



City of South Lake Tahoe Stormwater Management Plan

October 1, 2013



Prepared by:



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Stormwater Management Plan City of South Lake Tahoe

Prepared for
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List of Acronyms

AD	Assessment District
BMP	Best Management Practice
CASQA	California Stormwater Quality Association
C&I	Commercial and Industrial
CIP	Capitol Improvement Project
CFD	Community Facilities District
CTC	California Tahoe Conservancy
CUPA	Certified Unified Program Agencies
CWA	Clean Water Act
EDC	El Dorado County
EIP	Environment Improvement Program
EPA	Environmental Protection Agency
EPS	Economic & Planning Systems, Inc.
FSP	Fine Sediment Particle
FY	Fiscal Year
GIS	Geographic Information System
IDDE	Illicit Discharge Detection and Elimination
IFD	Infrastructure Financing District
IGP	Industrial Stormwater General Permit
MRP	Monitoring and Reporting Program
MOU	Memoranda of Understanding
NCE	Nichols Consulting Engineers
NDEP	Nevada Division of Environmental Protection
NPDES	National Pollutant Discharge Elimination System
NTCD	Nevada Tahoe Conservation District
O&M	Operations and Maintenance
PLRM	Pollutant Load Reduction Model
PLRP	Pollutant Load Reduction Plan
RSWMP	Regional Stormwater Monitoring Program
SIC	Standard Industrial Classification
SLTCC	South Lake Tahoe City Code
STPUD	South Tahoe Public Utility District
SWMP	Stormwater Management Plan
SWPPP	Stormwater Pollution Prevention Plan
TCGP	Tahoe Construction General Permit
TMDL	Total Maximum Daily Load
TN	Total Nitrogen
TOT	Transient Occupancy Taxes
TP	Total Phosphorus



TRCD	Tahoe Resource Conservation District
TRPA	Tahoe Regional Planning Agency
USDA	United States Department of Agriculture
USFS	United States Forest Service
UUT	Utility Users Tax
UNR	University of Nevada, Reno
WQIP	Water Quality Improvement Project
WY	Water Year

List of Abbreviations

Caltrans - California Department of Transportation

City - City of South Lake Tahoe

Grading Ordinance - The City of South Lake Tahoe Grading Erosion and Sediment Control Ordinance

Heavenly – Heavenly Ski Resort

Lahontan - State of California Regional Water Quality Control Board, Lahontan Region

Permit – ORDER NO. R6T-2011-101A1 - NPDES NO. CAG616001 - Updated Waste Discharge Requirements and National Pollutant Discharge Elimination System (NPDES) Permit for Storm Water/Urban Runoff Discharges from El Dorado County, Placer County, and the City of South Lake Tahoe Within the Lake Tahoe Hydrologic Unit

State Board - California State Water Resources Control Board

Stormwater Ordinance - The City of South Lake Tahoe Urban Runoff and Stormwater Quality Management Ordinance

Stormwater System – City of South Lake Tahoe stormwater collection, conveyance and treatment facilities



1. Program Management

1.1. Permitted Area

The City of South Lake Tahoe (City) is located in El Dorado County (EDC) California, at the southern end of Lake Tahoe. A map of the City is shown in **Figure 1-1**. The 2010 United States Census reported a population of 21,403 for the City, which is the only incorporated jurisdiction in the Tahoe Basin. Outdoor recreation and tourism are major economic drivers, therefore visitors significantly increase the number of people utilizing the City’s infrastructure. The undeveloped areas of the region are predominantly publicly owned, and public ownership is increasing, largely through the efforts of federal and state land acquisition programs.

1.2. Permit Requirements

The City is under the jurisdiction of the State of California Regional Water Quality Control Board, Lahontan Region (Lahontan), which adopted Order No. R6T-2011-101A1 (Permit) on October 10, 2012. This order updated the waste discharge requirements and National Pollutant Discharge Elimination System (NPDES) Permit (Lahontan, 2012) for stormwater and urban runoff discharges from the City and from the portions of El Dorado and Placer Counties lying within the Lake Tahoe Hydrologic Unit. The City and Counties are collectively referred to as “Permittees”. Section III.B. of the Permit specifically requires each Permittee to develop and implement a Stormwater Management Plan (SWMP).

1.3. Stormwater Management Plan Overview

This SWMP is the guiding document for the City’s integrated stormwater program. The SWMP includes a comprehensive set of Program Elements that together satisfy the requirements of the Permit, integrates the implementation measures from the City’s Pollutant Load Reduction Plan, and meets the City’s overall stormwater objectives. When implemented together, these elements are intended to effectively reduce pollutants in stormwater runoff within the City’s jurisdiction. The SWMP was completed under consideration and guidance from City Engineering Division staff.

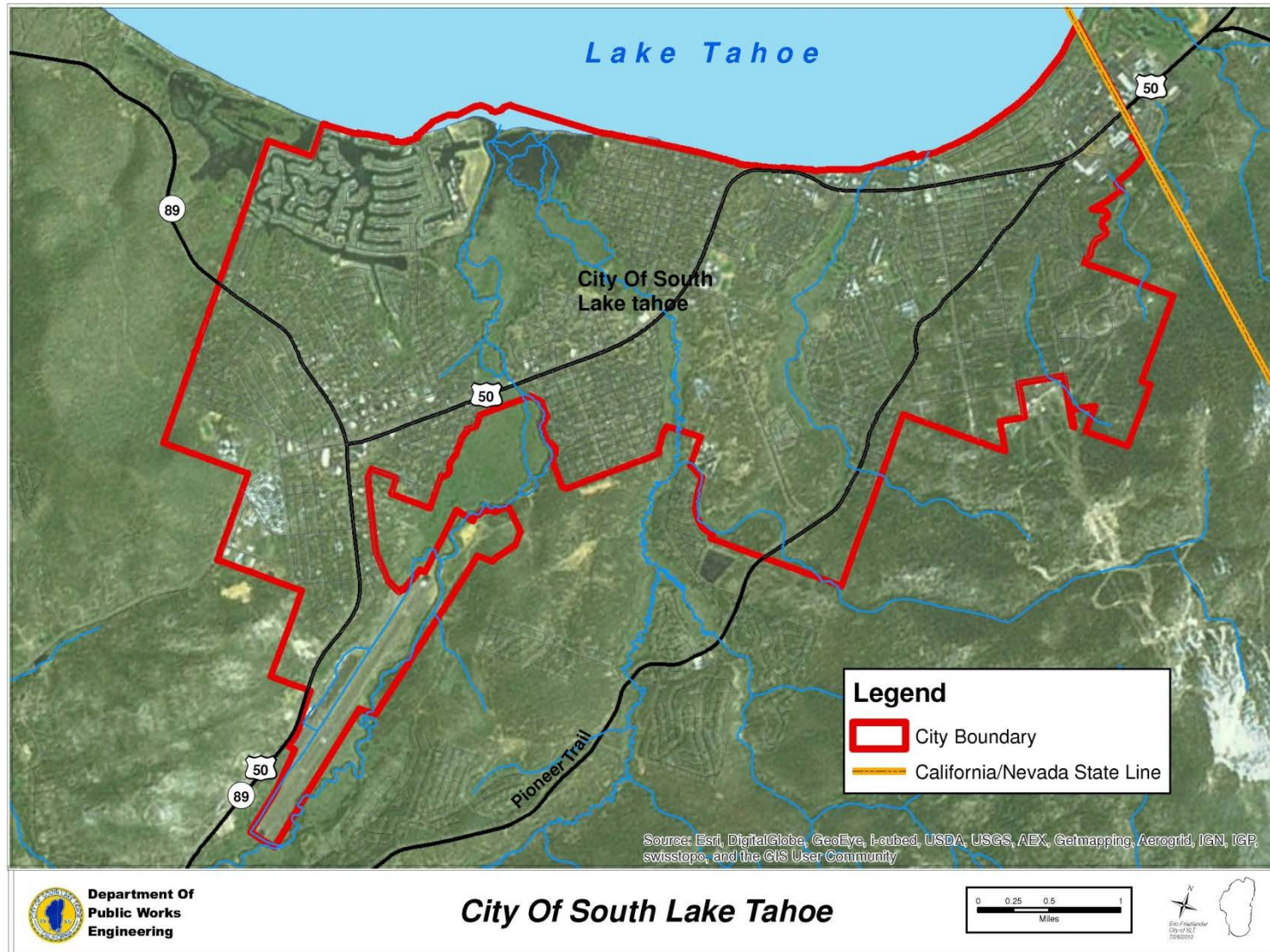
The implementation of this SWMP and compliance with the Permit will require significant staff and financial resources. The City understands the importance of its stormwater program and will prioritize and implement the Program Elements described in this document as resources allow over the duration of the Permit term.

1.3.1. SWMP Organization

This SWMP is organized into seven sections, or Program Elements, each addressing key Permit requirements. To assist in identifying which Permit provisions are addressed in each SWMP section, **Table 1-1** is provided following **Figure 1-1**.



Figure 1-1: City of South Lake Tahoe Map



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Table 1-1: Permit Correlation

Permit Section	Permit Requirement	SWMP Section Primary		SWMP Section Secondary	
III.A	Legal Authority	1.7	Legal Authority		
III.B	Stormwater Management Plan	All			
III.B.1	Construction Component	2	Construction	7	Education & Outreach
III.B.1.a	Construction Site Inventory	2.3.1	Construction Site Inventory and Prioritization		
III.B.1.b	Construction Site Outreach	7.3.2	Commercial, Industrial, and Construction Site Outreach		
III.B.1.c	Construction Site Prioritization & Inspection	2.3.2	Construction Site Inspection	2.3.1	Construction Site Inventory and Prioritization
III.B.1.d	Construction Site Enforcement	2.3.3	Construction Site Enforcement		
III.B.1.e	Oversight by Others	2.3.2	Construction Site Inspection	7.3.2	Commercial, Industrial, and Construction Site Outreach
III.B.2	Commercial Industrial Municipal & Residential	3	Commercial and Industrial	4	Municipal Operations and Facilities
III.B.2.a	Comm, Ind & Muni Site Inventory & Prioritization	3.3.1	Comm & Ind Site Inventory & Prioritization	4.3.1	Municipal Facilities Inventory and Prioritization
III.B.2.b	Comm, Ind & Muni Site Outreach	7.3.3	Comm & Ind Site Outreach	4.3.6	Municipal Personnel Training & Education
III.B.2.c	Comm, Ind & Muni Site Inspections	3.3.2	Comm & Ind Site Inspection	4.3.2	Municipal Facilities Inspection
III.B.2.d	Comm, Ind & Muni Site Enforcement	3.3.3	Comm & Ind Site Enforcement	4.3.3	Municipal Facilities Maintenance and Compliance
III.B.2.e	Oversight by Others	3.3.2	Comm & Ind Site Inspection	7.3.2	Commercial, Industrial, and Construction Site Outreach
III.B.2.f	Residential Property Outreach & Education	7.3.3	Residential Outreach & Education		
III.B.3	Stormwater Facilities Inspection	4	Municipal Operations and Facilities		
III.B.3.a	System Map	4.3.1	Municipal Facilities Inventory and Prioritization		
III.B.3.b	System Inspection	4.3.2	Municipal Facilities Inspection		
III.B.3.c	Evaluate & Identify Pollutant Sources	4.3.2	Municipal Facilities Inspection		
III.B.3.d	System Maintenance	4.3.3	Municipal Facilities Maintenance and Compliance		
III.B.4	Illicit Discharge Detection and Elimination	5	Illicit Discharge Detection and Elimination	7	Education & Outreach
III.B.4.a	System Inspection	5.3.2	Inspection & Identification	4.3.2	Municipal and Stormwater Facilities Inspection
III.B.4.b	Investigation & Follow-Up	5.3.3	Investigation & Follow-Up		
III.B.4.c	Enforcement	5.3.4	Ordinance Enforcement		
III.B.4.d	Promote & Facilitate Public Reporting	5.3.1	Public Reporting	7.3.1	Public Outreach
III.B.5	New Development and Redevelopment	6	New Development and Redevelopment	7	Education & Outreach
III.B.6	Public Education	7	Education & Outreach		
III.B.7	Municipal Personnel Training and Education	4.3.6	Municipal Personnel Training & Education		
III.B.8	Fiscal Analysis	1.7	Fiscal Analysis		



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Each Program Element is broken down into control measures, implementation tasks, and assessment tasks which will assist the City in implementation of the SWMP.

- **Control Measures** – Control measures are programmatic actions required to meet Permit requirements. The control measures were designed to adequately address all the applicable Permit provisions.
- **Implementation Tasks** – Within each control measure, there are specific implementation tasks which, once accomplished, constitute compliance with Permit requirements. The implementation tasks identify the specific actions (i.e., an inspection, development of a database or facilitating a public meeting), the level of effort required, and the responsible department or division for each task.
- **Assessment Tasks** – Each control measure includes several assessment tasks which identify those items that should be tracked and reported as a part of the Annual Report and program effectiveness assessments. These items include information or data that allows the City to document and assess the effectiveness of the stormwater program and compliance with the Lake Tahoe Total Maximum Daily Load (TMDL).
- **Control Measure Tables** – A table is provided at the end of each Program Element summarizing the control measures and implementation tasks, as well as the implementation schedule and responsible parties.

The Master Control Measure Table provides a comprehensive summary of the entire SWMP, including a brief description of each control measure and implementation task, when they need to be completed during the five year term of the Permit, and who has primary and secondary responsibility. The Master Control Measure Table is intended to be a tool to help guide the Stormwater Coordinator in implementing the SWMP and tracking the completion of each task. It has been prepared for the City as an interactive spreadsheet, allowing the Stormwater Coordinator to adaptively manage the program and easily communicate specific responsibilities to the various departments and divisions identified herein.

1.4. Program Coordination

1.4.1. Coordination with Other Agencies

The implementation of the SWMP requires a coordinated management effort by the City and other Tahoe Basin agencies including:

- El Dorado County (EDC)
- Placer County
- United States Forest Service (USFS) – Lake Tahoe Basin Management Unit
- Tahoe Regional Planning Agency (TRPA)
- Tahoe Resource Conservation District (TRCD)
- California Department of Transportation (Caltrans)
- California Tahoe Conservancy (CTC)
- South Tahoe Public Utility District (STPUD)
- Lahontan Regional Water Quality Control Board (Lahontan)

The Permit contains two SWMP components (Construction and Commercial, Industrial, Municipal and Residential) in which Permittees are specifically directed to coordinate and capitalize on the efforts of other agencies to meet Permit requirements. In these cases, regular coordination will be required for



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the City to obtain the necessary detailed documentation of the outreach, inspection, and/or enforcement actions taken by other agencies.

1.4.2. Intra-Departmental Coordination

The City's Engineering Division has primary responsibility for the development and implementation of the SWMP and has created the position of Stormwater Coordinator to act as the City's liaison for all issues pertaining to stormwater, including Permit compliance, TMDL implementation, and SWMP execution. The Stormwater Coordinator is responsible for tracking the development and performance of each control measure and implementation task described in this document. The Stormwater Coordinator will receive assistance from other Engineering Division staff in addition to other City divisions and departments with responsibilities described in the Control Measure Table provided at the end of each Program Element.

1.5. Legal Authority

The Permit requires that the City implement a stormwater program to reduce the pollutants in stormwater discharges. Central to this program is the establishment and/or verification that the City has adequate legal authority to regulate the discharge of pollutants to and from the stormwater collection, conveyance, and treatment facilities (stormwater system). Permit Section III.A requires the City to establish legal authority to prohibit illegal connections and illicit non-stormwater discharges into the City's stormwater systems. The City Council has established the required legal authority through the adoption of two Ordinances:

1. **The Urban Runoff and Stormwater Quality Management Ordinance** (Stormwater Ordinance) is included as Chapter 35 of the South Lake Tahoe City Code (SLTCC). Adopted in January, 2013, the Stormwater Ordinance, along with the legal authority certification letter (CSLT and Patrick Enright, 2012) show that the City possesses the required legal authority to:
 - Control through interagency agreement, the contribution of pollutants from one municipal jurisdiction to another
 - Require persons within the City's jurisdiction to comply with conditions in the City's ordinances, permits, and land use entitlements
 - Remove illicit connections to the City's stormwater system
 - Control the discharge of spills, dumping, or material disposal other than stormwater to the City's stormwater system
 - Utilize enforcement measures including administrative citations, nuisance abatement proceedings and civil actions
 - Control the quality of stormwater runoff from industrial and commercial sites
 - Carry out inspections, surveillance and monitoring procedures necessary to determine compliance and non-compliance with permit conditions including the prohibition on illicit discharges
 - Require the use of control measures to prevent or reduce the discharge of pollutants to the maximum extent practicable
2. **The Grading Erosion and Sediment Control Ordinance** (Grading Ordinance), adopted in March, 2009, provides the City with the authority to Control the quality of stormwater runoff from construction sites.



1.6. Lake Tahoe Total Maximum Daily Load

The following discussion was developed based on Permit Findings, Sections D.3, and F.1-4. Under the Clean Water Act (CWA) § 303(d), States are required to identify a list of impaired water bodies and develop and implement TMDLs for these water bodies (33 USC § 1313(d)(1)). Lake Tahoe is listed on the CWA § 303(d) impaired water bodies list. On November 16, 2010 Lahontan adopted an amendment to its Water Quality Control Plan (Basin Plan; Lahontan, 1995) to incorporate a TMDL for Lake Tahoe (Lahontan and NDEP, 2010). The amendment was approved by the California State Water Resources Control Board (State Board) on April 19, 2011 and the TMDL was approved by the U.S. Environmental Protection Agency (EPA) on August 17, 2011. The TMDL identifies pollutant loads by source category, sets load allocations at a basin-wide scale, and identifies an implementation plan for restoring Lake Tahoe's deep water transparency.

1.6.1. Overview of TMDL

The approved Basin Plan amendment requires the Permittees and Caltrans to meet pollutant load reduction requirements specified by the Lake Tahoe TMDL. The approved Basin Plan amendment replaces some of the concentration-based stormwater effluent limits with effluent limits expressed as average annual pollutant load reduction requirements for the three primary pollutants of concern:

- Fine Sediment Particles (FSP)
- Total Nitrogen (TN)
- Total Phosphorus (TP)

The Permit is the mechanism to ensure compliance with the changes made to the Basin Plan incorporating the TMDL. The Permit includes numeric and narrative effluent limitations consistent with 40 CFR 122.44(d) that implement the Lake Tahoe TMDL pollutant load reduction requirements. The TMDL is incorporated into the Municipal NPDES Permit in several places, effectively making compliance with the TMDL requirements a condition of compliance with the Permit.

1.6.2. Pollutant Load Reduction Plan

The Basin Plan amendment and the Lake Tahoe TMDL require Lake Tahoe basin municipalities and Caltrans to develop and implement comprehensive Pollutant Load Reduction Plans (PLRPs) to describe how proposed operations and maintenance activities, capital improvements, facilities retrofit projects, ordinance enforcement, and other actions are expected to meet required pollutant load reductions. PLRPs provide the Permittees the opportunity to prioritize pollutant load reduction efforts and target sub-watersheds that generate the highest average annual pollutant loads. The City approved a PLRP in January 2013, describing several tasks which are incorporated into the control measures of this SWMP:

- Catchments including Water Quality Improvement Projects (WQIPs) constructed since the TMDL baseline period will be registered with the Lake Clarity Crediting Program in Control Measure 4.3.7 – Stormwater Capital Project Implementation
- Abrasive source material will be managed as a part of control measure 4.3.4 – Traction Abrasive and Deicing
- The effect of sweeping frequency on road condition and FSP recovery will be tested in control measure 4.3.5. Sweeping and Vactoring Operation Optimization



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1.6.3. Monitoring Program

Attachment C of the Permit encompasses the Monitoring and Reporting Program (MRP). Section III of the MRP describes Water Quality Monitoring Requirements associated with the TMDL, including Best Management Practice (BMP) effectiveness monitoring and catchment outfall monitoring. To satisfy these requirements, the City is participating in the collaborative monitoring group known as the Regional Stormwater Monitoring Program (RSWMP). As described in the Implementers' Monitoring Plan (RSWMP, 2013), the TRCD will conduct monitoring and analysis, and prepare annual monitoring reports on behalf of the implementing jurisdictions. The City will include these monitoring reports in its Annual Reports to Lahontan as required in Section IV of the MRP.

1.7. Fiscal Analysis

Permit section III.B.8. requires the City to conduct a fiscal analysis of its entire stormwater program, including capital, administrative, education, and operations and maintenance costs associated with implementation of this SWMP and the City's PLRP for the remainder of the Permit term. This section of the SWMP is intended to satisfy this requirement by analyzing existing stormwater program expenditures, projecting future costs, documenting funding needs and identifying feasible potential funding sources. Based on this information, several funding strategies are developed and evaluated, and a brief implementation action plan is presented.

All projections are based on the City's Fiscal Year (FY) which runs from October through September (i.e. FY 2014 begins October 1, 2013 and ends September 30, 2014). Note that the FY schedule coincides with the Water Year (WY) schedule. The analysis presented herein projects stormwater program expenses through the end of FY 2016 (September 30, 2016). Since the Permit actually expires on December 5, 2016, a brief analysis of expected expenditure for the first quarter of FY 2017 will be provided with the Report of Waste Discharge and Preliminary Pollutant Load Reduction Plan due June 9, 2016.

1.7.1. Financial Assessment

This section provides an overview of existing and future financial resources associated with the City's stormwater program. This section specifically presents:

- An estimate of the annual current financial resources expended by the City on its stormwater program
- Projected future costs associated with implementation of the stormwater program including this SWMP and the City's PLRP
- The projected funding difference between existing expenditures and future needs
- Annual funding needs for the long term implementation of the stormwater program

The information presented in this section will be used in subsequent sections to develop stormwater finance strategy scenarios, evaluate each scenario, and select a feasible scenario for potential implementation.

Estimated Existing Stormwater Program Expenditures

Although the City allocates funding to the "Storm Water Management Program" through a line item in its annual budget, this account is exclusively used for tasks performed by the Engineering Division (hereafter referred to as the "Engineering Division stormwater budget"). Inspections, operations and maintenance activities performed by other divisions (Building, Streets, Facilities, etc.) constitute a very



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substantial part of the City's stormwater program, but are not specifically tracked or attributed to the Engineering Division's stormwater budget. Therefore, it is important to consider and integrate costs from divisions and departments other than Engineering in developing an estimate of existing stormwater expenditures for the entire stormwater program. This is a common situation among municipalities, which makes it challenging to present actual annual expenditures. So, for the purposes of this fiscal analysis the numbers presented for existing expenditures are an estimate which is likely within 10% of actual expenditures.

One important aspect of the City's program is that stormwater management efforts to date have included the design and construction of several public WQIPs, as well as the maintenance of existing erosion control, conveyance, and stormwater treatment systems. State and federal funding partners have provided the bulk of the capital costs associated with the implementation of WQIPs. Local mitigation funds assessed by the TRPA on private development projects have also been allocated to WQIPs. It is important to note that these funding sources are not a reliable long term source for the stormwater program. Furthermore, nearly all expenses and revenue associated with planning, engineering design, and construction of these WQIPs are shown in General Engineering or Capital Improvement Program (CIP) budgets, rather than the Engineering Division's stormwater budget.

In addition to the WQIPs, The City has expended significant time and financial resources developing programs for compliance with the Permit and the Lake Tahoe TMDL, including a construction inspection program, stormwater system maintenance and inspection programs, stormwater system mapping and Geographic Information System (GIS) development, monitoring programs, jurisdictional baseline pollutant load estimates, and the PLRP.

