4 Conservation and Open Space Element

The importance of environmental conservation within the Tahoe Region is emphasized by the guiding principles of the Tahoe Regional Planning Agency (TRPA). *"The Tahoe Region exhibits unique and irreplaceable environmental and ecological values of national significance which are threatened with deterioration or degeneration."* TRPA shall *"maintain the significant scenic, recreational, education, scientific, natural, and public health values provided by the Region;* and *"ensure equilibrium between the Region's natural endowment and its manmade environment."* (TRPA Regional Plan, 2012)

The challenges that TRPA faces at Lake Tahoe today are centered on maintaining a sustainable balance of environmental protection, economic health, and vital communities. To address these issues, focus is placed on restoration of sensitive lands and environmental improvement projects that repair damage of the past and redevelopment of Tahoe's Centers to accelerate attainment of threshold standards with more environmentally appropriate and attractive structures.

The purpose of the Conservation and Open Space Element is to provide policy guidance to protect, preserve, and enhance the Community Plan Area's natural and cultural resources. Topics addressed include vegetation, wildlife, fisheries, soils, shorezone, scenic resources, stream environment zone (SEZ), cultural resources, energy, water quality, noise, air quality and reduction of greenhouse gases, and natural hazards.

4.1 Vegetation

The Sierra Nevada ecoregion is divided into 21 ecological subsections that are distinguished primarily by their geologic and geomorphic properties and history, and by variation in climate and vegetation patterns. The Community Plan Area is located almost entirely within the Tahoe-Truckee Subsection, which occurs in the northwest portion of the Tahoe Basin extending from Kings Beach south to Homewood.

The predominant natural plant communities in the Tahoe-Truckee Subsection are pine, mixed conifer, white fir series, red fir series, and big sagebrush. Jeffrey pine is common in drier areas on shallow and rocky soils. Patches of mountain hemlock series occur at the highest elevations. Lodgepole pine series prevails on many wet soils and on drier soils where cold air drainage and frost limit the regeneration of other trees. Western white pine and whitebark pine occur at upper elevations. Sedge meadow communities are common but not extensive. Willow, mountain alder, and black cottonwood are common in riparian areas, and aspen is present. Shrub-dominated vegetation includes big sagebrush, bitterbrush, and rabbitbrush.

Alpine grassland and montane meadow are also present.[1] Table 4.1-1 summarizes the California Wildlife Habitat Relationships (CWHR) vegetation communities within the Community Plan Area and Figure 4-1 maps their location.

Table 4.1-1: Vegetation Communities

Vegetation	*Acres*	*Percent of Land Area*
White Fir	27,026	58.2%
Montane Chaparral	4,656	10.0%
Jeffrey Pine	3,513	7.6%
Red Fir	3,106	6.7%
Sagebrush	2,100	4.5%
Subalpine Conifer	1,767	3.8%
Montane Riparian	917	2.0%
Sierran Mixed Conifer	686	1.5%
Perennial Grass	440	0.9%
Aspen	337	0.7%
Barren	229	0.5%
Lodgepole Pine	206	0.4%
Lacustrine	60	0.1%
Wet Meadow	29	0.1%
Unclassified	1,360	2.9%
Total	**46,433**	**100.0%**

Source: USFS, TRPA, 2007.

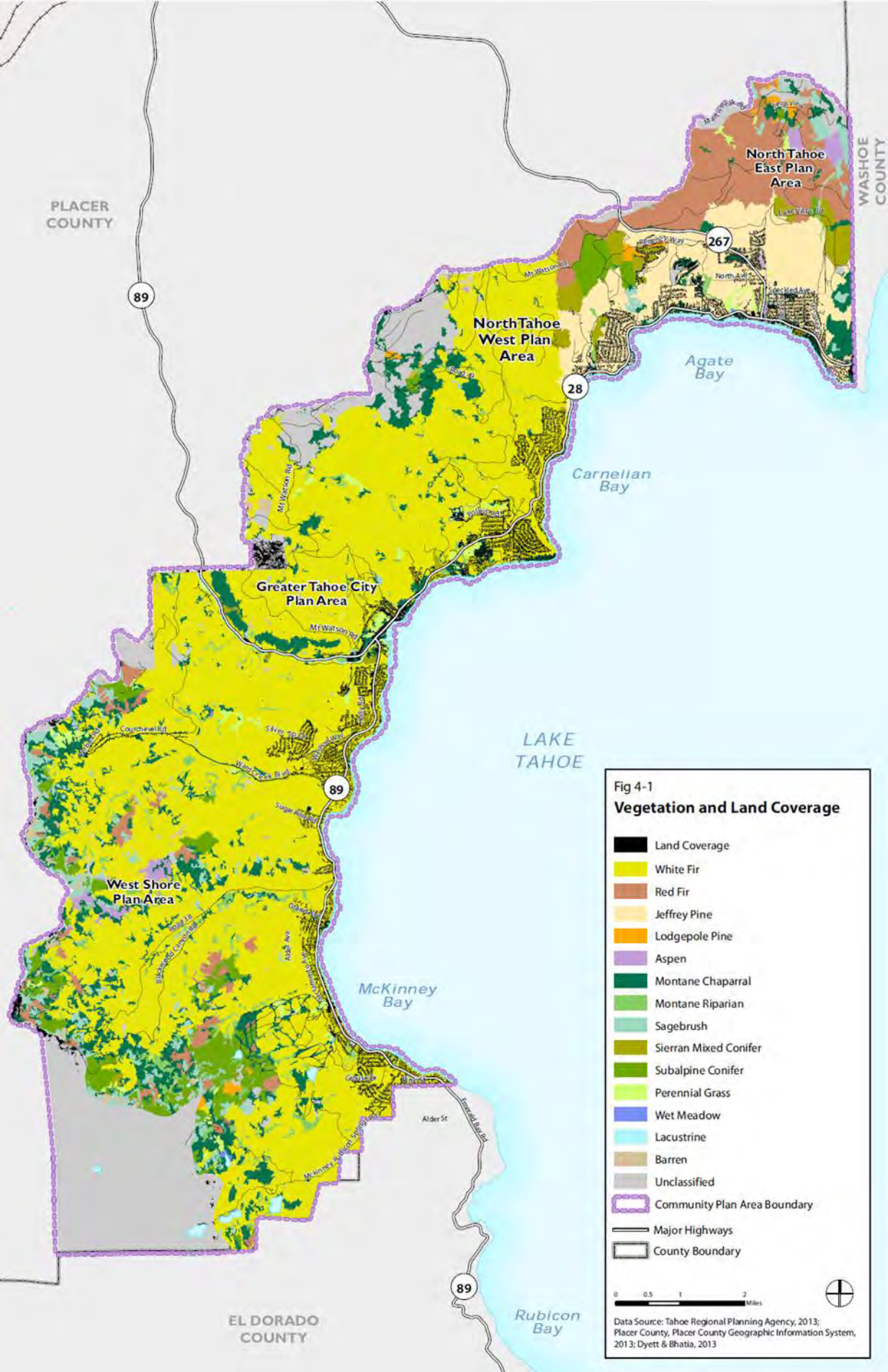
SPECIAL-STATUS SPECIES

Special-status species are plants that are legally protected under state and federal Endangered Species Acts or other regulations, and species that are considered sufficiently rare by the scientific community to qualify for such listing. Ascent Environmental identified 41 special-status plant species known or with potential to occur in the Tahoe Basin. Table 3.10-4 of the Regional Plan Update Draft EIS summarizes the status, habitat association, and occurrence information for each identified special-status plant species.

TRPA staff currently monitors 21 special-status plant species know to occur in the Tahoe Basin. Eight species are known only from text or herbarium records, and 14 special-status species potentially occur based on habitat preference or other environment criteria, however have not been documented in the Basin. Tahoe yellow cress is the only plant listed as endangered by California State.

The vegetation threshold standards apply to five species including galena creek rockcress, tahoe draba, cup lake draba, long-petaled lewisia, and tahoe yellow cress. According to the 2011 Threshold Evaluation Report, the status of all sensitive plants was "considerably better than target" with the exception of the galena creek rockcress, which lacked insufficient information to make a determination on its attainment status.

[1] Chapter 3.10: Biological Resources, TRPA Regional Plan Update Draft EIS. Ascent Environmental (2011).


PLACER COUNTY
WASHOE COUNTY
EL DORADO COUNTY
North Tahoe East Plan Area
North Tahoe West Plan Area
Greater Tahoe City Plan Area
West Shore Plan Area
LAKE TAHOE
Agate Bay
Carnelian Bay
McKinney Bay
Rubicon Bay
89
28
267
Mt Watson Rd
Courtesy Way
Lake Vista Rd
North Avenue
Speckled Ave
Silver Tip
Sugar Pine
Alder St
Emerald Bay Rd
McKinney Rubicon Springs Rd
Fig 4-1
Vegetation and Land Coverage
Land Coverage
White Fir
Red Fir
Jeffrey Pine
Lodgepole Pine
Aspen
Montane Chaparral
Montane Riparian
Sagebrush
Sierran Mixed Conifer
Subalpine Conifer
Perennial Grass
Wet Meadow
Lacustrine
Barren
Unclassified
Community Plan Area Boundary
Major Highways
County Boundary
0 0.5 1 2 Miles
Data Source: Tahoe Regional Planning Agency, 2013; Placer County, Placer County Geographic Information System, 2013; Dyett & Bhatia, 2013

GOALS AND POLICIES

VEG-G-1 **Provide for a wide mix and increased diversity of native plant communities, free of invasive plant species.**

VEG-P-1 Encourage forest management practices (e.g., timber harvest and prescribed burning) when consistent with acceptable strategies for the maintenance and enhancement of forest health and diversity, prevention of wildfire, protection of water quality, and enhancement of wildlife habitats.

VEG-P-2 Encourage opportunities to improve the age structure (ratio of young to mature trees) of the pine and fir plant communities when consistent with other environmental considerations.

VEG-P-3 Manipulate the forest pattern whenever appropriate as guided by the size and distribution of forest openings.

VEG-P-4 Maximize and treat edge zones between adjacent plant communities for their special value relative to plant diversity and wildlife habitat.

VEG-P-5 Limit permanent disturbance or unnecessary alteration of natural vegetation associated with development activities to approved boundaries (or footprints) of the building, driveway, or parking structures, or that which is necessary to reduce the risk of fire or erosion.

VEG-P-6 Manage vegetation in urban areas in accordance with the policies of this policy document, including provisions that allow for the perpetuation of the natural-appearing landscape.

VEG-P-7 Maintain forest litter for its erosion control and nutrient cycling functions in naturally-vegetated areas except to the extent it poses a fire hazard.

VEG-P-8 Promote use of native, water-efficient, nutrient-efficient, fire-resistant and non-invasive vegetation in urban areas and during revegetation of disturbed sites.

VEG-P-9 Consider the cumulative impact of vegetation removal with respect to plant diversity and abundance, wildlife habitat and movement, soil productivity and stability, and water quality and quantity, weighted against the potential damage from fire risk, for all proposed actions.

VEG-P-10 Work to eradicate and prevent the spread of invasive species.

VEG-P-11 Develop an urban forestry program that seeks to reestablish natural forest conditions throughout the Community Plan Area's built environment in a manner that does not increase the risk of catastrophic wildfire.

VEG-G-2 **Protect, maintain and restore such unique eco-systems as wetlands, meadows, and riparian and other native vegetation.**

VEG-P-12 Manage riparian plant communities for the beneficial uses of passive recreation, groundwater recharge, and nutrient catchment, and as wildlife habitats.

VEG-P-13 Restore or expand riparian plant communities whenever and wherever possible. When complete restoration is not feasible, focus restoration programs on restoring the natural function of riparian areas to the greatest extent practical.

VEG-P-14 Eliminate, if possible, the water diversion at Antone Meadows. At minimum, conceal the diversion pipes to eliminate visual impacts.

VEG-P-15 Scarify and revegetate logging road spurs in Burton Creek.

VEG-P-16 Provide incentives for the restoration of natural vegetation to areas previously modified to other vegetative communities.

VEG-G-3 **Conserve threatened, endangered, and sensitive plant species and uncommon plant communities.**

VEG-P-17 Identify and protect uncommon native plant communities.

VEG-P-18 Identify and preserve the population sites and critical habitat of all sensitive plant species in the Community Plan Area.

