Town of Loomis
General Plan 2020–2040
Volume III

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Table of Contents

TABLE OF CONTENTS

Section	Page

Appendices

List of Figures

List of Tables

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Chapter

1 LAND USE AND POPULATION

LAND USE AND POPULATION

The Town of Loomis is in western Placer County in California's Central Valley, approximately 25 miles northeast of the city of Sacramento along Interstate 80 (I-80). The Town is in the heart of the Loomis Basin, an 80 square-mile area of the Placer County foothills that includes Loomis, portions of the cities of Rocklin and Roseville, and the unincorporated communities of Penryn and Newcastle.

THE TOWN

Loomis encompasses approximately 4,280 acres of land, excluding roadways. The Town provides for low-density residential, ranchettes, open space, and small-scale agricultural uses around the perimeter of the Town with higher-density uses near the center of Town, I-80, and the Taylor Road corridor. This is reflective of the Town's historic development with undeveloped land, orchards and other agricultural uses surrounding the central commercial area that included packing sheds along the railroad tracks and Taylor Road. With increasing development in surrounding areas, Loomis land use patterns retain the Town's history and character by maintaining low-density uses around the perimeter with higher residential densities and commercial and industrial uses in the central portion of the Town.

The Town is accessed through a network of regional and local streets stemming from the I-80 corridor and Taylor Road which is the Old Lincoln Highway/Highway 40 Route that runs parallel to I-80. Two railroad tracks run generally parallel to Taylor Road through the center of Town and along the western boundary of the Town parallel to Sierra College Boulevard. The railroad corridor and I-80 split the Town and create land use challenges in relation to compatibility, noise, and access. The commercial and industrial land uses are focused in the area along Taylor Road and the railroad as those uses have historically needed to access the railroad and main vehicular travel route. Since the Town's only connection with I-80 is at Horseshoe Bar Road, this roadway, along with Taylor Road and Sierra College Boulevard provide the primary circulation routes, main gateways and development corridors. Sierra

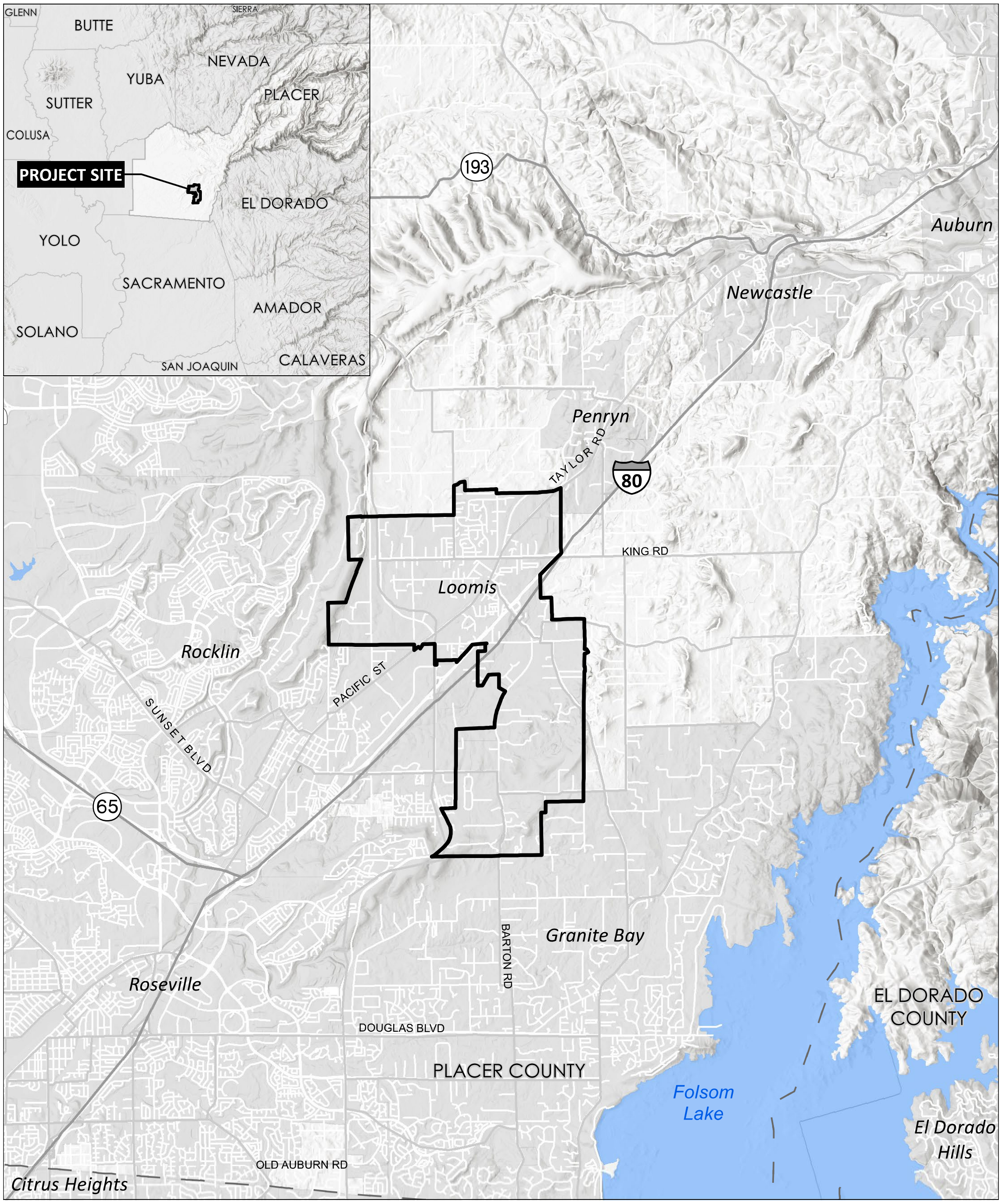

Figure 1-1: Vicinity Map

College Boulevard in particular experiences increasing development pressure from the surrounding communities of Rocklin and Lincoln. It can be expected that development pressure will remain within western Loomis into the future, with less pressure on the east side of Loomis where uses outside Town limits remain primarily low-density residential and small farming operations.

In addition to ranchettes and small-scale agriculture, there are pockets of open space and undeveloped land that are located within larger residential estates. These areas include creeks, ravines, riparian areas, oak woodlands, ponds, and rock outcroppings. Such features offer natural landscaping and privacy, cherished by the residents, and serve to retain a rural, natural aesthetic and character. Due to the challenges of developing on lands with these natural features and in conjunction with low-density land use designations, it can be expected that Loomis will continue to have large lots and future development that retains these natural features as open space, parks, or visual selling points within estate lots.

Loomis retains its small-town character through its land use layout and preservation of large lots and open areas. Limiting the commercial and industrial areas to specific corridors within the center of Town avoids commercial sprawl that leads to heavier urban development. The Town includes mixed uses and denser residential development around the commercial corridors, creating a sense of entering or leaving a distinct and singular Downtown area. This Downtown area encompasses the Taylor Road corridor and the Horseshoe Bar Road corridor extending from I-80. Although development pressure from neighboring areas will continue to grow into the future, the distribution of Loomis's land use designations will continue to retain that small-town character that defines the Town.

Areas of potential development in Loomis include lands within or near the Downtown, particularly Town-owned lands along the south end of Taylor Road, undeveloped lots adjacent to I-80, and the undeveloped area north of the Raley's shopping center at I-80 and Horseshoe Bar Road. Each of these areas are within or near the Downtown, and each include natural features or other challenges that will affect their use, such as ponds, ravines and creeks, oak woodlands and riparian habitat, rock outcroppings, or significant noise sources (railroad or I-80). The Town will rely on the land use designations, zoning ordinance, and other development standards to ensure development results in growth that retains the Town's character, supports the Town's Mission Statement, and enhances the Town.

Loomis's commercial and industrial operations rely on interstate truck traffic rather than rail traffic as in bygone eras; however, the rail system and interstate run parallel to each other, maintaining clear corridors for commercial and industrial access. Today's commerce relies primarily on locally-serving commercial uses and light manufacturing. The Market Analysis in Volume III, Chapter 6 provides detailed data on the economic uses and trends in the Town and greater region. As discussed in the Market Analysis, in the past decade, Loomis experienced more growth in the office and industrial sectors with little growth in the retail sector. Employment projections through 2040 reveal that office and industrial uses will continue to experience the most growth and land availability and compatibility in these sectors will impact land use patterns in the Town. Retail growth is expected, with some capture of regional traffic at Sierra College Boulevard, the Taylor Road corridor, and the Horseshoe Bar Road/I-80 interchange.

LAND USE

The purpose of a land use element is to provide an orderly plan for the general distribution, location, and intensity of land uses. The following section provides an overview of existing land uses within the Town of Loomis. Included are descriptions of the Town's existing land uses, land use designations, and zoning districts.

Data for this section was obtained from a combination of field surveys, secondary data sources, and government documents dictating land use distribution in the Town of Loomis, including the Town of Loomis General Plan (2001), the Town of Loomis Zoning Ordinance, and assessor's and Town parcel data.

General Plan Land Use Designations

Table 1-1 lists the acreage for each land use category under the Town's current General Plan Land Use Element. These land use categories are depicted on Figure 1-2. Table 1-1 shows the projected units and population on vacant land based on these land use categories.

Table 1-1: Town of Loomis General Plan Acreage–Build-Out Projections							
General Plan Designation	Dwelling Units Per Gross Acre(s)	Persons/ Gross Acre[1]	Gross Acres	Maximum Potential Dwelling Units		Projected Population	
				By Gross Acres	By Parcel Acres	By Units per Gross Acres	By Units per Parcel Acres
RA-Residential Agricultural	1 unit/4.6 acres	0.58	2,186.27	360	310	950	810
RE-Residential Estates	1 unit/ 2.3 acres	1.15	796.49	260	90	690	240
RR-Rural Residential	1 unit/acre	2.66	310.42	230	160	620	430
RL-Residential Low-Density	2 units/acre	5	30.11	50	20	120	50
RM-Residential Single Family	2-6 units/acre	5 to 16	355.19	1,670	1,270	4,430	3,390
RMH-Residential Medium High Density	6-10 units/acre	16 to 27	114.17	860	550	2,280	1,460
RH-Residential High Density	10-20 units/acre	27 to 53	10.39	160	180	470	420
OP- Office & Professional	2-10 units/acre	5 to 27	16.14	120	120	320	320
GC-General Commercial	2-10 units/acre	5 to 27	130.54	980	900	2,600	2,390
TC-Town Center Commercial	20 units/acre	53	54.83	820	740	2,190	1,970
TD-Tourist Destination Commercial	2-10 units/acre	5 to 27	117.77	880	850	2,350	2,250
ILT-Limited Industrial	1 caretaker/parcel	0	37.64	0	50	0	120
IL-Light Industrial	1 caretaker/parcel	0	108.31	0	70	0	180

Table 1-1: Town of Loomis General Plan Acreage–Build-Out Projections							
				Maximum Potential Dwelling Units		Projected Population	
General Plan Designation	Dwelling Units Per Gross Acre(s)	Persons/ Gross Acre[1]	Gross Acres	By Gross Acres	By Parcel Acres	By Units per Gross Acres	By Units per Parcel Acres
P-Public Quasi Public	1 caretaker/parcel	0	101.27	0	14	0	40
OS-Open Space & Conservation	0 units	0	0	-	-	-	-
TOTAL			**4,400**	**6,400**	**5,300**	**17,000**	**14,000**

Source: Town of Loomis 2022

The maximum potential dwelling units and projected population for each General Plan land use designation is rounded to the nearest ten. The total maximum potential dwelling units and projected population is rounded to the nearest hundred.

1 Population density calculated using 2.66 persons per households for residential uses, based upon the 2015 Department of Finance estimate for Placer County.

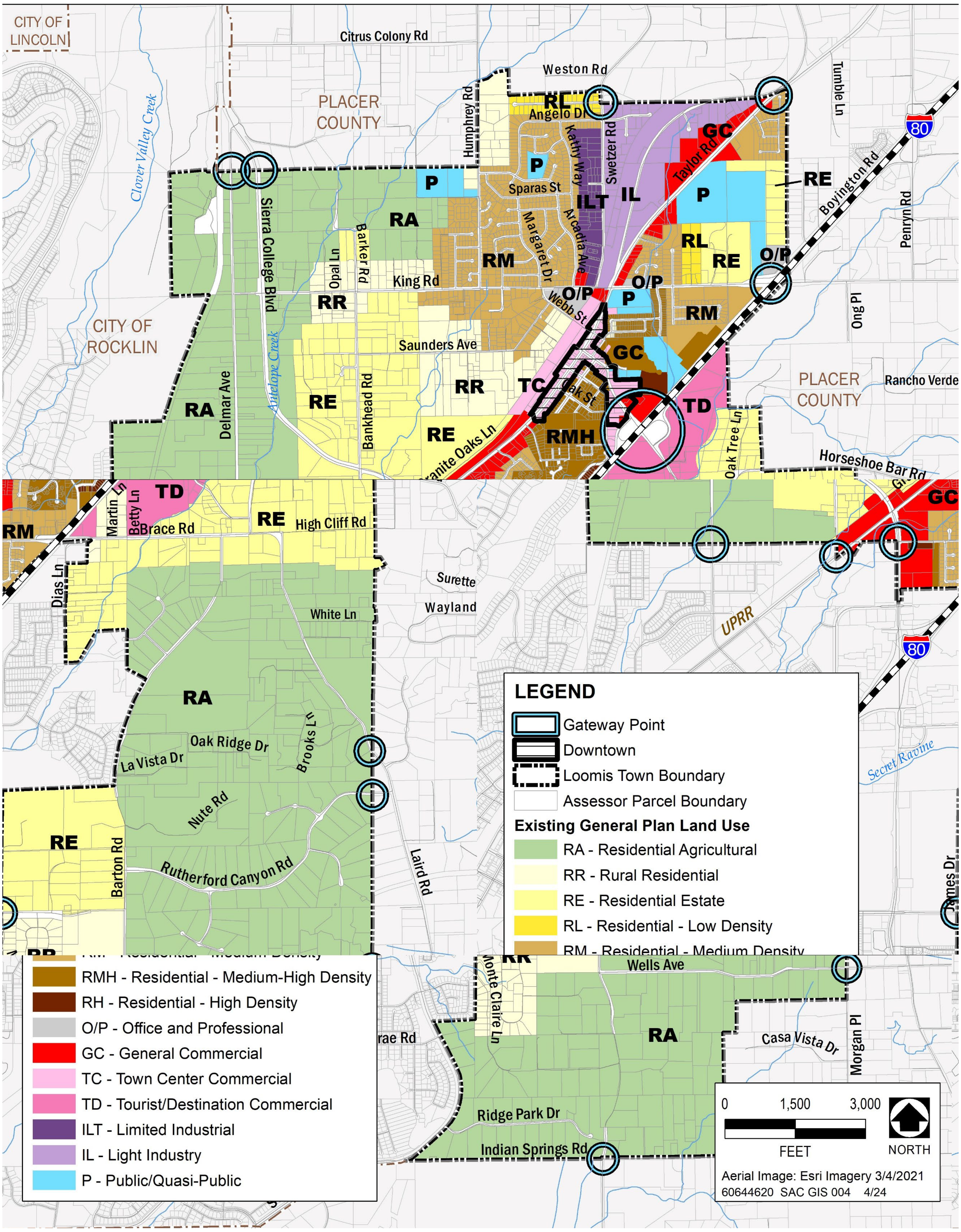

Figure 1-2: General Plan Land Use Designations

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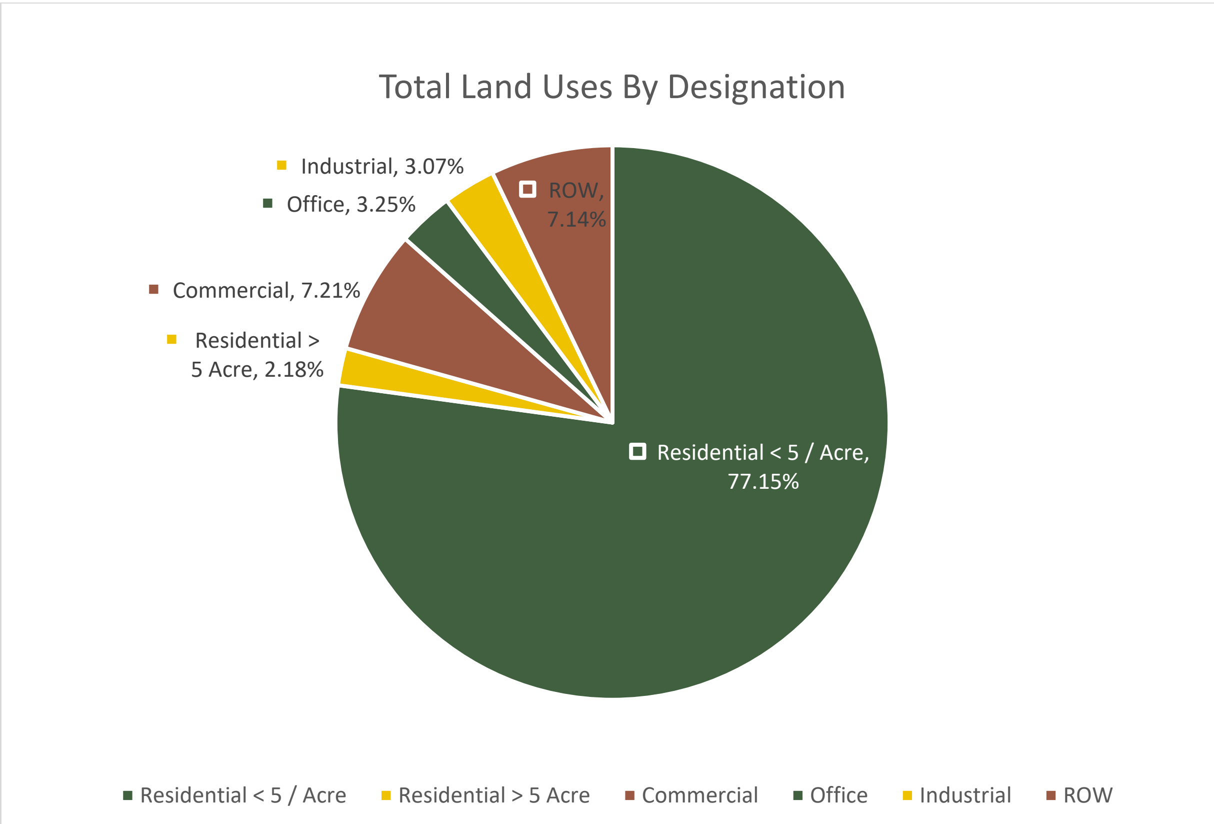
Figure 1-3 shows the percentage of land use designations in the Town organized approximately by residential designations that allow less than and greater than 5 units per acre. While the commercial land use designations allow some residential uses, these designations were kept separate for the purpose of this figure.

Figure 1-3: General Plan Land Use Designations Breakdown



The California Department of Finance Demographic Research Unit (DoF) provides an annual estimate of population for each jurisdiction in the state. The January 1, 2020, estimate for the Town is 6,888 residents and a total of 2,557 housing units (DoF, E-5 Report). The E-5 also estimates the Town's vacancy rate (4.3 percent), and persons per unit (2.81), that have been used to project possible unit / population yield from development of the vacant land at the existing land use designations. The Town's commercial areas also allow for residential uses of varying densities.

The Sacramento Area Association of Governments (SACOG) prepares the Metropolitan Transportation Plan / Sustainable Communities Strategy (MTP/SCS) that is used to plan for regional transit and transportation improvements. The MTP/SCS is based on population and employment projections for each agency within the region. The current projections used 2016 as a base year and projects a 2036 population for the Town of 8,692. To reach the SACOG projected population the Town would need to average 1.46 percent annual growth from 2020 to 2036. This is in contrast to the 0.69 percent annual growth experienced by the Town since 2010. For planning purposes, the SACOG population growth rate, and the historic growth rate can represent the high and low estimates of population growth for this planning effort.

Starting from the 2020 estimated population of 6,888, the total population estimates for 2040 would range from 7,900 to 9,200. As can be seen in the buildout table, its theoretically possible with full buildout of the existing vacant land, that a total population of 8,900 could be accommodated.

Existing Land Uses

Land uses in the Town of Loomis fall into four categories: residential, commercial, industrial, and public facilities. Table 1-1 details the acreage breakdown for each land use in the Town of Loomis. Figure 1-2 illustrates existing land uses.

Residential

Residential land uses make up the single largest land category in the Town. Existing residential land uses make up over 3,800 acres, approximately 86 percent of the total Town acreage. According to the 2021-2019 Housing Element, 13 acres of readily available vacant or underutilized residentially zoned land exists within the Town. An additional 104 acres of vacant commercially designated land could also support housing units (approximately 879 total units within the vacant residential and commercial parcels). The California Department of Finance reports there are 2,557 housing units in the Town of Loomis (2020). The Sacramento Area Council of Governments (SACOG) projects a 2020 population of 12,000 residents for the Town of Loomis. Based on an average household size of 2.81 persons (Department of Finance) the Town will need to provide an additional 2,407 units, for a total of 4,612 housing units. This total assumes a vacancy rate of 4.4 percent (Department of Finance). Given the amount of available land for residential use and current zoning standards, the Town can accommodate this anticipated housing demand. Table 1-1 lists each of the residential zoning districts and their corresponding maximum allowable number of housing units.

Commercial

Commercial land uses consist of locations for the sale of goods and services, as well as professional and business offices. Commercial areas within the Town are located primarily along the Taylor Road and Horseshoe Bar Road corridors, and near Interstate 80. Commercial areas south of Interstate 80 are largely undeveloped with commercial uses and contain existing single-family residences. The commercial uses in that area are designated to attract or accommodate visitors from the freeway, as opposed to the Downtown and General Commercial uses along Taylor Road and Horseshoe Bar Road that would cater more to the local community. Existing commercial land uses make up 220 acres. Additionally, vacant commercial lands occupy an estimated 100 acres.

Industrial

Industrial land uses consist of manufacturing, processing, distribution, storage, transportation, and other related uses. Industrial areas within the Town are located between King Road and the northern Town limits, along the Union Pacific Railroad line, Rippey Road, and Swetzer Road. Total Industrial area is approximately 146 acres. Vacant industrial uses make up an estimated 9 acres. There are no heavy industrial areas or operations within Loomis.

Public Facilities

Public facilities consist of publicly-held land uses such as government offices, schools, libraries, parks, open space, public safety buildings, civic corporate yards, and utilities. Existing public facilities make up 101 acres, with 13 acres shown as vacant. (Table 1-1).

Open space land includes a golf course, parks, agriculture, natural areas, and miscellaneous recreation. It does not include recreational facilities within school boundaries. The Sunrise-Loomis Neighborhood Park, at four acres, and the one-acre Blue Anchor Park are the only parks within the Town limits.

Table 1-2 lists the acreage of other recreational facilities in or near Loomis that are within school boundaries. These facilities are included with the Public/Quasi-Public land use category in Table 1-1.

Table 1-2: Other Recreational Facilities	
School Facilities	**Acreage**
Loomis Elementary School	3.5
Franklin Elementary School	4.2
H. Clarke Powers Elementary School	6.5
Del Oro High School	25.0

Source: Town of Loomis Parks and Recreation Element

Right-of-Ways

Two railroads' rights-of-way run through the Town of Loomis. The Union Pacific Railroad corridor that runs along Taylor Road and Rippey Road varies in width from 200 to 360 feet. It contains some scattered commercial land uses. The other railroad right-of-way runs north-south, east of Del Mar Road at the Western edge of Town. Right-of-way also includes portions of some roadways in Town, as well as a few areas along Taylor Road and I-80.

Zoning

Zoning districts are established in the Town's Zoning Ordinance and include residential, commercial, industrial, and public zones. The Zoning Ordinance can include one or more districts that correspond to each general plan land use designation.

DEMOGRAPHICS

In order to effectively establish land use patterns and set policies regarding housing and public services and facilities, the Town must have a thorough understanding of who lives in the community and how the population has changed and is expected to change in the future. This section examines the Town of Loomis' population trends. The Housing Element setting and background data provide in-depth demographic information, projections, and housing characteristics. The information contained in this section is taken from the U.S. Census, the California Department of Finance, and the Town of Loomis Housing Element.

Table 1-3: Town of Loomis Population: 2000-2020			
Year	**Town**	**County**	**Percent**
2000	6,260	248,399	2.52%
2005	6,166	307,710	2.00%
2010	6,430	348,432	1.85%
2015	6,646	371,264	1.79%
2020	6,888	403,711	1.71%

Source: American Community Survey

According to the 2014-2018 American Community Survey, the population of Loomis was 6,888 in 2018, a 21-percent increase in population since the 1990 Census. Since 1990, population growth in the Town of Loomis has slowed. Based on the Department of Finance's 2020 estimates, Loomis' population is 6,888. According to the Town's population projections, the Town will see an increase in total population to a projected 2040 total of 7,905 residents. This lower than the expected population growth for Placer County, which is expected to reach 585,215 people by the year 2035~~,~~ up from an estimated 348,432 in 2010.

Household Size

The average household size for the Town of Loomis saw a decline between 1980 and 2010 but has recently began to increase again. The average household size in 1980 was 2.95 persons per household, while the estimate for 2020 (CA Department of Finance) is 2.81. The estimated household size in Loomis remains larger than that of Placer County, with an average household size of approximately 2.69 in 2020. This number is expected to further decline as the number of senior and single-parent households increases.

Table 1-4: Town of Loomis Average Household Size		
Year	**Loomis**	**Placer County**
1990	2.94	2.64
2000	2.82	2.62
2010	2.72	2.60
2015	2.78	2.66
2020	2.81	2.69

Source: 2020 CA Department of Finance

Housing Units

According to the Department of Finance, the Town of Loomis had 2,557 dwelling units in 2020, including nearly 2,200 single-family houses. With an anticipated population of 7,905 residents by the year 2040, the Town will need an additional 373 dwelling units for a total of 2,928 housing units. This assumes a vacancy rate of 4.3 percent, and an average household size of 2.69 persons.

Table 1-5: Town of Loomis Housing Units					
	Single Family	**Multi-Family**	**Mobile Homes**	**Total**	**Vacancy Rate**
2010	2,248	97	120	2,465	4.4%
2015	2,275	97	120	2,492	4.4%
2020	2,340	97	120	2,557	4.3%

Source: 2020 Department of Finance City/County Population and Housing Estimates

Table 1-6: Town of Loomis Estimated Housing Demand 2020-2040			
Year	Population	New Housing Units Needed	Total Housing Units
2020	6,888	N/A	2,557
2025	7,130	90	2,647
2030	7,380	91	2,738
2035	7,638	95	2,833
2040	7,905	97	2,928

Source: Town of Loomis, 2021

SPHERE OF INFLUENCE

A "Sphere of Influence" is a boundary established around Loomis and other municipalities as required by State law by the Placer County Local Agency Formation Commission (LAFCO). A Sphere of Influence defines areas into which towns, cities, and special districts may expand through the annexation process. Currently, the Sphere of Influence for Loomis is coterminous (the same as) the Town's corporate boundary.

REGIONAL PLANS & POLICIES

The Town of Loomis and various regional agencies are undertaking special planning efforts to address certain issues that are either not required to be addressed in the general plan or cover a larger area. Table 1-7 identifies plans affecting land use, growth and development in the Town of Loomis that are either regional in nature or that deal with a particular governmental function.

Table 1-7: Regional Plans				
Plan Name	**Adoption Year**	**Geographic Scope**	**Responsible Agency**	**Link**
Placer County General Plan	2013	Placer County	Placer County Planning Services	https://www.placer.ca.gov/2971/General-Plan-Community-Plans
Horseshoe Bar/Penryn Community Plan	1994	Northeast of the Town of Loomis	Placer County Planning Services	https://www.placer.ca.gov/3033/Horseshoe-Bar-Penryn-Community-Plan
Granite Bay Community Plan	2012	Granite Bay	Placer County Planning Services	https://www.placer.ca.gov/3032/Granite-Bay-Community-Plan
City of Rocklin General Plan	2012	Rocklin	Rocklin Planning Department	https://www.rocklin.ca.us/post/general-plan
2020 Metropolitan Transportation Plan/Sustainable Communities Plan (MTP/SCS)	2019	Sacramento Region	SACOG	https://www.sacog.org/2020-metropolitan-transportation-plansustainable-communities-strategy
2040 Regional Transportation Plan (RTP)	2021	Placer County	Placer County Transportation Planning Agency (PCTPA)	https://pctpa.net/rtp2040-2/
2018-2022 South Placer Municipal Utility District (SPMUD) Strategic Plan	2017	Western Placer County	SPMUD	https://spmud.ca.gov/strategic-plan

Table 1-7: Regional Plans				
Plan Name	**Adoption Year**	**Geographic Scope**	**Responsible Agency**	**Link**
Local (Multi-Jurisdiction) Hazard Mitigation Plan	2021	Placer County	All Placer County jurisdictions	https://www.placer.ca.gov/1381/Local-Hazard-Mitigation-Plan
Placer County Water Agency (PCWA) County-Wide Master Plan	2010	Placer County	PCWA	https://www.pcwa.net/business/cwmp
Dry Creek Watershed Flood Control Plan	2011	Dry Creek Watershed	Placer County Flood Control and Water Conservation District	https://www.placer.ca.gov/1640/Dry-Creek-Watershed-Plan
Placer County Conservation Program (PCCP)	2020	Placer County	Placer County Community Development	https://www.placer.ca.gov/3362/Placer-County-Conservation-Program

MTP = Metropolitan Transportation Plan
PCCP = Placer County Conservation Program
PCWA = Placer County Water Agency
RTP = Regional Transportation Plan
SACOG = Sacramento Area Council of Governments
SCS = Sustainable Communities Plan
SPMUD = South Placer Municipal Utility District

Chapter

2 CIRCULATION & TRANSPORTATION

CIRCULATION & TRANSPORTATION

INTRODUCTION

Purpose

The update to the Circulation & Transportation Element of the General Plan is intended to reflect a realistic assessment of transportation infrastructure needs, financial constraints, and the broader goals of the community.

The approach of this section is to identify current and future traffic conditions if the General Plan is implemented. These baseline conditions will be used to develop goals/objectives and to explore alternative land use and transportation scenarios. The alternatives will then be tested to determine how well they meet the established goals/objectives and how they perform with respect to financial feasibility. The result will be a set of transportation improvements that reflects expected funding opportunities and constraints.

Study Process

The study presents an analysis of existing conditions and future baseline conditions including a summary of the condition of the existing transportation system, and an evaluation of future conditions if the General Plan is implemented (i.e., future baseline conditions).

EXISTING CONDITIONS

Transportation Setting

Loomis is located approximately 25 miles northeast of the city of Sacramento and about 90 miles southwest of Lake Tahoe, along Interstate 80 (I-80). Loomis is situated in the Loomis Basin, which is part of the foothills of Placer County. The adjacent city of Rocklin is directly west of the Town limits, and the unincorporated Granite Bay community is directly south. I-80 is the primary interstate highway providing regional access to San Francisco to the west, and Reno and the rest of the United States to the east. Traffic to and from the I-80 corridor is served by Horseshoe Bar Road and Sierra College Boulevard. I-80 runs diagonally through the center of Loomis and divides the Town into two areas. The northwestern section consists of higher-density residential development, existing retail, office and industrial developments, bounded by larger, semi-rural residential lots. Within the northwestern section is the Downtown area, which encompasses the portion of Taylor Road between the intersections of Oak Street and Webb Street. The southeastern section of the Town consists of rural, agricultural, and large-lot residential areas.

Loomis is approximately 7.25 square miles in area and at an elevation of approximately 400 feet. Based on data from the 2019 America Community Survey (ACS), population in Loomis has increased from 6,260 in 2000 to 6,866 in 2019, a 0.49 percent compound annual growth rate increase. Figure 2-1 shows the study area and vicinity map.

Existing Roadway System

The backbone roadway system serving the Town of Loomis has not changed substantially since the rural community evolved in the 1800s. Prior to 1984, the Loomis community remained in Placer County and utilized the County roadway standards as the community grew and developed over time. In 1984, when the Town incorporated, more urban street classifications and standards were adopted and utilized within small and medium lot subdivisions and commercial/industrial development. For larger-lot residential development, rural street classifications and standards have been kept to help maintain the historic and semi-rural character of the Town and community.

The existing Figure 2-2 and described below. This description is organized by roadway components, beginning with the regional roadway classification followed by the existing conditions inventory, and existing conditions level of service. The inventory of existing conditions consists of data collected for roadway pavement conditions, speed surveys, and daily traffic volumes.

Existing Roadway Classification

A hierarchy of streets provides access to and from residential, commercial, and industrial uses throughout Loomis. A route's design, including number of lanes needed, is determined by its functional classification and its projected traffic levels to achieve "safe and convenient movement at the development intensity anticipated in the Land Use Element."

State Freeways/Highways

Controlled access facilities whose junctions are free of at-grade crossing with other roads, railways, or pedestrian pathways, and instead are served by interchanges are classified as freeways. Freeway/highway speeds range from 55 to 70 miles per hour (mph), and can be toll or non-toll roads. The following freeway services Loomis:

Interstate 80 (I-80) is a major transcontinental east-west interstate that traverses across the northern United States. I-80 serves as the major inter-regional auto and truck travel route that connects Loomis to Reno and beyond to the rest of the country to the east, and the Sacramento and San Francisco areas to the west. I-80 is a major recreational and commuter travel route, and within Loomis is a six-lane divided freeway with a posted speed limit of 65 mph. Loomis has one full access interchange at Horseshoe Bar Road. Roadways in Loomis also have access to the Sierra College Boulevard interchange to the south, and the Penryn Road interchange to the north.

Figure 2-1: Vicinity Map

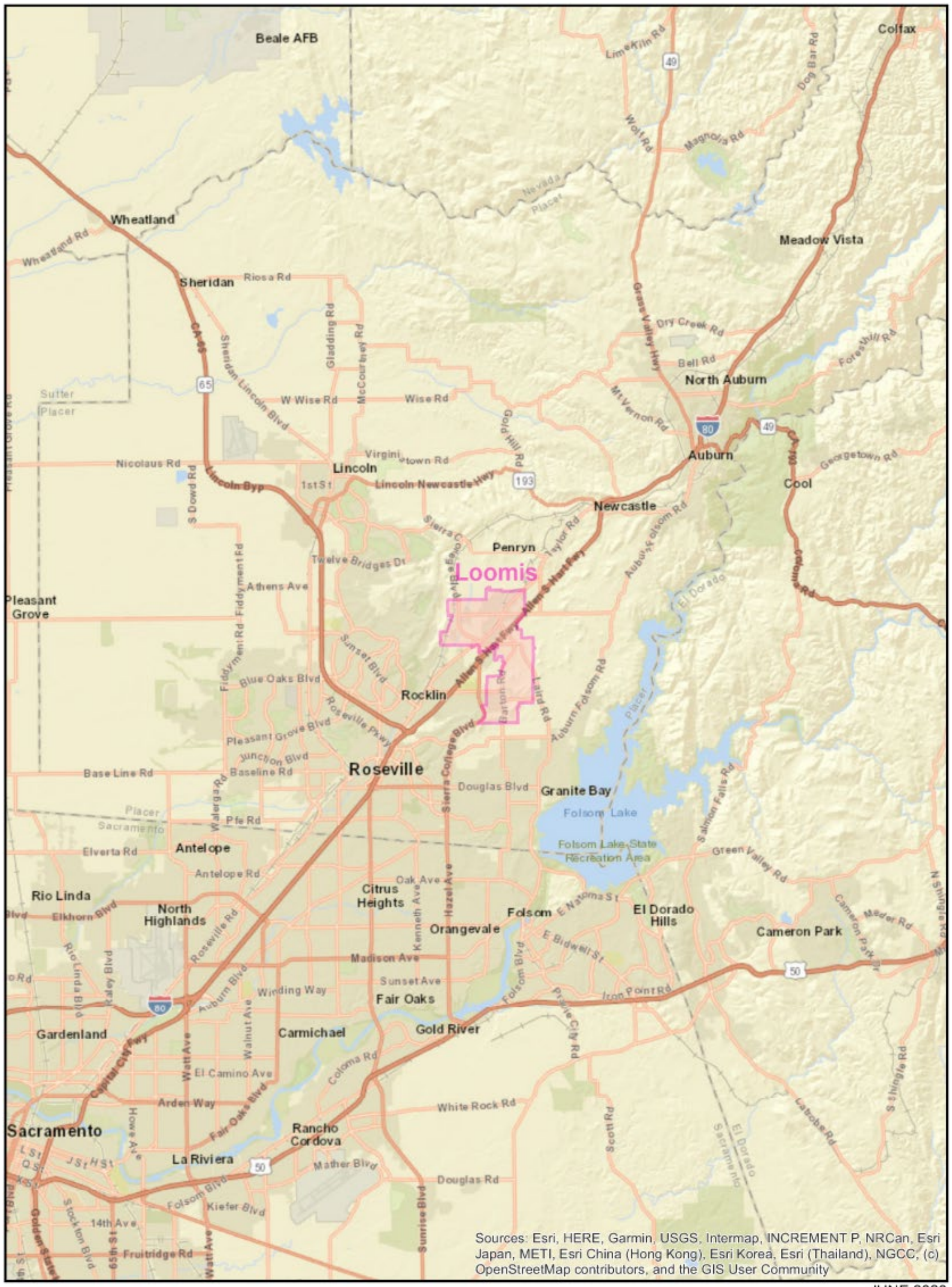


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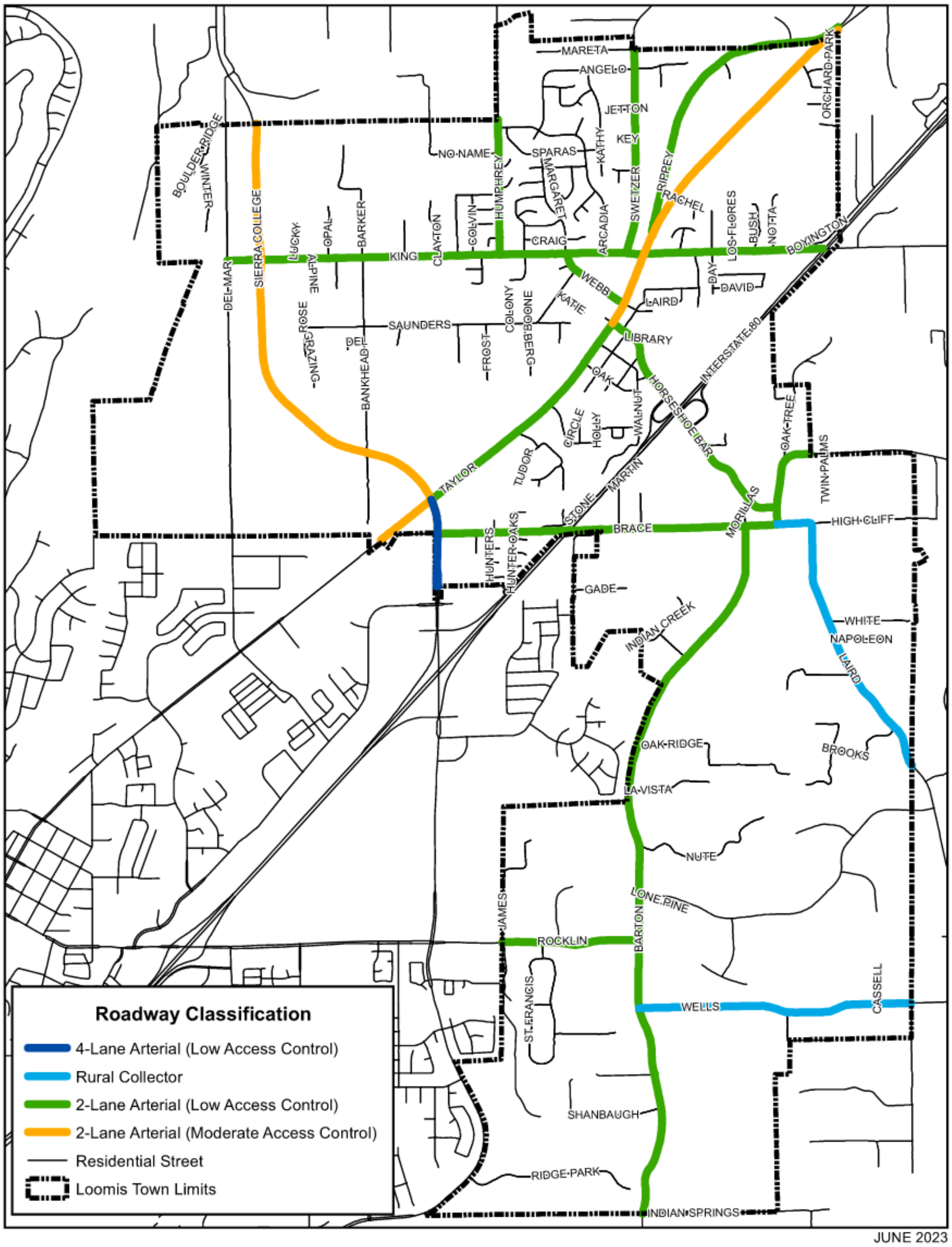
Figure 2-2: Existing Functional Roadway Classification Map



Arterial Streets

Arterial facilities serve to connect areas of major activity within the urban area of Loomis and function primarily to distribute cross-town traffic from freeways/highways to collector streets. Within Loomis, arterial streets are mostly two-lane facilities with operating speeds ranging from 25 to 50 mph. The following are descriptions of the major and minor arterials servicing the Town of Loomis:

> ***Taylor Road*** is a major arterial that parallels I-80 to the west, from Eureka Road in Roseville through Rocklin, Loomis, Penryn, Newcastle, and terminating at State Route 193 (SR 193) near Auburn. Prior to the construction of I-80, Taylor Road, as U.S. 40, was part of the National Highway System. Within Loomis, Taylor Road has generally one lane in each direction with center turn channelization.
>
> ***Horseshoe Bar Road*** is an east-west arterial from Taylor Road to Folsom Lake in unincorporated Placer County. Horseshoe Bar Road has one lane in each direction.
>
> ***King Road*** is an east-west arterial from Del Mar Avenue across I-80 to beyond Folsom-Auburn Road. King Road has one lane in each direction.
>
> ***Sierra College Boulevard*** is a major arterial from SR 193, south through Loomis, Rocklin, and Roseville, and into Sacramento County, where it becomes Hazel Avenue. Sierra College Boulevard has one lane in each direction from SR 193 to Taylor Road. From Taylor Road, through Loomis, Sierra College Boulevard is four lanes with turn channelization to Granite Drive.
>
> ***Barton Road*** is a north-south arterial from Brace Road into Granite Bay in unincorporated Placer County. Barton Road has one lane in each direction.
>
> ***Brace Road*** is an east-west arterial from Sierra College Boulevard across I-80 to Horseshoe Bar Road. Brace Road has one lane in each direction.

Collectors

Collectors function as connector routes between local and arterial streets and provide access to residential, commercial, and industrial property. Collector streets within Loomis are facilities with operating speeds around 30 mph and maximum capacity of 10,000 vehicle-trips per day.

Swetzer Road is a two-lane collector street from King Road to beyond Loomis Town limits.

Local Streets

Local streets provide direct access to properties and allow for localized movement of traffic. Local streets are characterized by low daily traffic volumes of less than 4,500 and operating speeds of 25 to 35 mph.

Existing Traffic Volumes

The Town of Loomis roadway facilities were evaluated for 38 key segments on a daily basis using Average Daily Traffic (ADT) counts obtained using a StreetLight Data subscription. ADT counts were obtained for all Tuesdays, Wednesdays, and Thursdays in September and October 2019, excluding holidays, and averaged. The existing conditions traffic operations and deficiencies were identified by generating a “Level of Service” (LOS) determination. Level of Service is a qualitative measure of traffic operating conditions, whereby a letter grade “A” through “F” is assigned to an intersection or roadway segment representing progressively worsening traffic conditions.

Roadway classifications were identified for the 38 key segments and were used to calculate the existing roadway LOS. The LOS was calculated using the roadway capacity thresholds from *Sacramento County Traffic Impact Analysis Guidelines* as presented in Table 2-1.

Table 2-1: Roadway Classification Capacity Thresholds							
Facility Type		# of Lanes	Maximum Volume for Given Level of Service				
			A	B	C	D	E
Residential	R	2	600	1,200	2,000	3,000	4,500
Rural Collector[1]	RC	2	3,000	5,000	6,500	8,000	9,000
Two-Lane Low Access Control[2]	AL 2	2	9,000	10,500	12,000	13,500	15,000
Two-Lane Low Access Control with Roundabouts[3]	ALR 2	2	12,000	14,000	14,500	16,000	18,000
Four-Lane Low Access Control[2]	AL 4	4	18,000	21,000	24,000	27,000	30,000
Six-Lane Low Access Control[2]	AL 6	6	27,000	31,500	36,000	40,500	45,000
Two-Lane Moderate Access Control[4]	AM 2	2	10,800	12,600	14,400	16,200	18,000
Two-Lane Moderate Access Control with Roundabouts[5]	AMR 2	2	13,500	15,750	18,000	20,000	22,500
Four-Lane Moderate Access Control[4]	AM 4	4	21,600	25,200	28,800	32,400	36,000
Six-Lane Moderate Access Control[4]	AM 6	6	32,400	37,800	43,200	48,600	54,000

Source: Sacramento County 2020
(https://sacdot.saccounty.net/Documents/A%20to%20Z%20Folder/Traffic%20Analysis/Transportation%20Analysis%20Guidelines%2009.10.20.pdf)

Notes:
[1] Rural Collector is 22' - 28' of Pavement, no curb
[2] Low Access Control is 4+ stops/mile, frequent driveway access, 25-30 mph
[3] Low Access Control with Roundabouts, frequent driveway access, 25-30 mph
[4] Moderate Access Control, limited (right in/right out driveway access, 25-35 mph
[5] Moderate Access Control with Roundabouts, limited (right in/right out) driveway access, 25-35 mph
AL 2: Two-Lane Low Access Control
AL 4: Four-Lane Low Access Control
AL 6: Six-Lane Low Access Control
ALR 2: Two-Lane Low Access Control with Roundabouts
AM 2: Two-Lane Moderate Access Control
AM 4: Four-Lane Moderate Access Control
AM 6: Six-Lane Moderate Access Control
AMR 2: Two-Lane Moderate Access Control with Roundabouts
R: Residential
RC: Rural Collector

Level of Service Thresholds

The *Town of Loomis General Plan Circulation Element* specifies minimum LOS standards for all streets and intersections within Loomis, as follows:

Level of Service Policy: In order to minimize congestion, maintain Level of Service C on all roads and intersections within the Town of Loomis. Level of Service D may be allowed in conjunction with development approved within the Town as an exception to this standard, at the intersections of King and Taylor, Horseshoe Bar Road and Taylor, Horseshoe Bar Road and I-80, Sierra College and Brace Road, and Webb and Taylor, when:

1. The deficiency is substantially caused by "through" traffic, which neither begins nor ends in Loomis, and is primarily generated by non-residents; or
2. The deficiency will be temporary (less than three years), and a fully-funded plan is in place to provide the improvements needed to remedy the substandard condition.

Mitigation of Impacts from Unincorporated Area Projects: Notwithstanding any other General Plan policy or provisions, in the event that significant adverse impacts will result from the construction of large developments on the Town's perimeter, the Town shall make every reasonable effort to have the developers adequately mitigate the adverse impacts.

Existing Transportation Conditions and Operations

Table 2-2 summarizes the existing number of travel lanes, posted speed limit, pavement conditions, and 85th percentile speed of these roadways.

Pavement conditions were rated as good, fair, poor, or failed based on the results of a condition survey performed by NCE in February 2020. The pavement condition rating generally indicates the frequency of observed potholes, cracks, pavement overlays, and other distresses in the roadway segments. The 85th percentile speeds are results of a speed survey conducted by Omni-Means in September and October, 2014 for the roadway segments.

Posted Speed Limits range from 25 miles per hour on roadways with fronting residences such as Bankhead Road to 55 miles per hour on limited access major arterials such as Sierra College Boulevard. The segments of Taylor Road and Horseshoe Bar Road near the Downtown area, Sierra College Boulevard near Taylor Road, and Rocklin Road near Barton Road carry the greatest volumes of traffic (approximately between 10,000 and 22,000 vehicles per day). Traffic volumes on Barton Road, Brace Road, King Road, Laird Road, Swetzer Road, and Webb Street range from approximately 1,900 to 8,000 vehicles per day. In some or all segments of Bankhead Road, Brace Road, Del Mar Avenue, Webb Street, and Sierra College Boulevard, pavement conditions are poor and result in difficult driving conditions. Travel speeds through Downtown (Taylor Road, King Road, and Webb Street) and residential areas such as Barton Road, Humphrey Road, and Laird Road, are also perceived as excessive by many for pedestrian and bicycle safety.

Table 2-3 summarizes the existing **roadway segment operations** (based on capacities in Table 2-1), and presents the following:

- Existing Level of Service
- Daily Volume to Capacity Ratio
- Average Daily Traffic
- Number of Lanes
- Roadway Classification

Currently, the following three roadway segments are operating at unacceptable LOS and are bolded in Table 2-3:

- Horseshoe Bar Road - Taylor Road to I-80 Bridge
- Rocklin Road – James Drive to Barton Road
- Taylor Road - Horseshoe Bar Road to King Road

Figure 2-3 presents the existing ADT for the study roadway segments within Loomis.

Table 2-2: Existing Roadway System				
Street	**Roadway Segments**	**Posted Speed Limit**	**Pavement Condition**	**85th Percentile Speed**
Bankhead Rd	King Rd to Saunders Ave	25	Fair	26
	Saunders Ave to Sierra College Blvd	25	Fair	30
Barton Rd	Brace Rd to Gold Trail Way	40	Fair	46
	Gold Tail Way to Rocklin Rd	40	Good	49
	Rocklin Rd to Indian Springs Rd	40	Good	50
Brace Rd	Sierra College Blvd to I-80 Bridge	35	Failed	38
	I-80 Bridge to Laird Rd	40	Good	47
Del Mar Ave	King Rd to N. Town Limit	35	Poor	35
	S. Town Limit to King Rd	35	Fair	33
Horseshoe Bar Rd	Taylor Rd to I-80 Bridge	25	Fair	32
	I-80 Bridge to Horseshoe Bar Rd	35	Fair	38
	Brace Rd to N. Town Limit	35	Fair	38
Humphrey Rd	Arcadia Ave to N. Town Limit	25	Fair	42
	King Rd to Arcadia Ave	35	Fair	35
King Rd	Del Mar Ave to Bankhead Rd	40	Failed	42
	Bankhead Rd to Humphrey Rd	35	Good	40
	Humphrey Rd to Taylor Rd	35	Fair	37
	Taylor Rd to Bush Ln	35	Poor	41
	Bush Ln to I-80 Bridge	35	Poor	46
Laird Rd	Brace Rd to White Ln	35	Poor	41
	White Ln to S. Town Limit	35	Poor	50
Rippey Rd	Taylor Rd to N. Town Limit	30	Fair	41
Rocklin Rd	James Dr to Barton Rd	40	Fair	50

Table 2-2: Existing Roadway System				
Street	**Roadway Segments**	**Posted Speed Limit**	**Pavement Condition**	**85th Percentile Speed**
Saunders Ave	Bankhead Rd to McAllen Ln	25	Good	36
	McAllen Ln to Webb St	25	Good	29
Sierra College Blvd	N. Town Limit to King Rd	50	Fair	56
	King Rd to Bankhead Rd	50	Poor	54
	Bankhead Rd to Taylor Rd	45	Fair	47
	Taylor Rd to N. Granite Dr	40	Good	44
Swetzer Rd	King Rd to N. Town Limit	35	Poor	35
Taylor Rd	S. Town Limit to Sierra College Blvd	40	Good	42
	Sierra College Blvd to Circle Dr	40	Good	41
	Circle Dr to Horseshoe Bar Rd	25	Fair	30
	Horseshoe Bar Rd to King Rd	25	Fair	32
	King Rd to N. Town Limit	40	Fair	47
Webb St	King Rd to Taylor Rd	25	Good	35
Wells Ave	Barton Rd to Rickety Rack Rd	40	Fair	49
	Rickety Rack Rd to Morgan Place	40	Fair	43

Table 2-3: Roadway Segment Operations – Existing Conditions (2019)						
Street	**Roadway Segments**	**Roadway Classification**	**Number of Lanes**	**Average Daily Traffic**	**Daily Volume to Capacity Ratio (v/c)***	**Level of Service**
Bankhead Rd	King Rd to Saunders Ave	R	2	409	0.09	A
	Saunders Ave to Sierra College Blvd	R	2	673	0.15	B
Barton Rd	Brace Rd to Gold Trail Way	AL 2	2	1,935	0.13	A
	Gold Tail Way to Rocklin Rd	AL 2	2	2,500	0.17	A
	Rocklin Rd to Indian Springs Rd	AL 2	2	7,952	0.53	A
Brace Rd	Sierra College Blvd to I-80 Bridge	AL 2	2	4,521	0.30	A
	I-80 Bridge to Laird Rd	AL 2	2	3,555	0.24	A
Del Mar Ave	King Rd to N. Town Limit	R	2	212	0.05	A
	S. Town Limit to King Rd	R	2	719	0.16	B
Horseshoe Bar Rd	Taylor Rd to I-80 Bridge	**AL 2**	**2**	**16,536**	**1.10**	**F**
	I-80 Bridge to Horseshoe Bar Rd	AL 2	2	9,578	0.64	B
	Brace Rd to N. Town Limit	AL 2	2	6,427	0.43	A
Humphrey Rd	Arcadia Ave to N. Town Limit	AL 2	2	1,232	0.08	A
	King Rd to Arcadia Ave	AL 2	2	2,721	0.18	A
King Rd	Del Mar Ave to Bankhead Rd	AL 2	2	2,988	0.20	A
	Bankhead Rd to Humphrey Rd	AL 2	2	3,188	0.21	A

Table 2-3: Roadway Segment Operations – Existing Conditions (2019)						
Street	**Roadway Segments**	**Roadway Classification**	**Number of Lanes**	**Average Daily Traffic**	**Daily Volume to Capacity Ratio (v/c)***	**Level of Service**
	Humphrey Rd to Taylor Rd	AL 2	2	5,521	0.37	A
	Taylor Rd to Bush Ln	AL 2	2	5,629	0.38	A
	Bush Ln to I-80 Bridge	AL 2	2	5,684	0.38	A
Laird Rd	Brace Rd to White Ln	RC	2	4,673	0.52	B
	White Ln to S. Town Limit	RC	2	4,412	0.49	B
Rippey Rd	Taylor Rd to N. Town Limit	AL 2	2	802	0.05	A
Rocklin Rd	James Dr to Barton Rd	**AL 2**	**2**	**13,479**	**0.90**	**D**
Saunders Ave	Bankhead Rd to McAllen Ln	R	2	378	0.08	A
	McAllen Ln to Webb St	R	2	919	0.20	B
Sierra College Blvd	N. Town Limit to King Rd	AM 2	2	12,179	0.68	B
	King Rd to Bankhead Rd	AM 2	2	11,372	0.63	B
	Bankhead Rd to Taylor Rd	AM 2	2	12,955	0.72	C
	Taylor Rd to N. Granite Dr	AL 4	4	22,010	0.73	C
Swetzer Rd	King Rd to N. Town Limit	AL 2	2	6,261	0.42	A
Taylor Rd	S. Town Limit to Sierra College Blvd	AM 2	2	11,463	0.64	B
	Sierra College Blvd to Circle Dr	AM 2	2	11,045	0.61	B

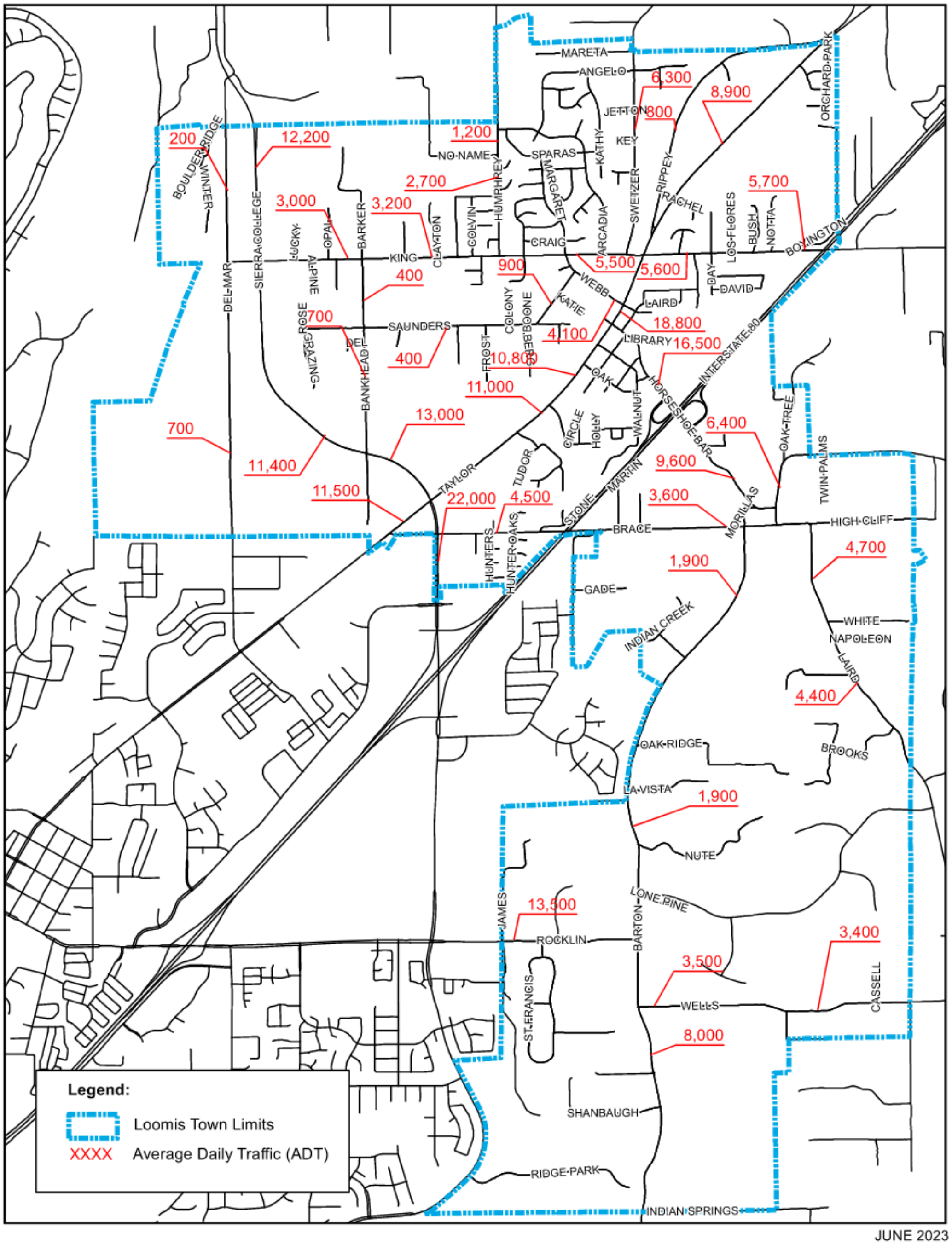
Table 2-3: Roadway Segment Operations – Existing Conditions (2019)

Street	Roadway Segments	Roadway Classification	Number of Lanes	Average Daily Traffic	Daily Volume to Capacity Ratio (v/c)*	Level of Service
	Circle Dr to Horseshoe Bar Rd	AL 2	2	10,775	0.72	C
	Horseshoe Bar Rd to King Rd	**AL 2**	**2**	**18,753**	**1.25**	**F**
	King Rd to N. Town Limit	AM 2	2	8,881	0.49	A
Webb St	King Rd to Taylor Rd	AL 2	2	4,121	0.27	A
Wells Ave	Barton Rd to Rickety Rack Rd	RC	2	3,497	0.39	B
	Rickety Rack Rd to Morgan Place	RC	2	3,372	0.37	B

Notes:
AL 2: 2 Lane Arterial Low Access Control (4+ stops/mile, frequent driveway access, 25-35 mph)
AL 4: 4 Lane Arterial Low Access Control (4+ stops/mile, frequent driveway access, 25-35 mph)
AM 2: 2 Lane Arterial Moderate Access Control (2-4 stops/mile, limited driveway access, 35-45 mph)
R: Residential
RC: Rural Collector
* Volume to capacity ratio is the volume of current traffic in relation to the maximum amount of traffic the roadway can safely accommodate.
BOLD = Roadway Segment LOS is currently worse than the Town's *target* LOS policy of LOS "C."

1

Figure 2-3: Existing Average Daily Traffic



Levels of Service have been calculated for all intersection control types using the methodologies documented in the Transportation Research Board publication, *Highway Capacity Manual, Sixth Edition* (HCM 6). For signalized intersections, all-way-stop-controlled (AWSC) intersections, and roundabouts, the intersection delays and Levels of Service are average values for all intersection movements. For two-way-stop-controlled (TWSC) intersections and one-way-stop-controlled (OWST) intersections, the intersection delays and levels of service are representative of those for the worst-case approach. Level of service criteria for different types of intersection controls are outlined in Table 2-4. This methodology determines the level of service by computing the average delay per vehicle and comparing the results to the thresholds shown in Table 2-4.

Table 2-5 shows the existing AM and PM peak hour levels of service for selected intersections on the major circulation system serving the Town of Loomis. Traffic signals are located on Sierra College Boulevard at the I-80 eastbound and westbound ramps intersections, Granite Drive, Brace Road, and Taylor Road. Traffic signals are located on Horseshoe Bar Road at the I-80 westbound ramps intersection and Taylor Road. Traffic signals are located on King Road at Swetzer Road and Taylor Road. The remaining study intersections are stop-controlled.

AM and PM peak-hour intersection turning movement counts used in this analysis were obtained from StreetLight Data based on data from September and October, 2019, supplemented with other available historical traffic counts. As illustrated in Table 2-5, the stop-controlled intersections of Horseshoe Bar Road/I-80 Eastbound Ramps and Taylor Road/Webb Street fall below acceptable levels of service and meet traffic signal warrants for future signalization. The signalized intersection of Taylor Road/King Road falls below acceptable levels of service as well. The intersection of Horseshoe Bar Road/Horseshoe Bar Road currently meets signal warrants but operates at acceptable LOS C.

Table 2-4: Intersection Level of Service Definitions						
Level of Service	Type of Flow	Delay	Maneuverability	Stopped Delay/Vehicle (sec)		
				Signalized	Roundabout	Stop Control
A	Stable Flow	Very slight delay. Progression is very favorable, with most vehicles arriving during the green phase not stopping at all.	Turning movements are easily made, and nearly all drivers find freedom of operation.	≤ 10.0	≤ 10.0	≤ 10.0
B	Stable Flow	Good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.	Vehicle platoons are formed. Many drivers begin to feel somewhat restricted within groups of vehicles.	> 10 and ≤ 20.0	> 10 and ≤ 15.0	> 10 and ≤ 15.0
C	Stable Flow	Higher delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, although many still pass through the intersection without stopping.	Back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted.	> 20 and ≤ 35.0	> 15 and ≤ 25.0	> 15 and ≤ 25.0
D	Approaching Unstable Flow	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle	Maneuverability is severely limited during short periods due to temporary back-ups.	> 35 and ≤ 55.0	> 25 and ≤ 35.0	> 25 and ≤ 35.0

Table 2-4: Intersection Level of Service Definitions						
Level of Service	**Type of Flow**	**Delay**	**Maneuverability**	**Stopped Delay/Vehicle (sec)**		
				Signalized	**Roundabout**	**Stop Control**
		lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.				
E	Unstable Flow	Generally considered to be the limit of acceptable delay. Indicative of poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.	There are typically long queues of vehicles waiting upstream of the intersection.	> 55 and ≤ 80.0	> 35 and ≤ 50.0	> 35 and ≤ 50.0
F	Forced Flow	Generally considered to be unacceptable to most drivers. Often occurs with over saturation. May also occur at high volume-to-capacity ratios. There are many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors.	Jammed conditions. Back-ups from other locations restrict or prevent movement. Volumes may vary widely, depending principally on the downstream back-up conditions.	> 80.0	> 50.0	> 50.0

Table 2-5: Peak Hour Intersection Operations – Existing Conditions

#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour		PM Peak Hour		Warrant Met?[3]
				Delay	LOS	Delay	LOS	
1	Sierra College Boulevard/I-80 EB Ramps	Signal	C	17.3	B	19.6	B	-
2	Sierra College Boulevard/I-80 WB Ramps	Signal	C	15.3	B	23.6	C	-
3	Sierra College Boulevard/Granite Drive	Signal	C	22.8	C	25.9	C	-
4	Sierra College Boulevard/Brace Road	Signal	C	10.6	B	13.1	B	-
5	Sierra College Boulevard/Taylor Road	Signal	C	25.0	C	33.0	C	-
6	Horseshoe Bar Road/Horseshoe Bar Road	AWSC	C	15.5	C	21.2	C	Yes
7	Horseshoe Bar Road/I-80 EB Ramps	OWSC	C	**98.7**	**F**	**135.3**	**F**	Yes
8	Horseshoe Bar Road/I-80 WB	Signal	C	17.2	B	17.6	B	-
9	Horseshoe Bar Road/Library Drive	OWSC	C	24.7	C	21.0	C	No
10	Horseshoe Bar Road/Taylor Road	Signal	C	27.0	C	30.2	C	-
11	Taylor Road/Webb Street	TWSC	C	**22.0**	**C**	**26.5**	**D**	Yes
12	Taylor Road/King Road	Signal	C	**26.3**	**C**	**42.3**	**D**	-
13	King Road/Swetzer Road	Signal	C	5.7	A	7.9	A	-
14	King Road/Boyington Road	OWSC	C	15.9	C	11.2	B	No

Source: Wood Rodgers 2022

Notes:
1. AWSC = All Way Stop Control; TWSC = Two Way Stop Control; OWSC = One Way Stop Control
2. LOS= Delay based on worst minor street approach for TWSC intersections, average of all approaches for AWSC and Signal
3. Warrant= Based on California MUTCD Warrant 3
BOLD = Intersection LOS is currently worse than the Town's *target* LOS policy of LOS "C."

The remaining study intersections currently operates at LOS C or better during the AM and PM peak hours.

Field observations indicate that the Taylor Road/King Road intersection actually operates at LOS E or F during the peak 30 minutes in the morning when school is in session. To avoid this congested intersection, many motorists use Webb Street to travel between northwest Loomis and the Downtown area.

Although the Horseshoe Bar Road/Taylor Road intersection operates at LOS C or better during each peak hour, field observations indicated for a duration within the peak hours significant queuing does occur for the northbound right-turn vehicles (queues extended beyond Laird Street), eastbound through vehicles, and westbound left-turn vehicles (queues exceeded the available turn lane storage).

The presence of the Union Pacific Railroad tracks limits access between northwest Loomis and the Downtown area. At-grade crossings are currently provided at King Road, Webb Street, and Sierra College Boulevard. Union Pacific Railroad representatives and the Loomis Fire Protection District are concerned about the close spacing (about 1,000 feet) of the railroad crossings at Webb Street and King Road. Given that trains frequently exceed 1,000 feet in length, it is possible that a slow moving or stopped train could simultaneously block the Webb Street and King Road at-grade crossings. The primary connections between southeast Loomis and the Downtown area (i.e., across I-80) are Horseshoe Bar Road and Brace Road. These two roads have narrow travel lanes and little or no paved shoulders, which limits travel speeds for emergency vehicles.

Truck Routes

With the exception of Sierra College Boulevard and I-80, none of the roadways within Loomis are posted as truck routes. By observation, Sierra College Boulevard, Taylor Road, and Horseshoe Bar Road (north of I-80) carry the greatest volume of truck traffic in Loomis. King Road has “Not a Truck Route” signs, while Brace Road has signs indicating truck weight restrictions. Figure 2-4 illustrates the signed Truck Routes within Loomis.

Bus Service

Public bus service is provided to the Loomis area by Placer County Transit. The Taylor Road Shuttle (Route 50) interconnects Auburn, Newcastle, Penryn, Loomis, and Sierra College Boulevard in Rocklin. This route has stops within Loomis at Shawn Way, Walnut Street, Horseshoe Bar Road, King Road, and Del Oro High School. Service is provided on Monday through Saturday between 8:35 AM and 6:25 PM. The Taylor Road Shuttle only provides service to one Loomis stop on Saturdays, the King Road stop. Loomis is also served by the Placer Commuter Express (PCE), a weekday commuter bus service that transports riders from stops along the I-80 corridor to Downtown Sacramento. The PCE stops at the Loomis Bus Station near the Horseshoe Bar Road/Taylor Road intersection. This service operates between 5:20 AM and 7:50 AM in the mornings and between 4:17 PM and 7:17 PM in the evenings. Three PCE buses stop in Loomis during each service period. Dial-A-Ride (DAR) paratransit is also available in Loomis near I-80 and Taylor Road. Figure 2-5 illustrates the Placer County Transit routes within Loomis.

Bicycle/Pedestrian System

The Town of Loomis has assessed the 2010 Bicycle Transportation Plan and the 2010 Trails Master Plan in coordination with the goals and policies expressed in this document, as an effort to provide the long-term framework to improve and encourage the enhancement of the local and regional bikeway and pedestrian network.

The existing bicycle system consists of a series of Class I (Multi-Use Paths) and Class II (Bike Lanes). The bikeway classifications are described below:

> **Class I.** Typically known as multi-use bike paths, Class I facilities are multi-use facilities that provide a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.

Figure 2-4: Existing Truck Routes

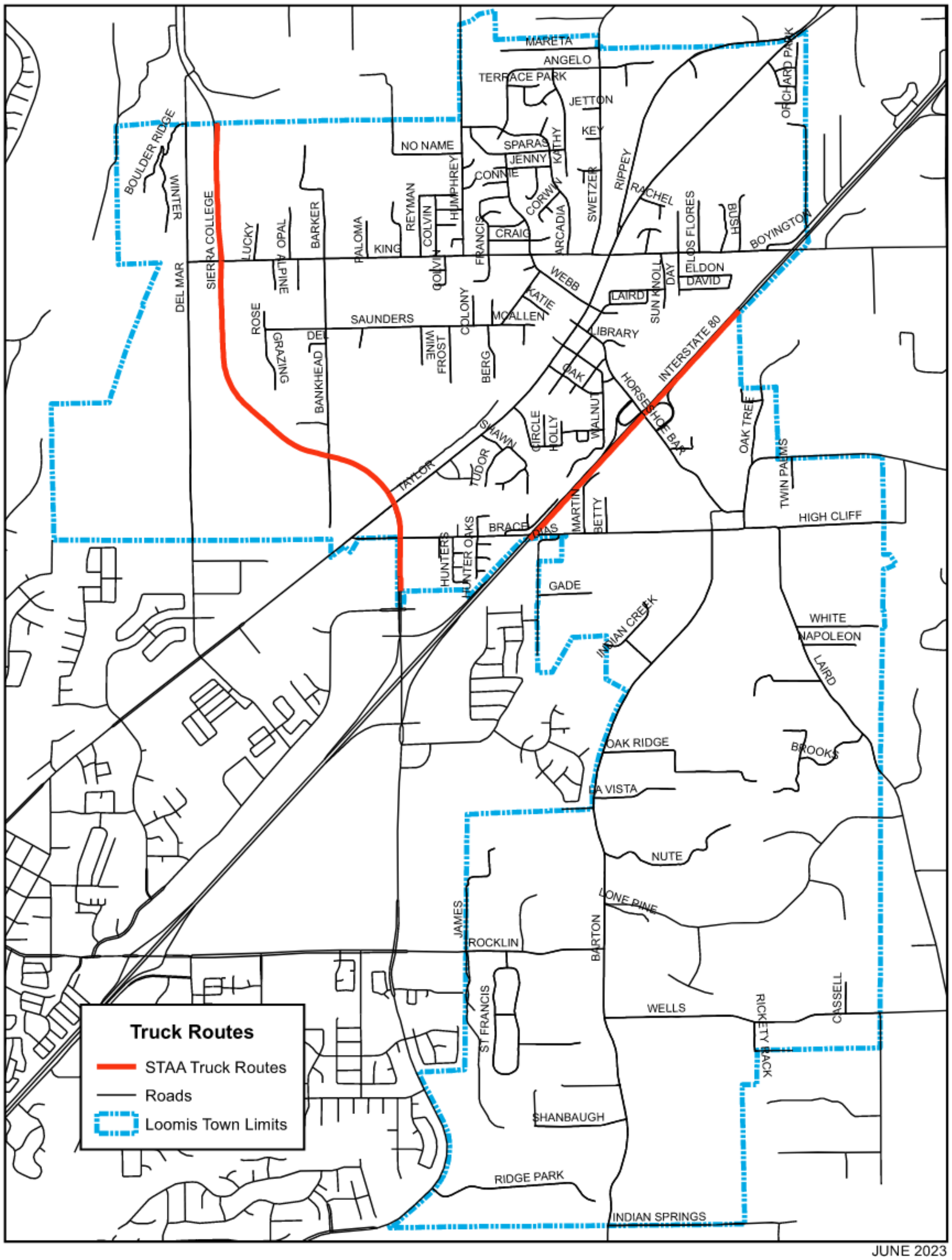
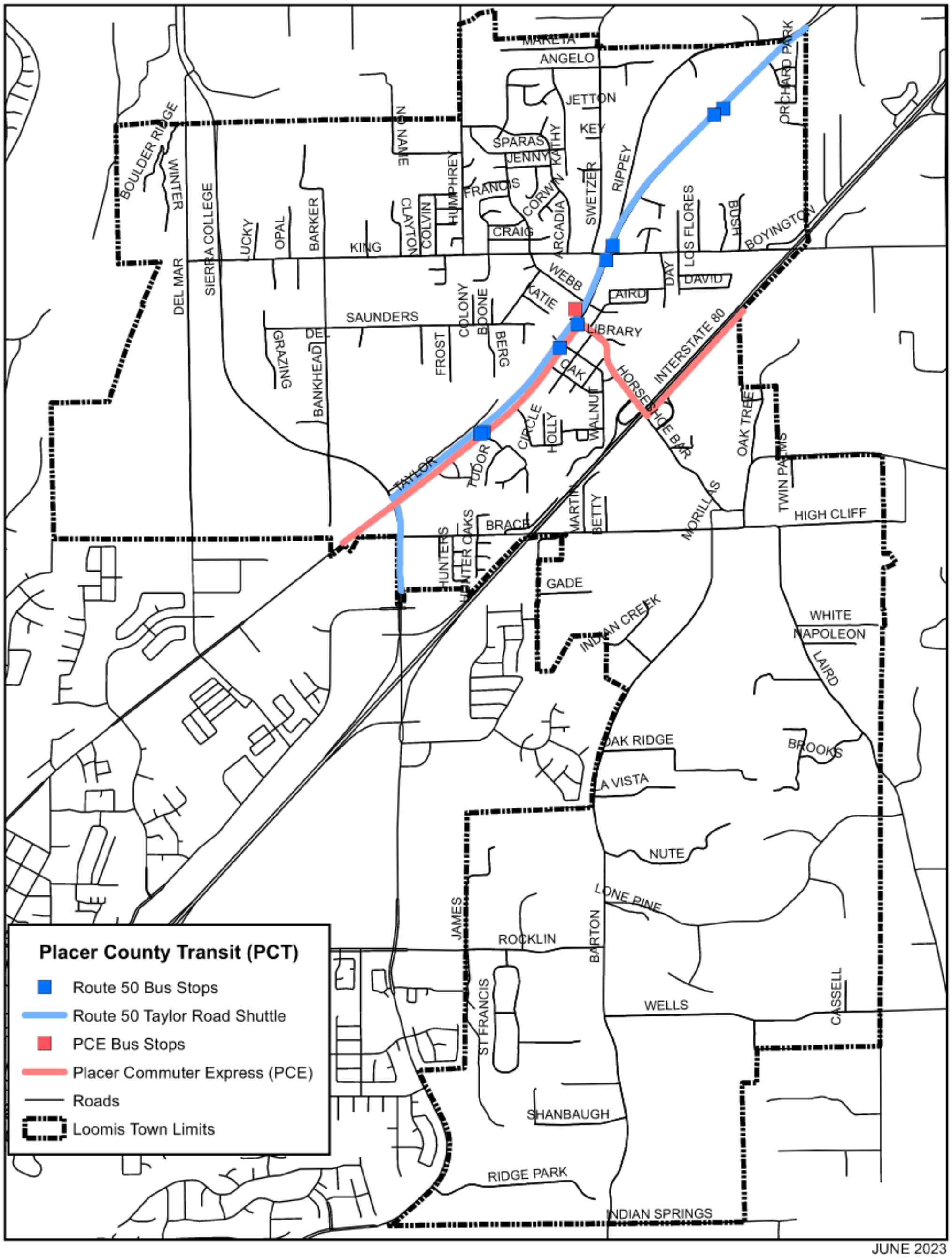


Figure 2-5: Existing Transit Routes



Class II. Known as bike lanes, Class II facilities provide a striped and signed lane for one-way bicycle travel on each side of a street or highway. The minimum width for bike lanes ranges between four and five feet depending upon the edge of roadway conditions (curbs). Bike lanes are demarcated by a six-inch white stripe, signage, and pavement legends.

Class III. Known as bike routes, Class III facilities provide signs for shared use with motor vehicles within the same travel lane on a street or highway. Bike routes may be enhanced with warning or guide signs and shared lane marking pavement stencils. While Class III routes do not provide measures of separation, they have an important function in providing continuity to the bikeway network.

A Class I bike path exists on the southeast side of Taylor Road between King Road and Del Oro High School. A Class I bike path exists on the northwest side of Taylor Road between Circle Drive and Sierra College Boulevard, but lacks proper connectivity to downtown Loomis. Several short portions of King Road near Bankhead Road and Humphrey Road north of King Road also feature a Class I bike path. Class II bike lanes are provided at the following locations:

- Sierra College Boulevard between Granite Drive and Northern Town Limits,
- Taylor Road between Southern Town Limits and Northern Town Limits (with some gaps),
- King Road between Sierra College Boulevard and I-80 (with some gaps), and
- Horseshoe Bar Road between I-80 Westbound Ramps and Library Drive.

The existing pedestrian facilities are irregularly located within Loomis. Sidewalks are partially provided on Sierra College Boulevard, King Road, Taylor Road, Horseshoe Bar Road, and Swetzer Road. Some of the sidewalks are old in design and do not meet current ADA standards. Crosswalks are provided at four signalized intersections and at a number of other unsignalized locations.

Figure 2-6 illustrates the existing bicycle facilities within Loomis. Town of Loomis Bikeway Master Plan and Town of Loomis Trails Master Plan are included at the end of this section as Figure 2-13 and Figure 2-14, respectively.

Rail Service

Existing train traffic through Loomis is the Union Pacific Railroad (UPRR), which has two tracks that run through Loomis; the one adjacent to Taylor Road is utilized by westbound trains, and the second is located close to Sierra College Boulevard and is utilized by eastbound trains. Currently, there are no passenger or freight rail transportation service stops located within Loomis.

Switching improvements may be made in the Loomis area so that passenger rail service will use the Taylor Road tracks for both directions of travel. The historic train station at the terminus of Horseshoe Bar Road is a possible location for future passenger service.

The existing Capitol Corridor train service is an intercity passenger train that provides service between San Jose and Auburn. Capitol Corridor has two stops in neighboring areas of Roseville, Rocklin, and Auburn. The existing Capitol Corridor train service stops east of Sacramento in the areas of Roseville, Rocklin, and Auburn with two trains per day. From Sacramento to San Jose, Capitol Corridor provides four trains per day. Expansion is possible and may be expanded to include Loomis and Newcastle. Figure 2-7 illustrates the railroads within Loomis.

Figure 2-6: Existing Bicycle Facilities

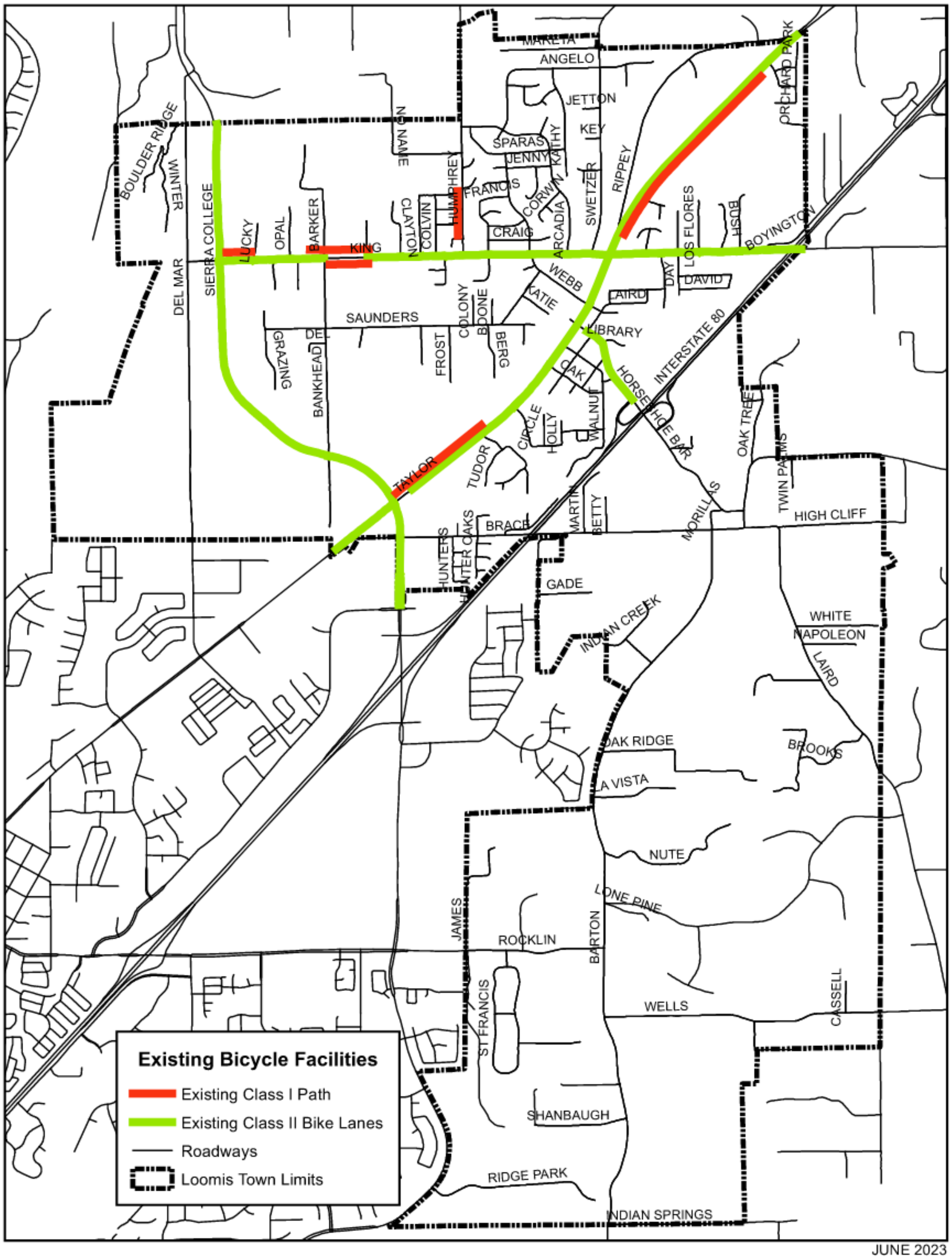
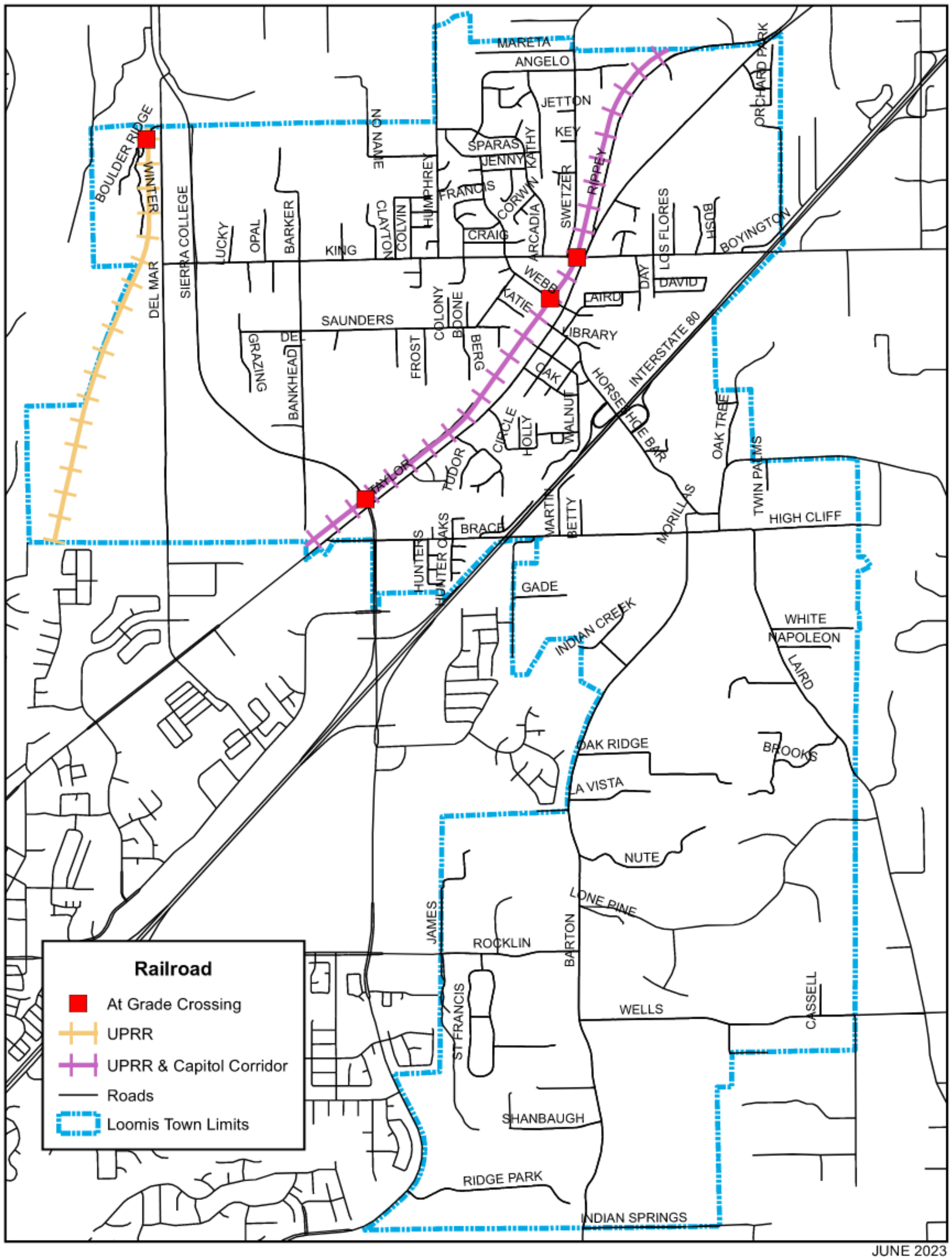


Figure 2-7: Existing Railroads



Existing Deficiencies

Existing deficiencies of the roadway, intersection, and bicycle/pedestrian systems are identified and displayed in Table 2-6. A review of the transit and rail systems did not reveal any existing deficiencies.

Table 2-6: Existing Deficiencies	
Roadway Facilities	**Description of Deficiency**
Horseshoe Bar Road between Taylor Road and I-80 Bridge	Existing traffic volumes are near the capacity of the road.
Horseshoe Bar Road south of I-80	Sharp curves and narrow travel lanes and shoulders results in difficult driving conditions.
Rocklin Road between James Drive and Barton Road	Existing traffic volumes are near the capacity of the road.
Taylor Road between Horseshoe Bar Road and King Road	Existing traffic volumes are near the capacity of the road.
Bankhead Road and Barton Road	Narrow travel lanes and shoulders results in difficult driving conditions.
Bankhead Road, Brace Road, Webb Street, Sierra College Boulevard north of King Road, and King Road west of Sierra College Boulevard	Poor pavement conditions, excessive travel speeds, and narrow travel lanes result in difficult driving conditions
Intersections	**Description of Deficiency**
Horseshoe Bar Road/I-80 EB Ramps	Significant delays and queuing occur on the westbound approach in the AM and PM peak hour. The high volumes on the off-ramp satisfy the peak-hour signal warrants.
Taylor Road/Webb Street	Significant delays occur on the westbound approach in the PM peak hour.
Taylor Road/King Road	Significant delay occurs on all approaches in the PM peak hour due to inefficient signal timing. Significant delays occur on some approaches in the AM peak when school is in session. Insufficient turn lane storage for multiple approaches.

Table 2-6: Existing Deficiencies	
Roadway Facilities	**Description of Deficiency**
Bicycle/Pedestrian System	**Description of Deficiency**
Taylor Road through the Downtown area	The Class I bike/pedestrian pathway from Sierra College Boulevard to Circle Drive lacks proper connectivity to Downtown Loomis and the multi-modal center.
Downtown area connectivity	There are multiple small gaps in the Class II bike lanes within and near the Downtown areas.
General bicycle facilities	The existing Class I multi-use paths in the Town generally do not meet standard design criteria. There are several short gaps in existing Class II bike lanes throughout the Town.

Source: Wood Rodgers 2021

Existing Vehicle Miles Traveled (VMT)

Vehicle Miles Traveled (VMT) generally refers to the amount and distance of automobile travel attributable to a geographic area. By definition, one VMT occurs when one vehicle is driven on a roadway for one mile. VMT is typically calculated for a given period of time, often a one-day period.

Senate Bill (SB) 743, signed in 2013, required changes to the California Environmental Quality Act (CEQA) Guidelines on the measurement and identification of transportation impacts due to new projects in California. Revised CEQA Guidelines were adopted in 2018 which stated that level of service can no longer be used to determine significant transportation impacts of projects under CEQA. The revised CEQA Guidelines identified VMT as the most appropriate metric to evaluate transportation impacts for most project types, including land use projects and plans. Statewide implementation of assessment of VMT as a metric of transportation impact occurred for all jurisdictions on July 1, 2020.

VMT has been estimated for the Town of Loomis under typical weekday conditions, consistent with industry standards. All VMT values estimated in this analysis represent the full length of a trip and are not truncated at jurisdiction boundaries. A custom scenario in the Sacramento Area Council of Governments' (SACOG) SACSIM19 travel demand model (TDM) was used to estimate VMT generated by

Town of Loomis land uses. VMT was calculated consistent with methodologies outlined on the SACOG SB 743 Technical Assistance website, and with recommendations in the Governor's Office of Planning and Research Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR Technical Advisory).

VMT is quantified in this analysis in terms of VMT efficiency metrics and total VMT. Efficiency metrics are generally expressed in terms of VMT generated by an area divided by the total population or number of employees in the area. This analysis uses the efficiency metrics of "VMT per capita" for residential Town land uses and "VMT per employee" for commercial/industrial/institutional Town land uses, consistent with recommendations in the OPR Technical Advisory and on the SACOG SB 743 Technical Assistance website.

VMT per capita is calculated as total residential VMT (i.e., trips made by residents to work, school, shopping or other destinations) of an area divided by total population of the area. VMT per employee is calculated as total work VMT (i.e., trips made by employees of an area for commuting or other work-related purposes) divided by total employees in the area. VMT efficiency metrics help measure travel efficiency, including whether people are traveling more or less by vehicle over time or across different planning scenarios. Total VMT is also provided in this analysis. Total VMT is calculated as the sum of all VMT (including all trip types and purposes) generated by an area (i.e., the sum of VMT from all vehicles traveling to or from an area).

Table 2-7 summarizes the existing VMT generated by Town of Loomis land uses. Each Loomis resident travels an average of 23.55 miles by vehicle every day. Each employee that works at a business in Loomis travels an average of 27.18 miles by vehicle every day for work related trips including commuting. Currently, the Town of Loomis generates approximately 357,829 vehicle-miles of travel every day throughout the region.

Table 2-7: Existing Daily VMT Generated by Town Land Uses

Metric	Existing VMT
VMT per Capita	23.55
VMT per Employee	27.18

Source: Wood Rodgers 2023

Future Conditions

This section provides an assessment of future transportation conditions assuming build-out of the General Plan and planned land uses in the surrounding areas through the year 2040. This "future baseline" condition establishes the need for the planned improvements identified in the subsequent sections.

A custom scenario in the SACSIM19 TDM was used to estimate future year 2040 travel conditions in and around the Town of Loomis. The custom scenario assumed land use growth in the Town of Loomis and surrounding areas based on the General Plan, reasonably foreseeable future developments, and SACOG population projections, among other sources.

In the following sections, Year 2040 Without Improvements conditions represent traffic conditions assuming build-out of the General Plan and surrounding area land uses through 2040 without construction of future improvements to the Town roadway network. Year 2040 With Improvements conditions represent traffic conditions assuming build-out of the General Plan and surrounding area land uses through 2040 with construction of planned future improvements to the Town roadway network.