An estimate of existing expenditures on the City's stormwater program was developed through consultation with City staff, analysis of available information for the current fiscal year, and available documentation of recent past expenses, including:

- City of South Lake Tahoe Annual Budget, Fiscal Year October 1, 2012 through September 30, 2013 (CSLT, 2012)
- Pollutant Load Reduction Plan (CSLT, 2013)
- Pollutant Load Reduction Strategy (CSLT, 2012)
- Maintenance Efficiency Plan (CSLT, 2010)
- Storm Water Management Plan (CSLT, 2007)

The figures included in the documents listed above provide detailed estimates of Municipal Operation and Maintenance (O&M) costs, but little documentation of existing expenditures for other program elements. Therefore, the existing annual expenditures shown in **Table 1-2** may not include all expenses related to other divisions and departments. For example, the Building Division intermittently performs stormwater inspections at construction sites, but no documentation of these expenses was available at the time of this analysis.

It should be noted that the estimates in **Table 1-2** account for all of the street sweeping and vactoring performed by the Streets Division, even though these tasks would be performed (less extensively) regardless of the City's stormwater program obligations to the Permit. At the time that this analysis was prepared, it was not reasonable to attempt to split the allocation of street sweeping and vactoring expenses between the stormwater program and other City maintenance programs due to the way these services are performed and the budgets tracked. In the future it may be necessary to do so depending on future stormwater program funding.



Table 1-2: City Stormwater Program Expenditures

Program Element	Existing Expenditure
Municipal Facilities Inspection	\$72,000
Municipal Facilities Maintenance	\$192,900
Municipal Sweeping and Vactoring	\$265,000
Subtotal Municipal Operations and Facilities Maintenance	\$529,900
Subtotal Engineering Division Stormwater Budget	\$359,200
Total City Stormwater Program Existing Expenditure	\$889,100

Sources: City of South Lake Tahoe, Nichols Consulting Engineers (NCE), and Economic & Planning Systems, Inc. (EPS)

Projected Future Costs

Projected costs for implementation of the SWMP and PLRP have been estimated for the remainder of the Permit term (FY 2014 – 2016). Each Implementation Task described in this SWMP has been assigned a number of hours for staff labor. The estimate of hours is multiplied by a fully burdened average hourly rate of \$100/hour (including fringe benefits and overhead) for FY 2014. This hourly rate reflects an average of all of the staff performing work in support of the Stormwater Program understanding that some will have rates lower than \$100/hour and others will be higher. A 1.5% annual escalation rate was applied, resulting in hourly rates of \$101.50 and \$103.02 for FY 2015 and 2016, respectively. Administrative costs (permit fees, lab fees, licensing, document production costs, consulting fees, etc.) and capital costs (new equipment and materials for task implementation or operations and maintenance) are also estimated for each Control Measure and summed for the remaining permit term. The projections include average annual O&M costs for WQIPs, but not design or construction of these projects. **Table 1-3** summarizes projected costs for full implementation of the City's stormwater program for Fiscal Years 2014-2016. The tool used to develop these projections has been provided to the City as an electronic spreadsheet, including all assumptions and source information.



Table 1-3: Projected Costs for Full Implementation of Stormwater Program

Table 1-3
City of South Lake Tahoe Stormwater Management Plan
Projected Costs for Full Implementation of Stormwater Program

Description	Projected Cost		
	FY 2014	FY 2015	FY 2016
Labor	\$843,100	\$903,900	\$905,300
Administrative Costs	\$136,500	\$135,800	\$137,900
Capital Costs	\$306,200	\$375,900	\$381,500
Total	\$1,285,800	\$1,415,600	\$1,424,700

Sources: City of South Lake Tahoe, NCE, and EPS

Note that the monitoring program required by the Permit is being managed by RSWMP, which is largely funded by the USFS for the remainder of the Permit term. Therefore, costs associated with the monitoring program are not included in this estimate. The City may be expected to assist in funding this program in future Permit terms. In addition, capital project implementation is also not included in this estimate. Due to the fluidity of available grant monies for implementation of these projects, it is not possible to reasonably estimate future program costs based on these funds.

Financial Analysis

A cash flow analysis has been prepared that identifies program costs, available funding sources, and funding needs. This assessment includes a total programmatic cost summary by year, as well as a quantitative estimate of existing resources versus projected needs. The City is required to develop several new Program Elements under the Permit which are the greatest factors in the increased cost over past expenditures. The new Program Elements requiring significant development are described in detail in the later sections of this SWMP, they include:

- Commercial and Industrial (Section 3)
- New Development and Redevelopment (Section 6)
- Education and Outreach (Section 7)

Although the City has already made substantial progress on the Construction, Municipal Operations and Facilities, and Illicit Discharge Detection and Elimination (IDDE) Program Elements, this SWMP has identified several Control Measures and Implementation Tasks that will require additional expenditure. These include:

- Municipal Site Base Map and Prioritization (4.3.1)
- Municipal Site Inspection (4.3.2)
- Development of a Traction Abrasive Material Specification (4.3.4)
- Increased Sweeping Frequency on Target Streets per the PLRP (4.3.5)



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- Municipal Personnel Training and Education (4.3.6)
- IDDE Inspections and Dry weather Monitoring (5.3.2)

Additional stormwater program costs contributing to the increase in projected expenses include the O&M costs for active WQIPs expected to be completed in FY 2015, and replacement costs for the sweeper fleet.

The funding available for all City services is finite, and the City Council has already indicated a willingness to maintain its General Fund contribution to the Engineering Division stormwater budget up to \$400,000 per year. Based on available information, and assuming that the budget allocations for other departments and divisions performing stormwater program functions will remain constant at \$529,900, the total funding available to the stormwater program is expected to be about \$929,900. Future stormwater program expenditures are projected to be greater than those identified in previous years, ranging from \$1,285,800 in FY 2014, to \$1,424,700 in FY 2016 as described in **Table 1-3**. This results in a projected annual net program cost increase ranging from \$355,900 in FY 2014, to \$494,800 in FY 2016.

Note that the projected future stormwater program costs include expenses that are difficult to estimate from the City's current budget documents, and may not be accounted for in the analysis of existing expenditure. For example, the time spent by Building Division staff on construction site stormwater inspection and enforcement is not currently tracked by the Development Services Department, and is not included in the analysis of existing expenditure. However, the hours and associated expenses for these inspections have been estimated in the projected future cost analysis. As a result, the projected annual net program cost increase may be slightly overestimated. Further discussion of the projected future costs is presented below in Section 1.7.3. "Scenario 1", **Table 1-4**, and **Figure 1-2**, which examine the "status quo" by utilizing existing funding sources.

1.7.2. Stormwater Funding Sources

This section provides a description and assessment of the major funding sources which may be considered for use to fund the stormwater program. Currently, funding for the stormwater program comes largely from the City's General Fund, which is supported by a number of revenue sources including property tax, sales tax, transient occupancy tax, etc. Other revenues sources also support the stormwater program, including grant funding (which funds capital projects, monitoring, TMDL, and other elements), as well as other organizations which fund certain educational aspects of the program.

In addition to these existing sources, this Fiscal Analysis considers the potential to use new funding sources to close the funding gap that has been identified to satisfy all requirements of the Permit. A description and assessment are provided for a complete roster of various existing and prospective funding sources which were considered in this report for future funding of the stormwater program. These sources have been grouped into six major categories: 1) City Funds, 2) Grant Funding, 3) Property-Based Taxes and Fees, 4) Consumption Taxes, 5) Development Fees, and 6) Other Taxes and Fees. A description of all potential funding sources considered follows below.

City Funds

General Fund

The City's General Fund is a major contributor to stormwater program funding in the City. The General Fund amount that is used to fund stormwater can vary in any given year based on a number of variables, including the amount and availability of supporting revenues (which flow from a variety of sources), the



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annual cost of stormwater operations, and the priority placed on the stormwater program among other essential city services.

Total General Fund revenue of \$27.3 million was projected in the FY 2013 Annual Budget. In recent years, General Fund revenues in the City have fluctuated from approximately \$26 million to \$30 million, and substantial declines were observed from 2008 through 2010, associated with the national “Great Recession” which severely impacted many cities throughout California by limiting property tax revenue and the disposable income from households that support sales tax and other sources. These major economic difficulties have subsided in recent years, and the prospects for the General Fund are currently more promising than in past years. General Fund revenues budgeted for FY 2013 were down 3 percent from the previous year, but future years are more optimistic and are projected to undergo a modest increase in each of the next five years resulting from expected increases in property tax revenues (from rising property values), sales tax and TOT revenues (from enhanced visitation), as well as other economic factors.

The General Fund is likely to be a major funding source for the stormwater program in the near-term. The “Storm Water Management Program” account (i.e. Engineering Division stormwater budget) was set up as a “Special Revenue Fund” in the City’s budget, with the intention of having it funded through a special dedicated revenue source such as a parcel tax. To date, this special revenue source has not been established, and with the exception of some small revenues from permit, plan check and inspection fees, the Special Revenue Fund supporting the Engineering Division’s stormwater budget is entirely subsidized by the City’s General Fund.

Currently available information indicates that the City Council has committed an annual budget of \$400,000 to the Engineering Division’s stormwater budget moving forward. It should be noted that as a result of tightening budgetary constraints and reduced staffing levels combined with increased regulatory requirements, the City is faced with significant revenue challenges.

Other City Funds

The City maintains several other funds which are dedicated to specific purposes. Some examples include the Gas Tax Fund and Capital Improvement Project Fund. Currently, support for the stormwater program comes primarily from the General Fund, but other City funds likely support stormwater program activities but may not be specifically itemized as such. For example, some stormwater system maintenance activities related to snow removal (sweeping and vactoring of traction abrasive) are partially reimbursed by the State Gas Tax. It should be noted that other jurisdictions in California have allocated funding to stormwater activities from other non-General Fund accounts (including the Road Fund or Capital Improvement Fund). Since there is a precedent for these funding sources being used for stormwater activities, they are included in this fiscal analysis as future options for the City.

The City does maintain a Capital Improvement Fund for the “Storm Water Management Plan”. This fund is not currently supported by any revenue sources, but does have a current balance of approximately \$250,000. This account may be used for stormwater program capital expenses such as a stormwater treatment facility retrofit, or sweeping and traction control equipment purchase.

Federal/ State Grants

State and federal governments have grants and programs that provide possible funding opportunities for stormwater programs; however, these grants and programs can frequently only be used for infrastructure improvements and do not address the maintenance and operation costs borne by the City. Grants often require local matching funds, which may limit the ability to utilize such grants. The



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City could team with other public agencies in the Tahoe basin to pursue grants which provide multi-jurisdictional or regional improvements.

The City has recently been awarded a \$3 million grant from the SWRCB related to Proposition 84 and has also utilized grants from the USFS, and a variety of other government bodies. Given its sensitive environmental setting and the generally recognized need for stormwater improvements, the City has been relatively successful in securing these grants, and the prospects for additional future grant funding appear to be favorable. However, obtaining grant funding is a notoriously fickle endeavor, and it is generally unwise to rely on these funding sources for core stormwater program elements since they are “ad-hoc” and can vary significantly from one year to the next.

Given the City’s past success with grants and the number of federal or state grants available to fund infrastructure capital or ongoing costs it is likely to continue to be a revenue source for the program at some level. Some of the more prominent grants which the City is already using or should consider in the future include:

- Prop 84
- Prop 1B
- Prop 1E
- USDA Forest Service Erosion Control Grants
- EPA Grants particularly 319 funds
- Private Grants including the Tahoe Fund

Property Based Special Taxes/ Assessments

Land secured financing mechanisms, such as Community Facilities Districts (CFDs) or Assessment Districts (ADs) are common methods to fund infrastructure and public facilities. Land secured financing districts are attractive financing sources because proceeds from the sale of tax-exempt bonds can be used to pay for the construction of infrastructure required to serve new development, and they can also fund annual operations and maintenance. Because CFD and AD bonds have a tax-exempt status, the interest rates on the bonds are more favorable than the interest rates on private financing. Additional information regarding specific types of land-secured special taxes and assessments follows below.

Parcel Tax

A parcel tax is an excise tax on real property that is based on either a flat per-parcel rate or a rate that varies depending on use, size, and/ or number of units on each parcel. Parcel taxes may be imposed for any municipal purpose. A parcel tax may be a viable method to fund the City’s stormwater program because it does not require the establishment of nexus between the fee and the land upon which it is imposed. Given the unique attributes of stormwater infrastructure, establishing such a nexus may be difficult in this context which may bode well for the use of a parcel tax.

Parcel taxes are commonly used by public agencies to fund ongoing maintenance and to provide public services. Public agencies sometimes place a limit on the term of the parcel tax authorization. This is deemed by such agencies to make the tax measure more palatable to registered voters, in that they know they are authorizing the parcel tax for a finite period of time. This also benefits the public agency as it allows the agency to re-evaluate maintenance or service costs when asking for a voter-approved reauthorization of the tax at the end of the initial term of the parcel tax.



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Voter Approval Requirements:

- Requires 2/3 majority approval from registered voters for a “special tax”
- Simple majority for a “general tax”

Advantages:

- Stable revenue stream
- Does not require establishment of nexus

Challenges:

- Difficult to achieve 2/3 voter approval (only 10 of 25 parcel tax measures passed in November 2012 state-wide for non-school public agencies, and 5 of 14 passed in June 2012)
- No agencies presented a “General Tax” measure in 2012

Mello-Roos Community Facilities Districts

The 1982 Mello-Roos Community Facilities District Act enables cities, counties, special districts, and school districts to establish CFDs and to levy special taxes to fund a wide variety of public facilities and services. Public improvements that are eligible for CFD financing include the purchase, construction, expansion, improvement, or rehabilitation of any real or other tangible property with an estimated useful life of five years including planning and design work for such facilities. In addition to infrastructure financing, annual special tax levies from CFDs can be used to fund qualified annual operations and maintenance costs.

Voter Approval Requirements:

- Requires 2/3 majority approval from registered voters within proposed district

Advantages:

- Stable revenue stream
- Does not require establishment of nexus

Challenges:

- Difficult to achieve 2/3 voter approval
- Apportionment and administration can be complex

Assessment Districts

California statutes give local governments (cities, counties, and many special districts) the authority to levy several special benefit assessments for specific public infrastructure improvements including stormwater. The local agency would create a special assessment district by defining both the area to benefit from the improvements and the properties that will pay for the improvements.

Historically, assessment districts have assigned a share of the infrastructure costs to each property in the district proportional to the special benefit the property receives from the infrastructure improvements. Recent court rulings have changed the way special benefit should be determined for each property. Rather than allocating a cost based on a measure of benefit, the courts have ruled that the value of the special benefit received by a property should be determined independent of total project costs. That is, the assessment engineer must determine the value of the special benefit received by each parcel as a result of the completion of improvements.



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In the case of stormwater improvements within the City, many of the “impacts” of the stormwater occur over a large drainage basin, and costs of special benefits would need to be spread to areas outside of the city limits. As the courts have recently ruled, using ADs to finance improvements have become more challenging for public agencies.

ADs may also permit the use of annual assessments to fund ongoing maintenance costs such as stormwater system maintenance.

Voter Approval Requirements:

- Requires fifty percent of returned ballots, with votes weighted by the amount of the proposed assessment for each parcel

Advantages:

- Allows funding for capital improvements and operations/ maintenance
- Lower voter threshold than other sources

Challenges:

- Requires demonstration of special benefit (very difficult for stormwater)
- Can be subject to legal challenge

General Obligation Bonds

General obligation bonds are “the most reliable and least expensive way for local agencies to borrow money” yet it is “one of the politically most difficult” (Abbot, 2001). General obligation bonds can be used only for capital construction of facilities (not for annual operations and maintenance). General obligation bonds rely on ad valorem property tax revenues that are collected outside Proposition 13’s one percent limit, making them highly secure investments (Abbot, 2001). It is because the investments are so secure that they are one of the least expensive ways to borrow money. General obligation bonds are typically used to fund large-scale public infrastructure that is not easily funded through other sources (e.g., parks, jails, city halls, and other civic facilities). Other facilities such as sewer, water, or stormwater drainage improvements may also be financed by general obligation bonds, but since the process of approving a general obligation is a rather time-consuming and costly endeavor, the cost of the needed facilities should be high enough to warrant such an undertaking.

Voter Approval Requirements:

- Requires 2/3 supermajority voter approval

Advantages:

- Secure funding stream
- Low interest rates

Challenges:

- Can only be used for capital construction
- Relatively low passage rate (3 of 7 measures for non-school agencies were approved in November 2012, and 2 measures were defeated in June 2012)
- High cost to form and administer



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Infrastructure Financing Districts

Infrastructure Financing Districts (IFDs) are an emerging financing mechanism that is hoped to replace the loss of Redevelopment and associated tax increment financing in California. IFDs, as currently structured under the Government Code, allow cities to identify a geographical area for which it intends to gain voter approval to implement tax increment financing using the city's property tax increment to fund infrastructure improvements.

There are several bills being considered by the state legislature that amend the IFD law to make implementation a little bit less difficult. For example, the voter threshold may be reduced to 55%, but this prospect will face tough scrutiny. The most likely change to the IFD law this year is the possible elimination of language that prevents an IFD being formed over a former redevelopment agency. Many cities are throwing their support behind this possible change and have enlisted the help of large developers to enact this change.

While IFDs may provide some promise for a future funding source the ability to use this source for stormwater management during the upcoming permit term are unlikely. In particular, if the IFD can only fund infrastructure improvements, it is only a partial solution for funding stormwater programs.

Voter Approval Requirements:

- Requires 2/3 voter approval, which may be reduced to 55% pending legislative approval

Advantages:

- Does not touch existing funding, only property tax increment
- Possible legislative changes will improve the feasibility of this source in the future

Challenges:

- Can only be used for capital construction
- Currently cannot be established in former redevelopment areas
- Relatively low funding availability unless jurisdiction receives a high property tax allocation
- Takes time for property tax escalation to allow tax increment to accrue

Consumption Taxes

Add-on Sales Tax

Local agencies can use these add-on portions from sales tax revenues to fund a variety of public services, including stormwater operations and maintenance. The add-on sales tax measure may be placed on the ballot as a "general" tax increase, or a "special" tax increase. The voter threshold for a "general" tax increase is a simple majority, while the "special" tax increase requires a super-majority. Approval of a "general" tax increase does not commit the public agency to using the additional sales tax for the intended purpose, in this case, funding stormwater improvements and maintenance. If the additional sales tax is committed to such uses, it becomes a "special" tax increase. Some cities place two measures on the same ballot. One measure is whether to impose a "general" tax increase, and the second measure is an advisory measure where voters may voice their non-binding approval of using it for a special purpose, such as stormwater.

Discussions with the City staff have indicated that a prospective sales-tax increase has been considered by the City and may be attempted in future years, but because of the difficulty in passing such a measure, and because other under-funded City programs may already be earmarked to receive this



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funding, the stormwater program may not be a likely candidate to receive funding from a sales tax increase.

Voter Approval Requirements:

- Requires majority voter approval if used for general benefit
- Requires 2/3 super-majority voter approval if used for special benefit

Advantages:

- Significant revenue potential
- Funding comes both from visitors and local residents
- General tax measures highly successful in 2012 (25 of 28 passed in November, and 8 of 8 passed in June 2012)

Challenges:

- Low success rate for special tax measures (3 of 7 special tax measures were approved in November 2012; however 2 of 3 passed in June of 2012)
- Revenues fluctuate with consumer spending patterns

Transient Occupancy Tax

Transient occupancy taxes (TOT) are taxes on hotels, motels, and other short term accommodations. Cities may set their own TOT rates. Lodging providers collect tax and remit funds to the City. As with add-on sales taxes, the measure can be presented to registered voters as a “general” or “special” tax and therefore become subject to the same voter thresholds as add-on sales tax increases. Most measures are submitted to voters as a “general purpose tax” and, as such, have shown a significant approval rate in 2012 elections.

Similar to sales tax, the City has reportedly considered the potential future use of an increase to TOT, but because of the difficulty in passing such a measure, and because other under-funded city programs may already be earmarked to receive this funding, the stormwater program may not be likely to receive funding from this source.

Voter Approval Requirements:

- Requires majority voter approval if used for general purpose (most often used)
- Requires 2/3 super-majority voter approval if used for special purpose

Advantages:

- Significant revenue potential
- Revenues come primarily from non-residents
- Reasonable success rate of recent measures (15 of 18 approved in November 2012, while 2 of 4 were approved in June 2012).

Challenges:

- Higher taxes may generate competitive disadvantage for lodging, as compared to other areas



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Development Impact Fees

Development impact fees are an exaction by a local agency imposed as a condition of development approval and can be used only for capital construction of facilities (not for annual operations and maintenance). Development impact fees, which are typically due at final map or building permit, are authorized under California Government Code Section 66000, *et seq.* This code section sets forth the procedural requirements for establishing and collecting development impact fees. These procedures require that “a reasonable relationship, or nexus, must exist between a governmental exaction and the purpose of the condition” (Abbot, 2001). To demonstrate the required nexus, development impact fees for each land use that would be subject to the fee are to be calculated based upon the proportionate share of the total facility use (benefit received) that each land use represents.

Development impact fee programs allocate the infrastructure costs over the land uses that will benefit from such improvements. The purpose of allocating certain improvement costs among the various land uses is to provide an equitable method of funding required infrastructure.

The keys to apportioning the cost of public infrastructure improvements to different land uses are the assumptions that the demands placed on such infrastructure are related to land use type and that such demands can be stated in relative terms for all particular land uses. It is by relating demand for facilities to land use types that a reasonable nexus, or relationship, can be established to apportion the “fair share” costs to that land use.

Given the limited development capacity of the City, a prospective development impact fee is not likely to provide a sufficient or sustained amount of revenue to fund needed stormwater facilities driven by the SWMP.

Voter Approval Requirements:

- Does not require voter approval. Must be adopted by local government body

Advantages:

- No voter requirement
- Funding does not impact other municipal revenue sources

Challenges:

- Can only be used for capital construction
- Limited revenue generation in the City
- Must demonstrate the nexus of infrastructure cost to the developed area

Other Taxes or Fees

Utility Users Tax

A utility users tax (UUT) is a tax on the users of utility services such as gas, electric, water, cable TV and/or telecommunications services. Cities may set their own UUT rate. UUT are collected by utility companies as part of regular billing procedures and remitted to the City. As with add-on sales taxes and transient occupancy taxes, the measure can be presented to registered voters as a “general” or “special” tax and therefore become subject to the same voter thresholds as add-on sales tax increases and transient occupancy tax increases. Most measures are presented a general purpose tax increases.



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Voter Approval Requirements:

- Majority voter approval for general benefit
- 2/3 super-majority if for special purpose

Advantages:

- Can provide significant revenue potential, depending upon how rates are structured
- Stable revenue stream. Taxes generally paid on monthly or quarterly bill instead of annual property tax bill
- High success with general tax increases (8 of 9 were approved in November 2012, and 1 of 2 were approved in June 2012)

Challenges:

- Since it directly impacts all community stakeholders, it often more difficult to pass than other taxes

Business License Tax

The City could increase business license taxes to fund stormwater improvements, either by a flat amount, or a percentage increase. The voter approval requirements are the same as with other tax increase measures discussed above. Business license taxes are unrestricted general fund revenues that could be dedicated to specific purposes, such as stormwater program maintenance. An increase of the business license tax would impact only a smaller section of the City that will benefit from the stormwater program. If a business license tax is considered to fund such items, it should also be done in conjunction with other revenue generating programs discussed herein.