VEG-G-4 **Provide for and increase the amount of late seral/old growth forest stands.**

VEG-P-19 Protect forest stands exhibiting late seral/old growth characteristics.

VEG-P-20 Manage stands not exhibiting late seral/old growth characteristics to progress towards late seral/old growth.

VEG-P-21 Retain large trees as a principal component of late seral/old growth ecosystems.

VEG-P-22 Retain trees of medium and small size sufficient to provide for large tree recruitment over time, and to provide structural diversity. In addition, species composition should be key consideration in tree retention.

VEG-P-23 Encourage use of prescribed fire to reduce fire hazard and perpetuate desired natural ecological processes. Use manual and mechanical treatment to reduce forest fuel levels and to improve late seral forest conditions in addition to, or in lieu of, prescribed fire.

VEG-P-24 Provide opportunities for intensive resource management practices such as regeneration harvest and selective cutting.

VEG-G-5 **Manage forests to matain the appropriate stocking level and distribution of snags and course woody debris to provide habitat for organisms that depend on such features and to perpetuate natural ecological processes.**

VEG-P-25 Allow for a sufficient number and an appropriate distribution of snags throughout the Community Plan Area's forests to provide and maintain habitat for species dependent on such features.

VEG-P-26 Allow for an appropriate amount, level and distribution of coarse woody debris (downed woody material) throughout the Community Plan Area's forests to maintain biological integrity, to stabilize soil, and to afford a reasonable level of fire safety.

4.2 Wildlife

The hydrologic, topographic, and elevation gradients present in the Tahoe Region support a diverse mix of vegetation communities and wildlife habitats. For example, more than 22 California Wildlife Habitat Relationships System (CWHR) habitat types are recognized in the Tahoe Region.

SPECIAL-STATUS SPECIES

Special-status species are animals that are legally protected under state and federal Endangered Species Acts or other regulations, and species that are considered sufficiently rare by the scientific community to qualify for such listing. Ascent Environmental, Inc. identified 40 special-status wildlife species know or with potential to occur in the Tahoe Region. Table 3.10-5 of the Regional Plan Update Draft EIS summarizes the status, habitat association, and occurrence information of each special-status wildlife species identified.

Fish and Amphibians

The Lahontan cutthroat trout is currently listed as a 'threatened species' under the Federal Endangered Species Act. TRPA has adopted a policy statement, which is to aid in state and federal efforts to reintroduce the Lahontan cutthroat trout to Lake Tahoe. Since 2002, the US Fish and Wildlife Service (USFWS) has introduced Lahontan cutthroat trout to Fallen Leaf Lake to learn what conditions are necessary for successful restoration of the species in a lake environment. Findings suggest that restoration of a viable Lahontan cutthroat trout population may be possible if it can establish a niche apart from other trout species.

Two amphibious species are listed as federal candidates for listing under the Federal Endangered Species Act. These include the Yosemite toad, found in wet meadows between 4,000 and 12,000 feet in the Sierra Nevada, and the Sierra Nevada yellow-legged frog, found in upper elevation lakes, ponds, bogs, and slow-moving alpine streams between 6,000 and 12,000 feet.

Birds and Mammals

Three species are listed by the California Department of Fish and Game as 'endangered'. These include the willow flycatcher, bald eagle and the great grey owl. An additional two species are listed as 'threatened' including the bank swallow and California wolverine.

TRPA identifies numerical and management standards related to six special-interest species—bald eagle, osprey, golden eagle, peregrine falcon, northern goshawk, and deer—and one group of species—waterfowl. The numerical standards establish a minimum number of population sites that must be maintained, while the management standard establishes disturbance free buffer zones for each species or species group. According to the 2011 Threshold Evaluation Report, the status of all special-interest species is "at or somewhat better than target."

GOALS AND POLICIES

WL-G-1 **Maintain suitable habitats for all indigenous species of wildlife without preference to game or non-game species through maintenance, improvement and protection of habitat diversity.**

WL-P-1 Consider impacts to wildlife for all proposed actions.

WL-P-2 Protect and manage riparian vegetation for wildlife.

WL-P-3 Control non-native wildlife and exotic species. Prohibit release of such animals into the wild.

WL-P-4 Control and appropriately contain domestic animals and pets.

WL-P-5 Develop and enforce an urban bear strategy addressing bear resistant solid waste facilities and related matters within the Community Plan Area.

WL-G-2 **Preserve, enhance, and where feasible, expand habitats essential for threatened, endangered, rare, or sensitive species.**

WL-P-6 Protect endangered, threatened, rare, and special interest species; buffer against conflicting land uses; and increase habitat connectivity.

4.3 Fisheries (Fish Habitat)

FISHERIES AND AQUATIC HABITAT

There are two key aquatic environments that support fish in the Tahoe Basin—healthy lakes and streams. Both environments play a key role in sustaining fish populations as some fish species use both lake and stream environments to fulfill their lifecycles. Lakes within the Region range from small glacial tarns and snowmelt ponds to very large lakes such as Lake Tahoe. Streams range from small ephemeral drainages and intermittent streams to large perennial rivers such as the Truckee River.

Lake Habitat

TRPA has designated different types and qualities of fish habitat. "Prime" fish habitat includes spawning habitat, and feed and cover habitat. Spawning habitats are composed of relatively small diameter gravel substrates used by native minnows for spawning and rearing fry. Feed and cover habitats are composed of larger diameter cobbles, rocks and boulders used by fish as foraging habitat, and to provide refuge from predators. "Marginal" habitats are dominated by sand and silt substrates interspersed with occasional willow thickets that establish during low lake levels. Figure 4-2 maps the location of spawning, feed and cover, and marginal fish habitats.

Native Fish Species

The Lake Tahoe Basin Management Unit Fisheries Department conducted non-game native fish surveys in streams of the California side of Lake Tahoe in 2007 and 2008. Creeks surveyed within the Community Plan Area included Griff Creek, Watson Creek, Burton Creek, Homewood Canyon Creek, Madden Creek, Quail Creek, McKinney Creek, Ward Creek, and Blackwood Creek. According to the assessment, seven species of fish were sampled, five of which were native to the Tahoe Basin.[2] These include the Lahontan redsider, paiute sculpin, speckled dace, Tahoe sucker, and tui chub. Three non-native species were also sampled including brook trout, brown trout and rainbow trout. The once abundant Lahontan cutthroat trout is the only trout native to the lakes and streams in the Tahoe Basin. Table 4.3-1 shows the distribution of fish species in Community Plan Area creeks surveyed in 2008.

Table 4.3-1: Fish Species Sampled in Community Plan Area

Fish Species	*Native/ Non-Native*	*Location*
Lahontan Redsider	Native	Quail Creek, Ward Creek
Paiute Sculpin	Native	Ward Creek
Speckled Dace	Native	Ward Creek, Griff Creek
Tahoe Sucker	Native	Griff Creek
Tui Chub	Native	Griff Creek
Brook Trout	Non-native	Mckinney Creek, Quail Creek, Madden Creek, Blackwood Creek, Ward Creek, Burton Creek, Watson Creek, Griff Creek
Brown Trout	Non-native	Quail Creek, Blackwood Creek, Ward Creek, Griff Creek
Rainbow Trout	Non-native	Mckinney Creek, Quail Creek, Homewood Creek, Madden Creek, Blackwood Creek, Ward Creek, Griff Creek

Source: Lake Tahoe Basin Management Unit Fisheries Department, 2008.

[2] The Lahontan cutthroat trout and mountain whitefish were not sampled as part of this study.

Non-native and Aquatic Invasive Species

As shown in Table 4.3-1 above, non-native fish species introduced to the Lake Tahoe Region include brook trout, brown trout and rainbow trout, as well as lake trout. Several warm-water fish species have also been introduced to Lake Tahoe and some tributary streams including bluegill, largemouth bass, smallmouth bass, and brown bullhead catfish.

Two invasive non-native aquatic mussels—quagga mussel and zebra mussel—are not present in the Tahoe Region, however are of particular concern due to their expanding range, highly invasive nature, and potential to disrupt ecosystem functions. Aquatic invasive species of serious concern that are present in Lake Tahoe include Asian clam, Eurasian watermilfoil and curlylead pondweed.

GOALS AND POLICIES

FI-G-1 **Improve aquatic habitat essential for the growth, reproduction, and perpetuation of existing and threatened native fish resources.**

FI-P-1 Evaluate impacts to the fishery when considering development proposals affecting streams, lakes and adjacent lands.

FI-P-2 Prohibit and remove unnatural blockages and other impediments to fish movement wherever appropriate.

FI-P-3 Develop and implement an instream maintenance program.

FI-P-4 Permit habitat improvement projects in streams and lakes.

FI-P-5 Regulate instream flows, when feasible, to maintain fishery values.

FI-P-6 Transfer existing points of water diversion from streams to lakes, whenever feasible, to help protect instream beneficial uses.

FI-P-7 Prohibit the release of non-native aquatic invasive species in cooperation with public and private entities. Control or eradicate existing populations of these species and take measures to prevent accidental or intentional release of such species.

FI-P-8 Remove or otherwise renovate the wall barrier on Burton Creek to facilitate upstream fish migration.

FI-P-9 Stabilize bank and remove fish passage barrier on Watson Creek.

FI-P-10 Protect stream fishery from water diversions on Griff Creek.

FI-P-11 Restore Blackwood Creek and manage waters in the Community Plan Area for a quality fishery.

FI-P-12 Utilize water in Quail Lake to provide minimum instream flows for Quail Creek.

PLACER COUNTY
WASHOE COUNTY
EL DORADO COUNTY
North Tahoe East Plan Area
North Tahoe West Plan Area
Greater Tahoe City Plan Area
West Shore Plan Area
LAKE TAHOE
Agate Bay
Carnelian Bay
McKinney Bay
Rubicon Bay
Burton Creek State Park
Ward Creek
Sugar Pine Point State Park
North Tahoe Regional Park
Kings Beach State Park
89
28
267
Fig 4-2
Fish Habitat
Fish Habitat
Feeding/Escape Cover
Marginal
Spawning
Community Plan Sub-Areas
Community Plan Area Boundary
Major Highways
Roads
Streams
Parks
Lake Tahoe
County Boundary
0 0.5 1 2 Miles
Data Source: Placer County Department of Public Works, 2013; Placer County Geographic Information System, 2013; Dyett & Bhatia, 2013

4.4 Soils

The Tahoe Basin was formed by the rise and fall of the landscape due to geologic block faulting. A geologic block fault is a fracture in the Earth's crust causing blocks of land to move up or down. Uplifted rocks created the Carson Range on the east and the Sierra Nevada on the west. Down-dropped blocks created the Lake Tahoe Basin in between. Snow, rain, and streams filled the southern and lowest part of the Basin, forming the ancestral Lake Tahoe. Modern Lake Tahoe was shaped and landscaped by the scouring glaciers during the Ice Age.

SOILS TYPES

As shown in Figure 4-3, soils within the Community Plan Area vary greatly. Soils at lower elevations in the Basin were formed mainly in alluvium derived from igneous rocks, and are all on alluvial or floodplains. Most of the alluvial soil is derived from igneous intrusive rock, like granodiorite, and igneous extrusive rock, mostly andesitic lahar. Granodiorite is easy to spot, because it is a lightly colored rock covered in small black speckles. Andesitic lahars are created from volcanic eruptions and their resulting flows, and are much darker in color, making them easier to distinguish than granodiorite rock. These two rock types provide parent material for the different types of soil in the Basin, and contribute to soil characteristics.

GOALS AND POLICIES

S-G-1 **Minimize soil erosion and the loss of soil productivity in order to sustain forest vegetation, water filtration and storage, and wildlife habitats within the Community Plan Area.**

S-P-1 Allowable impervious land coverage shall be consistent with the Regional Plan, Implementing Ordinances and threshold for impervious land coverage.

S-P-2 Develop specific policies to limit land disturbance and reduce soil and water quality impacts of disturbed areas.

S-P-3 Prioritize watersheds or other areas impaired by excess land coverage and incentivize the removal and transfer of coverage from appropriate locations within priority watersheds.

S-P-4 Require review of grading activity and maintain seasonal limitations on ground disturbing activities during the wet season (October 15 to May 1), and identify limited exceptions for activities that are necessary to preserve public health and safety or for erosion control.