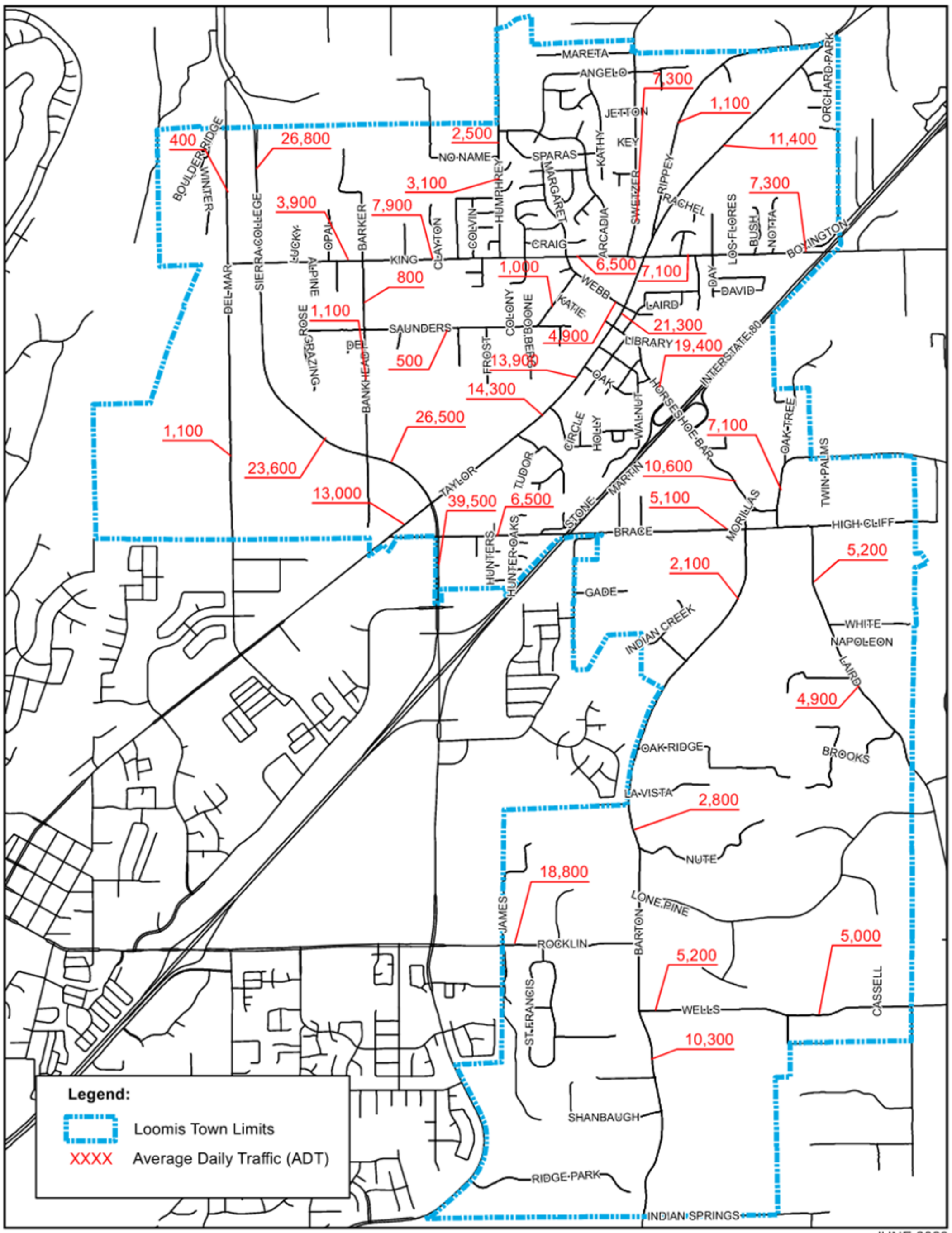
Future Travel Forecasts

Figure 2-8 and Figure 2-9 show the average daily travel demands for Year 2040 Without Improvements and Year 2040 With Improvements conditions, respectively. Average daily travel demands are anticipated to change under the "With Improvements" scenario due to the proposed roadway extensions and freeway ramps that would change traffic patterns in the Town. Sierra College Boulevard is projected to carry up to 26,800 vehicles per day near the northern Town limits and up to 39,900 vehicles per day near the southern Town limits. This is an approximate two-fold increase over existing traffic, largely due to planned developments in the communities surrounding the Town. Without improvements, traffic volumes on Taylor Road will range from approximately 11,400 vehicles per day near the northern Town limits to approximately 21,300 vehicles per day through the Downtown area. With improvements, including the proposed Swetzer Road Extension and Boyington Road Extension which would run parallel to Taylor Road, traffic volumes on Taylor Road would range from approximately 11,200 vehicles per day near the northern Town limits to approximately 9,800 vehicles per day through the downtown area.

Table 2-8 summarizes the daily volume-to-capacity ratio for select major Town roadways under Year 2040 With and Without Improvements conditions. Existing conditions daily volume-to-capacity ratio is also shown for comparison. Table 2-8 shows that without improvements, projected volumes will be at or above roadway capacity on one segment of Horseshoe Bar Road, one segment of Rocklin Road, four segments of Sierra College Boulevard, and two segments of Taylor Road. With improvements in place, projected volumes will generally be below roadway capacity, but one segment each of Horseshoe Bar Road, Sierra College Boulevard, and Taylor Road are projected to operate at LOS D which is below than the Town's target of LOS C.

Table 2-9 summarizes the AM and PM peak hour level of service for select major Town intersections under Year 2040 conditions with and without Improvements. Existing conditions peak hour level of service is also shown for comparison. Table 2-9 shows that without improvements, eight Town intersections are projected to operate below the Town's target of LOS C. With improvements in place, three Town intersections are projected to operate at LOS D which is below the Town's target of LOS C.

Figure 2-8: Future (2040) Average Daily Traffic Without Improvements



JUNE 2023

Figure 2-9: Future (2040) Average Daily Traffic With Improvements

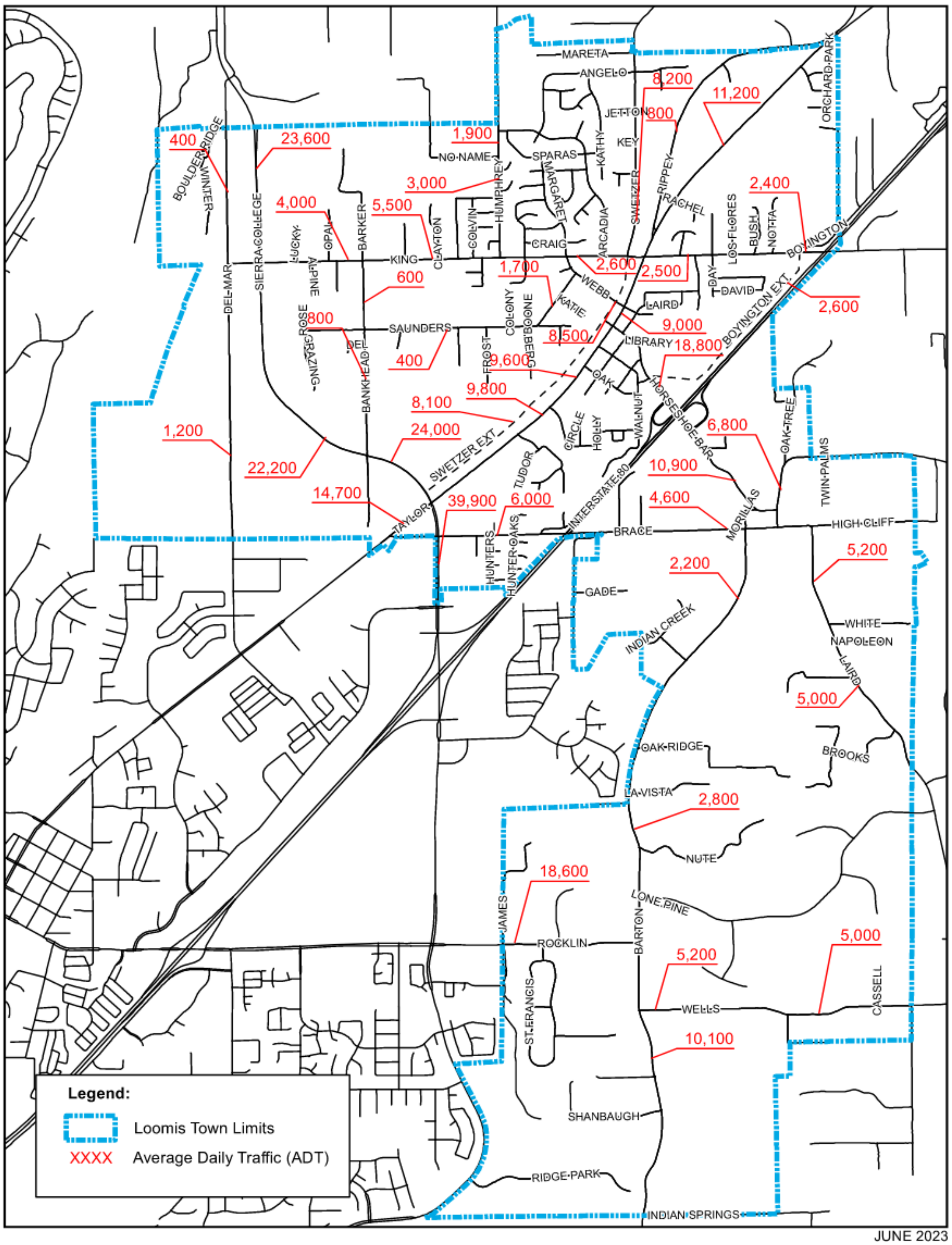


Table 2-8: Roadway Segment Operations – Existing and Future Baseline Conditions															
				Existing Conditions			Year 2040 – Without Improvements			Year 2040 – With Improvements					
Street	Roadway Segment	Roadway Classifica-tion	# of Lanes	Average Daily Traffic	Average Daily Traffic	Daily v/c Ratio*	Average Daily Traffic	Daily v/c Ratio*	LOS	Roadway Classifica-tion	# of Lanes	Average Daily Traffic	Daily v/c Ratio*	LOS
Bankhead Rd	King Rd to Saunders Ave	R	2	409	0.09	**A**	801	0.18	B	R	2	601	0.13	B
	Saunders Ave to Sierra College Blvd	R	2	673	0.15	**B**	1,088	0.24	B	R	2	816	0.18	B
Barton Rd	Brace Rd to Gold Trail Way	AL 2	2	1,935	0.13	A	2,149	0.14	A	AL 2	2	2,212	0.15	A
	Gold Tail Way to Rocklin Rd	AL 2	2	2,500	0.17	A	2,776	0.19		AL 2	2	2,824	0.19	A
	Rocklin Rd to Indian Springs Rd	AL 2	2	7,952	0.53	**A**	10,251	0.68	B	AL 2	2	10,100	0.67	B
Brace Rd	Sierra College Blvd to I-80 Bridge	AL 2	2	4,521	0.30	**A**	6,452	0.43	A	AL 2	2	5,972	0.40	A
	I-80 Bridge to Laird Rd	AL 2	2	3,555	0.24	A	5,073	0.34	A	AL 2	2	4,593	0.31	A
Del Mar Ave	King Rd to N. Town Limit	R	2	212	0.05	A	430	0.10	A	R	2	371	0.08	A
	S. Town Limit to King Rd	R	2	719	0.16	B	1,075	0.24	B	R	2	1,152	0.26	B

Table 2-8: Roadway Segment Operations – Existing and Future Baseline Conditions														
				Existing Conditions			Year 2040 – Without Improvements			Year 2040 – With Improvements				
Street	Roadway Segment	Roadway Classification	# of Lanes	Average Daily Traffic	Average Daily Traffic	Daily v/c Ratio*	Average Daily Traffic	Daily v/c Ratio*	LOS	Roadway Classification	# of Lanes	Average Daily Traffic	Daily v/c Ratio*	LOS
Horseshoe Bar Rd	Taylor Rd to I-80 Bridge	AL 2	2	**16,536**	**1.10**	**E**	**19,388**	**1.29**	**F**	AMR 2	2	**18,825**	**0.84**	**D**
	I-80 Bridge to Horseshoe Bar Rd	AL 2	2	9,578	0.64	A	10,636	0.71	C	AL 4	4	10,940	0.36	A
	Brace Rd to N. Town Limit	AL 2	2	6,427	0.43	A	7,137	0.48	A	AL 2	2	6,830	0.46	A
Humphrey Rd	Arcadia Ave to N. Town Limit	AL 2	2	1,232	0.08	A	2,516	0.17	A	AL 2	2	1,888	0.13	A
	King Rd to Arcadia Ave	AL 2	2	2,721	0.18	A	3,078	0.21	A	AL 2	2	3,033	0.20	A
King Rd	Del Mar Ave to Bankhead Rd	AL 2	2	2,988	0.20	A	3,917	0.26	A	AL 2	2	4,007	0.27	A
	Bankhead Rd to Humphrey Rd	AL 2	2	3,188	0.21	A	7,948	0.53	A	AL 2	2	5,487	0.37	A
	Humphrey Rd to Taylor Rd	AL 2	2	5,521	0.37	A	6,479	0.43	A	AL 2	2	2,642	0.18	A
	Taylor Rd to Bush Ln	AL 2	2	5,629	0.38	A	7,132	0.48	A	AL 2	2	2,536	0.17	A
	Bush Ln to I-80 Bridge	AL 2	2	5,684	0.38	A	7,328	0.49	A	AL 2	2	2,426	0.16	A

Table 2-8: Roadway Segment Operations – Existing and Future Baseline Conditions														
				Existing Conditions			Year 2040 – Without Improvements			Year 2040 – With Improvements				
Street	Roadway Segment	Roadway Classifica-tion	# of Lanes	Average Daily Traffic	Average Daily Traffic	Daily v/c Ratio*	Average Daily Traffic	Daily v/c Ratio*	LOS	Roadway Classifica-tion	# of Lanes	Average Daily Traffic	Daily v/c Ratio*	LOS
Laird Rd	Brace Rd to White Ln	RC	2	4,673	0.52	B	5,189	0.58	C	RC	2	5,245	0.58	C
	White Ln to S. Town Limit	RC	2	4,412	0.49	B	4,899	0.54	B	RC	2	4,956	0.55	B
Rippey Rd	Taylor Rd to N. Town Limit	AL 2	2	802	0.05	A	1,079	0.07	A	AL 2	2	809	0.05	A
Rocklin Rd	James Dr to Barton Rd	AL 2	2	**13,479**	**0.90**	**C**	**18,838**	**1.26**	**F**	AL 4	4	18,632	0.62	B
Saunders Ave	Bankhead Rd to McAllen Ln	R	2	378	0.08	A	526	0.12	A	R	2	395	0.09	A
	McAllen Ln to Webb St	R	2	919	0.20	B	1,020	0.23	B	R	2	1,702	0.38	C
Sierra College Blvd	N. Town Limit to King Rd	AM 2	2	12,179	0.68	**B**	**26,845**	**1.49**	**F**	AM 4	4	23,648	0.66	B
	King Rd to Bankhead Rd	AM 2	2	11,372	0.63	**A**	**23,556**	**1.31**	**F**	AM 4	4	22,165	0.62	B
	Bankhead Rd to Brace Rd	AM 2	2	12,955	0.72	**B**	**26,548**	**1.47**	**F**	AM 4	4	24,033	0.67	B
	Brace Rd to N. Granite Dr	AL 4	4	22,010	0.73	**B**	**39,465**	**1.32**	**F**	AL 6	6	**39,897**	**0.89**	**D**

Table 2-8: Roadway Segment Operations – Existing and Future Baseline Conditions															
				Existing Conditions			Year 2040 – Without Improvements			Year 2040 – With Improvements					
Street	**Roadway Segment**	**Roadway Classification**	**# of Lanes**	**Average Daily Traffic**	**Average Daily Traffic**	**Daily v/c Ratio***	**Average Daily Traffic**	**Daily v/c Ratio***	**LOS**	**Roadway Classification**	**# of Lanes**	**Average Daily Traffic**	**Daily v/c Ratio***	**LOS**
Swetzer Rd	King Rd to N. Town Limit	AL 2	2	6,261	0.42	A	7,291	0.49	A	AL 2	2	8,230	0.55	A
Taylor Rd	S. Town Limit to Sierra College Blvd	AM 2	2	11,463	0.64	**B**	12,993	0.72	C	AM 2	2	**14,716**	**0.82**	**D**
	Sierra College Blvd to Circle Dr	AM 2	2	11,045	0.61	**A**	14,326	0.80	C	AM 2	2	9,843	0.55	A
	Circle Dr to Horseshoe Bar Rd	AL 2	2	10,775	0.72	**B**	**13,908**	**0.93**	**E**	AL 2	2	9,610	0.64	B
	Horseshoe Bar Rd to King Rd	AL 2	2	**18,753**	**1.25**	**F**	**21,253**	**1.42**	**F**	AL 2	2	9,031	0.60	B
	King Rd to N. Town Limit	AM 2	2	8,881	0.49	A	11,404	0.63	A	AM 2	2	11,239	0.62	B
Webb St	King Rd to Taylor Rd	AL 2	2	4,121	0.27	A	4,879	0.33	A	AL 2	2	8,492	0.57	A
Wells Ave	Barton Rd to Rickety Rack Rd	RC	2	3,497	0.39	A	5,220	0.58	C	RC	2	5,202	0.58	C
	Rickety Rack Rd to Morgan Place	RC	2	3,372	0.37	A	5,037	0.56	C	RC	2	5,003	0.56	C

Source: Wood Rodgers 2023

Table 2-8: Roadway Segment Operations – Existing and Future Baseline Conditions

				Existing Conditions			Year 2040 – Without Improvements			Year 2040 – With Improvements				
Street	Roadway Segment	Roadway Classifica-tion	# of Lanes	Average Daily Traffic	Average Daily Traffic	Daily v/c Ratio*	Average Daily Traffic	Daily v/c Ratio*	LOS	Roadway Classifica-tion	# of Lanes	Average Daily Traffic	Daily v/c Ratio*	LOS

*Volume to capacity ratio is the volume of current traffic in relation to the maximum amount of traffic the roadway can safely accommodate. “OC” means Over Capacity.

Table 2-9: Peak-Hour Intersection Operations – Future Conditions										
#	Intersection	Control Type[1,2]	Target LOS	Peak Hour	Existing Conditions		Year 2040 – Without Improvements		Year 2040 – With Improvements	
					Delay[2]	LOS	Delay[2]	LOS	Delay[2]	LOS
1	Sierra College Boulevard/I-80 EB Ramps	Signal	C	AM	17.3	B	24.4	C	29.4	C
				PM	19.6	B	23.0	C	34.6	C
2	Sierra College Boulevard/I-80 WB Ramps	Signal	C	AM	15.3	B	24.5	C	20.7	C
				PM	23.6	C	**53.7**	**D**	**51.5**	**D**
3	Sierra College Boulevard/Granite Drive	Signal	C	AM	22.8	C	**41.5**	**D**	**40.3**	**D**
				PM	25.9	C	**38.8**	**D**	**38.5**	**D**
4	Sierra College Boulevard/Brace Road	Signal	C	AM	10.6	B	13.7	B	13.7	B
				PM	13.1	B	**47.4**	**D**	11.7	B
5	Sierra College Boulevard/Taylor Road	Signal	C	AM	25.0	C	**146.4**	**F**	**39.7**	**D**
				PM	33.0	C	**114.4**	**F**	33.5	C
6	Horseshoe Bar Road/Horseshoe Bar Road	AWSC (Rndbt)[3]	C	AM	15.5	C	19.2	C	6.9	A
				PM	21.2	C	**27.9**	**D**	8.0	A
7	Horseshoe Bar Road/I-80 EB Ramps	OWSC (Signal)[3]	C	AM	**98.7**	**F**	**214.2**	**F**	23.6	C
				PM	**135.3**	**F**	**278.7**	**F**	29.1	C
8	Horseshoe Bar Road/I-80 WB Ramps	Signal	C	AM	17.2	B	18.2	B	31.2	C
				PM	17.6	B	18.5	B	27.7	C
9	Horseshoe Bar Road/Library Drive		C	AM	24.7	C	**205.6**	**F**	7.1	A

Table 2-9: Peak-Hour Intersection Operations – Future Conditions

#	Intersection	Control Type[1,2]	Target LOS	Peak Hour	Existing Conditions		Year 2040 – Without Improvements		Year 2040 – With Improvements	
					Delay[2]	LOS	Delay[2]	LOS	Delay[2]	LOS
		OWSC (Signal)[3]		PM	21.0	C	**287.7**	**F**	6.3	A
10	Horseshoe Bar Road/Taylor Road	Signal	C	AM	27.0	C	**35.5**	**D**	34.8	C
				PM	30.2	C	**54.2**	**D**	32.0	C
11	Taylor Road/Webb Street	TWSC	C	AM	22.0	C	**36.4**	**E**	13.1	B
				PM	**26.5**	**D**	**4670.7**	**F**	**27.2**	**D**
12	Taylor Road/King Road	Signal	C	AM	26.3	C	31.4	C	**45.9**	**D**
				PM	**42.3**	**D**	**53.1**	**D**	32.6	C
13	King Road/Swetzer Road[4]	Signal	C	AM	5.7	A	6.6	A	23.2	C
				PM	7.9	A	9.0	A	32.5	C
14	King Road/Boyington Road[5]	OWSC (Signal)[3]	C	AM	22.1	C	20.3	C	16.0	B
				PM	15.9	B	11.2	C	22.0	C

Source: Wood Rodgers 2023

Notes:

1. "Existing (Improved)" control types are shown. AWSC = All Way Stop Control; TWSC = Two Way Stop Control; OWSC = One Way Stop Control; Rndbt = Roundabout
2. LOS = Delay based on worst minor street approach for TWSC and OWSC intersections, average of all approaches for AWSC, Signal, and Rndbt.
3. Proposed control type under "With Improvements" conditions.
4. Assumes a new south leg is constructed under "With Improvements" conditions for the Swetzer Road Extension.
5. Assumes a new south leg is constructed under "With Improvements" conditions for the Boyington Road Extension.

BOLD = Intersection LOS is projected to be worse than the Town's target LOS policy of LOS "C".

Future Deficiencies

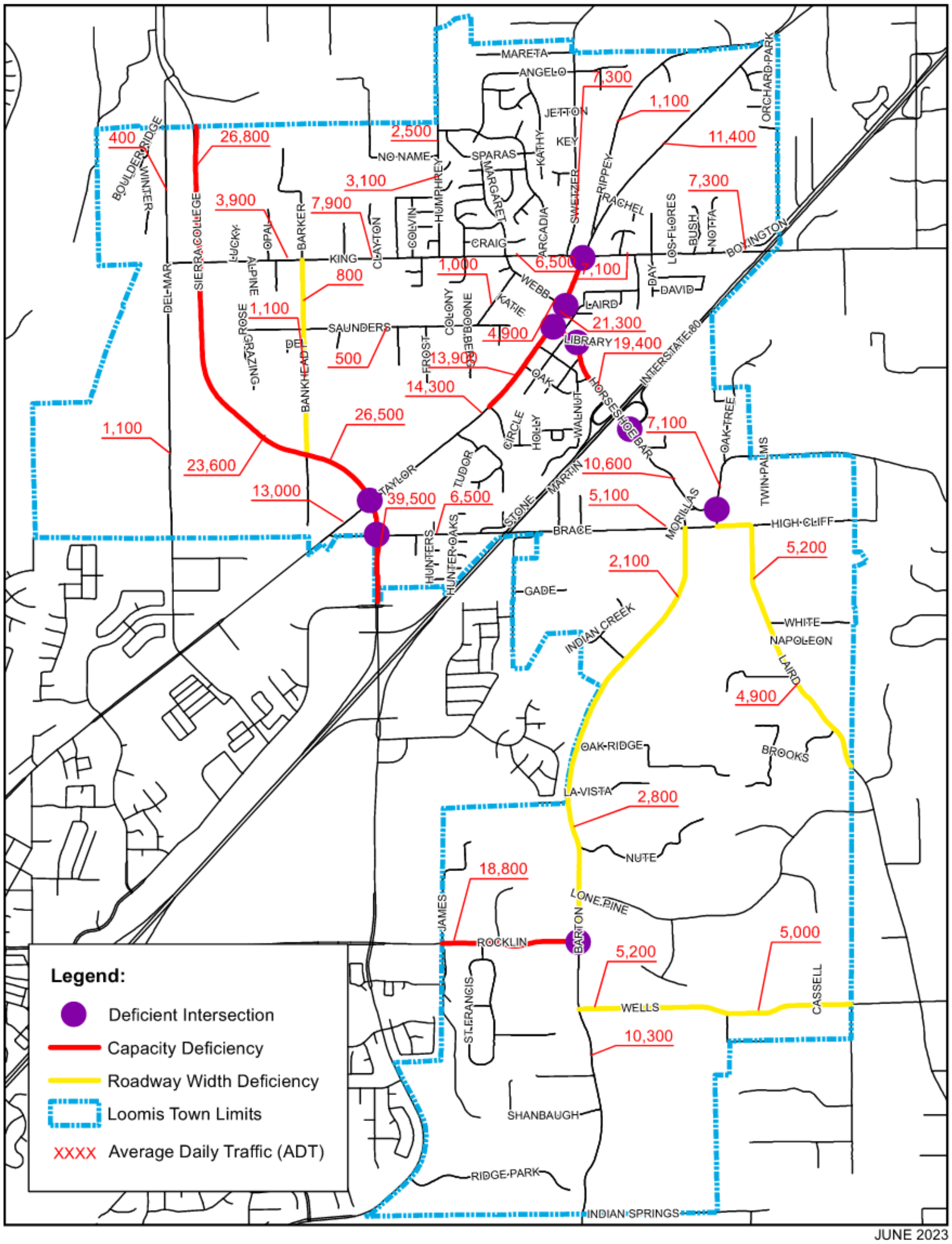
Future deficiencies of the roadway, bicycle, and pedestrian systems are identified and displayed in Table 2-10 under Year 2040 Without Improvements conditions. A review of the transit and rail systems did not reveal any future deficiencies. Figure 2-10 also presents the future deficiencies under Year 2040 Without Improvements conditions.

Table 2-10: Future Deficiencies - Year 2040 Without Improvements	
Roadway Facilities	**Description of Deficiency**
Horseshoe Bar Road, Taylor Road, Sierra College Boulevard, and Rocklin Road	Projected traffic volumes will exceed the capacity of these roadways in some or all sections.
Horseshoe Bar Road between Taylor Road and I-80 Bridge	Lack of turning lanes and sidewalks will become more problematic with increases in traffic volumes.
Bankhead Road, Brace Road, and Barton Road	Narrow travel lanes and little or no paved shoulders will result in difficult driving conditions with increased traffic volumes.
Taylor Road between southern Town limits and King Road	Lack of turning lanes and sidewalks will become more problematic with increases in traffic volumes.
Horseshoe Bar Road south of I-80	Sharp curves and narrow travel lanes and shoulders result in difficult driving conditions.
Bankhead Road, Barton Road, Laird Road, and Wells Ave	Narrow travel lanes and shoulders result in difficult driving conditions.
Intersections	**Description of Deficiency**
Sierra College Boulevard/ Brace Road	LOS D operations during PM peak hour conditions due to increased traffic volumes and associated delays.
Sierra College Boulevard/ Taylor Road	LOS F operations during AM and PM peak hour conditions due to increased traffic volumes and associated delays.
Horseshoe Bar Road/ Horseshoe Bar Road	LOS D operations during PM peak hour conditions due to increased traffic volumes and associated delays.

Table 2-10: Future Deficiencies - Year 2040 Without Improvements	
Roadway Facilities	**Description of Deficiency**
Horseshoe Bar Road/ I-80 EB Ramps	LOS F operations during AM and PM peak hour conditions due to increased traffic volumes and associated delays.
Horseshoe Bar Road/Library Drive	LOS F operations during AM and PM peak hour conditions due to increased traffic volumes and associated delays.
Taylor Road/Horseshoe Bar Road	LOS D operations during AM and PM peak hour conditions due to increased traffic volumes and associated delays.
Taylor Road/Webb Street	LOS E operations during the AM peak hour and LOS F during PM peak hour conditions due to increased traffic volumes and associated delays.
Taylor /King Road	LOS D operations during PM peak hour conditions due to increased traffic volumes and associated delays.
Bicycle/Pedestrian System	**Description of Deficiency**
General Bicycle Facilities	Bicycle facilities are sparse throughout the town, and increased population and use of bicycles will create the need for additional facilities. The Class I multi-use paths in the Town generally do not meet standard design criteria. There are several short gaps in existing Class II bike lanes throughout the Town.
Taylor Road, Sierra College Boulevard, King Road, Brace Road	Sidewalks are discontinuous throughout these roadways.

Source: Wood Rodgers 2023

Figure 2-10: Future (2040) Deficiencies Without Improvements



Future Vehicle Miles Traveled (VMT)

Table 2-11 summarizes the VMT projected to be generated by Town of Loomis land uses under future year 2040 conditions. Loomis residents are projected to travel approximately 8.2 percent less miles by vehicle each day compared to existing conditions. Loomis employees are projected to travel approximately 14.2 percent less miles by vehicle each day compared to existing conditions. Overall, Town of Loomis land uses are projected to generate approximately 31.1 percent more vehicle-miles of travel per day compared to existing conditions. Generally, this illustrates that the Town is projected to generate more total vehicle-miles of travel over time due to future residential and commercial development. However, vehicle travel is projected to become more efficient over time as more destinations are created closer to Town residents, future businesses are constructed in travel efficient locations, and more multimodal travel options become available, resulting in fewer and shorter vehicles trips per person.

Table 2-11: Existing Daily VMT Generated by Town Land Uses

Metric	Existing VMT	Year 2040 VMT	Percent Change
VMT per Capita	23.55	21.61	-8.2 percent
VMT per Employee	27.18	23.31	-14.2 percent
Total VMT	357,829	469,076	+31.1 percent

Source: Wood Rodgers 2023

Transportation System Improvements

This section presents planned capital improvements to the transportation system for the Town of Loomis. The transportation improvements are intended to support build-out of the General Plan. The planned transportation system will need to be phased as the needs occur and funding is available. The planned circulation improvements listed in this section are intended to support future build-out conditions.

Roadway Network

Improvements to the roadway network are intended to address several future problems:

- Insufficient capacity at several locations to support build-out of the Town and growth in the surrounding communities;
- Excess "through" traffic and trucks along Taylor Road through Downtown;
- A desire to create a more pedestrian-friendly environment in Downtown; and
- Safety issues related to vehicular traffic.

The primary elements of the planned transportation system are outlined in this section. Figure 2-11 illustrates the planned roadway network. Figures 2-12 through 2-19 illustrate the Roadway Cross-Sections for the Town. Figure 2-20 and 2-21 illustrate the Town's most recent Bikeway Master Plan and Trails Master Plan for future Town bicycle and recreational facilities, respectively. The 2010 Bikeway Master Plan was updated to reflect latest existing and planned Town bicycle facilities.

Figure 2-11: Planned Roadway Network

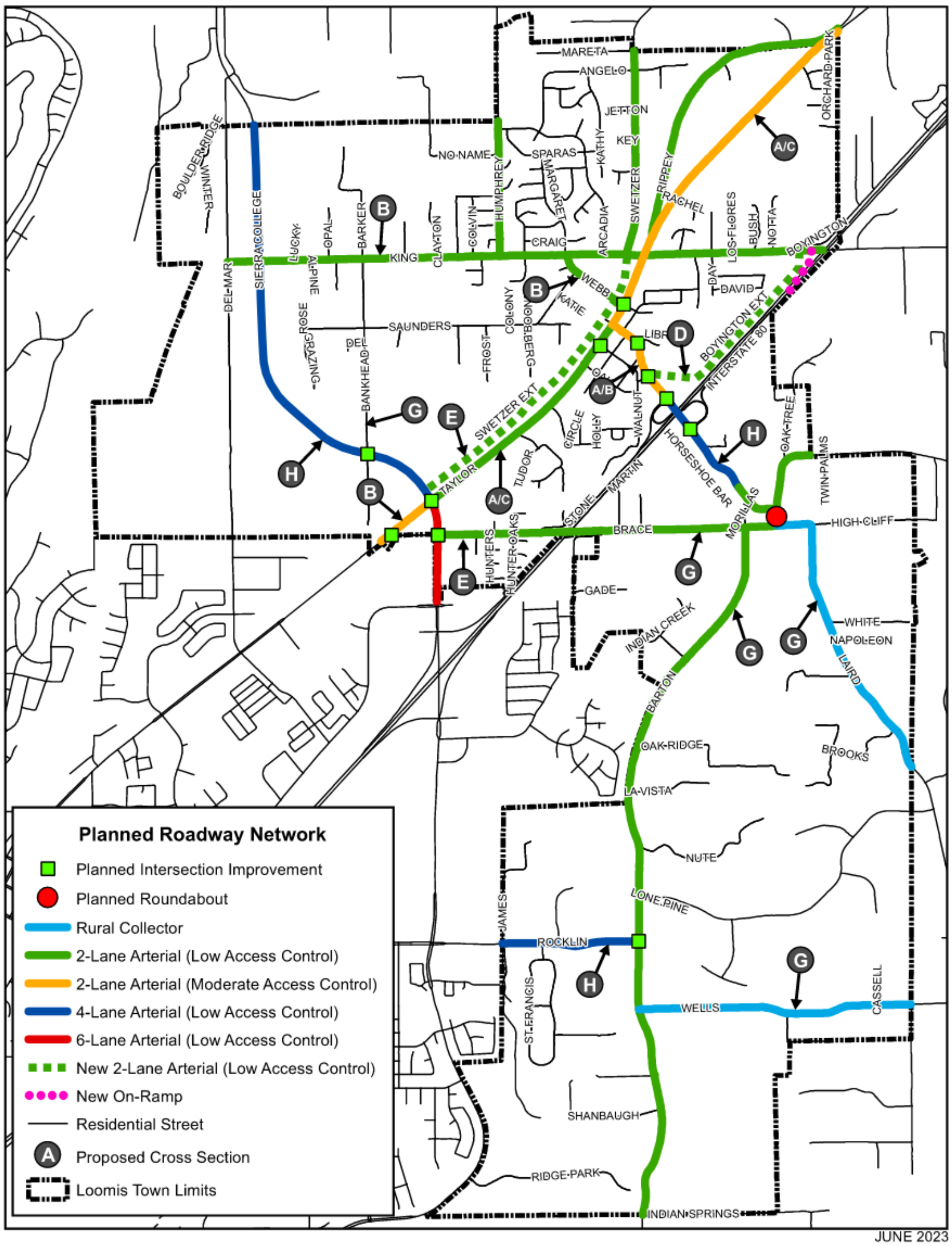


Figure 2-12: Roadway Cross-Sections (A)

Figure 2-13: Roadway Cross-Sections (B)

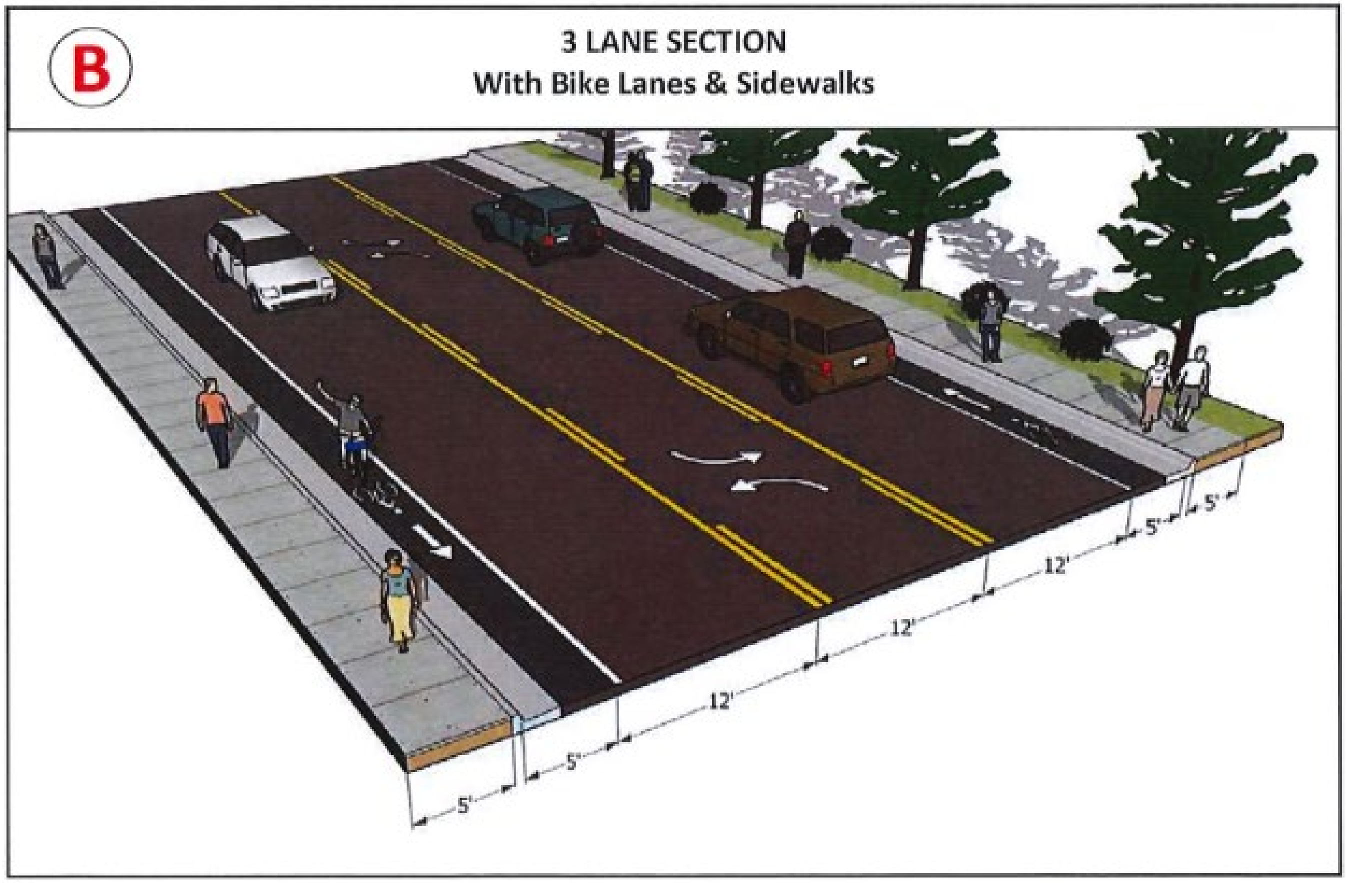


Figure 2-14: Roadway Cross-Sections (C)

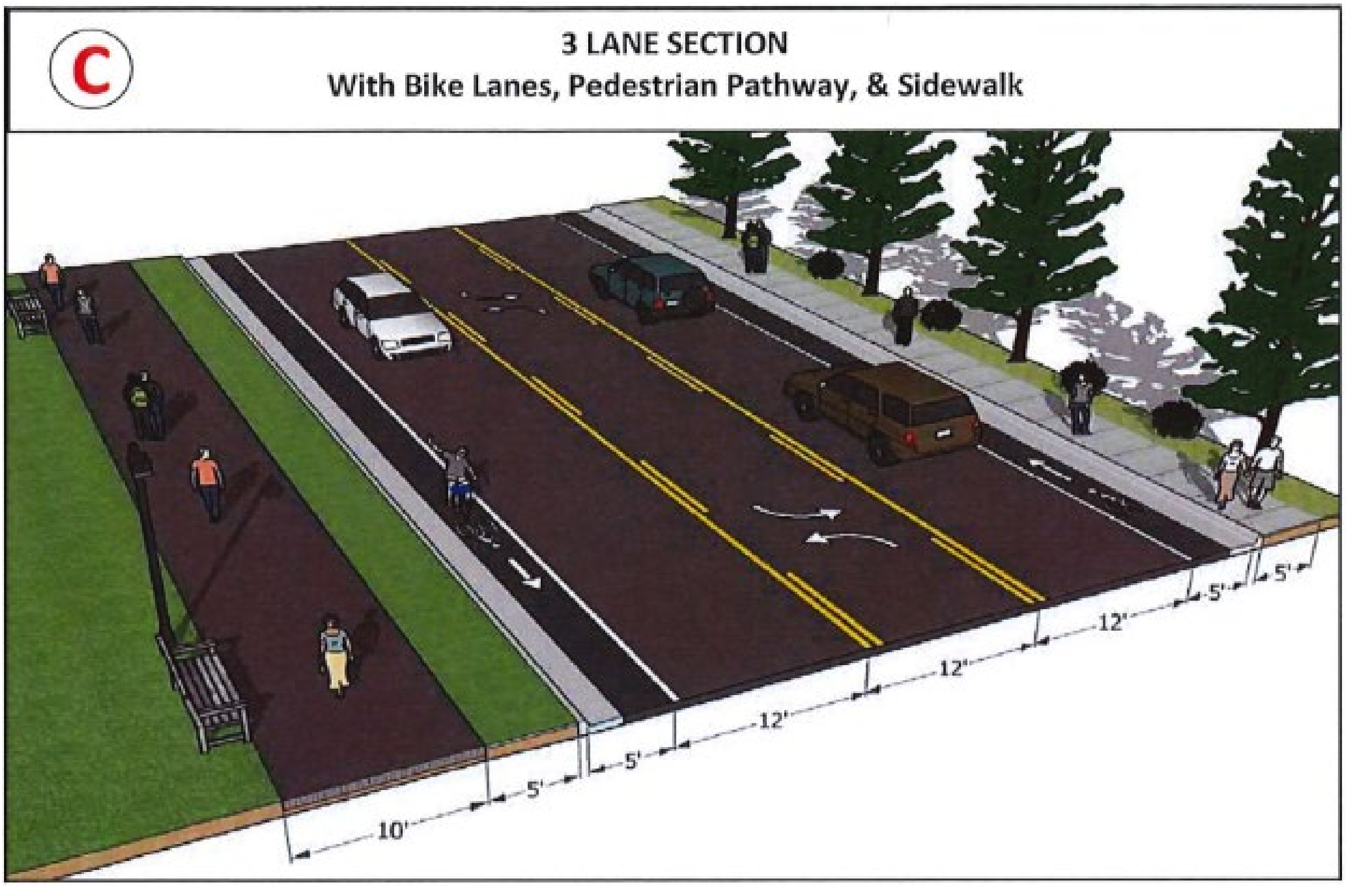


Figure 2-15: Roadway Cross-Sections (D)

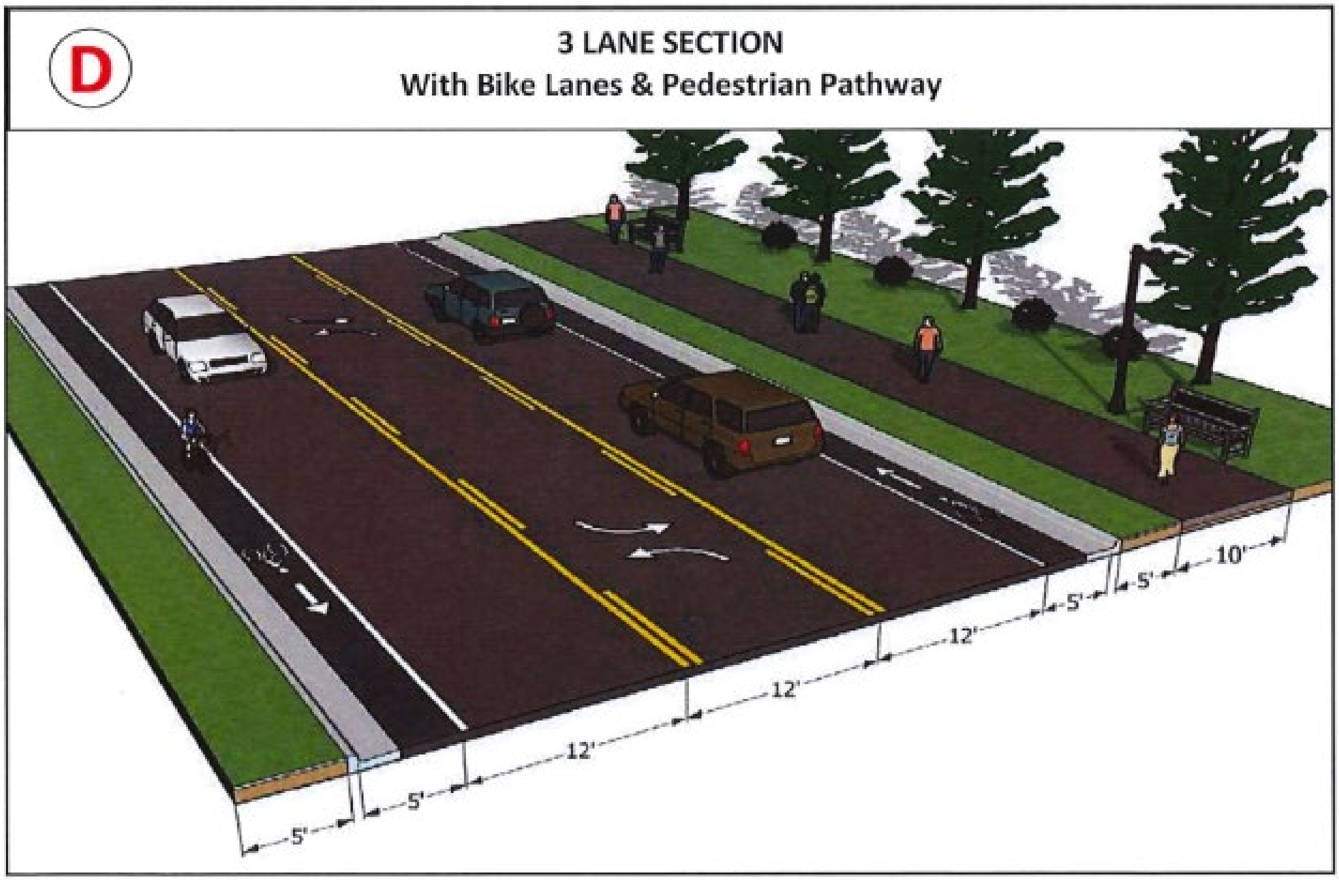


Figure 2-16: Roadway Cross-Sections (E)

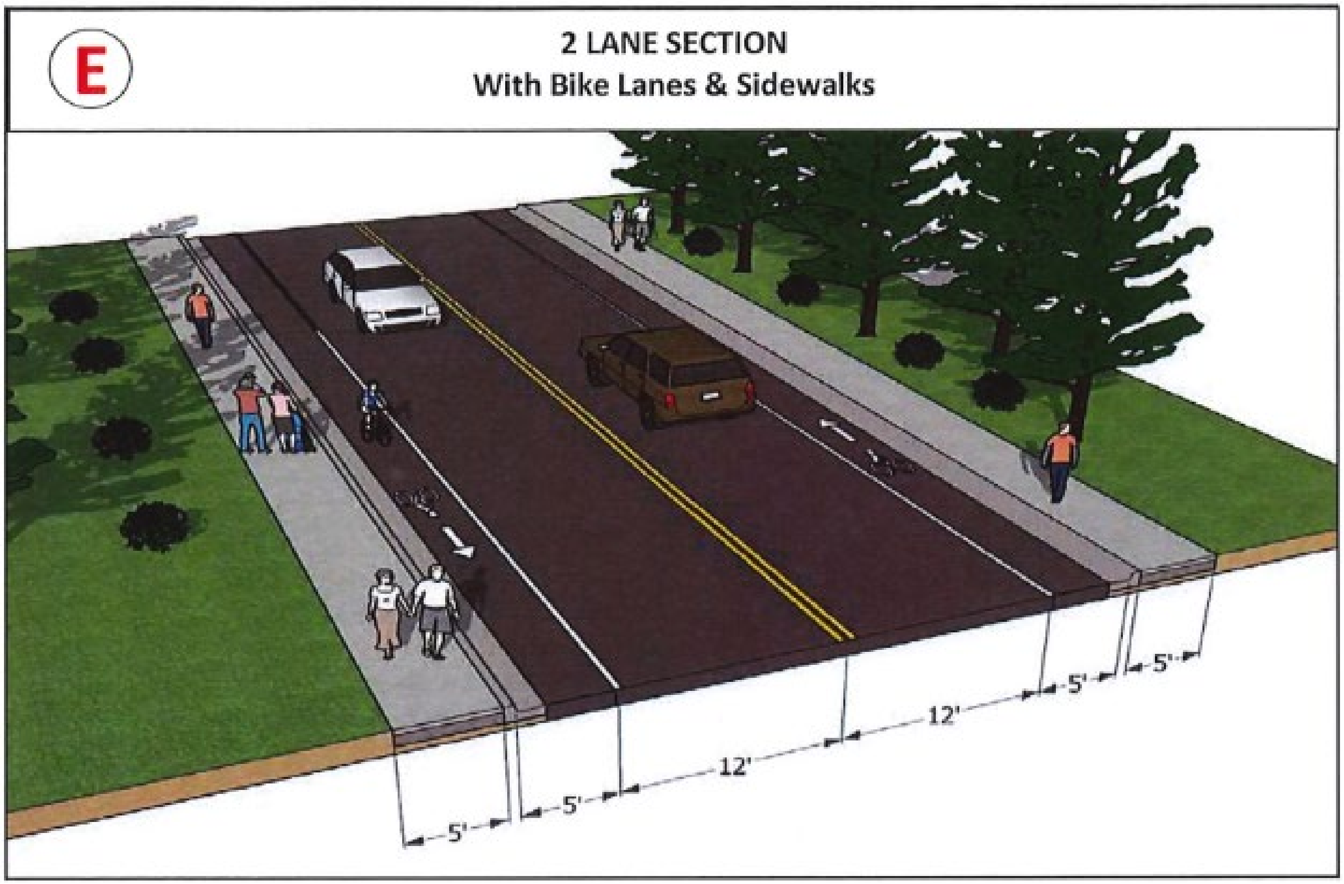


Figure 2-17: Roadway Cross-Sections (F)

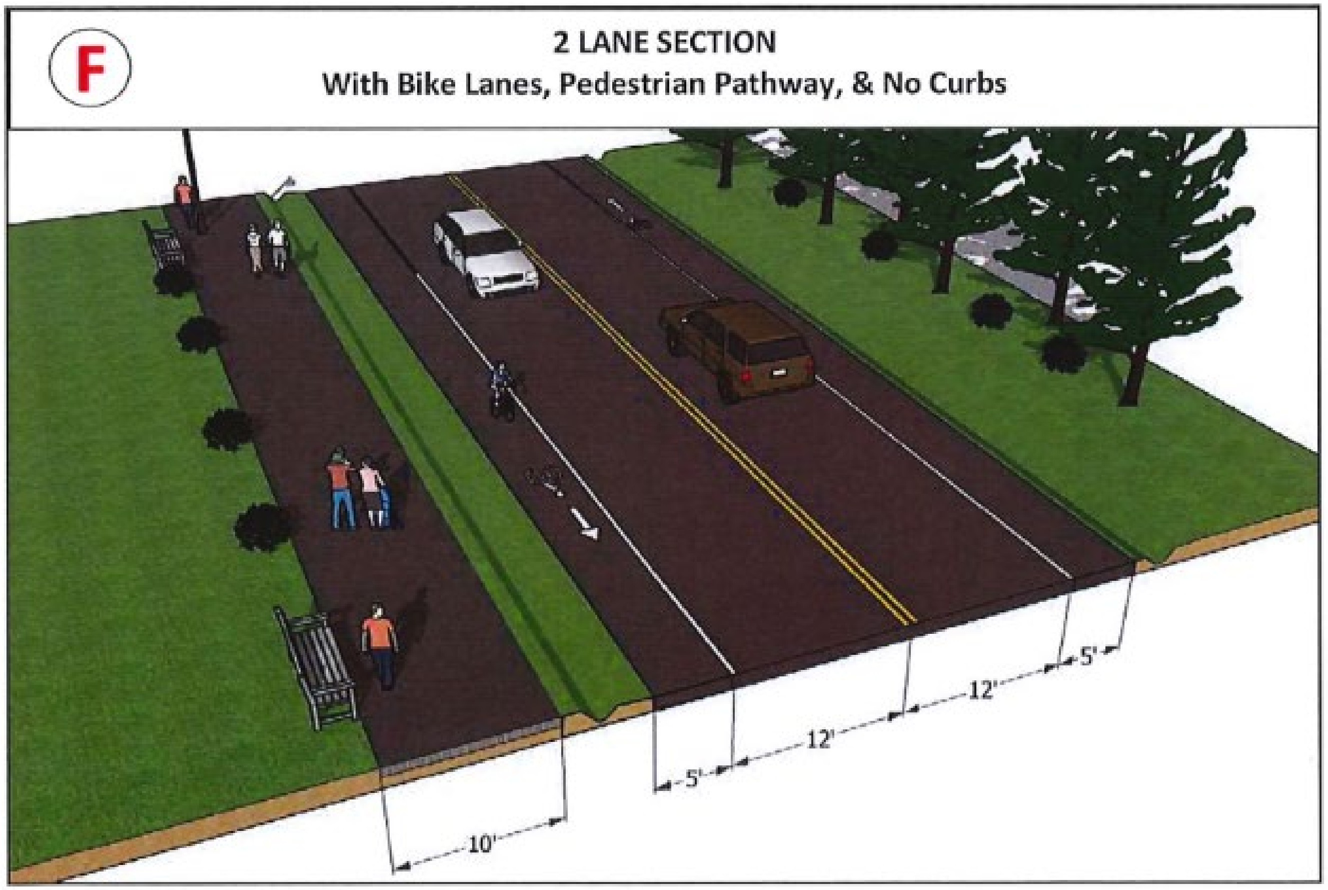


Figure 2-18: Roadway Cross-Sections (G)

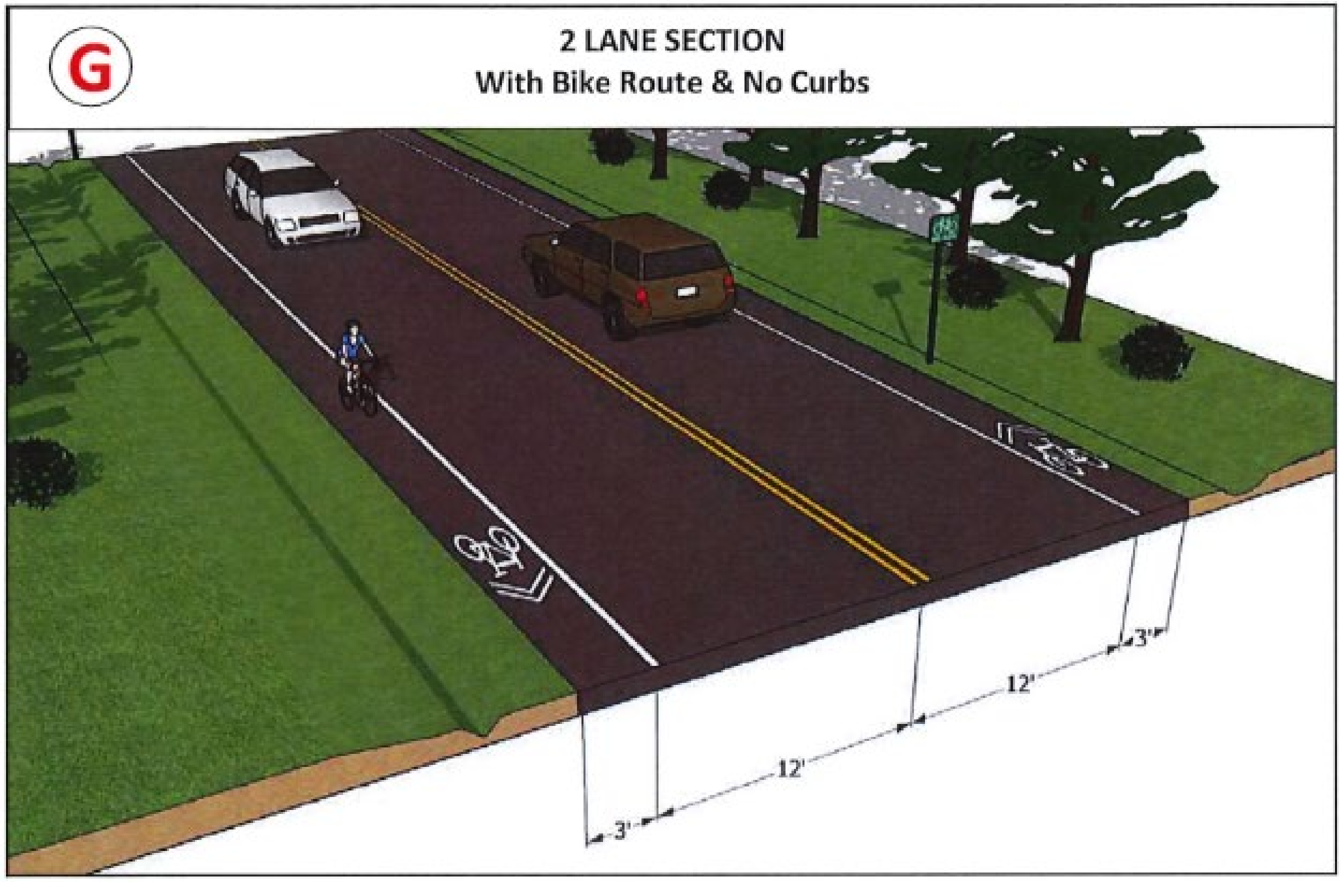
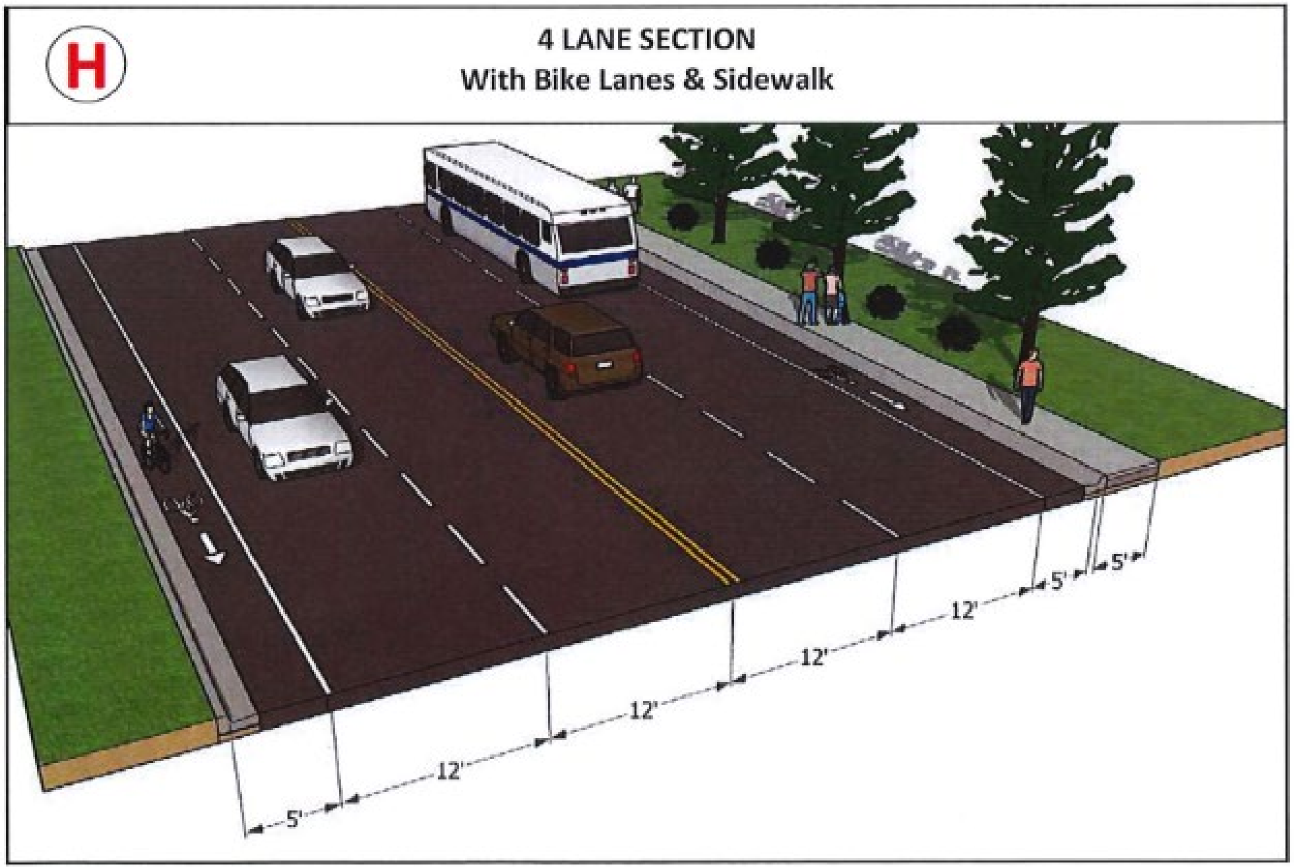


Figure 2-19: Roadway Cross-Sections (H)



Roadway Capacity Improvements

- Boyington Road Extension – Construct a new two-lane collector street from the King Road/Boyington Road intersection to Horseshoe Bar Road.
- Swetzer Road Extension – Construct a new two-lane collector street from the King Road/Swetzer Road intersection to Sierra College Boulevard north of the UPRR tracks.
- I-80/Horseshoe Bar Road Interchange Modification – Widen Horseshoe Bar Road at the I-80 overcrossing to four lanes and improve ramps and ramp intersections to ultimate configurations, which could include roundabouts. Further study is necessary to determine final improvements.
- Sierra College Boulevard Widening - Segment A – Widen Sierra College Boulevard (within Loomis) to six lanes between Granite Drive and Taylor Road.
- Sierra College Boulevard Widening - Segment B – Widen Sierra College Boulevard to four lanes between Taylor Road and the northern Town limits.
- Sierra College Boulevard Railroad Crossing Improvements – Construct a four-lane overcrossing or undercrossing for Sierra College Boulevard at the UPRR tracks.
- Horseshoe Bar Road Widening – Widen Horseshoe Bar Road to four lanes from the I-80 eastbound ramps to approximately 1,500 feet to the south, including standard lane widths and shoulders and a pedestrian pathway.
- Rocklin Road Widening – Widen Rocklin Road to four lanes between the west Town limits and Barton Road.
- I-80/King Road Freeway Access – Modify the existing King Road overcrossing to accommodate freeway access for traffic from King Road onto WB I-80. Provide a transition auxiliary lane on WB I-80 from King Road to the Horseshoe Bar Road interchange.

Roadway Operations Improvements

> Webb Street Improvements – Widen Webb Street between King Road and Taylor Road to include curb, gutter, sidewalk, parking, and turn lanes.

> New Taylor Road Traffic Signals – Construct new traffic signals at the Taylor Road intersections with Walnut Street and Brace Road.

> New I-80 EB Ramps/Horseshoe Bar Road Traffic Signal – Construct new traffic signal at the Horseshoe Bar Road intersection with the I-80 EB Ramps and coordinate with the signal at the I-80 WB Ramps. This represents an interim improvement that would be in place until the I-80/Horseshoe Bar Road Interchange Modification project, listed above, improves the I-80/Horseshoe Bar Road interchange to its ultimate configuration.

> Taylor Road/Webb Street Intersection Improvements – Construct improvements to improve peak hour operations, potentially including a traffic signal or restricting all left-turns (i.e., convert to right-in right-out). Further study is necessary to determine final improvements.

> Horseshoe Bar Road/Brace Road Roundabout – Construct roundabouts at the existing Horseshoe Bar Road/Horseshoe Bar Road and Horseshoe Bar Road/Brace Road/Laird Road intersections. Explore feasibility of combining both intersections into a single large roundabout intersection.

> Taylor Road Widening – Widen Taylor Road outside the Downtown Core Area to include a two-way left-turn lane, bike lanes, and a pedestrian path.

> Rocklin Road/Barton Road Intersection Improvements – Signalize the Rocklin Road/Barton Road intersection.

> Sierra College Boulevard/Brace Road Signal Modification – Modify the traffic signal at the Sierra College Boulevard/Brace road intersection.

> Sierra College Boulevard/Bankhead Road Intersection Improvements – Signalize the Sierra College Boulevard/Bankhead Road intersection.

> Bankhead Road Widening – Widen Bankhead Road to standard lane and shoulder widths, including bike lanes.

- Sierra College Boulevard/Taylor Road Intersection Improvements – Stripe a second eastbound left-turn lane, extend the length of the dual westbound left-turn pockets, and coordinate the traffic signal with adjacent signals on Sierra College Boulevard.
- Horseshoe Bar Road/Library Drive Intersection Improvements – Construct a traffic control that will accommodate future extension of Library Drive to the east to serve new development with LOS consistent with Town policy. Control could consist of a roundabout. Further study is necessary to determine final improvements.
- Horseshoe Bar Road/Doc Barnes Drive-Boyington Road Extension Intersection Improvements – Construct a traffic control that will accommodate addition of the future Boyington Road Extension as an eastern leg with LOS consistent with Town policy. Control could consist of a roundabout. Further study is necessary to determine final improvements.

Maintenance & Rehabilitation Improvements

- Horseshoe Bar Road Bridge Replacement – Replace the bridge on Horseshoe Bar Road at Secret Ravine Creek. Includes ancillary road work.
- Brace Road Bridge Replacement – Replace the bridge on Brace Road at Secret Ravine Creek. Includes ancillary road work.
- Bicycle/Pedestrian Improvements
- Antelope Creek Class I Path – Construct a Class I bicycle/pedestrian facility along Antelope Creek within Loomis.
- Secret Ravine Creek Class I Path – Construct a Class I bicycle/pedestrian facility along Secret Ravine Creek within Loomis.
- Taylor Road Class I Bike Path – Extend the Class I bicycle/pedestrian path on Taylor Road from its existing terminus at Circle Drive to Walnut Street near Downtown.
- King Road Class II Bike Lanes – Fill in gaps between existing bike lanes on King Road within Town limits.
- Brace Road Bike Lanes – Provide bike lanes on Brace Road between Sierra College Boulevard and I-80.

Figure 2-20: Bikeway Master Plan

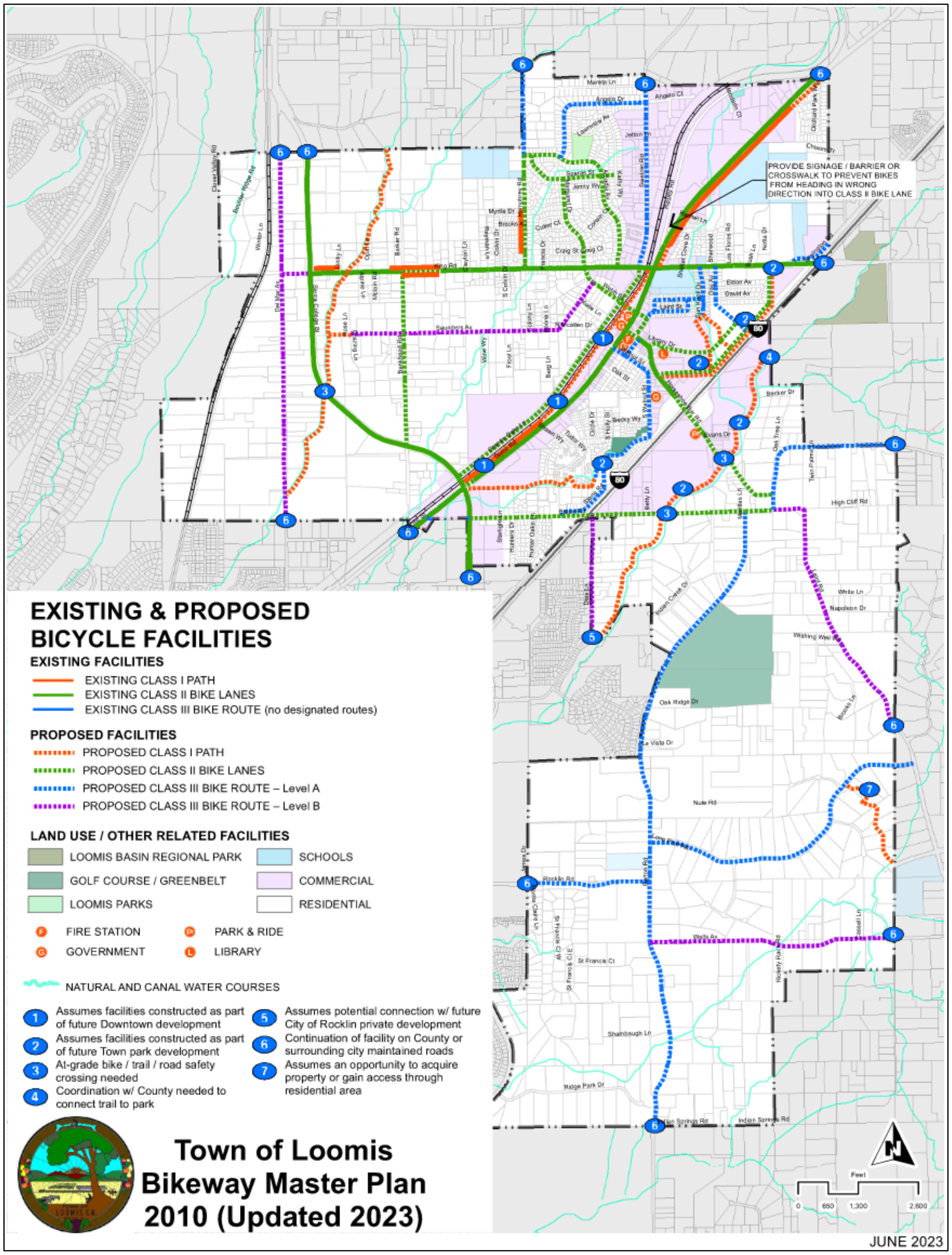
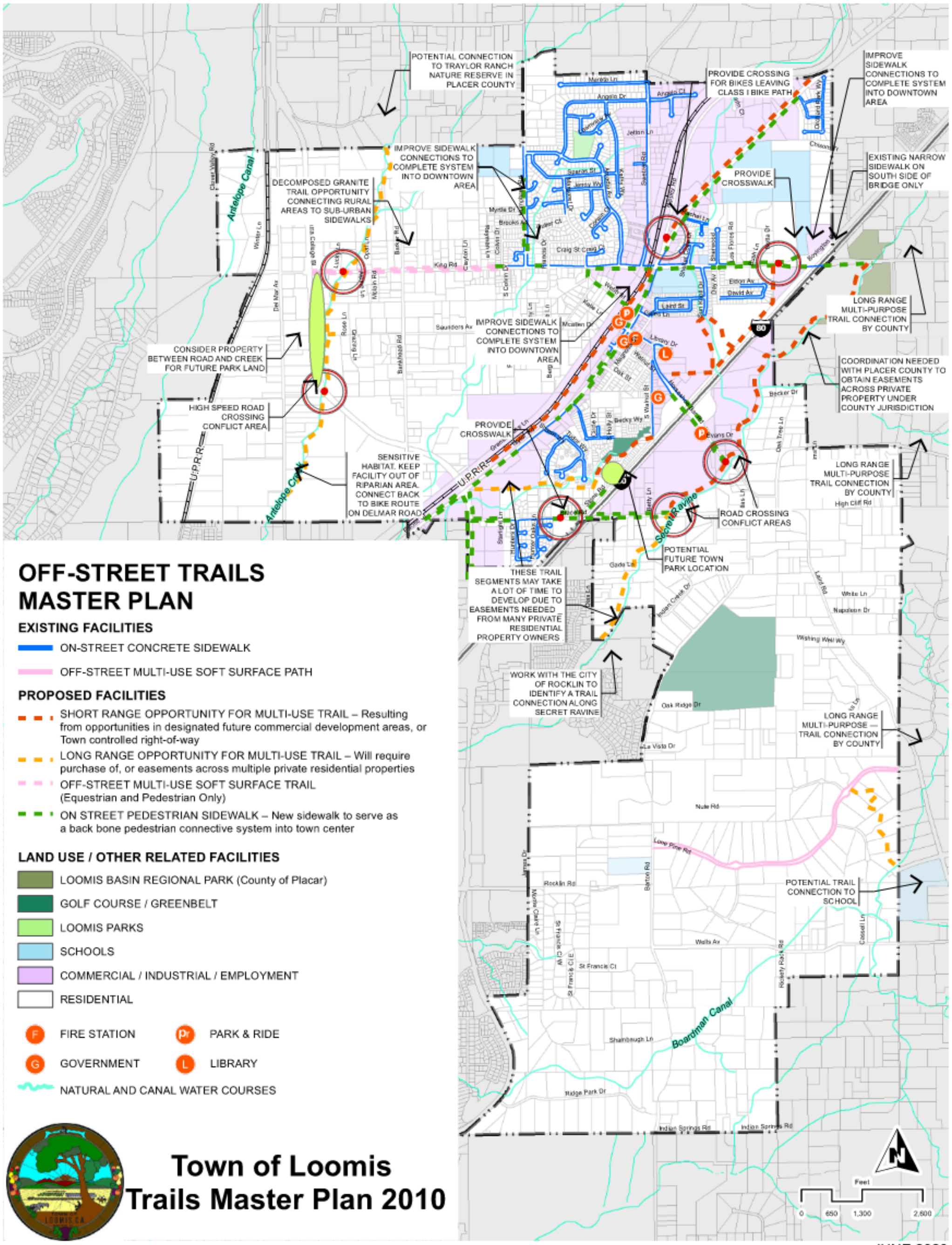


Figure 2-21: Trails Master Plan



JUNE 2023

Chapter

3 NATURAL RESOURCES

NATURAL RESOURCES

INTRODUCTION

This chapter summarizes information concerning the natural resources of the Planning Area, including aquatic resources, soils, biological communities including sensitive habitats, and special-status plant and wildlife species. It represents a compilation of existing published information combined with reconnaissance-level field surveys that have been conducted within the Town limits.

AQUATIC RESOURCES

Surface Water

The Planning Area is located within the Loomis Basin, a relatively shallow depression covering 88 square miles between the Sierra Nevada and the floor of the Sacramento Valley. Technically, the Loomis Basin is not a basin at all, as it is drained by several tributaries of westward-trending streams flowing from higher elevations. Several manmade water features, including reservoirs and canals, are also present within Loomis. The most important surface water features within the Planning Area are described below and shown on Figure 3-1.

Lower American Watershed

The Lower American watershed (HUC 8:18020111) encompasses the Planning Area. The major tributaries of the Lower American watershed within Loomis are described below.

Antelope Creek

Antelope Creek is the northwesternmost of the three primary tributaries of Dry Creek within the Planning Area. The smallest of these tributaries, it roughly parallels Sierra College Boulevard before crossing it to the west south of King Road. In Loomis, Antelope Creek drains the western portion of the Town. Antelope Creek ultimately flows through the cities of Rocklin and Roseville before joining Dry Creek near Sculpture Park in Roseville.

Secret Ravine

Secret Ravine is the primary drainage in the Town south of Interstate 80, and roughly parallels the freeway from its headwaters in Newcastle. After leaving the Town, it flows through the city of Rocklin before joining Miners Ravine in Roseville. From there, the stream enters Dry Creek at Sculpture Park in Roseville.

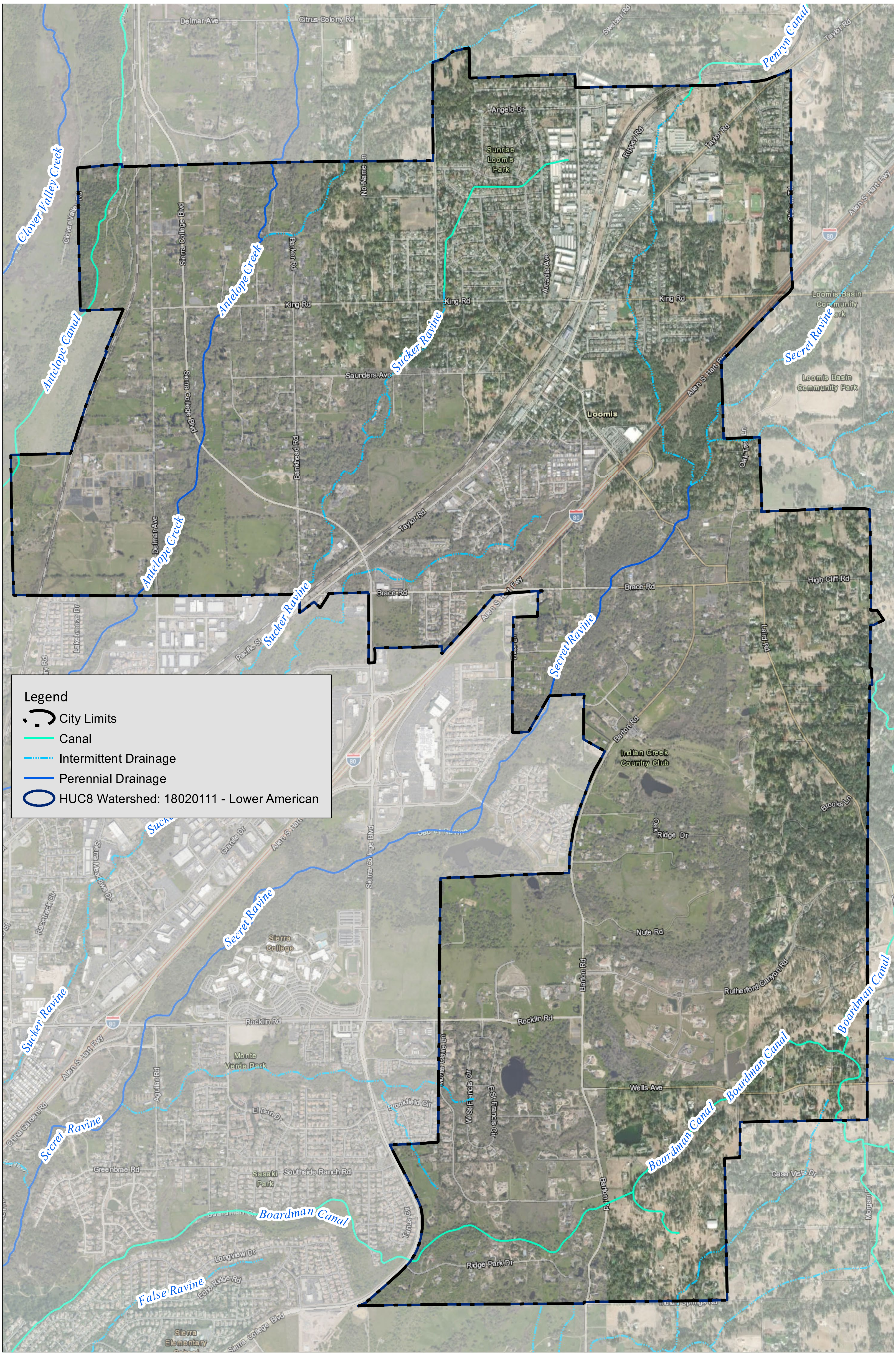
Sucker Ravine

Sucker Ravine is the smallest of the primary drainages within the Loomis town limits. This minor creek system drains the northwestern part of Loomis and has been partially realigned and modified for flood control purposes. Sucker Ravine crosses under Taylor Road and Interstate 80, ultimately joining Secret Ravine in the city of Rocklin.

Clover Valley Creek

Though outside of the existing Town limits, this tributary of Antelope Creek runs in a narrow valley just inside the western edge of the Planning Area. It is physically separated from the Town by a distinctive ridge, and no direct roadway access from Loomis is available. It eventually empties into Antelope Creek about a mile southwest of Loomis, in the city of Rocklin.

Figure 3-1: Surface Water Features



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Unnamed Drainages

Two significant unnamed drainages traverse the Town, flowing from north to south. The first begins just north of Del Oro High School and crosses Taylor Road and Interstate 80 before joining Secret Ravine. The second begins in Penryn and joins Antelope Creek in the northwestern part of the Town near King Road.

Lakes and Reservoirs

No natural lakes of any substantial size are located within the Loomis Planning Area. However, several small unnamed reservoirs, built primarily for flood control or water storage purposes, are found within the Town. These features are generally located on private property.

Canals

Several manmade canals, most notably the Boardman Canal, traverse the southern portion of Loomis. The Boardman Canal flows through the Planning Area and terminates in Roseville Reservoir within the city of Roseville. The canals are owned and operated by the Placer County Water Agency (PCWA), the service provider for the Town. The source of most of the water for these canals is the Yuba/Bear River.

Groundwater Resources

Bulletin 118, “California’s Groundwater,” published by the California Department of Water Resources (DWR 2020), defines the recognized groundwater basins and subbasins throughout the state. The Town of Loomis, along with the central and most of the eastern portions of Placer County, are not located within a groundwater basin designated by DWR (DWR 2020). These areas of Placer County consist of bedrock, which forms the Sierra Nevada mountains and foothills. Groundwater in the Sierra Nevada mountains and foothills is not held in large “pools” in the underground rock strata as it is on the Central Valley floor; rather, groundwater is held in small pores and fractures within the bedrock. This makes it difficult to gauge how much water is available, or the depth at which it may be encountered where levels are sufficient to provide enough flow for well usage.

The eastern boundary of the North American Subbasin, the most proximate subbasin to the Town of Loomis, lies between the cities of Roseville and Rocklin, approximately 3.5 miles southwest of the Town of the Loomis. The eastern subbasin boundary represents the approximate edge of the water-bearing alluvial basin, where little or no groundwater flows into or out of the groundwater basin from the Sierra Nevada basement rock. Under the Sustainable Groundwater Management Act, local groundwater management agencies must act in the capacity of designated Groundwater Sustainability Agencies (GSAs). There are five designated GSAs that are cooperatively working together to manage the North American Subbasin. The Placer County Water Agency (PCWA) is part of the West Placer County GSA. For subbasins that are not in critical overdraft, such as the North American Subbasin, the GSAs must prepare and implement a Groundwater Sustainability Plan by January 31, 2022. Preparation of the Groundwater Sustainability Plan for the North American Subbasin is in process (West Placer County Groundwater Sustainability Agency 2021). The Groundwater Sustainability Plan must take into account future water needs throughout the service areas of the combined GSAs, which includes the minor amount of future groundwater used by PCWA to supply its customers (including the Town of Loomis). Rural areas of the Town of Loomis are served by private groundwater wells, for which no data is available. Because the Town of Loomis is not located in an area where there is a designated groundwater basin, water from local groundwater wells is not subject to the requirements of the Sustainable Groundwater Management Act—a three-bill package composed of Assembly Bill 1739, Senate Bill 1168, and Senate Bill 1319 that was signed into law in September 2014.

The more urbanized areas of the Town of Loomis are supplied with potable water by PCWA. Water provided by PCWA is primarily from surface water supply sources, which consist of: (1) water from the North Fork American River and its tributaries (including water from PCWA's Middle Fork American River Project); (2) Central Valley Project water from the American River, and (3) water purchased from Pacific Gas & Electric from the Yuba and Bear Rivers (Tully & Young 2016). PCWA may also draw groundwater from the North American Subbasin in dry hydrologic conditions if surface water supplies are limited. However, this groundwater supply for PCWA is limited to two wells, each with a production capacity of 1,000 acre-feet per year (Tully & Young 2016).

Water Quality

The primary sources of pollution to surface and groundwater resources include stormwater runoff from paved areas, which can contain hydrocarbons, sediments, pesticides, herbicides, toxic metals, and coliform bacteria. Seepage from sewage treatment lagoons can further contribute to degraded water quality in the form of elevated nitrate levels. Improperly placed septic tank leach fields can cause similar types of contamination. Illegal waste dumping can introduce contaminants such as gasoline, pesticides, herbicides, and other harmful chemicals.

The use of septic tanks in the area may adversely affect both surface and groundwater quality. Parts of the Planning Area are subject to high nitrate concentrations from overuse of septic tanks and agricultural uses. While no detailed study has been performed, several shallow wells have shown high nitrate concentrations, suggesting surface contamination. Septic tanks are also a source of pollution to some wells in both alluvial and granitic rocks. Septic tanks discharging into alluvium have a high potential to pollute wells producing from the same deposit because of high permeability and low gradient. In the winter, the rains raise the water table in these areas, which can exacerbate possible contamination.

TOPOGRAPHY

The topography within the Planning Area ranges from nearly level interspersed with rolling hills and a few steeper escarpments, such as the Mehrten ridge at the western edge of the Planning Area adjacent to the eastbound Union Pacific rail line. The highest elevations range from 540-580 feet above sea level, both along the Mehrten ridge and among the rises in the southeastern portion of the Planning Area. The lowest elevations are along Secret Ravine and Antelope Creek (300-340 feet), which generally traverse the area from northeast to southwest. Most of downtown Loomis lies at about 400 feet, above the immediate flood plains of the two creeks. Interstate 80, Taylor Road and the rail lines follow the easiest grades as they slowly gain elevation when traveling eastbound, gaining from about 40 feet in the case of the freeway to about 160 feet in the case of Taylor Road.

AGRICULTURAL LANDS

Agricultural activities in and around Loomis began as early as the turn of the 19th century. Early pioneers, prior to the Donner party and the gold rush, planted fruit trees and eventually vineyards in the area now known as Loomis. The Loomis Basin soon was known as an excellent location to grow fruit. With the construction of the Central Pacific Railroad through the town in 1864, and a local train station, Loomis soon became a focal point as a fruit shed and shipping depot.

The Town of Loomis is no longer a significant commercial agricultural area. Hobby farming occurs on rural residential parcels and in adjacent areas. Residents and visitors value the open views of farming activities in the surrounding landscape.

SOILS

The *Soil Survey of Placer County, Western Part* (USDA, Natural Resources Conservation Service, 1980) identified sixteen soil series within the Planning Area (Figure 3-2: Soil Types), including:

- Andregg Coarse Sandy Loam (Types 106, 107, and 108),
- Andregg Coarse Sandy Loam, Rocky (109 and 110);
- Caperton-Andregg Coarse Sandy Loams (130);
- Caperton-Rock Outcrop Complex (133);
- Exchequer Very Stony Loam (144);
- Exchequer-Rock Outcrop Complex (145);
- Inks Cobbly Loam (152);
- Inks Very Cobbly Sandy Clay Loam (153)

- Inks-Exchequer Complex (154)
- Rubble Land (180);
- Xerofluvents, frequently flooded (194);
- Xerorthents, cut and fill areas (196); and
- Xerothents, placer areas (197).

By far the most common of these types within the Planning Area are the Andregg and Caperton-Andregg soils, found throughout the Planning Area. In general, soils within the Planning Area exhibit one or more physical constraints to development. Many soils are rocky or cobbly, or percolate slowly because of a cemented underlying pan. Most soils are relatively shallow, rarely more than five feet and more typically about one to two feet. The shallow depth to rock often makes excavation difficult, while the wet-clay characteristics of the common Andregg soil inhibit many uses. Other soils are subject to flooding due to their proximity to creeks. These soil types are described below.

Andregg Coarse Sandy Loam, 2 to 9% Slopes (106)

This is a moderately deep, gently rolling, well-drained soil underlain by weathered granitic bedrock. Typically, the surface layer of Andregg soil is grayish brown coarse sandy loam about 15 inches thick. The subsoil is pale brown and very pale brown coarse sandy loam. Permeability is moderately rapid and the erosion hazard is moderate.

Andregg Coarse Sandy Loam, 9 to 15% Slopes (107)

This soil type is similar to the previously described Andregg soil (106), except it is found on steeper slopes. Consequently, it has similar appearance and permeability characteristics, but exhibits a high erosion hazard. Surface runoff associated with this soil is medium to rapid.

Andregg Coarse Sandy Loam, 15 to 30% Slopes (108)

This is similar to the previously described Andregg soil (106), except it is found on steeper slopes.

Andregg Coarse Sandy Loam, Rocky, 2 to 15% Slopes (109)

This is similar to the previously described Andregg soils. It is well drained. Surface runoff is low. The parent material is not classified as hydric although there are minor components of this series that are considered hydric located in drainages.

Andregg Coarse Sandy Loam, Rocky, 15 to 30% Slopes (110)

This soil series is similar to the previously described Andregg soils. It is well drained. Surface runoff is classified as medium. This soil series is not classified as hydric.

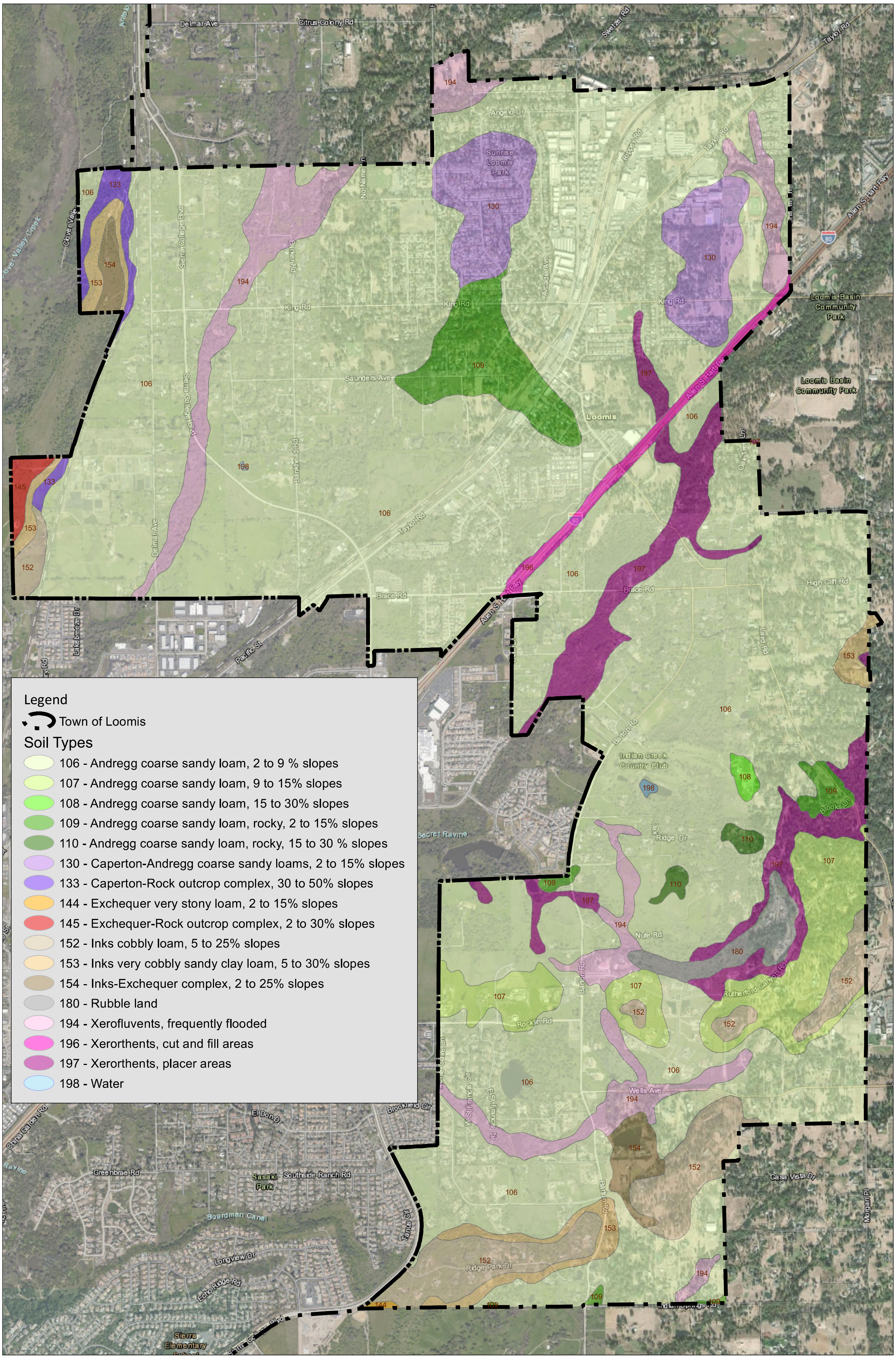
Caperton-Andregg Coarse Sandy Loam, 2 to 15% Slopes (130)

Caperton-Andregg soils are shallow (8 to 20 inches deep) and somewhat excessively drained gravelly sandy loams that exhibit moderate erosion potential and low shrink-swell potential.

Caperton-Rock Outcrop Complex, 30 to 50% Slopes (133)

Caperton soils are shallow (0 to 4 inches deep) and somewhat excessively drained. The runoff class is medium. This soil series is not rated as hydric.

Figure 3-2: Soil Types



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Exchequer Very Stony Loam, 2 to 15% Slopes (144)

This soil series is shallow (0 to 11 inches deep) and somewhat excessively drained. The runoff class is medium. This soil is not classified as hydric although there are some minor unnamed components found in drainageways and depressions that are classified as hydric.

Exchequer-Rock Outcrop Complex, 2 to 30% Slopes (145)

These soils are shallow (0 to 4 inches) and somewhat excessively drained. Surface runoff is classified as medium. This soil is not classified as hydric although there are some minor unnamed components found in drainageways and depressions that are classified as hydric.

Inks Cobbly Loam, 5 to 25% Slopes (152)

This is a shallow, well-drained cobbly soil underlain by andesitic conglomerate. The surface layer is generally yellowish brown cobbly loam about five inches thick. The subsoil is brown very cobbly clay loam. Permeability is moderate, surface runoff is medium to rapid, and the erosion hazard is highly variable (slight to high).

