



CITY OF KLAMATH FALLS
ANNUAL FACILITIES PLAN/CAPITAL IMPROVEMENT PROGRAM
2016-2021

PREPARED: MAY, 2016

INTRODUCTION

The City of Klamath Falls Public Works Department has prepared this annual Capital Improvement Plan (CIP). The document includes the results of master planning efforts, technical review and annual inspection of the existing assets that fall under the responsibility of each Department within the City. This CIP is a planning level document and no project is funded until approved in each year's adopted budget. Capital improvements proposed by other City Departments are also included in this document. In general, the report covers forecasted capital expenditures for fiscal 2016/17 through 2020/21. This document has been prepared for the following purposes:

- Describe the current programs.
- Provide recommendations for needed replacement, rehabilitation and repair projects necessary to protect the City's assets.
- Furnish supporting cost information necessary to permit the development of Division budgets and staffing plans.
- Anticipate capital expenditures in advance to allow for adequate budgetary planning and anticipate required policy decisions and/or adjustments.

This report is divided into individual City Department and Divisional sections including Water, Geothermal, Wastewater, Streets, Maintenance, Parks, Police, Information Systems and Airport.

In general, most sections of this report are further organized by major operational programs, subprograms and where possible, on a project level within each Division. Major programs are activities performed by the Divisions that have been grouped by similar functions. In several cases, projects have not yet been developed beyond a two-year time frame. However, program expenditures may still be shown to indicate that annual

expenditures will continue to be required to support the programs' goals. Projects will be identified and prioritized at a later date as the CIP planning process matures and as the Public Works Department completes the systematic technical review of each of the program areas.

Within most sections the text is organized as follows:

INTRODUCTION This section provides the reader with the brief description of the Divisional program and provides a "how to use" roadmap for the enclosed information. Programs within each Division have been defined, developed and presented slightly differently within this text to reflect the unique needs of each Division, financial condition and their funding sources.

PROGRAM GOALS AND OBJECTIVES The goal of each program is explained in terms of anticipated outcome, adopted operational philosophy and proposed implementation plan. In addition, short-term goals are identified to provide a base or relative measurement for assessing a Division's performance or progress toward the program goals.

PROGRAM ELEMENTS The program elements are the specific items, activities, critical milestones and/or criteria that were used in developing the program.

ISSUES AND CONCERNS A brief description of items, City policy, regulatory constraints or requirements and funding issues that may have a significant impact on the successful outcome of a program.

CAPITAL COST SUMMARY Capital expenditures have been prioritized based on operational and community growth related priorities.

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The capital needs of the City's infrastructure far exceed current and available funding. The cost estimates shown herein were prepared to establish a baseline of infrastructure needs to facilitate the budget process, anticipate and prioritize potential expenditures and to support Council in their efforts to develop and identify new funding sources.

The costs developed herein are formatted as follows:

- **Program Capital Cost:** This provides a summary table with composite capital cost information and projected yearly cash flow, for all the years covered by this Plan and a lifetime total cost for program with a finite end date. Costs are presented in current year dollars and have not been adjusted for inflation for the years covered by this plan. Total costs also are summarized by individual year.
- **Subprogram Capital Cost:** This provides a table with composite capital cost information for the subprogram and projected yearly cash flow, for the five years covered by this Annual Plan. Costs are presented in current year dollars and have not been adjusted for inflation for the five years covered. Total costs also are summarized by individual year.
- **Project Cost:** Shows a listing of the specific capital projects within the program or subprogram. Costs in this section include all hard capital and soft capital costs including outside and internal labor. Although projects have been coordinated as part of our recommendation process, modifications may be needed as other projects are identified and interdepartmental priorities change. In addition, projects

may be combined in construction contracts. These decisions will usually occur as part of the project pre-design efforts.

PROJECT FORECASTING TIMELINE.

This section provides a listing of all identified capital projects relative to individual sequencing and time phasing.

FY 2016/17 PROJECT FORECASTING TIMELINE

			FY 2016/17															
			2016						2017									
			M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A
AIRPORT	Page	'17 Budget																
Twy B (formerly Twy J)	5	\$ 7,650,000	bid							const								
MODOC Wetland Mitigation	5	\$ 235,000	bid							const								
Milkvetch Mitigation	5	\$ 25,000	environmental															
Terminal Roof	6	\$ 50,000			pre		design		bid						const			
Airport Administration Building	7	\$ 15,000				const												
MAINTENANCE DIVISION	Page	'17 Budget	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A
LED Retrofit Project	13	\$ 250,000								design		const						
PARKS DIVISION	Page	'17 Budget	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A
Downtown Street Tree Replacement	5	\$ 18,000				const												
Lake Ewauna Trail Project	4	\$ 1,420,000	bid							const								
Parks Irrigation Improvements																		
Kit Carson System Remodel	5	\$ 47,000	design			const									design		const	
Playground and Fitness Equipment																		
Kit Carson Nature Play	6	\$ 50,000	design		bid		const											
Kit Carson Park Trails & Landscaping	7	\$ 60,000	design				const						design				const	
Bicycle Pump Track	8	\$ 10,000							pre	bid		design					const	
Picnic Areas & Restroom																		
Southside Park Picnic Area	9	\$ 35,000	design		bid		const											
Moore Park Road Repairs	10	\$ 20,000					const											
Vehicle & Equipment Replacement	13	\$ 55,000				bid			purchase								bid	
Ella Redkey Pool																		
Pool Liner Resurfacing	16	\$ 160,000	pre		bid		const											

**WATER
GEOTHERMAL
DIVISION**

INTRODUCTION

The Water and Geothermal Division of the City of Klamath Falls provides water to nearly 40,000 urban area residents of the Klamath Basin. The Water Division staff is responsible for daily operation and maintenance of 24 pumping stations, 13 water wells, 21 water storage reservoirs, 260 miles of distribution mains, maintaining water system utility maps, working with developers on new additions to the distribution network, providing utility locates, installing new and replacing old water meters and water quality testing and reporting. In addition, the Water Division operates and maintains the City's downtown geothermal heating system which supplies geothermal heat to buildings and sidewalk areas.

The programs and projects described in this year's CIP reflect the direction and priorities outlined in the 2010 Water Master Plan.

The capital improvement projects identified herein will insure our continued service levels and will position the City to meet the challenges presented by our growing customer base.

ABSTRACT

The 2016-2021 Annual Capital Improvement Plan, prepared by the Public Works Department describes the yearly activities of the Water Division Programs.

This 2016-2021 Capital Improvement Plan:

- Provides recommendations for needed replacement, rehabilitation, repair projects and ongoing technical support;
- Furnishes supporting cost information necessary to permit the development of department budgets; and
- Provides these recommendations to support the water development process. The Water and Geothermal Division assigns priorities and makes final decisions on these recommendations as part of the budget review and approval process.

The 2016-2021 Annual Capital Improvement Plan is divided into five sections, as listed and described below:

- **System Optimization:** Capital improvements to maximize the efficiency and redundancy of the City's production and delivery system.
- **System Rehabilitation:** Systematic replacement of assets that have outlived their useful life or have historically been "labor intensive" to repair and maintain.
- **System Modernization:** Incorporation of changing or emerging technologies and methodologies that improve system management at a reasonable cost.
- **Inter-agency Response to Street Improvement Projects:** Capital projects necessary for timely response to other agency (County, ODOT, etc.) capital or maintenance improvement plans. In the Inter-agency Response section Cost Summary, operating

INTRODUCTION

capital projects are those that provide no system improvement. If capacity, fire protection or water quality improvements are realized, the project is listed as a New Asset Capital Improvement.

- **The Vehicle Replacement Program:** This program is designed to encompass and manage capital needs that are not directly tied to any one project or program. This program will cover equipment needs for all of the Public Works Divisions for their capital equipment needs. This rolling stock is a part of the Fleet Maintenance Program. The equipment is maintained, tracked and identified for replacement. When replacement becomes necessary the time frame, costs and budget considerations will be identified in the asset program.

INTRODUCTION

ISSUE STATEMENT

To ensure adequate water supply, the 2010 Water Master Plan identifies water system improvements required to meet existing and future water demands. In order to eliminate existing water system deficiencies, additional infrastructure improvement projects were identified but not previously listed in this program due to lack of funding. The recommended projects include 8 pipeline projects installing approximately 9,200 lf of 8” and 12” waterline at an estimated cost of \$1.92 million, adding two to three storage reservoirs with a total minimum capacity of 4 million gallons at an estimated total cost of \$5.67 million and upgrading 9 existing pumping stations estimated to cost \$3.11 million. A portion of water revenue is being identified in this program for the planning, design and construction of one or more water storage reservoirs, however, a five year capital improvement program which would include the projects listed above will require \$2.2 million annually or \$10.7 million in addition to the \$8.6 million already identified in the Water Division Capital Improvement Program.

Possible funding sources to complete the above-listed project may include increasing water rates and system development charges and/or requiring greater developer participation in the installation and completion of these projects. A comprehensive water rate study was completed during fiscal year 2013-2014. Water rates must be set at a level where the Division’s operating and capital expenses are met. Failure to achieve this objective may lead to insufficient funds to maintain the water system integrity. Additional funding sources are available through the State of Oregon including the Safe Drinking Water Revolving Loan Fund, the Special Public Works Fund, the Water/Wastewater Financing Program all through the State of Oregon. The City may also consider the issuance of municipal bonds to facilitate faster implementation of the recommended projects.

Also included in the 2010 Water Master Plan are projects identified to meet intermediate (within the next 10 years) growth and build-out (between 10 and 50 years) development. The total capital costs of the projects are recommended for these timeframes are \$40.65 million.

TOTAL CAPITAL IMPROVEMENT PROGRAM COSTS SUMMARY

Program	2016/17	2017/18	2018/19	2019/20	2020/21
FUNDED OPERATING CAPITAL					
System Optimization Program	\$1,500,000	\$1,050,000	\$800,000	\$250,000	\$500,000
System Rehabilitation Program	\$143,000	\$475,000	\$1,000,000	\$850,000	\$900,000
System Modernization Program	\$765,000	\$150,000	\$100,000	\$60,000	\$60,000
Interagency Response to Street Proj.	\$595,000	\$300,000	\$430,000		
Vehicle Replacement Program			\$200,000	\$300,000	
Total Program Costs	\$3,003,000	\$1,975,000	\$2,530,000	\$1,460,000	\$1,460,000
Secure Funding Amounts		-\$100,000	-\$100,000	-\$710,000	-\$500,000
TOTAL CAPITAL COSTS	\$3,003,000	\$1,875,000	\$2,430,000	\$750,000	\$960,000

SYSTEM OPTIMIZATION PROGRAM

PROGRAM INTRODUCTION

The 2010 Water Master Plan has altered some goals regarding pumping, storage and distribution capabilities. This CIP outlines improvement projects that will correct shortfalls in capacity, emergency storage and delivery pressure. For the most part, the projects listed herein are identified in the priorities outlined in the Master Plan.

PROGRAM GOALS AND OBJECTIVES

- Efficiently increase system flow capabilities to deficient areas.
- Increase storage capacity to provide adequate “fire flow” and emergency storage in all areas of our system.
- Re-equip existing production wells so that they can be operated more effectively and will continue to provide water that meets anticipated changes in future “water quality” guidelines.
- Reduce the risk of water quality violations.
- Increase system capacity without investment in new “cross town” transmission mains. The 2010 Master Plan has outlined requirements (projects) that differ significantly from those submitted in previous CIPs.
- Provide adequate fire protection for service to areas that do not currently have protection (fire hydrants).

PROGRAM ELEMENTS

- **System Looping (eliminating dead end areas of the distribution system):** During the development of residential and commercial areas it is common for water mains to be extended to the new users but not any farther. An extended period of growth has resulted in literally hundreds of long dead end water mains in our distribution system. These dead ends create a significant water quality hazard allowing water to stagnate. One-way supply mains negatively affect water delivery capacity and pressure with the overall distribution system capacity being reduced.
- **Increasing system capacity through main right sizing:** As with the looping component of this program, our system has been constructed with water mains only large enough to supply the capacity to localized areas or individual users. Population growth and increased commercial use has resulted in some areas of the distribution system being inadequate to meet customer demands.
- **Standardizing water delivery pressure ranges and capacities through the application of elevation based zoning principles:** Our historical practice of adding smaller distribution systems to our core water infrastructure without due consideration of elevation or delivery pressure has resulted in a system that does not function effectively. This problem is being mitigated through our systematic evaluation of the distribution system with our recently developed water system model.
- **Add storage reservoir capacity** at existing reservoir sites to adequately supply “in-fill” growth and provide emergency capacity to our existing service areas without dependence on long transmission pipelines.

SYSTEM OPTIMIZATION PROGRAM

ISSUES AND CONCERNS

- This Capital Improvement Program will require many years of funding commitment due to the large number of areas requiring improvements and the system's age and existing condition.
- CIP priorities are established based upon the greatest "system benefit" which may be in conflict with developmental or economic development priorities.
- Limited sites and the increasing expense of building water reservoirs will dictate that the City continually balance between pumping capacity, our certified water rights and storage.

SYSTEM OPTIMIZATION PROGRAM

Capital Type	Project	2016/17	2017/18	2018/19	2019/20	2020/21
Operating						
	Pelican City Booster/Water Main	\$1,500,000	\$1,450,000			
	East Side Reservoir(s)		\$100,000	\$100,000	\$250,000	\$500,000
Total Capital Costs		\$1,500,000	\$1,550,000	\$100,000	\$250,000	\$500,000

SYSTEM OPTIMIZATION PROGRAM

PROJECT NAME: Pelican City Booster/Water Main Project

Location: Lakeport Blvd.

Council District: 4

Cost Estimate: \$3,100,000

Project Description:

The 2010 Water Master Plan identifies the need for additional supply to the areas surrounding the hospital. This project includes constructing a new water booster station in the area of Jeld-Wen and construction of approximately 7,500 feet of 12 and 16 inch waterline generally along Lakeport Boulevard and Montelius Street. This project also requires two bore crossing, one crossing under Highway 97 North and the second crossing under SP Railroad property. The project is a three phase project, designed and constructed during three consecutive calendar years. Water shortage issues in the Klamath Basin and water curtailment/shutoff orders issued by Oregon Water Resources Department for the Wocus Well and the Fremont Well have caused the Pelican City Booster project to be reprioritized with design and construction of phase 1 of the project proposed to begin in 2015 which includes Phase I, Montelius from Nevada to Gage and Gage from Montelius to Alma Alley. Completion of this project will allow the City to provide adequate water for existing conditions as well as future water demands within the college industrial park and hospital areas.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues	\$75,454	\$ 1,500,000	\$ 950,000			

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
Land Acquisition & Design Phase I	Complete Phase I	Design & Construct Phase II	Design & Construct Phase III		

SYSTEM OPTIMIZATION PROGRAM

PROJECT NAME: East Side Reservoir
Location: TBD Site
Council District: County
Cost Estimate: \$1,500,000

Project Description:

The 2010 Water Master Plan outlines the need for additional water storage reservoir(s) to be located in the southeast and east side of the urban areas in order to meet demands for the next five to ten years. Construction of an additional reservoir will provide storage capacity required to adequately serve the present customer base as well as future growth. The City currently owns a large enough parcel at the existing Bowen Reservoir site to allow for the construction of a second water storage reservoir, however, an additional site must be identified near the far east end of the urban growth boundary. Construction of additional water storage reservoirs will provide for adequate water storage into the foreseeable future.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues	\$225,000		\$100,000	\$100,000	\$250,000	\$500,000

* LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
		Secure Funding	Secure Funding	Secure Funding	Secure Funding & Conceptual Design

SYSTEM REHABILITATION PROGRAM

PROGRAM INTRODUCTION

Like most communities the water infrastructure has historically limited its investment in rehabilitating the aging and deteriorating water facilities. Investments have for the most part been focused on meeting the demands of community growth. This philosophy has resulted in two significant characteristics of our current water system; distribution infrastructure failures and unaccounted water losses or non-revenue water usage. In 2001 the Water Division shifted from this historical practice by dedicating a specific level of funding to rehabilitation of the system on an annual basis.

PROGRAM GOALS AND OBJECTIVES

- Control maintenance costs and improve the operational efficiency by systematically replacing leaking water mains.
- Continue a meter replacement program that will insure accurate system wide usage information.
- Reduce long term operating expenditures through strategic rehabilitation investments.
- Regularly rehabilitate our storage reservoirs. These improvements will also add capital value to our system within a program that can be managed through conscientious long term budgeting.

PROGRAM ELEMENTS

- **Pipelines:** Our on-going “leak detection” program and analysis of our maintenance records have indicated a large number of distribution mains that are at high risk of leaking or failure. In some service areas these leaking mains have contributed to untimely street surface failure, unwanted loading to our sewer collection system and damage to public and private property. The Water Division is systematically replacing water mains that present a high risk of failure or are beyond their life expectancy.
- **Water Storage Reservoirs:** The Water Division inspects and maintains various storage reservoirs yearly. Recent underwater inspections and video analysis indicates that repainting and reconditioning should be considered for many reservoirs. The frequency of inspections will be accelerated to support our funding prioritization and rehabilitation efforts.
- **Pumping Station:** The Water Division pumping facilities are divided into 2 distinct systems. However, we produce all our water from groundwater wells located throughout our service area. We move water across our distribution system and from lower to higher zones utilizing booster or lift pumping stations. A number of pumping stations have deteriorated so severely that they are no longer reliable. A capital program has been established to rehabilitate or replace those pumping facilities.

ISSUES AND CONCERNS

- Similar to the System Optimization Program, the Rehabilitation Program requires significant long-term capital commitment. Rehabilitation of the existing system is on a 50 year cycle with the current investment rate. Unfortunately, this means that many of our pipes will have exceeded 100 years in service by the time they are replaced.

SYSTEM REHABILITATION PROGRAM

- The rehabilitation of water pipelines will directly result in improvement and longevity of the public streets and rights-of -way. This will require careful planning and scheduling with other City Public Works Divisions and with Klamath County.

SYSTEM REHABILITATION PROGRAM

Capital Type	Program	2016/17	2017/18	2018/19	2019/20	2020/21
OPERATING						
	CMAQ Warehouse Overlay	\$18,000				
	Melrose Street Water Main Replacement	\$100,000				
	Center Reservoir Recondition		\$250,000	\$250,000		
	Dayton Street Main Replacement	\$25,000	\$225,000			
	Etna Street Main Replacement Ph II			\$250,000		
	Etna Street Main Replacement Ph III				\$250,000	
	6th Street Booster Replacement				\$400,000	\$400,000
	Adams Street Main Replacement			\$250,000		
	Hilyard Reservoir Recondition			\$250,000		
	Patterson Reservoir Recondition				\$200,000	
	Melrose Reservoir Recondition					\$250,000
	Lindley Reservoir Recondition					\$250,000
	Total Capital Costs	\$143,000	\$475,000	\$1,000,000	\$850,000	\$900,000

SYSTEM REHABILITATION PROGRAM

PROJECT NAME: CMAQ Water Warehouse Parking/Storage Areas Overlay
Location: 610 Market Street
Council District: Ward 2

Project Description:

There is approximately 28,000 square feet of unpaved parking and storage area at the Water Division warehouse located at 610 Market Street. This project is intended to overlay this gravel/dirt area in an effort to mitigate dust during the dry seasons and eliminate pulling mud and gravel onto Market Street during the wet seasons. Approximate total cost of the Water Division’s portion of the overlay project is \$180,000. This project will be funded primarily through the CMAQ funding source with required 10% matching funds provided from the Water Division. Additional CMAQ project identified under the Street Division’s Capital Project Program on page 26.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues		\$18,000				

*LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
Design & Construct					

SYSTEM REHABILITATION PROGRAM

PROJECT NAME: Melrose Street Water Main Replacement

Location: Melrose Street

Council District:

Project Description:

Replace steel mains that have out lived their usefulness. Leak repair on existing 2” steel mains is a major operational expense. This project will require the replacement of approximately 980 feet of 2” water main on Melrose and in the alley between Portland Street and Earle Street.