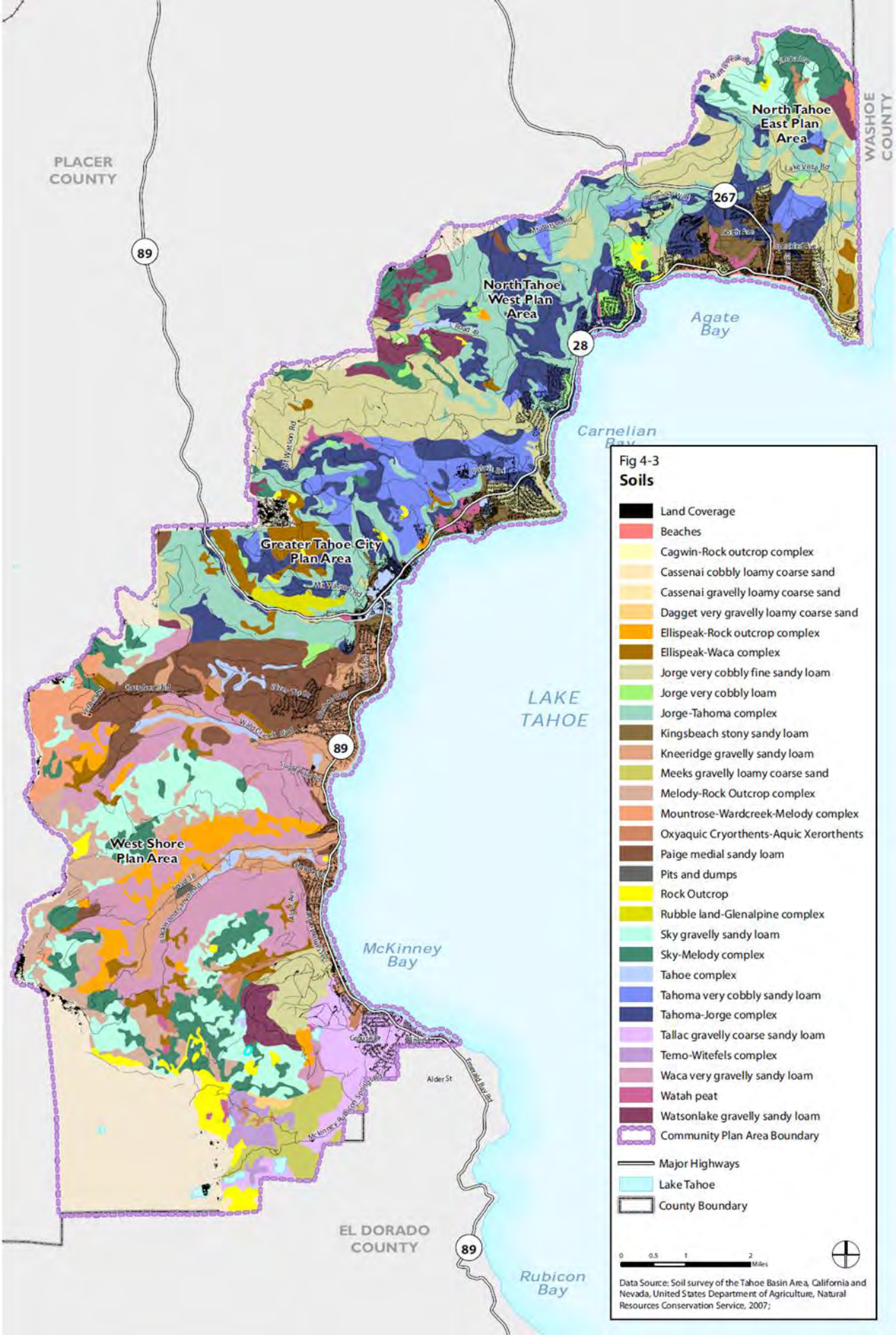
S-P-5 Retain all existing natural functioning Stream Environment Zones (SEZs) as such and restore disturbed SEZs whenever possible and may be treated to reduce the risk of catastrophic wildfire.

S-P-6 Stabilize Blackwood Creek and other instream programs to minimize erosion and prevent scouring.

S-G-2 **Encourage restoration of native wetland habitat to provide natural filtration of stormwater/developed area runoff.**

S-P-7 Evaluate potential for public trail use of unimproved roads in the Community Plan Area. Revegetate the unimproved roads or bring up to 208 water quality standards to eliminate associated erosion problems.

S-G-3 **Integrate landscaping with Best Management Practices (BMPs) to treat stormwater in developed areas that will minimize negative impacts to natural runoff and filtration processes.**


PLACER COUNTY
WASHOE COUNTY
EL DORADO COUNTY
North Tahoe East Plan Area
North Tahoe West Plan Area
Greater Tahoe City Plan Area
West Shore Plan Area
LAKE TAHOE
Agate Bay
Carnelian Bay
McKinney Bay
Rubicon Bay
89
28
267
Fig 4-3
Soils
Land Coverage
Beaches
Cagwin-Rock outcrop complex
Cassenai cobbly loamy coarse sand
Cassenai gravelly loamy coarse sand
Dagget very gravelly loamy coarse sand
Ellispeak-Rock outcrop complex
Ellispeak-Waca complex
Jorge very cobbly fine sandy loam
Jorge very cobbly loam
Jorge-Tahoma complex
Kingsbeach stony sandy loam
Kneeridge gravelly sandy loam
Meeks gravelly loamy coarse sand
Melody-Rock Outcrop complex
Mountrose-Wardcreek-Melody complex
Oxyaquic Cryorthents-Aquic Xerorthents
Paige medial sandy loam
Pits and dumps
Rock Outcrop
Rubble land-Glenalpine complex
Sky gravelly sandy loam
Sky-Melody complex
Tahoe complex
Tahoma very cobbly sandy loam
Tahoma-Jorge complex
Tallac gravelly coarse sandy loam
Temo-Witefels complex
Waca very gravelly sandy loam
Watah peat
Watsonlake gravelly sandy loam
Community Plan Area Boundary
Major Highways
Lake Tahoe
County Boundary
0 0.5 1 2 Miles
Data Source: Soil survey of the Tahoe Basin Area, California and Nevada, United States Department of Agriculture, Natural Resources Conservation Service, 2007;

4.5 Shorezone

The shorezone of Lake Tahoe consists of the nearshore, foreshore and backshore. The nearshore extends from the low water elevation of Lake Tahoe (6,223 feet) to the lake bottom elevation (6,193 feet); and a minimum lateral distance of 350 feet measured from the shoreline. The foreshore is the area between the high and low water level. For Lake Tahoe the elevations are 6,229 feet and 6,223 respectively. The backshore is considered the area of instability and extends from the high water line (6,229 feet) of Lake Tahoe to stable uplands. The backshore limits are established based on wave run-up (the area landward of the shoreline that is subject to wave run-up during high water conditions and an extreme wind event) and the area of instability, plus 10 feet.

The shorezone is regulated by the TRPA Code, Chapters 80 through 86, and not reiterated here. As a result, all projects which fall within this area shall be referred to the TRPA for review. The County's review will be limited to providing input into the TRPA process and processing the project through the County permit process pursuant to the TRPA Memorandum of Understanding (MOU).

SZ-G-1 **Provide for the appropriate shorezone uses of Lake Tahoe, while preserving the shorezone's natural and aesthetic qualities.**

SZ-P-1 Preserve all vegetation at the interface between the backshore and foreshore zones unless allowed by permit for uses otherwise consistent with TRPAs shorezone policies.

SZ-P-2 Set back construction activity to ensure no disturbance of the interface between high capability backshore and unstable cliff areas.

SZ-P-3 Discourage use of lawns or ornamental vegetation in the shorezone.

SZ-P-4 Maintain stream channel entrances to Lake Tahoe to allow unobstructed access of fishes to upstream spawning sites.

SZ-P-5 Encourage multiple-use piers when such uses are intended to reduce the number of single-use piers existing on adjoining properties.

SZ-P-6 Allow public access to the shorezone where lawful and feasible on public lands.

SZ-P-7 Encourage private marinas to provide public boat launching facilities.

4.6 Scenic Resources

The scenic quality of the Tahoe Basin is appreciated by visitors and residents alike and is viewed from roads, trails, scenic resources such as parks and public beaches, and the surface of Lake Tahoe. The modification of scenic resources is a byproduct of development. Scenic resource goals and polices seek to minimize and mitigate the impacts of development on the natural scenic features within the Community Plan Area.

EXISTING SCENIC QUALITY / SCENIC THRESHOLD STATUS

TRPA has conducted systematic monitoring of scenic conditions in the Lake Tahoe Region since 1982. As mandated by the Bi-State Compact, TRPA has adopted environmental threshold carrying capacities for scenic resources. They are represented by travel route ratings (roadway and shoreline travel units), scenic quality ratings (roadway and shoreline travel units), public recreation area and bike trails, and community design.

Travel Route Ratings for Roadway Travel Units

Travel route ratings assess the visual experience of traveling major roads in the Tahoe Basin. Roadways are separated into 54 travel segments or "travel units" that represent a continuous, two-directional viewshed. As shown in Figure 4-4, 10 out of 18 roadway travel units in the Community Plan Area are in attainment. Roadway units not in attainment and with the worst threshold composite scores include Unit 10 (Homewood), Unit 20A (Tahoe Vista), Unit 20B (Kings Beach), and Unit 42 (Outlet). Additionally, three roadway units had threshold composites scores that were worse than their 1982 score including Unit 11 (Homewood), Unit 17 (Cedar Flat) and Unit 43 (Lower Truckee River).

Scenic Quality Ratings for Roadway Travel Units

In contrast to travel route ratings, which reflect the positive or negative effects of certain physical characteristics of the landscape on scenic quality throughout an entire travel unit, the scenic quality rating for roadway travel units is a composite score for specific individual views, or features of the landscape referred to as scenic resources, seen from a specific location within a given roadway travel unit. As shown in Figure 4-4, two scenic resources in the Community Plan Area are not in attainment. These include a visual feature in Unit 13 (Sunnyside) and an entry point feature in Unit 43 (outlet). The remaining scenic resources within the Community Plan Area have maintained their scenic quality.

Travel Route Rating for Shoreline Travel Units

Shoreline travel unit ratings reflect conditions looking toward the shore from the surface of Lake Tahoe. The Lake's 72-mile shoreline is broken up into 33 individual units representing a portion of shoreline that exhibits similar visual character. As shown in Figure 4-4, five out of 11 shoreline travel units in the Community Plan Area are in attainment. Shoreline units not in attainment and with the worst threshold composite scores include Unit 15 (Tahoe City), Unit 16 (Lake Forest), and Unit 19 (Carnelian Bay). Additionally, four shoreline travel units had threshold composites scores that were worse than their 1982 score including Unit 14 (Ward Creek), Unit 16 (Lake Forest), and Unit 18 (Cedar Flat), and Unit 22 (Brockway).

Scenic Quality Ratings for Shoreline Travel Units

The scenic quality rating for shoreline travel units assesses specific views or features of the landscape, referred to as scenic resources, when looking from a specific location on Lake Tahoe. As shown in Figure 4-4, four shoreline resources in the Community Plan Area are not in attainment. These include a shoreline view in Unit 12 (McKinney Bay), a shoreline view in Unit 14 (Ward Creek), a visual feature in Unit 18 (Cedar Flat), and a shoreline view in Unit 20 (Flick Point). The remaining shoreline resources within the Community Plan Area have maintained their scenic quality.

Public Recreation and Bike Areas

TRPA also evaluates scenic conditions at public recreation areas (beaches, campgrounds and ski areas) and bike trails. Currently all 54 scenic resources associated with public recreation and bike trails that are located within the Community Plan Area are "in attainment," meaning that the visual characteristics for these resources have not degraded since they were first evaluated in 1993.

GOALS AND POLICIES

SR-G-1 **Maintain and restore the scenic qualities of the Community Plan Area.**

SR-P-1 Examine impacts to the identified landscape views from roadways, bike paths, public recreation areas, and Lake Tahoe for all proposed development.

SR-P-2 Demonstrate the effect of any development proposed in areas targeted for scenic restoration or within a unit highly sensitive to change on the 1982 travel route ratings of the scenic thresholds.

SR-P-3 Recognize and appropriately consider the factors or conditions that contribute to scenic degradation, as specified in the TRPA's Scenic Quality Improvement Program (SQIP), in restoration programs, plan development, and during project review to improve scenic quality.