Inks Very Cobbly Sandy Clay Loam, 5 to 30% Slopes (153)

This is a shallow, well-drained soil. Permeability is moderate. Surface runoff is medium. This soil is not classified as hydric.

Inks-Exchequer Complex, 2 to 25% Slopes (154)

These soils are shallow (0 to 11 inches) and somewhat excessively drained. Surface runoff is classified as medium. This soil is not classified as hydric although there are some minor components found in depressions that are classified as hydric.

Rubble Land (180)

Rubble land is cobbly and stony mine debris and tailings from dredge or hydraulic mining. It is essentially barren; grass and brush are sparse. Nearly all soil material either has been washed away from hydraulic mining or buried from dredge mining. Surface runoff and erosion hazard are variable. Rubble land is used mainly for watershed and provides limited wildlife habitat. Some areas are a source of aggregate.

Xerofluvents, Frequently Flooded (194)

These soils consist of narrow stringers of somewhat poorly drained recent alluvium adjacent to stream channels. These are variably colored, stratified gravelly clay or sandy loams that generally grade to sand and gravel with increasing depth. Permeability is variable, surface runoff is slow, and erosion hazard is high. The soils are subject to frequent flooding and channelization.

Xerorthents, Cut and Fill Areas (196)

These soils consist of stony, cobbly and gravelly material commonly adjacent to streams that have been placer mined. This soil varies in depth from 0 to 60 inches. Permeability, runoff, erosion hazard, and drainage are highly variable. This soil series is not classified as hydric.

Xerothents, Placer Areas (197)

These soils consist of stony, cobbly and gravelly material commonly adjacent to streams that have been placer mined. The soil material is derived from a mixture of rocks. It is stratified or poorly sorted. Such soils contain enough fine sand and silt to support some grass. The depth of this soil is highly variable, ranging from as little as 6 inches to more than five feet. Permeability, runoff, erosion hazard, and drainage are highly variable. Such areas are frequently flooded because of their typical proximity to streams.

BIOLOGICAL RESOURCES: FLORA & FAUNA

This section provides a generalized overview of the vegetation and wildlife resources found within the Planning Area. It includes sections on biological communities, special-status plant and animal species, and a discussion of wildlife movement corridors.

Biological Communities

The Planning Area includes both urban and rural elements in a topographically diverse setting. As such, it supports a variety of natural and artificial biological communities, as shown in Table 3-1:

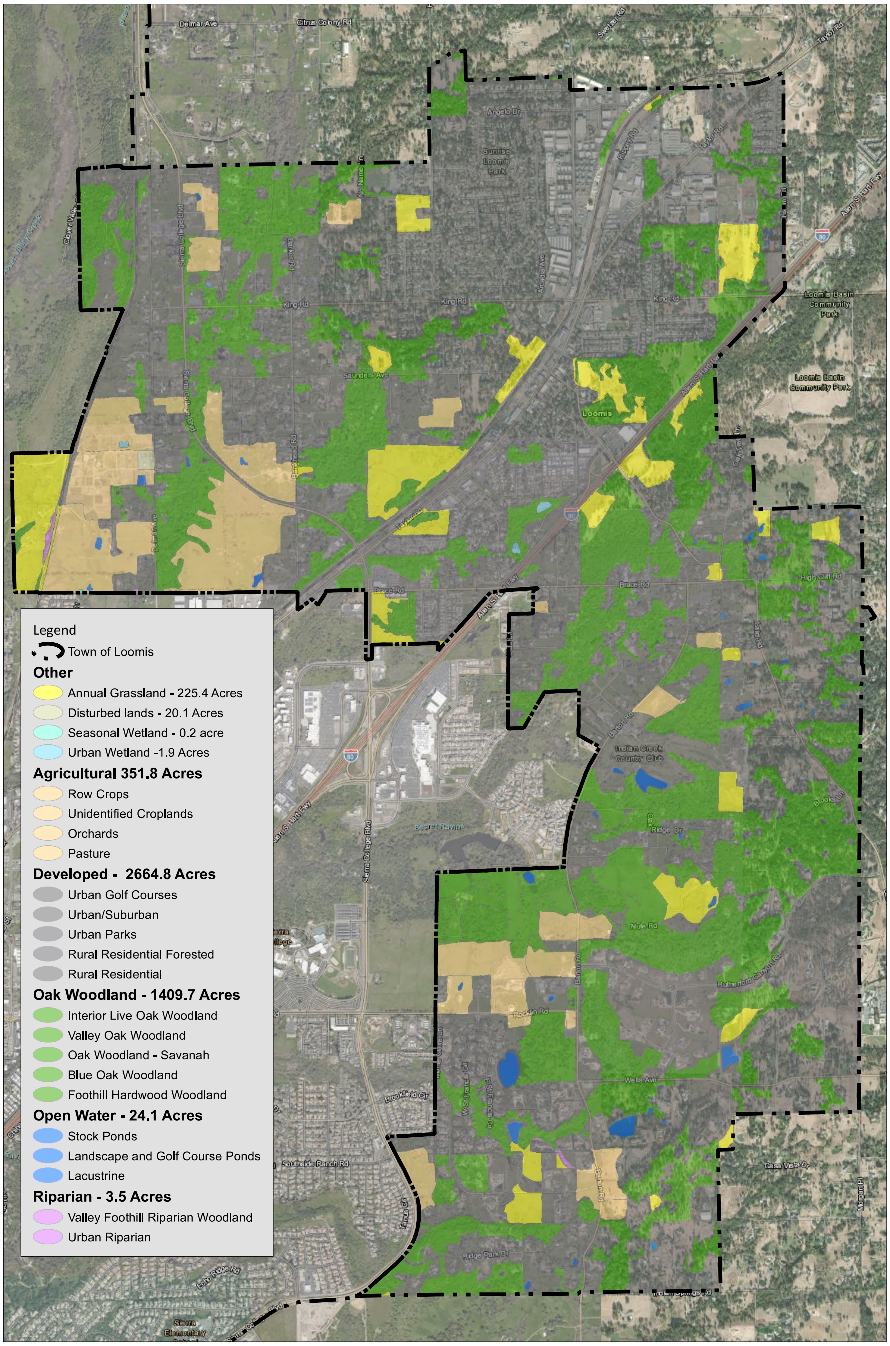
The vegetation community descriptions in this section and in Figure 3-3 generally follow the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) because the vegetation community mapping currently available for the Planning Area utilizes this reference source for naming vegetation communities. However, it should be noted that *The Manual of California Vegetation* (Sawyer, Keeler-Wolf, Evens, 2009) is now generally used in the State of California to describe vegetation communities. Some equivalent communities from Sawyer, Keeler-Wolf, Evens are provided in Table 3-1. These habitat types are grouped by sensitivity, as described below.

Table 3-1: Planning Area Biological Communities and Sensitivity		
Biological Community	**Sensitivity ***	**Manual of California Vegetation Equivalents**
Oak Woodland and Savanna	Sensitive	*Quercus* forest alliance, *Quercu*s *douglasii* forest alliance, *Quercus wislizeni* woodland alliance*, Quercus lobata* forest alliance
Riparian and Stream Habitat	Sensitive	*Salix* forest and woodland alliance*, Populus fremontii* forest and woodland alliance
Wetlands and other Aquatic Resources	Sensitive	Wetlands within oak woodland and grassland alliances.
Native Perennial	Sensitive	Nasella pulcra alliance
Non-native Annual Grasslands	Common	Lolium perrene alliance, Avena-Bromus Semi-natural alliance
Developed/ Urban Landscape	Artificial	N/A
Agriculture	Artificial	N/A

Sources: Jones and Stokes Associates 2004, HELIX Environmental Planning 2020

* See text following for explanation of this notation

Figure 3-3: Landcover Map



Sensitive Natural Communities

For the purpose of this report, a sensitive natural community refers to those that are of special concern to resource agencies or those that are protected under CEQA, Section 1600 of the California Fish and Game Code (i.e., riparian areas) and/or Sections 401 and 404 of the Clean Water Act, which include wetlands and other waters of the U.S. or State, or communities that are protected under the specific state and regional policies such as oak woodlands. In the Planning Area, oak woodland, native perennial grasslands, riparian and stream habitat, and wetlands are considered sensitive biological communities. These are given special consideration because they provide important ecological functions, including water quality maintenance, stream bank stabilization, and the provision of essential habitat for wildlife and fisheries resources. These communities are typically limited in extent compared to their historical distribution due to clearing for agriculture and other development activity. Sensitive natural communities are afforded special consideration under federal, state and county laws. A brief description of these communities follows. A map of biological communities within the Planning Area is provided in Figure 3-3. Landcover mapping is based on several sources including previous vegetation mapping efforts in the region and some limited aerial photo interpretation (Jones and Stokes/Placer County, 2003; HELIX Environmental Planning 2020). Vegetation community mapping should be considered preliminary unless site-specific vegetation mapping has occurred. The actual extent of riparian vegetation along major drainageways within the Town is almost certainly more extensive than shown in Figure 3-3. Field mapping of riparian communities within the Town is considered a priority to more accurately document the extent of riparian habitat within the Planning Area.

Oak Woodland and Savanna

Blue oak woodland, valley oak woodland, interior live oak woodland, and oak woodland savanna are the dominant oak associations that occur throughout the Planning Area. There are also areas of foothill hardwood woodland and that contain significant oak woodland canopy mixed with other tree species such as foothill pine.

Blue oak woodland occurs primarily in the portions of the Planning Area that support shallow or infertile soils. Typically, blue oak woodland includes a mixture of blue oak, foothill pine, buck brush, coffee berry and various grassland species.

Interior live oak woodland occurs in lower-lying portions of the Planning Area, typically along riparian and stream corridors. In some areas, interior live oaks form a dense woodland with an understory comprised of annual and perennial grassland species. In other areas, interior live oaks intermix with foothill pine, California buckeye, buck brush, coyote brush, poison oak, coffeeberry and grassland species.

Valley oak woodland occurs on deep alluvial soils along streams and riparian corridors in the low-lying portions of the Planning Area. Several valley oak woodland communities contain large, heritage-size valley oaks. The understory in a valley oak woodland is usually composed of pasture grassland and annual grassland species.

Oak woodland savannah occurs in areas with more open and non-overlapping oak canopy often in association with pastures. Oak woodland and savanna provide shelter, breeding, and foraging habitat for many of the wildlife species typically found in grassland habitats. Oak acorns are an important food source for wild turkeys, acorn woodpeckers, northern flickers, and mule deer. Oaks also provide nest sites for western gray squirrels and cavity-nesting birds, including acorn woodpeckers, northern flickers, and white-breasted nuthatches.

Riparian Habitat

Riparian communities develop in areas with high water tables that support seasonal and perennial (permanent) surface water. Riparian communities are common along streams, ponds, and swales in the Planning Area, most notably Secret Ravine and Antelope Creek. There are many variations of riparian habitat types. Three basic types commonly found in the Planning Area include mixed riparian woodland, riparian forest, and willow scrub. These are described below.

Mixed riparian woodland is the dominant riparian community in the Planning Area, and is characterized by intermixed layers of trees, shrubs and herbaceous species. Typical plants include Fremont's cottonwood, valley oak, willows, California blackberry, Himalayan blackberry, California rose, blue elderberry, poison oak, sedges, rushes, and grasses.

Riparian forest is found in the Planning Area particularly along Secret Ravine. Two basic types of riparian forest are present, cottonwood and oak, both of which are structurally complex and varied plant communities. Cottonwood riparian forest is characterized by a canopy of Fremont's cottonwood, valley oak, and alders, overtopping a tangle of Himalayan blackberry, poison oak, wild honeysuckle, and arroyo willow. The canopy of oak riparian forest is dominated by mature valley oaks, with scattered black willow. The understory is comprised of poison oak, pipevine, creeping wild rye, and Himalayan blackberry.

Willow scrub is an early-colonizing riparian community dominated by sandbar willow, mugwort, rush and sedge. It also forms along small creeks and drainages that lack the water supply necessary to develop woodland and forest communities.

Riparian and stream communities provide habitat for a variety of plant and wildlife species in the Planning Area. The multi-layered riparian community provides escape cover, forage and nesting opportunities for a variety of species. Typical wildlife that are found in riparian and stream habitats include California quail, Bewick's wren, song sparrow, red-shouldered hawk, Cooper's hawk, raccoon, coyote, cottontail, opossum, striped skunk, gray fox, and mule deer. Central Valley (CV) fall/late fall run Chinook salmon and CV steelhead utilize Dry Creek, Secret Ravine, and Antelope Creek for spawning and rearing habitat and are designated as Critical Habitat for CV steelhead.

Native Perennial Grassland

These grasslands are dominated by native grasses such as purple needlegrass, woodland ryegrass, and California melic grass. Perennial grasslands historically extended throughout the state and comprised one of the most extensive plant associations in the state, but native grasslands have largely been replaced by annual grasslands composed of Mediterranean species that had adapted to heavy grazing pressure. For this reason, most native grassland associations are considered sensitive by the California Natural Diversity Data Base. Besides grasses, perennial grasslands typically support a larger number of native forb species and wildflowers than the annual grasslands. Annual wildflowers include harvest brodiaea, soap plant, tarplant, lupine, and mariposa lily. Native perennial grasslands typically occur on north-facing, mesic slopes near oak woodlands and savannas.

Wetlands and Other Aquatic Resources

Wetlands include a variety of habitats that are characterized by a prevalence of hydrophytic (water-loving) vegetation, hydric soils, and wetland hydrology. Natural and artificially-created wetlands exist throughout the low-lying portions of the Planning Area, typically along drainages or in topographic depressions. Wetlands and other aquatic resource types in the Planning Area include ephemeral streams, intermittent streams, perennial streams, ponds, marsh, ditches, canals, swales, seeps and springs, and seasonal freshwater wetlands, including vernal pools.

Seasonal freshwater wetlands occur within annual grasslands as swales and shallow depressions underlain by slowly permeable soils. These wetlands are typically wet from November to May. Vegetation is a mix of wetland and upland species including perennial ryegrass, popcornflower, creek monkeyflower, spikerush, soft chess, tarweed, long-beak filaree, and medusa-head grass. Vernal pools occur on the impermeable Mehrten breccia that exists on ridge tops within the Planning Area.

Vernal pools, intermittent drainages, and other seasonal wetlands represent unique natural resource habitats within the Planning Area and the state. Vernal pools are considered sensitive habitat areas not only due to their limited occurrence and distribution, but also because they support several unique, and often rare, plant and animal species that are endemic to this kind of habitat. Intermittent drainages and seasonally wet swales within the Planning Area, while typically low in plant and wildlife species diversity, provide important watershed sources to vernal pools and are also limited in occurrence and distribution.

Streams

Streams within the Planning Area are classified as ephemeral, intermittent, or perennial depending on their hydrology. Ephemeral streams flow only during and for a short duration after rain events. Intermittent streams flow during wet seasons, but generally are dry during summer months. Perennial streams contain some water during all times of the year with the potential exception of during drought events.

A delineation of wetlands and other aquatic resources within the Planning Area has been conducted sporadically, and generally in conjunction with development proposals. The National Wetlands Inventory mapper for the Town of Loomis includes data for several types of wetlands within the Planning Area including freshwater pond, freshwater emergent wetland, and freshwater forested shrub wetland.

Many wildlife species depend on wetland habitats for foraging, nesting, water, and cover. Ponds in the Planning Area provide important resting and foraging habitat for migrating birds, such as Canada goose, mallard, and cinnamon teal. Wetlands also provide habitat for ring-necked duck, American coot, great blue heron, great egret, and black phoebe as well as aquatic species such as western pond turtle and fish such as steelhead and salmon. The Dry Creek Conservancy organizes volunteer surveyors to conduct an annual salmon spawner survey in Dry Creek and its major tributaries, including Dry Creek, Secret Ravine, Antelope Creek, and others, after the first major storm event of the season and lasting until fish are no longer observed. Since 2010, annual escapement of CV fall-run Chinook salmon is estimated to range from zero to several hundred adult spawners, largely based on carcass and redd counts. CV steelhead are also observed, but since steelhead do not necessarily die after spawning, few carcasses are observed. Although not quantified, annual steelhead populations are estimated to be far less than Chinook salmon.

Please refer to the *Regulatory Framework* section that follows for more information regarding federal and state protections for wetlands and other aquatic resources within the Planning Area.

Common Natural Communities

Common natural communities are native or apparently native landscapes that have not been substantially altered by farming or other land disturbance. Annual grassland is considered a common community because of its abundance in the Planning Area and throughout California.

Grasslands

Grassland is an herbaceous community characterized by annual and perennial grasses and forbs. Grasslands occur in pastures, along fence rows, and more extensively in undisturbed rural areas. Three types of grassland associations occur in the Planning Area: annual grassland, native perennial grassland, and pasture grassland. Native perennial grasslands were previously discussed above.

Non-native annual grasslands are dominated by annual grasses intermixed with annual forbs and perennial forbs, including wild oat, ripgut brome, soft chess, fescue, clover, summer mustard, wild radish, yellow star-thistle, and elegant clarkia. While the dominant plants that make up this association are often exotic species that originated primarily from the Mediterranean area, these plants have been present in California sufficiently long that this can be considered a “naturalized” community.

Pasture grasslands are typically dominated by perennial sod-forming grasses, such as Harding grass, orchard grass, Kentucky fescue, and common velvet grass. Pasture grasslands are maintained through artificial irrigation systems.

Grasslands provide nesting and foraging habitat for several wildlife species, including red-tailed hawk, American pipit, western meadowlark, lesser goldfinch, American kestrel, California ground squirrel, and California vole.

Artificial Plant Communities

Artificial plant communities are human-created landscapes that provide some wildlife habitat value. Urban landscape and agricultural areas are the primary artificial communities located in the Planning Area.

Developed/Urban Landscape

Developed/urban landscape exists around commercial, residential, golf course, and park sites within the Planning Area. This landscape is composed of primarily non-native plants, shrubs and trees. These areas provide habitat for a variety of native and non-native wildlife, including northern mockingbird, European starling, house sparrow, house finch, acorn woodpecker, mourning dove, Brewer's blackbird, gopher snake, and western toad.

Agricultural Land

Orchards and irrigated crops are the primary types of agricultural within the Planning Area. Agriculture is dispersed throughout the Planning Area, forming a mosaic between grasslands, oak woodland, and riparian habitats.

Areas along fence rows and drainage ditches that support some remnant native vegetation or weedy species provide limited habitat for common wildlife species, which include: western meadowlark, red-tailed hawk, American kestrel, and red-winged blackbird. Migrant birds also use agricultural areas for winter foraging and roosting. Typical migrant species that occur on agricultural land in the Planning Area include American pipit, Canada goose, and house finch.

Special-Status Plant and Wildlife Species

Special-status species are plant and wildlife species that have been afforded special recognition by federal, State, or local resource agencies or organizations. They are generally of relatively limited distribution and may require specialized habitat conditions. Special-status species are defined as meeting one or more of the following criteria:

- Listed or proposed for listing under CESA or FESA;
- Protected under other regulations (e.g., Migratory Bird Treaty Act);
- Included on the California Department of Fish and Wildlife (CDFW) Special Animals List;
- Identified as Rare Plant Rank 1 to 4 by CNPS; or
- Receive consideration during environmental review under CEQA.

Table 3-2 below illustrates the most commonly- recognized definitions of what qualifies as "special-status."

Table 3-2: Definition of Special-Status Species	
Plant Species	**Animal Species**
• Plants listed or proposed for listing as threatened or endangered under the federal Endangered Species Act; • Plants that are candidates for possible future listing as threatened or endangered under the federal Endangered Species Act; • Plants that meet the definition of rare or endangered under CEQA (*CEQA Guideline*s, Section 15380); • Plants considered by the CNPS to be “rare, threatened or endangered” in California (Lists 1B and 2; • Plants considered by the CNPS about which more information is needed and plants of limited distribution (Lists 3 and 4); • Plants listed or proposed for listing by the State as threatened or endangered under the California Endangered Species Act (14 CCR 670.5); • Plants listed under the California Native Plant Protection Act (CFG Code 1900 et. seq.); • Plants considered sensitive by other federal agencies, state and local agencies or jurisdictions; • Plants considered sensitive or unique by the scientific community or occurring at the limits of its natural range (*CEQA Guidelines*, Appendix G).	• Animals listed or proposed for listing as threatened or endangered under the federal Endangered Species Act; • Animals that are candidates for possible future listing as threatened or endangered under the federal Endangered Species Act; • Animals that meet the definition of rare or endangered under CEQA (*CEQA Guideline*s, Section 15380); • Animals listed or proposed for listing by the State as threatened or endangered under the California Endangered Species Act; • Animal species of special concern to the CDFW; • Animal species that are fully protected in California.

Source: Association of Environmental Professionals. 2022

CDFW utilizes the California Natural Diversity Database (CNDDB), the USFWS IPaC database for federally listed species, and the CNPS database of special-status plant occurrences to document occurrences of special-status species. The CNDDB includes information on plant species prepared by the California Native Plant Society (CNPS). An updated query of the CNDDB for the Rocklin Quadrangle (U.S. Geological Survey (USGS) 1981) and the eight surrounding quadrangles was conducted to determine the location of any known sensitive plants, animals, and communities in the vicinity of Loomis (CDFW, May 1, 2020). A list of sensitive plants and animal species that could potentially occur in the Planning Area was also compiled from available literature including previously prepared environmental documents within the Planning Area. Table 3-3 through Table 3-5 summarizes the results of this query. Table 3-4 is subdivided into federal and state-listed species (Table 3-3), species subject to CEQA review (Table 3-4), and other species of interest (Table 3-5).

Table 3-3: Federal and State-listed Species Potentially Occurring in the Town of Loomis

Special-Status Species	Regulatory Status	Habitat Requirements
Invertebrates		
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT; --; --	Sole hosts are elderberry (*Sambucus* sp.) shrubs typically associated with riparian areas. This species is known from portions of the Central Valley of California and several elderberry shrubs are known to occur along Secret Ravine within the Planning Area. This species has an elevational range limit of 500 feet above MSL (USFWS).
Vernal pool fairy shrimp *Branchinecta lynchi*	FT; --; --	Typically found in vernal pools, but can also be found in other natural ephemeral habitats (alkali pools, seasonal drainages, stock ponds, vernal swales and rock outcrops), and artificial ephemeral habitats (railroad toe-drains, roadside ditches, abandoned agricultural drains, deep tire ruts, and firebreak depressions).

Table 3-3: Federal and State-listed Species Potentially Occurring in the Town of Loomis		
Special-Status Species	**Regulatory Status**	**Habitat Requirements**
Vernal pool tadpole shrimp *Lepidurus packardi*	FE; --; --; --	Inhabits vernal pools, swales, and ephemeral freshwater habitat. Known from Alameda, Butte, Colusa, Contra Costa, Fresno, Glenn, Kings, Merced, Placer, Fresno, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Yolo, and Yuba counties.
Fish		
Central Valley steelhead DPS *Oncorhynchus mykiss irideus*	FT; --; --; --	Found in cool, clear, fast-flowing streams and rivers with riffles and ample cover from riparian vegetation or overhanging banks. Spawning occurs in streams with pool and riffle complexes. The species requires cold water and gravelly streambed to successfully breed. Spawn in the Sacramento and American rivers and tributaries before migrating to the Delta and Bay Area. Critical habitat for this species is designated throughout the Dry Creek watershed.
Amphibians/ Reptiles		
California red-legged frog *Rana draytonii*	FT; CSC; --	Breeding sites are in aquatic habitats including pools and backwaters within streams and creeks, ponds, marshes, springs, sag ponds, dune ponds and lagoons from 0 to 1,500 meters. Additionally, frequently breed in artificial impoundments such as stock ponds. Typically found in or within 300 feet of aquatic habitat, but may disperse up to two miles between suitable aquatic habitat. This species is unlikely to occur in Loomis based on the current known range of the species.

Table 3-3: Federal and State-listed Species Potentially Occurring in the Town of Loomis		
Special-Status Species	**Regulatory Status**	**Habitat Requirements**
Foothill yellow-legged frog *Rana boylii*	--; CE; CSC	Found in streams and rivers with rocky substrate and open, sunny banks in forests, chaparral and woodlands. Sometimes found in isolated pools, vegetated backwaters and deep shaded spring fed pools. Occurs from 0 to 1,830 meters. Rarely encountered far from permanent water sources. Inactive periods (e.g. overwintering during cold weather) will seek refuge under rocks in streams or along the shore within a few meters from water.
Birds		
Bald eagle *Haliaeetus leucocephalus*	FD; CE; --	Breeding habitat most commonly includes areas within 2.5 miles (4.0 kilometers) of coastal areas, bays, rivers, lakes, and reservoirs. Nests usually are in tall trees or on pinnacles or cliffs near water.
California black rail *Laterallus jamaicensis coturniculus*	--; CT; CFP	Inhabits saltwater, brackish, and freshwater marshes. Nesting occurs on the ground within dense vegetation in high spots of salt marshes (i.e. pickleweed), in shallow areas of freshwater marshes, in wet meadows and in flooded grassy vegetation.
Swainson's hawk *Buteo swainsoni*	--; CT; --; --	Nest peripherally to Valley riparian systems lone trees or groves of trees in agricultural fields. Most commonly used nest trees in the Central Valley, include valley oak, Fremont cottonwood, walnut, and large willows, and occasionally eucalyptus, pine and redwood trees. Forages in row, hay and grain agricultural crops, especially post-harvest when the height of the vegetation is short and easy to observe prey.

Table 3-3: Federal and State-listed Species Potentially Occurring in the Town of Loomis		
Special-Status Species	**Regulatory Status**	**Habitat Requirements**
Tricolored blackbird *Agelaius tricolor*	--; CT; CSC; --	Breeding habitat is freshwater marshes that include cattails, tules, bulrushes and sedges. Nests are made in the dense vegetation of the marsh or thickets, and sometimes on the ground. In migration and winter, will inhabit open cultivated lands and pastures as well as marshes.

Source: California Department of Fish and Wildlife. 2020; Loomis Union Elementary School District, 1994; Town of Loomis 1988; Town of Loomis, 1997; Town of Loomis, 2019.

Notes:

KEY:
Status Codes:
-- = not applicable
FD = Federally Delisted
FE = Federally Endangered
FT = Federally Threatened
CE = California Endangered
CT = California Threatened
CSC = California Species of Special Concern

DPS = Distinct Population Segments
MSL = mean sea level
USFWS = U.S. Fish and Wildlife Service

Table 3-4: Species Subject to CEQA Review		
Special-Status Species	**Regulatory Status**	**Habitat Requirements**
Plants		
Big-scale balsamroot *Balsamorhiza macrolepis* var. *macrolepis*	--; --; 1B	Perennial herb sometimes found on serpentinite soil in chaparral, cismontane woodland, and valley and foothill grassland from 90 to 1,555 meters in elevation.
Legenere *Legenere limosa*	--; --; 1B	Annual herb found in vernal pools from 1 to 880 meters in elevation.
Red Bluff dwarf rush *Juncus leiospermus* var. *leiospermu*s	--; --; --; 1B	Annual herb found in vernally mesic chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, and vernal pools from 35 to 1,250 meters in elevation.
Ahart's dwarf rush *Juncus leiospermus* var. *ahartii*	--; --; --; 1B	Annual herb found in mesic areas in valley and foothill grassland from 30 to 229 meters in elevation.
Dwarf downinigia *Downingia pusilla*	--; --; --; 2B	An annual herb found in mesic areas within valley and foothill grassland and vernal pool habitats from 1 to 445 meters in elevation.
Red Hills soaproot *Chlorogalum grandiflorum*	--; --; 1B	Perennial bulbiferous herb sometimes found on serpentinite and gabbroic soil in chaparral, cismontane woodland, lower coniferous forests from 245 to 1,690 meters in elevation.
Sanford's arrowhead *Sagittaria sanfordii*	--; --; --; 1B	Perennial rhizomatous herb found in marshes and swamps in assorted shallow freshwater areas from 0 to 650 meters.
Brazilian watermeal *Wolffia brasiliensis*	--; --; 2B	An aquatic perennial herb found in assorted shallow and freshwater marshes and swamps from 20 to 100 meters in elevation.

Table 3-4: Species Subject to CEQA Review		
Special-Status Species	**Regulatory Status**	**Habitat Requirements**
Invertebrates		
California linderiella *Linderiella occidentalis*	--; CSA; --; --	Found in a variety of natural, and artificial seasonally ponded freshwater habitats, including vernal pools, swales, ephemeral drainages, stock ponds, reservoirs, ditches, backhoe pits, and ruts caused by vehicular activity.
Fish		
Central Valley fall/late fall run Chinook salmon ESU and Essential Fish Habitat *Oncorhynchus tshawytsca*	CSC	Fall-run Chinook salmon spawn from October through December and late fall run spawn from January through mid-April in habitats similar those described for steelhead.
Reptiles and Amphibians		
Western pond turtle *Emys marmorata*	--; CSC; --	Typically associated with permanent ponds, lakes, streams, irrigation ditches and canals, and marshes, or pools in intermittent drainages, usually lined with abundant vegetation and either rocky or muddy bottom substrates. Requires aquatic basking sites, such as logs, rocks, cattail mats or exposed banks. Turtles are active from February to November, in which breeding occurs from April to May. Overwintering occurs in upland terrestrial habitats (approximately 300 feet) close to water sources, in which they will bury themselves under loose soil.

Table 3-4: Species Subject to CEQA Review		
Special-Status Species	**Regulatory Status**	**Habitat Requirements**
Western spadefoot *Spea hammondii*	--; CSC; --; --	Found in a variety of upland habitats, including lowlands, foothills, grasslands, open chaparral, and pine-oak woodlands. Habitat preferences include shortgrass plains, and sandy or gravelly soils for burrowing (e.g. alkali flats, washes, alluvial fans). Fossorial species that hibernates/aestivates for most of the year underground. Breeds temporary rain pools, and slow-moving streams (e.g. areas flooded by intermittent streams), and other artificial bodies of water as long as surrounding habitat is not developed or irrigated for agricultural purposes.
Birds		
American peregrine falcon *Falco peregrinus*	FD; CFP; --	Found in areas containing cliffs and almost always nest near water. Use open habitats for foraging. Non-breeding peregrine falcons may also occur in open areas without cliffs. Many artificial habitats like towers, bridges and buildings are also used.
Burrowing owl *Athene cunicularia*	--; CSC; --	Nests in burrows in the ground, often in old ground squirrel burrows or badger, within open dry grassland and desert habitat. The burrows are found in dry, level, open terrain, including prairie, plains, desert, and grassland with low height vegetation for foraging and available perches, such as fences, utility poles, posts, or raised rodent mounds.
Cooper's hawk *Accipiter cooperii*	--; WL--	Nests in riparian woodlands and occasionally in developed areas. Forages in open woodland areas.
Ferruginous hawk *Buteo regalis* (wintering)	--; WL--	Winters in California in grasslands and open habitats along the coast and Central Valley.

Table 3-4: Species Subject to CEQA Review		
Special-Status Species	**Regulatory Status**	**Habitat Requirements**
Golden eagle *Aquila chrysaetos*	--; --; CFP; --	Occurs in open and Semi-open habitats. Typically found in areas with cliffs, ridges, or canyonlands. Most often nests on cliffs and may also nest in trees, on the ground, or tall man-made structures such as transmission towers or windmills. This species avoids developed areas and fragmented urbanized environments.
Grasshopper sparrow *Ammodramus savannarum*	--; CSC; --; --	Frequents dense, dry, or well drained grassland, especially native grassland. Nests at base of overhanging clump of grass. This species is known from Los Angeles, Mendocino, Orange, Placer, Sacramento, San Diego, San Luis Obispo, Solano, and Yuba counties, in California.
Great blue heron *Ardea herodias*	--; CSA; -- (Nesting colony)	Variety of habitats close to bodies of water including fresh and saltwater marshes, wet meadows, lake edges and shorelines. Colonial nester in tall trees, cliff sides and sequestered spots on marshes.
Great egret *Ardea alba*	--; CSA; --; -- (Nesting colony)	Found in marshes, swampy woods, tidal estuaries, lagoons, mangroves, streams, lakes, ponds, fields and meadows. Nests primarily in tall trees, or in woods or thickets near water.
Loggerhead shrike *Lanius ludovicianus*	--; CSC; --	Forages in open areas such as grasslands, oak savannah, and deserts. Nests in dense thickets of shrubs or trees.
Merlin *Falco columbarius*	--; WL; --	Winter migrant in California. Found in a variety of habitats during winter. Requires dense vegetation for cover.

Table 3-4: Species Subject to CEQA Review		
Special-Status Species	**Regulatory Status**	**Habitat Requirements**
Northern harrier *Circus hudsonius*	--; CSC; --; --	Found in coastal scrub, Great Basin grassland, marsh and swamp, riparian scrub, valley and foothill grassland, wetland. Nests and forages in grasslands, from salt grass in desert sink to mountain cienagas. Nests on ground in shrubby vegetation usually at marsh edge; nests built of a large mound of sticks in wet areas.
Prairie falcon *Falco mexicanus*	--; WL; --	Found in open grasslands, savannahs, and coastal areas. Usually nests on cliffs or sheltered ledges.
Purple martin *Progne subis*	--; CSC; --; --	Nests in wide variety of open and partly open habitats that are often near water or around towns. Nests in tree cavities, abandoned woodpecker holes, crevices in rocks, and sometimes in bird houses or gourds put up by humans.
Sharp-shinned hawk *Accipiter striatus*	--; WL; --	Winter resident in the Central Valley of California. Forages in woodland edges and pastures with brush cover.
Short-eared owl *Asio flammeus*	--; CSC; --	Typically a winter migrant in the Central Valley of California. Limited nesting occurs along the North Coast and east side of Sierras and Modoc Plateau.
Song sparrow (Modesto population) *Melospiza melodia*	--; CSC; --; --	Found in a wide range of habitats including forest, shrub, and riparian habitat. Early in the season will nest on the ground on clumps of dead grasses and weeds, and later in the season will nest in thorny bushes, willows, cattails, cordgrass, and small conifers (0.5-10 meters high).

Table 3-4: Species Subject to CEQA Review		
Special-Status Species	**Regulatory Status**	**Habitat Requirements**
Yellow-breasted chat *Icteria virens*	--; CSC; --; --	Found in dense shrubby areas, often containing blackberry bushes, along rivers. Breeding habitat is second growth areas, shrubby old pastures, thickets, bushy areas, scrub, woodland undergrowth, and fence rows near low wet places near streams, pond edges, or swamps. Will also breed in thickets with few tall trees that are commonly close to human habitation. Nests in bushes, brier tangles, vines, and low trees generally within dense vegetation that is less than 2 meters above the ground.
Yellow warbler *Setophaga petechia*	--; CSC; --; --	Nests in thickets and other disturbed or re-growing habitats, particularly along streams and wetlands in elevations up to 9,000 feet. Overwintering can occur in mangrove forests, dry scrub, marshes, and forests, typically in lowlands but occasionally up to 8,500 feet.
White-tailed kite *Elanus leucurus*	--; CFP; -- (nesting)	Inhabit savanna, open woodlands, marshes, desert grassland, partially cleared lands and cultivated fields. Nests in trees, often near a marsh in savanna, open woodland, partially cleared lands, and cultivated fields. Foraging occurs within ungrazed or lightly-grazed fields and pastures.
Mammals		
American badger *Taxidea taxus*	--; CSC; --; --	Found in a variety of grassland, shrublands, and open woodlands throughout California. Suitable burrowing habitat requires friable soil.
Pallid bat *Antrozous pallidus*	--; CSC; --; --	Found in grasslands, shrublands, woodlands, and forests from sea level up through mixed conifer forest habitats. Roosts in colonies usually in rock crevices, caves, mines, hollow trees, and buildings.

Table 3-4: Species Subject to CEQA Review		
Special-Status Species	**Regulatory Status**	**Habitat Requirements**
Townsend's big-eared bat *Corynorhinus townsendii*	--; CSC; --	Found in subalpine and alpine habitats. Requires caves, mines, tunnels, buildings, or other human-made structures for roosting. Hibernation sites are cold, but not below freezing temperatures. Maternity sites are warm and similar to roosting sites.

Source: California Department of Fish and Wildlife. 2020; Loomis Union Elementary School District, 1994; Town of Loomis 1988; Town of Loomis, 1997; Town of Loomis, 2019.

Notes:
Table 3-4 includes state species of concern, watch list species, and Rank 1 and 2 CNPS species.

KEY:
Status Codes:
-- = not applicable
FD = Federally Delisted
CSA = California Special Animal
CFP = California Fully Protected
CSC = California Species of Special Concern
WL = Watch List

CNPS Threat Ranks
-- = not applicable
1B = Plants Rare, Threatened, or Endangered in California and elsewhere
2B = Plants presumed extirpated in California but common elsewhere

CEQA = California Environmental Quality Act
CNPS = California Native Plant Society
ESU = evolutionarily significant units

Table 3-5: Other Species of Interest		
Special-Status Species	**Regulatory Status**	**Habitat Requirements**
Plants		
Brandegee's clarkia *Clarkia biloba* ssp. *brandegeeae*	--; --; 4.2	Annual herb often found in roadcuts in the chaparral, cismontane woodland, lower montane coniferous forest from 75 to 915 meters in elevation.
Butte County fritillary *Fritillaria eastwoodiae*	--; --; 3	A perennial bulbiferous herb found sometimes in serpentinite soils within chaparral, cismontane woodland, and openings of lower montane coniferous forests from 50 to 1,500 meters in elevation.
Dubious pea *Lathyrus sulphureus* var. *argillaceus*	--; --; 3	A perennial herb found within cismontane woodland, and upper and lower montane coniferous forests from 150 to 930 meters in elevation.
Humboldt lily *Lilium humboldtii* ssp. *humboldtii*	--; --; 4.2	Perennial bulbiferous herb found in openings in chaparral, cismontane woodland, lower montane coniferous forest from 90 to 1,280 meters in elevation.
Valley brodiaea *Brodiaea rosea* ssp. *vallicola*	--; --; --; 4.2	Perennial bulbiferous herb found on silty, sandy, and gravelly loam on old alluvial terraces within swales in valley and foothill grassland and vernal pools from 10 to 335 meters.
Invertebrates		
Western bumble bee *Bombus occidentalis*	--; CCE; --	Found in open grassy areas, urban parks and gardens, chaparral and shrub areas, and mountain meadow. Nest underground in abandoned rodent burrows or other cavities. Associated food plants include *Ceanothus, Centaurea*, *Chrysothamnus*, *Geranium*, *Grindellia*, *Lupinus*, *Melilotus*, *Monardella*, *Rubus*, *Solidago*, and *Trifolium*.

Source: California Department of Fish and Wildlife. 2020; Loomis Union Elementary School District, 1994; Town of Loomis 1988; Town of Loomis, 1997; Town of Loomis, 2019.

Table 3-5 includes Rank 3 and 4 CNPS species and non-listed invertebrates, which may not be subject to CEQA review.

KEY:
Status Codes:
-- = not applicable
CCE: California Candidate Endangered

CNPS Threat Ranks
3 Plants about which we need more information – A Review List
4.2Plants of limited distribution – A Watch List (moderately threatened in California)

CEQA = California Environmental Quality Act
CNPS = California Native Plant Society

Special-Status Plants

Thirteen special-status plants have the potential to occur within the Town of Loomis. No federal or state-listed plant species are expected to occur within the Town limits. Several of these plants are associated with vernal pools that occur within old volcanic mud flows, which are generally located southwest of the Planning Area. However, they could also occur within vernal pools in the Planning Area. General habitat requirements for potentially occurring special-status plant species are included in Table 3-3 through Table 3-5. Focused plant surveys are recommended in areas that have the potential to support special-status plants within the Town limits.

Special-Status Wildlife

Based on known habitat requirements and distributions, the 36 special-status species listed in Table 3-3 through Table 3-5 have the potential to occur in the Planning Area. General habitat requirements for potentially occurring special-status wildlife species are included in Table 3-3 through Table 3-5. Many site-specific wildlife surveys have been conducted in the Planning Area and Table 3-6 lists the wildlife observed during previous surveys conducted within the Planning Area. This list does not include all wildlife species that would be expected to occur within the Planning Area, only those species documented in wildlife surveys as part of proposed projects. Special-status wildlife species previously observed have been marked with an asterisk.

Table 3-6: Wildlife Species Observed in the Planning Area

Common Name	Scientific Name	Source
Invertebrates		
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	8
Birds		
Cooper's hawk *	*Accipiter cooperii*	4
Red-winged blackbird	*Agelaius phoeniceus*	2
Mallard	*Anas platyrhynchos*	4

Table 3-6: Wildlife Species Observed in the Planning Area		
Common Name	**Scientific Name**	**Source**
California scrub jay	*Aphelocoma californica*	1, 2, 4
Red-tailed hawk	*Buteo jamaicensis*	1
Red-shouldered hawk	*Buteo lineatus*	1
Swainson's hawk *	*Buteo swainsoni*	6
California quail	*Callipepla californica*	1, 4
American goldfinch	*Spinus tristis*	4
Purple finch	*Carpodacus purpureus*	4
Turkey vulture	*Cathartes aura*	4
Wrentit	*Chamaea fasciata*	1
Killdeer	*Charadrius vociferus*	1
Northern flicker	*Colaptes auratus*	1, 2
Western wood-pewee	*Contopus sordidulus*	1
American crow	*Corvus brachyrhynchos*	1
Raven	*Corvus corax*	2
Warbler sp.	*Dendroica* sp.	4
White-tailed kite *	*Elanus leucurus*	1, 2, 4
Brewer's blackbird	*Euphagus cyanacephalus*	1
Acorn woodpecker	*Melanerpes formicivorus*	2, 4
Northern mockingbird	*Mimus polyglottos*	4
Ash-throated flycatcher	*Myiarchus cinerascens*	4
Oak titmouse	*Baeolophus inornatus*	2, 4
Savannah sparrow	*Passerculus sandwichensis*	4
Ring-necked pheasant	*Phasianus colchicus*	4
Grosbeak	*Pheucticus* sp.	4

Table 3-6: Wildlife Species Observed in the Planning Area		
Common Name	**Scientific Name**	**Source**
Nuttall's woodpecker	*Picoides nuttallii*	1, 4
Bushtit	*Psaltriparus minimus*	1
Black phoebe	*Sayornis nigricans*	1, 4
Western bluebird	*Sialia mexicana*	4
White-breasted nuthatch	*Sitta carolinensis*	4
Western meadowlark	*Sturnella neglecta*	1
European starling	*Sturnus vulgaris*	1
Barn owl	*Tyto alba*	1
Solitary vireo	*Vireo solitarius*	4
Canada goose	*Branta canadensis*	Known occurrences
Wild turkey	*Meleagris gallopavo*	Known occurrences
Mourning dove	*Zenaida macroura*	1, 2, 4
Golden-crowned sparrow	*Zonotrichia atricapilla*	2
White-crowned sparrow	*Zonotrichia leucophrys*	2
Mammals		
Coyote	*Canis latrans*	1
Black-tailed jackrabbit	*Lepus californicus*	1
Black-tailed deer	*Odocoileus hemionous*	1
Raccoon	*Procyon lotor*	2
Botta's pocket gopher	*Thomomys bottae*	1, 2
Skunk	*Mephitus mephitus*	5
Reptiles and Amphibians		
Western pond turtle *	*Emys marmorata*	4

Table 3-6: Wildlife Species Observed in the Planning Area		
Common Name	**Scientific Name**	**Source**
Western skink	*Plestiodon skiltonianus*	2
Western fence lizard	*Sceloporus occidentalis*	2, 4
Alligator lizard	*Elgaria* sp.	4
Pacific chorus frog	*Pseudacris (Hyla) regilla*	2, 4
Bullfrog	*Rana catesbeiana*	4
Common garter snake	*Thamnophis sirtalis*	4
Side-blotched lizard	*Uta stansburiana*	4
Fish		
Central Valley steelhead	*Oncorhynchus mykiss*	7
Central Valley fall/late fall run Chinook salmon	*O. tshawytscha*	7
Sacramento sucker	*Catostomus occidentalis*	3
Brown bullhead	*Ictalurus nebulosus*	3
Green sunfish	*Lepomis cyanellus*	3
Bluegill	*Lepomis macrochirus*	3
Largemouth bass	*Micropterus salmoides*	3
Sacramento squawfish	*Ptychocheilus grandis*	3

Source: Environmental Assessment Reports within the Town of Loomis (see Key below)

Key:
* = Special-status species
1 *Shadowbrook Recirculated Draft EIR*, ESA, 1997
2 *K-8 Elementary School Site Draft EIR*, Quad, 1994
3 Jones & Stokes Secret Ravine survey, March 1988
4 Laird Road survey, Jones & Stokes, 1993.
5 Town staff, 1998.
6 *Town of Loomis Costco, Recirculated Draft EIR*, AECOM, 2019.
7 *CDFW. 2020. California Natural Diversity Database Records.*
8 *Turtle Island Draft EIR. Town of Loomis. 1996.*

Aquatic Habitat

Streams in the Planning Area provide important habitat for several species. Portions of Dry Creek, Secret Ravine and Antelope Creek provide the highest quality habitat because these waterways have moderate perennial flows, clear water, rocky stream beds, and overhanging riparian vegetation.

Climate and hydrology interact to create conditions conducive to supporting two distinct fish communities: a cold-water community of anadromous fall/late fall-run Chinook salmon and steelhead during the late fall, winter and spring, and warm water resident fishes year-round. The local climatic pattern is Mediterranean in which almost all precipitation occurs during the fall through spring and virtually none during the summer. Since the first annual rain normally occurs in the fall and winter, the high stream flows are cold and attract adult. Chinook salmon and steelhead to migrate upstream to spawn. These fish may be either adults returning to their natal spawning streams or fish that have strayed (non-natal) from their native spawning streams. Stream-dwelling juveniles may also move into the system to rear (non-natal stream rearing). In either case, non-natal stream rearing may account for many fish that rear in the local drainages (Maslin and McKenney 1994, Maslin *et al.* 1997).

The cold-water condition in the local streams is not prolonged during the spring because headwaters of the local streams are too low in elevation to collect snowpack. As streamflow declines from spring and throughout the summer, the streams warm. At temperatures approaching 15 to 17°C, juvenile steelhead begin to outmigrate as smolts (physiological process by which juvenile steelhead are able to live in salt water). Juvenile Chinook salmon outmigrate at somewhat lower temperatures. Although salmonids are able to rear in water temperatures up to 20°C (or higher in streams with abundant cover and food resources), and those species with wide temperature tolerances (i.e., warm water species) remain.

Secret Ravine is a perennial stream used by fall-run chinook salmon (*Oncorhynchus tshawytcha*) and steelhead trout (*Oncorhynchus mykiss*) for spawning and rearing of juveniles (Town of Loomis, *Turtle Island Draft EIR*, 1996). Fall-run chinook salmon is a state species of special concern, and steelhead is a federal threatened species. CDFW has documented chinook salmon spawning in Secret Ravine from its confluence with Dry Creek upstream to Penryn (Gerstung 1965). Of the streams that are tributary to Natomas East Drain and the Natomas Cross Canal, Secret Ravine has supported the greatest number of spawning salmon. Approximately 60 percent of the 1,000 fish run in this drainage in 1964 spawned in Secret Ravine (Gerstung 1965). Fall-run chinook salmon typically spawn from November to January, and most juvenile salmon migrate downstream the following spring to the Sacramento River and through the Sacramento-San Joaquin Delta to the Pacific Ocean. Steelhead trout typically spawn January through March. In contrast to chinook salmon, however, juvenile steelhead my reside in freshwater in California as long as two years before migrating to the Pacific Ocean. In addition to these cold water anadromous salmonids, Secret Ravine also supports resident warm water freshwater species that include largemouth bass (*Micropterus salmoides*), green sunfish (*Lepomis cyannellus*), bluegill (*Lepomis macrochirus*), golden shiner (*Notemigonus crysoleucas*), hitch (*Lavinia exilicauda*), Sacramento sucker (*Catostomus occidentalis*), Sacramento pike-minnow (*Ptychocheilus grandis*) and may also include California roach (*Hesperoleucus symmetricus*) and Sacramento splittail (*Pogonichthys macrolepidotus*).

Antelope Creek is a perennial stream that has supported fall-run chinook salmon in the past (Gerstung 1965). It may provide non-natal rearing habitat for both fall-run chinook salmon and steelhead trout. Non-natal rearing occurs when juvenile salmonids born elsewhere migrate into the system to rear. California roach and Sacramento splittail may also occur here. Antelope Creek does provide habitat for several game species such as largemouth bass, bluegill, green sunfish, brown bullhead (*Ictalurus nebulosus*), Sacramento sucker, golden shiner and mosquitofish (*Gambusia affinis*). In addition, both Secret Ravine and Antelope Creek provide habitat for bullfrog (*Rana catesbeiana*), Pacific tree-frog (*Pseudacris regilla*), western pond turtle (*Emys marmorata*), as well as potential habitat for federal threatened foothill yellow-legged frog (*Rana boylii*) and the federal endangered California red-legged frog (*Rana aurora draytonii*).

There are several unnamed tributaries within the Town. The intermittent nature of these streams does not preclude fish species if the water occurs at the appropriate time and remains for a sufficient duration (Erman and Hawthorne 1976).

Critical Habitat

The Central Valley steelhead distinct population segment (DPS) was listed as threatened under the ESA on January 5, 2008, last updated on April 14, 2014. Critical Habitat for Central Valley steelhead was designated by the National Marine Fisheries Service on September 2, 2005 (70 FR 52488). This distinct population segment includes all naturally-spawned anadromous steelhead populations below natural and manmade impassable barriers in the Sacramento and San Joaquin Rivers and their tributaries. Steelhead are anadromous fish that spawn in rivers and streams with cool, clear, water and suitable gravel substrate. Hatchlings migrate downstream to the sea to mature before returning inland to spawn. The Planning Area is located within designated critical habitat for the Central Valley steelhead DPS.

A recovery plan for the ESUs of Sacramento River winter-run Chinook salmon, Central Valley spring-run Chinook salmon and the DPS of Central Valley steelhead was prepared by NMFS in July 2014 (NMFS 2014). The draft plan describes key threats and identifies recovery strategies and actions to achieve goals and objectives. While habitat conditions for CV steelhead have slightly improved over the past decade, access to historic habitat generally remains blocked and the quality of the species remaining habitat remains largely degraded (Lindley et al. 2009).

Regulatory Framework

Special-Status Plant and Wildlife Species

The federal Endangered Species Act of 1973 (50 CFR 17) provides legal protection and requires definition of critical habitat and development of recovery plans for plant and animal species in danger of extinction. California has a parallel mandate embodied in the California Endangered Species Act of 1984 and the California Native Plant Protection Act of 1977. These laws regulate the listing of plant and animal species as endangered, threatened, or in the case of plants, rare.

The federal Endangered Species Act requires federal agencies to make a finding on all federal actions, including the approval by an agency of a public or private action, as to the potential to jeopardize the continued existence of any federally listed species potentially impacted by the action. Section 9 of the federal Endangered Species Act prohibits the “take” of any member of an endangered species. “Take” is defined by the act as, “…to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” The USFWS has further defined the terms “harass” and “harm.” Harass is defined as

> “…an intentional or negligent act or omission that creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering.” Harm is further defined to include “…significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering.”

Section 10(a) of the federal Endangered Species Act permits the incidental “take” of an endangered species if the take is “incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.”

The federal Migratory Bird Treaty Act (MBTA) prohibits the killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of Interior. The Bald and Golden Eagle Protection Act (Eagle Act) prohibits the taking or possession of and commerce in bald and golden eagles with limited exceptions. Under the Eagle Act, it is a violation to “take, possess, sell, purchase, barter, offer to sell, transport, export or import, at any time or in any manner, any bald eagle commonly known as the American eagle, or golden eagle, alive or dead, or any part, nest, or egg, thereof.” Take is defined to include pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, and disturb. Disturb is further defined in 50 CFR Part 22.3 as “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available (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, by substantially interfering with normal breeding, feeding, or sheltering behavior.”

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) establishes a management system for marine and estuarine fishery resources. The Act applies to Pacific salmon, groundfish, and several pelagic species found in the Pacific Ocean and San Francisco Bay and Delta and pertains to Federal Agencies that carry out projects with the potential to affect Essential Fish Habitat (EFH). Essential fish habitat is defined as those waters and substrate necessary for fish spawning, breeding, feeding, or growth to maturity. For the purposes of interpreting the definition of EFH, “waters” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish, and may include areas historically used by fish where appropriate; “substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities; “necessary” means habitat required to support a sustainable fishery and a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species’ full life cycle. Habitat for Central Valley fall/late fall–run Chinook salmon (MSA managed species) are at least occasionally present in the vicinity of the Project area and are federally managed by the Pacific States Marine Fisheries Council (PSMFC) under the Pacific Salmon Fisheries Management Plan (FMP).

The State of California enacted the California Endangered Species Act (CESA) in 1984. CESA is similar to the FESA but pertains to State-listed endangered and threatened species. CESA requires state agencies to consult with the California Department of Fish and Wildlife (CDFW), when preparing CEQA documents. The purpose is to ensure that the State lead agency actions do not jeopardize the continued existence of a listed species or result in the destruction, or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available (Fish and Game Code §2080). CESA directs agencies to consult with CDFW on projects or actions that could affect listed species. It also directs CDFW to determine whether jeopardy would occur and allows CDFW to identify “reasonable and prudent alternatives” to the project consistent with conserving the species. CESA allows CDFW to authorize exceptions to the State’s prohibition against take of a listed species if the “take” of a listed species is incidental to carrying out an otherwise lawful project that has been approved under CEQA (Fish & Game Code § 2081). Species listed by the State are not necessarily protected by the federal protection statutes. Under the State laws, the CDFW is empowered to review projects for their potential impacts to listed species and their habitats.

In addition to formal endangered and threatened listings, the State of California also lists *Species of Special Concern* based on limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value. These species are not afforded the same legal protection as listed species, but may be added to official lists in the future.

Federal Candidate species include taxa for which the USFWS currently has compiled substantial information on biological vulnerability and potential threats in order to support the appropriateness of proposing to list the taxa as endangered or threatened species. The State of California also maintains lists for Candidate-Endangered Species and Candidate-Threatened Species.

A number of species have been designated as "fully protected" species under Sections 5515, 5050, 3511, and 4700 of the Fish and Game Code, but are not listed as endangered (Section 2062) or threatened (Section 2067) species under CESA. Except for take related to scientific research, all take of fully protected species is prohibited. The California Fish and Game Code defines take as "*hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.*" Additionally, Sections 3503, 3503.5, and 3513 of the California Fish and Game Code prohibits the killing of birds or the destruction of bird nests.

The Native Plant Protection Act (NPPA), enacted in 1977, allows the Fish and Game Commission to designate plants as rare or endangered. The NPPA prohibits take of endangered or rare native plants, with some exceptions for agricultural and nursery operations and emergencies. Vegetation removal from canals, roads, and other sites, changes in land use, and certain other situations require proper advance notification to CDFW.

Aquatic Resource Regulatory Framework

Development in the Planning Area is subject to various local, state, and federal regulations and permits regarding the use of aquatic resources. The Placer County Flood Control and Water Conservation District, California Department of Water Resources, and Central Valley Regional Water Quality Control Board are the primary agencies responsible for the protection of watersheds, floodplains, and water quality. The Placer County Department of Health and Medical Services is the primary agency responsible for establishing design standards and permitting septic tanks and wells. The federal government administers the National Pollutant Discharge Elimination System (NPDES) permit program, which regulates discharges into surface waters. Section 404 of the Clean Water Act prohibits the discharge of dredged or fill materials into Waters of the United States or adjacent wetlands without a permit from the U.S. Army Corps of Engineers. Placement of dredge or fill into regulated aquatic resources, including wetlands, depending on type, are regulated by the federal and/or state government. The Army Corps of Engineers regulates impacts to waters of the U.S. under Section 404 of the federal Clean Water Act. The Clean Water Act regulates the discharge of dredge and fill materials in aquatic resources deemed waters of the U.S. The State of California also regulates impacts to waters of the U.S. under Section 401 of the federal Clean Water Act and regulates impacts to waters of the State through the Porter Cologne Water Quality Control Act. On April 2, 2019, the SWRCB adopted a State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures) that is outlined below.

Federal Requirements

Unless considered an exempt activity under Section 404(f) of the Federal Clean Water Act, any person, firm, or agency planning to alter or work in “waters of the U.S.,” including the discharge of dredged or fill material, must first obtain authorization from the USACE under Section 404 of the Clean Water Act (CWA; 33 USC 1344). Permits, licenses, variances, or similar authorization may also be required by other federal, state, and local statutes. Section 10 of the Rivers and Harbors Act prohibits the obstruction or alteration of navigable waters of the U.S. without a permit from USACE (33 USC 403). Activities exempted under Section 404(f) are not exempted within navigable waters under Section 10.

”Waters of the U.S.” are defined as: “All waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide; all interstate waters including interstate wetlands; all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes or natural ponds, the use, degradation, or destruction of which could affect interstate commerce; impoundments of these waters; tributaries of these waters; the territorial sea; or wetlands adjacent to these waters (33 Code of Federal Regulations [CFR] Part 328).”

Within non-tidal waters that meet the definition cited above and, in the absence of adjacent wetlands, the indicator used by the USACE to determine the lateral extent of its jurisdiction is the ordinary high water mark (OHWM) – the line on the shore established by fluctuations of water and indicated by a clear, natural line impressed on the bank, shelving, changes in soil character, destruction of terrestrial vegetation, and/or the presence of litter and debris.

Wetlands are defined under the CFR Part 328.3 as those areas that are inundated or saturated by surface or ground water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

The USACE has determined that not all features which meet the wetland definition are, in fact, considered to be waters of the U.S. Normally, features not considered as waters of the U.S. include: (a) non-tidal drainage and irrigation ditches excavated on dry land; (b) artificially irrigated areas which would revert to upland if the irrigation ceased; (c) artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing, (d) artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water for primarily aesthetic reasons, and, (e) waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States (see 33 CFR 328.3(a)). Other features may be excluded based on Supreme Court decisions (e.g., SWANCC and Rapanos) or by regulation.

Federal and state regulations pertaining to waters of the U.S., including wetlands, are discussed below.

The Clean Water Act (33 United States Code (USC) 1251-1376 provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation’s waters.

Section 401 requires that an applicant for a federal license or permit that allows activities resulting in a discharge to waters of the U.S. obtain a state certification that the discharge complies with other provisions of CWA. The Regional Water Quality Control Board (RWQCB) administers the certification program in California and may require State Water Quality Certification before other permits are issued.

Section 402 establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into waters of the U.S.

Section 404 establishes a permit program administered by USACE that regulates the discharge of dredged or fill material into waters of the U.S. (including wetlands). Implementing regulations by USACE are found at 33 CFR Parts 320-332. The Section 404 (b)(1) Guidelines were developed by the USEPA in conjunction with USACE (40 CFR Part 230), allowing the discharge of dredged or fill material for non-water dependent uses into special aquatic sites only if there were no practicable alternative that would have less adverse impacts.

State Requirements

Waters of the State

Any action requiring a CWA Section 404 permit, or a Rivers and Harbors Act Section 10 permit, must also obtain a CWA Section 401 Water Quality Certification. The State of California Water Quality Certification (WQC) Program was formally initiated by the State Water Resources Control Board (SWRCB) in 1990 under the requirements stipulated by section 401 of the Federal CWA. Although the Clean Water Act is a Federal law, Section 401 of the CWA recognizes that states have the primary authority and responsibility for setting water quality standards. In California, under Section 401, the State and Regional Water Boards are the authorities that certify that issuance of a federal license or permit does not violate California's water quality standards (i.e., that they do not violate Porter-Cologne and the Water Code). The WQC Program currently issues the WQC for discharges requiring U.S. Army Corps of Engineers' (Corps) permits for fill and dredge discharges within Waters of the United States, and now also implements the State's wetland protection and hydromodification regulation program under the Porter Cologne Water Quality Control Act.

On April 2, 2019, the SWRCB adopted a State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures), for inclusion in the forthcoming Water Quality Control Plan for Inland Surface Waters and Enclosed Bays and Estuaries and Ocean Waters of California. The Procedures consist of four major elements: 1) a wetland definition; 2) a framework for determining if a feature that meets the wetland definition is a water of the state; 3) wetland delineation procedures; and 4) procedures for the submittal, review and approval of applications for Water Quality Certifications and Waste Discharge Requirements for dredge or fill activities. The Office of administrative Law approved the Procedures on August 28, 2019, and the Procedures became effective May 28, 2020.

Under the Procedures and the State Water Code (Water Code §13050(e)), "Waters of the State" are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state." Unless excluded by the Procedures, any activity that could result in discharge of dredged or fill material to Waters of the State, which includes Waters of the U.S. and non-federal Waters of the State, requires filing of an application under the Procedures.

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act, Water Code Section 13000 et seq.) is California's statutory authority for the protection of water quality in conjunction with the federal CWA. The Porter-Cologne Act requires the SWRCB and RWQCBs under the CWA to adopt and periodically update water quality control plans, or basin plans. Basin plans are plans in which beneficial uses, water quality objectives, and implementation programs are established for each of the nine regions in California. The Porter-Cologne Act also requires dischargers of pollutants or dredged or fill material to notify the RWQCBs of such activities by filing Reports of Waste Discharge and authorizes the SWRCB and RWQCBs to issue and enforce waste discharge requirements, National Pollution Discharge Elimination System (NPDES) permits, Section 401 water quality certifications, or other approvals.

California Department of Fish and Wildlife

The CDFW is a trustee agency that has jurisdiction under Section 1600 et seq. of the California Fish and Game Code. Under Sections 1602 and 1603, a private party must notify CDFW if a proposed project will "*substantially divert or obstruct the natural flow* *or substantially change the bed, channel, or bank of any river, stream, or lake designated* by *the department, or use any material from the streambeds…except when the department has been notified pursuant to Section 1601.*" Additionally, CDFW asserts jurisdiction over native riparian habitat adjacent to aquatic features, including native trees over 4-inches in diameter at breast height (DBH). If an existing fish or wildlife resource may be substantially adversely affected by the activity, CDFW may propose reasonable measures that will allow protection of those resources. If these measures are agreeable to the parties involved, they may enter into an agreement with CDFW identifying the approved activities and associated mitigation measures. Generally, CDFW recommends submitting an application for a Streambed Alteration Agreement (SAA) for any work done within the lateral limit of water flow or the edge of riparian vegetation, whichever is greater.

AIR QUALITY

Air quality describes the concentration of pollutants present in the air at a particular location. For a specific location, the air quality is a direct result of how air moves through the area and how people are influencing the air through the operation of emissions sources. Air quality is an important natural resource that influences public health and welfare and quality of life. Air pollutants can adversely affect public health, visibility, native vegetation, and agricultural production.

Ambient concentrations of air pollutant emissions are determined by the amount of emissions released by air pollutant sources and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and the presence of sunlight. Therefore, existing air quality conditions in the area are determined by such natural factors as climate, topography, and meteorology, in addition to the total emissions generated, as discussed separately below.

Greenhouse gas (GHG) emissions and energy use are often associated with air quality. These topics are addressed later in this Natural Resources Setting section.

Major Findings

The following provides a summary of key findings for consideration in the General Plan update. The technical background on each topic is further discussed in the sections to follow.

> In Placer County, the majority of ozone precursor (reactive organic gases [ROG] and nitrogen oxides [NOX]) emissions come from mobile sources such as cars, trucks, and trains. Off-road mobile emissions, such as construction and agricultural equipment account for approximately 25 percent of ozone precursor emissions. The majority of particulate matter (PM) emissions within Placer County in the Sacramento Valley Air Basin (SVAB) are attributable area-wide sources associated with construction and demolition activities, as well as re-entrained roadway dust and residential fuel combustion. There are no major stationary sources (e.g., petroleum refineries, large manufacturing plants, etc.) in the Town of Loomis.

> The Town of Loomis is within the SVAB and is under the jurisdiction of the Placer County Air Pollution Control District (PCAPCD). The portion of Placer County and the SVAB in which Loomis is located is designated as a nonattainment area for ozone and particulate matter with an aerodynamic diameter of 2.5 micrometers or less (PM2.5) under the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS), and as nonattainment for particulate matter with an aerodynamic diameter of 10 micrometers or less (PM10) under the CAAQS. A nonattainment area is an area for which the State or federal standards have been exceeded for that pollutant. In order to attain the NAAQS and CAAQS in the region at the earliest practicable date, PCAPCD is required to comply with and implement the applicable air quality attainment plan.

> Naturally occurring asbestos is known to be present in several foothill areas of Placer County. However, the Town of Loomis is within an area categorized as least likely to contain naturally occurring asbestos (Department of Conservation 2006). However, asbestos may have been used during the construction of existing structures; this would be an important consideration during demolition or renovation of existing structures.

- Sources of toxic air contaminants (TACs) present within the Planning Area include dry cleaning facilities, gasoline stations, and diesel backup generators, which are subject to the rules and regulations and permitting requirements of PCAPCD. Unpermitted sources also include on-road vehicles associated with Interstate (I-) 80 and concentrated use of off-road, diesel-powered heavy-duty equipment, such as that used in agricultural production and construction sites.

Climate, Topography and Meteorology

The Loomis Planning Area is located in the SVAB, which is characterized by cool winters and hot, dry summers tempered by occasional westerly breezes from the Sacramento/San Joaquin Delta. The region has a Mediterranean climate, characterized by hot, dry summers and cool, rainy winters.

In general, the SVAB is relatively flat and bounded by the north Coast Ranges to the west and the northern Sierra Nevada to the east. Air flows into the SVAB through the Carquinez Strait, the only breach in the western mountain barrier, and moves across the Sacramento–San Joaquin Delta from the San Francisco Bay Area. The inland location and surrounding mountains typically prevent the area from experiencing much of the ocean breeze that moderates the temperatures in coastal regions. The mountains surrounding the Sacramento Valley create a barrier to air flow, which can trap in air pollutants, particularly in the autumn and early winter when large pressure cells lie over the Sacramento Valley and temperatures are low. The lack of surface wind during these periods and reduced vertical flow caused by less surface heating, reduces the influx of outside air and allows air pollutants generated within the SVAB to become concentrated in a stable volume of air. Ground concentrations are the highest when these conditions are combined with smoke from agricultural burning or forest fires or temperature inversions the trap cool air, fog, and pollutants near the ground. Alternatively, winds and unstable atmospheric conditions associated with the passage of winter storms result in periods of low air pollution and excellent visibility.

Characteristic of the winter months in the SVAB are periods of dense and persistent low-level fog, which are most prevalent between storms. This precipitation and fog also tend to reduce or limit some pollutant concentrations. However, between winter storms, high pressure and light winds contribute to low-level temperature inversions and stable atmospheric conditions, resulting in the concentration of air pollutants.

May through October is ozone season in the SVAB and is characterized by poor air movement in the mornings and the arrival of the Delta sea breeze from the southwest in the afternoons. In addition, with the longer daylight hours, a larger amount of sunlight is available to fuel photochemical reactions between volatile organic compounds (VOC) and NO_X, which in turn result in ozone formation. Typically, the Delta breeze transports air pollutants northward out of the SVAB. However, during approximately half of the time from July to September, a phenomenon known as the Schultz Eddy prevents this from occurring. The Schultz Eddy phenomenon causes winds on the west side of the SVAB to shift to a northerly wind, blowing air pollutants southward back into the SVAB. This phenomenon exacerbates the concentration of air pollutant emissions in the air basin and can contribute to violations of ambient air quality standards.

Criteria Air Pollutants

There are many pollutants present in the atmosphere, although most are not a significant public health concern in the Planning Area. California Air Resources Board (ARB) and the U.S. Environmental Protection Agency (EPA) have identified six air pollutants as being indicators of ambient air quality: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), PM (often analyzed separately as PM_{10} and $PM_{2.5}$), and lead. Because the ambient air quality standards for these air pollutants are regulated using human health and environmentally based criteria, they are commonly referred to as “criteria air pollutants.” Criteria air pollutants of concern in the Planning Area are summarized below.

Ozone

Ozone is the most common component of smog and is the principal pollutant that causes adverse health effects. Ozone is toxic and colorless, and has a pungent odor. In high concentrations, ozone and other photochemical oxidants are directly detrimental to humans by causing respiratory irritation and possible alterations in the functioning of the lungs. Ozone and other oxidants can also enter the leaves of plants and reduce photosynthesis, which is the process that plants use to convert sunlight to energy to live and grow.

Ozone is not emitted directly into the air but is formed through a series of reactions involving ROG and NO_X in the presence of sunlight. These chemicals are considered to be precursors of ozone, as their reaction leads to its formation. ROG emissions result primarily from incomplete combustion and the evaporation of chemical solvents and fuels. NO_X includes various combinations of nitrogen and oxygen, including nitric oxide, NO_2, and others, typically resulting from the combustion of fuels.

Emissions of both ROG and NO_X are considered critical to ozone formation; therefore, either ROG or NO_X can limit the rate of ozone production. When the production rate of NO_X is lower, indicating that NO_X is scarce, the rate of ozone production is NO_X-limited. Under these circumstances, ozone levels could be most effectively reduced by lowering current and future NO_X emissions (from fuel combustion), rather than by lowering ROG emissions. Rural areas tend to be NO_X-limited, while areas with dense urban populations tend to be ROG-limited. Both ROG and NO_X reductions provide ozone benefits in the region, but the Sacramento Federal Nonattainment Area, which includes Placer County, exhibits a NO_X-limited regime; therefore, NO_X reductions (such as those available through reducing mobile source emissions) are more effective than ROG reductions on a tonnage basis (SMAQMD 2017).

Ozone concentrations reflect an interplay of emissions of ozone precursors, transport, meteorology, and atmospheric chemistry. Meteorology and terrain play a major role in ozone formation. Generally, low wind speeds or stagnant air, coupled with warm temperatures and clear skies provide the optimum conditions for formation. As a result, summer is generally the peak ozone season. Because of the reaction time involved, peak ozone concentrations often occur far downwind of the precursor emissions. Therefore, ozone is a regional pollutant that often affects large areas.

Individuals exercising outdoors, children, and people with lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the most susceptible subgroups for ozone effects. Short-term ozone exposure (lasting for a few hours) can result in changes in breathing patterns, reductions in breathing capacity, increased susceptibility to infections, inflammation of lung tissue, and some immunological changes. A correlation has also been reported between elevated ambient ozone levels and increases in daily hospital admission rates and mortality (EPA 2020a). An increased risk of asthma has been found in children who participate in multiple sports and live in communities with high ozone levels.

Emissions of the ozone precursors ROG and NO_X have decreased in the past several years. According to the most recently published edition of ARB's California Almanac of Emissions and Air Quality, NO_X and ROG emissions levels in the Sacramento metropolitan area (inclusive of the southern portion of the SVAB, as well as the western portions of El Dorado and Placer counties, within which the Planning Area is located) are projected to continue to decrease through 2035, largely because of more stringent motor vehicle standards and cleaner burning fuels, as well as rules for controlling ROG emissions from industrial coating and solvent operations (ARB 2013).

Carbon Monoxide

CO is a colorless and odorless gas that is primarily produced by the incomplete burning of carbon in fuels such as natural gas, gasoline, and wood, and is emitted by a wide variety of combustion sources, including on-road and non-road mobile sources, wood-burning stoves, incinerators, industrial sources, and wildfires. On-road and non-road mobile sources account for approximately 38 percent and 26 percent, respectively, of all CO emissions nationwide (EPA 2020b). Relatively high concentrations are typically found near crowded intersections and along heavily used roadways carrying slow-moving traffic. Even under the most severe meteorological and traffic conditions, high concentrations of CO are limited to locations within a relatively short distance (300 to 600 feet) of heavily traveled roadways. Vehicle traffic emissions can cause localized CO impacts, and severe vehicle congestion at major signalized intersections can generate elevated CO levels, called "hot spots," which can be hazardous to human receptors adjacent to the intersections.

Adverse health effects associated with exposure to high CO concentrations, typically only attainable indoors or within similarly enclosed spaces, include dizziness, headaches, and fatigue. CO exposure is especially harmful to unborn babies, infants, elderly people, and people with anemia or with a history of heart or respiratory disease (ARB 2020a).

Nitrogen Dioxide

NO_2 is one of a group of highly reactive gases known as oxides of nitrogen, or NO_X. NO_2 is formed when ozone reacts with nitric oxide (i.e., NO) in the atmosphere and is listed as a criteria pollutant because NO_2 is more toxic than nitric oxide. The major human-made sources of NO_2 are combustion devices, such as boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines. The combined emissions of nitric oxide and NO_2 are referred to as NO_X and reported as equivalent NO_2. Because NO_2 is formed and depleted by reactions associated with ozone, the NO_2 concentration in a geographical area may not be representative of local NO_X emission sources. NO_X also reacts with water, oxygen, and other chemicals to form nitric acids, contributing to the formation of acid rain.

Inhalation is the most common route of exposure to NO_2. Breathing air with a high concentration of NO_2 can lead to respiratory illness. Short-term exposure can aggravate respiratory diseases, particularly asthma, resulting in respiratory symptoms (such as coughing, wheezing, or difficulty breathing), hospital admissions, and visits to emergency rooms. Longer exposures to elevated concentrations of NO_2 may contribute to the development of asthma and potentially increase susceptibility to respiratory infections. Larger decreases in lung functions are observed in individuals with asthma or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these subgroups (EPA 2016).

Sulfur Dioxide

SO_2 is one component of the larger group of gaseous oxides of sulfur (SO_X). SO_2 is used as the indicator for the larger group of SO_X, as it is the component of greatest concern and found in the atmosphere at much higher concentrations than other gaseous SO_X. SO_2 is typically produced by such stationary sources as coal and oil combustion facilities, steel mills, refineries, and pulp and paper mills. The major adverse health effects associated with SO_2 exposure pertain to the upper respiratory tract. On contact with the moist mucous membranes, SO_2 produces sulfurous acid, a direct irritant. Concentration rather than duration of exposure is an important determinant of respiratory effects. Children, the elderly, and those who suffer from asthma are particularly sensitive to effects of SO_2 (EPA 2019).

SO_2 also reacts with water, oxygen, and other chemicals to form sulfuric acids, contributing to the formation of acid rain. SO_2 emissions that lead to high concentrations of SO_2 in the air generally also lead to the formation of other SO_X, which can react with other compounds in the atmosphere to form small particles, contributing to particulate matter pollution, which can have health effects of its own.

Particulate Matter

Particulate matter refers to a complex mixture of small solid matter and fine droplets (aerosols) made up of several components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The major area-wide sources of $PM_{2.5}$ and PM_{10} are fugitive dust, especially from roadways, agricultural operations, and construction and demolition. Other sources of PM_{10} include crushing or grinding operations. $PM_{2.5}$ sources also include all types of combustion, including motor vehicles, power plants, residential wood burning, forest fires, agricultural burning, and some industrial processes. Exhaust emissions from mobile sources contribute only a very small portion of directly emitted $PM_{2.5}$ and PM_{10} emissions. However, they are a major source of ROG and NO_X, which undergo reactions in the atmosphere to form PM, known as secondary particles. These secondary particles make up the majority of PM pollution.

The size of PM is directly linked to its potential for causing health problems. EPA is concerned about particles that are 10 micrometers in diameter or smaller, because these particles generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects, even death. The adverse health effects of PM_{10} depend on the specific composition of the particulate matter. For example, health effects may be associated with metals, polycyclic aromatic hydrocarbons, and other toxic substances adsorbed onto fine PM (referred to as the "piggybacking effect"), or with fine dust particles of silica or asbestos. Effects from short- and long-term exposure to elevated concentrations of PM_{10} include respiratory symptoms, aggravation of respiratory and cardiovascular diseases, a weakened immune system, and cancer (World Health Organization 2018).

$PM_{2.5}$ poses an increased health risk because these very small particles can be inhaled deep in the lungs and may contain substances that are particularly harmful to human health. Direct emissions of $PM_{2.5}$ in the Sacramento metropolitan area decreased between 2000 and 2010, but are projected to increase very slightly through 2035. Similarly, emissions of diesel particulate matter (DPM) decreased from 2000 through 2010 because of reduced exhaust emissions from diesel mobile sources. These emissions are anticipated to continue to decline through 2035 (ARB 2013).

Lead

Lead is a highly toxic metal that may cause a range of human health effects. Lead is found naturally in the environment and is used in manufactured products. Previously, the lead used in gasoline Anti-knock additives represented a major source of lead emissions to the atmosphere. Soon after its inception, EPA began working to reduce lead emissions, issuing the first reduction standards in 1973. Lead emissions have decreased substantially as a result of the near elimination of leaded gasoline use. Metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers. Although the ambient lead standards are no longer violated, lead emissions from stationary sources still pose "hot spot" problems in some areas. As a result, ARB has identified lead as a toxic air contaminant (TAC).

Fetuses, infants, and children are more sensitive than others to the adverse effects of lead exposure. Exposure to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotients. In adults, increased lead levels are associated with increased blood pressure. Lead poisoning can cause anemia, lethargy, seizures, and death, although it appears that lead does not directly affect the respiratory system.

Regional Ambient Air Quality

Both the EPA and the ARB have established air quality standards for the criteria air pollutants, based on consideration of the health and welfare of the general public. The NAAQS and the CAAQS are summarized in Table 3-7. In addition to standards for the criteria air pollutants, California has also set CAAQS for visibility reducing particles, sulfates, hydrogen sulfide, and vinyl chloride. These health-based pollutant standards are reviewed with a legally prescribed frequency and are revised, as warranted, by new data on health and welfare effects. Each standard is based on a specific averaging time over which the concentration is measured. Different averaging times are based on protection from short-term, high-dosage effects or longer term, low-dosage effects.

Table 3-7: Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [a,c]	Primary National Standards [b,c,d]	Secondary National Standards [b,c,e]
Ozone[f]	1-Hour 8-Hour	0.09 ppm (180 µg/m^3) 0.07 ppm (137 µg/m^3)	--- 0.07 ppm (137 µg/m^3)	Same as primary standard
Carbon Monoxide (CO)	1-Hour 8-Hour	20 ppm (23 mg/m^3) 9.0 ppm (10 mg/m^3)	35 ppm (40 mg/m^3)9.0 ppm (10 mg/m^3)	---
Nitrogen Dioxide (NO_2) [g]	1-Hour Annual Arithmetic Mean	0.18 ppm (339 µg/m^3) 0.030 ppm (57 µg/m^3)	100 ppb (188 µg/m^3) 0.053 ppm(100 µg/m^3)	--- Same as Primary Standard
Sulfur Dioxide (SO_2) [h]	24-Hour 3-Hour 1-Hour	0.04 ppm (105 µg/m^3) --- 0.25 ppm (655 ug/m^3)	--- --- 75 ppb (196 µg/m^3)	--- 0.5 ppm (1,300 µg/m^3) ---
Inhalable Particulate Matter (PM_{10}) [i]	24-Hour Annual Arithmetic Mean	50 µg/m^3 20 µg/m^3	150 µg/m^3 ---	Same at Primary Standard ---

Table 3-7: Ambient Air Quality Standards				
Pollutant	**Averaging Time**	**California Standards [a,c]**	**Primary National Standards [b,c,d]**	**Secondary National Standards [b,c,e]**
Fine Particulate Matter ($PM_{2.5}$) [i]	Annual Arithmetic Mean 24-Hour	12.0 μg/m^3 ---	12.0 μg/m^3 35.0 μg/m^3	15.0 μg/m^3 Same as Primary Standard
Lead	30-Day Average Rolling 3-Month Average	1.5 μg/m^3 ---	--- 0.15 μg/m^3	--- Same as Primary Standard
Visibility-reducing Particles [l]	8-Hour	See footnote 1	No National Standards	
Sulfates	24-Hour	25 μg/m^3		
Hydrogen Sulfide	1-Hour	0.03 ppm (42 μg/m^3)		
Vinyl Chloride [j]	24-Hour	0.01 ppm (26 μg/m^3)		

Notes for Table 3-7:
Source: ARB 2020b
Notes: μg/m^3 = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter; ppb = parts per billion; ppm = parts per million

[a] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility-reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[b] National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 μg/m^3 is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standards.

[c] Concentration expressed first in the units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25 degrees Celsius (°C) and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and reference pressure of 760 torr; "ppm" in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[d] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

[e] National Secondary Standards: Levels of air quality necessary to protect public welfare from any known or anticipated adverse effects of a pollutant.

[f] On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

[g] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. California standards are in units of ppm. To directly compare the national 1-hour standard to the California standards, the units can be converted from 100 ppb to 0.100 ppm.

[h] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. To directly compare the 1-hour national standard to the California standard, the units can be converted to ppm. In this case, the national standard of 75 ppb is identical of 0.075 ppm.

[i] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 μg/m^3 to 12.0 μg/m^3. The existing national 24-hour $PM_{2.}$ standards (primary and secondary) were retained at 35 μg/m^3, as was the annual secondary standard of 15 μg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 μg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean averaged over 3 years.

[j] ARB has identified lead and vinyl chloride as toxic air contaminants with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Notes for Table 3-7:

[k] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m³ as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standards are approved.

[l] In 1989, ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extension of 0.23 per kilometer" and the "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Air Quality Attainment Status

The Federal and California Clean Air Acts require identification and classification of each state air basin as attainment, nonattainment, or unclassified based on the NAAQS and CAAQS. An attainment designation for a particular pollutant indicates that available ambient monitoring data have shown that the NAAQS or CAAQS for that pollutant have not been violated (or exceeded). A nonattainment designation for a given pollutant indicates that the standards have been exceeded for that pollutant. An unclassified designation indicates that insufficient ambient monitoring data are available to determine whether or not there have been violations of the NAAQS or CAAQS for the pollutant in question. For regulatory purposes, an unclassified area is generally treated the same as an attainment area.

Table 3-8 provides the attainment status for each pollutant in the Sacramento Valley Air Basin. The Planning Area is in non-attainment for ozone and $PM_{2.5}$ based on both State and federal standards. For PM_{10}, it is in nonattainment for the State standard only. The Planning Area is in attainment or unclassified for all other pollutants.

Table 3-8: Attainment Status of the Sacramento Valley Air Basin			
Pollutant	**Averaging Time**	**Federal Status**	**State Status**
Ozone	1-Hour	---	Nonattainment
Ozone	8-Hour	Nonattainment	Nonattainment
Carbon Monoxide (CO)	1-Hour	Attainment	Attainment
Carbon Monoxide (CO)	8-Hour	Attainment	Attainment
Nitrogen Dioxide (NO_2)	1-Hour	Unclassified	Attainment
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	Attainment	Attainment
Sulfur Dioxide (SO_2)	24-Hour	Attainment	Attainment
Sulfur Dioxide (SO_2)	3-Hour	Attainment	Attainment
Sulfur Dioxide (SO_2)	1-Hour	Attainment	Attainment
Respirable Particulate Matter (PM_{10})	24-Hour	Attainment	Nonattainment
Respirable Particulate Matter (PM_{10})	Annual Arithmetic Mean	---	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	Attainment	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	Nonattainment	---
Lead	30-Day Average	Attainment	Attainment
Lead	Rolling 3-Month Average	Attainment	Attainment
Visibility-reducing Particles	8-Hour	No National Standards	Unclassified
Sulfates	24-Hour	No National Standards	Attainment
Hydrogen Sulfide	1-Hour	No National Standards	Unclassified
Vinyl Chloride	24-Hour	No National Standards	Unclassified

Source: ARB 2020c, EPA 2020c. Data compiled by AECOM.

Toxic Air Contaminants

In addition to criteria pollutants, both federal and State air quality regulations also focus on TACs. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may otherwise pose a hazard to human health. The health risks of individual toxic air contaminants vary greatly; at a given level of exposure, one toxic air contaminant may pose a hazard that is many times greater than another. TACs are identified and their toxicity is studied by the California Office of Environmental Health Hazard Assessment (OEHHA). TACs are usually present in minute quantities in the ambient air; however, their toxicity or health risk may pose a threat to public health even at low concentrations. TACs can be separated into carcinogens and noncarcinogens, based on the nature of the effects associated with exposure to the pollutant. For regulatory purposes, carcinogens are assumed to have no safe threshold below which health impacts would not occur. Noncarcinogens differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur.

Stationary sources of TACs include gasoline stations, dry cleaners, and diesel backup generators, among which are subject to PCAPCD permit requirements. On-road motor vehicles and off-road sources, such as construction equipment and trains, are also common sources of TACs. In terms of health risks, the most volatile contaminants are DPM, benzene, formaldehyde, 1,3-butadiene and acetaldehyde. Gasoline vapors contain several TACs, including benzene, toluene, and xylenes. Public exposure to TACs can result from emissions from normal operations, as well as accidental releases.

$PM_{2.5}$ and DPM exposure is strongly associated with mortality, respiratory diseases, and lung development in children, and other endpoints such as hospitalization for cardiopulmonary disease. ARB identified DPM as a TAC in 1998 based on data developed and reviewed by the OEHHA and ARB in the scientific risk assessment on exposure to diesel exhaust and its health effects (ARB 1998). Other agencies, such as the National Toxicology Program, the EPA and the National Institute of Occupational Safety and Health, concluded that exposure to diesel exhaust likely causes cancer. More recently, the World Health Organization’s International Agency for Research on Cancer classified diesel engine exhaust as carcinogenic to humans (Group 1), an increase from the prior 1998 classification by the International Agency for Research on Cancer (IARC) as probably carcinogenic to humans (Group 2A) (World Health Organization 2012). According to the 2009 California Almanac of Emissions and Air Quality (California Air Resources Board 2009), the majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important being diesel PM. Diesel PM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal-combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present.

Diesel powered engines, including locomotive engines and heavy-duty diesel-powered vehicles, represent a major source of DPM in California. Because locomotive engines and heavy-duty diesel-powered vehicles emit DPM during operations, areas where locomotive engines are operated in place/idle frequently or for long periods of time, and areas in proximity to high-volume freeways can experience increased atmospheric concentrations of DPM. Consequently, the ARB considers railyards and high-volume freeways to be substantial sources of TACs. The Planning Area does not contain a railyard, distribution centers, or other such substantial sources of DPM. The Union Pacific Railroad does traverse the Planning Area; however, DPM emissions from locomotives traveling along railroads are intermittent and dispersed, and therefore do not pose the same health risk as concentrated sources such as a railyard. I-80, a high-volume freeway, runs southeast to northwest through the Planning Area and is considered a potential source of DPM and gasoline-related TACs.

Asbestos is the name given to several naturally occurring fibrous silicate minerals. Asbestos has been mined for applications requiring thermal insulation, chemical and thermal stability, and high tensile strength. Asbestos is also found in its natural state in rock or soil (known as naturally occurring asbestos), typically in ultramafic or serpentine rock formations. Naturally occurring asbestos is known to be present in several foothill areas of Placer County, but according to the Special Report 190: Relative Likelihood for the Presence of Naturally Occurring Asbestos in Placer County, California prepared by the Department of Conservation (2006), the Town of Loomis is within an area categorized as least likely to contain naturally occurring asbestos, because faults and serpentinite outcroppings are not known to be in the Planning Area. However, asbestos may have been used during the construction of existing structures, which should be considered when such structures are proposed for demolition.

Odors

The ability to detect odors varies considerably among the population and is subjective. Some individuals can smell minute quantities of specific substances, while others may not have the same sensitivity but may be sensitive to odors of other substances. In addition, people may have different reactions to the same odor; an odor that is offensive to one person (e.g., from a fast-food restaurant or bakery) may be perfectly acceptable to another. Unfamiliar odors may be more easily detected and likely to cause complaints than familiar ones.

Several examples of common land uses that generate substantial odors are wastewater treatment plants, landfills, composting/green waste facilities, recycling facilities, petroleum refineries, chemical manufacturing plants, painting/coating operations, rendering plants, and food packaging plants. In addition, odors can be caused by agricultural activities, such as dairy operations; horse, cattle, or sheep (livestock) grazing; fertilizer use; and aerial crop spraying.

Offensive odors can affect human health in several ways. First, odorant compounds can irritate the eye, nose, and throat, which can reduce respiratory volume. Second, the VOCs that cause odors can stimulate sensory nerves to cause neurochemical changes that might influence health, for instance, by compromising the immune system. Finally, unpleasant odors can trigger memories or attitudes linked to unpleasant odors, causing cognitive and emotional effects, such as stress.

No single source of substantial odors is identified in the Planning Area. However, the Loomis area supports substantial agricultural uses, often in close proximity to residences and other odor-sensitive land uses. Typical odors from such uses include manure from livestock and fertilizer for crop production, which are often perceived as objectionable. Consequently, while odors are not an acute problem within the Planning Area, they may be considered substantial by some especially sensitive area residents.

Air Quality Regulatory Framework

Air pollution control is administered on three government levels in California: Federal (EPA), State (ARB), and local PCAPCD. The PCAPCD administers air pollution control programs in Placer in consultation with the EPA and ARB.

Federal

Clean Air Act and Ambient Air Quality Standards

The primary legislation that governs federal air quality regulations is the California Clean Air Act (CCAA), enacted in 1970 and amended by Congress most recently in 1990. The CAA delegates primary responsibility for clean air to EPA. EPA develops rules and regulations to preserve and improve air quality and delegates specific responsibilities to state and local agencies. The CAA directs EPA to establish federal air quality standards, known as NAAQS for six criteria air pollutants: ozone, CO, PM (both PM_{10} and $PM_{2.5}$), SO_2, NO_2 and lead. NAAQS include both primary and secondary standards; the former are set to protect public health with an adequate margin of safety, the latter to prevent degradation to the environment (e.g., impairment of visibility, damage to vegetation). Table 3-7 above summarizes NAAQS currently in effect for each criteria air pollutant.

The CAA places most of the responsibility on states to achieve compliance with NAAQS. Each state is required to submit and implement an air quality control plan, referred to as a State Implementation Plan (SIP) for local areas not meeting NAAQS. The SIP must include pollution control measures that demonstrate how the standards will be met by the dates specified in the CAA. The SIP is periodically modified 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 to determine whether implementing them will achieve ambient air quality standards. If EPA determines a SIP to be inadequate, a federal implementation plan that imposes additional control measures may be prepared for the nonattainment area. Failure to submit an approvable SIP or to implement the plan within the mandated time frame may result in sanctions to transportation funding and stationary air pollution sources in the air basin.

In California, EPA has delegated authority to prepare SIPs to ARB, which, in turn, has delegated that authority to individual air districts. ARB traditionally has established state air quality standards, maintaining oversight authority in air quality planning, developing programs for reducing emissions from motor vehicles, developing air emissions inventories, collecting air quality and meteorological data, and approving SIPs.

Locomotive Emissions Standards

In March 2008, EPA adopted a three-part emissions standard program to reduce emissions from diesel locomotives over time. The regulation tightens emission standards for existing, remanufactured locomotives, and sets exhaust emission standards for newly build locomotives of model years 2011-2014 (Tier 3) and 2015 and beyond (Tier 4). The regulation is expected to reduce PM emissions from locomotive engines by as much as 90 percent and NO_X emissions by as much as 80 percent when fully implemented.

State

Assembly Bill 2595, known as the CCAA took effect on January 1, 1989. The goal of this bill is to attain the CAAQS by the earliest practicable date. The CCAA requires that air quality plans be prepared for areas of the state that have not met state air quality standards for O_3, CO, NO_2, and SO_2. Among other requirements of the CCAA, the plans must include a wide range of implementable control measures, which often include transportation control measures and performance standards. In order to implement the transportation-related provisions of the CCAA, local air pollution control districts have been granted explicit authority to adopt and implement transportation control measures. The applicable AQAP for Placer County is discussed below with regard to the PCAPCD.

California Code of Regulations

Title 13 regulates motor vehicles.

Chapters 3.5 and 3.6 require that all heavy-duty vehicles powered by a diesel engine and operating on California highways, submit to a smoke emissions test. Vehicles with 1991 or newer model-year diesel engines may not exceed an opacity level of more than 40 percent. Vehicles with 1990 or older model-year diesel engines may not exceed an opacity level of 55 percent.

Chapter 9 regulates off-road vehicles and engine pollution control devices. Article 4.8 regulates diesel fleet emissions. The contractor shall use ARB ultra-low-sulfur diesel fuel for all diesel-powered equipment. In addition, low sulfur fuel shall be utilized for all stationary equipment. Targets for each year between 2011 and 2020 are mandated for particulate matter emissions. A large or medium fleet must meet a DPM index that is less than or equal to the calculated target rates. Small fleets will be required to comply with DPM averages starting in 2020. Article 5, the California Portable Equipment Registration Program, regulates portable equipment and requires that such equipment be registered with the air district. Registered portable engines shall not exceed the following emission limits:

- 550 pounds per day per engine of CO
- 150 pounds per day per engine of particulate matter less than 10 microns
- For registered portable engines operating onshore, 10 tons for each pollutant per district per year per engine for NO_X, SO_X, VOC, PM_{10} and CO in non-attainment areas.

