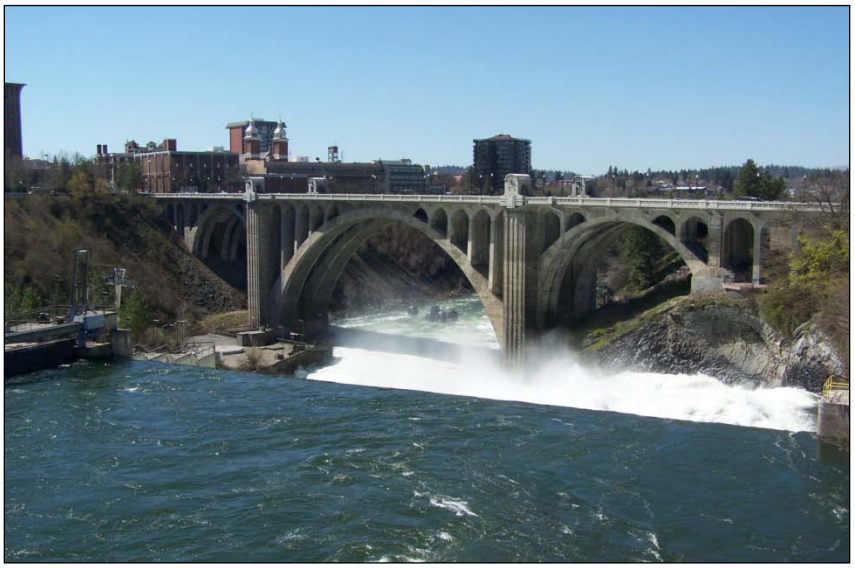
Six Year Comprehensive



Wastewater Program

2012-2017

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ENGINEERING SERVICES DIRECTOR

Mike Taylor, P.E.

WATERWATER MANAGEMENT DEPARTMENT DIRECTOR

Dale Arnold

CAPITAL PROGRAMS AND G.I.S

PRINCIPAL ENGINEER (Acting)	**Katherine E. Miller, P.E.**
SENIOR ENGINEER	**Marcia Davis, P.E.**
PROJECT STAFF	**Mark Papich, P.E., Richard McDermott**

Date Printed: September 13, 2011

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 four 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.

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. The Six-Year Comprehensive Utility Program is designed to meet each of the five purposes 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 user fees charged to customers fund the utility activities, so that no City General Fund revenues 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. 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	August - January
Prepare rough draft (Draft 1) of Program for internal City review	January	February
Prepare working draft (Draft 2) for coordination with budget; start environmental process (SEPA)	February-March	March-May
Working draft presentations: Public Works Committee; Plan Commission workshop and hearing	April-May	June-July
Pre-publication draft (Draft 3) is presented together with the Plan Commission recommendation to City Council	June	August
Publish complete and approved Program	July	August

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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CITY OF SPOKANE

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CITY PLAN COMMISSION FINDINGS OF FACT, CONCLUSIONS, AND RECOMMENDATIONS ON THE 2012-2017 SIX YEAR WASTEWATER MANAGEMENT PROGRAM

A Recommendation of the City Plan Commission certifying that the 2012-2017 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 2012-2017 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 August 10, 2011 and also held a public hearing on September 14, 2011, to obtain public comments on the 2012-2017 Six Year Wastewater Management Program.

F. The City Council must receive a recommendation from the City Plan Commission to certify that the 2012-2017 Six Year Wastewater Management Program is in conformance with the City's Comprehensive Plan in effect on the day of certification.

G. The projects are supported by Comprehensive Plan policy CFU 1.1, Level of Service.

H. The projects are supported by Comprehensive Plan policy CFU 1.2 Operational Efficiency.

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

CONCLUSIONS:

A. The 2012-2017 Six Year Wastewater Management Program has been prepared in full consideration of the City's Comprehensive Plan.

B. The 2012-2017 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 2001 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 2012-2017 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 6 to 0, the Plan Commission recommends the approval of this document by the City Council.

Bob Mansfield — Sept 14, 2011

Bob Mansfield, Vice President **Date**
Spokane Plan Commission

RESOLUTION 2011-0077

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, 2012 through 2017; and

WHEREAS, the Spokane City Plan Commission, on September 14, 2011, following a public hearing, found the 2012-2017 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, 2012-2017; 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 September, 2011.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Spokane that the revised and extended Six-Year Comprehensive Wastewater Program 2012 through 2017 is hereby adopted; and

BE IT FURTHER RESOLVED, that a copy of the revised and extended Six-Year Comprehensive Wastewater Program for the years 2012 through 2017, 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, 2012-2017.

Adopted this 26th day of September, 2011.

Terri Pfister, City Clerk

Approved as to Form:

Assistant City Attorney

CITY OF SPOKANE WASHINGTON

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, further environmental reviews and studies may be made before proceeding with the project.

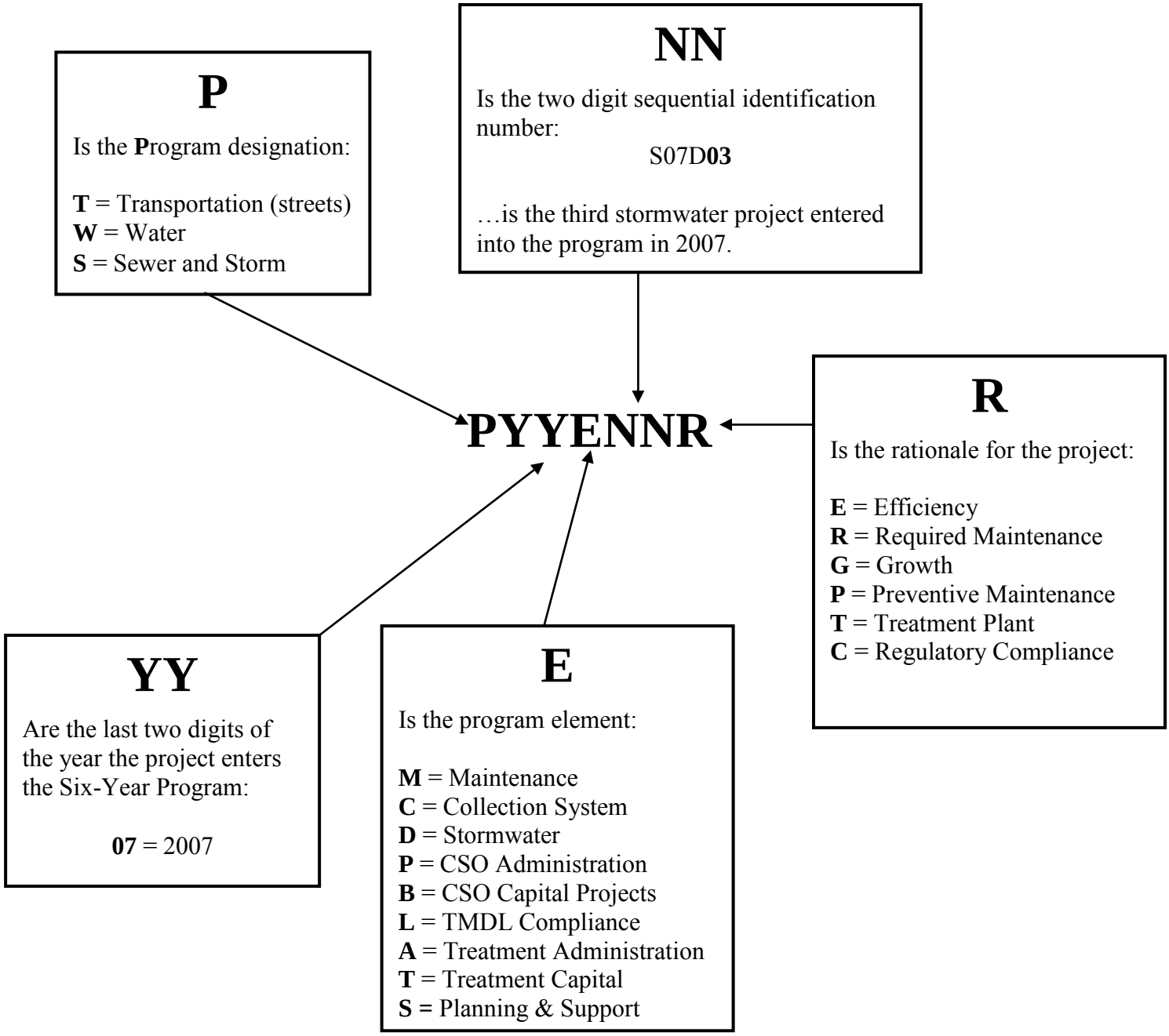
For projects requiring an environmental impact statement, a formal inter-disciplinary team will be appointed. A hearing or advertising for hearing interest is required along with a community involvement plan. Items with state or local funds are classified in accordance with the SEPA Guidelines.

> **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 Determination 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 Substantially Complete By End Of 2011
S04B10 - CSO Basin 10 Improvements
S04L01C –Final Effluent Filter Pilot & Evaluation
S07L01E – Reclaimed Water Pilot Project
S11C03E - Litchfield Sewer Hydraulic Improvement
S11T01E - Parking Improvements
S11T02C - Chemically Enhanced Primary Treatment Full Scale Test
Projects in Construction Started in 2011;Completion in 2012
S04B03C - CSO Basin 41 Improvements
S04B13C – CSO Basins 38, 39, 40 Improvements
S04B23C - CSO Basin 33-2 Improvements
S02T03C - Primary Clarifier Odor Control
S10T01E - Primary Skimming
S10T02C – Secondary Effluent Piping
S07C01E - Upriver-Havana Sewer Project
2011 Projects Not Completed—Carryover to 2012 -- 2017
S11C101E – Lower Hollywood Trunk Replacement-- moved to 2012
S08C03P - Groundwater Mitigation Construction (TREES) – moved to 2014
New Projects
S00T13E – Disinfection System (UV Only) w/ Pilot
S12D01R – Underground Injection Control Compliance
S12D02C – Francis Avenue Stormwater Upgrade
S12T01C – Future Next Level of Treatment Coordination Projects (TBD)
S12T01E – Future Process Projects (TBD)

Project Reconciliation *(continued)*

Projects with a Rescheduled Construction Start Date
S04B04 – CSO Basin 15 Improvements – Moved from 2012 to 2014
S04B16 – Post Street CSO Improvements – Moved from 2015 to 2016
S04B19 – CSO Basin 23-2 Improvements – Moved from 2012 to 2015
S04B20 – CSO Basin 33-1 Improvements – Moved from 2013 to 2014
S04M03E - Post Street Bridge Rehabilitation – Moved from 2014 to 2015
S05B02 – CSO Basin 20 Improvements – Moved from 2013 to 2015
S06B04 – CSO Basin 24 Improvements – Moved from 2013 to 2015
S09C02G - Lower Terrace Sewer Project, Phase 2 – Moved from 2014 to 2015
S11C01E – Lower Hollywood Trunk Replacement – Moved from 2011 to 2012
S04B09C – CSO Basin 7 – Moved from 2015 to 2012
S05B01C – CSO Basin 6 – Moved from 2015 to 2012

V. Financial Information

Wastewater Department Rate Model Summary						
	2012	2013	2014	2015	2016	2017
Domestic Wastewater Charge	$ 29.11	$ 37.13	$ 40.84	$ 43.91	$ 46.10	$ 48.41
Rate Stabilization Fee	$ 20.53	$ 23.30	$ 25.63	$ 27.56	$ 28.93	$ 30.38
Stormwater Fee	$ 3.60	$ 3.60	$ 3.60	$ 3.71	$ 3.82	$ 3.93
Total Wastewater Bill	$ 53.24	$ 64.03	$ 70.08	$ 75.17	$ 78.85	$ 82.72
Change in Wastewater Bill	$ 5.90	$ 10.79	$ 6.04	$ 5.09	$ 3.68	$ 3.87
Proposed Rate Increase Wastewater and Rate Stabilization	**13.50%**	**13.50%**	**10.00%**	**7.50%**	**5.00%**	**5.00%**
Proposed Rate Increase Stormwater	**0.00%**	**0.00%**	**0.00%**	**3.00%**	**3.00%**	**3.00%**
SOURCES OF FUNDS:						
Utility Sales (Treatment)	36,911,344	42,103,847	46,545,803	50,286,922	53,065,275	55,997,131
Sewer Collection Revenues	8,721,113	9,947,956	10,997,465	11,881,386	12,537,833	13,230,548
Rate Stabilization Fees	26,198,913	29,884,445	33,037,254	35,692,624	37,664,641	39,745,613
Stormwater Fees	6,567,800	6,600,639	6,633,642	6,866,814	7,108,183	7,358,035
Rate Revenues Revenues	**78,399,170**	**88,536,887**	**97,214,164**	**104,727,746**	**110,375,931**	**116,331,327**
Other Revenues	4,026,581	4,116,432	5,169,659	6,403,763	6,588,117	5,268,382
Total Operating Revenues	**82,425,751**	**92,653,319**	**102,383,823**	**111,131,510**	**116,964,048**	**121,599,709**
USES OF FUNDS:						
Operations & Maintenance	36,567,803	38,126,486	39,763,595	41,483,897	43,292,497	47,694,871
State Taxes	1,677,160	1,979,839	2,258,454	2,527,564	2,581,714	2,512,508
City Taxes	16,662,328	19,745,858	22,602,615	25,391,508	25,843,837	24,917,279
Adjustment to Budget Taxes						
Additional Capital Funding	0					0
Total Operating Expenses	**54,907,292**	**59,852,182**	**64,624,664**	**69,402,969**	**71,718,049**	**75,124,658**
Excess of rate and other revenues available to fund capital program and debt service	**27,518,459**	**32,801,137**	**37,759,159**	**41,728,541**	**45,245,999**	**46,475,051**
Beginning Cash Balance	**41,575,082**	**39,890,864**	**54,309,462**	**69,411,631**	**78,642,168**	**84,529,343**
Excess from Rate Revenues to fund capital	27,518,459	32,801,137	37,759,159	41,728,541	45,245,999	46,475,051
Contributed Capital County	2,502,608	7,706,624	13,224,176	19,561,466	16,076,445	5,384,640
Grant Proceeds	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	0
Debt Proceeds	33,458,289	27,621,376	76,088,824	142,423,534	132,225,048	25,042,677
Debt Service	(2,000,574)	(4,262,539)	(8,631,990)	(17,798,004)	(28,943,317)	(35,762,598)
Capital Projects (Six Year Plan)	(64,413,000)	(50,698,000)	(104,588,000)	(177,935,000)	(159,967,000)	(54,645,000)
Total Cash Reserve	**39,890,864**	**54,309,462**	**69,411,631**	**78,642,168**	**84,529,343**	**71,024,113**
Less Reserve For Debt Service	**(2,166,550)**	**(4,493,585)**	**(10,912,992)**	**(22,307,439)**	**(33,380,916)**	**(35,948,679)**
Total Available Cash Reserve	**37,724,314**	**49,815,877**	**58,498,640**	**56,334,729**	**51,148,427**	**35,075,434**
Over (Under) Minimum Reserve	**15,447,223**	**26,384,562**	**34,050,628**	**30,978,841**	**25,063,195**	**8,009,308**
* HDR suggested minimum approx. $23-27M						

Notes:

1. The Six Year Wastewater Program is subject to change based on final Council approval of future budgets.
2. Revenue projections are based on estimated rate increase and growth consistent with current economic climate.
3. A consultant, HDR, created a rate model for the City in 2009-2010. HDR recommended minimum cash balance of $23,000,000 to $27,000,000 for the Wastewater Department.

