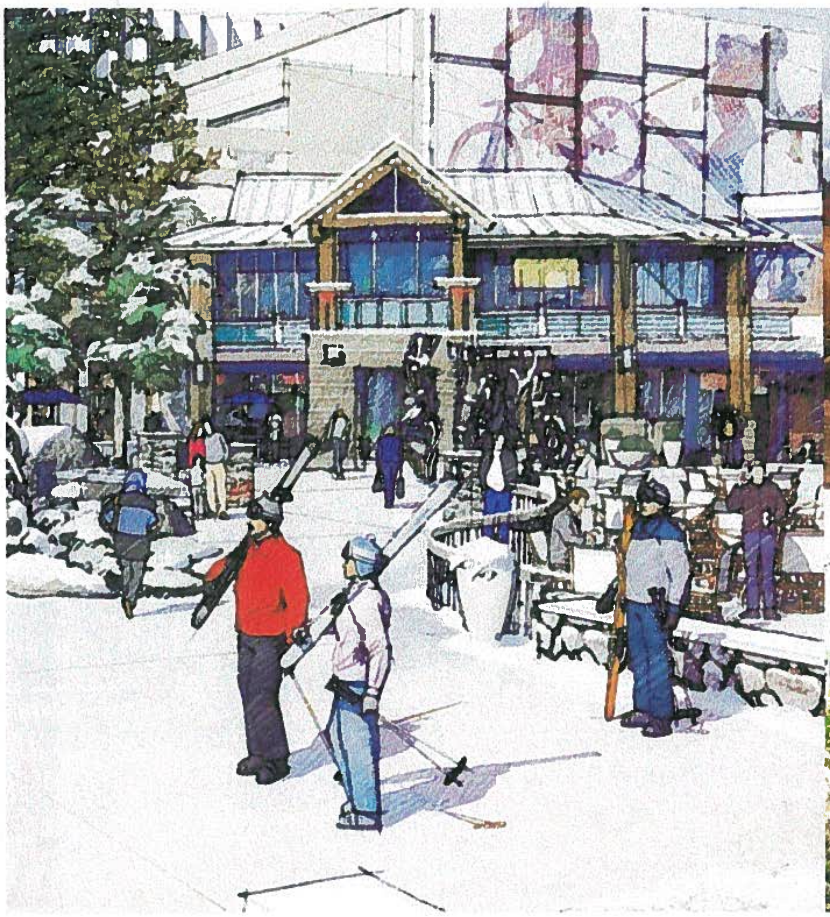
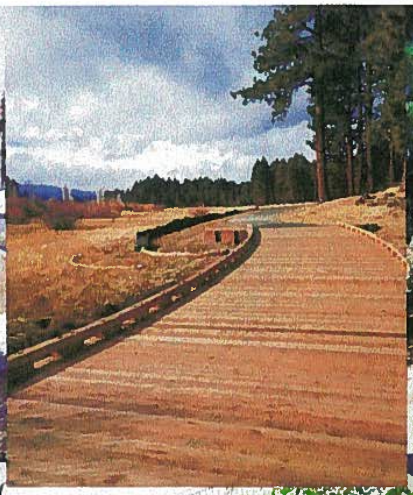
Douglas County Master Plan, Chapter 2, Land Use Element, Tahoe Planning Area





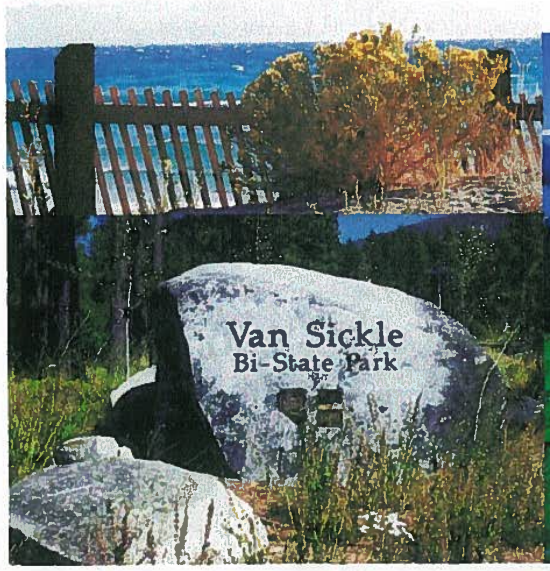
Draft South Shore Area Plan

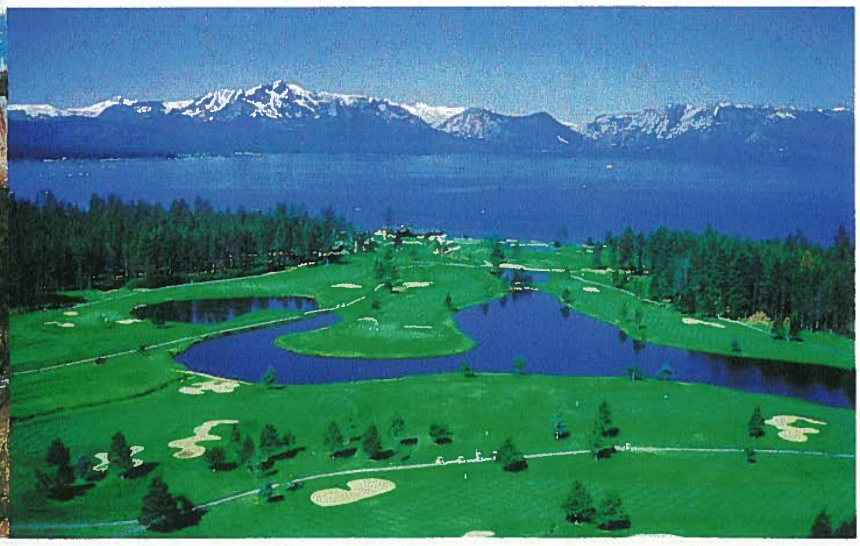
Douglas County, Nevada

June 20, 2013

DOUGLAS COUNTY
GREAT PEOPLE ▲ GREAT PLACES

TAHOE REGIONAL PLANNING AGENCY





AGENDA ITEM NO. VIII.A.

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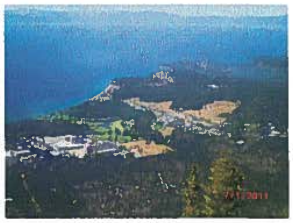
Tahoe Planning Area

Introduction



The Tahoe Planning Area serves as the Land Use Element of the South Shore Area Plan and future Area Plan for the rest of Douglas County under the jurisdiction of the Tahoe Regional Planning Agency (TRPA). It has been developed to conform to the Tahoe Regional Planning Compact, Thresholds, and 2012 TRPA Regional Plan. Once an Area Plan is adopted by the TRPA Governing Board, it is considered to be a component of the TRPA Regional Plan.

Location and General Description

The Tahoe Planning Area, previously referred to as the Tahoe Regional Plan, is located on the western edge of Douglas County, Nevada. The area totals 23,461 acres, or approximately 5 percent of the County. Approximately 84 percent of land is in public ownership, and the remaining 16 percent is in private ownership. The area borders Lake Tahoe, the 10th deepest lake in the world, known for the clarity of its waters and scenic beauty.

Background

The Lake Tahoe Region is under the jurisdiction of the TRPA, established in 1969 under the Bi-State Tahoe Regional Planning Compact (Public Law 91-148), in order to control growth and development and protect Lake Tahoe's clarity and environment.

In the 1980s, the Bi-State Tahoe Regional Planning Compact was amended (Public Law 96-551, 94 Stat. 3233) to further control growth; the Environmental Threshold Carrying Capacities, or "thresholds", which are environmental standards that address matters such as air quality, water quality, and noise, were adopted (August 1982); and the 1987 Regional Plan was adopted, which put in place residential growth caps called "allocations" and established caps on all other forms of development.

The TRPA developed Community Plans and Plan Area Statements to implement the 1987 Regional Plan. Douglas County adopted three Community Plans for Stateline, Kingsbury, and Round Hill and 30 Plan Area Statements. The Community Plans and Plan Area Statements address the policies, regulations, and programs for specific areas in order to attain and maintain the environmental thresholds and implement the goals and policies of the 1987 Regional Plan.