SR-P-4 Support undergrounding of overhead utility lines on a project-by-project basis, as well as through established Underground Districts.

SR-P-5 Require uses permitted along SR 28 in Dollar Hill to be compatible with the visual sensitivity of the area.

SR-P-6 Protect the exceptionally high scenic quality along Roadway Unit 12.

SR-P-7 Maintain the quality of background views as viewed from Shoreline Unit 13.

SR-P-8 Protect and enhance existing scenic views and vistas from commercial areas.

SR-P-9 Protect the scenic views of single family residential neighborhoods located near Town Centers.

SR-P-10 Manage development located between designated scenic corridors and Lake Tahoe so as not to cause a reduction of views of Lake Tahoe from the corridors.

SR-G-2 Improve the accessibility of Lake Tahoe for public viewing.

SR-P-11 Enhance the opportunities to view Lake Tahoe by designing view corridors from highways.

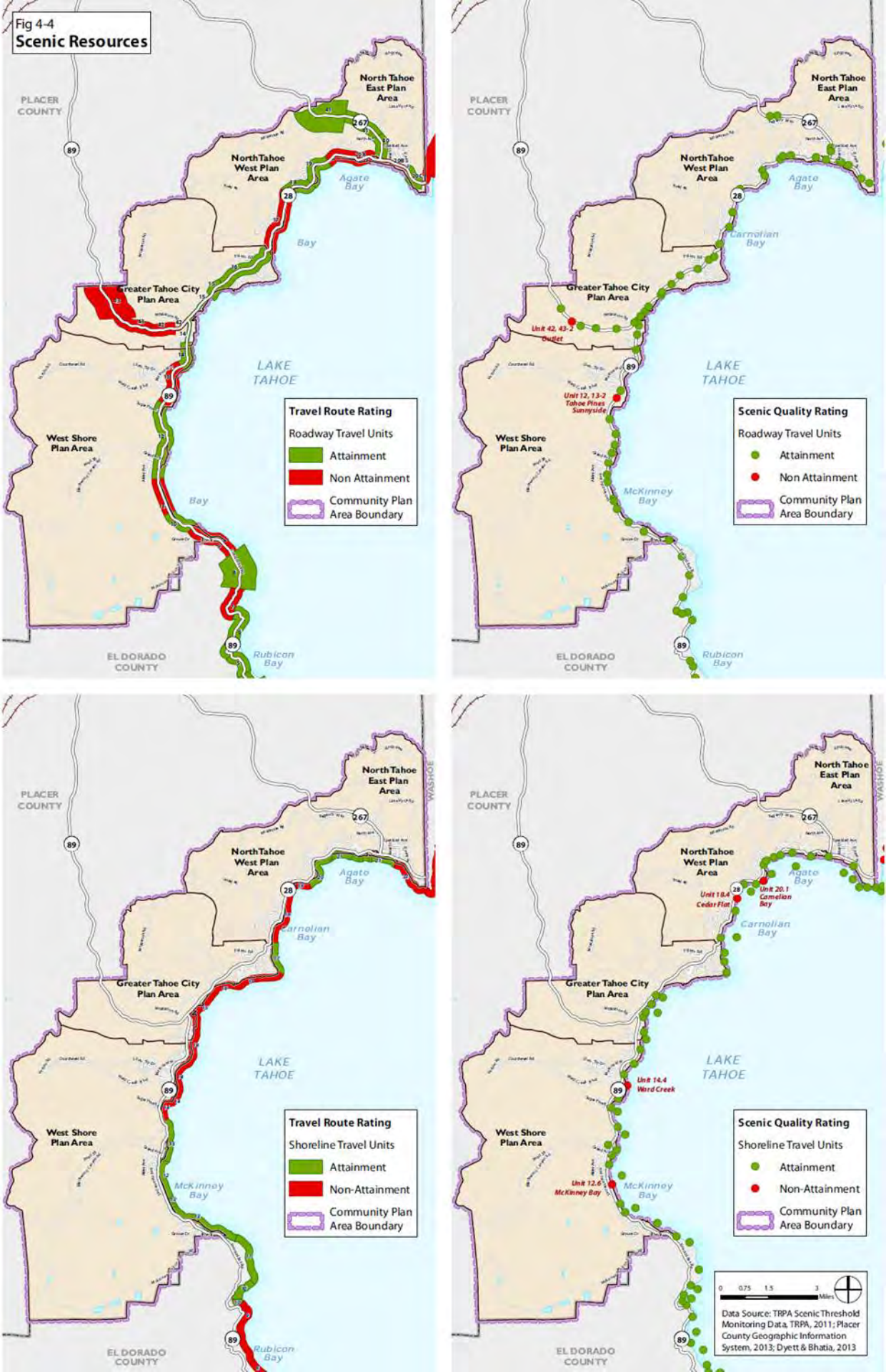
SR-P-12 Identify scenic viewpoints from roadways and provide pull-off facilities on public property, wherever desirable.

SR-P-13 Place signs along the roadways, as appropriate, to identify photo sites and scenic turnouts.

SR-P-14 Establish time limits for parking at roadside turnouts.

SR-G-3 Encourage redevelopment of built features along the roadway and shoreline within scenic corridors that are in non-attainment with TRPA thresholds.

Fig 4-4
Scenic Resources



4.7 Stream Environment Zone

Stream Environment Zone (SEZ) land makes up about 6 percent (2,962 acres) of the total area in the Community Plan Area. SEZ describes perennial, intermittent, and ephemeral streams and drainages, wet meadows, marshes, and other wetlands; riparian areas; and other areas expressing the presence of surface water or near-surface groundwater. SEZ areas generally possess the following characteristics: riparian or hydric (wet site) vegetation; alluvial, hydric soils; and the presence of surface water or near surface groundwater at least part of the year.

While SEZs may only make up 5 percent of the land area in the Tahoe Region, they provide key habitat for 84 percent of the 250 wildlife species in the Region and can contribute to reducing sediment and nutrient runoff concentrations by 70 to 90 percent. SEZs can also provide dispersed recreation opportunities, scenic open space, flood flow capacity, and buffers within urban areas. Protecting and restoring SEZs is essential for improving and maintaining the environmental amenities of the Lake Tahoe Region and for achieving environmental threshold standards for water quality, vegetation preservation, and soil conservation. Figure 4-5 maps the location of SEZ land within the Community Plan Area.

GOALS AND POLICIES

SEZ-G-1 **Provide for the long-term preservation and restoration of stream environment zones by encouraging and supporting public acquisition of SEZ land by land banks and public entities.**

SEZ-P-1 Prevent runoff into and filling of SEZs.

SEZ-P-2 Increase the area of naturally functioning SEZs by protecting and managing SEZ lands for their natural values.

SEZ-P-3 Discourage groundwater development in SEZ lands when such development could possibly impact associated plant communities or instream flows.

SEZ-P-4 Encourage golf courses located in SEZs to retrofit course design and require implementation of fertilizer management programs in accordance with Chapter 60 of the TRPA Code of Ordinances and the TRPA BMP Handbook to prevent release of nutrients into adjoining ground and surface waters.

SEZ-P-5 Prohibit new land coverage or other permanent land disturbance on SEZ lands except for those uses identified in policy SEZ-1.5 of the Regional Plan.

SEZ-P-6 Permit replacement of existing coverage (repair or rebuilding of existing structures) in SEZs where the project will reduce impacts on SEZs and will not impede restoration efforts.

SEZ-P-7 On previously disturbed SEZ lands, only allow development where it is that the project will:

- Not increase obstruction of floodwater;
- Not increase the potential for flood damage to other properties either up or down stream;
- Result in an overall improvement to water quality projection; and
- Result in an overall improvement to the SEZ.

SEZ-P-8 Encourage and support public acquisition of SEZ lands by land banks and public entities in order to restore, retire coverage on, and deed restrict SEZ lands for protection from future development and disturbance.

SEZ-G-2 Encourage restoration of SEZ lands that have been disturbed, developed, subdivided or modified by non-native vegetation.

SEZ-P-9 Restore all disturbed Stream Environment Zone (SEZ) lands in undeveloped, unsubdivided lands, and restore SEZ lands that have been disturbed, developed, or subdivided

SEZ-P-10 Restore all disturbed SEZ lands that have been modified by channelization, fill, or other human activity by means of landscaping, revegetation, or similar stabilization techniques as part of development activities on affected properties.

SEZ-P-11 Encourage restoration techniques that create site conditions where hydrologic function, especially surface hydrology, is accomplished and does not degrade the site or watershed (e.g., flooding). Consider the entire watershed, especially areas that contribute water and potentially sediment to SEZs.

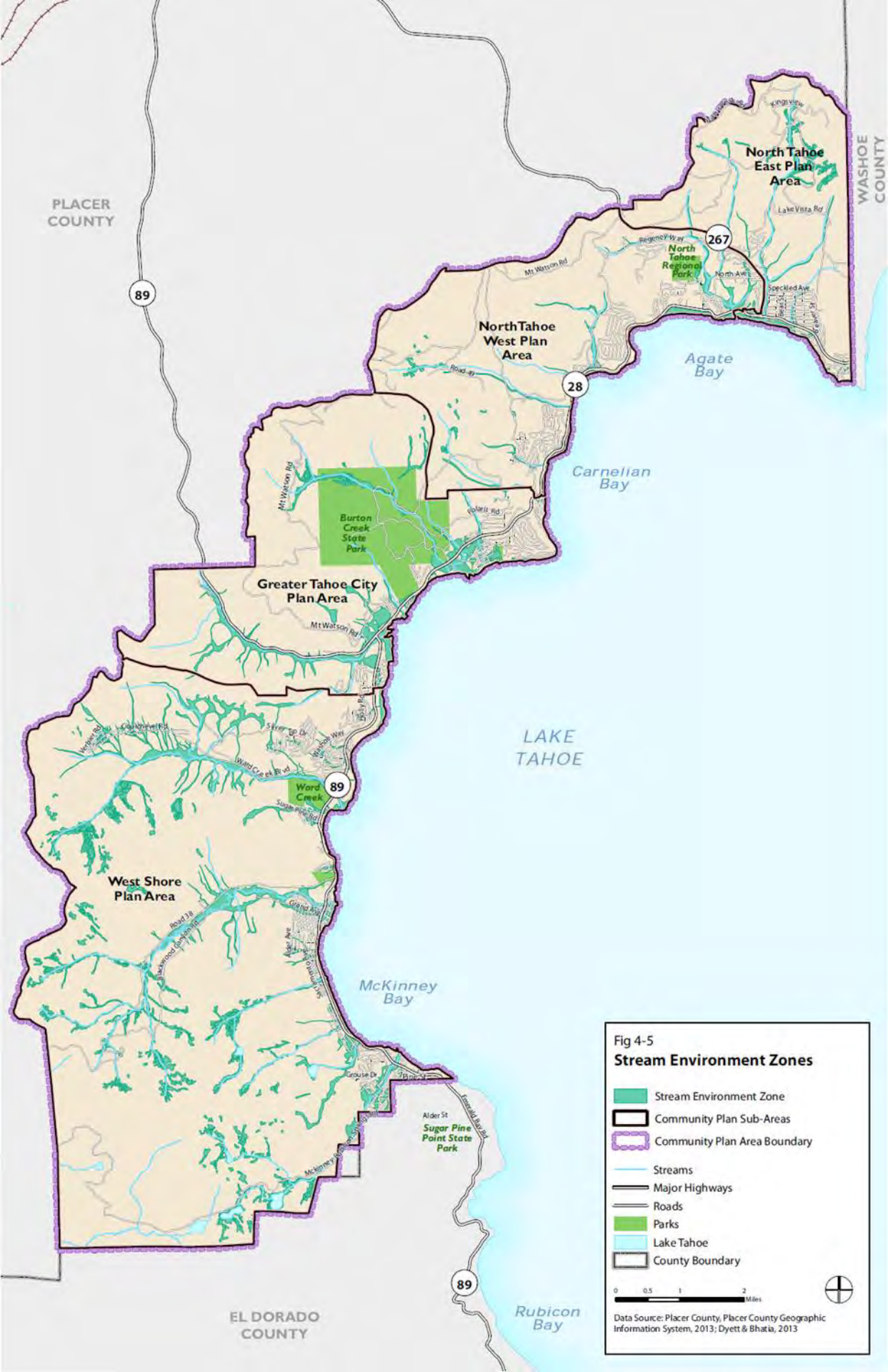
SEZ-G-3 Maintain and manage areas of open space to promote conservation of vegetation and protection of watersheds.

