Executive Summary
Capital Improvement Program Overview

Purpose

The Capital Improvement Program (CIP) represents the Community Development Agency, Transportation Division's (Division) strategy for infrastructure development and maintenance. The CIP is evaluated annually as new information becomes available regarding priorities, funding sources, project cost estimates and timing. The Division's goals are to:

- Maintain existing infrastructure to support existing residences and businesses.
- Develop new capital projects to help meet the highest priority community growth needs.
- Align capital budgets with adopted policies and plans.
- Link the County's development and fiscal planning processes.
- Broaden public participation in the budget process by providing documentation and scheduling hearings early in the process.
- Increase coordination between departments, agencies and other political jurisdictions.

Background

General Plan Policy TC-Xb, and General Plan Implementation Measures TC-A and TC-B require the Division to submit an updated CIP for the West Slope Road/Bridge Program annually to the El Dorado County Board of Supervisors for adoption.

The County is required to prepare and adopt a priority list of road and highway improvements for the CIP based on a horizon of ten years, pursuant to implementation of Measure TC-A. The County is required to update the CIP every year, or more frequently as recommended by the responsible divisions. Additionally, the CIP shall be coordinated with the Five-Year major review of the General Plan and shall be included in the annual General Plan review. Policy TC-Xb requires the County to "at least every five years, prepare a CIP specifying expenditures for roadway improvements within the next 20 years. Each plan shall contain identification of funding sources sufficient to develop the improvements identified."

CIP Overview

The CIP serves as a planning and implementation tool for the development, construction, rehabilitation and maintenance of the County's infrastructure. Capital improvements are projects that provide tangible long-term improvements or additions of a fixed or permanent nature, have value and can be depreciated. The CIP process includes identifying, prioritizing and developing funding for needed projects. The CIP includes ongoing projects started in previous years and new projects starting in the current fiscal year.

The 2013 CIP includes a section on the Road Maintenance Program (RMP), in response to an interest expressed by the El Dorado County Board of Supervisors in preserving and maintaining existing infrastructure. Road maintenance includes ongoing upkeep and repairs, such as brushing, ditching, etc.

The CIP is constrained by limited available funding sources that have specific restrictions on how they can be used. Currently, the County's infrastructure needs in the twenty-year time frame exceed available resources, which results in competing priorities for limited funds. In

order to resolve this issue, the Division uses outside funding sources (Federal, State and other grants) whenever possible, in addition to County funds.

The CIP makes up over half of the total Division budget. The Division coordinates the development of the capital budget with the development of the operating budget, so that future operating costs are projected in alignment with the capital infrastructure.

CIP Format

The proposed 2013 CIP Book includes four capital programs (listed below), the Road Maintenance Program (RMP) and the National Pollution Discharge Elimination System (NPDES) Program. The capital programs include:

- West Slope Road/Bridge (CIP)
- Tahoe Environmental Improvement Program (EIP)
- Airport Capital Improvement Program (AICP)
- Capital Overlay and Rehabilitation Program (CORP)

These programs are separated into the following sections:

West Slope Road and Bridge Program and ACIP

- Current Year work plan (Fiscal Year 2013/2014)
- Five-Year CIP (Fiscal Years 2013/2014 through 2017/2018)
- Ten-Year CIP (Fiscal Years 2018/2019 through 2022/2023)
- Twenty-Year CIP (Fiscal Years 2023/2024 through 2032/2033)

Tahoe EIP and CORP

- Current Year work plan
- Five-Year EIP/CIP

Projects that span several years may be listed in more than one funding segment of the CIP, depending on when funds are spent. Projects are included in a funding segment if any funds are estimated to be spent during any of the segment's fiscal years. The Executive Summary section of the 2013 CIP Book includes work plans for the following programs, in an effort to coordinate and capture all of the Division's work plans:

- RMP
- NPDES Program

These programs were reviewed and discussed with the Board of Supervisors during workshops held on February 5, 2013 and April 23, 2013. The Board provided guidance on the CIP and requested the Division to return with the completed CIP for Board adoption in June, 2013.

CIP Annual Updating Process

All Transportation programs are reviewed and updated annually, including revenue estimates, project scopes, costs and schedules. Proposed changes to the CIP are presented to the Board of Supervisors for discussion through the months of February to April and finalized by Board adoption in June. The CIP current work plan is developed concurrently with the Division budget for the upcoming fiscal year. The CIP/Budget cycle is shown in Figure 1-1.

Figure 1-1: CIP/Budget Cycle

The Airport CIP and the Tahoe EIP have additional review requirements, primarily tied to their specific funding sources: the Airport CIP is tied directly to the FAA's (Federal Aviation Administration) annual grant cycle and the Tahoe EIP is tied directly to TRPA's (Tahoe Regional Planning Agency) annual planning cycle.

The following tables list projects in the Current Year work plan. Table 1-1 lists projects currently in construction or scheduled to begin in FY 2013/2014. Table 1-2 lists projects scheduled to be in planning, design or Right of Way phases in FY 2013/2014. A map of all West Slope Road/Bridge projects currently in process or scheduled to begin work in FY 2013/2014 is shown in Figure 1-2. A map of all Tahoe EIP projects currently in process or scheduled to begin work in FY 2013/2014 is shown in Figure 1-3.

Table 1-1: Projects Currently In Construction or Scheduled to Begin in FY 2013/2014

Project Type	Project Description		Total Cost ($M)[1]
West Slope Road/Bridge	#72309	Class II Bikeway – Green Valley Road from Loch Way to Signalized Entrance to Pleasant Grove Middle School	0.32
	#73360	Cold Springs Road Realignment	1.74
	#77130	Cosumnes Mine Road at North Fork Cosumnes River – Bridge Maintenance Project	0.27
	#72375	Diamond Springs Parkway – Phase 1A – SR49 Realignment	6.01
	#97012	El Dorado Trail – Los Trampas to Halcon	0.53
	#71358	Francisco Drive Right-Turn Pocket	0.25
	#76114	Green Valley Rd / Deer Valley Rd West Intersection Improvements	1.28
	#73151	Green Valley Rd Traffic Signal Interconnect	0.27
	#72369	Hollow Oak Road Drainage	0.68
	#73359	Latrobe Road North of Ryan Ranch Road Realignment (Milepost 7.0-7.35)	2.03
	#77130	Mt. Aukum Rd at North Fork Cosumnes River – Bridge Maintenance Project	0.44
	#72304	Northside School Class 1 Bike Path – Phase 1 (SR 193)	1.95
	#72306	Northside School Class 1 Bike Path – Phase 2 (SR 49)	2.04
	#73320	Pleasant Valley Road (SR 49)/Patterson Drive Intersection Signalization	4.40
	#73358	Pleasant Valley Road at Oak Hill Road Intersection Improvements	1.18
	#73152	Radar Signal Controller Upgrade at Intersection of El Dorado Hills Boulevard/Saratoga Way	0.03
	#77117	Rubicon Trail at Ellis Creek – Bridge Replacement	1.48
	#73362	Salmon Falls Rd South of Glenesk Lane Realignment	1.32
	#76107	Silver Springs Pkwy to Green Valley Rd (N. Segment) / Green Valley Rd Intersection Signalization	7.64
	#77115	Sly Park Road at Clear Creek Crossing – Bridge Replacement	5.38
	#53124	U.S. 50/HOV Lane (Phase 0) – El Dorado Hills Blvd. Interchange Westbound ramps	18.59
	#71359	U.S. 50/Missouri Flat Rd Interchange 1B.2	3.55
	#71346	U.S. 50/Missouri Flat Rd Interchange 1C – Riparian Restoration	1.60
	#71328	U.S. 50/Silva Valley Parkway Interchange – Phase 1	56.72
CORP	#72186	Overlay – Francisco Drive	0.29

[1] Costs are estimated, and rounded to the nearest hundredth of $1 million.

Table 1-1: Projects Currently in Construction or Scheduled to Begin in FY 2013/2014 (Cont.)

Project Type	Project Description		Total Cost ($M)[1]
Tahoe EIP	#95153	Boulder Mountain Erosion Control	1.01
	#95190	Christmas Valley Phase 2C Erosion Control	1.23
	#95186	Lake Tahoe Blvd Bike Trail	1.68
	#95193	Montgomery Estates Area 1B	0.63
	#95170	Montgomery Estates Area 2	0.85
	#95165	Sawmill 2A Bike Path and Erosion Control	2.57
	#95192	Sawmill 2B Bike Path and Erosion Control	2.21
Airports - Placerville	#93129	Crack Seal and Remark Runway 5-23	0.31
	#93122	Water Line and Fire Hydrant to New Apron Area	0.17
Airports - Georgetown	#93527	Crack Seal, Joint Seal and Mark Runway	0.17

Table 1-2: Projects in Planning, Design or Right of Way Phase in FY2013/2014

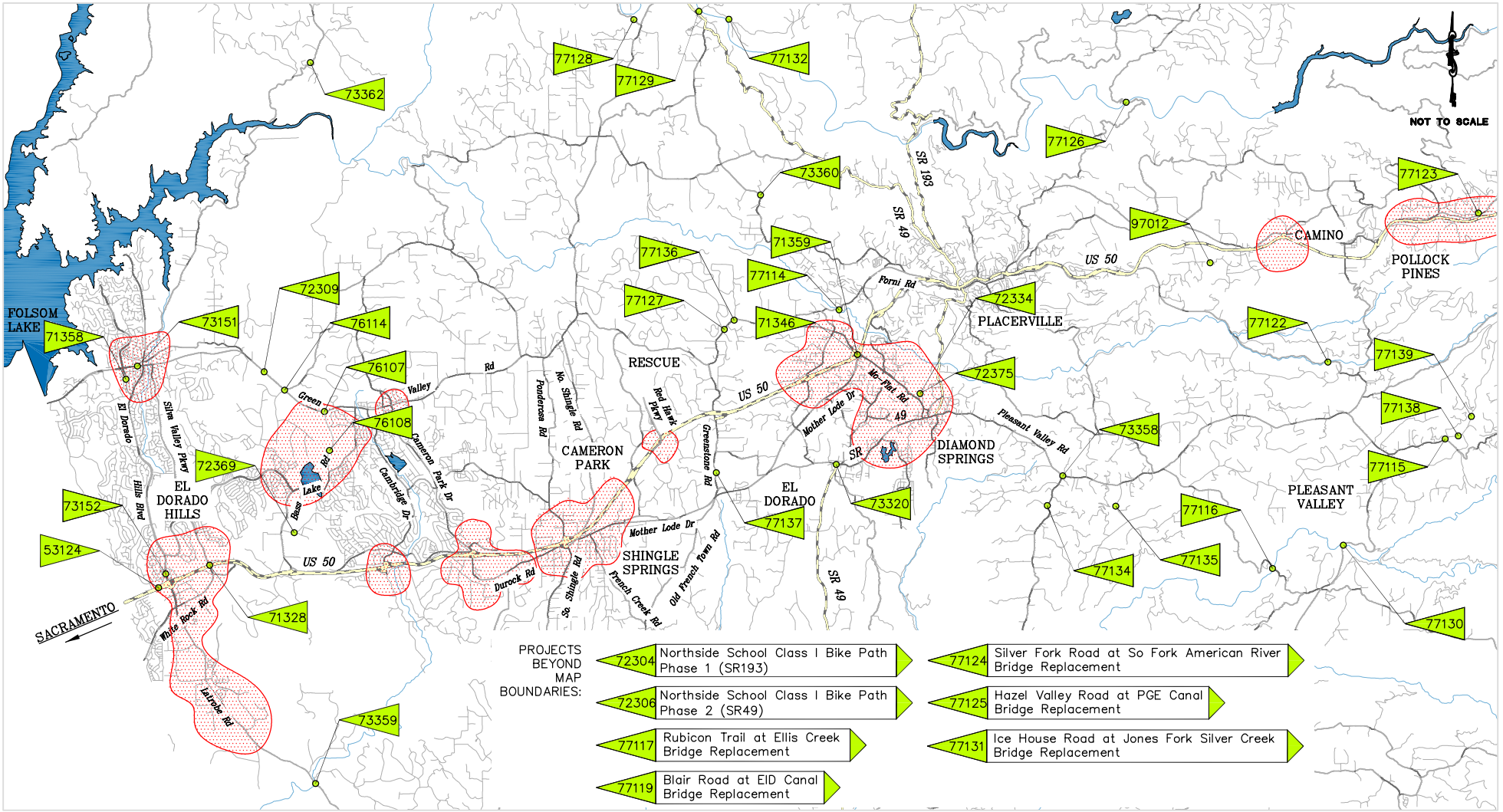
Project Type	Project Description		Total Cost ($M)[1]
West Slope Road/Bridge	#77123	Alder Drive at EID Canal – Bridge Replacement	2.93
	#77128	Bassi Road at Granite Creek – Bridge Replacement	3.96
	#77132	Bayne Road at Dutch Creek –Bridge Maintenance Project	0.16
	#77119	Blair Road at EID Canal – Bridge Replacement	3.65
	#77116	Bucks Bar Road at the North Fork Cosumnes River – Bridge Rehabilitation	4.84
	#77138	Clear Creek Road at Clear Creek (PM 1.82) – Bridge Replacement	4.56
	#77139	Clear Creek Road at Clear Creek (PM 0.25) – Bridge Replacement	4.56
	#72334	Diamond Springs Parkway – Phase 1B	27.30
	#77137	Greenstone Road at Slate Creek – Bridge Replacement	3.48
	#77127	Green Valley Road at Indian Creek – Bridge Replacement	4.47
	#77136	Green Valley Road at Mound Springs Creek – Bridge Replacement	4.47
	#77114	Green Valley Road at Weber Creek – Bridge Replacement	10.15
	#77125	Hazel Valley Road at PG&E Canal – Bridge Replacement	2.60
	#77135	Hanks Exchange at Squaw Hollow Creek – Bridge Replacement	3.93
	#77131	Ice House Road at Jones Fork Silver Creek Bridge Maintenance Project	0.76
	#66116	Latrobe Connection	19.45

