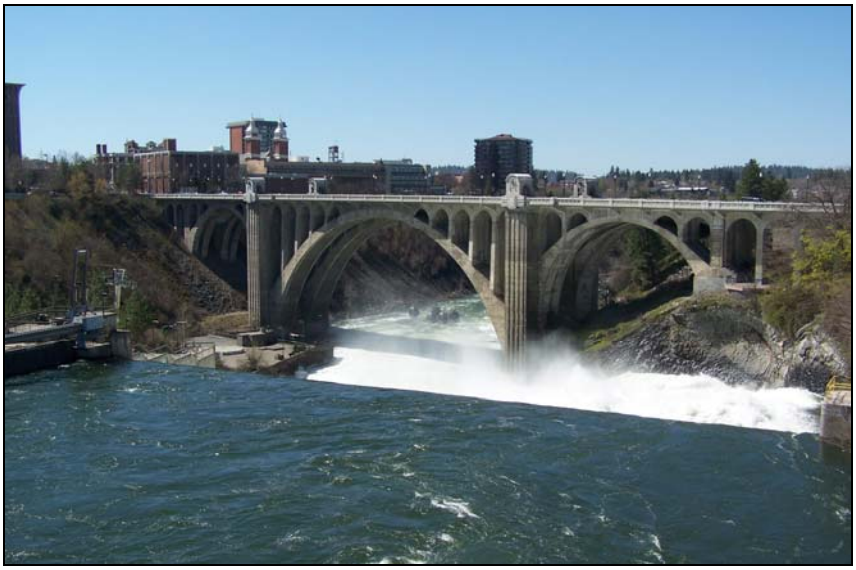
Six Year Comprehensive



Wastewater Program

2010-2015

Prepared for:

City Council

April 19, 2010

CITY OF SPOKANE

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CAPITAL PROGRAMS AND G.I.S

PROGRAM MANAGER	**John Mercer, AICP**
SENIOR ENGINEER	**Marcia Davis, P.E.**
PROJECT STAFF	**Susan King, Craig French**

Date Printed: April 13, 2010

I. Introduction

The City of Spokane Comprehensive Plan

The first planning activities of the City of Spokane (City) in the early 1900s were centered on parks and transportation. From these beginnings, planning in Spokane has continued to grow in significance and usefulness. In 1968, the City adopted the first land use plan as one element of the comprehensive plan. The *1968 Land Use Plan* was updated in 1983. Over the years, topics in the comprehensive plan have expanded to include parks and open spaces, bikeways, water and wastewater facilities, shorelines and individual neighborhoods.

In 1990, the State of Washington enacted the Growth Management Act (GMA) that established rules for communities (such as the City of Spokane) to accomplish community planning. The City's most recent planning effort, the *2000 Comprehensive Plan* (adopted in 2001 and updated in 2006), complies with the GMA rules and consists of goals, policies, maps, illustrations, and implementation strategies that state how the City should grow physically, socially and economically. The City's planning effort is termed "comprehensive" because it identifies the community's long-range plans for growth. The *2000 Comprehensive Plan* consists of over 30 official documents that encompass all aspects of city activities.

Importantly, the GMA includes two provisions to ensure that the City follows Comprehensive Plan directives:

1. The City must regulate land use and development consistent with the plan; the zoning code, subdivision code, environmental ordinances, and the building code must follow the plan's intent.
2. The City must make capital budget decisions and capital project investments in conformance with the plan.

These two GMA rules give the new *Comprehensive Plan* a much higher level of importance in managing and guiding the City's growth and development than previous editions of the plan.

Capital Facilities Planning

As defined in the *Comprehensive Plan*, capital facilities and utilities support the physical development and growth of the city. Section 1.1 of the Comprehensive Plan states that the

> "*...city must make capital budget decisions and capital project investments in conformance with the plan.*"

Further, it states,

> "*In addition to ongoing needs for repair and maintenance, these lists of capital facilities include the immediate improvements necessary to support growth, in conformance with the Comprehensive Plan.*"

The *Comprehensive Plan* strives to contain and manage sprawl, and encourages investment of infrastructure in support of the managed growth areas, including focusing high intensity growth in specified Centers and Corridors and infill development in other areas of the City. Chapter 5--Capital Facilities and Utilities (CFU) of the *Comprehensive Plan* is intended "*to guide how these crucial services coordinate with and support the future growth and development of Spokane.*" Spokane Horizons volunteers identified Visions and Values as being important in relation to Spokane's current and future growth. Those visions and values identified in Chapter 5 concerning CFU are:

- Public facilities and utilities will be provided concurrently with a growing population to meet the safety, utility, transportation, educational and cultural needs of residents.
- Ensuring good parks, schools, libraries and streets in the neighborhoods.
- Providing services and facilities as growth occurs.

The City's capital facility programs are part of the City's overall planning efforts as described in the table below:

Summary of Planning Efforts - City of Spokane		
Planning Effort	**Period**	**Description**
Six-Year Comprehensive Programs	6 Year	Prepared annually to support and coordinate with the other planning efforts.
Infrastructure Financial Planning	20 Year	Updated annually by City Utility Departments to balance rates and fees with estimated costs for maintenance and new construction.
City Comprehensive Plan	20 Year	Updated every 5 years (last update in 2006) this document is mandated by State law to direct growth, development and expansion.
Strategic Infrastructure Planning	50 – 100 years	The City does not presently have a Strategic Infrastructure Plan (SIP). Once created, the SIPs are usually updated every 5-10 years. The SIPs are useful because much of the underground infrastructure has an expected 50-100 year life.

Goals and Policies

Goals and policies in Section 5.4 of the *Comprehensive Plan* provide details for planning and decision-making. In order to fully comply with the *Comprehensive Plan*, capital sewer, stormwater, water, and street facilities planning must acknowledge and address at least five simultaneous goals:

1st. Adequate infrastructure for infill development must be provided.

2nd. Facilities must be constructed within the Urban Growth Area (UGA),

3rd. Infrastructure not to the detriment or in lieu of other development that is supportive of and necessary for designated Centers and Corridors.

4th. Existing facilities and infrastructure must be maintained and upgraded as needed.

5th. Facilities must be consistent with strategic system planning (50 to 100 years).

Occasionally for certain projects, the goals appear to be inconsistent or conflicting, particularly goals relating to the UGA and strategic planning (see above: second and fifth goals). For example, assume a water tank project is proposed in the next 6 years at a location not only outside the city limits, but also outside the Plan's UGA. This proposed water tank, together with its requisite transmission main system connection, appears to promote development outside the UGA, which would be a clear contravention of the Plan. However, this project is necessary to provide a relatively uniform water pressure throughout the water pressure zone, and the selected tank site meets the necessary engineering criteria of the Plan. Consistency of this water tank project is assured by the Plan's policies, which direct the City to apply strict limitations for allowing service connections outside the UGA:

> "*Any mains extended outside the city's UGA after May 31, 2001, shall be for the overall operational benefit and efficiency of the City of Spokane's water utility system. Such extensions shall be for transmission purposes only with no connections allowed except...*" as specifically provided.

The Six-Year Comprehensive Programs

The City prepares and publishes six-year capital improvement programs annually for street, water, stormwater and sewer projects. They provide a blueprint for improving the City's infrastructure in a rational, coordinated, cost-effective manner. Each of the five distinct purposes Six-Year Comprehensive Utility Program is used as summarized in the table below:

Purposes of the City's Six-Year Utility Program	
Purpose	**Description**
Efficiency	The City Utilities are "enterprise" activities that are managed like many successful businesses. A utility builds, operates and maintains infrastructure (pipes, buildings, pumps, etc.) to provide a service to customers. The fees charged to customers fund the utility activities, so that no City taxes are used to pay for utility operations. The Six Year Program provides the planning structure to construct and maintain the infrastructure in an orderly manner.
Fiscal Prudence	The 20-year utility financial planning period and the Program are directly related in an attempt to promote a predictable and even cash flow for the Utilities. By matching improvement projects with cash flow and revenues, peak capital spending can be minimized; projects can be spread out to minimize costly short-term borrowing; and large fee increases can be avoided.
Low-Cost Supplemental Funding	Grants and low interest loans are available from federal and state agencies for utility infrastructure improvements. These agencies require that projects proposed for funding are part of an approved capital improvement program, and the Program satisfies that requirement.
Program Coordination	All Programs are closely coordinated with each other. This coordination allows efficient installation of utility improvements in conjunction with street projects and prevents costly multiple construction projects in the same area. In addition, each separate project is shared with Spokane County and state agencies to ensure that other public projects are consistent with City projects.
Public Information	The Program is used by the public. Information contained in the Program supports redevelopment, private construction projects, and other City economic development activities.

Six-Year Programs Annual Update Process

The Six-Year Comprehensive Wastewater, Water and Street Programs are updated annually. New projects are added and completed (or cancelled) projects are removed from the programs during the annual update. Projects are added based on a need identified by one or more of the following sources:

Utility maintenance and operations staff identify infrastructure needing immediate replacement or upgrade based on observed conditions.

Adopted facility and management plans list projects needed for continued system operation.

Other City projects (such as street or bridge work) create an opportunity for cost-effective upgrades or facility replacements.

Planning documents, such as the City Comprehensive Plan, provide guidance on expansion and growth related projects.

Regulatory agencies (such as the Washington Department of Ecology and the Department of Health) have ordered improvements to the infrastructure system for public health and safety.

Updating the Six-Year Comprehensive Programs is an annual activity that begins immediately after the most recent plan is adopted. The adoption of the utility programs update is scheduled to compliment the City's budget process. The 2010-2015 Comprehensive Wastewater Program was delayed to wait for the outcome of a commissioned Rate Study critical to determine revenue streams for the next six years. A summary of the process is provided below:

City of Spokane
Six-Year Programs Schedule

Activity	Street Program	Utility Programs
Collect information from City staff & agencies	July-December	November-April
Prepare rough draft (Draft 1) of Program for internal City review	January	May-June
Prepare working draft (Draft 2) for coordination with budget; start environmental process (SEPA)	February-March	July
Working draft presentations: Public Works Committee; Plan Commission workshop and hearing	April-May	August-September
Pre-publication draft (Draft 3) is presented together with the Plan Commission recommendation to City Council	June	October
Publish complete and approved Program	July	November

Note: State law requires the six-year capital *street* program be completed by June 30 of each year.

Capital Projects

Criteria were established to distinguish maintenance projects from the capital projects included in the Six-Year Comprehensive Programs. Each project meets the following criteria:

1) The completed value of the project is at least $70,000.
2) The expected useful life of the project is at least five years.
3) The completed project results in a physical fixed asset.

Further Information

For further information on the City's Six-Year Comprehensive Programs, please contact:

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Engineering Services Department
City of Spokane
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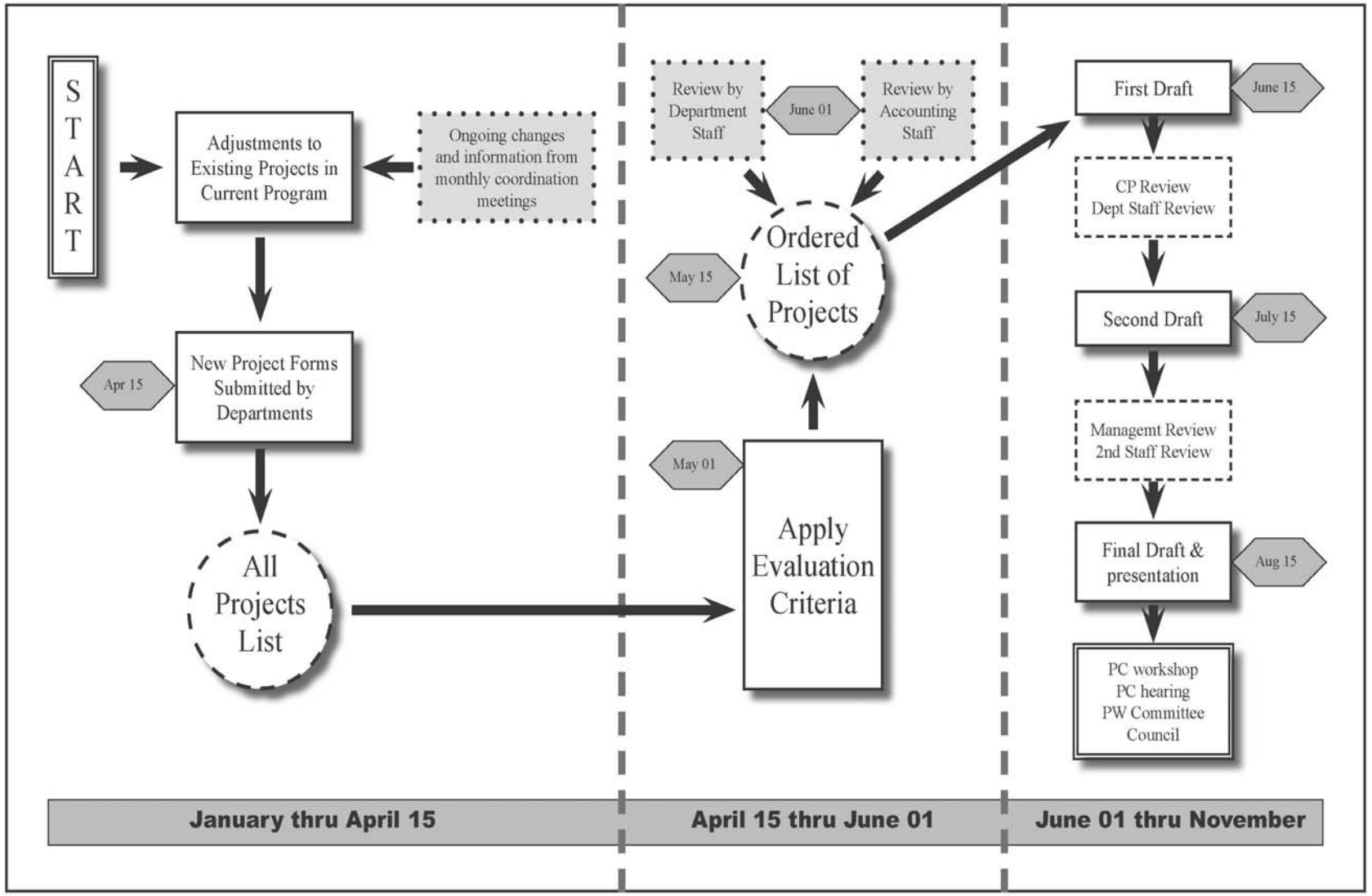
Spokane, WA 99201-3334
(509) 625-6065
jmercer@spokanecity.org

Six-Year Comprehensive Utility Program Flowchart and Schedule



JDM 06/09/09

CITY PLAN COMMISSION
808 W. SPOKANE FALLS BLVD.
SPOKANE, WASHINGTON 99201-3329
(509) 625-6060
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CITY PLAN COMMISSION FINDINGS OF FACT, CONCLUSIONS, AND RECOMMENDATIONS ON THE 2010-2015 SIX YEAR WASTEWATER MANAGEMENT PROGRAM

A Recommendation of the City Plan Commission certifying that the 2010-2015 Six Year Wastewater Management Program is in conformance with the City of Spokane's Comprehensive Plan.

FINDINGS OF FACT:

A. In May 2001, the City of Spokane adopted its Comprehensive Plan under the Growth Management Act (Chapter 36.70A RCW or "GMA").

B. The City's Comprehensive Plan is required to be consistent with the GMA.

C. The GMA requires that the City's annual Six Year Wastewater Management Program shall be in conformance with the City's Comprehensive Plan.

D. The 2010-2015 Six Year Wastewater Management Program identifies capital project activity which has implications on the growth of the community.

E. The City Plan Commission held a workshop on February 10, 2010, and also held a public hearing on March 10, 2010, to obtain public comments on the 2010-2015 Six Year Wastewater Management Program.

F. The City Council must receive a recommendation from the City Plan Commission to certify that the 2010-2015 Six Year Wastewater Management Program is in conformance with the City's Comprehensive Plan in effect on the day of certification.

ACTION: Motion to accept the staff's Findings of Fact A through F.

CONCLUSIONS:

A. The 2010-2015 Six Year Wastewater Management Program has been prepared in full consideration of the City's Comprehensive Plan.

B. The 2010-2015 Six Year Wastewater Management Program has been reviewed by the City Plan Commission and found to be in conformance with the goals and policies of the City's Comprehensive Plan.

ACTION: Motion to accept conclusions A and B by staff as conclusions of the Plan Commission.