Six Year Wastewater Management Program
Outside Funding

Type	Agency	Project	Amount
Grant	WA Dept. of Ecology	Summit & Nettleton LID Project	$342,000
Grant	WA Dept. of Ecology	Hazel's Creek LID Project	$183,700
Grant	WA Dept. of Ecology	Aquifer Protection Extended Grant	$6,250,000
Loan-20 years @ 2.60%	WA Dept. of Ecology	CSO Basin 10 Abatement Facility	$1,152,000
Loan-20 years @ 2.60%	WA Dept. of Ecology	CSO Basins 38-39-40 Control Facilities	$3,604,000
Loan-20 years @ 2.60%	WA Dept. of Ecology	River Runoff Reduction Phases 1 & 2	$1,372,800
Loan–20 years @2.60%	WA Dept. of Ecology	Summit Low-impact Urban Retrofit Project	$1,848,985
Loan-20 years @ 0.50%	Public Works Trust Fund	CSO Basins 38-39-40 Control Facilities	$4,308,000
Loan-20 years @ 0.50%	Public Works Trust Fund	CSO Basin 6 Control Facility	$5,724,000
		TOTAL ALL GRANTS AND LOANS	**$24,785,485**

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 in order to achieve their design life. 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 program, minor maintenance work is completed under the utility's operation budget.

- Sanitary collection system: The City operates and maintains over 470 miles of sanitary sewer lines, 400 miles of "combined" sanitary and storm sewer lines, twenty-eight sewage lift stations and fourteen river crossings.
- Stormwater: The City operates and maintains over 350 miles of storm drain pipes and over one hundred stormwater outfalls to the river.
- Combined Sewer Overflow (CSO) Abatement: The City is under a NPDES Permit issued by the Washington State Department of Ecology. This permit requires the City of Spokane to complete improvements by 2017 to the combined sewer system to minimize the number of overflows that will discharge to the Spokane River from the City's future eighteen 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 40 million gallons of wastewater each day. Discharge from the RPWRF into the Spokane River must meet the City's NPDES Permit.

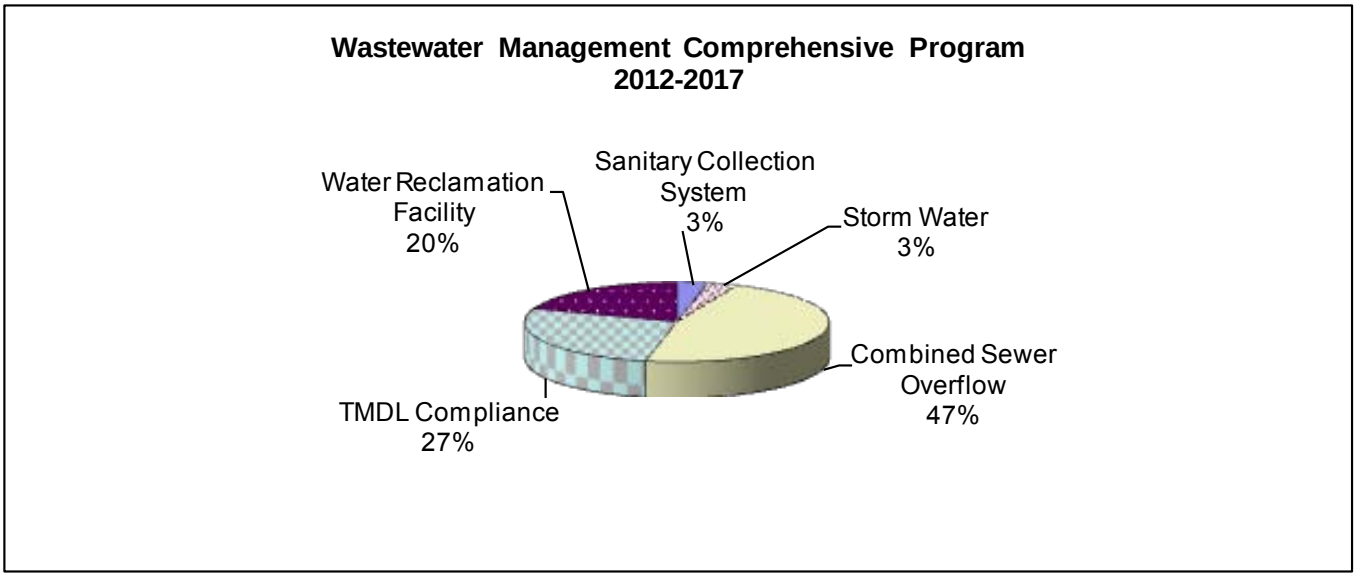
Wastewater Department

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's 2010 budget was over $600 million with the major source of revenue coming from sewer and stormwater rates. The 20 percent utilities tax is a major source of revenue to the City's general fund.

Wastewater Comprehensive Program Summary

thousands of dollars

Project Element	2012	2013	2014	2015	2016	2017	Total
Sanitary Collection System	5,873	4,707	1,775	4,705	1,445	1,345	**$19,850**
Storm Water	7,892	4,120	2,025	2,700	1,450	1,450	**$19,637**
Combined Sewer Overflow	39,633	7,951	42,583	84,432	86,313	26,150	**$287,062**
TMDL Compliance	250	9,980	31,660	61,900	59,410	2,000	**$165,200**
Water Reclamation Facility	11,015	23,940	26,545	24,198	11,349	23,700	**$120,747**
Total All Elements	**$64,663**	**$50,698**	**$104,588**	**$177,935**	**$159,967**	**$54,645**	**$612,496**



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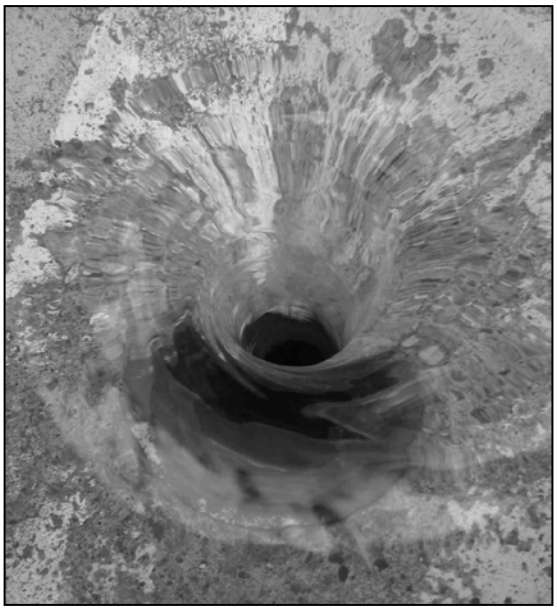
SANITARY COLLECTION SYSTEM



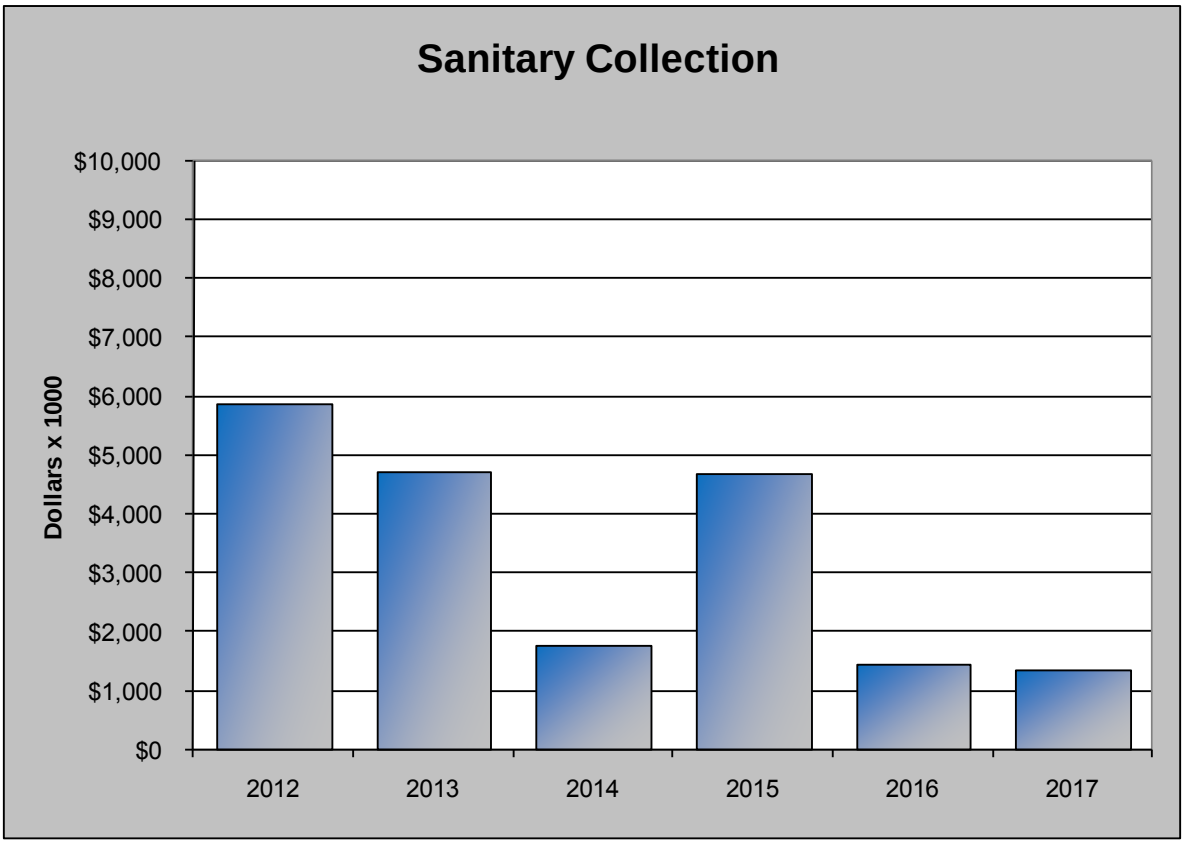
VII. Sanitary Collection System

The Sanitary Collection System contains projects related to collecting sanitary sewage and conveying it to the Riverside Park Water Reclamation Plant (RPWRP). Major projects for maintenance (designated with the element letter M) or new sewer systems (designated with the element letter C) are included in this element. Maintenance projects include major work such as pipe replacements, pipe rehabilitation by lining and pump station upgrade or replacement. New 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	2012	2013	2014	2015	2016	2017	Total
S04M03R - Post Street Bridge Rehabilitation			200	1800			**$2,000**
S09C01E - Joint City-County Marion Haye Intertie	1179						**$1,179**
S09C02G - Lower Terrace Sewer Project, Phase 2			130	1460			**$1,590**
S11C01E - Lower Hollywood Trunk Replacement	197						**$197**
Continuing Maintenance and Rehabilitation Projects							
S02C01P - Lateral Upgrade Program	75	75	75	75	75	75	**$450**
S02C02G - Infrastructure Upgrade-Public	150	150	150	150	150	150	**$900**
S02C03G - Infrastructure Participation-Private	20	20	20	20	20	20	**$120**
S02M06R - CBD & On-Going CIPP Project	300	300	300	300	300	300	**$1,800**
S02M09P - Force Main Replacement	140	150					**$290**
S03S01C - STEP Projects			100	100	100	100	**$400**
S04M02R - Lift Station Repair & Upgrade	312	312					**$624**
S05M01P - Future Rehabilitation Projects	500	500	500	500	500	500	**$3,000**
S06C01E - Street Bond Infrastructure Upgrade	3,000	3,000					**$6,000**
S08C03P - Groundwater Mitigation Construction			100	100	100		**$300**
S11C02P - Hillside Sewer Replacements		200	200	200	200	200	**$1,000**
Yearly Totals	**$5,873**	**$4,707**	**$1,775**	**$4,705**	**$1,445**	**$1,345**	**$19,850**


Sanitary Collection
Dollars x 1000
$10,000
$9,000
$8,000
$7,000
$6,000
$5,000
$4,000
$3,000
$2,000
$1,000
$0
2012
2013
2014
2015
2016
2017

Sewer Collection System

Project Details-Individual Projects

Project	Project Description			
S04M03R - Post Street Bridge Rehabilitation (Pipe Crossing)	The Post Street Bridge, located immediately north of City Hall, carries a 54-inch sewer interceptor that transports sewage from the south side of the river to the north side. 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 in coordination with bridge rehabilitation project.			
	Purpose			
	The purpose of this project is to coordinate sewer upgrade with the bridge rehabilitation work.			
	Construction Starts		**Environmental**	**Design by**
	2015		CE	Engineering
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$1,565,000	$235,000	$200,000	Right-of-way

Project	Project Description			
S09C01E - Joint City-County Marion Haye Intertie	This project will construct a gravity sewer pipe from North Pointe lift station to Spokane County's Marion Haye Lift Station. The North Pointe lift station would be eliminated after construction of the intertie. Completion of the Lower Hollywood Trunk Replacement (S11C01E) and Litchfield Sewer Replacements (S11C03E) are necessary for construction of this project			
	Purpose			
	The purpose of this project is to reduce operation and maintenance costs by eliminating a lift station.			
	Construction Starts		**Environmental**	**Design by**
	2012		CE	WWM
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$943,200	$141,480	$94,320	Right-of-way

Project	Project Description			
S09C02G - Lower Terrace Sewer Project, Phase 2	The Lower Terrace Sewer project will provide sewer service to the Nine Mile area. Septic systems currently provide sewer service to this area. Although depth to the Aquifer is fairly deep in this area, eliminating septic systems will protect the future water quality. This phase of the project will construct a lift station and force main to connect to the force main constructed in Phase 1 of this project.			
	Purpose			
	The purpose of this project is to provide sewer service to the Nine Mile area.			
	Construction Starts		**Environmental**	**Design by**
	2015		EA	Engineering
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$1,270,000	$190,000	$130,000	Acquired

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

Project	Project Description			
S11C01G – Lower Hollywood Trunk Replacement	This project will construct approximately 1300 LF of 24-inch HDPE sewer line to accommodate the flow restrictions associated with the modifications at RPWRF Headworks project and to provide for the future flows from the Spokane County Marion Haye Lift Station.			
	Purpose			
	This project will add capacity to the existing sewer collection system.			
	Construction Starts		**Environmental**	**Design by**
	2012		CE	WWM
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$157,600	$23,640	$15,760	Right-of-way

Project	Project Description		
S02C01P - 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 are maintenance intensive are identified and corrected.		
	Purpose		
	The purpose of this project is to reduce operation and maintenance costs of sewer laterals.		
	Start Date	**Environmental**	**Design by**
	2011	CE	WWM

Project	Project Description		
S02C02G - Infrastructure Upgrade-Public	The Wastewater Management Department coordinates with other City infrastructure work on an ongoing basis. When sewer or stormwater facilities are within other City projects, the Department evaluates these facilities for upgrade or replacement. For example: in conjunction with a road project, the Department funds the replacement of shallow vitrified clay pipe, broken or cracked pipes, and deteriorated manholes including replacement of worn surface cast iron rings and covers. These facility replacements and upgrades are funded through this project and paid for through separate schedules as part of the larger City improvement.		
	Purpose		
	The purpose of this project is to reduce overall project costs by combining sewer upgrades with private development.		
	Start Date	**Environmental**	**Design by**
	2011	CE	Engin/WWM

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

Project	Project Description		
S02C03G - 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 lines 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 larger community needs.		
	Purpose		
	The purpose of this project is to reduce overall project costs by combining sewer upgrades with other scheduled projects.		
	Start Date	**Environmental**	**Design by**
	2011	CE	WWM

Project	Project Description		
S02M06R – City Wide On-Going "Cure In Place Pipe (CIPP) Project	CIPP is a method that rehabilitates damaged pipe using a polyester felt liner impregnated with a resin that hardens when heated. Essentially, CIPP constructs a new pipe within a damaged pipe without resorting to excavating. Many of the existing older sewers are made of vitrified clay that is susceptible to cracking and/or infiltration at the joints. Excavation to replace sewer pipes in congested streets is very expensive, so using CIPP is a cost-effective method to rehabilitate these types of pipes.		
	Purpose		
	The purpose of this project is to reduce operation and maintenance costs by replacing damaged and leaking pipes.		
	Start Date	**Environmental**	**Design by**
	2011	CE	WWM

Project	Project Description		
S02M09P - Force Main Replacement	Many of the lift station installed in the 1980s and 1990s used plastic (PVC) pipe for their force mains. Recurring line breaks on these plastic force main lines have required 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.		
	Purpose		
	The purpose of this project is to reduce operation and maintenance costs by replacing plastic force mains.		
	Start Date	**Environmental**	**Design by**
	2011	CE	Engin/WWM

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

Project	Project Description.		
S03S01C - 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. Construction will be scheduled when project are identified.		
	Purpose		
	The purpose of this project is to protect Aquifer water quality by eliminating septic tanks.		
	Start Date	**Environmental**	**Design by**
	2014	EA	WWM