Chapter 10 regulates mobile source operations and includes provisions to address airborne toxics from diesel-fueled off- and on-road vehicles. Sections 2449 and 2485 limit idling time to a maximum of 5 minutes for off-road diesel-fueled construction vehicles heavy-duty commercial diesel vehicles (defined as diesel vehicles heavier than 10,000 pounds gross vehicle rated weight) and, respectively.

Title 17, Section 93105, codifies the Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations. Each air pollution control and air quality management district are required to implement and enforce the requirements of Section 93105 to minimize asbestos-containing dust.

Title 20 requires manufacturers of appliances to meet State and federal standards for energy and water efficiency. Performance of appliances must be certified through the California Energy Commission to demonstrate compliance with standards.

Title 24 serves to enhance and regulate California's building standards.

Part 6, establishes building energy efficiency standards that save energy, increase electricity supply reliability, increase indoor comfort, and help preserve the environment.

Part 11, the California Green Building Standards Code, commonly referred to as CALGreen, set minimum mandatory standards as well as voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality.

Regional and Local

Placer County Air Pollution Control District

PCAPCD attains and maintains air quality conditions in Placer County through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. PCAPCD inspects stationary sources of air pollution, responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by the CAA, CAAA, and CCAA. The clean-air strategy of PCAPCD includes preparing plans and programs for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, and issuing permits for stationary sources of air pollution. The rules and regulations include procedures and requirements to control the emission of pollutants and to prevent adverse impacts.

All projects within PCAPCD's jurisdictional area are subject to PCAPCD rules and regulations in effect at the time of construction. Specific PCAPCD rules that could be applicable to projects implemented under the General Plan Update may include but are not limited to the following:

- Rule 202: Visible Emissions. A person shall not discharge into the atmosphere from any single source of emissions whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is as dark or darker in shade as that designated as number 1 on the Ringelmann Chart, as published by the U.S. Bureau of Mines.
- Rule 205: Nuisance. A developer and proposed project cannot emit any quantities of air contaminants or other materials that would cause injury, detriment, nuisance, or annoyance to any considerable number of persons or the public; or that would endanger the comfort, repose, health, or safety of any persons or the public; or that would cause or have natural tendency to cause injury or damage to business or property.
- Rule 217: Cutback and Emulsified Asphalt Paving Materials. The developer or contractor is required to use asphalt paving materials that comply with the VOC content limits specified in the rule.
- Rule 218: Architectural Coatings. The developer or contractor is required to use coatings that comply with the content limits for VOCs specified in the rule.
- Rule 225: Wood Burning Appliances. No person shall sell or supply new wood burning appliances unless it is an EPA phase II Certified wood burning appliance, pellet-fueled wood burning heater, masonry heater, or determined to meet the EPA standard for PM emissions standards.
- Rule 228: Fugitive Dust. The developer or contractor is required to control dust emissions from earthmoving activities or any other construction activity to prevent airborne dust from leaving the project site.
- Rule 246: Natural Gas-Fired Water Heaters. A person shall not distribute, offer for sale, sell, or install, any natural gas-fired water heater within the District, unless it is a natural gas-fired water heater that emits less than or equal to 40 nanograms of nitrogen oxides [calculated as NO_2] per joule (93

pounds per billion British thermal unit [BTU]) of heat output; and is certified in accordance with Section 402 of Rule 246 or it is a mobile home natural gas-fired water heater that emits less than or equal to 50 nanograms of nitrogen oxides [calculated as NO_2] per joule (116 pounds per billion BTU) of heat output; and is certified in accordance with Section 402 of Rule 246.

> Rule 247: Natural Gas–fired Water Heaters, Small Boilers, and Process Heaters. If a proposed project would install natural gas-fired units (i.e., boilers, steam generators, and process heaters) with a rated heat input capacity greater than or equal to 75,000 BTU [British thermal units] and less than 5 million Btu per hour, the unit is required to comply with the NO_X and CO emissions standards.

> Rule 305: Residential Allowable Burning. Except as provided in Regulation 3, no person shall use an open outdoor fire (including the use of a burn barrel) for the purposes of disposal or burning of any disallowed combustibles. Only allowable combustibles, originating at a residence, and free of disallowed combustibles, and reasonably free from dirt, soil, and visible surface moisture, may be burned in an open outdoor burn pile. Burning in a burn barrel is prohibited.

> Rule 501: General Permit Requirements. To provide an orderly procedure for the review of new sources of air pollution and modification and operation of existing sources through the issuance of permits. Any project that includes the use of equipment capable of releasing emissions to the atmosphere may be required to obtain permit(s) from PCAPCD before equipment operation.

> Rule 507: Federal Operating Permit Program. Stationary sources subject to Rule 507 include major stationary sources, acid rain units subject to Title IV of the CAA, solid waste incinerators subject to Section 111 or 129 of the CAA, and any other stationary sources specifically designated by rule of the EPA.

PCAPCD has also produced a guidebook called the CEQA Air Quality Handbook (PCAPCD Handbook), which contains guidance for analyzing construction and operational emissions (PCAPCD 2017). The PCAPCD Handbook also includes a list of analysis expectations and methodologies for CEQA analyses. On October 13, 2016, the PCAPCD Board of Directors adopted the Review of Land Use Projects under CEQA Policy, which includes recommendations for thresholds of significance for criteria air pollutant emissions. In developing the thresholds, PCAPCD took into account health-based air quality standards and the strategies to attain air quality standards, historical CEQA project review data in Placer County, and the geographic and land use features of Placer County.

Because portions of Placer County do not attain the federal ozone and PM air quality standards, PCAPCD is responsible for working with the other air districts within the Sacramento Region to develop applicable air quality plans. As part of the Sacramento Federal Nonattainment Area for ozone, and in accordance with requirements under the Clean Air Act (CAA), PCAPCD worked with the other local air districts within the Sacramento area to develop a regional air quality management plan to describe and demonstrate how Placer County, as well as the Sacramento nonattainment area, is meeting requirements under the federal CAA in demonstrating reasonable further progress and attainment of the NAAQS for ozone (PCAPCD 2019). PCAPCD held a public hearing to consider, and ultimately adopted, the 2017 Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (Ozone Attainment and Progress Plan). The Ozone Attainment and Progress Plan documents how the region Some elements of the Ozone Attainment and Progress Plan were updated in 2018 and included in the 2018 Updates to the California State Implementation Plan, which updated SIP elements for nonattainment areas throughout the state, as needed. These updates were adopted by ARB in October 2018. The Ozone Attainment and Progress Plan is the currently adopted and applicable air quality plan for the region and, therefore, PCAPCD is required to comply with and implement this plan.

Similarly, PCAPCD also adopted the 2013 $PM_{2.5}$ Implementation and Maintenance Plan and Redesignation Request for Sacramento $PM_{2.5}$ Nonattainment Area ($PM_{2.5}$ Maintenance Plan and Redesignation Request) to address how the region attained and would continue to attain the 24-hour $PM_{2.5}$ NAAQS. In 2017, EPA found that the area attained the 2006 24-hour $PM_{2.5}$ NAAQS by the attainment date of December 31, 2015. The $PM_{2.5}$ Maintenance Plan and Redesignation Request will be updated and submitted in the future based on the clean data finding made by the EPA.

In compliance with the requirements set forth in the CCAA, which specifically addressed the non-attainment status for ozone, CO, $PM_{2.5}$ and PM_{10}, PCAPCD coordinated with the air quality management districts and air pollution control districts of El Dorado, Sacramento, Solano, Sutter, and Yolo counties to prepare and submit the 1991 Air Quality Attainment Plan (AQAP). The CCAA also requires a triennial assessment of the extent of air quality improvements and emission reductions achieved through the use of control measures. In accordance with this requirement, PCAPCD has prepared several triennial progress reports that build upon the AQAP. The most recently adopted report is the 2018 Triennial Progress Report for the 2015-2017 period.

Local and Regional Transportation Planning

Because transportation is one of the most substantial emissions sectors, there is a critical nexus between transportation planning and local and regional air quality. Effective coordination with and implementation of the following regional transportation plans could serve to reduce mobile source emissions within the Planning Area:

- Placer County Regional Transportation Plan 2036: This plan includes the *Integrated Land Use, Air Quality & Transportation* section and *Air Quality, Global Warming, Climate Change & Greenhouse Gas Element*. An effort is underway to update this plan for the 2040 horizon year. Placer County's Regional Transportation Plan is integrated with the Sacramento Area Council of Government's (SACOG's) regional planning processes through the Metropolitan Transportation Plan/Sustainable Communities Strategy. Placer County Transportation Planning Agency works closely with SACOG and PCAPCD to assess the impact of all transportation projects on air quality in the region.
- Town of Loomis Trails Master Plan: This plan defines a vision for a trail system that includes opportunities for pedestrians, bicyclists and equestrians. This plan can serve as a guide in coordination with the General Plan Update to enhances both recreational and commuter transportation options, and reduce the reliance upon automobiles.
- Town of Loomis Bicycle Transportation Plan: This is a master plan document, that, like a general plan document, provides guidance for the Town as the ability to build new bike facilities become available. Integrated bicycle

transportation planning can reduce congestion, increase circulation, and improve air quality.

> Placer County Regional Bikeway Plan: This plan is specific to the unincorporated portion of Placer County and does not propose new bikeway facilities within the Town of Loomis. However, planning of facilities and infrastructure within the Planning Area to integrate with this regional plan can provide new links to key destinations and communities through alternative transportation modes, thereby reducing regional VMT and mobile-source emissions, as well as increasing accessibility via active transportation modes to the Town of Loomis from surrounding communities.

GREENHOUSE GAS EMISSIONS

This section provides background information about greenhouse gas (GHG) emissions and climate change. Emissions of GHGs have the potential to adversely affect the environment because such emissions contribute cumulatively to global climate change. Unlike criteria air pollutants and toxic air contaminants that tend to have more localized or regional impacts, GHG emissions tend to disperse more broadly and are more of a global concern because of their relatively longer atmospheric lifetimes compared to air pollutant emissions. Similarly, climate change is a global phenomenon; however, the impacts of climate change are experienced locally and vary by location.

Major Findings

The following provides a summary of key findings that will be taken into account for the General Plan update. The technical background on each topic is further discussed in the sections to follow.

> Effects of climate change that are particularly relevant to the Town of Loomis and surrounding region include increased average and extreme temperatures and shifting precipitation patterns that will likely result in the regions being increasingly prone to extremes like megadroughts, flooding

and large wildfires, and affect water and energy availability, agricultural systems, plants and wildlife and public health.

> While GHG emissions reductions at the local scale may seem insignificant relative to the global scale of emissions, actions to reduce GHG emissions have positive co-benefits, such as for the local economy, public health, and household and local business energy and transportation costs.

> State legislation on the topics of climate change and GHG emissions has changed substantially since the Town of Loomis 2020 General Plan was adopted in 2001. California has established several statewide GHG targets through legislative action that can help to inform local GHG target selection. State agencies, including the California Air Resources Board (CARB) and the Governor's Office of Planning and Research (OPR), have also issued guidance to local governments on this topic. Local governments have unique influence and exclusive authority over significant GHG emission sources.

> Placer County has taken steps to evaluate GHG emissions sources from County operations and the unincorporated County, and adopted the Placer County Sustainability Plan in January 2020 that lays a framework for programs and policies that will be undertaken to achieve the most significant GHG emission reductions in the unincorporated County. Coordination between local policies and actions under the Town of Loomis General Plan with County actions may provide efficiencies and mutual benefit.

> The California Environmental Quality Act (CEQA) generally requires state and local government agencies to inform decision makers and the public about the potential environmental impacts of proposed projects, and to reduce those environmental impacts to the extent feasible. The evaluation of GHG emissions as part of the CEQA process was recognized by the passage of Senate Bill 97 in 2007, and the guidance was further refined by amendments to the CEQA Guidelines in 2018 (Section 15064.4) that clarified several points, including that lead agencies must analyze the GHG emissions of proposed projects and the focus of the analysis should be on the project's effect on climate change, rather than simply the quantity of emissions. The amendments also held that a project's incremental contribution may be

cumulative considerable even if it appears relatively small compared to statewide, national, or global emissions levels.

Overview of Greenhouse Gases

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 through the atmosphere. However, infrared radiation is selectively absorbed by GHGs in the atmosphere. As a result, infrared radiation released from the earth 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. Anthropogenic (e.g., human caused) emissions of these GHGs lead to atmospheric levels in excess of natural ambient concentrations and have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change.

The Intergovernmental Panel on Climate Change (IPCC) concluded that variations in natural phenomena, such as solar radiation and volcanoes, produced most of the warming of the earth from pre-industrial times to 1950. Some variations in natural phenomena also had a small cooling effect. From 1950 to the present, increasing GHG concentrations resulting from human activity, such as fossil fuel burning and deforestation, have been responsible for most of the observed temperature increase (IPCC 2015).

During the same period when increased global warming has occurred, many other changes have occurred in other natural systems. Sea levels have risen; precipitation patterns throughout the world have shifted, with some areas becoming wetter and others drier; snowlines have increased elevation, resulting in changes to the snowpack, runoff, and water storage; and numerous other conditions have been observed. Although it is difficult to prove a definitive cause-and-effect relationship between global warming and other observed changes to natural systems, there is a high level of confidence in the scientific community that these changes are a direct result of increased global temperatures caused by the increased presence of GHGs in the atmosphere (IPCC 2018).

The following are the principal GHG pollutants that contribute to climate change and their primary emission sources:

> Carbon Dioxide: Natural sources of CO2 include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; and evaporation from oceans. Anthropogenic (human) sources include burning of coal, oil, natural gas, and wood.

> Methane: CH4 is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.

> Nitrous Oxide: Primary human-related sources of N2O are agricultural soil management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. N2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests.

> Fluorinated gases: These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes called High Global Warming Potential (High GWP) gases. These High GWP gases include:

> Chlorofluorocarbons (CFC)s: These GHGs are used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants.

> Perfluorinated Chemicals (PFCs): PFCs are emitted as by-products of industrial processes and are also used in manufacturing.

> Sulfur hexafluoride (SF6): This is a strong GHG used primarily as an insulator in electrical transmission and distribution systems.

> Hydrochlorofluorocarbons (HCFCs): These have been introduced as temporary replacements for CFCs and are also GHGs.

> Hydrofluorocarbons (HFCs): These were introduced as alternatives to ozone-depleting substances in serving many industrial, commercial, and personal

needs. HFCs are GHGs emitted as by-products of industrial processes and are also used in manufacturing.

GHGs are not monitored at local air pollution monitoring stations and do not represent a direct impact to human health. Rather, GHGs generated locally contribute to global concentrations of GHGs, which result in changes to the climate and environment.

Greenhouse Gas Emissions Inventories

GHGs are present in the atmosphere naturally, are released by natural and anthropogenic (human-caused) sources and are formed from secondary reactions taking place in the atmosphere. Natural sources of GHGs include the respiration of humans, animals, and plants; decomposition of organic matter; volcanic activity; and evaporation from the oceans. Anthropogenic sources include the combustion of fossil fuels by stationary and mobile sources, waste treatment, and agricultural processes.

Methods have been set forth to describe emissions of GHGs in terms of a single gas to simplify reporting and analysis. The most commonly accepted method to compare GHG emissions is the global warming potential (GWP) methodology defined in IPCC reference documents. GWP is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and the length of time the gas remains in the atmosphere ("atmospheric lifetime"). IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of metric tons of CO_2 equivalents (MT CO_2e), which compares the gas in question to that of the same mass of CO_2 (CO_2 has a GWP of 1, by definition).

In order to better understand the sources and magnitudes of GHG emissions, public and private entities at the federal, state, and local level are developing GHG inventories. The Assembly Bill (AB) 32 Scoping Plan (the Scoping Plan) identifies the primary GHG emission "sectors," or types of activities, that account for the majority of GHG emissions generated within California. A brief description of each of the GHG emission sectors is provided below.

> Transportation: GHG emissions associated with on-road motor vehicles, off-road equipment, recreational vehicles, aviation, ships, and rail. Transportation is the largest emissions sector for the state as a whole (and for the county and for Loomis, as well).

> Electricity: GHG emissions associated with use and production of electrical energy. Approximately 25 percent of electricity consumed in California is imported; thus, GHG emissions associated with out-of-state electricity production are also included as part of this sector.

> Industry: GHG emissions associated with industrial land uses (e.g., manufacturing plants and refineries). Industrial sources are predominantly composed of stationary sources (e.g., boilers and engines) associated with process emissions.

> Commercial and Residential: Commercial and residential GHG emission sources include area sources such as landscape maintenance equipment, fireplaces, and natural gas consumption for space and water heating.

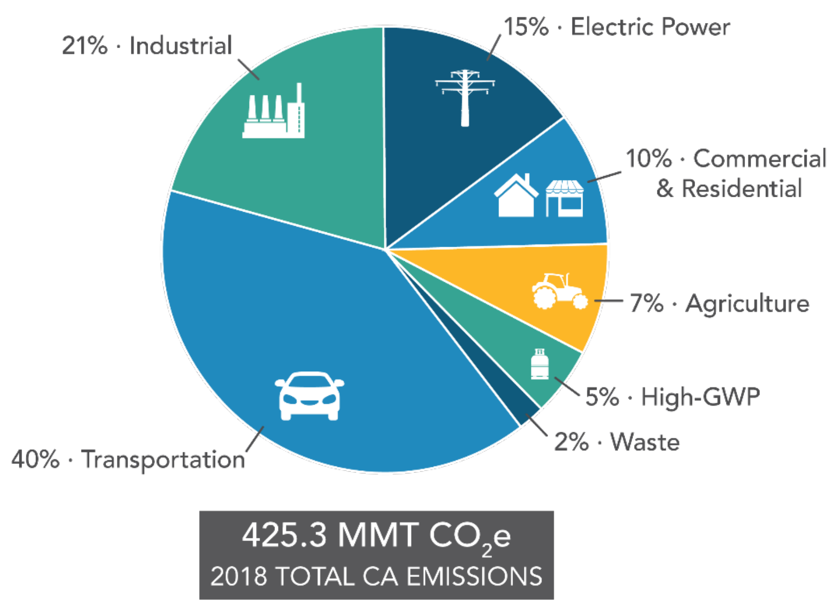
> Agriculture: GHG emissions associated with agricultural processes. Agricultural sources of GHG emissions include off-road farm equipment, irrigation pumps, residue burning, livestock, and fertilizer volatilization.

> High Global Warming Potential: This sector represents the generation of high GWP GHGs. Examples of high GWP GHG sources include refrigerants (e.g., hydrofluorocarbons [HFCs], chlorofluorocarbons [CFCs]) and electrical insulation (e.g., sulfur hexafluoride). Although these GHGs are typically generated in much smaller quantities than CO_2, their high GWP results in considerable CO_2e.

> Recycling and Waste: GHG emissions associated with waste management facilities and landfills.

CARB prepares an annual, statewide GHG emissions inventory, including an analysis of emissions by sector. As shown in Figure 3-4, California produced 425.3 million MT CO_2e in 2018 (the latest available full year of reporting). Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2018, accounting for 41 percent of total GHG emissions. Transportation was followed by industry, which accounted for 24 percent, and then the electricity sector (including in-state and out-of-state sources) accounted for 9 percent of total GHG emissions (CARB 2020).

Figure 3-4: 2018 California GHG Emissions Inventory by Sector

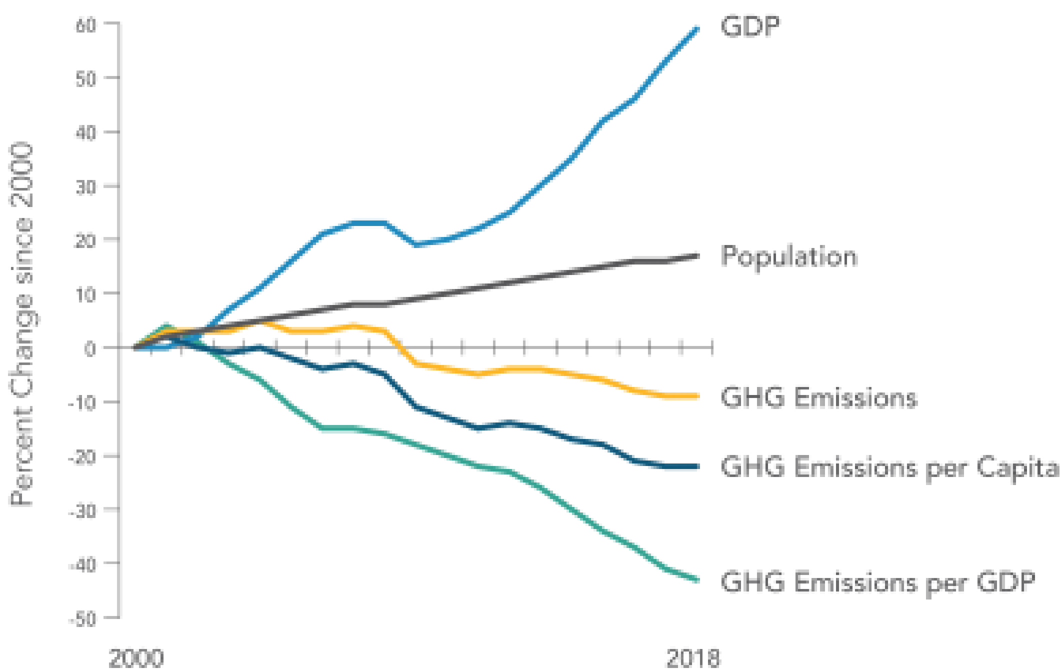


Source: CARB 2020

California has implemented several programs and regulatory measures to reduce GHG emissions. Figure 3-5 demonstrates California's progress in achieving statewide GHG emissions reduction targets. Since 2007, California's GHG emissions have been declining; GHG emissions have continued to decline even as population and gross domestic product have increased.

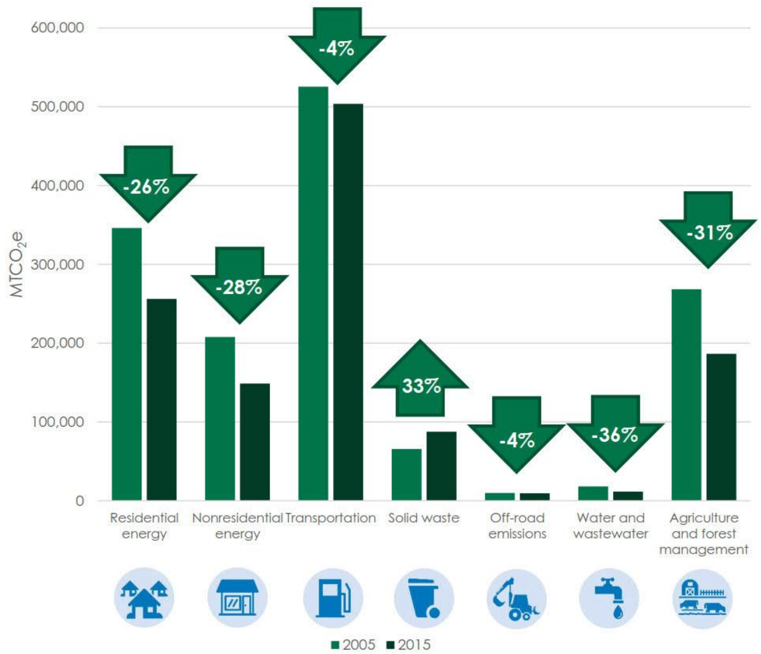
Placer County conducted a baseline (2005) and updated (2015) emissions inventory for County government operations and emissions associated with the unincorporated county. In 2005, unincorporated Placer County's emissions were 1,440,910 $MTCO_2e$ in total; transportation was the largest source of emissions followed by residential energy use and agricultural and forest management, accounting for approximately 36 percent, 24 percent, and 19 percent, respectively, of the total. County operations resulted in 40,520 $MTCO_2e$; solid waste was the largest source, generating 39 percent of the total, followed by employee commute and travel, buildings and facilities, and the County's vehicle fleet, accounting for 22 percent, 17 percent, and 13 percent, respectively. Community-wide emissions in 2015 totaled 1,203,260 $MTCO_2e$, a 16-percent decrease from 2005 levels, although the relative contribution of the sectors remained similar. County operations emissions increased to 49,390 $MTCO_2e$ in 2015 (an approximately 22 percent increase), but again the relative contribution of each sector was similar to the 2005 findings. The comparison between 2005 and 2015 emissions for the unincorporated county and County operations are shown in Figure 3-6 and Figure 3-7.

Figure 3-5: Trends in California GHG Emissions (Years 2000 to 2018)



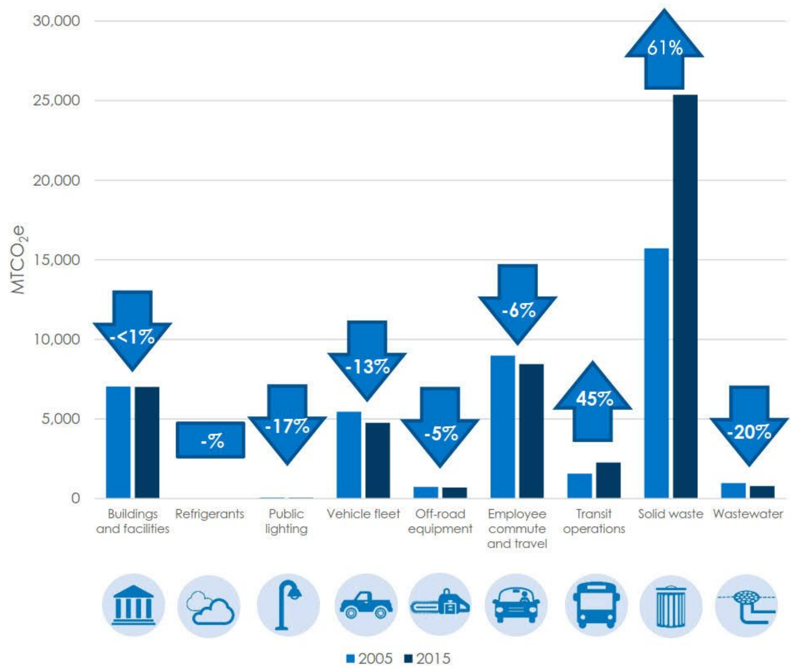
Source: CARB 2020

Figure 3-6: Placer County Unincorporated Community-Wide GHG Emissions by Sector (Years 2005 vs 2015)



Source: Placer County 2020

Figure 3-7: Placer County Government Operations GHG Emissions by Sector (Years 2005 vs 2015)



Source: Placer County 2020

In 2012, the Sierra Business Council published a community-wide GHG emissions inventory in collaboration with the Town of Loomis. The inventory (Sierra Business Council 2012) estimated emissions using the baseline year of 2005 using the International Local Government GHG Emissions Analysis Protocol. The inventory, summarized in Table 3-9, identified GHG emissions from multiple sectors: residential, commercial, industrial, vehicle transportation, solid waste, and wastewater. According to this estimate, in 2005 the Town of Loomis produced approximately 56,000 $MTCO_2e$, for a per-capita rate of approximately 8.8 $MTCO_2e$ per resident. As with the state as a whole, vehicle transportation was the largest source of GHG emissions, contributing more than 61 percent of the total.

Table 3-9: Town of Loomis 2005 GHG Emissions Inventory (Community-wide)		
Sector	**Emissions (MT CO_2e)**	**Percent of Inventory**
Residential	11,619	20.7
Commercial and Industrial	8,488	15.2
Vehicle transportation	34,238	61.1
Waste and wastewater	1,696	3.0
Total Emissions in Tow of Loomis	**56,041**	**100.0**

Source: Sierra Business Council 2012

Notes:
CO_2e = carbon dioxide equivalent; MT = metric tons

Since the Town of Loomis' 2005 GHG emissions inventory, statewide actions have continued to be implemented to reduce GHG emissions, including a cleaner-burning vehicle fleet throughout California and increased requirements for reducing the carbon intensity of electricity. As a part of the Town of Loomis 2005 GHG Emissions Inventory, next steps in sustainability and climate change mitigation activities were identified. These actions include:

- Leading by example through actions to reduce government operations emissions.
  - E.g., installing energy-efficient light bulbs and establishing carpool programs.
- Establishing robust community-wide recycling and waste reduction programs.
- Collaborating with Placer Sustain, a Placer County sustainability non-profit organization.

As shown above, vehicle transportation is a substantial driver of GHG emissions at both a state and regional level. There is a direct link between vehicle miles traveled (VMT) and mobile-source GHG emissions. According to the Placer County Transportation Planning Agency 2036 Regional Transportation Plan (2016), Placer County VMT was approximately 9,770,592 miles per day in 2012, projected to increase approximately 40 percent by 2036. However, the VMT per capita for the county was estimated to be 28.16 miles per day per capita in 2012, and projected to decrease 4.5 percent by 2036 through the integrated land use plans of Placer County jurisdictions and transportation projects contained in the 2036 Regional Transportation Plan (PCTPA 2016).

Effects of Climate Change

Climate change is caused by an increase in levels of GHG emissions in the atmosphere. Despite the level of action taken on the part of the world's governments to reduce GHG emissions, the earth is already committed to a certain level of climate change caused by GHG emissions that occurred over the last 150 years, and some climate change impacts can be considered foreseeable. Although climate change is a global phenomenon, the effects vary by location and can be experienced on a regional and local scale.

As noted in the Sacramento Valley Regional Report of the California's Fourth Climate Change Assessment, in which the western portion of Placer County is a part of the Sacramento Valley region, climate change is expected to make the Sacramento region hotter, drier, and increasingly prone to extremes like megadroughts, flooding, and large wildfires. These changing conditions are likely to affect water and energy availability, agricultural systems, plants and wildlife, public health, housing, and quality of life.

In Placer County, potential hazards (or exposures) related to climate change have also been analyzed as part of a vulnerability assessment for the County. Findings indicated that the most prominent localized effects of climate change include increased risks associated with agriculture and forestry pests and disease, avalanche (specific to higher elevation areas in the northeastern portion of the county), drought, extreme heat, flooding, fog, human health hazards, landslides, severe winter weather, and wildfire.

The warmer temperatures brought on by climate change are likely to cause an increase in extreme heat events in all parts of California, including Placer County and the Sacramento Valley. Depending on emissions levels and location, the number of extreme heat days is expected to increase from a historical average of 4 to between 22 and 32 days per year by the middle of the century, and between 33 and 62 days per year by the end of the century. Placer County is also expected to see an increase in average daily high temperatures. More frequent and intense heat waves in the Sacramento Valley, with fewer cooling degree days, place stress on certain crops, optimal human health conditions, and the longevity of transportation and electrical infrastructure.

Although droughts are a regular feature of California's climate, scientists expect that climate change will lead to more frequent and more intense droughts statewide. Overall, precipitation levels are expected to stay similar, and may even increase in some places. However, the state's current data says that there will be more years with extreme levels of precipitation, both high and low, which is expected to cause more droughts that last longer and are more intense, compared to historical norms. To exacerbate this changing condition, an increase in the global average temperature is expected to result in a decreased volume of precipitation falling as snow in California and an overall reduction in snowpack in the Sierra Nevada. Snowpack in the Sierra Nevada provides both water supply (runoff from melting) and storage (within the snowpack before melting), which is a major source of supply for the state, including the Town of Loomis. According to California's Fourth Climate Change Assessment, the Northern Sierras – a primary water source for the Sacramento Valley – are expected to have almost no annual snowpack by the end of the 21st century, while the Southern Sierras, which have higher elevations and therefore less impacted by rising temperatures, are expected to have total snow water decline by about 40 percent by the end of the century (CEC, et. at. 2018). Although current forecasts are uncertain, this may make water levels particularly low in late summer and early fall, which are often the hottest parts of the year in the region.

A flood can be caused by heavy rainfall, long periods of moderate rainfall, and rapid melting of accumulated snow. As noted above, more extreme precipitate events are anticipated as a result of climate change; these events are expected to increase the risk of flooding and are expected to occur more often throughout the Sacramento Valley and Placer County. In addition, the increased drought conditions may result in less permeable soils as they dry out and harden, and therefore increased runoff of precipitation along the soil rather than being absorbed into the ground. New extremes will challenge water storage and food control systems which were designed for the historical climate patterns. In particular, higher extreme rainfall will bring more surface runoff and less groundwater recharge.

The forests, farms, and ranches of Placer County all face risk from assorted pests and diseases that may affect crop plants, trees, and livestock. One of the most direct effects of climate change is that average temperatures will increase, and this has a bearing on many pests and diseases. Many pests and organisms that carry diseases are most active during warmer months, so the threat of infection or infestation can be higher during this time of year. Temperatures are expected to get warmer earlier in the year and remain warmer until later in the year due to climate change, creating a wider window for active pests and diseases that impact agricultural production.

Placer County adopted the Placer County Sustainability Plan in January of 2020 that serves as a road map outlining programs and policies that will be undertaken by the community and the County to achieve the most significant GHG emission reductions in the unincorporated county. While the Placer County Sustainability Plan does not specifically address the Town of Loomis, the plan includes actions being taken to promote sustainability and GHG emissions reductions in the region, several of which are applicable to the Town of Looms. Many of the regional emissions sources are similar to those of the Town of Loomis, and many actions may also support emissions reductions within the Town or demonstrate what programs are feasible and applicable to a municipality like the Town of Loomis.

Greenhouse Gas Emissions Regulatory Framework

While many federal, State, regional, and local GHG-related plans, policies, and regulations do not directly apply to the implementation of the Town's General Plan Update, the information below is helpful for understanding the overall context for GHG emissions impacts and strategies to reduce GHG emissions.

Federal

U.S. Environmental Protection Agency "Endangerment" and "Cause or Contribute" Findings

On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA:

- Endangerment Finding: The current and projected concentrations of the six key GHGs—CO_2, methane, nitrous oxide, hydrofluorocarbons, perfluorinated chemicals, and sulfur hexafluoride—in the atmosphere threaten the public health and welfare of current and future generations.
- Cause or Contribute Finding: The combined emissions of these GHGs from new motor vehicles and new motor vehicle engines contribute to GHG pollution, which threatens public health and welfare.

Mandatory Greenhouse Gas Reporting Rule

On September 22, 2009, EPA released its final Greenhouse Gas Reporting Rule (Reporting Rule). The Reporting Rule is a response to the fiscal year 2008 Consolidated Appropriations Act (House of Representatives Bill 2764; Public Law 110-161), which required EPA to develop "…mandatory reporting of GHGs above appropriate thresholds in all sectors of the economy…." The Reporting Rule applies to most entities that emit 25,000 MT CO_2e or more per year. Since 2010, facility owners have been required to submit an annual GHG emissions report with detailed calculations of the facility's GHG emissions. The Reporting Rule also mandates compliance with recordkeeping and administrative requirements to enable EPA to verify annual GHG emissions reports.

Corporate Average Fuel Economy (CAFE) Standards and the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule

U.S. EPA and the National Highway Traffic Safety Administration (NHTSA) implemented national GHG emission and fuel economy standards for model year 2012–2016 light-duty cars and trucks. The second phase of the standards includes GHG and fuel economy standards for model years 2017–2025. The 2017–2025 standards are anticipated to save approximately 4 billion barrels of oil and 2 billion MT of GHG emissions. In 2025, if all standards are met through fuel efficiency improvements, the average industry fleetwide fuel efficiency for light-duty cars and trucks would be approximately 54.5 miles per gallon (EPA 2012). In 2018, the United States Department of Transportation and EPA proposed to amend the existing CAFE standards and establish new standards for model years 2021 through 2026. In 2019, EPA and NHTSA published the "Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program." (84 Fed. Reg. 51,310 (Sept. 27, 2019.) The One National Program revokes California's authority to set its own GHG emissions standards and set zero-emission vehicle mandates in Part 2 of the regulations, if implemented, would address fuel efficiency standards for light-duty vehicles model years 2021 through 2026, have not been drafted as of the writing of this document.

Standards for light-duty cars and trucks, EPA and NHTSA have implemented Phase 1 of the Medium- and Heavy-Duty Vehicle GHG Emissions and Fuel Efficiency Standards, which apply to model years 2014–2018. It is anticipated that medium- and heavy-duty vehicles built to these standards from 2014–2018 will reduce CO_2 emissions by approximately 270 million MT over their lifetimes (EPA 2012). Phase 2 of these standards apply to model years 2021–2027 and would reduce GHG emissions by 1 billion MT over the lifetimes of those vehicles (EPA 2015).

State

The State's legal framework for GHG emission reductions has come about through Executive Orders, legislation, regulations, and court decisions. Legislation with regard to climate change adaptation and resilience is also highlighted below.

Statewide Emission Reduction Targets Pursuant to the California Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32 and Senate Bill [SB] 32, and Executive Orders [EOs] S-3-05 and B-30-15)

EO S-3-05 (2005) and AB 32 (2006)

Issued by the Governor in recognition of California's vulnerability to the effects of climate change, EO S-3-05 established progressive GHG emission reduction targets for the State, as follows:

> By 2010, reduce GHG emission to the year 2000 level;

> By 2020, reduce GHG emissions to the year 1990 level; and,

> By 2050, reduce GHG emissions to 80 percent below the 1990 level.

The California Global Warming Solutions Act of 2006, commonly known as AB 32, further detailed and put into law the midterm GHG reduction target established in EO S 3 05 to reduce statewide GHG emissions to 1990 levels by 2020 and created a comprehensive, Multi-year program to reduce GHG emissions in California. AB 32 also directed CARB to accomplish the following core tasks:

> Establish the statewide goal of reducing GHG emissions.

> Establish a mandatory reporting system to track and monitor emissions levels.

> Develop various compliance options and enforcement mechanisms.

EO B-30-15 (2014) and SB 32 (2016)

EO B-30-15 established a statewide GHG reduction goal of 40 percent below 1990 levels by 2030. This emission reduction goal serves as an interim goal between the AB 32 target to achieve 1990 emission levels by 2020 and the long-term goal set by EO S-3-05 to reduce statewide emissions 80 percent below 1990 levels by 2050. In addition, the executive order aligned California's 2030 GHG reduction goal with the European Union's 2030 reduction target that was adopted in October 2014.

SB 32 signed into law the emissions goal of EO B-30-15, extending the provisions of AB 32 from 2020 to 2030 with a new target of 40 percent below 1990 levels by 2030.

EO B-55-18 (2018)

EO B-55-18 acknowledges the environmental, community, and public health risks posed by future climate change. It further recognizes the climate stabilization goal adopted by 194 states and the European Union under the Paris Agreement. Based on the worldwide scientific agreement that carbon neutrality must be achieved by midcentury, EO B-55-18 establishes a new state goal to achieve carbon neutrality as soon as possible and no later than 2045, and to achieve and maintain net negative emissions thereafter. The EO charges CARB with developing a framework for implementing and tracking progress towards these goals. EO B-55-18 is only binding on state agencies.

California's Climate Change Scoping Plan

CARB adopted the Climate Change Scoping Plan (Scoping Plan) in December 2008, which contains California's primary strategies for achieving the GHG reductions required by AB 32. The Scoping Plan encourages local governments to align land use, transportation, and housing plans to minimize vehicle trips.

CARB is required to update the Scoping Plan at least once every five years to evaluate progress and develop future inventories that may guide this process. The First Update to the Climate Change Scoping Plan: Building on the Framework (2014 Scoping Plan Update) determined that the state was on schedule to achieve the 2020 target. However, an accelerated reduction in GHG emissions would be required to achieve the EO S-3-05 emissions reduction target for 2050.

California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target (2017 Scoping Plan Update) was driven by the 2030 target (pursuant to SB 32). The 2017 Scoping Plan Update established a plan of action, consisting of a variety of strategies to be implemented, rather than a single solution, to achieve the SB 32 emissions target.

Sustainable Communities and Climate Protection Act of 2008 (SB 375)

The Sustainable Communities and Climate Protection Act of 2008 (SB 375) built upon the existing framework of regional planning. In 2010, CARB adopted regional GHG targets for passenger vehicles and light trucks for 2020 and 2035 for the 18 metropolitan planning organizations (MPOs) in California. In 2018, CARB updated these targets. Under this legislation, each MPO is required to incorporate these GHG emissions targets into the regional transportation planning process and adopt either a "sustainable communities strategy" or an "alternative planning strategy" as part of its regional transportation plan to identify land use, housing, and transportation strategies that will achieve the regional GHG reduction targets.

Renewables Portfolio Standard

SB 1078, SB 107, EO S 14 08, and SB X1-2 have established increasingly stringent renewable portfolio standard (RPS) requirements for California's utility companies. RPS-eligible energy sources include wind, solar, geothermal, biomass, and small-scale hydro projects.

SB 1078 required investor-owned utilities to provide at least 20% of their electricity from renewable resources by 2020.

SB 107 accelerated the SB 1078 timeframe to take effect in 2010.

EO-S-14-08, codified by SB X1-2, increased the RPS further to 33% by 2020.

SB 350 increased the RPS to 50% by 2030.

SB 100 increased the RPS to 60% by 2030 and required the State's electricity to come from carbon-free resources by 2045.

These requirements reduce the carbon content of electricity generation and reduce GHG emissions associated with both existing and new development.

California Code of Regulations, Title 20 and 24

New buildings constructed in California must comply with the standards contained in California Code of Regulations (CCR) Title 20, Energy Building Regulations, and Title 24, Energy Conservation Standards.

Title 20 standards range from power plant procedures and siting to energy efficiency standards for appliances, ensuring reliable energy sources are provided and diversified through energy efficiency and renewable energy resources. California's 2009 Appliance Efficiency Regulations (20 CCR 1601–1608) were adopted by the CEC on December 3, 2008, and approved by the California Office of Administrative Law on July 10, 2009. The regulations include standards for both federally regulated appliances and non-federally regulated appliances.

Title 24 requires the design of building shells and building components to conserve energy. The Energy Conservation Standards for new residential and nonresidential buildings were established by the CEC in June 1977 June 1977 and were most recently revised in 2019 (Title 24, Part 6 of the California Code of Regulations [Title 24]). Title 24 governs energy consumed by commercial and residential buildings in California. This includes the HVAC system; water heating; and some fixed lighting. Non-building energy use, or "plug-in" energy use, is not covered by Title 24. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. California's Building Energy Efficiency Standards are updated on an approximate three-year cycle. The most recent update was in 2019 and took effect July 1, 2020. One of the improvements included within the 2019 Building Energy Efficiency Standards is the requirements that certain residential developments, including some single-family and low-rise residential development, include on-site solar energy systems capable of producing 100 percent of the electricity demand of the residences. With implementation of solar photovoltaic systems with new residential development, homes built under the 2019 standards will use approximately 53 percent less energy than those under the 2016 standards. Nonresidential buildings are anticipated to consume 30 percent less energy as compared to nonresidential buildings constructed under the 2016 California Energy Code, primarily through prescriptive requirements for high-efficiency lighting (CEC 2018). The Energy Code is 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 related to local climatologic, geologic, or topographic conditions, provided that these standards exceed those provided in the California Energy Code.

CALGreen (24 CCR Part 11) is intended to enhance the design and construction of buildings through the use of building concepts that benefit the environment and public health and encourage sustainability in construction and operations of a building. The provisions of the code apply to the planning, design, construction, use, and occupancy of all newly constructed buildings and structures throughout California. Some key provisions of the code include, but are not limited to, requirements related to the installation of electric vehicle charging infrastructure in residential and nonresidential developments, establishment of maximum fixture water use rates to reduce indoor water use consumption, diversion of 65 percent of construction and demolition waste from landfills, and mandatory use of low-pollutant emitting interior finish materials such as paints, carpet, and flooring.

Executive Order B 18 12

Executive Order B 18 12 orders all new State buildings and major renovations beginning design after 2025 be constructed as Zero Net Energy facilities. The Executive Order sets an interim target for 50 percent of new facilities beginning design after 2020 to be Zero Net Energy. It directs State agencies to take measures toward achieving Zero Net Energy for 50 percent of the square footage of existing State-owned building area by 2025.

Senate Bill 379

Senate Bill 379 requires that all cities and counties within the California address climate change adaptation and resilience within the safety element of their general plans. The bill requires a review and update of general plans that includes a vulnerability assessment that identifies the risks climate change poses to the local jurisdiction and the geographic areas at risk from climate change, a set of adaptation and resilience goals, policies and objectives based on the findings of the vulnerability assessment, and a set of implementation strategies.

Regional and Local

Sacramento Area Council of Governments

The Sacramento Area Council of Governments (SACOG). SACOG is designated by the federal government as the Metropolitan Planning Organization for the Sacramento region, maintaining a regional transportation plan in coordination with each of the local 28 member cities and counties, including Placer County. SACOG plays a central role in transportation infrastructure planning for the region, while also serving as a forum for the study, planning and resolution of other planning issues facing the local member governments. The most recent Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) for the SACOG region, the 2020 MTP/SCS, was adopted in November 2019. The 2020 MTP/SCS lays out a plan that links land use, air quality, and transportation needs. Under SB 375, the proposed MTP/SCS is subject to review and approval by CARB. Specifically, the SCS component of the regional plan will be reviewed by CARB to determine whether the adopted SCS, if implemented, would meet the region’s 2035 19 percent per-capita passenger vehicle greenhouse gas reduction target. As shown in the 2020 MTP/SCS and EIR, the region is making progress in VMT reductions and is making significant strides in the development of new initiatives, projects, and programs in the 2020 MTP/SCS.

Placer County Transportation Planning Agency

Placer and El Dorado counties each have their own state designation as Regional Transportation Planning Agencies (RTPAs) that are responsible for developing their own transportation plans. SACOG, as the RTPA for Sacramento, Sutter, Yolo, and Yuba counties, works in coordination with Placer County Transportation Planning Agency to ensure consistency between the county-specific plan and the broader region-wide plan. Since 1991, Placer County has been eligible to receive an apportionment of Congestion Mitigation and Air Quality funds from the federal government for projects designed to reduce congestion and improve air quality. Since that time, PCTPA has approved millions of dollars in Congestion Mitigation and Air Quality funds for alternatively-fueled transit buses, transit facilities, bikeways, rail station improvements, and pedestrian safety projects. As the vehicle fleet mix in California shifts toward more fuel-efficient vehicles, the fuel demand per mile traveled will decrease over time.

Placer County Sustainability Plan

The Placer County Sustainability Plan was the County’s first GHG emissions reduction plan and adaptation strategy, adopted in January 2020. The plan serves as a roadmap for programs and policies that will be undertaken at the county level to achieve GHG emissions reductions. The actions also provide co-benefits, such as reduced energy costs, reduced air and water pollution, supporting local economic development, and improving public health, safety, and quality of life. The GHG reduction measures address emissions from the building energy, land use and transportation, water consumption, and waste generation sectors. The plan’s adaptation strategy includes a vulnerability assessment that establishes which areas, populations, and assets in the County are most vulnerable to severe hazards including wildfire, drought, extreme heat, bark beetle infestation, flooding, and severe winter weather, among others. A set of adaptation and resiliency goals, policies, objectives, and feasible implementation measures are also included.

ENERGY

Reliable, affordable, and accessible energy is a key component of public health, safety, and economic security. Energy resources can be in the form of many different natural resources: fossil fuels such as coal, oil and natural gas, as well as renewable energy sources such as solar radiation, wind, hydropower, biological processes and geothermal heat. Energy resources support the region's economic base, agricultural production, and infrastructure capacity.

This section describes the existing conditions and regulatory framework related to energy resources in the Town of Loomis and surrounding region. Within this section, and most relevant to the Town of Loomis, the energy resources described are those related to transportation fuel, the consumption of electricity, natural gas, and opportunities for energy conservation and use of renewable energy.

MAJOR FINDINGS

The following provides a summary of key findings that will be taken into account for the General Plan update. The technical background on each topic is further discussed in the sections to follow.

- As demonstrated by the findings of the Town of Loomis Strategic Energy Resources Report, energy efficiency and conservation and the shift toward renewable energy sources can also provide economic benefit. This report includes strategies and actions that are relevant to the Town of Loomis.
- Local utility providers are increasingly providing support and incentives to improve energy efficiencies in residential and non-residential operations and buildings, as well as providing affordable options promoting the use of solar and other renewable energy sources.
- State mandates are increasingly stringent with regard to required building energy efficiency and conservation features and processes that need to be incorporated into the planning, design, construction, use and occupancy of all newly constructed or substantially renovated buildings and structures throughout California. Planning for these requirements will allow new

construction and renovation to adhere to State requirements, but in a fashion that is in alignment with the Town's vision for the design and operation of its built environment.

> Extreme events, such as heat waves and wildfires, as experience more frequently and with greater intensity in the region over recent years, can lead to disruptions in electric service as a result of both unanticipated power outages and planned power shutoffs, such as the Public Safety Power Shutoffs conducted by Pacific Gas and Electric Company (PG&E) to minimize the risk of fire during extreme heat, wind or related fire events. These power outages can be dangerous for those who rely on electricity to power home medical devices, are susceptible to health effects associated with no air conditioning and extreme heat, or other critical electricity-dependent needs. Increased energy efficiency and use of renewable energy can reduce the overall demand on the power system. Implementation of micro-grids can further aid in resiliency under these conditions to allow critical facilities and independent residents to operate independently from the power grid and maintain electricity for critical needs during electric system power outages.

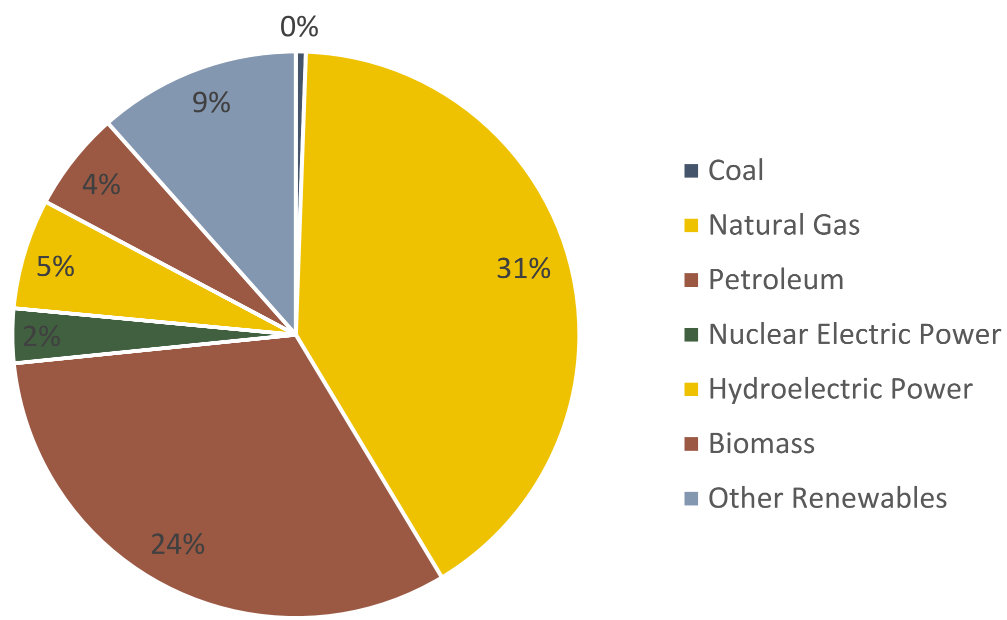
Statewide Energy Trends

California's total energy consumption is the second highest in the nation, but, in 2018, the state's per-capita energy consumption was the fourth-lowest, due in part to its mild climate and its energy efficiency programs (EIA 2020).

Figure 3-8 shows the relative end-use consumption of energy resources in California by source. Total consumption was approximately 6,269.2 trillion British thermal units (BTUs), primarily in the form of petroleum (24 percent) and natural gas (31 percent). California is the second-largest consumer of petroleum products in the nation and the largest consumer of motor gasoline and jet fuel. Almost nine-tenths of the petroleum consumed in the state is used in the transportation sector.

California ranked first in the nation as a producer of electricity from solar, geothermal, and biomass resources and fourth in the nation in conventional hydroelectric power generation. Electricity supply in California involves a complex grid of power plants and transmission lines located in the Western United States, Canada, and Mexico. In 2018, the total system power for California was 285,488 gigawatt-hours (GWh) of electricity, down 2 percent from 2017 (CEC 2019a). The overall decline observed in California's total system electric generation for 2018 is consistent with the trends observed in energy demand, which has been flat or slightly declining as energy efficiency programs have resulted in end-use energy savings and as customers install behind-the-meter energy systems that directly displace utility-supplied generation.

Figure 3-8: California Energy Consumption by Source



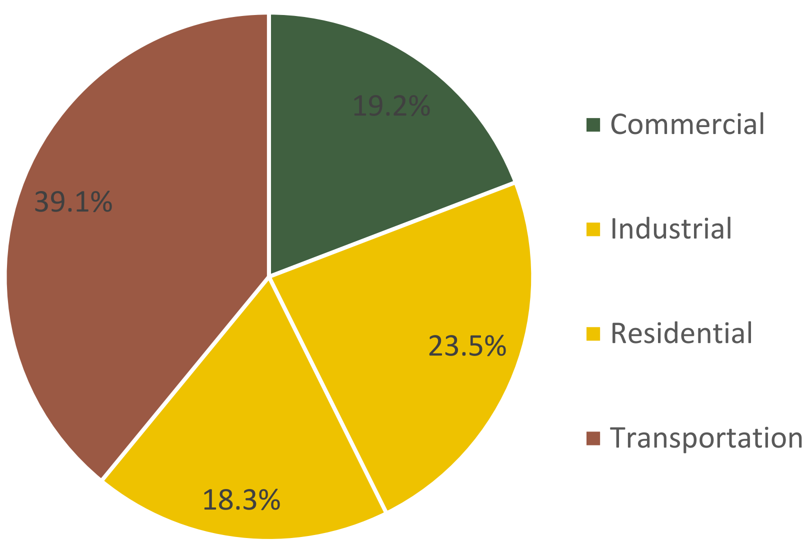
Source: EIA 2020.

As shown in Figure 3-9, the transportation sector is by far the largest consumer of energy, accounting for nearly 40 percent of end-use energy consumption in California. The industrial sector accounts for almost one-fourth of the State's energy use and is the second-largest energy consuming sector in California. The commercial and residential end-use sectors consume roughly equal amounts.

However, residential energy use per capita is lower than that of any other state except Hawaii.

As California works to reduce greenhouse gas (GHG) emissions, as one strategy to reduce vehicle exhaust emissions, California has provided incentives to increase the use of non-carbon-emitting vehicles; by the end of 2018, California drivers owned nearly 500,000 electric and plug-in hybrid vehicles and nearly one-fourth of the nation's electric vehicle charging stations were in California (DOE 2020). While transition to electric vehicles could increase electricity demand, it would reduce the demand for transportation fuels. As the electricity sector becomes increasingly dependent upon renewable energy, this would further reduce demand on non-renewable energy sources.

Figure 3-9: California End-use Consumption by Sector

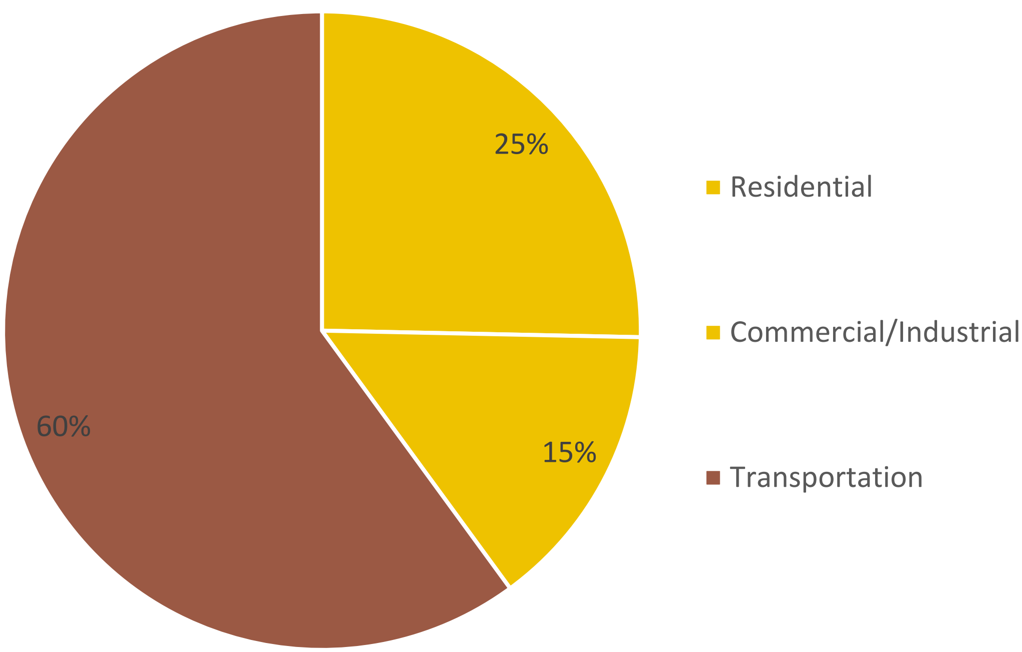


Source: EIA 2020.

Local Energy Services and Demand

Energy in consumed in the Town of Loomis by the built environment primarily in the form of electricity and natural gas, and by transportation uses primarily in the form of gasoline and diesel fuel; propane and other non-utility fuels use is also prominent in the region. Figure 3-10 provides a summary of the relative magnitude of end-use energy consumption by the principal sectors within the Town of Loomis in the year 2005, the most recent year for which an inventory has been taken for the Town.

Figure 3-10: Town of Loomis 2005 Energy Consumption by Sector



Source: Sierra Business Council 2012.

Local Energy Services

In Placer County, including Loomis, electrical and natural gas services are provided by PG&E, one of the largest combined natural gas and electrical energy companies in the United States. PG&E generates, transmits, and distributes electrical service to approximately 16 million people throughout its approximately 70,000-square-mile service area, which stretches north to south in California from Eureka to Bakersfield and west to east from the Pacific Ocean to the Sierra Nevada (PG&E 2020). The population of Placer County is 398,329, approximately 2.5 percent of the 16 million people served by PG&E.

PG&E owns approximately 107,000 circuit miles of electrical distribution lines and 18,000 circuit miles of electrical transmission lines (PG&E 2020). In 2019, PG&E delivered approximately 78,071 GWh of electricity within its service area (CEC 2020a); Placer County consumed approximately 3.7 percent (2,915 GWh) of that total (CEC 2020b). PG&E provides natural gas service to Loomis through portions of its approximately 43,000 miles of natural gas distribution pipelines (PG&E 2020). In 2019, natural gas consumption in the PG&E service area totaled approximately 4,942 million therms (CEC 2020c), approximately 2 percent (96 million therms) of which was consumed by users in Placer County (CEC 2020d).

Under a joint exercise of powers agreement, Placer County and the cities of Auburn, Colfax, Lincoln, Loomis, and Rocklin (Members) have established a joint powers authority called Pioneer Community Energy (Pioneer). Currently, Pioneer provides a Community Choice Aggregation program, which acts as an alternative electricity supplier to PG&E. The electric power is transmitted over PG&E transmission and delivery infrastructure. PG&E continues to own its transmission and delivery infrastructure and remains responsible for maintaining and servicing these systems. Pioneer partners with PG&E for billing and collection services. Pioneer's Community Choice Aggregation program complies with California's Renewables Portfolio Standard program, which requires a minimum 60 percent renewable energy portfolio by 2030 and 100 percent carbon free electricity by 2045. Customers may choose to receive both transmission/delivery and electric generation service of PG&E, or to receive electric power from Pioneer. Pioneer's Community Choice Aggregation program currently serves 90 percent of customers within its territory.

During Public Safety Power Shutoff events, PG&E can shut off power to their distribution and transmission lines (also known as de-energizing) to prevent their equipment from starting a wildfire. These shutoffs are considered necessary to protect customers and first responders. Due to extreme heat, wind, and related fire hazard events, these power shutoffs have occurred more frequently over the past several years.

In addition to electricity and natural gas, propane and wood are commonly used in residences, particularly in the more rural parts of the Planning Area, as an alternative fuel for natural gas. According to United States Census Bureau data, approximately 8 percent of homes in the Town of Loomis use bottled, tank, or liquid propane gas and 3 percent of homes in the Town of Loomis use wood for home heating fuel. This is about twice than the average for the State as a whole.

Electricity Energy Sources

PG&E provides power from a variety of sources, including nuclear, hydroelectric, natural gas, and renewable energy resources such as wind, geothermal, biomass, solar, and small hydro. In addition to a base power mix shown, PG&E offers 100 percent and 50 percent solar electricity source options for customers. Both the base and 50 percent solar option power mixes are shown in Table 3-10.

In 2018, approximately 86 percent of energy delivered by PG&E through its base mix was from non-GHG-generating sources: 39 percent of energy delivered by PG&E was from qualified renewable sources, thereby reaching the State’s 2020 renewable energy goal ahead of schedule. PG&E owns and operates eight solar plants, and has connected approximately 465,000 private rooftop solar customers to its energy grid. PG&E’s hydroelectric system is spread across California, consisting of 100 reservoirs that feed 65 powerhouses and a pumped storage facility, with a total generating capacity of nearly 4,000 megawatts (PG&E 2020).

Table 3-10: Pacific Gas and Electric Company Electrical Power Mix, 2018		
Electrical Sources	**Base Plan (%)**	**50% Solar Choice (%)**
Non-emitting Nuclear	34*	17*
Large Hydroelectric	13*	6*
Renewable[1]	39*	69*
Biomass and waste	*4*	*2*
Geothermal	*4*	*2*
Small hydroelectric	*3*	*1*
Solar	*18*	*59*
Wind	*10*	*5*
Natural Gas	15	7
Unspecified[2]	0	0

Source: CEC 2019b

Notes:
1 These energy sources are considered eligible under California's Renewable Portfolio Standard Program.
2 Unspecified sources of power means electricity from transactions that are not traceable to specific generation sources.
* These resources are greenhouse gas–free.

As noted above, Pioneer is also held to the California Renewable Portfolio Standards for its power content. Table 3-11 presents Pioneer's power content in 2018. The program's portfolio emissions profile is dependent upon whether Pioneer's Governing Board decides to alter its resource mix to exceed State requirements for renewable energy, and what percentage of customers and potential customers opted out and chose to choose to remain with PG&E.

Transportation-related Energy

Transportation is the largest energy-consuming sector in California, accounting for approximately 40 percent of all energy use in the state (EIA 2020). More motor vehicles are registered in California than in any other state, and commute times in California are among the longest in the country.

Table 3-11: Pioneer Community Energy Electrical Power Mix, 2018	
Electrical Sources	**Base Plan (%)**
Non-emitting Nuclear	0*
Large Hydroelectric	0*
Renewable[1]	33*
Biomass and waste	2
Geothermal	1
Small hydroelectric	7
Solar	17
Wind	6
Natural Gas	0
Unspecified	67

Source: CEC 2019c

Notes:
1 These energy sources are considered eligible under California's Renewable Portfolio Standard Program.
2 Unspecified sources of power means electricity from transactions that are not traceable to specific generation sources.
* These resources are greenhouse gas–free.

Types of transportation fuel have diversified in California and elsewhere. Historically, gasoline and diesel fuel accounted for nearly all demand. While gasoline and diesel fuel remain the primary fuels used for transportation in California, the types of transportation fuel have diversified in California and elsewhere. Various statewide regulations and plans (e.g., Low Carbon Fuel Standard, AB 32 Scoping Plan) encourage the use of a variety of alternatives are used to reduce demand for petroleum-based fuel. Depending on the vehicle capability, conventional gasoline and diesel are increasingly being replaced by alternative transportation fuels, including biodiesel, electricity, ethanol, hydrogen, natural gas, and other synthetic fuels. California has a growing number of alternative fuel vehicles through the joint efforts of the California Energy Commission, the California Air Resources Board, local air districts, federal government, transit agencies, utilities, and other public and private entities. Despite advancements in alternative fuels and clean-vehicle technologies, gasoline and diesel remain the primary fuels used for transportation in California, sales of diesel fuel to California end users in 2018 of approximately 1,187,100 gallons per day and sales of gasoline to California end users of approximately 455,900 gallons per day (CEC 2020e,f).

There is a direct link between vehicle miles traveled (VMT) and fuel use, as well as related GHG emissions. Placer County VMT was approximately 9,770,592 miles per day in 2012, projected to increase approximately 40 percent by 2036. However, the VMT per capita for the county was estimated to be 28.16 miles per day per capita in 2012, and projected to decrease 4.5 percent by 2036 through the integrated land use plans of Placer County jurisdictions and transportation projects contained in the 2036 Regional Transportation Plan (PCTPA 2016).

SACOG prepared a regional analysis of VMT and found average daily VMT in 2016 for the Town of Loomis to range from about the same as to 50 percent greater than the regional average (SACOG 2020). The SACOG Metropolitan Transportation Plan (MTP)/Sustainable Communities Strategy (SCS) identifies several policies and factors to promote reduced VMT per capita in the region. Among these factors are the trend toward more compact development, with more residents able to find jobs, schools, shopping, and other activities closer to their place of residence, and proposed improvements in transit and walkability that promote a shift away from reliance on private vehicles for transportation.

Local Energy Efficiency and Conservation Strategies

The Town of Loomis approved the *Loomis Strategic Energy Resources Report* on March 17, 2015 (Town of Loomis 2015). The report evaluated energy consumed by buildings (residential and non-residential) and municipal operations in the Town of Loomis, and identified energy efficiency and conservation goals and strategies to achieve overall reductions in energy consumption. The report also demonstrated annual economic savings that could be achieved with full implementation of the proposed strategies; the report estimated 2020 annual energy savings of 10,461,383 kWh of electricity and 59,250 therms of natural gas for a total annual savings of approximately $2.86 million. Strategies were developed according to five goals:

Goal 1.

Increase Energy Efficiency in Existing Structures

> Strategy 1.1: Expand outreach and education to increase participation in voluntary home energy-efficiency programs

> Strategy 1.2: Expand outreach and education to increase participation in voluntary non-residential energy-efficiency programs

> Strategy 1.3: Identify and promote programs that help finance energy efficiency and renewable energy projects

Goal 2.

Increase the Energy Performance of New Construction

> Strategy 2.1: Improve compliance with Title 24 Green Building and Energy Efficiency Standards

> Strategy 2.2: Provide incentives for buildings to exceed the current Title-24 Energy Efficiency Standards

> Strategy 2.3: Reduce the heat island effect and related summer heat gain in residential and non-residential projects

Goal 3.

Increase Renewable Energy Use

> Strategy 3.1: Evaluate the Town's residential, non-residential, and municipal solar potential and assess barriers to increased solar energy use

> Strategy 3.2: Develop a comprehensive renewable energy program that provides outreach, financing, and technical assistance

> Strategy 3.3: Encourage new development projects to meet 70% of their energy needs from renewable sources

Goal 4.

Increase Energy Efficiency in Municipal Structures and Operations

> Strategy 4.1: Improve energy efficiency of existing municipal structures

> Strategy 4.2: Evaluate feasibility of improving energy efficiency of traffic signals and public lighting

Goal 5.

Increase Community Water Conservation and Efficiency to Reduce Associated Energy Use

> Strategy 5.1: Encourage residents and businesses to conserve water used indoors

> Strategy 5.2: Encourage residents and businesses to conserve water used outdoors

As detailed below within the Regulatory Framework, the Town has also adopted several ordinances as part of its Municipal Code that reduce energy consumption associated with lighting and water use.

PG&E offers incentives, rebates, and educational resources to residents, businesses, nonprofits, and government agencies in Loomis. For nonresidential customers, PG&E offers rebates and incentives for power management software; occupancy sensors on lights; steam traps; heating, ventilation, and air conditioning (HVAC) motors and pumps; electric water heaters; process cooling; data center airflow management; boiler economizers; refrigeration; boiler heat recovery; refrigeration control; variable-frequency drive pumps; boilers; and fans. Pioneer also supports individual renewable energy and conservation programs. Pioneer customers are eligible to participate the Pioneer's solar net energy metering program, in which participants are credited for the net surplus energy generated by their solar systems. Pioneer also operates the mPower program, which provides financing to residential, commercial, industrial, agricultural, multifamily and non-profit property owners for energy efficiency upgrades, water conservation measures, and energy generation systems. Customers of Pioneer are also still eligible for many of PG&E's energy efficiency rebate programs and incentives.

Placer County adopted its first Sustainability Plan in January 2020. While the plan is focused on overall opportunities to reduce GHG emissions, as the residential and non-residential sectors accounted for approximately one-third of the community-wide emissions, several of the actions focus specifically on energy efficiencies, energy conservation, and opportunities for renewable energy. Strategies include replacing natural gas use with electricity as a cleaner energy source, replacement of appliances and equipment with more energy-efficient models, retrofits to existing buildings to improve HVAC and shell/envelope systems, adoption of CALGreen Tier 1 standards and increased zero-net energy in new construction, on-site renewable energy generation and storage systems, and education of community members with regard to energy efficiency and conservation opportunities. Although the scope of the plan is on the unincorporated county and county operations, not the Town of Loomis, the plan demonstrates relevant strategies and related actions being undertaken in the region to address similar conditions to the Town of Loomis with regard to energy use.

Energy Regulatory Framework

While many federal, State, regional, and local energy-related plans, policies, and regulations do not directly apply to the implementation of the proposed General Plan Update, the information below is helpful for understanding the overall context for energy conservation and efficiency actions locally and regionally.

Federal

Energy Policy Act of 1992

The Energy Policy Act of 1992 consists of 27 titles detailing various measures designed to lessen the nation's dependence on imported energy, provide incentives for clean and renewable energy, and promote energy conservation in buildings. Title III of the Act addresses alternative fuels. It gave the U.S. Department of Energy administrative power to regulate the minimum number of light-duty alternative fuel vehicles required in certain federal fleets beginning in fiscal year 1993. The primary goal of this program is to cut petroleum use in the United States by 2.5 billion gallons per year by 2020.

Energy Policy Act of 2005

The Energy Policy Act of 2005, which was intended to establish a comprehensive, long-term energy policy, is implemented by the U.S. Department of Energy. The Act addresses energy production in the U.S., including oil, gas, coal, and alternative forms of energy, as well as energy efficiency and tax incentives. The 2007 Energy Independence and Security Act expanded the program and its requirements to include long-term goals of using 36 billion gallons of renewable fuels and extending annual renewable-fuel volume requirements to year 2022. The four renewable fuels have specific renewable fuel-blending requirements for obligated parties such as refiners and importers of gasoline or diesel fuel. EPA implements the program in consultation with U.S. Departments of Agriculture and Energy. Gasoline and diesel refiners and importers (Obligated Parties) are required to demonstrate compliance with the Renewable Fuel Standard program.

State

The State has a related focus on energy efficiency and planning for energy resources at a statewide level, with influences local planning efforts. Some of the major components of California's climate change and energy efficiency initiatives are highlighted below.

Renewables Portfolio Standard

SB 1078, SB 107, Executive Order (EO)-S-14-08, and SB X1-2 and SB 100 have established increasingly stringent renewable portfolio standard (RPS) requirements for California's utility companies. RPS-eligible energy sources include wind, solar, geothermal, biomass, and small-scale hydro projects.

- SB 1078 required investor-owned utilities to provide at least 20 percent of their electricity from renewable resources by 2020.
- SB 107 accelerated the SB 1078 timeframe to take effect in 2010.
- EO-S-14-08, codified by SB X1-2, increased the RPS further to 33 percent by 2020.
- SB 350 increased the RPS to 50 percent by 2030.

> SB 100 increased the RPS to 60 percent by 2030 and required the State's electricity to come from carbon-free resources by 2045. SB 100 supersedes the renewable energy requirements set by SB 350, SB 1078, SB 107, and SB X1-2.

These requirements reduce the reliance on non-renewable energy sources associated with both existing and new development.

California Code of Regulations, Title 20 and 24

New buildings constructed in California must comply with the standards contained in California Code of Regulations (CCR) Title 20, Building Energy Regulations, and Title 24, California Building Standards Code.

Title 20 standards range from power plant procedures and siting to energy efficiency standards for appliances, ensuring reliable energy sources are provided and diversified through energy efficiency and renewable energy resources. California's 2009 Appliance Efficiency Regulations (20 CCR 1601–1608) were adopted by the CEC on December 3, 2008, and approved by the California Office of Administrative Law on July 10, 2009. The regulations include standards for both federally regulated appliances and non-federally regulated appliances.

Title 24 Parts 6 and 11 are the California's Building Energy Efficiency Standards. Part 6, the California Energy Code, governs energy consumed by commercial and residential buildings in California. This includes the HVAC system; water heating; and some fixed lighting. Non-building energy use, or "plug-in" energy use, is not covered by Title 24. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods; the most recent update was in 2019 and took effect January 1, 2020. One of the changes included within the 2019 Title 24, Part 6, is the requirement that certain residential developments, including some single-family and low-rise residential development, include on-site solar energy systems capable of producing 100 percent of the electricity demand of the residences. With implementation of solar photovoltaic systems with new residential development, homes built under the 2019 standards will use approximately 53 percent less energy than those under the 2016 standards. Nonresidential buildings are anticipated to consume 30 percent less energy as compared to nonresidential buildings constructed under the 2016 California Energy Code, primarily through prescriptive requirements for high-efficiency lighting (CEC 2018). The California Energy Code is enforced through the local plan check and building permit process.

On July 17, 2008, the California Building Standards Commission adopted the California Green Building Standards Code (Part 11, Title 24, Part 11), commonly known as CALGreen, the nation's first green building standards. As noted, the code was last updated in 2019, effective January 1, 2020. Part 11 establishes mandatory standards, including planning and designing for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water efficiency and conservation, material conservation and resource efficiency, and environmental quality. The provisions of the code apply to the planning, design, construction, use and occupancy of all newly constructed or substantially renovated buildings and structures throughout California. Some key provisions of the code include, but are not limited to, requirements related to the installation of electric vehicle charging infrastructure in residential and nonresidential developments, establishment of maximum fixture water use rates to reduce indoor water use consumption, diversion of 65 percent of construction and demolition waste from landfills, and mandatory use of low-pollutant emitting interior finish materials such as paints, carpet, and flooring. The code also includes additional voluntary measures to achieve increased energy savings: Tier 1 prerequisites set a higher baseline than CALGreen mandatory measures, while Tier 2 prerequisites include all of Tier 1 plus some enhanced or additional measures.

Executive Order B-18-12

Executive Order B 18 12 orders all new State buildings and major renovations beginning design after 2025 be constructed as Zero Net Energy facilities. The Executive Order sets an interim target for 50 percent of new facilities beginning design after 2020 to be Zero Net Energy. It directs State agencies to take measures toward achieving Zero Net Energy for 50 percent of the square footage of existing State-owned building area by 2025.

Regional and Local

Town of Loomis Municipal Code

The Town of Loomis Municipal Code provides regulations regarding land and structures to promote the health, safety, and welfare of the public and ensure the orderly development of the town. The following provisions of the Municipal Code are related to energy:

- Section 13.30.080(B) in Section 13.30.080, "Outdoor Lighting," begins by stating: "Lighting shall be energy efficient…"
- Section 13.34.050(A), "Landscape Design," in Section 13.34.050, "Landscape Standards," states: "The required landscape plan shall be designed to integrate all elements of the project (e.g., buildings, parking lots, and streets) to achieve their aesthetic objectives, desirable microclimates, and minimize water and energy demand."
- Section 13.38.050(F)(8) in Section 13.38.050, "General Requirements for All Signs," states: "Light sources shall utilize energy efficient fixtures to the greatest extent possible."

Town of Loomis Strategic Energy Resources Report

As detailed above with regard to local energy efficiency and conservation strategies, the Strategic Energy Resources Report presents goals, strategies, and actions to expand local efforts surrounding energy efficiency and renewable energy sources. This report services as a roadmap intended to provide guidance to Town staff, demonstrate the Town's commitment to energy efficiency, and inspire community participation and efforts to maximize energy efficiency and reduce dependency upon fossil fuel-based energy. However, the measures contained within the report are not mandatory or bound by regulation.

Chapter

4 CULTURAL AND HISTORIC RESOURCES

CULTURAL AND HISTORIC RESOURCES

INTRODUCTION

These resources are defined as buildings, sites, structures, or objects that may have historical, architectural, archaeological, cultural, or scientific importance. Preservation of the cultural heritage of Loomis should be considered when planning for the future.

KEY TERMS

The complete General Plan Glossary can be found in Volume II; however, the following terms are included for reader comprehension.

Archeology. The study of historic or prehistoric peoples and their cultures by analysis of their artifacts and sites.

Cultural Resources. Includes districts, sites, buildings, structures, or objects generally older than 50 years and considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. They include prehistoric, historic-era, and tribal cultural resources.

Complex. A patterned grouping of similar artifact assemblages from two or more sites, presumed to represent an archaeological culture.

Ethnology. The study of different societies and cultures.

Midden. A deposit marking a former habitation site and containing such materials as discarded artifacts, bone and shell fragments, food refuse, charcoal, ash, rock, human remains, structural remnants, and other cultural leavings.

Paleontology. The science of the forms of life existing in former geologic periods, as represented by their fossils.

RESOURCE SETTING

Prehistory

Until recent years, few archeological studies have been conducted in this region. Early excavations had focused either on the large, rich village sites in the Delta region and along the major waterways in the Central Valley or on the higher elevation sites in proposed reservoir areas, along major Sierra Nevada waterways. As a result, chronological sequences have been established for each region, with later work emphasizing refinement of these sequences.

Increasing urbanization in the Sacramento region has pushed development further from the major drainages and into the margin of the Sacramento Valley and the Sierra Nevada foothills. There is no established archeological sequence for the region, but the ties seem to be stronger to the Sierra Nevada.

The Planning Area is in an interesting area for archeological research because it is between three areas with defined archeological sequences: the Oroville locality to the north, the Central Sierra area to the east and the Central Valley/Delta area to the west. These sequences include many similar artifact types and dates for major cultural changes, but there are also significant differences between them. It is an important goal of archeology to determine how these differences relate to different cultural traditions, cultural adaptation to differing environmental conditions or other natural or cultural influences. It is not clear at present which of these sequences best reflects the prehistory of the Planning Area or if a separate local sequence is necessary to adequately describe the area.

An excavation project on sites on Linda Creek and Strap Ravine corroborated the findings of earlier work that indicated that the strong Central Valley association characteristic of the late prehistoric cultures in the foothill area might not extend to earlier cultures. Although there are many similarities with the material culture of the Late Horizon of the Central Valley, there are also significant points of diversion.

It is clear that the most recent prehistoric cultures of the area reflect, in general, the late cultures of the Central Valley, though there are interesting local variations. Some of the differences clearly result from the greater wealth and population in the valley, but other differences may reflect a technological response to differing ecological settings and resource exploitation techniques.

Ethnology

At the time of the gold rush, the Loomis area was occupied by the Nisenan Indians, identified by the language they spoke. There have been several general treatments of the Nisenan culture by Beals 1933; Kroeber 1929; Littlejohn 1928; and Wilson and Towne 1978, Wilson 1982. There are also several more specific articles on various aspects of their culture as reported in the bibliography and elsewhere. The following text by Norman Wilson, where not cited, is derived from Wilson and Towne 1978 and Wilson 1982.

The Nisenan peoples occupied the drainages of the Yuba, Bear, and the American Rivers from the Sacramento River on the west to the summit of the Sierra in the east. The Foothill and Hill Nisenan peoples were distinctive from the Valley Nisenan and were loosely organized into tribelets or districts with large central villages, surrounded by smaller villages. These are often referred to as winter villages by older Indians. These central villages and their leaders seemed to have had power or control over the surrounding smaller villages and camps and specific surrounding territory (Beals 1933; Littlejohn 1928; Wilson and Towne 1978). These districts were oriented to the natural resources and the landforms. In the foothills and mountains, the major drainages became formal or informal boundaries with the land in between forming the district. Thus, the Placerville District is between the Cosumnes River and the Middle Fork of the American River, the Auburn District between the Middle Fork of the American River and the Bear River and the Nevada City District between the Bear River and the Yuba River. There were other villages and headmen in these districts that also held significant power and at the present time it is not clear where most of these were.

In the valley, there is also the pattern of major villages controlling land and local groups of Indians. Different than the hills, the land between drainages becomes the separation between districts with the controlling villages situated along the major rivers. *Pujuni* at the mouth of the American River is a good example. There also seems to be a separation of the Valley Nisenan and the Foothill Nisenan near the edge of the valley where the foothills start. The valley peoples were more oriented to the Sacramento, American, Yuba, Feather, and the Bear rivers on the valley floor. Their large villages with their complex and rich culture are usually found along these watercourses. It is believed that they occupied both sides of the rivers and used the river courses for communication and major resource exploitation. Smaller stream courses were often occupied with permanent villages and seasonal campsites. They were not large villages, and some may reflect a budding-off of valley peoples as populations expanded in late times.

All the Nisenan depended on activities attuned to the seasonal ripening of plant foods and the seasonal movements and migration of the animals and the runs of fish. With the flooding of the valley in the winter and spring, a great number of animals such as elk, antelope and bears moved to the natural levees along the rivers and up into the lower foothills. Along the foothill margins they joined the resident and migratory deer herds. Huge flocks of waterfowl visited the flooded areas between the rivers and the foothills, coveys of quail gathered in the fall, and pigeons were common in the fall and spring. Steelhead and salmon ran up most of the major streams including Secret Ravine and Auburn Ravine in the fall, winter, and spring. The hunting of these plentiful resources was part of the foothill lifeway. This same bounty was available to the river-oriented valley peoples out on the valley floor and along the natural levees of the rivers. There was probably not a great deal of competition for resources at this time, except in lean years. Both the valley and foothill peoples lived at the edges of rich ecotones: the rivers and the valley floor; and the valley floor and the foothills.

The valley floors between the rivers were not permanently occupied and became seasonal resource bases. In many places, the areas between the rivers were shallow overflow basins that flooded in the winter and spring creating great tule forests, ponds and swampy areas, in some areas, there were oxbow lakes and other permanent ponds. These were hard to cross until summer and became a major resource base for the valley groups. Often access was made possible by the burning of the tule. These areas were rich with plant and animal resources including herds of deer, elk, and grizzly bears, and were exploited by the surrounding Indian people.

Historic Period Background

The early history of the region after the discovery of gold along the American River in January 1848 focuses to the many miners who checked all likely drainages for the presence of gold. Early mining efforts were designed to extract the placer gold from creeks and rivers, by individuals and small groups. After the gold became tougher to find, and the seasonality of mining related to the months when the creeks carried water from rainfall and snow melt, the control of water sources became an important issue, and corporate enterprises that built dams and excavated ditches that extended the mining to the entire year, took over control of much of the mining in the region. Corporate interests could also create larger mining enterprises, hiring workers at an hourly or daily rate.

The gold in the region lay in the gravels and earth: this area is not one in which hard rock deposits are present. All gold mining operations undertaken were forms of placer mining.

The early mining in the region as well as the need for overnight lodgings for both individuals and for freighting teams pulling loads of goods from the riverfront in Sacramento led to the development of Pine Grove House, an early inn along Secret Ravine. The freighting teams were important in providing supplies to the many small towns and camps that grew up rapidly in the mining areas.

Very early on, a community began to grow around the Pine Grove House, with mining remaining an important industry with both dry diggings and other placer mining with water from the Bear River Ditch. The community of Smithville was named for a local resident, Lew G. Smith (*Placer Herald* 17 April 1858; 31 December 1859). Smith & Hubble's store was one of the early businesses. Other newspaper articles describe a courthouse, a three-story brick building, hotels, lumber yard, blacksmith and carpenter shops, a plaza, a theater, and a horse race course (*Placer Herald* 21 August 1858; *Auburn Journal* 6 November 1913). The town site is shown on early maps about 0.75 miles mile south of the center of the old town of Loomis.

With many individual miners failing to strike it rich after the best claims were taken up by others or rapidly worked out, the new Californians soon recognized the agricultural value of the landscape. Many of the early agricultural efforts involved grain crops and grazing cattle and sheep. The livestock pursuits were limited by the climate, with the natural grasses and browse drying up by mid to late spring. The ranchers needed to acquire acreage in the mountains, and drive their herds to the verdant pastures of the Sierra Nevada, returning to the home ranch in the fall when grass began to re-grow when the rains started again. This seasonal practice of transhumance is an ancient practice, still used in California and throughout other countries to take advantage of seasonal resources.

The early development of water systems led to permanent settlement, and ranchers situated near the drainages and mining ditches could move into different types of agriculture, planting orchards in many regions. The Loomis Basin proved especially fertile for orchards and vineyards. An 1890 newspaper story presented the order of the popularity of various farm products: peach, cherries, pears, apricots, apples, plums, prunes, table grapes, wine grapes, olives, orange, fig, small berries, and vegetables (*Placer Argus* 25 January 1890).

In addition, the Placer Citrus Colony to the north of the Town, established in 1888 by J. Parker Whitney, the first agricultural colony in Placer County. Lands were divided into blocks of 10, 20, 40, and 80 acres, leading to the division of the lands now comprising the town into similar tracts (*Sacramento Daily Union* 12 January 1891).

The construction of the Central Pacific Railroad brought many changes to the region. This section was completed in the early 1860s, with the head of freighting moving further eastward as new sections were completed. The railroad provided expanded markets for the fruits and vegetables grown in the region, shipping from Pino Station in town.

Another industry that expanded in the Planning Area is granite quarrying. Penryn and Rocklin had established quarries. In the mid-1870s, a new quarry was established on the ranch of J. Turner as the Smithville Quarry (*Placer Herald* 22 December 1877). A list of several other quarry names in the Loomis Area include Carlow, Grant, Healy and Cook quarries (Loomis Basin Historical Society 2009).

Initially, the post office in the area was called “Placer”, established in 1861. The name of the post office at Pine Grove was officially changed to Smithville in March of 1862 (*Sonoma Democrat* 6 March 1862). Smithville was discontinued in 1869, moving to “Pino.”

The name Pino was used until 1890 (Frickstad 1955). The railroad station was Pino Station; the railroad and express office were called Loomis and the school district was Smithville. In 1890, the postmaster had the name officially changed to Loomis, with the Board of Supervisors renaming the school district at the same time (*Sacramento Daily Union* 12 June 1890; *Placer Herald* 19 July 1890).

Mining continued in the region in phases, with new technologies adopted over time. One such mine was the Laird Hydraulic mine. As with many hydraulic pit mines, it was worked in the 1870s-1890s, and the mine opened again in 1909. A final phase appears to have occurred in the 1930s, with dredge mining undertaken in the Depression years, in about 1935.

The population of what became Loomis is a bit difficult to distinguish in the federal Census records, with the now Town appearing to be located in Township 9. Township 9 as a whole included record of residents that included various subdivisions by towns, with names changing, preventing a good analysis of numbers of different ethnic groups. In 1860, the area of Secret Ravine included a number of individuals born in China, working primarily as placer miners. Ten years later, an area of the Township was distinguished as Pino. Population numbers are much lower, perhaps due to the gold-bearing sediments having been worked out by placer mining. Ten of the 61 households in Pino were Chinese men.

Again, trying to track Loomis is difficult. In 1880, there were still a number of households comprised of Chinese born men, some working as farm laborers and the majority as miners. Prejudice against Chinese miners began in the late 1840s, even before Statehood, and continued, pushed by labor organizations in California. In 1882, Congress passed the Chinese Exclusion Act that excluded immigration from China for 10 years; the act was renewed in 1892 and made permanent in 1902. Acts of violence against the Chinese were numerous, and gradually, many moved to more urban areas with established Chinese communities.

At the same time, agriculture in California needed workers. In the late 1880s-1890s, immigration from Japan began. There is no 1890 census to review, but the 1900 federal Census still shows some Chinese residents, but a number of Japanese-born men now lived in the Loomis area, working in agriculture.

Eventually, the Japanese also became targeted, and Japanese immigration was slowed to California, with a “Gentlemen’s Agreement”, a series of notes between the nations in 1907-1908, with Japan agreeing to stop issuing passports to Japanese men to come to work as laborers (Daniels 1962:44;1993:13).

The California legislature passed the Alien Land Law in 1913, preventing Japanese Issei (immigrants, first generation) from land ownership. There were loopholes that allowed the land to be placed in the name of their children born in the United States (Nissei) or they could lease the land from white landlords (Takaki 1989:203-205).

By 1900, much of the land in the northern portion of the Loomis Planning Area had been divided into smaller 10-acre parcels, with a number of parcels owned by Sacramento residents (Map of the Citrus Colony 1900). They may have been holding the land as an investment for later sale or had tenants working the land.

With the intensity of fruit production in the region, fruit packing became an important industry. Harvested goods could be shipped westward to Sacramento or the Bay Area, or eastward to markets in the Midwest or in the eastern states. By 1913, Pacific Gas and Electric Company had completed many parts of their system, using waters from the high Sierra, stored seasonally in reservoirs, could be delivered to through the associated ditch system to allow most acreage to be cultivated. In 1913, there were six fruit shipping firms in Loomis: Producer’s Fruit Co., Law Bros., Earl Fruit Company, Rowell Fruit Company, and The Loomis Fruit Growers’ Association (*Auburn Journal* 6 November 1913).

At the same time, the booming economy resulted in a number of new residences in the Town and the country around the Town. The Town could also boast about good schools, lodges, churches, and a great place to raise a family (*Auburn Journal* 6 November 1913).

The Loomis Fruit Growers Association was established in 1901 to provide fruit packing and transport services for local fruit ranchers. A group of progressive farmers started the Bank of Loomis in 1915, and by the 1920s Loomis had become the second-largest fruit-shipping station in the county, after Newcastle.

A large fire destroyed most of the Downtown business core in 1915. By the early 1920s, almost every destroyed building in Loomis had been rebuilt with brick, concrete, or tile, including the Town's bank, veterinary stables, fruit-shipping warehouse, butcher shop and community churches. Outside of the Downtown core, large orchards of budded and grafted fruit stock still spanned the countryside.

A former resident who became a significant person in California history is William Dana Perkins. Perkins, as a young man, owned Pine Grove House in 1860, and became a land agent for the Central Pacific Railroad. In later years, he lived in Rocklin and became appointed the State Librarian.

With the active industries, many members of different ethnic groups began to settle in the Loomis area, with additional family and neighbors migrating to the region. The 1920 Federal Census for Township 9, the larger area that includes the current Loomis Planning Area, had a number of Japanese, Finnish, Spanish, and Indian residents, many of whom worked on fruit farms. The establishment of supporting community features such as the Japanese churches, dating to 1911, and a store in Loomis also opened to provide cultural amenities and social support for the newer residents (http://japantownatlas.com/map-placer.html).

Unfortunately, the fate of Japanese Issei and their children was sealed by the advent of World War II. With unjustified fears about the loyalty of the immigrant Japanese and their American-born children after Pearl Harbor in December 1941, President Roosevelt ordered the internment of the families through Executive Order 9066. Many Loomis residents were placed in camps throughout the war. Specific impacts on different families as a result of this incarceration is a subject deserving much more study—some may have lost their land and possessions in addition to the years unfairly spent in the camps.

The Town of Loomis incorporated in 1984, including adjacent unincorporated lands of Placer County. It remains a small town with surrounding larger acreage in part in agricultural use, and unlike its neighbors Rocklin and Lincoln, has not grown exponentially with residential subdivisions and supporting commercial enterprises in the last 35 to 40 years.

Cultural Resources in the Town of Loomis

Sixty-five cultural resources have been identified within the Loomis Planning Area, according to files maintained by the North Central Information Center (NCIC) of the California Historical Resources Information System (CHRIS). The sixty-five recorded cultural resources represent both the prehistoric and historic periods (see Table 4-1).