RECOMMENDATIONS:

A. The Spokane City Plan Commission concludes that the 2010-2015 Six Year Wastewater Management Program is in full compliance with the existing Spokane Comprehensive Plan as required by RCW 36.70A and RCW 35.77.010 and is recommended for adoption by the Spokane City Council.

B. By a vote of 8 to 0, the Plan Commission recommends the approval of these amended documents by the City Council.

Michael J. Ekins 3/10/2010

Michael Ekins, President
Spokane Plan Commission

Date

RESOLUTION 2010-0024

WHEREAS, pursuant to the requirements of WAC 365-195-315 (as authorized by RCW 36.70A.190, Laws of the State of Washington) the City of Spokane has prepared a revised and extended Six-Year Comprehensive Wastewater Program for the ensuing six years, 2010 through 2015; and

WHEREAS, the Spokane City Plan Commission, on March 10, 2010, following a public hearing, found the 2010-2015 Six-Year Comprehensive Wastewater Program to be in full conformance with the City's Comprehensive Plan; and

WHEREAS, the City of Spokane utilizes state and federal grants and low-interest loans as appropriate to supplement its financial resources and such anticipated funding is incorporated in the Six-Year Comprehensive Wastewater Program, 2010-2015; and

WHEREAS, pursuant to the above law, the City Council of the City of Spokane, being the legislative body of the City held a public hearing on the Six-Year Comprehensive Wastewater Program at 6:00 p.m., at City Hall in Spokane, Washington, on the 26th day of April, 2010.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Spokane that the revised and extended Six-Year Comprehensive Wastewater Program 2010 through 2015 is hereby adopted; and

BE IT FURTHER RESOLVED, that a copy of the revised and extended Six-Year Comprehensive Wastewater Program for the six years 2010 through 2015, together with a copy of this resolution, be filed with the City Clerk, City of Spokane; and

BE IT FURTHER RESOLVED, that City staff be authorized to apply for state and federal grants and low-interest loans in support of projects as identified in the Six-Year Comprehensive Wastewater Program, 2010-2015.

Adopted this 26th day of April, 2010.

Terri Pfister, City Clerk

Approved as to Form:

Assistant City Attorney

CITY OF SPOKANE WASHINGTON

RES 2010-0024

II. Environmental Evaluation

Each project in this program has been evaluated for its environmental impacts, and an appropriate environmental classification has been given each item. The initial environmental assessment was made on the effect of the project to the local area and to the general public, taking into account such considerations as right of way acquisition, effect of clearing and grading, changes in natural drainage and possible disruptions to neighborhoods. Proposed projects have been indicated as having a "Not significant" environmental effect (designated by "CE" or "NS") or of requiring additional study (marked "ES" or "EA"). These projects for which additional study is indicated will be reviewed with particular attention to the sensitive areas at the time of preliminary design. At that time, a further declaration may be made before proceeding with the project.

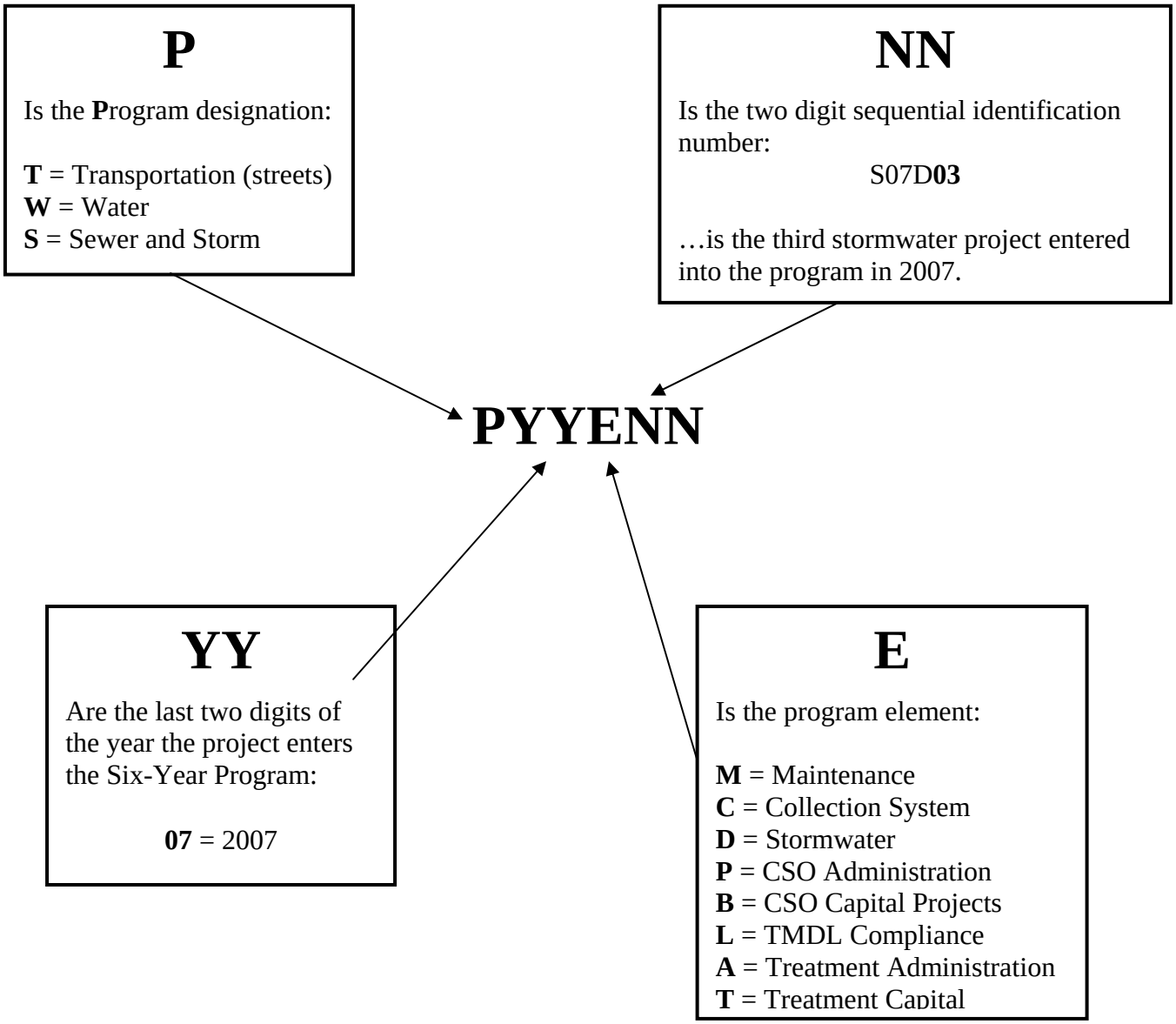
For projects requiring an environmental impact statement, a formal inter-disciplinary team will be appointed. A hearing or advertising for hearing interest is required along with a community involvement plan. Items with state or local funds are classified in accordance with the SEPA Guidelines.

> **CE** Categorically Exempt indicates that the proposal is not environmentally sensitive and no further action need be taken.
>
> **NS** Non-Significant indicates the proposal will not have a significant adverse effect upon the quality of the environment, and an environmental-impact statement and a public hearing are not required. No further environmental documentation is required.
>
> **EA** Environmental Assessment indicates that the proposal may or may not have a significant adverse effect on the quality of the environment and that further environmental investigation is needed.
>
> **ES** Environmentally Significant indicates the proposal will have a significant adverse effect upon the quality of the environment. It is expected that additional documents will be needed that address environmental impacts.

If a program has been determined not to have a significant adverse impact upon the environment, a Declaration of Non-Significance is made, and an environmental impact statement is not required under RCW43.21C.030(2)(c). This decision is made after review of a completed environmental checklist and other information on file.

III. How to Use this Document

When a new project is added to the six-year program, it is assigned a unique tracking number. Once assigned, this tracking number stays with the project for its life, even if other project numbers are subsequently assigned for billing and internal tracking purposes. The tracking numbers are of the form:



IV. Project Reconciliation

As part of the Six Year Program update, the status of each project is reviewed. At times, various factors will cause delay in construction or require rescheduling of the project. Occasionally, a project will be rescheduled beyond the six year programming window. The Project Reconciliation is an attempt to resolve the scheduled construction and account for projects both removed and added to the program.

Completed Projects—Construction Will Be Final By The End Of 2009	
	S00C06 – Five Mile Lateral Extension
	S04M02 – 35th Ave & Helena St. Lift Station Replacement
	S04M02 – Hayford Lift Station Replacement
	S04M02 – North Crescent Lift Station Replacement
	S04M02 – San Souci Lift Station Replacement
	S05T01 – Digester System Upgrade
	S08B03 – Weir Modifications, Phase 2
	S08T01 – Egg-shaped Digester Facility Auxiliary Heating
	SO8B01 –Segment I03 (Cochran Basin)I/I Reduction for CSO
	SO8B05 –Segment I04 (North River)I/I Reduction for CSO
Canceled Projects—Construction From Maintenance Funds	
	S03M02 - MMS Implementation
2009 Projects Not Constructed—Delayed to 2010 -- 2015	
	S02M03 – Northwest Terrace Force Main Replacement
	S08M01 – Northwest Terrace Pump Station Replacement
	S07C01 – Upriver-Havana Sewer Project
	S08C01 – Lower Terrace Sewer Project, Phase1
	S09C01 – Joint City-County Marion Haye Intertie
	S06D03 – Sylvia Court Drainage, Phase 2
	S05D01 – Hazel's Creek Drainage and Conservation Area
	S07L02 - Next Level of Treatment Implementation
New Projects	
	S10B01 - CSO Storage at RPWRF
	S10B02 - CSO Basin 22b Weir Modification
	S10D01 - Unidentified Future Stormwater Projects
	S10T01 – Primary Skimming

Project Reconciliation (*continued)*

New Projects (continued)
S10T02 – Steam Heating Conversion
S10T03 – Process Building Extension
S10T04 – Headworks Odor Control
S10T05 -- Aeration Basin 1 to 4 Modifications
S10T06 – Additional GBTs
S10T07 – UV Disinfection System

V. Financial Information

Wastewater Management Department

Estimated Fund Balance
2010 Through 2015

	2010 Budget	2011 Estimate	2012 Estimate	2013 Estimate	2014 Estimate	2015 Estimate
Beginning Cash Balance	43,926	34,268	30,943	34,374	44,174	38,854
Sources of Funds						
Sewer Service Revenues	57,508	66,135	75,438	86,050	92,534	99,507
Stormwater Utility	6,067	6,067	6,067	6,067	6,067	6,067
Other Revenues	1,086	1,340	1,579	2,039	2,116	2,022
Spokane County Utility	2,431	3,425	8,377	15,611	19,013	9,951
Grants	1,250	1,250	1,250	1,250	1,250	1,250
Proceeds from issuance of Debt		29,400	57,200	90,600	100,900	56,500
Total Source of Funds:	68,343	107,616	149,911	201,618	221,881	175,297
Demand for Funds						
Operating Expenses						
Administration	1,455	1,504	1,557	1,611	1,659	1,709
Maintenance	12,730	12,971	13,582	12,963	13,095	14,488
Operations	17,158	17,733	18,331	19,061	19,752	20,475
Equipment	2,627	2,705	2,787	2,870	2,956	3,045
Loan Payments & Other	631	631	631	631	631	631
Debt Service (Bonds)	0	2,460	7,247	14,828	23,271	27,999
Taxes	14,552	16,537	18,784	22,637	24,628	24,516
Operating Expenses Subtotal:	49,152	54,541	62,918	74,601	85,992	92,863
Capital Projects, Construction and Planning Expenses						
Programmed Funds	28,848	56,400	83,563	117,217	141,209	83,431
Programmed Funds (soft)	0	0	0	0	0	0
Capital Projects Subtotal:	28,848	56,400	83,563	117,217	141,209	83,431
Total Demand for Funds	78,000	110,941	146,481	191,818	227,201	176,294
Ending Cash Balance,						
Ending Cash Balance	**34,268**	**30,943**	**34,374**	**44,174**	**38,854**	**37,857**

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PROGRAM SUMMARY

VI. Program Summary

The Six-Year Comprehensive Wastewater Program provides a blueprint for improving the Wastewater Management Department's infrastructure in a coherent, coordinated, and cost-effective manner. The Six-Year Comprehensive Programs are prepared in support of the City's overall planning efforts. All projects in the Program are intended to address both the current need and the needs of the future. All projects placed in the Program must be designed to serve 50 to 100 years from now. All facilities need continued maintenance to keep them operating at optimal levels. Planning for the future has proven to be a financial benefit for the citizens of the City.

The Six-Year Comprehensive Wastewater Program is organized into five elements: sanitary collection system, stormwater, combined sewer overflow (CSO) abatement, total maximum daily load (TMDL) compliance, and Riverside Park Water Reclamation Facility (RPWRF). Each element is described below. Projects within these elements are divided into individual and continuing projects. Projects that are individual and specific to one site are listed separately from on-going projects in this summary. While on-going maintenance projects with large capital expenditures are included in the comprehensive Wastewater program, minor maintenance work is completed under the utility's operation budget.

- Sanitary collection system: The City operates and maintains over 300 miles of sanitary sewer lines, 450 miles of "combined" sanitary and storm sewer lines, twenty-seven sewage lift stations and fourteen river crossings.
- Stormwater: The City operates and maintains over 80 miles of storm drain pipes and forty stormwater outfalls to the river.
- Combined Sewer Overflow (CSO) Abatement: The City is under a Washington State Department of Ecology Order to complete improvements by 2017 to the combined sewer system to minimize the number of overflows and discharges to the Spokane River from the City's thirty CSO regulator structures.
- Total Maximum Daily Load (TMDL) Compliance: The City has a requirement under Washington State law to meet water quality standards of the Spokane River by enhancing treatment of wastewater generated by its wastewater treatment plant (RPWRF). Presently, TMDL requirements for phosphorus and dissolved oxygen are being developed, with other requirements planned for the future.
- Riverside Park Water Reclamation Facility (RPWRF): The City's wastewater treatment plant is named the Riverside Park Water Reclamation Facility, and it is located on the east bank of the Spokane River, north of the T.J. Meenach Bridge within the Riverside State Park. This facility treats approximately 44 million gallons of wastewater each day.

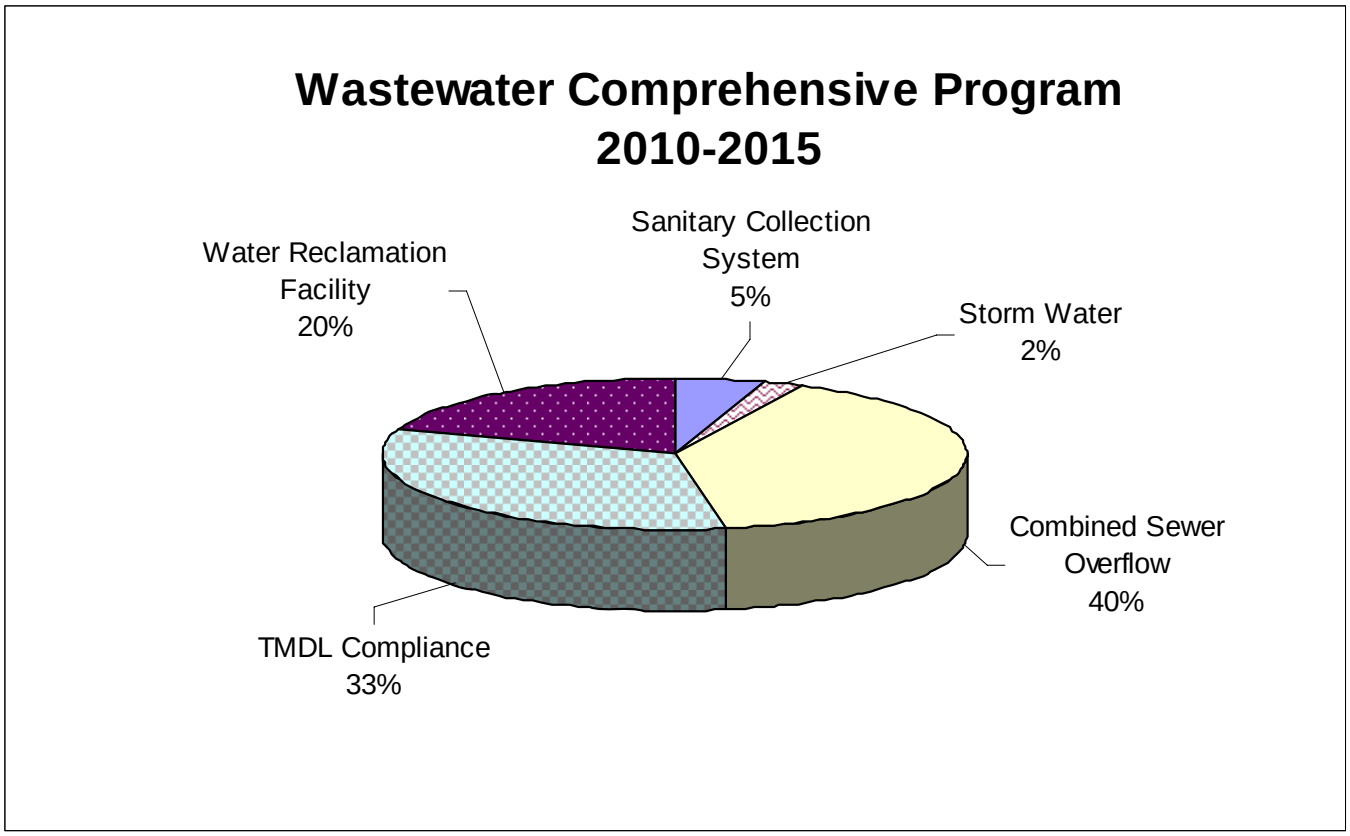
Wastewater Department

The City of Spokane's Wastewater Management (WWM) Department provides sewer collection, wastewater treatment, and stormwater management. All of these services are designed and managed to protect our local rivers and groundwater. These services are linked through a Water Quality Improvement Program (WQIP) to ensure that the Department's efforts to protect Spokane's water resources are integrated. The WWM Department is an enterprise fund, which provides goods or services to the public for a fee and makes the entity self-supporting. The WWM Department has an annual operating budget of over $60 million with the major source of revenue coming from sewer and stormwater service. The 20 percent utilities tax is a major source of revenue to the City's general fund.