Project	Project Description		
S04M02R - Lift Station Repair & Upgrade	This project repairs and/or upgrades existing lift stations because either the pumps and/or control equipment require excessive maintenance. Upgrades may also include above-ground facilities to address the new confined-space safety issues of lift stations in underground vaults.		
	Purpose		
	The purpose of this project is to reduce operation and maintenance costs by rehabilitating lift stations.		
	Start Date	**Environmental**	**Design by**
	2011	CE	Engin/WWM

Project	Project Description		
S05M01P - Future Rehabilitation Projects	Often rehabilitation projects are identified that must be completed within 2 or 3 years from the time the need is identified.		
	Purpose		
	The purpose of this project is to make funds available in the last five years of the program for rehabilitation projects that are not yet identified.		
	Start Date	**Environmental**	**Design by**
	2012	CE	Not known

Project	Project Description		
S06C01E - Street Bond Infrastructure Upgrade	The Wastewater Management Department is coordinating with the City's 10-year street bond improvements. When sewer or storm drain facilities are within these street bond projects, the Department evaluates these facilities for upgrade or replacement. These facility replacements and upgrades are funded through this project and paid for under separate pay schedules as part of the bond contact improvement. This is an on-going project until 2014.		
	Purpose		
	The purpose of this project is to reduce overall project costs by combining sewer upgrades with scheduled bond projects.		
	Start Date	**Environmental**	**Design by**
	2006	EA	Engineering

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

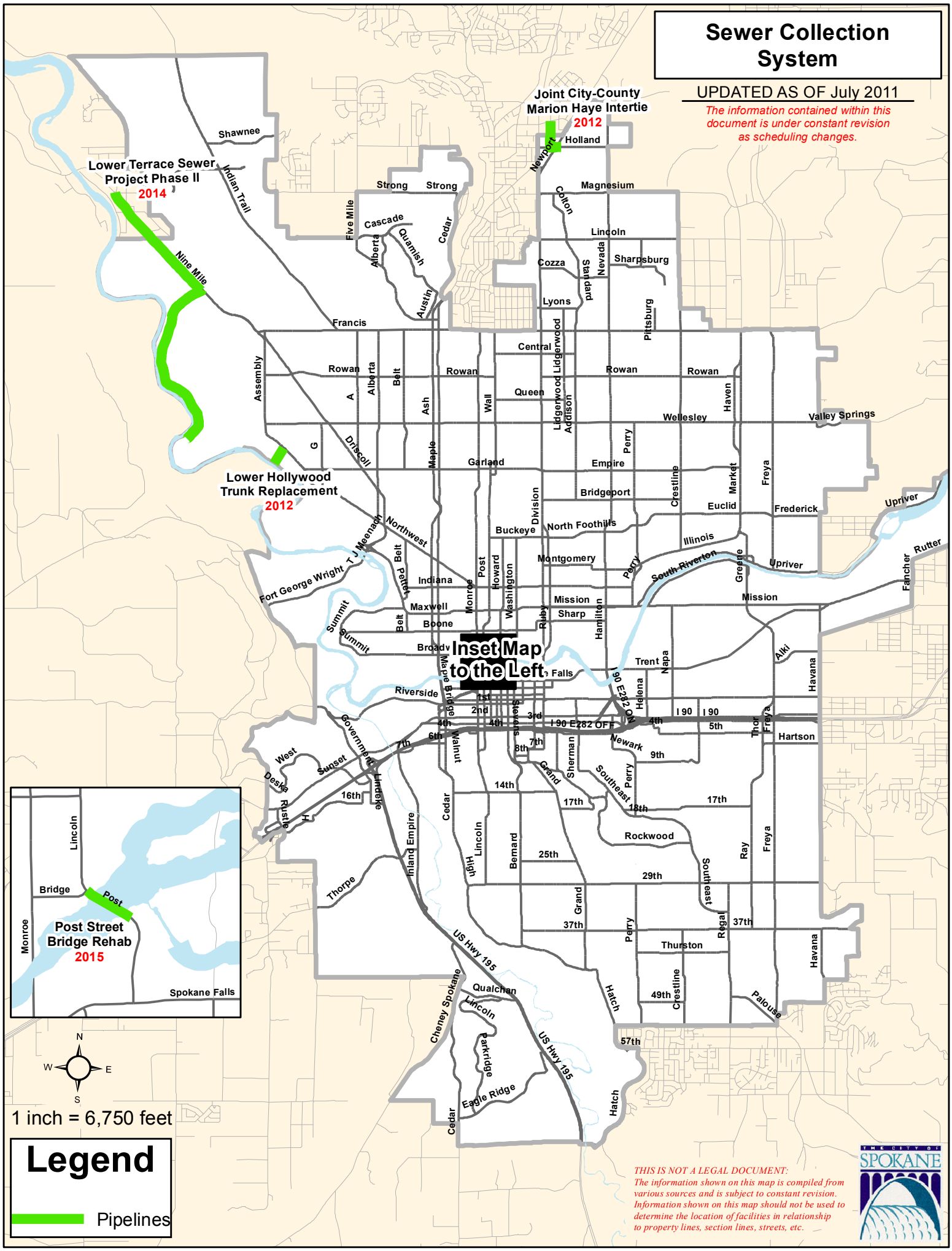
Project	Project Description.		
S08C03P - Groundwater Mitigation Construction (TREES)	The Groundwater Evaluation and Mitigation (GEM) program identifies areas of the City with high groundwater issues where cost effective and efficient mitigation actions could be used. This project will coordinate with other City Departments and the City Parks Department to fund the planting of water loving trees in previously identified locations. After the completion of this project, the issues identified and subsequent evaluation will direct, future efforts		
	Purpose		
	The purpose of this project is to reduce operation and maintenance costs caused by high groundwater in the sewer system.		
	Start Date	**Environmental**	**Design by**
	2014	EA	Engineering

Project	Project Description		
S11C02P – Hillside Sewer Replacements	Wastewater Management Department staff is currently evaluating the vulnerability of the trunk and inceptor pipes within the sewer system (S02M05). 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 and property damage. This evaluation may result in recommendations to replacement some lines on hillsides. The Hillside Sewer Replacements project will replace the pipes found vulnerable by the staff analysis.		
	Purpose		
	The purpose of this project is to prevent future maintenance costs associate with emergency replace of vulnerability sewer trunk and inceptor pipes.		
	Start Date	**Environmental**	**Design by**
	2013	EA	Engineering

Sewer Collection System

UPDATED AS OF July 2011

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



Legend

Pipelines

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

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STORMWATER

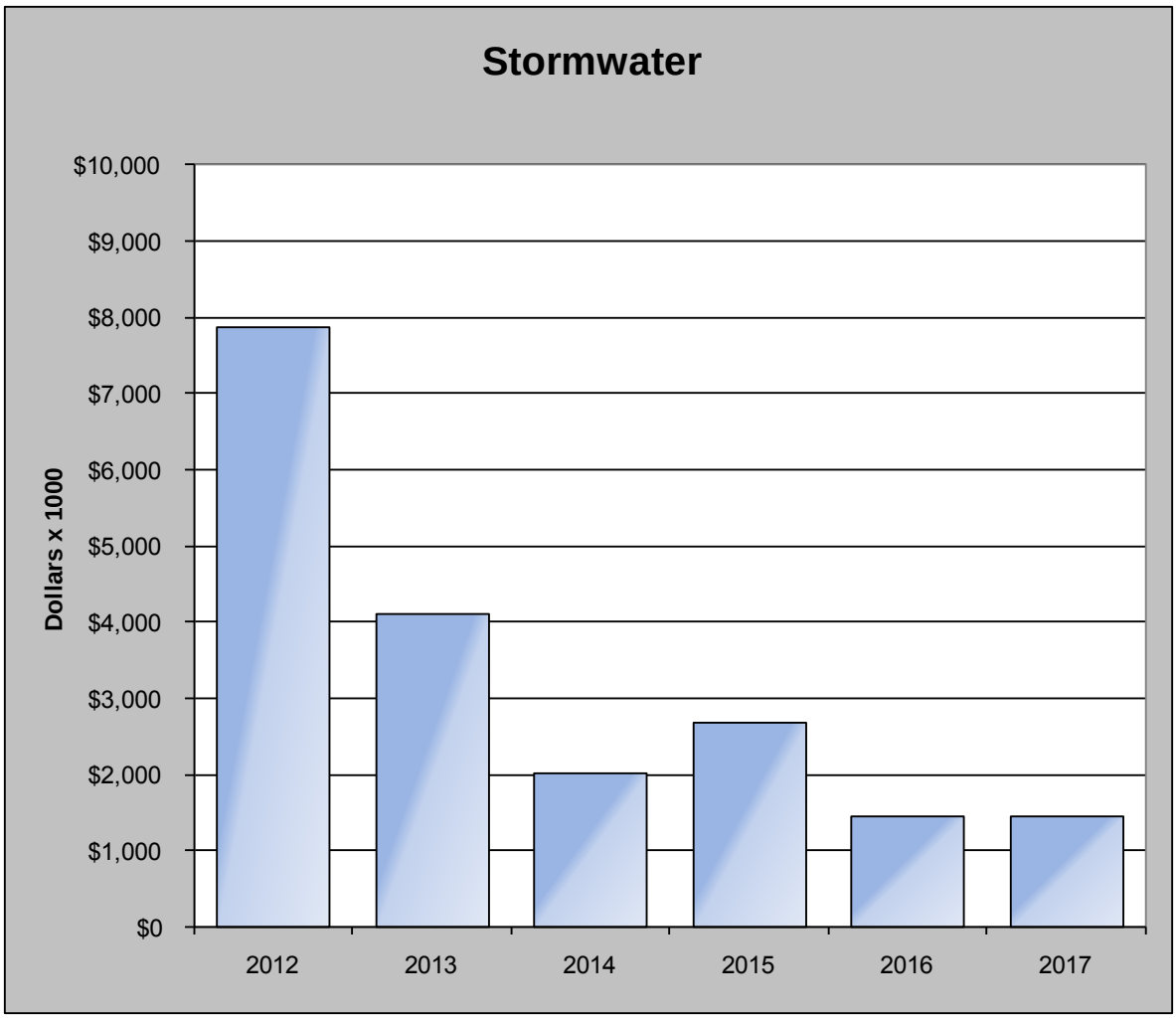
VIII. Stormwater

The Stormwater element contains infrastructure projects related to the collection, treatment and disposal of runoff resulting from either rain and/or melted snow. Project costs are in thousands of dollars.

Stormwater Summary

thousands of dollars

Project	2012	2013	2014	2015	2016	2017	Total
S05D01G - Hazels Creek Drainage and Conservation Area	300	250					**$550**
S06D03R - Sylvia Court Drainage - Phase II	500						**$500**
S08D01G - Hazels Creek Basin Drainage Implementation		750	600	600			**$1,950**
S10D02P - Summit Low Impact Urban Retrofit	1,586						**$1,586**
S10D03C -River Runoff Reduction Projects	1206	320	100	100	100	100	**$1,926**
S12D01R - Underground Injection Control Compliance			100	100	150	150	**$500**
S12D02C - Francis Ave. Stormwater Upgrade	1500						**$1,500**
S12D03E - Tree Inventory	250						**$250**
Ongoing Projects							
S02D03P - Corridor Acquisition	200	200	200	200			**$800**
S04D01P - Bio-Infiltration System Rehabilitation	200	200	200	200	200	200	**$1,200**
S08D02E - Spokane Urban Runoff Greenway Ecosystems Projects	250	500	500	500	500	500	**$2,750**
S09D01P - Stormwater Infrastructure Upgrade-Public	1900	1900					**$3,800**
S10D01P - Unidentified Future Stormwater Projects			325	1000	500	500	**$2,325**
Yearly Totals	**$7,892**	**$4,120**	**$2,025**	**$2,700**	**$1,450**	**$1,450**	**$19,637**


Stormwater
$10,000
$9,000
$8,000
$7,000
$6,000
$5,000
$4,000
$3,000
$2,000
$1,000
$0
Dollars x 1000
2012
2013
2014
2015
2016
2017

Stormwater
Project Details-Individual Projects

<table>
<tr><th>Project</th><th colspan="4">Project Description</th></tr>
<tr><td rowspan="6">S05D01G – Hazel's Creek Drainage and Conservation Area Site Improvements</td><td colspan="4">The Hazel's Creek Drainage and Conservation Area is a stormwater disposal site for a portion of the Moran Prairie. Improvements will manage/dispose of stormwater; improve access; abate weeds and plant native species; protect wetland; and provide education. See S08D01 for information on the Hazel's Creek Sub-basin improvements. Funding for a Low Impact Development Demonstration project will pay for trails and interpretive education.</td></tr>
<tr><td colspan="4">Purpose</td></tr>
<tr><td colspan="4">The purpose of this project is to enhance stormwater disposal in the Moran Prairie area.</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</td></tr>
<tr><td>Construction Budget</td><td>CM Budget</td><td>Design Budget</td><td>Property</td></tr>
<tr><td>$440,000</td><td>$66,000</td><td>$44,000</td><td>Acquired</td></tr>
<tr><td rowspan="2">OUTSIDE FUNDING</td><td colspan="3">Source</td><td>Amount</td></tr>
<tr><td colspan="3">Washington Department of Ecology Storm Water Retrofit and Low Impact Development Grant</td><td>$183,000</td></tr>
</table>

<table>
<tr><th>Project</th><th colspan="4">Project Description</th></tr>
<tr><td rowspan="6">S06D03R - Sylvia Court Drainage - Phase II</td><td colspan="4">While Phase I of this project (completed in 2005) eliminated some of the worst drainage problems in this area; Phase II will construct the remaining system to transport the sporadic seasonal excessive drainage to City-owned property for disposal. The selected alternative recommends installing a pipeline to convey stormwater under Arrowhead Street north to the City Park property just north of Brookfield Rd.</td></tr>
<tr><td colspan="4">Purpose</td></tr>
<tr><td colspan="4">This project will eliminate existing occasional flooding conditions.</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</td></tr>
<tr><td>Construction Budget</td><td>CM Budget</td><td>Design Budget</td><td>Property</td></tr>
<tr><td>$400,000</td><td>$60,000</td><td>$40,000</td><td>Acquired</td></tr>
</table>

Stormwater
Project Details-On-going Projects *(continued)*

Project	Project Description			
S08D01G – Hazel's Creek Basin Drainage Implementation (Off-site)	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 implement infrastructure improvements recommended by the Hazel's Creek Feasibility Analysis and subsequent hydraulic modeling and evaluation. Planned improvements may include: pipes, detention basins, control structures, disposal site development, evaluation and conversion of some existing evaporation ponds to detention ponds, monitoring and control systems, and identification and purchase of drainage easements. Exploration of long-term financing options such as a special drainage district will be included in this project. Partial funding by DOE.			
	Purpose			
	The purpose of this project is to construct storage and conveyance for the Moran Prairie.			
	Construction Starts		**Environmental**	**Design by**
	2013		EA	WWM
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$1,560,000	$234,000	$156,000	TBD

Project	Project Description			
S11D01P - Summit Low Impact Urban Retrofit Project	The Summit Low Impact Urban Retrofit Project (SLURP) involves piping existing stormwater runoff from Monroe Street and portions of the Kendall Yards development into a storage vault and then pumping the stormwater approximately 4,000 feet to a storm garden for treatment and infiltration. The storm garden will be located within a future City of Spokane Park and will be incorporated as part of the park design. An easement will be granted to the City for the storage tank and pumping station, and the park will be donated to the City by the Kendall Yards Development. A stormwater grant from the Washington State Department of Ecology will fund the storm garden portion of this project.			
	Purpose			
	The purpose of this project is to reduce the discharge of stormwater to the Spokane River.			
	Construction Starts		**Environmental**	**Design by**
	2012		EA	WWM
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$1,379,000	$207,000	$160,000	Acquiring
OUTSIDE FUNDING	**Source**			**Amount**
	Washington Department of Ecology Storm Water Retrofit and Low Impact Development Grant ($342,000) and Washington Department of Ecology Water Quality Loan ($1,848,985)			$2,190,985