SEZ-P-12 Permit management practices in open space that provide for the long-term health and protection of the resource(s) when consistent with the other goals and policies of this policy document.

SEZ-P-13 Protect the beneficial uses of open space by regulating uses and restricting access as necessary to maintain soil productivity and acceptable vegetative cover.

SEZ-G-4 Incentivize the restoration of previously altered vegetative communities or low capability lands to their natural appropriate ecological state.

SEZ-P-14 Encourage the removal and transfer of existing development from disturbed SEZs that can be feasibly restored by creating incentives for their removal.


PLACER COUNTY
WASHOE COUNTY
EL DORADO COUNTY
North Tahoe East Plan Area
North Tahoe West Plan Area
Greater Tahoe City Plan Area
West Shore Plan Area
LAKE TAHOE
Agate Bay
Carnelian Bay
McKinney Bay
Rubicon Bay
Burton Creek State Park
North Tahoe Regional Park
Ward Creek
Sugar Pine Point State Park
89
267
28
Fig 4-5
Stream Environment Zones
Stream Environment Zone
Community Plan Sub-Areas
Community Plan Area Boundary
Streams
Major Highways
Roads
Parks
Lake Tahoe
County Boundary
0 0.5 1 2 Miles
Data Source: Placer County, Placer County Geographic Information System, 2013; Dyett & Bhatia, 2013

4.8 Cultural Resources

In terms of long-range conservation planning, cultural resources are typically historic, archaeological, or Native American sites and structures protected under local, State, or federal law. These resources are protected because of their contribution to understanding and appreciating the past. Historic resources are defined as structures of historic or aesthetic significance. Archaeological resources are places where human activity has measurably altered the earth or left deposits of physical remains. Archaeological resources can be either prehistoric or historic. Contemporary Native American resources, also called ethnographic resources, can include archaeological burial sites, rock art, and the prominent topographical areas, features, habitats, plants, animals, and minerals that contemporary Native Americans value and consider essential for the preservation of their traditional values.

HISTORIC RESOURCES

There are four properties listed on the National Register of Historic Places and the California Register of Historic Places in the Community Plan Area, all of which are located in Tahoe City. These include Lake Tahoe Dam, Outlet Gates and Gatekeepers Cabin, Watson Log Cabin, and the Chapel of the Transfiguration.

Lake Tahoe Dam

Located on SR 89 at the Truckee River in Tahoe City, construction of the dam took four years to complete, beginning in 1909 and ending in 1913. It is still in operation, and drains an area of 505 square miles. The dam is 18 feet high, and can increase Lake Tahoe's capacity by 744,600 acre feet. The dam was listed on the National Register of Historic Places on March 25, 1981.

William B. Layton Park and Marion Steinbach Indian Museum (Outlet Gates and Gatekeepers Cabin)

William B. Layton Park is the site of the Gateskeeper's Cabin and Steinbach Indian Basket Museum. It is a California Registered Historical Landmark, number 797. It is a 3-acre site owned by California State Parks and managed by the North Lake Tahoe Historical Society. The Gatekeeper's Museum is a reconstruction of the original Gatekeeper's Cabin, on the same site where the original stood until it was destroyed by arson fire in the early 1980s. The original Gatekeeper's cabin was built by Robert Montgomery Watson—also the builder of the Watson Cabin—to be the home of the Watermaster who controlled the flow of water out of Lake Tahoe. The cabin now showcases Tahoe history, from the Washoe people through the logging and mining eras and the establishment of the tourism industry at Lake Tahoe. The Marion Steinbach Indian Basket Museum was added in 1992. The museums at William B. Layton Park are visited by over 10,000 people annually. The North Lake Tahoe Historical Society school tour programs serve more than 1,000 school children annually.

Watson Log Cabin

The Watson Log Cabin was built in 1909 and is listed on the National Register of Historic Places as the oldest Tahoe City house that still sits where it was originally built, in the middle of Tahoe City overlooking Commons Beach.

Chapel of the Transfiguration

The Chapel of the Transfiguration, also known as the Outdoor Chapel, was built in 1909 and was the first church constructed in Tahoe City. It is located about one mile south of Tahoe City along SR 89 and was added to the National Register of Historic Places in 2011.

TRPA Historic Resources Database

TRPA recognizes 21 sites of historical or archaeological significance in the Community Plan Area. These sites are categorized by physical types as linear and non-linear features. Linear features account for three of the recognized sites and non-linear sites account for the 18 remaining sites. Linear features include roads, passes, railroads, trestles, flumes, and trails. Non-linear features include housing, lodges, chapels, ranger stations, ranches, toll houses, sawmills, bridges, dairies, historic districts, logging/lumber camps, railroad tunnels, cabins, taverns, mansions/estates, piers, hotels, resorts, beaches, points, creek/river mouths, marshes, Native American function sites, springs, bays, and harbors. Figure 4-6 maps the location of historic resources located in the Community Plan Area.

GOALS AND POLICIES

C-G-1 **Identify, preserve, and encourage interpretation of sites of historical, cultural, archaeological, and architectural significance.**

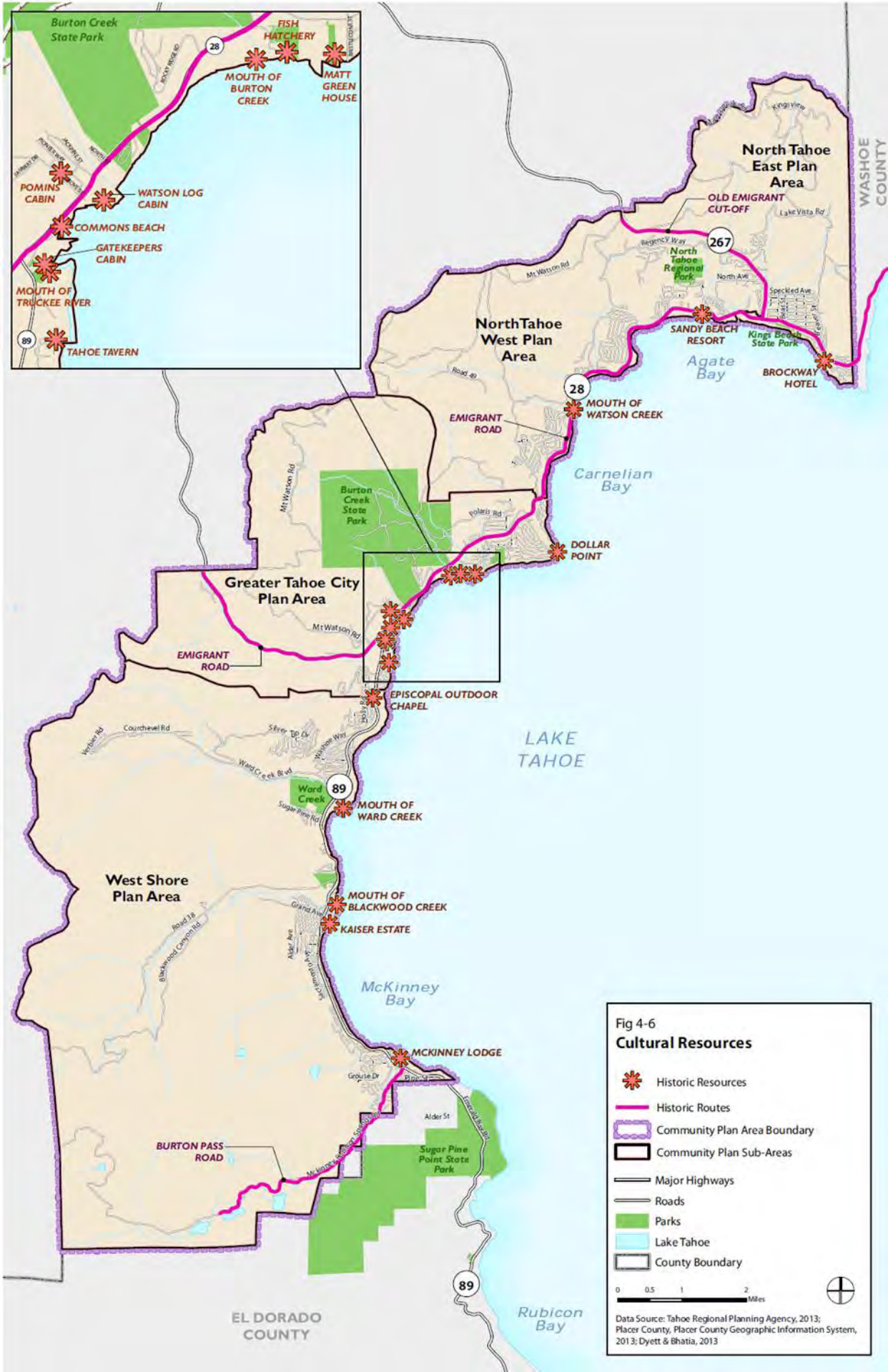
C-P-1 Identify and protect historical or culturally significant landmarks in the Community Plan Area from indiscriminate damage or alteration.

C-P-2 Provide special incentives and exemptions to sites and structures designated as historically, culturally, or archaeologically significant to promote the preservation and restoration of such structures and sites.

C-P-3 Encourage reuse and incorporate buildings or structures that are determined to be of historic significance into site plans.

C-P-4 Evaluate project activities in light of potential adverse impacts on cultural and/or historic resources with the goal of avoiding such resources.

C-P-5 Require consultation with a professional archaeologist in the event that cultural and/or historic resources are encountered during grading or construction activities to assess the resources and prepare appropriate mitigation measures.


Burton Creek State Park
FISH HATCHERY
MOUTH OF BURTON CREEK
MATT GREEN HOUSE
POMINS CABIN
WATSON LOG CABIN
COMMONS BEACH
GATEKEEPERS CABIN
MOUTH OF TRUCKEE RIVER
TAHOE TAVERN
North Tahoe East Plan Area
WASHOE COUNTY
OLD EMIGRANT CUT-OFF
North Tahoe Regional Park
SANDY BEACH RESORT
Kings Beach State Park
BROCKWAY HOTEL
Agate Bay
North Tahoe West Plan Area
MOUTH OF WATSON CREEK
EMIGRANT ROAD
Carnelian Bay
Burton Creek State Park
DOLLAR POINT
Greater Tahoe City Plan Area
EMIGRANT ROAD
EPISCOPAL OUTDOOR CHAPEL
LAKE TAHOE
Ward Creek
MOUTH OF WARD CREEK
West Shore Plan Area
MOUTH OF BLACKWOOD CREEK
KAISER ESTATE
McKinney Bay
MCKINNEY LODGE
BURTON PASS ROAD
Sugar Pine Point State Park
EL DORADO COUNTY
Rubicon Bay
Fig 4-6
Cultural Resources
Historic Resources
Historic Routes
Community Plan Area Boundary
Community Plan Sub-Areas
Major Highways
Roads
Parks
Lake Tahoe
County Boundary
0 0.5 1 2 Miles
Data Source: Tahoe Regional Planning Agency, 2013; Placer County, Placer County Geographic Information System, 2013; Dyett & Bhatia, 2013

4.9 Energy

Energy use in buildings and energy used for transportation are by far the largest sources of heat-trapping gases in the Community Plan Area. The greatest potential greenhouse gas reductions can be made by lowering the carbon content of energy, and by lowering per-capita energy use.

ENERGY CONSERVATION

It is possible to improve energy efficiency associated with transportation, commercial buildings, and homes and still maintain a high standard of living and a competitive local economy. By reducing the amount of energy consumed across land uses and transportation choices, as was as using more renewable sources of energy, residents and businesses in the Community Plan Area can see many benefits—better protection of the environment, improved public health, and ultimately reduced cost of infrastructure and energy delivery.

Energy Efficiency in Buildings

Site planning that takes advantage of shade and solar orientation, along with building design standards that recommend use of better materials and insulation, reduce the need for fuel for heating and cooling in buildings. The California Building Code includes Green Building Standards that are intended to help the State achieve the AB 32 goal of reducing greenhouse gas emissions to 1990 levels by 2020. At the same time, the energy efficiency of existing buildings can be significantly improved. Subsidized energy audits can identify needed improvements, which in many cases can be done free or at low cost.