Comprehensive Wastewater Program Summary

thousands of dollars

Project Element	2010	2011	2012	2013	2014	2015	Total
Sanitary Collection System	9,032	2,325	3,964	3,125	5,905	1,245	**$ 25,596**
Storm Water	2,225	2,125	2,300	1,200	1,325	2,000	**$ 11,175**
Combined Sewer Overflow	6,441	34,336	35,428	40,680	48,794	39,386	**$ 205,065**
TMDL Compliance	1,450	8,740	33,160	61,900	61,900	1,000	**$ 168,150**
Water Reclamation Facility	9,700	8,874	8,711	10,312	23,285	39,800	**$ 100,682**
Total All Elements	**$28.848**	**$56,400**	**$ 83,563**	**$117,217**	**$141,209**	**$ 83,431**	**$ 510,668**



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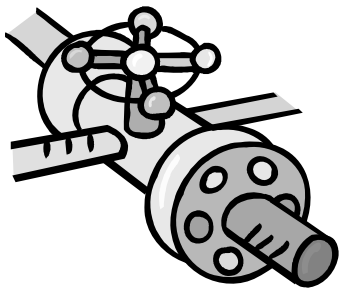
SANITARY COLLECTION SYSTEM



VII. Sanitary Collection System

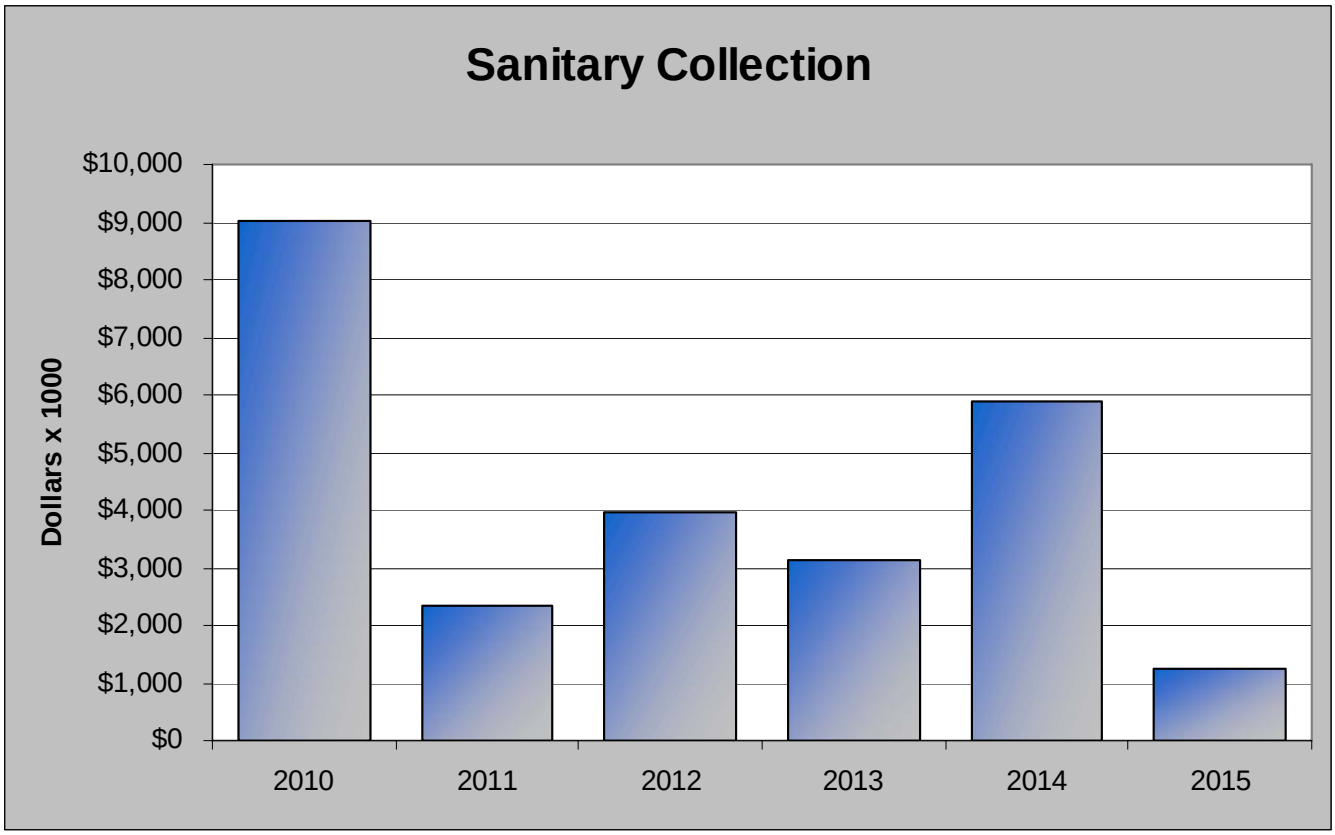
The Sanitary Collection System contains projects related to gathering sanitary sewage and sending to the Riverside Park Water Reclamation Plant (RPWRP). Major projects either for maintenance projects (designated with the element letter M) or for new sewer systems (designated with the element letter C) are included in this element. Maintenance projects include major work such as pipe replacements, pipe lining and pump station upgrade or replacement. Both pump stations and pipes shown will provide service to areas currently without sewer service. Project costs are in thousands of dollars.

Sanitary Collection System Summary

thousands of dollars

Project	2010	2011	2012	2013	2014	2015	Total
Individual Projects							
S02M03 - Northwest Terrace Force Main Replacement	1,050						**$ 1,050**
S04M03 - Post Street Bridge Rehabilitation				200	1,800		**$ 2,000**
S07C01 - Upriver-Havana Sewer Project	3,160						**$ 3,160**
S08C01 - Lower Terrace Sewer Project, Phase 1	1,505						**$ 1,505**
S08M01 - Northwest Terrace Pump Station Replacement	750						**$ 750**
S09C01 - Joint City-County Marion Haye Intertie	102		1179				**$ 1,281**
S09C02 - Lower Terrace Sewer Project, Phase 2				130	1,460		**$ 1,590**
On-Going Projects							
S02C01 - Lateral Upgrade Program	75	75	75	75	75	75	**$ 450**
S02C02 - Infrastructure Upgrade-Public	150	150	150	150	150	150	**$ 900**
S02C03 - Infrastructure Participation-Private	20	20	20	20	20	20	**$ 120**
S02M06 – City Wide On-Going CIPP Project	300	300	250	250	250	150	**$ 1,500**
S02M09 - Force Main Replacement	120	130	140	150			**$ 540**
S03S01 - STEP Projects	100	100	100	100	100	100	**$ 600**
S04M02 - Lift Station Repair & Upgrade	500	250	250	250	250	250	**$ 1,750**
S05M01 - Future Rehabilitation Projects			500	500	500	500	**$ 2,000**

Sanitary Collection System Summary *(continued)* *thousands of dollars*							
Project	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**Total**
On-Going Projects (continued)							
S06C01 - Street Bond Infrastructure Upgrade	1,200	1,200	1,200	1,200	1,200		**$ 6,000**
S08C03 - Groundwater Mitigation Construction		100	100	100	100		**$ 400**
Yearly Totals	**$9,032**	**$2,325**	**$3,964**	**$3,125**	**$5,905**	**$1,245**	**$25,596**



Sewer Collection System

Project Details-Individual Projects

Project	Project Description			
S02M03 - Northwest Terrace Force Main Replacement	The force main from the Northwest Terrace Pump Station is a 12-inch plastic (PVC) pipe about 8,000 feet in length, and it follows Aubrey L. White Parkway south from Rifle Club Road to a manhole just north of the Riverside Park Water Reclamation Facility. This PVC force main has broken once in the past and could break again in the future, which would allow sewage to discharge to the Spokane River. The project will replace the PVC pipe with a ductile iron pipe.			
	Construction Starts		**Environmental**	**Design by**
	2010		CE	Engineering
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$1,050,000	$157,500	$105,000	Right-of-way

S04M03 - Post Street Bridge Rehabilitation	The Post Street Bridge, located immediately north of City Hall, carries a 54-inch sewer interceptor that serves the downtown area. The City Public Works Department plans a significant rehabilitation of the Post Street Bridge. Included with the Post Street Bridge rehabilitation is replacement of the old 54-inch steel pipe with 450 feet of 60-inch ductile iron pipe, as well as manhole replacement on both river banks. This project will be constructed as a part of the entire bridge rehabilitation project			
	Construction Starts		**Environmental**	**Design by**
	2014		CE	Engineering
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$1,600,000	$240,000	$160,000	Right-of-way

S07C01 - Upriver-Havana Sewer Project	This project provided sewer service to the area north Upriver Drive and east of Havana Road through construction of a new sewer system connecting to Interceptor Segment I05. The existing sewer system in this area is served by two lift stations that must store sewage and pump to a gravity line during off-peak periods (evenings). This project will extend gravity sewer service to this area to eliminate the lift stations. Construction of a trunk line and collection system are necessary to serve the area. The trunk system will be installed in Upriver Drive.			
	Construction Starts		**Environmental**	**Design by**
	2010		EA	Engineering
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$2,528,000	$380,000	$252,000	Right-of-way

S08C01 - Lower Terrace Sewer Project, Phase 1	The Lower Terrace Sewer project will provide sewer service to the Nine Mile area. The overall project includes a new pump station, gravity sewer and force mains and will result in the elimination of four existing lift stations in the area. The project is anticipated to be constructed in four phases. The first phase will construct about 1.6 miles of 14-inch force main in conjunction with the Northwest Terrace Force Main Replacement Project (S02M03).			
	Construction Starts		**Environmental**	**Design by**
	2010		EA	Engineering
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$1,204,000	$180,000	$120,000	Right-of-way

Sewer Collection System
Project Details-Individual Projects *(continued)*

Project	Project Description			
S08M01 - Northwest Terrace Pump Station Replacement	Northwest Terrace pump station needs to be upgraded and repair and the vault requires confined-space entry procedures. This project will replace the existing pumps, motors and electrical equipment enclosed in an above ground building. The ground level will house the electrical, control and emergency power equipment. Stairs will lead to a fully accessible below-ground pump room. Not only will the new building improve safety by eliminating confined-space concerns, but also will be less costly to maintain.			
	Construction Starts		**Environmental**	**Design by**
	2010		EA	Engineering
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$600,000	$90,000	$60,000	Acquired

S09C01 - Joint City-County Marion Haye Intertie	This project will construct a sewer pipe from North Pointe lift station to Spokane County's Marion Hayes Lift Station. The existing lift station would be eliminated after construction of the intertie.			
	Construction Starts		**Environmental**	**Design by**
	2012		CE	WWM
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$1,025,000	$155,000	$102,000	Right-of-way

S09C02 - Lower Terrace Sewer Project, Phase 2	The Lower Terrace Sewer project will provide sewer service to the Nine Mile area. This phase of the project will construct a pump station and force main to connect to the force main constructed in phase 1 of the project.			
	Construction Starts		**Environmental**	**Design by**
	2014		EA	Engineering
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$1,272,000	$189,800	$127,200	Acquired

S02C01 - Lateral Upgrade Program	The City has numerous old sewer laterals that are either too small (6-inch pipes) or that are very difficult to maintain because of improper manhole placement. This project identifies and corrects these old sewer laterals. The laterals that are under-sized or a maintenance concern are identified and corrected.		
	Start Date	**Environmental**	**Design by**
	2010	CE	WWM

S02C02 - Infrastructure Upgrade-Public	The Wastewater Management Department coordinates with other City infrastructure work. When sewer facilities are near these other City projects, the Department evaluates these facilities for upgrade or replacement. For example: in conjunction with a road project, the Department may fund the replacement of shallow or broken pipe and leaking manholes. These facility replacements and upgrades are funded through this project as a contribution to the larger City improvement.		
	Start Date	**Environmental**	**Design by**
	2010	CE	Engin/WWM

Sewer Collection System
Project Details-On-Going *(continued)*

Project	Project Description.		
S02C03 - Infrastructure Participation-Private	Occasionally, a situation will arise where a developer is installing a sewer or storm drain line to serve a specific development, and some of the pipes could serve a larger area if the pipe size was increased. Funds from this project are intended to reimburse a developer for over sizing pipes and other facilities to meet the community needs.		
	Start Date	**Environmental**	**Design by**
	2010	CE	WWM

Project	Project Description.		
S02M06 – City Wide On-Going CIPP Project	The term "CIPP" means Cured In Place Pipe; CIPP is a method that rehabilitates old pipe using a polyester felt liner impregnated with a resin that hardens when heated with hot water. Essentially, CIPP constructs a new pipe within an older pipe without resorting to excavating. Many of the sewers are made of old clay pipes that are either cracked or have leaking joints. Excavation to replace sewer pipes in congested streets is very expensive, so using CIPP is a cost-effective method to rehabilitate these old pipes.		
	Start Date	**Environmental**	**Design by**
	2010	CE	WWM

S02M09 - Force Main Replacement	Many of the lift station and pump station force mains installed in the 1980s and 1990s were plastic (PVC) pipe. Recurring line breaks on these plastic force main lines require expensive emergency repairs. This project is an on-going replacement of these plastic pipes with ductile iron. Replacement is prioritized by the Sewer Maintenance Division based on the condition and location of the plastic force mains. Eventually, all plastic force mains will be replaced with ductile iron pipe.		
	Start Date	**Environmental**	**Design by**
	2010	CE	Engin/WWM

S03S01 - STEP Projects	The term "STEP" is an acronym for "Septic Tank Elimination Program." The City has numerous isolated pockets of properties using septic tanks. This project will construct small lateral extensions to connect to the sewer.		
	Start Date	**Environmental**	**Design by**
	2010	EA	WWM

S04M02 - Lift Station Repair & Upgrade	This project identifies lift stations in need of repair and upgrade because the pump and control equipment require constant maintenance. Upgrades may include above-ground facilities to address the confined-space safety issues of lift stations in underground vaults. Through 2009, four lift stations have been upgraded and repaired: Sans Souci, 35th Avenue and Helena, North Crescent, and Hayford Road. Two other lift stations have been identified for repair--North Pointe (old Lidgerwood, built in 1979) located on the southeast corner of Colton and Holland {constructing a new sewer line to eliminate North Pointe lift station is currently under study} and Springfield located on Springfield and Columbus (built in 1972).		
	Start Date	**Environmental**	**Design by**
	2010	CE	Engin/WWM

Sewer Collection System
Project Details-On-Going *(continued)*

Project	Project Description.		
S05M01 - Future Rehabilitation Projects	Often rehabilitation projects must be completed within 2 or 3 years from the time the need is identified. The purpose of this project is to make funds available in the last three years of the program for rehabilitation projects that are not yet identified.		
	Start Date	**Environmental**	**Design by**
	2012	CE	Not known

