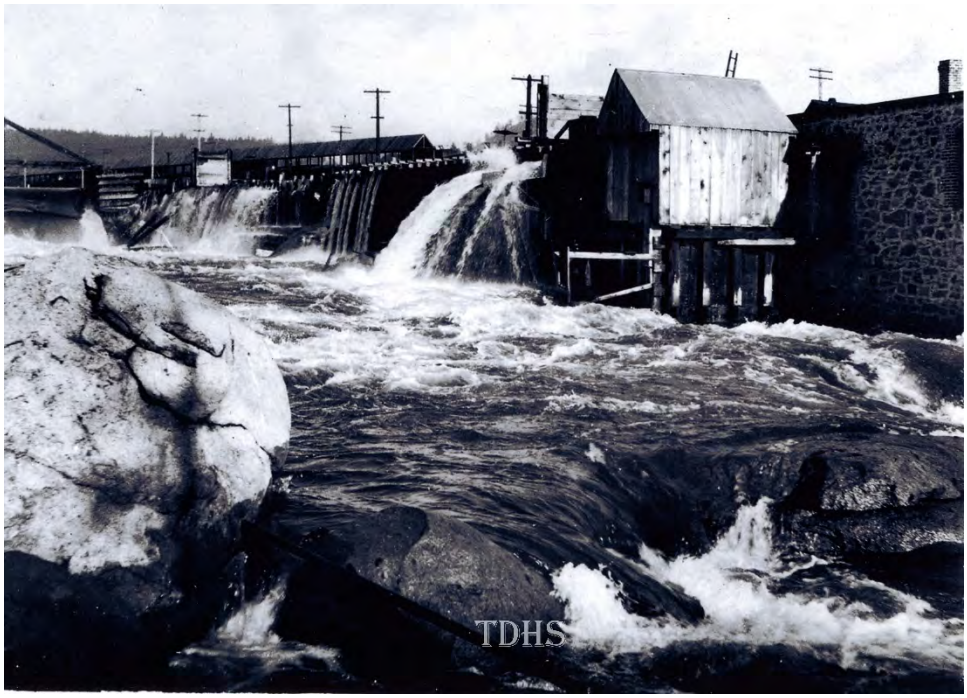
For a brief period, about 1910 to 1940, Truckee was the "film mecca" of the Sierras as an on-location set for the Hollywood movie industry, utilizing Truckee's unique accessibility by train to capture winter environment and mountain scenery. During this time, the local economy was significantly bolstered by the film crews who occupied nearly every available hotel and rooming house and filled the restaurants and bars in both winter and summer seasons. Notable film epics depicting the Klondike Gold Rush, Canadian Mounties, and the building of the transcontinental railroad featured renowned actors such as Charlie Chaplin, Clark Gable, Jack London, John Barrymore, Henry Fonda, Jeannette McDonald and Nelson Eddy, and John Wayne, to name a few.



Charlie Chaplin filming in outskirts of Truckee (courtesy Truckee Donner Historical Society: no Cat. No.)

Infrastructure and Public Utilities

The growing needs of Truckee prompted the need for more organized municipal infrastructure and the establishment of utility and water companies and sewer systems. Small independent systems were unable to supply enough sanitary water to the growing town and most of these older systems were eventually consolidated under the Truckee Donner Public Utility District, which was incorporated in 1927. Truckee's first hydro-electric power plant was established in 1888 as part of the Truckee Power and Light Company. The stone building and accessory dams and flumes were located along the river off East River Street.



Truckee Electric Light and Power Company, East River Street (courtesy Truckee Donner Historical Society: RVR-87)

One of the earliest water sources was developed as part of the McGlashan Water Company, incorporated in 1889. The McGlashen water system extended from McGlashan Springs (located within present-day Tahoe Donner Subdivision), eastward along the ridge to the Northside/Town Station above downtown Truckee. This water, originally piped to Truckee for use in the McGlashan Addition subdivision on High Street, contributed to the Truckee water supply into the 1970s.