Completion of this project will reduce unaccounted for water losses and maintenance costs and will provide for adequate fire flow requirements in the area.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues	\$100,000					

*LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
Construction Complete					

SYSTEM REHABILITATION PROGRAM

PROJECT NAME: Center Reservoirs Recondition
Location: Center Reservoirs
Council District: Ward 1

Project Description:

All reservoirs in the water system need to be routinely drained, inspected and repaired to maintain the integrity of the system. This project will include the removal of existing interior and exterior coatings, repairing any defects in the metal and re-leveling any low or sunken floor areas. The reservoirs will be recoated with an epoxy paint approved by AWWA for interior and exterior surfaces of a potable water storage reservoir. This project will be phased over a two year period to allow for refurbishing both of the Center Reservoirs, the west reservoir in fiscal year 2017/18 and the east reservoir in fiscal year 2018/19.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues			\$250,000	\$250,000		

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
		Phase I – Complete	Phase II - Complete		

SYSTEM REHABILITATION PROGRAM

PROJECT NAME: Dayton Street Water Main Replacement
Location: Dayton Street
Council District: County

Project Description:

Replace steel mains that have out lived their usefulness. Leak repair on existing 2” steel mains is a major operational expense. This project will require the replacement of approximately 1,100 feet of 2” steel water mainline between Frieda Avenue and Shasta Way. Completion of this project will reduce unaccounted for water losses and maintenance costs and will provide for adequate fire flow requirements in the area.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues		\$25,000	\$225,000			

*LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
	Design	Construction Complete			

SYSTEM REHABILITATION PROGRAM

PROJECT NAME: Etna Street Main Replacement, Phases II and III
Location: Etna Street
Council District: County

Project Description:

Replace steel mains that have out lived their usefulness. Leak repair on existing 2” steel mains is a major operational expense. This project will require the replacement of approximately 3,100 feet of 2” steel water mainline. Completion of this project will reduce unaccounted for water losses and maintenance costs and will provide for adequate fire flow requirements in this area. This project is being constructed in three separate phases, with Phase I already being completed.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues	\$232,350	\$250,000			\$250,000	

*LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
Detailed Design and Phase I Complete	Phase II Construction Complete			Phase III Construction Complete	

SYSTEM REHABILITATION PROGRAM

PROJECT NAME: 6th Street Booster Replacement
Location: 6th Street (Fairgrounds)
Council District: County

Project Description:

The 2010 Water Master Plan indicates that this facility will require extensive capacity increase to supply the existing customer base. Additionally, anticipated growth in the far eastern and southeastern areas will necessitate significantly greater capacity at this location. This project will involve replacing the existing booster station with a pumping station consisting of three 2,000gpm pumps (2 duty pumps and 1 standby pump). This capacity increase will meet existing and build-out domestic and emergency demands. Total project estimated cost: \$800,000.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues					\$400,000	\$400,000

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
				Securing Funding & Design	Construction

SYSTEM REHABILITATION PROGRAM

PROJECT NAME: Adams Street Main Replacement
Location: Adams Street
Council District: Ward 2

Project Description:

Replace steel mains that have outlived their usefulness. Leak repair on existing 2” steel mains is a major operational expense. This project will require the replacement of approximately 1,000 feet of 2” steel water mainline. Completion of this project will reduce unaccounted for water losses and maintenance costs and will provide for adequate fire flow requirements in this area.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues	\$12,450	\$250,000				

*LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
Design	Review Design & Construction Complete				

SYSTEM REHABILITATION PROGRAM

PROJECT NAME: Hilyard Reservoir Recondition
Location: Hilyard Reservoir
Council District: County

Project Description:

All reservoirs in the water system need to be routinely drained, inspected and repaired to maintain the integrity of the system. This project will include the removal of existing interior and exterior coatings and repairing any defects in the metal. The reservoir will be recoated with an epoxy paint approved by AWWA for interior and exterior surfaces of a potable water storage reservoir.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues				\$250,000		

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
			Design & Construction Complete		

SYSTEM REHABILITATION PROGRAM

PROJECT NAME: Patterson Reservoir Recondition
Location: Patterson #1
Council District: Ward 3

Project Description:

All reservoirs in the water system need to be routinely drained, inspected and repaired to maintain the integrity of the system. This project will include the removal of existing interior and exterior coatings and repairing any defects in the metal. The reservoir will be recoated with an epoxy paint approved by AWWA for interior and exterior surfaces of a potable water storage reservoir.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues					\$250,000	

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
				Design & Construction Complete	

SYSTEM REHABILITATION PROGRAM

PROJECT NAME: Melrose Reservoir Recondition
Location: Melrose Reservoir
Council District: Ward 2

Project Description:

All reservoirs in the water system need to be routinely drained, inspected and repaired to maintain the integrity of the system. This project will include the removal of existing interior and exterior coatings, repairing any defects in the metal and re-leveling any low or sunken floor areas. The reservoir will be recoated with an epoxy paint approved by AWWA for interior and exterior surfaces of a potable water storage reservoir.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues						\$ 250,000

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
					Design & Construction Complete

SYSTEM REHABILITATION PROGRAM

PROJECT NAME: Lindley Reservoir Recondition
Location: Lindley Reservoir
Council District: Ward 1

Project Description:

All reservoirs in the water system need to be routinely drained, inspected and repaired to maintain the integrity of the system. This project will include the removal of existing interior and exterior coatings, repairing any defects in the metal and re-leveling any low or sunken floor areas. The reservoir will be recoated with an epoxy paint approved by AWWA for interior and exterior surfaces of a potable water storage reservoir.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues						\$ 250,000

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2015-16	2016-17	2017-18	2018-19	2019-20
					Design & Construction Complete

SYSTEM MODERNIZATION PROGRAM

PROGRAM INTRODUCTION

The Water Division is committed to maintaining the highest level of service and providing the highest quality of water possible in addition to protecting the valuable resource. Utilizing advancements in modern technology will provide us the tools to meet these commitments. Supervisory Control and Data Acquisition (SCADA) through radio signal communications allow us to monitor and control water storage levels and pump sequencing to meet water demands throughout the year. Automated meter reading (AMR) will allow us to monitor hourly consumption at each meter, detect possible leaks in the customer's piping and encourage water conservation. Radio read water meter transceivers will allow us to read meters from centralized locations accurately in a fraction of the time needed to read meters visually.

We continue to emphasize improving our mapping and record keeping procedures. Creating and maintaining an accurate centralized records management program becomes more significant as water rights and water quality regulations continue to become more stringent. Utilizing modern technology such as Geographic Information System (GIS) to improve records management and mapping will also improve our ability to plan future water system improvement to meet future growth and development within the service area.

PROGRAM GOALS AND OBJECTIVES

- Prevent service interruptions and damage from overflowing facilities by investment in system performance monitoring equipment.
- Provide operational flexibility by investing in control systems that enhance our ability to adapt to our customer demands.
- Reduce annual emergency repair expenditures.

PROGRAM ELEMENTS

- **System Telemetry Upgrades:** We have committed to the modernization of our old and antiquated control system. This Capital Improvement Program will require several years. Improvements will be added according to a priority schedule and will be planned in conjunction with other Public Works Divisions.
- **Meter Upgrade:** Increase revenue, encourage water conservation and reduce water loss from inaccurate and outdated water meters.
- **Record Management:** The Water Division continues to transfer all of our system maps and records to Geographic Information System (GIS) files. This program must be expanded to include all Public Works Department records and facility management information. The Water Division will fund personnel and facilities to maintain the records management program, with appropriate contributions from other Divisions.
- **Electric Motor Analysis and Replacement:** The Water Division depends on electric motors, both very large (400 horse power) and small, to power pumps at well production sites and booster pumping sites. Many of these motors are very old and electrically inefficient. The

SYSTEM MODERNIZATION PROGRAM

Division has initiated a program to systematically test, evaluate and replace electrical components when significant savings can be achieved.

ISSUES AND CONCERNS

- The personnel involved in the operation of new SCADA equipment require extensive training in the operation and maintenance of the new systems.
- Standardized and centralized record management will require utility users and applicants to provide more accurate and timely information.

SYSTEM MODERNIZATION PROGRAM

Capital Type	Program	2016/17	2017/18	2018/19	2019/20	2020/21
Operating						
	Water Meter Rehab/Upgrade	\$750,000	\$150,000	\$100,000		
	Debbie Well Backup Generator				\$30,000	\$30,000
	Beverly Booster Generator				\$30,000	\$30,000
	SCADA Installation/Upgrade	\$15,000				
Total Capital Costs		\$765,000	\$150,000	\$100,000	\$60,000	\$60,000

SYSTEM MODERNIZATION PROGRAM

PROJECT NAME: Water Meter Rehab/Upgrade Program
Location: City Wide
Council District: All

Project Description:

The water meter replacement/upgrade program is in place to insure an accurate measure of water usage. Maintaining accurate meters minimizes non-revenue water usage and unaccounted for water loss. To date, this ongoing program has included upgrading all meters to Sensus water meters and the ongoing multi-year phased installation of radio read transceivers on existing meters. The program continues to focus on the installation of radio transceivers on all water meters in order to facilitate an Advanced Metering Infrastructure (AMI) which will allow for reading all meters via radio signal which will also provide improved customer service by tracking and storing usage patterns helping to identify possible leaks much sooner. AMI can also be utilized as a planning tool by tracking and documenting seasonal and daily water system demands. The final AMI component to be constructed is communication centers which will be located at four of the existing water tank sites. This final phase of the meter upgrade program will begin in fiscal year 2018 and will be completed in fiscal year 2019.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues	\$1,520,000	\$ 750,000	\$ 150,000	\$ 100,000		

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
	Phased Installation	Phased Installation	Phased Installation Complete		

SYSTEM MODERNIZATION PROGRAM

PROJECT NAME: Debbie Well Backup Generator
Location: Debbie Well
Council District: Ward 1

Project Description:

Providing standby power at wells and booster stations whereby the pumping capacity with standby power can be considered equivalent to providing emergency storage in tanks. This project will install an emergency power generator at the Debbie Well which is the primary source water for the Stewart Lenox service area.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues					\$30,000	\$30,000

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
				Secure Funding	Design & Construction

SYSTEM MODERNIZATION PROGRAM

PROJECT NAME: Beverly Booster Backup Generator
Location: Beverly Booster
Council District: County

Project Description:

Providing standby power at wells and booster stations whereby the pumping capacity with standby power can be considered equivalent to providing emergency storage in tanks. This project will install an emergency power generator at the Beverly Booster Station which provides for boosting water from the main pressure zone to the Patterson/Moyina pressure zones.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues					\$30,000	\$30,000

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
				Secure Funding	Design & Construction

SYSTEM MODERNIZATION PROGRAM

PROJECT NAME: SCADA Upgrades
Location: All Facilities
Council District: All

Project Description:

The SCADA system is a real time monitoring system that enables staff to assess the performance of each facility and spot performance deterioration trends before equipment failures. The SCADA system also provides for staff to make operational changes based on seasonal demands. This project will include installing state of the art technology communications hardware at water facilities with outdated equipment or at sites that currently have no existing SCADA controls to insure adequate data transfer and for proper monitoring and control of water system facilities.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues	\$15,000					

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
Construction Complete					

INTERAGENCY RESPONSE TO STREET PROJECTS PROGRAM

PROGRAM INTRODUCTION

During roadway, bridge and street improvements by the Oregon Department of Transportation, Klamath County and City of Klamath Falls, it sometimes becomes necessary for the Water Division to replace services and, in some cases, completely replace or relocate our distribution mains even though the infrastructure is in good shape. For those instances, the Water Division sets aside capital funds to respond to other agency's street improvement plans.

PROGRAM GOALS AND OBJECTIVES

- Prevent costly and unsightly O&M patches in recently constructed streets.
- Anticipate and plan for system improvements in partnership with the City and County Public Works Departments and the Oregon Department of Transportation.

PROGRAM ELEMENTS

- **Distribution Mains That May Require Repairs:** Water Division will identify “problem” mains and make every effort to replace high-risk mains prior to street projects being undertaken.
- **Undersized Distribution Mains:** Staff will evaluate proposed street projects in an attempt to estimate the increased system capacity that will result from increased development in the area. Prior to street construction, we will replace (or install) water mains large enough to meet anticipated demand.
- **Lateral Tie-ins:** Staff will anticipate the location of new and additional services and install lateral connections, with control valves, at likely development locations.

ISSUES AND CONCERNS

Funding for this program decreases the monies available to invest in the more critical needs of the water system. While the various agencies work with us on the scheduling of their infrastructure improvements, projects in this program sometimes are considered and unnecessary investment from the Water Division's perspective.

INTERAGENCY RESPONSE TO STREET PROJECTS PROGRAM

Capital Type	Project	2016/17	2017/18	2018/19	2019/20	2020/21
OPERATING						
	Altamont Main Replacement Ph V Construct	\$575,000				
	Brett Way Water Main Extension	\$20,000	\$300,000	\$430,000		
Total Capital Costs		\$595,000	\$300,000	\$430,000		

INTERAGENCY RESPONSE PROGRAM

PROJECT NAME: Altamont Drive Reconstruct
Location: Altamont Dr.
Council District: County

Project Description:

This project is in response to Klamath County’s plans to completely reconstruct Altamont Drive from South 6th Street to the South Side Expressway. This project was originally planned to be a 4 phase project during four calendar years, however, it has been extended to at least a 5 phase, five year project. As identified in the 2004 and 2010 Water Master Plan this project will be for the replacement of undersized 4” and 6” water mainlines with a 12” water main. The undersized water lines act as a “bottle neck” and limit water flow to areas south of South 6th Street between Washburn Way and Summers Lane. The area located between Hilyard Avenue and Laverne Avenue has been identified as a major weakness in the fire flow analysis. Installing a 12” water main will provide for adequate peak day demand and for emergency fire flow requirements in these areas. Phase 5 will consist of installing approximately 2,700 feet of 12” waterline on Altamont Drive between Laverne Avenue and the irrigation channel south of Barry Avenue.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues	\$2,154,900	\$575,000				

*LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
Phases 1, 2, 3 and 4 complete	Phase 5 Construction				

INTERAGENCY RESPONSE PROGRAM

PROJECT NAME: Brett Way Water Main Extension
Location: Brett Way
Council District: County

Project Description:

As part of the Brett Way Extension Project (see page 32 under Capital Street Program) this portion of the project will construct a new water main along Brett Way between Homedale Road and Summers Lane.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues		\$20,000	\$300,000	\$430,000		

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
	Design	Construct	Construct		

VEHICLE REPLACEMENT PROGRAM

PROGRAM INFORMATION

The Vehicle Replacement Program is designed to encompass and manage capital needs that are not directly tied to any one project or program. This program will cover vehicle and equipment needs for the Public Works Water Division. This rolling stock is a part of the Fleet Maintenance Program. The equipment is maintained, tracked and identified for replacement. When replacement becomes necessary the time frame, costs and budget considerations will be identified in the asset program.

PROGRAM GOALS AND OBJECTIVES

The goal of this program is to identify the Water Division's capital needs that are not identified in a program and meet the equipment needs of the Water Division.

OBJECTIVE

The objective of this program is to identify the capital need so the planning process can begin and budget issues can be addressed.

PROGRAM ELEMENTS

- Identify replacement needs
- Source of funds and replacement time frames

ISSUES AND CONCERNS:

The City's Vehicle Replacement Program is based on a program that the Oregon Department of Transportation contracted with Oregon State University Engineering Department to develop. The program assesses the replacement and maintenance costs of each type of equipment to determine the most cost effective time to replace it. Several major factors are considered when replacement is reviewed. Miles, hours and age of equipment are looked at closely. This program is based on the economic or useful life of equipment as well as user needs.

Information provided by this program will help City divisions in future planning and budget efforts. This program will help identify user needs and economic impact for each division.

VEHICLE REPLACEMENT PROGRAM

Project	2016/17	2017/18	2018/19	2019/20	2020/21
1 Ton Service Truck			\$100,000	\$100,000	
Dump Truck			\$100,000	\$200,000	
Total Capital Costs			\$200,000	\$300,000	

VEHICLE REPLACEMENT PROGRAM

PROJECT NAME: Purchase Vehicles for Water Division

Location: Water Division

Project Description:

Replace vehicles that are at the end of their cost effective and useful life. This project is intended to replace one 2006 1-ton service truck during fiscal year 2018/19, one 2007 1-ton service truck during fiscal year 2019/20 and one 1997 5-yard dump truck during fiscal year 2019/20.

Project Costs:

	-----Five Year Proposed Budget-----				
Funding Source:	2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues			\$200,000	\$300,000	

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
			Bid and Purchase/Secure Funding for Dump Truck	Bid and Purchase	

GEOTHERMAL DIVISION

GEOTHERMAL FUNCTION

Labor required for operating and maintaining the Geothermal District Heating System is provided by the Water/Geothermal Division Production and Infrastructure maintenance staff. Maintenance Division staff operates and maintains the geothermal heating systems serving City buildings.

The Geothermal system currently serves 23 space heating customers and 5 snowmelt systems. The system includes:

- Two geothermal production wells and production pipelines
- One geothermal heat exchanger facility and closed loop heating pipelines
- Two bridge surface snowmelt systems
- Three sidewalk snowmelt systems

ABSTRACT

There is currently no Geothermal Facility Master Plan to formally assess the system or recommend improvements needed now or for future system expansion. There is no revenue projected for the next 3 years for master planning or capital improvement projects. Staff has made recommendations for system upgrades necessary to improve system reliability and during FY 2009-2010 significant improvements toward system reliability were made, however, additional system reliability improvements are highly recommended.

INTRODUCTION

The following section describes capital improvement programs to be implemented in the near, mid and long terms, as described in the Geothermal District Heating System Report, April 3, 2003. The capital improvement programs for Water/Geothermal are organized under two general program headings. Funding for geothermal capital programs is from grants, loans, general fund revenue, and geothermal service charges

- **System Rehabilitation:** Systematic replacement of infrastructure that has outlived their useful service life or has become labor intensive to repair or maintain
- **System Modernization:** Incorporation of emerging and changing technologies and methodologies that improve system operation and management
- **System Optimization:** Improvements to maximize efficiency and redundancy of the geothermal production and closed loop heating system

Projects requiring rehabilitating and replacing critical equipment, improving operational control and efficiency and planning ahead for long term system management, as described in the Geothermal District System Plan, April 3, 2003, will require more revenue than is currently available.

GEOTHERMAL DIVISION:SYSTEM REHABILITATION

PROGRAM INTRODUCTION

This program provides a schedule for rehabilitation or replacement of the City's geothermal utility infrastructure, facilities and equipment. Infrastructure that is properly designed, constructed and maintained has a service life of at least forty years. Facilities that have been properly designed, constructed and maintained have a service life of about twenty-five years. Stationary equipment that has been properly installed and maintained has a service life of twenty years. Infrastructure, facilities and equipment is evaluated for scheduling of when actual rehabilitation or replacement is necessary. Rehabilitation vs. replacement of equipment is decided by cost/benefit analysis. The Program Elements have been separated into critical and anticipated operational need sub-programs.

PROGRAM GOALS AND OBJECTIVES

The primary goal of this program is to rehabilitate or replace infrastructure, facilities and equipment prior to its having reached the end of its useful service life. Timely rehab/replacement prevents rehabilitating or replacing systems under failure conditions, loss of heating service and increased safety risks. The secondary goal of this program is to maximize the City's return on capital investment funds. These goals can be achieved by meeting the following objectives:

- Maintenance of the critical equipment list, with valuations and design life
- Identification of critical systems that require replacement or rehab
- Development of plans, designs and project cost estimates
- Procurement of funds and construction of projects

PROGRAM ELEMENTS

Pipelines: Production and distribution pipelines located between the geothermal production wells and the heat exchanger facility and within the district heating loop are reaching the end of useful service life. These pipelines currently present a high risk of failure causing possible damage to surrounding infrastructure as well as public and private property. Replacement of the production and distribution pipelines will improve system reliability and reduce/eliminate shut downs to facilitate leak repairs.

Service lines: Steel service lines are reaching the end of their useful service life and will require replacement. Replacing these service pipelines with ductile iron will improve system reliability to the individual customer.

ISSUES AND CONCERNS

- **Funding is not available for this program**
- Implementation of this program may require an increase of geothermal revenue and/or additional grant/loan sources

GEOTHERMAL DIVISION: MODERNIZATION & OPTIMIZATION PROGRAMS

PROGRAM INTRODUCTION

This program provides options to modernize and optimize the geothermal district heating system.

PROGRAM GOALS AND OBJECTIVES

The goal of this program is to focus on changing or implementing emerging technologies and methodologies that are able to improve operating flexibility, reliability and efficiency and can be constructed to provide cost/benefit or rapid payback. These goals can be achieved by meeting the following objectives:

- Identification of opportunities to modernize and optimize systems
- Evaluation of feasibility and cost benefits of each opportunity
- Selection of the best opportunities
- Procurement of funds and construction of projects

PROGRAM ELEMENTS

- **Increase system capacity:** Capacity improvements enhance the ability to meet load demands by increasing flow and heat transfer of both the production and district systems
- **Improve system reliability:** Reliability improvements will enhance system longevity, provide standby capacity to allow continued operation on equipment failure or improve the ability to respond to operational problems. Some improvements will enhance both capacity and reliability.

ISSUES AND CONCERNS

- **Funding is not available for these programs**
- Recommended projects are identified in the 2003 NREL Geothermal Study Report
- Implementation of this program improves reliability of and extends service area of the Geothermal Heating District System to increase customer base and generate additional revenue
- Current revenues and reserves do not provide adequate funds for extension of geothermal supply and return pipelines to new customers. Increase in revenue and additional grants/loans are required
- Implementation of this program may require increase of geothermal revenue and/or additional grant/loan sources

GEOTHERMAL DIVISION: MODERNIZATION & OPTIMIZATION PROGRAMS

PROJECT NAME: Heat Exchanger Facility Power Service Upgrade
Location: Heat Exchanger Facility
Council District: 2

Project Description:

This project will replace/upgrade the existing power service to the heat exchanger facility. The existing geothermal district circulation pumps are equipped with 480 volt motors while the existing power service to the facility is 240 volts. In order to operate the pumps with the existing service, a step-up transformer is used. Replacement of this unit could prove to be very costly. Cost estimate: \$95,000, however, there is no funding currently available to complete this project.

Concerns:

Reliability – With the current electrical service and equipment failure of existing electrical components and extended service outage may be caused while replacement equipment is obtained and repairs are completed.

Maintenance – As discussed above, replacement equipment will be very specialized and difficult to locate in addition to very expensive to purchase.

Funding – Possible funding sources for this project may include State and/or Federal loans or grants. Increasing heating rates may also be a consideration however, with the small customer base increased rates may discourage using geothermal as a primary heating source. Increasing the customer base through marketing and incentive programs may also increase revenue and in turn funding for capital improvements.

GEOTHERMAL DIVISION: MODERNIZATION & OPTIMIZATION PROGRAMS

PROJECT NAME: 5th Street to Klamath Avenue Bottleneck Relief
Location: 5th Street to 4th Street and 4th Street to Klamath Avenue
Council District: 2

Project Description:

This project will replace existing 6” geothermal distribution pipeline in the alleyway between South 5th and South 4th Streets and on South 4th Street to Klamath Avenue. An 8” pipeline will be installed in the same location in order to eliminate the undersized pipeline restriction. Replacing this pipeline will also increase capacity and will allow full development of the heating system within the Timbermill Shores Development. Estimated cost for this project is \$90,000, however there is currently no funding available.

Concerns:

Capacity – Due to the undersized piping, water flow is restricted, therefore, limiting development in the Timbermill Shores, Veteran’s Park and South Spring Street areas.

Maintenance – There have been several leaks located and repaired in this area. Upon visual inspection of the supply and return geothermal mainlines, the pipe material is very badly corroded and is at the end of useful service. In order to repair leaks along this area of piping, the heating system is isolated which discontinues service to 10 customers.

Funding – Possible funding sources for this project may include State and/or Federal loans or grants. Increasing heating rates may also be a consideration, however with the small customer base increased rates may discourage using geothermal as a primary heating source. Increasing the customer base through marketing and incentive programs may also increase revenue and in turn funding for capital improvements.

GEOTHERMAL DIVISION: MODERNIZATION & OPTIMIZATION PROGRAMS

PROJECT NAME: Increase Capacity of Re-Injection Well/Rehab Fire Station Geothermal Well
Location: Heat Exchanger Facility
Council District: 2

Project Description:

The geothermal re-injection well will require upgrade and capacity expansion. Also the fire station connected to the heating system in about 1980 without decommissioning their geothermal well. The well is now artesianing and is contributing to the moisture problem in the basement of the heat exchanger facility. This well should be properly abandoned or rehabbed in order to serve as the second re-injection well. The cost estimate for this project is estimated at \$125,000, however, there is no funding currently available to complete this project.