Land Use and Transportation Patterns

Energy efficiency can also be achieved through good urban design. Compact and mixed use development patterns enable walking and bicycling and shorter automobile trips, reducing dependency on fossil fuels for transportation.

GOALS AND POLICIES

E-G-1 **Promote energy conservation programs and development of alternative energy sources to lessen dependence on carbon-producing, scarce and high-cost energy sources.**

E-P-1 Encourage recycling of waste products.

E-P-2 Encourage development of alternative energy sources when such development is both technologically and environmentally feasible.

E-P-3 Establish a local green building incentive program to reduce the energy consumption of new or remodeled buildings.

E-P-4 Modify applicable building code or design standards to reduce energy consumption.

E-P-5 Incorporate, when financially feasible, alternative energy production facilities into public facilities.

E-P-6 Coordinate with Liberty Energy, California Public Utilities Commission and other appropriate entities and identify funding to provide financing incentives for energy efficiency retrofits of existing residential, commercial and other uses.

E-G-2 Promote a broad range of transportation, land use, and site design measures that result in a decrease in the number of automobile trips and vehicle miles traveled per capita.

E-P-7 Promote alternatives to automobile use by establishing street design standards that enable safe, comfortable, and attractive access and travel for pedestrians, bicyclist, motorists, and transit users of all ages and abilities.

E-P-8 Provide incentives for the provision of priority parking for alternative fuel vehicles and electronic vehicle charging stations as individual project measures for new development.

E-P-9 Establish a land use pattern that enables alternatives to automobile use and reduces trip-lengths, including increased residential density, transit-oriented and mixed-use development, neighborhood commercial areas, and pedestrian realm enhancements.

4.10 Water Quality

Water resources in the Community Plan Area include groundwater and surface water resources. Groundwater refers to water found beneath the water table in the form of saturated soil. In some parts of northern California, groundwater may also be found in underground aquifers. Surface water refers to water collecting on Earth's surface such as creeks or ponds. All surface water eventually percolates into the soil, evaporates into the air, or flows into lakes and streams and eventually the sea.

Several external and internal factors are known to affect water quality of the Basin's aquatic system including: precipitation, air quality, atmospheric deposition, land use, impervious cover, urban stormwater runoff, and soil disturbance. Water quality goals and policies seek to reduce or eliminate point and non-point sources of pollutants in a manner consistent with the County of Placer Lake Tahoe Pollutant Reduction Plan (PLRP).

SURFACE WATER RESOURCES

The Community Plan Area lies within two watersheds—the Truckee River Watershed and the Lake Tahoe Watershed. The Lake Tahoe Watershed is made of a network of tributaries and streams surrounding the Lake Tahoe Basin that eventually flow into Lake Tahoe. Only one point of exit—the Truckee River—allows water to leave the Lake Tahoe Watershed and ultimately flow to its terminus at Pyramid Lake in western Nevada.

GROUNDWATER RESOURCES

The US Army Corps of Engineers (USACE) delineates five aquifer areas surrounding Lake Tahoe including the Tahoe City/West Shore Aquifer and Tahoe Vista/Kings Beach Aquifer. The Tahoe City/West Shore Aquifer extends from Dollar Point on the north to Rubicon Bay on the south. The estimated depth of the basin is about 590 feet. The Tahoe Vista/Kings Beach Aquifer extends from Dollar Point on the west to Stateline Point on the east.

Snowmelt is the primary source of recharge to the groundwater basin. Other sources of groundwater recharge include stream-flow seepage and groundwater inflow from the surrounding bedrock.

WATER QUALITY

Surface Water

Lake Tahoe can be differentiated into two zones: deep-water (pelagic) and near-shore (littoral). Monitoring data indicate a decline in the water quality of both zones. Since 1968, deep-water clarity has been reduced by approximately 30 percent, from 100 to 66 feet. Similarly, the near-shore environment has experienced degraded conditions due to proliferation of algae and other aquatic invasive plants and animals, particularly in urbanized areas.

Groundwater

According to the 2010 Tahoe City Public Utility District (TCPUD) Urban Water Management Plan, the quality of groundwater within the district is very good and within quality standards and regulations established by the U.S. EPA. Water quality data for the various private water companies was not available, however numerous private water companies have experienced difficulty in maintaining water quality standards.

LAKE TAHOE WATER QUALITY MANAGEMENT PROGRAM

Three pollutants—fine sediment particles (FSP), phosphorus and nitrogen—are responsible for Lake Tahoe's deep water transparency loss. Stormwater runoff from urbanized uses was identified as the largest source of FSP and phosphorous. Loss of Lake Tahoe's clarity and deep water transparency resulted in its listing as a 303(d) impaired water body. Impaired waters listed on the EPA National Summary of Impaired Waters are required to establish TMDLs, or Total Maximum Daily Loads. TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still safely meet water quality standards. The Lake Tahoe TMDL identified stormwater runoff from urbanized uses as the largest source of FSP and phosphorous to Lake Tahoe.

Lake Tahoe Pollutant Reduction Plan

Load reduction targets for FSP, phosphorous and nitrogen have been established based on attainment of California's Lake Tahoe transparency standard—roughly a clarity depth of 97 feet—over an estimated 65-year implementation period. The municipal separate storm sewer system (MS4) permit requires a 10 percent reduction in FSP, 7 percent reduction in phosphorous and 8 percent reduction in nitrogen by September 30, 2016. Table 4.10-1 identifies the pollutant load reduction requirements for Placer County.

Table 4.10-1: 2016 Pollutant Load Reduction Requirements

Parameter	*Base Load (kg/year)*	*Required Percent Reduction*	*Required Load Reduction (kg/year)*	*Allowable Load (kg/year)*
Fine Sediment Particles (mass)	234,053	10%	23,405	210,648
Phosphorus	1,111	7%	78	1,033
Nitrogen	4,635	8%	371	4,264

Source: County of Placer Lake Tahoe Pollutant Reduction Plan, March 2013.

Placer County intends to meet the TDML requirements during this five-year permit term through the registration of Water Quality Improvement Program (WQIP) catchments, implementation of pollutant control management measures in road maintenance operations, and private parcel Best Management Practices (BMP) clarity credits for larger commercial or mixed-use developments, and redevelopment projects.

Water Quality Improvement Projects

Since the Lake Tahoe TMDL 2004 baseline period, Placer County has completed 15 WQIP projects. Figure 4-7 maps there location. Placer County anticipates completion of six additional WQIP projects by September 2016.

Best Management Practices

Stormwater pollution affecting Lake Tahoe is directly correlated with the extent of urban development within the Tahoe Region. Stormwater BMPs are control measures taken to mitigate the quantity and quality of runoff caused by increased impervious surfaces from urban development. In general, BMPs are designed to reduce stormwater volume, peak flows, and/or nonpoint source pollution through evapotranspiration, infiltration, detention, and filtration, and stabilizing sediment sources to prevent them from being mobilized off-site.

As shown in Table 4.10-2 below, BMP compliance for all developed parcels in the Community Plan Area is 29 percent, which is slightly lower than BMP compliance overall within the Region (34 percent). Approximately 31 percent of single-family parcels, 39 percent of multifamily parcels and 20 percent of commercial parcels have received BMP certificates. Figure 4-7 maps the location of developed parcels with BMP certificates.

Table 4.10-2: BMP Compliance in the Community Plan Area

Land Use	*Total Estimated Parcels*	*BMP Certificates*	*BMP Compliance*
Single Family Residential	9,983	3,078	31%
Multifamily Residential	635	247	39%
Commercial	266	52	20%
Tourist Accommodations	73	14	19%
Industrial	217	10	5%
Public Services	129	29	22%
Recreation	439	20	5%
Total Parcels[1]	**11,742**	**3,450**	**29%**

1. Does not include conservation/backcountry or vacant parcels.

Source: TRPA, 2013.

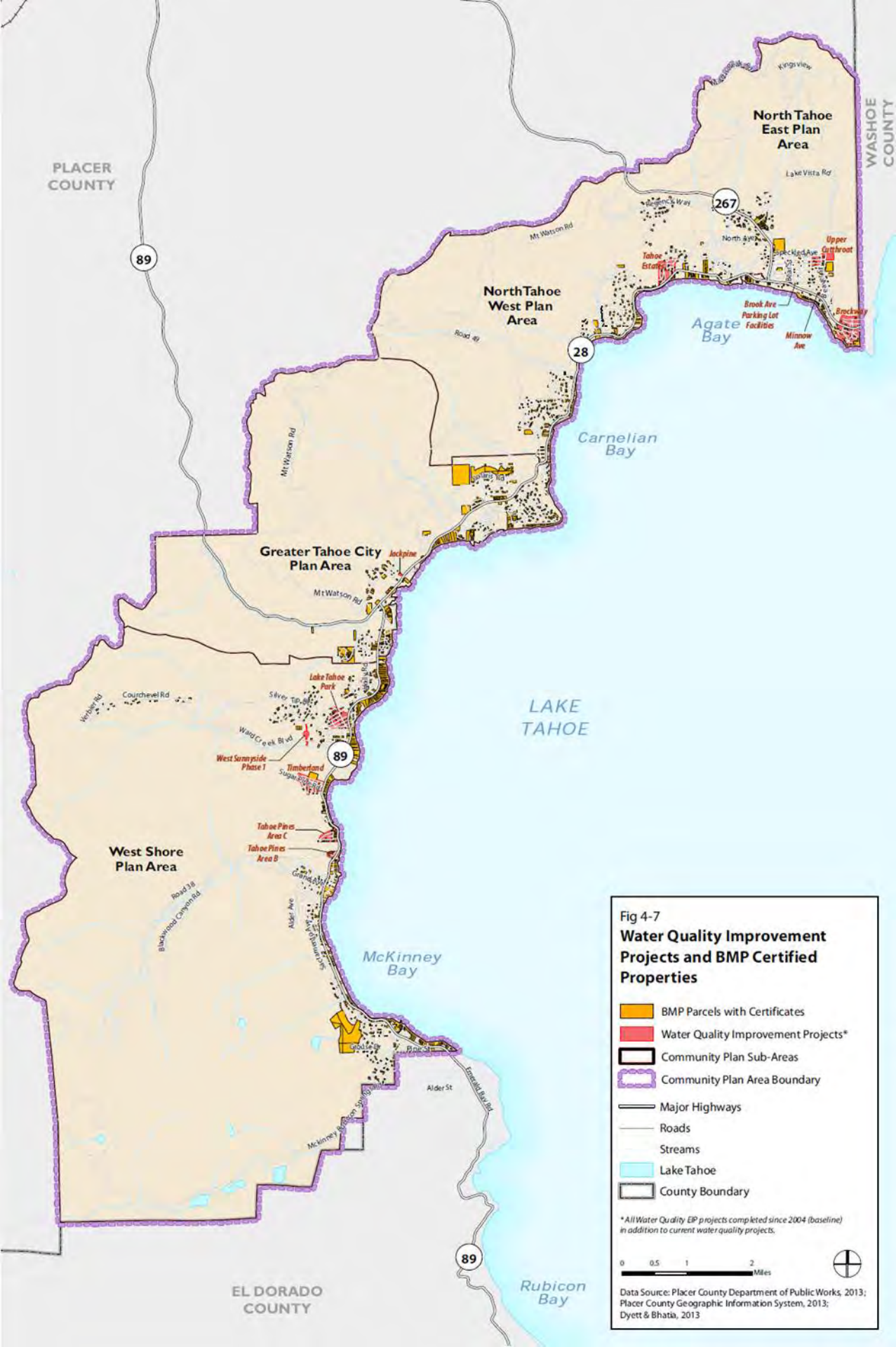


Fig 4-7

Water Quality Improvement Projects and BMP Certified Properties

- BMP Parcels with Certificates
- Water Quality Improvement Projects*
- Community Plan Sub-Areas
- Community Plan Area Boundary
- Major Highways
- Roads
- Streams
- Lake Tahoe
- County Boundary

*All Water Quality EIP projects completed since 2004 (baseline) in addition to current water quality projects.