Table 1-2: Projects in Planning, Design or Right of Way Phase in FY2013/2014 (Cont.)

Project Type	Project Description		Total Cost ($M)[1]
	#77126	Mosquito Road Bridge at South Fork American River	30.58
	#77129	Mount Murphy Road at South Fork American River – Bridge Replacement	8.46
	#77122	Newtown Road at South Fork of Weber Creek– Bridge Replacement	5.23
	#77134	Oak Hill Road at Squaw Hollow Creek – Bridge Replacement	3.93
	#77124	Silver Fork at South Fork American River - Bridge Replacement	4.56
	#76108	Silver Springs Pkwy to Bass Lake Road (south segment)	7.35
Tahoe EIP	#73120	Apache Avenue/Us 50 Intersection Signalization	4.66
	#95191	Country Club Heights Area 1 Stormwater Management and Erosion Control Project	0.63
	#95196	CSA #5 Upper Area Erosion Control Project	0.39
	#95157	CSA #5 Erosion Control Project	0.68
	#95195	Forest View Water Quality Project	0.39
	#95176	Golden Bear Erosion Control Project	0.43
	#95171	Lake Tahoe Blvd Erosion Control	0.90
	#95175	Lake Tahoe Boulevard Stream Environment Zone Project	1.03
	#95179	Meyers Erosion Control Project	0.77
	#95172	Montgomery Estates Area 3 Erosion Control Project	0.32
	#95171	Tahoe Hills Erosion Control	0.70
Airports - Georgetown	#93528	Update Airport 2013 Layout Plan with Program Narrative Report	0.04

WEST SLOPE ROAD/BRIDGE CURRENT YEAR WORK PLAN

PROJECTS CURRENTLY IN PROCESS OR TO BEGIN IN FY 13/14

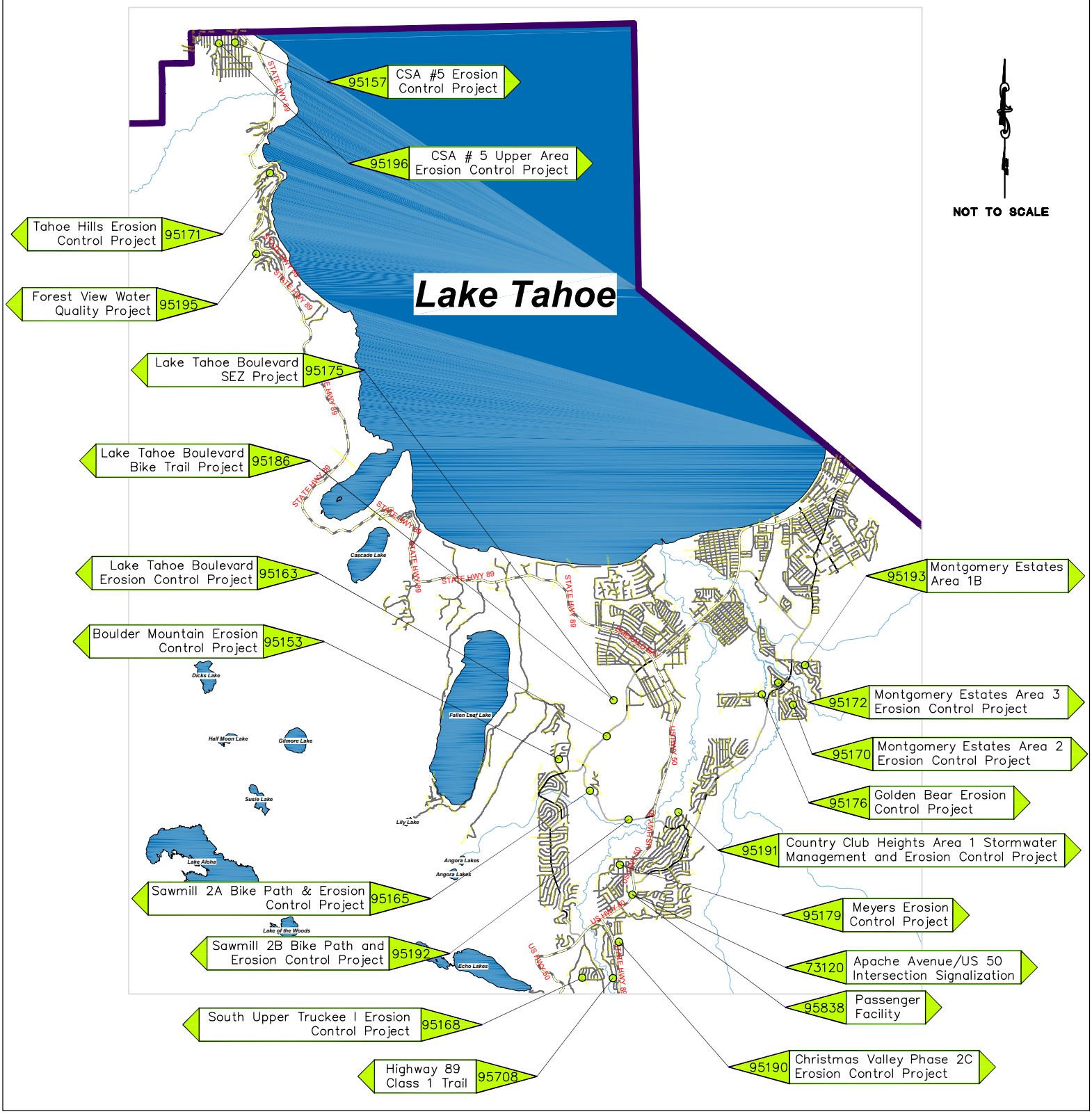


Drawing Name: Q:\2013 CIP\2013 CIP Book\CADD\Workplan_West Slope Road-Bridge Map_Current Yr_05-27-13_v2.dwg, Layout Tab: WEST SLOPE ROAD-BRIDGE PROJECT MAP_CURRENT & 5YR, Last Saved: Tue, 28 May 2013 - 1:56pm, jmelchor

Figure 1-2

SOUTH LAKE TAHOE CURRENT YEAR WORK PLAN

PROJECTS CURRENTLY IN PROCESS OR TO BEGIN IN FY 13/14



Drawing Name: Q:\2013 CIP\2013 CIP Book\CADD\South Lake Tahoe EIP Maps_05-28-13_v2.dwg, Layout Tab: SLT_Curr Yr Work Plan, Last Saved: Fri, 31 May 2013 - 11:14am, jmelchor

Figure 1-3

West Slope Road/Bridge
Capital Improvement Program Overview

Overview

General Plan Policy TC-Xb ensures that potential development in the County does not exceed available roadway capacity. It requires the County to prepare an annual Capital Improvement Program (CIP), specifying expenditures for roadway improvements within the next ten years, and to at least every five years prepare a CIP specifying expenditures for roadway improvements within the next twenty years.

The 2013 CIP includes the Ten- and Twenty-Year West Slope Road/Bridge Programs as well as Current and Five-Year CIP work plans. See the "Project Summary Table" in Section 2 for a breakdown of the Current, Five-, Ten- and Twenty-Year CIP work plans. In some cases (e.g. Ponderosa Interchange), these projects only have funding currently available to work on limited phases of the projects, such as design and environmental. Consequently, construction for these projects may be pushed out to the Ten- or Twenty-Year CIP, when funding becomes available.

Residential Permit Forecast:

One of the major funding sources for the West Slope Road/Bridge CIP is revenue from the Traffic Impact Mitigation (TIM) Fee Program. The majority of the TIM Fee Program's revenue comes from residential building permits. The Community Development Agency, Transportation Division's (Division) residential permit forecast process initiates the annual updating cycle for both the CIP and the TIM Fee Program.

The Division uses the residential permit forecast to estimate TIM Fee revenues programmed in the Ten-Year CIP. This estimate is important because it may either encourage or discourage private development. Currently, Policy TC-Xf of the 2004 General Plan states that if a road improvement that is impacted by a proposed single family residential subdivision of five or more parcels is in the County's Ten-Year CIP, the developer's TIM Fee may be adequate as a fair share payment. If the developer's TIM Fee is not adequate, and the developer is required to construct the roadway, its construction costs may be eligible for reimbursement. For all other discretionary projects (i.e. commercial or multi-family developments), the above rules apply if a road improvement is in the County's Twenty-Year CIP.

There are consequences of forecasting either too high or too low. If the Division's projected estimate is too high, the revenue forecast assumes the capacity to finance additional roadway projects in the Ten-Year CIP. The Division may approve development projects conditioned on these additional roadway projects. If the actual permits received are lower than forecasted, the Division may not be able to complete programmed projects. In this case, development projects could be built without the necessary roadway infrastructure, resulting in possible road congestion. Adding additional CIP projects could also cause a lack of sufficient revenue to repay existing reimbursement agreements.

Conversely, if the estimate is too low, the Division could potentially miss the opportunity to include capital projects needed in the County. This could impact proposed development, as developers would be required to construct improvements without reimbursement. Due to financial constraints in this scenario, developers may not have the resources to move projects forward.