Concerns:

Capacity – Increasing the capacity of the re-injection well located near the heat exchanger facility will allow increased flow from the production wells which, in turn, will allow increased capacity within the district heating loop.

Maintenance – Abandonment of the old unused well near the corner of Broad Street and Wall Street will prevent water flow into the stormwater collection system and into the basement of the heat exchanger facility which, due to temperature of the water, causes damage to pipe materials and the concrete floor in the basement.

Funding – Possible funding sources for this project may include State and/or Federal loans or grants. Increasing heating rates may also be a consideration, however with the small customer base, increased rates may discourage using geothermal as a primary heating source. Increasing the customer base through marketing and incentive programs may also increase revenue and in turn funding for capital improvements.

**WASTEWATER
DIVISION**

WASTEWATER DIVISION

The Wastewater Division's vision is to provide effective, efficient and economical wastewater and storm water utility service within the City of Klamath Falls. Realizing this vision requires executing a mission to have the customer and public at large value the services provided and work produced by the division. A primary objective in achieving this mission is to initiate progressive programs to actively and responsibly manage our assets (i.e. physical, fiscal and human assets) and our National Pollutant Discharge Elimination System (NPDES) Permits. This Capital Improvement Plan (CIP) is therefore developed in our response to actively manage our physical and fiscal assets. It is by this strategic intent that Division staff, under general policy guidance from Council and specific direction from Public Works, manages:

- The Spring Street Wastewater Treatment Plant (SSWTP).
- Reclaimed water production from the SSWTP and conveyance facilities delivering cooling water to Iberdrola Cogeneration Facility.
- Bio-solids composting facilities that provides cured composted soil amendments to the community at large.
- Sanitary sewer collection lines (over 151 miles) and twelve lift stations.
- A state-of-the-art water quality control laboratory.
- A State of Oregon DEQ approved industrial wastewater pretreatment program.
- Storm water catch basin collection, over 130 miles of gravity flow pipelines, four pumping conveyance systems and Best Management Practice (BMP) technology water quality improvement facilities.
- Current Upper Klamath Lake and soon to be implemented Klamath River Total Maximum Daily Load (TMDL), Storm Water BMP program and procedures tracking program.

The wastewater collection, conveyance, treatment, reuse and discharge system has a service population of approximately 7,759 connections and serves over 28,000 people. The storm water collection, conveyance, BMP and discharge systems provide drainage to approximately 19 square miles of surface area and over 100 miles of City maintained roadways. Because the majority of both of these systems were constructed prior to 1971, and as early as 1930, an accelerated rate of system deterioration and failure will continue to be an ongoing challenge for the Division to first stabilize then improve system condition and performance.

ABSTRACT

The 2016-2021 Capital Improvement Program (CIP), prepared by the Public Works Department describes capital programs of the Wastewater Division that support and/or are required to achieve Division goals, mission and vision statements.

This 2016-2021 CIP provides:

- A general introduction summarizing CIP short and long term programs, subprograms, funding sources and program prioritization considerations.
- A Capital Improvement Plan Program Cost Summary.
- Separate program introductions, project costs, project descriptions and proposed schedules for the: Capital Maintenance Rehabilitation and Replacement Program; the Regulatory Compliance Program; and the Master Planning Program.

WASTEWATER DIVISION

GENERAL INTRODUCTION

The following section provides an overview of capital improvement programs to be implemented in the next five years. The capital improvement programs for the Division are organized under three general program headings to improve Division efficiency, effectiveness and quality of its systems. The three programs (performance impacting measures are in parenthesis) are as follows:

- Rehabilitation and Replacement (GOAL: Efficiency and Effectiveness)
- Regulatory Compliance (GOAL: Quality)
- Master Planning (GOAL: Efficiency, Effectiveness and Quality)

The programs are further organized to differentiate between the three sub-functions of the Division: 1) wastewater collection and conveyance; 2) wastewater treatment, reclamation and bio-solid residuals treatment; and 3) storm water collection, conveyance and water quality management. Sub-programs under general programs are included to clarify budget organization.

Funding for these programs is from six sources: customer revenue, reserves for major maintenance, restricted TMDL revenue, State Revolving Loan Funds, System Development Charges (SDCs) and State/Federal grants. Non-capacity expanding rehabilitation, replacement, modernization and optimization projects are generally funded through working capital. As allowed by Council policy, capacity expanding projects and bond debt reduction are generally funded through reserved SDCs if available. Major capital improvement projects (i.e. projects having a cost greater than \$1.0 million) are typically funded through working capital, State Revolving Loan Funds and/or bond proceeds. The Program Cost Summary section includes two summary rollups: Capital; and Vehicles. Capital are those projects that are required to maintain, rehabilitate or replace existing infrastructure or equipment and meet the demands of growth within the community or comply with new environmental regulatory requirements or needed system security improvements. Vehicles include all motorized service vehicles or portable rolling stock required by the Division to execute the day-to-day functions of the Division.

Regarding prioritization of Capital projects, projects for the rehabilitation or replacement of the City's existing assets have been first priority for the Public Works Department followed by New Asset Capital Projects. Should the decision be made to move forward with meeting the demands of growth on the City's west side, mechanisms to recapture costs from the developments driving the need for infrastructure expansion shall be devised and implemented. The Wastewater Division completed a Wastewater Collection System Master Plan in December of 2006 and completed their Wastewater Treatment Facilities Master Plan in April 2009. An update to the Wastewater Collection System Master Plan was completed in 2014. These Master Plans will recommend collection and treatment system improvements needed along with project priority rankings, planning cost estimates and project completion schedules. The Wastewater Treatment Facilities Master Plan also considers new, stricter, Total Maximum Daily Loading (TMDL) for the Klamath River where our wastewater treatment plant discharges to. With continual reviews of funding sources based on the information such as the Master Plans and permit information, rates and System Development Charges are adjusted accordingly.

WASTEWATER DIVISION

In 2002 the City's Spring Street Wastewater Treatment Plant (SSWWTP) underwent a partial upgrade, however the remaining sections of the plant that are at or exceeding 50 years old are in need of upgrading. This project is in the early stages of planning with one variable in need of being answered before proceeding with construction. In order to address these necessary repairs and upgrades, Council has made some rate adjustments. A history of the rate adjustments follows:

On August 17, 2009, the City Council passed Resolution 09-33, which raised sanitary sewer rates by 70% over a three-year period. The first increase of 36% went into effect on September 1, 2009. The other two increases of 17% each were scheduled to go into effect on January 1, 2011, and January 1, 2012. These large rate increases were approved to provide a revenue stream for financing improvements and repairs to the front end of the treatment plant.

On December 6, 2010, the City Council passed Resolution 10-33, which delayed implementation of the two 17% increases for one year until there were more definitive answers on the Total Maximum Daily Loads (TMDLs) to lessen the potential impact the rate increases could have on ratepayers in the current economy.

On December 5, 2011, City Council approved Resolution 11-29 which amended Resolution 10-33 in three ways. First, in response to the June 2011 Budget Committee meeting, a 5% plus 3.9% CPI increase was approved rather than the scheduled 17% increase. Second, the 8.1% rate increase, which represents the remainder of the 17% increase, and subsequent 17% increase were delayed until January 2013 and January 2014 respectively. Third, CPI increases were suspended until January of 2015.

On December 17, 2012, City Council approved Resolution 12-31 which amended Resolution 11-29 delaying the balance of the two rate increases until 2014 and 2015 and reinstating annual CPI adjustments, starting with a 2% adjustment in January, 2013 and then the percentage will be determined each January 1st for every year thereafter.

In December of 2013, Council passed Resolution 13-25 which amended Resolution 12-31 and again delayed the 8.1% and 17% rate increases until 2015 and 2016

On January 20, 2015, City Council rescinded Resolution 13-25 and adopted Resolution 15-01 which raised rates a total of 5.9% for the rest of 2015 and increased rates 2% for years 2016 and 2017, plus CPI.

PROGRAM COST SUMMARY

Program	2016/17	2017/18	2018/19	2019/20	2020/21
Rehabilitation & Replacement Program	\$420,000	\$490,000	\$750,000	\$465,000	\$795,000
Regulatory Compliance Program	\$86,500	\$30,000			
Master Planning	\$1,680,000	\$12,150,000	\$18,150,000	\$150,000	\$150,000
Vehicles	\$185,000				
TOTAL PROGRAM COSTS	\$2,371,500	\$12,670,000	\$18,900,000	\$615,000	\$945,000
SECURE FUNDING AMOUNTS	-\$150,000	-\$150,000	-\$150,000	-\$150,000	-\$150,000
TOTAL CAPITAL COSTS	\$2,221,500	\$12,520,000	\$18,750,000	\$465,000	\$795,000

REVENUE SUMMARY

Program	2016/17	2017/18	2018/19	2019/20	2020/21
System Rehabilitation & Replacement Program					
Operating Revenue	\$420,000	\$490,000	\$750,000	\$465,000	\$795,000
Regulatory Compliance					
Operating Revenue	\$86,500	\$30,000			
Master Planning					
Operating Revenue	\$180,000	\$150,000	\$150,000	\$150,000	\$150,000
State Revolving Loan Funds	\$1,500,000	\$12,000,000	\$18,000,000		
Vehicle Replacement Program					
Operating Revenue	\$185,000				
Total Capital Revenue	\$2,371,500	\$12,670,000	\$18,900,000	\$615,000	\$945,000
Operating Revenue	\$871,500	\$670,000	\$900,000	\$615,000	\$945,000
State Revolving Loan Funds	\$1,500,000	\$12,000,000	\$18,000,000		

SYSTEM REHABILITATION & REPLACEMENT

PROGRAM INTRODUCTION

This program provides for the systematic rehabilitation or replacement of the Division's wastewater collection, treatment and reclamation systems equipment, facilities and infrastructure. A systematic rehabilitation and replacement program insures continued progress towards achieving and sustaining system operating efficiency and effectiveness. Division equipment, facilities and infrastructure generally have designed for service lives ranging from as low as 5 years for certain equipment to 20 years for certain facilities and in excess of 40 years for certain infrastructure.

The management of the Division's expanding inventory of infrastructure, facility and equipment assets mandates that the CIP be a very dynamic and flexible planning tool. The ever increasing cost of managing the Division's assets requires that an increased level of importance be placed upon staff to implement project prioritization decision-making practices that will result in the maximized benefit of the capital dollar expended.

The Capital Maintenance Rehabilitation and Replacement Program elements include both wastewater collection and wastewater treatment sub-programs.

PROGRAM GOALS AND OBJECTIVES

The goal of the Capital Maintenance Rehabilitation and Replacement Program is to maximize the service life of existing equipment, facilities and infrastructure. This goal can be achieved by the execution of an objective to systematically determine rehabilitation or replacement needs of equipment, facilities and infrastructure assets. Rehabilitation projects are designed to extend the service life of an asset, whereas replacement projects are improvements designed to replace equipment that has failed or that will soon fail or that has passed the end of its useful service life and rehabilitation of the asset is no longer cost effective.

The systematic approach to determining whether a rehabilitation or replacement project is warranted requires that the following practice is employed:

- Develop and maintain Division assets inventory that includes asset location, valuation and designed service life
- Identify critical assets in inventory that require routine maintenance or reveal the need for rehabilitation or replacement
- Prioritize CIP projects to meet defined efficiency and effectiveness goals
- Assign available funding or develop funding mechanisms to execute priority CIP projects

PROGRAM ELEMENTS

Wastewater Collection:

- Maintaining compliance with the EPA's Capacity, Management, Operations and Maintenance (CMOM) Program.

SYSTEM REHABILITATION & REPLACEMENT

- Rehabilitate or replace facilities or infrastructure. This ongoing program works to insure that facilities or infrastructure housing electrical and mechanical systems continue to retain their essential protective or process function within the system and identifies facilities that may be reaching the end of their service life and need replaced.
- Rehabilitate or replace lift stations that are approaching the end of useful service life. This program works to identify lift stations that have reached the end of useful service life due to the condition and/or age of electrical and mechanical systems and where routine maintenance or rehabilitation of these systems is no longer an effective activity.
- Rehabilitation or replace wastewater collection lines that are approaching the end of useful service life. This program works to identify wastewater collection lines that have reached the end of useful service life due to condition and/or age and where routine maintenance or rehabilitation of the infrastructure or facility is no longer an effective activity.

Wastewater Treatment/Reclamation:

- Maintaining compliance with the EPA's Capacity, Management, Operations and Maintenance (CMOM) Program.
- Rehabilitate or replace electrical and mechanical system components. This ongoing program element works to: a) insure the effective operation of wastewater treatment and reclamation systems; and b) eliminates the environmental and fiscal liability associated with the discharge of untreated or partially treated sewage into the environment. This program also works to identify electrical and mechanical systems that have reached the end of useful service life due to conditions and/or age and where routine maintenance or rehabilitation is no longer an effective activity.
- Rehabilitate or replace facilities or infrastructure. This ongoing program works to insure that facilities or infrastructure housing electrical and mechanical systems continue to retain their essential protective or process function and to identify facilities or infrastructure that have reached the end of useful service life due to condition and/or age and where routine maintenance or rehabilitation of the infrastructure or facility is no longer an effective activity.

ISSUES AND CONCERNS

- The age of wastewater collection, conveyance and treatment systems will continue to challenge the Division efforts, under current funding levels, to meet program goals.
- EPA CMOM program and EPA/DEQ effluent reuse rules will mandate that projects identified under this program be executed or system failures associated with the identified projects will result in considerable regulatory enforcement actions.
- Failure to properly fund and implement this program will increase the operations and maintenance costs of these systems with no net increase in income.
- This CIP includes preliminary and partial estimates for upgrades required due to changing TMDL and water quality requirements.

SYSTEM REHABILITATION & REPLACEMENT

Program		2016/17	2017/18	2018/19	2019/20	2020/21
Pretreatment Program Samplers	WWT	\$10,000				
Administration Building HVAC	WWT	\$50,000				
Rehabilitate or Replace Compost Screening Equipment	WWT	\$200,000				
Chemical Building Storage Tanks	WWT				\$10,000	\$140,000
Secondary Clarifier #1 – Replacement Drivers/Motors	WWT				\$10,000	\$65,000
KFI Manhole Rehab/Replace	WWC	\$10,000	\$40,000			
Misc. Gravity & Pressure Sewer Line & Manhole Rehab/Replace- 1400 Block Crescent Avenue	WWC	\$120,000				
Misc. Gravity & Pressure Sewer Line & Manhole Rehab/Replace- Mitchell and Orchard	WWC	\$10,000	\$130,000			
Misc. Gravity & Pressure Sewer Line & Manhole Rehab/Replace- 5300 Block Bartlett Drive	WWC			\$10,000	\$120,000	
Misc. Gravity & Pressure Sewer Line & Manhole Rehab/Replace- Klamath Falls Airport Terminal	WWC		\$10,000	\$120,000		
Misc. Gravity & Pressure Sewer Line & Manhole Rehab/Replace- 600 Block of Washington	WWC			\$10,000	\$65,000	
Misc. Gravity & Pressure Sewer Line & Manhole Rehab/Replace- 1500 Block of Sargent	WWC			\$10,000	\$65,000	
Misc. Gravity & Pressure Sewer Line & Manhole Rehab/Replace- 400 Block of Hillside	WWC			\$10,000	\$90,000	
Misc. Gravity & Pressure Sewer Line & Manhole Rehab/Replace- 1300 Block of Shelly	WWC			\$10,000	\$65,000	
Misc. Gravity & Pressure Sewer Line & Manhole Rehab/Replace- Sewer Lines Around Klamath Union High School	WWC				\$10,000	\$190,000

SYSTEM REHABILITATION & REPLACEMENT

Program		2016/17	2017/18	2018/19	2019/20	2020/21
Misc. Gravity & Pressure Sewer Line & Manhole Rehab/Replace- 900 Block Fulton	WWC		\$10,000	\$120,000		
Misc. Gravity & Pressure Sewer Line & Manhole Rehab/Replace- Washington & 7th	WWC				\$10,000	\$140,000
Misc. Gravity & Pressure Sewer Line & Manhole Rehab/Replace- 7th & High	WWC				\$10,000	\$140,000
Misc. Gravity & Pressure Sewer Line & Manhole Rehab/Replace- Soquel & Angle	WWC				\$10,000	\$120,000
Brett Way Sewer Main Extension	WWC	\$20,000	\$300,000	\$460,000		
Total Capital Costs		\$420,000	\$490,000	\$750,000	\$465,000	\$795,000

SYSTEM REHABILITATION & REPLACEMENT

PROJECT NAME: Pretreatment Program Samplers
Location: WWTP
Council District: 2

Project Description:

Replace the outdated portable samplers used in the field for the Wastewater Division’s Pretreatment Program. The current ISCO 2710 samplers which are ten years old have reached the end of their useful life and replacement and repair parts are becoming hard to find. Cost estimate: \$10,000

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Wastewater Operating Revenue	\$10,000					

*LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
Purchase					

SYSTEM REHABILITATION & REPLACEMENT

PROJECT NAME: Administration Building HVAC Replacement
Location: WWTP
Council District: 2

Project Description:

Administration building HVAC upgrade, which includes cooling and backup heating for the WWTP administration building. Cost estimate: \$50,000

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Wastewater Operating Revenue	\$50,000					

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
Construct					

SYSTEM REHABILITATION & REPLACEMENT

PROJECT NAME: Rehabilitate/Replace Compost Screening Equipment
Location: WWTP
Council District: 2

Project Description:

The screening equipment used in the composting operation is reaching the end of its useful life. The conveyors and trommel screen will need replaced in the near future. Cost Estimate: \$200,000

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Wastewater Operating Revenue		\$200,000				

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
Purchase					

SYSTEM REHABILITATION & REPLACEMENT

PROJECT NAME: Chemical Building Storage Tanks
Location: WWTP
Council District: 2

Project Description:

Project involves replacing the existing chemical storage tanks to address end of useful life. Tanks and the associated piping and plumbing connections have had an increase in age related leaks from the piping and fittings, both from normal aging and from the impact of the chemicals on the tank, piping, fittings and the PVC glue used to hold the components together. Cost Estimate: \$150,000

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Wastewater Operating Revenue					\$10,000	\$140,000

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
				Design	Construct

SYSTEM REHABILITATION & REPLACEMENT

PROJECT NAME: Replacement Drives/Motors – Secondary Clarifier #1
Location: WWTP
Council District: 2

Project Description:

Project is to replace the original DC drives and motors to an AC variable frequency drive system with compatible motors for the secondary clarifier #1 (RAS pumps and drive motor system). The existing drives and motors were installed 50 years ago and have passed their useful life cycle.
 Cost Estimate: \$75,000

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Wastewater Operating Revenue					\$10,000	\$65,000

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
				Design	Construct

SYSTEM REHABILITATION & REPLACEMENT

PROJECT NAME: KFI Manhole Rehab/Replacement
Location: WWTP
Council District: 2

Project Description:

Due to excessively high H₂S (Hydrogen Sulfide) levels the concrete is corroding and is losing its structural integrity. This will cause the manhole to eventually collapse causing a major sewer backup. In all likelihood, the manhole will not be able to be rehabilitated and will need replaced. In addition, an anti-corrosive liner will be installed to prevent future deterioration. Cost estimate: \$50,000

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Wastewater Operating Revenue		\$10,000	\$40,000			

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
	Design	Construct			

SYSTEM REHABILITATION & REPLACEMENT

PROJECT NAME: Miscellaneous Gravity & Pressure Sewer Line & Manhole Replacement/Rehabilitation
Location: 1400 Block of Crescent Avenue
Council District: 2

Project Description:

Replace 370 feet of 6” clay sewer pipe with 8” PVC sewer pipe from manhole 09/108 to manhole 09/019 in the 1400 block of Crescent and Fulton south to the vacated portion of Donald Street. Existing pipe is 65+ years old and contains sections of broken, offset pipe joints, cracked pipe and numerous root intrusions. Replacing this section of sewer main will reduce the possibility of future sewer backups or SSOs. Cost Estimate: \$130,000

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Wastewater Operating Revenue	\$120,000					

*LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
Construct					

SYSTEM REHABILITATION & REPLACEMENT

PROJECT NAME: Miscellaneous Gravity & Pressure Sewer Line & Manhole Replacement/Rehabilitation
Location: Mitchell and Orchard
Council District: 2

Project Description:

Replace and realign 240 feet of 6” clay sewer pipe with 8” PVC sewer pipe. Line runs beneath the house on the corner of Mitchell and Orchard between manholes 3A/064 and 3A/065. Existing pipe is 70+ years old and contains sections of broken, offset pipe joints, cracked pipe and numerous root intrusions. Cost Estimate: \$140,000

Project Costs:

Funding Source:	LTD*:	-----Five Year Proposed Budget-----				
		2016-17	2017-18	2018-19	2019-20	2020-21
Wastewater Operating Revenue		\$10,000	\$130,000			

*LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
	Design	Construct			

SYSTEM REHABILITATION & REPLACEMENT

PROJECT NAME: Miscellaneous Gravity & Pressure Sewer Line & Manhole Replacement/Rehabilitation
Location: 5300 Block of Bartlett Drive (Gatewood Subdivision)
Council District: 1

Project Description:

This project consists of rehabilitating 366 feet of 10” Chrysotile Asbestos Cement (AC) pipe. This section of sewer pipe is located between manhole 18/006 and 18/002. It has a large sag/belly in the existing pipe and collects debris. This line requires scheduled monthly flushing to prevent debris buildup which results in high H2s levels and could cause sewer backups. Cost Estimate: \$130,000

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Wastewater Operating Revenue				\$10,000	\$120,000	

*LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
			Design	Construct	

SYSTEM REHABILITATION & REPLACEMENT

PROJECT NAME: Miscellaneous Gravity & Pressure Sewer Line & Manhole Replacement/Rehabilitation
Location: Klamath Falls Airport Terminal
Council District: 1

Project Description:

Replace 330 feet of 6” clay sewer pipe with 8” PVC sewer pipe. Existing pipe is 70+ years old and contains sections of broken, offset pipe joints and cracked pipe. Replacing this section of sewer main will reduce the possibility of future sewer backups or SSOs. Cost Estimate: \$130,000

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Wastewater Operating Revenue			\$10,000	\$120,000		

*LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
		Design	Construct		

SYSTEM REHABILITATION & REPLACEMENT

PROJECT NAME: Miscellaneous Gravity & Pressure Sewer Line & Manhole Replacement/Rehabilitation
Location: 600 Block of Washington
Council District: 1

Project Description:

Replace 320 feet of existing 4” sewer main with 8” PVC line. We are unable to do routine maintenance on this line due to its size. The line is 50 plus years old and is in poor condition with broken sections, root intrusion and offset joints. In order to provide better access to the line for maintenance a new manhole will also be installed at the intersection of Washington and 7th Streets. This upgrade will eliminate sewer backups and allow access for regular maintenance. Cost Estimate: \$75,000

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Wastewater Operating Revenue				\$10,000	\$65,000	

LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
			Design	Construct	

SYSTEM REHABILITATION & REPLACEMENT

PROJECT NAME: Miscellaneous Gravity & Pressure Sewer Line & Manhole Replacement/Rehabilitation
Location: 1500 Block of Sargent
Council District: 5

Project Description:

Replace 370 feet of 6” clay pipe with 8” PVC sewer pipe from manhole 08/127 to 08/125 in the 1500 block of Sargent Street. The existing pipe is 50 plus years old and contains sections of broken pipe, offset joints and root intrusions. Replacement of the sewer main will reduce the possibility of future backups and SSOs. Cost Estimate: \$75,000

Project Costs:

Funding Source:	LTD*:	-----Five Year Proposed Budget-----				
		2016-17	2017-18	2018-19	2019-20	2020-21
Wastewater Operating Revenue				\$10,000	\$65,000	

*LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
			Design	Construct	

SYSTEM REHABILITATION & REPLACEMENT

PROJECT NAME: Miscellaneous Gravity & Pressure Sewer Line & Manhole Replacement/Rehabilitation
Location: 400 Block of Hillside
Council District: 2

Project Description:

Replace 490 feet of 6” concrete line with 8” PVC line. The existing pipe is 60 plus years old and contains sections of broken line, root intrusions and offset joints. Replacing this line will reduce the chance of future backups and SSOs. Cost Estimate: \$100,000

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Wastewater Operating Revenue				\$10,000	\$90,000	

*LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
			Design	Construct	

SYSTEM REHABILITATION & REPLACEMENT

PROJECT NAME: Miscellaneous Gravity & Pressure Sewer Line & Manhole Replacement/Rehabilitation
Location: 1300 Block of Shelly (between Lancaster & Lexington)
Council District: 2

Project Description:

Replace both 6” sanitary sewer lines with approximately 350 feet of 8” PVC line. The existing lines are cracked, have offset joints and numerous root intrusions. These sewer lines are more than 50 years old. Installing a new 8” line will reduce the chance of SSOs and future problems. One of the existing lines runs underneath a house on Shelly Street. Cost Estimate: \$75,000

Project Costs:

Funding Source:	LTD*:	-----Five Year Proposed Budget-----				
		2016-17	2017-18	2018-19	2019-20	2020-21
Wastewater Operating Revenue				\$10,000	\$65,000	

*LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
			Design	Construct	

SYSTEM REHABILITATION & REPLACEMENT

PROJECT NAME: Miscellaneous Gravity & Pressure Sewer Line & Manhole Replacement/Rehabilitation
Location: Klamath Union High School
Council District: 2

Project Description:

Rehabilitate all 8” sewer lines around Klamath Union High School. Existing pipe is 70+ years old and contains sections of broken, offset pipe joints, cracked pipe and numerous root intrusions. Project will be from manhole 08/004 near 1240 Monclaire all the way around the school on Alameda to manhole 08/006 near 1300 Monclaire. Replacing this section of sewer main will reduce the possibility of future sewer backups or SSOs. Cost Estimate: \$200,000

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Wastewater Operating Revenue					\$10,000	\$190,000

*LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
				Design	Construct

SYSTEM REHABILITATION & REPLACEMENT

PROJECT NAME: Miscellaneous Gravity & Pressure Sewer Line & Manhole Replacement/Rehabilitation
Location: 900 Block of Fulton
Council District: 5

Project Description:

Replace 360 feet of 8” clay sewer pipe with 8” PVC sewer pipe. Existing pipe is 70+ years old and contains sections of broken, offset pipe joints, cracked pipe and numerous root intrusions. Project will begin at manhole 08/121 near 925B Fulton and continue up the alley to manhole 08/123 near 915 Delta. This is the alley between Oregon Avenue and Sargent Street which include the entire block of 1500 Sargent. Replacing this section of sewer main will reduce the possibility of future sewer backups or SSOs. Cost Estimate: \$130,000

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Wastewater Operating Revenue			\$10,000	\$120,000		

LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
		Design	Construct		

SYSTEM REHABILITATION & REPLACEMENT

PROJECT NAME: Miscellaneous Gravity & Pressure Sewer Line & Manhole Replacement/Rehabilitation

Location: Washington and 7th Street

Council District:

Project Description:

Install 300 feet of 8” PVC sewer mainline and install new service connections to property corners. Existing line is inaccessible and is not able to be maintained due to two 45 degree bends in pipe. Pipe is also 70+ years old and cannot be televised to determine the condition. Cost Estimate: \$150,000

Project Costs:

Funding Source:	LTD*:	-----Five Year Proposed Budget-----				
		2016-17	2017-18	2018-19	2019-20	2020-21
Wastewater Operating Revenue					\$10,000	\$140,000

*LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
				Design	Construct

SYSTEM REHABILITATION & REPLACEMENT

PROJECT NAME: Miscellaneous Gravity & Pressure Sewer Line & Manhole Replacement/Rehabilitation

Location: Soquel and Angle

Council District:

Project Description:

Install approximately 150 feet of 6” mainline off of a lamp hole in an inaccessible right-of-way. There are currently fences and retaining walls built over the mainline. Installing a mainline extension and a new manhole will provide access for routine maintenance on that section of the collection system. Cost Estimate: \$130,000

Project Costs:

Funding Source:	LTD*:	-----Five Year Proposed Budget-----				
		2016-17	2017-18	2018-19	2019-20	2020-21
Wastewater Operating Revenue					\$10,000	\$120,000

*LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
				Design	Construct

SYSTEM REHABILITATION & REPLACEMENT

PROJECT NAME: 7th and High Mainline Extension
Location: 7th and High Streets
Council District:

Project Description:

Tie into existing manhole at High and 7th Streets installing 250 feet of new 8” PVC sewer main towards Washington Street. There are currently three houses tied into one lateral and they have several problems with blockages. Connect service laterals to each of the property corners eliminating the homes being on one service connection. Cost Estimate: \$150,000

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Wastewater Operating Revenue					\$10,000	\$140,000

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
				Design	Construct

SYSTEM REHABILITATION & REPLACEMENT

PROJECT NAME: Brett Way Sewer Main Extension
Location: Brett Way
Council District: County

Project Description:

As part of the Brett Way Extension Project (see page 31 under Capital Street Program) this portion of the project will construct a new sewer main along Brett Way between Homedale Road and Summers Lane. Cost Estimate: \$910,000

Project Costs:

Funding Source:	LTD*:	-----Five Year Proposed Budget-----				
		2016-17	2017-18	2018-19	2019-20	2020-21
Wastewater Operating Revenue		\$20,000	\$300,000	\$460,000		

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
	Design	Construct	Construct		

REGULATORY COMPLIANCE

PROGRAM INTRODUCTION

This program develops and implements projects to comply with current or emerging regulatory issues. The principle regulatory drivers currently faced by the division are: US Environmental Protection Agency (EPA); Capacity, Management, Operations, and Maintenance (CMOM) Program regulations; EPA Total Maximum Daily Loading (TMDL) standards; Senate Bill 737 regarding toxins; and the US EPA National Pollutant Discharge Elimination System (NPDES) Permit. Though many of the projects identified will be executed under non-capital project funds, certain projects will be funded with CIP funds. Also, many of the projects identified under this program will have cross-functional benefit across the aforementioned regulatory drivers.

The program elements have been separated into wastewater collection and wastewater treatment/reclamation sub-programs.

PROGRAM GOALS AND OBJECTIVES

The goal of this program is to identify and develop projects that will ultimately lead to compliance with the myriad of regulatory drivers facing the Division. Achieving regulatory compliance will result in achieving quality measures in environmental, water quality and financial performance areas. This goal can be achieved through attainment of the following objectives:

- Development and maintenance of a regulatory driver compliance strategy that will move the Division forward to ultimate compliance.
- Identification of regulatory driver capital projects that will align the Division with defined wastewater conveyance, wastewater treatment, wastewater reuse, wastewater discharge and financial accounting methodologies.
- Prioritization of short and long term projects that, if not executed, will result in a failure to meet defined quality goals.
- Assignment of available funding or development of funding mechanisms to execute priority short term projects and that anticipate eventual completion of long term projects.

PROGRAM ELEMENTS

Wastewater Collection:

- Identify pilot projects to establish physical, chemical and biological options to treat and/or control hydrogen sulfide production. This effort will result in meeting the intent of the CMOM program to control the impact of hydrogen sulfide production within the wastewater collection system.
- Establish permanent methods to continuously measure the flow emanating from the wastewater collection system's twenty-two drainage basins. This effort will result in meeting the intent of the CMOM program for testing and inspection requirements for the wastewater collection system.
- Establish a permanent and easily updated and maintained electronic means of establishing wastewater collection system asset conditions and efforts taken to maintain, repair, replace or expand the assets. This effort will result in meeting the intent of CMOM program requirements and GASB 34 standards by accurately accounting for the quantity, condition and value of wastewater collection system assets.

REGULATORY COMPLIANCE

Wastewater Treatment/Reclamation:

- Identify water quality pilot projects. This program element systematically works to identify pilot projects that will assess methodologies for achieving anticipated TMDL standards for dissolved oxygen, temperature, ammonia toxicity, total phosphorous and pH. This effort will ultimately lead to defining the best methodology to achieve TMDL water quality standards.
- Establish a permanent and easily updated and maintained electronic means of establishing wastewater treatment/reclamation system asset conditions and efforts taken to maintain, repair, replace or expand the assets. This effort will result in meeting the intent of GASB 34 standards by accurately accounting for the quantity, condition and value of wastewater collection system assets.

REGULATORY COMPLIANCE

Program	Description	2016/17	2017/18	2018/19	2019/20	2020/21
Replace WWTP Samplers/Equipment	WWT		\$30,000			
KFI H ₂ S Strategic Solutions Pilot Testing	WWC	\$30,000				
Emergency Bypass Pumping	WWC	\$56,500				
Total Capital Costs		\$86,500	\$30,000			

REGULATORY COMPLIANCE

PROJECT NAME: Replace WWTP Samplers and Equipment
Location: WWTP
Council District: 2

Project Description:

Replace outdated WWTP sampling equipment used for daily plant sampling required by the NPDES permit. (influent sampler, secondary effluent).

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenue			\$30,000			

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
		Purchase			

REGULATORY COMPLIANCE

PROJECT NAME: KFI H₂S Strategic Solutions Pilot Testing
Location: KFI Force Main
Council District: 1

Project Description:

A study of the elevated hydrogen sulfide (H₂S) levels in the KFI force main and its impacts on the manhole at the entrance to the WWTP was done in fiscal year 15/16. With the strategies outlined in the study’s technical memo, this project will pilot test and evaluate the most promising solutions and/or equipment. Cost estimate: \$30,000.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenue	\$ 30,000					

*LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
Pilot Testing					

REGULATORY COMPLIANCE

PROJECT NAME: Emergency Bypass Pumping
Location: Collection System
Council District: All

Project Description:

Replace and upgrade the existing mobile Gruman Rupp emergency pumping system with a more reliable mobile system for emergency and/or bypass pumping at pump stations or other system locations. Existing system is unable to meet the needs. Cost estimate: \$40,000.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenue		\$ 56,500				

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
Purchase					

MASTER PLANNING

PROGRAM INTRODUCTION

This program develops and implements projects in response to meeting the needs of growth identified in the Wastewater Collection System Master Plan, Wastewater Treatment Facility Master Plan or unanticipated commercial/industrial development not identified in either document.

PROGRAM GOALS AND OBJECTIVES

The goal of this program is to identify and develop projects that will ultimately lead to meeting increased efficiency, effectiveness and quality demands through the capacity expansion of wastewater collection and treatment systems or the extension of wastewater collection systems. These goals can be achieved through attainment of the following objectives:

- Development and maintenance of Sanitary Sewer Master Plans and Wastewater Treatment Plant Facility Plans.
- Identification of capital projects that will align the division with proposed capacity or extension demands as projected by the City's Community Development Department.
- Prioritization of short and long term projects that, if not executed, will result in a failure to meet the demand for additional capacity or expansion.
- Assignment of available funding or development of funding mechanisms to execute priority short term projects that anticipate eventual completion of long term projects.

PROGRAM ELEMENTS

Wastewater Collection:

- Identify projects that will meet the two to five year demand for capacity growth or system expansion pursuant to Master Plan findings.
- Identify projects that will meet the five to twenty year demand for capacity growth or system expansion pursuant to Master Plan findings.

Wastewater Treatment/Reclamation:

- Identify projects that will meet the two to five year demand for capacity growth or system expansion pursuant to Master Plan findings.
- Identify projects that will meet the five to twenty year demand for capacity growth or system expansion pursuant to Master Plan findings.

ISSUES AND CONCERNS

- Meeting short term program elements will exceed the capacity of existing unencumbered funding sources.
- Meeting long term program elements will necessitate annual re-evaluations of current wastewater service rates and System Development Charges to determine the adequacy of

MASTER PLANNING

these revenue sources to meet the planned demand upon the wastewater collection and treatment systems.

MASTER PLANNING

Program	2016/17	2017/18	2018/19	2019/20	2020/21
California Pump Station Land Procurement	\$30,000				
California Pump Station Rehab/Replacement	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000
Treatment Plant Upgrade	\$1,500,000	\$12,000,000	\$18,000,000		
Total Capital Costs	\$1,680,000	\$12,150,000	\$18,150,000	\$150,000	\$150,000

MASTER PLANNING

PROJECT NAME: California Pump Station Land Procurement
Location: 490 Nevada Street
Council District: 5

Project Description:

The Wastewater Division currently has limited pump station capacity remaining at this sanitary pumping station. Purchasing adjacent property will allow for future pump station upgrades or possibly total pump station replacement. Cost estimate: \$30,000

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenue	\$ 30,000					

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
Purchase					

MASTER PLANNING

PROJECT NAME: California Pump Station Rehabilitation/Replacement
Location: 490 Nevada Avenue
Council District: 5

Project Description:

This pump station has limited building space remaining and additional plumbing upgrades need to be made to meet future increased wastewater flows. This project is anticipated needing to be built 10 years out and it is recommended that funding be set aside. Cost estimate: \$1,500,000

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Wastewater Operating Revenue		\$150,000	\$150,000	\$150,000	\$150,000	\$150,000

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
	Secure Funding				

MASTER PLANNING

PROJECT NAME: Treatment Plant Upgrade
Location: WWTP
Council District: 2

Project Description:

Enter into a design/build contract with a qualified engineering firm to provide wastewater treatment plant upgrades identified in the Wastewater Master Plan. The areas of upgrade will be the headworks, primary clarifier, aeration basins and the anaerobic digesters. Cost estimate: \$30,000,000

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenue						
SRLF		\$1,500,000	\$12,000,000	\$18,000,000		

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
	Design	Construct	Construct		

VEHICLE REPLACEMENT PROGRAM

PROGRAM INFORMATION

The Vehicle Replacement Program is designed to encompass and manage capital needs that are not directly tied to any one project or program. This program will cover equipment needs for the Wastewater Division for capital equipment needs. This rolling stock is a part of the Fleet Maintenance Program. The equipment is maintained, tracked and identified for replacement. When replacement becomes necessary the time frame, costs and budget considerations will be identified in the asset program. This asset program will also identify other capital requirements of the Wastewater Division that are not part of the program.

PROGRAM GOALS AND OBJECTIVES

The goal of this program is to identify the Wastewater Division's capital needs that are not identified in a program and meet the equipment needs of Public Works Divisions.

OBJECTIVE

The objective of this program is to identify the capital need so the planning process can begin and budget issues can be addressed.

PROGRAM ELEMENTS

- Identify replacement needs
- Source of funds and time frames

ISSUES AND CONCERNS:

The City's Vehicle Replacement Program is based on a program that the Oregon Department of Transportation contracted with Oregon State University Engineering Department to develop. The program assesses the replacement and maintenance cost of each type of equipment to determine the most cost effective time to replace it. Several major factors are considered when replacement is reviewed. Miles, hours and age of equipment are looked at closely. This program is based on the economic or useful life of equipment as well as user needs.

Information provided by this program will help City divisions in future planning and budget efforts. This program will help identify user needs and economic impact for each division.

VEHICLE REPLACEMENT PROGRAM

PROJECT NAME: Video Inspection Vehicle and Equipment
Location: WWTP
Council District: 2

Project Description:

Replace and upgrade the existing video inspection vehicle, including upgraded camera and software equipment package to improve the collection system’s inspection performance. Existing vehicle might be able to be retrofitted to handle new equipment, resulting in smaller budget figure. Cost Estimate: \$185,000

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenue		\$185,000				

*LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
Purchase					

**STREETS &
FLEET
DIVISION**

STREET DIVISION

The Street Division consists of 12 full time employees assigned to perform street maintenance tasks and maintain the City's fleet, although, only 12 positions are currently filled. The Division is operated from a 5,000 sq. ft. shop with 1,500 sq. ft. of that dedicated to fleet maintenance. The Street Division maintains over 146 centerline miles and 302 lane miles of roadway, 5 miles of storm water conveyance ditches and with 2 fleet mechanics that maintain 294 pieces of heavy equipment and vehicles.

ABSTRACT

The 2016-2021 Capital Improvement Plan, prepared by the Public Works Department, describes the yearly activities of the Street Division Programs.

This 2016-2021 Capital Improvement Plan:

- Describes current inspection programs and provides summary information on infrastructure condition;
- Provides recommendations for needed replacement, rehabilitation, repair projects, and ongoing technical support;
- Furnishes supporting cost information necessary to permit the development of department budgets;
- Provides these recommendations to support the Street development process. The Street Division assigns priorities and makes final decisions on these recommendations as part of the budget review and approval process.

INTRODUCTION

The Street Division has a wide variety of tasks to perform on a daily, monthly and annual basis. For the purpose of forecasting short and long-term capital needs necessary to maintain the City's infrastructure, these tasks have been grouped into specific programs based on similar function or activities. The programs have been developed to reflect stand-alone activities that require dedicated equipment, activities that have specific regulatory compliance components and/or have funding sources outside of the control of the City. These Street Division programs include the following:

- Pavement Maintenance Program
- Street Safety Program
- Street Sweeping Program
- Snow Removal Program
- Fleet Maintenance Program
- Capital Street Program
- Vehicle Replacement Program

PROGRAM COST SUMMARY

Program Costs	2016/17	2017/18	2018/19	2019/20	2020/21
Pavement Maintenance Program	\$130,000		\$20,000	\$20,000	
Street Safety Program	\$40,000	\$25,000	\$35,000	\$45,000	\$20,000
Street Sweeping Program	\$420,000		\$20,000	\$25,000	
Snow Removal Program	\$54,000	\$24,000	\$30,000	\$48,000	\$39,000
Fleet Maintenance Program	\$8,000	\$5,000	\$5,000	\$10,000	\$10,000
Capital Street Program	\$1,527,000	\$1,120,000	\$655,000	\$550,000	\$550,000
Vehicle Replacement Program	\$54,000	\$54,000	\$180,000	\$180,000	\$180,000
Total Capital Costs	\$1,833,000	\$1,228,000	\$945,000	\$878,000	\$799,000

PROGRAM COST SUMMARY

Program Revenue	2016/17	2017/18	2018/19	2019/20	2020/21
Pavement Maintenance Program					
FFR	\$130,000		\$20,000	\$20,000	
Street Safety Program					
FFR	\$40,000	\$25,000	\$35,000	\$10,000	\$10,000
Street Sweeping Program					
CMAQ	\$360,000				
FFR	\$20,000	\$40,000	\$20,000	\$25,000	
Snow Removal Program					
FFR	\$29,000	\$30,000	\$24,000	\$30,000	\$48,000
Fleet Maintenance Program					
Operating	\$8,000	\$5,000	\$5,000	\$10,000	\$10,000
Capital Street Program					
City Bike & Ped		\$75,000			
CMAQ	\$342,000				
County		\$175,000			
FFR	\$185,000	\$50,000	\$25,000		
ODOT	\$240,000	\$260,000			
STP	\$760,000	\$560,000	\$630,000	\$550,000	\$550,000
Vehicle Replacement Program					
FFR	\$54,000	\$54,000	\$180,000	\$180,000	\$180,000
Total Capital Revenue	\$1,808,000	\$1,634,000	\$939,000	\$825,000	\$798,000
City Bike & Ped	\$0	\$75,000	\$0	\$0	\$0
CMAQ	\$702,000	\$360,000	\$0	\$0	\$0
County	\$0	\$175,000	\$0	\$0	\$0
FFR	\$458,000	\$199,000	\$304,000	\$265,000	\$238,000
ODOT	\$240,000	\$260,000	\$0	\$0	\$0
Operating	\$8,000	\$5,000	\$5,000	\$10,000	\$10,000
STP	\$760,000	\$560,000	\$630,000	\$550,000	\$550,000

PAVEMENT MAINTENANCE PROGRAM

PROGRAM INTRODUCTION

The Street Division's Pavement Maintenance Program encompasses the basic daily operations of the Street Division which consists of shoulder repair, drainage maintenance (surface and open ditch), crack sealing, maintenance overlay, utility patching, pot hole patching and equipment to support these functions. The Street Division is currently researching a new pavement management system which will allow for condition assessment, prioritization and scheduling of street repairs and replacements.

PROGRAM GOALS AND OBJECTIVES

The Pavement Maintenance Program will be updated on a regular basis to provide a comprehensive and cost effective program. The goals and objectives are:

- Goal
Protect and extend the life of all City streets by maximizing the effectiveness of the Street Division's limited staff and current funding sources.
- Objectives
Update of street condition assessments.
Defer costly street reconstruction by patching, crack sealing, chip/sealcoat and maintenance overlays until alternative-funding sources can be identified by City Council.