In the early days of Truckee there was no organized refuse collection system nor was there an awareness of the potential hazards of chemical wastes. For matters of convenience, residents and merchants widely broadcast their household and commercial garbage, especially along roadsides leading away from town. Local industries (e.g., lumber mills and railroad facilities) dumped liquid wastes into the Truckee River and its tributaries and burned all combustibles. Trash was fed to the family chickens or hogs and otherwise left to decompose and litter the alleys and backyards. Commercial stockyards, such as one owned by Joe Marzen on South River Street on “Slaughterhouse Hill,” operated without regulation. "Tons" of manure were piled along the water's edge, breeding flies and causing a menace to the general health. Four main dumps were established before the opening of the Placer County Sanitary Landfill during the 1970s. Truckee's first dump, the Old Truckee Dump, roughly parallels the south side of Interstate 80 east of the Truckee cemetery and Brockway Road (“old” State Route 267) near the U.S. Forest complex. While its contents span the entire historic era of Truckee town, the dump appears to have been most heavily utilized from the l880s to l920s. From the 1930s until 1945, garbage was dumped down the west flank of Euer Valley Road and onto the east bank of Trout Creek. Dumping here marks the first organized garbage collection in the town's history and the dump was officially operated by Harry Stout. About 1945 the Trout Creek Dump was relocated across town and in proximity to the present Truckee Regional Park. It operated as the official town dump during the mid l940s and until about l962. Harry Stout may also have supervised refuse disposal at this new dump. The "Hirshdale Dump" was opened in about l962. It was used until the l970s, when the current dump at the Placer County Sanitary Landfill was opened.

The Truckee Sewer District is the oldest sanitary district in the State of California. The sewer collection system of the town was installed in 1908 and until the 1960s, the system remained basically unchanged (Truckee Sanitary District 1964:3-1). Cesspools were crude affairs and ineffective and discharged a "zone of gray water and slime" into the river that was said to emanate strong odors in the summer months. Privies scattered along the river-front and directly over Trout Creek were common. Contamination of the water supply resulted in an epidemic of typhoid fever during the nineteen teens and a state investigation was conducted to report on the pollution and bacterial contamination of the Truckee River (Gillespie 1918). The 1918 report recommended the elimination of privies and manure piles, prohibition of swine, cattle or fowl within prescribed setbacks from water sources, and the employment of a paid garbage collector. Following study recommendations, settled sewage was discharged to seven newly-constructed effluent ponds, where it underwent oxidation and percolated into the soil. These stabilization ponds were abandoned with the opening of the Tahoe Truckee Sanitation agency plant in 1978.

Truckee's Neighborhoods and Subdivision Development

The 1918 state sanitary report also recommended that for Truckee to realize prosperity as a tourist center in the early 20th century, it had to endure "a most revolutionary clean-up" (Gillespie 1918:14). As of 1918, the town had an exceedingly rough-edged appearance. Homes along the river, "where the principal element was foreign," were described as "distressingly dilapidated." Buildings in the business section of town along Main Street (most being saloons) were "not at all modern." The absence of landscaping and of paved streets offset the initial positive impressions (formed at a distance) of a quaint, steeply-pitched roofed mountain town. The Town of Truckee has progressed far since the 1918. With its favored location adjacent to urban centers and multiple modes of transportation, the Truckee area has become a focal point of mountain residential development. Implementation of Town goals and policies and adherence to prescribed historic design guidelines insure that Truckee's unique historical character is maintained, while accommodating new development that maintains a welcoming atmosphere to tourists and residents alike. To take better control of its own destiny, the Town of Truckee incorporated in 1993 with a boundary surrounding 34 square miles (Design, Community & Development 2003:9). This area is characterized by a historic downtown core and several dispersed residential subdivisions. See the Land Use and Community Character Chapter for a description of each of Truckee's neighborhoods.

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Chaun Mortier, Research Historian. Truckee Donner Historical Society. October-November 2018.

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