2012 TRPA Regional Plan

In December 2012, the TRPA Governing Board adopted an updated Regional Plan. The TRPA Regional Plan Goals and Policies serve as a guide for all future land use decisions

within the Lake Tahoe Region, and are adopted by reference into the Douglas County, Nevada, Master Plan. The priorities of the updated Regional Plan include:

1. Accelerating water quality restoration and other ecological benefits by supporting environmental redevelopment opportunities and Environmental Improvement Program (EIP) investments.
2. Transitioning to more permitting by local governments to create one-stop-shopping for homeowner improvements in order to return TRPA to the more regional role the Compact originally intended.
3. Creating walkable communities and increasing alternative transportation options.

Important policies addressed in the Regional Plan include:

- Retaining the established regional growth control system. Under this system, rampant overdevelopment was stopped and open spaces preserved. Most of the policies from the 1987 Regional Plan stayed in place.
- Creating a more efficient planning system that integrates TRPA requirements into the plans and permits of other government agencies.
- Encouraging property owners to transfer development rights from sensitive or outlying areas to town centers with the goal of restoring these lands.
- Eliminating regulatory barriers to the environmental redevelopment of rundown buildings.
- Simplifying burdensome regulations for homeowners while achieving threshold gain.
- Integrating with the Regional Transportation Plan to support sidewalk and bike trail projects that reduce automobile dependency and increase walkability and safety.
- Continuing to deliver restoration projects under the EIP that achieve erosion control on roadways and restore forests and wetlands.

Area Plans

The 2012 TRPA Regional Plan and TRPA Code of Ordinances, Chapter 13, *Area Plans*, include new provisions that allow for local, state, and federal agencies, in coordination with TRPA staff, to prepare coordinated Area Plans for the implementation of land use goals, policies, and ordinances. The Area Plans, which must include implementing ordinances and zoning, are required to be consistent with the Regional Plan. Once an Area Plan has been found in conformance with the Regional Plan, local, state, or federal agencies may assume development review authority by entering into a Memorandum of Understanding (MOU) with TRPA. For Douglas County planning purposes, the objective is to replace the existing Community Plans and Plan Area Statements with one Area Plan for the entire County and assume additional development review authority by entering into an MOU with TRPA.

Current Conditions

In order to move forward with the implementation of the 2012 TRPA Regional Plan and development of an Area Plan for Douglas County, it is important to understand current conditions.

Environment

For a number of years, Douglas County has been participating in programs developed by the TRPA, and partnering agencies, to restore the environment and maintain the clarity of Lake Tahoe. The programs include:

Best Management Practices

Thousands of properties around the Lake Tahoe Region have installed Best Management Practices (BMPs), measures to reduce storm water runoff, minimize soil erosion and capture polluted water before it enters Lake Tahoe. The TRPA requires the installation of BMPs with new development. The Nevada Tahoe Conservation District (NTCD) assists with the design and installation of BMPs on existing developed residential parcels. Figure 2.4 shows Douglas County's estimated BMP compliance rate.

Figure 2.4
Douglas County BMP Compliance

	Total Estimated Developable Parcels	**BMP Certificates**	**BMP Compliance Percentage**
Single-Family Residential	2,598	946	**36%**
Multi-Family Residential	1,739	751	**43%**
Commercial	139	71	**51%**

Source: TRPA
Note: These numbers are estimates as of 8/31/2012. Percentages and data change daily as additional certificates are added and parcels are retired from development, created, combined, and split. Certificate numbers include BMP and Source Control.

Overall, the percentage of developed parcels with BMP Certificates is much higher in Douglas County than in the rest of the Lake Tahoe Region, as shown in Figure 2.5.

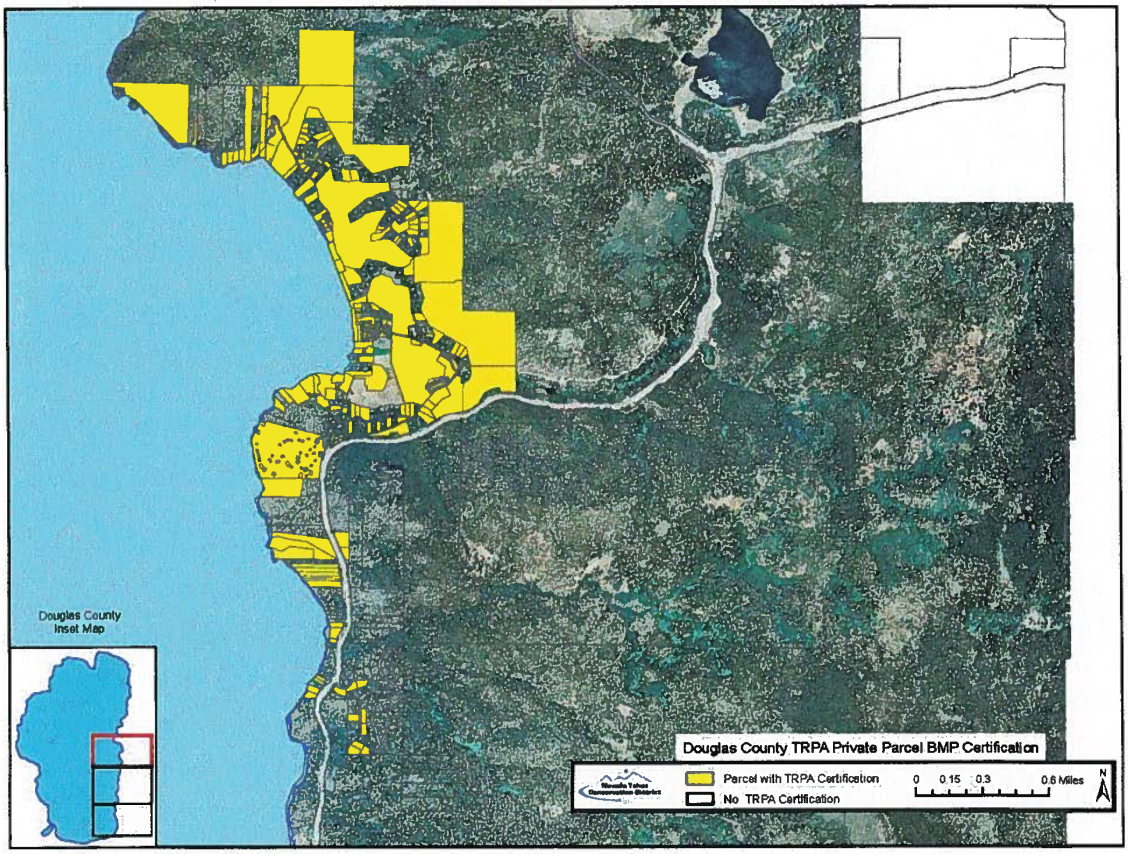
Figure 2.5
Percentage of Developed Parcels with BMP Compliance

	Lake Tahoe Region	Douglas County	California	Nevada
Single-Family Residential	26%	**36%**	21%	44%
Multi-Family Residential	62%	**43%**	50%	68%
Commercial	28%	**51%**	16%	56%

Source: TRPA 2012, NTCD Presentation to Douglas County Board of Commissions on Preliminary Cost Estimate to Meet Lake Tahoe TMDL Load Reductions on October 18, 2012