PROGRAM ELEMENTS

- Shoulder Repair
- Drainage (surface and open ditch)
- Crack Seal
- Maintenance Overlay
- Utility Patch
- Pot Hole Patch
- Equipment
- Pavement Management System

ISSUES AND CONCERNS

The infrastructure falling under the scope of the City's Street Division continues to expand as development within the Urban Growth Boundary continues to accelerate. Unfortunately, the current level of funding is insufficient to maintain our existing infrastructure let alone maintain new roads and storm drainage systems. This new infrastructure will be minimally maintained under the existing funding constraints and will ultimately result in greater replacement and repair costs to City residents indefinitely.

The City annually requests a portion of its remaining allotment of Federal Forest Receipts held by the County. Included within the annual request, \$150,000 is designated for the pavement maintenance program. Once depleted the impact to the Pavement Maintenance Program will be that streets may not be overlaid, swept or maintained at the same level as they were with the availability of Federal Forest Receipt dollars. At this pace, the City anticipates these funds to be depleted within the next 10 years.

PAVEMENT MAINTENANCE PROGRAM

The City also receives approximately \$240,000 per year from the Surface Transportation Program (STP). While these funds cannot be used for daily operations, a portion can be allocated to the Pavement Maintenance Program. The use of these funds is restricted to new construction, reconstruction or maintenance.

The City's existing street system is deteriorating at an accelerated rate due to current and past lack of funding. Our current pavement management system projects that the City will need to invest upwards of \$2 million dollars per year for the next 20 years just to maintain an average condition rating on its street system.

PAVEMENT MAINTENANCE PROGRAM

Equipment	2016/17	2017/18	2018/19	2019/20	2020/21
Pavement Management Software	\$50,000				
Roller	\$80,000				
Power Hand Tools			\$20,000		
Compaction Equipment				\$20,000	
Total Capital Costs	\$130,000		\$20,000	\$20,000	

PAVEMENT MAINTENANCE PROGRAM

TOOL/EQUIPMENT UPGRADES

Location: Streets Facility
Council District: All

Project Description:

Replacement of power and basic hand tools and light equipment related to street maintenance operation.

Roller - \$80,000 – 2016/17

Pavement Management Software - \$50,000 – 2016/17

Power Hand & Basic Hand Tools - \$20,000 – 2018/19

Compaction Equipment - \$20,000 – 2019/20

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
FFR		\$ 130,000		\$20,000	\$20,000	

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
	Purchase		Purchase	Purchase	

STREET SAFETY PROGRAM

PROGRAM INTRODUCTION

Our Street Safety Program includes several related subprograms including sign repair and replacement, striping, barricades, and tree trimming. The City currently maintains over 4,900 signs. The sign program will have number and location of signs on City streets and locations of signs that need to be replaced. The program will track signs replaced due to vandalism and accidents. Striping will include location of painting and what timeframe work should be accomplished. Approximately 1,800 gallons of paint is applied to City streets each spring. Tree trimming operations are conducted at certain times of the year to provide visibility around directional signage for public safety.

PROGRAM GOALS AND OBJECTIVES

- **SIGNAGE GOAL:** Make the City's streets as safe as possible for the driving public with clear and accurate signage, street markings and sight distance while meeting State and Federal requirements otherwise known as Manual on Uniform Traffic Control Devices (MUTCD).
- **SIGNAGE OBJECTIVES:** Assess the current condition, location, number and estimated cost of the City's signage assets.
Continue to update the computerized sign inventory in the sign management software, Simple Signs.
- **STRIPING GOAL:** Street markings as visible as possible to improve public safety.
- **STRIPING OBJECTIVES:** Paint street markings as early in the spring as weather and equipment will allow. Painting twice a year as needed and time, funding and weather allows.
- **PUBLIC SAFETY GOAL:** Public safety barricades are being upgraded to meet MUTCD standards.
- **PUBLIC SAFETY OBJECTIVES:** Continue to update existing barricades by repairing and replacing outdated barricades.
- **TREE TRIMMING GOAL:** Maintain good sight distance for emergency vehicles and the driving public.
- **TREE TRIMMING OBJECTIVES:** Trim low branches around directional and location signs.

PROGRAM ELEMENTS

- Sign production
- Repair and replacement
- Upgrade existing signs
- Center line stripe
- Curb and Crosswalk markings
- Barricade Painting
- Identify tree location
- Trim to right-of-way standard
- Remove debris

STREET SAFETY PROGRAM

ISSUES AND CONCERNS

- Signs: Vandalism to signs is the biggest cost factor in the sign replacement and repair program. Repairs have historically been covered out of the Streets operating budget. The City Police Department gives extra attention to problem areas when asked and are sensitive to the problem. Neighborhood Watch groups have been asked to watch and report any vandalism to 911.
- Sign pollution: Too many signs lead to informational overload for the driving community. The result is that drivers become confused and/or choose to ignore traffic and safety related signs. The Street Division is currently working with the City Planning Department and Traffic Control Board in an effort to reduce the number of signs within the City limits where appropriate.
- Striping: The Street Division is currently working to develop, implement and enforce a standard pavement marking plan. In addition, the Streets and Engineering Divisions are working towards a standard marking for crosswalks with highly visible crossing patterns being the goal. Insufficient funds and manpower have slowed its implementation.
- Tree trimming by citizens within the City's rights-of-way is not currently meeting the City's standards established by code (City Code 5.632) creating sight distance problems and damage to vehicles from low hanging branches. Most of our residents do not believe that trimming trees on their property that hang into streets and sidewalks is their responsibility. The Streets Division is working with Code Enforcement to educate the public and move further towards mitigating this safety issue.
- Tree trimming is still completed by Street Division staff on an as needed basis or as safety issues are identified.

STREET SAFETY PROGRAM

Equipment	2016/17	2017/18	2018/19	2019/20	2020/21
Portable Safety Signage		\$25,000			\$10,000
Sign System Upgrade	\$40,000				
Sign & Striping Equipment				\$10,000	
Traffic Signal Upgrades			\$35,000	\$35,000	
Pedestrian Crossing Ped-Heads					\$10,000
Total Capital Costs	\$40,000	\$25,000	\$35,000	\$45,000	\$20,000

STREET SAFETY PROGRAM

REPLACEMENT & UPGRADING OF PORTABLE SAFETY SIGNS, BARRICADE CONES & TOOLS & EQUIPMENT ASSOCIATED WITH EMPLOYEE & CITIZEN SAFETY

Location: Streets Facility
Council District: All

Project Description:

Portable Safety Signage - \$25,000 – 2017/18, \$10,000 – 2020/21
 Sign System upgrade - \$40,000 – 2016/17
 Traffic Signal Upgrades - \$35,000 – 2018/19
 Sign and Striping Equipment - \$10,000 – 2019/20
 Pedestrian Crossing Ped-Heads - \$10,000 – 2020/21

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
FFR	\$ 23,000	\$40,000	\$25,000	\$35,000	\$10,000	\$20,000

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
	Purchase	Purchase	Purchase	Purchase	Purchase

STREET SWEEPING PROGRAM

PROGRAM INTRODUCTION

The street sweeping program was created to enhance air quality, water quality and cleanliness of the rights-of-way. The program includes establishing routes, scheduling sweeping activities and record keeping requirements. This program is in place to support the City's effort to meet the goals of the Federal Clean Air Act.

PROGRAM GOALS AND OBJECTIVES

- **GOAL** - To ensure that the City's infrastructure is not contributing to regional air and water quality degradation. The City is proactive in the protection of the Basin's natural assets.
- **OBJECTIVES** - Sweep all City streets on a regular basis. Work with the development and contracting community to reduce dust and storm water discharges from construction sites.

PROGRAM ELEMENTS

- Follow sweeper routes on regular basis
- Collected debris is currently screened and used in compost at the wastewater treatment plant. Garbage is taken to a disposal site.
- Remove debris from temporary location to established dump sites: At times sweepings are held in temporary locations for convenience or when we are unable to access disposal sites.

ISSUES AND CONCERNS

- The lack of available manpower to keep sweepers on the street on a regular basis.
- Future federal regulations governing solid waste disposal may require sweeping material to be screened before it can be disposed of. Screening may be classified as hazardous material and require disposal at a certified land fill.
- EPA Phase II Storm Water Regulations adopted by the EPA in October 1999 requires a more aggressive and intensive street sweeping program to meet the nonpoint water quality protection standards.
- The City's two sweepers require a very aggressive maintenance program due to the nature and type of work. The service life of a sweeper is between 5-7 years and the City's two sweepers are 4 years old and requiring a higher level of maintenance.
- Equipment availability.
- High maintenance requirements.

STREET SWEEPING PROGRAM

Equipment	2016/17	2017/18	2018/19	2019/20	2020/21
Sweeper Components Replacement	\$20,000		\$20,000	\$25,000	
Two New Sweepers	\$400,000				
Total Capital Costs	\$420,000		\$20,000	\$25,000	

STREET SWEEPING PROGRAM

STREET SWEEPING PROGRAM

Location: Various
Council District: All

Project Description:

Sweeper Component Replacement - \$20,000 - 2016/17, 2018/19, \$25,000 – 2019/20
 Purchase two new sweepers - \$535,000 – 2016/17

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenue						
FFR	\$50,000	\$75,000		\$20,000	\$25,000	
CMAQ		\$480,000				

*LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-19	2020-21
	Purchase		Purchase	Purchase	

SNOW REMOVAL PROGRAM

PROGRAM INTRODUCTION

The Street Division is responsible for coordinating all City snow removal efforts, coordinating staffing efforts between other City departments, managing the fleet of snow removal equipment and tracking and implementing procedures to reflect changes in State and Federal regulations that apply to our snow removal efforts.

Hospital, schools and the higher elevations in the City have been assigned the highest priority when the snow removal efforts begin. Arterial and collector streets are plowed in combination with or immediately after the high priority areas are cleared. Local residential streets are addressed only after the high priority and arterials are in good condition.

PROGRAM GOALS AND OBJECTIVES

The main arterial and high country being the top priorities, when completed the remaining streets will be plowed.

- **GOAL:** The Street Division's goal is to return the City's streets to a safe and usable condition as soon as possible during and after winter storms.
- **OBJECTIVE:** To maintain safe driving conditions for the motorists and return City streets to a safe usable condition in as short a time period as possible by removing snow and sanding streets as quickly as manpower allows. Communicate and coordinate with State and County agencies in an effort to provide safe streets to and throughout our community.

PROGRAM ELEMENTS

- Update City's Snow Plan annually to Council for adoption and distribute to appropriate agencies
- Secure and maintain snow storage sites
- Remove snow from gutter plates and transport in areas where needed for drainage
- Respond to 911 calls due to slick conditions
- Repair and maintain snow equipment
- Review development plans to ensure provisions for snow storage and removal are incorporated in planning process
- Clean up debris left behind after snow melt
- Hire and direct contractor support as required
- In coordination with Waste Management, City crews are sanding higher elevation areas to facilitate refuse removal

SNOW REMOVAL PROGRAM

ISSUES AND CONCERNS

Manpower is currently insufficient to keep up with snow removal needs of the City. New development in the higher elevations of the City add additional streets that need to be plowed and put increased pressure on existing manpower and equipment. Street grades in the higher elevations require four wheel drive trucks for the removal process. These steeper streets are high priority for safety reasons. The City currently has two four wheel drive dump trucks with snow plows, which, at most times is sufficient with the help of our four wheel drive one ton pickups.

Additional manpower is usually available from other City departments for normal snow events. However, for long term snow events or 24-hour a day operations we do not have enough staff to meet the needs of the City residents. Contractors are used when available however, the cost impact to the Street Division's already limited budget is significant.

As more streets are added to our street inventory through development, limiting efforts to critical areas only may be the most effective way to keep within current budget constraints. However, the net result of this action will be significant impact to individual City residents.

SNOW REMOVAL PROGRAM

Equipment	2016/17	2017/18	2018/19	2019/20	2020/21
Pick Up Plows	\$27,000		\$15,000	\$24,000	
6 yd Sanders	\$12,000		\$15,000		
Two 1-yard Sanders	\$15,000				\$15,000
Truck Plows		\$24,000		\$24,000	\$24,000
Total Capital Costs	\$54,000	\$24,000	\$30,000	\$48,000	\$39,000

SNOW REMOVAL PROGRAM

CAPITAL EQUIPMENT UPGRADE AND REPLACEMENT

Location: Various
Council District: All

Project Description:

Pick Up Plows - \$27,000 – 2016/17, \$15,000 – 2018/19, \$24,000 - 2019/20
 6 Yard Sanders - \$12,000 - 2016/17, \$15,000 – 2018/19
 Truck Plows - \$24,000 – 2017/18, \$24,000 – 2019/20, \$24,000 – 2020/21
 2- 1 Yard Sanders - \$15,000 – 2016/17, \$15,000 – 2020/21

Project Costs:

LTD*:		-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
FFR		\$54,000	\$30,000	\$24,000	\$30,000	\$48,000

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2015-16	2016-17	2017-18	2018-19	2019-20
	Purchase	Purchase	Purchase	Purchase	Purchase

FLEET MAINTENANCE PROGRAM

PROGRAM INTRODUCTION

The Fleet Maintenance Program consists of managing the light and heavy fleet of all City departments. These efforts include tracking of all City vehicles through the Street Division's fleet management software program which flags upcoming service, tracks vehicle and/or equipment costs, historical records for each vehicle and shop production. This information supports our efforts to determine capital replacement time frames. In other words, after a vehicle or piece of equipment reaches a certain point in its life cycle the cost of maintaining that equipment exceeds the cost of replacement.

In addition to maintaining the fleet records, the Streets and Equipment Division is responsible for scheduling and performing preventative maintenance and minor repairs including all routine (lube, oil and filter) service. Repairs or breakdowns are assessed as to severity and either repaired in-house or contracted through outside vendors.

New vehicles procured by the various departments are outfitted by City staff (radios, lights, security devices, etc.) to reduce the overall cost of providing public safety.

PROGRAM GOALS AND OBJECTIVES

The Fleet Management Program goal is to maintain and manage the City's equipment and vehicles to prolong and protect the life of the City's vehicular assets.

OBJECTIVE

- Manage department vehicles and equipment as a City fleet
- Lower the cost to the City departments by employing preventative maintenance programs
- Improve the working conditions of the vehicle repair shop

PROGRAM ELEMENTS

- Repair
- Maintain
- Track cost
- Track history
- Identify capital replacement time frame

ISSUES AND CONCERNS

The Street Division's ability to service the City's fleet effectively is currently limited by inadequate shop space. The present shop consists of one and a half work bays and it does not provide enough room to store a vehicle waiting for parts and to repair or service another at the same time. This facility will need to be enlarged and re-tooled in the near future.

FLEET MAINTENANCE PROGRAM

Equipment	2016/17	2017/18	2018/19	2019/20	2020/21
Heavy Truck Diagnostics Tool			\$5,000		
Fleet Tooling	\$8,000	\$5,000		\$10,000	\$10,000
Total Capital Costs	\$8,000	\$5,000	\$5,000	\$10,000	\$10,000

FLEET MAINTENANCE PROGRAM

SHOP TOOLING UPGRADE

Location: Various
Council District: All

Project Description:

Updating and upgrading of tools with in the Fleet Maintenance shop including hand tools and heavy truck diagnostics tool.

Heavy Truck Diagnostics Tool - \$5,000 - 2018/19

Fleet Tooling - \$8,000 – 2016/17, \$5,000 – 2017/18; \$10,000 – 2019/20; \$10,000 – 2020/21

Project Costs:

LTD*:		-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating		\$8,000	\$5,000	\$5,000	\$10,000	\$10,000

* LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
	Purchase	Purchase	Purchase	Purchase	Purchase

CAPITAL STREET PROGRAM

PROGRAM INTRODUCTION

The Capital Street Program currently consists of the management of three separate programs, each with their own dedicated funding source. They include the Federal Forest Receipts Program, Oregon Surface Transportation Program, and the Congestion Mitigation Air Quality (CMAQ) Program. The Federal Forest Receipts and the Surface Transportation Program (STP) are, at present, ongoing programs where funds are awarded to the City for funding capital improvement projects to the City's road system.

Federal Forest Receipts: In previous years, Federal Forest Receipts were awarded to Klamath County based on a guarantee issued by the Federal government from 1986. This guarantee replaced a percentage of the dollars that were previously received from timber sales on national forests within the County. The guarantee ended in 2006 but has had two extensions and as of now, the program has sunset. Without a replacement program, the funds for County and City will no longer be available. Klamath Falls' share of Federal Forest Receipts is determined on miles of streets in the City. The formula is based on a 1986 Klamath County Resolution (137) to determine what percent of funding is disbursed to cities in Klamath County. The list of street projects submitted to Klamath County is identified and prioritized with the use of a pavement management system program. Some additional criteria used in the selection are the existing street conditions, traffic loads, street classifications and securing investments. Klamath County will entertain additional funding requests for special projects beyond the yearly allocation. In previous years, funds were split, \$150,000 for operations and the remainder used to reconstruct or repair any streets that have failed. The Association of Oregon Counties has indicated that Federal Forest Receipts will likely not be coming to Oregon counties this year but may come next year but likely more at the levels received in 2014. With that in mind, the City is not anticipating any new disbursements of Federal Forest Receipts which will require the City to further dip into the unused portions from previous years currently on hold at Klamath County.

Surface Transportation Program (STP): STP funds are Federal Fund exchange dollars administered through Oregon Department of Transportation (ODOT) to cities for street improvements. The formula for distribution of funds is calculated on population. The STP funds may be used for any street improvements such as street construction, sidewalks, traffic control signals and rights-of-way improvements. STP funds may stand alone or be combined with other grant dollars. The City has historically received approximately \$240,000 annually. The City must apply each year for available funds. Funding is then secured by submittal of a project prospectus outlining the schedule and costs associated with all phases of the project.

PROGRAM GOALS AND OBJECTIVES

- **Goal** - To maximize the use of the available capital funds to the greatest benefit of the City residents.
- **Objective** - Use the Pavement Management System program to help make decisions and stretch funding, and watch for additional funding opportunities. Work with Council to develop additional support of funding.

Program Elements

- Identify and prioritize street projects

CAPITAL STREET PROGRAM

- Estimate project cost
- Ensure City and County coordination

ISSUES AND CONCERNS

The City's transportation system is badly deteriorated and sorely in need of an extensive replacement program. Our Capital Street Program has very limited funds to repair streets. Like the Street Maintenance Program, the needs of the existing infrastructure far outweigh all available funds. Increased funding of this program needs given consideration in order to ensure continued economic development and prosperity of the region.

CAPITAL STREET PROGRAM

Project	2016/17	2017/18	2018/19	2019/20	2020/21
Washburn Way Sidewalks – Phase II	\$240,000	\$510,000			
CMAQ-Alley Paving	\$362,000				
Crack Seal Program	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
Chip Seal Program	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
City Bridge Maintenance (11 various bridges)	\$50,000	\$50,000	\$25,000		
North Eldorado Grind & Inlay	\$315,000				
Micro Seal Program	\$350,000	\$350,000	\$350,000	\$350,000	\$350,000
Brett Way Extension	\$10,000	\$10,000	\$80,000		
TOTAL CAPITAL COSTS	\$1,527,000	\$1,120,000	\$655,000	\$550,000	\$550,000

CAPITAL STREET PROGRAM

WASHBURN WAY SIDEWALKS– PHASE II

Location: Washburn Way
Council Ward: 2 and 3
Cost Estimate: \$750,000

Project Description:

This project will complete the sidewalk installation on the west side of Washburn Way between Pershing Way and Crater Lake Parkway. Two years ago sidewalk installation between these limits was completed on the east side of Washburn Way along with the installation of a rapid rectangular flashing beacon. This is a heavily used corridor and pedestrians are continuously using either the bike lane or adjacent yards to walk in.

The right-of-way acquisition, which is scheduled to start this year, will be done by ODOT with no money being transferred to the City until the start of construction.

Project Costs:

LTD*:		-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
ODOT		\$240,000	\$260,000			
City Bike & Ped Funds	\$10,000		\$75,000			
County			\$175,000			

*LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
	ROW Acquisition	Construction			

CAPITAL STREET PROGRAM

CONGESTION, MITIGATION & AIR QUALITY (CMAQ) – Alley Paving

Location: Various
Council Ward: 1, 2 and 3
Cost Estimate: \$362,000

Project Description:

Congestion, Mitigation and Air Quality project to pave high traffic alley ways to help mitigate dust and improve air quality. This project requires a 10.27% match from the City. A portion of the required match will be paid from the Water Division budget. Limits include: bus turnaround at Mill Street, paving of the Water Division compound, alleys between Esplanade and Earle, East Main and Owens, East Main and Martin, Martin and Division and Division and Mitchell.

Project Costs:

LTD*:		-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
CMAQ		\$342,000				
FFR		\$20,000				

*LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
	Construction				

CAPITAL STREET PROGRAM

CRACK SEAL PROGRAM

Location: Crack Seal Program
Council Ward: All

Project Description:

Crack seal streets identified in Pavement Management System. Estimated cost: \$500,000

2016/17: Overlook, Gatewood, Bartlett, Driftwood, Sumac, Glenwood, Ridgewood, Golden Ct., Orpine, Starlit, Laurelwood, Eastwood, Knightwood, Ankeny, Sherwood, Brentwood, Valleywood.

2017/18: Southview, Regency, Cambridge, Nickolas, Briana, Anderson, American, Liberty, Redfern, State, Kennebeck Loop, Balsam, Butte, Cortez, Diamond, Emerald, Granite, Flint, Cleveland, Douglas, Fawn, Quarry, Chelsea, Pelican, Lindbergh, Coli, Rickenbacker, Acosta.

2018/19: Airport, Brett/Wings Way, Stinson, Arnold, Fairchild, Altamont (south end), Front, Harbor Isle, W. Oregon, Bartlett, Tony Ct., Lombard, Travis, Judy Ct., Pinnacle, Ferndale Pl.

2019/20: Main Street (CLP to End), Klamath Avenue (Center to Spring), North 9th (Prospect to Main), North 11th (Main to Upham), Oregon Avenue (Upham to Nevada Street).

2020/21: 6th Street (from Austin to Pine), Washburn Way (from CLP to Laverne).

Project Costs:

LTD*:		-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
STP Funds	\$168,326	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000

* LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
Construction	Construction	Construction	Construction	Construction	Construction

CAPITAL STREET PROGRAM

CHIP SEAL VARIOUS STREETS

Location: Chip Seal Various Streets
Council Ward: All

Project Description:

Chip seal streets identified in Pavement Management System. Unless otherwise identified, the entire length of the roadway will be chip sealed. Estimated cost: \$1,000,000

2016/17- Lakeport (from Biehn Street to County line), all of Stewart Lenox.