0 0.5 1 2 Miles

Data Source: Placer County Department of Public Works, 2013; Placer County Geographic Information System, 2013; Dyett & Bhatia, 2013

GOALS AND POLICIES

WQ-G-1 **Coordinate with federal, state, regional, and private stakeholders when implementing water quality management program projects to aid in the effort to restore Lake Tahoe's unique clarity.**

WQ-P-1 Achieve and maintain water quality thresholds through comprehensive regional planning and through coordination with other public agencies and the private sector.

WQ-P-2 Prioritize and fund water quality improvement projects identified in the Placer County Stormwater TMDL Strategy based primarily on their ability to reduce pollutant loads.

WQ-P-3 Coordinate with Caltrans to ensure implementation of water quality improvement projects along SR 28 and SR 89 within the Community Plan Area.*)*

WQ-P-4 Require that development and other activities in the Community Plan Area mitigate anticipated water quality impacts.

WQ-P-5 Support and seek to expedite activities to redevelop non-conforming properties in a manner that improves water quality and to relocate or retire development rights on sensitive lands.

WQ-P-6 Support federal, state, local and private water quality improvement programs that improve water quality in the region.

WQ-P-7 Coordinate with public and private entities to maximize the efficiency and effectiveness of water quality programs.

WQ-G-2 **Reduce or eliminate point and non-point sources of pollutants that adversely affect, or potentially affect, water quality.**

WQ-P-8 Prohibit the discharge of municipal or industrial wastewater to Lake Tahoe, its tributaries, or the groundwaters of the Community Plan Area, except for existing development operating under approved alternative plans for wastewater disposal, and for fire suppression efforts in accordance with applicable state laws.

WQ-P-9 Prohibit discharges of sewage to Lake Tahoe, its tributaries, or the groundwaters of the Community Plan Area. Sewage collection, conveyance and treatment districts shall have approved spill contingency, prevention, and detection plans.

WQ-P-10 Install, maintain and monitor underground storage tanks for sewage, fuel, or other potentially harmful substances in accordance with TRPA ordinances and with the Best Management Practices (BMPs) Handbook.

WQ-P-11 Prohibit the discharge of solid wastes in the Community Plan Area, by depositing them on or in the land, except as provided by TRPA ordinance.

WQ-P-12 Reduce loads of sediment, nitrogen, and phosphorus to Lake Tahoe; and meet water quality thresholds for tributary streams, surface runoff, and groundwater.

WQ-P-13 Promote infiltration facilities and functioning floodplains along stream corridors as a strategy for removing instream loads of sediment and nutrients.

WQ-P-14 Maintain roads and dispose of snow to minimize the discharge of deicers, fine particulates and other contaminants to SEZs, groundwater and surface-water in accordance with site criteria and management standards in the BMP Handbook.

WQ-P-15 Require all persons who own land and all public agencies that manage public lands in the Community Plan Area to install and maintain BMP improvements in accordance with TRPA's BMP Handbook.

WQ-P-16 Ensure installation and maintenance of BMPs on all projects delegated under the permitting authority of the Memorandum of Understanding between TRPA and Placer County.

WQ-P-17 Coordinate with TRPA to support and/or enforce private property BMP certification with a near-term focus on commercial and multi-family land uses that are adjacent, have connected impervious surfaces, or are in the same catchment as EIP or public projects.

WQ-P-18 Coordinate with the Lahontan Regional Water Quality Control Board to update and refine the Pollutant Load Reduction Strategy for load reduction targets beyond the year 2016 and update the Pollutant Load Reduction Plan as necessary to achieve the Lake Tahoe TMDL load reduction targets. The Tahoe Basin Community Plan Policy Document hereby incorporates by reference all monitoring, operations and maintenance, and reporting required by the County's NPDES permit, the adopted Pollutant Load Reduction Plan, which will also be utilized by TRPA in the 4-year Area Plan recertification process pursuant to TRPA Code of Ordinances Sections 13.8.2 and 13.8.5.

WQ-P-19 Prohibit off-road motorized vehicle use in the Community Plan Area except on specified roads, trails, or designated areas where the impacts can be mitigated.

WQ-P-20 Restrict application of fertilizer within the Community Plan Area to uses, areas, and practices identified in TRPA's Code of Ordinances and the BMP Handbook.

WQ-P-21 Implement land use, transportation and air quality measures aimed at reducing airborne nitrogen emissions and entrained dust in the Tahoe region.

WQ-P-22 Design all internal drainage systems so as not to increase turbidity, sediment yield, or the discharge of any harmful substances that will degrade water quality.

WQ-P-23 Stabilize and remedy water quality problems on the Rubicon Trail.

WQ-P-24 Develop an Area-Wide BMP Strategy to enhance stormwater management in Town Centers

4.11 Air Quality

Goals and polices in this section aim to reduce air pollution, reduce exposure to air pollutants, reduce greenhouse gas emissions, and increase communitywide resilience to anticipated long-term effects of climate change on the Community Plan Area and Tahoe Basin. Policies in other parts of the Policy Document, including the Land Use and Community Design Element, Transportation and Circulation Element, and the Recreation and Public Services & Facilities Element, also contain policies designed to reduce air pollution, emissions of greenhouse gases, and community vulnerability to climate change impacts.

AIR POLLUTION AND HEALTH EFFECTS

When it comes to direct human health effects, there are two main categories of air pollutants regulated in California: criteria pollutants and toxic air contaminants.

Criteria Pollutants/Air Pollutants of Concern

The federal and state governments have established ambient air quality standards for the following six criteria pollutants: O3, CO, NO2, SO2, particulate matter (particulate matter smaller than 10 microns or less in diameter [PM10] and particulate matter smaller than 2.5 microns or less in diameter [PM2.5]), and lead. O3, NO2, and particulate matter are generally considered to be "regional" pollutants, as these pollutants or their precursors affect air quality on a regional scale. Pollutants such as CO, SO2, lead, and particulate matter are considered to be local pollutants that tend to accumulate in the air locally. Particulate matter is considered to be a localized pollutant as well as a regional pollutant.

Toxic Air Contaminants (TACs)

TACs are a broad class of compounds known to cause morbidity or mortality (usually because they cause cancer) and include, but are not limited to, the criteria air pollutants listed above. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., benzene near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, state, and federal level.

AIR QUALITY IN THE COMMUNITY PLAN AREA

The Tahoe Basin is located in the Lake Tahoe Air Basin (LTAB) that comprises portions of Placer and El Dorado counties in California, and Washoe and Douglas counties and the Carson City Rural District in Nevada. According to documents from the Tahoe Integrated Information Management System (TIIMS), the bowl shape of the Lake Tahoe Basin has significant air quality implications as locally-generated air pollutants are often trapped in the "bowl"

Additionally, Lake Tahoe's location directly to the east of the crest of the Sierra Nevada mountain range allows prevailing easterly winds, combined with local mountain upslope winds, to bring air from populated regions west of the Sierras to the Tahoe Basin.

Existing Air Quality

One way of summarizing air quality for a year within a Region is to report the number of days with an Air Quality Index (AQI) in each level of concern category. For each air pollutant the EPA provides a rating that ranges from Good to Hazardous, which is based on the highest pollutant concentration measured that day. The EPA calculates the AQI for five major pollutants regulated by the Clean Air Act: ground level ozone, particulate matter, carbon monoxide, sulfur dioxide, and nitrogen dioxide.

For the Tahoe Region, daily air quality data was available for particulate matter (Sandy Way), carbon monoxide (Harvey's Hotel) and ozone (Incline Village and South Lake Tahoe Airport) from which daily pollutant specific AQI categories were determined. Since 2007 the number of "good" days has increased from 319 day in 2007 to 361 days in 2011. Only four moderate days were documented in 2011. Motor vehicles are responsible for most of the smog-producing pollutants (nitrogen oxides and reactive organic gases) in the Community Plan Area and two-thirds of the carbon monoxide. Miscellaneous processes is a major source of organic gases, including reactive organic gases that contribute to smog.

CLIMATE CHANGE AND GREENHOUSE GAS EMISSIONS

Global Climate Change is a change in the average air temperature as measured by wind patterns, storms, precipitation, and temperature. In the past 10,000 years the Earth has experienced incremental warming as glaciers retreated across the globe. However, scientists believe we have observed an unprecedented increase in the rate of warming over the past 150 years, roughly coinciding with the global industrial revolution. Evidence suggests this enhanced global warming is likely caused by humans, through emissions of greenhouse gases as a result of activities such as electricity generation, vehicle fuel consumption, and even farming and forestry practices.

Climate Change Impacts

Accelerating global climate change has the potential to cause a number of adverse impacts in California, such as: a shrinking Sierra snowpack that could threaten the state's water supply; public health risks caused by higher temperatures and more smog; damage to agriculture and forests due to reduced water storage capacity, higher temperatures, increased salt water intrusion, flooding, and pest infestations; critical habitat modification and destruction; eroded coastlines; increased wildfire risk; and increased electricity demand.[3]

Of particular concern to the Community Plan Area are water quality and water supply issues; increased temperature and extreme heat events; fire threat at the urban-wildland interface; and an imbalance between electricity supply and demand.

[3] Office of the Attorney General, Global Warming Impacts in California.

Greenhouse Gas Emissions

In 2012, the Tahoe Metropolitan Planning Organization (TMPO) and TRPA prepared an emissions inventory as part of the Tahoe Region Sustainability Plan. The baseline years used were 2005 to be consistent with other planning efforts in the Region and 2010 to quantify the effects of the economic downturn after 2005. Source categories were determined based on unique characteristics of the Tahoe Region including forestry, wildfires, and recreational boating, which are not typically significant in urban areas. Emissions estimates were also classified as direct and indirect. Direct emissions are those that result from activity contained entirely within the Basin. Indirect sources take into account emissions from activities outside of the Region that are attributable to activity within the Region (e.g., electricity generated outside of the Region that is consumed within the Region). As shown in Table 4.11-1 below, in 2010, the largest sources of emissions were electricity generation (40 percent), transportation (28 percent), and fuel combustion (21 percent). Between 2005 and 2010 the greatest increase in emissions were in the fire and energy sectors. Sectors with the greatest reductions in emissions were transportation and waste.

Table 4.11-1: Tahoe Region Greenhouse Gas Emission Inventory

Type	*Source Sector*	*Source Category*	*2005*	*2010*
Direct	Transportation	On-road mobile sources	331,476	319,106
		Recreational boats	22,403	15,994
		Other off-road equipment	53,860	58,751
	Fuel combustion	Wood combustion	97,700	104,297
		Natural gas combustion	179,885	187,755
		Other fuel combustion	5,858	6,161
	Fires	Wildfires and prescribed burns	4,284	91,652
	Land use	Livestock	12,734	12,734
Indirect	Energy	Electricity consumption	487,553	562,543
		Wastewater treatment	2,115	2,300
	Transportation	Aircraft	5,131	4,739
	Waste	Municipal solid waste	110,512	26,704
Total Emissions			**1,313,511**	**1,392,736**

Source: draft Final Report Development of a Regional Greenhouse Gas Emissions Inventory for the Lake Tahoe Basin, page 1-6.

GOALS AND POLICIES

AQ-G-1 **Attain and maintain local ambient air quality levels that help meet regional attainment status.**

AQ-P-1 Coordinate with other agencies and jurisdictions to reduce emissions, exposures, and health and environmental risks when developing and implementing programs, plans, and projects.

AQ-P-2 Reduce or limit sources of pollutants that degrade visibility.

AQ-P-3 Encourage the reduction of emissions from motor vehicles and other motorized machinery in the Community Plan Area.

AQ-P-4 Encourage the reduction of emissions from gas appliances.

AQ-P-5 Encourage the reduction of emissions through building efficiency.

AQ-P-6 Reduce emissions from wood burning stoves in the Community Plan Area, and require wood stoves to comply with current EPA emissions standards with a target compliance date of 2020.

AQ-P-7 Promote the reduction of air quality impacts from construction and property maintenance activities in the Community Plan Area.

AQ-P-8 Promote technologies that reduce the air quality impacts of prescribed burning, or non-burning methods of reducing hazardous forest fuels, where practical.

AQ-P-9 Support Placer County Air Pollution Control District and TRPA in the development of improved ambient air quality monitoring capabilities within the Community Plan Area.

4.12 Noise

This section identifies noise sources that exist within the Community Plan Area and discusses how to mitigate their potential impacts through both preventative and responsive measures.