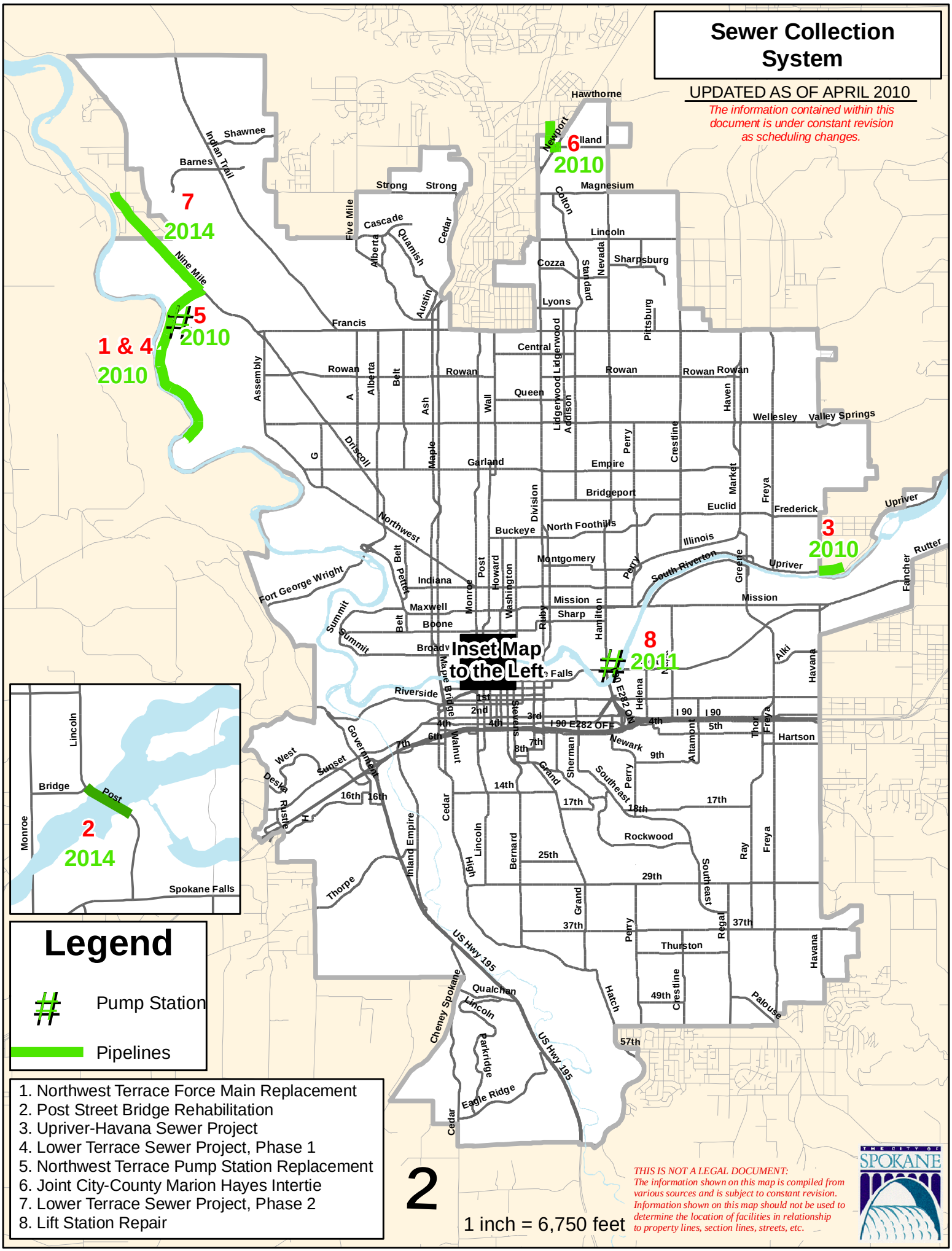
S06C01 - Street Bond Infrastructure Upgrade	The Wastewater Management Department coordinates with other City infrastructure work, including the City's 10-year street bond improvements. When sewer or storm drain facilities are near these street bond projects, the Department evaluates these facilities for upgrade or replacement; for example, in conjunction with an intersection improvement, the Department may fund the replacement of old catch basins, shallow or broken pipe and leaking manholes. These facility replacements and upgrades are funded through this project as a contribution to the bond improvement. This is an on-going project until 2014.		
	Start Date	**Environmental**	**Design by**
	2010	EA	Engineering

S08C03 - Groundwater Mitigation Construction	The Groundwater Evaluation and Mitigation (GEM) program will evaluate areas of the City with high groundwater regarding cost effective and efficient mitigation actions. The GEM program includes several facets to investigate and implement pilot projects. Investigations will be design to more fully understand the groundwater problems and potential solutions. The initial facets of this project are: 1) Define areas within the City of Spokane where significant ground water levels impact residences and stormwater drainage facilities. 2) Develop a location list where water loving trees can be planted on City own facilities and Parks; 3) Plant Trees in some selective locations to identify issues related to this concept. After the completion of these components and evaluation, future efforts will be identified.		
	Start Date	**Environmental**	**Design by**
	2011	EA	Engineering

Sewer Collection System

UPDATED AS OF APRIL 2010

The information contained within this document is under constant revision as scheduling changes.



Legend

Pump Station

Pipelines

1. Northwest Terrace Force Main Replacement
2. Post Street Bridge Rehabilitation
3. Upriver-Havana Sewer Project
4. Lower Terrace Sewer Project, Phase 1
5. Northwest Terrace Pump Station Replacement
6. Joint City-County Marion Hayes Intertie
7. Lower Terrace Sewer Project, Phase 2
8. Lift Station Repair

2

1 inch = 6,750 feet

THIS IS NOT A LEGAL DOCUMENT:
The information shown on this map is compiled from various sources and is subject to constant revision. Information shown on this map should not be used to determine the location of facilities in relationship to property lines, section lines, streets, etc.

THE CITY OF SPOKANE

STORMWATER

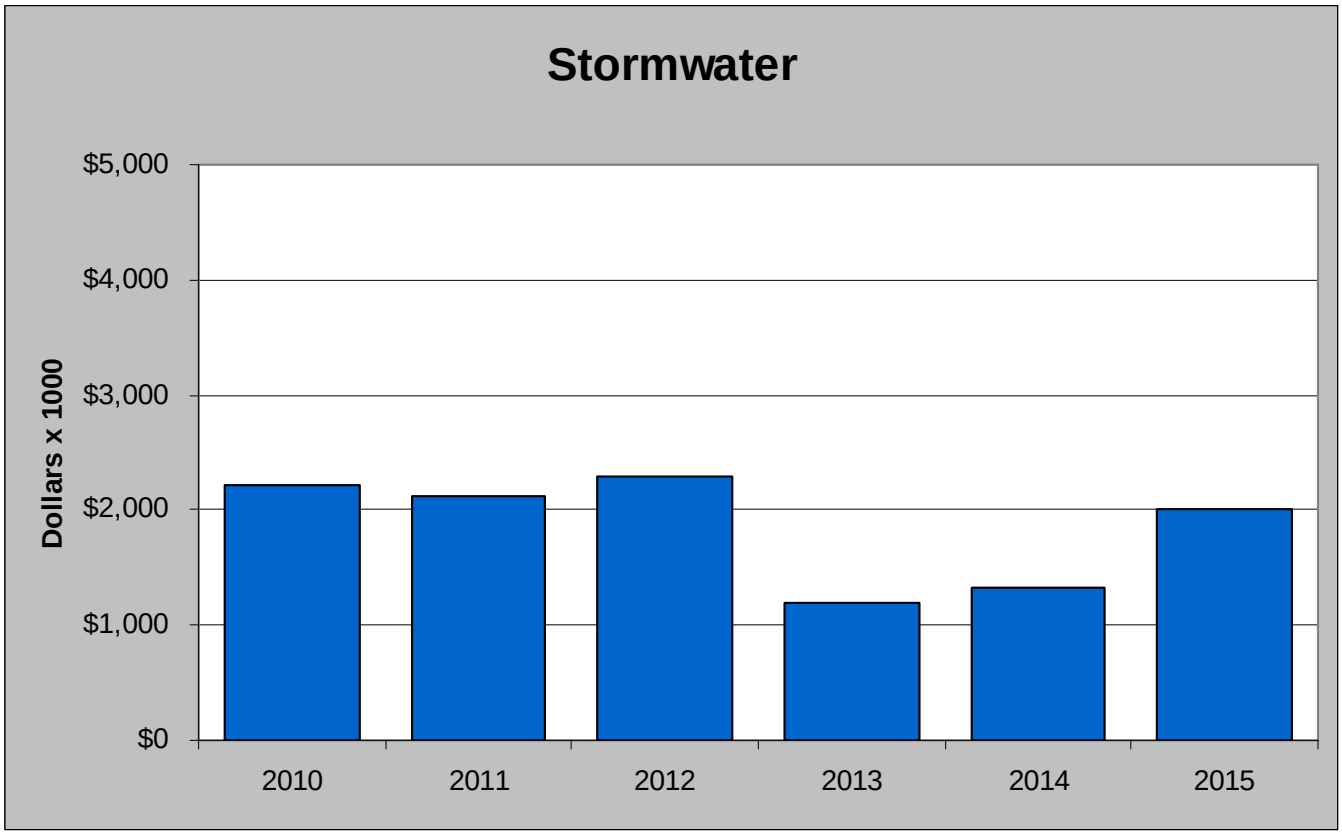
VIII. Stormwater

Stormwater contains infrastructure projects related to the collection, treatment and disposal of runoff created by precipitation, either rain or melted snow. Project costs are in thousands of dollars.

Stormwater Summary

thousands of dollars

Project	2010	2011	2012	2013	2014	2015	Total
Individual Projects							
S05D01 - Hazels Creek Drainage and Conservation Area	350	250					**$ 600**
S06D03 - Sylvia Court Drainage - Phase II		100	500				**$ 600**
S08D01 - Hazels Creek Basin Drainage Implementation	750	600	600				**$ 1,950**
S10D01 - Unidentified Future Stormwater Projects					325	1,000	**$ 1,325**
On-Going Projects							
S02D03 - Corridor Acquisition	175	175	200	200	200	200	**$ 1,150**
S04D01 - Bio-Infiltration System Rehabilitation	150	200	200	200	0	0	**$ 750**
S08D02 - Spokane Urban Runoff Greenway Ecosystems Projects	500	500	500	500	500	500	**$ 3,000**
S09D01 - Stormwater Infrastructure Upgrade-Public	300	300	300	300	300	300	**$ 1,800**
Yearly Totals	**$ 2,225**	**$ 2,125**	**$ 2,300**	**$ 1,200**	**$ 1,325**	**$ 2,000**	**$11,175**


Stormwater
$5,000
$4,000
$3,000
$2,000
$1,000
$0
Dollars x 1000
2010
2011
2012
2013
2014
2015

Stormwater

Project Details-Individual Projects

Project	Project Description			
S05D01 - Hazels Creek Drainage and Conservation Area	The Hazels Creek Drainage and Conservation Area has been identified as a drainage treatment and disposal site for a portion of the Moran Prairie. Site improvements include removal of old structures; stormwater treatment systems, infiltration/detention ponds; access improvements; weed abatement and native species plantings; wetland mitigation; and educational elements. The City plans to create a self-supporting fee structure for the Hazel's Creek Sub-basin and the revenues generated will re-capture the City capital expenditures and will defray annual operations and maintenance costs. See S08D01 for information on the Hazel's Creek Sub-basin improvements.			
	Construction Starts		**Environmental**	**Design by**
	2010		EA	Engineering
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$480,000	$72,000	$48,000	Acquired

Project	Project Description			
S06D03 - Sylvia Court Drainage - Phase II	While the Phase I project (completed in 2005) eliminated some of the worst drainage problems in this area, the Phase II will construct the best method to transport the seasonal excess drainage to City-owned property for disposal. The selected alternative recommends installing a pipeline to convey stormwater under Arrowhead Street north to City property near the power line easement.			
	Construction Starts		**Environmental**	**Design by**
	2012		EA	Engineering
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$480,000	$72,000	$48,000	Acquired

Project	Project Description			
S08D01 - Hazels Creek Basin Drainage Implementation	The Hazel's Creek drainage basin consists of approximately 1,200 acres on the Moran Prairie that drain to the Hazel's Creek Drainage and Conservation Area (see S05D01.) This project will begin implementation of infrastructure improvements recommended by the Hazels Creek Feasibility Analysis for Drainage. Planned improvements include: drainage pipe, detention basins, control structures, disposal site development, conversion of evaporation ponds to detention ponds, monitoring and control systems, and drainage easements. The City plans to create a self-supporting fee structure for the Hazel's Creek drainage basin and the revenues generated will re-capture the City capital expenditures and will defray annual operations and maintenance costs.			
	Construction Starts		**Environmental**	**Design by**
	2011		EA	WWM
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$1,560,000	$234,000	$156,000	Acquired

Project	Project Description			
S10D01 - Unidentified Future Stormwater Projects	This item is a placeholder for work that was not indentified as a separate project, but anticipated to be needed in the future.			
	Construction Starts		**Environmental**	**Design by**
	2015		EA	WWM
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$1,060,000	$159,000	$106,000	Acquired

Stormwater
Project Details — On-Going

Project	Project Description		
S02D03 - Corridor Acquisition	This project funds the purchase of property for future drainage projects identified by the Stormwater drainageways project.		
	Start Date	**Environmental**	**Design by**
	2010	N/A	N/A

S04D01 - Bio-Infiltration System Rehabilitation	"Bio-Infiltration Systems" or grass percolation areas are commonly known as "grassy swales" or “208 swales”. The City maintains almost 10 acres of grass percolation areas along streets that are used to treat and dispose of stormwater. Sometimes the grass percolation areas will have a dry well to allow more storm water to infiltrate into the ground. City staff performs regular maintenance in order to maintain effectiveness. Grass percolation areas have a 20-year design life, but generally need maintenance every 5-10 years. Spokane County and the Spokane Valley City are currently researching rehabilitation methods, and City crews will use current rehabilitation technology in their work.		
	Start Date	**Environmental**	**Design by**
	2010	CE	WWM

S08D02 - Spokane Urban Runoff Greenways Ecosystems	The Spokane Urban Runoff Greenways Ecosystems, or SURGE, is a program to determine the suitability of retrofitting plant-based stormwater treatment systems into the existing urban environment. SURGE is an approach to wet weather management that is designed to be sustainable, environmentally friendly and cost-effective. SURGE may improve water quality and increase green space. Currently two projects are underway on West Broadway and Lincoln Street. Future projects may include rain gardens, porous pavements, green roofs, infiltration planters, trees and tree boxes, or wetlands restoration.		
	Start Date	**Environmental**	**Design by**
	2010	EA	Engineering

S09D01 - Stormwater Infrastructure Upgrade-Public	The Wastewater Management Department coordinates with other City infrastructure work. When stormwater facilities are near these other City projects, the Department evaluates these facilities for upgrade or replacement. For example: in conjunction with a road project, the Department may fund the replacement of old catch basins, shallow or broken pipe and leaking manholes. These facility replacements and upgrades are funded through this project as a contribution to the larger City improvement.		
	Start Date	**Environmental**	**Design by**
	2010	CE	WWM

