Part 2 Conservation Plan

The importance of environmental conservation at Lake Tahoe Region is emphasized by TRPA's guiding principles.

"*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 West Shore Multi Use Trail

This Conservation Plan outlines policies and programs to protect, preserve, and enhance the Area Plan's natural and cultural resources. It implements the Regional Plan at the local level to achieve and maintain the environmental Threshold standards.

Topics addressed include water quality, soil conservation and land coverage, stream environment zone (SEZ), air quality, scenic resources, vegetation, fisheries and aquatic resources, wildlife resources, noise, cultural resources and natural hazards.

2.1 2011 Threshold Evaluation

The 2011 Threshold Evaluation Report provides a snapshot of the overall environmental health at Lake Tahoe and is the fifth report since the adoption of the 1987 Regional Plan. Its findings indicate that significant environmental progress has been made and trends are increasingly positive. The Evaluation also shows that challenges remain.

Summary findings of the Threshold Evaluation Report are listed in Table 2.1. Consistent with the Regional Plan, this Area Plan is focused on addressing the Threshold areas of concern.

Table 2.1: 2011 Threshold Evaluation Report Findings

Threshold	*2011 Threshold Evaluation Executive Summary Findings*
Water Quality	The rate of Lake Tahoe annual clarity decline has slowed over the last decade. The winter clarity threshold indicator met the interim target of 78.7 feet (2011 measured 84.9 feet) and is trending toward attainment of 109.5 feet. Trends in stream water quality indicated that conditions have not declined over time. However, summer lake clarity and nearshore conditions are highlighted as major areas of concern.
Air Quality	The Tahoe Basin made air quality gains over the last five years. The majority of air quality indicators in the Lake Tahoe Basin were at or better than attainment with adopted standards. The Report shows that indicators for carbon monoxide and vehicle-miles-traveled moved from non-attainment into attainment. Federal and state tailpipe and industrial emission standards have likely contributed to this achievement along with local projects which delivered walkable, transit-friendly improvements such as the Heavenly Gondola in South Lake Tahoe.
Soil Conservation	An analysis of impervious cover (land coverage) showed that seven of nine indicators were in attainment with threshold targets, however, sensitive wetlands and very steep lands are "over-covered" which can negatively affect water quality and other resources. Stream zone restoration efforts implemented by TRPA partner agencies are making progress in achieving restoration goals with more needing to be done.
Scenic Resources	The Tahoe Basin made gains in scenic quality over the last five years. Overall, compliance with scenic quality standards is at 93 percent with an improving trend in scenic quality for the built environment. Developed areas along roadways and Lake Tahoe's shoreline continue to be the locations where scenic improvements are needed.
Vegetation	The Regional Plan and partner agencies have successfully protected sensitive plant species, keeping those standards in attainment. However, a couple of uncommon plant communities fell short of attainment because of non-native species; beaver, aquatic invasive species and noxious weeds were identified as potential threats to the integrity of uncommon plant communities. Progress is being made on fuels reduction and forest ecosystem restoration.
Recreation	Both Recreation Threshold Standards have been implemented and are in attainment. TRPA partners have made substantial progress in upgrading recreational facilities through the Environmental Improvement Program.
Fisheries	TRPA and partner agencies have implemented a robust aquatic invasive species control and prevention program; however, aquatic invasive species continue to be a major area of concern because their threat to fisheries