Table 4-1: Resources Listed with the North Central Information Center, CHRIS

Resource #	Address	Period/Type	Name
P-31-000094	Not Listed	Prehistoric/Isolated artifact	Not Listed
P-31-000122	6201 Horseshoe Bar Road	Historic/House site	Not Listed
P-31-000123/ CA-PLA-807H	6262 Horseshoe Bar Road	Historic/House/outbuilding site	Not Listed
P-31-000124/ CA-PLA-808H	6262 Horseshoe Bar Road	Historic/Granite foundation	Not Listed
P-31-000125/ CA-PLA-809	Not Listed	Prehistoric/Bedrock milling feature	Not Listed
P-31-000126/ CA-PLA-810/H	Not Listed	Prehistoric/Bedrock milling feature Historic/Mining features, refuse scatter	Not Listed
P-31-000179/ CA-PLA-153	Not Listed	Prehistoric/Bedrock milling features, lithic scatter	Not Listed
P-31-000423/ CA-PLA-297/H	Not Listed	Prehistoric/Bedrock milling features Historic/Granite quarry	Not Listed
P-31-000618/ CA-PLA-492/H	Not Listed	Historic/Hotel site, refuse scatter	Bradley House
P-31-000620/ CA-PLA-494	Not Listed	Prehistoric/Bedrock milling features	Not Listed
P-31-000796/ CA-PLA-760H	Not Listed	Historic/Water conveyance feature	Boardman Canal segment
P-31-000845/ CA-PLA-719	Not Listed	Prehistoric/Bedrock milling feature	Not Listed

Table 4-1: Resources Listed with the North Central Information Center, CHRIS

Resource #	Address	Period/Type	Name
P-31-000964/ CA-PLA-841H	Not Listed	Historic/Railroad	Southern Pacific Railroad
P-31-001006/ CA-PLA-880H	Not Listed	Historic/Mining features	Not Listed
P-31-001208	3342 Humphrey Road	Historic/House site	Not Listed
P-31-001209	3342 Humphrey Road	Historic/Outbuilding site	Not Listed
P-31-001211/ CA-PLA-966H	Not Listed	Historic/Water conveyance feature	Red Ravine Canal segment
P-31-001240/ CA-PLA-982H	Not Listed	Historic/Railroad features	Southern Pacific Railroad
P-31-001293/ CA-PLA-1000H	Not Listed	Historic/Refuse scatter	Not Listed
P-31-001295/ CA-PLA-1003H	Not Listed	Historic/Roadway	Lincoln-Victory Highway/ US Highway 40
P-31-001507/ CA-PLA-1172H	Not Listed	Historic/Water conveyance feature	Antelope Canal segment
P-31-001508/ CA-PLA-1173H	Not Listed	Historic/Rock wall	Not Listed
P-31-001514	Not Listed	Historic/Water conveyance feature	Not Listed
P-31-001515	5373 No Name Lane	Historic/Single family property	Not Listed
P-31-001516	3300 Humphry Road	Historic/Single family property	Not Listed
P-31-001517	3296 Humphrey Road	Historic/Single family property	Not Listed
P-31-001524/ CA-PLA-1182H	Not Listed	Historic/Mining features	Laird Hydraulic Mine

Table 4-1: Resources Listed with the North Central Information Center, CHRIS

Resource #	Address	Period/Type	Name
P-31-001525/ CA-PLA-1193H	Not Listed	Historic/House site	Laird House
P-31-001531/ CA-PLA-1189H	Not Listed	Historic/House, outbuilding site	Not Listed
P-31-001552/ CA-PLA-1208H	5775 Horseshoe Bar Road	Historic/Railroad depot	Loomis Depot
P-31-001553/ CA-PLA-1209H	5750 Horseshoe Bar Road	Historic/Commercial building	Blue Anchor Fruit Packing Shed
P-31-002466/ CA-PLA-1763H	3241 Taylor Road	Historic/Commercial building	Alice's Fruit Stand
P-31-003154/ CA-PLA-1271H	Not Listed	Historic/Water retention feature	Not Listed
P-31-003262	3616 Laird Street	Historic/Single family property	Not Listed
P-31-003263	3621 Laird Street	Historic/Single family property	Not Listed
P-31-003264	3661 Library Drive	Historic/Single family property	Not Listed
P-31-003265	Not Listed	Historic/Outbuilding	Not Listed
P-31-003266	5913 Horseshoe Bar Road	Historic/Commercial building	Valerie's Gallery
P-31-003267	5907 Horseshoe Bar Road	Historic/Single family property	Not Listed
P-31-003268	5901 Horseshoe Bar Road	Historic/Single family property	Not Listed
P-31-003269	5885 Horseshoe Bar Road	Historic/Single family property	Not Listed
P-31-003270	Not Listed	Historic/Horse trailer	Not Listed
P-31-003271	Not Listed	Historic/granite blocks, orchard	Not Listed
P-31-003272	Not Listed	Historic/Water conveyance feature	Not Listed
P-31-003273	Not Listed	Historic/Mining features	Not Listed
P-31-003274	Not Listed	Historic/Water conveyance feature	Not Listed

Table 4-1: Resources Listed with the North Central Information Center, CHRIS

Resource #	Address	Period/Type	Name
P-31-003514	Not Listed	Historic/Isolated artifact	Not Listed
P-31-003515	Not Listed	Prehistoric/Isolated artifact	Not Listed
P-31-003516	Not Listed	Historic/Fence	Not Listed
P-31-004342	Not Listed	Historic/Single family property	Not Listed
P-31-005050	7590 Dick Cook Road	Historic/Single family property	Not Listed
P-31-005067	3104 Humphrey Road	Historic/Single family property	Not Listed
P-31-005091	3900 Twin Palms Lane	Historic/Single family property	Not Listed
P-31-005418	3636 Taylor Road	Historic/Commercial building	Taco Tree
P-31-005980	5575 Cavitt Stallman Road	Historic/Ranch complex	Hawk Ranch
P-31-006029	Not Listed	Historic/House site	Not Listed
P-31-006030	Not Listed	Historic/House site	Not Listed
P-31-006051/ CA-PLA-2601H	Not Listed	Historic/Water conveyance feature	Not Listed
P-31-006108	Not Listed	Prehistoric/Bedrock milling feature	Not Listed
P-31-006109	Not Listed	Historic/Water conveyance feature	Not Listed
P-31-006110	Not Listed	Historic/Water conveyance feature	Not Listed
P-31-006111	Not Listed	Historic/Outbuilding site	Not Listed
P-31-006112	Not Listed	Historic/Outbuilding site	Not Listed
P-31-006113	5145 James Drive	Historic/Single family property, outbuildings	Not Listed
P-31-006147	Not Listed	Prehistoric/Rock art	Not Listed

Source: North Central Information Center, CHRIS, Files

Four buildings within the Loomis Planning Area are identified on the Office of Historic Preservation's Placer County Built Environment Resource Directory (BERD), but are not included in the list of resources provided by NCIC (Table 4-1). The four buildings are listed in Table 4-2.

Table 4-2: Built Environment Resource Directory – Loomis Planning Area

Property #	Address	Year Built	Name
108889	Not listed	1890	Not listed
109407	6731 Horseshoe Bar Road	1900	Not listed
109408	6961 Horseshoe Bar Road	1900	Not listed
109411	6990 Horseshoe Bar Road	Not listed	Not listed

Source: Office of Historic Preservation (OHP) Placer County Built Environment Resource Directory (BERD) March 2020

There are no properties formally listed on the National Register of Historic Places within the Loomis Planning Area (www.nrhp.gov); however, two properties have been previously found eligible for listing on the National Register: the Loomis Depot and the no longer extant Blue Anchor Fruit Packing Shed.

Consultation

A check of the Sacred Lands Files was made through the Native American Heritage Commission (NAHC) on August 13, 2020. The NAHC identified tribal contacts for the Loomis area, and letters dated August 17, 2020 were sent on August 18, 2020 to Grayson Coney, Cultural Director, Tsi Akim Maidu; Gene Whitehouse, Chairperson, United Auburn Indian Community; Clyde Prout, Chairperson, Colfax-Todds Valley Consolidated Tribe; and Pamela Cubbler, Treasurer, Colfax-Todds Valley Consolidated Tribe. The letter to Mr. Coney was returned; it was resent on August 28, 2020 to an email address provided on the NAHC list.

A letter and map of the Town boundaries was sent on May 15, 2020 to the Loomis Basin Historical Society requesting information on their concerns. A second letter was sent to the group on August 27, 2020. No reply has been received to date from the group.

Paleontology

Among the natural resources deserving conservation and preservation, and possibly existing within the Loomis Planning Area, are the often-unseen records of past life buried in the sediments and rocks below the pavement, buildings, soils, and vegetation which now cover most of the area. Fossils constitute a non-renewable resource: Once lost or destroyed, the exact information they contained can never be reproduced.

Paleontology is the science that attempts to unravel the meaning of these fossils in terms of the organisms they represent, the ages and geographic distribution of those organisms, how they interacted in ancient ecosystems and responded to past climatic changes, and the changes through time of all of these aspects.

The sensitivity of a given area or body of sediment with respect to paleontological resources is a function of both the potential for the existence of fossils and the predicted significance of any fossils which may be found there. The primary consideration in the determination of paleontological sensitivity of a given area, body of sediment, or rock formation is its potential to include fossils. Information that can contribute to assessment of this potential includes: (1) direct observation of fossils within the Planning Area; (2) the existence of known fossil localities or documented absence of fossils in the same geologic unit (e.g., "Formation" or one of its subunits); (3) descriptive nature of sedimentary deposits (such as size of included particles or clasts, color, and bedding type) in the area of interest compared with those of similar deposits known elsewhere to favor or disfavor inclusion of fossils; and (4) interpretation of sediment details and known geologic history of the sedimentary body of interest in terms of the ancient environments in which they were deposited, followed by assessment of the favorability of those environments for the preservation of fossils.

The most general paleontological information can be obtained from geologic maps, but geologic cross sections (slices of the layer cake to view the third dimension) must be reviewed for each area in question. These usually accompany geologic maps or technical reports. Once it can be determined which formations may be present in the subsurface, the question of paleontological resources must be addressed. Even though a formation is known to contain fossils, they are not usually distributed uniformly throughout the many square miles the formation may cover. If the fossils were part of a bay environment when they died, perhaps a scattered layer of shells will be preserved over large areas. If on the other hand, a whale died in this bay, you might expect to find fossil whalebone only in one small area of less than a few hundred square feet. Other resources to be considered in the determination of paleontological potential are regional geologic reports, site records on file with paleontological repositories and site-specific field surveys.

Paleontologists consider all vertebrate fossils to be of significance. Fossils of other types are considered significant if they represent a new record, new species, an oldest occurring species, the most complete specimen of its kind, a rare species worldwide, or a species helpful in the dating of formations. However, even a previously designated low potential site may yield significant fossils.

Although most of the Loomis Planning Area is of low sensitivity in the igneous Penryn and Rocklin Pluton, three portions of the Loomis Planning Area have a higher sensitivity for the presence of fossils. Scattered outcrops of the Mehrten formation are exposed in the northwest and southeast portion of the Loomis Planning Area (See Figure 7-1 Geologic Map). The Mehrten Formation consists primarily of volcanic mudflow and ash deposits and also includes occasional beds of andesitic boulders, cobbles and gravels in a sandstone matrix, and dates to the late Pliocene-early Miocene age. There are Ione Formation outcrops located at the southeastern portion of the Loomis Study Area. This formation is derived from fluvial, estuarine, and shallow marine deposits from the Eocene. There are also two small areas of undivided Older Alluvium, of early to late Pleistocene age in the southeast portion of the Loomis Planning Area.

REGULATORY SETTING

Federal

National Historic Preservation Act

Most regulations at the federal level stem from the National Environmental Policy Act (NEPA) and historic preservation legislation such as the National Historic Preservation Act (NHPA) of 1966, as amended. NHPA established guidelines to "preserve important historic, cultural, and natural aspects of our national heritage, and to maintain, wherever possible, an environment that supports diversity and a variety of individual choice." The NHPA includes regulations specifically for federal land-holding agencies, but also includes regulations (Section 106) which pertain to all projects that are funded, permitted, or approved by any federal agency and which have the potential to affect cultural resources. All projects that are subject to NEPA are also subject to compliance with Section 106 of the NHPA and NEPA requirements concerning cultural resources. Provisions of NHPA establish a National Register of Historic Places (The National Register) maintained by the National Park Service, the Advisory Councils on Historic Preservation, State Historic Preservation Offices, and grants-in-aid programs.

American Indian Religious Freedom Act and Native American Graves and Repatriation Act

The American Indian Religious Freedom Act recognizes that Native American religious practices, sacred sites, and sacred objects have not been properly protected under other statutes. It establishes as national policy that traditional practices and beliefs, sites (including right of access), and the use of sacred objects shall be protected and preserved. Additionally, Native American remains are protected by the Native American Graves and Repatriation Act of 1990.

Other Federal Legislation

Historic preservation legislation was initiated by the Antiquities Act of 1966, which aimed to protect important historic and archaeological sites. It established a system of permits for conducting archaeological studies on Federal land, as well as setting penalties for noncompliance. This permit process controls the disturbance of archaeological sites on Federal land. New permits are currently issued under the Archeological Resources Protection Act (ARPA) of 1979. The purpose of ARPA is to enhance preservation and protection of archaeological resources on public and Native American lands. The Historic Sites Act of 1935 declared that it is national policy to "Preserve for public use historic sites, buildings, and objects of national significance."

State

California Register of Historical Resources (CRHR)

California State law also provides for the protection of cultural resources by requiring evaluations of the significance of prehistoric and historic resources identified in documents prepared pursuant to the California Environmental Quality Act (CEQA). Under CEQA, a cultural resource is considered an important historical resource if it meets any of the criteria found in Section 15064.5(a) of the CEQA Guidelines. Criteria identified in the CEQA Guidelines are similar to those described under the NHPA. The State Historic Preservation Office (SHPO) maintains the CRHR. Historic properties listed, or formally designated for eligibility to be listed, on the National Register are automatically listed on the CRHR. State Landmarks and Points of Interest are also automatically listed. The CRHR can also include properties designated under local preservation ordinances or identified through local historical resource surveys.

California Environmental Quality Act (CEQA)

CEQA requires public agencies to consider the effects of their actions on "historical resources," "unique archaeological resources," and "tribal cultural resources." Pursuant to PRC Section 21084.1, a "project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." Section 21083.2 requires agencies to determine whether proposed projects would have effects on unique archaeological resources.

State Laws Pertaining to Human Remains

Section 7050.5 of the California Health and Safety Code requires that construction or excavation be stopped in the vicinity of 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 Native American, the coroner must contact the California Native American Heritage Commission. CEQA Guidelines (Section 15064.5) specify the procedures to be followed in case of the discovery of human remains on non-Federal land. The disposition of Native American burials falls within the jurisdiction of the Native American Heritage Commission.

Several sections of the California Public Resources Code protect paleontological resources.

Section 5097.5 prohibits "knowing and willful" excavation, removal, destruction, injury, and defacement of any "vertebrate paleontological site, including fossilized footprints," on public lands, except where the agency with jurisdiction has granted express permission. "As used in this section, 'public lands' means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof."

California Public Resources Code, Section 30244 requires reasonable mitigation for impacts on paleontological resources that occur as a result of development on public lands.

The sections of the California Administrative Code relating to the State Division of Beaches and Parks (now Department of Parks and Recreation) afford protection to geologic features and "paleontological materials" but grant the director of the State park system authority to issue permits for specific activities that may result in damage to such resources, if the activities are in the interest of the State Park system and for State Park purposes (California Administrative Code, Title 14, Section 4307–4309).

Senate Bill 18 (Burton, Chapter 905, Statutes 2004)

SB 18, authored by Senator John Burton and signed into law by Governor Arnold Schwarzenegger in September 2004, requires local (city and county) governments to consult with California Native American tribes to aid in the protection of traditional tribal cultural places ("cultural places") through local land use planning. This legislation, which amended §65040.2, §65092, §65351, §65352, and §65560, and added §65352.3, §653524, and §65562.5 to the Government Code; also requires the Governor's Office of Planning and Research (OPR) to include in the General Plan Guidelines advice to local governments on how to conduct these consultations. The intent of SB 18 is to provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting, or mitigating impacts to, cultural places. These consultation and notice requirements apply to adoption and amendment of both general plans (defined in Government Code §65300 et seq.) and specific plans (defined in Government Code §65450 et seq.).

Assembly Bill 52 (Chapter 532, Statutes of 2014)

Assembly Bill ("AB") 52 establishes a formal consultation process for California tribes as part of CEQA and equates significant impacts on "tribal cultural resources" with significant environmental impacts (PRC Section 21084.2). AB 52 defines a "California Native American Tribe" as a Native American tribe located in California, and included on the contact list maintained by the Native American Heritage Commission. AB 52 requires formal consultation with California Native American Tribes prior to determining the level of environmental document if a tribe has requested to be informed by the lead agency of proposed projects. AB 52 also requires that the consultation address project alternatives and mitigation measures, for significant effects, if requested by the California Native American Tribe, and that consultation be considered concluded when either the parties agree to measures to mitigate or avoid a significant effect, or the agency concludes that mutual agreement cannot be reached.

Local

The Town of Loomis General Plan goals and policies can be found in the Conservation of Resources Element (Chapter VI) in General Plan Volume I. The Town's goals are to preserve and replicate historic areas of town that contribute to the Town's distinct character and to encourage cultural facilities and events. Policies address historic building revitalization and restoration, expansion of cultural facilities and programs, and protection of archaeological sites.

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Chapter

5 PUBLIC SERVICES & FACILITIES

PUBLIC SERVICES & FACILITIES

INTRODUCTION

Development within the Planning Area depends on an elaborate network of public services and utilities. This chapter describes these services, including law enforcement, fire protection, schools, libraries, water and sewer services, drainage, solid waste, gas service, and electrical service. Roadways and transit services are discussed in Chapter 2, Circulation.

PUBLIC SERVICES

Law Enforcement

Law enforcement services are provided in Loomis by the Placer County Sheriff's Department. The department operates from the South Placer Substation located at 6140 Horseshoe Bar Road and Interstate 80 in Loomis. The South Placer Substation staff include one commander, 36 patrol officers, a community services/school safety sergeant, eight school resource deputies, one field community services officer, six patrol sergeants, three community service officers, three detectives, other professional staff, and numerous. volunteers. Deputies from this substation provide 24-hour protection.

The crime rate in Loomis is relatively low and calls for law enforcement services are usually directed at the protection of property rather than responding to crimes against persons. The Department has found that community involvement programs, such as Neighborhood Watch, are particularly effective in assisting the efforts of Sheriff's patrols. Crime rates for 2018 and 2019 are shown as follows in Table 5-1:

Table 5-1: Law Enforcement Service Calls in Loomis			
Calls for Service	**2018**	**2019**	**Percent Change**
Crimes Against Persons (Loomis)	50	51	+2% (although only 1 additional call)
Property Crimes (Loomis)	202	188	-7%
Total Service Calls	2,392	2,282	-4% (No change per the Department)
Total Calls Including Deputy Initiated Calls	4,130	3,877	-6%

Source: Placer County Sheriff's Department, 2020.

Response times average about 5.2 minutes for priority one (more critical) calls and 6.5 minutes for priority two calls for years 2018/19 (Silva, 2020). Currently, the Town pays for 0.5 Lieutenants, 4.25 Deputies, 0.5 Detectives, and one Traffic Deputy, totaling 6.25 personnel paid for by the Town of Loomis; however, a total of 14 law enforcement personnel work out of the South Placer Substation in Loomis and serve the area (Silva, 2020). The Placer County General Plan goal for service is 1:1000 residents. With an estimated population of 6,866 Loomis residents in 2019, the ratio of deputies specifically paid for by the Town to Loomis residents is 1:1,098 or based on the 14 personnel assigned to the South Placer Substation, the ratio is 1:492 or 2:1,000 (Silva, 2020). Based on the County standard and the number of deputies paid for by the Town, the ratio of deputies to residents is slightly exceeded, and payment for an additional 0.62 deputies are needed to meet that standard. Based on actual sworn personnel available to serve the Town out of the substation, the standard is fully met. As the Town grows or should larger commercial facilities develop within the Town, funding for an additional deputy sheriff or full-time detective may be beneficial (Silva 2020).

Fire Protection

The Loomis Fire Protection District (LFPD) consolidated with the South Placer Fire District (SPFD) in 2017 and operates as the SPFD. The SPFD serves nearly all of the Planning Area. The California Department of Forestry and Fire Protection (CAL FIRE) also provides fire protection services, particularly with regard to rural wildland fires.

These agencies and their service abilities are described below, and service areas are depicted in Figure 5-1.

Small portions of the northern Town limits are served by the Penryn Fire Protection District (PFPD). Mutual aid and automatic aid agreements are in place with the PFPD and CAL FIRE.

South Placer Fire District

SPFD provides fire protection, fire suppression, emergency medical service, open area (wildlands) fire protection, assists in search and rescue operations and removal of hazardous materials. The SPFD operates out of five staffed stations and one volunteer station to serve the communities of Loomis, Granite Bay, and the southern areas of Penryn and Newcastle, and covering an area of 55 square miles with 42,000 residents. There are two stations within Loomis. Station 18 is located at 5840 Horseshoe Bar Road in the heart of Downtown Loomis, and is staffed with a captain, engineer, and paramedic firefighter. Apparatus located at Station 18 includes an engine, brush truck, and an all-terrain vehicle. The location of this station allows for quick response to fire hazards along I-80, the railroad, high pressure underground pipeline, and the wildland urban interface. Although fully operational, SPFD is proposing to increase the size of Station 18, however, that project has been delayed due to Covid-19 and construction costs. Station 20 is located at 3505 Auburn Folsom Road in Loomis and is located furthest north within the service area. This station operates with a captain paramedic engineer and a paramedic/firefighter, and includes a medic unit, grass unit, and an engine. The location of this station provides primarily for wildland fire response and emergency medical response. Both. stations provide advanced life support (ALS) services. All District personnel are Emergency Medical Technicians (EMT) or Paramedics, the latter who have an expanded scope of medical practice to include advanced lifesaving skills. SPFD includes an EMS Division that is headed by an EMS Officer and a Medical Director who is a local emergency room physician (SPFD June 3, 2021).

SPFD uses a 48/96 work schedule in which staff work two days on and four days off in rotation. Approximately 8,000 responses to 6,000 calls are made annually, of which 75 percent are medical, 13 percent are fire-related, and 12 percent are other service or false calls (SPFD June 3, 2021).

SPFD indicates there are no areas of Loomis that are not served or that have insufficient infrastructure for service. The Insurance Service Office (ISO), a national rating service sponsored by fire insurance carriers to measure fire-fighting capability to reduce structural fire losses, provides rankings of fire-fighting capability on a scale of 1 - 10 with 1 being best. The SPFD fire services are rated 3 (Placer County Local Hazard Mitigation Plan, March 2016 and SPFD June 3, 2021).

SPFD operating costs are financed from three property related tax sources: a general property tax; a benefit assessment tax of $70 per parcel or irrigated farm, $0.05 per square foot of commercial unit, $20 per mobile home unit, and an additional $2.00 per acre of land, and a special zone of benefit assessment limited to non-residential developments that occur within the District. Mitigation/impact fees and other smaller revenue sources also fund SPFD. The separate benefit assessment applies to zones created for each such new development. Currently, new development within the SPFD service area is required to pay a fire impact fee based on the type of use and size of the proposed structure. These fees fund fire facilities, apparatus, and equipment. The fees are:

Land Use Category	Maximum Fee
Residential Development	**Per Living Sq. Ft.**
Single-Family Housing	$0.81
Multi-Family Housing	$1.41
Mobile Home	$0.97
Assisted Living Facility	$0.89
Nonresidential Development	**Per Building Sq. Ft.**
Retail/Commercial	$1.32
Office	$1.70
Industrial	$1.05
Agriculture	$0.53
Warehouse/Distribution	$0.87

Source: SPFD 2018/2019 Annual Report, 12/13/19

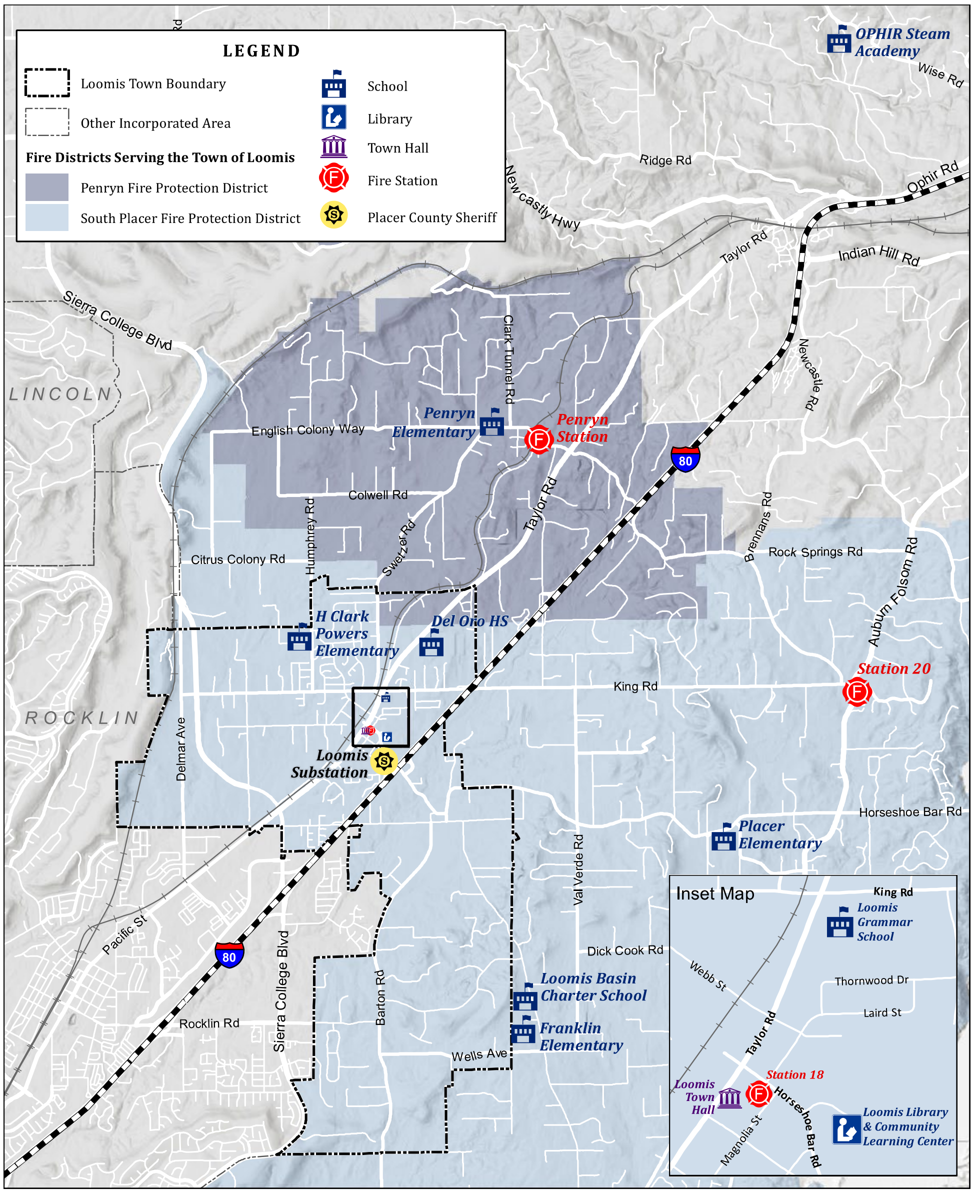
Note: [1] The fire impact fee is rounded to the nearest whole cent.

All money collected helps pay the annual SPFD budget which was budgeted for 2019/2020 for expenditures of $13,988,068 ($11,677,956. operational expenditures such as salaries operations and fixed assets, $1,617,261 in capital expenditures reserve account, $355,000 in California Fire Agreement Assistance through the State Office of Emergency Services, and other general capital expenditures and mitigation). The estimated revenue was $13,448,641 ($12,678,641 in general revenue, $415,000 in mitigation/development fee revenue, and $355,000 in California Fire Agreement Assistance funds). The 2020/21 budget is also nearly $14,000,000. SPFD indicates they are, “currently considering pursuing a voter approved special tax with a consumer price index adjustment in the former South. Placer Fire District Service area prior to the merger in July 2017 with Loomis Fire. The costs associated with providing fire services is always increasing and the District is continuously trying to find ways to be more efficient while being sensitive to the taxpayers of the communities we serve” (SPFD, June 3, 2021).

Penryn Fire Protection District

The Penryn Fire District operates one fire station located on Church Street, off English Colony Way, in Penryn. The station serves about 6,000 residents, very few of whom live within the Loomis Planning Area. The PFPD covers an area of 10.5 square miles and serves 1,164 residences, and 63 businesses. Only two percent of the service area is within Loomis. The district receives about 500 calls per year, about 42 percent of which are related to fire incidents Two personnel staff the station 24 hours a day with assistance from Intern Firefighters. Staff provide a variety of resources including equipment operation, hazardous materials, swift water rescue, fire prevention, and training and safety, among others. Station equipment includes three engines and a command vehicle. Response times range from five to eight minutes. The PFPD would like to increase staffing from two to three staff members on duty at all times to expand medical response capabilities and service. Property taxes, Measure C, Measure A, and other means such as inspection fees and other services fund the PFPD (Penryn Fire Protection. District, Strategic Plan 2019-2024). The ISO rating for the district is 3/3x. PFPD indicates there are no areas in Loomis

Figure 5-1: Public Service Areas



that they serve in which there is insufficient fire protection infrastructure and the PFPD has no current issues in providing adequate service in relation to staffing or equipment. Additionally, PFPD indicates there are no existing funding deficiencies. Future vegetation and roadway maintenance within the Town will help PFPD to continue to provide quality service to Loomis (Penryn Fire Protection District, October 30, 2020).

California Department of Forestry and Fire Protection CAL FIRE

The entire Planning Area is served by the California Department of Forestry. And Fire Protection (CAL FIRE). This agency is responsible for controlling wildland fires in the unincorporated areas of the state. Loomis is served by the Nevada-Yuba-Placer CAL FIRE unit. In Placer County, CAL FIRE operates stations in Auburn, Lincoln, Colfax, Foresthill, Alta, and Higgins. The Auburn or Lincoln stations are most likely to serve the Planning Area, but all stations could respond in the event of a major wildfire. No Very High Fire Severity Zones have been designed by California Department of Forestry and Fire Protection (CAL FIRE) in the Planning Area. Rural areas immediately adjacent to the north and east of the Planning Area are located within a State Responsibility Area, meaning that CAL FIRE is primarily responsible for fire-fighting efforts, and these areas have been identified by CAL FIRE as moderate fire hazard severity zones. Finally, the Town has designated a small portion of the Planning Area south of Brace Road, southwest of Secret Ravine, as a High Fire Hazard Severity Zone (see Volume III, Chapter 7, Figure 7-5).

Schools

Facilities and Enrollment

The Loomis Planning Area encompasses portions of two school districts: Placer Union High School District (PUHSD) and Loomis Union School District (LUSD). The entire Planning Area lies within the PUHSD, which serves grades 9-12, and within the LUSD, which serves grades K-8. The facilities and enrollments within these districts are described below.

Placer Union High School District. Placer Union High School District operates several high schools within its far-reaching boundaries. Del Oro High School lies within the Planning Area, and is the only one to serve Planning Area residents. Its current capacity is 1,750. The school's enrollment of about 1,750, which includes the school's acceptance of approximately 300 inter-district transfers from other communities, indicates it operates at capacity (Sziraki, 2020). Table 5-1 shows the enrollment and capacity of Del Oro High School.

Loomis Union School District. There are seven elementary schools within the LUSD, including one charter school. Each of the schools serve grades TK-8. The current enrollment districtwide is essentially equal to the existing capacity of the facilities, with some schools operating above the capacity limit as shown in Table 5-2. Portable classrooms are used to house excess enrollment. With the introduction of the statewide Class Size Reduction Program and ongoing growth in Loomis, Rocklin, and the surrounding County, the demand for new facilities has increased, and the shortage of space is exacerbated. Table 5-1 shows the current capacity and enrollment within Planning Area schools. The District's 2018-2020 Report to the Community estimates a 2% annual growth rate, gaining approximately 300 students between 2019 and 2025.

Facilities Funding

Revenue for facilities construction comes from both state and local sources, including developer fees. Both the PUHSD and LUSD participate in school construction programs, whereby new development contributes half of the cost of new facilities, while the remainder is supplied by state and local resident taxes.

The school districts charge developer fees for both new commercial and residential development to fund facilities. As of July 1, 2020, PUHSD commercial construction fees were $0.264 per square foot and residential construction fees were $3.19 per square foot (PUHSD, 2020 Developer Fees Information, https://sites.google.com/puhsd.k12.ca.us/developerfees/Home, site accessed May 3, 2021). LUSD's current developer fees, as of May 2021, are $2.45 per square foot of living space for residential development and $0.40 per square foot for commercial development (LUSD, Kim Chase, Personal Communication, May 6, 2021).

Table 5-2: Planning Area School Capacity & Enrollment			
School	**Capacity**	**Enrollment (2018-2019)**	**Percent of Capacity**
Loomis USD			
Franklin Elementary	500	498	100%
Loomis Basin Charter	500	436	87%
H. Clarke Powers Elementary	500	505	101%
Loomis Grammar School	500	498	100%
Ophir STEAM Academy	250	214	86%
Penryn Elementary	250	243	97%
Placer Elementary	500	515	103%
Total LUSD	*3,000*	*2,909**	*97%*
Placer UHSD			
Del Oro High (9-12)	1,750	1,750	100%
TOTAL all schools	**4,750**	**4,659**	**98%**

Source: 2018-2019 School Accountability Report Cards

*Total enrollment at LUSD was cited as 2,998 in the LUSD Report to the Community 2018-2020

PUHSD passed a general obligation bond (Measure D) in November 2018, which provided $40 million to address facilities needs at Del Oro High School, specifically 34 new classrooms as well as modernization, renovations, and upgrades to several again classrooms and facilities. This bond will be paid off through an additional property tax of $27 per $100,000 of assessed value through 2050.

Libraries

The Loomis Library and Community Learning Center (CLC) is the only library within the Planning Area and is located at 6050 Library Drive in Loomis. While previously a branch of the Auburn Placer County Library, the Loomis Library and CLC became an entity of the Town on March 1, 2019. As a Town entity, the Loomis Library and CLC operates under appointees to the Mayor's Library Board. The Loomis Library and CLC is funded through the Town's operating budget.

Water & Sewer Services

Water

Most of the Town of Loomis is supplied by the Placer County Water Agency (PCWA). However, some of the more rural portions of the Planning Area are not connected to the PCWA's infrastructure and are supplied by private wells. Each source of water is described in greater detail below.

Placer County Water Agency

The Placer County Water Agency (PCWA) provides retail and wholesale water service throughout Placer County, including the Loomis community, which is in PCWA's lower Zone 6. Zone 6 extends from the Alta community on the east, along the Interstate 80 corridor into western Placer County, including the cities of Auburn, Rocklin, Lincoln, and Roseville, the Newcastle and Penryn communities, the Granite Bay area, and vast areas of unincorporated Placer County including agricultural lands west of the city of Lincoln.

PCWA has various sources of water for meeting the needs of its service area. Those sources include two separate water supply contracts with PG&E, water obtained from the American River pursuant to PCWA's water rights for its Middle Fork American River Project, supply from the Federal Central Valley Project, supplies obtained from Canyon Creek, which are pre-1914 appropriative rights acquired from PG&E, and water supplies obtained from groundwater sources within western Placer County west of State Highway 65. Table 5-3 summarizes the water supplies available to the PCWA.

PCWA estimates normal year demand to be 158,800 AFY, compared to a current delivery capacity of 236,900 AFY. This includes water deliveries to a service population of over 248,000 and 7,000 acres of agricultural land.

Table 5-3: Water Available to the PCWA	
Water Source	**Amount (AFY)**
Yuba and Bear Rivers PG&E water supply contract	125,400
North Fork American River PCWA Middle Fork Project water rights	120,000
Folsom Reservoir Central Valley Project contract (Bureau of Reclamation)	35,000
Canyon Creek Pre-1914 water rights	~5,000
Groundwater (two wells presently, each capable of producing 1,000 acre-feet per year. Note: zero amount shown because PCWA utilizes groundwater sources for emergency or dry-year supplies only.	--
TOTAL	**285,400**

Source: PCWA, 2020 and 2021

Water Treatment, Storage, and Transmission/Distribution Facilities. PCWA operates eight water treatment plants throughout its service area. The Town of Loomis is within PCWA's Foothill/Sunset water system, which is supplied from the Foothill Water Treatment Plant (WTP) and the Sunset WTP. The Foothill WTP has a present capacity of 60 million gallons per day (mgd) and the Sunset WTP has a present capacity of 5 mgd. The peak-day demand on this water system was 49.1 mgd in 2020, resulting in 15.9 mgd of remaining capacity.

Two additional water treatment plants located in the Auburn area are the primary plants serving the Bowman, Auburn, and Newcastle areas. These two plants have a combined capacity of 15 mgd and are also able to support the Foothill WTP service area by means of a pipeline connecting the two water systems. Additional pipelines connecting the Auburn/Bowman water system to the Foothill/Sunset water system are planned in the future, allowing for even greater backup capacity to be conveyed from the upper system to the lower system.

To meet future water system demands that exceed PCWA's current water treatment plant capacity, PCWA is planning to construct a new water treatment plant known as the Ophir WTP. This plant is planned to be constructed along Ophir Road between

Auburn and Newcastle and would likely be needed within the next 10 to 15 years, depending on the pace of growth within PCWA's service area.

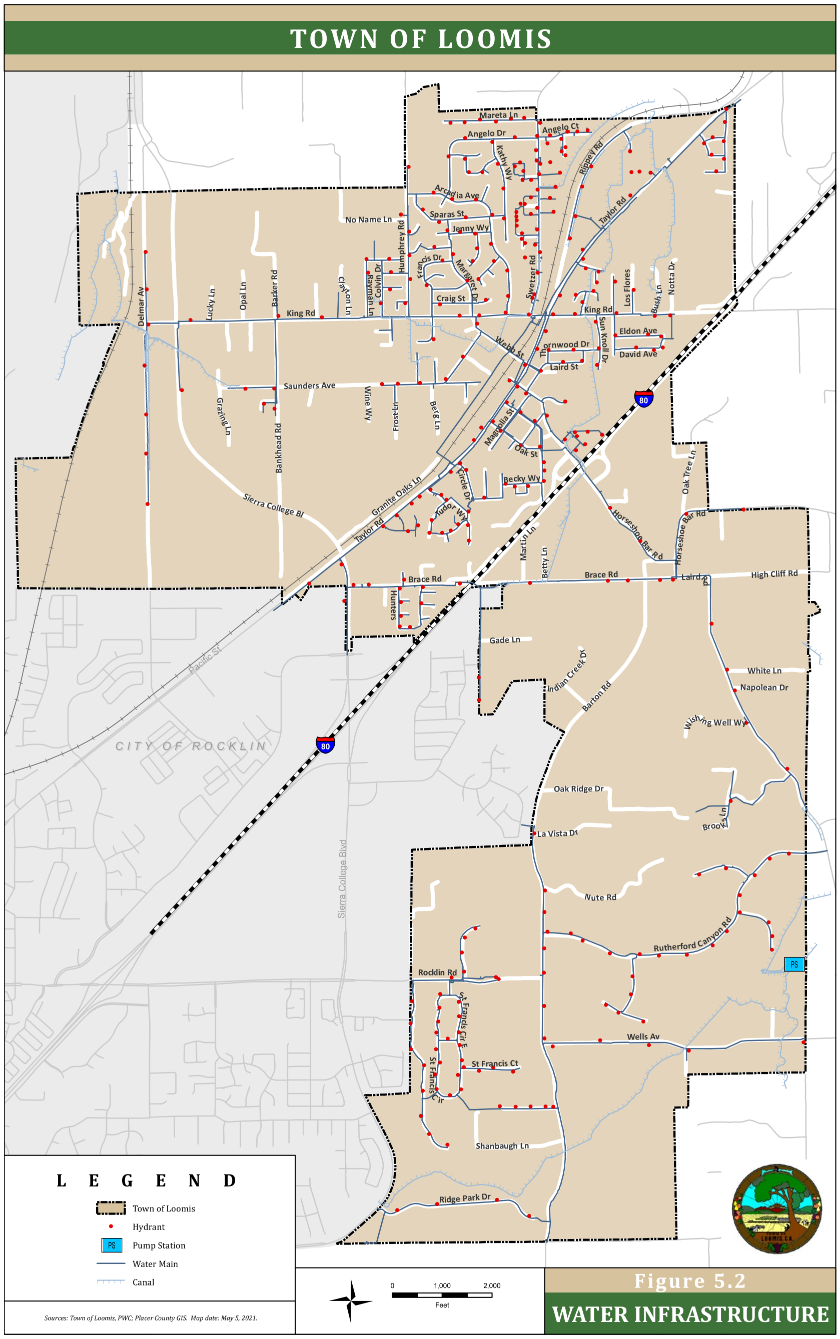
PCWA's treated water systems include numerous storage tanks in various locations through its service area. Water storage for the Town of Loomis area is provided directly from two locations. There is a 10-million-gallon water storage tank at the Foothill WTP and a 1-million-gallon water storage tank within the Penryn area. These storage tanks provide operational and emergency water storage to the Town of Loomis and surrounding area. According to the PCWA 2020 Year End Report, there are 3,052 treated water customers in Loomis and 1,332 untreated water customers (PCWA, 2020 Year End Report, https://imgix.cosmicjs.com/492aa9a0-6658-11eb-8120-dfe8ec2b682f-Year-End-Report-2020FINAL.pdf).

The main transmission pipelines that convey water from the Foothill WTP to the Town of Loomis include 48-inch and 30-inch transmission pipelines from the WTP to Taylor Road in the Penryn area, a 24-inch pipeline along Taylor Road between Penryn and Loomis, and 24-inch and 18-inch pipelines that generally convey water on the southeast side of Interstate 80 toward the Granite Bay area, with connecting pipelines to Loomis in Horseshoe Bar Road, Brace Road, Laird Road, and Wells Avenue. A future pipeline is planned for Barton Road between Brace Road and La Vista Drive.

In addition to treated water (drinking water) service to the Town of Loomis and surrounding areas, PCWA also operates and maintains an untreated, or canal water, system of canals and pipes that provides untreated irrigation water service. This system of canals and pipes dates back to the 1800s and continues to deliver irrigation water in units of miners inches to PCWA customers throughout the Town of Loomis and surrounding areas (PCWA, Personal Communication April 28, 2021).

Figure 5-2 shows the major lines in the PCWA water distribution network within the Loomis Planning Area.

Figure 5-2: Water Distribution Network



***System Deficiencies*.** PCWA identifies no major transmission problems with the distribution system in the Planning Area and does not indicate there are any deficiencies in the service system within the Town or in relation to infrastructure ultimately serving the Town. PCWA indicates the existing water distribution system within the Town is robust and can be extended from existing infrastructure to meet the needs of new development activity. There is no indication that PCWA's water supplies are insufficient or unable to meet the Town's future needs (Personal Communication, Brent Smith, PCWA, April 27, 2021).

Private Wells. Portions of the Loomis community do not have access to the PCWA's distribution system and are supplied by private wells. The rural residential properties along Barton Road are within the largest area in Loomis not served by the PCWA. Groundwater distribution in the Planning Area is sporadic and well yield is highly variable. The average production of wells in the area is 4 to 9 gallons per minute. Water quality varies with the source. Granitic rock wells provide the best water quality in the area and many of the area's wells are of this type. Wells overlying alluvial deposits vary from low to moderate quality. Many wells in the area experience iron and manganese contamination, sometimes associated with low yield. Please refer to Volume III, Chapter 3, Section *Groundwater Resources*, for further discussion of groundwater resources and wells in the Planning Area.

Wastewater

Most of the Planning Area is connected to wastewater collection infrastructure, a service provided by the South Placer Municipal Utility District (SPMUD). SPMUD operates under a joint-powers agreement between the City of Roseville, SPMUD, and Placer County, and funds a recycled water facility, sewer trunk lines, and two wastewater treatment plants. Serving Loomis, Rocklin, Penryn, Newcastle, and portions of Granite Bay, SPMUD's service area covers over 18,560 acres and serves 34,530 equivalent dwelling units (EDUs) through 280 miles of mainline pipe that ranges in size from 4 to 54 inches in diameter, 6,000 manholes, 13 lift stations and 10 permanent flow monitoring stations. Most connections are residential.

Currently SPMUD averages dry-weather flows of 4.62 mgd and wet-weather flows of 8.67 mgd. By 2060, SPMUD projects the total number of EDUs served will increase to

46,850, resulting in average dry-weather flows of 6.95 mgd and average wet-weather flows of 15.99 mgd (SPMUD Sewer Participation Nexus Fee Study 2020).

The Town of Loomis falls within three SPMUD Wards. Ward 3 includes the portions of Loomis south of I-80, Ward 4 includes the portion of Loomis north of King Road, and Ward 5 includes west and central portions of Loomis between I-80 and King Road (SPMUD 2020).

There are three larger sized sewer lines that serve the Town of Loomis, including a 15-inch line near Taylor Road (Lower Loomis Trunk), a combination 15-inch and 18-inch line south of Horseshoe Bar Road and along Brace Road and Dias Lane (Loomis Diversion Line), and a 10-inch line that serves the southern portion of the Town near Barton Road and Monte Claire Lane. SPMUD provides access to a district-wide interactive map showing the location and size of the service lines and sewer facilities in Loomis at: https://spmud.ca.gov/district-map. In total, there are over 183,311 feet of sewer lines serving the Town of Loomis, as detailed in Table 5-4:

Table 5-4: SPMUD Sewer Infrastructure in Loomis

Pipe Diameter (inches)	Number of Pipelines	Total Length (feet)
4	7	4,135
6	383	88,183
8	259	54,606
10	78	18,479
12	40	11,015
15	19	5,112
18	7	1,781
Total:	**793**	**183,311**

Source: SPMUD, 2020

The South Placer Wastewater Authority (SPWA) was created by the City of Roseville, Placer County, and SPMUD to provide regional wastewater and recycled water facilities in southwestern Placer County. SPWA oversees two regional facilities: the

Dry Creek and Pleasant Grove Wastewater Treatment Plants (WWTPs), both of which receive flows from SPMUD. All of the sewer generated within the Town of Loomis flows to the Dry Creek WWTP, located at 1800 Booth Road in Roseville. Treatment at the Dry Creek WWTP includes screening, primary clarification, aeration, secondary clarification, filtering, and disinfection, and the recycled water is used for landscape irrigation in Roseville.

To project future regional wastewater needs, the SPWA prepared the South Placer Regional Wastewater and Recycled Water Systems Evaluation (Evaluation) in June 2007 and is currently in the process of completing an updated Evaluation. Background data for the Evaluation update indicates that as of 2019, flows to both WWTPs were below design flows. Both WWTPs are permitted discharges under the National Pollutant Discharge Elimination System (NPDES). Specifically, the Dry Creek WWTP is permitted to discharge an average dry weather flow not to exceed 18 mgd, while the Pleasant Grove WWTP is permitted to discharge an average dry weather flow not to exceed 12 mgd. For fiscal year 2019-2020 the Dry Creek WWTP had an average dry weather inflow of 8.6 mgd, with SPMUD's portion being 1.9 mgd, and the Pleasant Grove WWTP had an average dry weather inflow of 7.6 mgd, with SPMUD's portion being 2.2 mgd (SPMUD, 2020). Therefore, there is currently adequate capacity at the WWTPs to serve the area, based on the existing intensity of development in the region.

It should be noted that the two WWTPs are limited not only by capacity but by the amount of nutrients they can receive and treat. The State Water Board regulates nutrient levels such as biochemical oxygen demand and total suspended solids and the WWTPs must meet those regulatory thresholds. Although total flow volumes have decreased with water efficiency, the concentration of nutrients in those flows has increased. To date, this nutrient capacity volume has been accommodated at the WWTPs, but as water efficiency continues to improve and as new development occurs in the region served by SPWA, nutrient levels will continue to concentrate and increase, resulting in a need for improved infrastructure to treat nutrient loads. This could also be exacerbated should regulatory requirements for nutrient removal become more stringent. Improvements at the WWTPs may require additional nutrient handling infrastructure or conversion of infrastructure to newer technologies and systems with increased efficiency. A 2009 Systems Efficiency study identifies improvements to the WWTPs to ensure the WWTPs continue to meet State standards (RMC 2009 South Placer Regional Wastewater and Recycled Water Systems Evaluation). Therefore, future development in Loomis may need to assess not only total flow capacity, but also nutrient volume capacity for the Dry Creek WWTP serving the Town.

According to the 2020 Sewer Participation Fee Nexus Study and the 2020 System Evaluation and Capacity Assurance Plan (SECAP), SPMUD plans to improve the Boyington Road Diversion Trunk in the near term (by 2025). This project includes 3,240 feet of 12-inch diameter trunk line along the Boyington Road frontage at I-80. This improvement allows for the abandonment of two aging sewer lift stations. Long-term system improvements include replacing various sections of pipe with larger diameter pipe within the service area, such as replacing the 8-inch and 12-inch diameter pipe in Bankhead Road with new 15-inch diameter pipe, as well as the installation of new trunklines and a pump station in underserved areas, notably areas south of I-80 in east Loomis and areas near Antelope Creek. However, it is critical to note that these improvements are based on development assumptions and estimates to help SPMUD plan for future improvements and establish estimated improvements and timeframes for those improvements. These improvement assumptions in the 2020 SECAP are subject to change depending on the actual pace, scale, and location of future development within the Town, which fluctuates over time.

SPMUD is funded through connection fees and service charges, as well as through inspection fees, taxes and bond revenues, interest income and other revenues.

Some of the wastewater in the Planning Area is treated by on-site private septic systems, particularly within larger rural residential lots on the periphery of the Planning Area, especially (but not exclusively) in the more rural portions of Town where sanitary sewer service is not available or where main lines are located too far from a property for a connection. Where sewer infrastructure is not available or within an adequate distance, septic systems can be an appropriate alternative if property and soil conditions allow. Septic systems may only be located on land with the appropriate soil type and away from property setbacks, wells, surface waters, and other waterways with approval of the Placer County Health Department. The Placer County Health Department requires a permit, soil testing in the exact location of the proposed septic system on the property, and the payment of appropriate fees. Some septic systems in the area have a history of discharge and maintenance problems. However, because the placement and maintenance of septic systems is up to private individuals and not public agencies, issues related to septic systems are discussed in more detail in Volume III, Chapter 3, Sections *Water Quality and Aquatic Resource Regulatory Framework*.

Drainage & Flood Control

The Planning Area is within the Dry Creek watershed, which covers about 101 square miles in Placer and Sacramento counties. Antelope Creek, Secret Ravine, and their tributaries are the primary drainages in the area.

The Placer County Flood Control and Water Conservation District (PCFCWCD) is responsible for developing flood control management strategies within the county. The 2011 Update to the Dry Creek Watershed Flood Control Plan prepared for the PCFCWCD addresses flood control within the watershed, and suggests the following recommendations:

1. Implement the two phases of the Antelope Creek at Atlantic Street project and ALERT system upgrades to mitigate for development impacts as funding becomes available.

2. Pursue other regional flood flow reduction projects with consideration for additional multi-objective components along with stream corridor if and when opportunities for funding develop.

3. Implement bridge and culvert improvements in a manner that does not exacerbate flooding at other locations in the watershed. Stream crossing modifications may provide opportunities for additional projects that could improve the flood control benefit of the existing floodplain.

4. Support building elevation and floodplain property buy-outs as these programs are expected to be the most effective means available to reduce future flood damage to existing structures.

5. Require on-site (local) detention where mitigation is necessary due to local flood impact considerations.

6. Incorporate [low impact development] LID measures into future development design that promotes infiltration.

The Town of Loomis Resolution 97-70 establishes an agreement between PCFCWCD and the Town to coordinate the development, support, and operation of PCFCWCD facilities. Within the Planning Area, the Loomis Town Manager is the Town Floodplain Administrator. The PCFCWCD provides guidance to the Town in dealing with potential flooding impacts. To help implement the above recommendations, on-site detention that reduces runoff to 90 percent of existing flows is required of new development within the Dry Creek watershed.

No regional flood control facilities are located within the Loomis Planning Area. However, several small unnamed reservoirs provide local flood detention within the Town. Please refer to Volume III, Chapter 7, *Safety & Noise Issues*, *Flooding Hazards*, for additional information regarding the location of flood-prone areas in the Town.

The Town maintains storm drain infrastructure within the Town limits. This infrastructure includes roadway gutters, drop inlets, and conveyance piping, and roadside drainage ditches or rock-lined ditches. Infrastructure improvements are conducted on a case-by-case basis through the Town's Capital Improvement Program.

Solid Waste Management

Recology Auburn Placer (Recology) provides solid waste disposal for the Planning Area, including residential and commercial yard waste, recycling, and garbage collection. If households elect to subscribe to the service, each is provided with a 32- or 90-gallon container for weekly collection of domestic refuse. Customers may choose to supply and use their own 32-gallon container; however, no green waste container is supplied by Recology at that service level and containers may weigh no more than 50 pounds when full. Recology also offers the "One Big Bin" recycling service. Recyclable materials are collected in one bin and sorted at the materials recovery facility at the Western Regional Sanitary Landfill.

CalRecycle data collected between 2007 and 2018 indicates the per-capita production of solid waste in Loomis was 6.7 pounds per day (ppd) in 2007 and 6.6 ppd in 2018. For per-capita employees, the rate was 10.8 ppd in 2007 and 11.3 ppd in. 2018. The target per resident disposal rate is 6.2 ppd and the target employee disposal rate is 10.8 ppd, indicating that both targets continue to be exceeded.

Solid waste is taken to the Western Regional Sanitary Landfill (WRSL) in western Placer County at the intersection of Athens Avenue and Fiddyment Road. The landfill is managed by the Western Placer Waste Management Authority, which consists of representatives from Rocklin, Lincoln, Roseville, and Placer County. The 800-acre landfill has been operating since 1979.

The maximum permitted throughput at the WRSL is 1,900 tons per day (tpd), with a total maximum permitted capacity of 36.4 million cubic yards. According to the California Department of Resources Recycling and Recovery (CalRecycle), the remaining capacity at the WRSL is approximately 29.1 million cubic yards and it has an anticipated closure date of January 1, 2058. Loomis's solid waste has been sent to the WRSL since 2003. CalRecycle disposal data indicates Loomis has an increasing volume of disposal tonnage, with 4,916 tons generated by Loomis in 2010 and 8,214 tons generated by Loomis in 2018.

A materials recovery facility (MRF) at the landfill was opened in 1997. The MRF recovers recyclable materials from mixed waste, process green and wood wastes for composting or biomass, receive and process source-separated recyclables, and receive, recycle, and dispose of household hazardous waste. The facility can handle up to 2,000 tons per day with a 16-hour shift, with a 17 percent guaranteed minimum recovery rate. The materials recovery facility includes a compacted residential waste tipping area and recyclables drop-off/buy back center.

Loomis participates in the Placer County Solid Waste Task Force, which assists in the review, revision and implementation of county and city source reduction and recycling elements, household hazardous waste elements and non-disposal facility elements.

The Western Placer Waste Management Authority is a regional agency that provides recycling and waste disposal opportunities to the Town of Loomis. The WPWMA oversees operations of the WRSL, MRF, and permanent household hazardous waste collection facility.

Utilities

Gas and Electricity

The Pacific Gas and Electric Company (PG&E) supplies natural gas and electricity to homes and businesses in Loomis. These services are provided in accordance with Public Utilities Commission (PUC) rules and regulations, which requires PG&E to update their systems to meet additional demands. As new development occurs, PG&E expands infrastructure within the Town as needed based on the demands of the developments. PG&E has interest in expanding services as new customers fund operations, and it is in their best interest to expand services and maintain infrastructure to continue operations.

Town residents, and much of Placer County, are also served by Pioneer Community Energy. Pioneer Community Energy uses PG&E lines to provide electrical service to the area. Pioneer Community Energy operates with a locally elected board and without shareholders to provide a competitive rate. Residents may choose to use unbundled electric service through Pioneer Community Energy or opt back into PG&E's bundled service (http://pioneercommunityenergy.ca.gov/).

PG&E's electrical mainline is an overhead line located generally along Taylor Road. This is a 60 kV, single circuit line that extends for five miles between Rocklin and Penryn (California State Geoportal. California Electric Transmission Lines, https://gis.data.ca.gov/datasets/. Site accessed May 6, 2021). Electrical substations associated with this line are located in Penryn, near Penryn Road, and in Rocklin at the Del Mar Substation near Sierra Meadows Drive (California Energy Commission, California Energy Maps https://caenergy.maps.arcgis.com/apps/webappviewer/index.html?id=ad8323410d9b47c1b1a9f751d62fe495. Site accessed May 6, 2021).

The primary gas main in Loomis runs along Taylor Road, and PG&E is currently upgrading the valve system to improve service and safety. This line (Line 173) extends from Roseville and Rocklin along Taylor Road and up through Penryn and Auburn. Another natural gas main runs along Rocklin Road and continues south along Barton Road (Line 1519-01). The lines within Loomis, except for a portion along Barton Road, are considered to be within High Consequence Areas and as such have been pressure tested for safety. Based on these tests, valve improvements are being installed to maintain system safety. (https://www.pge.com/includes/docs/pdfs/myhome/edusafety/systemworks/gas/latestupdates/filingmaps/Map%2020.pdf).

Most electrical lines in the Town are located above-ground on utility poles, although some areas, such as the newer developments, have located lines underground to improve the aesthetic. In recent years, due to an increase in wildfire events caused by high winds, the electrical service in Town and the surrounding region has been periodically suspended during high-wind events to avoid fire risk. Although undergrounding utilities is expensive, the increasing vulnerability of the lines and uncertainty of service due to inclement weather may make undergrounding more desirable not just for the aesthetic benefit, but also in terms of maintaining system reliability.

Some rural locations on the periphery of the community are not connected to the existing gas distribution network and are instead on individual propane hookups. This service is currently provided by many private propane providers on an individual basis. With increased interest and availability of electric cars and the various home solar infrastructure opportunities and state mandates, homes in Loomis are increasingly equipped with electric vehicle charging infrastructure, solar collection systems, and battery storage.

Telephone

AT&T currently provides phone service to homes and businesses in the Loomis area and is responsible for maintaining telephone infrastructure in the area. However, many alternative local and long-distance companies are available to provide service using AT&T's network of phone lines. Cellular service is currently provided by AT&T, Verizon, and T-Mobile (Sprint).

Cable/Satellite Television and Internet

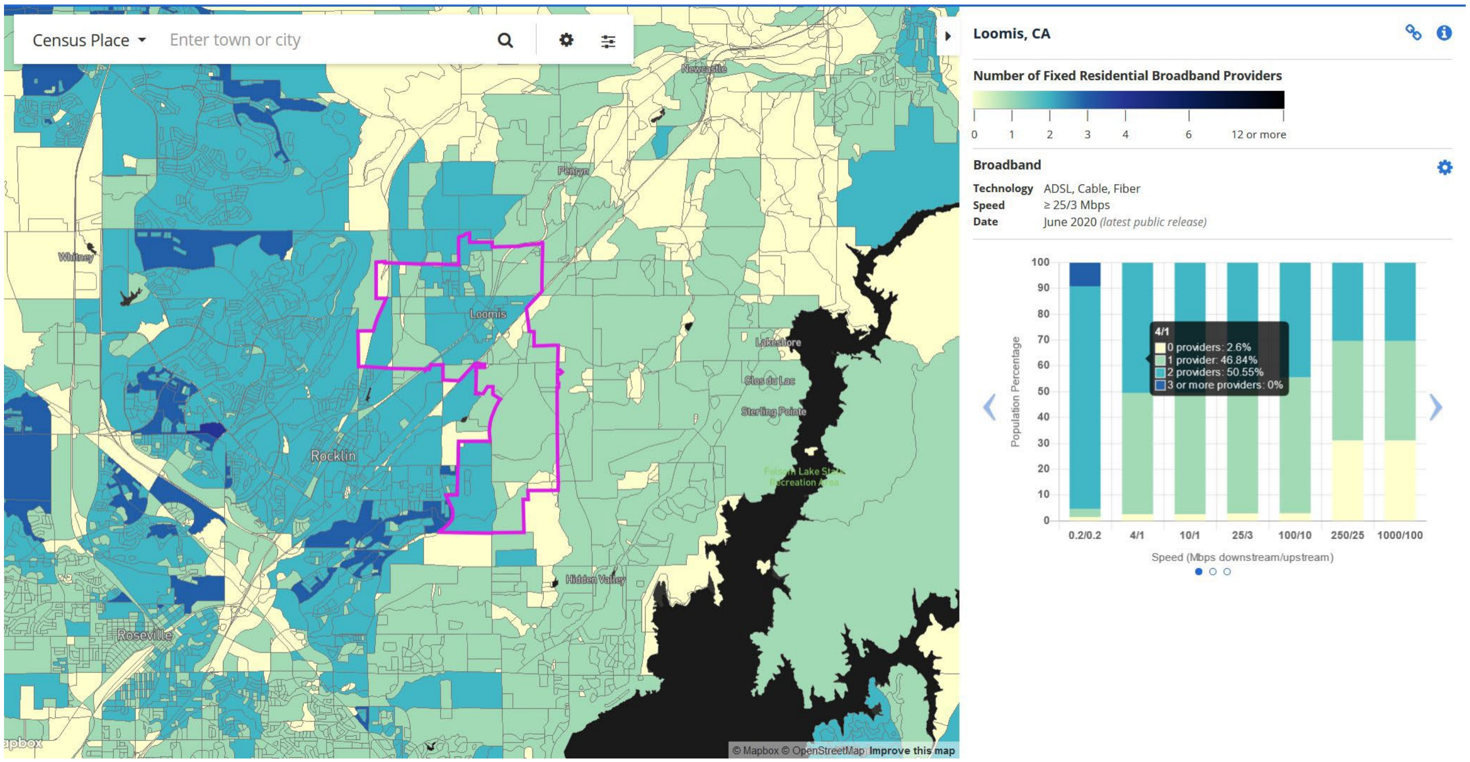
A variety of home internet and cable or satellite service providers are available in Loomis. While fiber service is limited, access through wireless internet, DSL, and cable are widely available through multiple providers including AT&T, Wave Cable, DISH, DirectTV, HughesNet, Cal.net, Pivotal Global Capacity, Winters Broadband, and South Valley Internet (DecisionData.org, April 24, 2020). Internet speeds range from 6 to 1,000 megabits per second (Mbps).

Wireless service and infrastructure are driven by market demand, with infrastructure installation or service established as new land development occurs or as customers demand. Installation or expansion of telecommunications services occurs in accordance with the rules of the State Public Utilities Commission.

According to the FCC as of June 2020, approximately 97 percent of Loomis has access to non-wireless (DSL, cable, or fiber) or satellite internet at 25 Mbps/3 Mbps (download/upload speed); however, approximately 47 percent of Loomis residents are only served by one service provider, while the remaining 50 percent having access to only two service providers (see Figure 5-3). The current primary service providers are AT&T (DSL) service or Wave (cable) service.

Loomis residents indicate that service is not reliable in all areas of the Town and that many areas of the Town, particularly southeast of I-80, receive poor service. While providers other than AT&T and Wave are available, they are wireless or satellite providers and often charge much higher fees that are not feasible for all residents (Public Services and Facilities Committee, March 17, 2001). The Town offers free wifi service at the Loomis Depot and the Loomis Library and Community Learning Center.

Figure 5-3: Communications Service Map (June 2020)



Source: FCC, https://broadbandmap.fcc.gov/#/area-summary?version=jun2020&type=place&geoid=0643140&tech=acf&speed=25_3&vlat=38.80633933495537&vlon=-121.200696&vzoom=11.488214487788884, Fixed Broadband Deployment, site accessed April 28, 2021.

Chapter

6 MARKET ANALYSIS

MARKET ANALYSIS

PURPOSE OF THE MARKET ANALYSIS

This market analysis was conducted to:

> Provide information regarding the regional and local economic setting of the Town of Loomis;

> Evaluate the dynamics between supply and demand of various land uses; and

> Estimate the amount of and type of development that could be absorbed in the Town of Loomis now through 2040.

The analysis focuses on the growth potential of non-residential land uses, including retail, office, and industrial uses; however, a forecast of household projections through 2040 is also included, as population growth informs future non-residential capacity. The results of the market analysis will assist in the formulation of economic development policies to be incorporated into the General Plan Update.

KEY FINDINGS OF THE MARKET ANALYSIS

> The Town of Loomis experienced low to moderate growth in retail (4,600 square feet), office (31,000 square feet), and industrial space (122,000 square feet) from 2000-2020, all of which grew at slower rates than Placer County as a whole.

> Construction is the largest and fastest growing industry sector in the Town of Loomis, representing one third of total employment and over 40% of new jobs added from 2010-2017.

> The Town can play an important role in attracting employment and economic development by prioritizing development planning, implementation, and communication. A strategic focus on economic development could better

align the occupations of residents with the jobs available in the Town, as currently less than 10% of residents work in the Town of Loomis.

> Civic beautification and other efforts to improve circulation are important steps taken by the Town in recent years to support local business.

> Sales and Use Taxes are a significant source of fiscal revenues, comprising approximately 25% of the Town of Loomis General Fund Revenues. Unlike comparable jurisdictions in western Placer County, the Town of Loomis derives approximately 60% of sales tax from business-to-business and wholesale transactions. These businesses are typically in the construction, manufacturing, wholesale, and warehousing sectors. Encouraging the development of retail and other sales tax generating businesses through a suite of strategic policies and regulations could be an effective strategy to boost tax revenues, support the provision of social services, and provide fiscal stability.

> The Town of Loomis saw a net retail surplus in 2020 (supply greater than demand) of approximately $6.4 million, driven by the high volume of Food and Beverage Stores (Raley's Supermarket) compared to the consumption of its residents. When Food and Beverage Store sales are not considered, the Town of Loomis is experiencing approximately $16 million in retail leakage (demand greater than supply) annually. The Town could capture more of this excess demand through development of appropriately located additional retail space.

> Based on projections of household growth from 2020-2040 for western Placer County, the Town of Loomis could experience sufficient retail demand to warrant the development of approximately 185,000 square feet of retail space (17 acres of land zoned for retail.) The current approved development pipeline includes approximately 155,000 square feet from the approved Costco project that could absorb a significant portion (~80%) of the projected future demand. Nonetheless, the unique characteristics of Costco's business model suggest that the Town could support development beyond the remaining 30,000 square feet of projected demand and develop space in multiple categories of retail to serve the residents of the Town and the surrounding areas. This large addition to the inventory should not preclude

development opportunities in established retail corridors, such as downtown Loomis.

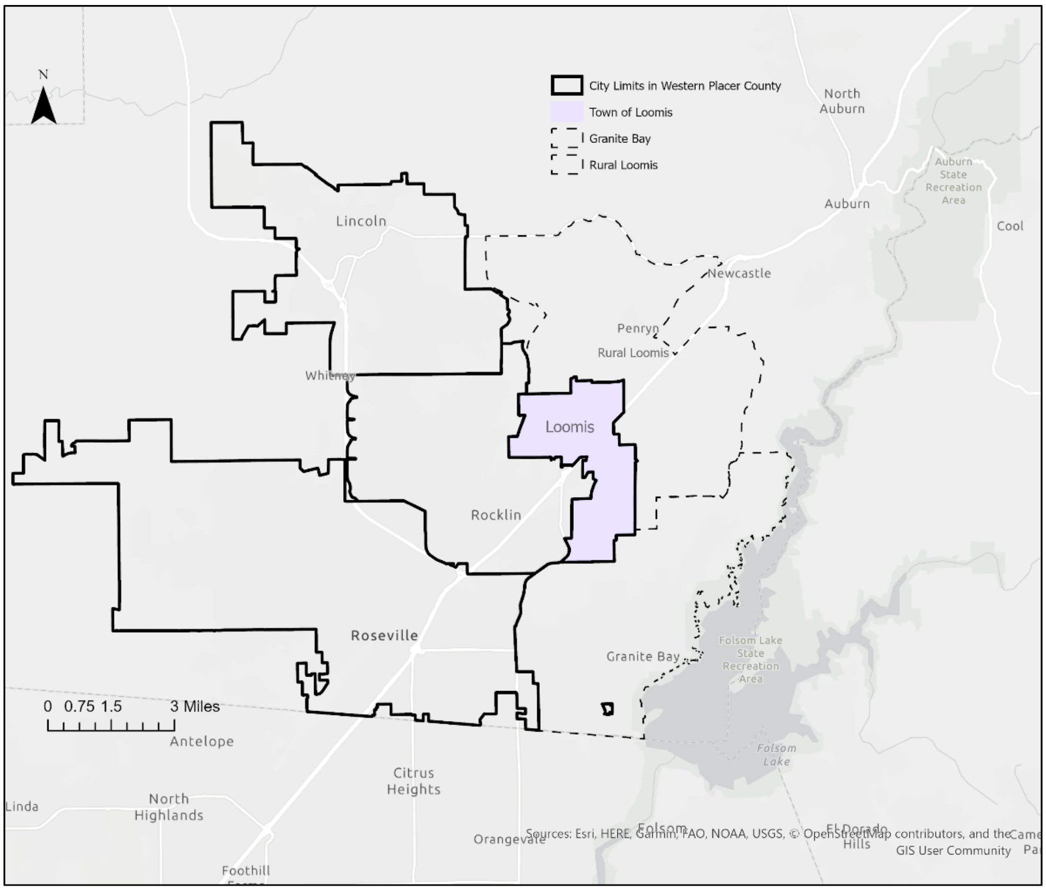
- Based on projections of employment growth from 2020-2040 for western Placer County, the Town of Loomis could experience sufficient demand to warrant the development of approximately 11 acres of office (123,000 square feet) and 12 acres (207,000 square feet) of industrial space.

Context

Western Placer County & the Town of Loomis

The Town of Loomis functions within a regional economy that includes the portion of Placer County from Roseville to the south up to Auburn to the north. This region can generally be divided into two parts: (1) the western Placer County areas of Roseville, Rocklin, Granite Bay, Loomis, Penryn (included in "Rural Loomis" for this analysis), and Lincoln (Figure 6-1); and (2) the central Placer County areas of Newcastle, Auburn, Bowman, Christian Valley, Meadow Vista, and Clipper Gap. The regional marketplace in which Loomis operates is focused on the western Placer County areas.

The Town of Loomis is divided into two distinct areas by Interstate 80 (I-80). The area north of I-80 contains most of the existing retail, office, and industrial uses. Commercial development is located along most of the Taylor Road corridor, though it is most focused in what has been designated the "Town Center" area on either side of Horseshoe Bar Road in the core of the community. The Town Center is not only the hub of commerce, but also the civic heart of the community – the Town Hall, Veteran's Building, library, schools, fire department, and Placer County sheriff substation are also within or adjacent to the Town Center. The Town Center area is designated as a "Center and Corridor Community" in the Sacramento Area Council of Governments (SACOG) Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS). Housing and industrial employment areas bordering the Town Center are characterized as an "Established Community," while the remainder of the Town is categorized as "Rural Residential Community" by SACOG (SACOG 2019, Appendix C). The SACOG job projections for the Town are based in part on these designations. As noted in the 2010 update to the Town Center Master Plan, "the Town's two 'main streets' Taylor Road and Horseshoe Bar Road together with adjacent Town-owned properties, can evolve to more completely fulfill the community's current needs, spur positive change, and serve to shape new development opportunities in the future."



Source: SACOG 2020, adapted by AECOM 2020

Figure 6-1: Town of Loomis and Western Placer County

Industrial uses are located in the area around Taylor Road and Swetzer Road in the northern portion of the Town. The area north of I-80 also provides multi-family and higher-density residential uses. The western portion of the Town, including areas along Sierra College Boulevard is primarily developed with rural residential uses. The area south of I-80 is primarily rural and residential in nature, with a few exceptions such as the Indian Creek Country Club on Barton Road, several places of worship, and Mount St. Joseph Seminary, south of Wells Avenue.

The Town of Loomis has a locally cherished small-town character and agricultural heritage that has been preserved over the years led by local efforts. Projects and events such as the Loomis Mural Project and the Loomis Eggplant Festival draw residents and visitors alike. While the 2020 Eggplant Festival was cancelled due to the Covid-19 pandemic, the Festival Committee launched a social media “Purple Week” to promote businesses in Loomis and involve local residents with online events, such as a cooking contest. The Loomis Basin Chamber of Commerce provides businesses with online resources and serves as a central updated portal for residents and the business community to check on status updates of the Loomis Downtown Plan, a multi-phased project to improve streetscape and revitalize downtown.

Economic Trends and Projections

Land Use

In the past two decades, the Town of Loomis has experienced commercial growth primarily in office and industrial space (Table 6-1). Loomis office space increased by 24% between 2000 and 2020, while office space in Placer County increased by 77% during this time. The 1998 market analysis completed for the Loomis General Plan noted that there was a fundamental shortage of light industrial space and that the Loomis area could capitalize on this condition, which has been realized to some extent as industrial space increased 13% over the past two decades. The majority of the new industrial space in Loomis is found in a series of warehouses clustered along Swetzer Road (See Figure C1 in Appendix C). This growth represents the largest overall change in square footage of any land use type – with over 122,000 square feet added. Placer County industrial space increased by 21% during this same period.

Retail space for both the Town of Loomis and Placer County has lagged other sectors – with 2% growth since 2006 for Loomis and 18% for the County. These changes in land use inventory are congruent with national trends showing growth of warehousing/distribution space and general stagnation or decline in retail space.

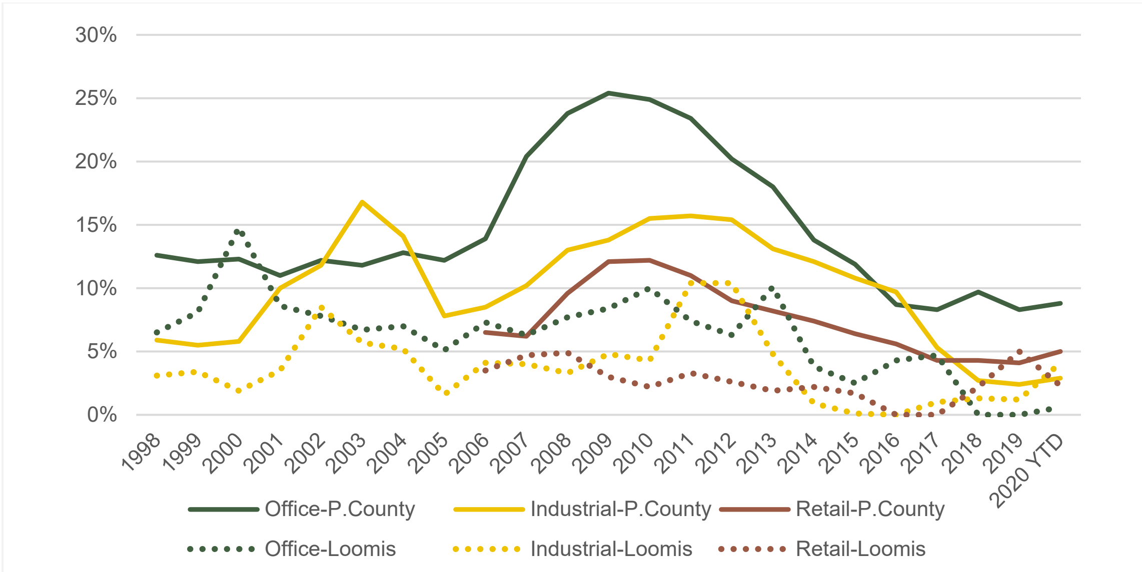
Vacancy rates in both Placer County and Loomis have been low in recent years (Figure 6-2). In Loomis, there was no vacancy for office space, 1.2% vacancy for industrial space, and 5% vacancy for retail in 2019. The vacancy rates for all three land uses are lower or equivalent to those of California as a whole, which experienced vacancy rates of 7.6% for office, 3.4% for industrial, and 4.6% for retail. The impacts of Covid-19 on vacancy are still somewhat unknown. Preliminary data from 2020 show a 1% vacancy rate for office space, 4% vacancy rate for industrial space, and 3% vacancy rate for retail space in Loomis.[1] While the Town of Loomis continues to be a relatively small market for these non-residential uses, the steady inventory growth and absorption, along with the consistently low vacancy rates, indicate healthy local conditions that conform to the strong growth seen in greater Placer County.

[1] Costar Group, www.costar.com

Table 6-1: Office, Industrial, Retail Inventory and Growth		
Sector	**Loomis**	**Placer County**
Office Space (SF)	**160,973**	**15,818,183**
% Placer County	1%	100%
Growth 2000-2020	30,950	6,891,534
% Growth 2000-2020	24%	77%
Compound Annual Growth Rate 2000-2020	1.07%	2.90%
Industrial Space ((SF)	**1,055,994**	**20,426,282**
% Placer County	5%	100%
Growth 2000-2020	122,154	3,516,529
% Growth 2000-2020	13%	21%
Compound Annual Growth Rate 2000-2020	0.62%	0.95%
Retail Space (SF)[a]	**274,296**	**22,343,875**
% Placer County	1%	100%
Growth 2006-2020	4,600	3,333,721
% Growth 2006-2020	2%	18%
Compound Annual Growth Rate 2006-2020	0.12%	1.16%

Source: Costar Group, 2020, www.costar.com

[a] Retail data starts in 2006



Retail data starts in 2006
Source: Costar Group, 2020, www.costar.com

Figure 6-2: Town of Loomis and Placer County Vacancy Rates 1998-2020

2020 Development Pipeline

Several projects are in various stages of the entitlement, development, or lease-up process in Loomis. Key projects are highlighted below.

> The Loomis Costco Project is an approximately 17-acre project located southeast of the intersection of Sierra College Boulevard and Brace Road approved by the Town in 2020. The project will consist of an approximately 150,000-sf retail facility.[2]

> The Taylor Road improvement project in downtown Loomis is providing new sidewalks, curbs, gutters, streetlights, road paving, and bike paths, among

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[2] Town of Loomis. 2020. Loomis Costco Final Environmental Impact Report. Available: https://storage.googleapis.com/proudcity/loomisca/uploads/2020/06/1.0-Introduction.pdf. Accessed December 2020; Gold Country Media. 2020. Loomis Town Council unanimously approves Costco project. Joshua Gutierrez.
Available: https://goldcountrymedia.com/news/175742/loomis-town-council-unanimously-approves-costco-project/ Accessed November 2020.

other streetscape improvements.[3] Phase 1, a $2.4 million streetscape improvement plan, began in 2017. As of 2020, the project is in Phase 3.

> In January, 2020, the Loomis Planning Commission approved a conditional use permit and design review for the Loomis Mill Group to put a brewery/distillery, tasting room/bar, and market in a 18,500 square foot building on a 4-acre Town-owned site.[4] This particular group's plans fell through, though Loomis has continued to look for a developer for the property.

> The Town is reviewing a proposed subdivision of 20 acres at 3791 Bankhead Road for 8 residential lots.[5]

> The Village at Loomis was approved by the Town but was later rejected by voters in a referendum. It is still undetermined what land uses and space this development might include. The site is 66 acres and is located northwest of the I-80/Horseshoe Bar Road interchange.[6]

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[3] Sierra Culture. 2017. Loomis: Revitalizing its Downtown. Available: http://www.sierraculture.com/art/loomis-revitalizing-its-downtown/. Accessed November 2020; Town of Loomis Department of Public Works. Town of Loomis Downtown Master Plan – Phase 1. Available: https://www.saiservices.com/loomis-dt-mp. Accessed November 2020; Loomis Chamber of Commerce. 2020. Updates at idigloomis.com Available: https://www.loomischamber.com/idigloomis/. Accessed November 2020.

[4] Gold Country Media. 2020. Loomis Planning Commission OKs High Hand, LBB project. Joshua Gutierrez. Available: https://goldcountrymedia.com/news/162500/loomis-planning-commission-oks-high-hand-lbb-project/. Accessed November 2020; Sacramento Business Journal. 2020. Loomis looks for new developer for Taylor Road site. Ben van der Meer Available: https://www.bizjournals.com/sacramento/news/2020/03/06/loomis-looks-for-new-developer-for-taylor-road.html. Accessed November 2020; Town of Loomis. 2020. 2020 Active Projects Planning Status Report (as of September 1, 2020). Available: https://storage.googleapis.com/proudcity/loomisca/uploads/94e6f6bc-planning-status-report-10132020.pdf. Accessed November 2020.

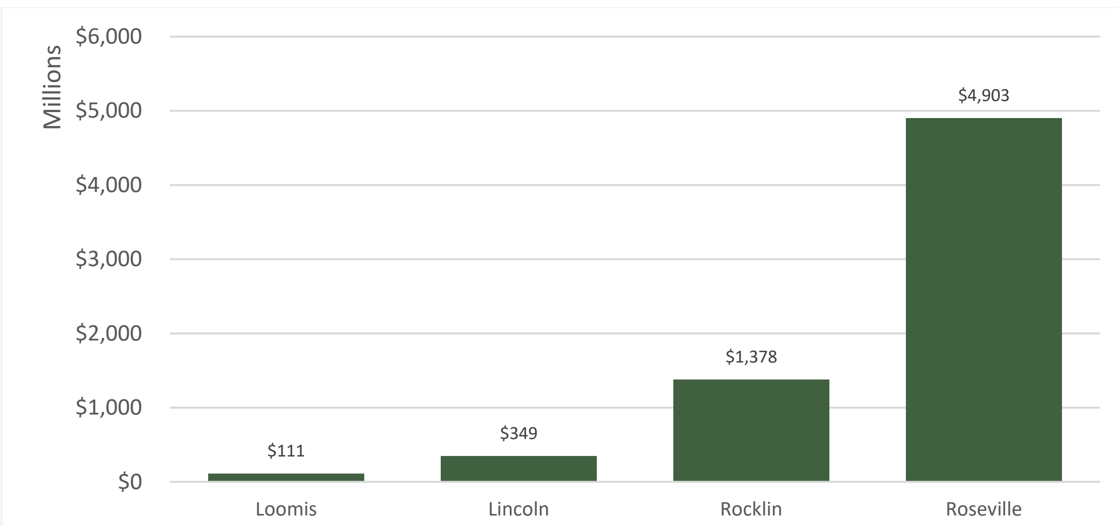
[5] Town of Loomis. 2020. 2020 Active Projects Planning Status Report (as of September 1, 2020). Available: https://storage.googleapis.com/proudcity/loomisca/uploads/94e6f6bc-planning-status-report-10132020.pdf. Accessed November 2020.

[6] Town of Loomis. 2017. The Village at Loomis Final Environmental Impact Report. Available: https://storage.googleapis.com/proudcity/loomisca/uploads/2020/09/Chapter-1-2.pdf. Accessed December 2020.

In addition, in order to promote reinvestment in the core of the community, in 2019, the Town was selected by the Civic Lab project managed by SACOG for a Commercial Corridor Challenge. The Town is working on a retail strategy for Taylor Road as the initial phase of this Corridor Challenge.

Fiscal Impact of Non-Residential Land Uses

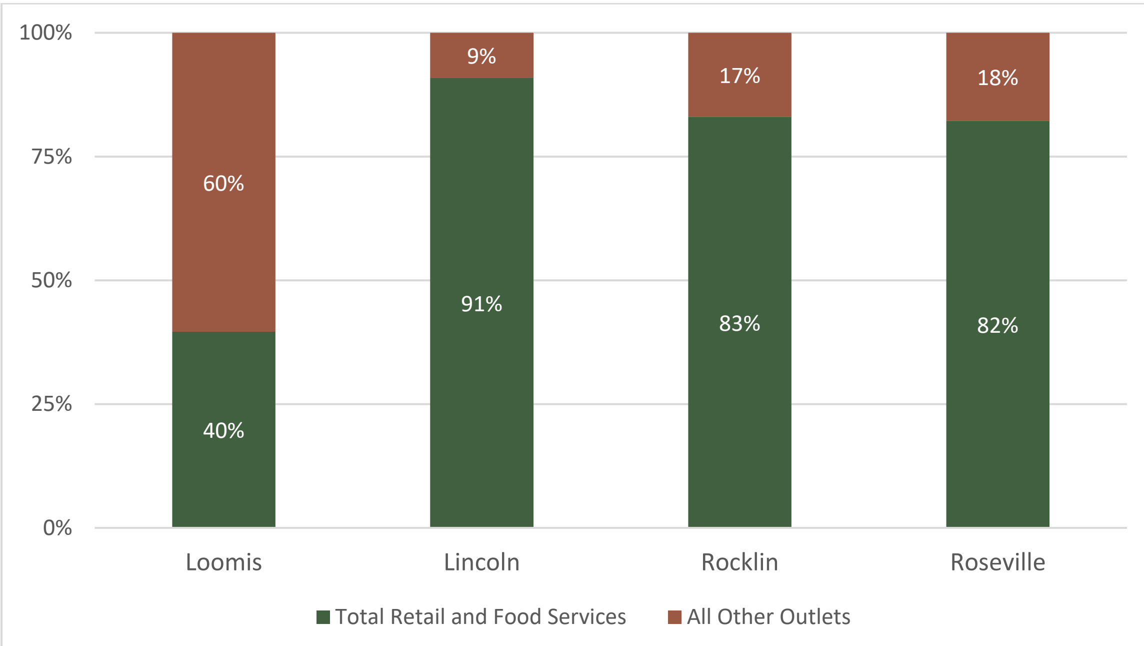
Compared to the other incorporated jurisdictions in western Placer County, the Town of Loomis has a relatively small retail market, largely attributable to the smaller critical mass of households and jobs within its municipal boundary. Taxable sales in the Town of Loomis were around $110 million in 2019, compared to $349 million in Lincoln, $1.38 billion in Rocklin and $4.9 billion in Roseville (Figure 6-3).



Source: California Department of Tax and Fee Administration, 2019

Figure 6-3: Taxable Sales in Loomis and Incorporated Jurisdictions (2019)

Unlike neighboring jurisdictions, however, Loomis derives a majority of its sales taxes from non-retail establishments, or businesses classified by the California Department of Tax and Fee Administration as “All Other Outlets” (Figure 6-4). These businesses typically represent manufacturing, construction, wholesale, and other North American Industry Classification System (NAICS) sectors that sell taxable goods and services business-to-business or business-to-government. Loomis has multiple construction supplies and other wholesale businesses that represent a large proportion of total sales. These industrial sector establishments represent both the highest source of employment and revenue for the Town of Loomis.



Source: California Department of Tax and Fee Administration, 2019

Figure 6-4: Proportion of Taxable Sales from Retail (2019)

Sales and Use Taxes averaged 25% of the Town of Loomis General Fund for fiscal years 2014-15 through 2019-20. While this proportion of total General Fund revenues is lower than the average of California cities (30%), the relatively small size of Loomis' retail market makes it susceptible to economic volatility.[7] The annual sales of fewer businesses could have an outsized impact of the Town's fiscal health. Encouraging the development of retail and other sales tax generating businesses through a suite of strategic policies and regulations could be an effective strategy to

[7] League of California Cities. 2016. A Primer on California City Revenues. Available: http://www.californiacityfinance.com/WCCaCityRevenuePrimer1612.pdf. Accessed December 2020

boost tax revenues, support the provision of social services, and provide fiscal stability.

Expansion of the hospitality sector is also a potential strategy to encourage the growth of businesses and generate fiscal revenues. Hotel visitors are likely to consume goods and services in Loomis, and hotel development contributes additional property and transit occupancy tax revenues.

Business and Employment

The number of business licenses issued by the Town has remained relatively stable in recent years. In 2019, 495 Loomis business licenses were issued or renewed in addition to 196 out-of-town business licenses (Table 6-2), which are issued for businesses based outside the Town or without an office in the Town but with operations in Town's limits.

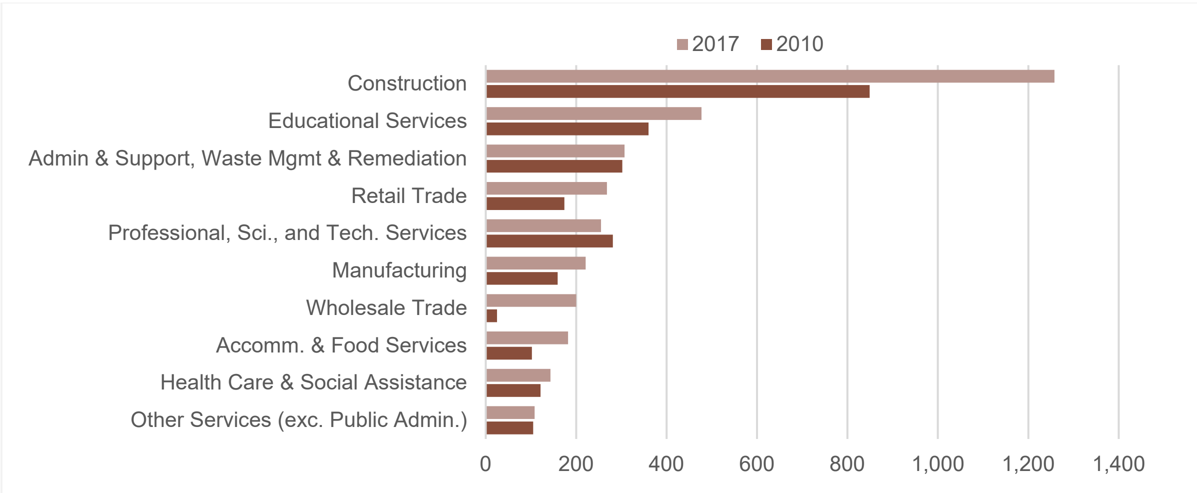
Between 2010 and 2017, the number of employees in the Town increased by 35%, which is comparable to the countywide change (32%). Construction services had the greatest increase in employees over this time period (Figure 6-5). The top industries by employee count in 2017 were (1) Construction (NAICS 11); (2) Educational Services (NAICS 61); and (3) Administration and Support and Waste Management and Remediation Services (NAICS 56).

Table 6-2: Issued or Renewed Business Licenses

Business Licenses	2013	2014	2015	2016	2017	2018	2019	2020[a]
Loomis Business Licenses Issued or Renewed	486	482	496	482	474	497	495	476
Out of Town Business Licenses Issued or Renewed	175	182	197	186	193	184	196	196

Source: Town of Loomis 2020 Active Projects Planning Status Report (as of September 1, 2020)

[a] As of September 2020



Source: Longitudinal Employer-Household Dynamics (LEHD). 2017. All jobs.

Figure 6-5: Loomis Employment for Top 10 Sectors (by Job Count) 2010 and 2017

As in many communities, there is a mismatch between the occupation of Loomis residents and the types of jobs offered locally. While there are over 3,700 jobs in the Town of Loomis, only about 5% of employed residents live and work in the Town. Of the workers that leave Town limits for employment, nearly 60% earn more than $3,333 monthly, while only 43% of the jobs *within* the Town meet that earnings threshold.[8]

For some industries, Loomis could create a better match with the occupations of local residents by focusing on employment development in some specific areas (Figure 6-6). For example, approximately 13% of Loomis residents work in Health Care & Social Assistance, while only 4% of jobs in Loomis are in this industry. Approximately 9% of Loomis residents work in Public Administration, while only 1% of jobs in Loomis are in this industry.

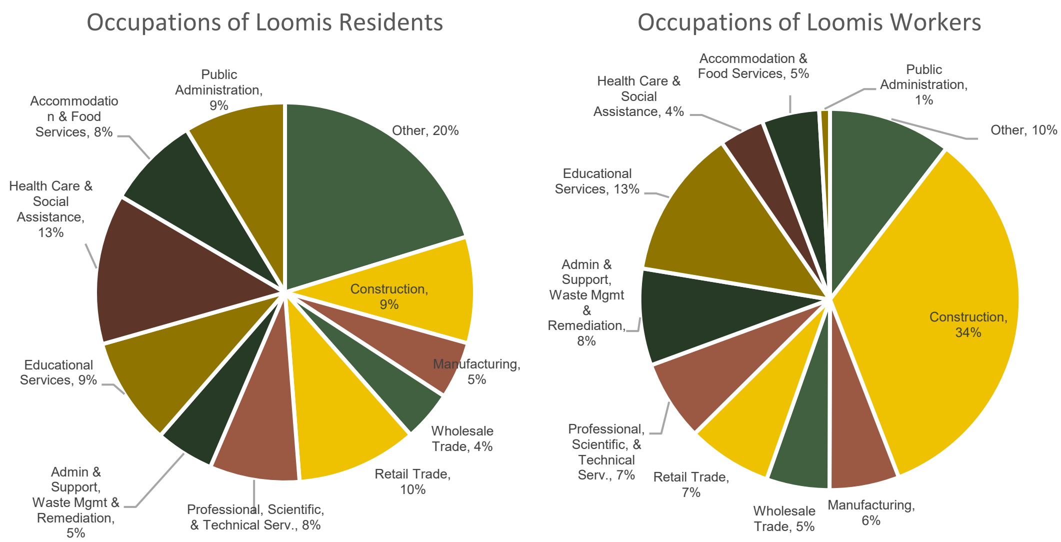
In other areas, Loomis has a surplus of jobs compared to the employment needs of the local population – for example, construction is a key sector for jobs located within the Town (34% of the Town's jobs), though only 9% of Loomis residents work

[8] Based on count of All Jobs Inflow/Outflow Analysis LEHD 2017

in that industry. Approximately 9% of Loomis residents work in Education, while 13% of jobs in Loomis are in this industry.

In some sectors, there is a good numeric match. For example, 8% of Loomis residents work in Accommodation & Food Services, which represents 5% of local jobs and 8% of residents work in Professional, Scientific, and Technical Services, which represents 7% of local jobs.

The Town developed strategies to encourage residential development of diverse housing types to better provide housing to the current and future residents of the Town with a recent update to the Housing Element. Sustainable economic growth requires the provision of housing for all household income levels and employees of various sectors.



Source: Longitudinal Employer-Household Dynamics (LEHD). 2017. All jobs.