Voter Approval Requirements:

- Majority voter approval for general benefit
- 2/3 super-majority if for special purpose

Advantages:

- Can provide significant revenue potential, depending upon how rates are structured.
- High success with general tax increases (5 of 6 were approved in November 2012. There were no such measures in June 2012)

Challenges:

- Can negatively impact the perceptions of a city's business environment.



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1.7.3. Funding Strategies

In consultation with City officials, three potential finance strategy scenarios have been identified which provide opportunities to fund the City's stormwater program:

- Scenario 1: Utilize Existing Funding Sources - 'Status Quo'
- Scenario 2: Status Quo in Addition to Best Available Funding Sources (i.e., Grant funding)
- Scenario 3: Sustained Local/Regional Revenue Source

In each scenario, the General Fund contribution to the Engineering Division's stormwater budget has been held at the Council commitment level of \$400,000. City funding for other stormwater program activities has been held constant at the current level of \$530,000, and a projected future need has been identified to achieve the FY 2016 program goal of \$1.42 million per year (see **Table 1-3**).

Given the breadth of potential funding sources noted in Section 1.7.2., there are numerous combinations of these sources which can be developed as scenarios. The scenarios presented in this section were selected because they:

- Build on existing funding sources
- Provide a diverse mix of potential funding sources
- Represent a reasonable and politically acceptable set of strategies for the City to consider

Scenario 1: Utilize Existing Funding Sources – 'Status Quo'

Scenario 1 examines the "status quo", assuming that the stormwater program continues to be funded at the current level, and no new funding sources are considered. This calculation includes a reasonable yet somewhat aggressive assumption that the City would continue to contribute approximately \$400,000 out of the General Fund which will be specifically earmarked for the Engineering Division's stormwater budget. Other divisions and departments which support the City's stormwater program, would continue to be funded at an aggregate total of approximately \$530,000 per year as described in Section 1.7.1, and **Table 1-2**, above.

As shown in **Table 1-4** below, these two primary sources of funding equal approximately \$930,000 per year. The anticipated cost to fully implement the stormwater program is predicted to range from \$1.29 million to \$1.42 million over the next three years. Therefore, given only approved existing funding sources, a projected future need of approximately \$350,000 to \$500,000 per year is predicted. Over a period of three years, the cumulative need grows to approximately \$1.34 million, as illustrated in **Table 1-4** and **Figure 1-2** below. As described above, the projected future stormwater program costs include expenses that are difficult to estimate from the City's current budget documents, and may not be accounted for in the analysis of existing expenditure, resulting in projected annual net program costs that may be slightly overestimated. The Capital Improvement Fund for the "Storm Water Management Plan" could be used to offset the additional projected cost, but it only contains about \$250,000 and is not supported by any revenue streams.



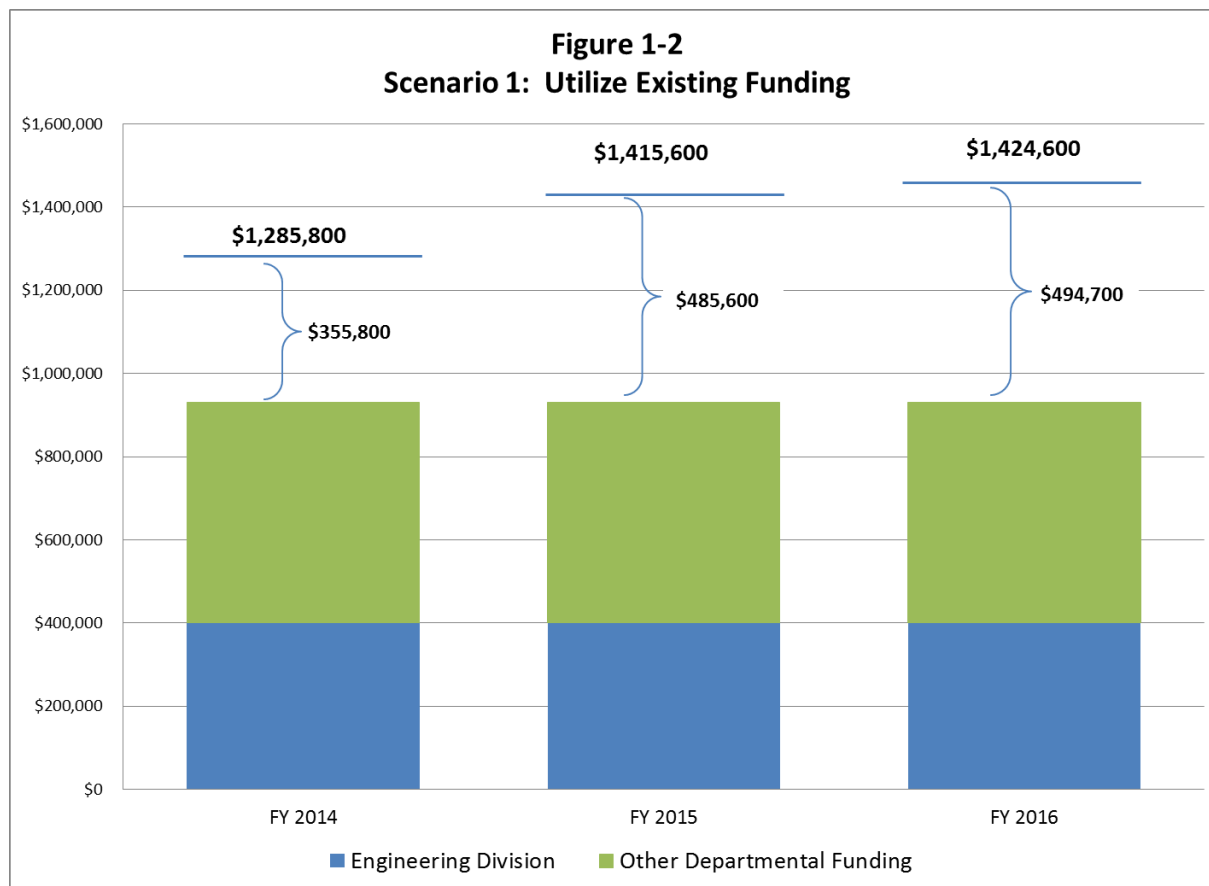
Table 1-4: Scenario 1 - Utilize Existing Funding

Item	Existing	Projected			3-Year Total
		FY 2014	FY 2015	FY 2016	
Annual Revenues					
Engineering Division	\$359,200	\$400,000	\$400,000	\$400,000	\$1,200,000
Other Departmental Funding	\$529,900	\$530,000	\$530,000	\$530,000	\$1,590,000
Subtotal Revenues	\$889,100	\$930,000	\$930,000	\$930,000	\$2,790,000
Annual Expenses					
City Stormwater Program	(\$889,100)	(\$1,285,800)	(\$1,415,600)	(\$1,424,700)	(\$4,126,100)
Subtotal Expenses	(\$889,100)	(\$1,285,800)	(\$1,415,600)	(\$1,424,700)	(\$4,126,100)
Net Surplus/ Funding Need	\$0	(\$355,800)	(\$485,600)	(\$494,700)	(\$1,336,100)
Cumulative Surplus/ Funding Need		(\$355,800)	(\$841,400)	(\$1,336,100)	

Sources: City of South Lake Tahoe, NCE, and EPS.



Figure 1-2: Scenario 1, Utilize Existing Funding



Scenario 1 is summarized in terms of its inherent advantages and challenges below.

Advantages:

- No additional funding sources required
- Majority of costs required for the stormwater program are funded
- Critical stormwater program needs can be prioritized to ensure core program elements are implemented while the remaining elements are implemented as resources become available

Challenges:

- Does not provide funding for full implementation of stormwater program
- May risk non-compliance with Permit
- May lead to long-term budget problems due to “deferred maintenance”

Scenario 2: Status Quo in addition to best available funding sources

Scenario 2 allows the City some flexibility in attempting to fund the projected future costs for the stormwater program in any given year by utilizing other City funds in addition to the General Fund, grant funding, existing revenue sources currently dedicated to other City services, or other “ad hoc” funding sources that may not be sustained over the long term.

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Table 1-5 and **Figure 1-3** show predicted revenues as compared to expenses under Scenario 2. After the General Fund allocation, it is assumed that any remaining funding gap is closed by grants and other items within the City’s budget so that the total funding requirements are satisfied each year. This is a highly prospective proposition, and may require that funding from some other City services are reduced and re-allocated for the stormwater program. The Capital Improvement Fund for the “Storm Water Management Plan” could also be used to fund projected future costs, but this fund only contains about \$250,000 and is not supported by any revenue streams.

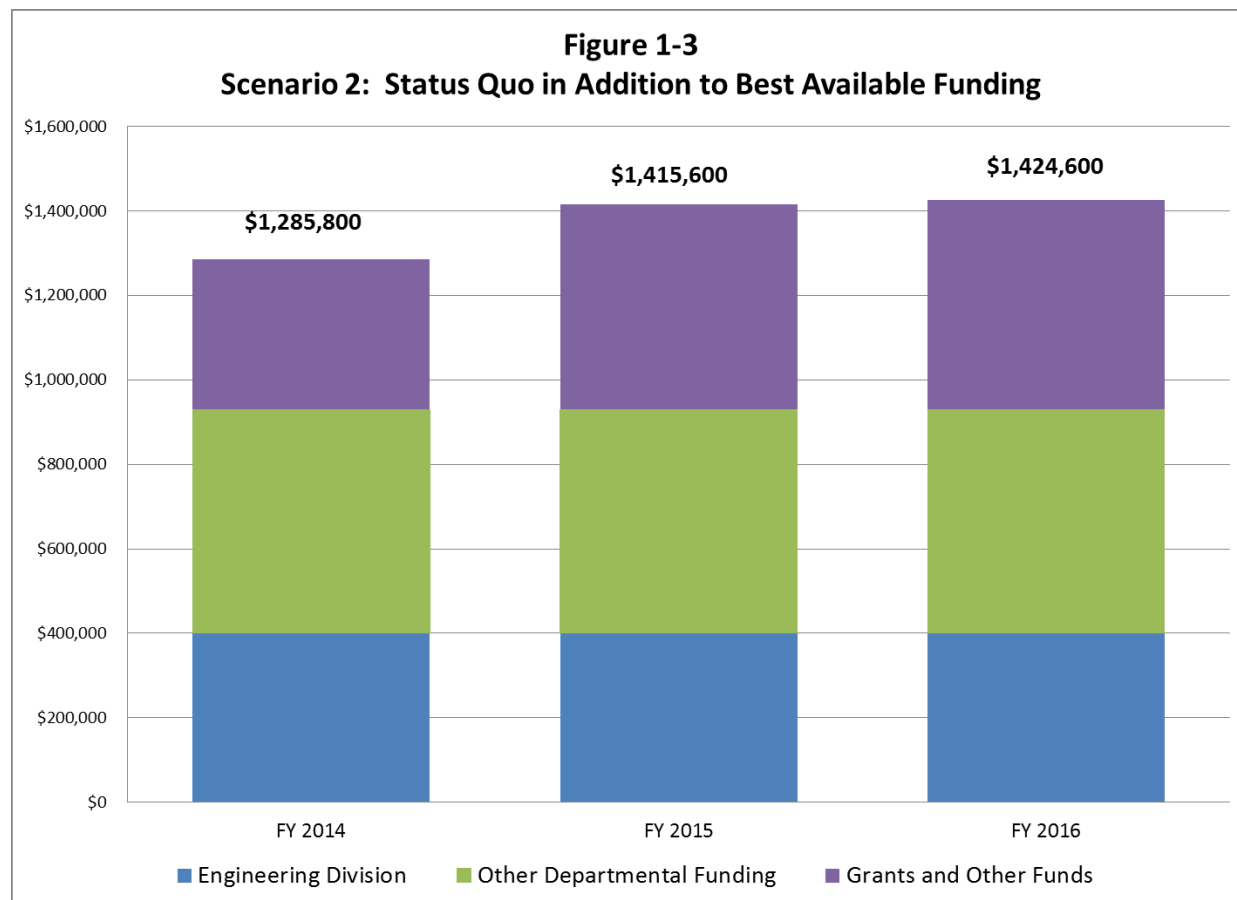
While this approach may have some promise as a short-term stop-gap, the uncertainty of available funding from grants and other City funds suggests that it is not likely to be a viable alternative over the long-term.

Table 1-5: Scenario 2, Status Quo in Addition to Best Available Funding Sources

Item	Projected			3-Year Total
	FY 2014	FY 2015	FY 2016	
Annual Revenues				
Engineering Division	\$400,000	\$400,000	\$400,000	\$1,200,000
Other Departmental Funding	\$530,000	\$530,000	\$530,000	\$1,590,000
Grants and Other Funds	\$355,800	\$485,600	\$494,700	\$1,336,100
Subtotal Revenues	\$1,285,800	\$1,415,600	\$1,424,700	\$4,126,100
Annual Expenses				
City Stormwater Program	(\$1,285,800)	(\$1,415,600)	(\$1,424,700)	(\$4,126,100)
Net Surplus/ Funding Need	\$0	\$0	\$0	\$0
Cumulative Surplus/ Funding Need	\$0	\$0	\$0	

Sources: City of South Lake Tahoe, NCE, and EPS.



Figure 1-3: Scenario 2, Status Quo in Addition to Best Available Funding

Scenario 2 is summarized in terms of its inherent advantages and challenges below.

Advantages:

- All costs required for the stormwater program are funded
- No new taxes or fees are required

Challenges:

- Stability of funding is highly variable and unsecured
- Likely to require significant staff time to develop grant applications and negotiate for stormwater funding during annual budgeting process
- Potential for cuts to other City departments or programs

Scenario 3: Sustained local/regional revenue source

Scenario 3 has been developed to provide the benefit of a sustained, dedicated funding source to satisfy a portion of stormwater program costs over the long-term. A Parcel Tax is a potential option which can be allocated to various land use types based upon a number of methodologies. The Parcel Tax would be legally defensible, and would not require the establishment of “nexus” between specific costs and the fee amount applied to each parcel. As described above in Section 1.7.2, this funding mechanism *would* require 2/3 voter approval from landowners within the City which could present a major hurdle.

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However, if successful, it could provide major headway toward solving regionally-important stormwater program and infrastructure issues for the long term.

Table 1-6 and **Figure 1-4** show the potential revenue that could be generated from a parcel tax to fund the City’s stormwater program. An assessment at the levels shown would provide up to \$520,000 in dedicated annual funding for stormwater on an ongoing basis, thus fulfilling the full roster of costs associated with the Permit, assuming other revenue dedicated to the stormwater program remains the same. This estimate is based on annual tax rates of \$36.50 per developed parcel, \$18.00 per vacant parcel, or \$0.75 per timeshare “share,” as shown in **Table 1-7** below. These rates are preliminary estimates and are shown to demonstrate the potential revenue amount that could be generated given relatively low tax rates. Although this is believed to be an appropriate allocation methodology, there are other methods that could be selected to spread costs to various parcel types.

Table 1-6: Scenario 3, Sustained Local/Regional Revenue Source

Item	Projected			3-Year Total
	FY 2014	FY 2015	FY 2016	
Annual Revenues				
Engineering Division	\$400,000	\$400,000	\$400,000	\$1,200,000
Other Departmental Funding	\$530,000	\$530,000	\$530,000	\$1,590,000
Parcel Tax [1]	\$520,000	\$520,000	\$520,000	\$1,560,000
Subtotal Revenues	\$1,450,000	\$1,450,000	\$1,450,000	\$4,350,000
Annual Expenses				
City Stormwater Program	(\$1,285,800)	(\$1,415,600)	(\$1,424,700)	(\$4,126,100)
Net Surplus/ Funding Need	\$164,200	\$34,400	\$25,300	\$223,900
Cumulative Surplus/ Funding Need	\$164,200	\$198,600	\$223,900	

Sources: City of South Lake Tahoe, NCE, and EPS.

[1] Parcel tax revenues are a preliminary estimate, based on the rates shown in Table 1-7.



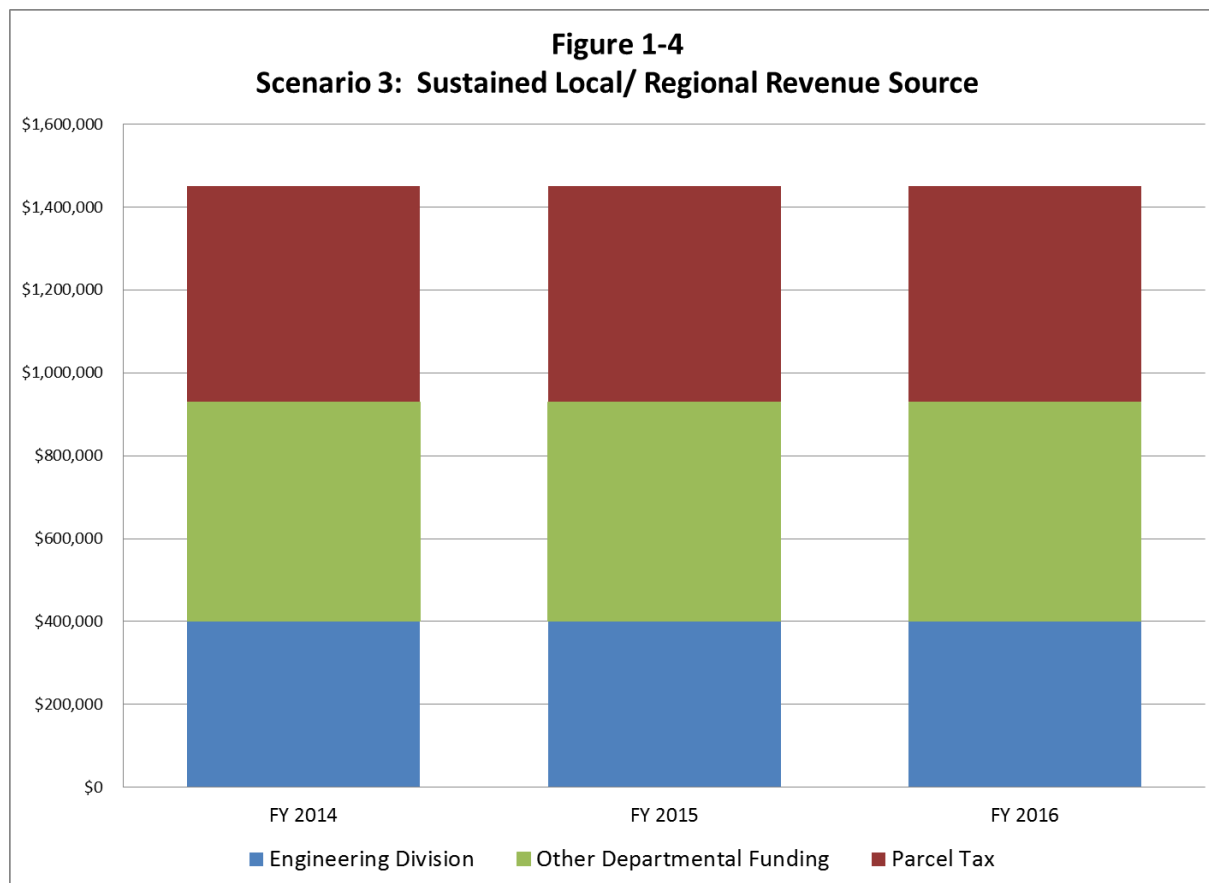
Table 1-7: New Property-Based Assessment Revenue Calculation

Category	Parcels [1]	Rate	Annual Revenue
Developed Parcel	12,105	\$36.50	\$441,833
Vacant	2,420	\$18.00	\$43,560
Timeshare [2]	46,143	\$0.75	\$34,607
Total			\$520,000

Sources: El Dorado County and EPS

[1] Number of parcels obtained from El Dorado County .

[2] Timeshare units are allocated the same tax rate as a developed parcel, assuming 50 owners per timeshare unit.

Figure 1-4: Scenario 3, Sustained Local/Regional Revenue Source

Scenario 3 is summarized in terms of its inherent advantages and challenges below.

Advantages:

- All costs required to fulfill the stormwater program are funded
- Sustained, long-term funding source

Challenges:

- Difficulty in achieving voter support for a new tax
- Costs associated with outreach, education, and balloting

1.7.4. Strategy Evaluation

The scenarios described in Section 1.7.3 represent a realistic range of strategies that the City could pursue to fund the City's stormwater program. Each scenario has inherent benefits and drawbacks and therefore, in order to determine the most appropriate scenario for the City to consider, the following evaluation process was developed.

Based on discussions with City officials, four core evaluation criteria were identified and applied to each scenario: 1) funding stability, 2) Permit compliance, 3) revenue potential, and 4) political viability. This approach efficiently illustrates results in a meaningful and defensible way. Each evaluation criteria is

1. PROGRAM MANAGEMENT

scored as a 1, 3, or 5, with 1 being the least desirable and 5 being the most desirable (further described below). The results of this semi-quantitative analysis are presented in **Table 1-8**.

Funding Stability Scoring:

Funding stability is scored from 1 to 5, with 5 be the most stable and 1 representing a very unstable funding source for long-term reliability, according to the criteria below.

5 = Strong long-term funding stability based on dedicated annual funding for stormwater program on an ongoing basis

3 = Moderately stable funding dependent on sources that are currently reliable, but may fluctuate in the future, leaving the stormwater program unable to plan for long-term expenses

1 = Dependent on annual stop-gap measures and ad-hoc funding sources, no consistency or reliability from one year to the next

Permit Compliance Scoring

Permit Compliance is scored from 1 to 5, with 5 representing full compliance with the Permit and low legal risk, and 1 representing partial compliance and high legal risk, according to the criteria below.

5 = Full implementation of the stormwater program and full compliance with the Permit

3 = Potential for full implementation of stormwater program and compliance with Permit but needs to be evaluated annually

1 = Partial implementation of the stormwater program and potential non-compliance with Permit

Revenue Potential Scoring

Revenue potential is scored from 1 to 5, with 5 representing a relatively high amount of revenue availability, and 1 representing low level of revenue availability, according to the criteria below.

5 = Funding sources provide long term security, equal to or greater than \$550,000 per year, with no additional burden on the City General Fund

3 = Funding sources provide between \$200,000 and \$550,000 per year requiring an increase of General Fund or other revenue

1 = Funding sources provide less than \$200,000 requiring a substantial increase of General Fund or other revenue

Political Viability Scoring

Political viability is scored from 1 to 5, with 5 representing a high degree of political acceptance, and 1 representing low degree, according to the criteria below

5 = Strong support from local elected officials and community members. Funding bears little political risk and does not require a public vote

3 = Moderate support from local elected officials and community members. May require moderate public outreach effort, and may require a public vote, but appears reasonable that public approval could be achieved



1. PROGRAM MANAGEMENT

1 = Questionable support from local elected officials and community members, clearly requires a public vote, and may have strong resistance from elements of the voting public

The results of the evaluation process are presented below in **Table 1-8**. As shown, Scenario 3 has received the highest score among the three options. This scenario relies on existing funding in addition to a new dedicated local funding stream, presented in the form of a Parcel Tax for the purposes of discussion in this document. However, it should be noted that implementation of this scenario is not simply up to the City, but requires approval of a voter measure, the outcome of which the City has no control over. While the approval of a new municipal tax is often difficult to achieve, it has been deemed to be a prudent course of action since it allows stormwater program elements to be funded over the long-term, while avoiding negative impacts to other important City services.