2017/18- Old Fort, Loma Linda, Linda Vista, Huron, N. Laguna, Homedale, Basin View Dr & Ct., Havencrest Dr. & Ct., Upland, Crestdale, Hunter Ct.

2018/19- Northwood Ct., North Hills, Glenridge, Springcrest, Rosemont, Westview, Overlook, Gatewood, Bartlett, Driftwood, Sumac, Glenwood, Ridgewood, Golden Ct., Orpine, Starlit, Laurelwood, Eastwood, Knightwood, Ankeny, Sherwood, Brentwood, Valleywood.

2019/20- New Way, Industrial Park Drive, College Way, Century Drive, Dagget Avenue and Shallock, Brett Way (Wings Way), Stinson, Arnold., Fairchild and Altamont Dr (south end), California, Front, Harbor Isle, W. Oregon.

2020/21: On hold – future microseal projects.

Project Costs:

LTD*:		-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
FFR	\$13,000					
STP Funds	\$220,708	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000

* LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
	Construction	Construction	Construction	Construction	Construction

CAPITAL STREET PROGRAM

CITY BRIDGE MAINTENANCE

Location: 11 Separate Bridges in City Inventory

Council District: Various

Project Description:

Perform various refurbishments and required maintenance such as abutment, joint and scaling work on the 6th Street Viaduct, Biehn Street bridge, Esplanade bridge and Washburn Way bridge.

Cost Estimate: \$125,000

Project Costs:

Funding Source:	LTD*	-----Five Year Proposed Budget-----				
		2016-17	2017-18	2018-19	2019-20	2020-21
FFR	\$75,000	\$50,000	\$50,000	\$25,000		

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
	Construct	Construct	Construct		

CAPITAL STREET PROGRAM

NORTH ELDORADO GRIND & INLAY

Location: North Eldorado from Dahlia to Vanness
Council Ward: 4

Project Description:

Grind and inlay two to three inches of hot mix asphalt and complete pedestrian corridor from the hospital area to downtown. Estimated cost: \$335,000

Project Costs:

LTD*:		-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
STP	\$20,000	\$200,000				
FFR		\$115,000				

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
Design	Construct				

CAPITAL STREET PROGRAM

MICRO SEAL PROGRAM

Location: Various Roadways
Council Ward: 1 & 2

Project Description:

Micro surfacing consisting of slurry seals, rubberized asphalt and emulsion sealants.

2016/17- Shasta Way (All), Austin Street (All), Avalon Street (All).

2017/18- South 6th Street (All), Pershing Way (All).

2018/19- Gatewood Subdivision (All), Ferndale Subdivision (All).

2019/20- Americana Subdivision (All), Prairie Meadows Subdivision (All), Oregon Avenue (All), Biehn Street (All).

2020/21- Washburn Way (All), Biehn Street (All).

Project Costs:

LTD*:		-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
STP		\$350,000	\$350,000	\$350,000	\$350,000	\$350,000

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
	Design and Construction				

CAPITAL STREET PROGRAM

BRETT WAY EXTENSION

Location: Brett Way at Summers Lane to Homedale Road
Council Ward: 1

Project Description:

The project will extend Brett Way from its current termination point at Summers Lane over to Homedale Road aligning itself with Airway Drive. In addition to the roadway extension, Summers Lane will be cul-de-sac'd on either side of the railroad tracks and a signal will be installed at the intersection of Homedale and the South Side Bypass. The signal may not be immediately installed but once warrants are met, it will be placed. The project rose to the top of ODOT's STIP process and was supported by the South Central Oregon Area Commission on Transportation (SCOACT). The project is estimated at just over \$4 million with ODOT paying for the project and the City and County providing the necessary matching funds. The City's share comes to \$150,000 and the County will pay \$300,000.

There have been concerns raised by ODOT related to increased traffic at Summers Lane as a result of continued development of the industrial and business park near the airport. This project will alleviate those concerns and help to address safety at the Summers/South Side Bypass intersection which has seen 24 crashes, 28 injuries and 1 fatality over a 9 year period.

Project Costs:

LTD*:		-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
STP	\$50,000	\$10,000	\$10,000	\$80,000		

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
	Right of Way Acquisition	Utilities	Construction		

VEHICLE REPLACEMENT PROGRAM

PROGRAM INFORMATION

The Vehicle Replacement Program is designed to encompass and manage capital needs that are not directly tied to any one project or program. This program will cover equipment needs for the Street Division for capital equipment needs. This rolling stock is a part of the Fleet Maintenance Program. The equipment is maintained, tracked and identified for replacement. When replacement becomes necessary the time frame, costs and budget considerations will be identified in the asset program. This asset program will also identify other capital requirements of the Street Division that are not part of the program.

PROGRAM GOALS AND OBJECTIVES

The goal of this program is to identify the Street Division's capital needs that are not identified in a program and meet the equipment needs of the City of Klamath Falls.

OBJECTIVE

The objective of this program is to identify the capital need so the planning process can begin and budget issues can be addressed.

PROGRAM ELEMENTS

- Identify replacement needs
- Source of funds and time frames

ISSUES AND CONCERNS:

The City's Vehicle Replacement Program is based on a program that the Oregon Department of Transportation contracted with Oregon State University Engineering Department to develop. The program assesses the replacement and maintenance cost of each type of equipment to determine the most cost effective time to replace it. Several major factors are considered when replacement is reviewed. Miles, hours and age of equipment are looked at closely. This program is based on the economic or useful life of equipment as well as user needs.

Information provided by this program will help City divisions in future planning and budget efforts. This program will help identify user needs and economic impact for each division.

VEHICLE REPLACEMENT PROGRAM

Equipment	2016/17	2017/18	2018/19	2019/20	2020/21
1-ton pickup w/plow & sander	\$54,000	\$54,000			
1-ten yd. truck & plow			\$180,000	\$180,000	\$180,000
Total Capital Costs	\$54,000	\$54,000	\$180,000	\$180,000	\$180,000

VEHICLE REPLACEMENT PROGRAM

VEHICLE REPLACEMENT PROGRAM

Location: Various
Council District: All

Project Description:

The Vehicle replacement program assesses the replacement and maintenance cost of each type of equipment to determine the most cost-effective time to replace it. Several major factors are considered when replacement is reviewed. Miles, hours and age of equipment are looked at closely. This program is based on the economic or useful life of equipment as well as user needs.

One 1-ton pickup w/plow - \$54,000 – 2016/17, 2017/18
 One 10-yd dump truck w/plow - \$180,000 - 2018/19, 2019/20
 120G Road Grater - \$250,000 – 2020/21
 Backhoe - \$100,000 – 2020/21

Project Costs:

LTD*:		-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
FFR		\$54,000	\$54,000	\$180,000	\$180,000	\$350,000

*LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
	Purchase	Purchase	Purchase	Purchase	Purchase

AIRPORT

INTRODUCTION

The Crater Lake - Klamath Regional Airport is a general aviation airport jointly used by the Air National Guard 173rd Fighter Wing. The Airport Department has a staff of six full-time employees responsible for daily operation and maintenance of the airport. The facility is over 1,100 acres in size with 8 miles of runways and taxiways, over 50 tenants, and had approximately 59,500 landings and takeoffs (operations) in 2015.

Commercial air service by United Express, operated by SkyWest Airlines was discontinued in early June of 2014. The Airport continues to seek a replacement service with another air carrier but industry trends that favor larger community populations that can be served more efficiently and cost effectively makes recruitment difficult. The Airport has been in negotiation with Peninsula Airways (PenAir), an air carrier based in Anchorage, Alaska. PenAir was planning to begin air service in November 2015; however, the Transportation Security Administration (TSA) has made the decision to not re-federalize the Airport. This negative TSA decision has directly impacted the Airport's ability to attract a new air carrier. The Airport and PenAir are continuing to pursue options.

The largest tenant in size and impact on the airport is the 173rd Fighter Wing of the Oregon Air National Guard. The 173rd Fighter Wing is currently the only F-15 training center in the United States. In addition to their leased areas the 173rd Fighter Wing utilizes the airport's runways and taxiways under an Airport Joint Use Agreement (AJUA). Military flights accounted for about 37% of the operations in 2015.

General Aviation flights accounted for about 58% of the operations in 2015. One of the Airport's major tenants is Century Air – Klamath Falls who provides fueling, aircraft parking, and hangar space for general aviation aircraft as well as commercial and visiting military aircraft. Between Century Air and 58 privately owned hangars on the airport, there are nearly 110 civil aircraft that call Klamath Falls home.

The Airport's 2005 Master Plan plots out airport improvements and funding for the next 20 years. This plan anticipates developing a new general aviation area on the northwest end of the airport and preserving the east side of the field for major aviation-related industrial development. All future development is geared toward allowing room for expansion of both commercial and general aviation facilities, and towards consolidating Air Guard facilities so that they can also grow without negatively impacting other airport uses. The Master Plan is expected to be updated within the next year or two.

The Airport recently submitted a ConnectOregon VI grant application to fund \$2.8M of a \$4M maintenance hangar project on the Airport's eastside. The Airport's budget will show the need for an additional \$1.2M in capital expenses to cover the funding match required by the grant.

ABSTRACT

The 2016-2021 Annual Capital Improvement Plan describes the yearly capital plan to be funded by both the Airport's Operating Fund and by grants from the FAA Airport Improvement Program.

INTRODUCTION

This 2016-2021 Capital Improvement Plan:

- Provides recommendations for needed replacement, rehabilitation, repair projects and economic development initiatives;
- Furnishes supporting cost information necessary to permit the development of the department budget.

ISSUE STATEMENT

The Crater Lake - Klamath Regional Airport (a National Plan of Integrated Airport Systems airport) is considered a general aviation Airport by the Federal Aviation Administration (FAA), and as such, is eligible for FAA Airport Improvement Program (AIP) grants. The FAA AIP grants (in consultation with the State of Oregon) provide grant funds for approximately 90% of an eligible project's cost and require a 10% local match (different from previous years of 93% and 7% respectively). The Airport is entitled to \$150,000 per year toward eligible projects. In addition, the Airport is required to work through the State of Oregon, Department of Aviation as well as coordinating with the FAA for all future AIP projects.

With the loss of commercial air service in June 2014, the Airport did not have any enplanements for the 2015 calendar year. As a result, beginning in FAA FY2017 our entitlement grant funds were reduced to the base level of \$150,000/year in 2016 versus \$1M in previous years. The change from a commercial service airport to a general aviation airport also increased our local match from 7% to 10%. This entitlement level remains until such time as the Airport regains commercial air service status and enplanements again climb above 10,000 passengers.

The Airport has the option to request discretionary funds for projects that are large and cannot be funded by entitlement funds alone. There is a limited amount of discretionary funds available during any one year from the FAA and projects needing discretionary funds are rated based on how closely they align with FAA's priorities.

In the event that the Airport does not regain a minimum of 10,000 enplanements per year, the reduced level of entitlement funds and scarcity of discretionary funds will make it increasingly difficult to accomplish periodic refurbishment or improvements to airfield facilities such as runway, taxiways, ramps and other infrastructure.

The Airport is maintained to FAA, 14 CFR, Part 139 standards.

TOTAL CAPITAL IMPROVEMENT PROGRAM COSTS

FAA Airport Improvement Program (AIP) Capital Projects						
	FY16	FY17	FY18	FY19	FY20	FY21
Grant	530,470	7,489,200	792,000	2,448,000	720,000	0
City Match (10%) - (0.675 for FY17)	35,364	499,300	88,000	272,000	80,000	0
Total Funds	565,834	7,988,500	880,000	2,720,000	800,000	0
Twy B (formerly Twy J) (Design)	480,539	\$50,000				
Twy B (formerly Twy J) (Const.)		7,600,000				
2013 Airfield Improvements (Carryover)		\$23,500				
MODOC Wetland Mitigation (Design)	45,295					
MODOC Wetland Mitigation (Const.)		235,000				
Milkvetch Mitigation	40,000	\$25,000				
Master Plan & Exhibit A Update (AGIS) ²			600,000			
Twy G Rehab (CatEx & Design) ²			280,000			
Twy G Rehab (Const.)				2,700,000		
Wildlife Hazard Assessment				20,000		
Twy F & Rwy 7/25 Rehab (Design)					800,000	
Total Expenses	565,834	7,933,500	880,000	2,720,000	800,000	0

Note 1: The FAA requested the City to forward fund the \$280,000 for the Taxiway G Rehab (design) project. The FAA will reimburse the City in 2019 when the discretionary construction grant is provided. The Airport currently expects to receive discretionary grant funds in FY18, and FY19 for both the Master Plan and the Taxiway G Rehab projects.

TOTAL CAPITAL IMPROVEMENT PROGRAM COSTS

Airport Capital Projects – Not FAA Funded						
	FY16	FY17	FY18	FY19	FY20	FY21
Condenser Unit for Terminal Building	10,000					
Lawn Mower	10,000					
Utility ATV	25,000					
Terminal Roof		50,000				
Deicing Truck for Lease Back to PenAir		110,000				
Maintenance Hangar (ConnectOregon)			1,200,000			
Storm Water Inlet Valves			50,000			
FBO Building Maintenance			100,000			
Asphalt Maintenance			100,000	100,000	75,000	75,000
Airport Administration Building		15,000				300,000
Total Expenses	45,000	175,000	1,450,000	100,000	75,000	375,000

CAPITAL PROGRAM

TAXIWAY B (Formerly Twy J)

There is a safety concern for aircraft that utilize the east side of the airport. The main safety risk is located in the NE area of the airport. Currently, there is no parallel taxiway located on the east side of Runway 14-32. This causes all aircraft landing Runway 32 to taxi full length of the primary runway in order to exit to the east side of the airfield. The Environmental Assessment (EA) for the full length of Taxiway B was completed in 2015. The section of Taxiway B that will be constructed under this project will be the section from the existing Taxiway B (to be renamed to Taxiway B1) to approximately Taxiway E.

ENVIRONMENTAL MITIGATION 2015/2016

The Airport continues to work on establishment of the Modoc Wetland Site created to mitigate the removal of wetlands at the Airport for safety reasons. Based on discussions with the DSL and ACOE, the Airport submitted a permit application to access the wetlands from Lake Ewauna. Once permits are received from the agencies, the Airport will construct two unrestricted culverts from Lake Ewauna to the Modoc Wetland Site in accordance with agency requirements.

MILKVETCH MITIGATION

As part of the Taxiway B (formerly Taxiway J) project, a contract was established with the Oregon Department of Agriculture (ODA). ODA has been working to collect and mitigate impact to the Applegate Milkvetch plant within the boundaries of the upcoming Taxiway B project.

MASTER PLAN & EXHIBIT 'A' UPDATE

The Airport's Master Plan was last updated in 2005 using 2003 data. Many of the projects identified in the plan have been completed or are in progress. Due to the loss of air service, the update will evaluate the future development needs. The FAA guidance for updates requires the Airport to perform an Airports Surveying Geographic Information System (Airport GIS) survey. The Airports GIS helps the Federal Aviation Administration (FAA) collect airport and aeronautical data to meet the demands of the Next Generation National Airspace System.

TAXIWAY G REHABILITATION

Taxiway G was heavily utilized during the Runway 14-32 reconstruction. Taxiway G was utilized for the temporary Runway 14-32. The taxiway is beginning to show signs of moderate pavement distresses. To address this concern, a 2" mill and overlay would be placed on Taxiway G along with taxiway edge lighting upgrades. The taxiway is approximately 20 years old and at the end of its useful life.

WILDLIFE HAZARD ASSESSMENT

The previous Wildlife Hazard Assessment was completed in 2012. In accordance with FAA Part 139 requirements, a Wildlife Hazard Assessment should be completed approximately every 5-10 years or when a triggering event (e.g., bird strike, more than unusual wildlife activity, etc.) occurs, whichever occurs first.

CAPITAL PROGRAM

TAXIWAY F & RUNWAY 7/25 REHABILITATION

Runway 7-25 and Taxiway F are showing various pavement distresses. A rehabilitation project in FY2013 addressed the major cracks and distress of these pavements. However, a more comprehensive reconstruction project is necessary to bring the pavement back into good condition.

CONDENSER UNIT FOR TERMINAL BUILDING

A replacement for one of the two units that serve the terminal building is required. The unit to be replaced is approximately 5 years old and currently inoperative.

LAWN MOWER

A medium to heavy duty riding lawn mower with a wide deck to replace one that is approximately 20 years old. Current mower is used for extensive grass areas along Airport Way and mowing around airfield lighting and signs that can't be done with large field mowers.

UTILITY ATV

A utility ATV that would have multiple uses such as; clearing snow close in and around buildings and parking spaces; accessing infield areas where heavy vehicles would be too damaging to the soil at certain times of the year; and for work along roadway landscape areas where larger vehicles aren't easily accommodated.

TERMINAL ROOF

The terminal roof is approximately 20 years old and been impacted by various terminal upgrades. Selected repairs will be accomplished.

DEICING TRUCK FOR LEASE BACK TO PENAIR

The Airport will purchase, and lease back to PenAir, a deicing truck for their use when they begin operations in the Fall of 2016.

MAINTENANCE HANGAR

The Airport submitted an application for a ConnectOregon VI grant for a \$3M maintenance hangar. It is a critical project to further economic growth. The amount shown in the budget is for the grant match. An aircraft maintenance facility is critical infrastructure for attracting and retaining passenger air service to the Airport. The additional jobs, tourism and community growth, education connection, and support for the 173rd Fighter Wing of the Oregon Air National Guard are desperately needed in this area.

AIRPORT ADMINISTRATION BUILDING

The Administration Building is in need of minor updates. The carpet needs to be replaced, and the windows updated. The carpet and windows are at least 25 years old. Additional ceiling insulation may also need to be added if funds are available.

CAPITAL PROGRAM

STORM WATER INLET VALVES

The storm water catch basins near the terminal and in front of the FBO (4) currently don't have valves. Valves will enhance the ability to contain fuels and aircraft deicing fluids from entering the storm water system.

FBO BUILDING MAINTENANCE

The Fixed Base Operations (FBO) building is Airport owned and was built in the 1940s. Several internal and external repairs need to be completed to the building if it is going to continue to be used for existing purposes. It is currently leased to Century Aviation.

ASPHALT MAINTENANCE

Various parking lots and roadways around the airport, including the terminal drive and parking lot, have reached a point where they will need refurbishment to maintain their usefulness and prevent more costly repairs due to failure.

AIRPORT ADMINISTRATION BUILDING

The Airport Administration is currently occupying an old converted vehicle maintenance shop. Airport Administration activity needs to be in a location that it can directly view and access the airfield to manage and monitor the critical airport infrastructure. The existing Master Plan indicates demolition and relocation of the existing Airport Administration Building. Upon completion of the Master Plan Update, this item will be updated.

**MAINTENANCE &
STREET
LIGHTING
DIVISION**

INTRODUCTION

The Maintenance Division consists of 10 employees assigned to maintain, repair, replace, design, build and operate a variety of systems. These systems include the equipment and controls associated with the Water/Geothermal Division, Wastewater/Storm water Division and Streets Division which includes traffic signals and street lighting. In addition, the Maintenance Division handles a wide variety of maintenance requests for all City-owned and leased buildings as well as providing janitorial services for all City-owned buildings.

The Maintenance Division is located in a 3,600 square foot building. It has a complete carpenter and fabricating shop. Also housed in the facility is the Supervisory Control and Data Acquisition (SCADA) control center which contains all the computer and telemetry equipment that will, at build out, monitor all Water, Wastewater, Stormwater, Geothermal and Streets equipment associated with pump stations, booster stations, lift stations, reservoir levels, traffic signals, etc. Any SCADA improvements that might be necessary during the period covered by this CIP are included in the pertinent division's documentation.

ABSTRACT

The 2016-2021 Annual Facilities Plan, prepared by the Public Works Department describes yearly activities of the Maintenance Division.

This 2016-2021 Annual Facilities Plan:

- Provides summary information on facility conditions;
- Provides recommendations for needed replacement, rehabilitation, modernization, regulatory projects and ongoing technical support;
- Furnishes supporting cost information necessary to permit the development of department budgets;
- Provides these recommendations to support the Maintenance facility development process. Maintenance assigns priorities as part of the budget review and approval process.

The Maintenance Division is responsible for tasks that are all essential for the City to operate with efficiency and dependability.

Traditionally, the Maintenance Division supplies labor to all City Divisions and Departments. Material costs and labor come from the individual departments requesting the work.

The Maintenance Division has completed a thorough inspection of all City facilities and their associated equipment.

Our information has been compiled and placed into several major programs and sub-programs to make it easy to identify work needing to be performed in order to keep our facilities and equipment in satisfactory condition.

INTRODUCTION

The Maintenance Division programs include the following:

- Facilities Maintenance Program
- Equipment Maintenance Program
- Street Lighting Program
- SCADA System Program
- Vehicles
- Traffic; and pedestrian lights

The Maintenance Division performs Maintenance Capital Projects for all City Departments. Expenditures associated with maintenance projects are listed under each division's CIP other than Street Lighting Projects which are listed here in the Maintenance Division CIP. Vehicle replacements for the Maintenance Division are also proportionally funded from all City Departments served by the Maintenance Division.

TOTAL CAPITAL IMPROVEMENT PROGRAM FINANCIAL SUMMARY

Program Costs	2016/17	2017/18	2018/19	2019/20	2020/21
Facilities Maintenance Program			\$22,000		\$15,000
Equipment Maintenance Program					
Street Lighting Program	\$250,000	\$360,000	\$50,000	\$50,000	\$50,000
Total Capital Costs	\$250,000	\$360,000	\$272,000	\$50,000	\$65,000

Program Revenues	2016/17	2017/18	2018/19	2019/20	2020/21
Facilities Maintenance Program					
Building Maintenance Funds			\$22,000		\$15,000
Street Lighting Program					
Street Lighting Fund	\$250,000	\$360,000	\$50,000	\$50,000	\$50,000
Total Capital Revenue	\$250,000	\$360,000	\$72,000	\$50,000	\$65,000
Building Maintenance Funds			\$22,000		\$15,000
Street Lighting Fund	\$250,000	\$360,000	\$50,000	\$50,000	\$50,000

FACILITIES MAINTENANCE PROGRAM

PROGRAM INTRODUCTION

Management of the City facilities consists of a series of inspection programs that covers roofing, HVAC systems, plumbing systems, electrical systems, flooring, painting, sidewalks, and parking areas.