Figure 6-6: Occupations of Residents and Workers

The unfolding impact of Covid-19 has taken the entire country from expansion and opportunity to recession within months, highlighting the need for community policies supporting economic resiliency. The Caltrans 2020 Economic Forecast for Placer County estimates that an average of 10,000 to 12,000 jobs will be lost countywide in 2020, with losses driven by leisure services, professional business services, construction, and retail trade. The report does not anticipate much change in home value in 2020 or 2021, with a slight decrease in housing production in 2020 but a rebound in 2021 and expansion the following year.[9] While short-term economic implications reflect obvious economic distress, long-term ramifications are also important:

> **Impacted sectors**: Covid-19 impacts on hotels, retail, and tourism have been consequential. There is general concern that these markets will take time to recover. Other sectors, including retail, health care, and higher education also appear to be facing greater challenges due to Covid-19, and will take considerable time to recover. The 2020 Economic Forecast for Placer County notes that it is “unknown when and if retail employment will eclipse pre-recession levels because of the strengthening demand trend towards online purchasing.”[10]

> **Return to Work**: Given conjecture about the share of workers who are now permanently working from home, it is unclear how permanent teleworking situations will become. The future ability to compete for a share of this mobile workforce will be relevant. The City of Roseville was awarded 8th place amongst mid-size U.S. cities by the Center for Digital Government for their efforts improving the digital experience for businesses and residents. In Center for Digital Government’s 2020 survey, over 85% of cities listed that telecommuting and work-from-home policies were their most pressing policy need of the year.[11]

Based on 2017 data, there were 3,735 jobs in the Town and 2,977 workers living in the Town – 760 more jobs in Loomis than workers.[12] The SACOG 2020 MTP/SCS

[9] Placer County Economic Forecast (Caltrans 2020 County-Level Economic Forecast)
[10] Caltrans. 2020. County-Level Economic Forecasts: Placer County. Available: https://dot.ca.gov/programs/transportation-planning/economics-data-management/transportation-economics/long-term-socio-economic-forecasts-by-county. Accessed November 2020
[11] City of Roseville. 2020. Roseville wins national award for technology efforts. Available: https://www.roseville.ca.us/news/what_s_happening_in_roseville/roseville_wins_national_award_for_technology. Accessed November 2020
[12] Longitudinal Employer-Household Dynamics (LEHD). 2017. All Jobs.

includes employment estimates for 2035 and 2040 with a baseline model year of 2016. The MTP/SCS estimates that the Town of Loomis had a total of 3,616 jobs and 3,195 modeled jobs in 2016.[13] SACOG projects an increase of 923 total jobs through 2040, a 0.95-percent compound annual growth rate. The SACOG 2016 employment and employment projections for 2035 and 2040 are organized into nine different employment categories, as shown in Table 6-3. SACOG notes that "with no plans for expansion, the Town's residential growth is limited to development of the remaining vacant rural residential lands and development in its downtown. Employment growth will be concentrated along the I-80 corridor and in the downtown." These projections inform the office and industrial absorption analysis discussed further below.

Table 6-3: SACOG Employment Projections for the Town of Loomis

SACOG Employment Category	2016	2035	2040
Retail	291	407	431
Office	735	1,011	1,056
Medical	0	33	36
Education	245	280	291
Industrial	1,045	1,139	1,203
Food Service	221	303	322
Service	418	512	537
Government	240	240	243
Other[a]	0	0	0
Total	**3,195**	**3,925**	**4,118**

Source: SACOG, 2019 (2020 MTP/SCS)
[a] Other employment includes jobs in Military/Other
This table shows SACOG MTP/SCS modeled jobs – i.e. the jobs that are inputted in travel models, which exclude home-based business jobs, as this the job number that SACOG breaks down by industry. The total jobs for Loomis in 2016, 2035, and 2040 are, respectively: 3,616, 4,346, and 4,539 – or higher by a factor of 10-13% relative to modeled jobs.

[13] Modeled jobs exclude home-based business jobs, or the jobs that are inputted in travel models, which exclude home-based business jobs as this the job number that SACOG breaks down by industry. The total jobs for Loomis in 2016, 2035, and 2040 are, respectively: 3,616, 4,346, and 4,539 – or higher by a factor of 10-13% relative to modeled jobs. Note that SACOG baseline and projections may not align with recent data related to job distributions. They have been applied in the absorption analysis for this report to be consistent with regional planning work, particularly as related to land use planning through 2040.

The California Employment Development Department (EDD) develops sector level projections for Census Metropolitan Areas. For the Greater Sacramento Region, the EDD estimates that the fastest growing industrial sectors through 2026 will be Health Care and Social Services, Construction, Transportation/Utilities, and Accommodation/Food Services. These sectors represent the most immediate opportunity for the Town to target for continued economic growth. Table 6-4 shows the estimated growth by sector through 2026 for the Sacramento-Roseville-Arden-Arcade MSA.

Table 6-4: Projected Growth by Sector 2016-2026

NAICS Sector	Total Growth (%)	Annual Growth (%)
Health Care and Social Assistance	27%	2.4%
Construction	20%	2.1%
Transportation, Warehousing, and Utilities	20%	2.0%
Accommodation and Food Services	20%	1.6%
Arts, Entertainment, and Recreation	10%	1.3%
Real Estate and Rental and Leasing	10%	1.2%
Wholesale Trade	10%	1.2%
Admin/Support/Waste Management/Remediation	10%	1.2%
Professional, Scientific, and Technical Services	10%	1.1%
Educational Services	11%	1.0%
Management of Companies and Enterprises	10%	1.0%
Information	10%	0.8%
Government	10%	0.5%
Finance and Insurance	0%	0.5%
Retail Trade	0%	0.4%
Manufacturing	0%	0.0%
Mining and Logging	-20%	-2.8%

Source: EDD 2021, AECOM

LOOMIS RETAIL ABSORPTION ANALYSIS

Retail Sales Capture and Leakage

The first step in analyzing an area's retail market is to determine whether "leakage" or "capture" of retail sales is occurring. Leakage would occur if there is insufficient retail space to meet the shopping needs of Loomis residents, which would result in retail dollars "leaking" outside the Town as shoppers go elsewhere to consume the goods and services they demand. Capture would occur if there is an excessive amount of retail space to meet the shopping needs of Loomis residents, combined with a lack of retail space in surrounding areas, which would result in retail dollars being "captured" from areas outside the Town as shoppers from surrounding areas come to Loomis to consume the goods and services they demand.

The results of the retail sales leakage analysis for Loomis are presented in Tables C-1 through C-6H in Appendix C following the text of this report. Table C-1 projects the estimated number of households in each of the jurisdictions and unincorporated areas included in western Placer County. Table C-2 projects the estimated household income for each area, and Table C-3 multiplies the data in Table C-1 by the data in Table C-2 to derive total income projections. Tables C-4A through C-4F present the estimated demand in each area by retail sales category based on spending habits that assume total retail expenditures per household account for approximately 37 percent of household income, estimated as the average consumption of each category for western Placer County.

Table C-4G summarizes the demand projections by retail category for western Placer County, totaling $3.6 billion in 2020 and increasing to $5.4 billion by 2040. Table C-4H summarizes demand by area for 2020. Of the total demand, the Town of Loomis represents the smallest share at 1.7 percent, while demand generated in Roseville constitutes 45.5 percent of the total demand in western Placer County.

The estimated supply of retail space in 2020, expressed in terms of retail sales, is shown in Table C-5. The Town of Loomis accounts for only 1 percent of the total supply of retail in the area. As expected, Roseville accounts for a very high share of the total supply, estimated to be approximately 70 percent.

Tables C-6A through C-6H bring demand and supply together to estimate whether each area is experiencing a capture or leakage of retail sales. Table 6-5 below (also Table 6A in Appendix C) illustrates that Loomis is currently experiencing a surplus of nearly $6.4 million, and this surplus is projected to become a deficit by 2040 as demand overtakes supply.

Table 6-5: Loomis Retail Leakage Analysis 2020-2040

Retail Sales Category (In constant 2018 $)	Estimated Supply[a] 2020	Estimated Demand 2020	Demand v. Supply 2020	Estimated Demand 2040	Demand v. Supply 2040
Clothing and Clothing Accessories Stores	$11,619	$5,131,364	($5,119,745)	$7,114,797	($7,103,178)
General Merchandise Stores	$0	$4,381,895	($4,381,895)	$6,075,634	($6,075,634)
Food and Beverage Stores[b]	$34,763,233	$12,432,551	$22,330,682	$17,238,121	$17,525,112
Food Services and Drinking Places	$11,886,749	$10,528,473	$1,358,276	$14,598,056	($2,711,307)
Home Furnishings and Appliance Stores	$3,924,291	$6,514,459	($2,590,168)	$9,032,500	($5,108,209)
Building Material and Garden Equipment and Supplies Dealers	$6,470,234	$2,476,398	$3,993,836	$3,433,603	$3,036,631
Motor Vehicle and Parts Dealers	$2,917,790	$8,788,754	($5,870,964)	$12,185,883	($9,268,093)
Gasoline Stations	$0	$5,432,917	($5,432,917)	$7,532,909	($7,532,909)
Other Retail Group	$8,244,730	$6,144,703	$2,100,027	$8,519,823	($275,093)
Total	**$68,218,646**	**$61,831,514**	**$6,387,132**	**$85,731,326**	**($17,512,680)**

Source: California Department of Tax and Fee Administration, Bureau of Labor Statistics, 2020; SACOG, 2019 (2020 MTP/SCS); ACS, Caltrans Placer County Economic Forecast, 2020; ESRI Business Analyst, 2020; AECOM 2020

[a] Supply is assumed to remain constant in comparison to both current and future demand.

[b] California does not charge sales tax on most food and beverage products purchased from grocery stores and comparable retail businesses. To estimate sales of Food and Beverage Stores, AECOM used ESRI Business Analyst data which tracks sales data from private businesses, comparable studies citing ranges of 25%-30% of groceries are taxable, and Costar inventory of relevant retail categories.

By 2040, the Town of Loomis is projected to experience retail leakage of approximately $17.5 million if no additional retail space is developed. A closer examination of retail supply and demand in the Town of Loomis shows that the 2020 surplus is driven primarily by sales in Food and Beverage Stores, which saw almost $35 million in sales. Raley's supermarket in Loomis is the largest contributor to these overall sales and has been able to attract customers from outside the Town of Loomis. Excluding Food and Beverage sales, the Town of Loomis is experiencing retail leakage of approximately $16 million in the other eight retail categories.

In 2020, the Town of Loomis experienced a surplus in four categories: Food and Beverage Stores, Food Services and Drinking Places, Building Materials, and Other Retail. This represents the opportunity for businesses to expand into Loomis and capitalize on excess demand.

Expanding the leakage analysis to include the Loomis Rural Area and Granite Bay (defined as the secondary and tertiary markets below), there is an additional $310 million of retail leakage (Table C-6B and Table C-6C). This represents additional opportunity for retail expansion in Loomis that could absorb demand from these nearby unincorporated areas in every retail category.

In all the areas studied for western Placer County, only Loomis, Roseville and Rocklin have retail surpluses, indicating their total supply is greater than the demand of their residents. As presented in Table C-6G, all retail categories are estimated to have a current surplus for western Placer County as a whole. The surplus for western Placer County as a region is driven by retail sales in Roseville, which documented over $4.3 billion in retail sales in 2019. As a region, western Placer County is currently experiencing a large retail surplus of approximately $2 billion, driven by the abundance of retail sales in Roseville, which appears to absorb demand from jurisdictions outside the region.

While the leakage analysis shows the opportunity for growth of retail space in Loomis, future development should consider the relevant competitive supply in neighboring jurisdictions that is already absorbing retail demand from the Town of Loomis, Loomis Rural Area, and Granite Bay.

Loomis Retail Trade Areas

The Town of Loomis retail establishments operate in a unique environment that includes a vast retail marketplace. Cities to the west, including Rocklin and Roseville, have both substantial purchasing power and community-serving retail centers to satisfy that need. Areas to the east and southeast do not have the same level of access to shopping as the cities to the west and southwest.

To estimate the likely future impact of household consumption on the demand for additional retail space in the Town of Loomis, the surrounding areas are separated into Primary, Secondary, and Tertiary markets based on their relative proximity to retail areas in Loomis and clusters of retail space in other jurisdictions.

> The Primary Trade Area is the Town of Loomis.

> The Secondary Trade Area is the Loomis Basin area south of the freeway, referenced in the appendices as "Loomis Rural Area." This is an area immediately outside the Loomis Town limits, bounded by Highway 193 to the north, Sierra College Boulevard to the west, Auburn Folsom Road to the east, and Cavitt Stallman Road to the south. This area includes Penryn but excludes Newcastle. (See Figure C2 in Appendix C)

> The Tertiary Trade Area includes the Granite Bay area. Loomis can be reached quickly via Laird Road and Horseshoe Bar Road from various points in Granite Bay; however, shoppers in Granite Bay may choose to travel to Roseville and Folsom, as well. (See Figure C3 in Appendix C)

> Finally, new development areas of Lincoln and Rocklin will have immediate access to Loomis retail centers on the west side of town as they commute to and from work. It is anticipated that Loomis will capture a share of retail expenditures made by these commuters, as well as by those living on the eastern sides of those cities. Households in Roseville are estimated to generate an insignificant impact on retail demand in the Town of Loomis. The capture rate assumptions for these areas, together with other retail assumptions, are provided in Table D-1 of Appendix D. The capture rate assumptions are summarized in Table 6-6.

Table 6-6: Trade Area Capture Rates by Retail Category		
Trade Area	**Neighborhood Retail**	**Other Retail**
Primary	75%	50%
Secondary	0%	40%
Tertiary	0%	20%
Other	0%	5%

Source: AECOM 2020

The two categories of retail shopping are described below:

> ***Neighborhood Retail:*** Neighborhood shopping centers generally provide convenience goods and personal services. These goods and services are purchased relatively frequently and at the most convenient location without much comparison shopping. Typical items include food, medication, hardware, dry cleaning, barber and beauty services, and shoe repair services. A neighborhood center is a relatively small shopping center, generally ranging from 75,000 to 125,000 square feet of retail space. National surveys indicate that approximately 30% of retail consumption per household accrues to neighborhood retail space.

> ***Other Retail:*** Community, regional, and other shopping centers provide goods and services that are bought after some degree of deliberation, on a less frequent basis than those provided by neighborhood centers, and that are somewhat specialized in nature. The products purchased at these other centers typically last longer than those from neighborhood centers and are differentiated by brand identification, retailer image, and shopping area ambience. Typical items include apparel, household furnishings, and specialty items like jewelry, cameras, and books. Representative examples also include health and entertainment establishments, such as gyms and movie theatres. Other retail centers in smaller towns like Loomis range in size from 200,000 to 300,000 square feet of retail space. National surveys indicate that approximately 70% of retail consumptions per household accrues to community, regional, and other shopping centers.

It is assumed that Loomis will capture 75% of neighborhood shopping demand generated by Loomis residents. Naturally, some residents who work outside the area will conduct some of their neighborhood shopping (including lunches, trips to the dry cleaners, etc.) in the area of their workplace, but workers who commute to Loomis will do the same and some commuters will stop to purchase these types of goods and services in Loomis rather than near their residences.

In terms of other retail shopping demand, the percentages shown in the capture rate table above are typical for the size and composition of each Loomis trade area. For example, while local shoppers will take advantage of their proximity to community-serving retail centers in Loomis to meet the majority of their community shopping needs, these shoppers are likely to make trips to outlet centers, power retail centers, various upscale centers, and other shopping areas in Roseville, Rocklin, and even Auburn. The farther shoppers in the secondary and tertiary trade areas are from Loomis and the closer they are to other shopping locations, the less likely they are to frequent Loomis shopping centers. This accounts for the declining capture rates from primary to tertiary trade areas. Capture rates for the other trade areas rely exclusively on pass-by traffic. The significant clusters of retail space in Rocklin and Roseville are likely to continue to attract retail customers from beyond their jurisdictions' boundaries.

New Retail Acres in Loomis

As Table D-2 illustrates, a total of 17 new retail acres are projected to be required to meet new retail demand in Loomis from 2016 through 2040: nearly 2 new neighborhood retail acres and another 15 acres of other retail are projected to be required in Loomis through the year 2040. The 17 acres represent the estimated demand for 185,000 square feet of future retail space under current zoning regulations. This forecast is based on projections of household growth in Loomis and western Placer County and household consumption survey data from 2019. These estimates highlight the total demand potential from households in the Town of Loomis, the Loomis Rural Area, and surrounding jurisdictions, which is highly susceptible to changes in the competitive market and local household spending patterns. The robust retail supply in neighboring jurisdictions and the large and growing presence of e-commerce and on-line retailers (a pattern accelerated by recent changes caused by Covid-19) will continue to represent a competitive supply of retail that could dampen future demand generated from household and employment growth in the Town of Loomis.

There are a number of projects in the current development pipeline that could add additional retail space to the inventory of the Town of Loomis. In particular, a Costco has been approved for construction that would add approximately 155,000 square feet and absorb a majority of the estimated 185,000 square feet demanded through 2040. The impact this new retail space could have on projected demand in Loomis warrants discussion. As a warehouse club store, Costco is likely to meet a certain percentage of demand from existing and future households in a number of retail categories. While the projected demand for the Town of Loomis assumes a capture rate from future household growth in the Loomis Rural Area, Granite Bay, and the neighboring jurisdictions (detailed in the previous section), the retail space of the new Costco is likely to serve an expanded regional market. At the same time, only a certain percentage of Loomis residents are likely to be Costco members and utilize this new retail space. Thus, while Table 6-7 shows a linear reduction in projected retail space demanded in the Town of Loomis after accounting for the approved development pipeline, it is understood that there remains significant potential for development in other retail categories and absorption into the currently vacant retail spaces in established corridors, such as in downtown Loomis.

Table 6-7: Town of Loomis Estimated Future Retail Demand 2020-2040

	Gross Demand 2020-40	Approved Development Pipeline (2020)	Net Demand 2020-40
Retail Space (SF)	185,000	155,000	30,000

Source: SACOG, AECOM, Town of Loomis

LOOMIS OFFICE & INDUSTRIAL ABSORPTION ANALYSIS

Job Distribution

The office and industrial absorption analysis is based primarily on SACOG's 2020 MTP/SCS projections for employment. Employment projections by sector, as classified by SACOG, are categorized here into broader employment categories and correlated to general land use categories (see Table 6-8 and Table 6-9). In order to convert employment to land use requirements, assumptions regarding square feet of space per employee, floor-to-area ratios (FARs), and vacancy rates were made (Table 6-8 and Table D-4). These three assumptions, taken together, translate into a factor for jobs per acre, which is used to convert employment to acreage. Office and medical and service employment growth is estimated to generate demand for future additions of office space inventory. Industrial employment is assumed to be a mix of light industrial and general industrial. Therefore, employment projections translate into demand for the following three broad land use categories:

- Office
- Light Industrial
- General Industrial

Table 6-10 shows the distribution of employment by broad employment category for 2016 and 2040 with associated general land use categories. While total employment in Loomis is expected to increase by approximately 923 jobs from 2016 to 2040, the overall distribution of jobs among sectors is estimated to remain relatively consistent. Retail and food service, office, and medical and service each experience slight increases, while education and government, and industrial, both decrease as a percentage of the total.

Table 6-8: Crosswalk of Employment Categories			
Employment Category	**NAICS Codes**	**SubCodes/Description**	**Employment Category for Analysis**
Education	61	Educational Services (exclude 6115-6117 trade school, education support, include in service)	Education and Government
Food Service	722	7221-7225 (restaurants and bars)	Retail and Food Service
Government	92	Public Administration (exclude 9281 security and information, include in Other)	Education and Government
Industrial	11	Agriculture, Forestry, Fishing and Hunting	Industrial
Industrial	21	Mining, Quarrying, and Oil and Gas Extraction	Industrial
Industrial	22	Utilities	Industrial
Industrial	23	Construction	Industrial
Industrial	31-33	Manufacturing	Industrial
Industrial	42	Wholesale Trade	Industrial
Industrial	48-49	Transportation and Warehousing (exclude 4911 post office, include in service)	Industrial
Industrial	562	562 - (5621 - 5629) included in industrial because uses are administrative for waste, utilities and construction uses.	Industrial
Medical	62	Health Care and Social Assistance (exclude 623-624 nursing and residential care, social service, include in service)	Medical and Service
Office	51	Information	Office
Office	52	Finance and Insurance	Office
Office	53	Real Estate and Rental and Leasing	Office

Table 6-8: Crosswalk of Employment Categories

Employment Category	NAICS Codes	SubCodes/Description	Employment Category for Analysis
Office	54	Professional, Scientific, and Technical Services	Office
Office	55	Management of Companies and Enterprises	Office
Office	56	Administrative and Support and Waste Management and Remediation Services (exclude 562, construction, include in industry)	Office
Office	813	8131 - 8139 included in Office (Office) because uses are larger civic and charitable organizations.	Office
Other*	9281	9281 (military) included in Military/Other	Office (note there are 0 for other for all time periods for Town of Loomis)
Retail	44-45	Retail Trade	Retail and Food Service
Service	4911	4911 post office	Medical and Service
Service	6115-6117	6115-6117 (trade and technical schools) included in Retail(Service) because I-PLACE3S Education is K12 and college related	Medical and Service
Service	623	623 - Nursing and Residential Care Facilities	Medical and Service
Service	624	624 - Social Assistance	Medical and Service

Source: SACOG 2020 MTP/SCS, AECOM

Table 6-9: Town of Loomis Job Distribution and Land Use Assumptions							
Employment Category	**General Land Use Categories**	**SF per Employee**	**Floor Area Ratio**	**Vacancy Rate[2]**	**Jobs Per Acre**	**Estimated Job 2016 Distribution**	
Retail and Food Service[1]	Neighborhood Commercial, Other Retail	500	0.25	10.0%	21	512	16%
Education and Government[1]	Schools	N/A	N/A	N/A	N/A	485	15%
Office	Office	300	0.3	7.5%	42	735	23%
Medical and Service	Office	250	0.25	7.5%	42	418	13%
Industrial	Light Industrial (50%) General Industrial (50%)	900	0.4	5%	19	1,045	33%
Total						**3,195**	**100%**

Source: Western Placer County Nexus Fee, USGBC, Urban Land Institute, 1998 Town of Loomis General Plan

[1] Retail acreage calculated separately based on housing units; school and government acreage not determined as part of this analysis.

[2] Vacancy rates based on industry best practice; SF per employee based on Western Placer County Nexus fee study and USGBC

Table 6-10: Job Distribution			
Employment Category	**General Land Use Categories**	**Estimated Job 2016 Distribution**	**Estimated Job 2040 Distribution**
Retail[1] & Food Service	Neighborhood Commercial, Other Retail	16%	18%
Education & Government[1]	Schools, Other Public	15%	13%
Office	Office	23%	26%
Medical & Service[2]	Office	13%	14%
Industrial	Light Industrial (50%), General Industrial (50%)	33%	29%
Total		**100%**	**100%**

Source: SACOG 2020 MTP/SCS, AECOM

[1] Retail acreage calculated separately based on housing units; school and government acreage not determined as part of this analysis.

[2] Service includes NAICS: 4911(post office), 6115-6117 (trade and technical schools), 623 (nursing and residential care facilities), and 624 (social assistance)

Note: The job distribution presented here, and the accompanying analysis, use SACOG data for current and projected job distribution. This may not align with data related to recent job distributions but has been applied to as to be consistent with regional planning work, particularly as related to land use planning through 2040.

New Office and Industrial Acres in Loomis

Overall, office and industrial acreage is modeled to have a total demand of 23 acres between 2016 and 2040 (see Table D-5). Of the 23 acres demanded, approximately 11 acres would be developed for office space to accommodate the estimated 123,000 square feet needed for job sectors concentrated in office. The remaining 12 acres would be developed for industrial space to accommodate the estimated 207,000 square feet needed for job sectors concentrated in industrial space. Employment growth for the retail and food service sector is likely to be accommodated by the growth in retail space estimated above, while employment growth in education and government will be accommodated through expansion or renovation of the appropriate institutional land uses, and has not been included in this analysis. These estimates are based on projections of employment through 2040 and could change dramatically based on future economic conditions. While still too early to predict, the future impact of Covid-19 on working and commuting patterns could both greatly increase the demand for traditional office or industrial space (demand for more square feet per worker) or decrease the same demand (remote work becoming a permeant feature of many jobs).

SUMMARY OF RETAIL, OFFICE, AND INDUSTRIAL ABSORPTION ANALYSIS

Table 6-11 and Table D-6 in Appendix D summarize the absorption analysis for the key areas of non-residential land use: retail, office, and industrial through 2040. Overall, based on projections of household growth from 2020-2040 for western Placer County, the Town of Loomis could experience sufficient retail demand to warrant the development of approximately 17 acres of land zoned for retail. Based on projections of employment growth for the same time period, the Town of Loomis could experience sufficient demand for commercial and industrial space to warrant the development of approximately 23 acres of office and industrial space.

Table 6-11: Town of Loomis Estimated Demand for Non-Residential Acreage 2016-2040

Land Use Designations	Retail Demand	Office Demand	Light Industrial Demand	General Industrial Demand	Total Demand
Retail					
Neighborhood Commercial	2				2
Other Retail	15				15
TOTAL RETAIL	**17**				**17**
Office & Industrial					
Office		11			11
Light Industrial			6		6
General Industrial				6	6
TOTAL OFFICE & INDUSTRIAL		**11**	**6**	**6**	**23**
TOTAL ACRES	**17**	**11**	**6**	**6**	**40**

Source: AECOM, 2020

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Chapter

7 SAFETY AND NOISE

SAFETY & NOISE

PUBLIC HEALTH AND SAFETY

Introduction

Jurisdictions planning for future development and conservation must consider a wide range of public safety issues. Safety hazards can be natural in origin, such as seismic and geologic hazards, flooding, and wildland fire hazards. Others may be the result of natural hazards that are exacerbated by human activity and alteration of the natural environment, such as urban fires and development in sensitive areas such as floodplains and areas subject to erosion. Other hazards are manmade, including the introduction of hazardous materials. Many of these hazards can be avoided through careful planning and site design.

This section inventories and assesses the major hazards confronting Loomis, including seismic and geologic hazards, wildland and urban fires, flooding, and hazardous materials incidents. This section also assesses the noise environment of Loomis, which contributes to the health and safety of the community.

Seismic and Geologic Hazards

Seismic and geologic concerns can present a variety of hazards for people and structures. These hazards include surface fault rupture, strong seismic ground shaking, liquefaction, lateral spreading, subsidence, landslides, seiches, soil erosion, and expansive/unstable soils. Each of these potential hazards are addressed below.

Regional and Local Geology

The Planning Area is located along the western margin of the Sierra Nevada foothills, on the western side of the Sierra Nevada geomorphic province. The western slope of the Sierra Nevada dips gently westward and extends beneath sediment of the Great Valley province. The Planning Area is located within the

Penryn and Rocklin Pluton—Lower Cretaceous age (approximately 145.5 to 99.6 million years Before Present [B.P.]) formations composed of quartz diorite (see Figure 7-1) (Gutierrez 2011). Plutonic rocks are igneous in nature; they formed from magma that cooled deep underground and intruded into the surrounding rock formations.

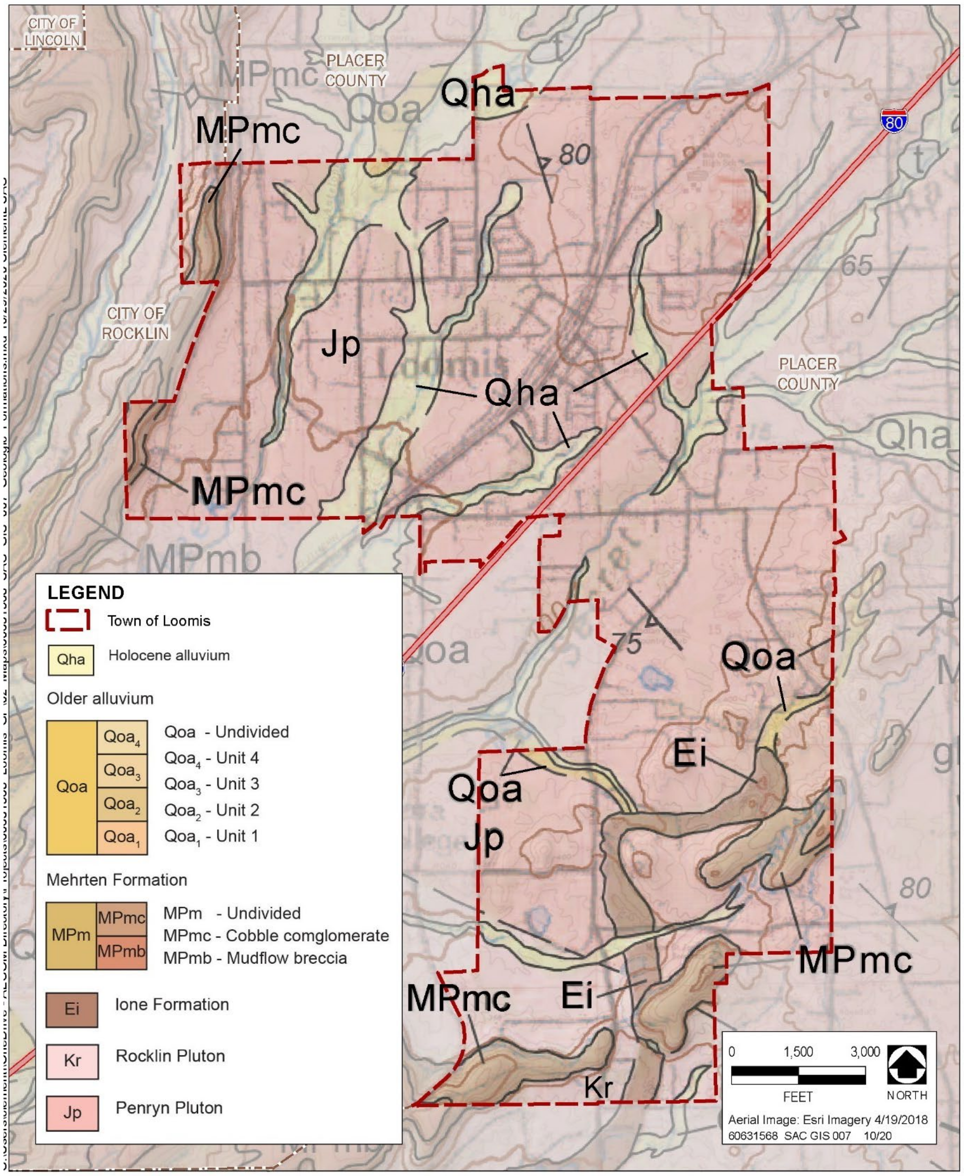
Scattered outcrops of the late Pliocene–early Miocene age (approximately 9 million years B.P.) Mehrten Formation are exposed at the surface in the northwestern and southeastern portions of the Planning Area. The Mehrten Formation consists predominantly of volcanic mudflow and ash deposits; however, it also includes occasional beds of andesitic boulders, cobbles, and gravels in a sandstone matrix (i.e., alluvial deposits).

The Ione Formation outcrops at the surface at the southeastern edge of the Planning Area. This formation occurs as a 200-mile-long series of isolated exposures along the western foothills of the Sierra Nevada, from Oroville south to Friant in Fresno County. The Ione Formation consists of quartzose sandstone, conglomerate, and claystone that is generally soft and deeply eroded. Locally, it contains beds of kaolinite clay. The Ione formed from fluvial, estuarine, and shallow marine deposits of Eocene age (approximately 35 to 55 million years B.P.).

Two small areas of undivided Older Alluvium, which is of early to late Pleistocene-age (11,700 to 2.6 million years B.P.), are present in the Planning Area south of Interstate (I-)80. The Older Alluvium comprises alluvial fan, stream terrace, basin, and channel deposits. The topography in these two areas is gently rolling with little or no original alluvial surfaces preserved.

Finally, Holocene-age (the last 11,700 years) alluvial deposits are present along streambeds in the Planning Area, primarily associated with Antelope Creek, Sucker Ravine, and Secret Ravine.

Figure 7-1: Geologic Map



Source: Gutierrez 2011

Geologic Formations

Town of Loomis General Plan and EIR

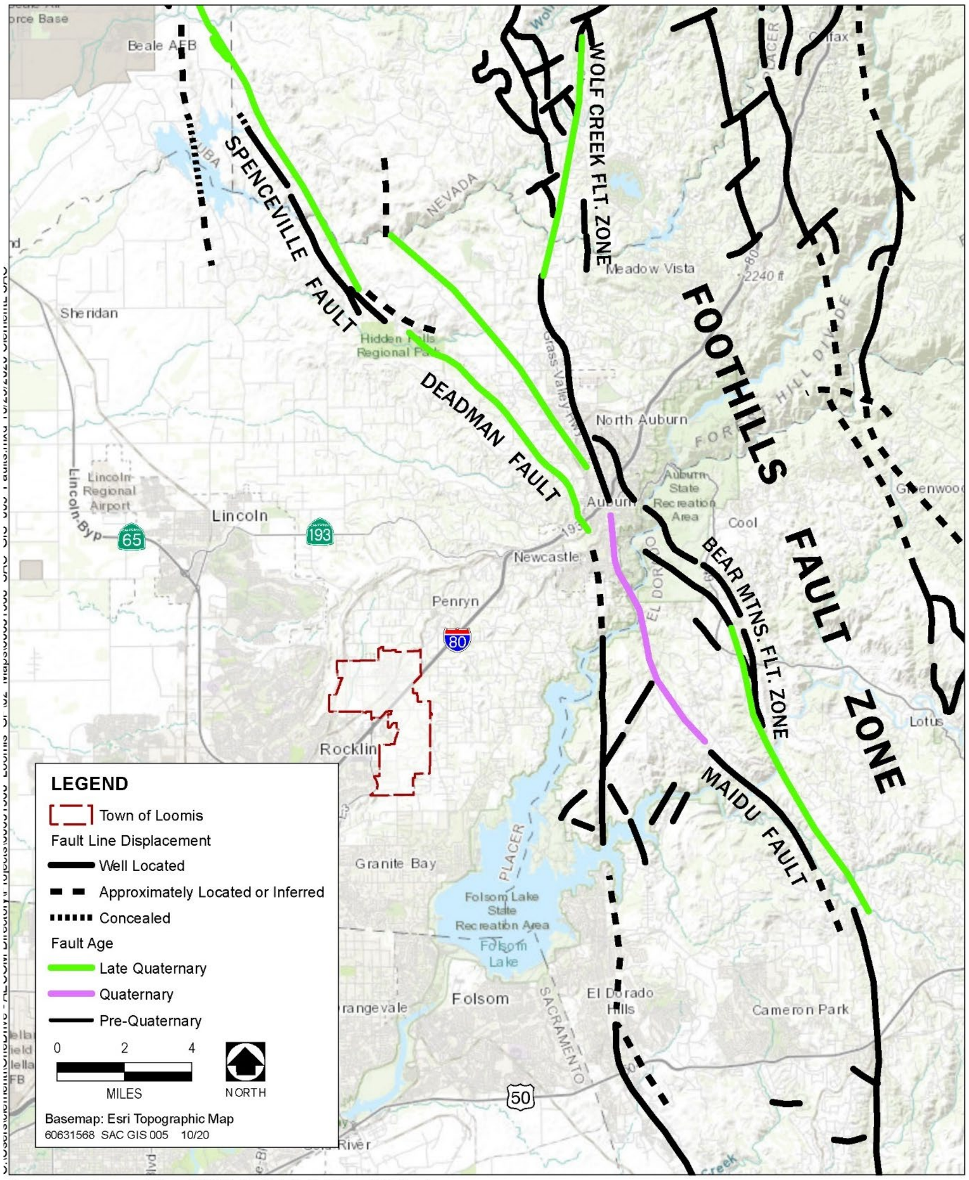
Regional and Local Faulting

The nearest major fault system near Loomis is the Foothills Fault System, which traverses Amador, El Dorado, and Placer counties in a path more than 200 miles long and 6 miles wide (see Figure 7-2). The Foothills Fault System is a broad zone of northwest-trending east-dipping normal faults formed along the margin of the Great Valley and the Sierra Nevada geologic provinces, on the western flank of the Sierra Nevada and southern Cascade mountain ranges. The Bear Mountains Fault Zone, which is part of the Foothills Fault System, includes several potentially active faults, including the Spenceville, Deadman, and Dewitt Faults. The Deadman Fault is approximately 6 miles northeast of the Planning Area. The potentially active Wolf Creek Fault Zone (also part of the larger Bear Mountains Fault Zone) is approximately 12 miles to the northeast.

Geologists have determined that the greatest potential for surface fault rupture and strong seismic ground shaking is from active faults; that is, faults with evidence of activity during the Holocene epoch. Faults classified as "potentially active" (where there is evidence that movement has occurred during the Quaternary period, which is currently defined as the last 2.6 million years), have a lower potential for surface fault rupture and strong seismic ground shaking.

No active faults are known to exist in Placer County, and no Alquist-Priolo Special Studies Zones are designated in the county. The nearest known active fault that has been mapped by the California Geological Survey is the Dunnigan Hills Fault, well to the west of the Town on the opposite side of the Sacramento Valley. Investigations performed for the proposed Auburn Dam indicated that, in the vicinity of Folsom Lake (east of the Planning Area), the Foothill Fault System may be capable of producing a magnitude 6.5 Richter Scale event (U.S. Geological Survey Auburn Project Review Team 1996). In 1975, a magnitude 5.7 earthquake was recorded on the Cleveland Hills Fault within the Foothill Fault System south of Lake Oroville, although the most likely cause of the earthquake was later determined to be a result of reservoir-induced stress.

Figure 7-2: Regional Faults



Source: Jennings and Bryant 2010 Fault Activity Map of California

Regional Faults

Town of Loomis General Plan and EIR

Because the Spenceville, Deadman, and Dewitt Faults, the Wolf Creek Fault Zone, and the Bear Mountains Fault Zone east of Folsom Lake, have shown evidence of activity in the last 700,000 years, they are considered potentially active. There is no evidence of activity along the Melones Fault (approximately 15 miles east of the Planning Area) during the Quaternary period. The last seismic event recorded in the area with a magnitude of 4.0 or greater was in 1907, with an epicenter between Auburn and Folsom, possibly associated with the Bear Mountain Fault.

An inactive, inferred local fault was mapped approximately 3,000 feet southeast of the Planning Area's southern boundary in 1974 (Gutierrez 2011); this fault is not included in the California Geological Survey Fault Activity Map of California (Jennings and Bryant 2010). The potential for seismic events originating from this fault is considered low (see Figure 7-1: Geologic Map).

Seismic Hazards

The Planning Area is located within the Penryn and Rocklin Plutons—rock formations that are composed of quartz diorite (similar to granite), which intruded into the surrounding Sierra Nevada batholith. During seismic events, this material tends to react as a uniform block, which has the effect of reducing ground movement, acceleration, and the likelihood of ground rupture. Consequently, the Planning Area is in a lower risk category in terms of potential damage from an earthquake on the potentially active faults to the east.

Typical seismic hazards include surface rupture, groundshaking, and various types of ground failure (such as liquefaction, lateral spreading, subsidence, and landslides). The potential for these hazards to occur in the Planning Area is described below.

Surface Rupture

Surface rupture is the actual cracking or breaking of the ground along a fault during an earthquake. Structures built over an active fault can be torn apart if the ground ruptures. Surface ground rupture along a fault generally is limited to a linear zone a few yards wide. The Alquist-Priolo Earthquake Fault Zoning Act was enacted to prohibit structures designed for human occupancy from being built across the traces of active faults, thereby reducing the loss of life and property from an earthquake.

There are no Alquist-Priolo Earthquake Fault Zones delineated by California Geological Survey, nor are there any other known faults within the Planning Area. Therefore, the likelihood of surface rupture in the Planning Area is considered low.

Groundshaking

Groundshaking is the vibration that radiates from the earthquake source. The severity of groundshaking and its potential to cause damage to buildings is determined by several factors:

- The nature of the underlying soil and geology;
- The location of the earthquake source;
- The earthquake magnitude;
- The duration and character of the ground motion;
- The structural characteristics of a building; and
- The quality of workmanship and materials used in buildings.

Portions of the Planning Area are located on Holocene-age, unconsolidated alluvial deposits, which can increase the potential for groundshaking damage. As earthquake waves pass from more dense rock to less dense alluvial material, they tend to reduce velocity, but increase in amplitude (i.e., size). A bigger earthquake wave causes stronger shaking. As a result, structures located on these types of materials may suffer greater damage. “Poor ground” can be a greater hazard for structures than close proximity to the fault or the earthquake’s epicenter. The potential for groundshaking may be considered highest on the Holocene-age alluvial deposits along the creeks and ravines in the northern portion of the Planning Area (see Figure 7-1).

Earthquakes can be measured in several ways. Earthquakes create certain types of waves with different velocities, which can be recorded on instruments called seismometers. For purposes of geotechnical reports and compliance with the

California Building Standards Code (CBC), scientists use computer models to project the anticipated amount of ground shaking by calculating the peak horizontal ground acceleration. The California Geological Survey Probabilistic Seismic Hazards Assessment Model (CGS 2008) indicates there is a 1-in-10 probability that an earthquake within 50 years would result in a peak horizontal ground acceleration of approximately 0.139*g* (where *g* is a percentage of gravity), which indicates that a low level of seismic ground shaking is anticipated in the Planning Area. The lack of nearby active faults and historic records suggest that the probability of large magnitude events occurring in the Planning Area is very low. Furthermore, the potential for structural damage from seismic hazards is minimized for all types of new development, which must be constructed in accordance with applicable CBC requirements (see the “Regulatory Background” subsection below for details).

Older buildings constructed before building codes were in effect are most likely to suffer damage in an earthquake. Many of Loomis’s buildings are one or two stories high, and of wood frame construction, which is considered relatively resistant to earthquake damage. However, the Town also includes older buildings constructed with unreinforced masonry, which are highly susceptible to damage from severe groundshaking (Town of Loomis 1998). The Downtown area in particular includes a high percentage of older buildings with brick facades, indicating that this portion of the community is at relatively higher risk.

Liquefaction

Liquefaction is restricted to certain geologic and hydrologic environments, primarily Holocene-age loose (unconsolidated), water-saturated, fine grained sand and silt in areas with high groundwater levels. The process of liquefaction involves seismic waves passing through saturated granular layers, distorting the granular structure, and causing the particles to collapse. This causes the granular layer to behave temporarily as a viscous liquid rather than a solid, resulting in liquefaction. Liquefaction can cause the soil beneath a structure to lose strength, which may result in the loss of foundation-bearing capacity. This loss of strength commonly causes the structure to settle or tip. Loss of bearing strength can also cause light buildings with basements, buried tanks, and foundation piles to rise buoyantly through the liquefied soil.

Because the Planning Area is composed of solid, Jurassic-age bedrock, the potential for liquefaction is generally low. Although the Holocene-age alluvial deposits present along the ravines and creeks (i.e., Antelope Creek, Secret Ravine, and Sucker Ravine) are more susceptible to liquefaction, these deposits are underlain by bedrock at a shallow depth, and given that the potential for strong seismic ground shaking is low, liquefaction is unlikely to represent a hazard in the Planning Area. There are no liquefaction Seismic Hazard Zones delineated by California Geological Survey in the Planning Area.

Subsidence

Seismically-induced subsidence is the compaction of soils and alluvium caused by groundshaking. It occurs irregularly and is largely a function of the underlying soils. Depending on the event, the amount of compaction can vary from a few inches to several feet. Because the Planning Area is composed of solid, Jurassic-age bedrock, the potential for subsidence is generally low. Although the Holocene-age unconsolidated alluvial deposits along Antelope Creek, Secret Ravine, and Sucker Ravine are more susceptible to subsidence, significant subsidence problems have not been identified in the Planning Area. Furthermore, given the low probability of strong seismic ground shaking, seismically-induced settlement is unlikely to represent a substantial hazard in the Planning Area.

Lurch Cracking and Lateral Spreading

Lateral spreading is lateral ground movement, with some vertical component, as a result of liquefaction. In effect, the soil rides on top of the liquefied layer outward from under buildings, roads, pipelines, transmission towers, railroad tracks, and other structures such as bridges. Damage is usually greatest to large or heavy structures on shallow foundations, and takes the form of cracking, tilting, and differential settlement. Where gentle slopes exist such as on stream or slough banks, liquefaction may cause lateral spreading landslides. Whole buildings can be moved downslope by this type of ground failure. Where the condition is known to exist, structural and foundation design can usually minimize or eliminate liquefaction hazard to new construction. Lateral spreading can also occur on relatively flat sites with slopes less than 2 percent, under certain circumstances, and can cause ground cracking and settlement. Lurching is the movement of the ground surface toward an open face when the soil liquefies. An open face could be a graded slope, stream bank, canal face, gully, or other similar feature. The potential for these hazards is greatest on Holocene-age unconsolidated alluvial deposits where the groundwater table is high. In the Planning Area, this would include areas adjacent to Antelope Creek, Secret Ravine, and Sucker Ravine. However, given the low probability for strong seismic ground shaking or liquefaction, seismically-induced lateral spreading or lurching is unlikely to represent a substantial hazard in the Planning Area.

Seiches and Tsunamis

Seiches are earthquake-generated waves within enclosed or restricted bodies of water. However, because no sizable lakes or reservoirs are present in the Planning Area, and the location of highest probability of impact within Placer County are shore areas of Lake Tahoe over 50 straight-line miles away, there are no seiche hazards. A tsunami is a series of waves in a water body resulting from the displacement of a large volume of water. Tsunamis are generally caused by earthquakes or undersea volcanic eruptions. Because the Planning Area is approximately 100 miles from the Pacific Ocean, tsunamis do not represent a hazard.

Landslides

Landslides may be triggered by numerous processes including oversaturated soils (after heavy rains) or by earthquakes. Landslide potential is highest in steeply-sloped areas, particularly those areas underlain with saturated and unconsolidated soil. As shown in Figure 7-3, the steepest slopes in Loomis are located west of Antelope Creek (west of Sierra College Boulevard), and in the southern portion of the Planning Area. Some slopes exceed 45 percent in these ~~is~~ areas. However, the underlying geology of the area is generally quartz diorite with outcrops of Mehrten volcanics; these are solid geologic foundation materials not highly susceptible to landslides. Most other portions of the Planning Area are relatively level or gently sloping, and thus are not susceptible to landslides. There are no landslide Seismic Hazard Zones delineated by California Geological Survey in the Planning Area.

Soil Hazards

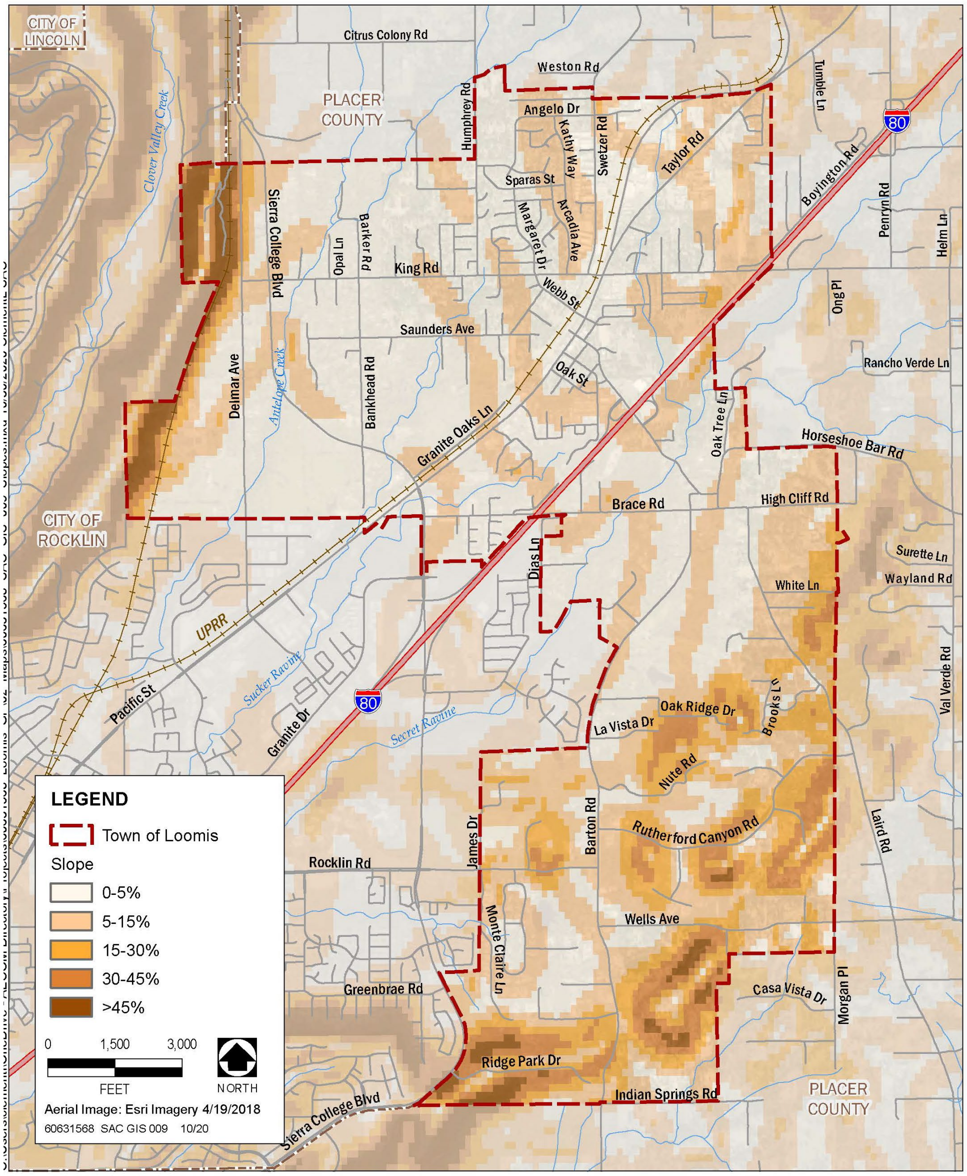
Soils in the Planning Area are shown on Figure 7-4. Table 7-1 provides data on the soil types found in the Planning Area based on the Natural Resources Conservation Service (NRCS 2020) soil survey data.

Erosion

Erosion is the detachment and movement of soil materials through natural processes or human activities. In general, rates of erosion can vary depending on the soil's capacity to drain water, slope angle and length, extent of groundcover, and human influence. Human activities, such as earthmoving activities during construction, can expose soil to water erosion during the winter rainy season. Stormwater runoff can transport sediment into storm drains and local waterbodies, which can in turn degrade existing water quality and impair beneficial uses designated in the Basin Plan. In extreme cases of erosion, watercourses can be downcut and gullies develop that can eventually undermine adjacent structures or vegetation.

Most soils can be categorized into hydrologic soil groups (which apply only to surface soil layers) based on runoff-producing characteristics. Hydrologic soil groups are factored into calculations of erosion potential when drainage plans are prepared. The Andregg soils, which comprise most of the Planning Area, have low water erosion hazard, a moderately high wind hazard, and a moderate runoff potential. The remaining soils in the Planning Area contain greater amounts of cobbles and rocks and are located on sloped areas; these soils have a low wind erosion hazard, a low to moderate water erosion hazard, but a high runoff potential (see Table 7-1) (NRCS 2020).

Figure 7-3: Slopes in the Planning Area

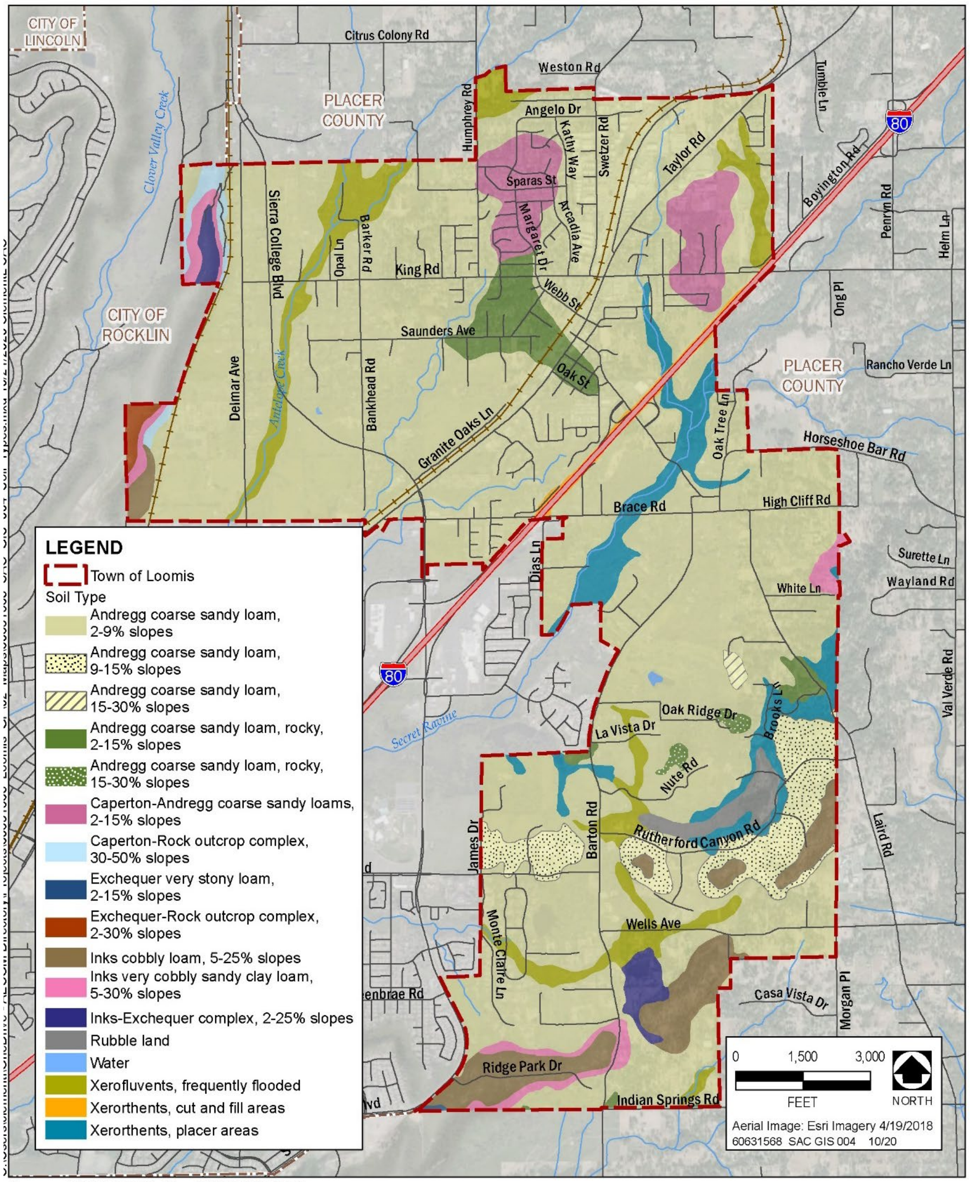


Source: Placer County 2020

Slope Analysis

Town of Loomis General Plan and EIR

Figure 7-4: Soils in the Planning Area



Source: USDA NRCS, May 2020 (SSURGO)

Soil Types

Town of Loomis General Plan and EIR

Table 7-1: Soil Characteristics in the Planning Area								
Soil Type	**Shrink-Swell Potential[1]**	**Permeability[2]**	**Drainage**	**Suitability for Conventional Septic Systems**	**Water Erosion Hazard[3]**	**Wind Erosion Hazard[4]**	**Hydrologic Group (Runoff Potential)[5]**	**Limitations for Development**
Andregg coarse sandy loam, 2–9% slopes	Low	High	Well drained	Very limited	Low	3	B	Dwellings and Local Roads and Streets: Not limited Small Commercial Buildings: Somewhat limited (slope)
Andregg coarse sandy loam, 9–15% slopes	Low	High	Well drained	Very limited	Low	3	B	Dwellings and Local Roads and Streets: Somewhat limited (slope) Small Commercial Buildings: Very limited (slope)

Table 7-1: Soil Characteristics in the Planning Area

Soil Type	Shrink-Swell Potential[1]	Permeability[2]	Drainage	Suitability for Conventional Septic Systems	Water Erosion Hazard[3]	Wind Erosion Hazard[4]	Hydrologic Group (Runoff Potential)[5]	Limitations for Development
Andregg coarse sandy loam, 15–30% slopes	Low	High	Well drained	Very limited	Low	3	B	Dwellings, Small Commercial Buildings, and Local Roads and Streets: Very limited (slope)
Andregg coarse sandy loam, rocky, 2–15% slopes	Low	High	Well drained	Very limited	Low	3	B	Dwellings and Local Roads and Streets: Somewhat limited (slope) Small Commercial Buildings: Very limited (slope)
Andregg coarse sandy loam, rocky, 15–30% slopes	Low	High	Well drained	Very limited	Low	3	B	Dwellings, Small Commercial Buildings, and Local Roads and Streets: Very limited (slope)

Table 7-1: Soil Characteristics in the Planning Area

Soil Type	Shrink-Swell Potential[1]	Permeability[2]	Drainage	Suitability for Conventional Septic Systems	Water Erosion Hazard[3]	Wind Erosion Hazard[4]	Hydrologic Group (Runoff Potential)[5]	Limitations for Development
Caperton-Andregg coarse sandy loams, 2–15% slopes	Low	High	Somewhat excessively drained	Very limited	Moderate	3	D	*Dwellings and Local Roads and Streets:* Somewhat limited (slope, shallow depth to bedrock) *Small Commercial Buildings:* Very limited (slope, shallow depth to bedrock)
Caperton-Rock outcrop complex, 30–50% slopes	Low	High	Somewhat excessively drained	Very limited	Moderate	5	D	*Dwellings and Small Commercial Buildings:* Very limited (slope, shallow depth to bedrock)

Table 7-1: Soil Characteristics in the Planning Area

Soil Type	Shrink-Swell Potential[1]	Permeability[2]	Drainage	Suitability for Conventional Septic Systems	Water Erosion Hazard[3]	Wind Erosion Hazard[4]	Hydrologic Group (Runoff Potential)[5]	Limitations for Development
Exchequer very stony loam, 2–15% slopes	Low	High	Somewhat excessively drained	Very limited	Low	7	D	Dwellings, Small Commercial Buildings, and Local Roads and Streets: Very limited (shallow depth to bedrock, large stones)
Exchequer-Rock outcrop complex, 2–30% slopes	Low	High	Somewhat excessively drained	Very limited	Low	7	D	Dwellings, Small Commercial Buildings, and Local Roads and Streets: Very limited (slope, shallow depth to bedrock, large stones)

Table 7-1: Soil Characteristics in the Planning Area								
Soil Type	**Shrink-Swell Potential[1]**	**Permeability[2]**	**Drainage**	**Suitability for Conventional Septic Systems**	**Water Erosion Hazard[3]**	**Wind Erosion Hazard[4]**	**Hydrologic Group (Runoff Potential)[5]**	**Limitations for Development**
Inks cobbly loam, 5–25% slopes	Low	Moderately high	Well drained	Very limited	Moderate	7	D	Dwellings, Small Commercial Buildings, and Local Roads and Streets: Very limited (slope, shallow depth to bedrock, large stones)
Inks very cobbly sandy clay loam, 5–30% slopes	Low	Moderately high	Well drained	Very limited	Low	7		*Dwellings and Local Roads and Streets:* Somewhat limited (slope, shallow depth to bedrock) *Small Commercial Buildings:* Very limited (slope, shallow depth to bedrock)

Table 7-1: Soil Characteristics in the Planning Area

Soil Type	Shrink-Swell Potential[1]	Permeability[2]	Drainage	Suitability for Conventional Septic Systems	Water Erosion Hazard[3]	Wind Erosion Hazard[4]	Hydrologic Group (Runoff Potential)[5]	Limitations for Development
Inks-Exchequer complex, 2-25% slopes	Low	Moderately high	Well drained	Very limited	Low	6	D	*Dwellings and Local Roads and Streets:* Somewhat limited (slope, shallow depth to bedrock, large stones) *Small Commercial Buildings:* Very limited (slope, shallow depth to bedrock, large stones)

Table 7-1: Soil Characteristics in the Planning Area

Soil Type	Shrink-Swell Potential[1]	Permeability[2]	Drainage	Suitability for Conventional Septic Systems	Water Erosion Hazard[3]	Wind Erosion Hazard[4]	Hydrologic Group (Runoff Potential)[5]	Limitations for Development
Rubble land	Low	Very high	Excessively drained	Very limited	NR	NR	NR	Dwellings and Small Commercial Buildings: Very limited (large stones, slope) *Local Roads and Streets:* Very limited (low strength, large stones, slope)
Xerofluvents[6], frequently flooded	Moderate	High	Somewhat poorly drained	Very limited	Moderate	3	B	Dwellings, Small Commercial Buildings, and Local Roads and Streets: Very limited (Flooding, shrink-swell potential)

Table 7-1: Soil Characteristics in the Planning Area								
Soil Type	**Shrink-Swell Potential[1]**	**Permeability[2]**	**Drainage**	**Suitability for Conventional Septic Systems**	**Water Erosion Hazard[3]**	**Wind Erosion Hazard[4]**	**Hydrologic Group (Runoff Potential)[5]**	**Limitations for Development**
Xerorthents[7], cut and fill areas	NR	NR	Well drained	NR	NR	NR	NR	NR
Xerorthents[7], placer areas	NR	NR	Well drained	NR	NR	NR	NR	NR

Source: Natural Resources Conservation Service 2020

Notes: NR = not rated

1 Based on percentage of linear extensibility, shrink-swell potential ratings of "moderate" to "very high" can result in damage to buildings, roads, and other structures.
2 Based on standard NRCS saturated hydraulic conductivity (Ksat) class limits. Ksat refers to the ease with which pores in a saturated soil transmit water.
3 Based on the erosion factor "Kw whole soil," which is a measurement of relative soil susceptibility to sheet and rill erosion by water.
4 Soils assigned to wind erodibility group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible.
5 Hydrologic soil groups are based on estimated runoff potential: Group A = high infiltration rate and low runoff potential, Group B = moderate infiltration rate and moderate runoff potential, Group C = slow infiltration rate and high runoff potential, Group D = very slow infiltration rate and very high runoff potential.
6 These soils are found as narrow stringers of recent alluvium adjacent to stream channels; they consist of stratified gravelly clay or sandy loams that generally grade to sand and gravel with increasing depth.
7 Xerorthents are materials that have modified by human activity. In cut-and-fill areas the soil has been rearranged and may include artificial fill. In placer areas, the soil consists of stony, cobbly and gravelly material commonly adjacent to streams that have been placer mined.

Unstable Soils

Soil properties influence the development of building sites, including the site selection, structure design, construction, performance after construction, and site and structure maintenance.

Shrink-swell potential is the relative change in volume that occurs with changes in moisture content. In other words, the extent to which the soil shrinks as it dries out or swells when it gets wet. Shrinking and swelling is influenced by the amount of clay in the soil. Shrinking and swelling of soils can cause damage to building foundations, roads, and other structures. Damage, such as cracking of foundations, results from differential movement and from the repetition of the shrink-swell cycle. Hazards from construction in areas with moderate to high shrink-swell potential can be remediated by removing the clay layer in the soil and replacing it with compacted artificial fill, or by soil treatment with lime. As shown in Table 7-1, Planning Area soils have a low clay content and a low shrink-swell potential (NRCS 2020).

The NRCS (2020) soil database indicates the limitations of soils with respect to dwellings, local roads and streets, and small commercial buildings. The rating system indicates the extent to which the soils are limited by the soil features that affect building site development. NRCS soil limitations are based on the soil properties that affect the capacity of the soil to support a load without movement, and on the properties that affect excavation and construction costs. Hazards from unstable soils can also result from low bearing strength. In addition, subsidence and liquefaction can occur from the weight of construction equipment in areas where a clay layer is present at a shallow depth, combined with a shallow groundwater table. However, as shown in Table 7-1, these hazards are not present in the Planning Area. The NRCS has rated most Planning Area soils with limitations related to a shallow depth to bedrock, slope, and large stones (see Table 7-1).

Soil Suitability for Septic Systems

A conventional septic system consists of a septic (holding) tank and a leachfield (generally consisting of perforated pipe on top of gravel). Effluent filters through the gravel and into the soil below. For a septic system to function properly, soils must percolate (or “perc”)—that is, a certain volume of wastewater must flow through the soil in a certain time period, as determined by a licensed engineer. Wastewater is "treated" as soil bacteria feed on the waste material and in the process, break down the material into more basic elements that are dispersed into the lower layers of the soil horizon. If wastewater percolates through the soil too quickly, the bacteria do not have enough time to digest the material. On the other hand, if wastewater percolates through the soil too slowly, the bacteria are killed by the lack of oxygen.

Soils in the Planning Area consist of a shallow layer of silt, sand, or cobbles, underlain by bedrock. These shallow soils have a high to moderately high permeability (i.e., a low water holding capacity) and thus tend to "perc" too quickly, rendering them unsuitable for septic systems. Based on a review of NRCS (2020) soil data, all of the soils in the Planning Area are rated as very limited for conventional septic systems. However, in most instances, a licensed engineer can design an alternative septic system that is suitable for single-lot residential use even where soil conditions are not optimal.

Naturally Occurring Asbestos

Certain areas of Placer County, such as Iowa Hill, are known to contain naturally-occurring asbestos (NOA). Asbestos is the common name for a group of silicate minerals that can separate into thin but strong and durable fibers. If these fibers are inhaled, they can cause lung cancer and mesothelioma. The presence of asbestos in nature is related to the chemistry of rocks in an area and the different geologic processes that have acted on those rocks through time. NOA is found primarily in ultramafic rocks and serpentinite, but has also been reported in mafic metavolcanic rocks, and metamorphosed or altered gabbro. Also, soils derived from weathering of ultramafic rocks and serpentinite may contain NOA (Higgins and Clinkenbeard 2006). As described previously, the geologic formations in the Town consist of quartz diorite, volcanic ash and mudflow deposits, quartzose sandstone and claystone, and alluvial deposits. As a result, NOA does not represent a hazard in the Town.

Wildland & Urban Fire Hazards

Loomis faces two types of fire hazards that threaten lives and property: urban and wildland fires. Wildland fires may also result in the loss of natural vegetation, loss of agricultural crops, and soil erosion. The threat posed by each type of fire hazard is described below.

Wildland Fires

The outbreak and spread of wildland fires within the Planning Area is a potential danger, particularly during the dry summer and fall months. Various factors contribute to the intensity and spread of wildland fires: humidity, wind speed and direction, vegetation type, the amount of vegetation (fuel), and topography. Wildland fires can be caused by lightning strikes, malfunctioning equipment and vehicle engines, arson, or simple carelessness.

Based on wildfire hazard mapping conducted by the California Department of Forestry and Fire Protection (CAL FIRE 2020), the Planning Area is located with a Local Responsibility Area. Therefore, the primary responsibility for firefighting efforts lies with local agencies; in this case, the South Placer Fire District (which consolidated with the Loomis Fire Protection District in 2017). No Very High Fire Severity Zones have been designed by California Department of Forestry and Fire Protection (CAL FIRE) in the Planning Area. Rural areas immediately adjacent to the north and east of the Planning Area are located within a State Responsibility Area, meaning that CAL FIRE is primarily responsible for fire-fighting efforts, and these areas have been identified by CAL FIRE as moderate fire hazard severity zones.

The rural portions of the Planning Area, along with the adjacent rural areas to the north and east in Placer County, all consist of extensive grasslands and oak woodlands in rolling terrain, and are subject to hot, dry summers with frequent wind gusts. Grassland fires are not as potentially intensive as mountainous brush and tree fires (which are generally classified as High or Very High Fire Hazard Severity Zones). Because the topography, climate, and vegetation of the rural portions of the Planning Area are the same as those designated by CAL FIRE as Moderate Fire Hazard Severity Zones to the north and east, the Town of Loomis, in conjunction with Placer County (2016), has determined that these rural portions of the Planning Area should also be considered as Moderate Fire Hazard Severity Zones. Finally, the Town has designated a small portion of the Planning Area south of Brace Road, southwest of Secret Ravine, as a High Fire Hazard Severity Zone (see Figure 7-5).

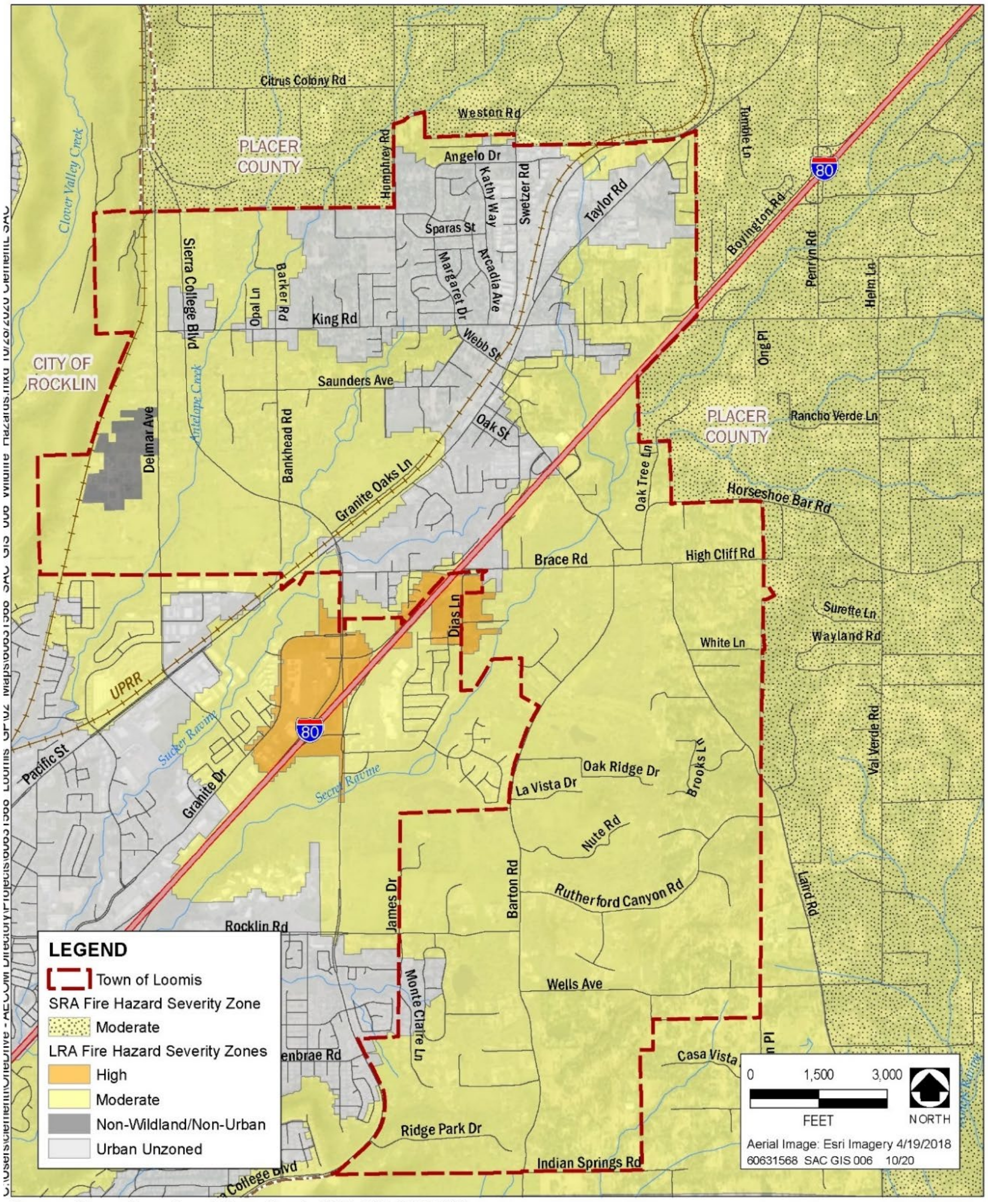
California Public Resources Code Section 4291 requires property owners to maintain a minimum of 100 feet of defensible space around structures. A description of the specific vegetative management actions required within the 100-foot zone is available from CAL FIRE (https://www.readyforwildfire.org/prepare-for-wildfire/get-ready/defensible-space/). Loomis Municipal Code Section 13.34.050 states that on sites in heavily wooded and/or vegetated areas of the Planning Area identified by the fire district as being fire-prone, fire prevention will be addressed by providing fire-resistant landscaping buffers between development areas and naturally vegetated areas. Outdoor burn permits, for burning of vegetative materials, are required between April 15 and December 1 of each year (Loomis Municipal Code Section 7.08.010). Roadway widths and turning radii requirements in the Planning Area have been designed to allow for appropriate emergency access; these requirements are set forth in the Town of Loomis Land Development Manual (2004), which has been adopted in Loomis Municipal Code Section 9.04.010. Peaking factors in terms of water supply for firefighting efforts are addressed in Volume III, Chapter 5, Public Services and Facilities.

Although small grass fires are common in the Planning Area, they have historically been limited in size by prompt emergency response. In 2002, the Planning Area was affected by the Sierra Fire, which burned 900 acres, including six structures.

Urban Fires

Urban fires are primarily those associated with structures and the activities in and around them. Most urban fires are caused by human activity. Over the years, development standards have become more stringent to reduce the frequency and severity of such events. Building codes now require fire walls for adjacent structures. Local ordinances often prohibit the use of fire-prone materials, such as shake-shingle roofs. Electrical standards have also changed to reduce fire risk inside structures. Smoke detectors are now commonly required.

Figure 7-5: Wildland Fire Hazards



Sources: Town of Loomis and Placer County 2016, CAL FIRE 2020

Wildfire Hazards

Town of Loomis General Plan and EIR

Urban fire hazards are greatest in areas containing older buildings that do not meet current building code requirements. Earthquakes or floods may rupture buried natural gas lines, while high winds or accidents could cause overhead electric lines to break. Either condition could result in a fire. In recent years, electric utility providers have taken the step of temporarily de-energizing the power grid during high wind events, particularly in the fall months when the fire danger is greatest, in order to avoid fires from overhead power lines and transformers.

Once an urban fire starts, fast emergency response is critical to ensure that the fire does not spread. Urban fires by their nature occur in areas with a high density of human occupation and property. Therefore, the threat to life and property is high.

Evacuation Routes

Evacuation routes are necessary for the safe and effective community response to a wildland fire or any other incident that may require an evacuation of the community. An Evacuation Warning means that an event is approaching, and residents and employees should be prepared to leave. Mandatory evacuation is reserved for incidents of extreme severity or imminent loss of life. Mandatory evacuation involves the complete removal of all civilians from a given area.

The Planning Area encompasses the north and south sides of I-80, which is the primary evacuation route for planning area residents and workers. Barton Road, a two-lane arterial, is the primary north-south roadway that serves the Planning Area south of I-80. Brace Road, Rutherford Canyon Road, Wells Avenue, and a variety of other east-west roadways provide evacuation routes south of I-80. North of I-80, Sierra College Boulevard (north-south) and King Road (east-west) both provide direct freeway access. Union Pacific Railroad tracks bisect the Planning Area in a northeast-southwest direction, on the west side of I-80. The railroad tracks serve as a barrier to evacuation in the event of an emergency for the northwestern portion of the planning area; the only roadways west of I-80 that include railroad crossings are Sierra College Boulevard and King Road. Residents and workers must cross the railroad tracks at one of these two locations in order to reach I-80.

Significant loss of life has occurred during wildland fires in several areas of the state when only one evacuation route has been available. California Government Code

Section 65302(g)(5) requires the General Plan Safety Element to identify residential developments in any identified hazard area that do not have at least two emergency evacuation routes. All newer residential subdivisions are required by law to have at least two points of ingress and egress. However, there are single-family residences in rural portions of the Planning Area that have only one point of ingress/egress, where those residences are located on a “dead-end” street.

Flooding Hazards

Flood Protection

The Placer County Flood Control District collaborates with Placer County communities and cities, including Loomis, to protect lives and property from the effects of flooding. The Placer County Flood Control District implements regional flood control projects, develops and implements master plans for selected watersheds in the county, provides technical support and information on flood control; operates and maintains an Alert flood warning system; reviews proposed development projects to ensure they meet Placer County Flood Control District flood control standards; develops hydrologic and hydraulic models for county watersheds; provides technical support for Office of Emergency Services activities; and manages the annual stream channel maintenance program within the Dry Creek Watershed.

The Placer County Flood Control District is collaborating with Federal Emergency Management Agency (FEMA) through the Cooperating Technical Partners Program to maintain up-to-date floodplain mapping and other flood hazard information within Placer County. The main objective of the program is to provide new or improved 1 percent annual chance floodplain, or 100-year, mapping of major creeks within developing areas of the county, including the Town of Loomis. Updated floodplain mapping for the Planning Area was completed and approved by FEMA in 2018.

The Planning Area is located within the Dry Creek Watershed (hydrologic unit code [HUC] Code 10). The most recent update to the Dry Creek Watershed Flood Control Plan was prepared by the Placer County Flood Control District in 2011. The Dry Creek Flood Control Plan identifies known flood hazard locations and causes, and includes potential projects that could be implemented to improve flood control throughout the watershed. The Dry Creek Flood Control Plan includes identification of bridges and culverts that require flood control improvements, options for regional flood control detention basins, channel improvement and restoration opportunities, and non-structural flood hazard reduction measures such as low impact development (LID) features. The Dry Creek Flood Control Plan assigns responsibilities to the Town of Loomis for continuing its capital improvement program, specifically the replacement of undersized culverts and stream crossings. The Antelope Creek Flood Control Project, one of the high-priority flood control projects recommended in the Dry Creek Watershed Flood Control Plan, will provide substantial mitigation for increases in urban runoff and peak flood flow increases due to new and existing development in the watershed. A portion of the Antelope Creek Flood Control Project has been implemented, at the upstream end of the creek. The downstream portion of the project is pending, depending on the availability of funding.

Storm drain development criteria in the Planning Area are based on the Placer County Flood Control District's Stormwater Management Manual (1990). The Placer County Flood Control District's Stormwater Management Manual requires that new storm drain facilities be designed to convey the runoff from a 10-year storm event.

Effects of Flooding

Flooding can cause widespread damage to affected areas. Buildings and vehicles can be damaged or destroyed, while smaller objects can be buried in flood-deposited sediments. Floods can also cause drowning or isolation of people or animals. In addition, floodwaters can break utility lines, interrupting services and potentially affecting health and safety, particularly in the case of broken sewer or gas lines.

The secondary effects of flooding are due to standing water, which can result in crop damage, septic tank failure, and well water contamination. Standing water can also damage roads, foundations, and electrical circuits.

Storm Drainage

Flooding and drainage problems in the Planning Area are caused either by creek overflow or by storm drain problems. The Planning Area is located in the Dry Creek Watershed (HUC Code 10) within the larger Lower American River Watershed (HUC Code 8). Three tributaries to Dry Creek flow through the Planning Area: Antelope Creek, Sucker Ravine, and Secret Ravine. Antelope Creek drains western Loomis and joins Dry Creek south of Loomis. Sucker Ravine flows into Secret Ravine downstream of Loomis. Secret Ravine flows into Miners Ravine and on to Cirby Creek in Roseville. Cirby Creek discharges into Dry Creek. Dry Creek flows through Placer and Sacramento counties to the Natomas East Main Drainage Canal/Steelhead Creek in Sacramento, from which the water is eventually discharged into the Sacramento River.

The Planning Area drainage system relies in large part on natural water courses and to a lesser extent on pipe and channel storm drain systems. Loomis has a limited number of storm drain facilities. The Town of Loomis Drainage Master Plan maintains the concept of open drainage ditches and cross culverts, and focuses on small-scale improvements to address problem areas.

Much of the Planning Area relies on natural drainage courses, overland flow, swales, and roadside ditches to dispose of local runoff. These are supplemented with culverts under roads and cross culverts under driveways. Large storms result in an increase in water flow rates and water volume and can cause temporary local flooding in all drainage ways, both natural and manmade. All of the storm drains in the Planning Area discharge into one of the aforementioned three Dry Creek tributaries.

Flood Hazard Zones

Loomis is a participant in the National Flood Insurance Program (NFIP). For a community to participate in the NFIP, it must adopt and enforce floodplain management regulations that meet or exceed the minimum NFIP standards and requirements contained in the Code of Federal Regulations Chapter 44. These standards are intended to prevent loss of life and property, as well as economic and social hardships that result from flooding. The Town's Floodplain Management

Regulations are contained in Loomis Municipal Code Chapter 11.08, Flood Damage Prevention.

Flooding has historically been a relatively minor hazard in the Planning Area, primarily due to its relatively elevated location within the middle Dry Creek watershed. The lower portions of the Dry Creek watershed, south of the Planning Area, have historically been hit hard by flooding, particularly in the Roseville area (where tributaries of Dry Creek converge) and in the flatlands in the Rio Linda area.

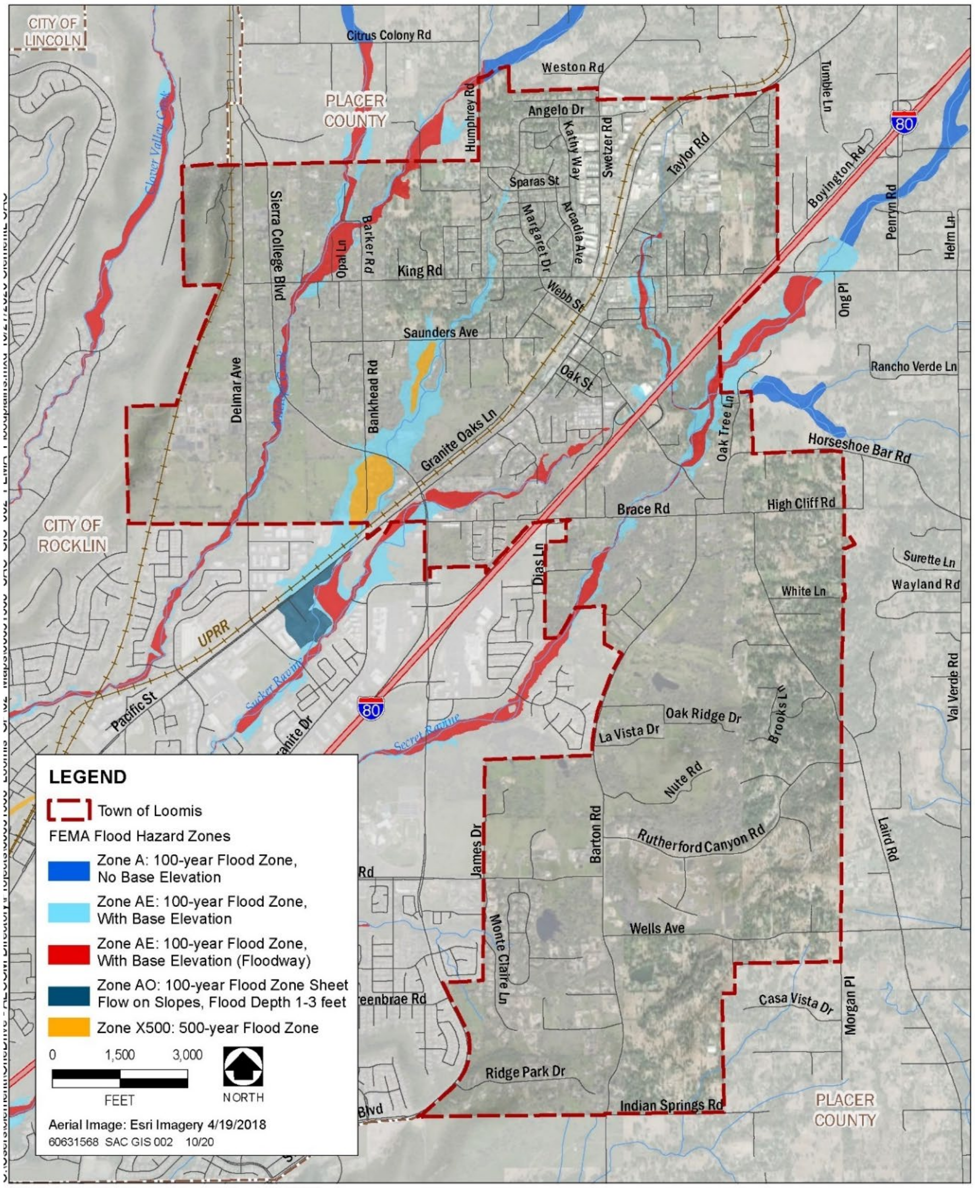
The Flood Insurance Rate Map (FIRM) produced by FEMA in 2018 identifies special flood hazard areas in the Planning Area, focusing on areas that could be inundated in the event of a 100-year flood (which statistically has a 1 percent chance of occurring in any given year). Residential, commercial, and industrial properties located in a 100-year flood zone require flood insurance. The locations of 100-year and 500-year flood plains generally occur along Secret Ravine, Antelope Creek, Sucker Ravine, and their tributaries (see Figure 7-6). No 200-year flood zones or California Department of Water Resources (DWR) awareness floodplains have been mapped in the Planning Area (DWR 2008).

Local Flooding Concerns

As discussed in the Town of Loomis Drainage Master Plan (West Yost Associates 2008), a few inadequately-sized culverts and bridges create impediments to the passage of high water flow in streams and gullies, and result in flooding hazards in the Planning Area. Undersized infrastructure typically results in short-term back-ups behind the culvert or bridge, with pooling water in such areas, in effect, an unintended detention basin.

Areas of potential concern in Loomis could include culverts under I-80; the Horseshoe Bar Road crossing over Secret Ravine; the railroad and Taylor Road crossing of Sucker Ravine; and various crossings of Antelope Creek and its tributaries at King Road and Sierra College Boulevard. The Brace Road bridge crossing over Secret Ravine is identified in the Dry Creek Watershed Flood Control Plan as a priority replacement project. Most storm drains are adequately sized to

Figure 7-6: Flood-Hazard Zones in the Planning Area



Source: FEMA Effecive Floodplains April 2020

Floodplains

Town of Loomis General Plan and EIR

carry runoff. Various culverts and storm drains throughout the Planning Area are also subject to potential flooding in the event that they become clogged with debris during heavy rains.

Flooding has previously affected several homes in the Planning Area in 1986, 1995, and 2005, along Sucker River, Secret Ravine, and Antelope Creek. These homes are located within the FEMA 100-year floodplain and were built prior to 1997, when Loomis became a participant in the NFIP and adopted the required floodplain management regulations.

The Town of Loomis Master Plan EIR identifies drainage problems associated with the culvert under the southbound freeway ramp of I-80 into a poorly maintained swale near South Walnut Street. Other similar deficiencies are likely elsewhere, as discussed in more detail in the Dry Creek Watershed Flood Control Plan.

Dam Inundation

Loomis is not in the dam inundation area for any major stream or river in the region. There are no dams or reservoirs (except small local detention facilities) upstream of Loomis on any tributary of Antelope Creek or Secret Ravine. Loomis is not subject to potential damage from dam inundation.

Climate Change – Flooding and Wildland Fires

An emerging issue related to planning for public health and safety is accounting for the potential effects of climate change in the given geographical scope. Climate change is a shift in normal weather conditions over time. A growing body of scientific research has linked climate change to an increase in the concentration of greenhouse gas (GHG) emissions in the Earth’s atmosphere. Some GHGs occur naturally and are responsible for the “greenhouse effect” that provides a habitable climate on Earth. However, a significant amount of GHGs is created through human activities and are resulting in atmospheric levels of GHGs in excess of natural conditions. In the United States, approximately 80 percent of all GHG emissions come from the use of petroleum and natural gas (Sacramento Area Council of Governments [SACOG] 2015). The Greenhouse Gas Emissions subsection provided in Chapter 3, "Natural Resources," of this Background Report provides the most recent state and local emissions inventories identifying the principal sources of GHG emissions generated by human activities by sector, or type of activity, as well as the relevant regulatory framework addressing GHG emissions reduction efforts.

Scientists use a variety of different numerical models (called Global Climate Models) to simulate the Earth's physical processes. These models use mathematical equations to predict how the atmosphere, oceans, ice, land surface, and natural and human-caused emissions of GHGs will interact globally in the climate system over the next centuries.

The California Energy Commission and the University of California, Berkeley (2021) developed a climate change modeling tool called Cal-Adapt, as part of recommendations of the 2009 California Climate Adaptation Strategy. Cal-Adapt produces peer-reviewed, scientific climate projections for the entire state of California. The data is available to the public at https://cal-adapt.org/, and is continuously updated as the science of climate change evolves.

California Government Code Section 65302(g)(4) requires cities and counties to address the potential effects from climate change as part of the public safety element of their respective general plans. The Town of Loomis is situated in the urbanized western Placer County region. The Vulnerability Assessment Report prepared for Placer County in 2018 identifies the natural hazards in Placer County that could be affected by climate change based on modeling from Cal-Adapt.

Table 7-2 presents a summary of the types of climate change hazards that may occur in the Town of Loomis, and the resulting potential impacts to people and the natural environment.[1]

In 2020, Placer County adopted the *Placer County Sustainability Plan*, which outlines various programs and policies to be undertaken by the community and the County to achieve GHG emission reductions. The Sustainability Plan includes a summary of the results of the *Vulnerability Assessment Report* (Placeworks 2018). While the Placer County Sustainability Plan does not specifically address the Town of Loomis, the

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[1] Table 7-3 does not include climate change hazards from severe winter weather or avalanches, which would not represent hazards for the Town of Loomis due to its low elevation.

plan includes climate adaptation strategies to protect against hazards in the region, several of which are applicable to the Town of Loomis. Many of the regional hazards and anticipated effects of climate change encompass those that are expected to affect the Town of Loomis, and many of the identified climate adaptation and resiliency actions could apply to Loomis.

Table 7-2: Projected Effects of Climate Change Pertaining to the Town of Loomis

Hazard	Climate Change Influence	Result
Drought	Climate change is projected to result in statewide droughts that are more frequent and more intense. California's climate varies between extremely dry and extremely wet periods, driven by the presence or absence of a few large winter storms or "atmospheric rivers." There will likely be more years with extreme levels of precipitation, both high and low; more years with very low levels of precipitation would cause more droughts that last longer and are more intense, as compared to historical norms. Drought conditions will likely be made worse by changes to Placer County's snowpack. Snowpack refers to the total amount of snow and ice that accumulates on the ground. Usually, this snow melts slowly over the year, helping to provide a consistent supply of water during dry months. However, because of climate change, less precipitation is expected to fall as snow and instead will fall as rain due to warmer temperatures, leading to a reduced snowpack. This may make water levels particularly low in late summer and early autumn, which are also often the hottest parts of the year.	Drought results in less water available for human consumption, industrial processes, and agricultural irrigation. It also decreases the amount of water available to plants and animals, threatens endangered species and ecosystems, and increases wildfire hazards.

Table 7-2: Projected Effects of Climate Change Pertaining to the Town of Loomis		
Hazard	**Climate Change Influence**	**Result**
Extreme Heat1	Climate change is expected to cause warmer temperatures overall, as well as an increase in extreme heat events. Depending on the location of interest within Placer County, as well as level of global GHG emissions, the number of extreme heat days is expected to rise from a historical annual average of 4 days, to 22–32 days by the middle of the century, and to 33–62 days by the end of the century. An increase in the average daily high temperatures is also anticipated. These projected high temperatures are substantially greater than historical norms.	Extreme heat has a direct adverse effect on humans, plants, and animals, including heat-related illness and increased vulnerability to cardiovascular and respiratory disorders in humans; contributes to the spread of wildfires; increases the need for water consumption throughout the human, plant, and animal ecosystems; and results in greater energy loads for air conditioning systems.
Wildfire	Wildfires in Placer County occur most often in late summer and autumn, when temperatures are high and several months have passed without significant precipitation, creating large amounts of dry plants that can act as fuel. Warmer temperatures and an increase in drought conditions created by climate change are likely to create more fuel for fires in the state's wildlands. The timing of wildfire events is also expanding throughout more of the year. The biggest increase in wildfires in Placer County is projected to occur along the western slope of the Sierra Nevada and areas closer to Lake Tahoe. Another wildfire hazard is the presence of small rural roadways with low carrying capacity, which can reduce wildfire evacuation and impede firefighting access. The Town of Loomis is composed primarily of grasslands and oak woodlands, which are relatively less prone to wildfires because of the lower fuel loads.	Wildfires result in the destruction of plant and animal ecosystems, as well as direct animal mortality, and can cause property damage and loss of life.

Table 7-2: Projected Effects of Climate Change Pertaining to the Town of Loomis		
Hazard	**Climate Change Influence**	**Result**
Flooding	Climate change is projected to cause more years with particularly intense storm systems that result in high rainfall amounts over a short period, and could overtop the capacity of local streams and drainage systems. Flooding may also occur more frequently when: (1) increased drought causes the soil to dry out and become hard, making it more difficult for rainfall to penetrate the soil; (2) the heat from increased wildfires bakes the surface layers of the soil resulting in decreased rainfall penetration; and (3) loss of vegetation (from wildfires and pests) results in fewer tree roots and less leaf litter, which in turn increases stormwater runoff.	Flooding on roadways and bridges impedes evacuation, flooding at residences and businesses results in loss of human life and property damage, and flooding on agricultural land results in crop damage or loss.
Fog	There has been a 50 percent reduction in days with fog in the Central Valley since the 1980s. Increasing temperatures caused by climate change likely makes it harder for the air to become cool enough to create fog. In addition, since particles of pollutants in the air help water vapor to condense, a reduction in air pollution may also be causing or contributing to the decreased days with fog.	Loss of fog events can benefit humans by reducing traffic accidents on roadways; however, it may harm plants that depend on the cool, moist environment.

Table 7-2: Projected Effects of Climate Change Pertaining to the Town of Loomis		
Hazard	**Climate Change Influence**	**Result**
Human Health Hazards	Diseases such as hantavirus pulmonary syndrome, Lyme disease, and West Nile fever are carried by animals such as mice and rats or insects such as ticks and mosquitos. Climate change is projected to cause warmer temperatures in both winter and spring. Since many of the organisms that carry diseases are more active during warmer weather, the time during which these diseases can be transmitted may increase.	Increased favorability for disease transmission could result in an increased number of people affected by diseases. Note that Placer Mosquito and Vector Control District, an independent special-district governed by California Mosquito and Vector Control Law and a seven-member Board of Trustees, including a representative of the Town of Loomis, provides year-round services and information to the residents of Placer County to reduce vector populations, including but not limited to mosquitos, ticks, yellow jackets and rats, promote awareness of vectors and vector-borne diseases, and decrease associated health risks to residents in Placer County.

