



Colorado Springs Stormwater Program

STORMWATER PROGRAM IMPLEMENTATION PLAN

DRAFT DOCUMENT – Revised July 2016

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[NOTE TO THE READER]

The document you are reading is a draft version of the Stormwater Program Implementation Plan prepared by the City of Colorado Springs, Colorado (City). This draft is dated July 2016.

This planning document continues to undergo internal review within the City. It is subject to change.

This draft document is nevertheless at a point in its development at which the citizens of Colorado Springs and other interested parties should be aware of directions the City intends to take with its stormwater program. These are matters of obvious public health, safety, environmental protection, and financial importance and the City wants to be open and transparent.

The City of Colorado Springs welcomes your comments and suggestions on this draft document. Please direct them to Mr. Richard Mulledy, the City's Stormwater Division Manager. You can send your comments and suggestions by email to: rmulledy@springsgov.com, or you can send a letter to: Richard Mulledy, Stormwater Division Manager, City of Colorado Springs, 30 S. Nevada Avenue, Suite 401, Colorado Springs, CO 80901.

Please be aware that the City continues discussions with federal and state authorities interested in this stormwater program. These discussions may lead to changes to the draft document you are reading. Please also be aware that the stormwater Capital Program described in this document continues to undergo discussion with the City's downstream neighbors and other interested parties. This program, too, may change from the description in this draft.

Thank you for your interest in the City of Colorado Springs stormwater program.

Revision Log

Date	Version	Revision History	Author
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1.0 EXECUTIVE SUMMARY

Introduction and Background

The City of Colorado Springs (City) conducted a comprehensive review of its stormwater management program. The City has recognized that its stormwater program requires improvement due in recent years to funding limitations, staff turnover, a poor economy, and the need to respond to multiple natural disasters. The City has performed this review at this time to determine how to effectively invest additional financial resources in stormwater management.

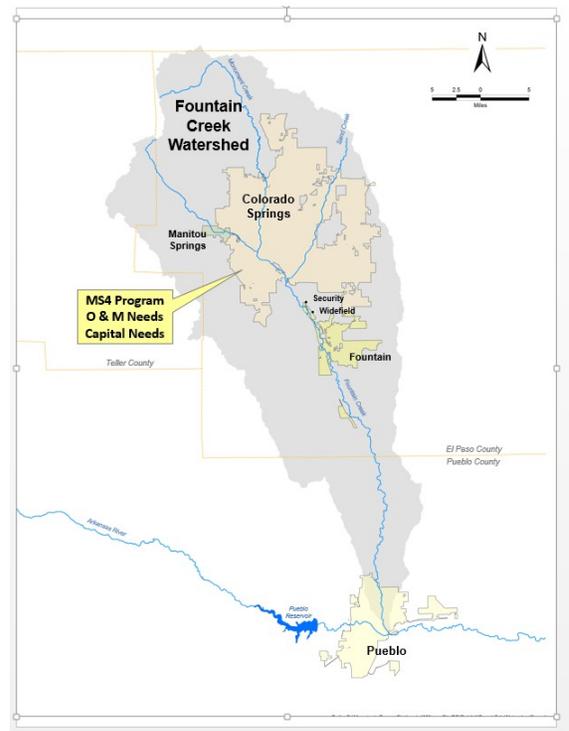
The City of Colorado Springs is located in El Paso County and the Fountain Creek watershed. It covers 195 square miles, making Colorado Springs the most extensive municipality in Colorado. With this extensive area comes a significant stormwater challenge, as the City manages runoff from 32 different subwatersheds within the city limits.

The City has comprehensively reviewed its stormwater program. The purpose of this review is to address the City's own needs and to respond to concerns expressed by regulators and neighbors.

The result is this Stormwater Program Implementation Plan report, which outlines the City's plans to reorganize and consolidate stormwater activities, hire and train additional staff, purchase equipment, implement construction projects, and pursue program improvement goals over the next two years and beyond.