Table 1-8: Stormwater Funding Scenarios Criteria Evaluation

Scenario	Description	Funding Stability	Permit Compliance	Revenue Potential	Political Viability	Total Score
Scenario 1	Utilize Existing Funding Sources - 'Status Quo'	3	1	1	5	10
Scenario 2	Status Quo in Addition to Best Available Funding Sources	1	3	3	3	10
Scenario 3	Sustained Local/Regional Revenue Source	5	3	3	1	12

1.7.5. Action Plan for Scenario 3

In the event that the City decides to pursue Scenario 3, which proposes the creation of a new parcel tax, the following action plan for implementation has been developed. An action plan that anticipates a registered voter approval requirement should consider the following components.

- Potential registered voter survey
- Public outreach
- Final determination of stormwater funding structure
- Preparation of reports, resolutions, and other required documents to initiate the ballot process
- Preparation of ballots and election process

Action Plan Timeline

Potential registered voter survey	Month 1 to 3
Public outreach	Months 4 to 6
Final determination of stormwater funding structure	Month 7
Preparation of reports, resolutions, and other required documents to initiate the ballot process	Months 8 to 9
Preparation of ballots and conduct election	To be determined



1. PROGRAM MANAGEMENT

Potential Registered Voter Survey

It is recommended, if resources are available to do so, that the City conduct a survey to determine the likely success of the proposed funding structure. The benefit of conducting the survey is that it would provide the City with information regarding the funding program, program structure, and annual amount that is likely to succeed if presented to the voters.

Advantages of a Voter Survey

- Could provide a strong indication of the likelihood of success of a ballot measure
- Could define “maximum” annual amounts that would be approved by voters
- Could inform the City as to other finance structuring consideration needed to gain approval (citizen oversight committees, a sunset clause for the fee/tax, etc.)

Disadvantages of a Voter Survey

- Voter survey results don’t always accurately predict the successful outcome of an election
- Can be costly with no guarantee of success of the measure (\$20,000 to \$30,000)

Public Outreach

Some form of public outreach should be conducted in preparation for bringing a revenue ballot measure forward. The outreach program can be scaled based on the perceived level of public education that must occur prior to conducting an election. Public outreach should begin by identifying all potential stakeholders from the environmental community, business community, tourist trades, and community groups, such as service organizations, and church organizations. Once the level of effort is determined given the number and positions of the identified stakeholders, the City could enlist the assistance of a public relations firm to help conduct outreach events and present informative materials. There should be no artificial truncation of this public education process. The City should be satisfied that every effort has been made to inform the public about the benefits to the community that will accrue from a successful ballot measure.

Advantages of Public Outreach

- Increased likelihood of success of a ballot measure
- Furthers City goal of educating public
- Contributes toward Public Education requirements of Permit
- Costs of program could be scaled if outreach performed in conjunction with community leaders

Disadvantages of Public Outreach

- Can be costly with no guarantee of successful ballot measure (\$20,000 to \$100,000)
- May result in public fatigue (the “Keep Tahoe Blue” effect)

Final Determination of Stormwater Funding Structure

Input gathered by the City during the voter survey and public outreach efforts would be used to develop the final structure of the financing program to be presented to the voters. The results of such efforts may also redirect the efforts of the City to identify an alternative financing plan. As such, the City should be prepared to present possible alternatives in the outreach process so that these efforts do not have to be repeated if the public is not responsive to a parcel tax program.



1. PROGRAM MANAGEMENT

Detailed funding strategy reports will need to be prepared for presentation to the City Council, and the Council will need to approve a plan for moving the strategy forward and drafting the language for the ballot measure.

Preparation of Ballots and Election

Resolutions would need to be prepared calling for the public hearing, and it may be required that notices are mailed to eligible voters notifying them of the time and location of the public hearing. Once the nature of the election is determined by City Council, the City should work with a qualified consultant to prepare the ballot measure and ballots, as needed. It is recommended that the City have the measure placed on the date of the general election in November 2014. A special election would be significantly more costly, and would likely have a lower voter turn-out.

Assuming that the election is successful and the parcel tax is approved, the resolutions/ordinances prepared during the election process will authorize the parcel tax. The City could then use the existing "Storm Water Management Program" Special Fund, or create a separate fund for parcel tax accounting. The parcel tax would be levied against taxable parcels in the first fiscal year after the election. The City would receive first parcel tax revenues the following January.

Despite the time and effort required of City staff to execute the action plan described above, a stable funding source would allow the City officials to plan more effectively for the continued implementation of the City stormwater program, and compliance with the Permit.



1. PROGRAM MANAGEMENT

1.8. Reporting

As required by the Permit, the City is responsible for submitting a number of documents relating to the development of the City’s stormwater program. **Table 1-9** describes the Permit requirements and submittal schedule.

Table 1-9: Permit Requirements and Schedule

Permit Section	Required Submittal Date	Date Submitted	Description
III.A.4	March 15, 2012	August 29, 2008	Analysis of Existing Legal Authority
III.A.4	March 15, 2013	March 2, 2012	Certification of Legal Authority (CSLT and Patrick Enright, 2012)
III.B	October 1, 2013		Revised Stormwater Management Plan
IV.C	March 15, 2013	Jan 25, 2013	Pollutant Load Reduction Plan
IV.F	October 1, 2013		Pollutant Load Reduction Progress Report
VI.F	June 9, 2016		Report of Waste Discharge and Preliminary Pollutant Load Reduction Plan

The Monitoring and Reporting Program (MRP) is incorporated in the Permit as Attachment C. The MRP requires the submittal of several reports documenting progress on implementation of the City’s stormwater program. **Table 1-10** describes the MRP requirements and submittal schedule.

Table 1-10: MRP Requirements and Schedule

MRP Section	Required Submittal Date	Date Submitted	Description
I.D	March 15, 2012	March, 2012	Catchment Credit Schedule (CSLT, 2012)
III.C	March 15, 2013	April 30, 2013	Stormwater Monitoring Plan (RSWMP, 2013)
IV	March 15, 2014, 2015 & 2016		Annual Report
I.G, IV.I	March 15, 2015		Development Impact Statement

Annual Reports will be submitted by March 15 of 2014, 2015, and 2016. These reports will describe the progress made by the City staff in implementing the control measures and Program Elements described in this SWMP. The Master Control Measure developed in conjunction with this SWMP is intended to assist the Stormwater Coordinator in preparing the Annual Reports. **Table 1-11** summarizes the implementation schedule and responsible parties for the Program Management element.



Table 1-11: SWMP Program Management Control Measures

Stormwater Management Plan Control Measure Table	Implementation Schedule																Responsible Parties																						
	WY/FY 2013				WY/FY 2014				WY/FY 2015				WY/FY 2016				Public Works		Development	Internal			Public Safety																
	2012				2013				2014				2015				2016				Engineering / SW Coordinator	Engineering / GIS	Engineering / Other	Capital Improvement Projects	Streets	Facilities	Fleet Maintenance	Building	Planning	City Manager	Public Information Officer	City Attorney	Finance	Airport	Police Department (CSO)	Fire Department	Parks	Recreation	Outside Agencies / Consultant
Control Measures / Implementation Tasks	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4																			
1. Program Management																																							
Analysis of Existing Legal Authority	◇																																						
Certification of Legal Authority				◇																																			
Revised Stormwater Management Plan						◇																															○		
Pollutant Load Reduction Plan				◇																																			
Pollutant Load Reduction Progress Report						◇																																	
Report of Waste Discharge and Preliminary Pollutant Load Reduction Plan																																							
Catchment Credit Schedule	◇																																						
Stormwater Monitoring Plan				◇																																			
Annual Report									◇																														
Development Impact Statement												◇																											
Permit expiries on December 5, 2016 Q1 (Jan-Mar); Q2 (Apr-June); Q3 (July-Sept); Q4 (Oct-Dec) WY/FY = Water Year and Fiscal Year																																							



2. Construction

2.1. Overview

The purpose of the Construction Program Element is to reduce pollutants in runoff from construction sites that involve more than three cubic yards of soil disturbance during all construction phases. Through implementation of this Program Element, the City will:

- Develop and update a GIS base map of all construction sites within its jurisdiction disturbing more than three cubic yards of soil
- Prioritize sites based on potential threat to water quality
- Inspect sites for compliance with applicable City ordinances, permits and discharge prohibitions
- Enforce compliance
- Document and report non compliance
- Document Construction Program Element coordination with other agencies

2.2. Permit Requirements

This SWMP is primarily intended to meet City priorities and satisfy the requirements of the Permit, but the Tahoe Construction General Permit (TCGP) also has bearing on the City's Construction Program Element.

2.2.1. Municipal NPDES Permit

Permit Section III.B.1 requires the City to develop and implement a program to address construction sites disturbing more than three cubic yards of soil through the following control measures:

- Construction Site Inventory
- Construction Site Outreach
- Construction Site Prioritization and Inspection
- Construction Site Enforcement
- Oversight by Others

This section of the SWMP will address all of the above requirements with the exception of the Construction Site Outreach control measure, which is included in Section 7. Education and Outreach.

The MRP is included in the Permit as Attachment C. It contains two sections relating to the Construction Program Element of the SWMP. Section II.B of the MRP reiterates the requirement that Permittees inspect high priority sites at least weekly, with medium and low priority sites inspected "at a frequency sufficient to ensure that sediment and other pollutants are properly controlled and that unauthorized, non-stormwater discharges are prevented." Section IV.C of the MRP describes annual reporting requirements for the construction inspection program.

2.2.2. Tahoe Construction General Permit

Order No. R6T-2011-0019 adopted by Lahontan on April 14, 2011, requires any construction site disturbing greater than one acre within the Lake Tahoe Basin to obtain a TCGP (Lahontan, 2011). The TCGP requires the discharger to:

- Develop and implement a Stormwater Pollution Prevention Plan (SWPPP)
- Develop and implement a construction site monitoring and reporting plan



2. CONSTRUCTION

- Install, inspect and maintain BMPs to treat construction site runoff

The City will coordinate inspections and enforcement actions for projects covered by the TCGP with Lahontan.

2.3. Control Measures

The following control measures describe the current and proposed actions taken by the City to address the permit requirements for management of construction site runoff. Each control measure also includes assessment tasks to gauge progress and a description of responsible parties and coordinating agencies. The implementation schedule and responsible parties for each control measure are summarized in the Construction Control Measure Table (**Table 2-1**) at the end of this section.

2.3.1. Construction Site Inventory and Prioritization

DESCRIPTION

Maintaining a GIS base map to track the type, location, and phase of construction sites is needed for construction-related source identification, and helps ensure that appropriate pollution prevention and source control measures are identified and used during all construction phases. Prioritization of construction sites based on potential threat to water quality will allow the City to allocate limited resources, while minimizing the potential for pollutants to leave construction sites and impact receiving waters.

EXISTING ACTIVITIES

The City developed a framework for tracking construction sites under the previous permit. Using sources such as the City’s Community Plus database, Engineering Division staff populates the construction site GIS base map with grading, building and encroachment permits. GIS allows the sites to be prioritized by proximity to receiving waters, site slope, and other project characteristics. This tool will continue to be utilized and maintained for future implementation of this control measure.

IMPLEMENTATION TASKS

1. **Populate Inventory.** During the months preceding the construction season which starts May 1, Engineering Division staff will populate the GIS base map with all construction sites permitted by the City from the Community Plus database. Engineering Division staff will also query the following sources to obtain a complete listing of other projects within the City’s jurisdiction, such as projects covered by encroachment permits or grading permits issued by other agencies:
 - CIP Manager’s list of utility projects by Caltrans, STPUD, Liberty Energy, Southwest Gas, or other projects requiring encroachment permits
 - State of California CIWQS and SMARTS databases of larger sites requiring a TCGP [<http://www.waterboards.ca.gov/ciwqs> <https://smarts.waterboards.ca.gov/>]
 - TRPA Construction Sites List
2. **Prioritize Projects.** Using project characteristics described in the permits and spatial data assembled in the GIS base map, projects will be prioritized based on:
 - Project Characteristics
 - Type of construction
 - Proximity to watercourse



2. CONSTRUCTION

- Number of acres impacted
- Average slope of the construction site
- Priority catchments per PLRP (as an indication of connectivity)
- Construction Phase

Construction sites automatically receiving high priority designation include City CIP or Environmental Improvement Program (EIP) Projects involving grading, sites larger than an acre, and sites with project owners or contractors that have demonstrated past performance issues. Sites with greater than 3% slope, or closer than 300’ to a watercourse also receive higher priority consideration, particularly during construction phases with increased potential for fine sediment discharge (i.e. mass grading). Initial threat to water quality priority classifications are assigned to each construction site in the base map. A list of priority projects and required inspection frequency is generated for all staff performing inspections.

3. Update Inventory. Until the end of the construction season on Oct. 15, the GIS base map and prioritized lists will be updated on a monthly basis. Updated lists of priority projects will be provided to all staff performing inspections.

ASSESSMENT TASKS

In order for the Stormwater Coordinator to track and assess performance of the Construction Inventory and Prioritization control measure, the following assessment tasks will be performed on an annual basis:

- Confirm that the GIS base map was populated and prioritized prior to May 1
- Confirm that the GIS base map and prioritized lists were updated monthly
- Tabulate the number of sites recorded in the GIS base map
- Tabulate the number of high, medium, and low priority sites

RESPONSIBLE PARTIES

Engineering Division staff will be responsible for inventory and prioritization of construction sites, with support and cooperation from the Building Division.

2.3.2. Construction Site Inspection

DESCRIPTION

Inspection of construction sites within the City’s jurisdiction is a critical task for ensuring that BMPs are properly installed and maintained, and receiving waters are adequately protected.

EXISTING ACTIVITIES

The City operates under memoranda of understanding (MOU; TRPA and CSLT, 1999 and 1995) with TRPA which divide responsibility for construction inspection between City staff and TRPA inspectors as follows:

- City staff conduct inspections of residential construction sites, and small industrial and commercial construction projects involving less than 2500 square feet of new commercial floor area within City Limits
- TRPA maintains records for inspections of industrial and commercial construction projects involving more than 2500 square feet of new commercial floor area, single family residential projects along scenic corridors, and projects on School District, State, or Federal lands.



2. CONSTRUCTION

Building Division inspectors typically visit construction sites for the following inspections:

- Pre-grade Inspection
- Intermediate Inspection
- Winterization Inspection

City inspectors fill out detailed Construction Stormwater Inspection Forms (CSLT, 2013) when performing stormwater-specific inspections on non-City projects, and submit them to the Engineering Division to be entered into the inspection database. Engineering Division staff or consultants perform these stormwater inspections more frequently on City projects. Building Division Inspectors note any deficiencies in construction site BMPs on their internal building inspection forms when performing other routine inspections as requested by contractors/owners. Engineering Division staff also perform inspections prior to storm events and as needed to support the Building Division.

IMPLEMENTATION TASKS

1. Review Construction Stormwater Inspection Form. The Stormwater Coordinator will review the Construction Stormwater Inspection Form on an annual basis to ensure that inspectors are observing and documenting compliance with the following permits and City ordinances:

- Grading Ordinance
- Stormwater Ordinance
- Grading Permit
- Encroachment Permit
- Building Permit
- NPDES Municipal Permit
- NPDES Construction Permit (TCGP)
- Applicable TRPA Permits

2. Coordinate Inspections with Lahontan and TRPA. Construction sites over 1 acre in size within City limits are subject to the TCGP which is overseen by Lahontan. TRPA issues grading permits (or qualified exempt permits) for projects disturbing more than 3 cubic yards of soil. Projects permitted by Lahontan or TRPA will be included in the City’s GIS base map, and will be prioritized based on the same criteria as all other projects. City inspectors will periodically visit high priority sites covered by the TCGP or TRPA permits to check for compliance with City Ordinances, as resources allow. However, primary inspection responsibility will remain with the permitting agency, except in cases where the City is the Permittee.

The City will coordinate inspection scheduling and criteria with Lahontan and TRPA to ensure that all construction sites are inspected at the minimum frequency, and compliance with all applicable permits and ordinances is documented. Prior to the 2014 construction season, The City will coordinate with Lahontan and TRPA to develop a protocol for documenting and sharing results of inspections and enforcement actions occurring at construction sites within the City’s jurisdiction.

3. Perform and Document Inspections: Inspections will be performed by qualified City or City consultant staff, or a partner agency. For inspections performed by the City, the Construction Stormwater Inspection Form will be used. Inspectors will review the following items/activities:

- Review of permit conditions and ordinance compliance
- Inspection of BMPs to ensure proper type, location, installation and function



2. CONSTRUCTION

- Appropriate use of good housekeeping and source control measures

Inspection frequency will be determined based on the construction site prioritization criteria described above. High priority sites will be inspected at least weekly. Medium and low priority sites will be inspected a minimum of two times at the beginning and the end of the construction period:

- Pre-grade inspection: The pre-grade inspection checks that all BMP temporary measures are in place, and any damage from tree removal is addressed before construction and grading is allowed
- Winterization inspection: Sites to be winterized are inspected for compliance by the October 15 grading season deadline

As resources allow, the City will conduct intermediate inspections during active construction to check for proper BMP maintenance, evidence of erosion or deposition, and to advise site operators about compliance with TRPA and City Ordinances.

In addition to regularly scheduled inspections, Engineering Division staff will check weather forecasts daily during the construction season for potential storm events. Within 24 hours preceding any day having a greater than 30% chance of precipitation, Engineering Division staff will perform pre-storm inspections for proper BMP maintenance at high priority construction sites.

Construction Stormwater Inspection Forms will be reviewed for accuracy and completeness by Engineering Division staff and will be filed electronically in the inspection database on a weekly basis. All non-compliance issues will be flagged for action by the enforcement team.

Follow-up inspections will be required within one week if deficiencies or violations are identified. Follow-up inspections will focus on the specific issue identified in the normal inspection, and will not necessarily cover the entire site or full list of inspection items.

ASSESSMENT TASKS

In order for the Stormwater Coordinator to track and assess performance of the Construction Inspection control measure, the following assessment tasks will be performed on an annual basis:

- Confirm Construction Stormwater Inspection Form has been updated Prior to May 1
- Confirm inspections were completed per required frequencies
- Tabulate the number inspections completed
- Tabulate the number of sites with BMP deficiencies requiring follow up
- Confirm follow up inspections for sites with deficiencies or violations

Tracking these data will help the Stormwater Coordinator determine where best to focus education and outreach efforts, and “red flags” to watch for when inspecting construction sites.



2. CONSTRUCTION

RESPONSIBLE PARTIES

The Stormwater Coordinator and Engineering Division staff are responsible for coordinating the construction inspection program. Most inspections are performed by Building Division staff, with support from the Engineering Division and other agencies, including TRPA and Lahontan. For City construction projects, weekly inspections will be performed by the Resident Engineer or Resident Inspector on the project.

2.3.3. Construction Site Enforcement

DESCRIPTION

In order to encourage project owners, contractors and construction site operators to effectively comply with applicable ordinances and permits, the City needs a reasonable and consistent enforcement system.

EXISTING ACTIVITIES

To meet requirements of the previous permit, the City updated the Grading, Erosion and Sediment Control Ordinance in September 2009. The Director of Public Works and/or Director of Community Development are empowered to enforce the Grading Ordinance through the issuance of correction notices, stop work orders and/or nuisance abatement proceedings.

The Construction Stormwater Inspection Form used for construction site inspections identifies deficiencies, recommendations for follow-up inspections, and the level of enforcement action taken when necessary: verbal warning, correction notice, or stop work order.

The Stormwater Ordinance includes requirements to use temporary and permanent BMPs on construction sites (Section 35-10.C). The City Manager is empowered to enforce the Stormwater Ordinance through the use of administrative citations, nuisance abatement proceedings and civil actions including:

- A temporary restraining order
- Reimbursement of cost for investigation leading to the establishment of the violation
- Cost incurred in correcting the adverse effects of the violation
- Compensatory damages for loss or destruction of water quality, wildlife, fish and aquatic life
- \$100 or \$250 fines for ordinance violations (within an initial warning before imposing fines during calendar year 2013)

IMPLEMENTATION TASKS

Standard Construction Stormwater Inspection Forms have been developed to identify deficiencies, recommendations for follow-up inspections, and the level of enforcement action taken: verbal warning, stormwater pollution violation letter, or stop work notice.

1. **For minor deficiencies or violations** inspectors may issue verbal warnings or correction notices to the site owner or operator at the time of inspection.
2. **For multiple deficiencies or violations** not constituting an immediate threat to water quality, inspectors may issue a stormwater ordinance violation letter to the responsible party, along with a copy of the Construction Stormwater Inspection Form identifying the deficiency and recommending corrective actions.



2. CONSTRUCTION

3. **For violations of the Stormwater or Grading Ordinances** involving immediate threats to water quality, a stop work notice will be issued instructing the site to cease operations that are actively polluting until the issue is resolved. A stormwater ordinance violation letter may also be issued, instructing the site owner or operator to cease activities that are actively polluting.
4. **Repeated or serious violations of the City's Stormwater or Grading Ordinances** will be subject to administrative, civil, or criminal liability as provided by the South Lake Tahoe City Code. The City Engineering and Building Divisions will work with the City Attorney's Office and Code Enforcement staff in the Police Department to take any of the following enforcement actions:
 - Administrative citations
 - Fines
 - Nuisance abatement
 - Civil actions
5. **Agency Coordination:** Inspectors finding evidence of non-compliance at sites permitted by other agencies will notify the Stormwater Coordinator immediately. Lahontan is the responsible agency for sites larger than one acre subject to the TCGP. TRPA has jurisdiction over:
 - Construction sites on school district, State, or Federal land
 - Industrial and commercial construction projects having over 2500 square feet of new commercial floor area
 - Construction sites within TRPA scenic corridors

ASSESSMENT TASKS

In order for the Stormwater Coordinator to track and assess performance of the Construction Site Enforcement Control Measure, the following assessment tasks will be performed on an annual basis:

- Tabulate the number of correction notices, violation letters, and stop work notices
- Tabulate the number of enforcement actions that lead to administrative, civil, or criminal legal actions
- Tabulate number of repeat offenders

RESPONSIBLE PARTIES

Construction inspectors will be primarily responsible for performing minor enforcement actions including verbal warnings, correction notices, violation letters, and stop work notices. The Stormwater Coordinator, and Engineering Division staff will provide support for these actions as-needed. The Stormwater Coordinator will engage the assistance of the City Manager, Department Directors (or their designees), Code Enforcement (Police Department), and City Attorney for carrying out enforcement actions involving administrative citations, fines, nuisance abatement, or civil actions.