Table 7-2: Projected Effects of Climate Change Pertaining to the Town of Loomis		
Hazard	**Climate Change Influence**	**Result**
Pests and Diseases in Agriculture and Forestry	Because climate change is expected to result in an increase in average temperatures, the threat of agriculture and forestry infestation from pests and diseases can be higher, because many pests and organisms that carry diseases are most active during warmer months. For example, the bark beetle is one of the worst pests threatening California forests and has contributed to the death of 1.5 million trees in Placer County's forests alone. The dead trees deplete forest ecosystems, create more fuel for wildfires, and are a safety risk for people and property. Climate change is likely to worsen bark beetle infestations because the warmer temperatures and shorter periods of cold weather create a longer period for bark beetles to cause tree damage and to reproduce. Drought and extreme heat also stress and weaken trees, making them more susceptible to bark beetle infestation.	Increased pests and diseases in agriculture and forestry could reduce forest tree cover and lower crop productivity.
Landslides[2]	Climate change is expected to cause an increase in intense levels of precipitation, and heavy rainfall or snowfall could increase the number of landslides or make landslides larger than normal, as well as increase the potential for erosion. Vegetation, which helps to hold hillsides together, can be stripped away by climate exposures such as increased wildfires, droughts, or disease/pest infestations. Without vegetation to help stabilize the slope, hillsides may be more likely to slide, and erosion may be more likely to occur.	An increase in landslides could result in increased temporary losses of roadway access, and increased loss of property damage and human life. Increased erosion could result in increased degradation of water quality.

Table 7-2: Projected Effects of Climate Change Pertaining to the Town of Loomis		
Hazard	**Climate Change Influence**	**Result**
Severe Weather	Climate change is expected to cause an increase in intense rainfall, which is usually associated with strong storm systems. This means that Loomis could see more intense storms in the coming years and decades, which could also include more high wind events. Future wet seasons will have more precipitation as rain than snow, primarily due to higher temperatures. Higher extreme rainfall will result in more surface runoff and less groundwater recharge.	Increased short-term precipitation could result in increased flooding and increased high-wind events could result in increased wildfires (from downed power lines) and property damage (from falling tree limbs).

Sources: California Energy Commission et al. 2018, Placeworks 2018, Placer County 2020, SACOG 2015 and 2020

Notes:

[1] Defined as temperatures that are hotter than 98 percent of the historical high temperatures for the area, as measured between April and October of 1961 to 1990.

[2] Landslide hazards are limited in the Town of Loomis. Most portions of the Town are relatively level or gently sloping. In areas with steeper slopes, the underlying geology generally consists of stable bedrock.

Hazardous Materials

Hazardous materials are defined as those that are a potential threat to human health, having the capacity to cause serious illness or death. This section discusses the types of hazardous materials typically found in the Planning Area.

Recorded Hazardous Material Sites

A search of the State Water Resources Control Board's GeoTracker database (SWRCB 2020) and the California Department of Toxic Substances Control's EnviroStor database (DTSC 2020) found no open, active records of known hazardous material sites within the Planning Area. The GeoTracker database listed one open case related to a potential hazards material leak from 2009, but it is inactive (meaning that no regulatory oversight activities are being conducted), and no details are available. The EnviroStor database listed one open, inactive case related to hazardous materials cleanup from agricultural chemicals related to a former orchard, for a proposed residential development; remedial action work is pending. One other open EnviroStor database record dates back to 2007, with no details available and no pending actions. Eleven hazardous materials sites have been remediated. No Federal (Superfund) sites are located within or adjacent to the Planning Area (U.S. Environmental Protection Agency 2020). The database search included Federal Superfund sites, State response sites, voluntary cleanup sites, school cleanups, evaluation sites, military evaluations, tiered permit sites, and corrective action sites.

Household Products

By far the most common hazardous materials are those found or used in the home. Waste oil is a common hazardous material that is often improperly disposed of and can contaminate surface water through runoff. Other household hazardous wastes (used paint, pesticides, cleaning products and other chemicals) are common and often improperly stored in garages and homes. Because of their prevalence and proximity to residents, household products constitute the most pervasive health hazard facing residents.

Mine Tailings

Historic mining operations often left dredge tailings, or discarded rock and material, either near the mine site in the case of dredge or hardrock mining, or washed downstream as a result of upstream hydraulic mining. Dredge mining was common in the 19th century along the creeks in the Loomis area, and dredge tailings can still be found. Historic hydraulic operations have scarred hillsides in Loomis, leaving them susceptible to erosion.

Mine tailings can be contaminated with mercury or cyanide, both of which are used in the process of gold refining. However, most gold was not refined in the immediate Loomis area and the potential for such contamination in dredge materials is considered low.

Agricultural Pesticide Use

The Loomis area includes many agricultural operations. Orchards in particular are often sprayed with various pesticides, which can persist in the soil~~s~~ over a period of many years. Denuded vegetation can suggest evidence for soil contamination. Potential contaminants can include dichlorodiphenyltrichloroethane (DDT), lead, and arsenic. In such areas, it is prudent to conduct soil testing (and conducting soil clean-up steps, if necessary) before allowing more intensive development.

Asbestos

Asbestos is the name given to a number of naturally occurring, fibrous silicate minerals. Asbestos is commonly used as an acoustic insulator, thermal insulation, fireproofing, and in other building materials. Asbestos is made up of microscopic bundles of fibers that may become airborne when asbestos-containing materials are damaged or disturbed. When these fibers get into the air, they may be inhaled into the lungs, where they can cause significant health problems.

The Planning Area contains many older structures with the potential to contain asbestos. Pre-1979 construction often included asbestos and it should be assumed that the demolition of older structures in the Town may present this hazard. Proper asbestos abatement and disposal procedures should be undertaken whenever the demolition of older structures is considered. As described earlier, no areas that are likely to contain naturally occurring asbestos have been identified in the Planning Area (Higgins and Clinkenbeard 2006).

Lead

Lead is a highly toxic metal that was used until the late 1970s in a number of products, most notably paint. Lead may cause a range of health effects, from behavioral problems and learning disabilities to seizures and death. Primary sources of lead exposure are deteriorating lead-based paint, lead-contaminated dust, and aerially-deposited lead from vehicle emissions in soil within 30 feet of major (i.e., state and federal) highways. Lead is also present in the yellow paint that was used in striping roadways.

In addition to roadways and bridges, demolition of residential, commercial, and industrial structures in the Planning Area containing lead-based paint require specific remediation activities regulated by federal, State, and regional and local laws. The debris produced during the removal of yellow pavement markings may need to be disposed of as a state or federal hazardous waste if the concentrations of lead exceed applicable hazardous waste thresholds.

Hazardous Materials Transport

The Union Pacific Railroad and I-80 are major transcontinental transportation routes that traverse Loomis. Trains and trucks commonly carry a variety of hazardous materials, including gasoline and various crude oil derivatives, and other chemicals known to cause human health problems. When properly contained, these materials present no hazard to the community. But in the event of an accident or derailment, such materials may be released, either in liquid or gas form. In the case of some chemicals (such as chlorine), highly toxic fumes may be carried far from the accident site. Standard accident prevention and hazardous materials recovery procedures are enforced by Federal and State agencies and followed by private transportation companies, and are included in the State Health and Safety Codes.

Hazardous Waste Management Plan

Counties are required by state law to prepare hazardous waste management plans. Placer County's plan addresses the treatment, storage and disposal of such materials. The primary goal of the plan is to protect public health by promoting the safe use and disposal of hazardous waste. To accomplish this, the plan provides for the reduction of hazardous waste through source reduction, recycling, and on-site handling and treatment methods. Public education and community involvement are key features for achieving this goal.

Critical Facilities

Critical facilities are those that must remain operational after an emergency event, in order for the community to respond effectively. Examples of critical facilities include hospitals, fire stations, electrical power plants, and community facilities.

Schools are often important staging and evacuation areas. There are relatively few critical facilities in the Planning Area; the nearest hospitals, for example, are in Roseville and Auburn.

There are no critical facilities located in flood hazard zones. There is one critical facility, the Placer County Sherriff's Office of Loomis, along the urban fringe in a moderate fire hazard severity zone. Figure 7-7 shows the location of critical facilities in the Planning Area in relation to identified flood and wildfire hazard zones. The critical facilities identified in Figure 7-7 include the Placer County Sherriff's Office of Loomis, South Placer Fire Protection District Station 18, and three schools.

Fuel pipelines can also be considered critical infrastructure. Pacific Gas & Electric Company (PG&E) provides natural gas service to the Loomis area. The system receives gas from PG&E's regional transmission system, with a local transmission pipeline that runs along Taylor Road through the Town of Loomis. In addition, Kinder Morgan operates a petroleum pipeline that parallels the railroad alignment through the Town of Loomis.

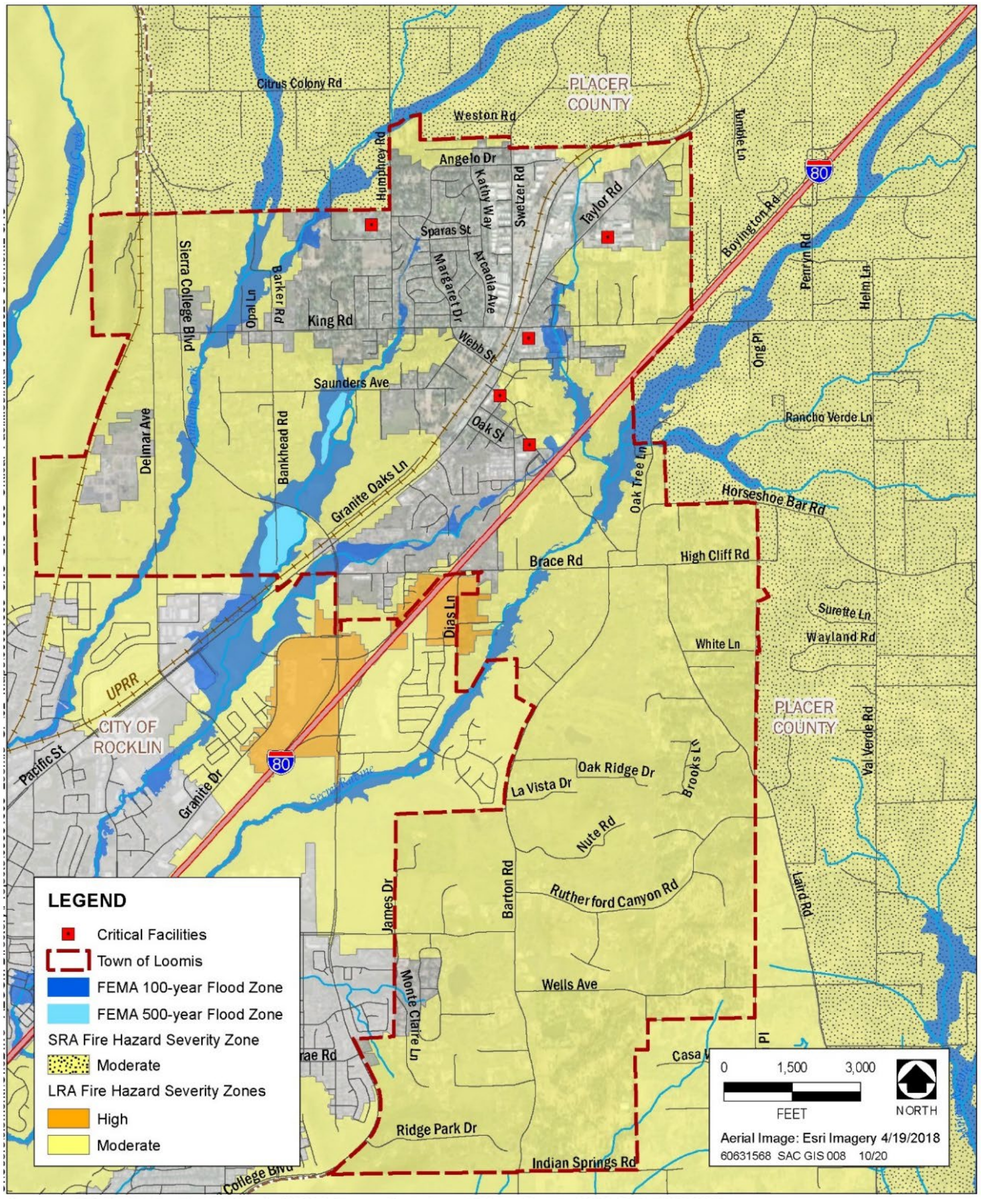
Airports and Airstrips

There are no public airports or private airstrips in or near the Planning Area. The Holsclaw short takeoff and landing short take-off and landing (STOL) airstrip, formerly located in Loomis immediately south of I-80 on Holsclaw Road, no longer exists.

Military Facilities

There are no military facilities in or near the Planning Area.

Figure 7-7: Critical Facilities in the Planning Area



Sources: FEMA Effecive Floodplains April 2020, Town of Loomis and Placer County 2016, CAL FIRE 2020

Critical Facilities

Town of Loomis General Plan and EIR

NOISE SOURCES & STANDARDS

The State Office of Planning and Research Noise Element Guidelines require that major noise sources be identified and quantified through the preparation of generalized noise contours for current and projected conditions. Significant noise sources in the Loomis area include traffic and railroad operations. Industrial operations are an additional, but less intrusive, noise source in Loomis. There are no airports in the area that could be a source of noise.

Overview of Noise & Sound Measurement

Noise is usually defined as “unwanted sound.” It consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

Sound intensity is measured in units called decibels (dB). When this basic unit is adjusted to correct for the relative frequency response of the human ear, the resulting unit is the “A-weighted” decibel (dBA). A-weighting de-emphasizes low frequencies to better correlate with the response of the human ear to sound. The zero on the dBA scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Unlike linear units (inches or pounds), the decibel scale is logarithmic. When measured on this scale, therefore, sound intensity increases or decreases exponentially with each decibel of change. While 10 decibels is 10 times more intense than one decibel, 20 decibels is 100 times more intense and 30 decibels is a thousand times more intense. The decibel scale increases as the square of the change in sound pressure energy. A sound as soft as human breathing is about 10 times greater (10 dBA) than the faintest sound audible to the human ear (just above zero dBA). The decibel system of measuring sound provides us with a simplified relationship between the physical intensity of sound and its perceived loudness to the human ear.

Because of the physical characteristics associated with sound transmission and reception, a doubling of noise energy normally results in about a 3 dBA increase in noise levels while a 10-dBA increase in noise level is generally required to perceive a doubling of noise. A 1- to 2-dBA change in ambient noise levels generally is not audible even to sensitive receptors.

Sound levels corresponding to typical noise sources are provided in Table 7-3. For a single point source, sound level decays approximately six decibels for each doubling of distance from the source. Noise originating from a linear, or

Table 7-3: Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
n/a	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	n/a
Gas Lawn Mower at 1 m (3 ft)	--90--	n/a
Diesel Truck at 15 m (50 ft), at 80km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1m (3 ft)
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
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
n/a	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

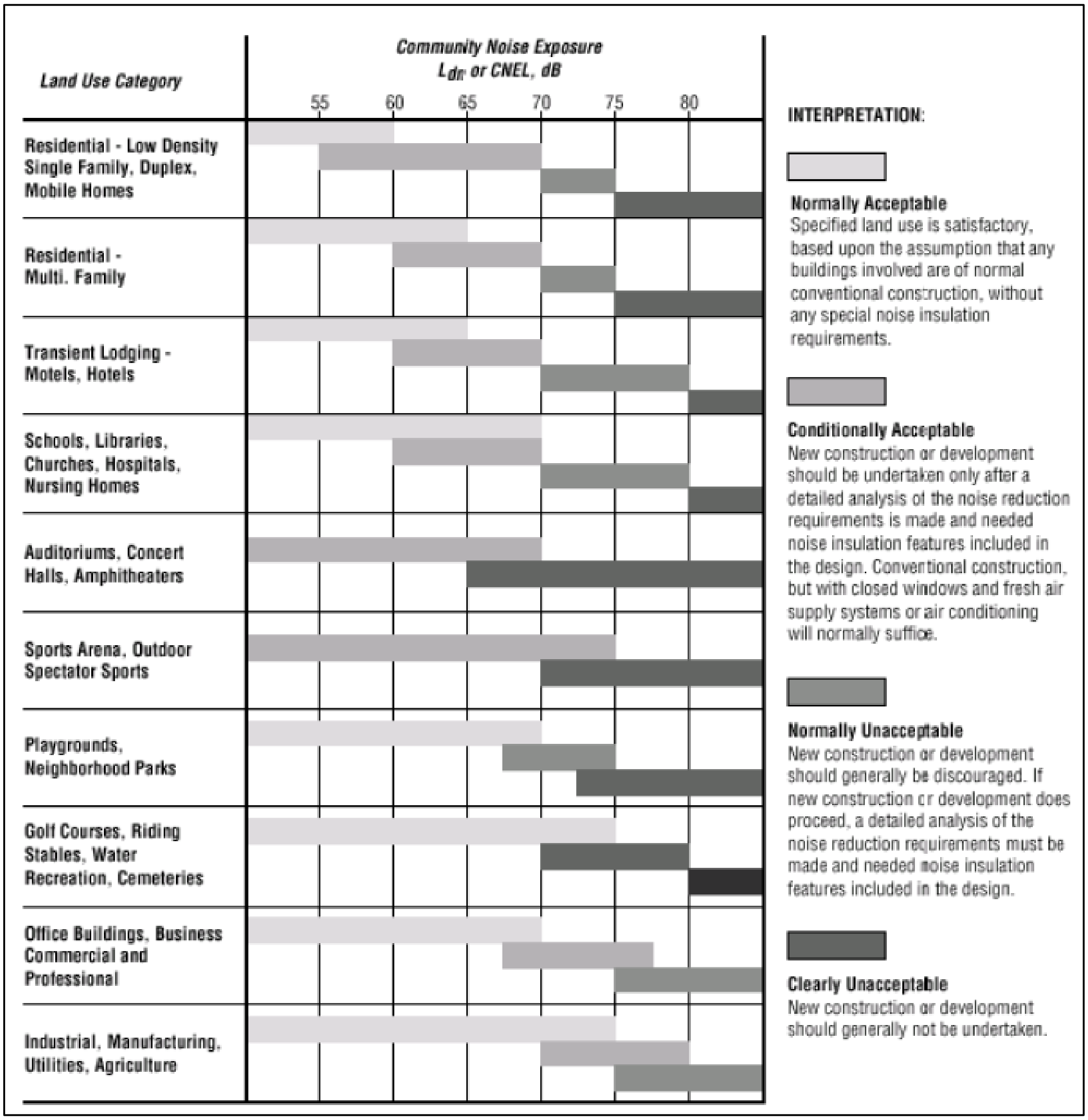
Source: Caltrans, Technical Noise Supplement, Traffic Noise Analysis Protocol, September 2013 "line" source, such as a traffic or rail corridor, will typically decrease by about three decibels for each doubling of distance, provided the surrounding environment is "hard" (free from "soft," sound-absorbing objects such as vegetation). Noise from a line source in an environment that is relatively flat and well-vegetated will decrease by about 4.5 decibels for each doubling of distance.

The time of day when a sound is emitted is an important factor in determining whether or not it is considered a nuisance. Sounds that may be barely noticeable at midday may be seriously disruptive at midnight. A number of measurement scales that attempt to account for this time factor have been developed. Two of the more commonly used scales of this type are the Community Noise Equivalent Level (CNEL) and the day-night sound level (L_{dn}). The L_{dn}, which was developed by the Environmental Protection Agency, is a 24-hour average sound level in which a 10 dBA penalty is added to any sounds occurring between the hours of 10:00 pm and 7:00 a.m. The CNEL scale, which is used in California Airport Noise Regulations, is similar except that an additional 5-dBA penalty is added for the evening hours from 7:00 p.m. to 10:00 p.m.

Noise Compatibility Standards

California Government Code §65302(f) provides noise compatibility guidelines for various land uses, as shown by Figure 7-8. The compatibility table illustrates the range of community noise exposure in terms of what is considered "normally acceptable," "conditionally acceptable," "normally unacceptable," and "clearly unacceptable." For the most sensitive uses, such as single-family residences, 60 dBA L_{dn} is recommended as the maximum normally acceptable level, which is the level below which no special sound attenuation measures are required. These guidelines are recommended by the State to assist

Figure 7-8: Noise Land Use Compatibility Standards



communities in determining whether or not noise poses a conflict with land development. The following summarizes other pertinent federal and state noise guidelines:

communities in determining whether or not noise poses a conflict with land development. The following summarizes other pertinent federal and state noise guidelines:

Noise Insulation Standards

The State Building Code, Title 24, Part 2 of the State of California Code of Regulations, establishes uniform minimum noise insulation performance standards to protect persons within new buildings which house people, including hotels, motels, dormitories, apartment houses, and dwellings other than single-family dwellings. Title 24 mandates that interior noise levels attributable to exterior sources shall not exceed 45 dB L_{dn} or CNEL in any habitable room. Title 24 also mandates that for structures containing noise-sensitive uses to be located where the L_{dn} or CNEL exceeds 60 dB, an acoustical analysis must be prepared to identify mechanisms for limiting exterior noise to the prescribed allowable interior levels. If the interior allowable noise levels are met by requiring that windows be kept closed, the design for the structure must also specify a ventilation or air conditioning system to provide a habitable interior environment.

The Federal Housing Administration establishes a 65 dBA L_{dn} standard for outdoor activity areas adjoining residential dwellings, and a 45 dBA L_{dn} standard for the interior of single-family residences. If exterior levels are between the 65 dBA L_{dn} standard and 75 dBA L_{dn}, acoustical analysis is required to ensure that the interior standard is met. Residential development is unacceptable where exterior noise levels exceed 75 dBA L_{dn}.

Local Standards

Loomis' current noise element sets an exterior standard of 65 dBA L_{dn} and an interior standard of 45 dBA L_{dn}. This is less stringent than those provided in the State Guidelines. However, the Town's current guidelines are consistent with the FHA standards described above.

Existing Noise Sources & Sound Levels

Noise modeling techniques and measurements were used to develop generalized L_{dn} or L_{eq} noise contours in the Planning Area for existing conditions. This method uses source-specific data including traffic mixture, speed limits and traffic volumes, all of which were obtained from either Caltrans, or Wood Rodgers. Noise contours along roadways were modeled using the Federal Highway Administration's Highway Traffic Noise Prediction Model (FHWA-RD-77-108, 1978), with California vehicle noise emission levels (CALVENO) developed by Caltrans.

The resulting noise contours (Figure 7-9) are based on average annual conditions. Local topography and intervening structures at specific locations would alter the contours, which should be considered generalizations. Table 7-4 shows the model results for the distance to the 60, 65 and 70 dBA L_{dn} contours associated with traffic on major roads traversing the Town.

Roadways

Roadway traffic is a primary source of noise in the Loomis community. Interstate 80 carries by far the most traffic through the area and is consequently the major noise contributor. The 60 dBA L_{dn} contour from this roadway extends up to 1,859 feet from centerline. However, this distance may be much less than modeled, because of topographic attenuation and intervening buildings. Please refer to Figure 7-2 and Table 7-4 for more detailed information.

Table 7-4: Existing Traffic Noise Levels					
Roadway	Segment	Traffic (ADT)	Distance to L_{dn} Contour from Centerline (feet)		
			70 dB	65 dB	60 dB
Bankhead Road	King Rd to Saunders Ave	409	2	4	8
Bankhead Road	Saunders Ave to Sierra College Blvd	673	2	5	11
Barton Rd	Brace Rd to Gold Trail Way	1,935	9	19	41
Barton Rd	Gold Trail Way to Rocklin Rd	2,500	10	23	49
Barton Rd	Rocklin Rd to Indian Springs Rd	7,952	23	49	105
Brace Rd	Sierra College Blvd to I-80 Bridge	4,521	13	27	59
Brace Rd	I-80 Bridge to Laird Rd	3,555	13	29	61
Del Mar Ave	King Rd to N. Town Limit	212	2	4	8
Del Mar Ave	S. Town Limit to King Rd	719	4	8	17
Horseshoe Bar Rd	Taylor Rd to I-80 Bridge	16,536	20	43	93
Horseshoe Bar Rd	I-80 Bridge to Horseshoe Bar Rd	9,578	14	30	64
Horseshoe Bar Rd	Brace Rd to N. Town Limit	6,427	20	42	91
Humphrey Rd	Arcadia Ave to N. Town Limit	1,232	5	10	21
Humphrey Rd	King Rd to Arcadia Ave	2,721	6	13	28
King Rd	Del Mar Ave to Bankhead Rd	2,988	12	25	55
King Rd	Bankhead Rd to Humphrey Rd	3,188	10	22	46
King Rd	Humphrey Rd to Taylor Rd	5,521	14	31	67
King Rd	Taylor Rd to Bush Ln	5,629	15	31	68
King Rd	Bush Ln to I-80 Bridge	5,684	18	39	84
Laird Rd	Brace Rd to White Ln	4,673	13	28	60
Laird Rd	White Ln to S. Town Limit	4,412	12	27	58
Rippey Rd	Taylor Rd to N. Town Limit	802	4	9	18
Rocklin Rd	James Dr to Barton Rd	13,479	32	69	149
Saunders Ave	Bankhead Rd to McAllen Ln	378	2	3	7

Table 7-4: Existing Traffic Noise Levels					
Roadway	**Segment**	**Traffic (ADT)**	**Distance to L_{dn} Contour from Centerline (feet)**		
			70 dB	**65 dB**	**60 dB**
Saunders Ave	McAllen Ln to Webb St	919	3	6	13
Sierra College Blvd	N. Town Limit to King Rd	12,179	43	93	201
Sierra College Blvd	King Rd to Bankhead Rd	11,372	41	89	192
Sierra College Blvd	Bankhead Rd to Brace Rd	13,019	38	82	176
Sierra College Blvd	Brace Rd to N. Granite Dr	22,010	45	96	207
Swetzer Rd	King Rd to N. Town Limit	6,261	16	34	73
Taylor Rd	S. Town Limit to Sierra College Blvd	11,463	29	62	134
Taylor Rd	Sierra College Blvd to Circle Dr	11,045	28	61	131
Taylor Rd	Circle Dr to Horseshoe Bar Rd	10,775	15	32	70
Taylor Rd	Horseshoe Bar Rd to King Rd	18,753	22	47	101
Taylor Rd	King Rd to N. Town Limit	8,881	13	28	61
Webb St	King Rd to Taylor Rd	4,121	8	17	37
Wells Ave	Barton Rd to Rickety Rack Rd	3,497	13	28	61
Wells Ave	Rickety Rack Rd to Morgan Place	3,372	13	28	59
I-80	Sierra College	85,500	401	863	1,859

Source: Traffic volumes from Caltrans and Wood Rodgers (2020).

ADT = average daily traffic

db = decibel

ldn = Day-Night Average Sound Level

Note: * All noise levels reported at 50 feet from roadway centerlines, except for Interstate 80 (100 feet).

Union Pacific Railroad

The Union Pacific Railroad operates two rail lines through the Town. The westbound rail line parallels Taylor Road, and cuts through the center of the community. The eastbound line travels northward, along the western edge of the Planning Area, about 1.5 miles west of Downtown Loomis.

Noise measurements were conducted on both lines to determine the contribution of freight and passenger rail operations to the noise environment. The goal of the noise measurements was to determine the typical sound exposure levels (SEL), accounting for travel speed, warning horns, locomotive noise, and other factors contributing to noise generation. The average SEL for the westbound line as collected at Site LT-1 was 110 dBA at 50 feet from the track centerline (includes use of warning horns). The average SEL for the eastbound line was 98 dBA at 50 feet (no warning horn usage). Saxelby Acoustics observed approximately 10 daily eastbound trains and 7 westbound trains during the noise measurement survey.

Union Pacific officials will not release the precise number of daily trains that travel through Loomis but estimated that about 12 to 15 trains is typical. This number is consistent with a 1996 Surface Transportation Board ruling that limits the number of trains passing through Reno, Nevada, to 15 as a condition of the recent Union Pacific/Southern Pacific merger (Mike Furtney, Union Pacific, 1998). For the purpose of this analysis, an average of 15 trains is assumed, evenly distributed between east and westbound freight.

Amtrak operates two eastbound and two westbound passenger trains daily that pass through Loomis. All four passenger trains pass through the Town during the day or early evening. However, the noise levels generated by passenger trains do not substantially contribute to overall day/night noise levels when compared to freight activity.

To determine the distance to noise contours, it is necessary to calculate the L_{dn} for typical rail operations. This is accomplished by using the recorded SEL values and the known number of trains. The L_{dn} may be calculated as follows:

$$L_{dn} = SEL + 10\log N - 49.4 \text{ dB, where:}$$

SEL is the mean SEL of the event, N is the sum of the number of day and evening trains per day plus 10 times the number of nighttime (10 pm to 7 am) trains per day, and 49.4 is a constant which represents ten times the logarithm of the number of seconds per day. Based on this information, the calculated noise contour distances from each rail line are shown in Table 7-5. These contours are depicted graphically in Figure 7-9.

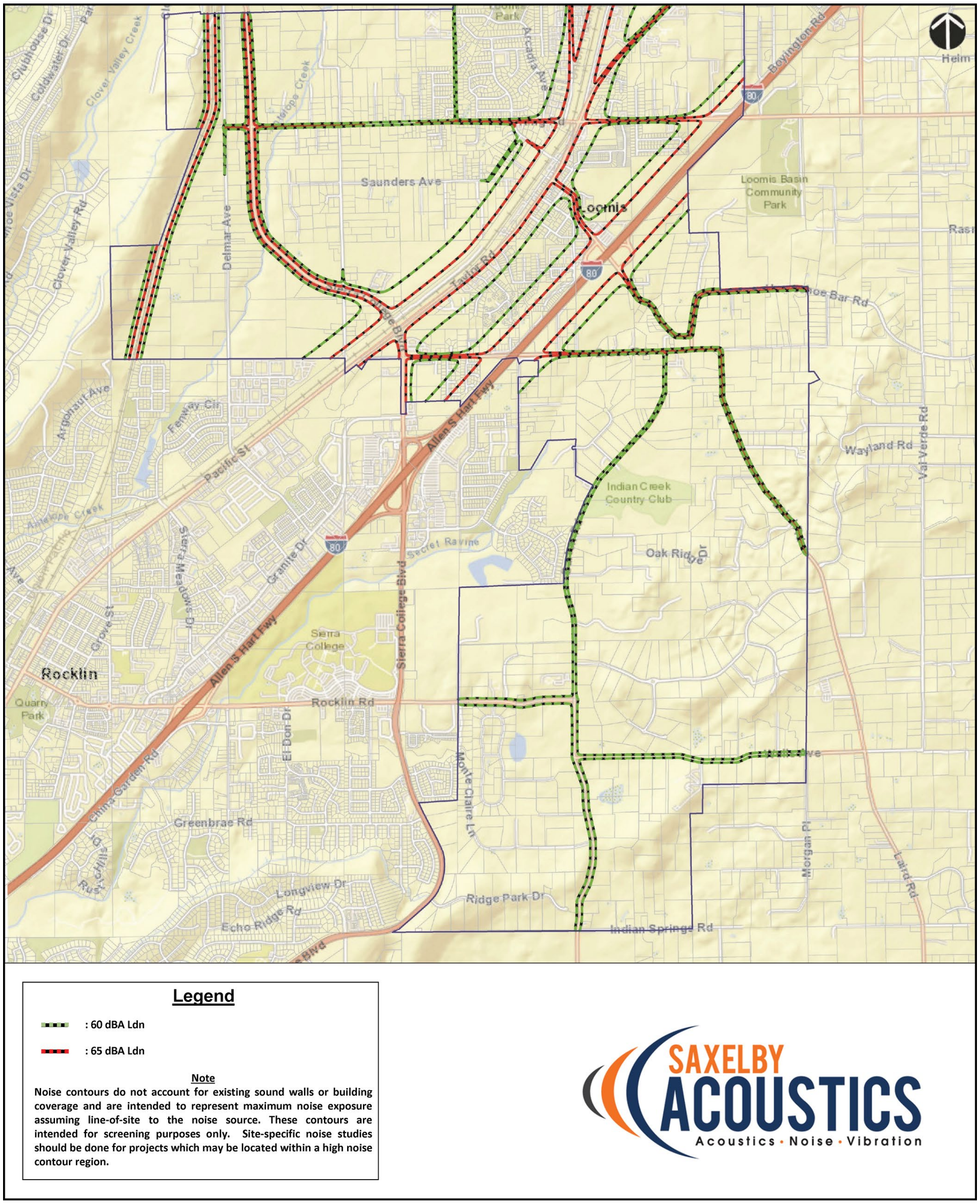
Table 7-5: Approximate Distance to Railroad Noise Contours

Train Source	L_{dn}, at 100 feet	Distance to L_{dn} Contour (feet)		
		70	65	60
Union Pacific (freight) -with warning horns	71.2 dBA	120	259	558
Union Pacific (freight) - without warning horns	61.9 dBA	29	62	134

Source: Saxelby Acoustics, 2020.

Assumes 7.5 freight trains daily, evenly distributed between daytime and nighttime hours.
L_{dn} = day/night average sound level with a penalty for noise occurring during nighttime hours.

Figure 7-9: Existing Noise Contours



Community Noise Survey

A community noise survey was conducted to document ambient noise levels at various locations throughout the Town. Short-term noise measurements were conducted at six locations throughout Loomis on July 13-16, 2020. In addition, four continuous 24-hour noise monitoring sites were also conducted to record day-night statistical noise level trends. The data collected included the hourly average (L_{eq}), median (L50), and the maximum sound level (L_{max}) during the measurement period. Noise monitoring sites and the measured noise levels at each site are summarized in Table 7-6 and Table 7-7. Figure 7-10 shows the locations of the noise monitoring sites. Detailed results of noise monitoring can be found in Appendix A. It should be noted that field work was conducted during COVID-19 restrictions. However, it is not expected that reduced traffic would have resulted in more than a 1-2 dBA reduction in measured noise levels; in some cases, traffic noise may potentially have been louder than typical due to increased vehicle travel speeds.

Table 7-6: Existing Short-Term Community Noise Monitoring Results						
Site	Location	Time[1]	Measured Sound Level, dBA			Notes
			L_{eq}	L_{50}	L_{max}	
ST-1	H. Clarke Powers Elementary School	11:31 am	57	42	73	Primary noise source is Humphrey Ave.
ST-2	Del Oro High School	11:09 am	67	59	83	Primary noise source is traffic on Taylor Rd.
ST-3	Sierra College Blvd. and King Rd.	11:52 am	71	67	82	Primary noise source is Sierra College Blvd. Train horn audible in background.
ST-4	Saunders Rd.	12:10 pm	54	42	72	Background noise due to Sierra College Blvd./ Taylor Rd. Natural sounds such as birds and insects. L_{max} due to passing mail truck on Saunders Rd.
ST-5	Barton Rd. – Indian Creek Country Club	9:41 am	66	53	82	Primary noise source is traffic on Barton Rd. Secondary Noise sources include activity at the Indian Creek Driving Range, HVAC noise from the Secret Ravine Winery, and natural sounds such as bird and insect noise.
ST-6	Barton Rd. and Wells Ave.	9:19 am	70	65	83	Primary noise source is Barton Rd. Secondary noise source is Wells Ave.

Source: Saxelby Acoustics, 2020.

[1] All community noise measurement sites have test durations of 10:00 minutes; all measurements conducted on July 13, 2020.

Table 7-7: Existing Continuous 24-Hour Ambient Noise Monitoring Results								
Site	Location	L_{dn} (dBA)	Measured Hourly Noise Levels, dBA Low-High (Average)[1]					
			Daytime (7:00 am – 10:00 pm)			Nighttime (10:00 pm – 7:00 am)		
			L_{eq}	L50	L_{max}	L_{eq}	L50	L_{max}
LT-1	UPRR at Webb St.	73	75	55	93	56	51	72
LT-2	UPRR at Gayaldo Park	66	58	43	70	60	43	73
LT-3	Interstate 80	75	71	69	85	68	61	84
LT-4	Sierra College Boulevard	64	62	58	80	56	48	74

Source: Saxelby Acoustics, 2020.

[1] All noise measurement conducted July 13 through 16, 2020.

Community noise monitoring equipment included Larson Davis Laboratories (LDL) Model 812, 820, and 831 precision integrating sound level meters equipped with LDL ½" microphones. The measurement systems were calibrated using an LDL Model CAL200 acoustical calibrator before and after testing. The measurement equipment meets all of the pertinent requirements of the American National Standards Institute (ANSI) for Type 1 (precision) sound level meters.

Railroad Vibrations

Saxelby Acoustics performed measurements of train vibrations near site long-term site 2 (LT-2). Vibration measurements were conducted using a BRC vibration sensor and Larson Davis model 831 sound meter. Velocity measurements were calibrated in the field using an IMI 699B02 vibration shaker. Based on the vibration measurements, freight and Amtrak trains were found to generate maximum levels of vibration of 72-73 VdB at a distance of 120 feet from the center of the Union Pacific Railroad line.

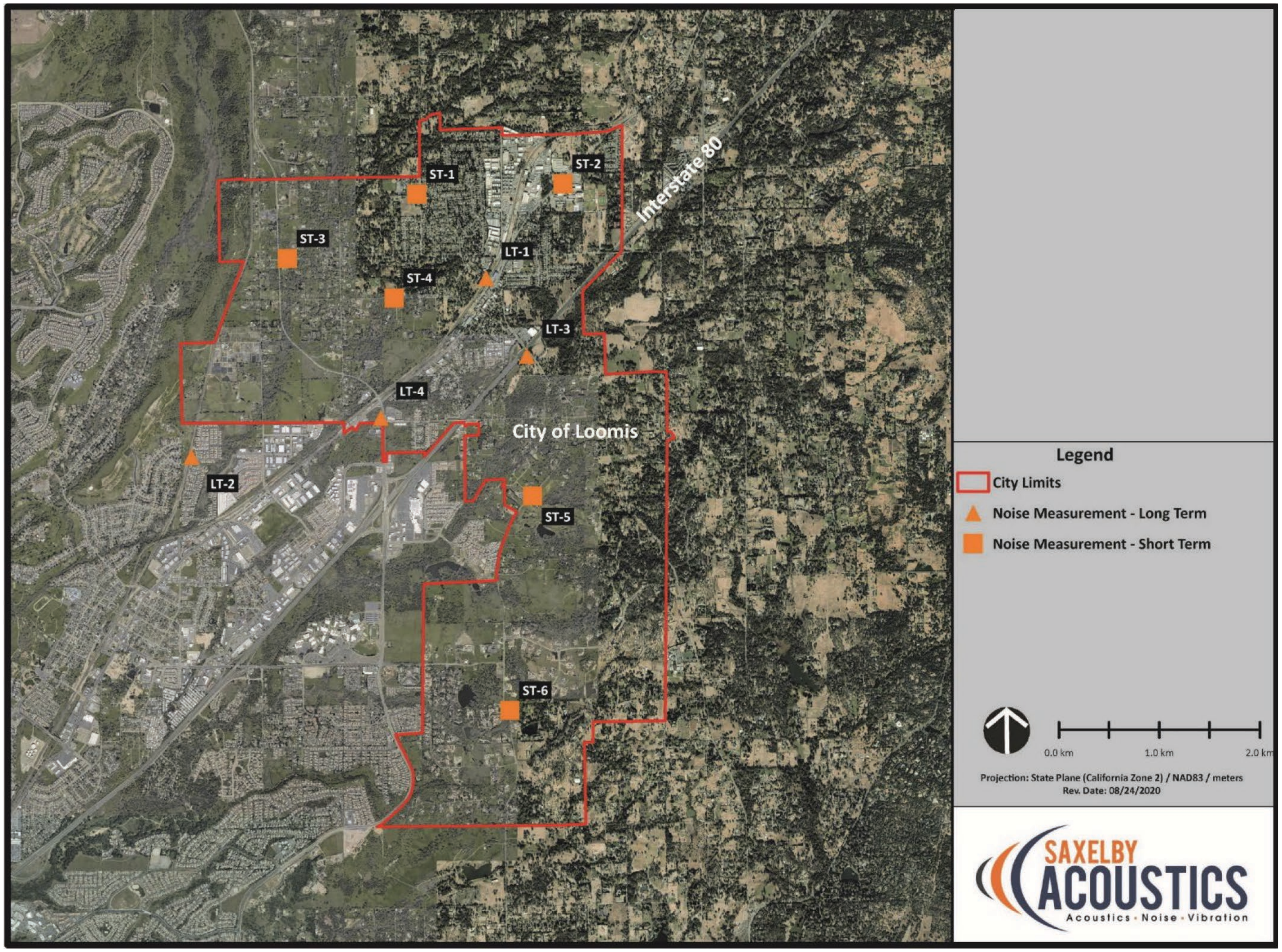
Stationary Noise Sources

Industrial and commercial operations can be significant sources of noise, depending on the type and hours of operation. Stationary noise sources of concern typically include generators, pumps, air compressors, outdoor speakers, motors, heavy equipment, and similar machinery. These are usually often associated with trucking companies, tire shops, auto mechanic shops, metal shops, shopping centers, drive-up windows, car washes, loading docks, gravel operations, athletic fields, and electric generating stations.

Many facilities of this type exist in Loomis. However, none have been identified in the existing environmental documents on file with the Town as substantial noise sources causing significant public disruption.

Existing or planned commercial/industrial operations may result in noise impacts when they are adjacent to noise sensitive land uses. Typical commercial and industrial noise sources include loading dock operations, parking lot activity, onsite equipment (including heating and air conditioning), and heavy truck idling.

Figure 7-10: Noise Measurement Sites



Currently, potential noise impacts of this type are most common near the Taylor Road corridor, where residential development often backs against commercial and industrial uses. Industrial parcels along Swetzer Court also back against homes along Kathy Way and Arcadia Avenue, resulting in similar noise impacts to residents in that area. On occasion, there have been complaints regarding excessive industrial-related noise, typically involving the use of heavy equipment or trucks during nighttime hours. From a land use planning perspective, fixed-source noise control issues focus upon two goals:

1. To prevent the introduction of new noise-producing uses in noise-sensitive areas
2. To prevent encroachment of noise sensitive uses upon existing noise-producing facilities

The first goal can be achieved by applying noise level performance standards to proposed new noise-producing uses. The second goal can be met by requiring that new noise-sensitive uses in near proximity to noise-producing facilities include mitigation measures that would ensure compliance with noise performance standards.

Typical noise levels associated with various types of stationary noise sources are shown in Table 7-8.

Sensitive Receptors

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with those uses. Residences, hospitals, schools, guest lodging, libraries, churches and parks are most sensitive to noise intrusion and therefore have more stringent noise exposure targets than manufacturing or agricultural uses that are not subject to such impacts as sleep disturbance.

The relative sensitivity of various land uses is illustrated in the state’s noise compatibility guidelines, shown previously in Figure 7-8.

Table 7-8: Typical Stationary Source Noise Levels

Use	Noise Level at 100 feet, L_{eq} [1]	Distance to Noise Contours, feet			
		50 dB L_{eq} (No Shielding)	45 dB L_{eq} (No Shielding)	50 dB L_{eq} (With 5 dB Shielding)	45 dB L_{eq} (With 5 dB Shielding)
Auto Body Shop	56 dB	200	355	112	200
Auto Repair (Light)	53 dB	141	251	79	141
Busy Parking Lot	54 dB	158	281	89	158
Cabinet Shop	62 dB	398	708	224	398
Car Wash	63 dB	446	792	251	446
Cooling Tower	69 dB	889	1,581	500	889
Loading Dock	66 dB	596	1,059	335	596
Lumber Yard	68 dB	794	1,413	447	794
Maintenance Yard	68 dB	794	1,413	447	794
Outdoor Music Venue	90 dB	10,000	17,783	5,623	10,000
Paint Booth Exhaust	61 dB	355	631	200	355
Skate Park	60 dB	316	562	178	316
School Playground / Neighborhood Park	54 dB	158	281	89	158
Truck Circulation	48 dB	84	149	47	84
Vendor Deliveries	58 dB	251	446	141	251

Source: Saxelby Acoustics. 2020.

[1] Analysis assumes a source-receiver distance of approximately 100 feet, no shielding, and flat topography. Actual noise levels will vary depending on site conditions and intensity of the use. This information is intended as a general rule only and is not suitable for final site-specific noise studies.

REGULATORY BACKGROUND

Federal Plans, Policies, Regulations, and Laws

Earthquake Hazards Reduction Act

In October 1977, the U.S. Congress passed the Earthquake Hazards Reduction Act to reduce the risks to life and property from future earthquakes in the United States. To accomplish this goal, the act established the National Earthquake Hazards Reduction Program. The program's mission is to improve understanding, characterization, and prediction of hazards and vulnerabilities; improve building codes and land use practices; reduce risk through post-earthquake investigations and education; develop and improve design and construction techniques; improve mitigation capacity; and accelerate application of research results.

The National Earthquake Hazards Reduction Program was substantially amended in November 1990 by the National Earthquake Hazards Reduction Program Act (NEHRPA), which refined the description of agency responsibilities, program goals, and objectives. The NEHRPA designates the Federal Emergency Management Agency as the program's lead agency and assigns several planning, coordinating, and reporting responsibilities. Other NEHRPA agencies are the National Institute of Standards and Technology, National Science Foundation, and U.S. Geological Survey.

Federal Emergency Management Agency

The primary mission of the Federal Emergency Management Agency is to reduce the loss of life and property and to protect the nation from all hazards, including natural disasters, acts of terrorism, and other man-made disasters, by leading and supporting a risk-based, comprehensive emergency management system of preparedness, protection, response, recovery, and mitigation.

Disaster Mitigation Act

The Disaster Mitigation Act of 2000 requires a state mitigation plan as a condition of disaster assistance, adding incentives for increased coordination and integration of mitigation activities at the state level through the establishment of requirements for two different levels of state plans: “Standard” and “Enhanced.” States that develop an approved Enhanced State Plan can increase the amount of funding available through the Hazard Mitigation Grant Program. The Disaster Mitigation Act also established a new requirement for local mitigation plans.

Emergency Planning and Community Right-To-Know Act

The Emergency Planning Community Right-to-Know Act (EPCRA) of 1986 was included under the Superfund Amendments and Reauthorization Act (SARA) law and is commonly referred to as SARA Title III. EPCRA was passed in response to concerns regarding the environmental and safety hazards proposed by the storage and handling of toxic chemicals. EPCRA establishes requirements for federal, state, and local governments, Indian Tribes, and industry regarding emergency planning and Community Right-to-Know reporting on hazardous and toxic chemicals. SARA Title III requires states and local emergency planning groups to develop community emergency response plans for protection from a list of Extremely Hazardous Substances (40 CFR Appendix B). The Community Right-to-Know provisions help increase the public’s knowledge of and access to information on chemicals at individual facilities, their uses, and their release into the environment.

Hazardous Materials Transportation Act

The Hazardous Materials Transportation Act (HMTA) of 1975 was created to provide adequate protection from the risks to life and property related to the transportation of hazardous materials in commerce by improving regulatory enforcement authority of the Secretary of Transportation.

United States Department of Transportation

Transportation of chemicals and hazardous materials are governed by the U.S. Department of Transportation (USDOT), which stipulates the types of containers, labeling, and other restrictions to be used in the movement of such material on interstate highways.

Federal Railroad Administration

The Federal Railroad Administration (FRA) an agency under USDOT, is responsible for requiring each railroad carrier that provides intercity or commuter rail passenger transportation to develop a Railroad Safety Risk Reduction Program, as part of Public Law 110-432, “Federal Rail Safety Improvements,” enacted in 2008. The program addresses issues such as railroad safety, highway/rail grade crossings, pedestrian safety, trespasser prevention, and safety enhancements. FRA is also responsible for enforcing safety rules and standards under CFR Title 49, Sections 200–272, which cover a comprehensive range of railroad safety topics, including track safety, roadway workplace safety, railroad operation rules, communication, locomotive safety standards, inspections and maintenance, signal systems, grade crossing safety, bridge safety standards, emergency preparedness, passenger safety, safety training, dispatching, and qualification/certification for conductors.

Federal Highway Administration (FHWA)

The FHWA has developed noise abatement criteria that are used for federally funded roadway projects or projects that require federal review. These criteria are discussed in detail in Title 23 Part 772 of the Federal Code of Regulations (23 CFR 772).

Environmental Protection Agency (EPA)

The EPA has identified the relationship between noise levels and human response. The EPA has determined that over a 24-hour period, an L_{eq} of 70 dBA will result in some hearing loss. Interference with activity and annoyance will not occur if exterior levels are maintained at an L_{eq} of 55 dBA and interior levels at or below 45 dBA. Although these levels are relevant for planning and design and useful for informational purposes, they are not land use planning criteria because they do not consider economic cost, technical feasibility, or the needs of the community.

The EPA has set 55 dBA L_{dn} as the basic goal for residential environments. However, other federal agencies, in consideration of their own program requirements and goals, as well as difficulty of actually achieving a goal of 55 dBA L_{dn}, have generally agreed on the 65 dBA L_{dn} level as being appropriate for residential uses. At 65 dBA L_{dn}, activity interference is kept to a minimum, and annoyance levels are still low. It is also a level that can realistically be achieved.

The Department of Housing and Urban Development (HUD) was established in response to the Urban Development Act of 1965 (Public Law 90-448). HUD was tasked by the Housing and Urban Development Act of 1965 (Public Law 89-117) "to determine feasible methods of reducing the economic loss and hardships suffered by homeowners as a result of the depreciation in the value of their properties following the construction of airports in the vicinity of their homes."

HUD first issued formal requirements related specifically to noise in 1971 (HUD Circular 1390.2). These requirements contained standards for exterior noise levels along with policies for approving HUD-supported or assisted housing projects in high noise areas. In general, these requirements established the following three zones:

> 65 dBA L_{dn} or less - an acceptable zone where all projects could be approved.

> Exceeding 65 dBA L_{dn} but not exceeding 75 dBA L_{dn} - a normally unacceptable zone where mitigation measures would be required and each project would have to be individually evaluated for approval or denial. These measures must provide 5 dBA of attenuation above the attenuation provided by standard construction required in a 65 to 70 dBA L_{dn} area and 10 dBA of attenuation in a 70 to 75 dBA L_{dn} area.

> Exceeding 75 dBA L_{dn} - an unacceptable zone in which projects would not, as a rule, be approved.

HUD's regulations do not include interior noise standards. Rather, a goal of 45 dBA Ldn is set forth and attenuation requirements are geared towards achieving that goal. HUD assumes that using standard construction techniques, any building will provide sufficient attenuation so that if the exterior level is 65 dBA L_{dn} or less, the interior level will be 45 dBA L_{dn} or less. Thus, structural attenuation is assumed at 20 dBA. However, HUD regulations were promulgated solely for residential development requiring government funding and are not related to the operation of schools or churches.

The federal government regulates occupational noise exposure common in the workplace through the Occupational Health and Safety Administration (OSHA) under the EPA. Noise exposure of this type is dependent on work conditions and is dependent on work conditions and is addressed through a facility's or construction contractor's health and safety plan.

State Plans, Policies, Regulations, and Laws

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Act (Public Resources Code Sections 2621–2630) was enacted in 1972 to mitigate the hazard of surface faulting to structures designed for human occupancy. The main purpose of the law is to prevent buildings used for human occupancy from being constructed on the surface trace of active faults. The law addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards.

The Alquist-Priolo Act requires the State Geologist to establish regulatory zones known as "earthquake fault zones" around the surface traces of active faults and to issue appropriate maps. The maps are distributed to all affected cities, counties, and state agencies for their use in planning efforts. Before a project can be permitted in a designated Alquist-Priolo Earthquake Fault Zone, cities and counties must require the completion of a geologic investigation demonstrating that proposed buildings would not be constructed across active faults.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (Public Resources Code Sections 2690 through 2699.6) addresses earthquake hazards from non-surface fault rupture, including liquefaction and seismically induced landslides. The act established a mapping program for areas that have the potential for liquefaction, landslide, strong ground shaking, or other earthquake-related and geologic hazards. The act also specifies that the lead agency for a project may withhold development permits until geologic or soils investigations are conducted for specific sites and mitigation measures are incorporated into plans to reduce the hazards associated with seismicity and unstable soils.

California Building Standards Code

The California Building Standards Commission coordinates, manages, adopts, and approves building codes in California. The CBC (Title 24 of the California Code of Regulations) provides minimum standards for building design in California. The CBC applies to building design and construction in the state and is based on the federal Uniform Building Code (UBC) used widely throughout the country (generally adopted on a state-by-state or district-by-district basis). The CBC has been modified for California conditions with numerous more detailed or more stringent regulations. Where no other building codes apply, Chapter 29 of the CBC regulates excavation, foundations, and retaining walls.

The state earthquake protection law (California Health and Safety Code, Section 19100 et seq.) requires that structures be designed to resist stresses produced by lateral forces caused by wind and earthquakes. The CBC requires that any structure undergo a seismic-design evaluation that assigns the structure to one of six categories, A–F. Category F structures require the most earthquake-resistant design.

The CBC philosophy focuses on “collapse prevention,” meaning that structures are to be designed to prevent collapse during the maximum level of ground shaking that could reasonably be expected to occur at a site. CBC Chapter 16 specifies exactly how each seismic-design category is to be determined on a site-specific basis, based on site-specific soil characteristics and proximity to potential seismic hazards.

Chapter 18 of the CBC regulates the excavation of foundations and retaining walls, as well as the preparation of a preliminary soil report, engineering geologic report, geotechnical report, and supplemental ground-response report. Chapter 18 also regulates the analysis of expansive soils and the determination of depth to the groundwater table. For structures in Seismic Design Category C, Chapter 18 requires analysis of slope instability, liquefaction, and surface rupture attributable to faulting or lateral spreading. For structures in Seismic Design Categories D, E, and F, Chapter

18 requires these same analyses plus an evaluation of lateral pressures on basement and retaining walls, liquefaction and loss of soil strength, and lateral movement or reduction of the foundation's soil-bearing capacity.

Chapter 18 also requires that mitigation measures be considered in structural design. Mitigation measures may include stabilizing the ground, selecting appropriate foundation types and depths, selecting appropriate structural systems to accommodate anticipated displacements, or using any combination of these measures. The potential for liquefaction and soil strength loss must be evaluated for site-specific peak-ground-acceleration magnitudes and source characteristics consistent with the design earthquake ground motions. The peak ground acceleration must be determined in a site-specific study, the contents of which are specified in CBC Chapter 18.

Finally, Appendix J of the CBC regulates grading activities, including drainage and erosion control and construction on expansive soils, areas subject to liquefaction, and other unstable soils.

Senate Bill 1369 (2004) and Assembly Bill 2911 (2019) – Defensible Space for Fire Protection

Senate Bill 1369 and Assembly Bill 2911 amended Public Resources Code Section 4291 to require owners or lessees of buildings or structures in or adjoining a mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or land that is covered with flammable material, to maintain 100 feet of defensible space around structures. The intensity of fuels management may vary within the 100-foot zone, the first 30 feet from the structure being the most intense in terms of fuels management. AB 2911 also authorized the creation of firebreaks and allows state or local agencies to designate a defensible space zone that is greater than 100 feet, if required. Reducing vegetation in the defensible space zone is intended to help slow or stop the spread of wildfire and to help protect structures from catching fire—either from direct flame contact or radiant heat. Defensible space is also important for the protection of firefighters.

Public Resources Code Sections 4427 and 4442 – Fire Prevention

Public Resources Code Section 4427 prohibits the use or operation of any motor, engine, boiler, stationary equipment, welding equipment, cutting torches, grinding devices, or other tools from which a spark or flame may originate—during periods when a burn permit is required—on forest-covered land, brush-covered land, or grass-covered land, without doing both of the following:

1. First clearing away all flammable material, including snags, from the area around such operation for a distance of 10 feet; and
2. Maintaining one serviceable round point shovel with an overall length of not less than forty-six (46) inches and one backpack pump water-type fire extinguisher fully equipped and ready for use at the immediate area during the operation.

(Public Resources Code Section 4427 does not apply to portable power-saws and other portable tools powered by a gasoline-fueled internal combustion engine.)

Public Resources Code Section 4442 prohibits the use of any internal combustion engine which uses hydrocarbon fuels on any forest-covered land, brush-covered land, or grass-covered land unless the engine is equipped with a spark arrester or the engine used to power a vehicle is equipped with a muffler.

Burn Permits

Residential burning is the most common burning activity in Placer County. Residents most commonly burn vegetation from yard clean-up. Materials that may be legally burned in the Planning Area consist of dry tree and brush trimmings, dry leaves and pine needles, dry plants, and dry weeds; burning of household trash or garbage is not allowed. A burn permit is required from the South Placer Fire District. Burning is only allowed on days and hours permitted by Placer County Air Pollution Control District. As part of the burn permit, the following actions and restrictions apply:

- Maximum pile size is 4 feet in diameter.
- Clear all flammable material and vegetation within 10 feet of the outer edge of the burn pile.

- > Keep a water supply close to the burn pile.
- > An adult must be in attendance with a shovel until the fire is out.
- > No burning may be undertaken unless weather conditions are safe, with no strong wind.
- > The permittee must maintain the original signed permit in their possession during the burning operation and is responsible for maintaining control of the fire at all times.

Department of Toxic Substances Control

The California Department of Toxic Substances Control (DTSC) has primary regulatory responsibility, with delegation of enforcement to local jurisdictions that enter into agreements with the State agency, for the management of hazardous materials and the generation, transport and disposal of hazardous waste under the authority of the Hazardous Waste Control Law. Since August 1, 1992, DTSC has been authorized to implement the state's hazardous waste management program for California Environmental Protection Agency (CalEPA).

California Occupational Safety and Health Administration

California Occupational Safety and Health Administration (Cal-OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations within California. Cal-OSHA regulations pertaining to the use of hazardous materials in the workplace (Title 8 of the California Code of Regulations) include requirements for safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and preparation of emergency action and fire prevention plans. Cal-OSHA enforces hazard communication program regulations that contain training and information requirements, including procedures for identifying and labeling hazardous substances, communicating hazard information related to hazardous substances and their handling, and preparation of health and safety plans to protect workers and employees at hazardous-waste sites. The hazard communication program requires that employers make Safety Data Sheets available to employees, and requires documentation of informational and training programs for employees.

State Water Resources Control Board

The State Water Resources Control Board (SWRCB) was established in 1967 by combining the State Water Quality Control Board and the State Water Rights Board, but its work originated in the 1950s. The Central Valley RWQCB is authorized by the SWRCB to enforce provisions of the Porter-Cologne Water Quality Control Act of 1969. This act gives the Central Valley RWQCB authority to require groundwater investigations when the quality of groundwater or surface waters of the state is threatened and to require remediation of the site, if necessary.

California Department of Transportation

The California Department of Transportation (Caltrans) was established in 1972 and manages more than 50,000 miles of California's highway and freeway lanes, provides inter-city rail services, and permits more than 400 public-use airports and special-use hospital heliports. Caltrans is also the first responder for hazardous material spills and releases that occur on highway and freeway lanes and inter-city rail services.

Caltrans has adopted policy and guidelines relating to traffic noise as outlined in the Traffic Noise Analysis Protocol (Caltrans 2011). The noise abatement criteria specified in the protocol are the same as those specified by FHWA.

Senate Bill 1082, California Environmental Protection Agency's Unified Program

In 1993, Senate Bill 1082 gave CalEPA the authority and responsibility to establish a unified hazardous waste and hazardous materials management and regulatory program, commonly referred to as the Unified Program. The purpose of this program is to consolidate and coordinate six different hazardous materials and hazardous waste programs, and to ensure that they are consistently implemented throughout the state. The Unified Program is overseen by CalEPA with support from DTSC, RWQCBs, the California Office of Emergency Services (OES), and the State Fire Marshal.

The Unified Program Administration and Advisory Group (UPAAG) was created to foster effective working partnerships between federal, State and local agencies. The UPAAG's goals and objectives are listed in the UPAAG Strategic Plan. The six programs are:

> Hazardous Materials Release Response Plans and Inventories (Business Plans)

> California Accidental Release Prevention Program

> Underground Storage Tank Program

> Aboveground Petroleum Storage Act Program

> Hazardous Waste Generator and Onsite Hazardous Waste Treatment (tiered permitting) Programs

> California Uniform Fire Code: Hazardous Material Management Plans and Hazardous Material Inventory Statements

State law requires county and local agencies to implement the Unified Program. The agency in charge of implementing the program is called the Certified Unified Program Agency (CUPA). The Placer County Environmental Health Services Division is the designated CUPA for the county and the Town of Loomis. The Town and the Placer County Environmental Health Services Division work together to regulate hazardous materials in the Planning Area.

Assembly Bills 2185 and 2189, Hazardous Materials Business Emergency Response Plan Program, CA Health and Safety Code Chapter 6.95

The State of California requires an owner or operator of a facility to complete and submit a Hazardous Material Business Plan (HMBP) to the Governor's OES if the facility handles a hazardous material or mixture containing a hazardous material in amounts greater than specified threshold quantities. Placer County Environmental Health is responsible for the implementation of the HMBP program in Placer County. Congress requires Environmental Protection Agency (EPA) Region 9 to make

HMBP program information available to the public through the EPA's Envirofacts Data Warehouse.

California Air Resources Board

The California Air Resources Board (CARB) oversees implementation of and compliance with the National Emission Standard for Hazardous Air Pollutants (NESHAP) for asbestos, and investigates all related complaints, as specified by California Health and Safety Code Section 39658 (b)(1). The Placer County Air Pollution Control District requires notification of CARB and EPA for demolition and renovation where asbestos-containing materials may be present. CARB reviews and investigates each notification and if it is determined that a structure contains asbestos-containing materials, demolition or renovation of the structure must be compliant with NESHAP standards for demolition and renovation (40 CFR 61.145).

Lead-Based Paint, California Code of Regulations Title 17

Title 17, Division 1, Chapter 8, of the California Code of Regulations requires that work on any structure built prior to January 1, 1978 use lead-safe practices. Such practices include containment of the work area and cleaning of the work area after project completion. California Code of Regulations Chapter 8 also covers accreditation of training providers and certification of individuals to perform lead abatement. Cal-OSHA provides construction and general industry lead standards within Title 8 of the California Code of Regulations, which contains occupational health requirements for lead abatement. DTSC regulations for hazardous waste are provided within California Code of Regulations Title 22, Division 4.5. Demolition or renovation of structures with lead-based paint would be required to comply with procedures in California Code of Regulations Title 22.

Governor's Office of Planning and Research (OPR)

OPR has developed guidelines for the preparation of general plans (Office of Planning and Research, 2017). The guidelines include land use compatibility guidelines for noise exposure.

Local Plans, Policies, Regulations, and Laws

Placer County Local Hazard Mitigation Plan

Loomis is a participant, in cooperation with Placer County, in the Placer County Local Hazard Mitigation Plan (LHMP) (Town of Loomis and Placer County 2016). The LHMP, Annex D, provides a vulnerability assessment that analyzes the population, property, and other assets at risk to hazards ranked of medium or high significance in the Planning Area. The analysis is primarily focused on flooding, wildfire, and hazardous materials transport; it also includes earthquakes and severe weather. Programs, plans, policies, codes, and ordinances that would reduce these hazards are identified in the LHMP. Mitigation and loss prevention are focused on implementation of the identified programs, plans, policies, codes, and ordinances. The 2016 LHMP does not include a vulnerability analysis related to climate change, which was not required at the time the LHMP was prepared. Placer County kicked off its 2021 LHMP Update in October 2020. The Town of Loomis continues to be a participating jurisdiction in the County's LHMP. Climate change is one of the hazard areas being addressed as a part of this update and will be included in the Loomis Annex to inform the 2021 LHMP.

Placer County Health and Human Services Strategic Plan

Placer County Health and Human Services serves the community through direct services and a network of public, private, and community-based partners for a safe and healthy community. Placer County Health and Human Services department is split into six divisions: Adult System of Care; Children's System of Care; Human Services; Public Health; Environmental Health and Animal Services; and Administrative Services. Placer County Health and Human Services underwent a strategic planning process in 2018 to 2019, incorporating the perspectives of a wide range of stakeholders, to produce its 2019-2021 Strategic Plan: "Building a Healthier Community Together." This plan serves as a blueprint for the department regarding how to meet the current and changing needs of the community, including addressing public health and other human services, as well as emergency management and preparedness. Placer County Health and Human Services coordinates with a wide range of local, regional, and State agencies and organizations to comprehensively serve the community.

Placer County Community Wildfire Protection Plan

The Placer County Community Wildfire Protection Plan (Anchor Point 2012), presents as assessment of the existing wildfire risk for each local community and fire department capabilities (based on 2012 conditions), describes resources available to residents, and provides recommendations to reduce wildfire risk.

Loomis Municipal Code 12.04 – Grading, Erosion, and Sediment Control

A grading permit is required in situations where the amount of grading exceeds 50 cubic yards, would occur within a riparian area, or would involve clearing more than 1 acre of land. The grading permit requires submittal of grading plans, construction specifications, details related to construction in any water sources, necessary drainage facilities, an erosion and sediment control plan that provides the details of temporary and permanent sediment control measures, a landscaping plan (including temporary erosion control plantings), and calculations related to cut and fill. If rough grading is proposed between October 1 and May 1, a more detailed schedule of grading activities and use of erosion and sediment control facilities may be required.

Loomis Municipal Code Section 11.08 – Flood Damage Prevention

The Town's Flood Damage Prevention Ordinance is designed to protect public health and safety, and to minimize public and private losses due to flood conditions. The ordinance includes specific methods and provisions to:

- Restrict or prohibit uses which are dangerous to health, safety and property due to water or erosion hazards, or which result in damaging increases in erosion or flood heights or velocities;
- Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;

- Control the alteration of natural floodplains, stream channels and natural protective barriers, which help accommodate or channel flood waters;
- Control filling, grading, dredging and other development which may increase flood damage; and
- Prevent or regulate the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas.

Loomis Municipal Code Section 11.04 – Adoption of California Fire Code, As Amended

The South Placer Fire District evaluated the CBC Title 24, Part 9, known as the 2019 California Fire Code, and prepared an amendment that reflects the local climatic, geological, and topographical conditions in Placer County. The Town has adopted the 2019 California Fire Code with the local amendments, in Loomis Municipal Code Section 11.04. The California Fire Code establishes minimum standards for protection of life and property from fire, explosion, and hazardous materials release. Fire districts are authorized by law to enact stricter standards than those in state or local codes. Municipal Code Section 11.04 regulates roadway widths and turning radii, posting of plainly visible building addresses, fire flow requirements, storage of flammable hazards materials, and addresses interior building sprinkler systems and alarms, construction of turn-arounds at dead-end roads, and fire access roadways and gates.

Loomis Municipal Code Section 13.34.050 – Landscape Standards in Fire-prone Areas

Loomis Municipal Code Section 13.34.050 requires that on sites in heavily wooded and/or vegetated areas of the Planning Area that are identified by the fire district as being fire-prone, fire prevention will be addressed by providing fire-resistant landscaping buffers between development areas and naturally vegetated areas.

Loomis General Plan

The existing Town of Loomis General Plan goals and policies can be found in the Public Health & Safety Element (Chapter VIII) in General Plan Volume I. The Town's goals are to protect Town residents and workers from natural and human-induced hazards, including harmful and annoying noise effects, mitigate noise effects created by roadway traffic and non-residential land uses while discouraging the construction of sound walls, maintain and enhance the quiet and rural ambiance of the Town, and to minimize noise effects of railroad operations on residential and other sensitive land uses.

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Chapter

8 PARKS, RECREATION, AND OPEN SPACE

PARKS, RECREATION, AND OPEN SPACE

Open space is both a land use designation and a way of referring to land that is not developed with buildings or other intensive land uses. As a land use designation, open space is discussed in the Land Use Element and shown on the Land Use Map and if used for conservation of natural resources would be discussed in the Conservation Element. This setting refers to the consideration of open space as it is applied to land that is set aside for recreation and parks. Each of these is important to the identity of the town as a rural community, and to the preservation of the natural beauty of Loomis.

The Town of Loomis is proud of its partnership with schools and other agencies to meet the recreational needs of its residents. This element recognizes the significant benefit residents gain from these partnerships and continues the practice of working with others to improve the quality of life in Loomis.

The Town is fortunate to have riparian areas, natural creeks, and natural rural beauty. The Conservation Element preserves these areas to maintain the Town's rural character and natural resources. The Parks, Recreation and Open Space Element encourages additional areas near the resource that could be developed with park and recreational facilities to allow residents to enjoy the preserved natural beauty. Combined with trails and sidewalks, the addition of trails along natural features of the Town should incentivize walking to schools, employment, and recreation.

EXISTING PARK AND RECREATIONAL FACILITIES

The Town owns approximately five and a half acres of developed parks and relies on regional parks and school facilities to meet the remainder of residents' park, recreation, and open space needs. If only the Town-owned parkland is considered, the current ratio of parkland to population is 0.82 acre per 1,000 persons. Fortunately, through a series of joint use agreements with the school district, and proximity to regional parks, there are more opportunities than this amount of parkland would suggest. The land use pattern for the Town has large-lot residential on the periphery, with gradually smaller lots as development is closer to the Town center. Many of the existing residential parcels at the periphery are larger than the Town parks which reduces the need for parkland at the edge of Town as these residents have access to open space on their properties. As development becomes more intense near the Town core, or new higher-density development is approved, the need for parkland will increase as the available land for each unit will be substantially reduced.

There are also several other facilities and open space resources that serve the community's recreational needs. The Town has contributed funds to the Loomis Union School District and to Del Oro High School to provide recreational improvements. Although school facilities have limitations on use of their facilities (available to the public approximately 40 percent of the time), they represent a significant park and recreation resource for Loomis residents. Placer County also operates the Loomis Basin Regional Park on the northeast border of the Town, which Loomis residents frequently use. In addition, Sierra Community College has recreational facilities available for limited use by non-students. Bikeways, hiking and equestrian trails also provide recreational opportunities for residents. Figure 8-1 identifies the locations of all park and recreation facilities in available to Loomis residents. An inventory of park and recreational facilities in the vicinity of Loomis is provided in Table 8-1.

BIKEWAYS AND TRAILS

The Town of Loomis has designated several bikeways and trails within the community, which are also part of the Placer County Bikeway System and Trails Master Plan. Currently, one bikeway has been developed in Loomis along King Road. The County has designated several additional bikeways within Loomis as shown on Figure 8-1.

Table 8-1: Park & Recreational Facilities Accessible to the Town of Loomis			
Facility	**Amenities**	**Acreage**	**Location**
Town Owned Parks			
Sunrise-Loomis Neighborhood Park	2 softball fields; 1 tot lot; picnic area; open space	4.6	North Planning Area on Arcadia Avenue, between Humphrey and Swetzer Roads
Blue Anchor Park	Skateboard park; pavilion, splash pad, picnic tables	1.0	Next to the Loomis Train Station near Horseshoe Bar and Taylor Road.
Regional Parks Outside Town			
Loomis Basin Regional Park (Placer County)	2 softball fields; 1 soccer field; 1 basketball court; 1 tot lot; picnic area; snack bar; portable restrooms	33.0	Intersection of King and Winters Roads
School Facilities Accessed Through Agreement			
Loomis Elementary School	2 softball fields; 2 volleyball courts; 3 basketball courts; track field; tot lot	3.5	Intersection of Taylor and King Roads
H. Clarke Powers School	2 ball fields/soccer fields	6.5	Humphrey Road
Franklin Elementary School	3 ball diamonds; 1 soccer field; 2 basketball courts; 1 track field; 2 volleyball courts; 1 tot lot	4.2	Laird Road
Del Oro High School	1 softball field; 2 soccer fields; 1 football fields; track field; pool; 4 basketball courts; 5 tennis courts; 2 hardball courts	25.0 (approx.)	Taylor Road
Sierra Community College	track fields; trails	not known	Intersection of Rocklin Road and Sierra College Blvd.
Total Acreage	**77.8**		

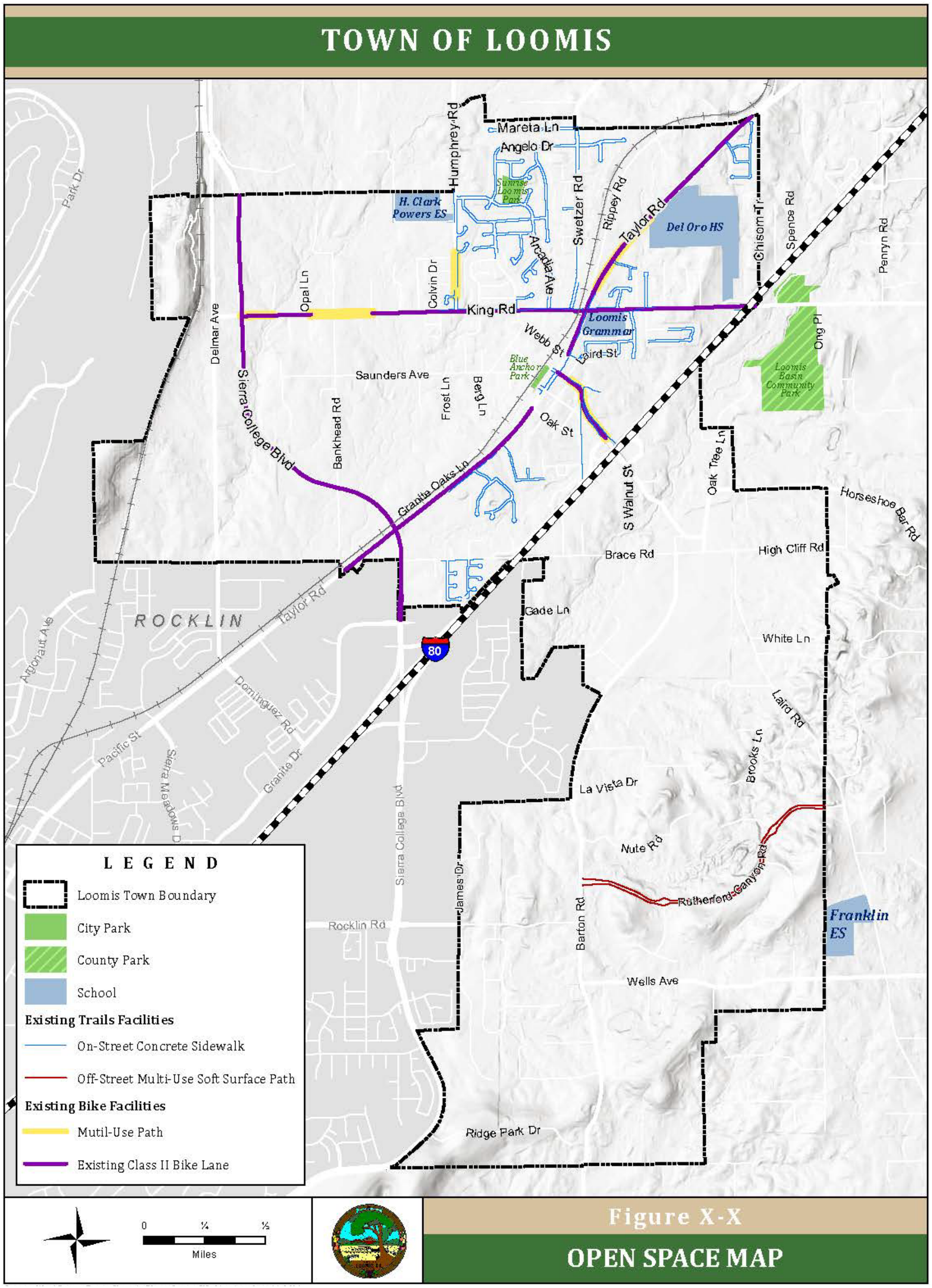
Source: Town of Loomis Draft Park and Recreation Master Plan, 2010

Antelope Creek and Secret Ravine provide opportunities for open space corridors potentially providing bikeways, hiking and equestrian trails. The creeks provide connections between the north and south areas of town, and to areas south of Loomis. A large area surrounding Secret Ravine north of Horseshoe Bar Road and west of Interstate 80 is designated, but not yet improved, as Public Quasi Public land. The County designated Secret Ravine as a Class 1 bicycle corridor in the 2004 Dry Creek Greenway Regional Vision master plan. The Secret Ravine corridor is planned to extend from Loomis Basin Regional Park, west to the city of Roseville. This bikeway has not yet been improved. Secret Ravine has also been designated as a hiking and equestrian trail in the Loomis Basin Horsemen's Association Trails Master Plan and in other County planning documents. While no bikeways or trails have been designated along Antelope Creek, it is an important open space resource providing flood protection and significant riparian habitat value and is also used as an informal hiking trail. The County trails master plan and surrounding community plans designate trails and pathways along several corridors within Loomis, as shown in Figure 8-1.

OTHER RECREATIONAL FACILITIES

There are several other regional recreational facilities within the Loomis Basin available to Town residents. These include Griffith Quarry Historic Park in Penryn, Mormon Park to the northeast town east of I-80, the Folsom Lake State Recreation Area (FLSRA), the American River Parkway, and private and municipal golf courses. The lake provides opportunities for boating, camping, hiking trails, beach activities, and picnic facilities. A regional trail can be accessed from Beals Point and Granite Bay (access points for FLSRA) which provide a connection to the American River Parkway along the north shore of Lake Natoma to the lower American River Parkway trail system.

Figure 8-1: Park and Recreation Facilities



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Chapter

9 ENVIRONMENTAL JUSTICE

ENVIRONMENTAL JUSTICE

Environmental Justice addresses discrimination through unjust land use policies and practices. Historically, policies that have discriminated against different groups of people have been based on practices of relocating those groups to undesirable or less desirable or hazardous locations, preventing groups from owning property, and allowing for health hazards to persist in areas in which certain groups reside. Issues of environmental justice may also occur in relation to access to food and recreation.

Although environmental justice has been a general plan consideration since 1999, passage of SB 1000 in 2016 led to the requirement for an Environmental Justice Element in city and county general plans in which a disadvantaged community exists. The purpose of SB 1000 is to, “Identify objectives and policies to reduce the unique or compounded health risks in disadvantaged communities by means that include, but are not limited to, the reduction of pollution exposure, including the improvement of air quality, and the promotion of public facilities, food access, safe and sanitary homes, and physical activity” (Gov. Code, § 65302(h)(1)(A)).

Under AB 1553, California Government Code § 65040.12 tasks the California Office of Planning and Research (OPR), which oversees General Planning in California, as a coordinating agency for state government environmental justice programs. OPR must coordinate with other state agencies such as the Natural Resources Agency, Environmental Protection Agency, and others to coordinate environmental justice programs and data with federal agencies. OPR is also tasked with developing General Plan Guidelines for environmental justice. The purpose of the guidelines is to:

1. “Propose methods for the equitable distribution of new public facilities and services that increase and enhance community quality of life throughout the community, given the fiscal and legal constraints that restrict the siting of these facilities;

2. Propose methods for providing for the location, if any, of industrial facilities and uses that, even with the best available technology, will contain or produce material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant hazard to human health and safety, in a

manner that seeks to avoid over-concentrating these uses in proximity to schools or residential dwellings;

3. Propose methods for providing for the location of new schools and residential dwellings in a manner that seeks to avoid locating these uses in proximity to industrial facilities and uses that will contain or produce material that because of its quantity, concentration, or physical or chemical characteristics, poses a significant hazard to human health and safety; and

4. Propose methods for promoting more livable communities by expanding opportunities for transit-oriented development so that residents minimize traffic and pollution impacts from traveling for purposes of work, shopping, schools, and recreation."

On June 24, 2020, OPR added environmental justice guidelines to the General Plan Guidelines document. The General Plan Guidelines provides a history of Environmental Justice in California, references environmental justice bills, including SB 1000 and AB 1553, describes the California Communities Environmental Screening Tool, describes how environmental justice may be integrated into the General Plan, and establishes guidance for determining if an Environmental Justice Element is required in a jurisdiction, and what policy topics should be included. As established in the General Plan Guidelines, an Environmental Justice Element is only required in jurisdictions within which a "disadvantaged community" has been identified; however, an Environmental Justice Element may be included in a General Plan as a non-required element for jurisdictions without a "disadvantaged community" at the discretion of that jurisdiction. Jurisdictions in which an Environmental Justice element is not required may include aspects of environmental justice, but are not required to address any specific topics or the breadth of topics that a jurisdiction with a "disadvantaged community" would be required to address. Environmental Justice policies may be included in an environmental justice element or may be referenced from other related elements in the General Plan. As noted in the content of the four guideline areas listed above, many aspects of environmental justice are addressed through other elements of a general plan, including land use, housing, circulation, parks and recreation, health and safety, and public services and facilities.

Fundamental to environmental justice is the term “disadvantaged community” which means an area that has been identified by the California Environmental Protection Agency (CalEPA) or a low-income area that is disproportionately affected by environmental pollution or hazards that can lead to adverse health or environmental effects. Low-income areas are defined as areas with household incomes below 80 percent of the statewide median or below thresholds established by the California Department of Housing and Community Development.

The CalEPA maintains an environmental justice program and an environmental justice task force that coordinates compliance and identifies disadvantaged communities. The California Communities Environmental Health Screening Tool (CalEnviroScreen) is maintained by the CalEPA and provides a mapping data tool to identify communities disproportionately affected by environmental pollution. This tool identifies disadvantaged communities. Current CalEnviroScreen data is from June, 2018, and shows southern Loomis within the lowest risk category of 1-10% and the portion of Loomis north of I-80 within the second lowest category of 11-20%. A draft update (CalEnviroScreen 4.0) has been prepared, but not yet finalized, and that draft detail is also shown with screening percentiles of 13% and 16%. These very low percentiles continue to show Loomis at a very low risk of containing a disadvantaged community or issues of health and equity that would cause environmental justice disparities. Detailed CalEnviroScreen data is shown in Table 9-1 below:

Table 9-1: CalEnviroScreen 3.0 and Draft 4.0 Data for Loomis

	CalEnviroScreen 3.0		Draft CalEnviroScreen 4.0	
	Loomis North of I-80[1]	Loomis South of I-80[2]	Loomis North of I-80[1]	Loomis South of I-80[2]
Population	6,536	6,970	7,962	8,183
CalEnviroScreen percentile	15-20%	5-10%	13%	16%
Pollution Burden Percentile	33%	30%	24%	35%
Population Characteristics Percentile	15%	5%	12%	12%

Table 9-1: CalEnviroScreen 3.0 and Draft 4.0 Data for Loomis				
	CalEnviroScreen 3.0		**Draft CalEnviroScreen 4.0**	
	Loomis North of I-80[1]	**Loomis South of I-80[2]**	**Loomis North of I-80[1]**	**Loomis South of I-80[2]**
Pollution Exposures				
Ozone	74%	74%	71%	72%
PM 2.5	18%	18%	10%	10%
Diesel Particulates	27%	13%	41%	19%
Pesticides	33%	34%	25%	41%
Toxic Releases	11%	11%	12%	12%
Traffic	51%	41%	41%	39%
Drinking Water	5%	10%	0%	32%
Lead from Housing	N/A	N/A	17%	10%
Environmental Effects				
Cleanup Sites	85%	90%	91%	94%
Groundwater Threats	67%	48%	72%	61%
Hazardous Waste	26%	9%	0%	0%
Impaired Water	0%	29%	0%	34%
Solid Waste	39%	51%	40%	52%
Sensitive Populations				
Asthma	18%	8%	16%	10%
Low Birth Weight	12%	3%	5%	26%
Cardiovascular Rate	25%	13%	48%	28%
Socioeconomic Factors				
Education	13%	14%	25%	14%
Linguistic Isolation	0%	5%	0%	3%

Table 9-1: CalEnviroScreen 3.0 and Draft 4.0 Data for Loomis				
	CalEnviroScreen 3.0		Draft CalEnviroScreen 4.0	
	Loomis North of I-80[1]	Loomis South of I-80[2]	Loomis North of I-80[1]	Loomis South of I-80[2]
Poverty	12%	16%	17%	22%
Unemployment	74%	66%	53%	44%
Housing Burden	66%	25%	32%	49%
Age Profile				
0-10	12%	10%	17%	12.6%
11-64	74%	73%	67.3%	68.3%
65+	13%	17%	15.7%	19%
Race/Ethnicity				
White	83%	85%	80.1%	83.8%
Hispanic	9%	7%	8%	4.3%
Asian American	3%	3%	4%	4.4%
Native American	1%	1%	<1%	<1%
African American	1%	1%	1.6%	2%
Other	4%	3%	6.3%	5.2%

Source: CalEnviroScreen 3.0, June 2018, (https://oehha.maps.arcgis.com/) accessed September 2020.

CalEnviroScreen 4.0, February 2021, (https://oehha.ca.gov/calenvirscreen/report/draft-calenviroscreen-40) accessed May 2020.

Notes:

1 Census Tract 6061021203; includes land outside of the Town limit, including the northern portion of Rocklin, and portions of the County between Penryn and Loomis

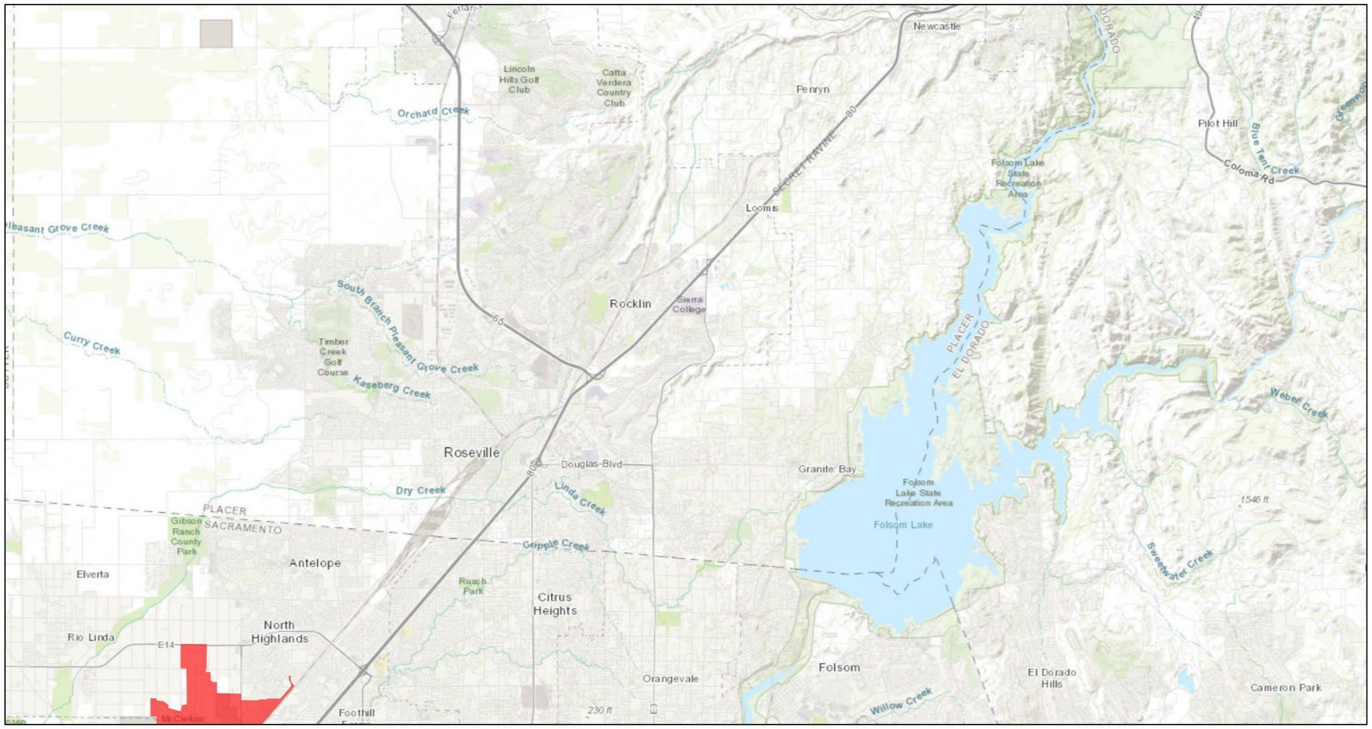
2 Census Tract 6061020602; includes land outside of the Town limit including portions of Rocklin east of Sierra College Boulevard and portions of the County west of Auburn Folsom Road and south of Gilardi Road.

There are 13 indicators related to pollution and eight indicators related to population characteristics or other health and social vulnerabilities. The percentages shown per indicator reveal the location's ranking in terms of hazard or vulnerability. Higher percentages reveal higher potential risk, while low percentages reveal no or low potential to occur. As shown in the data, Loomis and the surrounding area have an overall very low potential for issues of environmental justice to occur. While some indicator percentages are at the higher end of the spectrum, such as for toxic cleanups or ozone, other indicators were very low or zero, such as linguistic isolation, toxic releases, drinking water, asthma, or low birth weight.

Factors that exceeded 50 percent included: ozone for which the entire region is not within ozone pollutant attainment levels; traffic under the 3.0 assessment only for the area north of I-80; cleanup sites that include sites that have been cleaned and cleanup cases closed; groundwater threats which includes leaking underground storage tanks that have been addressed and are closed as well as potential for leaks into open canals and waterways; solid waste, which includes the closed dump site outside of the Town limit but within the census tract area for Loomis; unemployment, which decreased under the 4.0 assessment; and housing burden under 3.0 for the area north of I-80. It is important to note that the assessment uses census tracts that are not confined to Town limits that can affect the percentiles as cleanup sites and other factors outside the Town are applied. The Town is not able to control the census tract boundaries or how CalEPA chooses to assess areas and their boundaries, and therefore must work within these parameters to address the Town's response to ensuring an equitably healthy community.

The CalEPA map of disadvantaged communities based on the CalEnviroScreen data in Table 9-1 shows no disadvantaged communities within Loomis or Placer County, as depicted on Figure 9-1, (CalEPA Office of Environmental Health Hazard Assessment, SB 535 Disadvantaged Communities, https://oehha.maps.arcgis.com, accessed September 21, 2020).

Figure 9-1: SB 535 Disadvantaged Communities



September 21, 2020

SB 535 Disadvantaged Communities (June 2018 Update)

1:144,448

0 1.25 2.5 5 mi

0 2.25 4.5 9 km

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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Chapter

10 REFERENCES

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Town of Loomis
General Plan 2020–2040
Volume III: Appendices

Final

April 2024

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Appendix

A ACOUSTIC TERMINOLOGY

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Appendix A: Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
ASTC	Apparent Sound Transmission Class. Similar to STC but includes sound from flanking paths and correct for room reverberation. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by +5 dBA and nighttime hours weighted by +10 dBA.
DNL	See definition of Ldn.
IIC	Impact Insulation Class. An integer-number rating of how well a building floor attenuates impact sounds, such as footsteps. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz (Hz).
Ldn	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
Leq	Equivalent or energy-averaged sound level.
Lmax	The highest root-mean-square (RMS) sound level measured over a given period of time.
L(n)	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L50 is the sound level exceeded 50% of the time during the one-hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
NIC	Noise Isolation Class. A rating of the noise reduction between two spaces. Similar to STC but includes sound from flanking paths and no correction for room reverberation.
NNIC	Normalized Noise Isolation Class. Similar to NIC but includes a correction for room reverberation.
Noise	Unwanted sound.
NRC	Noise Reduction Coefficient. NRC is a single-number rating of the sound-absorption of a material equal to the arithmetic mean of the sound-absorption coefficients in the 250, 500, 1000, and 2,000 Hz octave frequency bands rounded to the nearest multiple of 0.05. It is a representation of the amount of sound energy absorbed upon striking a particular surface. An NRC of 0 indicates perfect reflection; an NRC of 1 indicates perfect absorption.
RT60	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 Sabin.
SEL	Sound Exposure Level. SEL is a rating, in decibels, of a discrete event, such as an aircraft flyover or train pass by, that compresses the total sound energy into a one-second event.
SPC	Speech Privacy Class. SPC is a method of rating speech privacy in buildings. It is designed to measure the degree of speech privacy provided by a closed room, indicating the degree to which conversations occurring within are kept private from listeners outside the room.
STC	Sound Transmission Class. STC is an integer rating of how well a building partition attenuates airborne sound. It is widely used to rate interior partitions, ceilings/floors, doors, windows and exterior wall configurations. The STC rating is typically used to rate the sound transmission of a specific building element when tested in laboratory conditions where flanking paths around the assembly don't exist. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
Simple Tone	Any sound which can be judged as audible as a single pitch or set of single pitches.