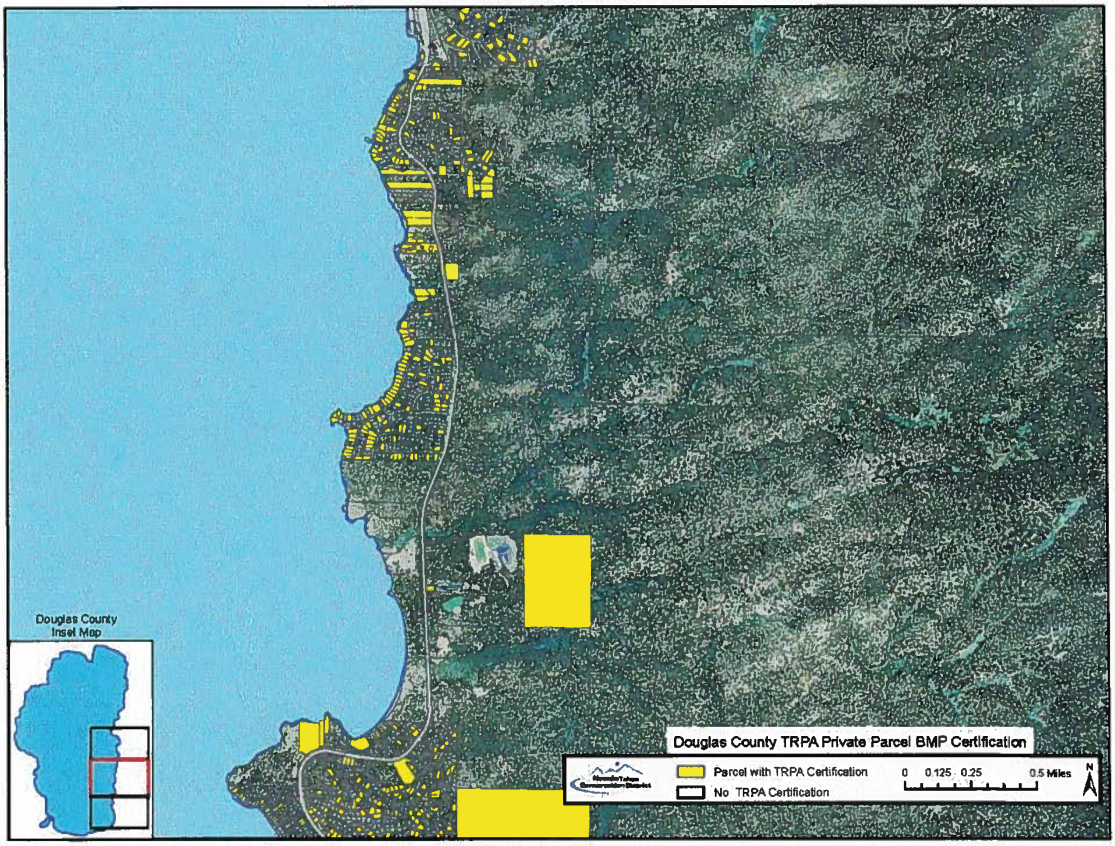
Maps 2.16a, b, and c show the location of private parcels with BMP certificates.

Map 2.16a
Private Parcel BMP Certificates



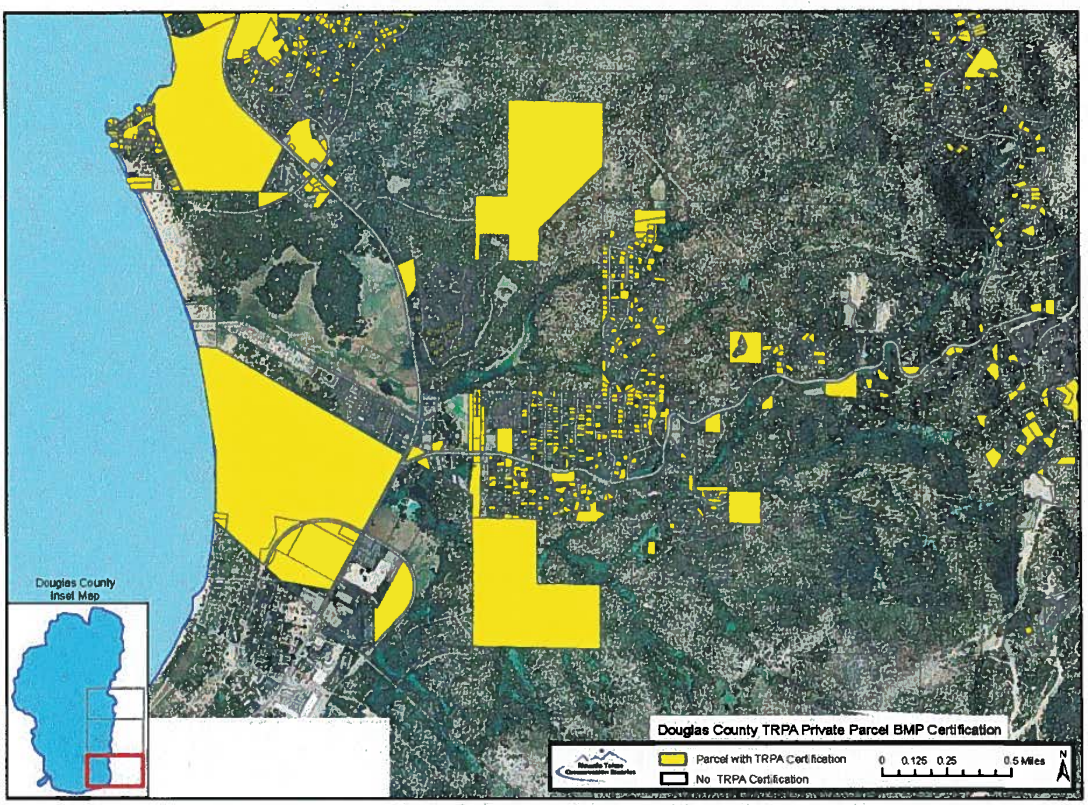
Source: NTCD

Map 2.16b
Private Parcel BMP Certificates



Source: NTCD

Map 2.16c
Private Parcel BMP Certificates



Source: NTCD

The TRPA, Douglas County, and NTCD continue to work to increase BMP compliance on individual parcels, as well as through the development of area-wide water quality improvement projects.

Environmental Improvement Program (EIP)

The TRPA is responsible for coordinating the EIP, a program that identifies projects and programs needed to improve the environment at Lake Tahoe. The cost of implementing the EIP has been apportioned between the Federal Government, the States of Nevada and California, local governments, and private property owners. In Douglas County, approximately 31 water quality and erosion control EIP projects have been completed by various agencies, including the State of Nevada, County, GIDs, NTCD, NDOT, and private entities (refer to Figure 2.6). Additional EIP projects have also been completed by the U.S. Forest Service.

Figure 2.6
Water Quality or Erosion Control EIP Projects

Water Quality or Erosion Control Projects Completed Pre-2004 (TMDL Baseline Conditions)				
NTCD ID	**SLRP ID**	**Project Name; EIP Number**	**Year**	**Improvements, Project Area**
186	CR02	Cave Rock Estates; EIP #10078	1990	Retaining walls, slope stabilization, conveyances to dry basins (3000 cf, 6630 cf);
				Streets affected include: US50, Cave Rock Dr., Winding Way, Gull Ct, Wren, Lark, Chukkar, Gull, Pheasant Lane, Robin Circle.
188	EWCF	Kingsbury Highlands ECP	1990	Retaining walls, conveyances to infiltration trench (450 cf);
				Project area is off SR207 on Highlands Rd, Laurel Lane, and Laurel Circle
187	ZK01	Zephyr Knolls ECP	1991	Conveyances;
				Lakeview Dr, US 50
176	BCB	Lower Kingsbury ECP (Phase 0) / Burke Creek ECP	1992	Retaining walls, revegetation (71,800 sf), slope stabilization (56268 sf), conveyances, rock lined channel, vegetated swale (456 lf);
				Project area is Lower Kingsbury (Charles Ave, Crest View, Cypress, Daggett, Delissa, Desni, Edgewood, Granite Springs, Hall, Hawthorne, Juniper, Meadow, Palisades, Panorama, Pine, Pony Express, Reinken, Robert, Sequoia, William, Woodland) & Burke Crk (Chimney Rock, Mackay, Reynolds, Ridge, Sherwood Ct, Sherwood Dr, Summit, Terrace View)
204	EWCE	Kingsbury Hubbard Drive ECP	1992	Retaining walls, slope stabilization, conveyances;
				Project area Hubbard Drive
205	EWCG	Summit Village/Kingsbury Estates ECP	1992	Retaining walls, conveyances, percolation trench
168	SK02	Skyland WQIP Phase 1; EIP #10055	1997	Conveyances to and dry basins on 50/Myron (1000 cf, 690 CF), Lynn (360 cf), Myron/Skyland (1400 cf), Skyland/Tahoe (1250 cf)