Stormwater

UPDATED AS OF APRIL 2010

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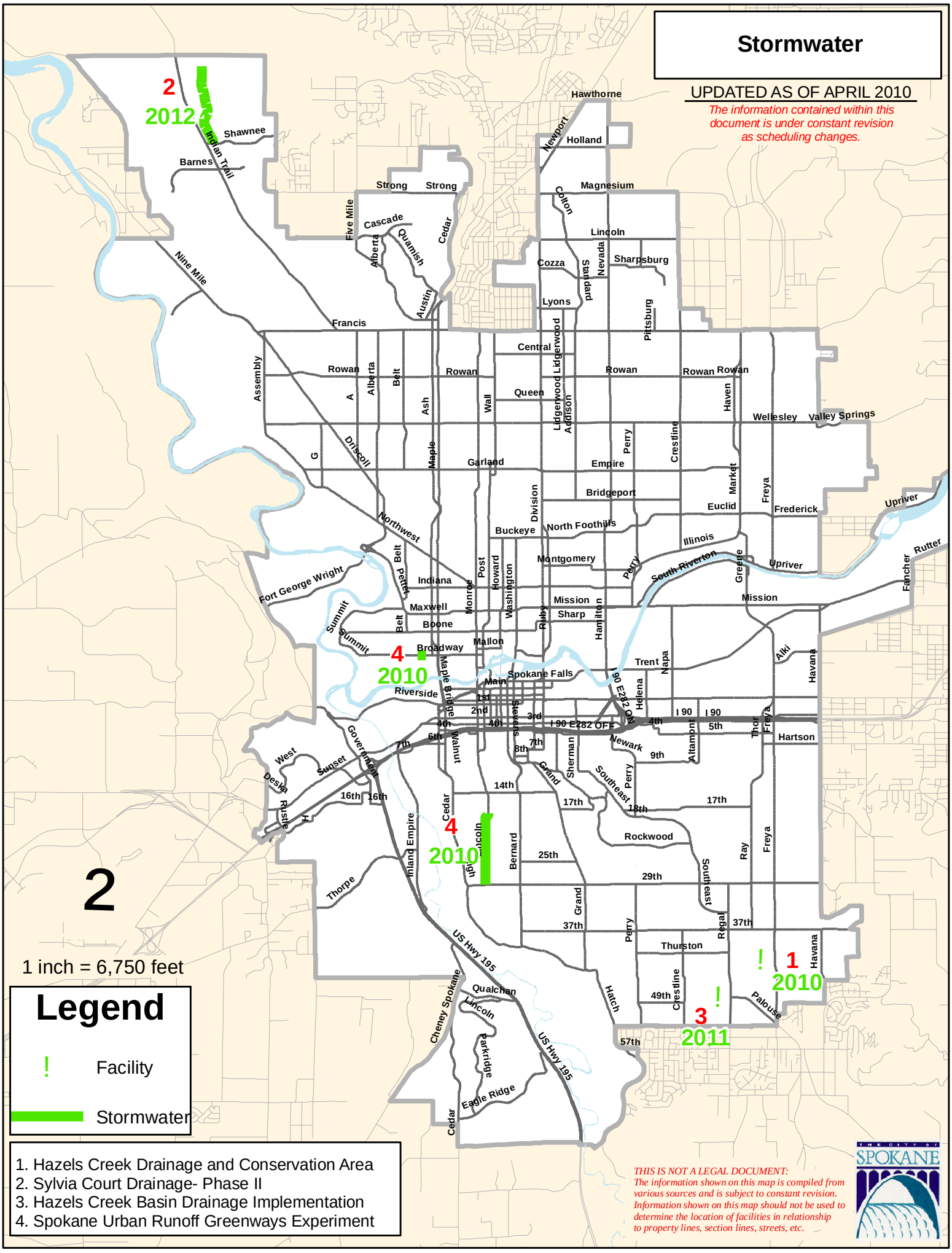
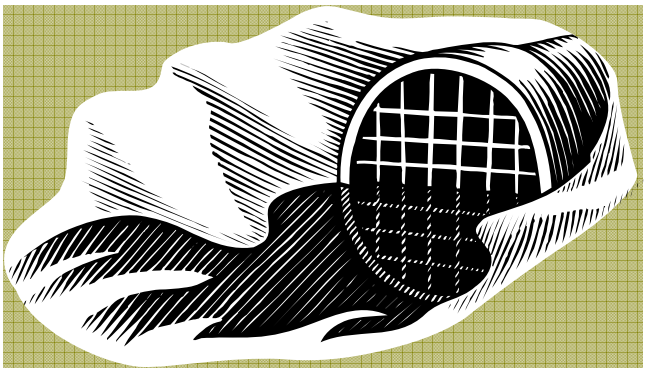


COMBINED SEWER OVERFLOW ABATEMENT



IX. Combined Sewer Overflow Abatement

The Combined Sewer Overflow (CSO) Capital Abatement element contains projects from the individual CSO basins that will reduce CSO overflows to the Spokane River. Most of these projects include construction of off-line storage tanks for temporary retention of mixed sanitary sewage and storm water. The City is working diligently to meet a 2017 Department of Ecology Consent Order deadline for completion of CSO abatement projects. Design costs included environmental documentation and property acquisition cost. Project costs are in thousands of dollars.

Combined Sewer Overflow Abatement Summary

thousands of dollars

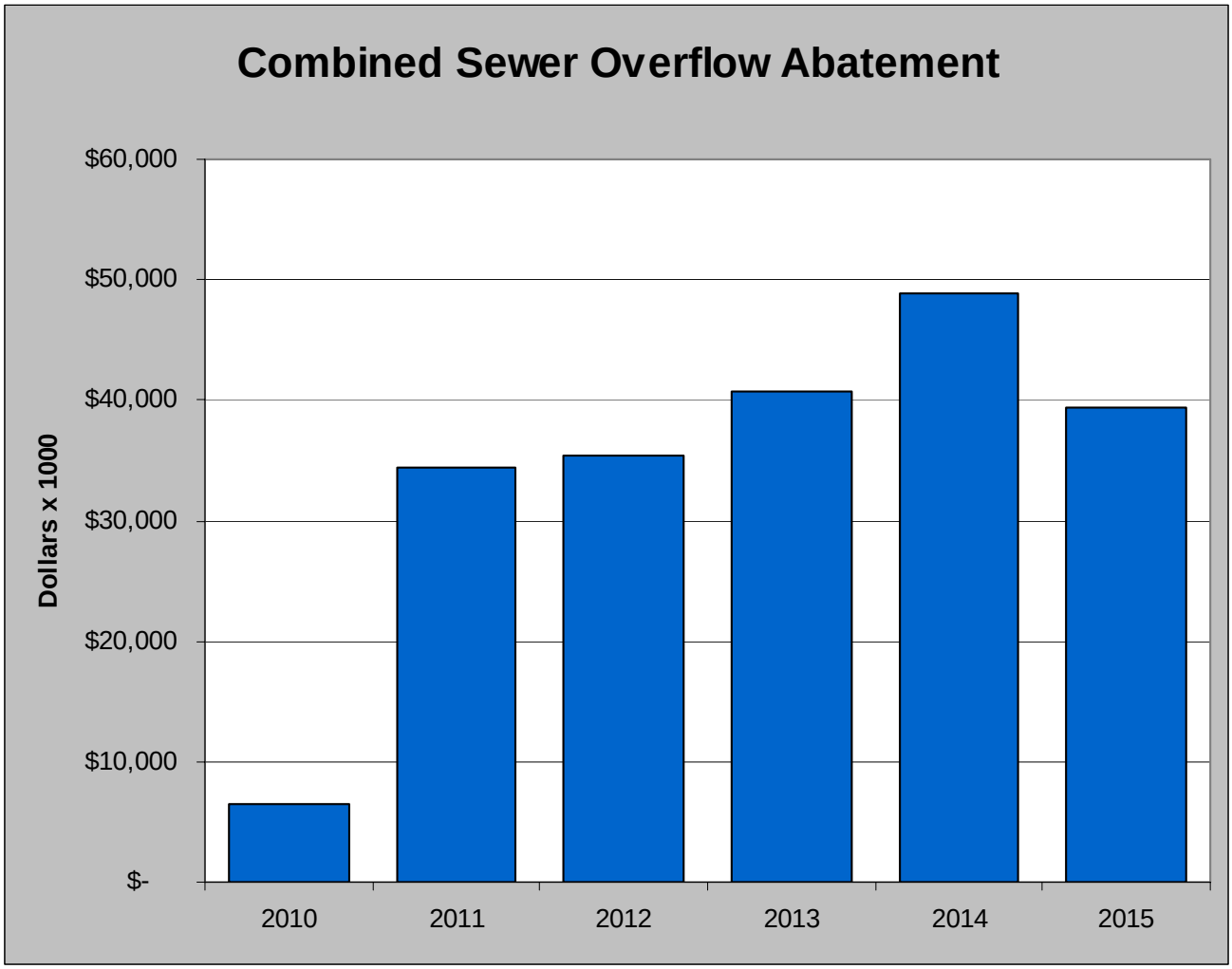
Project	2010	2011	2012	2013	2014	2015	Total
Individual Projects							
S04B03 -CSO Basin 41 Improvements	595	5,721					**$ 6,316**
S04B04 - CSO Basin 15 Improvements	637	6,517					**$ 7,154**
S04B05 - CSO Basin 14 Improvements	132	1,788					**$ 1,920**
S04B07 - Interceptor I03-1 Improvements	49	153	2,140				**$ 2,342**
S04B08 - Interceptor I03-2 Improvements	109	357	4,712				**$ 5,178**
S04B09 - CSO Basin 07 Improvements	83	10	1,366				**$ 1,459**
S04B10 - CSO Basin 10 Improvements	952						**$ 952**
S04B11 - CSO Basin 12 Improvements		437	79	7,029			**$ 7,545**
S04B13 - CSO Basins 38, 39, 40 Improvements		359	100	5,892			**$ 6,351**
S04B14 - Interceptor I04-1 Improvements		353	1,282	8,521	8,521		**$ 18,677**
S04B15 - Interceptor I04-2 Improvements		41	126	1,781			**$ 1,948**
S04B16 - Post Street CSO Improvements		30					**$ 30**
S04B18 - CSO Basin 23-1 Improvements	74	1,431					**$ 1,505**
S04B19 - CSO Basin 23-2 Improvements	695	7,432					**$ 8,127**
S04B20 - CSO Basin 33a,b,c Improvements		2,720	11,718	10,822	10,822		**$ 36,082**
S04B23 - CSO Basin 33d Improvements	339	308	5,952				**$ 6,599**

Continued…

Combined Sewer Overflow Abatement Summary *(continued)*

thousands of dollars

Project	2010	2011	2012	2013	2014	2015	Total
S04B24 - CSO Basin 34-1 (Hartson) Improvements			83	954	7,567	7,567	**$ 16,171**
S05B01 - CSO Basin 6 Improvements	575	4,733	4,633				**$ 9,941**
S05B02 - CSO Basin 20 Improvements			228	1,964			**$ 2,192**
S05B04 - CSO Basin 26-1 Improvements	699	727	727	0	1,630	7,568	**$ 11,351**
S05B05 - CSO Basin 26-2	102	0	0	0	0	783	**$ 885**
S05B06 - CSO Basin 34-2 (20th & Ray) Improvements		236	550	503	10,216		**$ 11,505**
S05B07 - CSO Basin 34-3 (Playfair) Improvements			898	885	2,064	9,584	**$ 13,431**
S06B01 - CSO Basin 19 Improvements	Combined with S08B04, Weir Modifications Phase 3						-
S06B04 - CSO Basin 24-1 Improvements	112			713	4,863	0	**$ 5,688**
S06B05 CSO Basin 24-2 Improvements	499	714	714	714	1,165	5,408	**$ 9,214**
S08B04 - Weir Modifications, Phase 3	600						**$ 600**
S10B01 - CSO Storage at RPWRF				782	1,826	8,476	**$ 11,084**
S10B02 - CSO Basin 22b Weir Modification	39	169					**$ 208**
On-Going Projects							
S00P04 - CSO-PMO Administration and Management	150	100	120	120	120		**$ 610**
Yearly Totals	**$ 6,441**	**$34,336**	**$35,428**	**$40,680**	**$48,794**	**$39,386**	**$205,065**


Combined Sewer Overflow Abatement
Dollars x 1000
$60,000
$50,000
$40,000
$30,000
$20,000
$10,000
$-
2010
2011
2012
2013
2014
2015

Combined Sewer Overflow Abatement
Project Details-Individual Projects

Project	Project Description			
S04B03 -CSO Basin 41 Improvements	The project will identify, design and construct a CSO storage facility located near Upriver Drive and Rebecca Street to meet Department of Ecology's regulations. The new facility will reduce combine sewer overflows to the Spokane River while better managing flow rates to the RPWRF.			
	Construction Starts		**Environmental**	**Design by**
	2011		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$5,061,000	$660,000	$595,000	Needed

S04B04 - CSO Basin 15 Improvements	The project will identify, design and construct a CSO storage facility located near Broadway Avenue and Summit Boulevard to meet Department of Ecology's regulations. The new facility will reduce combine sewer overflows to the Spokane River while better managing flow rates to the RPWRF. A consolidated facility for both CSO Basins 15 and 14 is being analyzed.			
	Construction Starts		**Environmental**	**Design by**
	2011		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$5,723,000	$858,000	$572,000	Needed

S04B05 - CSO Basin 14 Improvements	The project will identify, design and construct a CSO storage facility located near Broadway Avenue and Summit Boulevard to meet Department of Ecology's regulations. The new facility will reduce combine sewer overflows to the Spokane River while better managing flow rates to the RPWRF. A consolidated facility for both CSO Basins 15 and 14 is being analyzed.			
	Construction Starts		**Environmental**	**Design by**
	2011		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$1,536,000	$230,000	$154,000	Needed

S04B07 - Interceptor I03-1 Improvements	This project will identify, design and construct a CSO storage facility to meet Department of Ecology regulations for unregulated wet weather flow in the Cochran Basin. Major features of the facility include installation of flow controls to better manage downstream interceptor flow rates; self cleaning flush mechanisms; a new regulator and remote sensors for centralized operations.			
	Construction Starts		**Environmental**	**Design by**
	2012		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$1,874,000	$281,000	$187,000	Needed

Combined Sewer Overflow Abatement
Project Details-Individual Projects *(continued)*

Project	Project Description			
S04B08 - Interceptor I03-2 Improvements	This project will identify, design and construct a CSO storage facility to meet Department of Ecology regulations for unregulated wet weather flow in the Cochran Basin. Major features of the facility include installation of flow controls to better manage downstream interceptor flow rates; self cleaning flush mechanisms; a new regulator and remote sensors for centralized operations.			
	Construction Starts		**Environmental**	**Design by**
	2012		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$4,142,000	$621,000	$414,000	Needed

S04B09 - CSO Basin 07 Improvements	The project will identify, design and construct a CSO storage facility located near Downriver Drive and Euclid Avenue to meet Department of Ecology's regulations. Major features of the facility include installation of flow controls to better manage downstream interceptor flow rates; self cleaning flush mechanisms; a new regulator and remote sensors for centralized operations.			
	Construction Starts		**Environmental**	**Design by**
	2012		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$1,167,000	$178,00	$117,000	Needed

S04B10 - CSO Basin 10 Improvements	This project will identify, design and construct a CSO storage facility to meet Department of Ecology regulations. Major features of the facility include installation of flow controls to better manage downstream interceptor flow rates; self cleaning flush mechanisms; a new regulator and remote sensors for centralized operations.			
	Construction Starts		**Environmental**	**Design by**
	2010		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$952,000	$114,000	Completed	Acquired

S04B11 - CSO Basin 12 Improvements	This project will identify, design and construct a CSO storage facility located near Pettet Avenue and Nora Avenue to meet Department of Ecology regulations. Major features of the facility include installation of flow controls to better manage downstream interceptor flow rates; self cleaning flush mechanisms; a new regulator and remote sensors for centralized operations.			
	Construction Starts		**Environmental**	**Design by**
	2013		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$6,036,000	$905,000	$604,000	Needed

Combined Sewer Overflow Abatement
Project Details-Individual Projects *(continued)*

Project	Project Description			
S04B13 - CSO Basins 38, 39, 40 Improvements	The project will identify, design and construct two CSO storage facilities near South Riverton Avenue and Altamont Street for CSO Basins 38, 39 and 40 to meet Department of Ecology's regulations, which allows better management of downstream interceptor flow rates. Major features of the facility include installation of flow controls; self cleaning flush mechanisms; a new regulator; elimination of two (39 & 40) CSO outfalls; and remote sensors for centralized operations.			
	Construction Starts		**Environmental**	**Design by**
	2013		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$5,081,000	$762,000	$508,000	Needed
S04B14 - Interceptor I04-1 Improvements	This project will identify, design and construct a CSO storage facility to meet Department of Ecology regulations for unregulated wet weather flow in the North River Basin. Major features of the facility include installation of flow controls to better manage downstream interceptor flow rates; self cleaning flush mechanisms; a new regulator and remote sensors for centralized operations.			
	Construction Starts		**Environmental**	**Design by**
	2013		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$14,942,000	$2,241,000	$1,494,000	Needed
S04B15 - Interceptor I04-2 Improvements	This project will identify, design and construct a CSO storage facility to meet Department of Ecology regulations for unregulated wet weather flow in the North River Basin. Major features of the facility include installation of flow controls to better manage downstream interceptor flow rates; self cleaning flush mechanisms; a new regulator and remote sensors for centralized operations.			
	Construction Starts		**Environmental**	**Design by**
	2016		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$1,558,000	$234,000	$156,000	Needed
S04B16 - Post Street CSO Improvements	This project will identify, design and construct a CSO storage facility to meet Department of Ecology regulations. Major features of the facility include installation of flow controls to better manage downstream interceptor flow rates; self cleaning flush mechanisms; a new regulator and remote sensors for centralized operations.			
	Construction Starts		**Environmental**	**Design by**
	2017		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$1,136,000	$170,000	$114,000	Needed