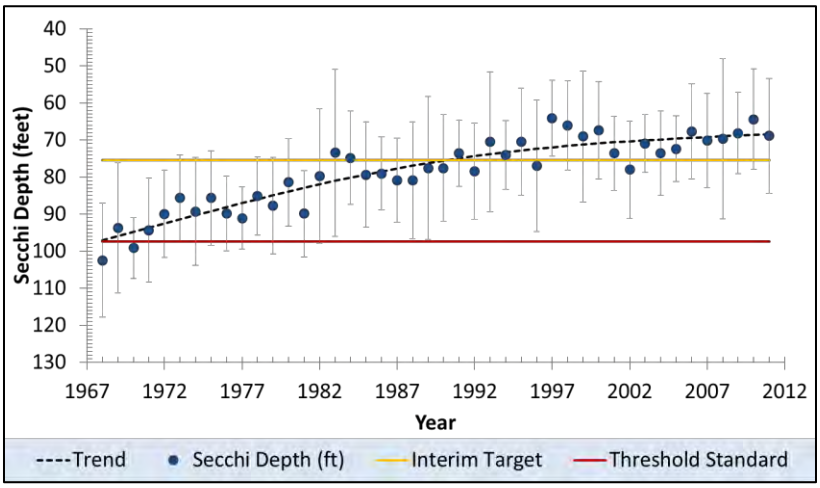
Table 2.1: 2011 Threshold Evaluation Report Findings

Threshold	*2011 Threshold Evaluation Executive Summary Findings*
	and other aquatic biota.
Wildlife	Indicators for special interest wildlife species show stable or improving conditions. TRPA's development regulations have protected riparian wildlife habitats and partner agencies are making progress restoring these valuable habitats.
Noise	TRPA and the peer review panel recommended that noise standards and evaluation approaches be re-evaluated. The majority of standards were determined to be out of attainment as a result of a 'no exceedance' interpretation of the standard and that TRPA has little enforcement authority to address many noise issues – in particular, single event noise.

Source: 2011 Threshold Evaluation.

2.2 Water Quality

Restoring Lake Tahoe's water quality has been a top priority for decades. Data indicates that after years of steady decline, Lake Tahoe's average annual clarity has nearly stabilized, albeit well below the 97.4 foot threshold standard (1967-71 levels). Nearshore water quality and algae are topics of significant concern and active research.



Lake Tahoe Water Clarity (Average Annual Secchi Depth). Source: TRPA 2011 Threshold Evaluation, December 12, 2012.

To address water quality challenges, Placer County and partner organizations have made substantial investments in water quality initiatives. Completed and current water quality improvement projects are described below and depicted in the maps that follow (Figures 2-1 through 2-5).

ENVIRONMENTAL IMPROVEMENT PROGRAM (EIP)

The multi-agency Environmental Improvement Program (EIP) was launched in 1997 to improve the environment at Lake Tahoe. The EIP focuses on accelerating Threshold attainment with public and private investments in physical projects including erosion control measures, riparian area restoration, transportation, forest health, and others. TRPA administers the program.

Within the Plan area, water quality and erosion control EIP projects have been completed by various agencies, including Placer County, the State of California, California Tahoe Conservancy, local utility and fire protection districts and the U.S. Forest Service. Region-wide, over $1 billion in federal, state, local and private funds have been invested in EIP Projects. Completed EIP water quality projects are mapped in Figures 2-1, 2-2 and 2-3 and described in the Implementation Plan.

This Area Plan supports continued implementation of the EIP in coordination with regional partners and the TMDL Program. As a capital program, project completion is directly related to availability of funding.

BEST MANAGEMENT PRACTICES (BMPs)

Best Management Practices (BMPs) are stormwater management measures that reduce runoff volume, peak flows, and pollution levels through detention, infiltration, evapotranspiration, and filtration. TRPA requires that BMPs be installed with all development permits and be designed to stabilize soil and infiltrate the volume of a 20-year, one-hour storm onsite. TRPA also requires that property owners in the Tahoe Region install BMPs on existing developed parcels – even if improvements are not being made.

As shown in Table 2.2-A, BMP compliance for developed parcels in the Plan area was 29 percent in 2013, slightly lower than the regional compliance rate. The significant cost of BMP retrofits has limited compliance. Properties with BMP certificates are mapped on Figures 2-1, 2-4 and 2-5.

For projects delegated to the County for approval under the Area Plan MOU, the County will enforce BMP compliance in consultation with TRPA. TRPA will continue to enforce the BMP retrofit program for properties not seeking development approvals. The MOU outlines the administrative details.