Stormwater
Project Details-Individual Projects *(continued)*

<table>
<tr><th>Project</th><th colspan="4">Project Description</th></tr>
<tr><td rowspan="6">S11D03C - River Runoff Reduction Projects</td><td colspan="4">The River Runoff Reduction projects will remove direct connections of separated stormwater to the Spokane River by disconnecting existing catch basins in existing public residential streets. In accordance with State and Federal rules for Underground Injection Control (UIC) for drywells, this runoff will be treated in two stages. The first stage of treatment will be the collection in catch basins with down-turned elbows providing both emergency spill containment and oil/sediment separation. The second stage of treatment will then be by injection/disposal through the drywells into approved soils. This treatment train as approved by the State Department of Ecology will allow for the disconnection of this stormwater from the Spokane River and thus reduce the associated pollutant loading. The project location was selected to coordinate with well draining soils and dedicated storm lines in north Spokane. Residential streets are very low pollutant generating areas and the soils in these areas meet treatment standards. A low interest loan will fund a portion of this project. This project was originally shown to be constructed in two phases, but is now shown as an ongoing project.</td></tr>
<tr><td colspan="4">Purpose</td></tr>
<tr><td colspan="4">The purpose of this project is to reduce the discharge of stormwater to the Spokane River.</td></tr>
<tr><td colspan="2">Construction Starts</td><td>Environmental</td><td>Design by</td></tr>
<tr><td colspan="2">2011</td><td>EA</td><td>WWM</td></tr>
<tr><td>Construction Budget</td><td>CM Budget</td><td>Design Budget</td><td>Property</td></tr>
<tr><td>$1,540,800</td><td>$231,120</td><td>$154,080</td><td>Acquired</td></tr>
<tr><td>OUTSIDE FUNDING</td><td colspan="3">Source</td><td>Amount</td></tr>
<tr><td></td><td colspan="3">Washington Department of Ecology Revolving Fund Loan (20 years at 2.60%)</td><td>$1,372,800</td></tr>
</table>

<table>
<tr><th>Project</th><th colspan="4">Project Description</th></tr>
<tr><td rowspan="6">S12D01R – Underground Injection Control Compliance</td><td colspan="4">Washington Department of Ecology administers an Underground Injection Control (UIC) Program to protect ground water quality by regulating the disposal of fluids into the subsurface. Drywells are classified as a UIC facility. Regulations require the City to register all drywells and create a schedule by 2012 to bring all UIC facilities into compliance. This project funds the construction of the storm water retrofits for drywells that currently do not meet UIC regulations.</td></tr>
<tr><td colspan="4">Purpose</td></tr>
<tr><td colspan="4">The purpose of this project is retrofit existing drywells systems to meet UIC regulations.</td></tr>
<tr><td colspan="2">Construction Starts</td><td>Environmental</td><td>Design by</td></tr>
<tr><td colspan="2">2014</td><td>EA</td><td>WWM</td></tr>
<tr><td>Construction Budget</td><td>CM Budget</td><td>Design Budget</td><td>Property</td></tr>
<tr><td>$400,000</td><td>$60,000</td><td>$40,000</td><td>TBD</td></tr>
</table>

Stormwater
Project Details-Individual Projects *(continued)*

<table>
<tr><th>Project</th><th colspan="4">Project Description</th></tr>
<tr><td rowspan="6">S12D02C – Francis Avenue Stormwater Upgrade</td><td colspan="4">Francis Avenue from Division Street to Market Street will be repaired with the Street Bond in 2012. The stormwater system along this stretch of Francis Avenue does not efficiently remove runoff and does not meet current UIC regulations. This project will construct a stormwater system for Francis Avenue with the bond project.</td></tr>
<tr><td colspan="4">Purpose</td></tr>
<tr><td colspan="4">The purpose of this project is to meet stormwater regulations.</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>WWM</td></tr>
<tr><td>Construction Budget</td><td>CM Budget</td><td>Design Budget</td><td>Property</td></tr>
<tr><td>$1,275,000</td><td>$225,000</td><td>$150,000</td><td>TBD</td></tr>
</table>

<table>
<tr><th>Project</th><th colspan="4">Project Description</th></tr>
<tr><td rowspan="6">S12D03 – Tree Inventory</td><td colspan="4">This project will inventory primarily the street trees within the City of Spokane. The tree survey will evaluate the condition of existing trees and locations where more trees should be planted.</td></tr>
<tr><td colspan="4">Purpose</td></tr>
<tr><td colspan="4">The results of the survey are expected to provide an estimate of the value and cost of trees to the stormwater program and existing green infrastructure.</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</td></tr>
<tr><td>Construction Budget</td><td>CM Budget</td><td>Inventory Budget</td><td>Property</td></tr>
<tr><td>----</td><td>----</td><td>$250,0000</td><td>----</td></tr>
</table>

Stormwater
Project Details-Ongoing Projects

Project	Project Description		
S02D03P - Corridor Acquisition	This project funds the purchase of property for future drainage projects identified by the Stormwater drainageways project.		
	Purpose		
	The purpose of this project is to provide locations for stormwater conveyance and disposal.		
	Start Date	**Environmental**	**Design by**
	2011	N/A	N/A

Project	Project Description		
S04D01P - Bio-Infiltration System Rehabilitation	"Bio-Infiltration Systems" or grass percolation areas are commonly known as "grassy swales" or "208 swales". The City maintains approximately 10 acres of grass percolation areas along streets that treat and dispose of stormwater. Most grass percolation areas will have a drywell to allow excess storm water to infiltrate into the ground during large storms. City staff performs regular maintenance in order to maintain the effectiveness of these facilities. Grass percolation areas have a 20-year design life, but generally need substantial maintenance every 5-10 years. This project provides for this substantial maintenance effort along arterials, etc.		
	Purpose		
	The purpose of this project is to restore functionality to swales demonstrating sub-standard performance.		
	Start Date	**Environmental**	**Design by**
	2008	CE	WWM

Project	Project Description		
S08D02E - Spokane Urban Runoff Greenways Ecosystems Projects	Spokane Urban Runoff Greenways Ecosystems, or SURGE, is intended to determine the suitability of retrofitting plant-based stormwater treatment systems into the existing urban environment. Two projects are in place and being evaluated on west Broadway and south Lincoln Street. Results from these two projects will assist the City in determining if this type of approach is feasible for Spokane's separated stormwater systems.		
	Purpose		
	The purpose of this project is to remove the discharge of stormwater from the Spokane River.		
	Start Date	**Environmental**	**Design by**
	2010	EA	Engineering

Stormwater
Project Details-On-going Projects *(continued)*

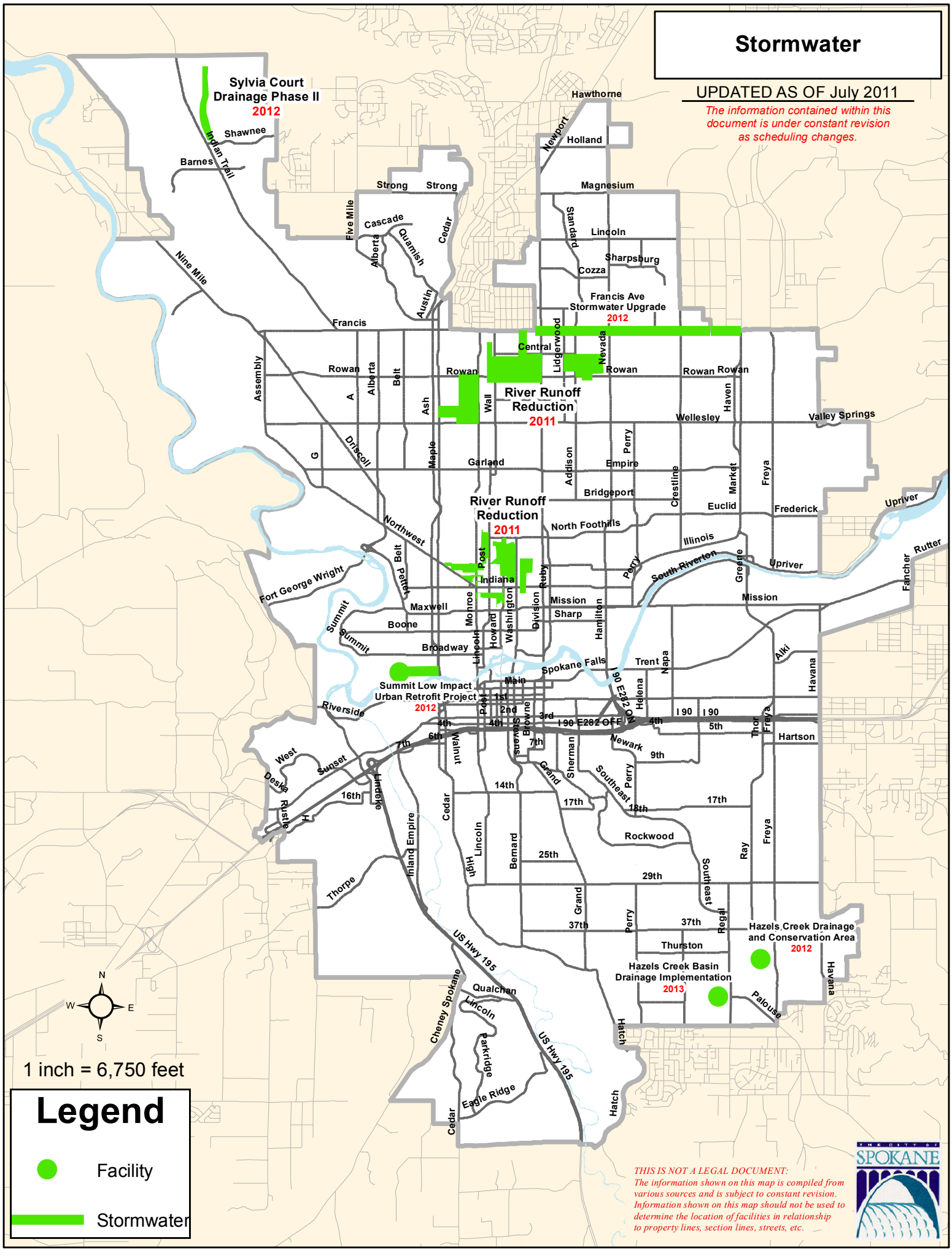
Project	Project Description		
S09D01P - Stormwater Infrastructure Upgrade-Public	The Wastewater Management Department coordinates with other City Departments infrastructure work. When stormwater facilities are located within these other City projects, the Department evaluates existing facilities for upgrade and/or replacement. For example: in conjunction with a road project, the Department may fund the replacement of old deteriorated brick catch basins, shallow clay pipes, broken or cracked pipes and any deteriorated manholes including replacement of worn surface cast iron rings and covers. These facility replacements and upgrades are funded through this project and paid for through separate schedules within the contract of the other department's contracts.		
	Purpose		
	The purpose of this project is to reduce overall project costs by addressing storm sewer rehabilitation and upgrades with other scheduled projects.		
	Start Date	**Environmental**	**Design by**
	2011	CE	WWM

Project	Project Description		
S11D01P - Unidentified Future Stormwater Projects	This item is a placeholder for work that cannot yet be identified as specific projects, but is anticipated to be needed in the future.		
	Purpose		
	The purpose of this project is to anticipate the need for funds in the future for this as-yet unidentified work.		
	Construction Starts	**Environmental**	**Design by**
	2014	EA	WWM

Stormwater

UPDATED AS OF July 2011

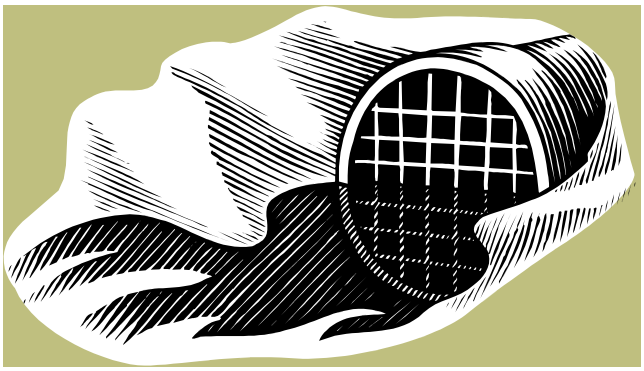
The information contained within this document is under constant revision as scheduling changes.



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

COMBINED SEWER OVERFLOW ABATEMENT



IX. Combined Sewer Overflow Abatement

The Combined Sewer Overflow (CSO) Capital Abatement element contains projects in the individual CSO basins that will reduce 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 NPDES Permit deadline for completion of CSO abatement projects. Design costs include environmental documentation and property acquisition. Project costs in the table are in thousands of dollars.

Combined Sewer Overflow Abatement Summary

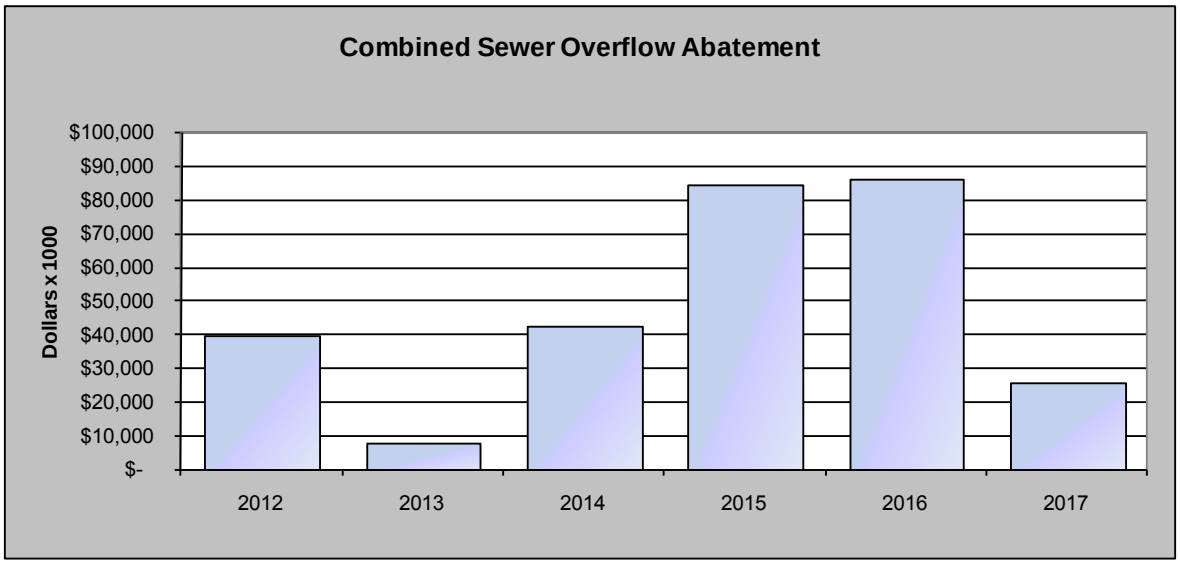
thousands of dollars

Project	2012	2013	2014	2015	2016	2017	Total
S04B04/5C - CSO Basin 15 Improvements	2950		415	5485			**$8,850**
S04B07/8E - Interceptor I03 Basin Improvements	140	370	2284	2283	2283		**$7,360**
S04B09C - CSO Basin 07 Improvements	457		90	913			**$1,460**
S04B11C - CSO Basin 12 Improvements	200	150	2300	2020	2880		**$7,550**
S04B14/15E - Interceptor I04 Basin Improvements	390	1,115	1,115	8,530	8,530		**$19,680**
S04B16C - Post Street Basin Improvements			290		640	640	**$1,570**
S04B18C - CSO Basin 23-1 Improvements		120	1,384				**$1,504**
S04B19C - CSO Basin 23-2 Improvements	2,544		508	4,580			**$7,632**
S04B20C - CSO Basin 33-1 Improvements		1,510	12,320	11,430	10,820		**$36,080**
S04B24C - CSO Basin 34-1 (Playfair) Improvements	740	556	6,400	2,225	12,800	12,800	**$35,521**
S05B01C - CSO Basin 6 Improvements	3,217		967	5,756			**$9,940**
S05B02C - CSO Basin 20 Improvements		250	50	2,460			**$2,760**