On September 25, 2012, the Board supported the continuation of the 2011/2012 Ten-Year permit forecast (the "long, slow climb") based on the following factors:

- Slow recovery of the housing market
- Higher cost of homes
- Not much new construction
- Associated low building permit activity
- Economic uncertainty
- Decision to keep cash on hand available to repay current and prior obligations

The approved permit forecast is summarized in Table 1-3:

Table 1-3

Long, Slow Climb	**Fiscal Year 11/12 Actual**	**Fiscal Year 12/13**	**Fiscal Year 13/14**	**Fiscal Year 14/15**	**Fiscal Year 15/16**
Permit Forecast	**146**	**80**	**104**	**135**	**176**
TIM Revenues Forecast	**$3.8M**	**$2.0M**	**$2.3M**	**$2.8M**	**$3.5M**
Actual Permits through April 2013		**191**			
Actual TIM Revenue through April 2013		**$3.6M**			

The Division has received 191 permit applications between July 1, 2012 and April 30, 2013 (i.e., 83% of the way through the current fiscal year). This is already 239% of the 80 permits forecasted for the current fiscal year.

Project Prioritization

The Division uses several criteria to prioritize road improvement projects including:

- **Estimated Construction Start**
  - The first fiscal year the project is planned to be in construction.
  - Projects estimated to start construction in fiscal year (FY) 13/14 or 14/15 are more desirable.
- **Supports Economic Development in the County of El Dorado**
  - Projects that would help create connections to pave the way for new commercial development are more desirable.

  - For projects with proposed scopes that don't include construction, the Division denotes that these projects will support economic development once constructed.

- **Safety Ranking**
  - Projects are rated High, Medium, or Low based on the likelihood that they would improve safety conditions once constructed (High = higher likelihood of the proposed project improving safety).
  - For projects with proposed scopes that don't include construction, the Division estimates the safety rating once the project is constructed.
  - Medium or High ranked projects are more desirable.
- **Capacity/Traffic Relief**
  - 2012 traffic counts Average Daily Trips (ADTs) are reviewed for existing roads to provide a relative sense of how heavily they are used.
  - For proposed new roads, projected ADTs are provided from recent traffic studies.
  - Projects on roads with ADTs around 10,000 or higher are more desirable.
- **Funding/Grant Leveraging**
  - Projects are ranked High, Medium, or Low based on their ability to attract grant funding (High = higher likelihood of attracting grant funding).
  - Medium or High projects are more desirable.
- **Caltrans Sufficiency Rating (applicable to Bridge projects)**
  - Caltrans' bridge sufficiency ratings are based on a scale of 1-100: bridges with scores between 0 and 50 are eligible for replacement; bridges with scores between 51 and 80 are eligible for rehabilitation; and bridges with scores between 81 and 100 are eligible for maintenance.
  - Bridge projects eligible for rehabilitation or replacement are a higher priority.

In addition to prioritizing projects in or near construction, the Division prioritizes projects that the Board has previously expressed an interest in moving forward. On February 5, and April 23, 2013, the Division requested Board direction on the proposed 2013 CIP. Revisions were made to the proposed 2013 CIP based on the Board's recommendations.

The Division has continued to pursue potential Federal grants for rural bridge rehabilitation or replacement, which require little or no matching funds. This effort facilitates delivering these bridge projects now, avoiding the need for maintenance or replacement at a future date when grant funding may no longer be available.

The Division is currently updating the Travel Demand Model (TDM), which will be a key factor in determining the prioritization of roadway projects. The TDM was not available to use for the 2013 CIP. When the TDM update is complete, the Division will be able to run baseline and projected growth scenarios to evaluate roadway infrastructure needs. The results of this analysis will be used in the 2014 CIP update.

Economic Development

The Board has directed the Division to prioritize economic development in the County. The Division has included maps section of the West Slope Road/Bridge CIP, with economic development areas identified.

The “Project Summary Table”, in Section 2 of this book, summarizes all of the projects in the Twenty-Year CIP, and provides a guide to the projects indicated on the maps included in the West Slope Road/Bridge CIP sections. The Project Summary Table illustrates which phase of the project will occur in each fiscal year of the CIP.

Twenty-Year CIP Total Expenditures

The Division’s projected expenditures for the West Slope Road/Bridge Twenty-Year CIP are approximately $852M, which includes funding from all sources. Revenue sources are displayed in Figure 1-4.

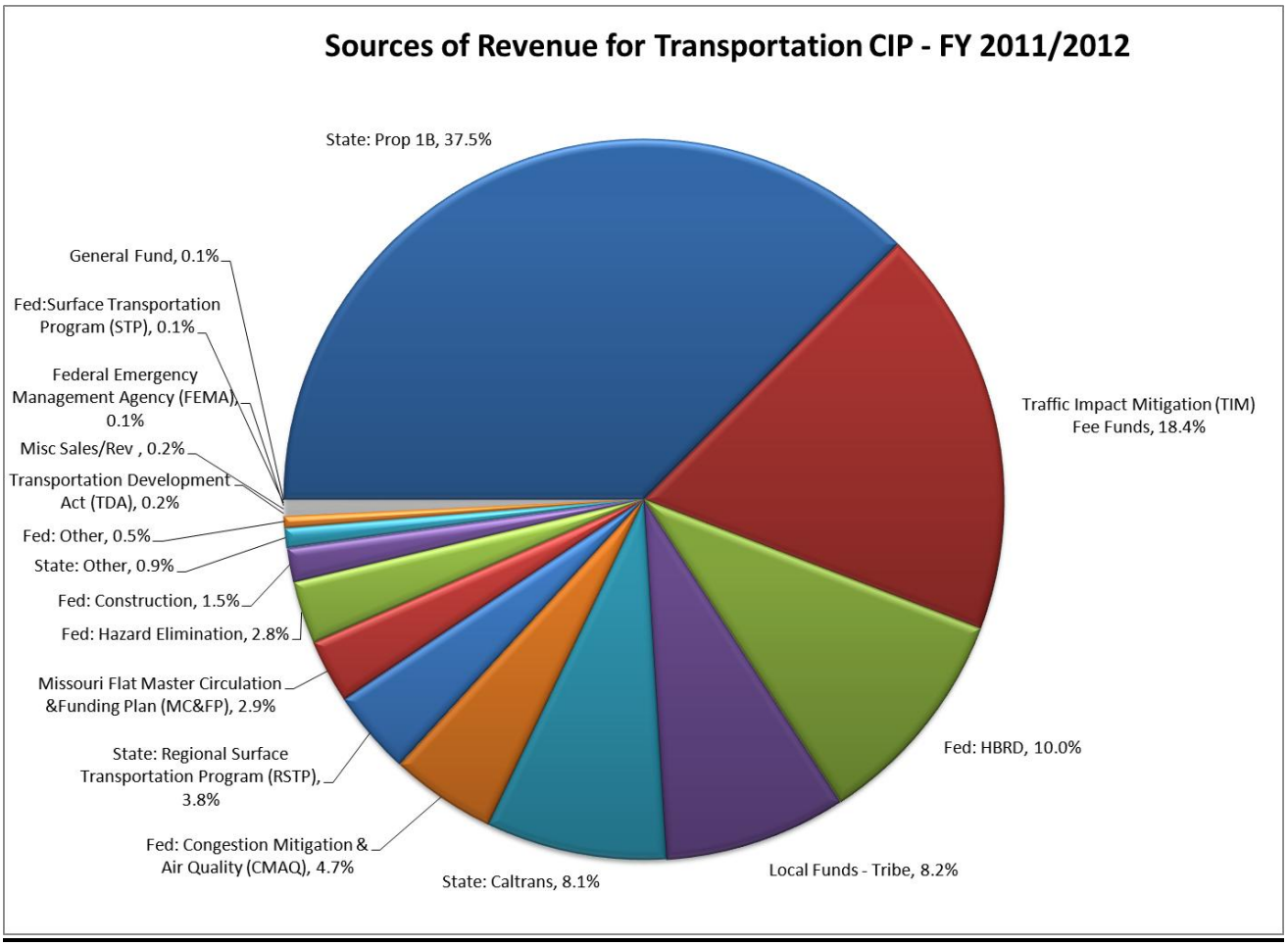


Figure 1-4

Indexes

Indexes in Section 2 provide alternate ways to locate detailed project summaries – alphabetically, by project number, by project type and by Supervisor district. Project summaries are located in Section 8, and provide the following information:

Individual Projects - Grouped by Project Type

Individual Project Summaries are provided for each segment of the CIP, in alphabetical order. The summaries provide detailed descriptions, location maps, schedule, cost and revenue information. The “Revenues” section of each project summary lists the various funding

sources for each project, including TIM Fee funds, State and Federal grants, developer advances, etc. The “Expenditures” section of each project summary includes the various types of costs planned to be incurred for each project (i.e., Planning/Environmental, Design, Right of Way and Construction.)

The “Project Schedule” section provides an estimate of the funding year each phase is expected to occur. This section is divided into the following phases:

1. **Planning/Environmental:** This phase includes expenditures for “Planning/Env – Staff” and “Planning/Env – Consultant”. Typically the first step in the project delivery process, the Planning/Environmental phase includes all costs related to planning the project, including the preliminary design and research required to complete the environmental analysis. “Planning/Env – Staff” refers to the cost for Division staff time, while “Planning/Env – Consultant” includes all other costs (e.g., staff time from non-Division departments, external consultants who specialize in environmental analysis, rental of monitoring equipment, etc.)

2. **Design:** This phase includes expenditures for “Design – Staff” and “Design – Consultant”. The Design phase includes all costs related to developing the project plans, specifications and engineer’s cost estimates to make a project bid-ready. This phase usually begins after the environmental document has been certified by the Board of Supervisors, and can be completed in parallel with the Right of Way acquisition phase. “Design – Staff” refers to the cost for Division staff time, while “Design – Consultant” includes all other costs.

3. **Right of Way:** This phase includes expenditures for “Right of Way – Staff”, “Right of Way – Consultant”, and “Right of Way – Acquisition”. The Right of Way phase includes all costs related to determining what property or easements are needed for a project, then pursuing acquisition. This phase begins after the environmental document has been certified by the Board of Supervisors, and can be completed in parallel with the Design phase. “Right of Way – Staff” refers to the cost for Division staff time; “Right of Way – Acquisition” refers to the cost of land; and “Right of Way – Consultant” includes all other costs.

4. **Construction:** This phase includes expenditures for “Construction Mgmt – Staff”, “Construction Mgmt – Consultant”, “Direct Construction Costs”, “Env Monitoring – Consultant” and “Env Monitoring – Staff”: This phase includes all costs related to managing, overseeing, and inspecting a project once the project has been bid and awarded to an external firm for construction. “Construction Mgmt – Staff” refers to the cost for Division staff time, while “Construction Mgmt – Consultant” includes all other costs. “Direct Construction Costs” refers to the actual cost to build the project. Where needed, this phase also includes the costs associated with monitoring the environment affected by the project to ensure any impacts are mitigated. “Env Monitoring – Staff” refers to the cost for Division staff, time while “Env Monitoring – Consultant” includes all other costs (e.g., staff time from non-Division departments, external consultants who specialize in environmental analysis, rental of monitoring equipment, etc.)

For projects in the Current to Ten-Year segments of the CIP, the original budget is the project engineer's initial estimate of all project costs required to plan, design, acquire Right of Way and construct a project. This level of estimate is done when the engineer has sufficient knowledge of the project details to create a preliminary budget. The project can then be

programmed in the Five-Year CIP work plan. Project costs can change over time for a number of reasons, such as expanded or reduced project scope, inflation in costs of materials or labor, and funding changes. The latter can cause a portion of a project to be advanced or delayed as funding becomes more or less available. For projects in the Twenty-Year segments of the CIP, the original budget is either the project engineer's initial estimate or the budget described in the 2004 General Plan TIM Fee Program Resolution 266-2006 (adopted August 22, 2006).