Table 2.2-A: BMP Compliance in the Area Plan

Land Use	*Parcels*	*BMP Certificates*	*BMP Compliance*
Single Family	9,983	3,078	31%
Multifamily	635	247	39%
Commercial	266	52	20%
Tourist	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.

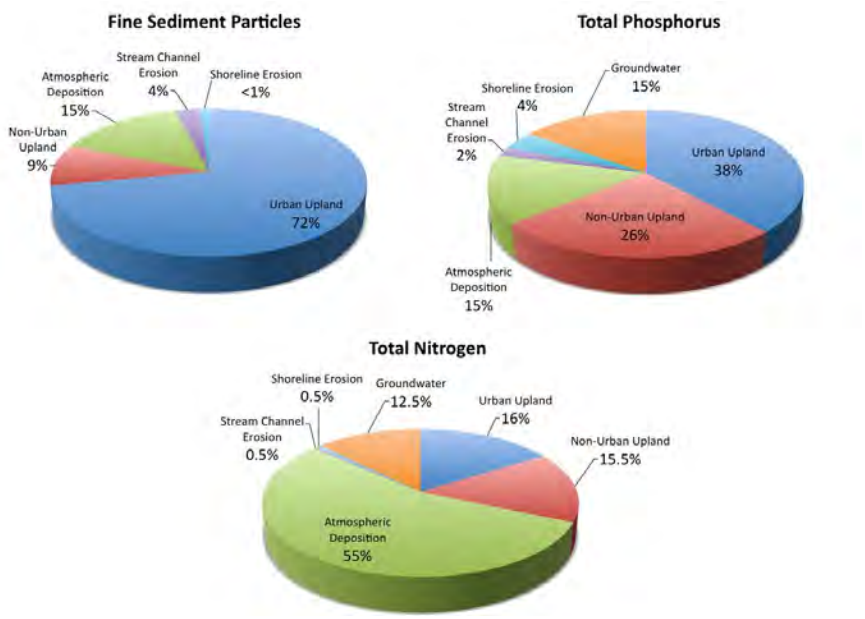
Source: TRPA, 2013.

LAKE TAHOE TMDL (TOTAL MAXIMUM DAILY LOAD)

The Lake Tahoe TMDL program was developed in accordance with U.S. Clean Water Act and was approved in 2011. The TMDL is intended to complement the Regional Plan and was prepared in coordination with TRPA.

Lake Tahoe's West Shore

In the 2000s, extensive studies for the Lake Tahoe TMDL provided detailed information related to water quality. TMDL reports adopted by California and Nevada identified fine sediment particles, nitrogen and phosphorus as Lake Tahoe's primary pollutants. Fine sediment particles are the most dominant pollutant contributing to the impairment of the lake's deep water transparency and clarity, accounting for roughly two thirds of the lake's impairment.



Lake Tahoe Estimated Pollutant Loading. Source: Final Lake Tahoe Total Maximum Daily Load Report, November, 2010.

A pollutant source analysis identified urban uplands runoff, atmospheric deposition, forested upland runoff, and stream channel erosion as the primary sources of fine sediment particle, nitrogen, and phosphorus loads discharging to Lake Tahoe. The largest source of fine sediment particles to Lake Tahoe is urban stormwater runoff, comprising 72 percent of the total fine sediment particle load. The urban uplands also provide the largest opportunity to reduce fine sediment particle and phosphorus contributions to the lake.

While the TMDL focuses on impairment of Lake Tahoe's deep water transparency and clarity, the primary pollutants that it addresses (fine sediment, nitrogen and phosphorous) have also been shown to affect nearshore water quality.

Load reduction targets for fine sediments, phosphorus, and nitrogen have been established in the TMDL to attain the Lake Tahoe transparency standard over a 65-year implementation period. To meet the requirements of the TMDL program, each jurisdiction holding a NPDES permit – including Placer County – is required to reduce their baseline pollutant load by the set amounts.