Water Quality or Erosion Control Projects Completed Pre-2004 (TMDL Baseline Conditions) – Continued				
NTCD ID	**SLRP ID**	**Project Name; EIP Number**	**Year**	**Improvements, Project Area**
23	MB01	Marla Bay ECP; EIP #10069	2000	Revegetation, conveyance piping to sediment traps
146	RH04	Round Hill GID Water Quality Project Phase 0; EIP #10155	2001	Conveyance piping;
				Project area in Navajo Court which drains to the end of the cul-de-sac
22	BCC, EWCH	Upper Kingsbury North; EIP #240	2002	Conveyances to and dry basins on Benjamin/Aspen (2400 cf), Donna/Scott (4200 cf), Kingsbury/Benjamin (3600 cf);
				Upper Kingsbury North ECP (Kingsbury Village)/Tahoe Estates
105	ZC01	Zephyr Cove GID WQIP; EIP #10079	2002	Conveyances to and 2 infiltration galleries; Armortech rock lined channel.
12	EWCG	Upper Kingsbury South ECP Phases I & II (Tahoe Village); EIP#242	2002	Conveyances to and dry basins on Buchanan (4800 cf), Jack Cir (3600 cf), Jack Dr (3600 cf);
				Upper Kingsbury, Tahoe Village, Tahoe Estates; SR 207 Kingsbury Grade from US 50 to Dagget Pass
20	CR02	Cave Rock Estates Slope Protection Project (CR ECP Ph 2B); EIP #10078	2003	Retaining walls, 78,000 sf revegetation/bare soil cover
14	BCB, EWCD	Lower Kingsbury Phase I & II; EIP #239	2003	Conveyances to and dry basins (2000 cf, 1000 cf), TVs (6 CDS, 1 Jenson); SEZ restoration, vegetated swale 3000 LF;
				Lower Kingsbury Phase I & II; SR 207 Kingsbury Grade from US 50 Junction to Daggett Pass
13	SK01	Skyland WQIP Phase II; EIP #10055	2003	Conveyances to and 3 Baysaver treatment vaults;
				Skyland location- Tahoe Dr, Skyland Dr, Skyland Ct & Alpine Dr

Water Quality or Erosion Control Projects Completed Pre-2004 (TMDL Baseline Conditions) – Continued				
NTCD ID	**SLRP ID**	**Project Name; EIP Number**	**Year**	**Improvements, Project Area**
19	RH02,03,04	Round Hill Phase I and Navajo Court: & Phase III-SEZ; EIP #10155	2003	Retaining walls, slope stabilization, conveyances to treatment vaults: 2 Vortechnic, 1 Jenson, 1 CDS ;
				The smaller project was designed to finish one street that didn't get completed in Phase 0.
	SSWA	SSWA; EIP #01.01.01.11	2004	Project numbers 115, 160, 178, 207, 209 (NTCD codes)

Water Quality or Erosion Control Projects Completed 2004-2012 (TMDL Existing Conditions)				
NTCD ID	**SLRP ID**	**Project Name; EIP Number**	**Year**	**Improvements, Project Area**
106		Round Hill GID Water Quality Project Phase II; EIP #10155	4-Oct	Slope stabilization, revegetation (56550 sf);
				This project consisted of an SEZ restoration and included installation of 7 manholes to access the new sewer line and some revegetation.
46	KUC	Kahle Drive WQIP; EIP #10054	2006	Conveyances to and 1 treatment vault (Vortechnic) and 1 wetland/retention basin (64,700 cf);
				Water Quality improvement project for Oliver Park GID and Kahle Drive, runoff from Michelle Dr, Faris Ct, Aynes Ct, Irwin Dr, Laura Dr & Kahle Drive funnel into wetlands located downhill, water is treated and discharges across Kahle Drive into Rabe Meadow.
99	LR01	Lakeridge GID WQIP, Lakeridge- Phase I & Hidden Woods Phase II; EIP #678	2006	Retaining walls, slope stabilization, conveyances to and 1 treatment vault (Vortechnic), 1 wetland basin (9100 cf);
				Collect water from Cedar Ridge, Sugar Pine Cir, Lincoln Cir & Canyon Cir and treat (catch basin) & convey the water to the infiltration basins located just below Hwy 50, the water then flows into a treatment vault & discharges to Lake Tahoe. Water from Tamarack Dr & Pine Point Dr (located below Hwy 50) also conveys into the treatment vault.

Water Quality or Erosion Control Projects Completed 2004-2012 (TMDL Existing Conditions) – Continued				
NTCD ID	**SLRP ID**	**Project Name; EIP Number**	**Year**	**Improvements, Project Area**
47	LV01	Lake Village Homeowners Assn WQIP Phase IA; EIP #679	2006	Slope stabilization, conveyances to 1 treatment vault (Vortechnics), dry basin (3000 cf);
				Most of Lake Village Homeowners Association except for the south west corner of the HOA, including the west section of Cascade Ct, the south section of Manzanita Ct, and Lake Village Drive.
113	LP01	Lincoln Park WQIP; EIP #677	2006	Conveyances to and treatment vault (Vortechnics 7000);
				Located within Lincoln Park along Hwy 50, including Alley 'A' and Lincoln Way
17	LC01	Logan Creek ECP; EIP #676	2007	Retaining walls, slope stabilization, conveyances to and 1 treatment vault (Vortechnic), 3 dry basins (1928 cf);
				Logan Creek Estates-Logan Crk Dr, Michael Lane
165	RH03, RH04	Round Hill GID Ph III; Round Hill Phase I and Navajo Court: & Phase III-SEZ; EIP #10155	2007	Conveyances to and dry basin (350 cf), rock lined channel, revegetation;
				Round Hill-Cheyenne Cir towards McFaul Way, it was a drainage project along these streets
16	HW01	Hidden Woods Homeowners Assn WQIP; EIP #678	2007	Conveyances to and treatment vault (Vortechnics 3000), infiltration gallery (2@ 960 sf);
				Project parts of 2 phase effort (1-WQ Improvement, 2-Improve road entrance to Hidden Woods) Project extends from US Hwy 50 entrance along Hidden Woods Drive to first section of Hidden Woods Circle.

Water Quality or Erosion Control Projects Completed 2004-2012 (TMDL Existing Conditions) – Continued				
NTCD ID	**SLRP ID**	**Project Name; EIP Number**	**Year**	**Improvements, Project Area**
109	LV01	Lake Village (Lake Village Drive Impr.) WQIP Phase IB, EIP #679	2007	Slope stabilization, revegetation (8000 sf), conveyances to dry basin (900 sf);
				Includes the southwest corner of the HOA along Lake Village Drive and the west section of Cascade Ct and south section of Manzanita Ct
236	LV02	Lake Village Phase II WQIP EIP #679/01.01.01.13	2012	Numerous dry basins, armortec lined conveyances;
				This project area includes Lake Village Drive/Echo Drive from US Highway 50 to the Kingsbury Middle School. This project will strive to reduce source control issues associated with compacted parking areas, eroding cut slopes and unstable road shoulders. In addition, measures such as catch basins, pretreatment vaults, retention/detention facilities and infiltration basins may be included for the collection and treatment of stormwater runoff and to minimize peak flows and runoff volumes where feasible and appropriate. Stormwater runoff to be treated is generated on impervious surface within the Douglas County right of way.
240	WW01	Warrior Way WQIP; EIP #10173	2012	Conveyance and basins for treatment of Warrior Way road runoff flows
	GB01	Glenbrook Creek Restoration; 01.02.03.03	2013	Enhance Glenbrook Creek and surrounding meadow with targeted restoration actions and vegetation management.

Water Quality or Erosion Control – Funded Projects (2013 – 2016)				
NTCD ID	**SLRP ID**	**Project Name; EIP Number**	**Year**	**Description**
	CR02	Cave Rock GID WQIP Retrofit; 01.01.01.16	2014	Existing sand bed filter is piping and not capturing FSP. Filter bed reconfiguration may be necessary and engineered media will be necessary;
				New project is maintenance and upgrade of bed filter installed in 1990's
	ZC01	Zephyr Cove GID WQIP; 01.01.01.15	2014	Expected installation of infiltration basins to treatment NDOT and ZCGID (DC) flows consist of creating infiltration basins on USFS property;
				The current treatment facilities at ZCGID are not designed to capture FSP. They consist of medium sized, deep concrete tanks with grates. These devices will capture coarse-sediments, but cannot capture fine sediments of concern. Additionally, they appear to be undersized and the current is sufficient to lift the grates off-of them causing safety concerns. Hwy 50 conveys stormwater runoff through this area.
	DCA	Burke Creek Crossing, Master Plan; 01.02.03.01	2015	Replace culvert on Burke Creek at Hwy 50 with large box culvert. Realign channel downstream of Hwy 50.
	EDGE	Edgewood; 04.02.02.11	2015	Edgewood Lodge Improvements and pond excavation; shoreline

Water Quality or Erosion Control – Future Potential Projects (2016 – 2021)				
NTCD ID	**SLRP ID**	**Project Name; EIP Number**	**Year**	**Description**
	MB01	Marla Bay WQIP; EIP #242, 01.01.01.14		The current treatment facilities at MBGID are not designed to capture FSP. They consist of deep concrete tanks with grates. These devices will capture coarse-sediments, but cannot capture fine sediments of concern. Resizing the vaults and installing filters may be necessary. Potential to convey and treat runoff in adjacent parcels. Hwy 50 conveys stormwater runoff through area.
	PT01	Pittman Terrace WQIP; EIP #01.01.01.17		Un-treated or under-treated stormwater is being directly discharged to the Lake. Solution may consist of installing appropriate stormwater sufficient to lift the grates off of them causing safety concerns also. Resizing the vaults andn installing filters may be necessary. Hwy 50 conveys stormwater runoff through this area.