Combined Sewer Overflow Abatement
Project Details-Individual Projects *(continued)*

Project	Project Description			
S04B18 - CSO Basin 23-1 Improvements	This project will identify, design and construct a CSO storage facility near Ide Avenue and Cedar Street to meet Department of Ecology regulations. Major features of the facility include installation of flow controls to better manage downstream interceptor flow rates; self cleaning flush mechanisms; a new regulator and remote sensors for centralized operations.			
	Construction Starts		**Environmental**	**Design by**
	2011		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$1,204,000	$181,000	$120,000	Needed
S04B19 - CSO Basin 23-2 Improvements	This project will identify, design and construct a CSO storage facility near Ide Avenue and Cedar Street to meet Department of Ecology regulations. Major features of the facility include installation of flow controls to better manage downstream interceptor flow rates; self cleaning flush mechanisms; a new regulator and remote sensors for centralized operations.			
	Construction Starts		**Environmental**	**Design by**
	2011		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$6,502,000	$975,000	$650,000	Needed
S04B20 - CSO Basin 33a,b,c Improvements	This project will identify, design and construct a CSO storage facility to meet Department of Ecology regulations. Major features of the facility include installation of flow controls to better manage downstream interceptor flow rates; self cleaning flush mechanisms; a new regulator and remote sensors for centralized operations.			
	Construction Starts		**Environmental**	**Design by**
	2012		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$28,866,000	$4,330,000	$2,887,000	Needed
S04B23 - CSO Basin 33d Improvements	This project will identify, design and construct a CSO storage facility to meet Department of Ecology regulations. Major features of the facility include installation of flow controls to better manage downstream interceptor flow rates; self cleaning flush mechanisms; a new regulator and remote sensors for centralized operations.			
	Construction Starts		**Environmental**	**Design by**
	2012		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$5,279,000	$792,000	$528,000	Needed

Combined Sewer Overflow Abatement
Project Details-Individual Projects *(continued)*

Project	Project Description			
S04B24 - CSO Basin 34-1 (Hartson)	This project will identify, design and construct a CSO storage facility to meet Department of Ecology regulations. Major features of the facility include installation of flow controls to better manage downstream interceptor flow rates; self cleaning flush mechanisms; a new regulator and remote sensors for centralized operations.			
	Construction Starts		**Environmental**	**Design by**
	2014		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$12,937,000	$1,941,000	$1,294,000	Needed
S05B01 - CSO Basin 6 Improvements	This project will identify, design and construct a CSO storage facility near Northwest Boulevard and Garland Avenue to meet Department of Ecology regulations. Major features of the facility include installation of flow controls to better manage downstream interceptor flow rates; self cleaning flush mechanisms; a new regulator and remote sensors for centralized operations.			
	Construction Starts		**Environmental**	**Design by**
	2012		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$7,953,000	$1,193,000	$795,000	Needed
S05B02 - CSO Basin 20 Improvements	This project will identify, design and construct a CSO storage facility to meet Department of Ecology regulations. Major features of the facility include installation of flow controls to better manage downstream interceptor flow rates; self cleaning flush mechanisms; a new regulator and remote sensors for centralized operations.			
	Construction Starts		**Environmental**	**Design by**
	2013		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$1,754,000	$263,000	$175,000	Needed
S05B04 - CSO Basin 26-1 Improvements	This project will identify, design and construct the primary storage facility for CSO Basin 26 to meet Department of Ecology regulations. Major features of the facility include installation of flow controls to better manage downstream interceptor flow rates; self cleaning flush mechanisms; a new regulator and remote sensors for centralized operations.			
	Construction Starts		**Environmental**	**Design by**
	2015		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$26,780,000	$3,493,000	$3,783,000	Needed

Combined Sewer Overflow Abatement
Project Details-Individual Projects *(continued)*

Project	Project Description			
S05B05 - CSO Basin 26-2 Improvements	This project will identify, design and construct secondary storage facility for CSO Basin 26 to meet Department of Ecology regulations. Major features of the facility include installation of flow controls to better manage downstream interceptor flow rates; self cleaning flush mechanisms; a new regulator and remote sensors for centralized operations.			
	Construction Starts		**Environmental**	**Design by**
	2016		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$3,910,000	$510,000	$884,000	Needed
S05B06 - CSO Basin 34-2 (20th & Ray)	This project will identify, design and construct a CSO storage facility to meet Department of Ecology regulations. Major features of the facility include installation of flow controls to better manage downstream interceptor flow rates; self cleaning flush mechanisms; a new regulator and remote sensors for centralized operations.			
	Construction Starts		**Environmental**	**Design by**
	2014		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$9,038,000	$1,178,000	$1,289,000	Needed
S05B07 - CSO Basin 34-3 (Playfair) Improvements	This project will identify, design and construct a CSO storage facility to meet Department of Ecology regulations. Major features of the facility include installation of flow controls to better manage downstream interceptor flow rates; self cleaning flush mechanisms; a new regulator and remote sensors for centralized operations.			
	Construction Starts		**Environmental**	**Design by**
	2015		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$33,915,000	$4,424,000	$3,930,000	Needed
S06B01 - CSO Basin 19 Improvements	This project is included in S08B04 - Weir Modifications, Phase 3.			
	Construction Starts		**Environmental**	**Design by**
	2010		CE	--
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	--	--	--	--

Combined Sewer Overflow Abatement
Project Details-Individual Projects *(continued)*

Project	Project Description			
S06B04 - CSO Basin 24-1 Improvements	This project will identify, design and construct a secondary storage facility for CSO Basin 24 to meet Department of Ecology regulations. Major features of the facility include installation of flow controls to better manage downstream interceptor flow rates; self cleaning flush mechanisms; a new regulator and remote sensors for centralized operations.			
	Construction Starts		**Environmental**	**Design by**
	2014		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$4,302,000	$560,000	$826,000	Needed

S06B05 CSO Basin 24-2 Improvements	This project will identify, design and construct the primary storage facility for CSO Basin 24 to meet Department of Ecology regulations. Major features of the facility include installation of flow controls to better manage downstream interceptor flow rates; self cleaning flush mechanisms; a new regulator and remote sensors for centralized operations.			
	Construction Starts		**Environmental**	**Design by**
	2015		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$19,136,000	$2,496,000	$3,805,000	Needed

S08B04 - Weir Modifications, Phase 3	This project includes design and construction of modifications to ten CSO regulators intended to significantly reduce “dry-weather” overflows. The weir modifications will be constructed in advance of the CSO basin improvements, but design will coordinate with future improvements. Phase 3 of this project will include three CSO weirs for CSO Basins 19, 39 and 40.			
	Construction Starts		**Environmental**	**Design by**
	2010		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$510,000	$90,000	--	Acquired

S10B01 - CSO Storage at RPWRF	This project will identify, design and construct a CSO storage facility to meet Department of Ecology regulations. Major features of the facility include installation of flow controls to better manage downstream interceptor flow rates; self cleaning flush mechanisms; a new regulator and remote sensors for centralized operations.			
	Construction Starts		**Environmental**	**Design by**
	2015		CE	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$29,994,000	$3,912,000	$2,608,000	Acquired

Combined Sewer Overflow Abatement
Project Details-Individual Projects *(continued)*

Project	Project Description			
S10B02 – CSO Basin 22b Weir Modifications	This project includes design and construction of modifications to the weir for CSO Basin 22b.			
	Construction Starts		**Environmental**	**Design by**
	2011		CE	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$145,000	$24,000	$39,000	Acquired

Project	Project Description		
S00P04 - CSO-PMO Administration and Management	CSO-PMO stands for Combined Sewer Overflow Project Management Office. The CSO-PMO work is performed by a City consultant, AECOM, who is supervised by City Wastewater Management Department staff. The CSO-PMO consultant is performing the City's Combined Sewer Overflow (CSO) reduction planning and preliminary design; they perform studies, cost estimates, planning, and preliminary design for both the overall CSO reduction program.		
	Construction Starts	**Environmental**	**Design by**
	2010	EA	WWM

Legend

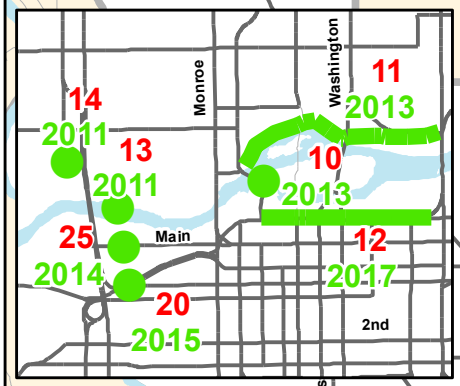
CSO Basin Improvements

Stormwater

Combined Sewer Overflow Abatement

UPDATED AS OF APRIL 2010

The information contained within this document is under constant revision as scheduling changes.



Inset Map to the Left

N
W
E
S

1 inch = 5,517 feet

1. S04B03 -CSO Basin 41 Improvements
2. S04B04 -CSO Basin 15 Improvements
3. S04B05 -CSO Basin 14 Improvements
4. S04B07 -Interceptor I03-1 Improvements
5. S04B08 -Interceptor I03-2 Improvements
6. S04B09 -CSO Basin 07 Improvements
7. S04B10 -CSO Basin 10 Improvements
8. S04B11 -CSO Basin 12 Improvements
9. S04B13 -CSO Basin 38, 39, 40 Improvements
10. S04B14 -Interceptor I04-1 Improvements
11. S04B15 -Interceptor I04-2 Improvements
12. S04B16 -Post Street CSO Improvements
13. S04B18 -CSO Basin 23-1 Improvements
14. S04B19 -CSO Basin 23-2 Improvements
15. S04B20 -CSO Basin 33 a,b,c Improvements
16. S04B23 -CSO Basin 33d Improvements
17. S04B24 -CSO Basin 34-1 (Hartson)
18. S05B01 -CSO Basin 6 Improvements
19. S05B02 -CSO Basin 20 Improvements
20. S05B04 -CSO Basin 26-1 Improvements
21. S05B05 -CSO Basin 26-2 Improvements
22. S05B06 -CSO Basin 34-2 (20th & Ray)
23. S05B07 -CSO Basin 34-3 (Playfair) Improvements
24. S06B01 -CSO Basin 19 Improvements
25. S06B04 -CSO Basin 24-1 Improvements
26. S06B05 -CSO Basin 24-2 Improvements
27. S08B04 -Weir Modifications, Phase 3
28. S10B01 -CSO Storage at RPWRF

CITY OF SPOKANE

TOTAL MAXIMUM DAILY LOAD (TMDL) COMPLIANCE

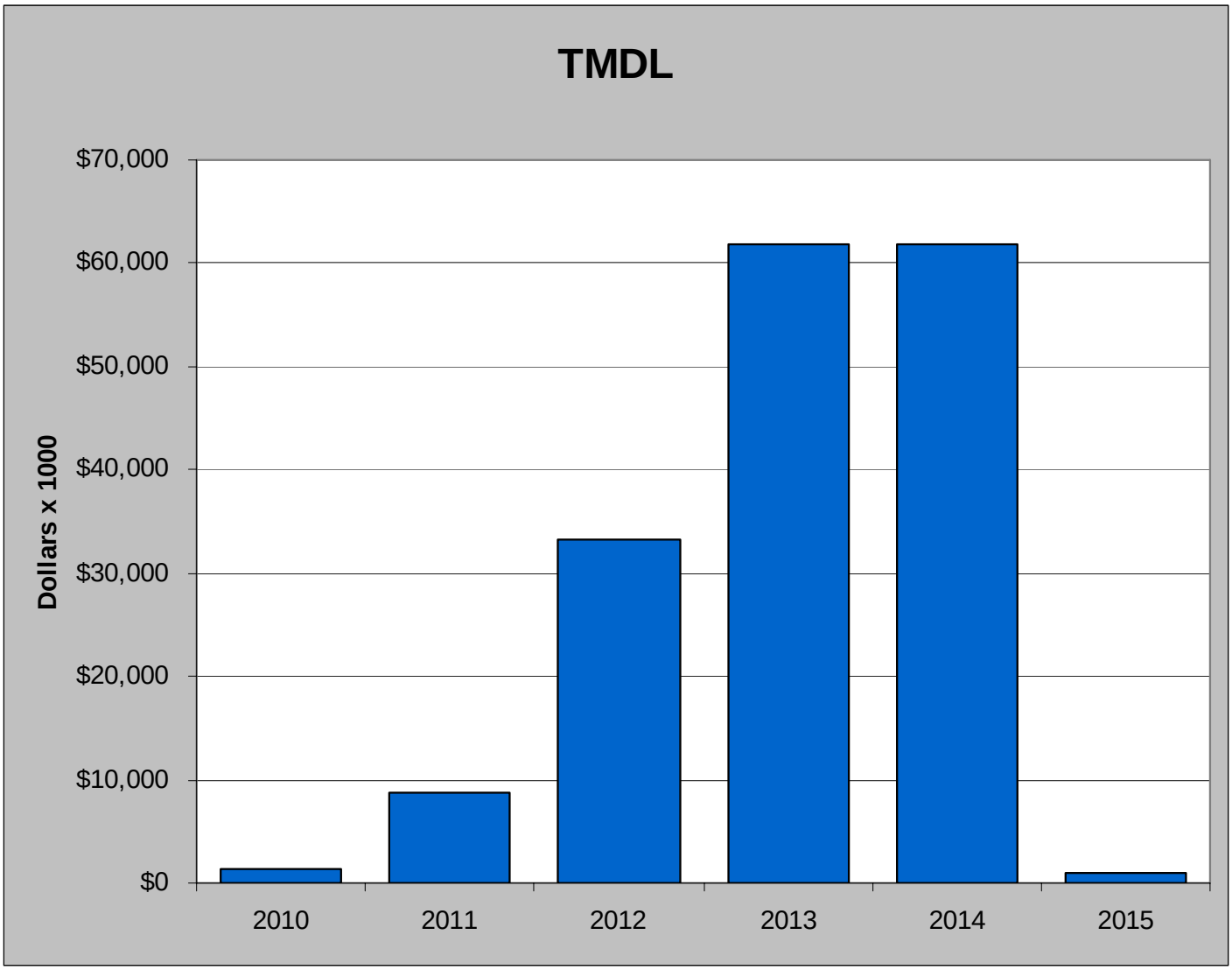
X. TMDL Compliance

The Spokane River does not have enough dissolved oxygen (DO) during the months of March through October to meet current Water Quality Standards (WQS). To comply with WQS, Total Maximum Daily Load (TMDL) requirements need to be met to return the river to a healthy condition. The Department of Ecology has determined the maximum TMDL for DO in the Spokane River. The permit for the RPWRF will be re-issued soon and will include the implementation plan to meet the TMDL. The new permit will contain effluent limitations for phosphorus as well as guidelines for reclaimed water use. Project costs are in thousands of dollars.