Table 2- 1: SWMP Construction Control Measures

Stormwater Management Plan Control Measure Table	Implementation Schedule																				Responsible Parties																							
	WY/FY 2013				WY/FY 2014				WY/FY 2015				WY/FY 2016				Public Works		Develop ment	Internal		Public Safety																						
	2012		2013		2014		2015		2016		Engineering / SW Coordinator	Engineering / GIS	Engineering / Other	Capital Improvement Projects	Streets	Facilities	Fleet Maintenance	Building	Planning	City Manager	Public Information Officer	City Attorney	Finance	Airport	Police Department (CSO)	Fire Department	Parks	Recreation	Outside Agencies / Consultant															
Control Measures / Implementation Tasks	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Engineering / SW Coordinator	Engineering / GIS	Engineering / Other	Capital Improvement Projects	Streets	Facilities	Fleet Maintenance	Building	Planning	City Manager	Public Information Officer	City Attorney	Finance	Airport	Police Department (CSO)	Fire Department	Parks	Recreation	Outside Agencies / Consultant					
2.3.1 Construction Site Inventory and Prioritization																																												
1. Populate GIS Base Map from Community Plus Database																																												
Query CIP Manager's List of Projects by Caltrans, STPUD, NV Energy, & Southwest Gas																						●																						
Query State of California CIWQS & SMARTS for Sites Requiring a TCGP																						●	○																					
Query TRPA Construction Sites List																						●	○																					
2. Prioritize Sites Based on Project Characteristics, Priority Catchments & Construction Phase																						●	○																					
3. Update Inventory and Provide Prioritized Lists for Inspectors					M	M			M	M	M		M	M	M		M	M	M			●																						
2.3.2 Construction Site Inspection																																												
1. Review Construction Stormwater Inspection Form to Verify Compliance with City Ordinances & Permits																						●	○																					
2. Coordinate Inspections with Lahontan and/or TRPA to Ensure Minimum Frequency and Compliance with All Applicable Permits & Ordinances																						●	○																					
3. Perform and Document Inspections Using the Construction Stormwater Inspection Form																																												
Inspect High Priority Construction Sites					W	W			W	W	W		W	W	W		W	W	W			○	○																					
Inspect Medium & Low Priority Construction Sites																						○	○																					
Review Stormwater Inspection Forms & Update Inspection Database					W	W			W	W	W		W	W	W		W	W	W			●	○																					
Check Weather Forecast & Perform Pre-storm Inspections As-Needed at High Priority Construction Sites					D	D			D	D	D		D	D	D		D	D	D			●	○																					
Perform Follow-up Inspections if Deficiencies or Violations are Identified																						○	○																					
2.3.3 Construction Site Enforcement																																												
1. Minor Deficiencies May Receive a Verbal Warning or Correction Notice																						○	○																					
2. For Multiple deficiencies or Violations, not constituting an immediate threat, Issue a Stormwater Ordinance Violation Letter																						○	○																					
3. For Ordinance Violations Involving Immediate Threat, Issue a Stop Work Notice. A Stormwater Ordinance Violation Letter May Also be Issued																						○	○																					
4. Repeated or Serious Violations Will be Subject to Administrative Citations, Fines, Nuisance Abatement & Civil Actions																						●	○							○	○													
5. Coordinate With & Provide Support to Other Responsible Agencies Involved with Water Quality Enforcement on Construction Sites																						●	○																					
Permit expires on December 5, 2016 Q1 (Jan-Mar); Q2 (Apr-June); Q3 (July-Sept); Q4 (Oct-Dec) WY/FY = Water Year and Fiscal Year	Period complete								○ Implementation Period																																			
													M Monthly Implementation																															
													W Weekly Implementation																															
													D Daily Implementation																															



3. Commercial and Industrial

3.1. Overview

The purpose of the Commercial and Industrial Program Element is to reduce pollutants in the runoff from commercial and industrial sites within the City's jurisdiction. The City will accomplish this goal through the further refinement of its GIS base map, prioritization of industrial and commercial sites, site inspection, outreach, and code enforcement. The City will coordinate with other agencies which oversee and inspect commercial and industrial activities within the City's jurisdiction.

3.2. Permit Requirements

This SWMP is primarily intended to meet City priorities and satisfy the requirements of the Permit, but the California Industrial Stormwater General Permit also has bearing on the City's Commercial and Industrial Program Element.

3.2.1. Municipal NPDES Permit

Permit Section III.B.2 requires each Permittee to address pollution sources associated with commercial, industrial, municipal and residential properties. This Program Element will focus on the following requirements as applicable to commercial and industrial sites:

- Inventory and prioritization of commercial and industrial activities and pollutant sources
- Outreach to commercial and industrial site operators intended to provide education about ordinances and other regulatory measures
- Annual inspections of high priority commercial and industrial sites
- Enforcement of applicable ordinances and other regulatory mechanisms
- Coordination with other agencies including TRPA, EDC and Lahontan

Municipal sites and activities identified in Section III.B.2 are addressed in Section 4 of this SWMP, and all outreach activities to commercial, industrial, municipal and residential properties are addressed in Section 7.

The MRP Section II.C requires Permittees to establish commercial and industrial inspection frequencies based on the water quality prioritization described in Permit Section III.B.2. High Priority sites must be inspected at least once per year. Permittees are also required to implement a tracking system to record inspection findings. Section IV.D of the MRP includes annual reporting requirements for commercial, industrial and municipal sites.

3.2.2. California Industrial Stormwater General Permit

The State of California regulates industrial sites under a statewide Industrial Stormwater General Permit, CAS No. 000001, Order No. 97-03-DWQ (IGP; State Board, 1997). Sites with specific Standard Industrial Classification (SIC) codes designated by U.S. EPA are required to obtain an IGP. Primary requirements in the IGP include:

- Prohibition of unauthorized non-stormwater discharges. The authorized non-stormwater discharges are addressed in the Special Conditions section.
- Control of pollutant discharges using the best available technology economically achievable and best conventional pollutant control technology.



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- All site operators must prepare, retain on site, and implement a stormwater pollution prevention plan (SWPPP). Development and implementation requirements for the SWPPPs are included in sections of the IGP. However, SWPPPs are developed emphasizing BMP implementation and elimination of unauthorized non-stormwater discharges.
- Implementation of a monitoring program to demonstrate compliance with the IGP. Allowances for alternative monitoring and group monitoring are provided in the IGP.

Industrial sites subject to the IGP reside within the City’s jurisdiction. The Lake Tahoe Airport is one facility subject to the IGP and there may be others. The City will identify other industrial sites subject to the IGP through the implementation of this Program Element.

3.3. Control Measures

The following control measures are intended to achieve compliance with the requirements of Permit Section III.B.2 and MRP Section II.C as it applies to industrial and commercial properties. Municipal requirements are addressed in Section 4, and residential requirements are addressed in Section 7 of this SWMP. The implementation schedule and responsible parties for each control measure are summarized in the Commercial and Industrial Control Measure Table (**Table 3-1**) at the end of this section.

3.3.1. Commercial and Industrial Site Inventory and Prioritization

DESCRIPTION

The development and maintenance of a GIS base map for commercial and industrial activities is fundamental to assisting the City with minimizing the impacts of stormwater runoff from these sites. In addition, prioritization of commercial and industrial sites and activities based on potential threat to water quality will allow the City to efficiently and cost effectively allocate the limited staff and financial resources available for this Program Element.

EXISTING ACTIVITIES

The City develops a GIS base map from the “All Business Master List” of current City business licensees maintained by the Finance Department to inventory commercial and industrial properties and activities. The GIS base map is prioritized by SIC codes, site slope, and proximity to watercourses.

IMPLEMENTATION TASKS

1. **Update Inventory Annually:** The Engineering Division will continue to update the GIS base map from the All Business Master List annually.

Engineering Division staff will work with the Finance Department to refine the link between the All Business Master List and the GIS base map to allow for easier updating and coordinated data tracking. Issues to be resolved include:

- Small businesses with multiple residential addresses
- Mobile businesses
- Businesses having multiple locations with only a single mailing address

2. **Inventory Prioritization:** The GIS base map will be prioritized annually following the update, based on the following commercial and industrial activity types:

- Automobile mechanical repair, maintenance, or cleaning
- Automobile and other vehicle body repair or painting



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- Retail or wholesale fueling
- Eating or drinking establishments
- Mobile carpet, drape or furniture cleaning
- Concrete mixing or cutting
- Painting and coating
- Mobile pool and spa cleaning
- Snow removal and storage activities
- Parking areas with more than 30 parking spaces
- Off-pavement parking and storage yards
- Boat Marinas (regulated under Lahontan Tahoe Marina Industrial/Maintenance Dredging permit R6T-2011-0024)
- Golf courses, ski operations, and other recreational sites

A commercial or industrial site or activity having a SIC code affiliated with activities noted above will be considered a high priority if it also meets one or more of the following criteria:

- Within 300' of a perennial stream or Lake Tahoe
- Site slope is greater than or equal to 3%
- Size of site is greater than 1 acre
- History of runoff pollution problems
- Sites lacking BMP certificates from the TRPA

All sites required to comply with the IGP will automatically receive a high priority ranking. Engineering Staff may use their discretion to assign priority to some sites that may not meet the above criteria. If the number of sites/activities identified through this initial prioritization system exceeds the City's ability to complete annual inspections, the City may modify the prioritization criteria to identify some sites/activities as medium priority, which would then be targeted for inspection once during the permit period.

- 3. Inventory Review:** The Engineering Division will seek assistance in reviewing the commercial and industrial GIS base map to ensure inclusion of all appropriate industrial and commercial sites and activities. The Stormwater Coordinator will request that the following groups review the GIS base map and compare to any records or databases they may have:

- City Fire Department
- EDC Environmental Management
- TRPA

The SMARTS system: <https://smarts.waterboards.ca.gov/> will be queried to ensure inclusion of all sites covered by the IGP.

ASSESSMENT TASKS

In order for the Stormwater Coordinator to track and assess performance of the Commercial and Industrial Site Inventory and Prioritization control measure, the following assessment tasks will be performed on an annual basis:

- Confirm that the commercial and industrial GIS base map was updated



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- Confirm that the link between All Business Master List and GIS base map was modified and improved
- Confirm that prioritization of GIS base map was completed
- Tabulate the total number of sites and number of high priority sites included in the GIS base map
- Confirm that the commercial and industrial GIS base map has been reviewed by the Fire Department, TRPA and EDC Environmental Management

RESPONSIBLE PARTIES

The Engineering Division is responsible for developing, updating, and prioritizing the GIS base map of commercial and industrial sites. The Finance Department and Fire Department will assist in providing information.

3.3.2. Commercial and Industrial Site Inspection

DESCRIPTION

The commercial and industrial site inspection control measure establishes procedures for inspection of high priority commercial and industrial sites. The inspections will check that the commercial and industrial site operators are in compliance with the City, County, State, and Regional ordinances, that unauthorized non-stormwater discharges do not occur, and that illegal connections do not exist. This control measure includes commercial and industrial sites that are fixed sites, as well as mobile operations.

EXISTING ACTIVITIES

In January, 2013, the City Council passed the Stormwater Ordinance. Article IV provides the City Manager (or their designee) the authority to perform inspections, take samples, and request records at any premises within the City limits in order to enforce the provisions of the Stormwater Ordinance. Until the passage of the Stormwater Ordinance, the City did not have the authority to inspect commercial or industrial sites for stormwater compliance. However, the Fire Department has been performing ongoing inspections of industrial sites for fire code compliance and hazardous material storage procedures.

EDC Environmental Management currently conducts three commercial business inspection programs:

- Certified Unified Program Agencies – EDC is the lead agency for the Certified Unified Program Agencies (CUPA) compliance. The CUPA-subject businesses, generally hazardous waste generators, are inspected once every three years by EDC Environmental Management
- Restaurants (food facilities) – The current restaurant inspections occur on an annual basis, with follow-up for significant violations occurring one week to one month later
- Pool & Spa Inspections – EDC Environmental Management inspects public pools and spa facilities twice a year for continuous operations, and once a year for pools that are open seasonally

Through the BMP Retrofit Program, TRPA conducts site evaluations and post construction BMP site inspections for commercial and industrial properties to ensure compliance with the TRPA Code of Ordinances.



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IMPLEMENTATION TASKS

1. **Develop Stormwater Site Inspection Form:** Engineering Division staff will utilize resources from the EPA, California Stormwater Quality Association (CASQA) and Lahontan to develop a Stormwater Site Inspection Form for commercial, industrial and municipal sites to ensure compliance with the Stormwater Ordinance and other applicable requirements. The Stormwater Site Inspection Form will include a section for inspection of mobile operations. The Stormwater Site Inspection Form will be reviewed and updated annually.
2. **Identify and train inspectors:** The Stormwater Coordinator may identify and train personnel to conduct inspections at commercial and industrial sites. The inspectors may be City staff or consultants.
3. **Perform inspections:** High priority commercial and industrial sites will be inspected annually. For commercial and industrial businesses found to have deficiencies during the first inspection, follow-up inspections will be conducted to ensure that deficiencies have been addressed. In most cases, the follow-up inspection will occur within six months of the initial inspection.

Stormwater Site Inspection Forms will be reviewed to check for accuracy and completeness. Inspection data will then be filed electronically and documented in the commercial and industrial inspection database on a monthly basis by Engineering Division staff. All non-compliance issues will be flagged for enforcement action and follow-up as needed. Sites found to be in violation of permits managed by other authorities (TRPA or Lahontan) will be referred to the appropriate agency for enforcement action.

While conducting inspections for this Program Element, if the inspector notices an issue related to one of the other Program Elements (Construction, IDDE, etc.), the inspector will notify the Stormwater Coordinator.

4. **Coordinate with Lahontan and EDC Environmental Management:** The Stormwater Coordinator will communicate with other agencies to develop a protocol for documenting inspections and sharing results for their existing inspection programs including, but not limited to:
 - EDC Environmental Management
 - CUPA-subject businesses
 - Restaurants and other food facilities
 - Pools and Spas
 - Lahontan
 - IGP
 - Tahoe Marina General Permit

ASSESSMENT TASKS

In order for the Stormwater Coordinator to track and assess performance of the Commercial and Industrial Site Inspection control measure, the following assessment tasks will be performed on an annual basis:

- Confirm that Stormwater Site Inspection Form was developed or updated and reviewed annually
- Tabulate the number of inspections completed



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- Tabulate the number of sites with deficiencies requiring follow up
- Confirm follow up inspections for sites with deficiencies or violations
- Confirm that coordination has occurred with Lahontan and EDC Environmental Management

RESPONSIBLE PARTIES

The Stormwater Coordinator will be responsible for developing the inspection program. Inspections will be carried out by City staff and/or consultants

3.3.3. Commercial and Industrial Site Enforcement

DESCRIPTION

In order to encourage industrial and commercial owners and site operators to effectively comply with applicable ordinances and permits, the City needs a reasonable and consistent enforcement system.

EXISTING ACTIVITIES

The City Manager is empowered to enforce the Stormwater Ordinance through the use of administrative citations, nuisance abatement proceedings and civil actions including:

- A temporary restraining order
- Reimbursement of cost for investigation leading to the establishment of the violation
- Cost incurred in correcting the adverse effects of the violation
- Compensatory damages for loss or destruction of water quality, wildlife, fish and aquatic life
- \$100 or \$250 fines for ordinance violations (with an initial warning before imposing fines during calendar year 2013)

IMPLEMENTATION TASKS

Standard Stormwater Site Inspection Forms will be developed for industrial and commercial site inspections to identify deficiencies, recommendations for follow-up inspections, and the level of enforcement action taken: verbal warning, correction notice, and/or stormwater pollution violation letter.

1. **For minor deficiencies or violations** inspectors may issue verbal warnings or correction notices to the site owner or operator at the time of inspection.
2. **For multiple deficiencies or violations** not constituting an immediate threat to water quality, inspectors may issue a stormwater ordinance violation letter to the responsible party, along with a copy of the Stormwater Site Inspection Form identifying the deficiency and recommending corrective actions.
3. **For violations of the Stormwater Ordinance** involving immediate threats to water quality, a correction notice will be issued identifying the violations and recommended immediate corrections. A stormwater ordinance violation letter may also be issued, instructing the site owner or operator to cease activities that are actively polluting.
4. **Repeated or serious violations of the City's Stormwater Ordinance** will be subject to administrative, civil, or criminal liability as provided by the South Lake Tahoe City Code. The City Engineering Division will work with the City Attorney's Office and Code Enforcement staff in the Police Department to take any of the following enforcement actions:



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- Administrative citations
- Fines
- Nuisance abatement
- Civil actions

5. Agency Coordination: Inspectors finding evidence of non-compliance at sites permitted by other agencies will notify the Stormwater Coordinator immediately. Lahontan is the responsible agency for sites subject to the IGP or Marina Permit.

ASSESSMENT TASKS

In order for the Stormwater Coordinator to track and assess performance of the industrial and commercial enforcement activities, the following assessment tasks will be performed on an annual basis:

- Tabulate the number of correction notices and violation letters
- Tabulate the number of correction notices and violation letters that lead to administrative, civil or criminal legal actions
- Tabulate number of repeat offenders

Information from the commercial and industrial inspections and enforcement assessments will be used to identify priority activities and sources for commercial and industrial outreach, see Section 7.3.2.

RESPONSIBLE PARTIES

The Stormwater Coordinator and site inspectors will be primarily responsible for carrying out enforcement actions, with support from the City Manager, Engineering and Building Divisions, Code Enforcement (Police Department) and the City Attorney.



Table 3- 1: SWMP Commercial and Industrial Control Measures

Stormwater Management Plan Control Measure Table	Implementation Schedule																Responsible Parties															
	WY/FY 2013				WY/FY 2014				WY/FY 2015				WY/FY 2016				Public Works			Develop ment	Internal			Public Safety		Recreation	Outside Agencies / Consultant					
	2012		2013		2014		2015		2016		Engineering / SW Coordinator	Engineering / GIS	Engineering / Other	Capital Improvement Projects	Streets	Facilities	Fleet Maintenance	Building	Planning	City Manager	Public Information Officer	City Attorney	Finance	Airport	Police Department (CSO)			Fire Department	Parks			
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3																				Q4	Q1	Q2
Commercial and Industrial Program Element																																
Control Measures / Implementation Tasks																																
3.3.1 Commercial and Industrial Site Inventory and Prioritization																																
1. Update GIS base map from the All Business Master List																																
Refine the Link Between GIS base map and All Business Master List																																
2. Prioritize Base Map Based on Industrial Activities, Proximity to Watercourse, Site Slope, Size, History, Mobile Operation, and BMP Certificate Status																																
3. Review base map with Fire Department, EDC Environmental Management, TRPA, and SMARTS																																
3.3.2 Commercial and Industrial Site Inspection																																
1. Develop and Update Stormwater Site Inspection Form																																
2. Identify and Train Inspectors																																
3. Perform Inspections on High Priority C&I Sites																																
Update Inspection database with results of inspections																																
4. Coordinate with Lahontan and EDC to Develop a Protocol for Sharing and Documenting Inspections																																
3.3.3 Commercial and Industrial Site Enforcement																																
1. Minor Deficiencies May Receive a Verbal Warning or Correction Notice																																
2. For Multiple deficiencies or Violations, not constituting an immediate threat, Issue a Stormwater Ordinance Violation Letter																																
3. For Ordinance Violations Involving Immediate Threat, Issue a Correction Notice. A Stormwater Ordinance Violation Letter May Also be Issued																																
4. Repeated Minor Infractions & Serious Infractions Will be Subject to Administrative Citations, Fines, Nuisance Abatement & Civil Actions																																
5. Coordinate With & Provide Support to Other Responsible Agencies Involved with Water Quality Enforcement on Commercial and Industrial Sites																																
Permit expiries on December 5, 2016 Q1 (Jan-Mar); Q2 (Apr-June); Q3 (July-Sept); Q4 (Oct-Dec) WY/FY = Water Year and Fiscal Year	Period complete				◇ Implementation Period				M Monthly Implementation				W Weekly Implementation				D Daily Implementation				● Primary Responsible Party ○ Secondary Responsible Party											



4. Municipal Operations and Facilities

4.1. Overview

The objective of this SWMP Program Element is to provide a comprehensive program for reducing pollutants in runoff from all City of South Lake Tahoe municipal facilities including:

- Corporation yards, parks and recreation sites, fire and police stations, the airport, and all other operational sites (sites)
- The storm drainage collection, conveyance and treatment system (stormwater system)

In order to accomplish this goal, the City will:

- Inventory and prioritize municipal sites
- Map the stormwater systems
- Inspect municipal sites and stormwater systems and identify potential pollutant sources
- Develop and maintain a database of stormwater system inspection findings
- Prioritize and perform maintenance tasks to keep the stormwater systems functioning properly
- Track performance of corrective actions to ensure City departments and divisions are abiding by the Permit requirements and Stormwater Ordinance
- Develop specification and sampling program for traction abrasive which ensures fine sediment particles and nutrients are minimized
- Track abrasive application quality and quantity
- Consider a pilot program for improved vactoring and sweeping operations
- Train municipal operators and staff on the requirements of the Permit and Stormwater Ordinance
- Construct WQIPs and register catchments with the Lake Clarity Crediting Program

This Program Element includes implementation tasks associated with Permit requirements for the SWMP, in addition to TMDL requirements which the City has committed to in its PLRP. In order to make this SWMP a comprehensive guidance document for the City's stormwater program, action items from the PLRP are incorporated into three control measures in this section: 4.3.4, 4.3.5, and 4.3.7.

4.2. Permit Requirements

This section of the SWMP is intended to meet requirements applying to municipal facilities and operations included in the following sections of the Permit and the MRP:

- Permit Section III.B.2 requires each Permittee to address pollution sources associated with commercial, industrial, municipal, and residential properties. Permittees are required to develop programs including an inventory of high priority activities and pollutant sources, outreach efforts to site operators, annual inspections of high priority sites, and enforcement of applicable ordinances and other regulatory mechanisms
- Section III.B.3 of the Permit requires Permittees to develop and implement inspection programs to assess the condition of stormwater systems. The program is required to include an up-to-date system map, annual inspections, evaluation of pollutant sources, and prioritized system for maintenance
- Permit Section III.B.7 instructs Permittees to ensure that municipal personnel and contractors responsible for implementing Permit requirements, operating municipal facilities, and performing inspections are adequately trained to do so



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- Section IV of the Permit incorporates requirements of the Lake Tahoe TMDL, including the PLRP. The City commits to several action items in its PLRP, and in order to make this SWMP a comprehensive guidance document for the City’s stormwater program, action items from the PLRP are incorporated into three control measures in this section: 4.3.4, 4.3.5, and 4.3.7
- Permit Section IV.E. includes the requirement that Permittees operate and maintain stormwater systems to ensure, at a minimum, that baseline pollutant loading as defined in the PLRP does not increase
- MRP sections II.A and IV.B describe the requirements for stormwater system inspection and annual reporting, respectively
- MRP sections II.C and IV.D describe the requirements for commercial, industrial, and municipal site inspections and annual reporting, respectively
- MRP section II.D requires the City to develop a program to establish specifications for traction abrasives and measure the quantity of traction abrasive material applied to and recovered from City streets
- MRP section IV.E requires a traction abrasive and material report to be included in the annual report

Some municipal sites such as the Lake Tahoe Airport, are subject to the IGP, see description of this permit in Section 3.2.2.

4.3. Control Measures

The following control measures describe specific tasks that the City will complete to address the Permit requirements described above. The implementation schedule and responsible parties for each control measure are summarized in the Municipal Operations and Facilities Control Measure Table (**Table 4-1**) at the end of this section.

4.3.1. Municipal Facilities Inventory and Prioritization

DESCRIPTION

The purpose of the Municipal Facilities Inventory and Prioritization control measure is to assist the City with maintaining and updating the GIS base map of municipal sites and stormwater system. This GIS base map provides the information necessary to identify the location of municipal sites and stormwater system assets. It also allows the City to identify the location and type of municipal activities with the potential to discharge pollutants to the stormwater system. The GIS base map also serves as the tool for tracking and prioritizing the required inspections and maintenance needs to ensure a properly functioning system.

EXISTING ACTIVITIES

Sites – Municipal sites within the City are included in the GIS base map.

Stormwater System - The City maintains a base map of the existing stormwater system in GIS format. The spatial context of all stormwater system features is maintained with respect to the collection area, connections to other features, and the overall drainage flow paths. The base map includes the following system components:

- Wetland treatment systems
- Treatment basins
- Vaults



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- Manholes
- Storm drain inlets, sediment traps, dry wells and interceptors
- Drainage pipes
- Curb and gutter
- Rock lined channels
- Outfalls
- Miscellaneous other drainage features

Each year following the construction season, improvements to the stormwater system are added to the base map.