NDOT Water Quality or Erosion Control Projects Completed Pre-2004 (TMDL Baseline Conditions)				
NTCD ID	**SLRP ID**	**Project Name; EIP Number**	**Year**	**Improvements, Project Area**
115	SSWA	US50 to Stateline	2000	The project provides water quality improvements for the casino corridor along Highway 50 including Lake Parkway East and West.
				Improvements include curb and gutter, conveyance pipes, drainage inlets, sediment traps and treatment vaults (4), along with riprap slope stabilization and revegetation
218		Kahle Drive (Pre EIP)	1992	Burke Creek/Kahle Ditch Restoration Project
				#218-Burke Creek / Kahle Ditch Restoration Project (1992)- runoff from Douglas County Community Center, Douglas County Administration area and NDOT routed down Kahle Drive to treatment vault to dry basin which discharges to Rabe Meadow/Burke Creek

NDOT Water Quality or Erosion Control Projects Completed Pre-2004 (TMDL Baseline Conditions) – Continued				
NTCD ID	**SLRP ID**	**Project Name; EIP Number**	**Year**	**Improvements, Project Area**
46		Kahle Drive WQIP	2003	#46- Kahle Drive WQIP (2006)- Oliver Park runoff routed down Kahle Drive via drainage inlets and conveyance pipes to treatment vaults (2) to a wetland which discharges to Rabe Meadow/Burke Creek, the project also included paving, riprap slope stabilization and revegetation
119	760	SR760 - from Ellks Point Rd; EIP #688	2002	State Route 760 water quality, erosion control and drainage improvements from Highway 50 junction to Nevada Beach entrance
				Improvements include curb and gutter, conveyance pipes, drainage inlets and a settling basin, along with riprap slope stabilization, revegetation and a paved bike trail to Lake Tahoe

NDOT Water Quality or Erosion Control Projects Completed 2004-2012 (TMDL Existing Conditions)				
NTCD ID	**SLRP ID**	**Project Name; EIP Number**	**Year**	**Improvements, Project Area**
118	5013, 5002, 5012, 5011, 5016	US50 - from Bourne Meadow to south of Tahoe Drive; EIP #687	2004	Highway 50 water quality, erosion control and drainage improvements from Bourne Meadow to just south of Tahoe Drive
				Improvements include curb and gutter, conveyance pipes, drainage inlets, and treatment vaults (2), along with retaining walls (Binwalls 2-3), riprap slope stabilization and revegetation
171	2862, 2863, 2864, 2804, 2814, 2815, 2816, 2818,	SR28 in Incline from Lakeshore Blvd to SR431 (Part of Phase II); EIP #10156	2005	The project provides water quality improvements for the entire length of Highway 28 from the Highway 431 junction to the east Lakeshore Blvd entrance in Incline Village.
	2808, 2805, 2809, 2850A, 2850B, 2851, 2813, 2820			Improvements include curb and gutter, conveyance pipes, drainage inlets, conveyance ditches, 2 treatment vaults, riprap slope stabilization, revegetation and paving
185	5015, 5006, 5009, 5008	US50 in Douglas County from Kahle Dr to Elks Point Rd (Part of Phase II)	2005	The project provides water quality improvements from Kahle Drive to Elks Point Rd
				Improvements along the NDOT right of way consist of curb and gutter, retaining walls, riprap slope stabilization, conveyance piping, drainage inlets and sediment traps
	5014, 5001, 5018, 5019	Highway 50, Skyland to Cave Rock	2005/2006	

NDOT Water Quality or Erosion Control Projects Completed 2004-2012 (TMDL Existing Conditions) – Continued				
NTCD ID	**SLRP ID**	**Project Name; EIP Number**	**Year**	**Improvements, Project Area**
137	506, 505, 504, 503, 502, 501, 5017	Highway 50, Cave Rock to Glenbrook; #954	2006	Highway 50 water quality improvements from approximately 0.5 miles north of Cave Rock to Glenbrook entrance (Mile Point 7.6-9.6)
				Improvements include curb and gutter, conveyance pipes, trench drains, a treatment vault, riprap slope stabilization and revegetation
		NDOT Hwy 50- Bin Wall 1 Elks Point N	2006/2007	
230	20701-20712	NDOT 207; EIP #01.01.02.16	2011	The project design provides water quality improvements for the entire length of Kingsbury Grade (a.k.a. State Route 207) in Douglas County, NV.
				The project includes a significant amount of source control for cut and fill slopes (revegetation, rock rip-rap and retaining walls), pavement of road shoulders, new storm drain, lining of existing roadside channels with articulated block, vegetative buffers, improvement of discharge points to stream environment zones (SEZ), infiltration basins, construction of new articulated block lined channels and asphalt concrete swales and the installation of sediment treatment cans and sumped drop inlets.

NDOT Water Quality or Erosion Control Projects Completed 2004-2012 (TMDL Existing Conditions) – Continued				
NTCD ID	**SLRP ID**	**Project Name; EIP Number**	**Year**	**Improvements, Project Area**
NA		NDOT Hwy 50 - Water Quality Improvement Project Phase A EIP 01.01.02.14	2012	The project area is comprised of three discontinuous segments from Cave Rock to the US Highway 50/State Route 28 intersection. Significant cut slopes exist throughout the project area and contribute a significant amount of sediment to stormwater. Slope stabilization options such as revegetation and soil/rock nailing and refacing will be evaluated through the alternative design process. In addition, facilities for the conveyance and treatment of stormwater will be evaluated and designed. Erosion control (primarily cut and fill slope stabilization) and water quality features will be implemented to reduce the discharge of sediments and pollutants into Lake Tahoe as part of a two phase project.
NA		NDOT Hwy 50 - Water Quality Improvement Project Phase B EIP 01.01.02.15	2014	Second phase of EIP 01.01.02.14

Source: NTCD

There are five projects exclusive to Douglas County on the EIP 5-year Priority Project List (January 1, 2012 through December 31, 2016) that have yet to be completed. These are Burke Creek (EIP #01.02.03.01), Zephyr Cove Water Quality Improvement Project (WQIP) (EIP #01.01.01.15), Cave Rock WQIP Retrofit (EIP #01.01.01.16), Marla Bay WQIP (EIP #01.01.01.14), and Pittman Terrace WQIP (EIP #01.01.01.17). The Burke Creek project requires the replacement of the culvert at Burke Creek and Highway 50 and realigning the channel downstream to improve fish passage and sediment transport as well as enhance the stream environment zone. The NTCD has organized the Burke Creek Working Group and planning for this project is underway. The Zephyr Cove and Cave Rock projects have received funding and are in the beginning stages of design. The remaining two projects may be funded at a later date.

The County plans to add projects that will contribute to pollutant load reductions that will be identified in the future Stormwater Load Reduction Plan (SLRP), refer to discussion

on Total Maximum Daily Load (TMDL) below, to the EIP list and process an Area Plan amendment to include them into this Plan in the future. The projects will be added to the EIP list in order for the County to secure funding and receive credit for the projects as part of the annual Performance Evaluation, which is an evaluation of each local jurisdiction's progress in meeting certain environmental goals and is linked to the distribution of residential allocations.

Additional implementation of the EIP will occur through development and redevelopment along the TRPA designated Scenic Travel Routes (i.e. Highway 50 and State Route 208). Since all projects must meet scenic quality standards along the travel routes, an incremental improvement to Scenic Quality Thresholds are expected through implementation of the Area Plan.