For projects in the Current to Ten-Year segments of the CIP, the project initiation date is the date that coincides with the project engineer's original budget. For projects in the Twenty-Year CIP, the project initiation date either coincides with the date of the project engineer's initial estimate or the date of Board adoption of 2004 General Plan TIM Fee Program Resolution 266-2006 (August 22, 2006).

Cash Proformas

Section 3 includes cash proformas for the TIM Fee Program, Local Funds – Tribe, and the Missouri Flat Corridor Master Circulation and Funding Program. The cash proformas show how funding source revenues are used and what is left in each fund at the end of each year. Pending and approved reimbursements are also noted in this section, as well as a description of revenue sources and their potential uses.

West Slope Road/Bridge CIP Format

The West Slope Road/Bridge CIP is separated into the following sections:

- Current Year work plan (Fiscal Year 2013/2014)
- Five-Year CIP (Fiscal Years 2013/2014 through 2017/2018)
- Ten-Year CIP (Fiscal Years 2018/2019 through 2022/2023)
- Twenty-Year CIP (Fiscal Years 2023/2024 through 2032/2033)

Projects may be included in more than one funding segment of the CIP, depending on the duration of the project and when funds are expected to be spent. Projects are listed in a segment if funds are estimated to be spent in any stage (planning, design, Right of Way, or construction). The timing, costs and revenues for projects in the Twenty-Year West Slope Road/Bridge CIP are rough approximations at this time. An index for the Current Year projects is located in Section 4.1; an index for the Five-Year projects is located in Section 5.1; an index for the Ten-Year projects is located in Section 6.1 and an index for the Twenty-Year projects is located in Section 7.1. Individual Project Summaries for each project in the West Slope Road/Bridge CIP are located in Section 8.

The Lake Tahoe Basin has long been at the forefront of environmental improvements at Federal, State and Local levels. The Community Development Agency, Transportation Division's (Division) Tahoe Engineering Unit (TEU) is solely grant funded, and is primarily responsible for capital projects identified in the Tahoe Environmental Improvement Program (EIP) to improve the environmental quality of Lake Tahoe. Projects are aimed at implementing improvements in the Lake Tahoe watershed, airshed and the lake itself. The TEU's projects address the EIP threshold categories of Water Quality, Soil Conservation/Stream Environment Zone, Air Quality/Transportation, Fisheries and Recreation. These environmental threshold carrying capacities are defined as environmental standards necessary to maintain significant scenic, recreational, educational, scientific, or natural values of the Lake Tahoe Region or to maintain public health and safety within the Region.

The TEU's Five-Year EIP includes construction of four to five projects per construction season. The construction season in Tahoe is limited to May 1 through October 15, per regulatory ordinances. Since Transportation TEU's environmental improvement projects are dependent on grant funds, the projects included in this EIP represent the Transportation TEU's best project delivery forecast at this time.

Tahoe EIP Annual Updating Process

The EIP program is reviewed and updated annually, including revenue estimates and project costs and schedules. The EIP is developed concurrently with the Division's budget for the upcoming fiscal year.

In the case of the EIP, the needs of granting agencies are reviewed during July through November, and project costs and anticipated revenues are updated. TEU staff identifies the needs of granting agencies, updates the Federal/State/Local grant forecast and revises projects in the Tahoe EIP based on latest cost and grant information. This list is then submitted to the Tahoe Regional Planning Agency (TRPA) for review in December. Project costs, funding sources and delivery priorities are reviewed, updated and presented to the Board of Supervisors for discussion and adoption in February.

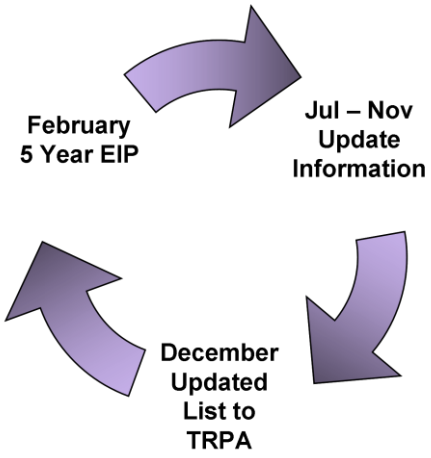


Figure 1-5: Tahoe EIP Annual Updating Process

Individual Projects - Grouped by Project Type

Individual project summaries are located in Section 8, and provide detailed descriptions, schedule, cost and revenue information. Projects are listed in alphabetical order within this section. The "Revenues" section of each project summary lists the various funding sources for each project, and can include many different grants, including California Tahoe Conservancy (CTC), TRPA, U.S. Forest Service (USFS), etc. The "Expenditures" section of each project summary includes the various types of costs expected for each project (i.e., Planning/ Environmental, Design, Right of Way and Construction).

The "Project Schedule" provides an estimate of the funding year each phase is expected to occur. This section is divided into the following phases:

1. **Planning/Environmental:** This phase includes expenditures for "Planning/Env – Staff" and "Planning/Env – Consultant". Typically the first step in the project delivery process, the Planning/Environmental phase includes all costs related to planning the project including the preliminary design and research required to complete the environmental analysis. "Planning/Env – Staff" refers to the cost for Division staff time while "Planning/Env – Consultant" includes all other costs (e.g., staff time from non-Division departments, external consultants who specialize in environmental analysis, rental of monitoring equipment, etc.)

2. **Design:** This phase includes expenditures for "Design – Staff" and "Design – Consultant". The Design phase includes all costs related to developing the project plans, specifications and engineer's cost estimates to make a project bid-ready. This phase usually begins after the environmental document has been certified by the Board of Supervisors, and can be completed in parallel with the Right of Way acquisition phase. "Design – Staff" refers to the cost for Division staff time while "Design – Consultant" includes all other costs.

3. **Right of Way:** This phase includes expenditures for "Right of Way - Staff", "Right of Way – Consultant", and "Right of Way – Acquisition". The Right of Way phase includes all costs related to determining what property or easements are needed for a project, then pursuing acquisition. This phase begins after the environmental document has been adopted by the Board of Supervisors, and can be completed in parallel with Design phase. "Right of Way – Staff" refers to the cost for Division staff time; "Right of Way – Acquisition" refers to the cost of land; and "Right of Way – Consultant" includes all other costs.

4. **Construction:** This phase includes expenditures for "Construction Mgmt – Staff", "Construction Mgmt – Consultant", "Direct Construction Costs", "Env Monitoring – Consultant" and "Env Monitoring – Staff": This phase includes all costs related to managing, overseeing, and inspecting a project once the project has been bid and awarded to an external firm for construction. "Construction Mgmt – Staff" refers to the cost for Division staff time while "Construction Mgmt – Consultant" includes all other costs. "Direct Construction Costs" refers to the actual cost to build the project. Where needed, this phase also includes the costs associated with monitoring the environment affected by the project to ensure impacts are mitigated. "Env Monitoring – Staff" refers to the cost for Division staff time while "Env Monitoring – Consultant" includes all other costs. "Plant Establishment – Staff" and "Plant Establishment – Consultant": Typically done at the end of construction, environmental improvement projects include re-establishment of vegetation that may have been removed or damaged during the construction phase. This step

includes all costs related to planting, watering and maintaining the new or disturbed vegetation until it becomes established. "Plant Establishment – Staff" refers to the cost for Division staff time while "Plant Establishment – Consultant" includes all other costs.

The original budget is the project engineer's initial estimate of all project costs required to plan, design, acquire Right of Way and construct a project. This level of estimate is usually done about the time the engineer has sufficient knowledge of the details of the project to create a preliminary budget and program the project in the Five-Year Tahoe EIP work plan. Project costs can change over time for a number of reasons, such as expanded or reduced project scope, inflation in costs of materials or labor, and funding changes. The latter can cause a portion of a project to be advanced or delayed as funding becomes more or less available. The project initiation date coincides with the date funding becomes available through the award of grant funds.

Tahoe EIP Format

The Tahoe EIP is separated into the following sections:

- Current Year work plan (Fiscal Year 2013/2014)
- Five-Year EIP (Fiscal Years 2013/2014 through 2017/2018)

Projects may be listed in more than one funding segment of the EIP, depending on the duration of the project and when funds are expected to be spent. Projects are listed in a segment if funds are estimated to be spent in any phase of the project delivery schedule. An index for the Current Year EIP projects is located in Section 4.2, and an index for the Five-Year EIP projects is located in Section 5.2. Individual project summaries are located in Section 8.

The Community Development Agency (CDA) is responsible for operating the Placerville and Georgetown Airports, which includes developing and implementing the Airport Capital Improvement Programs (ACIP) for both airports. The Federal Aviation Administration (FAA) reviews, authorizes and funds the ACIPs. Thus, the ACIPs are developed in partnership with the FAA. The FAA funds 90% of most ACIP project costs. The State has provided matching funds for Division projects in past years. However, State matching funds have not been programmed in the 2013 ACIP, as these funds have become unreliable. State funding will continue to be pursued.

ACIP projects are prioritized based on several criteria including safety, maintenance, capacity, and whether a project generates revenue – in that order.

ACIP Annual Updating Process

All CIP programs are reviewed and updated annually, including revenue estimates, project costs and schedules. In the case of the ACIP, the Division drafts a proposed list of projects and submits it to the FAA in December for discussion. The FAA reviews the Airport Layout Plan (ALP) for compliance with aviation design standards, and proposes revisions to the ALP & ACIP. The FAA guides the Division in project ranking and funding eligibility. The FAA circulates the draft ACIP for potential funding to California Transportation Commission, Federal and State aviation divisions.

In January, the Division updates the ACIP and submits to the FAA. The FAA provides direction to the Division on which projects it will fund, and requests the Division submit grant applications in March so that projects can be initiated in June/July. Projects may be authorized for planning, design, and/or construction work.

Simultaneously, the Division presents its CIP recommendations to the Board of Supervisors for discussion and adoption. The Division updates the budget for next year's potential projects (based on Federal and State budget constraints). Figure 1-6 shows the ACIP Annual Updating Process.

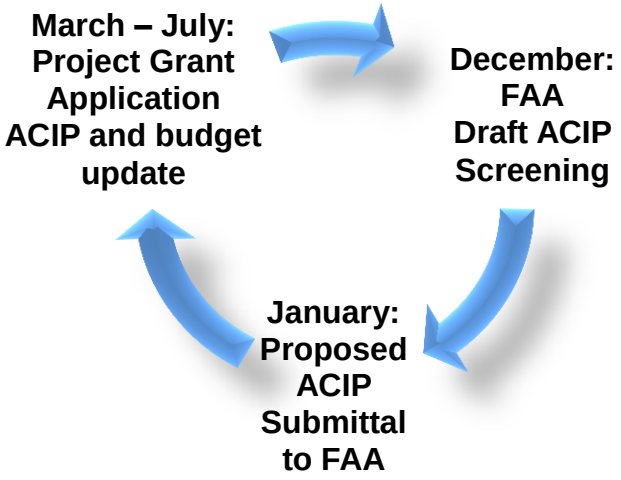


Figure 1-6: ACIP Annual Updating Process

Airport CIP Projects

The Division proposes to work on several projects, subject to FAA grant funding. On December 18, 2012, the Board of Supervisors approved a General Fund Contribution of $172K to construct the waterline project at Placerville Airport. In addition, the Board supported an additional $51K to match the FAA grants for the Fiscal Year (FY) 13/14 ACIP projects as shown in Table 1-4.