TMDL Compliance Summary

thousands of dollars

Project	2010	2011	2012	2013	2014	2015	Total
Individual Projects							
S04L01 - Final Effluent Filter Pilot & Evaluation	1,000	500					**$ 1,500**
S07L01- Reclaimed Water Pilot Project	250	250					**$ 500**
S07L02 - Next Level of Treatment Implementation		4,700	28,160	58,400	58,400		**$149,660**
S08L01 - Joe Albi/Fairmont Reclaimed Water Project		1010					**$ 1,010**
S09L01 - Reclaimed Water Pipeline Evaluation			280				**$ 280**
S08L03 - Reclaimed Water Distribution System	100	1,000	1,000	1,000	1,000	1,000	**$ 5,100**
S08L04 - Reclaimed Water Treatment	100	1000	4,000	2,500	2,500		**$ 10,100**
Yearly Totals	**$1,450**	**$8,740**	**$33,160**	**$61,900**	**$61,900**	**$1,000**	**$ 168,150**


TMDL
Dollars x 1000
$70,000
$60,000
$50,000
$40,000
$30,000
$20,000
$10,000
$0
2010
2011
2012
2013
2014
2015

TMDL Compliance
Project Details-Individual Projects

<table>
<tr><th>Project</th><th colspan="4">Project Description</th></tr>
<tr><td rowspan="4">S04L01 - Final Effluent Filter Pilot & Evaluation</td><td colspan="4">This project is a pilot program to study the most suitable technology for seasonally removing phosphorus from effluent with an objective of achieving a discharge with seasonal average 50ug/l or lower per the State Department of Ecology Total Maximum Daily Limits (TMDL). Six pilot units will be tested over a two-year period.</td></tr>
<tr><td colspan="2">Construction Starts</td><td>Environmental</td><td>Design by</td></tr>
<tr><td colspan="2">2008</td><td>CE</td><td>Engineering Services</td></tr>
<tr><td>Construction Budget</td><td>CM Budget</td><td>Design Budget</td><td>Property</td></tr>
<tr><td>$4,200,000</td><td>$1,100,000</td><td>--</td><td>Acquired</td></tr>
<tr><td rowspan="4">S07L01- Reclaimed Water Pilot Project</td><td colspan="4">The City plans to operate a pilot project for two years to demonstrate the feasibility of using reclaimed water locally during the growing season. The highest Department of Health classification, Class A reclaimed water will be made using a small scale system located at the RPWRF. Downriver Golf Course was selected as the initial recipient of the reclaimed water. Expansion of service to Qualchan Golf Course is planned for the second year. Reclaimed water will be trucked to storage at the golf courses for use of their irrigation systems. Class A reclaimed water production began in 2007.</td></tr>
<tr><td colspan="2">Construction Starts</td><td>Environmental</td><td>Design by</td></tr>
<tr><td colspan="2">2007</td><td>CE</td><td>Engineering Services</td></tr>
<tr><td>Construction Budget</td><td>CM Budget</td><td>Design Budget</td><td>Property</td></tr>
<tr><td>$1,632,000</td><td>$408,000</td><td>--</td><td>Acquired</td></tr>
<tr><td rowspan="4">S07L02 - Next Level of Treatment Implementation</td><td colspan="4">This project consists of an engineering report, design and final construction of the final effluent filtration technology selected in the pilot project (S04L01) to seasonally remove phosphorus from effluent with an objective of achieving. The filters will be installed to discharge higher quality effluent to the Spokane River with a seasonal average of 50ug/l or lower per the State Department of Ecology Total Maximum Daily Load (TMDL). An engineering report concerning the final effluent filter will be submitted to the State Department of Ecology.</td></tr>
<tr><td colspan="2">Construction Starts</td><td>Environmental</td><td>Design by</td></tr>
<tr><td colspan="2">2012</td><td>EA</td><td>Engineering Services</td></tr>
<tr><td>Construction Budget</td><td>CM Budget</td><td>Design Budget</td><td>Property</td></tr>
<tr><td>$119,728,000</td><td>$17,959,000</td><td>$11,973,000</td><td>Acquired</td></tr>
</table>

TMDL Compliance
Project Details-Individual Projects *(continued)*

Project	Project Description			
S08L01 - Joe Albi/Fairmont Reclaimed Water Project	This project will provide a pipeline to connect the Riverside Park Water Reclamation Facility to Fairmount Memorial Park, Joe Albi Stadium, and Riverside State Park for reclaimed water service. This is a first step in providing reclaim water for irrigation. Future projects will include storage and pumping capacity to deliver the reclaimed water through this pipeline.			
	Construction Starts		**Environmental**	**Design by**
	2011		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$808,000	$121,000	$81,000	Right-of-way

S09L01 - Reclaimed Water Pipeline Evaluation	Drinking water is supplied to Fairchild Air Force Base from wells near the Spokane River. Once water is supplied to FAFB by the City's Water Department, the existing pipeline will no longer be needed. This project will evaluate the pipe for use in the reclaimed water system and, if necessary, recommend design modification.			
	Construction Starts		**Environmental**	**Design by**
	2012		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	--	--	$280,000	unknown

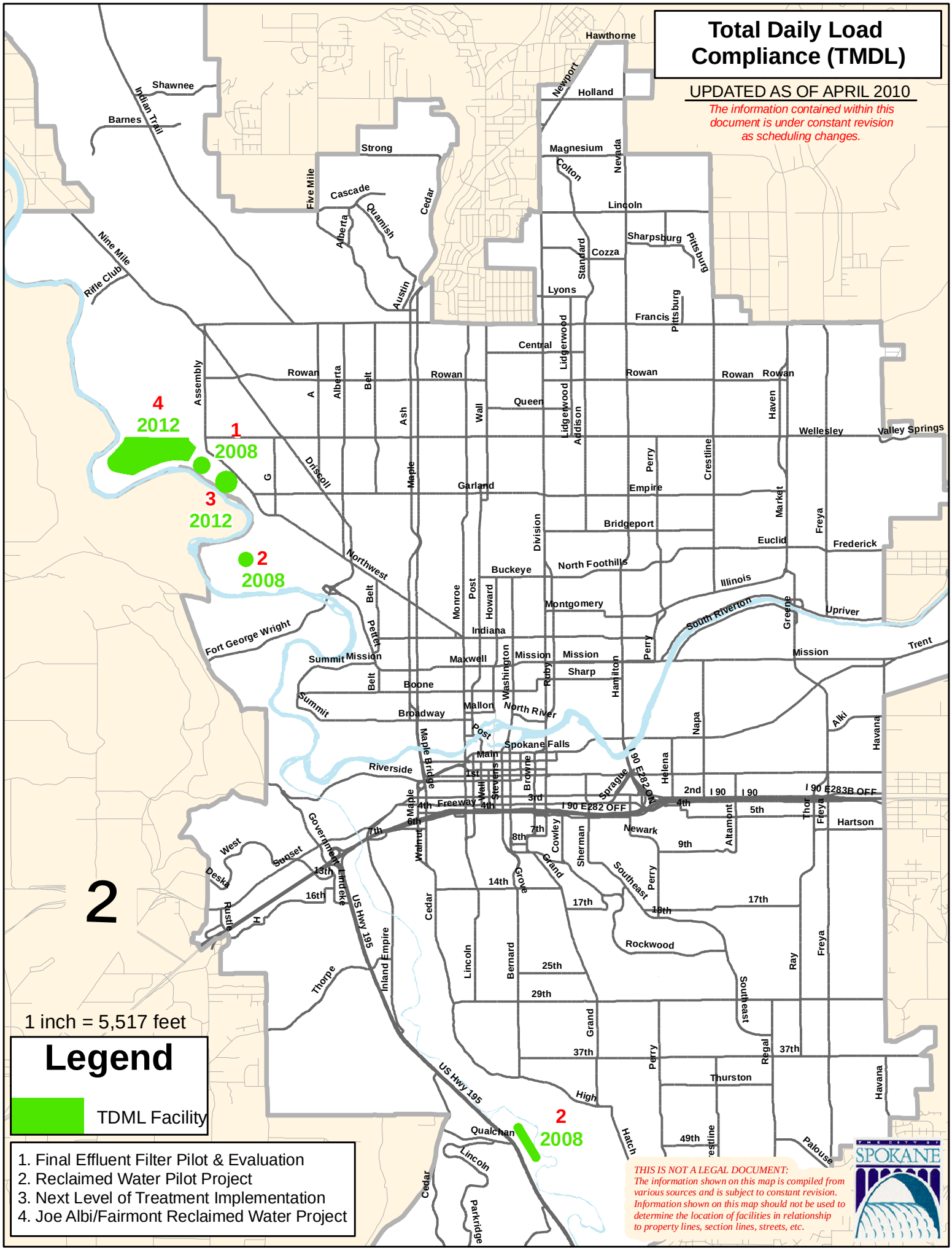
S08L03 - Reclaimed Water System Implementation	If a reclaimed water system is found feasible in the Reclaimed Water System Feasibility Study, this project will design and construct the recommended facilities.			
	Construction Starts		**Environmental**	**Design by**
	2012		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$3,910,000	$690,000	$500,000	unknown

S08L04 - Reclaimed Water Treatment Construction	This project consists of the construction of reclaimed water treatment facilities at Riverside Park Water Reclamation Facility. Based on the results of the pilot project (S07L01) to provide reclaimed water to golf course, treatment facilities will be installed in conjunction with Reclaimed Water System Feasibility Study.			
	Construction Starts		**Environmental**	**Design by**
	2012		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$7,735,000	$1,365,000	$1,000,000	unknown

Total Daily Load Compliance (TMDL)

UPDATED AS OF APRIL 2010

The information contained within this document is under constant revision as scheduling changes.



THIS IS NOT A LEGAL DOCUMENT:
The information shown on this map is compiled from various sources and is subject to constant revision. Information shown on this map should not be used to determine the location of facilities in relationship to property lines, section lines, streets, etc.

THE CITY OF SPOKANE

RIVERSIDE PARK WATER RECLAMATION FACILITY (RPWRF)

VII. Riverside Park Water Reclaimed Facility

The Riverside Park Water Reclamation Facility (RPWRF) Capital Projects element of the 6-Year Program contains individual projects that will improve the City's treatment of wastewater prior to discharge to the Spokane River. The sequence of these projects is intended to allow full operation of the facility during construction. The projects have been organized into "Packages" from A to D. Projects were determined to be assigned a Package by priority of the work, physical sequence, locations and logistics, and to combine work of specialist for design efficiency. Project costs are in thousands of dollars.

RPWRF Summary

thousands of dollars

Project	2010	2011	2012	2013	2014	2015	Total
Individual Projects							
PACKAGE A							
S02T03 - Primary Clarifier Odor Control	4,950	6,624	3,883				**$ 15,457**
S10T01 – Primary Skimming	1,000						**$ 1,000**
					Total Package A	**$16,457**	
PACKAGE B							
S03T01 - West Plant Generator				400			**$ 400**
S07T02 - Digester Gas Compressor Room			928	2,272			**$ 3,200**
S10T02 – Steam Heating Conversion			500				**$ 500**
S10T03 – Process Building Extension			800	300			**$ 1100**
					Total Package B	**$5,200**	
PACKAGE C							
S07T04 - Co-Generation (Steam Turbines)			350	1,000	750		**$ 2,100**
S07T05 - New Blower #5				815	1,385		**$ 2,200**
S10T04 – Headworks Odor Control					2,300	2,300	**$ 4,600**
S10T05 Aeration Basin 1 to 4 Modifications			1,000	1,000	3,000	3,000	**$ 8,000**
S10T06 –Additional GBT's Timing				500	1,500		**$ 2,000**
					Total Package C	**$18,900**	
PACKAGE D							

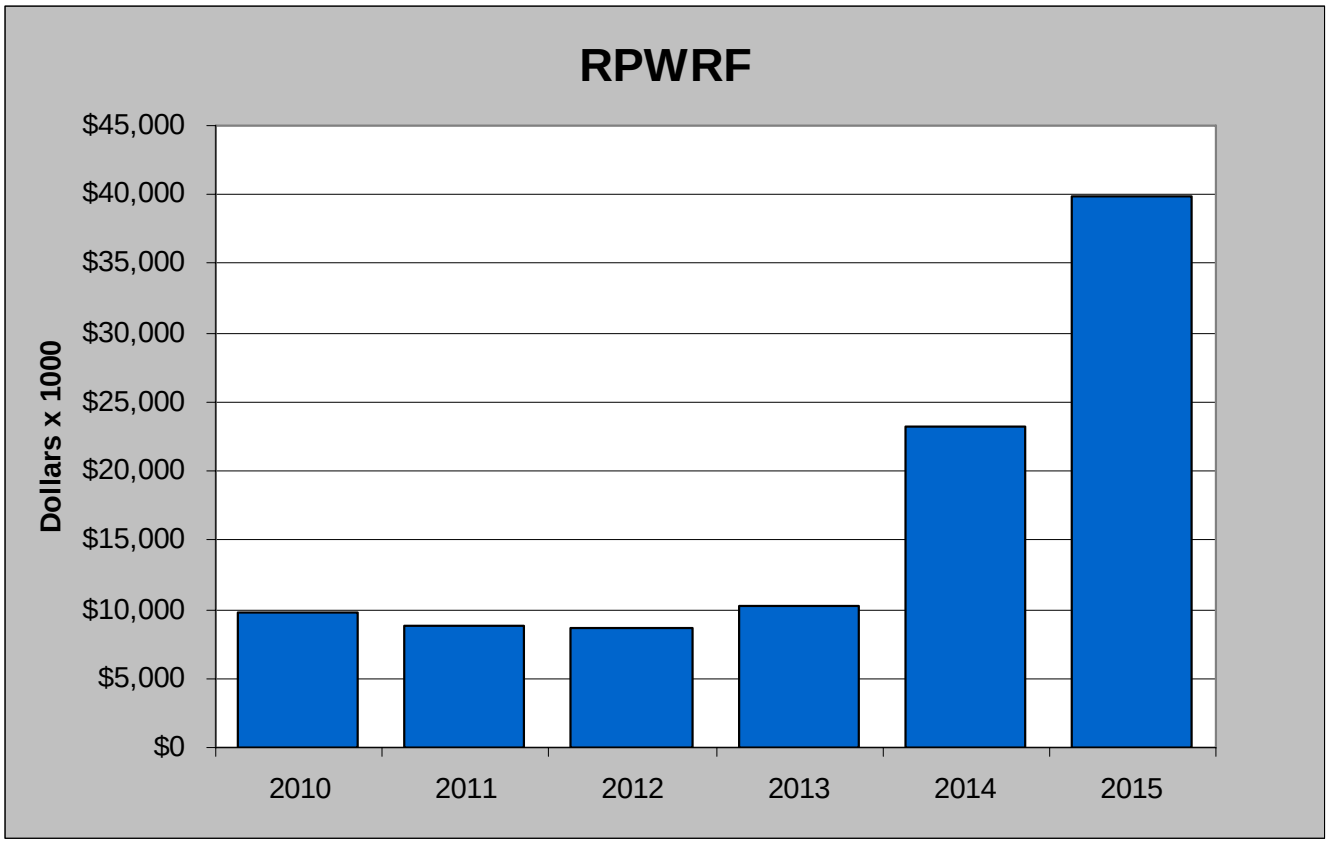
RPWRF Summary

thousands of dollars

Project	2010	2011	2012	2013	2014	2015	Total
S04T03 - Primary Sludge Pump Station Rehabilitation				225	300	175	**$ 700**
S07T01 - Primary Clarifier Influent Flow Split					250	3,325	**$ 3,575**
						Total Package D	**$4,275**
PACKAGE E							
S09T01 - Egg-shaped Digester Facility #3					10,000	25,000	**$ 35,000**
						Total Package E	**$35,000**
NON-PACKAGED (STAND ALONE) PROJECTS							
S03T04 - Headworks Screening and Grit Improvements	2,500						**$ 2,500**
S08T02 - Alum Flow Pacing		500					**$ 500**
S08T03 - Biosolids Storage Bin Replacement						200	**$ 200**
S08T04 - Waste-flare Instrumentation Modifications		500					**$ 500**
S10T07 – UV Disinfection System						2,000	**$ 2,000**
						Total Non-Packaged Projects	**$5,700**

On-Going Projects

S00P04 - CSO-PMO Administration and Management	1,250	1,250	1,250	3,800	3,800	3,800	**$ 15,150**
Yearly Totals	**$ 9,700**	**$ 8,874**	**$ 8,711**	**$10,312**	**$23,285**	**$39,800**	**$100,682**


RPWRF
Dollars x 1000
$45,000
$40,000
$35,000
$30,000
$25,000
$20,000
$15,000
$10,000
$5,000
$0
2010
2011
2012
2013
2014
2015

RPWRF
Project Details-Individual Projects

PACKAGE A

Project	Project Description			
S02T03 - Primary Clarifier Odor Control	Primary clarifiers have been identified as the next priority in the odor control strategy at the RPWRF. This project will design and construct covers over the four existing primary clarifiers, including an exhaust fan facility to divert odorous air to a new bio-filter east of the primary clarifiers.			
	Construction Starts		**Environmental**	**Design by**
	2010		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$12,365,000	$1,855,000	$1,257,000	Acquired

S10T01 - Primary Skimming	The new facility will remove grease and scum from the wastewater stream. The facility will be located in the primary clarifier channel downstream from the primary skimming wells, east of the existing primary building. The primary skimming project will shorten pipes carrying skimmings fed by gravity. These changes will reduce the likelihood of clogging.			
	Construction Starts		**Environmental**	**Design by**
	2010		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Construction Budget**
	$800,000	$120,000	$80,000	Acquired

Project Details-Individual Projects *(continued)*

PACKAGE B

Project	Project Description			
S03T01 - West Plant Generator	The project will design and construct a new emergency generator at the west end of the RPWRF to provide backup power.			
	Construction Starts		**Environmental**	**Design by**
	2013		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$340,000	$30,000	$30,000	Acquired