Total Maximum Daily Load (TMDL)

Douglas County participated with a number of local, state, and federal agencies in the development of the Lake Tahoe TMDL Program, adopted at the Tahoe Summit on August 16, 2011. The program is a requirement of the federal Clean Water Act. The program is designed to protect Lake Tahoe, an Outstanding National Resource Water, from certain pollutants of concern, including fine sediment particles, nitrogen, and phosphorus, with fine sediment from urban stormwater runoff contributing most to Lake clarity decline.

According to the Lake Tahoe TMDL Technical Report (LRWQCB and NDEP 2010), it is estimated that Nevada jurisdictions contribute 25 percent of the entire Basin fine sediment particle load to the Lake. Douglas County borders approximately 18 percent of the Lake Tahoe shoreline, yet is estimated to have the least amount of runoff contributing to the decrease in Lake clarity at three (3) percent of the Basin-wide fine sediment particle load.

To meet the requirements of the Lake Tahoe TMDL Program, the pollutant load prior to 2005 (October 2004) must be reduced by the amounts shown in Figure 2.7.

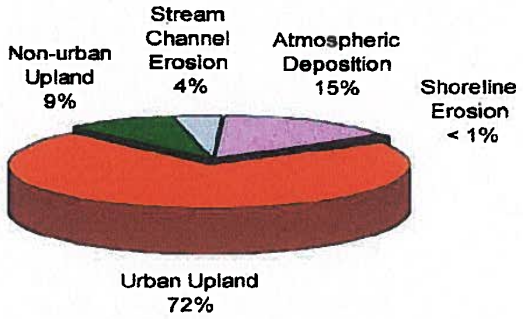
Figure 2.7
Load Reduction Targets for the Lake Tahoe TMDL

Pollutant	5-Year Milestone 2016	10-Year Milestone 2021	15-Year Milestone 2026	Transparency Standard (65-Year)
Fine Sediment Particles	10%	21%	34%	71%
Total Phosphorus	7%	14%	21%	50%
Total Nitrogen	8%	14%	19%	46%

Source: Final Lake Tahoe Total Maximum Daily Load (August 2011)

Since the TMDL Report found that stormwater run-off from urban upland developed areas (roads and town centers) produces the greatest amount of fine sediment particles (72 percent) entering the Lake (refer to Figure 2.8), the 2012 TRPA Regional Plan is encouraging the redevelopment of the existing built environment and implementation of associated water quality improvement projects to improve Lake clarity.

Figure 2.8
Sources of Fine Sediment Particles in the Lake Tahoe Basin



Source: Final Lake Tahoe Total Maximum Daily Load (August 2011)

Douglas County's Stormwater Load Reduction Plan (SLRP), the Plan to implement the Lake Tahoe TMDL Program, is currently being developed by the Nevada Division of Environmental Protection (NDEP) and NTCD. This plan is essential for laying out how Douglas County will meet its TMDL load reduction obligations under a Memorandum of Agreement with NDEP. The SLRP is expected to be finalized by 2014. It is being developed in two phases:

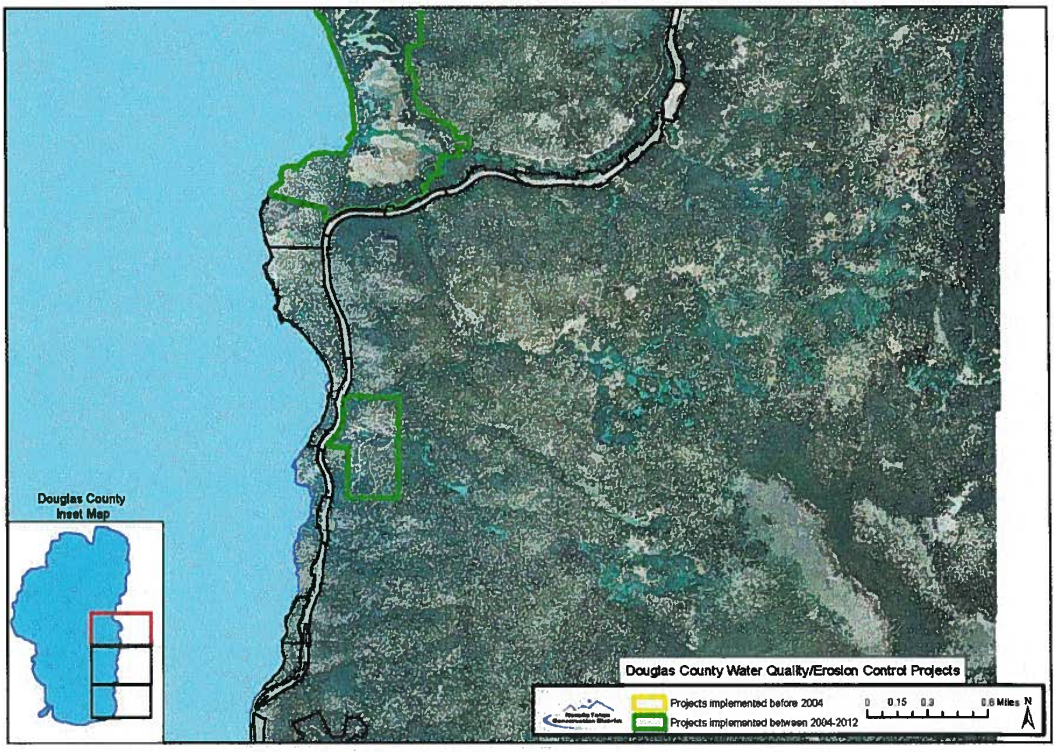
Phase I: The NTCD is developing baseline and existing conditions pollutant loads for the Nevada jurisdictions of Douglas County, Washoe County, and NDOT. These estimated loads will be available by mid-2013. Loads are determined on a 'catchment' basis within each jurisdiction, leading to an overall jurisdictional baseline (2004) and existing (2012) pollutant load estimate. Because of the geographic layout of urbanized areas within Douglas County, these catchments may cover multiple jurisdictions including the County, General Improvement Districts (GIDs) and Homeowner Associations (HOAs). The difference between the existing conditions pollutant load and the baseline pollutant load is the load reduction achieved thus far, and will go toward meeting the first TMDL implementation milestone. In addition to developing jurisdictional baseline pollutant load estimates, this phase will identify, evaluate, rate and rank catchments based on pollutant risk potential.

Phase II: SLRPs for each jurisdiction will describe cost-effective strategies and on-the-ground actions that will provide a 34 percent load reduction from the jurisdiction's October 2004 baseline stormwater loads. The results of the load reduction modeling using the Pollutant Load Reduction Model (PLRM) and SLRP protocols will become

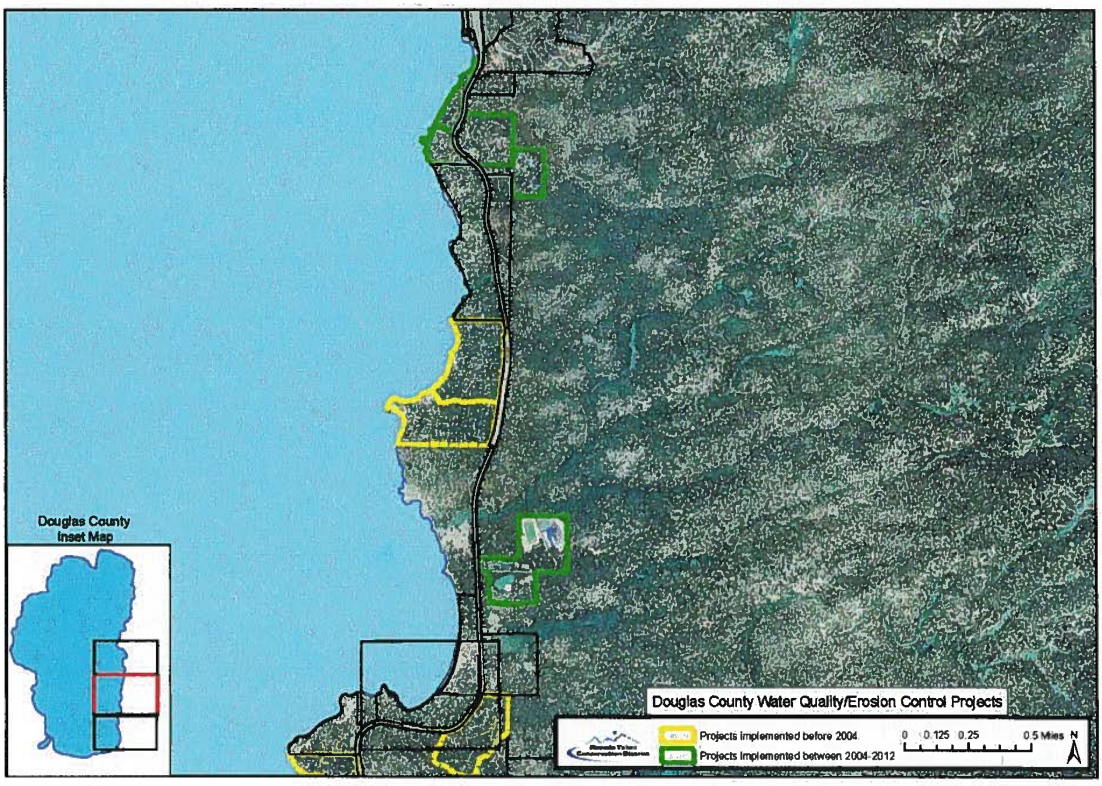
the basis of developing implementation alternatives for the agencies and will include a timeline and preliminary cost estimates. The study will identify particular catchments within each jurisdiction that will be prioritized for specific implementation actions. Identifying areas with the greatest sediment yields will facilitate jurisdictions to focus their load reduction activities in those locations and on those actions and strategies that will result in the greatest load reductions.