Placer County's initial Pollutant Load Reduction Plan (PLRP) was approved in 2013. Load reduction targets are being achieved with Water Quality Improvement Projects in high priority catchments, pollutant control management measures in road maintenance operations, and the completion of private parcel Best Management Practices (BMPs) for larger projects and redevelopment activities.

Table 2.2-B identifies the pollutant load reduction requirements for Placer County.

Table 2.2-B: 2016 Pollutant Load Reduction Requirements

Parameter	*Base Load (kg/year)*	*Annual Load Reduction (%)*	*Annual Load Reduction (kg)*	*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, May 2013.

Since the 2004 baseline period, Placer County has completed sixteen qualifying projects, as listed in Table 2.2-C and mapped in Figures 2-1, 2-2 and 2-3. Registered TMDL catchments, the pollutant loading for each catchment, and the status of BMP certification are mapped in Figures 2-1, 2-4 and 2-5.

Table 2.2-C: Completed TMDL Water Quality Improvement Projects

Water Quality Improvement Project	*Year Completed*	*Load Reduction Estimate (FSP)*	*Lake Clarity Credit*
Dollar Point	2008	3,241	16.2
Lake Forest Meadow	2009-2010	2,184	11.0
Timberland	2004	551	3.0
Upper Cutthroat	2005	398	2.0
Lake Tahoe Park	2004	804	4.0
Tahoe Pines - Area A	2007	1,195	6.0
Tahoe Pines - Area B	2009	43	0.3
Tahoe Pines - Area C	2011	1,704	9.0
Tahoe Estates	2009	3,112	16.0
West Sunnyside Phase I	2008	1,305	7.0
Fox Clean Water Pipe	2010	400	2.0
Tahoe City Residential	2011	969	5.0
Brockway	2012	2,022	10.0
Homewood Phase 1 & 1A	2012	3,800	19.0
Beaver Street Retrofit	2007	928	5.0
Lake Forest Highlands	2012	1,000	5.0
Total		**23,656**	**120.5**

Note: One lake clarity credit = 200.42 pounds of FSP.

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

Placer County anticipates completion of six additional TMDL water quality improvement projects by September 2016. The current projects are listed in Table 2.2-D.

Table 2.2-D: Current TMDL Water Quality Improvement Projects

Water Quality Improvement Project	*Year Completed*	*Load Reduction Estimate (FSP)*	*Lake Clarity Credit*
Lake Forest Panorama	2014-2015	6,040	30.1
West Sunnyside Phase II	2016	1,414	7.1
Snow Creek Restoration	2014	1,800	9.0
Kings Beach CCIP	Underway	10,508	52.4
Griff Creek	Underway	900	4.5
Kings Beach WIP [1]	2016	3,000	15.0
Total		**23,662**	**118.1**

1. Kings Beach WIP includes two subwatershed projects within the Kings Beach Planning Area.

Source: County of Placer Lake Tahoe Pollutant Reduction Plan, May 2013. Project status updated January 2015.

In addition to the water quality improvement projects, Placer County is implementing additional Pollutant Control Management Measures for road maintenance activities. These are listed in Table 2.2-E.

Table 2.2-E: Pollutant Control Management Measures Summary

Action	*Load Reduction Estimates (lbs/year) FSP*	*Lake Clarity Credits*
Change Abrasive Type	3,234	16
Increase Frequency of Sweeping	2,405	11
Utilize New High-Efficiency Sweeper	3,006	15
Management Measures Total [1]	**5,411**	**25**
Percentage of Required Credits	**26,260**	**10%**

1. Does not include changing abrasives - as a credit methodology is in development.

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

The completed and current projects, along with identified pollution control management measures, are expected to reduce pollution loading by the required amounts. Additional efforts are being evaluated for future Load Reduction Plans in accordance with TMDL criteria.