The City's Municipal Separate Storm Sewer System (MS4) Program, Operations and Maintenance (O&M) Program, Capital Projects Program, and Public Education and Outreach Program have all been examined and are addressed in this report. Key findings are as follows:

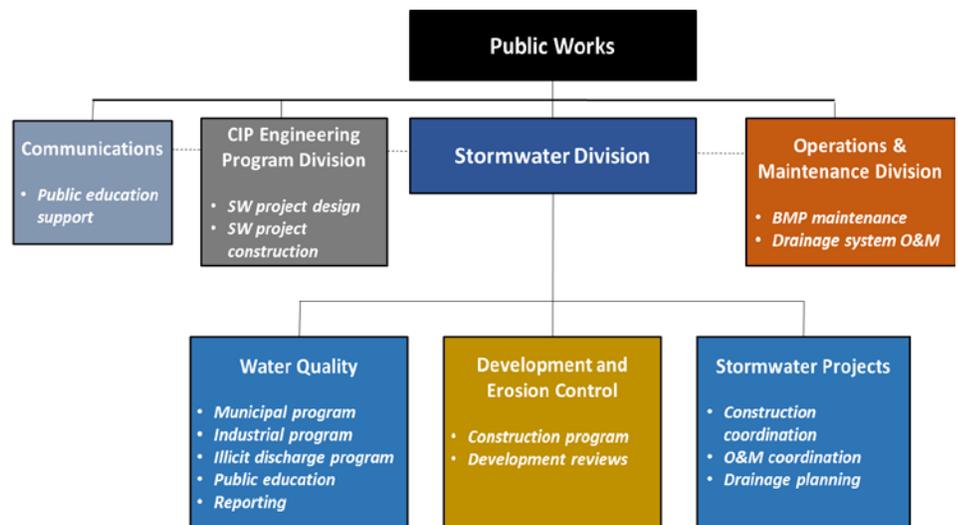
- The Colorado Springs stormwater program has been underfunded and understaffed in recent years compared to similar communities and to the Colorado Springs Stormwater Enterprise that operated from 2006 to 2009.
- MS4 programs, strategies, and tools developed in the past — the City's written framework for its program — are good. The difficulty is that resources have been insufficient to execute them fully.
- Drainage system O&M and infrastructure improvements are important needs.
- Past capital project budgeting did not account for cost escalation due to inflation; therefore, costs of future projects were sometimes underestimated in previous plans and discussions within the City and with neighboring communities.
- Public education and outreach efforts have lacked strategic focus to establish stormwater management as an important community benefit.



Location of Colorado Springs in the Fountain Creek watershed

Stormwater Program Reorganization

The City has created a separate Stormwater Division within its Public Works Department. City staff dedicated to stormwater work, as expressed in full time equivalents (FTEs), will increase from 28 FTEs to 65 FTEs between late 2015 and the end of 2017. Most significantly, included in the additional staff are a Stormwater Division Manager, three senior section leaders, and a substantial number of inspectors and engineers. Some positions will be filled by re-purposing current staff, but most will be new hires.

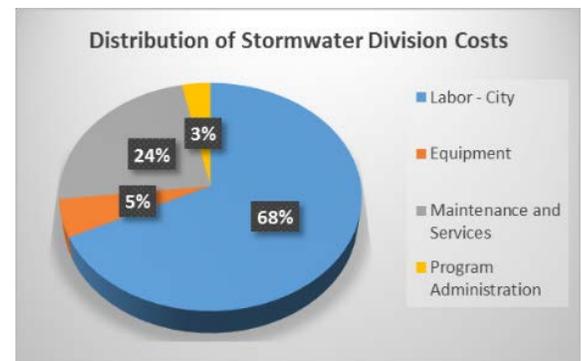
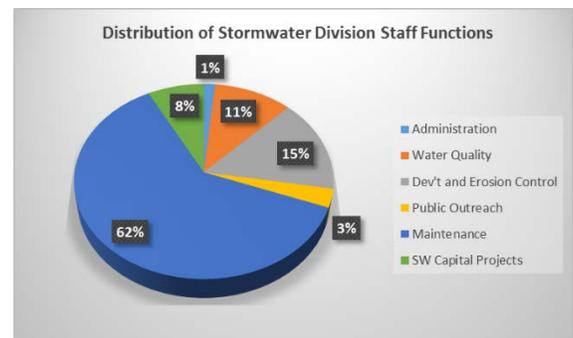


MS4 and O&M Program Improvement

The City will undertake the following key actions to improve the MS4 and O&M programs:

- Increase FTEs dedicated to stormwater MS4 and O&M Program (including capital project delivery) from 28 in December 2015 to 65 in December 2017. As of June 2016 40 positions have been filled.
- Increase the annual City budget specifically for MS4 compliance from approximately \$3 million to an average of approximately \$5.6 million in 2016 and \$6.9 million in 2017. Additional MS4 activities, supported by separate parts of the City budget, will continue to be performed by the O&M Division (street sweeping - \$918,000/yr), the fire department (spill response - \$225,000/yr), and Colorado Springs Utilities (CSU) (inspection and maintenance of stream crossings - \$375,000/yr). Total MS4 compliance spending annually will be about \$7.1 million in 2016 under the improvement plan.
- Emphasize enforcement for construction site operators, industrial site owners, and private developers that are not in compliance.
- Increase emphasis on inspector staffing, training, record-keeping, and prioritization of O&M activities.
- Implement over 150 actions in the next two years to improve processes, tools, and strategies for meeting the terms of the MS4 permit.

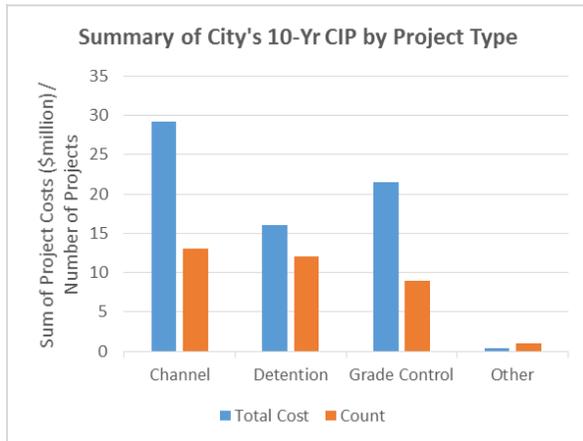
Location of new Stormwater Division in the reorganized Public Works Department



About two-thirds of the Stormwater Division budget will go toward staff salaries and benefits when fully staffed, and about two-thirds of staff positions will be focused on drainage system maintenance

- Improve lines of authority and responsibility and narrow the span of control for program implementation by creating the Stormwater Division.

Capital Program Improvement



Most planned capital projects address channel stability or capacity problems, provide detention storage, or stabilize eroding channels

A comprehensive list of stormwater capital projects has been developed for implementation over the next 20 years. This list is referred to as the stormwater Capital Improvements Project (CIP) List. The projects in the CIP List are prioritized based on benefits provided within the City and to downstream neighbors of Colorado Springs. The City worked closely with Wright Water Engineers (representing Pueblo County) in prioritizing the CIP. A total of 71 projects were considered in detail, with 37 projects included in the first 10-years of the 20-year CIP List. Similar numbers of channel improvement, detention basin, and channel grade control projects are included on the CIP List, but channel improvement projects involve the largest capital investment.

In parallel with the City's stormwater capital program efforts, CSU has an ongoing effort to construct stormwater projects to protect CSU infrastructure that crosses stream channels and floodplains. CSU's Sanitary Sewer Creek Crossing Program implements capital projects with a total average cost of approximately \$3 million annually. CSU and City stormwater staff will closely coordinate their efforts to provide maximum benefit from these efforts to meet overall stormwater program objectives.

Public Outreach and Communication

The City reviewed its public education and outreach strategies and programs related to the requirements of the MS4 permit, the need to reach out to the local regulated community, and the City's desire to promote the benefits of improved stormwater management to its citizens. Strategies and tactics were identified for an overall communication strategy, public education (e.g., website and hotline upgrades, stakeholder inventories), public outreach (e.g., school programs, festivals, media outreach, brochures, social media), and public involvement related to implementation of capital projects.