S07T02 - Digester Gas Compressor Room Upgrades	Once solids are removed from the wastewater they must be treated to the standards for biosolids reuse. At the RPWRF the solids are placed in large tanks and are digested. Solids digestion generates methane gas as a byproduct and the gas is collected and compressed for use either in mixing the solids or for steam generation. The existing gas compressor room has been in service approximately 30 years with some improvements during that time. This project will upgrade equipment to ensure the safe collection of the methane gas and safe operation of the system.			
	Construction Starts		**Environmental**	**Design by**
	2013		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$2,560,000	$384,000	$256,000	Acquired

S10T02 – Steam Heating Conversion	The project will convert existing electric resistance and natural gas heating to heating using steam produced at the plant.			
	Construction Starts		**Environmental**	**Design by**
	2013		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$400,000	$60,000	$40,000	Acquired

S10T03 – Process Building Extension	Large vehicle traffic at the process building has increased while space has been reduced, creating maneuvering and storage issues. This project extends the process building to increase the efficiency of operations, such as chemical deliveries and biosolids handling.			
	Construction Starts		**Environmental**	**Design by**
	2012		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$880,000	$132,000	$88,000	Acquired

RPWRF
Project Details-Individual Projects *(continued)*

PACKAGE C

Project	Project Description			
S07T04 - Co-Generation (Steam Turbines)	Methane gas produced by the RPWRF digester is presently burned at a waste flare. This project will use the methane gas in a new boiler to generate steam that will power steam turbines to generate electricity for use at the RPWRF. The steam turbines, new boiler, and all support systems will be housed in the existing boiler/co-generation facility.			
	Construction Starts		**Environmental**	**Design by**
	2012		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$1,660,000	$265,000	$175,000	Acquired
S07T05 - New Blower #5	The secondary treatment process requires large blowers to provide oxygen to the organisms that treat wastewater. The existing blower system is nearing capacity; therefore, a new blower is required. The new blower, ductwork, and electrical and control equipment will be housed within the existing blower building.			
	Construction Starts		**Environmental**	**Design by**
	2014		CE	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$1,760,000	$264,000	$176,000	Acquired
S10T04 – Headworks Odor Control	This project will be used to reduce the odor emitted from the headworks building.			
	Construction Starts		**Environmental**	**Design by**
	2014		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$3,680,000	$552,000	$368,000	Acquired
S10T05 Aeration Basin 1 to 4 Modifications	This project will add baffles to create a plug-flow regime and increase the efficiency in four of the existing aeration basins.			
	Construction Starts		**Environmental**	**Design by**
	2013		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$6,400,000	$960,000	$640,000	Acquired
S10T06 –Additional GBTs	Gravity Belt Thickeners (GBT) reduce the volume of bio-solids by removing water. Two additional GBTs are needed to meet the treatment demand.			
	Construction Starts		**Environmental**	**Design by**
	2014		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$1,600,000	$240,000	$160,000	Acquired

RPWRF
Project Details-Individual Projects *(continued)*

Package D

Project	Project Description			
S04T03 - Primary Sludge Pump Station Rehabilitation	This project replaces the primary clarifier sludge pumps that have been in service for over 25-years and have reached the end of their useful life. New variable speed control drives will be installed to improve flow control for the downstream solids thickening processes.			
	Construction Starts		**Environmental**	**Design by**
	2013		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$560,000	$84,000	$56,000	Acquired
S07T01 - Primary Clarifier Influent Flow Split	With limited room for expansion of the RPWRF it is essential to optimize the performance of each process, especially those that require a large amount of space. After wastewater leaves the headworks, the flow must be split between four primary clarifiers. Presently, this flow split is not uniform and results in more wastewater flow to clarifiers 3 and 4, and inefficient operation of clarifiers 1 and 2. Flow split improvements will be designed to uniformly split the flow so that all four clarifiers operate at their optimal capacity.			
	Construction Starts		**Environmental**	**Design by**
	2015		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$6,505,000	$976,000	$651,000	Acquired

Package E

Project	Project Description			
S09T01 - Egg-shaped Digester Facility #1 & 2	The project will design and construct two additional 2.8 million gallon egg shaped digesters and integrate them into the digester gallery to enhance operations, accommodate increased solids from the Next Level of Treatment..			
	Construction Starts		**Environmental**	**Design by**
	2014		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$41,000,000	$5,000,000	$4,000,000	Acquired

Project Details-Individual Projects *(continued)*

Non-Packaged (Stand Alone) Projects

Project	Project Description			
S03T04 - Headworks Screening and Grit Improvements	Wastewater screening is the first process at the RPWRF. Screening removes large materials that are commonly found in municipal wastewater. New equipment with finer screens will significantly improve removal of unwanted materials form the wastewater. Improved removal reduces the operation and maintenance costs for RPWRF and increases downstream treatment process. Construction in underway.			
	Construction Starts		**Environmental**	**Design by**
	2009		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$6,720,000	$1,008,000	$672,000	Acquired

S08T02 - Alum Flow Pacing	This project will design and construct pumping and control equipment to pace the flow of alum in the treatment process. Alum is used at the RPWRF to treat wastewater.			
	Construction Starts		**Environmental**	**Design by**
	2011		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$400,000	$60,000	$40,000	Acquired

S08T03 - Biosolids Storage Bin Replacement	The project will design and construct two new biosolids hoppers to replace the four existing bins and to increase storage capacity.			
	Construction Starts		**Environmental**	**Design by**
	2015		CE	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$2,000,000	$300,000	$200,000	Acquired

S08T04 - Waste-flare Instrumentation Modifications	This project will modify instrumentation to better control the waste gas flare. Methane gas produced by the RPWRF digester is presently burned at a waste flare.			
	Construction Starts		**Environmental**	**Design by**
	2011		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$400,000	$60,000	$40,000	Acquired

S10T07 – UV Disinfection System	Currently, the effluent is disinfected using liquid chlorine. An ultra violet (UV) system is anticipated after Next Level of Treatment to disinfect the effluent.			
	Construction Starts		**Environmental**	**Design by**
	2015		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$1,760,000	$264,000	$176,000	Acquired

Project Details- Continuing Projects

<table>
<tr><th>Project</th><th colspan="4">Project Description</th></tr>
<tr><td rowspan="3">S00P04 - CSO-PMO Administration and Management</td><td colspan="4">“PMO” stands for Project Management Office, and it includes program administration, management, and planning for Water Quality Improvement Program at the City‘s Riverside Park Water Reclamation Facility (RPWRF). In addition to capital project implementation, process consulting and plant engineering, the PMO provides planning, organization, scheduling, budgeting, staffing, accounting, invoicing, documentation, record retention, status reporting, office management and, when requested, public outreach, for all the improvements and upgrades at the RPWRF. Included in their activities are sub-consultant administration and management as well as construction administration and management, including safety management. PMO planning efforts guide the direction of the facility improvements including odor control, permitting, aesthetics, treatment processes, and plant-wide infrastructure.</td></tr>
<tr><th>Start Year</th><th>Use</th><th>Environmental</th><th>Design by</th></tr>
<tr><td>2010</td><td>Design</td><td>--</td><td>--</td></tr>
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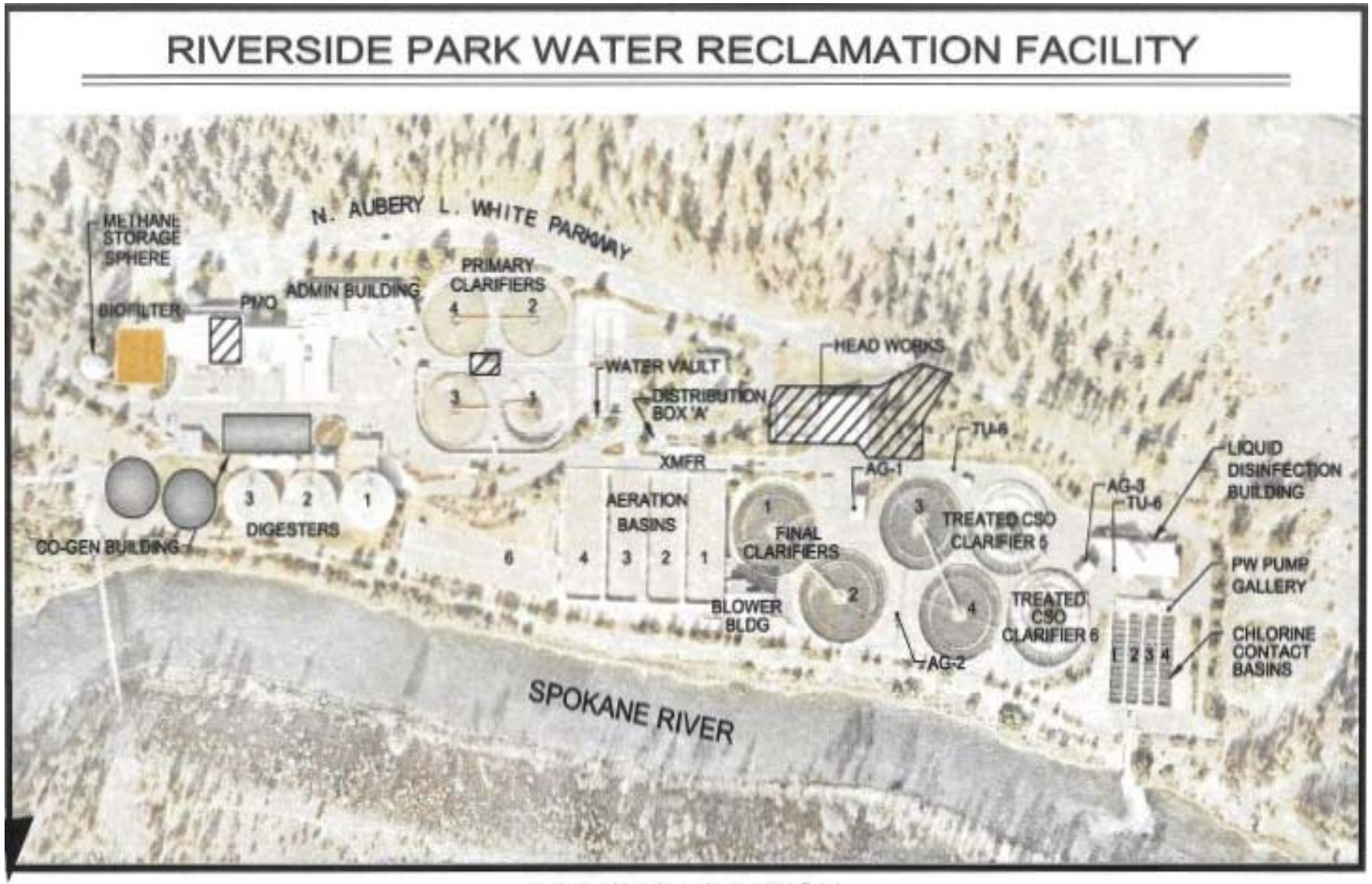

PROJECT LOCATION

XII. Planning and Support

These programs and studies are important to the capital projects in the six year program; however they do not meet the criteria for capital improvements.

Project	Description
Public Works Strategic Infrastructure Planning Study	The Public Works Strategic Infrastructure Planning Study will analyze the City of Spokane's ability to provide utility infrastructure to support both future demands of our existing infrastructure and infrastructure needs of future growth as guided by the City's Comprehensive Plan. The Study will develop an action plan to address the impacts of infrastructure replacement, population growth, and densification for a 50-year planning horizon. Components of the study will include water, wastewater and stormwater infrastructure coordinated with transportation planning efforts. Each department will fund a portion of the study. The Study will answer "What major infrastructure improvements will be necessary to serve the City's entire Service Area in the next 50 years?" This work will be completed by a consultant under the direction of City staff.
Communications and Education	This project provides general education and notices regarding the City's Combined Sewer Overflow (CSO) system, and it includes the City's internet-based overflow notice system. Other communication efforts include 344-FISH signs, kiosks and reporting telephone number to report overflows. The Communications and Education Project is a requirement of the State Department of Ecology's CSO permit requirements with the City.
Technical Consulting	Although most of the studies, design and planning for City's Riverside Park Water Reclamation Facility (RPWRF) is performed by the PMO, the City utilizes a third-party consultant to provide an independent opinion. These consultants have technical specialties that complement the PMO activities. Past technical consulting has included overall treatment process review and Spokane River studies.
Interceptor/Trunk Inspection Program	The City's trunk and interceptor pipes constitute the "backbone" of the sewer collection system. A failure of any component of this backbone system threatens the integrity of the entire sewer system and could cause significant environmental damage. Some elements of the trunk and interceptor system is vulnerable to damage from a variety of causes: steep slopes, proximity to water bodies, bridge crossing, utility conflicts, and other conditions. Wastewater Management Department staff is currently evaluating this project and may use a consultant to assist in identifying vulnerable backbone elements and to recommend work that may reduce existing vulnerability.
STEP Studies	The term "STEP" is an acronym for "Septic Tank Elimination Program." The City has numerous isolated pockets of properties using septic tanks. This project will construct small lateral extensions every other year that were identified in previous studies (S02S01).

Project	Description
Austin Draw Infiltration Facility Study	This project will identify infiltration capacity and conceptual design of the Austin Draw Infiltration Facility located below the Five Mile Prairie . The study location is an area north of Francis, between Five Mile Road and Cedar Road. Information from this study will allow the City and the County to size and design storm water facilities in this area.
High Drive Sewer Study	The Sewer Maintenance Division has responded to several line breaks and "blow-outs" in the sewer lines along and west of High Drive. Some of these lines have very steep slopes with shallow ground cover. This project is a study that will determine the best way to rehabilitate, replace or re-route the High Drive sewer lines to reduce and/or eliminate the current maintenance issues. Projects may be added to the 6-Year Program as a result of this study. This project will use information provided by the Trunk Sewer Vulnerability Assessment (S04C03).
Second Drainage-Conservation Area Master Plan	This project consists of the technical studies and assessments for a second regional drainage and conservation area facility similar on the Five Mile Prairie.
NPDES Phase II Permit Implementation	The City was issued a National Pollution Discharge Elimination System (NPDES) Storm Water Phase II Permit in February 2007 by the Washington State Department of Ecology. Requirements of the permit are currently being implemented; however, the level of effort necessary to meet the conditions of the permit will continue to increase over the five-year period. Permit implementation is an on-going project.
Wastewater Facility Plan Update	The City is required to update its Wastewater Facility Plan every five years. The next update work will be performed in 2010. A consultant usually assists the City with these updates.
Groundwater Evaluation and Mitigation	The Groundwater Evaluation and Mitigation (GEM) program will evaluate areas of the City with high groundwater regarding cost effective and efficient mitigation actions. The GEM program includes several facets to investigate and implement pilot projects. Investigations will be designed to more fully understand the groundwater problems and potential solutions. The initial facets of this project are: 1) Tree Runoff Evaluation Experiment (TREE) to determine the effectiveness of trees in removing excess groundwater; 2) Examination for Disposal of Groundwater Evaluation (EDGE) to identify disposal sites; and 3) Pumping Out at Wells (POW) to determine the effect of pumping on groundwater. After the completion of these facets, Clean water Reduction Infrastructure System Plan (CRISP) will develop a planning-level conveyance system to disposal sites identified in EDGE.

Project	Description
Reclaimed Water System Feasibility Study	This project will determine the feasibility of installing a large reclaimed water system. The study will identify reclaimed water potential customers, such as golf courses, parks, cemeteries, industries and other potential users. The evaluation will propose the potential locations and size of facilities including pumps, tanks, and pipelines to serve reclaimed water to high-demand users. The study will also estimate the cost of construction and staffing requirements.

Water Conservation Program	The Wastewater and City Water Department together are funding the Water Stewardship program to promote water conservation.

Non-point Source Reduction Program	The Non-point Source Reduction Program is a part of regional efforts by participating NPDES permit holders and Ecology. An initial study will determine the best opportunities for non-point source phosphorus reductions identified in the TMDL. This program will fund and implement methods to reduce non-point source phosphorus. The County of Spokane has taken the lead in this project. The City will coordinate all non-point reduction activities with the County.

CSO Reduction Plan Update	The City's Combined Sewer Overflow (CSO) Reduction Plan is updated every five years. The 2005 update was achieved through memorandums prepared by City staff and the PMO. The 2005 update was approved by Ecology. The next update is scheduled for approximately 2011.