WATER QUALITY POLICIES

WQ-P-1 Continue to participate in the Lake Tahoe Total Maximum Daily Load (TMDL) program, maintain Pollutant Load Reduction Plans (PLRPs), and implement the identified pollutant load reduction measures.

WQ-P-2 Continue to participate in the Lake Tahoe Environmental Improvement Program (EIP) and coordinate with other agencies to identify and secure funding for water quality improvement projects.

WQ-P-3 Continue to prioritize and seek funding assistance for the installation and long-term maintenance of Water Quality Best Management Practices (BMPs).

WQ-P-4 Reduce pollutant loading to Lake Tahoe by implementing incentives for redevelopment within Town Centers and the transfer of development to Town Centers in accordance with the Regional Plan.

WQ-P-5 Pursue Area-Wide water quality treatment districts in coordination with involved property owners and in accordance with the Regional Plan and TMDL. Within an approved district, water quality facilities may be jointly managed in lieu of certain parcel-specific BMP requirements.

Priority will be given to sites with interested property owners, in high pollution loading catchments, on SEZ lands and within Town Centers.

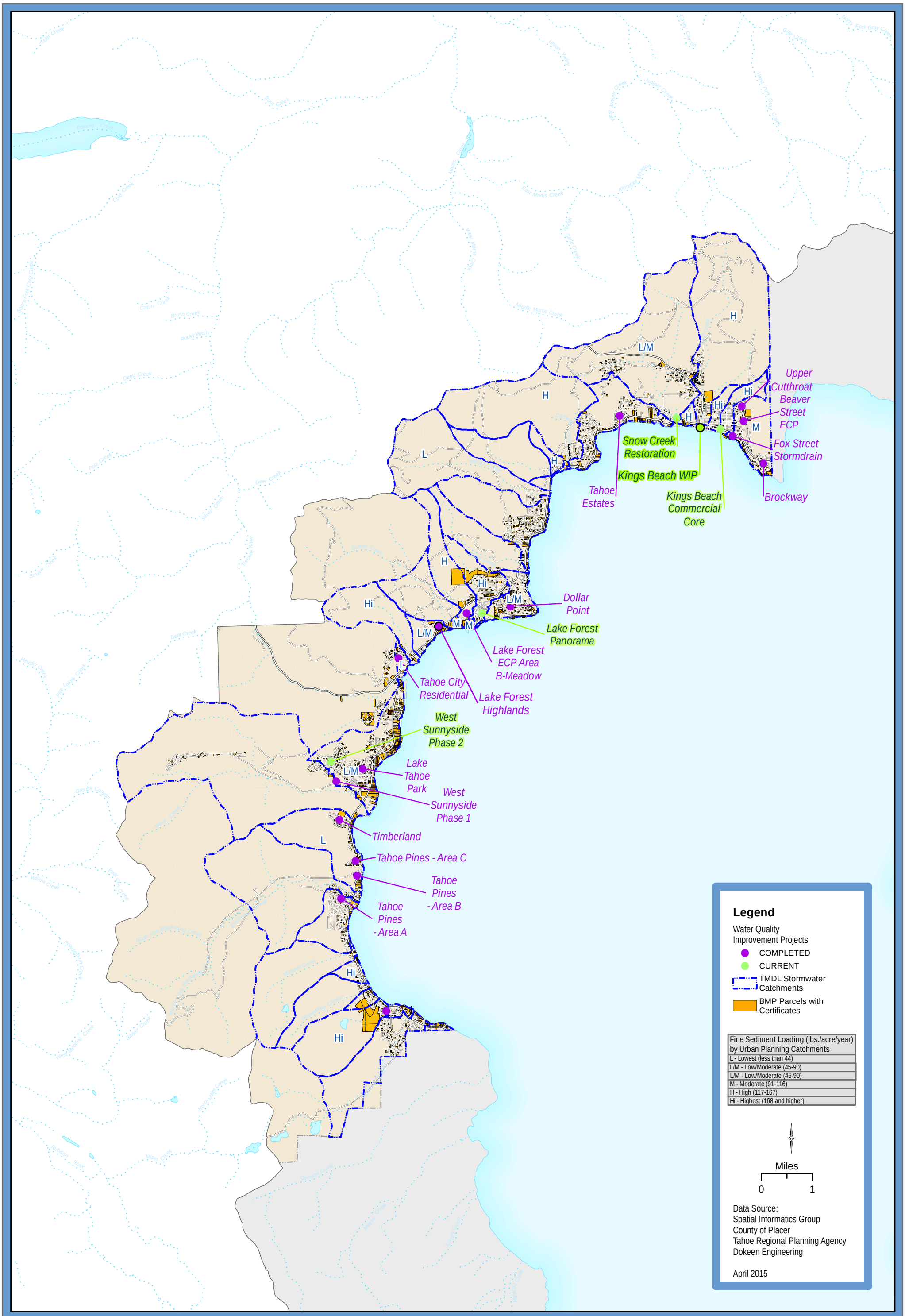
WQ-P-6 Evaluate the feasibility of establishing one or more public stormwater districts to construct and maintain water quality improvements.