IMPLEMENTATION TASKS

1. **Stormwater System Base Map and Prioritization:** The Engineering Division will continue to maintain the stormwater system base map and update annually with improvements. The base map is divided into discrete stormwater systems by catchment or sub-watershed. Each catchment system will be prioritized for maintenance based on the results of previous inspections indicating maintenance needs and potential stormwater pollutant sources within the catchment area. Staff will also consult the Drainage Master Plan (CSLT, 2008) which was developed to identify reoccurring drainage problems, and the PLRP which identifies high pollutant load catchments and connectivity. Prioritized maps will be developed for use by inspection and maintenance personnel.
2. **Municipal Site Inventory and Prioritization:** Engineering Division staff will develop and annually update the GIS base map of municipal sites. Each site will be associated with descriptions for high priority activities that may occur, including:
 - Vehicle repair, maintenance or cleaning
 - Fueling
 - Concrete mixing or cutting
 - Painting and coating
 - Snow removal and storage
 - Parking areas with more than 30 parking spaces
 - Off pavement parking and storage yards
 - Municipal maintenance yards
 - Other sites where the City applies chemicals or materials that could be pollutant sources – e.g. fertilizers, pesticides, de-icing solutions, etc.

A municipal site associated with any of the above activities will receive high priority if it also meets one or more of the following criteria:

- The site is within 300' of a watercourse
- Site slope is greater than or equal to 3%
- History of runoff pollution problems

The Lake Tahoe Airport is required to comply with the IGP. The airport, as well as municipal maintenance and corporation yards will automatically receive a high priority ranking. Prioritized maps will be developed for use by inspection and maintenance personnel.

3. **Develop Web-Based GIS Base Map.** The Engineering Division is in the process of developing an interactive web-based GIS tool that can be accessed by each department within the City for tracking



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performance of maintenance and inspections. This new web-based GIS will allow for greater efficiency in scheduling and tracking of maintenance needs, stormwater inspections, updating infrastructure, and many other City services.

ASSESSMENT TASKS

In order for the Stormwater Coordinator to track and assess performance of the Municipal Facilities Inventory and Prioritization control measure, the following assessment tasks will be performed on an annual basis:

- Confirm that the stormwater systems base map was updated and prioritized annually
- Confirm that the municipal site base map was updated and prioritized annually
- Tabulate the total number of municipal sites and number of high priority sites

RESPONSIBLE PARTIES

The Engineering Division is responsible for maintaining, prioritizing and updating the municipal facility base map, with support from the Streets and Facilities Divisions.

4.3.2. Municipal Facilities Inspection

DESCRIPTION

Municipal facility inspections are required to assess the condition and proper function of the City's stormwater infrastructure, and to identify required maintenance and pollution source control needs.

EXISTING ACTIVITIES

Annual inspections of the stormwater system occur between April and November of each year, usually as part of vactoring operations performed by Streets Division staff. Vactor log sheets documenting the quantity of material removed as well as the condition of the structures and connecting pipes are completed for each inspection and provided to the Engineering Division for tabulation. Streets Division staff also perform visual inspection of the City's infrastructure after each significant storm, clearing inlet grates of debris and inspecting drainage structures, road shoulders, curbs, and gutters.

IMPLEMENTATION TASKS

1. Develop Stormwater System Inspection Form: The Stormwater Coordinator will develop a Stormwater System Inspection Form based on the existing vactor log sheet to include criteria pertaining to:

- Evidence of significant erosion
- Evidence of significant sedimentation or debris
- Structural damage to facility which compromises performance
- Flood prone areas or standing water for EDC Vector Control
- Evidence of illicit discharges and illegal connections
- Potential pollutant source identification, including:
 - Private property/residential runoff
 - Commercial and industrial property runoff
 - Eroding cut slopes
 - Eroding road shoulders
 - Intercepted groundwater discharges

4. MUNICIPAL OPERATIONS AND FACILITIES

- Excessive traction abrasive application
- Dislodged sediment from snow removal activities
- Vehicles tracking sediment onto the roadway
- Parking related erosion

2. Inspect Municipal Sites: The Stormwater Coordinator and Engineering Division staff will coordinate with the Streets Division, Facilities and Fleet Maintenance, and Airport staff to annually inspect sites determined to be a high priority in control measure 4.3.1. The Stormwater Site Inspection Form developed for commercial and industrial inspections (control measure 3.3.2.) will also be used for municipal site inspections. All observations will be recorded in an inspection database and any deficiencies identified will be flagged for corrective action.

3. Perform Stormwater System Inspections: Streets Division staff will continue to perform stormwater system inspections as part of their normal maintenance routines. The system will be inspected at least once a year utilizing the Stormwater System Inspection Form.

Engineering Division staff will assist Streets Division in inspecting conveyance and treatment systems in registered catchments. Prior to catchment registration, Engineering Division staff will inspect essential and key treatment BMPs in catchments where the Pollutant Load Reduction Model (PLRM) indicates that these treatment BMPs provide significant pollutant load reductions. Engineering Division staff will collect Stormwater System Inspection Forms and enter field data into the inspection database.

4. Investigate use of an Integrated Web-Based Documentation and Tracking System: The City will investigate and evaluate options for an integrated web-based inspection and tracking system. In the future, the City prefers to have field inspection forms loaded into handheld GPS units and linked to the GIS base map software to allow the City to track spatial and condition information more efficiently. Inspection forms and the tracking system will need to provide the following minimum information for each entry:

- Inspectors Name
- Date and time of inspection
- Field and weather conditions
- Inspection location
- Observed facility conditions
- Volume of sediment removed during vector operations
- A summary of follow-up and maintenance actions taken

ASSESSMENT TASKS

In order for the Stormwater Coordinator to track and assess performance of the Municipal Facilities Inspection control measure, the following assessment tasks will be performed on an annual basis:

- Confirm Stormwater System Inspection Form was developed
- Tabulate number of municipal site and stormwater system inspections performed
- Confirm that inspection information was uploaded into database
- Tabulate number of deficiencies at municipal sites
- Tabulate number of assets within stormwater system maintained



4. MUNICIPAL OPERATIONS AND FACILITIES

RESPONSIBLE PARTIES

The Stormwater Coordinator will be responsible for reviewing and updating inspection criteria and conducting inspections of conveyance and treatment systems in registered catchments. Streets Division staff will inspect collection and conveyance components of the stormwater system. Facilities and Fleet Maintenance, Streets Division, and Airport staff will have roles in inspecting their departments' facilities.

4.3.3. Municipal Facilities Maintenance and Compliance

DESCRIPTION

Maintenance is a critical component to ensuring the stormwater system is able to collect, convey and treat stormwater runoff within the City's jurisdiction. The Stormwater Coordinator will ensure that City facilities remain in compliance with the Stormwater Ordinance discharge prohibitions by tracking deficiencies discovered during inspections and recording corrective maintenance activities.

EXISTING ACTIVITIES

All municipal sites, with the exception of the Recreation Center and the Airport, are maintained by the Facilities Maintenance Division.

Stormwater system maintenance needs are itemized during annual inspections of the stormwater system. Work is prioritized based on Streets Division experience, and Streets Division maintenance crews are directed to the drainage structures needing immediate attention. The crews may complete other lower priority work while in the same area as the higher priority structures. The City has also used California Conservation Crews for labor-intensive hand work to remove accumulated sediment, or to repair rock-lined drainage channels.

IMPLEMENTATION TASKS

1. **Prioritize Maintenance:** The Stormwater Coordinator will work with the Streets Division to develop a protocol for prioritizing stormwater system maintenance needs as they arise. Criteria to consider include:
 - Safety of the public and municipal personnel
 - Cost of repair
 - Impact of maintenance activity (e.g. street closure required?)
 - Potential threat to water quality
 - Impact on TMDL assessment methodologies in catchments to be registered
2. **Perform Maintenance and Corrective Actions:** The Stormwater Coordinator will report deficiencies discovered as part of municipal site inspections to the department or division responsible for each individual site. The Stormwater Coordinator will recommend maintenance or corrective actions to be performed, and progress will be reported back to the Stormwater Coordinator. Completion of required tasks will be recorded in the municipal site inspection database. If progress on corrective actions is not satisfactory, the Stormwater Coordinator will have the option to prepare an internal work order for approval by the City Manager directing maintenance, construction, or management actions that may need to be performed to bring a municipal site into compliance with the Permit and Stormwater Ordinance.

Streets Division crews will perform the bulk of maintenance activities on the stormwater system. In cases where extensive repairs are required, a larger job may go out to contract, or the California



4. MUNICIPAL OPERATIONS AND FACILITIES

Conservation Corps may be utilized. Streets Division crews will continue to keep logs of vactoring and sweeping activities.

ASSESSMENT TASKS

In order for the Stormwater Coordinator to track and assess performance of the Municipal Facilities Maintenance control measure, the following assessment tasks will be performed on an annual basis:

- Confirm maintenance prioritization protocol has been developed
- Tabulate maintenance activities and corrective actions performed

RESPONSIBLE PARTIES

The Streets Division will be responsible for performing maintenance on stormwater system components throughout the City. Maintenance at most municipal sites will be performed by Facilities Maintenance Division. The Recreation and Airport Divisions will take responsibility for their individual facilities. If necessary, the City may contract out for specialized maintenance tasks. The Stormwater Coordinator will be responsible for ensuring that the various departments and divisions carry out their required maintenance and documentation is recorded.

4.3.4. Traction Abrasive and Deicing

DESCRIPTION

The objective of the Traction Abrasive and Deicing Program Element is to assess, and, if possible, reduce the amount of fine sediment particles and nutrients entering the stormwater system from traction abrasive material. This control measure incorporates one element of the City's 2013 PLRP in which the City is switching to an abrasive supply source which is expected to produce less FSP. In addition, the City will measure the quality and quantity of material applied to the City's streets each winter season. Through implementation of this Program Element, the City will better understand, and if possible, reduce pollutants mobilized into stormwater runoff and ensure that traction control activities are performed in a manner consistent with best practices.

EXISTING ACTIVITIES

Streets Division maintenance crews track and record daily application of abrasives and deicers in eight zones throughout the City, see **Figure 4-1**. Material quantity is estimated by the number of truckloads applied within the 8 zones:

- Stateline
- Heavenly Valley
- Bijou
- Al Tahoe
- Sierra Tract
- Tahoe Keys
- Tahoe Island
- Gardner Mountain

Most traction abrasive material is applied to intersections, curves, and steeper roads (e.g. Heavenly Valley and Gardner Mountain). As stated in the City's PLRP, the City has switched to a lower FSP traction abrasive supply starting in the 2012-13 winter season. A particle analysis study performed by Caltrans (2010) found that the deicing sand currently in use by the City and EDC has significantly lower FSP than



4. MUNICIPAL OPERATIONS AND FACILITIES

the volcanic cinders used prior to the 2012-13 winter season. The City has an agreement with Heavenly Ski Resort (Heavenly) to assist City crews and facilitate vehicle traffic to Heavenly's California Base Area by applying traction abrasive and deicer on City roads leading up to the California Base Area, including Needle Peak Road, Ski Run Boulevard, Keller Road, Saddle Road and Wildwood Avenue.

IMPLEMENTATION TASKS

- 1. Develop Traction Abrasive Material Specification.** The Stormwater Coordinator will work with the Streets Division and EDC Department of Transportation to develop a specification and sampling protocols for the amount of FSP, TN, and TP allowable in material used for traction abrasive. The Stormwater Coordinator will assist EDC to develop this specification based on the characteristics of the currently used material.

After developing sampling protocols, the Stormwater Coordinator will assist Streets Division staff in sampling the traction abrasive material prior to and/or after delivery each fall to test for FSP, TN, and TP, and ensure compliance with specifications determined above. Deliveries occurring after the fall season may also be sampled.

- 2. Track and Record Application:** Streets Division maintenance crews will continue to track the quantity of abrasive and deicing material applied to City streets and parking areas each winter season. Drivers will complete sanding logs describing how many tons of material is applied per zone. Heavenly and any others permitted to apply abrasives and deicers to City rights-of-way will be required to track and report applications.

The City may research and evaluate the potential use of GPS-enabled application and tracking systems to more accurately determine and control the quantity of traction abrasive and deicing material applied to City Streets. The GPS would provide for finer spatial resolution, potentially allow City staff to determine which streets and intersections receive the most material, rather than estimating by zone.

- 3. Review Agreements with Other Entities Applying Traction Abrasive:** The Stormwater Coordinator will assist the Streets Division to review the current agreements with all parties currently applying traction abrasive and deicers on rights-of-way within the City's jurisdiction. Agreements will be revised to address:

- Use of appropriate source material complying with the City's specification
- Method for reporting application volume
- Sweeping & cleanup cost incurred by City for material applied by other parties

ASSESSMENT TASKS

In order for the Stormwater Coordinator to track and assess performance of the Traction Abrasive and Deicing control measure, the following assessment tasks will be performed on an annual basis:

- Confirm the specification for traction abrasive has been developed
- Confirm that abrasive supply has been sampled annually, and results conform to specification
- Tabulate traction abrasive quantity applied by zone
- Confirm that agreements with other parties have been reviewed



RESPONSIBLE PARTIES

The Stormwater Coordinator will be responsible for developing a specification for traction abrasive material. The Streets Division will be responsible for sampling the abrasive material and tracking application quantity. Engineering Division staff will be responsible for assembling and analyzing the application data. The Stormwater Coordinator may require the assistance of the Streets Division, the City Attorney and the Finance Department in reviewing traction abrasive agreements with other entities.

4.3.5. Sweeping and Vactoring Operation Optimization

DESCRIPTION

The objective of this control measure is to improve the City's ability to remove sediment from its stormwater system before it is conveyed to receiving waters. This control measure incorporates one element of the City's 2013 PLRP where the City may test whether FSP recovery is improved through more frequent sweeping on a subset of City streets.

EXISTING ACTIVITIES

When the pavement is sufficiently dry following storm events, sweepers are sent out to collect abrasives, sediment, and debris from roadways. Crews will also schedule repair work to stabilize any curbs, shoulders, or road cuts damaged by graders and rotaries. Sweeping efforts are intensified during and immediately after the spring snowmelt to provide efficient collection of sediments or debris deposited on roadsides during snow removal activities. During summer, Streets Division crews clear the streets of debris before forecasted events in order to remove sediment that would otherwise be available for transport during rainstorms. The City estimates sweeper sediment recovery by adding up monthly invoices from South Tahoe Refuse for disposal of collected sediment and debris. In the fall months, a significant fraction of the material recovered by sweeping may be pine needles.

The Streets Division maintenance crews use a vactor truck to remove sediment from stormwater system assets including drain inlets, vaults, pond forebays, manholes, storm drain pipes, ditches, and other flow lines. Vactor logs quantify the amount of sediment collected based on the depth of sediment removed and the dimensions of the structure. The sediment is stored temporarily at the Caltrans Sierra Boulevard Snow Storage facility, to be hauled off for disposal outside of the Tahoe Basin.

IMPLEMENTATION TASKS

- 1. Track Sediment Recovery:** The Streets Division maintenance crews will continue to record information about sediment removal by vactor operations using the vactor log sheets. Data from the log sheets will be entered into the sediment recovery database by Engineering Division staff for further review and reporting.

Streets Division crews will continue to track waste materials collected in street sweepers during discharge at South Tahoe Refuse. The total volume of material will be tallied based on South Tahoe Refuse disposal receipts.

- 2. Test FSP recovery in higher frequency sweeping areas:** This task was developed as part of the City's PLRP Pilot Program for Improved Road Operations. As described in the City's PLRP, the Streets Division may increase sweeping frequency on a subset of primary roads within catchments that are directly connected to Lake Tahoe. These streets include Ski Run Boulevard, Pioneer Trail, and the sections of Needle Peak Road and Wildwood Avenue used to access the Heavenly California Base



4. MUNICIPAL OPERATIONS AND FACILITIES

Area. The targeted streets may be swept with the City’s regenerative air sweepers after each winter abrasive application, as road conditions allow, and once a month otherwise. Engineering Division staff will perform the approved road assessment methodology under the TMDL to test the effectiveness of increased sweeping frequency on road condition. Findings and results from this pilot program will be used to assess the feasibility of expanding City road operations for water quality as a more prominent load reduction strategy in future PLRPs.

ASSESSMENT TASKS

In order for the Stormwater Coordinator to track and assess performance of the Sweeping and Vactoring Operation Optimization control measure, the following assessment tasks will be performed on an annual basis:

- Tabulate the quantity of material collected by vactoring
- Tabulate the quantity of material collected by sweeping
- Tabulate scores for TMDL-approved road assessment methodology in higher frequency sweeping areas

RESPONSIBLE PARTIES

The Streets Division will be responsible for performing sweeping and vactoring operations and recording recovery quantities. The Stormwater Coordinator or other Engineering Division staff will tabulate and analyze the data, and assess sweeping effectiveness.

4.3.6. Municipal Personnel Training & Education

DESCRIPTION

Through implementation of this control measure, the City will develop and deliver training to all relevant City divisions and personnel who are responsible for ensuring compliance with the Permit and or implementing elements of this SWMP. The City will also use this control measure as a vehicle for outreach to all City staff about this SWMP and the responsibilities assigned to each division herein.

EXISTING ACTIVITIES

There are no ongoing existing activities associated with this control measure.

IMPLEMENTATION TASKS

1. **Municipal Outreach.** Following the adoption of this SWMP, the Stormwater Coordinator will make contact with the heads of each division having duties relating to the implementation of this SMWP. The Stormwater Coordinator will coordinate the performance and tracking of these duties using the Master Control Measure Table to ensure that all tasks are completed according to the implementation schedule.
2. **Develop Training.** Using available training materials from EDC and CASQA where appropriate, the Stormwater Coordinator will develop general stormwater training for municipal site operators and managers from all applicable divisions. The training will address:
 - The recently adopted Stormwater & Grading Ordinances and discharge prohibitions and other Permit requirements to reduce stormwater pollution
 - The municipal site inspection, maintenance and compliance control measures developed as a part of this Program Element



4. MUNICIPAL OPERATIONS AND FACILITIES

- Identification of illicit discharges, and illegal connections

In addition to the general stormwater training module, the Stormwater Coordinator will develop training materials targeted to each of the following groups and their unique responsibilities to the SWMP or facility maintenance:

- Building Division
- Streets Division
- Fire Department
- Parks & Recreation
- Airport
- Facilities Maintenance

- 3. Implement Training:** The Stormwater Coordinator will deliver training of municipal staff and record attendance at each training session.

ASSESSMENT TASKS

In order for the Stormwater Coordinator to track and assess performance of the Municipal Personnel Training and Education control measure, the following assessment tasks will be performed on an annual basis:

- Confirm training has been developed for each appropriate department or division
- Tabulate City staff trained in each department and division

RESPONSIBLE PARTIES

The Stormwater Coordinator will be responsible for implementation of this task, with support from the Engineering Division.

4.3.7. Stormwater Capital Project Implementation

DESCRIPTION

The City has been an active participant in TRPA's Environmental Improvement Program, and implementation of capital WQIPs has been an important aspect of the City's approach for reducing stormwater pollutant loads. Since the Lake Tahoe TMDL baseline period (2004), the City has constructed seven WQIPs, and has three more in various stages of planning and development. One of the tasks outlined in the City's PLRP is to register catchments in which WQIPs have been completed. Active or planned WQIPs will be registered after construction is complete.

EXISTING ACTIVITIES

The City has developed PLRM simulations to estimate load reductions from the seven completed WQIPs. Three more projects are in the planning stages, and are expected to be complete before the end of the permit term. These projects include:

- Bijou Commercial Core
- Harrison Avenue
- Sierra Tract Phases 3 & 4



4. MUNICIPAL OPERATIONS AND FACILITIES

IMPLEMENTATION TASKS

- 1. Register completed WQIPs.** Engineering Division staff will complete the catchment registration process according to the schedule provided in the PLRP.
- 2. Construct Active WQIPs:** City staff will provide guidance and technical support during the development of active and future WQIPs. The CIP Manager and Engineering Division will be the primary proponents of these projects. After the projects are constructed, Engineering Division staff will finalize the PLRM simulations, register the projects and provide the necessary documentation.

ASSESSMENT TASKS

In order for the Stormwater Coordinator to track and assess performance of the Stormwater Capital Project Implementation control measure, the following assessment tasks will be performed on an annual basis:

- Confirm that projects are registered according to the catchment registration schedule
- Confirm that active projects are registered following completion of construction

RESPONSIBLE PARTIES

Engineering Division staff will be responsible for performing the tasks associated with catchment registration. The CIP Manager and Engineering Division staff lead the development and construction of active WQIPs.