Table 1-4

Airport	Proposed Const. Year	Description	Total Project Cost		FAA Grants		Local Funds	
			FY 12/13	FY 13/14	FY 12/13	FY 13/14	FY 12/13	FY 13/14
Placerville	2013/2014	Water Line and Fire Hydrant to New Apron Area (93122)		$172,000				$172,000
Placerville	2013/2014	Crack Seal and Remark Runway 5-23, Taxiways, Aprons, and Tee Hangar Taxilanes (93129)	$24,000	$266,000	$21,600	$239,400	$2,400	$26,600
Georgetown	2013/2014	Airport Layout Plan Narrative Including ALP Updated Plans.		$75,000		$67,500.00		$7,500
Georgetown	2013/2014	Crack Seal, Joint Seal and Mark Runway, Taxiways, Aprons, and Tee Hangar Taxilanes and Change Runway End ID (93527)		$171,000		$153,900		$17,100
		Totals	**$24,000**	**$684,000**	**$21,600**	**$460,800**	**$2,400**	**$223,200**

Individual Projects - Grouped by Project Type

Individual Project Summaries are provided for each segment of the ACIP, grouped by airport, and provide detailed descriptions, timing, cost and revenue information. Projects are listed in alphabetical order within each segment of the ACIP. The “Revenues” section of each project summary includes anticipated grants from the FAA along with matching funds from ACO or airport operations (i.e., “Enterprise funds”). The “Expenditures” section of each project summary includes the various types of costs planned to be incurred for each project (i.e., Planning/Environmental, Design and Construction.)

The “Project Schedule” section provides an estimate of the funding year each phase is expected to occur. This section is divided into the following phases:

1. **Planning/Environmental:** This phase includes expenditures for “Planning/Env – Staff” and “Planning/Env – Consultant”. Typically the first step in the project delivery process, the Planning/Environmental phase includes all costs related to planning the project including the preliminary design and research required to complete the environmental analysis. “Planning/Env – Staff” refers to the cost for Division staff time, while “Planning/Env – Consultant” includes all other costs (e.g., staff time from non-Division departments, external consultants who specialize in environmental analysis, etc.)

2. **Design:** This phase includes expenditures for “Design – Staff” and “Design – Consultant”. The Design phase includes all costs related to developing the project

plans, specifications and engineer's cost estimates to make a project bid-ready. "Design – Staff" refers to the cost for Division staff time, while "Design – Consultant" includes all other costs.

3. **Construction:** This phase includes expenditures for "Construction Mgmt – Staff", "Construction Mgmt – Consultant", "Direct Construction Costs", "Env Monitoring – Consultant" and "Env Monitoring – Staff": This phase includes all costs related to managing, overseeing, and inspecting a project once the project has been bid and awarded to an external firm for construction. "Construction Mgmt – Staff" refers to the cost for Division staff time, while "Construction Mgmt – Consultant" includes all other costs. "Direct Construction Costs" refers to the actual cost to build the project.

The original budget is the project engineer's initial estimate of all project costs required to plan, design and construct a project. This level of estimate is done when the engineer has sufficient knowledge of the project details to create a preliminary budget. The project can then be programmed in the Five-Year ACIP work plan. Project costs can change over time for a number of reasons, such as expanded or reduced project scope, inflation in costs of materials or labor, and funding changes. The latter can cause a portion of a project to be advanced or delayed as funding becomes more or less available.

The project initiation date is the date that coincides with the project engineer's original budget.

ACIP Format

The ACIP program is separated into the following sections:

- Current year work plan (Fiscal Year 2013/2014)
- Five-Year CIP (Fiscal Years 2013/2014 through 2017/2018)
- Ten-Year CIP (Fiscal Years 2018/2019 through 2022/2023)
- Twenty-Year CIP (Fiscal Years 2023/2024 through 2032/2033)

Projects may be listed in more than one funding segment of the ACIP, depending on the duration of the project and when funds are expected to be spent. Projects are listed in a segment if funds are estimated to be spent in any phase of the project delivery schedule. An index for the Current Year projects is located in Section 4.3; an index for the Five-Year projects is located in Section 5.3; an index for the Ten-Year projects is located in Section 6.2 and an index for the Twenty-Year projects is located in Section 7.2. Individual Project Summaries for each project in the ACIP are located in Section 8. The timing, costs and revenues for projects in the Twenty-Year ACIP are rough approximations at this time.

Capital Overlay and Rehabilitation Program Overview

Asphalt Concrete overlay projects are very visible improvements that have positive impacts in El Dorado County. They are an efficient use of one time revenues, with lower planning, environmental, and design costs than other transportation projects (e.g., bridges, road widening projects, etc.). The Community Development Agency, Transportation Division (Division) is able to get overlay projects on the ground very quickly. Asphalt-Concrete (AC) overlays are considered to be capital projects if they are one-inch (1") or more in thickness. Overlays typically have a long useful life (15+ years), and permanently increase the roadway thickness.

The Division's Maintenance Unit plans to overlay and rehabilitate as many of the roads as possible on its project priority list given available funding. Past asphalt concrete overlay projects have been funded by Regional Surface Transportation Program Exchange Funds, Proposition 1B, American Recovery and Reinvestment Act funds, and some contributions from the General Fund. The Road Fund is generally used for Maintenance work (e.g., brushing, ditching, chip seal, etc.) and not for asphalt concrete overlays. Lack of external funding sources precluded the Division from constructing any overlay projects during the 2012 construction season.

Pavement Management Program (PMP)

Over the course of many years, the Division developed a Pavement Management System, which has provided the necessary information to guide and prioritize various capital overlay projects. Recently, the existing system was incorporated into a more robust Geographic Information System tool entitled "Pavement Management Program" (PMP). The Division purchased the StreetSaver software program to assist in the decision making process.

The information provided by the PMP drives the Road Maintenance Program (RMP) and CORP programs. The PMP is a tool used to assist in monitoring the condition of all paved roads within the County. It maintains a history of surface treatment and overlay work performed on the roads. In addition, it assists in funding procurement by demonstrating use of proper maintenance strategy with existing funds.

The PMP allows staff to evaluate and monitor the condition of pavement to enable the Division to use its limited resources in the most efficient manner possible. Ideally, each road should be inspected every other year. Surface treatment and overlay data is entered upon completion of work, and used to prioritize maintenance and overlay work plans.

The PMP inspection process has two components.

In the field:

- For every 1,000 feet of roadway, 100 feet are inspected on foot.
- Each inspection looks for 19 different potential deficiencies.
- Each deficiency encountered is measured and evaluated for severity.
- Inspectors must be trained to identify deficiencies and properly evaluate severity.
- Inspection is quantitative and statistics-based.

In the office:

- Data is entered into the StreetSaver program.
- Pavement Condition Index (PCI) is calculated and updated.
- Roads are prioritized for maintenance or overlay work.

Over the past six years, the Division has spent $4.86 million on chip seal work and $9.87 million on asphalt concrete overlay projects. The PMP will enable staff to focus on common-sense preventative maintenance, which will maximize the useful life of the County's roadway infrastructure.

CORP Annual Updating Process

The Division prioritizes CORP projects based on several criteria, including pavement condition, traffic volume, traffic circulation and funding. Between October and February, staff performs pavement inspections (Tahoe inspections are performed prior to snow season). Upon completion of pavement inspections, the PMP database is updated. Between February and April, staff uses PMP data to set priorities for surface treatment and to determine which CORP projects to include in the CIP. During the period from April to October, staff performs overlay work.

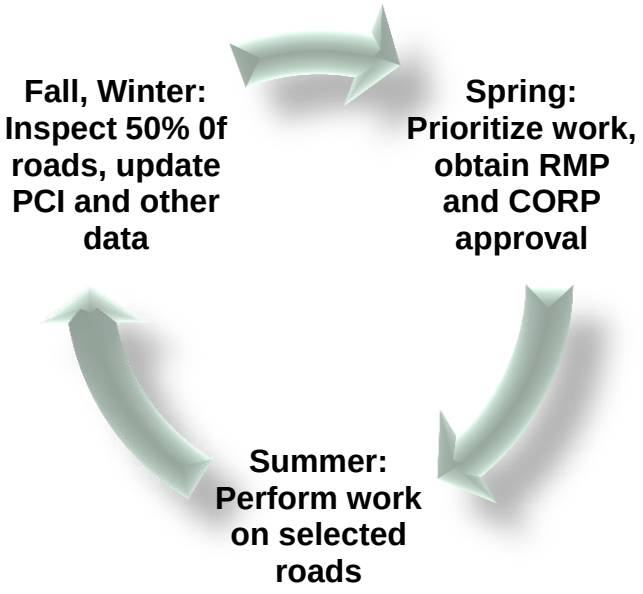


Figure 1-7: CORP Annual Updating Process

CORP Projects

Table 1-5 shows that one overlay project (Francisco Drive) is planned for the 2013 construction season. A second project (Latrobe Road at Ryan Ranch) had originally been programmed in the CORP, but was recently combined with the Latrobe Road at Ryan Ranch realignment and widening CIP project.

Table 1-5

Year Construction to Begin	Description	Cost
13/14	Francisco Drive Right-Turn Pocket	$250,000
		$250,000

Individual Projects - Grouped by Project Type

Individual Project Summaries are provided for each segment of the CORP, and provide detailed descriptions, timing, cost and revenue information. Projects are listed in alphabetical order within each segment of the CORP. The "Revenues" section of each project summary lists the various funding sources for each project. The "Expenditures" section of each project summary includes the various types of costs expected for each project (i.e., Planning/Environmental, Design and Construction.)

The "Project Schedule" section provides an estimate of the funding year each phase is expected to occur. This section is divided into the following phases:

1. **Planning/Environmental:** This phase includes expenditures for "Planning/Env – Staff" and "Planning/Env – Consultant". Typically the first step in the project delivery process, the Planning/Environmental phase includes all costs related to planning the project including the preliminary design and research required to complete the environmental analysis. Where needed, this phase also includes the costs associated with monitoring the environment affected by the project to ensure impacts are mitigated. "Planning/Env – Staff" refers to the cost for Division staff time, while "Planning/Env – Consultant" includes all other costs (e.g., staff time from non-Division departments, external consultants who specialize in environmental analysis, rental of monitoring equipment, etc.)

2. **Design:** This phase includes expenditures for "Design – Staff" and "Design – Consultant". The Design phase includes all costs related to developing the project plans, specifications and engineer's cost estimates to make a project bid-ready. "Design – Staff" refers to the cost for Division staff time, while "Design – Consultant" includes all other costs.

3. **Construction:** This phase includes expenditures for "Construction Mgmt – Staff", "Construction Mgmt – Consultant", "Direct Construction Costs", "Env Monitoring – Consultant" and "Env Monitoring – Staff": This phase includes all costs related to managing, overseeing, and inspecting a project once the project has been bid and awarded to an external firm for construction. "Construction Mgmt – Staff" refers to the cost for Division staff time,while "Construction Mgmt – Consultant" includes all other costs. "Direct Construction Costs" refers to the actual cost to build the project. Where needed, this phase also includes the costs associated with monitoring the

environment affected by the project to ensure any impacts are mitigated. “Env Monitoring – Staff” refers to the cost for Division staff time, while “Env Monitoring – Consultant” includes all other costs (e.g., staff time from non-Division departments, external consultants who specialize in environmental analysis, rental of monitoring equipment, etc.)

The original budget is the project engineer's initial estimate of all project costs required to plan, design and construct a project. This level of estimate is usually done about the time the engineer has sufficient knowledge of the details of the project to create a preliminary budget and program the project in the Five-Year CIP. Project costs can change over time for a number of reasons, such as expanded or reduced project scope, inflation in costs of materials or labor, and funding changes. The latter can cause a portion of a project to be advanced or delayed as funding becomes more or less available. The project initiation date is the date that coincides with the project engineer's original budget.