SAXELBY ACOUSTICS
Acoustics · Noise · Vibration

Appendix

B

CONTINUOUS AND SHORT-TERM AMBIENT NOISE MEASUREMENT RESULTS

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SAXELBY ACOUSTICS
Acoustics • Noise • Vibration

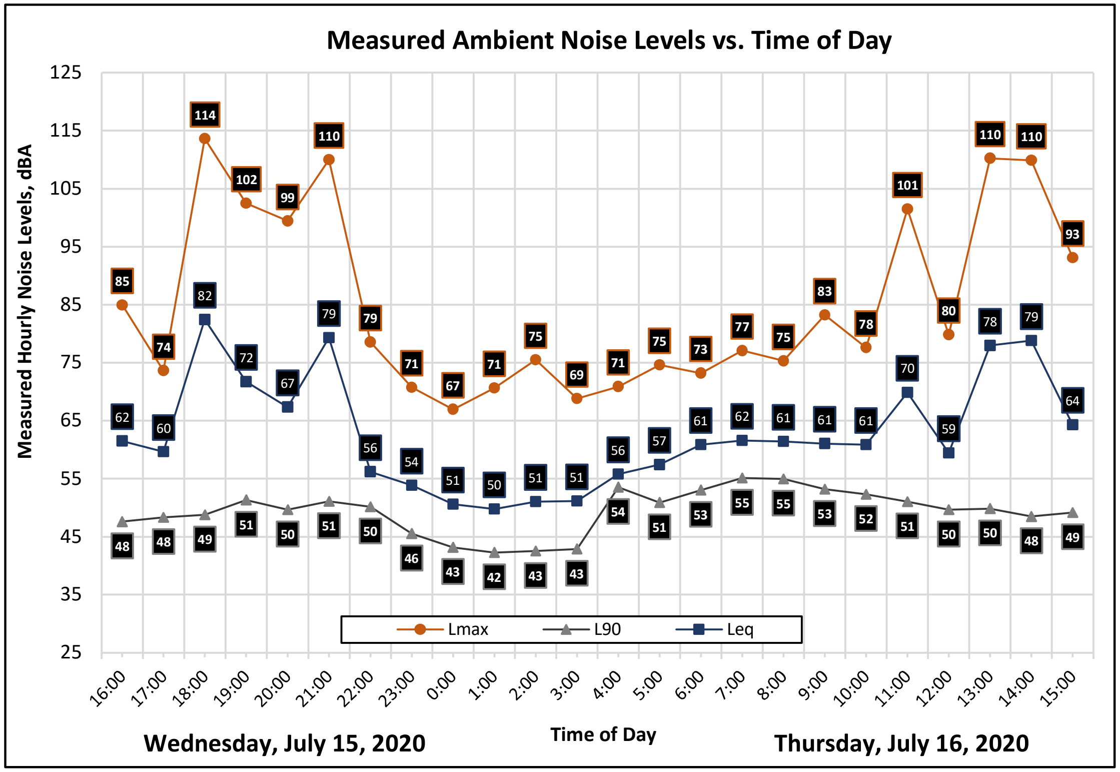
Appendix B: Continuous and Short-Term Ambient Noise Measurement Results

Appendix B1: Continuous Noise Monitoring Results

Site: LT-1
Project: Town of Loomis General Plan Update
Location: UPRR at Webb St.
Coordinates: 38.8229149°, -121.1937365°
Meter: LDL 820-2
Calibrator: CAL200

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Wednesday, July 15, 2020	16:00	62	85	55	48
Wednesday, July 15, 2020	17:00	60	74	54	48
Wednesday, July 15, 2020	18:00	82	114	55	49
Wednesday, July 15, 2020	19:00	72	102	56	51
Wednesday, July 15, 2020	20:00	67	99	55	50
Wednesday, July 15, 2020	21:00	79	110	53	51
Wednesday, July 15, 2020	22:00	56	79	52	50
Wednesday, July 15, 2020	23:00	54	71	51	46
Thursday, July 16, 2020	0:00	51	67	49	43
Thursday, July 16, 2020	1:00	50	71	45	42
Thursday, July 16, 2020	2:00	51	75	46	43
Thursday, July 16, 2020	3:00	51	69	47	43
Thursday, July 16, 2020	4:00	56	71	55	54
Thursday, July 16, 2020	5:00	57	75	55	51
Thursday, July 16, 2020	6:00	61	73	59	53
Thursday, July 16, 2020	7:00	62	77	59	55
Thursday, July 16, 2020	8:00	61	75	59	55
Thursday, July 16, 2020	9:00	61	83	57	53
Thursday, July 16, 2020	10:00	61	78	57	52
Thursday, July 16, 2020	11:00	70	101	55	51
Thursday, July 16, 2020	12:00	59	80	54	50
Thursday, July 16, 2020	13:00	78	110	55	50
Thursday, July 16, 2020	14:00	79	110	54	48
Thursday, July 16, 2020	15:00	64	93	55	49

Statistics	Leq	Lmax	L50	L90
Day Average	75	93	55	51
Night Average	56	72	51	47
Day Low	59	74	53	48
Day High	82	114	59	55
Night Low	50	67	45	42
Night High	61	79	59	54
Ldn	73	Day %		99
CNEL	74	Night %		1

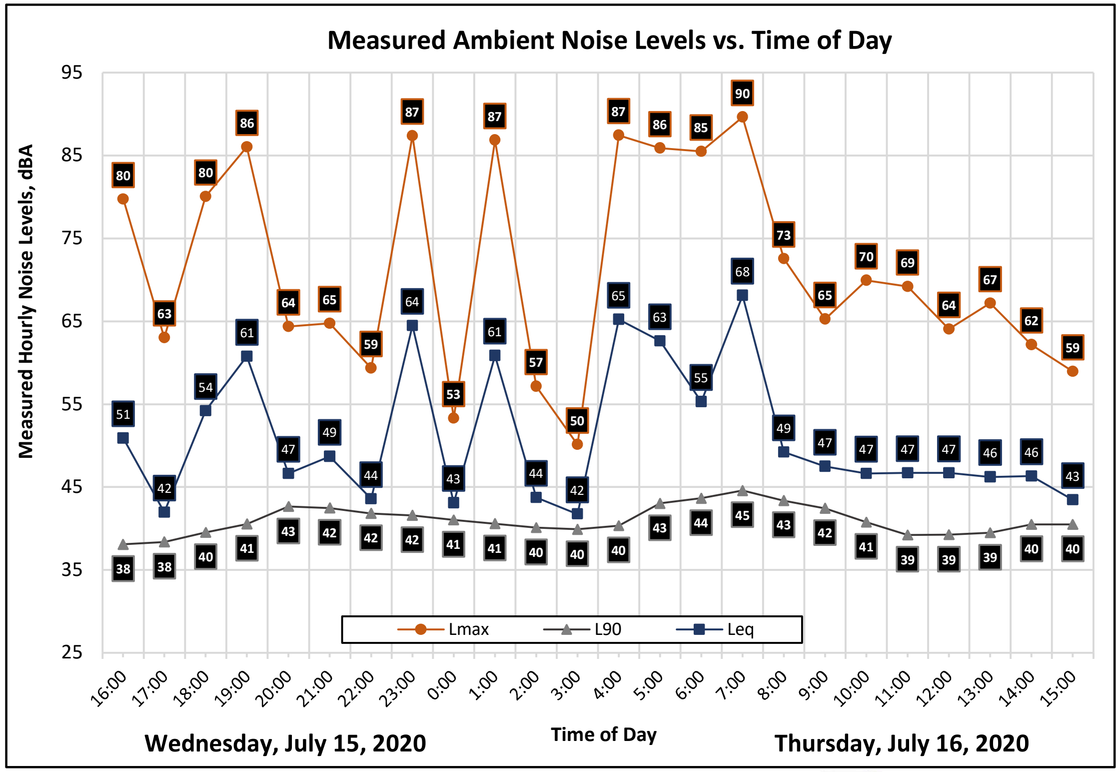


Appendix B2: Continuous Noise Monitoring Results

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Wednesday, July 15, 2020	16:00	51	80	40	38
Wednesday, July 15, 2020	17:00	42	63	40	38
Wednesday, July 15, 2020	18:00	54	80	42	40
Wednesday, July 15, 2020	19:00	61	86	43	41
Wednesday, July 15, 2020	20:00	47	64	45	43
Wednesday, July 15, 2020	21:00	49	65	45	42
Wednesday, July 15, 2020	22:00	44	59	43	42
Wednesday, July 15, 2020	23:00	64	87	43	42
Thursday, July 16, 2020	0:00	43	53	42	41
Thursday, July 16, 2020	1:00	61	87	42	41
Thursday, July 16, 2020	2:00	44	57	42	40
Thursday, July 16, 2020	3:00	42	50	41	40
Thursday, July 16, 2020	4:00	65	87	42	40
Thursday, July 16, 2020	5:00	63	86	45	43
Thursday, July 16, 2020	6:00	55	85	45	44
Thursday, July 16, 2020	7:00	68	90	47	45
Thursday, July 16, 2020	8:00	49	73	46	43
Thursday, July 16, 2020	9:00	47	65	45	42
Thursday, July 16, 2020	10:00	47	70	43	41
Thursday, July 16, 2020	11:00	47	69	41	39
Thursday, July 16, 2020	12:00	47	64	41	39
Thursday, July 16, 2020	13:00	46	67	42	39
Thursday, July 16, 2020	14:00	46	62	42	40
Thursday, July 16, 2020	15:00	43	59	42	40

Statistics	Leq	Lmax	L50	L90
Day Average	58	70	43	41
Night Average	60	73	43	41
Day Low	42	59	40	38
Day High	68	90	47	45
Night Low	42	50	41	40
Night High	65	87	45	44
Ldn	66	Day %		47
CNEL	67	Night %		53

Site: LT-2
Project: Town of Loomis General Plan Update
Location: UPRR at Gayaldo Park
Coordinates: 38.8071039°, -121.2277083°
Meter: LDL 820-1
Calibrator: CAL200

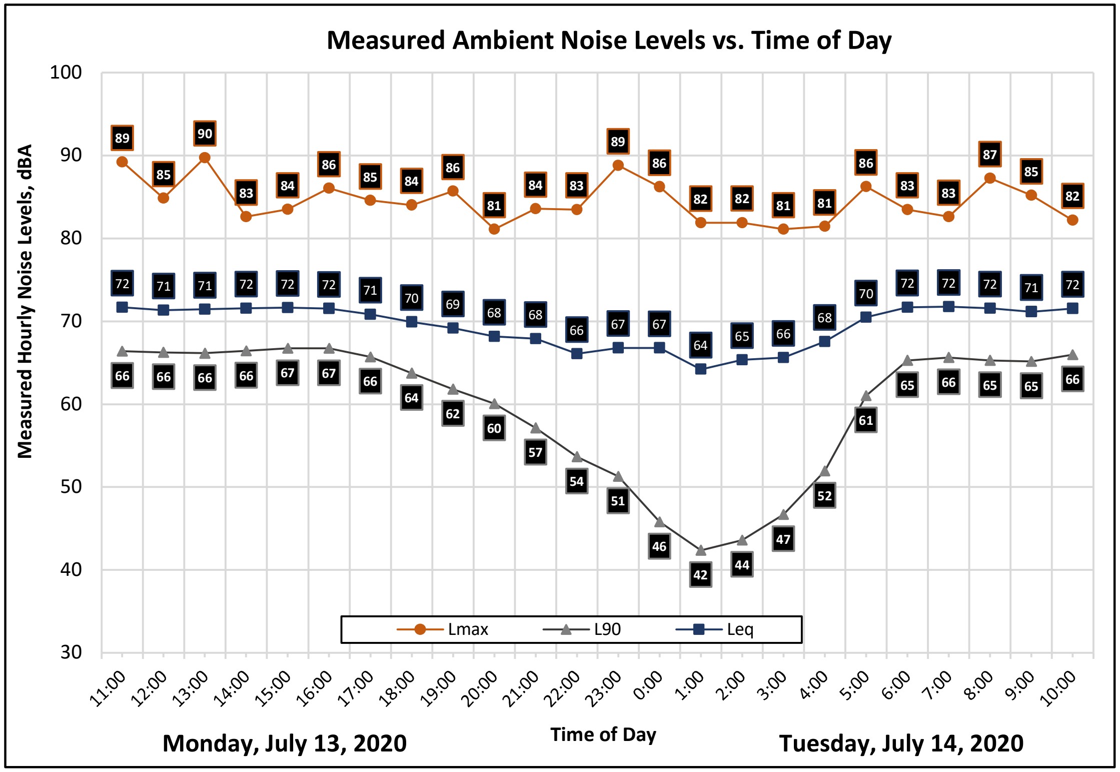


Appendix B3: Continuous Noise Monitoring Results

Site: LT-3
Project: Town of Loomis General Plan Update
Location: Interstate 80
Coordinates: 38.8163334°, -121.1891026°
Meter: LDL 812-1
Calibrator: CAL200

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Monday, July 13, 2020	11:00	72	89	70	66
Monday, July 13, 2020	12:00	71	85	70	66
Monday, July 13, 2020	13:00	71	90	70	66
Monday, July 13, 2020	14:00	72	83	70	66
Monday, July 13, 2020	15:00	72	84	70	67
Monday, July 13, 2020	16:00	72	86	70	67
Monday, July 13, 2020	17:00	71	85	70	66
Monday, July 13, 2020	18:00	70	84	69	64
Monday, July 13, 2020	19:00	69	86	67	62
Monday, July 13, 2020	20:00	68	81	66	60
Monday, July 13, 2020	21:00	68	84	65	57
Monday, July 13, 2020	22:00	66	83	62	54
Monday, July 13, 2020	23:00	67	89	61	51
Tuesday, July 14, 2020	0:00	67	86	59	46
Tuesday, July 14, 2020	1:00	64	82	55	42
Tuesday, July 14, 2020	2:00	65	82	56	44
Tuesday, July 14, 2020	3:00	66	81	58	47
Tuesday, July 14, 2020	4:00	68	81	62	52
Tuesday, July 14, 2020	5:00	70	86	68	61
Tuesday, July 14, 2020	6:00	72	83	70	65
Tuesday, July 14, 2020	7:00	72	83	70	66
Tuesday, July 14, 2020	8:00	72	87	70	65
Tuesday, July 14, 2020	9:00	71	85	70	65
Tuesday, July 14, 2020	10:00	72	82	70	66

Statistics	Leq	Lmax	L50	L90
Day Average	71	85	69	65
Night Average	68	84	61	51
Day Low	68	81	65	57
Day High	72	90	70	67
Night Low	64	81	55	42
Night High	72	89	70	65
Ldn	75	Day %		77
CNEL	75	Night %		23

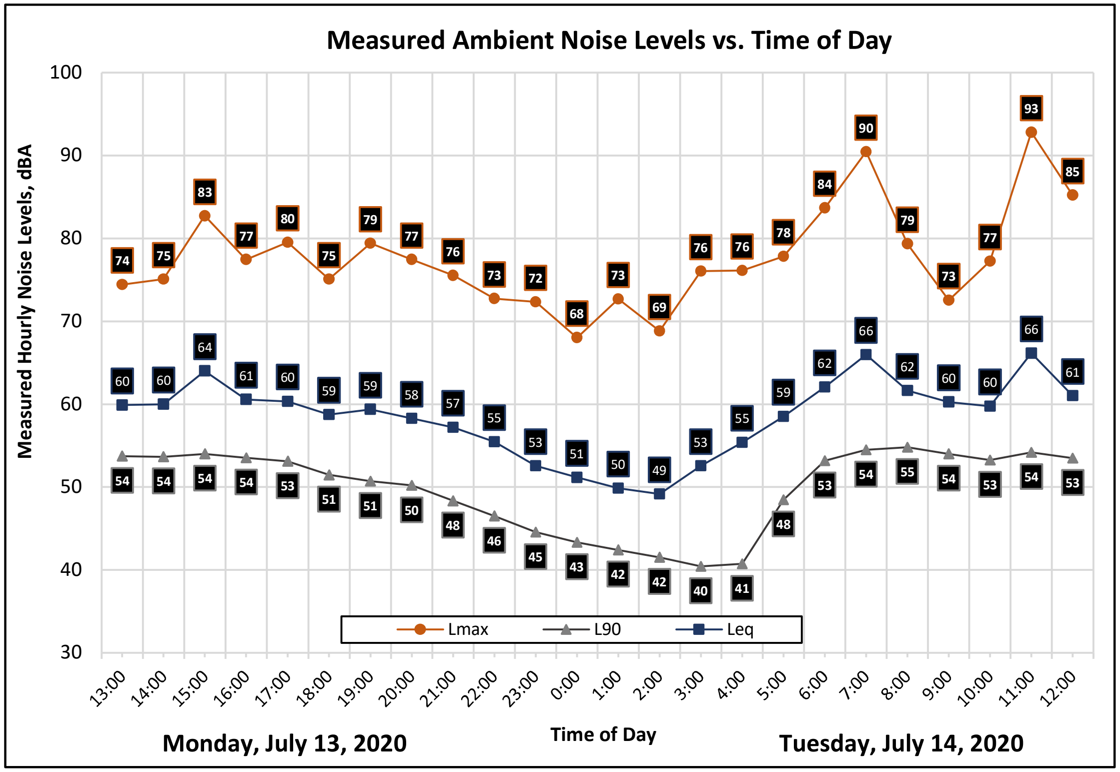


Appendix B4: Continuous Noise Monitoring Results

Site: LT-4
Project: Town of Loomis General Plan Update
Meter: LDL 812-2
Location: Sierra College Boulevard
Calibrator: CAL200
Coordinates: 38.8114304°, -121.2059388°

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Monday, July 13, 2020	13:00	60	74	58	54
Monday, July 13, 2020	14:00	60	75	58	54
Monday, July 13, 2020	15:00	64	83	58	54
Monday, July 13, 2020	16:00	61	77	58	54
Monday, July 13, 2020	17:00	60	80	58	53
Monday, July 13, 2020	18:00	59	75	57	51
Monday, July 13, 2020	19:00	59	79	57	51
Monday, July 13, 2020	20:00	58	77	56	50
Monday, July 13, 2020	21:00	57	76	54	48
Monday, July 13, 2020	22:00	55	73	52	46
Monday, July 13, 2020	23:00	53	72	48	45
Tuesday, July 14, 2020	0:00	51	68	46	43
Tuesday, July 14, 2020	1:00	50	73	44	42
Tuesday, July 14, 2020	2:00	49	69	43	42
Tuesday, July 14, 2020	3:00	53	76	43	40
Tuesday, July 14, 2020	4:00	55	76	47	41
Tuesday, July 14, 2020	5:00	59	78	55	48
Tuesday, July 14, 2020	6:00	62	84	59	53
Tuesday, July 14, 2020	7:00	66	90	60	54
Tuesday, July 14, 2020	8:00	62	79	59	55
Tuesday, July 14, 2020	9:00	60	73	58	54
Tuesday, July 14, 2020	10:00	60	77	58	53
Tuesday, July 14, 2020	11:00	66	93	58	54
Tuesday, July 14, 2020	12:00	61	85	58	53

Statistics	Leq	Lmax	L50	L90
Day Average	62	80	58	53
Night Average	56	74	48	45
Day Low	57	73	54	48
Day High	66	93	60	55
Night Low	49	68	43	40
Night High	62	84	59	53
Ldn	64	Day %		86
CNEL	64	Night %		14



Appendix B5 : Short Term Noise Monitoring Results

Site: ST-1
Project: Town of Loomis General Plan
Location: H. Clarke Powers Elementary School
Coordinates: 38.8309759°, -121.2012289°
Meter: LDL 831-3
Calibrator: CAL200

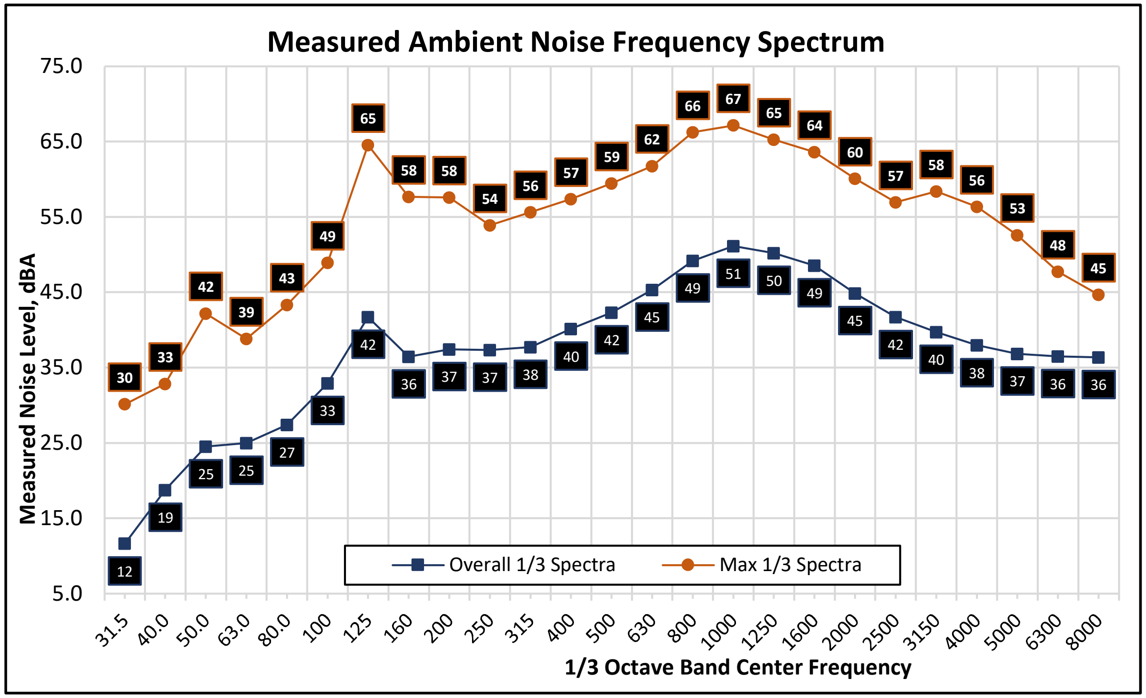
Start: 2020-07-13 11:31:11
Stop: 2020-07-13 11:41:11
SLM: Model 831
Serial: 1329

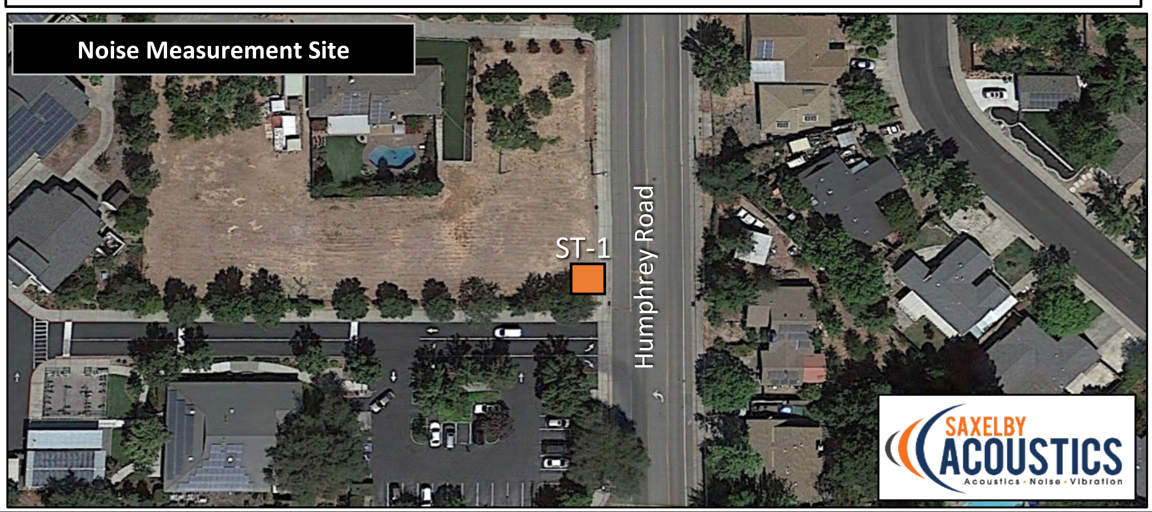
Measurement Results, dBA

Duration:	0:10
L_{eq}:	57
L_{max}:	73
L_{min}:	37
L_{50}:	42
L_{90}:	38

Notes

Primary noise source is Humphrey Ave.





Appendix B6 : Short Term Noise Monitoring Results

Site: ST-2
Project: Town of Loomis General Plan
Location: Del Oro High School
Coordinates: 38.8310516°, -121.1855356°
Meter: LDL 831-3
Calibrator: CAL200

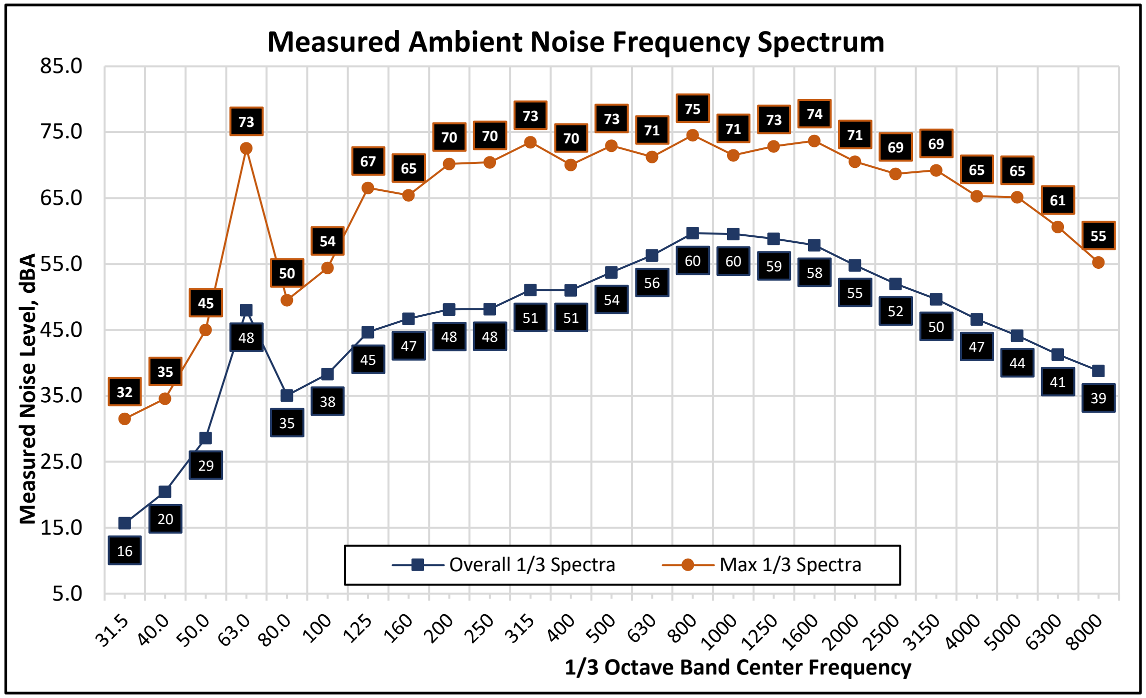
Start: 2020-07-13 11:09:07
Stop: 2020-07-13 11:19:07
SLM: Model 831
Serial: 1329

Measurement Results, dBA

Duration:	0:10
L_{eq}:	67
L_{max}:	83
L_{min}:	42
L_{50}:	59
L_{90}:	47

Notes

Primary noise source is traffic on Taylor Road.



Appendix B7 : Short Term Noise Monitoring Results

Site: ST-3
Project: Town of Loomis General Plan
Location: Sierra College Blvd. and King Rd.
Coordinates: 38.8251090°, -121.2172326°
Meter: LDL 831-3
Calibrator: CAL200

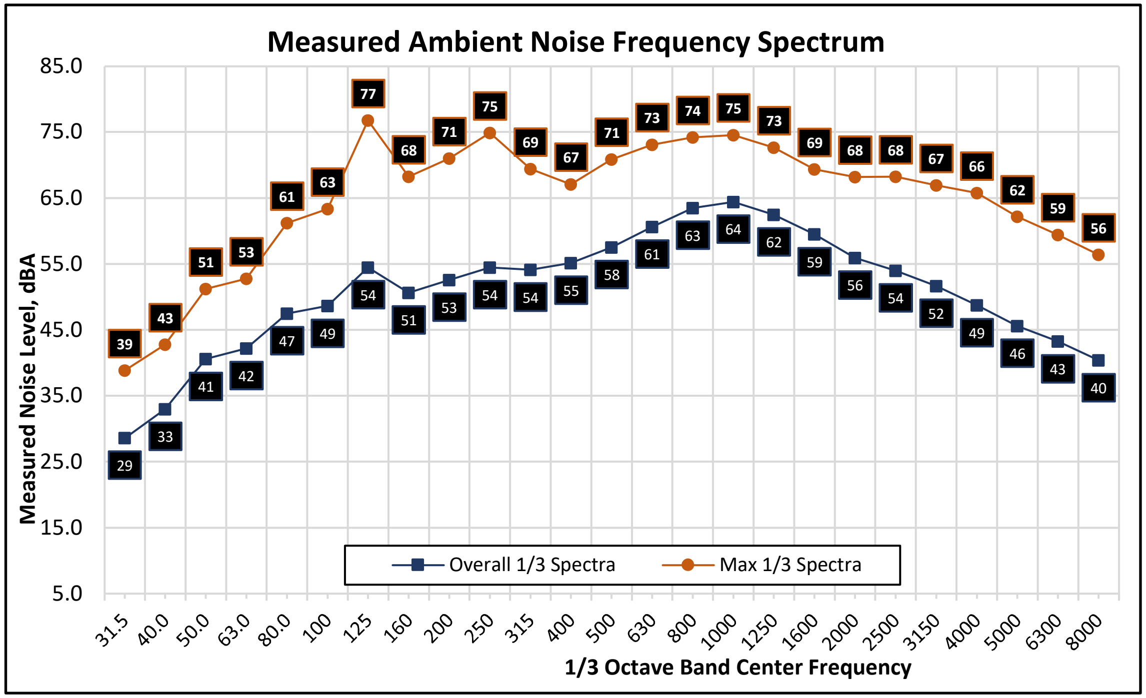
Start: 2020-07-13 11:52:00
Stop: 2020-07-13 12:02:00
SLM: Model 831
Serial: 1329

Measurement Results, dBA

Duration:	0:10
L_{eq}:	71
L_{max}:	82
L_{min}:	50
L_{50}:	67
L_{90}:	59

Notes

Primary noise source is Sierra College Blvd. Train horn audible in background.



Appendix B8 : Short Term Noise Monitoring Results

Site: ST-4
Project: Town of Loomis General Plan
Location: Saunders Rd.
Coordinates: 38.8214278°, -121.2035081°
Meter: LDL 831-3
Calibrator: CAL200

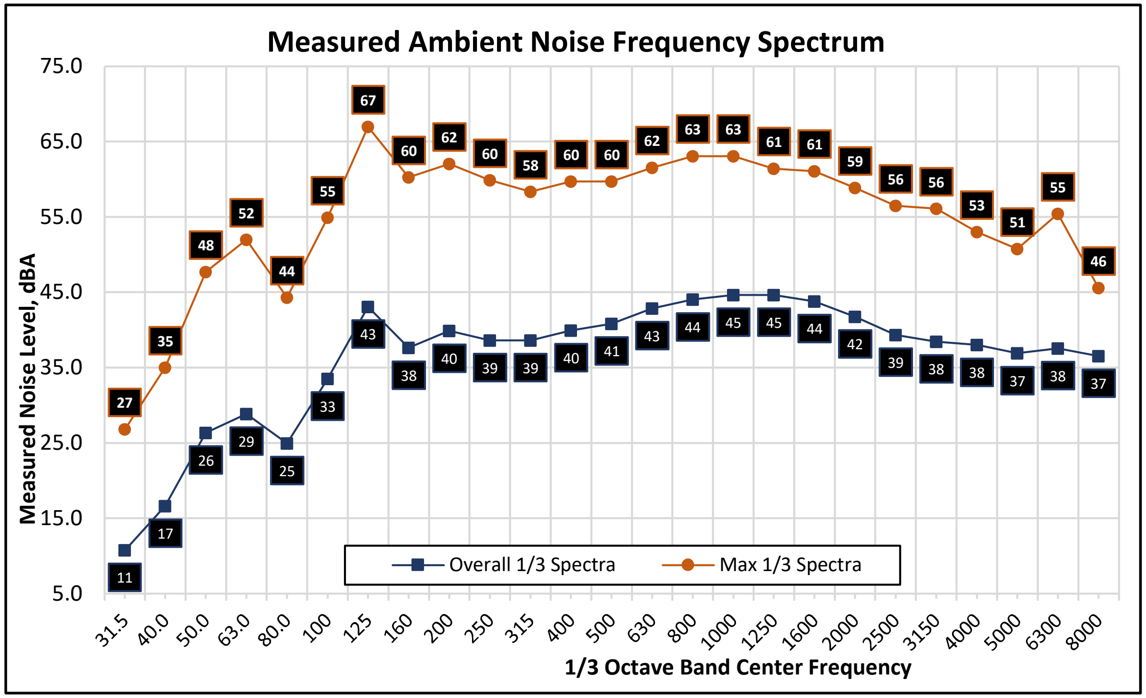
Start: 2020-07-13 12:10:18
Stop: 2020-07-13 12:20:18
SLM: Model 831
Serial: 1329

Measurement Results, dBA

Duration:	0:10
L_{eq}:	54
L_{max}:	72
L_{min}:	37
L_{50}:	42
L_{90}:	39

Notes

Background noise due to Sierra College Blvd. / Taylor Road. Natural sounds such as birds and insects. Lmax due to passing mail truck on Saunders Rd.



Appendix B9 : Short Term Noise Monitoring Results

Site: ST-5
Project: Town of Loomis General Plan
Location: Barton Road - Indian Creek Country Club
Coordinates: 38.8034354°, -121.1889527°
Meter: LDL 831-3
Calibrator: CAL200

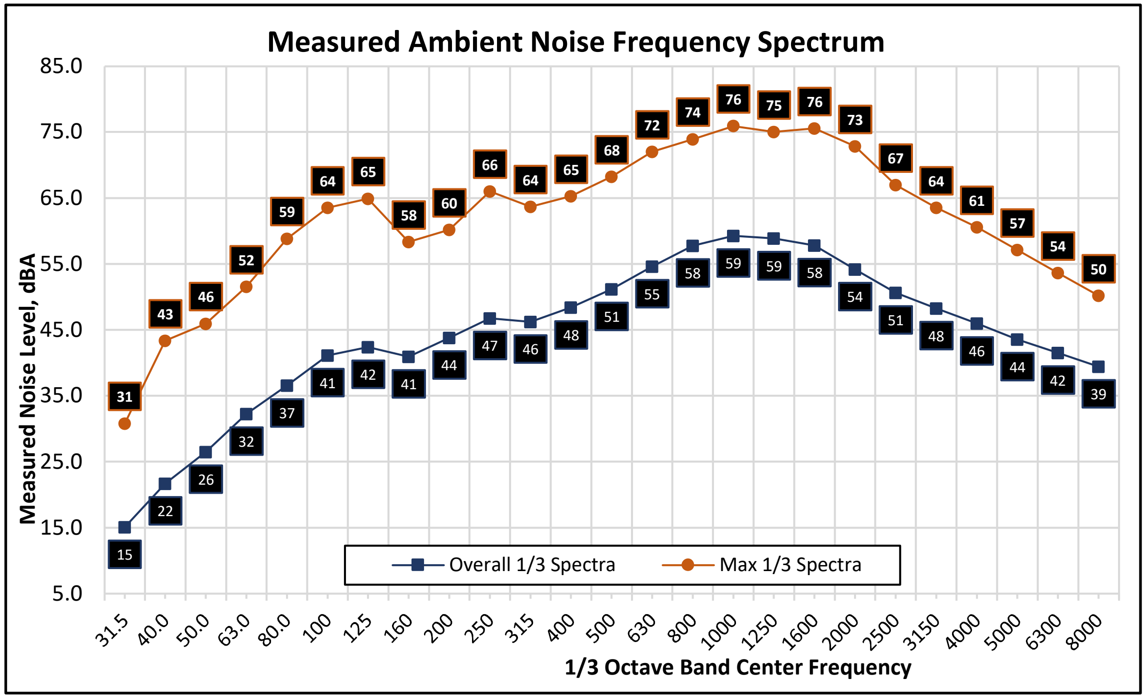
Start: 2020-07-13 09:41:41
Stop: 2020-07-13 09:51:41
SLM: Model 831
Serial: 1329

Measurement Results, dBA

Duration:	0:10
L_{eq}:	66
L_{max}:	82
L_{min}:	41
L_{50}:	53
L_{90}:	47

Notes

Primary noise source is traffic on Barton Road. Secondary noise sources include activity at the Indian Creek Driving Range, HVAC noise from the Secret Ravine Winery, and natural sounds such as bird and insect noise.



Appendix B10 : Short Term Noise Monitoring Results

Site: ST-6

Project: Town of Loomis General Plan

Location: Barton Rd. and Wells Ave.

Coordinates: 38.7849071°, -121.1919246°

Meter: LDL 831-3

Calibrator: CAL200

Start: 2020-07-13 09:19:08

Stop: 2020-07-13 09:29:08

SLM: Model 831

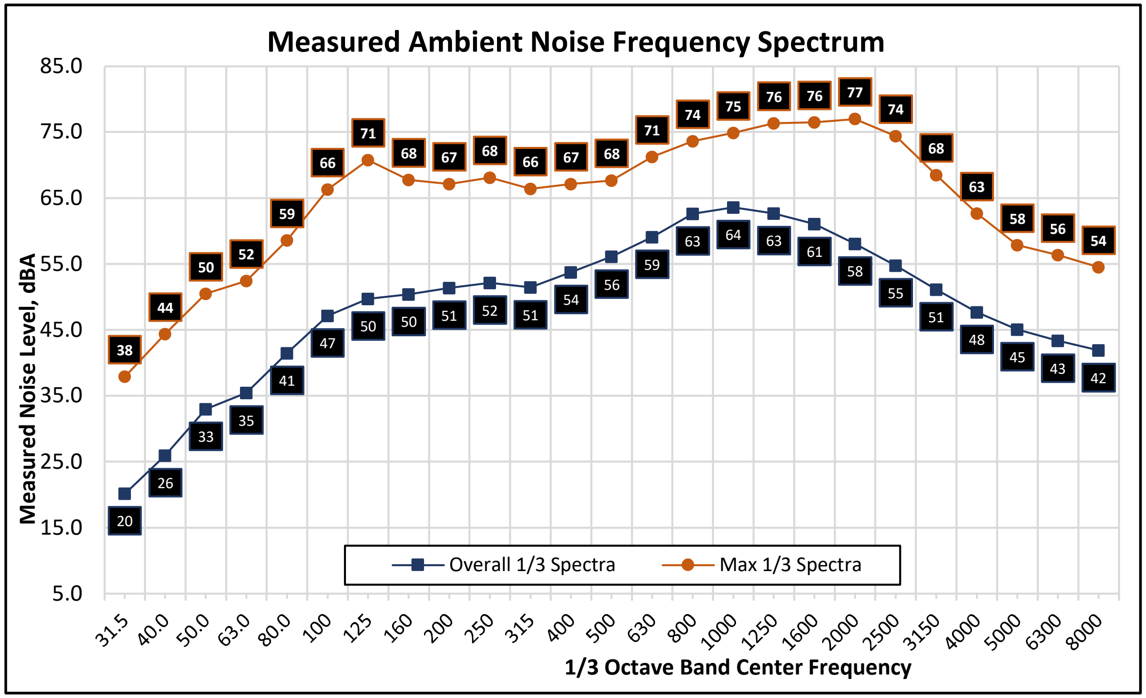
Serial: 1329

Measurement Results, dBA

Duration:	0:10
L_{eq}:	70
L_{max}:	83
L_{min}:	47
L_{50}:	65
L_{90}:	53

Notes

Primary noise source is Barton Road. Secondary noise source is Wells Ave.



Appendix

C

CAPTURE/LEAKAGE ANALYSIS

Table of Contents

Section **Page**

List of Tables

List of Figures

CAPTURE/LEAKAGE ANALYSIS

Table C-1: Estimated Households in Trade Areas

Trade Areas	2016	2020	2025	2030	2035	2040
Town of Loomis	2,302	2,418	2,543	2,663	2,780	2,822
Loomis Rural Area	2,706	2,793	2,939	3,142	3,344	3,515
Granite Bay	7,506	7,716	8,064	8,340	8,625	9,065
Rocklin	22,458	24,415	26,530	28,555	30,531	30,925
Lincoln	18,112	19,605	21,217	22,762	24,269	25,116
Roseville	50,179	54,169	58,479	62,608	66,635	69,678
Western Placer Total	103,263	111,115	119,772	128,070	136,185	141,120

Source: SACOG 2020 MTP/SCS, ACS, AECOM

Loomis Rural Area is comprised of the SACOG Regional Analysis District excluding the jurisdiction of the Town of Loomis. Granite Bay area and Loomis Rural Area data is estimated by AECOM; Rocklin, Lincoln, Roseville, and Town of Loomis are jurisdictions in SACOG data

Table C-2: Estimated Median Household Income (In constant 2018 $)						
Trade Areas	**2016[1]**	**2020**	**2025**	**2030**	**2035**	**2040**
Town of Loomis	$70,671	$68,384	$74,510	$77,750	$79,714	$81,239
Loomis Rural Area	$101,879	$98,582	$107,413	$112,083	$114,915	$117,113
Granite Bay	$132,034	$127,761	$139,207	$145,259	$148,929	$151,777
Rocklin	$97,508	$94,353	$102,805	$107,275	$109,985	$112,089
Lincoln	$81,417	$78,782	$85,840	$89,572	$91,835	$93,592
Roseville	$84,105	$81,383	$88,674	$92,529	$94,867	$96,682

Source: ACS, Caltrans Placer County Economic Forecast, ESRI Business Analyst, AECOM

[1] 2016 household median income based on 2014-2018 American Community Survey (ACS).
Loomis Rural Area is comprised of the SACOG Regional Analysis District excluding the jurisdiction of the Town of Loomis.

Table C-3: Estimated Total Income (In constant 2018 $)						
Trade Areas	**2016[1]**	**2020**	**2025**	**2030**	**2035**	**2040**
Town of Loomis	$162,684,642	$165,344,658	$189,486,104	$207,049,222	$221,605,175	$229,255,533
Loomis Rural Area	$275,659,652	$275,338,498	$315,687,929	$352,132,416	$384,322,888	$411,627,230
Granite Bay	$991,065,501	$985,805,515	$1,122,566,120	$1,211,443,151	$1,284,541,305	$1,375,801,950
Rocklin	$2,189,834,664	$2,303,635,607	$2,727,393,706	$3,063,269,193	$3,357,957,094	$3,466,343,023
Lincoln	$1,474,624,704	$1,544,501,401	$1,821,299,696	$2,038,860,574	$2,228,747,362	$2,350,645,567
Roseville	$4,220,304,795	$4,408,413,452	$5,185,554,269	$5,793,059,097	$6,321,470,011	$6,736,573,804
Total	**$9,314,173,958**	**$9,683,039,132**	**$11,361,987,824**	**$12,665,813,653**	**$13,798,643,835**	**$14,570,247,108**

Source: SACOG 2020 MTP/SCS, ACS, Caltrans Placer County Economic Forecast, ESRI Business Analyst, AECOM

[1] 2016 household median income based on 2014-2018 ACS.
Loomis Rural Area is comprised of the SACOG Regional Analysis District excluding the jurisdiction of the Town of Loomis.

Table C-4: Estimated Demand by Retail Sales Category Town of Loomis (In constant 2018 $)							
Retail Sales Category	**% of Total Income**	**2016**	**2020**	**2025**	**2030**	**2035**	**2040**
Clothing and Clothing Accessories Stores	3.10%	$5,048,813	$5,131,364	$5,880,579	$6,425,639	$6,877,373	$7,114,797
General Merchandise Stores	2.65%	$4,311,400	$4,381,895	$5,021,682	$5,487,132	$5,872,888	$6,075,634
Food and Beverage Stores	7.52%	$12,232,540	$12,432,551	$14,247,788	$15,568,390	$16,662,877	$17,238,121
Food Services and Drinking Places	6.37%	$10,359,094	$10,528,473	$12,065,701	$13,184,049	$14,110,913	$14,598,056
Home Furnishings and Appliance Stores	3.94%	$6,409,656	$6,514,459	$7,465,614	$8,157,588	$8,731,082	$9,032,500
Building Material and Garden Equipment and Supplies Dealers	1.50%	$2,436,558	$2,476,398	$2,837,968	$3,101,015	$3,319,022	$3,433,603
Motor Vehicle and Parts Dealers	5.32%	$8,647,364	$8,788,754	$10,071,972	$11,005,525	$11,779,234	$12,185,883
Gasoline Stations	3.29%	$5,345,514	$5,432,917	$6,226,160	$6,803,251	$7,281,532	$7,532,909
Other Retail Group	3.72%	$6,045,849	$6,144,703	$7,041,872	$7,694,570	$8,235,513	$8,519,823
Total	**37.40%**	**$60,836,787**	**$61,831,514**	**$70,859,337**	**$77,427,158**	**$82,870,434**	**$85,731,326**

Source: Bureau of Labor Statistics, SACOG 2020 MTP/SCS, ACS, Caltrans Placer County Economic Forecast, ESRI Business Analyst, AECOM

Table C-5: Estimated Demand by Retail Sales Category Loomis Rural Area (In constant 2018 $)

Retail Sales Category	% of Total Income	2016	2020	2025	2030	2035	2040
Clothing and Clothing Accessories Stores	3.10%	$8,554,919	$8,544,952	$9,797,170	$10,928,202	$11,927,212	$12,774,585
General Merchandise Stores	2.65%	$7,305,417	$7,296,906	$8,366,230	$9,332,066	$10,185,165	$10,908,773
Food and Beverage Stores	7.52%	$20,727,327	$20,703,179	$23,737,122	$26,477,446	$28,897,904	$30,950,964
Food Services and Drinking Places	6.37%	$17,552,881	$17,532,431	$20,101,718	$22,422,354	$24,472,112	$26,210,741
Home Furnishings and Appliance Stores	3.94%	$10,860,789	$10,848,136	$12,437,874	$13,873,760	$15,142,041	$16,217,812
Building Material and Garden Equipment and Supplies Dealers	1.50%	$4,128,606	$4,123,796	$4,728,117	$5,273,952	$5,756,075	$6,165,017
Motor Vehicle and Parts Dealers	5.32%	$14,652,454	$14,635,383	$16,780,123	$18,717,299	$20,428,356	$21,879,695
Gasoline Stations	3.29%	$9,057,662	$9,047,109	$10,372,916	$11,570,414	$12,628,133	$13,525,302
Other Retail Group	3.72%	$10,244,340	$10,232,405	$11,731,910	$13,086,297	$14,282,591	$15,297,303
Total	**37.40%**	**$103,084,393**	**$102,964,296**	**$118,053,180**	**$131,681,790**	**$143,719,588**	**$153,930,192**

Source: Bureau of Labor Statistics, SACOG 2020 MTP/SCS, ACS, Caltrans Placer County Economic Forecast, ESRI Business Analyst, AECOM

Loomis Rural Area is comprised of the SACOG Regional Analysis District excluding the jurisdiction of the Town of Loomis.

Table C-6: Estimated Demand by Retail Sales Category Granite Bay (In constant 2018 $)							
Retail Sales Category	**% of Total Income**	**2016**	**2020**	**2025**	**2030**	**2035**	**2040**
Clothing and Clothing Accessories Stores	3.10%	$30,757,076	$30,593,836	$34,838,113	$37,596,354	$39,864,908	$42,697,123
General Merchandise Stores	2.65%	$26,264,804	$26,125,406	$29,749,779	$32,105,161	$34,042,378	$36,460,929
Food and Beverage Stores	7.52%	$74,519,932	$74,124,424	$84,407,691	$91,090,509	$96,586,886	$103,448,932
Food Services and Drinking Places	6.37%	$63,107,004	$62,772,070	$71,480,427	$77,139,753	$81,794,345	$87,605,450
Home Furnishings and Appliance Stores	3.94%	$39,047,256	$38,840,017	$44,228,285	$47,729,975	$50,609,989	$54,205,591
Building Material and Garden Equipment and Supplies Dealers	1.50%	$14,843,372	$14,764,592	$16,812,881	$18,144,008	$19,238,813	$20,605,641
Motor Vehicle and Parts Dealers	5.32%	$52,679,242	$52,399,652	$59,669,046	$64,393,229	$68,278,699	$73,129,581
Gasoline Stations	3.29%	$32,564,562	$32,391,729	$36,885,427	$39,805,760	$42,207,629	$45,206,284
Other Retail Group	3.72%	$36,830,967	$36,635,490	$41,717,924	$45,020,862	$47,737,408	$51,128,928
Total	**37.40%**	**$370,614,216**	**$368,647,216**	**$419,789,572**	**$453,025,611**	**$480,361,054**	**$514,488,458**

Source: Bureau of Labor Statistics, SACOG 2020 MTP/SCS, ACS, Caltrans Placer County Economic Forecast, ESRI Business Analyst, AECOM

Table C-7: Estimated Demand by Retail Sales Category Rocklin (In constant 2018 $)							
Retail Sales Category	**% of Total Income**	**2016**	**2020**	**2025**	**2030**	**2035**	**2040**
Clothing and Clothing Accessories Stores	3.10%	$67,960,101	$71,491,840	$84,642,898	$95,066,576	$104,212,024	$107,575,711
General Merchandise Stores	2.65%	$58,034,084	$61,049,989	$72,280,250	$81,181,482	$88,991,177	$91,863,576
Food and Beverage Stores	7.52%	$164,657,461	$173,214,351	$205,077,457	$230,332,516	$252,490,610	$260,640,336
Food Services and Drinking Places	6.37%	$139,439,730	$146,686,109	$173,669,295	$195,056,474	$213,820,996	$220,722,570
Home Furnishings and Appliance Stores	3.94%	$86,277,885	$90,761,559	$107,457,319	$120,690,567	$132,301,055	$136,571,382
Building Material and Garden Equipment and Supplies Dealers	1.50%	$32,797,559	$34,501,977	$40,848,681	$45,879,150	$50,292,745	$51,916,061
Motor Vehicle and Parts Dealers	5.32%	$116,398,796	$122,447,788	$144,972,289	$162,825,464	$178,489,348	$184,250,510
Gasoline Stations	3.29%	$71,953,879	$75,693,166	$89,617,066	$100,653,307	$110,336,202	$113,897,561
Other Retail Group	3.72%	$81,380,825	$85,610,010	$101,358,132	$113,840,272	$124,791,759	$128,819,705
Total	**37.40%**	**$818,900,321**	**$861,456,789**	**$1,019,923,385**	**$1,145,525,809**	**$1,255,725,918**	**$1,296,257,412**

Source: Bureau of Labor Statistics, SACOG 2020 MTP/SCS, ACS, Caltrans Placer County Economic Forecast, ESRI Business Analyst, AECOM

Table C-8: Estimated Demand by Retail Sales Category Lincoln (In constant 2018 $)

Retail Sales Category	% of Total Income	2016	2020	2025	2030	2035	2040
Clothing and Clothing Accessories Stores	3.10%	$45,764,023	$47,932,601	$56,522,857	$63,274,718	$69,167,731	$72,950,763
General Merchandise Stores	2.65%	$39,079,888	$40,931,732	$48,267,324	$54,033,032	$59,065,332	$62,295,828
Food and Beverage Stores	7.52%	$110,879,586	$116,133,735	$136,946,679	$153,305,458	$167,583,375	$176,749,112
Food Services and Drinking Places	6.37%	$93,898,080	$98,347,543	$115,972,928	$129,826,316	$141,917,532	$149,679,511
Home Furnishings and Appliance Stores	3.94%	$58,099,136	$60,852,226	$71,757,877	$80,329,616	$87,811,017	$92,613,717
Building Material and Garden Equipment and Supplies Dealers	1.50%	$22,085,727	$23,132,284	$27,277,943	$30,536,392	$33,380,362	$35,206,054
Motor Vehicle and Parts Dealers	5.32%	$78,382,420	$82,096,656	$96,809,634	$108,373,897	$118,467,167	$124,946,562
Gasoline Stations	3.29%	$48,453,415	$50,749,433	$59,844,508	$66,993,152	$73,232,478	$77,237,825
Other Retail Group	3.72%	$54,801,478	$57,398,305	$67,684,960	$75,770,175	$82,826,938	$87,357,041
Total	**37.40%**	**$551,443,752**	**$577,574,515**	**$681,084,710**	**$762,442,757**	**$833,451,932**	**$879,036,414**

Source: Bureau of Labor Statistics, SACOG 2020 MTP/SCS, ACS, Caltrans Placer County Economic Forecast, ESRI Business Analyst, AECOM

Table C-9: Estimated Demand by Retail Sales Category Roseville (In constant 2018 $)

Retail Sales Category	% of Total Income	2016	2020	2025	2030	2035	2040
Clothing and Clothing Accessories Stores	3.10%	$130,974,427	$136,812,257	$160,930,319	$179,783,838	$196,182,729	$209,065,207
General Merchandise Stores	2.65%	$111,844,756	$116,829,933	$137,425,395	$153,525,234	$167,528,960	$178,529,867
Food and Beverage Stores	7.52%	$317,332,027	$331,476,243	$389,910,807	$435,590,147	$475,322,279	$506,534,652
Food Services and Drinking Places	6.37%	$268,731,777	$280,709,768	$330,194,922	$368,878,349	$402,525,398	$428,957,513
Home Furnishings and Appliance Stores	3.94%	$166,276,924	$173,688,268	$204,307,048	$228,242,294	$249,061,298	$265,416,084
Building Material and Garden Equipment and Supplies Dealers	1.50%	$63,208,286	$66,025,625	$77,665,007	$86,763,719	$94,677,827	$100,894,913
Motor Vehicle and Parts Dealers	5.32%	$224,326,706	$234,325,461	$275,633,719	$307,925,121	$336,012,353	$358,076,841
Gasoline Stations	3.29%	$138,671,337	$144,852,237	$170,387,633	$190,349,108	$207,711,704	$221,351,240
Other Retail Group	3.72%	$156,839,186	$163,829,868	$192,710,752	$215,287,454	$234,924,789	$250,351,291
Total	**37.40%**	**$1,578,205,428**	**$1,648,549,661**	**$1,939,165,603**	**$2,166,345,265**	**$2,363,947,337**	**$2,519,177,609**

Source: Bureau of Labor Statistics, SACOG 2020 MTP/SCS, ACS, Caltrans Placer County Economic Forecast, ESRI Business Analyst, AECOM

Table C-10: Estimated Total Demand by Retail Sales Category (In constant 2018 $)						
Retail Sales Category	**2016**	**2020**	**2025**	**2030**	**2035**	**2040**
Clothing and Clothing Accessories Stores	$289,059,358	$300,506,850	$352,611,936	$393,075,326	$428,231,978	$452,178,186
General Merchandise Stores	$246,840,351	$256,615,862	$301,110,659	$335,664,107	$365,685,900	$386,134,608
Food and Beverage Stores	$700,348,873	$728,084,484	$854,327,544	$952,364,467	$1,037,543,930	$1,095,562,117
Food Services and Drinking Places	$593,088,566	$616,576,394	$723,484,991	$806,507,296	$878,641,296	$927,773,842
Home Furnishings and Appliance Stores	$366,971,647	$381,504,665	$447,654,016	$499,023,801	$543,656,482	$574,057,087
Building Material and Garden Equipment and Supplies Dealers	$139,500,108	$145,024,670	$170,170,596	$189,698,237	$206,664,844	$218,221,289
Motor Vehicle and Parts Dealers	$495,086,981	$514,693,695	$603,936,783	$673,240,534	$733,455,157	$774,469,072
Gasoline Stations	$306,046,369	$318,166,590	$373,333,710	$416,174,992	$453,397,677	$478,751,121
Other Retail Group	$346,142,645	$359,850,781	$422,245,551	$470,699,630	$512,798,998	$541,474,090
Total	**$3,483,084,897**	**$3,621,023,991**	**$4,248,875,786**	**$4,736,448,390**	**$5,160,076,263**	**$5,448,621,411**

Source: Bureau of Labor Statistics, SACOG 2020 MTP/SCS, ACS, Caltrans Placer County Economic Forecast, ESRI Business Analyst, AECOM

Table C-11: Estimated Retail Demand by Trade Area - Year 2020 (In constant 2018 $)						
Retail Sales Category	**Town of Loomis**	**Loomis Rural Area**	**Granite Bay**	**Rocklin**	**Lincoln**	**Roseville**
Clothing and Clothing Accessories Stores	$5,131,364	$8,544,952	$30,593,836	$71,491,840	$47,932,601	$136,812,257
General Merchandise Stores	$4,381,895	$7,296,906	$26,125,406	$61,049,989	$40,931,732	$116,829,933
Food and Beverage Stores	$12,432,551	$20,703,179	$74,124,424	$173,214,351	$116,133,735	$331,476,243
Food Services and Drinking Places	$10,528,473	$17,532,431	$62,772,070	$146,686,109	$98,347,543	$280,709,768
Home Furnishings and Appliance Stores	$6,514,459	$10,848,136	$38,840,017	$90,761,559	$60,852,226	$173,688,268
Building Material and Garden Equipment and Supplies Dealers	$2,476,398	$4,123,796	$14,764,592	$34,501,977	$23,132,284	$66,025,625
Motor Vehicle and Parts Dealers	$8,788,754	$14,635,383	$52,399,652	$122,447,788	$82,096,656	$234,325,461
Gasoline Stations	$5,432,917	$9,047,109	$32,391,729	$75,693,166	$50,749,433	$144,852,237
Other Retail Group	$6,144,703	$10,232,405	$36,635,490	$85,610,010	$57,398,305	$163,829,868
Total	**$61,831,514**	**$102,964,296**	**$368,647,216**	**$861,456,789**	**$577,574,515**	**$1,648,549,661**
Percent of Total Demand	**1.71%**	**2.84%**	**10.18%**	**23.79%**	**15.95%**	**45.53%**

Source: Bureau of Labor Statistics, SACOG 2020 MTP/SCS, ACS, Caltrans Placer County Economic Forecast, ESRI Business Analyst, AECOM

Table C-12: Estimated Retail Supply by Trade Area - Year 2020 (In constant 2018 $)							
Retail Sales Category	**Town of Loomis**	**Loomis Rural Area**	**Granite Bay**	**Rocklin**	**Lincoln**	**Roseville**	**Total**
Clothing and Clothing Accessories Stores	$11,619	$0	$2,054,458	$22,115,110	$14,290,062	$405,535,479	$444,006,728
General Merchandise Stores	$0	$2,536,673	$11,245,916	$96,772,635	$38,502,182	$601,194,394	$750,251,800
Food and Beverage Stores	$34,763,233	$2,711,339	$62,495,297	$151,258,794	$56,182,470	$463,755,657	$771,166,790
Food Services and Drinking Places	$11,886,749	$2,765,806	$17,516,771	$121,450,038	$64,519,946	$456,732,491	$674,871,801
Home Furnishings and Appliance Stores	$3,924,291	$1,411,238	$8,937,838	$154,292,089	$5,205,453	$214,151,582	$387,922,491
Building Material and Garden Equipment and Supplies Dealers	$6,470,234	$1,694,365	$10,730,976	$44,536,366	$62,112,635	$216,820,024	$342,364,599
Motor Vehicle and Parts Dealers	$2,917,790	$3,411,795	$0	$456,525,747	$9,571,243	$1,448,736,863	$1,921,163,438
Gasoline Stations	$0	$3,372,828	$6,408,373	$108,745,550	$69,949,175	$245,949,653	$434,425,579
Other Retail Group	$8,244,730	$5,959,673	$8,068,281	$101,275,985	$27,265,429	$270,067,195	$420,881,293
Total	**$68,218,646**	**$23,863,716**	**$127,457,911**	**$1,256,972,314**	**$347,598,595**	**$4,322,943,338**	**$6,147,054,520**
Percent of Total Supply	**1%**	**0%**	**2%**	**20%**	**6%**	**70%**	**100%**

Source: California Department of Tax and Fee Administration, ESRI Business Analyst, AECOM

Loomis Rural Area is comprised of the SACOG Regional Analysis District excluding the jurisdiction of the Town of Loomis.

Table C-13: Retail Market Estimated Supply vs. Estimated Demand, Town of Loomis (In constant 2018 $)					
Retail Sales Category	**Estimated Supply[1] 2020**	**Estimated Demand 2020**	**Demand v. Supply 2020**	**Estimated Demand 2040**	**Demand v. Supply 2040**
Clothing and Clothing Accessories Stores	$11,619	$5,131,364	($5,119,745)	$7,114,797	($7,103,178)
General Merchandise Stores	$0	$4,381,895	($4,381,895)	$6,075,634	($6,075,634)
Food and Beverage Stores	$34,763,233	$12,432,551	$22,330,682	$17,238,121	$17,525,112
Food Services and Drinking Places	$11,886,749	$10,528,473	$1,358,276	$14,598,056	($2,711,307)
Home Furnishings and Appliance Stores	$3,924,291	$6,514,459	($2,590,168)	$9,032,500	($5,108,209)
Building Material and Garden Equipment and Supplies Dealers	$6,470,234	$2,476,398	$3,993,836	$3,433,603	$3,036,631
Motor Vehicle and Parts Dealers	$2,917,790	$8,788,754	($5,870,964)	$12,185,883	($9,268,093)
Gasoline Stations	$0	$5,432,917	($5,432,917)	$7,532,909	($7,532,909)
Other Retail Group	$8,244,730	$6,144,703	$2,100,027	$8,519,823	($275,093)
Total	**$68,218,646**	**$61,831,514**	**$6,387,132**	**$85,731,326**	**($17,512,680)**

Source: California Department of Tax and Fee Administration, Bureau of Labor Statistics, SACOG 2020 MTP/SCS, ACS, Caltrans Placer County Economic Forecast, ESRI Business Analyst, AECOM

[1] Supply is assumed to remain constant in comparison to both current and future demand.

Table C-14: Retail Market Estimated Supply vs. Estimated Demand, Loomis Rural Area (In constant 2018 $)

Retail Sales Category	Estimated Supply[1] 2020	Estimated Demand 2020	Demand v. Supply 2020	Estimated Demand 2040	Demand v. Supply 2040
Clothing and Clothing Accessories Stores	$0	$8,544,952	($8,544,952)	$12,774,585	($12,774,585)
General Merchandise Stores	$2,536,673	$7,296,906	($4,760,233)	$10,908,773	($8,372,100)
Food and Beverage Stores	$2,711,339	$20,703,179	($17,991,840)	$30,950,964	($28,239,625)
Food Services and Drinking Places	$2,765,806	$17,532,431	($14,766,625)	$26,210,741	($23,444,935)
Home Furnishings and Appliance Stores	$1,411,238	$10,848,136	($9,436,898)	$16,217,812	($14,806,574)
Building Material and Garden Equipment and Supplies Dealers	$1,694,365	$4,123,796	($2,429,431)	$6,165,017	($4,470,653)
Motor Vehicle and Parts Dealers	$3,411,795	$14,635,383	($11,223,588)	$21,879,695	($18,467,900)
Gasoline Stations	$3,372,828	$9,047,109	($5,674,281)	$13,525,302	($10,152,475)
Other Retail Group	$5,959,673	$10,232,405	($4,272,731)	$15,297,303	($9,337,630)
Total	**$23,863,716**	**$102,964,296**	**($79,100,580)**	**$153,930,192**	**($130,066,476)**

Source: California Department of Tax and Fee Administration, Bureau of Labor Statistics, SACOG 2020 MTP/SCS, ACS, Caltrans Placer County Economic Forecast, ESRI Business Analyst AECOM

[1] Supply is assumed to remain constant in comparison to both current and future demand.
Loomis Rural Area is comprised of the SACOG Regional Analysis District excluding the jurisdiction of the Town of Loomis.

Table C-15: Retail Market Estimated Supply vs. Estimated Demand, Granite Bay (In constant 2018 $)					
Retail Sales Category	**Estimated Supply[1] 2020**	**Estimated Demand 2020**	**Demand v. Supply 2020**	**Estimated Demand 2040**	**Demand v. Supply 2040**
Clothing and Clothing Accessories Stores	$2,054,458	$30,593,836	($28,539,378)	$42,697,123	($40,642,664)
General Merchandise Stores	$11,245,916	$26,125,406	($14,879,490)	$36,460,929	($25,215,013)
Food and Beverage Stores	$62,495,297	$74,124,424	($11,629,127)	$103,448,932	($40,953,635)
Food Services and Drinking Places	$17,516,771	$62,772,070	($45,255,299)	$87,605,450	($70,088,679)
Home Furnishings and Appliance Stores	$8,937,838	$38,840,017	($29,902,178)	$54,205,591	($45,267,753)
Building Material and Garden Equipment and Supplies Dealers	$10,730,976	$14,764,592	($4,033,616)	$20,605,641	($9,874,665)
Motor Vehicle and Parts Dealers	$0	$52,399,652	($52,399,652)	$73,129,581	($73,129,581)
Gasoline Stations	$6,408,373	$32,391,729	($25,983,356)	$45,206,284	($38,797,911)
Other Retail Group	$8,068,281	$36,635,490	($28,567,210)	$51,128,928	($43,060,647)
Total	**$127,457,911**	**$368,647,216**	**($241,189,306)**	**$514,488,458**	**($387,030,547)**

Source: California Department of Tax and Fee Administration, Bureau of Labor Statistics, SACOG 2020 MTP/SCS, ACS, Caltrans Placer County Economic Forecast, ESRI Business Analyst, AECOM

[1] Supply is assumed to remain constant in comparison to both current and future demand.

Table C-16: Retail Market Estimated Supply vs. Estimated Demand, Rocklin (In constant 2018 $)					
Retail Sales Category	**Estimated Supply[1] 2020**	**Estimated Demand 2020**	**Demand v. Supply 2020**	**Estimated Demand 2040**	**Demand v. Supply 2040**
Clothing and Clothing Accessories Stores	$22,115,110	$71,491,840	($49,376,730)	$107,575,711	($85,460,601)
General Merchandise Stores	$96,772,635	$61,049,989	$35,722,646	$91,863,576	$4,909,059
Food and Beverage Stores	$151,258,794	$173,214,351	($21,955,557)	$260,640,336	($109,381,542)
Food Services and Drinking Places	$121,450,038	$146,686,109	($25,236,071)	$220,722,570	($99,272,532)
Home Furnishings and Appliance Stores	$154,292,089	$90,761,559	$63,530,530	$136,571,382	$17,720,707
Building Material and Garden Equipment and Supplies Dealers	$44,536,366	$34,501,977	$10,034,389	$51,916,061	($7,379,695)
Motor Vehicle and Parts Dealers	$456,525,747	$122,447,788	$334,077,959	$184,250,510	$272,275,237
Gasoline Stations	$108,745,550	$75,693,166	$33,052,384	$113,897,561	($5,152,011)
Other Retail Group	$101,275,985	$85,610,010	$15,665,975	$128,819,705	($27,543,720)
Total	**$1,256,972,314**	**$861,456,789**	**$395,515,525**	**$1,296,257,412**	**($39,285,098)**

Source: California Department of Tax and Fee Administration, Bureau of Labor Statistics, SACOG 2020 MTP/SCS, ACS, Caltrans Placer County Economic Forecast, ESRI Business Analyst, AECOM

1 Supply is assumed to remain constant in comparison to both current and future demand.

Table C-17: Retail Market Estimated Supply vs. Estimated Demand, Lincoln (In constant 2018 $)					
Retail Sales Category	**Estimated Supply[1] 2020**	**Estimated Demand 2020**	**Demand v. Supply 2020**	**Estimated Demand 2040**	**Demand v. Supply 2040**
Clothing and Clothing Accessories Stores	$14,290,062	$47,932,601	($33,642,539)	$72,950,763	($58,660,701)
General Merchandise Stores	$38,502,182	$40,931,732	($2,429,550)	$62,295,828	($23,793,646)
Food and Beverage Stores	$56,182,470	$116,133,735	($59,951,265)	$176,749,112	($120,566,642)
Food Services and Drinking Places	$64,519,946	$98,347,543	($33,827,597)	$149,679,511	($85,159,565)
Home Furnishings and Appliance Stores	$5,205,453	$60,852,226	($55,646,773)	$92,613,717	($87,408,264)
Building Material and Garden Equipment and Supplies Dealers	$62,112,635	$23,132,284	$38,980,351	$35,206,054	$26,906,581
Motor Vehicle and Parts Dealers	$9,571,243	$82,096,656	($72,525,413)	$124,946,562	($115,375,319)
Gasoline Stations	$69,949,175	$50,749,433	$19,199,742	$77,237,825	($7,288,650)
Other Retail Group	$27,265,429	$57,398,305	($30,132,876)	$87,357,041	($60,091,612)
Total	**$347,598,595**	**$577,574,515**	**($229,975,920)**	**$879,036,414**	**($531,437,819)**

Source: California Department of Tax and Fee Administration, Bureau of Labor Statistics, SACOG 2020 MTP/SCS, ACS, Caltrans Placer County Economic Forecast, ESRI Business Analyst, AECOM

[1] Supply is assumed to remain constant in comparison to both current and future demand.

Table C-18: Retail Market Estimated Supply vs. Estimated Demand, Roseville (In constant 2018 $)

Retail Sales Category	Estimated Supply[1] 2020	Estimated Demand 2020	Demand v. Supply 2020	Estimated Demand 2040	Demand v. Supply 2040
Clothing and Clothing Accessories Stores	$405,535,479	$136,812,257	$268,723,222	$209,065,207	$196,470,272
General Merchandise Stores	$601,194,394	$116,829,933	$484,364,461	$178,529,867	$422,664,527
Food and Beverage Stores	$463,755,657	$331,476,243	$132,279,414	$506,534,652	($42,778,995)
Food Services and Drinking Places	$456,732,491	$280,709,768	$176,022,723	$428,957,513	$27,774,978
Home Furnishings and Appliance Stores	$214,151,582	$173,688,268	$40,463,314	$265,416,084	($51,264,502)
Building Material and Garden Equipment and Supplies Dealers	$216,820,024	$66,025,625	$150,794,399	$100,894,913	$115,925,111
Motor Vehicle and Parts Dealers	$1,448,736,863	$234,325,461	$1,214,411,402	$358,076,841	$1,090,660,022
Gasoline Stations	$245,949,653	$144,852,237	$101,097,416	$221,351,240	$24,598,413
Other Retail Group	$270,067,195	$163,829,868	$106,237,327	$250,351,291	$19,715,904
Total	**$4,322,943,338**	**$1,648,549,661**	**$2,674,393,677**	**$2,519,177,609**	**$1,803,765,729**

Source: California Department of Tax and Fee Administration, Bureau of Labor Statistics, SACOG 2020 MTP/SCS, ACS, Caltrans Placer County Economic Forecast, ESRI Business Analyst AECOM

[1] Supply is assumed to remain constant in comparison to both current and future demand.

Table C-19: Retail Market Estimated Supply vs. Estimated Demand Summary by Retail Sales Category (In constant 2018 $)					
Retail Sales Category	**Estimated Supply[1] 2020**	**Estimated Demand 2020**	**Surplus/ Leakage 2020**	**Estimated Demand 2040**	**Surplus/Leakage 2040**
Clothing and Clothing Accessories Stores	$444,006,728	$300,506,850	$143,499,878	$452,178,186	($8,171,457)
General Merchandise Stores	$750,251,800	$256,615,862	$493,635,938	$386,134,608	$364,117,192
Food and Beverage Stores	$771,166,790	$728,084,484	$43,082,306	$1,095,562,117	($324,395,327)
Food Services and Drinking Places	$674,871,801	$616,576,394	$58,295,407	$927,773,842	($252,902,041)
Home Furnishings and Appliance Stores	$387,922,491	$381,504,665	$6,417,826	$574,057,087	($186,134,596)
Building Material and Garden Equipment and Supplies Dealers	$342,364,599	$145,024,670	$197,339,929	$218,221,289	$124,143,310
Motor Vehicle and Parts Dealers	$1,921,163,438	$514,693,695	$1,406,469,743	$774,469,072	$1,146,694,366
Gasoline Stations	$434,425,579	$318,166,590	$116,258,989	$478,751,121	($44,325,542)
Other Retail Group	$420,881,293	$359,850,781	$61,030,512	$541,474,090	($120,592,797)
Total	**$6,147,054,520**	**$3,621,023,991**	**$2,526,030,528**	**$5,448,621,411**	**$698,433,108**

Source: CA Department of Tax and Fee Administration, Bureau of Labor Statistics, SACOG 2020 MTP/SCS, ACS, Caltrans Placer County Economic Forecast, ESRI Business Analyst AECOM

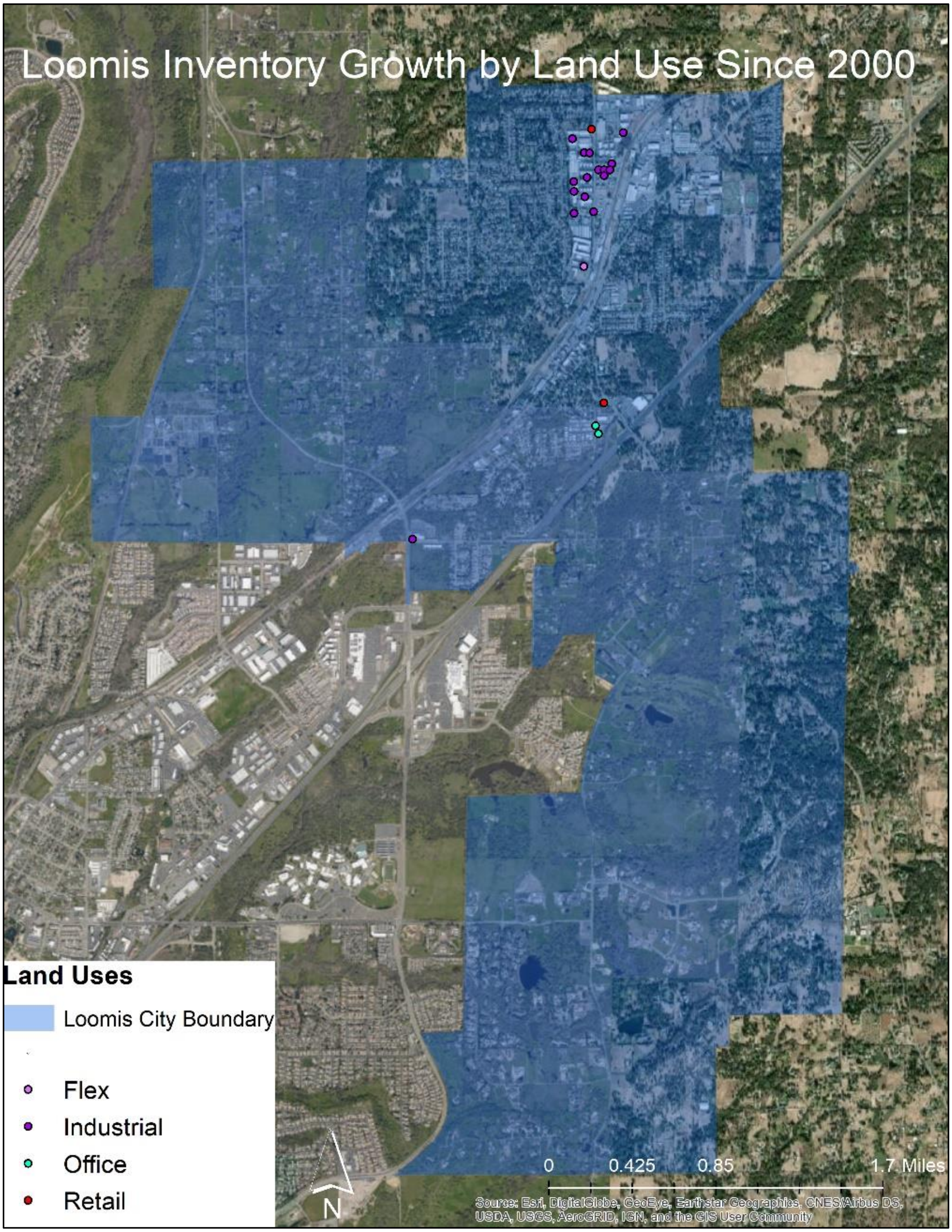
[1] Supply is assumed to remain constant in comparison to both current and future demand.

Table C-20: Retail Market Estimated Supply vs. Estimated Demand Summary by Trade Area					
Trade Area (In constant 2018 $)	**Estimated Supply[1] 2020**	**Estimated Demand 2020**	**Surplus/Leakage 2020**	**Estimated Demand 2040**	**Surplus/Leakage 2040**
Town of Loomis	$68,218,646	$61,831,514	$6,387,132	$85,731,326	($17,512,680)
Loomis Rural Area	$23,863,716	$102,964,296	($79,100,580)	$153,930,192	($130,066,476)
Granite Bay	$127,457,911	$368,647,216	($241,189,306)	$514,488,458	($387,030,547)
Rocklin	$1,256,972,314	$861,456,789	$395,515,525	$1,296,257,412	($39,285,098)
Lincoln	$347,598,595	$577,574,515	($229,975,920)	$879,036,414	($531,437,819)
Roseville	$4,322,943,338	$1,648,549,661	$2,674,393,677	$2,519,177,609	$1,803,765,729
Total	**$6,147,054,520**	**$3,621,023,991**	**$2,526,030,528**	**$5,448,621,411**	**$698,433,108**

Source: California Department of Tax and Fee Administration, Bureau of Labor Statistics, SACOG 2020 MTP/SCS, ACS, Caltrans Placer County Economic Forecast, ESRI Business Analyst
AECOM

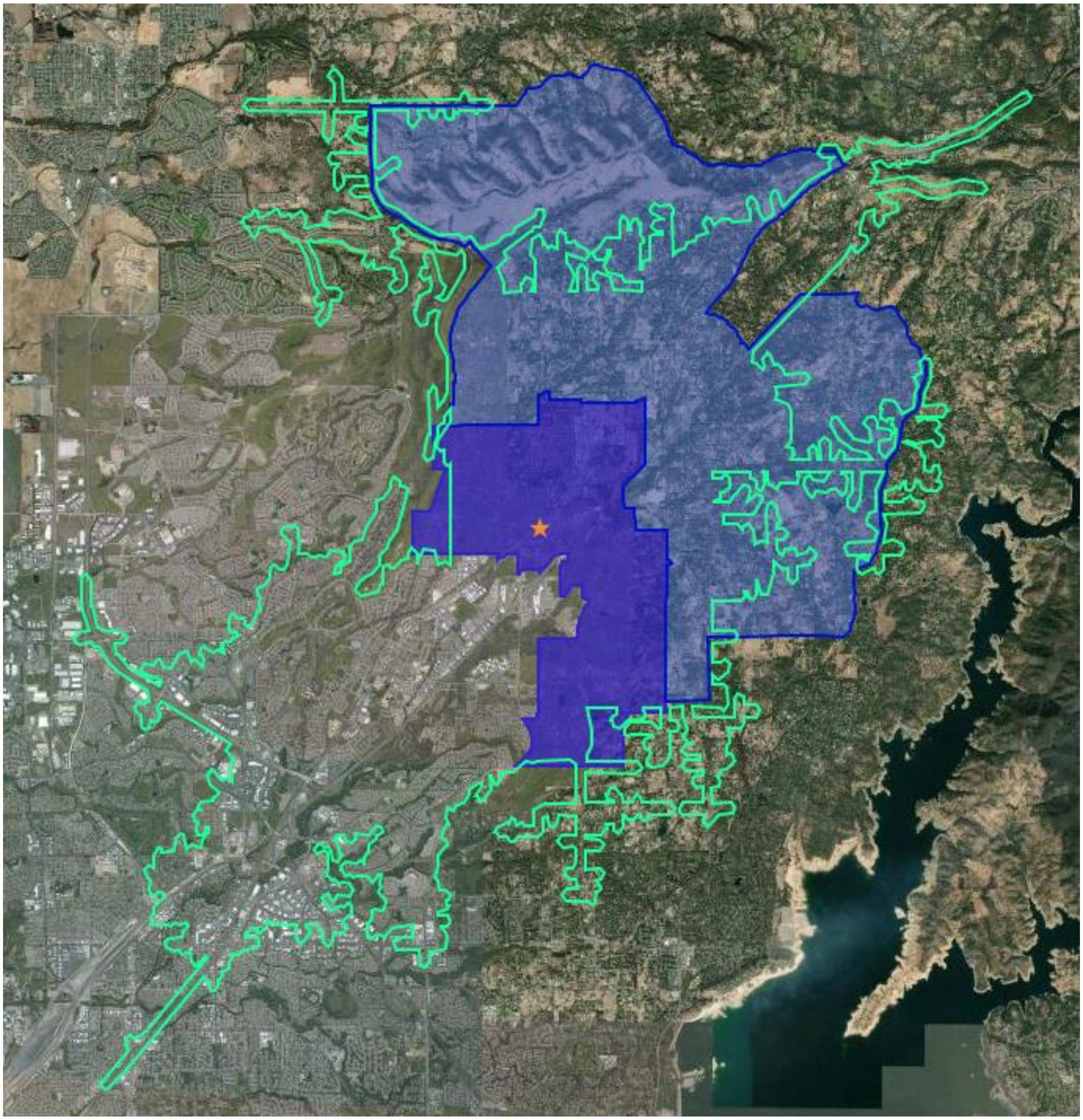
[1] Supply is assumed to remain constant in comparison to both current and future demand.
Loomis Rural Area is comprised of the SACOG Regional Analysis District excluding the jurisdiction of the Town of Loomis.

Figure C-1: Land Use Inventory Growth 2000-2020



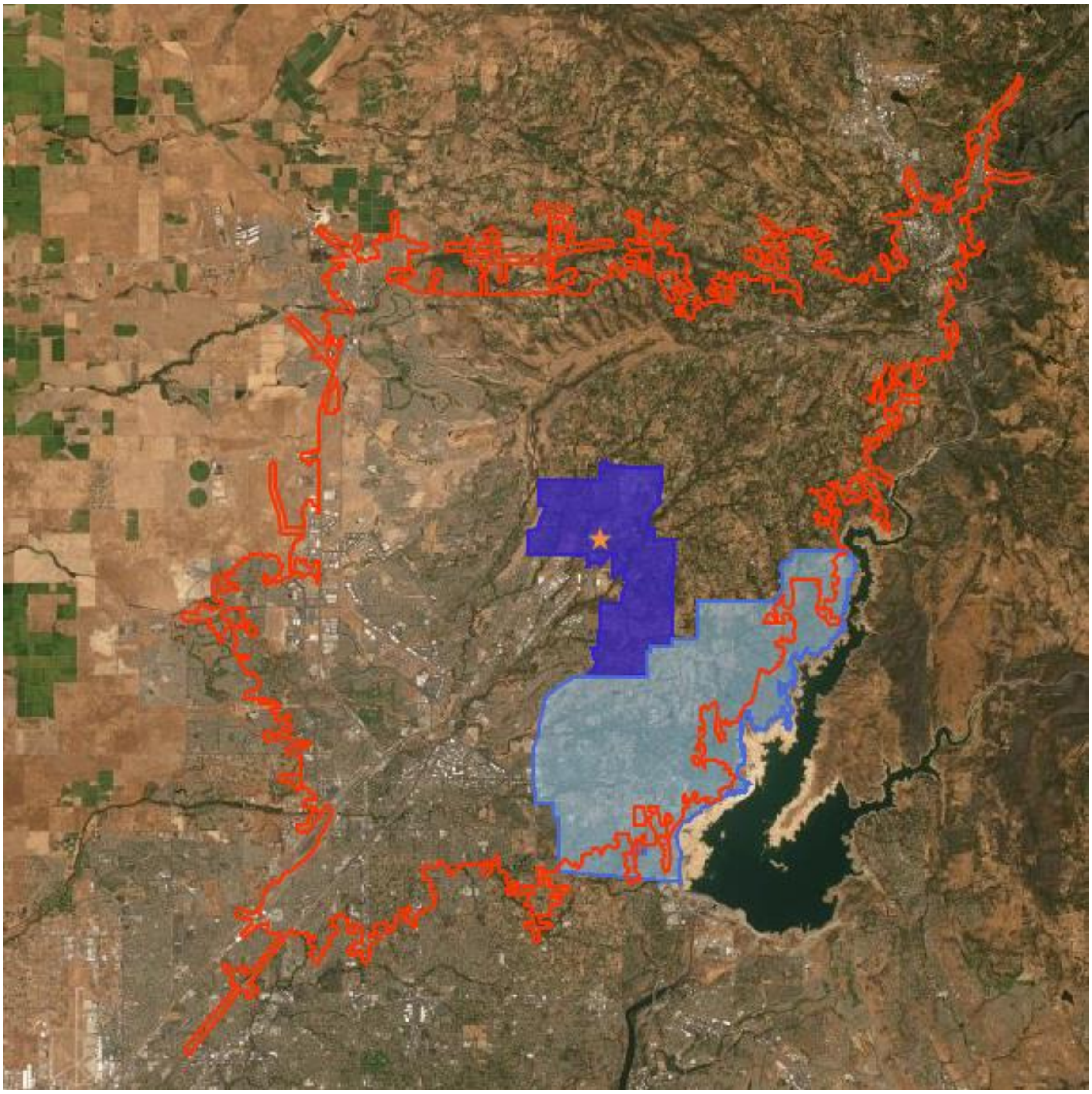
Source: ESRI, 2020; Costar, 2020; AECOM, 2020

Figure C-2: Secondary Retail Market



Source: ESRI, 2020; SACOG, 2020; AECOM, 2020

Figure C-3: Tertiary Retail Market



Source: ESRI, 2020; SACOG, 2020; AECOM, 2020

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Appendix

D ABSORPTION ANALYSIS

Table of Contents

List of Tables

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ABSORPTION ANALYSIS

Table D-1: Town of Loomis Retail Assumptions

Retail Assumptions	Neighborhood Retail	Other Retail
% Retail Spending by Retail Category	30%	70%
% of Household Income Spent on Retail Category	11%	26%
Floor-to-Area Ratio (FAR)	0.25	0.25
Stabilized Vacancy Rate	10%	10%
Retail Sales per SF	$225	$300
Capture Rates:		
Town of Loomis	75%	50%
Loomis Rural Area	0%	40%
Granite Bay	0%	20%
Rocklin	0%	5.0%
Lincoln	0%	5.0%
Roseville	0%	0.0%
Land Uses:		
Neighborhood Commercial	100%	0%
Other Commercial	0%	100.0%

Source: Bureau of Labor Statistics Consumer Expenditure Survey; International Council of Shopping Centers, ESRI Business Analyst, AECOM

Table D-2: Town of Loomis - Future Retail Demand & Absorption						
Future Retail Demand & Absorption	**2016-2020**	**2021-2025**	**2026-2030**	**2031-2035**	**2036-2040**	**Total**
Total Demand for New Homes						
Town of Loomis	116	125	120	117	42	520
Loomis Rural Area	87	146	203	203	170	809
Granite Bay	210	348	276	285	439	1,558
Rocklin	1,957	2,114	2,026	1,976	394	8,467
Lincoln	1,493	1,613	1,545	1,507	847	7,004
Roseville	3,990	4,310	4,129	4,027	3,043	19,499
Total	7,852	8,656	8,298	8,115	4,936	37,857
Average Household Income During Time Interval (2018$)						
Town of Loomis	$69,527	$72,060	$76,454	$78,928	$80,629	
Loomis Rural Area	$100,230	$103,881	$110,215	$113,782	$116,234	
Granite Bay	$129,898	$134,629	$142,838	$147,461	$150,638	
Rocklin	$95,930	$99,424	$105,487	$108,901	$111,247	
Lincoln	$80,100	$83,017	$88,079	$90,930	$92,889	
Roseville	$82,744	$85,758	$90,987	$93,932	$95,956	
Total Demand for New Retail Space						
Neighborhood Commercial (NC)	0.3	0.3	0.3	0.4	0.1	1.5
Other Commercial	2.5	3.3	3.5	3.5	2.6	15.4
Total Acres	3	4	4	4	3	17

Source: SACOG 2020 MTP/SCS, US Census Bureau, ACS, Caltrans Placer County Economic Forecast, ESRI Business Analyst, Bureau of Labor Statistics Consumer Expenditure Survey; International Council of Shopping Centers, AECOM

Table D-3: Description of Employment Categories			
Employment Category	**NAICS Codes**	**SubCodes/Description**	**Employment Category for Analysis**
Education	61	Educational Services (exclude 6115-6117 trade school, education support, include in service)	Education and Government
Food Service	722	7221-7225 (restaurants and bars)	Retail and Food Service
Government	92	Public Administration (exclude 9281 security and information, include in Other)	Education and Government
Industrial	11	Agriculture, Forestry, Fishing and Hunting	Industrial
Industrial	21	Mining, Quarrying, and Oil and Gas Extraction	Industrial
Industrial	22	Utilities	Industrial
Industrial	23	Construction	Industrial
Industrial	31-33	Manufacturing	Industrial
Industrial	42	Wholesale Trade	Industrial
Industrial	48-49	Transportation and Warehousing (exclude 4911 post office, include in service)	Industrial
Industrial	562	562 - (5621 - 5629) included in industrial because uses are administrative for waste, utilities and construction uses.	Industrial
Medical	62	Health Care and Social Assistance (exclude 623-624 nursing and residential care, social service, include in service)	Medical and Service
Office	51	Information	Office
Office	52	Finance and Insurance	Office

Table D-3: Description of Employment Categories			
Employment Category	**NAICS Codes**	**SubCodes/Description**	**Employment Category for Analysis**
Office	53	Real Estate and Rental and Leasing	Office
Office	54	Professional, Scientific, and Technical Services	Office
Office	55	Management of Companies and Enterprises	Office
Office	56	Administrative and Support and Waste Management and Remediation Services (exclude 562, construction, include in industry)	Office
Office	813	8131 - 8139 included in Office (Office) because uses are larger civic and charitable organizations.	Office
Other*	9281	9281 (military) included in Military/Other	(note there are 0 for other for all time periods for Town of Loomis)
Retail	44-45	Retail Trade	Retail and Food Service
Service	4911	4911 post office	Medical and Service
Service	6115-6117	6115-6117 (trade and technical schools) included in Retail(Service) because I-PLACE3S Education is K12 and college related	Medical and Service
Service	623	623 - Nursing and Residential Care Facilities	Medical and Service
Service	624	624 - Social Assistance	Medical and Service

Source: SACOG 2020 MTP/SCS, AECOM

Table D-4: Town of Loomis Job Distribution and Land Use Assumptions							
Employment Category	**General Land Use Categories**	**SF per Employee**	**Floor Area Ratio**	**Vacancy Rate[2]**	**Jobs Per Acre**	**Estimated Job 2016 Distribution**	
Retail and Food Service[1]	Neighborhood Commercial, Other Retail	500	0.25	10.0%	21	512	16%
Education and Government[1]	Schools	N/A	N/A	N/A	N/A	485	15%
Office	Office	300	0.3	7.5%	42	735	23%
Medical and Service	Office	250	0.25	7.5%	42	418	13%
Industrial	Light Industrial (50%) General Industrial (50%)	900	0.4	5%	19	1,045	33%
Total						**3,195**	**100%**

Source: Western Placer County Nexus-Based Affordable Housing Fee Study, USGBC, Urban Land Institute, 1998 Town of Loomis General Plan

1 Retail acreage calculated separately based on housing units; school and government acreage not determined as part of this analysis.
2 Vacancy rates based on industry best practice. SF per employee based on Western Placer County Nexus-Based Affordable Housing Fee Study and USGBC LEED v.4 New Construction Default Occupancy Counts

Table D-5: Town of Loomis Future Office/Industrial Demand & Absorption							
Future Office/Industrial Demand & Absorption		**2016-2020[2]**	**2021-2025**	**2026-2030**	**2031-2035**	**2036-2040**	**Total**
Total Employment Growth		351	242	116	21	193	923
Distribution of Employment Growth	As of 2016						As of 2040
Retail & Food Service[1]	16%	27%	16%	29%	34%	22%	18%
Education & Government[1]	15%	5%	3%	5%	5%	7%	13%
Office	23%	27%	35%	48%	41%	23%	26%
Medical & Service	13%	19%	9%	18%	20%	14%	14%
Industrial	33%	22%	36%	0%	0%	33%	29%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Total Demand for New Office and Industrial Space							
Office		4	3	2	0	2	11
Light Industrial		2	2	0	0	2	6
General Industrial		2	2	0	0	2	6
Total Acres		**8**	**7**	**2**	**0**	**6**	**23**

Source: SACOG 2020 MTP/SCS, Caltrans Placer County Economic Forecast, AECOM

[1] Retail acreage calculated separately based on housing units; school and government acreage not determined as part of this analysis.
[2] 2016-2020 based on end year of 2021 given 2020 dip from Covid-19; If growth in a timeframe for an industry is anticipated to be negative, it is zeroed out

Table D-6: Town of Loomis Estimated Demand for Non-Residential Acreage 2016-2040					
Land Use Designations	**Retail Demand**	**Office Demand**	**Light Industrial Demand**	**General Industrial Demand**	**Total Demand**
Retail					
Neighborhood Commercial	1				1
Other Retail	15				15
TOTAL RETAIL	17				17
Office & Industrial					
Office		11			11
Light Industrial			6		6
General Industrial				6	6
TOTAL OFFICE & INDUSTRIAL		**11**	**6**	**6**	**23**
TOTAL ACRES	**17**	**11**	**6**	**6**	**40**

Source: AECOM, 2020

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