Figure 4-1: Traction Abrasive Application Zones

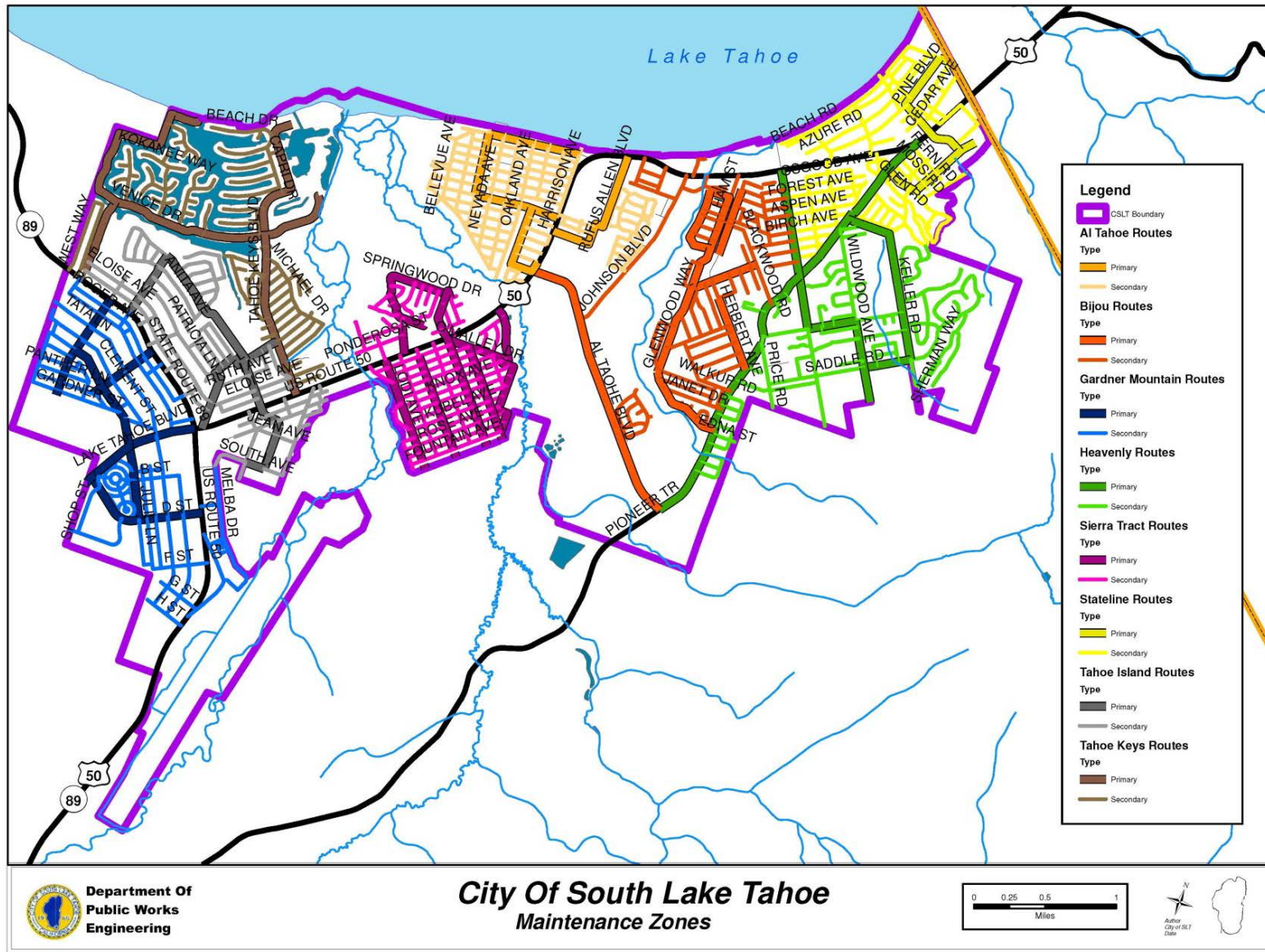


Table 4- 1: SWMP Municipal Operations and Facilities Control Measures

Stormwater Management Plan Control Measure Table	Implementation Schedule																Responsible Parties												
	WY/FY 2013				WY/FY 2014				WY/FY 2015				WY/FY 2016				Public Works		Develop ment	Internal		Public Safety							
	2012		2013		2014		2015		2016		Engineering / SW Coordinator	Engineering / GIS	Engineering / Other	Capital Improvement Projects	Streets	Facilities	Fleet Maintenance	Building	Planning	City Manager	Public Information Officer	City Attorney	Finance	Airport	Police Department (CSO)	Fire Department	Parks	Recreation	Outside Agencies / Consultant
Control Measures / Implementation Tasks	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4									
4.3.1 Municipal Facilities Inventory and Prioritization																													
1. Stormwater System Base Map and Prioritization																													
Prioritize Catchment Systems for Maintenance Based on Previous Inspections and Pollutant Sources								◊																					
Develop Prioritized Maps for Inspection and Maintenance Personnel								◊																					
Update Annually with Improvements and New Construction								◊																					
2. Municipal Site Base Map and Prioritization																													
Develop and Update GIS Base Map of Municipal Sites								◊																					
Prioritize Sites Based on High Priority Activities, Proximity to Watercourse, Site Slope, and History of Runoff Pollution								◊																					
3. Develop Web-Based GIS Base Map for Tracking Performance of Maintenance and Inspections								◊																					
4.3.2 Municipal Facilities Inspection																													
1. Develop Stormwater Systems Inspection Form to Include Criteria Identifying Maintenance Needs and Pollutant Sources								◊																					
2. Inspect High Priority Municipal Sites Using Stormwater Site Inspection Form. Record Observations in Municipal Inspection Database									◊	◊																			
3. Inspect Stormwater System as Part of Vactor Operations. Record Observations in Inspection Database									◊	◊																			
Inspect Conveyance and Treatment Facilities in Registered Catchments									◊	◊																			
4. Investigate Use of Integrated Web-based Documentation and Tracking System											◊																		
4.3.3 Municipal Facilities Maintenance and Compliance																													
1. Develop a Protocol for Prioritizing Stormwater System Maintenance Needs as They Arise								◊	◊																				
2. Perform and Document Maintenance and Corrective Actions at Municipal Sites								◊	◊	◊	◊																		
Permit expires on December 5, 2016 Q1 (Jan-Mar); Q2 (Apr-June); Q3 (July-Sept); Q4 (Oct-Dec) WY/FY = Water Year and Fiscal Year																													
	Period complete				◊ Implementation Period				M Monthly Implementation				W Weekly Implementation				D Daily Implementation				● Primary Responsible Party		○ Secondary Responsible Party						



5. Illicit Discharge Detection and Elimination

5.1. Overview

An illicit discharge is defined as any discharge to the stormwater system that is prohibited under local, state, or federal statutes, ordinances, codes, or regulations. The term “illicit discharge” includes all non-stormwater discharges except discharges pursuant to a NPDES permit (Section I.B.). Illicit discharges include the disposal of non-stormwater materials such as paint, spa water, or waste oil into the stormwater system or the discharge of waste streams containing pollutants into the stormwater system.

Illegal connections are a subset of illicit discharges. Illegal connections are defined as undocumented and/or unpermitted physical connections from a facility to a stormwater system or receiving water (e.g., a sanitary sewer connection to the stormwater system).

Because illicit discharges and illegal connections can be a significant source of pollutants to the stormwater system and receiving waters, the purpose of this Program Element is to ensure implementation of a comprehensive program for detecting, responding to, investigating and eliminating these types of discharges and connections in an efficient and effective manner.

5.2. Permit Requirements

Section III.B.4 of the Municipal NPDES Permit directs Permittees to implement an IDDE program including the following requirements:

- Annual inspection of the stormwater system to identify evidence of illicit discharges, illegal connections or other sources of non-stormwater discharges
- Establish a program for investigation and inspection of the stormwater system components having a reasonable potential for illicit discharges, illegal connections or other sources of non-stormwater discharges
- Enforcement of ordinances and other regulatory mechanisms to prevent and eliminate illicit discharges, illegal connections or other sources of non-stormwater discharges
- Facilitation and promotion of a public reporting hotline

Through Implementation of the IDDE Program Element, the City will achieve compliance with the permit requirements listed above.

5.3. Control Measures

The control measures described below are intended to address both illicit discharges and illegal connections to the City’s storm drain system. The implementation schedule and responsible parties for each control measure are summarized in the Illicit Discharge Detection and Elimination Control Measure Table (**Table 5-1**) at the end of this section.

5.3.1. Public Reporting

DESCRIPTION

In order to promote, publicize and facilitate public reporting of illicit discharge and illegal connections the City will continue to operate a public reporting hotline. By enlisting the help of concerned citizens to observe and report illicit discharges, the City can more efficiently monitor its stormwater system. Promoting and publicizing of the public reporting hotline is described in Section 7. Education & Outreach.



5. ILLICIT DISCHARGE DETECTION AND ELIMINATION

EXISTING ACTIVITIES

With the cooperation of EDC, the City has established a public reporting hotline for reporting illicit discharges and illegal connections. The hotline enables the general public to notify public officials of non-storm discharges and stormwater pollution in English or in Spanish. Engineering Division staff checks the hotline two to three times weekly, log all reports, and initiate follow-up actions.

IMPLEMENTATION TASKS

- 1. Public Reporting Hotline:** Continue to maintain public reporting hotline and check at least every 2 working days for messages. Publicize hotline on City website, public access television, and other media (See Control Measure 7.3.1.)
- 2. Record Keeping:** Continue to maintain the illicit discharge and illegal connection complaint database, including, at a minimum, the following fields:
 - Origin of complaint
 - Responsible party (if known)
 - Location and description of the discharge
 - Materials and waste involved
 - Estimated amount of discharge
 - Possible impacts of spill
 - Action(s) taken in response to call(s)
 - Confirmation of resolution
- 3. Online Reporting:** Update the City Stormwater Program webpage with a link to the existing “Report a Concern” online form for reporting.

ASSESSMENT TASKS

In order for the Stormwater Coordinator to track and assess performance of the Public Reporting control measure, the following assessment tasks will be performed on an annual basis:

- Confirm hotline is operational and maintained
- Confirm the Stormwater Program Page of the City’s website has been updated with link to provide opportunities for on-line IDDE reporting
- Tabulate the number of public reports logged via hotline or website
- Tabulate the number of reports which require follow up actions

RESPONSIBLE PARTIES

The Stormwater Coordinator and Engineering Division staff will be primarily responsible for checking the hotline and initiating follow-up actions.

5.3.2. Inspection and Identification

DESCRIPTION

This control measure encompasses the search for illicit discharges and illegal connections within the City’s stormwater system. Three methods are used for detection: system inspection, dry weather monitoring, and design review.



5. ILLICIT DISCHARGE DETECTION AND ELIMINATION

EXISTING ACTIVITIES

The City Streets Division staff members currently inspect the stormwater system as part of routine maintenance described in Section 4.3.2 of this SWMP. They are aware of illicit discharge prohibitions and report any evidence of such to the Engineering Division. Dry weather monitoring occurs on an informal basis, often as part of vactoring operations performed by the Streets Division. If Streets Division staff identifies evidence of non-stormwater discharges they report the location to Engineering Division staff. Engineering Division staff members inspect reported IDDE discharges, document the reports in the IDDE database, and initiate follow-up, usually by filing a work order with the Streets Division.

The Design Review Team is comprised of Planning Division, Engineering Division, Building Division and Fire Department staff. They review plans for proposed developments as part of the City’s project review and permitting processes. Review of plans submitted to the Design Review Team or Building Division can reveal existing illegal connections, as well as help prevent future illegal connection from proposed projects.

IMPLEMENTATION TASKS

Inspection of the stormwater system for evidence of illicit discharges, illegal connections, and other sources of non-stormwater discharges will be accomplished in concert with annual system inspections as described in Section 4.3.2.

- 1. Review City Inspection Criteria:** Engineering Division staff will ensure the Stormwater System Inspections Form used to perform stormwater system inspections includes criteria for detection of illicit discharges and illegal connections. During municipal personnel training and education (see Control measure 4.3.6.); City staff will be taught to become aware of illicit discharges, and encouraged to report suspected discharges to the Stormwater Coordinator.

The Stormwater Coordinator will work with other City and County inspectors to ensure criteria for detecting illicit discharges and illegal connections are considered during the course of other routine inspections, including:

- Fire Code Inspection
- Building Code Inspection
- EDC Environmental Management Inspections
- STPUD Water Conservation program inspections

The Stormwater Coordinator will develop a protocol for tracking inspections performed by other parties and document any observations related to the detection of illicit discharges and illegal connections.

- 2. Perform Inspections:** Stormwater system inspections will be performed primarily by Streets Division staff as part of Control Measure 4.3.2 – Municipal Facilities and Stormwater System Inspection. Other inspections will be carried out in the course of normal operations by the Fire Department, Building Division, EDC, and STPUD.
- 3. Dry Weather Monitoring:** The Stormwater Coordinator and/or Engineering Division staff will annually observe stormwater system outfalls during periods of extended dry weather (at least 72 hours of dry weather prior to inspection). Staff will look for evidence of illicit discharges and/or illegal connections and note the flow rate and any odor or other indication of the possible source or



5. ILLICIT DISCHARGE DETECTION AND ELIMINATION

nature of the discharge. Staff will attempt to follow significant discharges to their source and note the approximate location for further investigation. All system outfalls will be checked for dry weather flows at least once during the permit term.

- 4. Design Review Team:** In an effort to prevent the construction of new illegal connections, and reduce the potential for illicit discharges, the Stormwater Coordinator will participate in the Design Review Team for proposed development projects (See Section 6.3.1). The Stormwater Coordinator will review plans for proposed developments and check all new or existing connections to the stormwater system to ensure that only stormwater from uncontaminated source areas will be discharged to the system. Where appropriate, the Stormwater Coordinator may recommend source control and treatment control BMPs to help reduce the potential for contaminated runoff and non-storm discharges reaching the collection system.

ASSESSMENT TASKS

In order for the Stormwater Coordinator to track and assess performance of the Inspection and Identification control measure, the following assessment tasks will be performed on an annual basis:

- Confirm the Stormwater System Inspection Forms include criteria for detecting Illicit discharges and illegal connections
- Tabulate the number of inspections completed by City, County and STPUD staff
- Confirm annual dry weather monitoring of outfalls
- Tabulate the number of illicit discharges and/or illegal connections identified as a result of system or other routine inspections and dry weather monitoring
- Tabulate number of plans reviewed and number of illegal connections identified

RESPONSIBLE PARTIES

Stormwater system inspections and dry weather monitoring will be carried out primarily by Streets Division Staff, with support from Engineering Division staff. The Stormwater Coordinator will be responsible for enlisting the help of the Fire, Building, STPUD and EDC inspectors to look for evidence of illicit discharges and illegal connections. The Stormwater Coordinator will be the primary participant in the Design Review Team, with support from Engineering, Planning, and Building Division staff.

5.3.3. Investigation and Follow-Up

DESCRIPTION

Once a potential illicit discharge or illegal connection has been reported, the responsible party needs to be identified, the pollution cleaned up, and the threat to water quality eliminated.

EXISTING ACTIVITIES

The City's Engineering Division currently makes the initial response to all reports of illicit discharges. As appropriate, the Streets Division or the Fire Department may be called upon for clean-up work.

IMPLEMENTATION TASKS

- 1. Investigation:** Inspections yielding evidence of illicit discharges and/or illegal connections will be flagged for investigation and follow-up. The Stormwater Ordinance gives the City Manager (or their designee) the authority to take samples, perform testing, and request records and/or design drawings from the owner or occupant of any premises believed to be in violation of the discharge prohibitions. The Stormwater Coordinator will work with the City Manager to use this authority to:



5. ILLICIT DISCHARGE DETECTION AND ELIMINATION

- Determine the source of the discharge
 - Determine the responsible party
 - Check for encroachment permit, design plans, or other documentation
 - Take samples and perform testing to determine the nature and potential consequences of the discharge
 - Recommend action for elimination and remediation of the discharge
 - Initiate ordinance enforcement actions, as needed
2. **Spill Response:** The Stormwater Coordinator will review Fire Department hazardous material spill response procedures and other appropriate plans to ensure that all measures necessary to prevent discharge to the storm drainage system are included. In the event that an illicit discharge has occurred to the stormwater system and a clean-up effort is required, the City will notify EDC Environmental Management, and take one or more of the following actions, depending on the type of spill:
- Call the Fire Department in the case of Hazardous Material spills
 - Call STPUD in the event of sewage spill
 - Call Lahontan in the event of significant spills reaching surface waters, or involving Lahontan-permitted facilities
3. **Record Keeping:** The Stormwater Coordinator will update the illicit discharge database with the results of any investigations conducted and associated enforcement actions. The database will serve as a tool to identify problem areas in the city for targeted enforcement, and allow tracking of repeat offenders.

ASSESSMENT TASKS

In order for the Stormwater Coordinator to track and assess performance of the Inspection and Follow-Up Control Measure, the following assessment tasks will be performed on an annual basis:

- Tabulate the number of investigations performed
- Tabulate the number of spill response actions taken

RESPONSIBLE PARTIES

The Stormwater Coordinator will be responsible for investigation and follow-up actions, with support from the City Manager, Engineering Division, Fire Department, Lahontan, and EDC Environmental Management.

5.3.4. Ordinance Enforcement

DESCRIPTION

Elimination of illicit discharges and illegal connections will be accomplished through enforcement of the City's ordinances. The Stormwater Ordinance provides the City Manager with the authority to require a person or entity responsible for an illicit discharge or illegal connection to eliminate the discharge or connection and take measures to eliminate the source of such discharges.



5. ILLICIT DISCHARGE DETECTION AND ELIMINATION

EXISTING ACTIVITIES

The Stormwater Ordinance was adopted in January, 2013. The City Manager is empowered to enforce the Stormwater Ordinance through the use of administrative citations, nuisance abatement proceedings and civil actions including:

- A temporary restraining order
- Reimbursement of cost for investigation leading to the establishment of the violation
- Cost incurred in correcting the adverse effects of the violation
- Compensatory damages for loss or destruction of water quality, wildlife, fish and aquatic life.
- \$100 or \$250 fines for ordinance violations (within an initial warning before imposing fines during calendar year 2013)

IMPLEMENTATION TASKS

1. **Review the Evidence** gathered during the investigation of the discharge or connection in question, and confirm whether a violation of a code, ordinance or law has occurred.
2. **Enforce the Stormwater Ordinance** to eliminate the detected illicit discharges and illegal connections. Enforcement will be carried out through a tiered approach. The approach will include:
 - **For minor deficiencies or violations** inspectors may issue verbal warnings or correction notices to the site owner or operator at the time of inspection.
 - **For violations of the Stormwater Ordinance** involving immediate threats to water quality, a correction notice will be issued identifying the problems and recommending immediate corrections. A stormwater ordinance violation letter may also be issued, instructing the site owner or operator to cease activities that are actively polluting.
 - **Repeated or serious violations of the City's Stormwater Ordinance** will be subject to administrative, civil, or criminal liability as provided by the South Lake Tahoe City Code. The City Engineering Division will work with the City Attorney's Office and Code Enforcement staff in the Police Department to take any of the following enforcement actions:
 - Administrative citations
 - Fines
 - Nuisance abatement
 - Civil actions

ASSESSMENT TASKS

In order for the Stormwater Coordinator to track and assess performance of the Ordinance Enforcement Control Measure, the following assessment tasks will be performed on an annual basis:

- Tabulate the number of correction notices and violation letters
- Tabulate the number of correction notices and violation letters that lead to administrative, civil or criminal legal actions
- Tabulate number of repeat offenders



5. ILLICIT DISCHARGE DETECTION AND ELIMINATION

RESPONSIBLE PARTIES

The Stormwater Coordinator, City Manager, and Code Enforcement (Police Department) will be primarily responsible for carrying out enforcement actions, with support from the Engineering Division and the City Attorney.



Table 5- 1: SWMP Illicit Discharge Detection and Elimination Control Measures

Stormwater Management Plan Control Measure Table	Implementation Schedule																Responsible Parties																								
	WY/FY 2013				WY/FY 2014				WY/FY 2015				WY/FY 2016				Public Works			Develop ment	Internal			Public Safety																	
	2012				2013				2014				2015				2016				Engineering / SW Coordinator	Engineering / GIS	Engineering / Other	Capital Improvement Projects	Streets	Facilities	Fleet Maintenance	Building	Planning	City Manager	Public Information Officer	City Attorney	Finance	Airport	Police Department (CSO)	Fire Department	Parks	Recreation	Outside Agencies / Consultant		
Control Measures / Implementation Tasks	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4																					
5.3.1 Public Reporting																																									
1. Check Public Reporting Hotline					D	D			D	D	D	D	D	D	D	D	D	D	D	D	●	○	○																		
2. Maintain the Illicit Discharge & Illegal Connection Complaint Database					◇	◇			◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	●	○	○																		
3. Update the City Stormwater Program Webpage to include a Link to the Existing "Report a Concern" Online Form for Reporting													◇	◇							●	○	○									○									
5.3.2 Inspection & Identification																																									
1. Review & Update Stormwater System Inspection Form					◇	◇															●		○	○								○									
Coordinate with City & County Inspectors to Ensure IDDE is Included in Routine Inspections (Fire, Building, El Dorado County, STPUD)					◇	◇															●																				
Develop Protocol for Tracking Inspections Performed by Other Entities					◇	◇															●																				
2. Perform Inspections									◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	○	○		●																	
3. Dry Weather Monitoring - Observe Outfalls Annually During Periods of Extended Dry Weather													◇				◇				●	○	○	○																	
4. Design Review Team to Consider New and Existing Connections to Stormwater System					◇	◇			◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	●								○	○											
5.3.3 Investigation & Follow-Up																																									
1. Investigation of the Source, Responsible Party & Permits, Collect Samples, Recommend Action					◇	◇			◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	●	○	○									○									
2. Spill Response					◇	◇			◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	●		○																		
Review Fire Department Hazardous Material Spill Response Procedures to Prevent Discharge to Storm Drain System									◇												●		○																		
In the Event of an Illicit Discharge, Call the Fire Department, STPUD, EDC, or Lahontan.					◇	◇			◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	●		○																		○
3. Record Keeping by Updating the Illicit Discharge Database					◇	◇			◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	●	○	○																		
5.3.4 Ordinance Enforcement																																									
1. Review the Evidence from the Investigation (5.3.3)					◇	◇			◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	●		○									○	○								
2. Enforce Stormwater Ordinance					◇	◇			◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	●		○									○	○								
Permit expiries on December 5, 2016	Period complete																																								
Q1 (Jan-Mar); Q2 (Apr-June); Q3 (July-Sept); Q4 (Oct-Dec)	◇ Implementation Period																																								
WY/FY = Water Year and Fiscal Year	M Monthly Implementation																																								
	W Weekly Implementation																																								
	D Daily Implementation																																								
	● Primary Responsible Party																																								
	○ Secondary Responsible Party																																								



6. New Development and Redevelopment

6.1. Overview

The purpose of the New Development and Redevelopment Program Element is to ensure development projects in the City include treatment facilities which minimize stormwater runoff from the site through infiltration. The City will require development project plans to include proposed infiltration facilities. This Program Element also helps ensure that changes associated with development or redevelopment projects do not adversely impact the City's ability to:

- Meet the Permit's TMDL Pollutant Load Reduction requirements
- Prevent increases in a catchment's average annual baseline pollutant load

Ongoing post-construction maintenance of essential or key treatment BMPs may be required to ensure that potential pollutant load increases from land use changes or new coverage continue to be mitigated.

6.2. Permit Requirements

Permit Section III.B.5 directs Permittees to require new development and redevelopment project proponents to incorporate permanent stormwater treatment facilities designed to infiltrate, at a minimum, runoff generated by the 20 year, 1 hour storm, which equates to approximately one inch of runoff over all impervious surfaces during a 1 hour period.

If infiltrating the entire volume of the 20 year, 1-hour storm is not possible at a given new development or redevelopment site, the Permit states that the Permittee shall require project proponents to infiltrate as much runoff as possible, and take one of the following options for alternative compliance:

- Document how the project proponent will treat runoff to meet the numeric effluent limits described in Permit Table III.B.1
- Document coordination with the project proponent to demonstrate that shared stormwater treatment facilities treating private property discharges and public right-of-way stormwater are sufficient to meet the municipality's average annual fine sediment and nutrient load reduction requirements described in Section IV.B of the Permit

Permit Section IV.D and MRP Section 1.G require Permittees to ensure that changes in land use, impervious coverage, or operations and maintenance practices do not increase a catchment's average annual baseline pollutant load. Additionally, MRP Section 1.G requires the City to assess land use, impervious cover and operations and maintenance changes during Water Year 2014 in hydraulically connected unregistered catchments to determine whether changes have increased average annual baseline pollutant loads. If changes in baseline loading have occurred, the City must then register those catchments in the Lake Clarity Crediting Program.

6.3. Control Measures

The following control measures describe the actions that will be taken by the City to address the Permit requirements for new development and redevelopment. The implementation schedule and responsible parties for each control measure are summarized in the New Development and Redevelopment Control Measure Table (**Table 6-1**) at the end of this section.



6. NEW DEVELOPMENT AND REDEVELOPMENT

6.3.1. Stormwater Infiltration Facilities

DESCRIPTION

New development and redevelopment projects within the City's jurisdiction will be required to design, construct, and maintain BMPs to infiltrate the volume of runoff associated with the 20 year, 1 hour event. Projects will be reviewed by the Design Review Team to ensure compliance with the Stormwater Ordinance and Permit requirements.

EXISTING ACTIVITIES

The Stormwater Ordinance provides the City with the authority to require any owner or person developing real property to install and maintain appropriate BMPs to control the volume, rate, and potential pollutant load in stormwater runoff from new development and redevelopment projects as appropriate to minimize the generation, transport and discharge of pollutants.

The Design Review Team is comprised of Planning Division, Engineering Division, Building Division and Fire Department staff. They meet weekly to review plans for proposed developments as part of the City's project review and permitting processes. The Design Review Team checks design submittals for adherence to City design standards.