CORP Format

The CORP is separated into the following sections:

- Current Year work plan (Fiscal Year 2013/2014)
- Five-Year CIP (Fiscal Years 2013/2014 through 2017/2018)

Projects may be listed in more than one funding segment of the CIP, depending on the duration of the project and when funds are expected to be spent. Projects are listed in a segment if funds are estimated to be spent in any phase of the project delivery schedule. An index for Current Year CORP projects is located in Section 4.4, and an index for Five-Year CORP Projects is located in Section 5.4. Individual project summaries are located in Section 8.

Road Maintenance Program Overview

The Road Maintenance Program (RMP) manages the repair or replacement of existing County infrastructure. The Board has expressed concern regarding the cost of postponing road maintenance. If road defects are repaired promptly, the cost is usually modest. If defects are neglected, an entire roadway section may deteriorate completely, requiring full reconstruction at three times or more the cost of maintenance.

Maintenance Unit Overview

The RMP is spread among 23 categories of roadway maintenance activities that receive funding each year. Maintenance activities include, but are not limited to, brushing, ditching, grading, asphalt concrete patching, chip and cape seal, crack seal, Dura Patching, sweeping, vegetation control, drainage, traffic signals, sign maintenance and snow removal.

The Division's Maintenance Unit is responsible for maintenance of 1,079 centerline miles of roadway. The roadway surface types are as follows:

- 433 miles of asphalt concrete surfacing
- 586 miles of chip seal
- 60 miles of unimproved roads
- 70 miles of sidewalks

The Maintenance Unit is also responsible for installing, maintaining and repairing the following:

- 76 bridges
- 100+ box culverts
- 17,000 feet of guardrail
- 1,600 feet of timber wall
- 750 miles of road side ditches
- 90 miles of brushing
- 25 miles of crack sealing
- 35-40 miles of unconstructed roadway grading
- 300-400 culverts
- 464 miles of double yellow centerline
- 302 miles of white edge line
- 14,822 warning, guide, regulatory and informational signs
- 137.6 miles of raised pavement markers (RPMs) – centerline
- 46 signalized intersections

The Maintenance unit is divided into the following areas of responsibility:

- **Traffic Unit - Installs/Maintains/Repairs:**
    - Signalized intersections

    - Sign maintenance
    - Roadway striping
    - Traffic legends
    - Raised pavement markers
- **Bridge Crew – Installs/Maintains/Repairs:**
    - Bridges
    - Box culverts
    - Guardrail
    - Sidewalk
    - Timber wall
- **Maintenance Shop - Maintains/Repairs:**
    - Construction equipment
    - Heavy vehicles
    - Countywide fleet vehicles
    - Locations:
        - Equipment Shop - Meyers & Headington facility
        - Fleet Shop - Headington facility
- **Road Side Ditch Crew - Maintains/Repairs**
    - Approximately 750 miles
    - Performed in winter/fall
    - Annual practice is to clean 10% per year
    - The storm water BMP restricts many of these activities due to runoff
- **Brushing:**
    - Performed in fall/winter
        - Completed by combination of hand crews and brush movers (flail machines)
    - Annual practice is 90 miles
- **Cracksealing:**
    - Performed in fall/winter
    - Annual practice is 25 miles completed per year (this is a very labor intensive project and productivity can be greatly hampered by weather conditions)
- **Unimproved roadway grading:**
    - Performed in the spring
    - Annual practice is to re-grade 35 to 40 miles
    - Non-residential areas are generally not graded
    - Minimal locations are cleaned and lightly scraped for wildland fire evacuation routes
- **Culverts cleaned with vactor truck:**
    - West Slope activities performed in the fall/winter
    - Tahoe basin activities performed in the summer with the Erosion Control group
    - Annual practice is 300 to 400 per year
- **Chip Seal:**
    - Prep work spring/early summer
        - Grinding/paving, asphalt patching, and/or Dura Patching
    - Chip Seal Application summer/early fall
        - Annual practice is 60 miles
- **Cape Seal (Chip Seal with Slurry Seal over the top):**
    - Prep work spring/early summer

        - Grinding/paving, asphalt patching, and/or Dura Patching
    - Cape Seal Application summer/early fall
        - Annual practice is 6 miles
    - Mainly used for subdivision streets

The Division estimates 200 total miles are maintained per year. Totals may be affected by weather conditions in any given year. Wet winters hamper most activities, as well as create extra damage to substandard pavements.

The following sections discuss the Pavement Management Program, the RMP updating cycle and planned maintenance activities for Fiscal Year 2013/2014. Lists of County Maintained Unimproved Roads and County Maintained Traffic Signals are provided for reference.

Pavement Management Program

The Division's Pavement Management Program (PMP) is described in Section 1.5. Over the past six years, the Division has spent $4.86 million on chip seal work and $9.87 million on asphalt concrete overlay projects. The PMP will enable staff to focus on common-sense preventative maintenance, which will maximize the useful life of the County's roadway infrastructure. Additional funding for the PMP, authorized on February 5, 2013, will allow staff to inspect 50% of County roads each year.

RMP Annual Updating Cycle

Between October and February, staff performs pavement inspections (Tahoe inspections are performed prior to snow season). Upon completion of pavement inspections, the PMP database is updated. From February to April, staff uses PMP data to set priorities for surface treatment. Between April and October, staff performs surface treatment work. Figure 1-8 shows the annual RMP updating cycle.

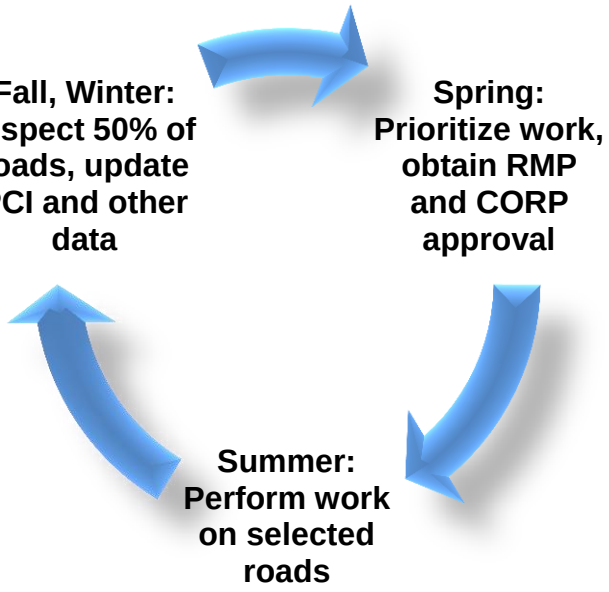


Figure 1-8: RMP Annual Maintenance Cycle

Fiscal Year 13/14 Projects

Table 1-6 contains specific listings of scheduled chip seal and maintenance projects (e.g., brushing, ditching, vegetation control) for FY 13/14. Along with these projects, some of the other areas of concentration will be the annual maintenance of Mosquito Bridge, Rubicon Trail Phase 3 and construction of a new culvert and bridge on the Rubicon Trail.

On February 5, 2013, the Board supported a $1.8M increase in funding from the General Fund to the Road Fund to be included in the FY 13/14 budget for consideration. The Maintenance Unit has scheduled the following FY 13/14 maintenance activities with the additional funding:

- 40 miles of brushing
- 38 miles of ditching
- 9 miles of chip seal
- 100 miles of vegetation control

Table 1-7 contains specific listings of these additional chip seal and maintenance projects (e.g., brushing, ditching, vegetation control) that will be performed in FY 13/14 using the additional funding authorized in the February workshop. Figures 1-9 and 1-10 show the locations of the additional projects.

In addition, the Division currently replaces about 900 signs per year. Recently, the Federal and State Manual of Uniform Traffic Control Devices (MUTCD) have updated their standards resulting in a need for staff to replace the Division's current sign panels with new retro-reflective panels for better visibility at night. The Maintenance unit has a retro-reflective program in place, and performs sign checking at nighttime during the fall. Staff will be able to replace an additional 600 signs with funding received on February 5, 3013.

For reference, Table 1-8 lists County Maintained Unimproved Roads, and Table1-9 lists County Maintained Traffic Signals.

Table 1-6

Scheduled Maintenance - FY 13/14					
Brushing	**Ditching**	**Surface Treatment - West Slope**	**Surface Treatment - Tahoe Basin**	**Vegetation Control**	**Sign Maintenance**
Bucks Bar Rd	Bucks Bar Rd	Beatty Court	Alice Lake Road	All roads in Western County minus large subdivisions. For example, the area between Pleasant Valley and Diamond Springs, El Dorado and Shingle Springs, Placerville to Cameron Park, El Dorado Hills to Pilot Hill, Coloma to Garden Valley and Shingle Springs to Latrobe.	Replace an average of 900 signs in both West Slope and Tahoe Basin.
Cold Springs Rd	Cambridge Rd	Beatty Drive	Amador Way		
Forebay Rd	Pleasant Valley Rd	Blair Road	Bernice Lane		
Pony Express Trl	Salmon Falls Rd	Charito Lane	Clipper Street		
S.Shingle Rd	Sly Park Rd	Deep Haven Road	Cold Creek Trail		
		El Camino Drive	Copper Way		
		El Tejon Drive	Del Norte Street		
		Estepa Drive	Fortune Way		
		Forebay Road	Humbolt Street		
		French Creek Rd	Quartz Street		
		Granada Court	Talbot Place		
		Granada Drive	Talbot Street		
		Grizzly Flat Road	Viking Way		
		Joni Court	Acoma Circle		
		Katie Way	Acoma Court		
		Knollridge Court	Apalachee Drive		
		Knollridge Drive	Aravaipa Street		
		Loyal Lane	Boren Way		
		Marjorie Way	Brule Street		
		Mossridge Way	Canarsee Street		
		Mt. View Court	Glen Eagles Road		
		Muse Drive	Guadalupe Street		
		Old French Town Rd	Hekpa Drive		
		Perry Creek Road	Hunkpapa Street		
		Portillo Court	Huph Street		
		Powers Drive	Ibache Street		
		Ridgeview Court	Jicarilla Drive		
		Ritz Road	Koyukon Drive		
		Rocky Ridge Way	Kulow Street		
		Rolph Way	Mingwe Street		
		Romer Blvd	Mink Court		
		Salida Court	Minniconjou Drive		
		Salida Way	Muskwaki Drive		
		Sherman Way	Nadowa Street		
		Slug Gulch Road	No Name (Frontage Rd)		
		Terrace Drive	Nottaway Drive		
		Turner Circle	Onnontioga Street		
		Turner Court	Panka Street		
			Pine Valley Road		
			Ponca Street		
			Sawmill Road		
			Semat Street		
			Susquehana Drive		
			Tabira Court		
			Tokochi Street		
			Tooch Street		
			Washaon Blvd		
			Watson Street		