WQ-P-7 Implement the recommendations outlined in the Pollutant Load Reduction Plan (PLRP) to achieve the Lake Tahoe TMDL five-year load reduction target for year 2016.

WQ-P-8 Collaborate 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 Placer County Tahoe Basin Area Plan hereby incorporates by reference all, monitoring ,operations and maintenance, and reporting required by the County's NPDES permit, the adopted Pollutant Load Reduction Plan and the Stormwater Management Plan, which will also be utilized by TRPA in the 4-year Area Plan recertification process pursuant to TRPA Code Sections 13.8.2 and 13.8.5

WQ-P-9 All TRPA policies, ordinances and programs related to Water Quality will remain in effect.

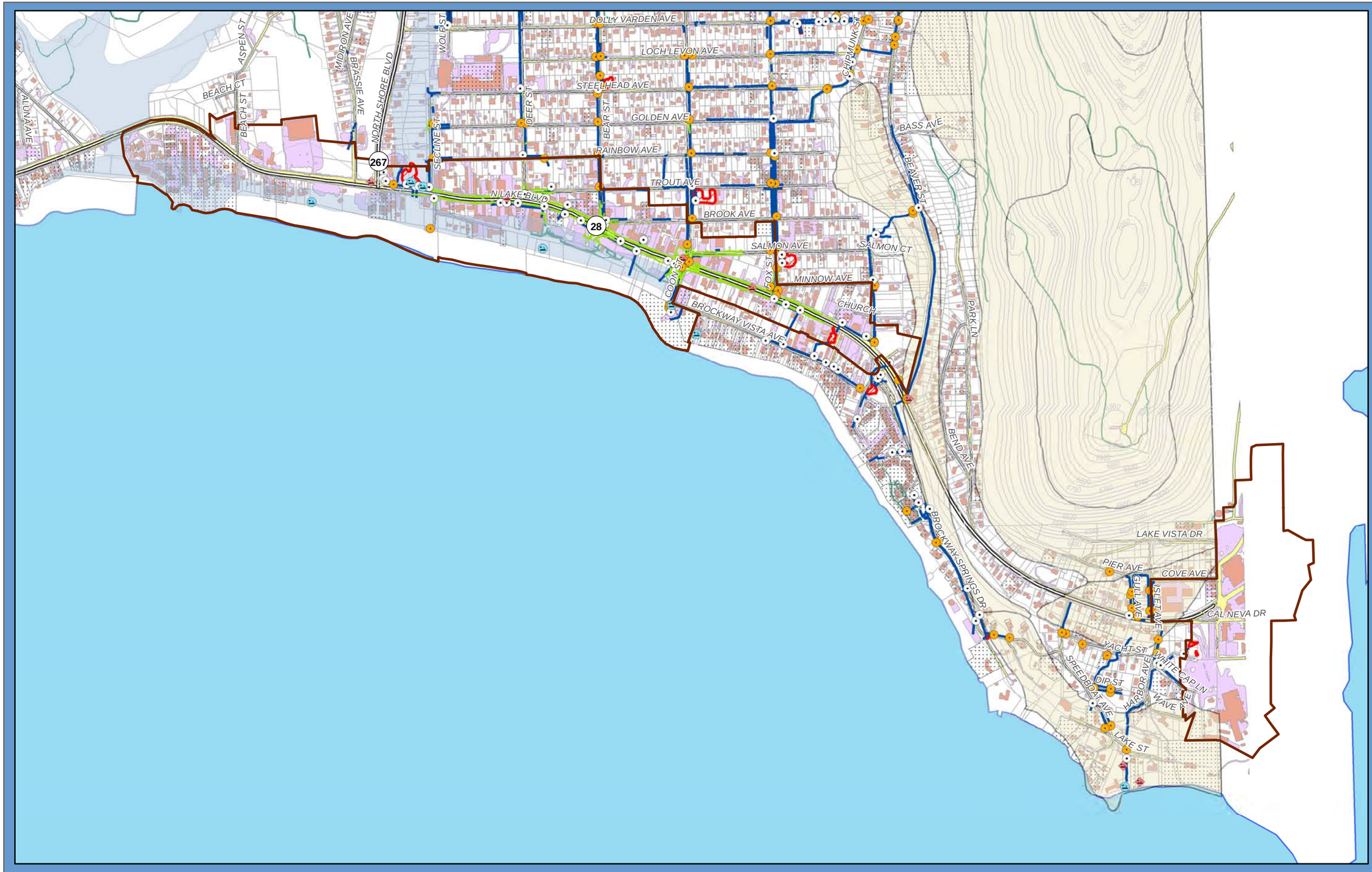
The Implementation Plan describes the water quality improvement projects. Regulations are outlined in the Area Plan Implementation Regulations.