Combined Sewer Overflow Abatement Summary *(continued)*

thousands of dollars

S05B04/5C - CSO Basin 26 Improvements	1,000	1,390	5,080	15,405	15,405		**$38,280**
S05B06C - CSO Basin 34-2 (Hartson) Improvements	15,895						**$15,895**
S05B07C - CSO Basin 34-3 (20th & Ray) Improvements	10,720						**$10,720**
S06B04/5C - CSO Basin 24 Improvements	1,340	1,400	6,500	14,375	14,375		**$37,990**
S10B01C - CSO Storage at RPWRF		780	1,830	8,480	12,710	12,710	**$36,510**
S11B01C - Interceptor I07 Basin Improvements		170	1,000	400	5,750		**$7,320**
S11B02C - Elm Street Basin Improvements (CSO 22b)	40	140	40	70			**$290**
S11B03C - Interceptor I05 Basin Improvements (CSO Basin 33 Un-regulated)			10	20	120		**$150**
Yearly Totals	**$ 39,633**	**$ 7,951**	**$ 42,583**	**$ 84,432**	**$ 86,313**	**$ 26,150**	**$287,062**



Combined Sewer Overflow Abatement
Project Details-Individual Projects

<table>
<tr><th>Project</th><th colspan="4">Project Description</th></tr>
<tr><td rowspan="6">S04B04/5C – CSO Basins 14/15 Improvements</td><td colspan="4">Separation and infiltration of stormwater has been further analyzed for CSO Basins 14 and 15. During 2011, the computer model will be modified to reflect installation of UIC compliant dry wells and resulting changes to storage requirements. The project will be constructed in two phases. The initial phase will install drywells in residential streets to infiltrate stormwater where possible. This will separate portions of the storm system from the sanitary sewer system. Based on the success rate of the installed drywells, the project will identify, design and construct a CSO storage facilities located near Sherwood and Summit and Nettleton and Ohio to meet Department of Ecology's regulations. One facility each will be constructed for CSO Basin 14 and CSO Basin 15.</td></tr>
<tr><td colspan="4">Purpose</td></tr>
<tr><td colspan="4">The purpose of this project is to meet Ecology regulations to reduce the discharge of untreated sewage to the Spokane River by storing peak combined sewage flows while more intensively managing flow rates to the RPWRF.</td></tr>
<tr><td colspan="2">Construction Starts</td><td>Environmental</td><td>Design by</td></tr>
<tr><td colspan="2">2012 & 2015</td><td>EA</td><td>PMO</td></tr>
<tr><td>Construction Budget</td><td>CM Budget</td><td>Design Budget</td><td>Property</td></tr>
<tr><td>$7,334,800</td><td>$1,100,200</td><td>$415,000</td><td>Needed</td></tr>
</table>

<table>
<tr><th>Project</th><th colspan="4">Project Description</th></tr>
<tr><td rowspan="6">S04B07/8E – Interceptor I03 Improvements</td><td colspan="4">This project will identify, design and construct facilities to manage and control the unregulated wet weather flow from areas tributary to Interceptor Segment I03. Previously two storage facilities were described; however, the location and number of facility is being evaluated. Major features of the facility include installation of storage, flow controls; self cleaning flush mechanisms, and remote sensors.</td></tr>
<tr><td colspan="4">Purpose</td></tr>
<tr><td colspan="4">The purpose of this project is help meet Ecology regulations by storing peak combined sewage flows in unregulated basins to increase the capacity in the interceptor to carry combined sewage from CSO basins.</td></tr>
<tr><td colspan="2">Construction Starts</td><td>Environmental</td><td>Design by</td></tr>
<tr><td colspan="2">2014</td><td>EA</td><td>PMO</td></tr>
<tr><td>Construction Budget</td><td>CM Budget</td><td>Design Budget</td><td>Property</td></tr>
<tr><td>$5,888,000</td><td>$883,000</td><td>$589,000</td><td>Needed</td></tr>
</table>

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

<table>
<tr><th>Project</th><th colspan="4">Project Description</th></tr>
<tr><td rowspan="6">S04B09C – CSO Basin 07 Improvements</td><td colspan="4">Separation and infiltration of stormwater has been further analyzed for CSO Basin 7. During 2011, the computer model will be modified to reflect installation of UIC compliant dry wells and resulting changes to storage requirements. The project will be constructed in two phases. The initial phase will install drywells in residential streets to infiltrate stormwater where possible. This will separate portions of the storm system from the sanitary sewer system. Based on the success rate of the installed drywells, the project will identify, design and construct a CSO storage facility located near Downriver Drive and Columbia Circle 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.</td></tr>
<tr><td colspan="4">Purpose</td></tr>
<tr><td colspan="4">The purpose of this project is to meet Ecology regulations to reduce the discharge of untreated sewage to the Spokane River by storing peak combined sewage flows while more intensively managing flow rates to the RPWRF.</td></tr>
<tr><td colspan="2">Construction Starts</td><td>Environmental</td><td>Design by</td></tr>
<tr><td colspan="2">2012 & 2015</td><td>EA</td><td>PMO</td></tr>
<tr><td>Construction Budget</td><td>CM Budget</td><td>Design Budget</td><td>Property</td></tr>
<tr><td>$1,191,000</td><td>$179,000</td><td>$90,000</td><td>Needed</td></tr>
</table>

<table>
<tr><th>Project</th><th colspan="4">Project Description</th></tr>
<tr><td rowspan="6">S04B11C – CSO Basin 12 Improvements</td><td colspan="4">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.</td></tr>
<tr><td colspan="4">Purpose</td></tr>
<tr><td colspan="4">The purpose of this project is to meet Ecology regulations to reduce the discharge of untreated sewage to the Spokane River by storing peak combined sewage flows while more intensively managing flow rates to the RPWRF.</td></tr>
<tr><td colspan="2">Construction Starts</td><td>Environmental</td><td>Design by</td></tr>
<tr><td colspan="2">2014</td><td>EA</td><td>PMO</td></tr>
<tr><td>Construction Budget</td><td>CM Budget</td><td>Design Budget</td><td>Property</td></tr>
<tr><td>$6,435,000</td><td>$965,000</td><td>$150,000</td><td>Needed</td></tr>
</table>

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

Project	Project Description			
S04B14/15E – Interceptor I04 Improvements	This project will identify, design and construct facilities to manage and control The un-regulated wet weather flow from areas tributary to Interceptor Segment I04. Previously two storage facilities were described; however, the location and number of facility is being evaluated. Major features of the facility include installation of storage, flow controls; self cleaning flush mechanisms, and remote sensors.			
	Purpose			
	The purpose of this project is help meet Ecology regulations by storing combined sewage flows in un-regulated basins to increase the capacity in the interceptor to carry combined sewage.			
	Construction Starts		**Environmental**	**Design by**
	2015		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$16,035,000	$2,405,000	$1,240,000	Needed

Project	Project Description			
S04B16C - Post Street Basin Improvements	This project will identify, design and construct a storage facility to manage and control the unregulated wet weather flow from Post Street. 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.			
	Purpose			
	The purpose of this project is help meet Ecology regulations by storing peak combined sewage flows in unregulated basins to increase the capacity in the interceptor to carry combined sewage from CSO basins.			
	Construction Starts		**Environmental**	**Design by**
	2016		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$1,256,000	$188,400	$125,600	Needed

Project	Project Description			
S04B18C - 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; self cleaning flush mechanisms; a new regulator and remote sensors.			
	Purpose			
	The purpose of this project is to meet Ecology regulations to reduce the discharge of untreated sewage to the Spokane River by storing peak combined sewage flows while more intensively managing flow rates to the RPWRF.			
	Construction Starts		**Environmental**	**Design by**
	2014		EA	TBD
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$1,203,000	$181,000	$120,000	Needed

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

<table>
<tr><th>Project</th><th colspan="4">Project Description</th></tr>
<tr><td rowspan="6">S04B19C - CSO Basin 23-2 Improvements</td><td colspan="4">Separation and infiltration of stormwater has been further analyzed for CSO Basin 23. During 2011, the computer model will be modified to reflect installation of UIC compliant dry wells. The storage requirements may be reduced. Construction will be in two phases. The initial phase will install UIC compliant drywells in residential streets infiltrate stormwater where possible. The second phase will identify, design and construct a CSO storage facility near Bridge Avenue and Ash 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.</td></tr>
<tr><td colspan="4">Purpose</td></tr>
<tr><td colspan="4">The purpose of this project is to meet Ecology regulations to reduce the discharge of untreated sewage to the Spokane River by storing peak combined sewage flows while more intensively managing flow rates to the RPWRF.</td></tr>
<tr><td colspan="2">Construction Starts</td><td>Environmental</td><td>Design by</td></tr>
<tr><td colspan="2">2012 & 2015</td><td>EA</td><td>PMO</td></tr>
<tr><td>Construction Budget</td><td>CM Budget</td><td>Design Budget</td><td>Property</td></tr>
<tr><td>$6,194,800</td><td>$929,200</td><td>$508,000</td><td>Needed</td></tr>
</table>

<table>
<tr><th>Project</th><th colspan="4">Project Description</th></tr>
<tr><td rowspan="6">S04B20C - CSO Basin 33-1 Improvements</td><td colspan="4">This project will identify, design and construct a CSO storage facility near 2nd Avenue and Hamilton Street to meet Department of Ecology regulations. Major features of the facility include installation of flow controls; self cleaning flush mechanisms; a new regulator and remote sensors. Formerly named CSO Basins 33a, b, c.</td></tr>
<tr><td colspan="4">Purpose</td></tr>
<tr><td colspan="4">The purpose of this project is to meet Ecology regulations to reduce the discharge of untreated sewage to the Spokane River by storing peak combined sewage flows while more intensively managing flow rates to the RPWRF.</td></tr>
<tr><td colspan="2">Construction Starts</td><td>Environmental</td><td>Design by</td></tr>
<tr><td colspan="2">2014</td><td>EA</td><td>PMO</td></tr>
<tr><td>Construction Budget</td><td>CM Budget</td><td>Design Budget</td><td>Property</td></tr>
<tr><td>$28,864,000</td><td>$4,329,600</td><td>$2,886,400</td><td>Needed</td></tr>
</table>

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

<table>
<tr><th>Project</th><th colspan="4">Project Description</th></tr>
<tr><td rowspan="6">S04B24C - CSO Basin 34-1 (Playfair) Improvements</td><td colspan="4">This project will identify, design and construct a CSO storage facility and pump station near Main Avenue and Altamont Street at the former Playfair site to meet Department of Ecology regulations. Major features of the facility include pumping into the interceptor inlet; installation of flow controls; self cleaning flush mechanisms; a new regulator and remote sensors.</td></tr>
<tr><td colspan="4">Purpose</td></tr>
<tr><td colspan="4">The purpose of this project is to meet Ecology regulations to reduce the discharge of untreated sewage to the Spokane River by storing peak combined sewage flows while more intensively managing flow rates to the RPWRF.</td></tr>
<tr><td colspan="2">Construction Starts</td><td>Environmental</td><td>Design by</td></tr>
<tr><td colspan="2">2014</td><td>EA</td><td>PMO</td></tr>
<tr><td>Construction Budget</td><td>CM Budget</td><td>Design Budget</td><td>Property</td></tr>
<tr><td>$28,416,800</td><td>$4,262,520</td><td>$2,841,680</td><td>Needed</td></tr>
</table>

<table>
<tr><th>Project</th><th colspan="4">Project Description</th></tr>
<tr><td rowspan="6">S05B01C - CSO Basin 6 Improvements</td><td colspan="4">Separation and infiltration of stormwater has been further analyzed for CSO Basin 6. During 2011, the computer model will be modified to reflect installation of UIC compliant dry wells and resulting changes to storage requirements. The project will be constructed in two phases. The initial phase will install the drywells in residential streets to collect and discharge stormwater where possible. Based on the success rate of the installed drywells, this project will also identify, design and construct a CSO storage facility near Northwest Boulevard and Kiernan Avenue to meet Department of Ecology regulations. Major features of the facility include installation of flow controls; self cleaning flush mechanisms; a new regulator and remote sensors.</td></tr>
<tr><td colspan="4">Purpose</td></tr>
<tr><td colspan="4">The purpose of this project is to meet Ecology regulations to reduce the discharge of untreated sewage to the Spokane River by storing peak combined sewage flows while more intensively managing flow rates to the RPWRF.</td></tr>
<tr><td colspan="2">Construction Starts</td><td>Environmental</td><td>Design by</td></tr>
<tr><td colspan="2">2012 & 2015</td><td>EA</td><td>PMO</td></tr>
<tr><td>Construction Budget</td><td>CM Budget</td><td>Design Budget</td><td>Property</td></tr>
<tr><td>$7,803,000</td><td>$1,170,000</td><td>$967,000</td><td>Needed</td></tr>
<tr><td rowspan="2">OUTSIDE FUNDING</td><td colspan="3">Source</td><td>Amount</td></tr>
<tr><td colspan="3">Public Works Trust Fund Loan (20 years at 0.50%)</td><td>$5,724,000</td></tr>
</table>

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

Project	Project Description			
S05B02C – CSO Basin 20 Improvements	This project will identify, design and construct a CSO storage facility near Scott Street and 43th Avenue to meet Department of Ecology regulations. Major features of the facility include installation of flow controls; self cleaning flush mechanisms; a new regulator and remote sensors.			
	Purpose			
	The purpose of this project is to meet Ecology regulations to reduce the discharge of untreated sewage to the Spokane River by storing peak combined sewage flows while more intensively managing flow rates to the RPWRF.			
	Construction Starts		**Environmental**	**Design by**
	2015		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$2,208,000	$331,200	$220,800	Needed

Project	Project Description			
S05B04C – CSO Basin 26 Improvements	This project will identify, design and construct the primary storage facility for CSO Basin 26 to meet Department of Ecology regulations. This facility will be located in the downtown area. Previously two storage facilities were described; however, the location and number of facility is being evaluated. Major features of the facility include installation of flow controls; self cleaning flush mechanisms; a new regulator and remote sensors.			
	Purpose			
	The purpose of this project is to meet Ecology regulations to reduce the discharge of untreated sewage to the Spokane River by storing peak combined sewage flows while more intensively managing flow rates to the RPWRF.			
	Construction Starts		**Environmental**	**Design by**
	2015		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$30,624,000	$4,593,600	$3,062,400	Needed

Project	Project Description			
S05B06C – CSO Basin 34-2 (Hartson)	This project will identify, design and construct a CSO storage facility near Harston Avenue and Altamont Street to meet Department of Ecology regulations. Major features of the facility include installation of flow controls; self cleaning flush mechanisms; a new regulator and remote sensors.			
	Purpose			
	The purpose of this project is to meet Ecology regulations to reduce the discharge of untreated sewage to the Spokane River by storing peak combined sewage flows while more intensively managing flow rates to the RPWRF.			
	Construction Starts		**Environmental**	**Design by**
	2012		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$13,800,000	$2,095,000	$276,000	Needed

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

Project	Project Description			
S05B07C – CSO Basin 34-3 (20th & Ray) Improvements	This project will identify, design and construct a CSO storage facility at 20th Avenue and Ray Street to meet Department of Ecology regulations. Major features of the facility include installation of flow controls; self cleaning flush mechanisms; a new regulator and remote sensors.			
	Purpose			
	The purpose of this project is to meet Ecology regulations to reduce the discharge of untreated sewage to the Spokane River by storing peak combined sewage flows while more intensively managing flow rates to the RPWRF.			
	Construction Starts		**Environmental**	**Design by**
	2012		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$9,322,000	$1,398,000	$785,000	Needed

Project	Project Description			
S06B04/5C – CSO Basin 24 Improvements	This project will identify, design and construct a storage facility for CSO Basin 24 and 25 to meet Department of Ecology regulations. This facility will be located in the downtown area. Previously two storage facilities were described; however, the location and number of facility is being evaluated. Major features of the facility include installation of flow controls; self cleaning flush mechanisms; a new regulator and remote sensors.			
	Purpose			
	The purpose of this project is to meet Ecology regulations to reduce the discharge of untreated sewage to the Spokane River by storing peak combined sewage flows while more intensively managing flow rates to the RPWRF.			
	Construction Starts		**Environmental**	**Design by**
	2015		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$30,392,000	$4,558,800	$3,039,200	Needed