PROGRAM GOALS AND OBJECTIVES

- To maintain our public facilities in a way that they stay clean, have a pleasing appearance, are fully functional, operate efficiently, and are a safe and healthy environment in which to work;
- To maintain the facilities that house equipment pertinent to the operation of our Water, Wastewater, and Geothermal Systems in a manner that will insure the protection of our equipment and be esthetically pleasing to the public;

The goal of this program is to accomplish these tasks as efficiently and economically as possible while keeping disruption to normal operations to a minimum.

PROGRAM ELEMENTS

All City facilities are thoroughly inspected on an annual basis. Some areas are inspected quarterly during their regularly scheduled preventive maintenance. This information allows us to upgrade our records to show the current condition of all aspects of each facility. This information also allows us to notify the appropriate Divisions of upcoming major expenses they need to budget for in the following year concerning their facility. As we proceed through each budget year the Maintenance Division performs minor to major maintenance tasks that are required to keep our facilities in good condition. Examples of these tasks would be repairs to plumbing systems, electrical systems, HVAC systems, etc.

The Maintenance Division receives requests throughout the year to perform tasks from city departments. These requests come in a wide range of tasks from repairing and replacing doors and windows, extensions to electrical, computer and phone systems, as well as building walls, partitions and cabinets for various offices.

All of our inspections, requests, repairs and replacement tasks are received and recorded with the use of our PMM asset management/work order system.

ISSUES AND CONCERNS

The age of some of our facilities requires us to perform a considerable amount of maintenance every year to keep them in good condition. For example, City Hall and the City Hall Annex buildings were constructed around 1920. After evaluating building use, it was decided to move forward with the capital projects listed in this publication in order to maintain building standards.

FACILITIES MAINTENANCE PROGRAM

Beginning in 2013, the City became solely responsible for the maintenance of the Ella Redkey Pool. The majority of the tasks fall to the Maintenance Division.

Through the years, as the City has grown, so has the need for office and storage space. This means we are constantly looking for ways to create additional work and storage space in virtually all Divisions. With the size and age of our facilities, this task is becoming more and more difficult.

FACILITIES MAINTENANCE PROGRAM

Project	2016/17	2017/18	2018/19	2019/20	2020/21
City Hall – Exterior Paint			\$22,000		
Annex – Exterior Paint					\$15,000
Total Capital Costs			\$22,000		\$15,000

FACILITIES MAINTENANCE PROGRAM

PROJECT NAME: Administration Building
Location: 500 Klamath Avenue & 226 South 5th Street
Council District: Ward 2

Project Description:

Exterior Paint/City Hall - \$22,000 - 2018/19
 Exterior Paint/Annex - \$15,000 – 2020/21

Project Costs:

Funding Source:		-----Five Year Proposed Budget-----				
		2016-17	2017-18	2018-19	2019-20	2020-21
Building Maintenance Funds	Exterior Paint – City Hall			\$22,000		
	Exterior Paint – Annex					\$15,000
	Total			\$22,000		\$15,000

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
			Construct		Construct

EQUIPMENT MAINTENANCE PROGRAM

PROGRAM INTRODUCTION

Management of the Equipment Maintenance Program includes routine inspections on all motors, pumps, electrical services, and associated equipment that is essential to the operation of the Water Production, Water Distribution, Wastewater Treatment, Wastewater Collections, Stormwater, traffic signals and the Geothermal Systems within the City.

PROGRAM GOALS AND OBJECTIVES

- Increase citizen safety
- To keep all equipment functioning in an efficient manner
- To have all our equipment in a condition that is safe for our employees to work on and around
- To minimize down time in areas that are critical for our customers such as water, sewer and geothermal heating services

The goal of this program is to reach these objectives by identifying potential problems and predicting failures to equipment before they occur. Another goal is to build an inventory of spare parts and equipment to help us minimize our down time when a problem occurs.

PROGRAM ELEMENTS

All equipment in pump houses, booster stations, lift stations and at the Wastewater Treatment Plant is inspected on a regular basis. Much of this equipment requires regular scheduled maintenance. This scheduled maintenance is performed either on a timed basis or on an hour of operation basis. During the scheduled maintenance of this equipment, a visual check is made in the immediate area, which affords us the opportunity to spot anything out of the ordinary that might need attention. With the help of in-house engineers, we have started testing programs on our equipment. This testing will establish the efficiency of the equipment and help us to determine when repair or replacement is needed. The combination of scheduled preventive maintenance and testing of our equipment will help tremendously in extending the life of the equipment. Through the use of these sub-programs we are able to inform the different Divisions of expenses they need to place in their budgets for upcoming upgrades, replacements and repairs. Also, through these programs, it makes it easier to keep all our systems operating in an efficient and economical manner. All information regarding scheduled maintenance, repairs and equipment replacement is tracked and recorded in the computer on the HTE Work Orders/Facility Management Program.

ISSUES AND CONCERNS

In the past, the lack of personnel put the preventive maintenance program behind schedule. In recent years, with reorganization of the Maintenance Division, we have improved the preventive maintenance program considerably. We must continue to keep preventive maintenance a top priority. Also, the lack of funding has not allowed us to build an adequate inventory of spare parts and equipment. Without the proper inventory on hand, we risk major problems with Regulatory Agency compliance should a crucial system fail.

EQUIPMENT MAINTENANCE PROGRAM

We have established a higher level of funding for training of our personnel. New processes, controls and procedures are being established all the time. We must be able to keep our staff trained in these new areas. This allows us to run our operations more effectively.

As with our facilities, another concern is the age of some of our equipment.

STREET LIGHTING PROGRAM

PROGRAM INTRODUCTION

The Street Lighting Program involves installation of new streetlights, cleaning of existing streetlights, and repairing lights as needed. Another facet of the program is to perform lighting studies to approve types, location and styles of streetlights proposed for installation by developers.

PROGRAM GOALS AND OBJECTIVES

- To give good general illumination to our city streets
- To make our neighborhoods safer at night
- To create a more pedestrian friendly atmosphere after hours throughout the City

Our goal is to accomplish these objectives by constantly reviewing our master plan to identify areas that would benefit by additional or improved lighting.

PROGRAM ELEMENTS

Currently the City Street Light System consists of approximately 3,200 streetlights. Several areas within our system are plagued with bugs filling our fixtures, especially midges. The streetlights in these areas are on a semi-annual cleaning schedule. These fixtures are thoroughly cleaned early spring and late fall. Some areas must also be cleaned mid-summer to maintain adequate lighting and keep the fixtures from being damaged from heat build-up. Due to the cost of replacement parts, and the varying life span of fixtures and lamps, we do not have a scheduled replacement program. Concerning the operation of our streetlights, we rely on City employees and calls from citizens letting us know if a streetlight is malfunctioning. We pride ourselves on the fact that 98% of all problems are resolved within 24 hours. Throughout the year we receive requests from citizens for additional lights in their area. We respond to their requests by surveying the area in question either early evening or early morning. If we determine lighting is inadequate, we install additional lights in the area. If we determine lighting in their area is adequate, we contact the requester and discuss the findings with them.

All information concerning cleaning, repairs, replacements and new installations are recorded in the computer using the HTE Work Orders/Facility Management Program.

ISSUES AND CONCERNS

A concern we have to deal with each year is vandalism. Vandalism creates an added cost to maintaining the Street Light Program. Some individuals find our lights to be a great target for pellet guns, slingshots, .22 rifles and we have even found .38 slugs in some fixtures. Some of our wooden poles have also been used for practicing logging skills by trying to chop the pole down.

The cost of operating our system is another concern. The funding for the Street Lighting System was set up to operate 2,300 streetlights. We are currently operating approximately 3,200 streetlights. In 2012, in cooperation with Energy Trust of Oregon and the American Recovery act, we were able to change out 315 high pressure sodium street light fixtures with LED fixtures saving the City an average of \$2,000 per month in electricity costs. In 2014/15 we changed 750

STREET LIGHTING PROGRAM

fixtures with their LED counterparts and experienced an additional savings of \$1,640 per month. In 2015/16, we plan on expanding the project by replacing 380 more fixtures which will add to our monthly savings.

Another concern we have is the cost of repairing and replacing the decorative fixtures and poles downtown. They are a definite asset to downtown, but are very costly to repair and replace.

STREET LIGHTING PROGRAM

Project	2016/17	2017/18	2018/19	2019/20	2020/21
LED Retrofit Project	\$250,000	\$250,000	\$50,000		
ROAM Photo Cell Replacement				\$50,000	\$50,000
Basket Truck Replacement		\$110,000			
Total Capital Costs	\$250,000	\$360,000	\$50,000	\$50,000	\$50,000

STREET LIGHTING PROGRAM

PROJECT NAME: LED Retrofit Project
Location: City-wide
Council District: All

Project Description:

Replace additional street light bulbs with high efficiency bulbs.

Project Costs:

Funding Source:	LTD*:	-----Five Year Proposed Budget-----				
		2016-17	2017-18	2018-19	2019-20	2020-21
Street Lighting Fund	\$548,000	\$250,000	\$250,000	\$50,000		
	Total	\$250,000	\$250,000	\$50,000		

* - LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
	Construct	Construct	Construct		

STREET LIGHTING PROGRAM

PROJECT NAME: ROAM Street Light Remote Monitoring Project
Location: City-wide
Council District: All

Project Description:

Upgrade photocells on street lights with remote sensing units allowing the Street Lighting Division to monitor light outages.

Project Costs:

Funding Source:	LTD*:	-----Five Year Proposed Budget-----				
		2016-17	2017-18	2018-19	2019-20	2020-21
Street Lighting Fund					\$50,000	\$50,000
	Total				\$50,000	\$50,000

* - LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
				Construct	Construct

STREET LIGHTING PROGRAM

PROJECT NAME: Basket Truck Replacement
Location: Maintenance Division
Council District: All

Project Description:

Replace existing basket truck as it will be past its service life. Estimated cost: \$110,000.

Project Costs:

Funding Source:	LTD*:	-----Five Year Proposed Budget-----				
		2016-17	2017-18	2018-19	2019-20	2020-21
Street Lighting			\$110,000			
	Total		\$110,000			

* - LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
		Purchase			

SCADA SYSTEM PROGRAM

PROGRAM INTRODUCTION

Management of the Citywide SCADA (Supervisory Control and Data Acquisition) System has required us to physically inspect 60-plus locations that service the Water, Wastewater, Stormwater and Geothermal Systems. We have taken a complete survey of all electrical and control systems at each location.

PROGRAM GOALS AND OBJECTIVES

- Design a computerized system to control and monitor pumps, flows, levels and temperatures associated with the Water, Wastewater, and Geothermal systems
- Build the system
- Install the system
- Operate the system
- Train other personnel on system operation
- Add weather monitoring stations to add weather data to SCADA been done

The goal of this program is to monitor and troubleshoot all operations of the Water, Wastewater, and Geothermal equipment from one central location.

PROGRAM ELEMENTS

An inspection has been performed at all pump stations, lift stations and reservoirs within our Water, Wastewater and Geothermal Systems. A design has been formulated for a computerized control system at each location. All operational information from each of these locations will be transmitted to a Central Control Center. This information will be gathered and distributed through the use of computers and radio transmitters. The design and installation of this system has been underway for several years. Completion of the system is expected within the next couple of years. The Control Center is located in the Maintenance Division building located at 1199 S. Spring St. The equipment for the Control Center is in place and functional. Currently we have 30 well sites, pump stations and reservoirs for the Water Division operating on the system. We also have 26 operations at the Wastewater Treatment Plant connected to the system, as well as 10 remote stations. Recently our (2) Geothermal Wells and our Heat Exchanger Building have been added to the system. Each new segment of the system is built and tested at the Control Center. Once a new segment is complete, it is taken to its appropriate location and installed by City personnel. Once installed, it is field tested and adjusted for proper operation. Training on the building and operations of our entire system is an ongoing process conducted by our in-house Systems Controls Specialist. When the program is completed, it will give us the capability to monitor and troubleshoot all our operations from one central location. Another function of this program is an alarm system. This will notify us of any problems occurring in our operation. If alarms occur after hours, it has the ability to place a telephone call to someone notifying them of the problem.

SCADA SYSTEM PROGRAM

ISSUES AND CONCERNS

The type of equipment used in building our system was selected after extensive research. Several manufacturers were contacted concerning their brand of equipment. Other cities that have a SCADA system were visited to discuss what equipment they chose, why they chose it and how it's performing. Segments of our system have been operating for several years. Reliability of the system is proving to be very good. Keeping the system user friendly is an issue we must deal with. We must make a conscious effort when building the control screens for the system to make them easy to understand and operate. We are in the process of upgrading our system this year. With the old system being in place now for almost ten years we find it prudent to keep up with the new technology.

While there are not any planned capital costs being expended through the Maintenance Division CIP, this Division continues to be responsible for the maintenance and upkeep of the system. Any capital improvements are budgeted for in Water and Wastewater Divisions' CIPs.

PARKS
DIVISION

INTRODUCTION

The Parks Division, a Division of the Support Services Department, manages and maintains the City Parks system consisting of over thirty areas totaling approximately 700 acres of land. These areas include mini, neighborhood and regional parks; and special use areas, such as boating facilities, sports fields, Linkville Pioneer Cemetery, the Veteran's War Memorial and Ella Redkey Pool.

Parks also manages natural open spaces, remnant forest land, the downtown district landscape, and provides maintenance support to Kiger Stadium.

Parks staff includes one manager, one working supervisor, four permanent maintenance workers, and two summer seasonal workers. Parks Administrative Assistant duties are currently distributed among two Development Services positions and one City Recorder Assistant position. The Ella Redkey Pool staff includes one manager and up to fourteen lifeguards working on a seasonal basis.

ABSTRACT

The 2016-2021 Annual Capital Improvement Plan, prepared by the Parks Division, describes high priority capital projects.

This 2016-2021 Capital Improvement Plan:

- Provides recommendations for needed replacement, rehabilitation and compliance projects, and ongoing technical support
- Furnishes cost information necessary to develop the Parks Division budgets
- Provides these recommendations to support the Parks development process

ISSUE STATEMENT

Parks spaces, facilities and natural areas directly contribute to measurable community and societal benefits, such as improvement in community health, economy, safety and general well-being. It has been proven that children and adults need to spend time in the great outdoors. Our public resources play an essential role in the livability of a city and have tremendous indirect returns.

The mission of the Parks Division is to provide visitors with safe environments in which to engage in a variety of healthy activities or to just simply do nothing more than relax, reflect and restore during their stressful lives.

- As the Parks system continues to serve the community, it is vital to preserve maintenance levels rather than defer maintenance until resources decline and inevitably cost much more to cure.

INTRODUCTION

- Given current weather trends, the business of sustaining large tracts of turf must be examined, with planning toward water wise landscaping to be incorporated into park areas dependent on questionable surface irrigation water deliveries.
- Citizen requests for contemporary facilities in their parks system is on the rise. Hiking trails, bicycling trails and protected trans-community travel lanes, modern playgrounds and safe access to natural areas top the list.
- As part of a vital downtown business district, the heart of any community, landscaping and street trees offer not only aesthetic value but also softens architecture, reduce glare, absorb traffic sound, collect airborne particulates and introduces natural settings into the urban environment. Many of the downtown sidewalk trees were planted over 20 years ago and are now due for systematic replacement in the years to come. In addition, future pocket parks and plazas will require intelligent design and adequate maintenance.

TOTAL CAPITAL IMPROVEMENT PROGRAM COSTS

Program	2016-17	2017-18	2018-19	2019-20	2020-21
Lake Ewauna Trail Project	\$1,420,000				
Parks Irrigation Improvements	\$ 47,000	\$ 40,000	\$ 32,000	\$ 25,000	\$ 25,000
Playground and Fitness Equipment	\$ 50,000	\$ 105,000	\$ 60,000	\$ 70,000	
Kit Carson Park Trails and Landscaping	\$ 60,000	\$ 60,000	\$ 47,000		
Bicycle Pump Track	\$ 10,000	\$ 75,000			
Picnic Areas and Restroom	\$ 35,000	\$ 170,000			
Moore Park Road Repairs	\$ 20,000	\$ 20,000	\$ 28,000	\$ 30,000	\$ 30,000
Veterans Memorial Park Restroom Replacement			\$ 25,000	\$ 170,000	
Veterans Memorial Park Locomotive Shelter Roof Replacement			\$ 40,000		
Vehicle and Equipment Replacement	\$ 55,000	\$ 90,000	\$ 20,000	\$ 55,000	\$ 95,000
Total Capital Cost Parks	\$1,697,000	\$ 580,000	\$ 277,000	\$ 375,000	\$ 175,000
Ella Redkey Pool –Wall Repair, Painting, and Partitions		\$ 63,000			
Ella Redkey Pool – Deck Drain Replacement		\$ 20,000			
Ella Redkey Pool-Pool Resurfacing	\$ 60,000				
Total Capital Cost Pool	\$ 60,000	\$ 83,000			
Total Capital Cost Parks and Pool	\$1,757,000	\$ 713,000	\$ 277,000		

PARKS DIVISION

PROJECT NAME: Lake Ewauna Trail Project

Location: Klamath Avenue to Spring Street

Council District: Ward II

Cost Estimate: \$159,603 (local cash match). Total project cost, \$1,420,000

Project Description: The Lake Ewauna Trail, as funded through the ODOT Flexible Funds Program, will be an approximately 0.9 mile paved and geothermal heated pathway stretching along Lake Ewauna from Veterans Memorial Park to the City’s Wastewater Treatment Plant. The Lake Ewauna Trail, per original OPRD and ODOT grant agreements was to be completed by 12/31/2014 but has however been delayed to 12/31/2016.

The 540’ segment of the trail through Veterans Memorial Park and its associated OPRD Local Government Grant Program has been combined with the broader ODOT, STP Flex funded project.

Project management is the responsibility of ODOT.

Project Costs:

Funding Source:	LTD*:	-----Five Year Proposed Budget-----				
		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues		\$ 159,603				
ODOT/Fed Funds		\$1,260,397				

*LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	
Obligation of Funds for the Right-of-Way phase of the Project.	Obligation of Funds for the Construction phase of the Project. Project Completion: To be completed by December 31, 2016	

PARKS DIVISION

PROJECT NAME: Parks Irrigation Improvements

Location: Kit Carson Park, Linkville Cemetery, Moore Park & Veterans Park
Council District: Wards II, IV, V
Cost Estimate: \$129,000 (cash match), \$40,000 (donation). Total project cost \$169,000

Project Description: Due to recent regional drought conditions, surface water irrigation allocations have been sporadic. Two locations have been without water for three prior years. Kit Carson Park and Linkville Pioneer Cemetery should be converted to optional City potable irrigation water as an alternate source. Installation of an axillary system at Kit Carson Park would be available to supply ground water irrigation to specific areas of the park when surface irrigation supplies are unavailable.

Upgrading existing ground water irrigation systems will make them more efficient through use of current irrigation components, redesign and remodel. Intelligent controllers and valves sense breakages or abnormalities from preset information as they occur, and will shut off problem zones automatically. All warnings, system information, use and adjustments are readable and programmable from a computer or mobile devices.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues		\$ 33,000	\$ 26,000	\$ 20,000	\$ 25,000	\$ 25,000
Sky Lakes Funding for Kit Carson		\$ 14,000	\$ 14,000	\$ 12,000		

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2018-19	2020-21
	Remodel existing systems				

PARKS DIVISION

PROJECT NAME: Playground and Fitness Equipment

Location: Southside Park, Mills Kiwanis Park & Kit Carson Park
Council District: Wards I, III, IV
Cost Estimate: **\$215,000** (cash match), \$70,000 (donation). Total project cost \$285,000

Project Description: Southside and Mills Parks currently lack children’s playgrounds. Kit Carson Park would benefit from adding more contemporary play.

Southside Park, still largely undeveloped, has no children’s playground. The City has benefited from public access to Hosanna School playground. System development charges were collected for improvements to South Side Park, which would benefit from its own 5-12 year old children’s Nature Play system.

Mills Kiwanis Park, located in central Mills Addition, has only one swing set and a climbing wall. The park is located near the largest population of children per capita within the City. It is recommended that 2-5 year old and 5-12 year old component play systems be installed in alternate years.

Kit Carson Park has potential to offer an all-age group Nature Play system. Designing play areas that replicate settings found in nature provide activities that cultivate imagination and develop motor skills. Balancing on logs, crawling over rocks and playing in the dirt inspire children to experience that play can be more exciting than sitting in front of electronic devices a home. Adult exercise stations, placed along a future Kit Carson trail system, will help provide additional fitness activities to walkers, joggers and other park visitors.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues		\$ 20,000	\$ 105,000	\$ 20,000	\$ 70,000	
Sky Lakes Funding		\$ 30,000		\$ 40,000		

*LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
	Kit Carson Playground Construct	Southside and Mills Playgrounds Construct	Kit Carson Exercise Equipment	Mills Playground Construct	

PARKS DIVISION

PROJECT NAME: Kit Carson Trails and Landscape Improvement

Location: Kit Carson Park
Council District: Ward I
Cost Estimate: \$68,000 (cash match), \$99,000 (donation). Total project cost \$167,000

Project Description: Given sporadic water availability and current visitor trends, Kit Carson Park is under redesign to develop accessible tree-line trails, in lieu of large, open turf areas which are now underutilized.

Trail development offers additional off-street walking for leisure and exercise for the neighborhood and the community.