Table 1-7

Additional Maintenance Approved February 5, 2013					
Brushing	**Ditching**	**Surface Treatment**	**Vegetation Control**	**Sign Maintenance**	**Pavement Management**
Perry Creek Rd - 4.14 mi.	Pony Express Trl - 5.47 mi.	Garden Valley Rd - 3.56 mi.	Expand treatment to East of Placerville in areas such as Smith Flat, Apple Hill and Georgetown	Sign Maintenance is currently averaging about 900 signs a year. The additional funding will allow staff to maintain an additional 600 signs.	Increase Pavement Management Budget by $60,000 per year to allow for inspection of 50% of County roads each year. This would allow staff to build inventory of appurtenances.
Slug Gulch Rd - 5.39 mi.	Mt. Aukum Rd - 12.39 mi.	Black Oak Mine Rd - 1.24 mi.			
Salmon Falls Rd - 12.5 mi.	Lotus Rd - 6.79 mi.	Brandon Rd - 2.12 mi.			
Sly Park Rd - 11.46 mi.	Latrobe Rd - 11.47 mi.	Bonneti Rd - .94 mi.			
Snows Rd - 3.19 mi.	Durock Rd -2.03 mi.	Kyburz Dr - .48 mi.			
Cambridge Rd - 3.36 mi.		Hillbilly Ln - .16 mi.			
		Pine Cone Dr - .14 mi.			
		Riverview Cir - .04 mi.			
		Silver Fork Rd - .34 mi.			
		Redwing Dr - .12 mi.			
		Oriole Drive - .09 mi.			
		Robin Cir - .02 mi.			
Total Miles - 40.04	**Total Miles - 38.15**	**Total Miles - 9.25**	**Approx. Miles - 70**	**Total Signs - 600**	**Total Miles - 510**
Approx. Cost - $852,133	**Approx. Cost - $357,656**	**Approx. Cost - $223,128**	**Approx. Cost - $15,507**	**Approx. Cost - $291,576**	**Approx. Cost - $60,000**
Total Additional Funding - $1,800,000					

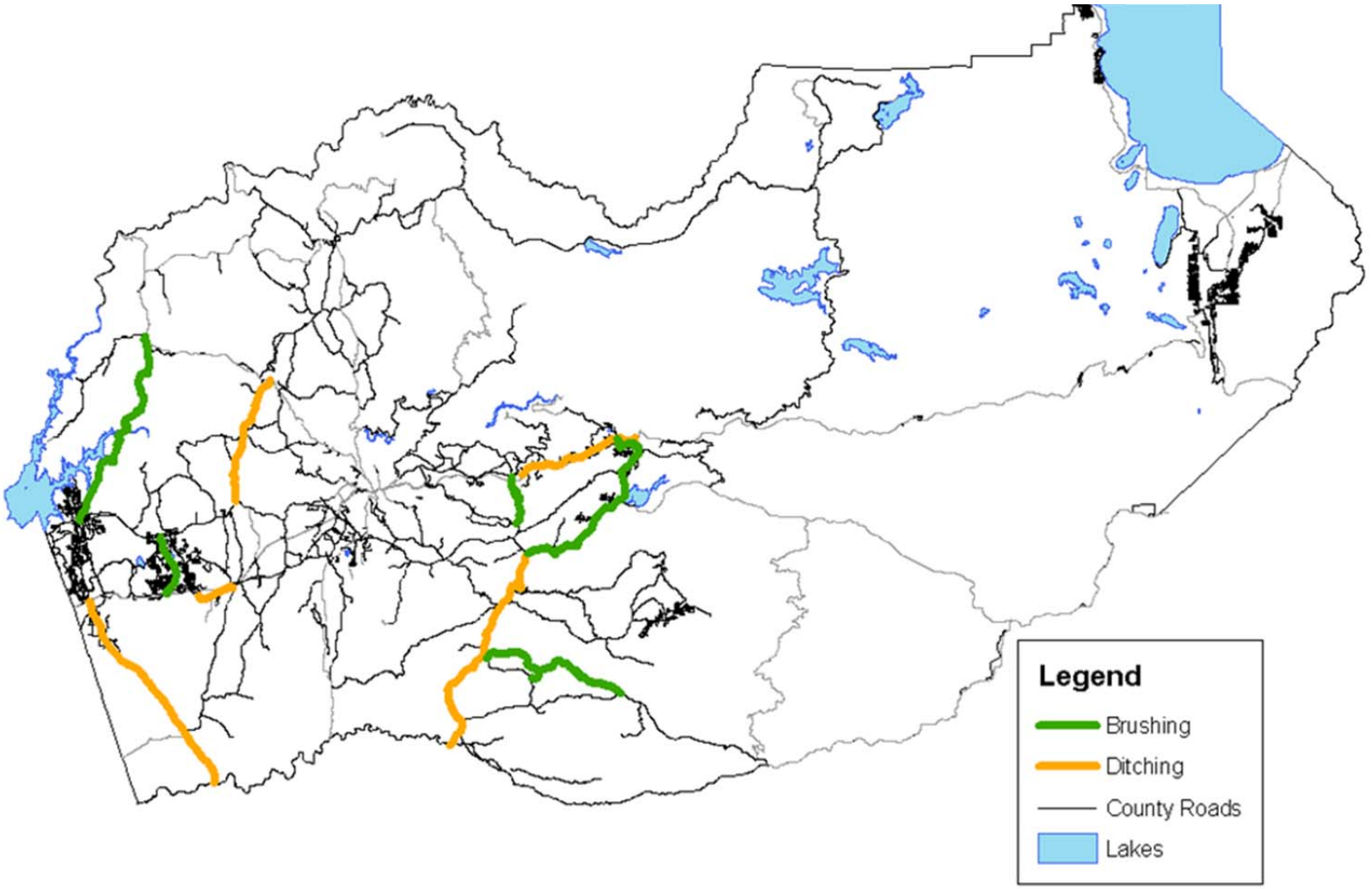
Table 1-8

County Maintained Unimproved Roads				
	Road #	Road Name		Mileage
West Slope				
1	46	Bear Creek Road		1.73 Miles
2	14	Big Canyon Road		0.58 Miles
3	112	Breedlove Road		2.22 Miles
4	121	Cable Road		5.44 Miles
5	118	Caldor Road		2.69 Miles
6	96	Cedarville Road		0.72 Miles
7	877	Cosumnes Mine Road		3.83 Miles
8	93	Farnham Ridge Road		5.38 Miles
9	858	Fort Jim Ct		0.08 Miles
10	42	Goose Flat Road		0.29 Miles
11	80	Happy Valley Road		3.19 Miles
12	92	Indian Diggins Road		3.26 Miles
13	103	Leoni Road		0.53 Miles
14	111	Mameluke Hill Road		1.10 Miles
15	60	Mosquito Road		6.95 Miles
16	75	Mt Murphy Road		1.40 Miles
17	41	Russell Hollow Road		0.65 Miles
18	82	Sand Ridge Road		3.65 Miles
19	124	Sciaroni Road		3.28 Miles
20	17	South Shingle Road		1.39 Miles
21	1862	South St		0.09 Miles
22	105	Sweeney Road		2.47 Miles
23	125	Tullis Mine Road		0.22 Miles
24	2232	County Road 2232		0.07 Miles
25	45A	County Road 45A		0.08 Miles
26	1861	Oriental St		0.07 Miles
27	88	Park Creek Road		6.37 Miles
			Total	57.73 Miles
East Slope				
1	1850	Tamarack Ave		0.11 Miles
2	2005	Tamarack Ct		0.03 Miles
3	1852	Hemlock Ave		0.11 Miles
4	1854	Phillips Heights Ave		0.11 Miles
			Total	.36 Miles

Table 1-9

County Maintained Traffic Signals	
1	Cameron Park Dr @ Coach Ln
2	Cameron Park Dr @ La Canada Dr
3	Cameron Park Dr @ Meder Rd
4	Cameron Park Dr @ Oxford Rd
5	Cameron Park Dr @ Palmer Dr
6	Durock Rd @ Business Dr
7	El Dorado Hills Blvd @ Harvard Wy
8	El Dorado Hills Blvd @ Lassen Ln/Serrano Pkwy
9	El Dorado Hills Blvd @ Olson Ln
10	El Dorado Hills Blvd @ Park Dr
11	El Dorado Hills Blvd @ Saratoga Wy
12	El Dorado Hills Blvd @ St Andrews/Governor Dr
13	El Dorado Hills Blvd @ Wilson Blvd
14	Francisco Dr @ Green Valley Marketplace
15	Francisco Dr @ Village Center Dr
16	Green Valley Road @ Bass Lake Rd/Alexandrite Dr
17	Green Valley Road @ Cambridge Rd
18	Green Valley Road @ Cameron Park Dr/Starbuck Rd
19	Green Valley Road @ El Dorado Hills Blvd/Salmon Falls Rd
20	Green Valley Rd @ Francisco Dr
21	Green Valley Rd @ Miller Road/Browns Ravine Rd
22	Green Valley Rd @ Mormon Island Dr
23	Green Valley Rd @ North Shingle Rd
24	Green Valley Rd @ Pleasant Grove Middle School
25	Green Valley Rd @ Silva Valley Pw/Allegheny Rd
26	Green Valley Rd @ Sophia Pw
27	Latrobe Rd @ Golden Foothill Pw (N)
28	Latrobe Rd @ Golden Foothill Pw (S)
29	Latrobe Rd @ Investment Bl
30	Latrobe Rd @ Suncast Ln
31	Latrobe Rd @ Town Center Bl
32	Latrobe Rd @ White Rock Rd
33	Missouri Flat Rd @ El Dorado Rd
34	Missouri Flat Rd @ Forni Rd
35	Missouri Flat Rd @ Golden Center Dr
36	Missouri Flat Rd @ Mother Lode Dr
37	Missouri Flat Rd @ Plaza Dr
38	Mother Lode Dr @ French Creek Rd
39	Pioneer Tr @ Black Bart Av/Cold Creek Tr
40	Silva Valley Pw @ Harvard Wy
41	Silva Valley Pw @ Serrano Pw
42	South Shingle Rd @ Durock Rd
43	White Rock Rd @ Post St
44	White Rock Rd @ Stonebriar Dr
45	White Rock Rd @ Valley View Pw
46	White Rock Rd @ Windfield Wy

Additional Maintenance Activities Scheduled Using Funding Approved February 5, 2013



Brushing:
Perry Creek Rd.
Slug Gulch Rd.
Salmon Falls Rd.
Sly Park Rd.
Snows Rd.
Cambridge Rd.

Ditching:
Pony Exp. Trail
Mt. Aukum Rd.
Lotus Rd.
Latrobe Rd.
Durock Rd.