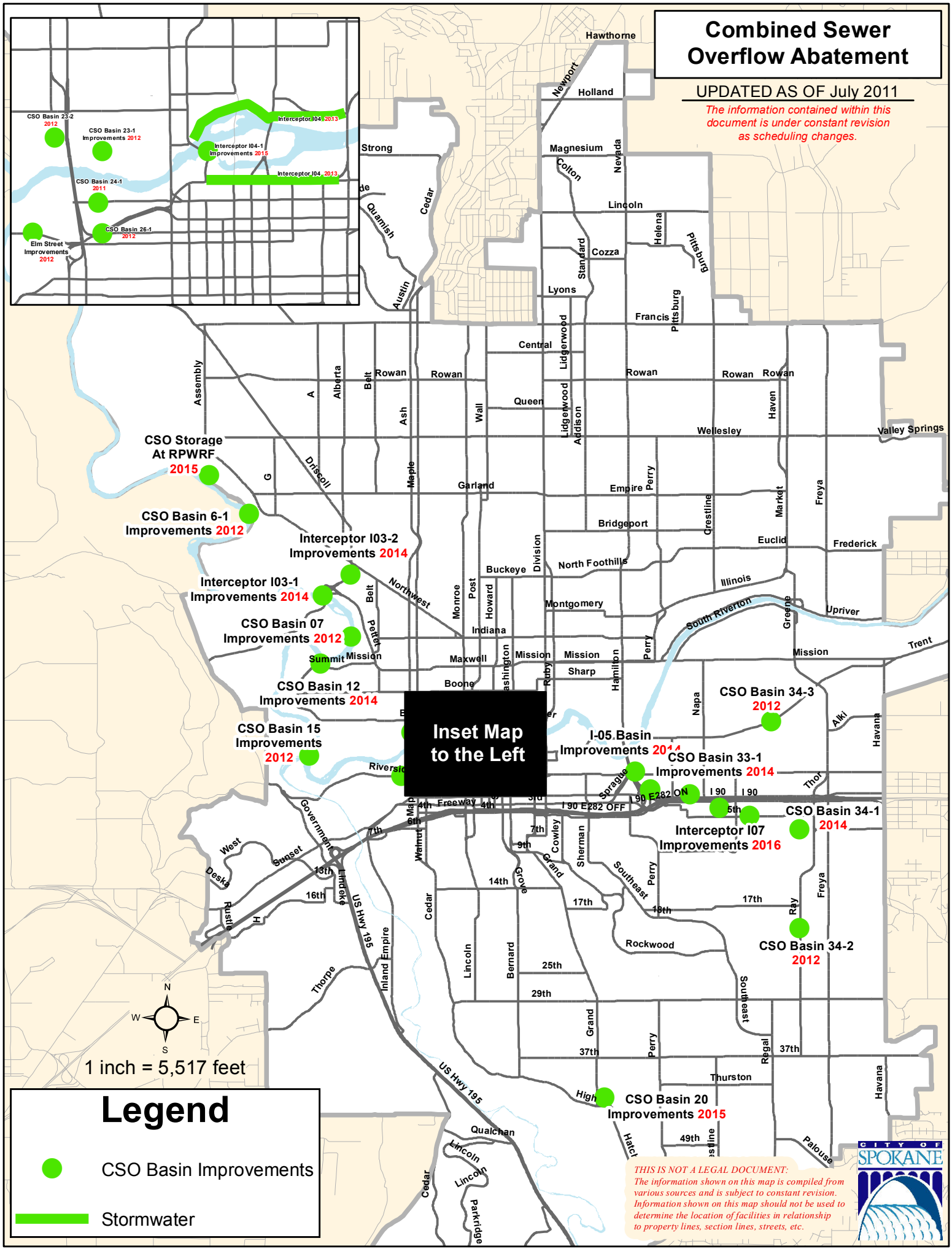
Project	Project Description			
S10B01C – CSO Storage at RPWRF	This project will identify, design and construct a CSO storage facility at the Riverside Park Water Reclamation Facility to meet Department of Ecology regulations. Major features of the facility include installation of flow controls; self cleaning flush mechanisms; a new regulator and remote sensors.			
	Purpose			
	The purpose of this project is to meet Ecology regulations to reduce the discharge of untreated sewage to the Spokane River by storing peak combined sewage flows while more intensively managing flow rates to the RPWRF.			
	Construction Starts		**Environmental**	**Design by**
	2016		CE	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$29,208,000	$4,381,200	$2,920,800	Acquired

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

Project	Project Description			
S11B01C – Interceptor I07 Basin Improvements	This project will identify, design and construct facilities to manage and control the unregulated wet weather flow from areas tributary to Interceptor Segment I07. Major features of the facility include installation of flow controls; self cleaning flush mechanisms, and remote sensors.			
	Purpose			
	The purpose of this project is to reduce the discharge of sewage to the Spokane River. The purpose of this project is help meet Ecology regulations by storing peak combined sewage flows to increase the capacity in the interceptor to carry combined sewage.			
	Construction Starts		**Environmental**	**Design by**
	2016		CE	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$5,856,000	$878,400	$585,600	Acquired

Project	Project Description			
S11B02 – Elm Street Improvements (CSO 22b)	This project will identify, design and construct facilities to manage and control the unregulated wet weather flow from areas tributary to the Elm Street Pump Station and modifications to the weir for CSO Basin 22b.			
	Purpose			
	The purpose of this project is to eliminate CSO 22b outfall.			
	Construction Starts		**Environmental**	**Design by**
	2013		CE	TBD
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$232,000	$34,800	$23,200	Acquired

Project	Project Description			
S11B03C – Interceptor I05 Basin Improvements	This project will identify, design and construct facilities to manage and control the unregulated wet weather flow from areas tributary to Interceptor Segment I-05. Major features of the facility include installation of flow controls, self cleaning flush mechanisms, and remote sensors.			
	Purpose			
	The purpose of this project is to reduce the discharge of sewage to the Spokane River. The purpose of this project is help meet Ecology regulations by storing peak combined sewage flows in unregulated basins to increase the capacity in the interceptor to carry combined sewage from CSO basins.			
	Construction Starts		**Environmental**	**Design by**
	2016		CE	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$120,000	$18,000	$12,000	Acquired


Combined Sewer Overflow Abatement
UPDATED AS OF July 2011
The information contained within this document is under constant revision as scheduling changes.
CSO Basin 23-2 2012
CSO Basin 23-1 Improvements 2012
CSO Basin 24-1 2011
CSO Basin 26-1 2012
Elm Street Improvements 2012
Interceptor I04 2013
Interceptor I04-1 Improvements 2015
Interceptor I04 2013
CSO Storage At RPWRF 2015
CSO Basin 6-1 Improvements 2012
Interceptor I03-2 Improvements 2014
Interceptor I03-1 Improvements 2014
CSO Basin 07 Improvements 2012
CSO Basin 12 Improvements 2014
CSO Basin 15 Improvements 2012
Inset Map to the Left
CSO Basin 34-3 2012
I-05 Basin Improvements 2014
CSO Basin 33-1 Improvements 2014
CSO Basin 34-1 2014
Interceptor I07 Improvements 2016
CSO Basin 34-2 2012
CSO Basin 20 Improvements 2015
Hawthorne
Holland
Strong
Magnesium
Lincoln
Cozza
Lyons
Francis
Central
Rowan
Queen
Wellesley
Valley Springs
Garland
Empire
Bridgeport
Euclid
Frederick
North Foothills
Buckeye
Illinois
Montgomery
Indiana
Maxwell
Mission
Sharp
Boone
Trent
Upriver
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Freeway
I 90 E282 ON
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I 90
Thor
Sprague
Napa
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Inland Empire
Thorpe
Cedar
Lincoln
Bernard
Grove
Walnut
Division
Monroe
Post
Howard
Wall
Ash
Maple
Driscoll
Assembly
Alberta
Belt
Northwest
Perry
Hamilton
Ruby
Greene
Market
Grestline
Haven
Addison
Lidgerwood
Standard
Pittsburg
Helena
Nevada
Colton
Newport
Quamish
Austin
13th
16th
25th
29th
37th
49th
Qualchan
Parkridge
N
W
E
S
1 inch = 5,517 feet
Legend
CSO Basin Improvements
Stormwater
THIS IS NOT A LEGAL DOCUMENT:
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CITY OF SPOKANE

TOTAL MAXIMUM DAILY LOAD (TMDL) COMPLIANCE

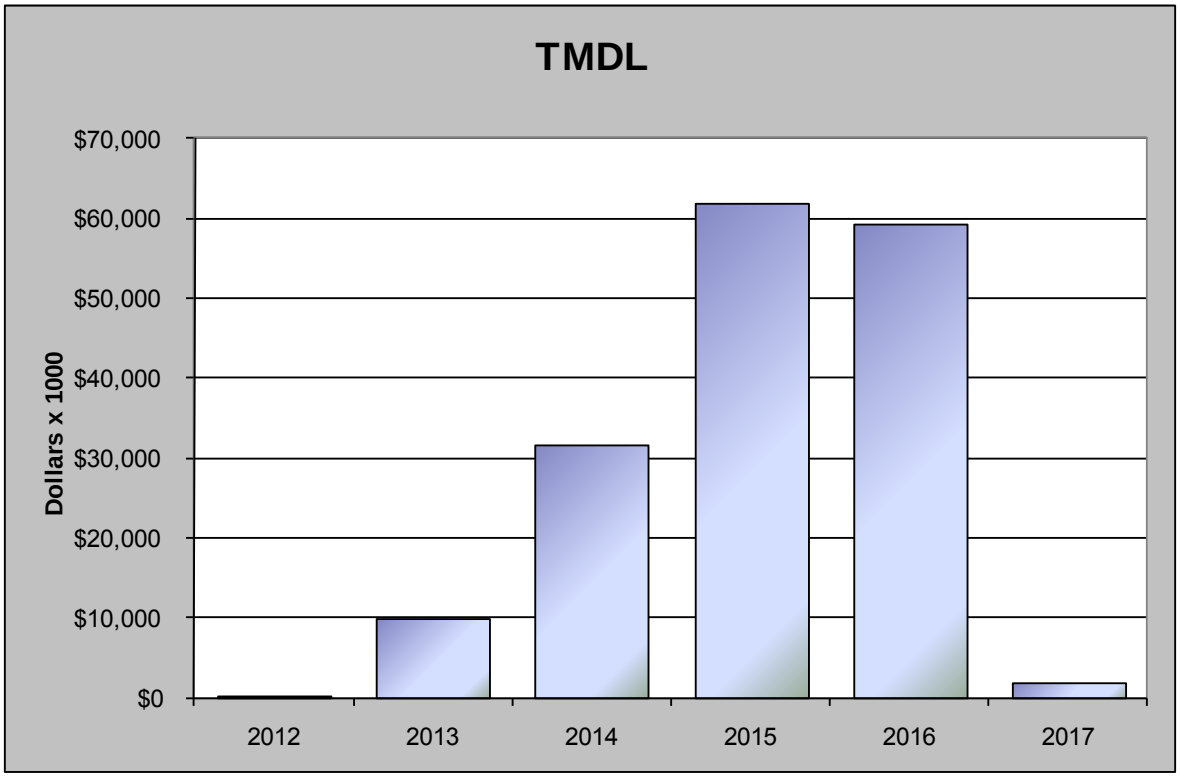
X. TMDL Compliance

The Spokane River and Lake Spokane do 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 nutrients affecting DO in the Spokane River and Lake Spokane. The NPDES permit for the RPWRF was issued on June 23, 2011 and included the implementation plan to meet the TMDL. The new permit will contain more stringent effluent limitations for phosphorus, ammonia and carbonaceous biological oxygen demand and will address reclaimed water use. Project costs in the table are shown in thousands of dollars.

TMDL Compliance Summary

thousands of dollars

Project	2012	2013	2014	2015	2016	2017	Total
S04L01C - Final Effluent Filter Pilot & Evaluation	250						**$250**
S07L02C - Next Level of Treatment Implementation		4,700	28,160	58,400	58,400	2,000	**$151,660**
S08L01C - Joe Albi/Fairmont Reclaimed Water Project					1,010		**$1,010**
S09L01C - West Plains Reclaimed Water Evaluation		280					**$280**
S08L03C - Reclaimed Water Distribution System		1,000	1,000	1,000			**$3,000**
S08L04C - Reclaimed Water Treatment		4,000	2,500	2,500			**$9,000**
Yearly Totals	**$250**	**$9,980**	**$31,660**	**$61,900**	**$59,410**	**$2,000**	**$165,200**


TMDL
$70,000
$60,000
$50,000
$40,000
$30,000
$20,000
$10,000
$0
Dollars x 1000
2012
2013
2014
2015
2016
2017

TMDL Compliance
Project Details-Individual Projects

Project	Project Description			
S04L01C - Final Effluent Filter Pilot & Evaluation	This project is a pilot study to determine the most suitable technology (or technologies) for seeking phosphorous removal in RPWRF effluent down to 50ug/l or lower per the State Department of Ecology's Dissolved Oxygen Total Maximum Daily Load (TMDL). Six pilot units will be tested over a two-year period, followed by a comprehensive pilot report.			
	Construction Starts		**Environmental**	**Design by**
	2008		CE	WWM
	Operational Cost	**CM Budget**	**Design Budget**	**Property**
	$6,800,000	--	--	Acquired

Project	Project Description			
S07L02C - Next Level of Treatment Implementation	This project consists of an engineering report, design and final construction of the final effluent filtration technology (or technologies) selected in the pilot project (S04L01) to seasonally remove phosphorus down to a seasonal average of 17.8 pounds per day (based on the draft NPDES permit). The filters will be installed to discharge higher quality effluent to the Spokane River. The engineering report concerning the final effluent filter will be submitted to the State Department of Ecology.			
	Purpose			
	This project will reduce the amount of phosphorus that currently discharges to the Spokane River.			
	Construction Starts		**Environmental**	**Design by**
	2015		EA	TBD
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$119,728,000	$17,959,000	$11,973,000	Acquired

Project	Project Description			
S08L01C - Joe Albi/Fairmont Reclaimed Water Project	This project will provide a pipeline to connect the Riverside Park Water Reclamation Facility to Fairmount Memorial Cemetery, Joe Albi Stadium, and Riverside State Park for reclaimed water service. This is a first step in providing reclaimed water for irrigation. Future projects will include storage and pumping capacity to deliver the reclaimed water through this pipeline.			
	Purpose			
	The purpose of this project is to reduce the amount of phosphorus that currently discharges to the Spokane River and to conserve sole-source Spokane-Rathdrum Aquifer water.			
	Construction Starts		**Environmental**	**Design by**
	2016		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$808,000	$121,200	$80,800	Right-of-way

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

Project	Project Description			
S09L01C – West Plains Reclaimed Water Evaluation	Fairchild Air Force Base draws its potable water from wells near the Spokane River. In the event that water is supplied to FAFB by the City's Water Department such that the existing pipeline will no longer be needed by FAFB, this project will evaluate the pipe for use in a City reclaimed water system and, if necessary, recommend design modification.			
	Purpose			
	The purpose of this project is to reduce the amount of phosphorus that currently discharges to the Spokane River and to conserve sole-source Spokane-Rathdrum Aquifer water.			
	Construction Starts		**Environmental**	**Design by**
	2013		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Construction Budget**
	--	--	$280,000	--