NOISE CHARACTERISTICS AND MEASUREMENT

Noise is commonly defined as undesirable or unwanted sound. Noises vary widely in their scope, source, and volume, ranging from individual occurrences such as leaf blowers, to the intermittent disturbances of overhead aircraft, to the fairly constant noise generated by traffic on freeways. Noise is primarily a concern with regard to noise–sensitive uses such as residences, schools, churches, and hospitals.

Noise Measurement

Three aspects of community noise are used in assessing the noise environment:

- *Level* (e.g., magnitude or loudness) of sound. Sound levels are measured and expressed in decibels (dB) with 10 dB roughly equal to the threshold of hearing. Table 4.12-1 shows the decibel levels associated with different common sounds.
- *Frequency* composition or spectrum of the sound. Frequency is a measure of the pressure fluctuations per second, measured in units of hertz (Hz). The characterization of sound level magnitude with respect to frequency is the sound spectrum, often described in octave bands, which divide the audible human frequency range (e.g., from 20 to 20,000 Hz) into ten segments.
- *Variation* in sound level with time, measured as noise exposure. Most community noise is produced by many noise sources that change gradually throughout the day and produce a relatively steady background noise having no identifiable source. Identifiable events of brief duration, such as aircraft flyovers, cause the community noise level to vary from instant to instant. A single number called the equivalent sound level or L_{eq} describes the average noise exposure level over a period of time.

Transient noise events may be described by their maximum A-weighted noise level (dBA) Hourly L_{eq} values are called Hourly Noise Levels.

Table 4.12-1: Typical Noise Levels

Common Outdoor Activities	*Noise Level (dBA)*	*Common Indoor Activities*
	–110–	Rock band
Jet flyover at 1,000 feet		
	–100–	
Gas lawn mower at 3 feet		
	–90–	
Diesel truck at 50 feet traveling 50 miles per hour		Food blender at 3 feet
	–80–	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower at 100 feet	–70–	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	–60–	
		Large business office
Quiet urban daytime	–50–	Dishwasher next room
Quiet urban nighttime	–40–	Theater, large conference room
Quiet suburban nighttime		
	–30–	Library
Quiet rural nighttime		Bedroom at night, concert
	–20–	
		Broadcast/recording studio
	–10–	
Lowest threshold of human hearing	–0–	Lowest threshold of human hearing

Source: Caltrans; 1998.

Reporting Noise Levels

Measuring and reporting noise levels involves accounting for variations in sensitivity to noise during the daytime versus nighttime hours. Noise descriptors used for analysis factor in human sensitivity to nighttime noise when background noise levels are generally lower than in the daytime and outside noise intrusions are more noticeable. Common descriptors include the Community Noise Equivalent Level (CNEL) and the Day-Night Average Level (DNL, symbol (L_{dn}). Both reflect noise exposure over an average day with weighting to reflect the increased sensitivity to noise during the evening and night. The CNEL descriptor is used in relation to major continuous noise sources, such as aircraft or traffic, and is the reference level for the Policy Document.

Knowledge of the following relationships is helpful in understanding how changes in noise and noise exposure are perceived:

- Except under special conditions, a change in sound level of 1 dB cannot be perceived;
- A 3 dB change is considered a just-noticeable difference;
- A 5 dB change is required before any noticeable change in community response would be expected. A 5 dB increase is often considered a significant impact; and
- A 10 dB increase is subjectively heard as an approximate doubling in loudness and almost always causes an adverse community response.

NOISE GENERATION IN THE COMMUNITY PLAN AREA

TRPA identifies noise levels from transportation corridors as the main source of noise in the Community Plan Area. Other noise sources include motorized watercraft, construction vehicles and equipment, machinery associated with refuse collection and snow removal, and off-road vehicles.

In 2011, Ascent Environmental modeled existing traffic noise levels at 100 feet from the centerline of major roadways in the Tahoe Basin. The traffic noise modeling results are based on existing average daily traffic volumes and speeds from traffic counts collected in 2010 as part of the traffic analysis included in Section 3.3, Transportation, of the Regional Plan Update draft Environmental Impact Statement (dEIS). In many cases, the actual distances to noise level contours may vary from the distances predicted by the traffic noise model. Factors such as roadway curvature, roadway grade, shielding from local topography or structures, elevated roadways, or elevated receivers may affect actual sound propagation. The distances reported are considered to be conservative estimates of noise exposure along roadways in the Community Plan Area.

As shown in Table 4.12-2 below, the 55-bd CNEL/L_{dn} traffic noise contours along four of the five roadway segments located in the Community Plan Area extend beyond the highway corridor (300 feet from highway edge).

Table 4.12-2: Existing Travel Noise Levels

Roadway Segment	*CNEL/L_{dn} (db) at 100 feet from Roadway Centerline*	*Distance (ft) from Roadway Centerline to CNEL/D_{dn} (DB)*			
		70	*65*	*60*	*55*
SR 28 mp 11.00	62.7	33	71	152	328
SE 28 mp 1.85	64.7	44	95	205	442
SR 89 mp 13.72	65.3	49	105	227	490
SR 267 mp 6.23	66.2	55	119	257	554
SR 267 mp 9.28	64.2	28	60	129	278

Notes: CNEL = Community Noise Level Equivalent; dB = A-weighted decibels; Ldn = day-night average noise level; and mp = mile post.

Source: Ascent Environmental, 2011.

TRPA conducted a shoreline test for motorized watercraft as part of the 2011 Thresholds Evaluation. The threshold is measured based on the number of exceedances of the noise limit (>75 dBA) during the year by motorized watercraft. The current threshold is zero single-event exceedances of the shoreline test noise limit. Two noise monitoring sites are located in the Community Plan Area, one in Kings Beach and the other in Tahoe City. While TRPA didn't disaggregate the data by testing site, for the period from 2009 to 2011 the exceedance rate on average for Lake Tahoe increased by about 0.045 exceedances/day/year. However, according to TRPA, there is insufficient data to determine a trend and confidence in this status is low.

TRPA also measured cumulative noise events as part of the 2011 Thresholds Evaluation. Depending on the land use category, the adopted CNEL standards range from 45 dBA (e.g. critical wildlife habitat and wilderness areas) to 65 dBA (e.g. highway corridors). TRPA evaluated the status of 16 adopted threshold standards for CNEL. According to TRPA, data indicates that the regional status is somewhat worse than the established target, particularly for critical wildlife habitat areas and the SR 267 transportation corridor.

GOALS AND POLICIES

N-G-1 **Protect public health and welfare by eliminating noise problems and maintaining an acceptable indoor and outdoor acoustic environment.**

N-P-1 Observe adopted CNEL standards for highways located in the Community Plan Area.

N-P-2 Work with TRPA, Caltrans, TART, USFS, and the Placer County Public Works Roads Division to mitigate transportation-related noise impacts on residential and sensitive uses. Additionally, continue to limit hours for construction and demolition work to reduce construction-related noises.

N-P-3 Prohibit off-road vehicle use in the Community Plan Area except on specified roads, trails, or designated areas where impacts can be mitigated.

N-P-4 Restrict use of snowmobiles to designated areas.

N-P-5 Permit uses only if they are consistent with the noise standards or are otherwise exempted. Require noise mitigation measures on all structures containing uses that would otherwise adversely impact the prescribed noise levels.

4.13 Natural Hazards

Ensuring safety of community members, through protection from hazards, is an essential service of pubic agencies and a critical priority for maintaining community health. This section establishes goals and policies to mitigate the potential impacts from natural hazards that pose a threat to public health and safety in the Community Plan Area, including seismic and geologic hazards, flood, fire, emergency preparedness, and coordinated response measures.

FIRE HAZARDS

The threat of catastrophic fires has been identified as the number one public concern in the Tahoe Region. The forests in the Tahoe Basin are significantly different than found prior to logging during the Comstock era. Prior to Comstock logging during the late 1800s, forest stands were much less dense consisting of larger trees and open understories. The current forest stand characteristics have created excess fuel hazards capable of supporting stand-destroying fires that threaten communities and ecosystem health along the north and west shores of Lake Tahoe.[4]

Ignition Risk

The Tahoe Basin has one of the highest fire ignition rates in the Sierra Nevada. According to data from the US Forest Service's Lake Tahoe Basin Management Unit (LTBMU), between 1973 and 1996 the highest occurrence of ignitions in the Community Plan Area occurred at Brockway, from Kings Beach to Tahoe Vista, and Dollar Point. The lowest occurrence of ignitions occurred at Homewood.[5]

Values at Risk

In 2004, communities in the California portion of the Tahoe Basin were assessed and ranked based on fire susceptibility, value of the community (based on percentage of each watershed covered by development), impacts to lake clarity (soil erosion hazards), and percentage of old growth forests within each watershed. Based on this assessment, values at risk within the Community Plan Area include: Brockway and portions of Kings Beach; Dollar Point; Cedar Flat and the Highlands; and portions of Tahoe City, the Truckee River corridor, and Talmont.

[4] Lake Tahoe Basin California Portion, Community Wildfire Protection Plan. C.G Celio & Sons Co, Steve Holl Consulting, and Wildland Rx (2004).

[5] ibid

FLOODING

Flood risk is a consequence of rainfall characteristics, topography, water features, vegetation and soil coverage, impermeable surfaces, and the Community Plan Area's stormwater management infrastructure.

The Federal Emergency Management Agency (FEMA) has published floodplain maps showing areas that would be inundated by the 100-year flood. As shown in Figure 4-8, various waterways located in the Community Plan Area are subject to the 100-year flood. Rivers and creeks prone to flooding in the Community Plan Area include Blackwood Creek, Ward Creek, Burton Creek, Lake Forest Creek, Tahoe Vista Creek, Griff Creek, and the Truckee River. Communities located in a portion of the 100-year floodplain include Kings Beach, Tahoe Vista, Dollar Point, Tahoe City, Tahoe Pines, and Homewood.

Additionally, potential exists for both tsunami and seiche-related waves up to 30 feet to occur along the shore of Lake Tahoe.

GOALS AND POLICIES

NH-G-1 **Minimize risks from natural hazards such as flooding, avalanche, earthquake and wildfire hazards.**

NH-P-1 Implement land development policies that minimize potential loss of property and threat to human life caused by flooding.

NH-P-2 Regulate development in identified avalanche or mass instability hazard areas.

NH-P-3 Prohibit additional development, grading, and filling of lands within the 100-year floodplain and in the area of wave run-up except for public recreation facilities, public service facilities, necessary crossings, restoration facilities, and as otherwise necessary to implement these goals and policies. Require all facilities located in the 100-year floodplain and area of wave run-up to be constructed and maintained to minimize impacts on the floodplain.

NH-P-4 Inform residents and visitors of the wildfire hazard associated with occupancy in the Community Plan Area. Encourage use of fire resistant materials and fire preventative techniques when constructing structures, especially in the highest fire hazard areas. Manage forest fuels to be consistent with state laws and other goals and policies of Placer County and the North Tahoe Fire Protection District.

NH-P-5 Require public safety agencies to prepare and update disaster plans.

NH-P-6 Initiate a program to eliminate unsafe and hazardous structures through a comprehensive survey of buildings to determine susceptibility to seismic damage.

NH-P-7 Maintain strict enforcement of seismic safety standards for new construction contained in the Uniform Building Code.

NH-P-8 Stabilize cuts along SR 28 in Dollar Point.

PLACER COUNTY
WASHOE COUNTY
EL DORADO COUNTY
North Tahoe East Plan Area
North Tahoe West Plan Area
Greater Tahoe City Plan Area
West Shore Plan Area
LAKE TAHOE
Agate Bay
Carnelian Bay
McKinney Bay
Burton Creek State Park
North Tahoe Regional Park
Kings Beach State Park
Ward Creek
Sugar Pine Point State Park
89
267
28
Mt Watson Rd
Lake Vista Rd
Regency Way
North Ave
Specked Ave
Road 49
Polaris Rd
Courchevel Rd
Silver Tip Dr
Ward Creek Blvd
Sugar Pine Rd
Grand Ave
Alder Ave
Grouse Dr
Alder St
Fanny Bridge Rd
Fig 4-8
Flood Zones
Flood Zone
100 Year Floodplain
500 Year Floodplain
Community Plan Area Boundary
Community Plan Sub-Areas
Streams
Major Highways
Roads
Parks
Lake Tahoe
County Boundary
0 0.5 1 2 Miles
Data Source: Placer County, Placer County Geographic Information System, 2013; Dyett & Bhatia, 2013