Maps 2.17a, b, and c show baseline and existing water quality and erosion control project areas and Maps 2.18a, b, and c show funded and future water quality and erosion control project areas identified by the NTCD to be incorporated into the SLRP.

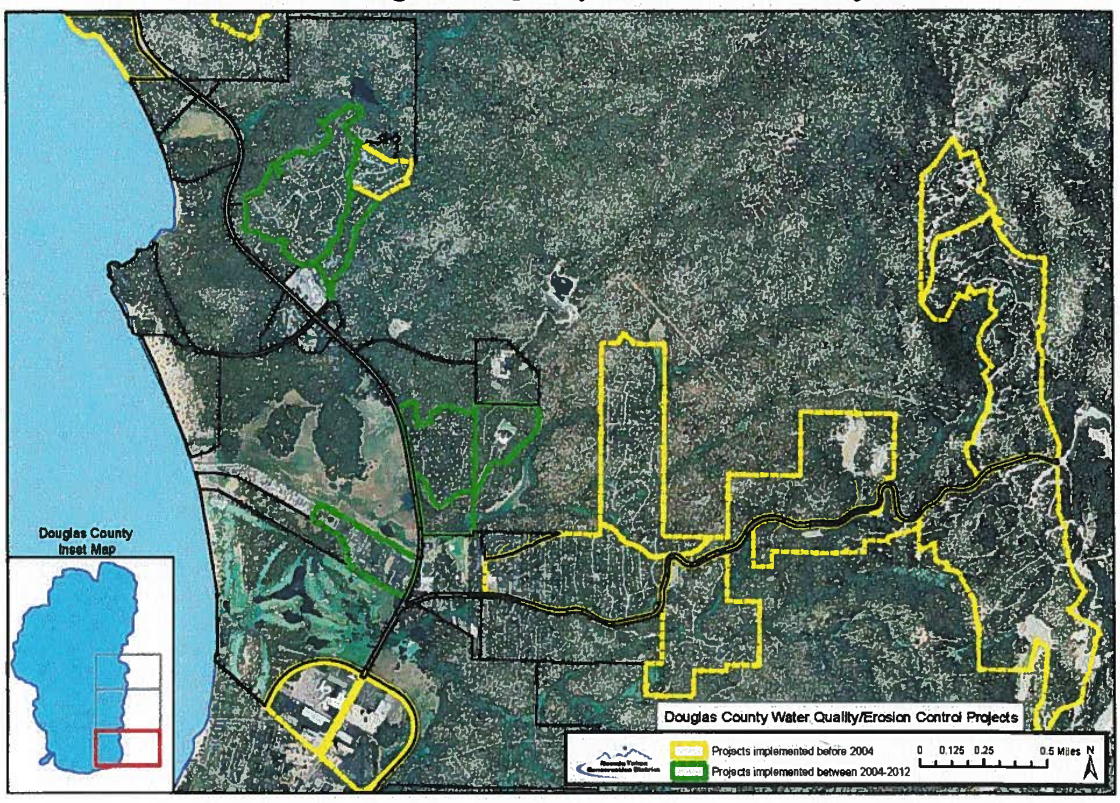
Map 2.17a
Baseline and Existing Water Quality/Erosion Control Projects



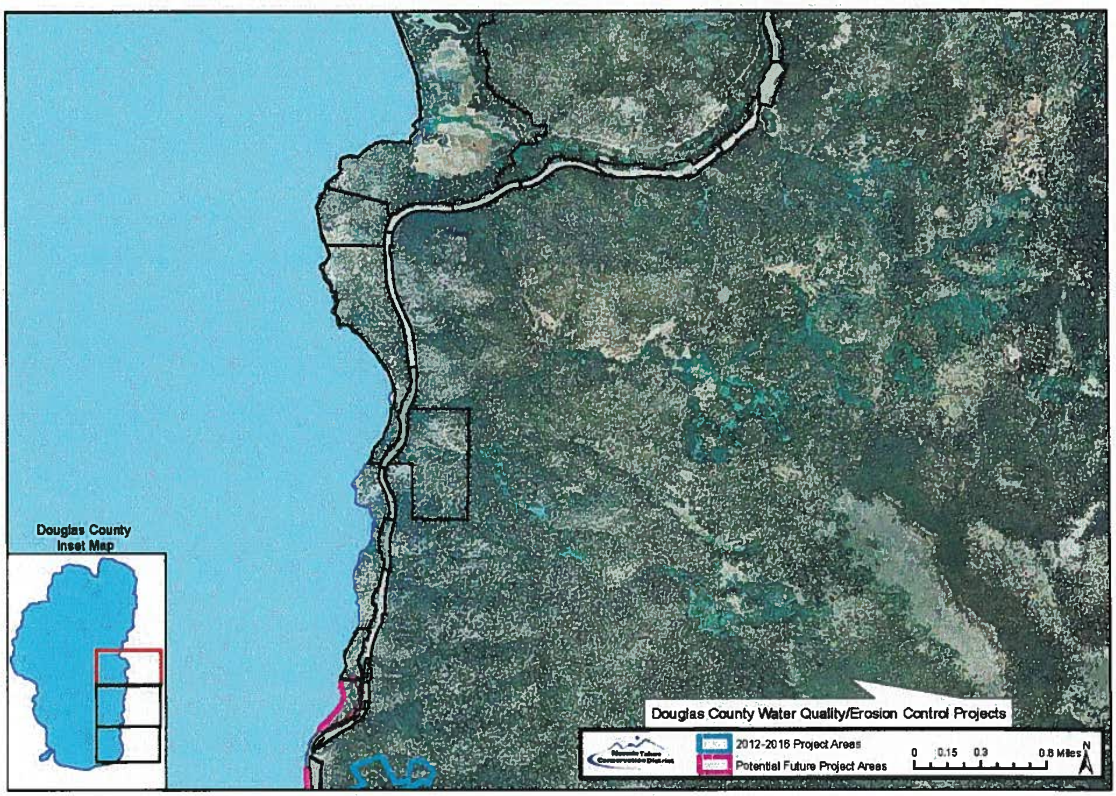
Map 2.17b
Baseline and Existing Water Quality/Erosion Control Projects