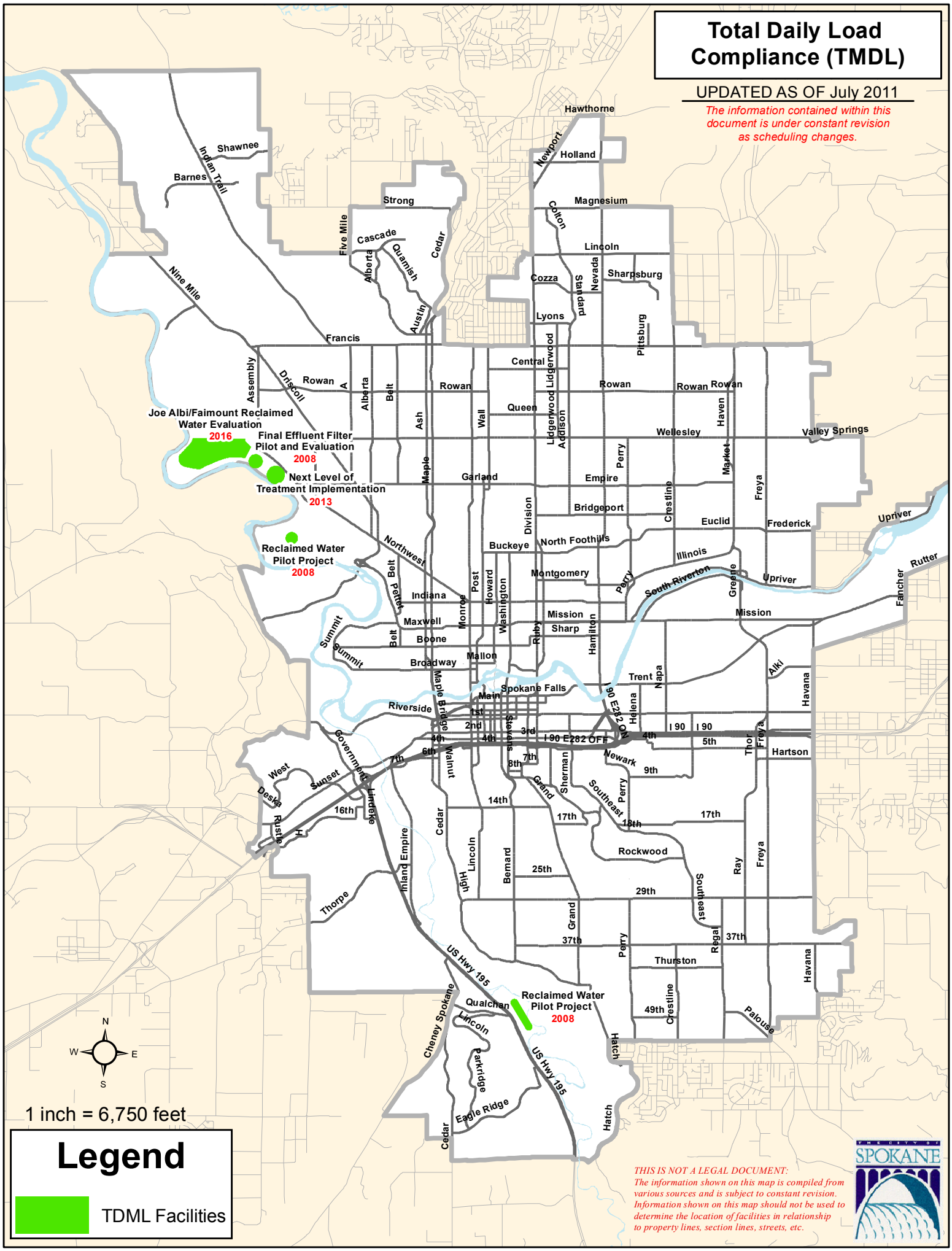
Project	Project Description			
S08L03C - Reclaimed Water Distribution	If a reclaimed water system is found feasible in the Reclaimed Water System Feasibility Study, this project will design and construct the recommended facilities.			
	Purpose			
	The purpose of this project is to reduce the amount of phosphorus that currently discharges to the Spokane River and to conserve sole-source Spokane-Rathdrum Aquifer water.			
	Construction Starts		**Environmental**	**Design by**
	2013		EA	Engineering Services
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$2,400,000	$360,000	$240,000	unknown

Project	Project Description			
S08L04C - Reclaimed Water Treatment Construction	This project constructs reclaimed water treatment facilities at a satellite location or Riverside Park Water Reclamation Facility. Based on the results of the pilot project (S07L01) to provide reclaimed water to golf course, treatment facilities may be installed pursuant to with Reclaimed Water System Feasibility Study.			
	Purpose			
	The purpose of this project is to reduce the amount of phosphorus that currently discharges to the Spokane River and to conserve sole-source Spokane-Rathdrum Aquifer water.			
	Construction Starts		**Environmental**	**Design by**
	2013		EA	TBD
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$7,200,000	$1,080,000	$720,000	unknown

Total Daily Load Compliance (TMDL)

UPDATED AS OF July 2011

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



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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 E based on priority of the work, physical sequence, locations and logistics, and to combine work of specialists for design efficiency. Project costs in the table are in thousands of dollars.

RPWRF Summary

thousands of dollars

Project	2012	2013	2014	2015	2016	2017	Total
PACKAGE A							
S02T03E - Primary Clarifier Odor Control	1,782						**$1,782**
S10T01C – Primary Skimming	343						**$343**
S10T02C - Secondary Effluent Piping	222						**$222**
			Total Package A	**$2,347**			
PACKAGE B							
S12T01E - Plant Standby Power Upgrade	236	442	185				**$863**
S04T03E - Primary Solids Pump Station Rehabilitation	217	407	170				**$794**
S07T02E - Digester Gas Compressor Room	1,076	2,016	841				**$3,933**
S07T04E - Co-Generation (Steam Turbines)	877	1,644	686				**$3,207**
S10T03E – Process Building Extension	1,257	2,356	983				**$4,596**
S10T07C – Gravity Belt Thickeners 5&6	611	1,144	478				**$2,233**
S11T03E- Digesters 4 and 5 Heat Exchangers	287	538	225				**$1,050**
S11T04E - Effluent Heat Recover	204	382	159				**$745**
S11T05E - Low Head Hydro Power Provisions	500	500					**$1,000**
			Total Package B	**$18,421**			

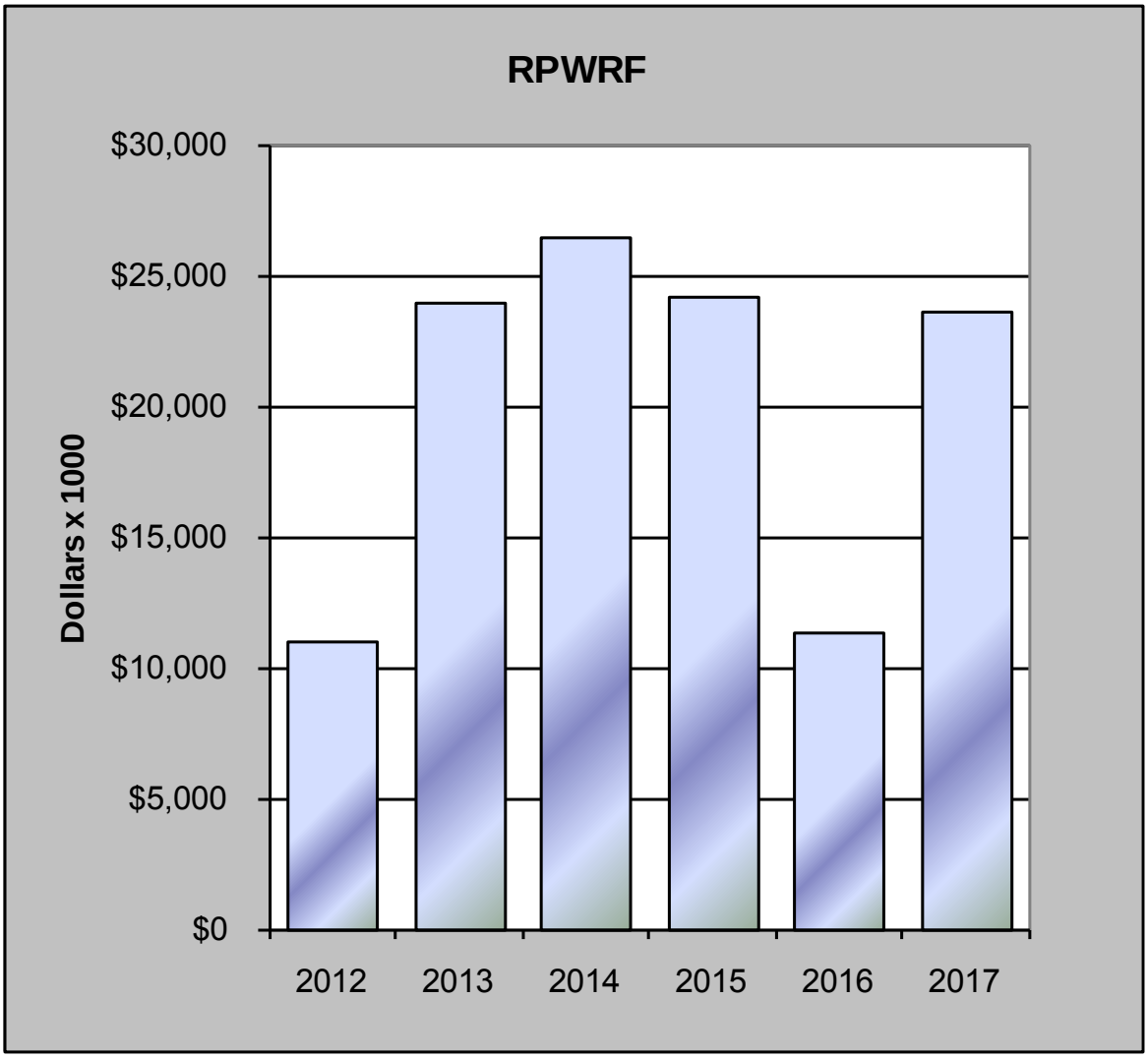
RPWRF Summary *(continued)*

thousands of dollars

PACKAGE C							
S09T01C-Egg-shaped Digester Facility #3	1,330	8,192	9,056	5,317			**$23,895**
S10T04E – Headworks Odor Control	228	1,404	1,553	912			**$4,097**
S11T06C - CEPT Facility	152	936	1,035	607			**$2,730**
				Total Package C	**$30,722**		
PACKAGE D							
S07T05E - New Blower No. 5		258	1,147	1,267	427		**$3,099**
S11T07E - New Primary Clarifier No. 5		586	2,606	2,880	970		**$7,042**
S11T08C - New Aeration Basin No. 5		1,172	5,213	5,759	1,940		**$14,084**
				Total Package D	**$24,225**		
PACKAGE E							
S10T06E- Aeration Basin 1 to 4 Modifications		343	874	6,123	6,735		**$14,075**
				Total Package E	**$14,075**		

RPWRF Summary

Project	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**Total**
NON-PACKAGED (STAND ALONE) PROJECTS							
S00P04C - RPWRF-PMO Administration and Management	1,693	1,620	1,334	1,333	1,277	1,200	**$8,457**
S00T13E - Disinfection System (UV Only) w/ Pilot						15,000	**$15,000**
S12T01E - Future Process Projects (TBD)						2,500	**$2,500**
S12T01C - Future Next Level of Treatment Coordination Projects (TBD)						5,000	**$5,000**
				Total Non-Packaged Projects	**$30,957**		
Yearly Totals	**$11,015**	**$23,940**	**$26,545**	**$24,198**	**$11,349**	**$23,700**	**$120,747**


RPWRF
$30,000
$25,000
$20,000
$15,000
$10,000
$5,000
$0
Dollars x 1000
2012
2013
2014
2015
2016
2017

RPWRF
Project Details-Individual Projects

Package A

Project	Project Description			
S02T03E - 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 carbon filter east of the primary clarifiers.			
	Purpose			
	The purpose of this project is to reduce odor issues associated with the plant.			
	Construction Starts		**Environmental**	**Design by**
	2010		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$7,063,200	$1,059,480	$706,320	Acquired

Project	Project Description			
S10T01C - Primary Skimming	The new skimming 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 project results in shorter pipes carrying skimmings fed by gravity. These changes will reduce the likelihood of clogging and associated maintenance costs.			
	Purpose			
	The purpose of this project is to upgrade facilities to meet NPDES permit discharge limits.			
	Construction Starts		**Environmental**	**Design by**
	2011		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Construction Budget**
	$1,180,000	$177,000	$343,000	Acquired

Project	Project Description			
S10T02C – Secondary Effluent Piping	The secondary effluent piping modifications will combine all the effluent piping from all the secondary clarifiers before entering the chlorine contact basin influent channel. The influent channel contains extra valves for future expansion to the Next Level of Treatment (i.e., phosphorus removal). This project needs to be built before the wet weather capacity is increased above 100 million gallons per day. This project facilitates use of the fifth secondary clarifier and provides more operational flexibility for disinfection. Having flexibility in operational procedures reduces maintenance and operations cost.			
	Purpose			
	The purpose of this project is to facilitate changes in the plant operations to meet NPDES permit discharge limits.			
	Construction Starts		**Environmental**	**Design by**
	2011		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Construction Budget**
	$880,000	$132,000	$88,000	Acquired

RPWRF
Project Details-Individual Projects *(continued)*

Package B

Project	Project Description			
S03T01E – Plant Standby Power Upgrade	This project upgrades the existing east end standby generator and installs new switches on the two Avista power feeds to allow remote switching in case of a power outage.			
	Purpose			
	This project provides new switches to meet reliability and redundancy requirements of the NPDES permit. The standby generator addresses life, safety, headworks and disinfection processes.			
	Construction Starts		**Environmental**	**Design by**
	2012		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$690,000	$104,000	$69,000	Acquired

Project	Project Description			
S04T03E - Primary Solids Pump Station Rehabilitation	This project replaces the primary clarifier sludge pumps that have been in service for over 25 years and are near the end of their useful life. New variable speed control drives will be installed to improve flow control for the downstream solids thickening processes. Installing new higher efficiency pumps will reduce operation and maintenance costs.			
	Purpose			
	The more efficient operation will improve ability to meet the NPDES permit discharge limits and reduce operation costs.			
	Construction Starts		**Environmental**	**Design by**
	2012		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$635,000	$96,000	$63,000	Acquired

Package B (continued)

Project	Project Description			
S07T02E - Digester Gas Compressor Room Upgrades	Once solids are removed from the wastewater, they must be treated to the standards for biosolids reuse. The solids at the RPWRF are pumped to egg shaped digesters and are digested. Solids digestion generates methane gas as a byproduct and the gas is collected and compressed for use either in heating 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 allow the safe collection of the methane gas and safe operation of the system.			
	Purpose			
	This project will increase the safety and efficiency of the methane collection system.			
	Construction Starts		**Environmental**	**Design by**
	2012		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$3,146,000	$472,000	$315,000	Acquired

Project	Project Description			
S07T04E - Co-Generation (Steam Turbines)	While most methane gas produced by the RPWRF digesters is burned to produce steam for process and space heating, excess gas is currently burned at a waste flare. Flaring usually occurs in the summer when steam heat demand is lowest. This project will burn excess methane gas in a new boiler to generate steam to power steam turbines to generate electricity for use at the RPWRF. The project will be housed in the existing boiler/co-generation facility.			
	Purpose			
	This project will generate electricity that can be used within the plant and will make the plant less dependent on electrical power from the grid. The purpose of this project is to reduce operation costs by generating power.			
	Construction Starts		**Environmental**	**Design by**
	2012		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$2,566,000	$384,000	$257,000	Acquired

Project	Project Description			
S10T03E – Process Building Extension	Large vehicle traffic at the process building has increased while available space has decreased due to construction, creating maneuvering and storage issues. This project extends the process building to control odors and increase the efficiency of operations, such as chemical deliveries and biosolids handling.			
	Purpose			
	This project will control odors and increase the efficiency of operations.			
	Construction Starts		**Environmental**	**Design by**
	2012		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$3,676,800	$551,200	$368,000	Acquired

RPWRF
Project Details-Individual Projects *(continued)*

Package B (continued)

Project	Project Description			
S10T07C –Gravity Belt Thickeners 5 & 6	Gravity Belt Thickeners (GBTs) reduce the volume of sludge prior to digestion by removing water. Two additional GBTs are needed to meet the increasing solids treatment demand.			
	Purpose			
	The purpose of this project is to improve sludge digestion to meet the NPDES permit requirements.			
	Construction Starts		**Environmental**	**Design by**
	2012		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$1,786,400	$267,600	$179,000	Acquired