Dozens of maturing conifer and canopy trees eventually become an urban forest that requires less moisture than turf, shades park property and native grasses, and provides numerous ecosystem and wildlife habitat benefits. Kit Carson Park trails will provide connection between the neighborhood and the Crater Lake Parkway multi-use path, and beyond.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2019-20
Operating Revenues		\$ 24,000	\$ 24,000	\$ 20,000		
Sky Lake Funding		\$ 36,000	\$ 36,000	\$ 27,000		

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2019-20
	Trails and Landscape Construct	Trails and Landscape Construct	Trails and Landscape Construct		

PARKS DIVISION

PROJECT NAME: Bicycle Pump Track

Location: Kit Carson Park

Council District: Wards I

Cost Estimate: \$34,000 (cash match), \$51,000 (donations). Total project cost \$85,000

Project Description: Local bicycling groups have requested a Pump Track bicycle riding feature. Utilizing a small amount of space, these features provide a venue for both children and adults to develop off-road riding skills and improve fitness. The Klamath Trails Alliance group, Sky Lakes Foundation and local businesses pledge to secure grants in support the project. A Local Government Grant may be secured by the City.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues		\$ 10,000	\$ 24,000			
Sky Lake Funding			\$ 51,000			

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
	Design	Construct			

PARKS DIVISION

PROJECT NAME: Picnic Areas

Location: Southside Park, Mills Kiwanis Park
Council District: Wards I, III
Cost Estimate: \$205,000

Project Description: Parks reservations and special events continue to grow, demanding additional picnic facilities in our Parks. Distribution of picnic areas takes pressure from Moore Park and Kit Carson Park and makes additional facilities available throughout our Parks system. Four individual picnic tables, each with “A” Frame shelters, will provide small group gatherings or separate visitor accommodations at Southside Park. The Mills Park picnic shelter should be built with attached ADA restrooms, similar to the previous non-ADA structure removed a decade ago.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues		\$ 35,000	\$ 170,000			

*LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
	Construct	Construct			

PARKS DIVISION

PROJECT NAME: Moore Park Road Repairs

Location: Moore Park

Council District: Ward V

Cost Estimate: \$128,000

Project Description: The upper loop road, now closed to public vehicle traffic, is popular with walkers, bicyclist and other outdoor enthusiasts. Walking is difficult in some sections and mostly impassable for wheelchair travelers, as asphalt has degraded over a fifty year lifespan.

Other areas of pavement surfaces will require attention. The Parks maintenance shop area contains large sections of cracked pavement, creating an alligator effect with displacement of asphalt and base material. Beyond this five-year projection, the picnic area road, parking lots and the main loop road will need repairs.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues		\$ 20,000	\$ 20,000	\$ 28,000	\$ 30,000	\$ 30,000

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
	Replace section of upper loop road	Replace section of upper loop road	Demo and replace upper Shop area	Replace section of upper loop road	Replace section of upper loop road

PARKS DIVISION

PROJECT NAME: Veterans Park Restroom Replacement

Location: Veterans Memorial Park

Council District: Ward I, II

Cost Estimate: \$195,000

Project Description: The number of large community events being held at Veterans Memorial Park is steadily growing. Current restroom facilities are not equipped for large numbers of visitors and are in very poor condition. Parks receives maintenance assistance funding from the Oregon State Marine Board for availability of the restrooms to boaters. Engineering for size, ADA compliance and contemporary use will be required to design the facility before construction begins.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues				\$ 25,000	\$ 170,000	

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2015-16	2016-17	2017-18	2018-19	2019-20
			Engineering and Design	Construct	

PARKS DIVISION

PROJECT NAME: Locomotive Shelter Roof Replacement

Location: Veterans Memorial Park
Council District: Ward II
Cost Estimate: \$40,000

Project Description: Engine #2579 is housed at Veteran’s Park under a cedar shake roof structure. The roof material has degraded and should be replaced with a metal roof, as has been done successfully with nearly all other Parks buildings.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues				\$ 40,000		

*LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
			Construct		

PARKS DIVISION

PROJECT NAME: Vehicle & Equipment Replacement

Location: Parks Division
Council District: Ward
Cost Estimate: \$315,000

Project Description: Replace a 1997, ¾ ton pickup truck, with a 1 ton pickup truck with utility box, in 2016-17; replace a 1998 16’ wide cut mower in 2017-18; replace one small area zero-turn mower in 2018-19; replace a 2002, ¾ ton pickup with a one ton pickup truck in 2019-20; and, replace a 2006 16’ wide cut mower in 2020-21.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues		\$ 55,000	\$ 90,000	\$ 20,000	\$ 55,000	\$ 95,000

*LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
	1 Ton pickup truck with utility box	Large Area mower	Zero-turn mower, 60”	1 Ton pickup truck	Large Area mower

PARKS DIVISION

PROJECT NAME: Ella Redkey Pool Bathhouse Shower Room and Interior Upgrades

Location: 1805 Main Street

Council District: Ward II

Cost Estimate: \$63,000

Project Description: The interior walls have stained and chipped down to the concrete in some areas, which is difficult to clean effectively. Wall repair is needed before interior repainting. Repainting with the appropriate product will seal the walls and provide for better cleaning and a vibrant new look.

The existing metal partitions have corroded from the floor up, in both men’s and women’s side restrooms, and the woman’s side changing area. Replacement with composite material partitions will last and make cleaning easier. Replacement would occur just after the repainting of the interior walls in the bathhouse.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-2018	2018-2019	2019-2020	2020-2021
Operating Revenues			\$ 63,000			

*LTD = “Lifetime to Date”

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
		Wall Resurfacing, Interior Wall Painting, Partitions			

PARKS DIVISION

PROJECT NAME: Ella Redkey Pool Deck Drains

PROJECT NAME: Ella Redkey Pool Deck Drain Replacement

Location: 1805 Main Street

Council District: Ward II

Cost Estimate: \$20,000

Project Description: Light-duty plastic deck drains were removed in high traffic areas in 2013, with pervious aggregate fill installed in the open channels. In certain areas the aggregate drains are now loaded with sediment and do not allow rapid drainage of surface water.

Standing water reduces safety on the deck for lifeguards and patrons, especially if frozen. To increase drainage and reduce pooling and slippage, the deck will be saw-cut, and 4” metal, commercial standard deck drain installed.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues			\$ 20,000			

*LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
		Construct			

PARKS DIVISION

PROJECT NAME: Ella Redkey Pool Resurfacing

Location: 1805 Main Street

Council District: Ward II

Cost Estimate: **\$33,000.00** (local cash match), ORPD grant (\$99,300), Sky Lakes Donation (\$33,200); Total project cost, \$160,000

Project Description: The pool surface has become worn from years of use, there are many cracks in the plaster of the bottom of the pool where algae and dirt collect, and are extremely difficult to remove. The standard lifespan of pool plaster ranges from 10-15 years.

The Ella Redkey Pool plaster has not been updated for over 18 years. Along with the plaster damage, many of the coping tiles, pool tiles, hand rails, and underwater light housings have become damaged and unsafe. To increase the safety, functionality, and appeal of the pool, the entire pool will be resurfaced. This project includes: removing the old plaster from the entire pool and putting new plaster in; replacing all the in pool tiles with new tiles; replacing the wall tiles and stair tiles with slip resistant tiles to minimize accidents; Replacing the hand rails with new, safer hand rails; replacing all damaged coping tiles; and lastly, repairing all underwater lighting housing to ensure safety and functionality of the in pool LED lights. This project will be funded primarily by the remainder of a 60/40 match, OPRD Local Government Grant that was awarded in 2014. Remaining City match is further reduced through a Sky Lakes donation for Pool projects.

Project Costs: 165,500.000

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues		\$ 27,700				
ORPD		\$ 99,300				
Sky Lakes Donation		\$ 33,000				

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
	Construct				

TECHNOLOGY SERVICES

TECHNOLOGY SERVICES DIVISION

The Technology Services Division consists of three employees assigned to maintain, repair, replace, design, build and operate a variety of systems. These systems include server, network, desktop and mobile devices just to name a few. These systems are for city-wide functionality as well as department/division specific. The Technology Services Division handles a wide variety of service requests for all city-owned technology, hardware and software devices.

ABSTRACT

The Technology Services Division is responsible for support and maintenance of essential systems that are required for the City to operate effectively and efficiently.

The Technology Services Division provides support to all City Division and Departments. Material and costs come from the individual departments requesting support.

The Technology Services Division is currently working on an assessment on all computers and peripheral equipment to develop a consistent replacement policy to keep all equipment in satisfactory condition to provide the best service to the citizens of Klamath Falls.

The Technology Services Division programs include the following:

- Enterprise Resource Planning Software
- Network Services
- Communication Services
- Desktop/Customer Support
- Server Resources

PROGRAM COST SUMMARY

Program	2016/17	2017/18	2018/19	2019/20	2020/21
Communication Services	\$72,700	\$26,500		\$55,000	
Server Resources	\$22,100				
Total Capital Costs	\$94,800	\$26,500		\$55,000	

COMMUNICATIONS SERVICES PROGRAM

PROGRAM INTRODUCTION

Communications Services Program consists of email, telephony and mobile device connectivity.

PROGRAM GOALS AND OBJECTIVES

- To keep up with current technologies allowing staff the ability to communicate with each other and, most importantly, with the customers of the City effectively.

The goal of this program is to accomplish these tasks as efficiently and economically as possible while keeping disruption to normal operations to a minimum.

PROGRAM ELEMENTS

It is the responsibility of Technology Services to maintain and monitor the communication technologies employed by the City. This entails testing connectivity for uptime, server maintenance and communicating with service providers. We are also tasked with continually researching new technologies that would provide the most efficient, reliable and cost effective service.

ISSUES AND CONCERNS

Keeping up with proper replacement of older equipment is a constant concern and issue. There is constantly new technology developed. Staying on top of these technologies and implementing the best, effective and cost conscious solution is a never ending task.

COMMUNICATIONS SERVICES PROGRAM

Project	2016/17	2017/18	2018/19	2019/20	2020/21
Exchange Server Replacement	\$72,700			\$55,000	
Total Capital Costs	\$72,700			\$55,000	

COMMUNICATIONS SERVICES PROGRAM

PROJECT NAME: Exchange Service Replacement
Location: City Facilities
Council District: Ward 2

Project Description:

Replace aging exchange server environment prior to failure. Both physical hardware and software are in need of replacement. The server is going on six years old and the software is two full versions behind the current release. We are looking at three options of which I have added the most expensive option in the CIP costs spreadsheet:

- Replacement of the Exchange Server (Approximate cost for this option is: \$72,700)
 - There would be recurring costs of approximately \$55,000 every three to 4 years for the Office Suite upgrade for all users.
 - New physical server and operating system.
 - Move to newest Exchange Servicer Environment (Exchange, user Cals)
 - Update users to newest Office Suite. The reason for moving all users to the 2016 Office Suite is cross-functionality. Users are hindered when one is on the latest version of the software and another is on an older version.
- Move to Google Docs: (Approximate cost for this option is: \$50,466)
 - The annual recurring cost is \$30,775.
 - No need for physical email server onsite.
 - Always in most current environment.
 - Adds features not currently used by City departments.
- Move to Office 365: (Approximate cost for this option is: \$43,361)
 - The annual recurring cost is \$32,143.
 - No need for physical email server onsite.
 - Always in most current environment.
 - Also has added features not currently used by City departments.

Each solution has pros and cons. We are in the research phase of this project. Some of these costs are figured in the highest case scenario because we are uncertain of all functionality needed. Investigation into the best solution for the city will be ongoing and completed prior to the next fiscal year. Purchase and implementation is planned to take place in fiscal year 2016/17 with a four year updating plan with the first mandatory update in 2019/20.

Project Costs:

Funding Source:		-----Five Year Proposed Budget-----				
		2016-17	2017-18	2018-19	2019-20	2020-21
General Fund		\$72,700			\$55,000	
	Total	\$72,700			\$55,000	

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
	Purchase			Upgrade	

COMMUNICATIONS SERVICES PROGRAM

PROJECT NAME: Phone Replacement Project
Location: City Facilities
Council District: Ward 2

Project Description:

Replace aging phones. We have the same phones since we implemented the system. Many phones have bad displays and physical damage. New phones will also allow new options for users.

Project Costs:

Funding Source:		-----Five Year Proposed Budget-----				
		2016-17	2017-18	2018-19	2019-20	2020-21
General Fund			\$ 26,500			
	Total		\$ 26,500			

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
		Purchase and Deploy			

SERVER RESOURCES PROGRAM

PROGRAM INTRODUCTION

The Server Resources Program is designed to keep the City's electronic data and programs in an efficient and reliable medium that is conducive to a productive work environment. Technology Services maintains a server environment that is both physical and virtual.

PROGRAM GOALS AND OBJECTIVES

- Maintain and implement a server environment that has the capacity and speed to run the software the City uses for daily operation.
- Maintain the electronic data retention policies that are set by State ORS and the City's own retention policies.

PROGRAM ELEMENTS

Technology Services staff procures, configure and implement both physical and virtual servers to run the various software platforms utilized by City staff. The servers are evaluated, monitored and replaced on a schedule that will keep up with changes in technology and reduce potential physical server failure.

ISSUES AND CONCERNS

Keeping up with Department needs for servers and data retention grows each year and the need for new servers grows. Data retention requires the City to look into new ways to backup and keep records for the amount of time required in retention policies.

SERVER RESOURCES PROGRAM

Project	2016/17	2017/18	2018/19	2019/20	2020/21
Barracuda Backup 890	\$22,100				
Total Capital Costs	\$22,100				

SERVER RESOURCES PROGRAM

PROJECT NAME: Barracuda Backup 890
Location:
Council District: Ward 2

Project Description:

The City is tasked with archival duties that require certain retention time periods for data. As technology continues to develop, most departments are relying on electronic data records. Our current backup device keeps a local copy of current backups and sends those backups to a cloud service that houses our information offsite which also serves to protect our data in the case of disaster. We currently have a solution, but the space on the appliance is running out and the demand for space keeps increasing.

Project Costs:

Funding Source:	LTD*:	-----Five Year Proposed Budget-----				
		2016-17	2017-18	2018-19	2019-20	2020-21
General Fund		\$22,100				
	Total	\$22,100				

* - LTD = "Lifetime to Date"

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-21
Purchase					

Recurring Cost:

This project has an annual recurring cost of \$6800.00 for support and product replacement. New product is on a four-year rotation. There are also annual costs of \$8500.00 for offsite data storage.

POLICE DEPARTMENT

INTRODUCTION

The City of Klamath Falls Police Department serves a population of 21,000 residents and is comprised of 36 sworn officers, 3 clerical and support personnel, an evidence technician, 20 reserve officers, 9 police explorers, and 6 Volunteers.

The Klamath Falls Police Department aspires to promote a desirable community where citizens are proud to reside, work, and raise families without fear of crime. We strive for strong community partnerships to align policing practices with community needs and expectations.

The mission of our department is to serve our community with courage and integrity while protecting the rights of all individuals. To maintain an innovative, visionary workforce, dedicated to working with our community to enhance public safety through education, prevention and enforcement.

The men and women of the Klamath Falls Police Department are defined, and live by, our core values of “Courage, Service, and Integrity.”

ABSTRACT

The Police Department is responsible for responding to emergency calls for service, enforcement of criminal and traffic laws, conducting criminal investigations and enforcing City of Klamath Falls Municipal Codes.

To effectively and efficiently deliver law enforcement services to the citizens of Klamath Falls, the police department must replace and the following equipment.

- Patrol Vehicles
- Code Enforcement Vehicles
- Network Equipment
- Conducted Electrical Devices

Program	2016/17	2017/18	2018/19	2019/20	2020/21
Police Vehicle Replacement	\$183,340	\$188,840	\$194,505	\$200,340	\$206,350
Code Enforcement Vehicle Replacement	\$33,879	0	0	0	\$34,217
Network Equipment	\$8,700	0	0	0	0
Conducted Electrical Devices	\$47,840	0	0	0	0
Total Capital Costs	\$273,759	\$188,840	\$194,505	\$200,340	\$240,567

POLICE VEHICLE REPLACEMENT

PROJECT NAME: Police Vehicle Replacement

Project Description: Replacement of retiring police vehicles consistent with the department vehicle replacement schedule.

- 2016-17 (3 patrol SUVs - \$183,340)
- 2017-18 (3 patrol SUVs - \$188,840)
- 2018-19 (3 patrol SUVs - \$194,505)
- 2019-20 (3 patrol SUVs - \$200,340)
- 2020-21 (3 patrol SUVs - \$206,350)

History: The Police Department has developed a 7 year patrol vehicle replacement schedule to maximize the service life of patrol vehicles while minimizing costs associated with maintaining an aging fleet.

According to most studies, the average service life of a patrol is 5.5 years and 100,000 miles. Currently, 9 of the department’s 17 patrol vehicles have over 100,000 miles, with 1 over 230,000 miles. On average, patrol vehicles are driven 20,500 miles per year. The department’s vehicle replacement schedule plans for the replacement of patrol vehicles every 7 years and 150,000 miles. Yearly, the department will analyze maintenance costs and may extent the service life of useful vehicles and/or replace vehicles with excessive service costs.

Objectives:

- 1) Identify capital needs to plan and maintain a beneficial, and realistic vehicle replacement schedule.
- 2) Yearly, analyze the patrol fleet and replacement schedule to ensure the patrol fleet is “mission ready” and provides efficient service delivery to the community.
- 3) Yearly, analyze the useful service life of patrol vehicles and maintain vehicles with minimum maintenance costs beyond the planned replacement schedule to minimize financial impact to the City.

Project Costs:

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenue		\$ 183,340	\$ 188,840	\$ 194,505	\$ 200,340	\$ 206,350

*LTD = “Lifetime to Date”

- Above costs assume a 3% increase per year (% may vary as high as 8% per year by domestic sale standards)

POLICE VEHICLE REPLACEMENT

- Above costs assume no turnover of equipment (each vehicle brought out of rotation will have an equipment assessment for re-use of current equipment and compatibility, with the goal to mitigate project costs).

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-2021
	Property Tax Budget Request				

CODE ENFORCEMENT VEHICLE REPLACEMENT

PROJECT NAME: Code Enforcement Vehicle Replacement

Project Description: Replacement of retiring code enforcement vehicle consistent with the department vehicle replacement schedule.

2016 – 17 / \$33,879
2017 – 18 / \$0
2018 – 19 / \$0
2019 – 20 / \$0
2020 – 21 / \$34,217

History: The Police Department/Community Service has developed a 10 year community service vehicle replacement schedule to maximize the service life of the CSO vehicles while minimizing costs associated with maintaining an aging fleet.

Currently, the department has 2 vehicles in excess 9 years old with varying miles. The vehicles are not adequately equipped for the changing mission of the department. The department's vehicle replacement schedule plans for the replacement of CSO vehicles every 10 years or 100,000 miles. Yearly, the department will analyze maintenance costs and may extent the service life of useful vehicles and/or replace vehicles with excessive service costs.

Objectives:

- 1) Identify capital needs to plan and maintain a beneficial, and realistic vehicle replacement schedule.
- 2) Yearly, analyze the CSO fleet and replacement schedule to ensure the fleet is “mission ready” and provides efficient service delivery to the community.
- 3) Yearly, analyze the useful service life of vehicles and maintain vehicles with minimum maintenance costs beyond the planned replacement schedule to minimize financial impact to the City.

Project Costs:

The below project costs beyond 2016-17 are projections based upon current conditions. Allocations for 2016-2021 are estimates based on future replacement needs. These projections may lower as vehicle equipment from retired vehicles is reused in newly purchases vehicles and/or the service life of a vehicle is extended beyond the vehicle replacement schedule.

Attached is a visual projection of the patrol fleet, using a 10 year vehicle replacement schedule. Using this CIP and our vehicle replacement schedule, the department will meet our fleet goals in budget year 20/21.

CODE ENFORCEMENT VEHICLE REPLACEMENT

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenue		\$ 33,876	\$ 0	\$ 0	\$ 0	\$ 34,217

*LTD = "Lifetime to Date"

- Above costs assume a 3% increase per year (% may vary as high as 8% per year by domestic sale standards)
- Above costs assume no turnover of equipment (each vehicle brought out of rotation will have an equipment assessment for re-use of current equipment and compatibility, with the goal to mitigate project costs).

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-2021
	Property Tax Budget Request				Property Tax Budget Request

NETWORK EQUIPMENT REPLACEMENT

PROJECT NAME: Network Equipment Replacement

Project Description: Purchase Networking Equipment

2016 – 17 / \$8,700
 2017 – 18 / \$0
 2018 – 19 / \$0
 2019 – 20 / \$0
 2020 – 21 / \$0

History: The Police Department purchased 2 used network switches and 2 new Security appliances to add to their current switches in 2010 when moving into the new Police Department. This equipment is outdated and has come to its hardware end of life cycle. When the equipment’s life cycle ends, that means the updates for security vulnerabilities aren’t produced by the manufacturer anymore.

Objective:

- 1) To preserve the integrity and security of the information systems network.
- 2) Recognize and identify security needs as they arise to allow for planning process.

Project Costs:

The pricing structure is for replacement of all 6 pieces of hardware and a new management console.

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenue	\$ 8,700					

*LTD = “Lifetime to Date”

- Above costs based on current pricing as of 1/6/2016

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-2021
	Project Complete				

CONDUCTED ELECTRICAL WEAPONS

PROJECT NAME: Purchase of Conducted Electrical Weapons

Project Description: Purchase of 36 CEWs to include extended warranty and holsters from Taser International.

2016 – 17 / \$47,840
 2017 – 18 / \$0
 2018 – 19 / \$0
 2019 – 20 / \$0
 2020 – 21 / \$0

History: The Police Department has traditionally used a rotation of 13 Conducted Electrical Devices or Tasers on a rotational (sign-in, sign- out) basis. With the current size of our patrol squads and number of reserve officers, this made it difficult at times to equip every officer/reserve officer with a Taser, especially during large events or critical events such as a SWAT call-out.

This purchase allows for exclusive use of a Taser by every sworn officer, as well as our reserves having exclusive use of the 13 units currently in use.

Like any electronic device, Taser has an ideal lifespan of approximately 5 years, however many units last longer. 5 years is the general recommended replacement time frame. The police department has also considered that our current model of Taser is no longer manufactured, so any replacement or repair to our current Tasers is impossible. Our department has also considered the project costs against studies suggesting Taser devices lead to reduced injuries to suspects and officers, reduced response to force litigation, and reduced worker’s compensation claims.

Objectives:

- 1) Identify capital need so the planning process can begin.
- 2) Annually, analyze Taser (CEW) cost against efficient service delivery and officer/suspect safety.

Project Costs:

The below project costs for fiscal 2016-17 are only projections based upon current conditions.

	LTD*:	-----Five Year Proposed Budget-----				
Funding Source:		2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenue		\$ 47,840	\$0	\$0	\$0	\$0

*LTD = “Lifetime to Date”

CONDUCTED ELECTRICAL WEAPONS

- With a five year lifespan, the next CEW replacement cycle would begin in 2021-2022 with a projected cost of \$55,020 (this assumes a 3% cost increase per year according to Taser International Inc.)

Phasing (concept, funding, design, construction, etc.):

To Date:	2016-17	2017-18	2018-19	2019-20	2020-2021
	Property Tax Budget Request	N/A	N/A	N/A	N/A