Map 2.17c
Baseline and Existing Water Quality/Erosion Control Projects

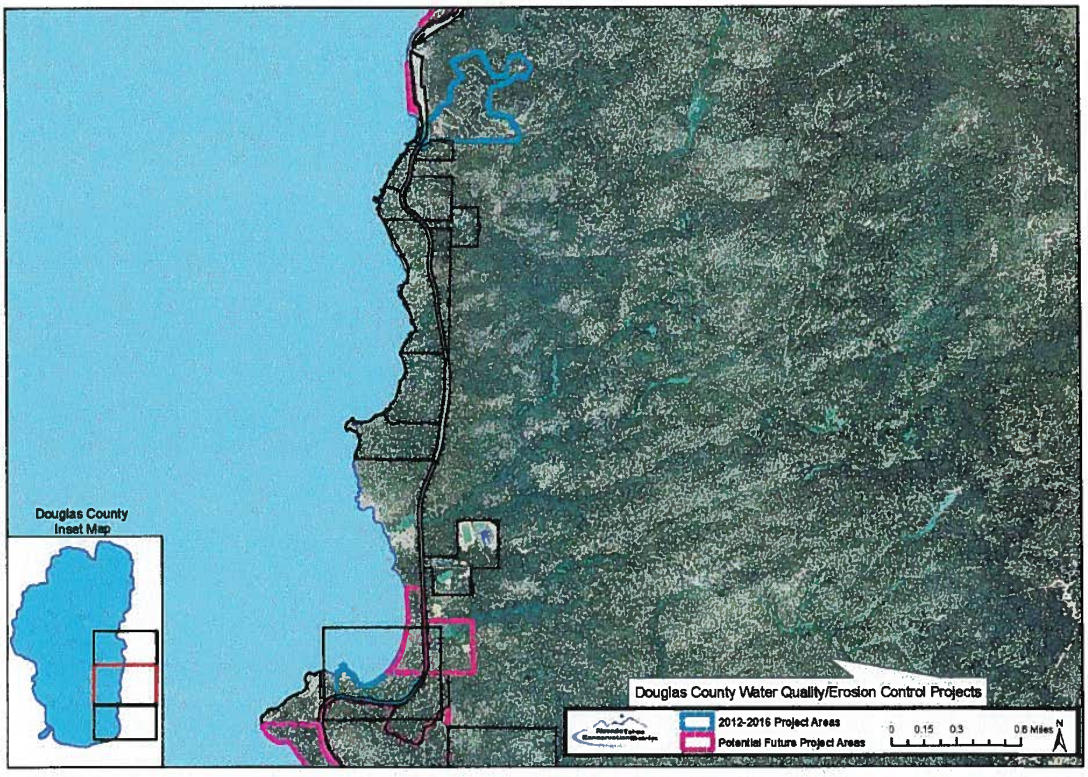


Map 2.18a
Funded and Future Water Quality/Erosion Control Projects



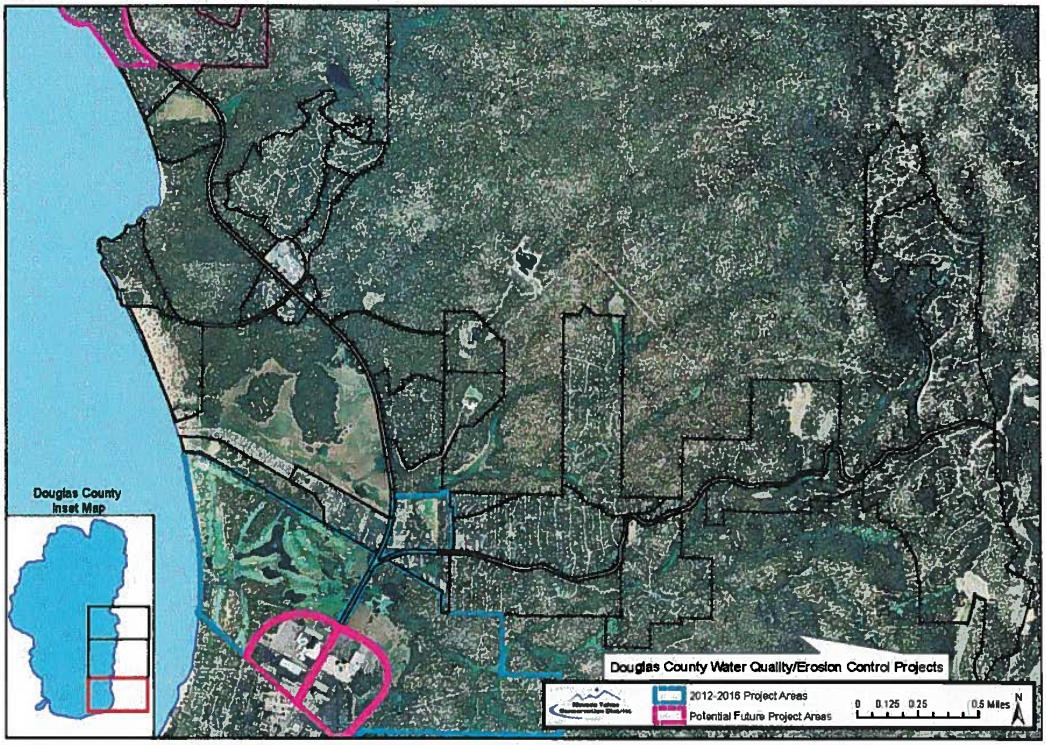
Source: NTCD

Map 2.18b
Funded and Future Water Quality/Erosion Control Projects



Source: NTCD

Map 2.18c
Funded and Future Water Quality/Erosion Control Projects



Source: NTCD

Preliminary estimates conducted by the NTCD suggest Douglas County's baseline fine sediment load is 100,000 lbs/year. It must be noted that these estimates are preliminary and the final Douglas County baseline load will be released in the SLRP. Using these preliminary estimates, Douglas County will need to implement water quality improvement actions, including: 1) capital improvement projects; 2) implementation of BMPs; and 3) advanced road operations that cumulatively result in 10,000 lbs/year to achieve the 10 percent reduction requirement by 2016 (Five-Year Milestone).

Preliminary modeling results show that a great level of load reduction has already been achieved over baseline conditions. These load reductions are primarily through the implementation of large scale water quality improvement projects, such as Lake Village, Cave Rock, and Lakeridge, and private parcel BMP implementation. Projects that include water quality improvements, such as the Tahoe Beach Club and Edgewood Lodge and Golf Course Improvement Project, will also help the County meet its fine sediment particle load reduction goals. If it is determined that additional fine sediment particle load reduction is necessary to achieve the Five-Year Milestone, the next and most cost-effective step may be to implement advanced road operations.

It needs to be noted that Douglas County maintains less than six miles of roads within the Tahoe Planning Area. NDOT, GIDs, and HOAs maintain the remaining roads in Douglas County. In most cases, the GIDs and HOAs do not have the expertise, resources, or financial capability of implementing advanced road operations independently. As a result, the NTCD and County are exploring the option of forming a TMDL Cooperative to share in the responsibility of advanced road operations. The SLRP analysis will identify other potential cost-effective means to implement load reduction strategies specific to Douglas County.

TMDL Monitoring

The Implementers' Monitoring Program (IMP) is a partnership between the Tahoe Resource Conservation District, El Dorado County, Placer County, the City of South Lake Tahoe, Douglas County, Washoe County, NTCD, NDOT, and Caltrans. Funding in the amount of $750,000 from Round 12 of the Southern Nevada Public Lands Management Act (SNPLMA) issued through the USDA Forest Service will provide these jurisdictions the ability to implement coordinated monitoring requirements necessary for meeting urban jurisdiction permit needs. Utilizing these funds, the Lake Tahoe Basin's first collaborative monitoring plan for implementing the TMDL Program, through the California National Pollutant Discharge Elimination System (NPDES) permit and a Nevada Memorandum of Agreement (MOA) has been developed, known as the "Implementers Monitoring Plan" (Plan). The data collected as part of this monitoring will support the TMDL Management System and the modeling and assessment tools associated with the Lake Clarity Crediting Program. Five catchments have been chosen to be registered and monitored for crediting purposes. These catchments are defined as the area that drains to an outfall monitoring site and can be modeled as a PLRM catchment. In some instances, PLRM catchments are subsets of larger Urban Planning Catchments. Monitoring will include flow measurements and water quality sampling at eleven monitoring stations: the outfalls of the five selected catchments, and the inflows to and outflows from the selected BMPs located within three of those catchments. Participation in the Plan by Douglas County will allow it to meet the monitoring requirements set forth in the MOA. Growing funding constraints prohibit monitoring to be conducted at more frequent intervals and at more locations around the Lake Tahoe Region, therefore this coordinated effort allows for detailed monitoring to be conducted at specific locations, the results of which will be applicable to similar sites in all jurisdictions. Jurisdictional representatives sought for a "One Lake, One Plan" approach to use the available funding in the most efficient manner.

Wastewater

All septic systems have been removed from the Tahoe Planning Area. All development is connected to public and private wastewater systems and all wastewater is pumped out of the Tahoe Planning Area to the Carson Valley in order to protect the clarity of Lake Tahoe. For more information on the management of wastewater, refer to Chapter 12, *Public Services and Facilities Element.*