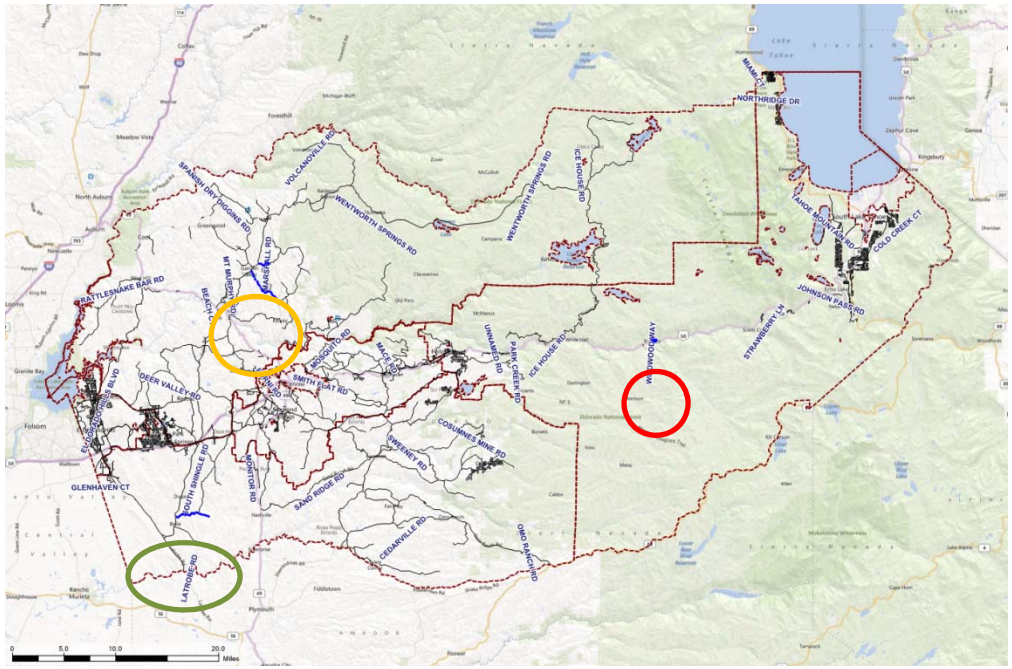
Vegetation Control:
Expanded treatment to include area east of Placerville:
Smith Flat
Apple Hill
Georgetown
Omo Ranch

Figure 1-9

Chip Seal Projects Scheduled Using Additional Funding Authorized February 5, 2013

North Co

Garden Valley Rd
Black Oak Mine Rd



Southwest Co

Brandon Rd
Bonnetti Rd

Kyburz

Kyburz Dr	Silver Fork Rd
Hillbilly Ln	Redwing Dr
Pine Cone Dr	Oriole Dr
Riverview Cr	Robin Cr

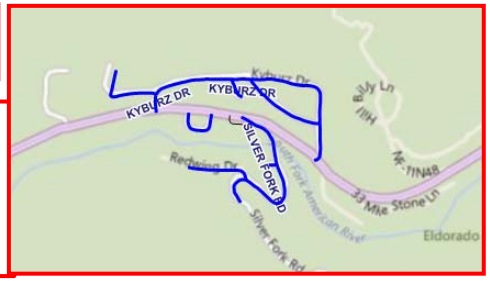


Figure 1-10

National Pollutant Discharge Elimination System Program Overview

Storm water from urban runoff is one of the leading causes of pollution in creeks, rivers and lakes. In developed areas, rainwater often travels over paved areas, into gutters and ditches, and through concrete storm drains. Everything that flows into a storm drain without best management practices (BMPs) goes untreated directly into our creeks, rivers, lakes, delta and eventually, the ocean.

Storm water can become polluted by pesticides, paint, fertilizers, pet waste, litter, oil and other automotive fluids, eroded soil and household chemicals. Even small amounts of pollutants that accumulate on roads, parking lots, and sidewalks can be transported into nearby streams and rivers. Identifying sources of storm water pollution and keeping this pollution away from storm drains and ditches is the best and most economical way to keep storm water clean.

NPDES Requirements

Storm water pollution is controlled by the Clean Water Act amendments of 1987. The amendments authorized the U.S. Environmental Protection Agency to expand the National Pollutant Discharge Elimination System (NPDES) to cover storm water discharges. The NPDES is a permitting mechanism that requires the implementation of controls designed to prevent harmful pollutants from being washed by storm water runoff into local water bodies.

Both the Tahoe and West Slope portions of the County are facing increased NPDES requirements which come with more restrictions and with limited funding sources. In 2012, the Community Development Agency, Transportation Division's (Division) Tahoe Engineering Unit successfully negotiated the Municipal NPDES Permit with the Lahontan Water Board. This resulted in reduced permit costs and requirements, and extended deliverable dates.

On the West Slope, a new "MS4" Permit was adopted by the State Water Resources Control Board (SWRCB) on February 5, 2013. The new permit includes a significant ramp-up in the Clean Water Act's six minimum control measure requirements.

NPDES Costs

Currently the Tahoe NPDES Program and the West Slope NPDES Program are funded by the General Fund and Public Utility Franchise Fees in a 50/50 split. Possible additional funding options include the Road Fund, storm water utility fees, State and Federal grants, public/private partnerships, and increased contributions from the County General Fund or Public Utility Franchise Fees.

The Division is also currently spending approximately $2M per year in grant funds on the Environmental Improvement Program (EIP) in the Tahoe Basin. The Tahoe EIP projects help the Division achieve the County's Total Maximum Daily Load (TMDL) as defined within the NPDES requirements.

To date, the Division has been looking for win-win opportunities to secure grant funds that help the County comply with its NPDES requirements. Failure to comply with NPDES permit requirements can result in notices of violation, clean up and abatement orders, and related monetary penalties.

On February 5, 2013, the Board supported a $400K increase in funding to be included in the FY 13/14 budget for consideration. The $400K will be used for ongoing NPDES permit compliance activities, using General Fund and Public Utility Franchise Fees. This will allow the Division to comply with the majority of the new NPDES Permit requirements in FY 13/14.

The Tahoe area Storm Water Ordinance was adopted by the Board of Supervisors on February 12, 2013. The West Slope Storm Water Ordinance has not been completed, as it requires additional information from the SWRCB. Upon receipt of information from the SWRCB, staff will propose a West Slope Storm Water Ordinance for Board approval.

West Slope Program Cost Estimate

The West Slope "MS4" Permit includes nine program elements:

- E.6 Program Management Element
- E.7 Public Outreach and Education Program
- E.8 Public Involvement and Participation Program
- E.9 Illicit Discharge Detection and Elimination Program
- E.10 Construction Site Storm Water Runoff Control Program - Pollution Prevention/Good Housekeeping for Permittee
- E.11 Operations Program
- E.12 Post Construction Storm Water Management Program
- E.13 Water Quality Monitoring
- E.14 Program Effectiveness Assessment
- E.15 Total Maximum Daily Loads Compliance Requirements

The annual cost of the MS4 permit is expected to average $410,000. Estimates of West Slope program costs for the next five fiscal years are summarized in Table 1-10.

Table 1-10: West Slope MS4 Permit Costs

COST BY YEAR					
YEAR	**2013 -14**	**2014 -15**	**2015 -16**	**2016 -17**	**2017 -18**
Base Costs	388,200	388,200	388,200	388,200	388,200
One Time Costs	13,100	52,500	26,900	-	11,900
Total Cost	**401,300**	**440,700**	**415,100**	**388,200**	**400,100**
Est Population	180,938	181,843	182,752	183,666	184,584
Cost per resident	2	2	2	2	2
Cost per household	6	6	6	5	6

Cost estimates are comprised of staff costs and other costs, which include consultants, equipment, lab tests, etc.

Tahoe Program Cost Estimate

The annual cost of the Tahoe NPDES permit is expected to average $500,000. Annual cost estimates are detailed in the following chart. The Tahoe NPDES permit includes the Monitoring and Reporting Program (MRP), which is Attachment C of the permit. Annual cost estimates for both the permit and MRP documents are detailed in Table 1-11. Costs listed as DSD are paid for by the Development Services Division, and costs listed as USFS are paid for by U.S. Forest Service Grants.

Acronyms are as follows:

BMP - Best Management Practice
RAM - Rapid Assessment Methodology
FSP - Fine Sediment Particle
TSS - Total Suspended Solids
TN - Total Nitrogen
TP - Total Phosphorus

Table 1-11: Tahoe NPDES Costs

Deliverable	Page	Document	Cost
Develop Construction Site Inventory	16	Permit	DSD
Conduct Construction Site Outreach	17	Permit	DSD
Prioritize and Inspect Construction Sites, Inspect High Priority Sites once per week, other Priority Sites as needed	17	Permit	DSD
Conduct Construction Site Enforcement	18	Permit	DSD
Implement Commercial, Industrial, Municipal and Residential Component	18	Permit	$20,000
Conduct Commercial, Industrial and Municipal Site Outreach	19	Permit	$5,000
Perform Commercial, Industrial and Municipal Site Inspections, High Priority Sites once per year	19	Permit	$10,000
Conduct Commercial, Industrial and Municipal Site Enforcement	19	Permit	$10,000
Perform Source Identification and Prioritization on Residential Properties	20	Permit	$5,000
Develop, inspect, track, maintain and report on a Stormwater Facilities Inspection Component	21	Permit	$60,000
Implement an Illicit Discharge Detection and Elimination Component	21	Permit	$7,000
Visually inspect all stormwater collection, conveyance and treatment facilities at least once annually	21	Permit	$60,000
Identify areas that pose a water quality threat and **establish a Program to prioritize them and conduct follow-up investigations**	21	Permit	$10,000
Encourage Public Reporting on illicit discharges by implementing a Hotline	22	Permit	$5,000
Require New Development Project Proponents to implement stormwater treatment facilities to treat a 20 year/1 hour storm event	22	Permit	DSD
Implement a Public Education Component using appropriate media	23	Permit	$15,000
Conduct Municipal Personnel Training and Education	23	Permit	$10,000
Annually conduct a **Fiscal Analysis** of the NPDES Program	24	Permit	$10,000
Submit an Annual Report that includes the following Chapters: Pollutant Load Reduction Report, Stormwater Facilities Inspection Report, Construction Site Inspection Report, Commercial, Industrial and Municipal Site Inspection Report, Traction Abrasive and Deicing Material Report, Stormwater Monitoring Report, Illicit Discharge Report, Education Component Report, Impacts Influencing Baseline Pollutant Loads Report.	31/13	Permit/ MRP	$30,000

Calculate Pollutant Loading and Load Reductions in the Pollutant Load Reduction Model	4	MRP	$35,000
Conduct BMP RAM Data Analysis & Reporting	4	MRP	$30,000
Conduct Road RAM Data Analysis & Reporting	4	MRP	$30,000
Conduct BMP RAM Field Assessments	4	MRP	$60,000
Conduct Road RAM Field Assessments	4	MRP	$50,000
Develop Alternative Condition Assessment Protocols in lieu of the BMP RAM and the Road RAM. First, a proposal and schedule must be submitted, followed by the technical methodology.	4	MRP	USFS
Implement a Program to: track the specifications of the traction abrasives that are applied, sample supplied traction abrasives to ensure they meet the specifications, track and record the total amount of abrasives applied, track and record the location and amount where abrasives are applied and track and record the amount of material recovered from sweeping and vactoring.	7	MRP	$30,000
Establish Monitoring Locations at two high-loading catchment stormwater outfall locations.	8	MRP	$2,500
Obtain continuous flow data at the outfall locations.	8	MRP	USFS
Collect first flush samples for each seasonal event type and additional samples spanning storm even hydrographs and snow melt hydrographs to gain an average annual concentration.	8	MRP	USFS
Analyze all collected water samples for pollutants of concern (FSP, TSS, TN, TP). The focus should be on FSP, with an emphasis on capturing the higher end of FSP concentrations experienced.	9	MRP	USFS
Collect paired turbidity and FSP measurements concurrently with flow at the catchment outfall. Relate FSP concentration to turbidity measurements to develop and FSP/turbidity rating curve.	9	MRP	USFS
Estimate average flow-weighted concentration of each pollutant for each season.	9	MRP	USFS
Calculate the total load for each pollutant for each season monitored as the product of total seasonal volume and average seasonal concentration.	9	MRP	USFS
Use long-term regional meteorological data to determine whether data were collected during an average, dry or wet year.	9	MRP	$2,500
Select one stormwater treatment device or other BMP and monitor its effectiveness for at least three successive years.	10	MRP	$2,500
Obtain continuous flow at the inlet and outlet of the BMP.	10	MRP	USFS
Collect influent and effluent stormwater samples to assess performance.	10	MRP	USFS
Analyze all collected water samples for pollutants of concern (FSP, TSS, TN, TP). The focus should be on FSP, with an emphasis on capturing the higher end of FSP concentrations experienced.	10	MRP	USFS
Use collected data to estimate average concentration of each pollutant for each season monitored.	11	MRP	USFS
Use long-term regional meteorological data to determine whether data were collected during an average, dry or wet year.	11	MRP	$2,500
Make all monitoring data and associated analytical reports available through a regional data center and optionally through our website.	12	MRP	USFS
		Total	**$502,000**