PLACER COUNTY
COMMUNITY DEVELOPMENT RESOURCE AGENCY
GEOGRAPHIC INFORMATION SYSTEM DIVISION

Tahoe Basin Area Plan

Figure 2-1
Water Quality Improvement Projects and BMP Certified Properties



Legend

Water Quality Improvement

Approximate Location

- Discharge
- Non-Stormwater Outfall
- Drainage Inlet
- Sediment Trap
- Curb and Drianage
- Conveyance & Filtration Improvements
- Basins
- Contour (20 foot)

Land Capability

- Sensitive Lands
- SEZ
- BMP Certificates Issued

Impervious Surfaces

- Building
- Parking - Other Impervious Surface
- Pathways - Dirt Roads
- Roadways
- Town Center

Feet

0 500

Data Source:
Spatial Informatics Group
County of Placer
Tahoe Regional Planning Agency
Dokeen Engineering

April 2015

PLACER COUNTY
COMMUNITY DEVELOPMENT RESOURCE AGENCY
GEOGRAPHIC INFORMATION SYSTEM DIVISION

Tahoe Basin Area Plan

Figure 2-2
Kings Beach
Water Quality
Improvements

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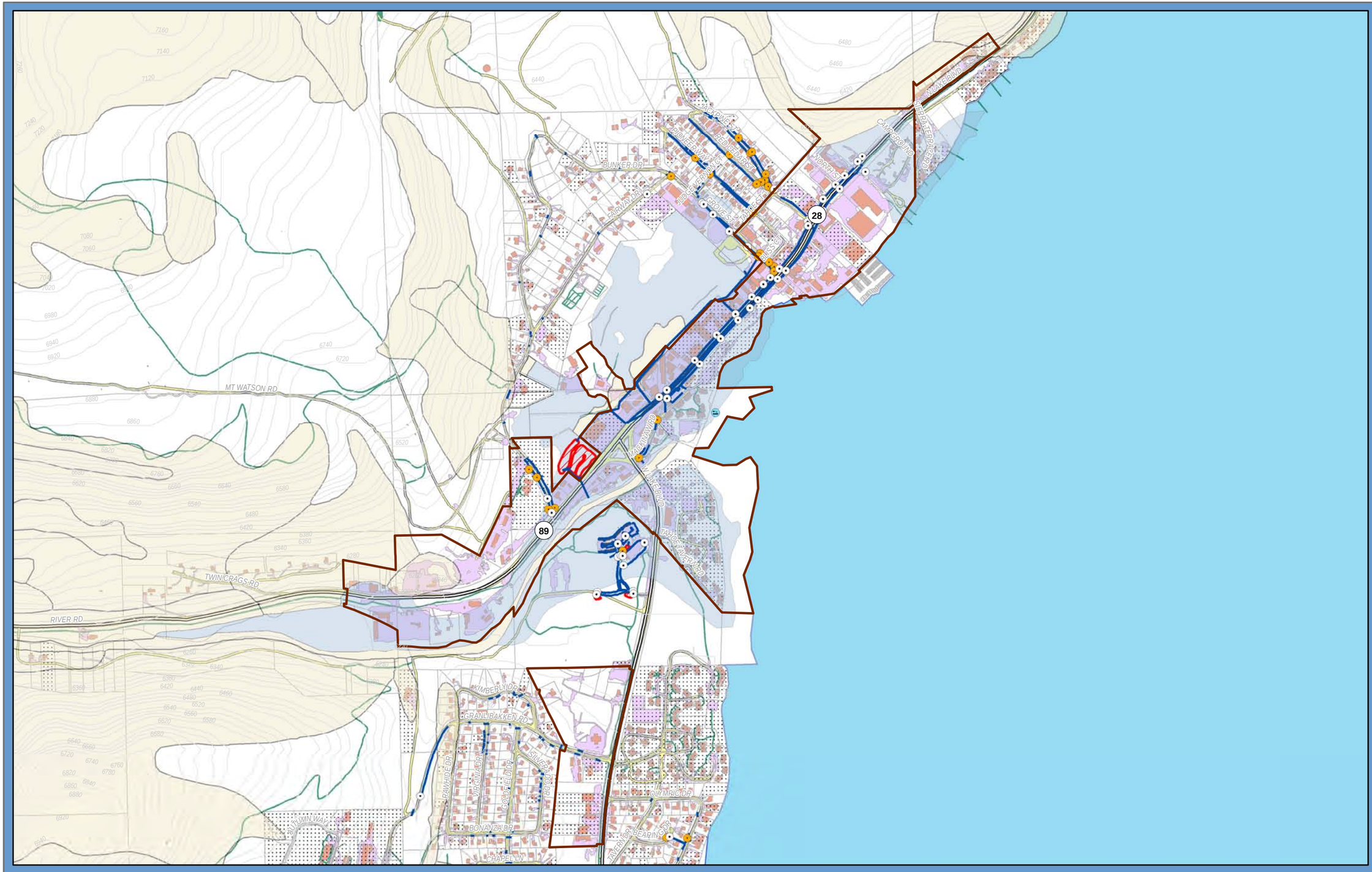

Legend

Water Quality Improvement

Approximate Location

- Discharge
- Non-Stormwater Outfall
- Drainage Inlet
- Sediment Trap
- Curb and Drainage
- Conveyance & Filtration Improvements
- Basins
- Contour (20 foot)

Land Capability

- Sensitive Lands
- SEZ
- Porous Pavement
- BMP Certificates Issued

Impervious Surfaces

- Building
- Parking - Other Impervious Surface
- Pathways - Dirt Roads
- Roadways
- Town Center

Feet

0 500

Data Source:
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County of Placer
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April 2015

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Tahoe Basin Area Plan

Figure 2-3
Tahoe City
Water Quality
Improvements

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