IMPLEMENTATION TASKS

- 1. Formalize Stormwater Infiltration Requirements:** Engineering Division staff will coordinate with the Building and Planning Divisions to formalize infiltration facility requirements for new development and redevelopment projects in the project approval process. This task will include the following:
 - Develop and include permanent stormwater treatment facilities as a condition of approval for Building and Planning Division permits
 - Include stormwater infiltration requirements in the Planning Division's City-Wide Design Standards Checklist (see control measure 7.3.4. New Development and Redevelopment Design Criteria Outreach)
 - Develop inspection, operations, and maintenance standards for infiltration facilities to be included as conditions of approval for Building and Planning Divisions permits
 - Review and include as a supplement to building applications appropriate design guidance material developed by TRPA and TRCD
- 2. Review New Development and Redevelopment Design Submittals.** As a member of the Design Review Team, the Stormwater Coordinator will review development plans to ensure minimum requirements for permanent infiltration facilities are met. The Stormwater Coordinator will consult with project proponents regarding proper design of infiltration facilities, as needed. Permits will not be issued until the treatment facilities have been satisfactorily proven to meet the requirements.
- 3. Confirm installation of BMPs:** New development and redevelopment projects permitted by the City and whose construction sites will be primarily inspected by the City will be checked to confirm BMPs have been installed during the final inspection.

In addition, any commercial and industrial development projects will be included in the inventory and prioritization process defined in control measure 3.3.1. Commercial and Industrial Site Inventory and Prioritization. High priority sites will be inspected annually and as a part of these inspections BMPs will be checked to ensure they are functioning and have been maintained.



6. NEW DEVELOPMENT AND REDEVELOPMENT

ASSESSMENT TASKS

In order for the Stormwater Coordinator to track and assess performance of the Stormwater Treatment Facilities control measure, the following assessment tasks will be performed on an annual basis:

- Confirm that infiltration requirements have been formalized in the project approval process
- Confirm BMP installation is included in inspection process
- Tabulate number of project sites inspected
- Tabulate number of project sites with BMP deficiencies

RESPONSIBLE PARTIES

The Stormwater Coordinator will be responsible for ensuring that the stormwater treatment BMPs are implemented at new development and redevelopment projects with support and cooperation from the Design Review Team, and the Building, Planning, and Engineering Divisions.

6.3.2. Alternative Compliance Procedures

DESCRIPTION

If infiltrating the entire volume of the 20 year, 1-hour storm is not possible at a given new development or redevelopment site, The City will require project proponent to infiltrate as much runoff as possible, and develop alternative compliance procedures.

EXISTING ACTIVITIES

There are no existing activities related to this control measure.

IMPLEMENTATION TASKS

1. Develop Procedure for Compliance with Numeric Limits: Engineering Division staff will coordinate with Building and Planning Divisions to develop a set of requirements for a project proponent who may wish to treat runoff to numeric effluent limits. Suggested requirements include:

- Justification for the BMP or technology proposed, i.e. performance studies, manufacturer lab data, etc.
- Operations and maintenance plan describing how and when the BMP will be inspected (minimum of annually) and how and when the BMP will be maintained
- Inspections to be performed by a qualified third party to ensure the BMP is functioning as designed
- Sampling twice per year for three years to demonstrate adherence to numeric effluent limits, with possible reduction in sampling frequency if previous sampling demonstrates compliance
- Annual reports submitted to the City presenting inspection and sampling data and confirming the BMP is functioning as designed

The above requirements shall be recorded on the property deed to ensure future owners also comply.

2. Develop Procedures for Shared Facilities: If a project proponent wishes to pursue the shared use of a larger treatment facility, the City will require that they submit calculations showing sufficient capacity in the system or BMP to treat additional runoff from their site. These calculations shall be prepared by a licensed engineer and submitted to the City for review and acceptance as a part of the project application process.



6. NEW DEVELOPMENT AND REDEVELOPMENT

The Alternative Compliance Procedures may also provide an option for project proponents to make a commitment to perform or provide funding for ongoing enhanced maintenance activities or construction of shared BMP facilities that would help ensure that the City would meet pollutant load reduction requirements.

ASSESSMENT TASKS

In order for the Stormwater Coordinator to track and assess performance of the Alternative Compliance Procedures control measure, the following assessment tasks will be performed on an annual basis:

- Confirm development of alternative requirements for compliance with numeric effluent limits
- Confirm development of alternative requirements for shared facilities
- Tabulate the number of projects approved for alternative compliance

RESPONSIBLE PARTIES

The Stormwater Coordinator will be responsible for developing the protocols for alternative compliance with cooperation from the Building and Planning Divisions, and technical support from Engineering Division staff. The City Attorney will provide legal review as-needed.



Table 6- 1: SWMP New Development and Redevelopment Control Measures

Stormwater Management Plan Control Measure Table	Implementation Schedule																Responsible Parties																											
	WY/FY 2013				WY/FY 2014				WY/FY 2015				WY/FY 2016				Public Works			Develop ment	Internal			Public Safety																				
	2012				2013				2014				2015				2016				Engineering / SW Coordinator	Engineering / GIS	Engineering / Other	Capital Improvement Projects	Streets	Facilities	Fleet Maintenance	Building	Planning	City Manager	Public Information Officer	City Attorney	Finance	Airport	Police Department (CSO)	Fire Department	Parks	Recreation	Outside Agencies / Consultant					
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Public Works	Development	Internal	Public Safety																									
New Development and Redevelopment Program Element																																												
Control Measures / Implementation Tasks	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Engineering / SW Coordinator	Engineering / GIS	Engineering / Other	Capital Improvement Projects	Streets	Facilities	Fleet Maintenance	Building	Planning	City Manager	Public Information Officer	City Attorney	Finance	Airport	Police Department (CSO)	Fire Department	Parks	Recreation	Outside Agencies / Consultant					
6.3.1 Stormwater Infiltration Facilities																																												
1. Formalize Stormwater Infiltration Requirements																																												
Include infiltration Facilities as a Condition of Approval for Building and Planning Division Permits																					●	○																						
Update City-Wide Design Standards Checklist																					○	○								●														
Develop inspection, operations, and maintenance standards for infiltration facilities																					●	○								○														
Include Design Guidance Material from TRPA and TRCD as a Supplement to Building Applications					◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	○								●	○														
2. Review New Development and Redevelopment Design Submittals to Ensure that Infiltration Requirements are Met					◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	●	○								○														
3. Confirm Installation of BMPs During Final Construction Inspections																					○	○								●														
6.3.2 Alternative Compliance Protocol																																												
1. Develop Procedure for Compliance with Numeric Effluent Limits																					●	○								○														
2. Develop Procedure for Shared Treatment Facilities																					●	○								○														○
Permit expiries on December 5, 2016																																												
Q1 (Jan-Mar); Q2 (Apr-June); Q3 (July-Sept); Q4 (Oct-Dec)																																												
WY/FY = Water Year and Fiscal Year																																												
	Period complete								◇ Implementation Period								● Primary Responsible Party																											
									M Monthly Implementation								○ Secondary Responsible Party																											
									W Weekly Implementation																																			
									D Daily Implementation																																			



7. Education & Outreach

7.1. Overview

The purpose of the Education and Outreach Program Element is to increase the community’s knowledge of the effect of urban stormwater runoff on surface waters, and the various ways by which the public can help to control and prevent stormwater pollution. In an effort to streamline the City’s stormwater program, all of the outreach and education activities required by various sections of the Permit have been assembled within this Program Element, except for municipal training and education described in Section 4.3.6. Thus, by implementing this Program Element, the City will comply with all of the Permit’s outreach and education requirements. In addition to South Lake Tahoe residents and visitors, the target audiences include:

- Construction site operators, owners , and contractors
- Commercial and Industrial site owners and operators
- Owners, Developers and Designers working on new development and redevelopment projects
- Residents, Renters and Property Owners of developed properties

7.2. Permit Requirements

This Program Element is intended to satisfy requirements for education and outreach from several sections of the Permit:

- Section III.B.1.b requires Permittees to conduct construction site outreach efforts that include efforts to educate construction site operators about local ordinances, regulations, and enforcement mechanisms applicable to controlling stormwater runoff at their sites
- Section III.B.2.b instructs Permittees to include outreach efforts to educate commercial, industrial, and municipal site operators about local ordinances, regulations, and enforcement mechanisms applicable to stormwater runoff at their sites
- Section III.B.2.f requires Permittees to identify high priority residential areas and activities for targeted outreach and education, and coordinate outreach efforts with other agencies including TRCD and TRPA
- Section III.B.4.d requires each Permittee to promote, publicize and facilitate public reporting of illicit discharges to the stormwater systems
- Section III.B.6 requires Permittees to implement a public education program to increase the community’s knowledge of the effect of urban runoff on surface waters and the role the public can play in controlling stormwater pollution
- MRP Section IV.H includes annual reporting requirements for outreach and education elements of the SWMP

The Education and Outreach Element of this SWMP is intended to meet all of the requirements listed above, with two exceptions. First, all activities pertaining to municipal operations are included in Section 4 of this document, including outreach, education and training efforts for municipal site operators. Second, all reporting is included in the Section 1 Program Management. This Program Element focuses primarily on the City’s outreach and education efforts to external parties.



7. EDUCATION & OUTREACH

7.3. Control Measures

The following control measures describe the actions that will be taken by the City to address the Permit requirements described above. The implementation schedule and responsible parties for each control measure are summarized in the Education and Outreach Control Measure Table (**Table 7-1**) at the end of this section.

7.3.1. Education and Outreach to Public

DESCRIPTION

The objective of this control measure is to increase the community’s awareness of the impacts of stormwater discharges on surface water resources and encourage behavior which reduces pollutant discharges.

EXISTING ACTIVITIES

The City has developed a community education program called the Citizens Academy. This program is free and open to interested community members and addresses a wide variety of municipal services and operations. One component of the Citizens Academy curriculum is stormwater and urban runoff awareness.

The City also enrolls staff members in the Chamber of Commerce Leadership Program. This program allows staff members to outreach to a broad group of business, governmental, and community members regarding the City’s stormwater programs.

The City’s Stormwater Program website (<http://www.cityofslt.us/index.aspx?nid=342>) presents public information on urban runoff and the City’s efforts to reduce stormwater pollution, including participation the Lake Tahoe TMDL, complying with the Municipal NPDES Permit, and links to the Grading and Stormwater Ordinances. The City also has a webpage dedicated to EIP Projects (<http://www.cityofslt.us/index.aspx?NID=341>) and their expected benefits to stormwater quality.

The City contributes content to the community access cable TV station which has been used to list the Public Reporting Hotline number. City staff also makes occasional appearances on the local Channel 12 TV station to discuss stormwater issues.

IMPLEMENTATION TASKS

1. **Continue to provide a stormwater component as part of the Citizens Academy:** The Stormwater Coordinator will review materials for the Citizens Academy prior to each session and present a summary of the Stormwater Program along with the ways in which citizens can support and participate in program activities.
2. **Enhance the stormwater materials available to the public on the City Website:** Engineering Division Staff will work with the Public Information Officer to provide additional materials on the City Stormwater Program website, including:
 - Links to other agencies web pages with educational materials on water quality and pollution prevention
 - The City’s SWMP, PLRP, and Permit
 - A description of the role of private BMP implementation in helping the City to meet Clarity Challenge reduction targets



7. EDUCATION & OUTREACH

- Prominent display of the Public Reporting Hotline number

3. Support Public Events and Education Programs: The Stormwater Coordinator will facilitate support and publicizing of events and education programs hosted by other agencies through the City's website and printed material, including:

- EDC Programs: Household Hazardous Waste Program, Used Oil & Filters Program, E-Waste pick-up days, Universal Wastes Program, and Clean Boating Kit Giveaways
- League to Save Lake Tahoe storm drain stenciling program
- Beach Cleanup Day - held in conjunction with the annual California Coastal Cleanup Day
- Snapshot Day Stream Monitoring - sponsored by the Tahoe-Truckee Clean Water Team and the Lake Tahoe Environmental Education Coalition
- South Tahoe Earth Day Festival

ASSESSMENT TASKS

In order for the Stormwater Coordinator to track and assess performance of the Education and Outreach to Public control measure, the following assessment tasks will be performed on an annual basis:

- Confirm that the Citizens Academy curriculum includes a stormwater component
- Confirm that the City's website has enhanced stormwater materials and links
- Tabulate the number of hits on City Stormwater Program page
- Tabulate the number of events hosted by other agencies publicized on City's website or printed material
- Tabulate of the number of calls to the public reporting hotline

RESPONSIBLE PARTIES

The Stormwater Coordinator and Public Information Officer will be primarily responsible for implementing the Public Outreach control measure, with support from the Engineering Division staff.

7.3.2. Commercial, Industrial and Construction Site Outreach

DESCRIPTION

In order to assist commercial, industrial and construction site operators in complying with City Grading and Stormwater Ordinances, it is important for the City to provide outreach and education about requirements therein. This control measure is intended to target outreach activities to those parties active in commercial and industrial site operations as well as construction sites.

EXISTING ACTIVITIES

The City conducts education and training for construction activities through the distribution of educational materials during the permitting process and through one-on-one discussions during site inspections by City staff.

The University of Nevada, Reno Cooperative Extension collaborates with NDEP, TRCD, NTC and TRPA in conducting annual workshops for Tahoe contractors and BMP installers. The City has provided handouts on the Grading Ordinance for distribution at these workshops.

TRPA and TRCD actively provide guidance, outreach and technical support to commercial and industrial site operators about the selection, design and installation of erosion control and stormwater BMPs through the BMP Retrofit Program and the Conservation Landscaping Program. The City has supported



7. EDUCATION & OUTREACH

outreach efforts associated with both of these programs through support of workshops and distribution of educational material.

IMPLEMENTATION TASKS

- 1. Update City Website:** The Stormwater Coordinator will work with the Public Information Officer to include information on the City Website specifically intended for the following targeted groups:
 - Owners, operators and contractors of construction sites, to provide information on the following:
 - Links to educational materials on construction BMPs and pollution prevention available on other agencies websites (e.g. Lahontan, TRPA, CASQA)
 - The City's Grading Ordinance
 - A description of the City's construction inspection program and associated enforcement procedure
 - Owners and operators of commercial and industrial sites, to provide information on the following:
 - Links to educational materials on commercial and industrial BMPs and pollution prevention available on other agencies websites (e.g. TRPA, CASQA)
 - The role of BMP implementation in helping the City to meet Clarity Challenge reduction targets and to protect Lake Tahoe and other local waters
 - A description of the City's commercial and industrial inspection program and associated enforcement procedure
- 2. Stormwater Program Fact Sheet:** Stormwater Coordinator will develop a one page fact sheet describing the City's Stormwater Program and the recently adopted Stormwater and Grading Ordinances. The fact sheet will direct interested parties to the City website for detailed information. The fact sheet will be distributed with:
 - Grading Permits
 - Encroachment Permits
 - Building Permits
 - Business Licenses
- 3. Support Outreach Programs:** The Stormwater Coordinator will facilitate the City's support and participation in the following targeted outreach programs administered by other Tahoe Basin Agencies:
 - Annual BMP contractor training workshop hosted by TRPA, TRCD, NTCD and the UNR Cooperative Extension
 - TRPA BMP Retrofit Program
 - TRCD Conservation Landscaping Program
 - STPUD Water Conservation and Education Programs

The Stormwater Coordinator may also cooperate with other Permittees and Tahoe regional jurisdictions to develop cost-effective shared outreach programs reaching target audiences in the Tahoe region.

ASSESSMENT TASKS



7. EDUCATION & OUTREACH

In order for the Stormwater Coordinator to track and assess performance of the Commercial, Industrial and Construction Site Outreach control measure, the following assessment tasks will be performed on an annual basis:

- Confirm the one page stormwater and grading ordinance fact sheet was developed
- Confirm participation in annual BMP contractor training
- Confirm the City's website has been updated
- Tabulate the number of hard copy fact sheets distributed
- Tabulate the number of hits to the stormwater fact sheet on the City Website

RESPONSIBLE PARTIES

The Stormwater Coordinator and Public Information Officer will be primarily responsible for implementing the Commercial, Industrial and Construction Site Outreach control measure, with support from the Engineering Division and Building Division.

7.3.3. Residential Outreach & Education

DESCRIPTION

This control measure is intended to satisfy the requirements of Permit Section III.B.2.f. The City will engage residents in controlling stormwater pollution resulting from specific high priority residential activities, including:

- Automobile repair and maintenance;
- Off-pavement automobile parking;
- Home and garden care activities and product use (pesticides, herbicides, and fertilizers);
- Disposal of household hazardous waste (e.g., paints, cleaning products);
- Snow removal activities

EXISTING ACTIVITIES

The Engineering Division has developed a GIS base map including the locations of all residential parcels within the City limits. Outreach is currently focused on responding to citizen, agency or staff complaints about residential parcels with activities including automotive repair, off pavement parking and hazardous materials disposal.

Multi-Family residential sites are inspected by the Building Division. Building Division inspectors are aware of stormwater issues and look for issues while on site. Inspectors speak with site operators about best practices as appropriate. Inspectors finding potential violations of the Stormwater Ordinance at multi-family residential sites will notify the Stormwater Coordinator. Violations will be investigated and addressed as illicit discharges, as described in Section 5 of this SWMP.

IMPLEMENTATION TASKS

1. Prioritize residential neighborhoods. Engineering Division staff will query the existing residential parcels in GIS to identify neighborhoods and/or catchments that may be associated with high priority residential activities:

- Parcels larger than 1 acre – Likely to have large areas of turf or landscaping requiring fertilizer and other potential pollutants



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- Parcels lacking a TRPA BMP certificate – which may be an indication of off-pavement parking and other drainage issues at the catchment scale
- Multifamily parcels – which may have issues with snow removal activities and off-pavement parking
- Residential parcels having a business license potentially associated with the generation of hazardous materials, fertilizer, or other known pollutants. Residential business types may include:
 - Automobile maintenance
 - Landscaping and tree service
 - Mobile cleaning operations

The residential prioritization task will be updated annually to check for changes in BMP certificate status and business license additions and renewals.

2. Coordinate Outreach Efforts with Partnering Agencies: Based on priorities identified in the previous task, the City will support existing outreach programs to target appropriate educational materials to high priority neighborhoods and activities. These programs include:

- TRPA BMP Retrofit Program
- TRCD Conservation Landscaping Program
- STPUD Water Conservation Program

The Stormwater Coordinator may also cooperate with other Permittees and Tahoe regional jurisdictions to develop cost-effective shared outreach programs reaching target audiences in the Tahoe region.

ASSESSMENT TASKS

In order for the Stormwater Coordinator to track and assess performance of the Residential Outreach & Education control measure, the following assessment tasks will be performed on an annual basis:

- Confirm prioritization of residential properties has been completed and updated annually
- Tabulate the number of high priority neighborhoods
- Confirm that partnering agencies have implemented outreach efforts
- Tabulate the number of high priority residential neighborhoods having received outreach efforts or educational materials from partnering agencies

RESPONSIBLE PARTIES

The Stormwater Coordinator and Public Information Officer will be primarily responsible for implementing this Control Measure, with GIS support from the Engineering Division.

7.3.4. New Development and Redevelopment Design Criteria Outreach

DESCRIPTION

The purpose of this Control Measure is to educate developers and designers about the new development and redevelopment requirements within the City's Stormwater Ordinance and the Municipal NPDES Permit.



7. EDUCATION & OUTREACH

EXISTING ACTIVITIES

The Planning Division has developed a comprehensive City-Wide Design Standards Checklist, which is used as a tool for informing developers and designers of current design criteria. Design criteria consultations are also provided by Building Division and Planning Division staff as part of the City’s project review and permitting process.

IMPLEMENTATION TASKS

1. **Update Design Standards Checklist.** Engineering Division staff will coordinate with the Planning Division to update the City-Wide Design Standards Checklist (CSLT, 2005) to reflect the new permit and ordinance requirements, including:
 - Stormwater and Grading Ordinance requirements applicable to new development and redevelopment projects within City limits
 - Design criteria for permanent stormwater treatment facilities infiltrating the runoff from a 20 year 1-hour storm
 - BMP maintenance responsibilities
 - Alternative Compliance Procedure developed as part of Control Measure 6.3.2

Planning Division will provide revised Design Standards Checklists to designers and developers with all applicable permit applications.

2. **Update City Website:** The Stormwater Coordinator will work with the Planning Division and the Public Information Officer to provide additional details and/or guidance as appropriate on the City Website, including resources for treatment facility selection and implementation such as the CASQA New Development and Redevelopment Handbook (CASQA, 2004)

ASSESSMENT TASKS

In order for the Stormwater Coordinator to track and assess performance of the New Development and Redevelopment Design Criteria Outreach control measure, the following assessment tasks will be performed on an annual basis:

- Confirm that the City-Wide Design Standards Checklist has been updated
- Confirm that the City Website has been updated with design criteria resources

RESPONSIBLE PARTIES

The Stormwater Coordinator and Planning Division staff will be primarily responsible for implementing this Control Measure, with support from the Public Information Officer, Engineering Division, and Building Division.



Table 7- 1: SWMP Education and Outreach Control Measures

Stormwater Management Plan Control Measure Table	Implementation Schedule																Responsible Parties																		
	WY/FY 2013				WY/FY 2014				WY/FY 2015				WY/FY 2016				Public Works			Develop- ment	Internal			Public Safety											
	2012		2013		2014		2015		2016		Engineering / SW Coordinator	Engineering / GIS	Engineering / Other	Capital Improvement Projects	Streets	Facilities	Fleet Maintenance	Building	Planning	City Manager	Public Information Officer	City Attorney	Finance	Airport	Police Department (CSO)	Fire Department	Parks	Recreation	Outside Agencies / Consultant						
Control Measures / Implementation Tasks	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Engineering / SW Coordinator	Engineering / GIS	Engineering / Other	Capital Improvement Projects	Streets	Facilities	Fleet Maintenance	Building	Planning	City Manager	Public Information Officer	City Attorney	Finance	Airport	Police Department (CSO)	Fire Department	Parks	Recreation	Outside Agencies / Consultant
7.3.1 Education & Outreach to Public																																			
1. Present Stormwater Program to Citizen's Academy					◇	◇			◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇															
2. Enhance and Provide Additional Materials on the City's Stormwater Program Website																																			
3. Support Public Events and Educational Programs Hosted by Other Agencies					◇	◇			◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇															
7.3.2 C&I, Construction Site Outreach & Education																																			
1. Update City Website with a Page for Owners and Operators of Construction Sites																																			
Update City Website to Target Owners and Commercial and Industrial Sites									◇	◇																									
2. Develop a Fact Sheet on the City's Stormwater Program and Stormwater & Grading Ordinances																																			
3. Support Outreach Programs Administered by Other Tahoe Agencies					◇	◇			◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇															
7.3.3 Residential Outreach & Education																																			
1. Prioritize Residential Neighborhoods Based on Size, BMP Certificate Status, Multifamily, and Business License Data																																			
2. Coordinate with TRPA, TRCD, & STPUD to Target Outreach to High Priority Residents																																			
7.3.4 New Development & Redevelopment Design Criteria Outreach																																			
1. Update City-Wide Design Standards Checklist to Reflect New Permit and Ordinance Requirements																																			
Distribute Revised Design Standards Checklists to Permit Applicants									◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇															
2. Update the City Website to Include Stormwater Details and Guidance																																			
Permit expiries on December 5, 2016 Q1 (Jan-Mar); Q2 (Apr-June); Q3 (July-Sept); Q4 (Oct-Dec) WY/FY = Water Year and Fiscal Year	Period complete				◇ Implementation Period				M Monthly Implementation				W Weekly Implementation				D Daily Implementation				<ul style="list-style-type: none"> ● Primary Responsible Party ○ Secondary Responsible Party 														



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QUALITY CONTROL REVIEWER



Name: Andrew Knust, PE
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