Project	Project Description			
S11T03E - Digesters No. 4 and 5 Heat Exchangers	Digesters 4 and 5 will receive new heat exchangers that heat the contents of the digesters. This project will provide a complete redundant heating system to the existing steam heating system for the digestion process. The project needs to be built before more digesters are constructed for operational reliability.			
	Purpose			
	The construction of a complete redundant heating system will increase the reliability of the treatment process to meet the NPDES permit requirements.			
	Construction Starts		**Environmental**	**Design by**
	2012		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$840,000	$126,000	$84,000	Acquired

Project	Project Description			
S11T04E - Effluent Heat Recovery	This project includes a heat pump system to extract heat from Plant Water 3 and use it to heat a room or building. This project will meet sustainability goals.			
	Purpose			
	This project will improve the energy efficiency of the plant, which will reduce operation costs.			
	Construction Starts		**Environmental**	**Design by**
	2012		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$596,000	$89,000	$60,000	Acquired

Package B (continued)

<table>
<tr><th>Project</th><th colspan="4">Project Description</th></tr>
<tr><td rowspan="6">S11T05E - Low Head Hydro Power Provisions</td><td colspan="4">This project entails early provisions for an anticipated future hydropower turbine pump system used to generate power from the plant effluent flow stream and use it at the Water Reclamation Facility site. This project will meet sustainability goals. This project will evaluate current technology and initiate design and site prep.</td></tr>
<tr><td colspan="4">Purpose</td></tr>
<tr><td colspan="4">This fully implemented project will generate electricity to be used in the plant and will make the plant less reliant on power from the grid.</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>PMO</td></tr>
<tr><td>Construction Budget</td><td>CM Budget</td><td>Design Budget</td><td>Property</td></tr>
<tr><td>-</td><td>-</td><td>$1,000,000</td><td>Acquired</td></tr>
</table>

RPWRF
Project Details-Individual Projects *(continued)*

Package C

Project	Project Description			
S09T01C - Egg-shaped Digester Facility #3	The project will design and construct one additional 2.8 million gallon egg shaped digester and integrate it into the digester gallery for operation.			
	Purpose			
	This project will enhance operations, accommodate increased solids from the Next Level of Treatment, and provide redundancy to meet NPDES permit requirements.			
	Construction Starts		**Environmental**	**Construction Starts**
	2013		EA	2014
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$19,180,000	$3,385,000	$1,330,000	Acquired

Project	Project Description			
S10T04E-Headworks Odor Control	This project will reduce the odor emitted from the headworks building via ducting, fans and a scrubber.			
	Purpose			
	The purpose of this project is to reduce odor issues associated with the plant.			
	Construction Starts		**Environmental**	**Design by**
	2013		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$3,278,000	$491,000	$328,000	Acquired

Project	Project Description			
S11T06C - CEPT Facility	This project includes a Chemically Enhanced Primary Treatment facility housing a pumping and chemical storage system used to deliver alum and polymer into the wastewater flow stream to remove some phosphorus in the primary clarifiers. CEPT will improve phosphorus removal and enable the activated sludge treatment process to accommodate increased loading from growth and from Next Level of Treatment. The facility will also provide additional maintenance garage space.			
	Purpose			
	The purpose of this project is to allow more efficient operation, and provide for more phosphorus removal relating to both Next Level of Treatment and growth.			
	Construction Starts		**Environmental**	**Construction Starts**
	2013		EA	2014
	Construction Budget	**CM Budget**	**Construction Budget**	**Property**
	$2,184,000	$328,400	$218,000	Acquired

Package D

Project	Project Description			
S07T05E - Blower No. 5	The secondary treatment process requires large blowers to provide oxygen to the organisms that treat wastewater. The new blower, ductwork, and electrical and control equipment will be housed within the existing blower building. The existing blower system is nearing capacity; and a new blower is required.			
	Purpose			
	The new blower is necessary to meet NPDES Permit requirements and for efficient operation of the treatment process.			
	Construction Starts		**Environmental**	**Design by**
	2014		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$2,479,000	$372,000	$248,000	Acquired

Project	Project Description			
S11T07E - Primary Clarifier No. 5	This project includes a primary clarifier, solids pumping systems, yard piping and flow splitting for primary treatment. Primary clarifier No. 5 needs to be built before Next Level of Treatment.			
	Purpose			
	This project will provide redundancy in the primary treatment system to help remove phosphorus and will allow increased storm flow through primary and secondary treatment, reducing wet weather impacts at RPWRF.			
	Construction Starts		**Environmental**	**Design by**
	2014		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$5,634,000	$845,000	$563,000	Acquired

	Project Description			
S11T08C - Aeration Basin No. 5	This project includes a new aeration basin with associated yard piping and equipment. Aeration Basin No. 5 needs to be built before the Next Level of Treatment.			
	Purpose			
	This project will provide additional treatment capacity to meet NDPES permit limits.			
	Construction Starts		**Environmental**	**Design by**
	2014		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$11,267,000	$1,690,000	$1,127,000	Acquired

Project Details-Individual Projects *(continued)*

Package E

Project	Project Description			
S10T06E – Aeration Basin 1 to 4 Modifications	The project will add baffles and process improvements to create a plug-flow regime and increase the efficiency in the four existing rectangular aeration basins.			
	Purpose			
	This project will increase treatment plant efficiency to meet NDPES permit requirements.			
	Construction Starts		**Environmental**	**Design by**
	2015		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$11,267,000	$1,690,000	$1,127,000	Acquired

Non-Packaged (Stand Alone) Projects

Project	Project Description			
S00P04C - RPWRF-PMO Administration and Management	"PMO" stands for Project Management Office, and it includes program administration, management, and planning for Water Quality Improvement Program upgrades 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.			
	Purpose			
	PMO planning efforts guide the implementation of the facility improvements including odor control, permitting, aesthetics, treatment processes, and plant-wide infrastructure.			
	Start Year	**Use**	**Environmental**	**Design by**
	2011	Design	--	--
	Budget			
	$8,457,000			

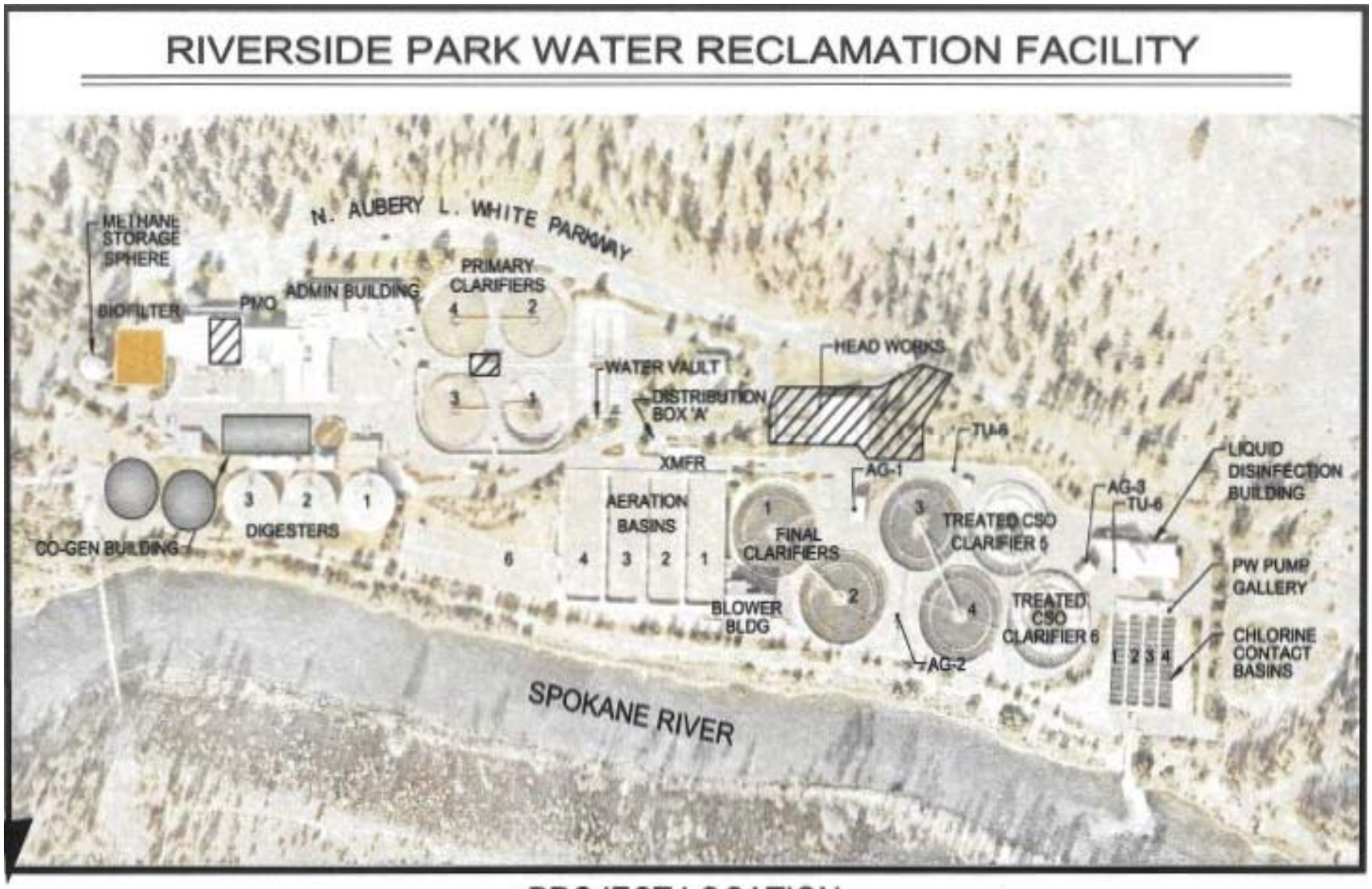
Project Details-Individual Projects *(continued)*

Non-Packaged (Stand Alone) Projects (continued)

Project	Project Description			
S00T13E – Disinfection System (UV Only) w/Pilot	Ultraviolet (UV) disinfection is a non-chemical method that damages DNA and RNA of bacteria and viruses, which stops them from reproducing. Since UV is not a chemical agent, byproducts are not generated and the wastewater has a greater reuse potential. Currently the City uses a liquid chlorine disinfection system. If the pilot is successful, it will be the basis of the UV system design.			
	Purpose			
	This project will develop a pilot to determine the cost effectiveness of using UV for disinfection.			
	Construction Starts		**Environmental**	**Design by**
	2017		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
	$12,000,000	$1,800,000	$1,200,000	Acquired

Project	Project Description			
S12T01E – Future Process Projects (TBD)	After the completion of Phase 2 projects, the treatment process will be evaluated to determine upgrades or modifications that may be required for more efficient operation or to meet NPDES Permit requirements. While the specific projects have not yet been identified, this item is a placeholder for this work that is anticipated to be needed in the future.			
	Purpose			
	The purpose of this project is to allow more efficient operation and to meet NPDES Permit requirements.			
	Construction Starts		**Environmental**	**Design by**
	2017		EA	PMO
	Construction Budget	**CM Budget**	**Design Budget**	**Property**
			$2,500,000	Acquired

Project	Project Description			
S12T01E – Future Next Level of Treatment Coordination Projects (TBD)	Construction of the Next Level of Treatment is scheduled to be completed by 2018. The other parts of the treatment process at RPWRF may need modification or upgrade to meet the final effluent filtration system requirements. While the specific projects have not yet been identified, this item is a placeholder for anticipated future needs.			
	Purpose			
	This project will modify the treatment process to meet NPDES Permit requirements to reduce the amount of phosphorus that currently discharges to the Spokane River.			
	Start Year	**Use**	**Environmental**	**Design by**
	2017	Design	--	--
	Budget			
	$5,000,000			



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	Project Description			
S04C01 - Strategic Infrastructure Planning Study	The 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.			
	Start Year	**Project Duration**	**Annual Budget**	**Total Budget**
	2011	2 years	--	600

S00P01 - Communications and Education	This project provides for public communications and education regarding the City's CSO and the MS4 systems, and it includes the City's internet-based overflow notice system. Communication efforts include 344-FISH signs & reporting telephone number, educational fairs, Channel 5 programs, and curb-side signs. The Communications and Education Project is a State Department of Ecology's NPDES Permit requirements for the City.			
	Start Year	**Project Duration**	**Annual Budget**	**Total Budget**
	2011	On-going	50	--

S02A01 - Technical Consulting	Although most of the studies, design and planning for the 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.			
	Start Year	**Project Duration**	**Annual Budget**	**Total Budget**
	2011	6	150	--

S02M05 - 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 are 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.			
	Start Year	**Project Duration**	**Annual Budget**	**Total Budget**
	2011	2	--	1,200

Planning and Support *(continued)*

Project	Project Description			
S02S01 - 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 propose a sewer system to serve identified septic tanks properties.			
	Start Year	**Project Duration**	**Annual Budget**	**Total Budget**
	2015	On-going	20	--

S03D02 - 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.			
	Start Year	**Project Duration**	**Annual Budget**	**Total Budget**
	2014	2	--	100

S04C02 - 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).			
	Start Year	**Project Duration**	**Annual Budget**	**Total Budget**
	2013	1	--	100

S05D02 - Second Drainage-Conservation Area Master Plan	This project consists of the technical studies and assessments for a second regional drainage and conservation area facility for additional areas in the City.			
	Start Year	**Project Duration**	**Annual Budget**	**Total Budget**
	2016	2	--	500

S07A01 - Wastewater Facility Plan Update	The City is required to update its Wastewater Facility Plan every five years. The next update work will begin in 2011.			
	Start Year	**Project Duration**	**Annual Budget**	**Total Budget**
	2011	1	--	350

S08C02 - 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 completion of these facets, effectiveness will be evaluated.			
	Start Year	**Project Duration**	**Annual Budget**	**Total Budget**
	2013	5	100	500

Planning and Support *(continued)*

Project	Project Description			
S08L02 - 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.			
	Start Year	**Project Duration**	**Annual Budget**	**Total Budget**
	2013	3	--	600

S08L05 - Water Conservation Program	The City Wastewater and City Water Departments together are funding the Water Stewardship program to promote water conservation.			
	Start Year	**Project Duration**	**Annual Budget**	**Total Budget**
	2011	6	250	--

S08L06 - 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. Spokane County has taken the lead in this project. The City will coordinate all non-point reduction activities with the County.			
	Start Year	**Project Duration**	**Annual Budget**	**Total Budget**
	2011	6	500	--

S11B06 - 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 after the NPDES permit is renewal.			
	Start Year	**Project Duration**	**Annual Budget**	**Total Budget**
	2012	2	--	--

S12S01 – UIC Upgrade Identification	Underground Injection Control regulations were created as part of the Safe Drinking Water Act. Washington State Code 173-218 WAC establishes rules and guidelines for UIC. A schedule of upgrades necessary to meet UIC rules is required by 2012. This project would identify the upgrades, estimate costs and establish a schedule.			
	Start Year	**Project Duration**	**Annual Budget**	**Total Budget**
	2012	5	--	--

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XII. Abbreviations and Acronyms

CBD – Central Business District
CE – Categorically Exempt
CEPT – Chemically Enhanced Primary Treatment
CFU – Capital Facilities and Utilities
CIPP – Cured In Place Pipe
CSO – Combined Sewer Overflow
DO – Dissolved Oxygen
EA – Environmental Assessment
ES – Environmentally Significant
FAFB – Fairchild Air Force Base
GBT – Gravity Belt Thickeners
GEM – Groundwater Evaluation and Mitigation
GMA – Growth Management Act
HDPE – High Density Polyethylene
LID – Low Impact Development
MS4 -- Municipal Separated Storm Sewer System
NPDES – National Pollution Discharge Elimination System
NS – Non-Significant
NSRP – Nonpoint Source Reduction Program
PMO – Project Management Office
PVC – Polyvinyl Chloride
PWTF – Public Works Trust Fund
RPWRF – Riverside Park Water Reclamation Facility
SIA – Spokane International Airport
SIP – Strategic Infrastructure Plan
SLURP – Summit Low Impact Urban Retrofit Project
STEP – Septic Tank Elimination Program
SURGE – Spokane Urban Runoff Greenways Ecosystem Projects
TBD – To Be Determined
TMDL – Total Maximum Daily Load
TREE – Tree Runoff Evaluation Experiment
UGA – Urban Growth Area
WQIP – Water Quality Improvement Program
WQS – Water Quality Standards
WWM – Wastewater Management