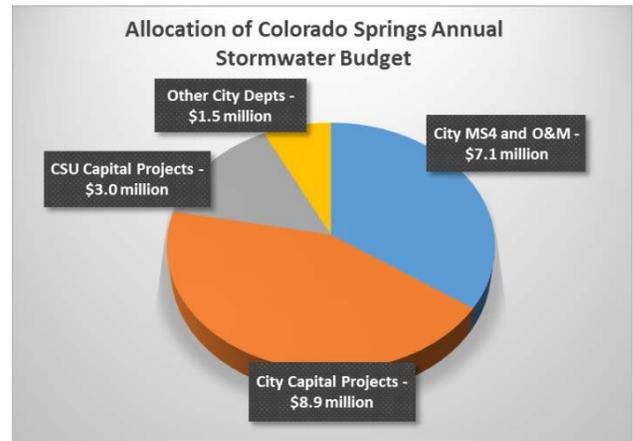
Budget

The City has committed to spend an average of \$20 million per year on its stormwater program (core MS4 requirements, O&M, and capital projects) for 20 years beginning in 2016. This commitment includes an average of \$3 million per year by CSU through its Sanitary Sewer Creek Crossing Program that provides stormwater system benefits. In addition, other City departments have an annual budget of about \$1.5 million for stormwater related activities that are part of MS4 permit compliance such as street sweeping and spill response. City and CSU budgets will be escalated to keep up with inflation with a total commitment of \$460 million to be spent between 2016 and 2035.

With the MS4 Program and O&M requiring an average of \$7.8 million per year when the Stormwater Division is fully staffed, an average of \$9.2 million per year remains for capital projects (not including the CSU Sanitary Sewer Creek Crossing Program). At this level of funding, approximately 37 capital projects can be completed in 10 years, including ongoing FEMA grant-funded projects and a \$1.5 million per year allocation for emergency projects.

Implementation Plan

Beginning in late 2015 and continuing in 2016 and 2017, the City will use the Stormwater Program Implementation Plan as its roadmap for revitalizing its stormwater infrastructure and operations. The City has hired a new Stormwater Division Manager, is preparing for other new hires, and has organized a new and improved Stormwater Division. Criticisms in EPA and State of Colorado inspection reports are being addressed, and the O&M practices for the City are being expanded and improved. Eight capital projects will immediately move into design and construction during 2016.



Allocation of \$20.5 million annual stormwater budget (\$19 million dedicated and \$1.5 million in other departments) when Stormwater Division is fully staffed

2.0 INTRODUCTION AND BACKGROUND

2.1 Purpose

The City of Colorado Springs (City) is committing to comprehensive management of its stormwater system. The City has recognized that its stormwater program requires improvement due in recent years to funding limitations, staff turnover, a poor economy, and the need to respond to multiple natural disasters.

As a result, the City has performed a detailed review of its stormwater program, including appropriate functions, internal organization, budget requirements, and staff and equipment needs. This review has covered the areas of stormwater permit compliance, operation and maintenance (O&M), capital projects, and public education and outreach.

The City has performed this review at this time to determine how to effectively invest additional financial resources in stormwater management. In addition, this review coincides with the need to respond to recent assessments of the stormwater permit program by the Environmental Protection Agency (EPA) and Colorado Department of Public Health and Environment (CDPHE) and ongoing discussions with downstream neighboring communities on the need for capital projects to reduce effects of urbanization on runoff quantity and quality.

2.2 Study Area

The City of Colorado Springs lies within El Paso County and the Fountain Creek watershed, upstream of the cities of Fountain and Pueblo (see **Figure 2-1**). The City is the most populous municipality in southern Colorado, supporting a population of about 416,000 in 2015. Effective stormwater management is important to the City. Because the City is located in the upstream portion of the Fountain Creek watershed, effective stormwater management is also important to its downstream neighbors.

The City covers 195 square miles, making it the most extensive municipality in Colorado. With this extensive area comes a significant stormwater challenge, as the City manages runoff from 32 different drainage basins within the city limits.

2.3 Documentation of City's Stormwater Assessment

The City of Colorado Springs has developed this plan to improve its stormwater program. This stormwater program consists of two key components--the ongoing stormwater system operation, including Municipal Separate Storm Sewer System (MS4) permit activities (MS4 Program), and implementation of capital improvement projects for the stormwater system (Capital Program). The results of the City's stormwater planning efforts are contained in two reports:

- MS4 Program Improvement Plan Report (attached as **Appendix A**)
- Capital Program Delivery Plan Report (attached as **Appendix B**)

In addition, the City performed an assessment of its public education and outreach needs relative to MS4 permit compliance and its desire to improve the public's understanding of the benefits of stormwater management. The results of this review are presented in the Public Education and Outreach Program Report in **Appendix C**.

This Stormwater Program Implementation Plan report consolidates and summarizes the findings from the MS4, Capital Project, and Public Outreach assessments. A draft Program Management Plan (PMP) is being prepared as part of the Capital Program Delivery Plan. It contains detailed guidelines for implementing capital projects. The draft Program Management Plan is bound as a separate volume.

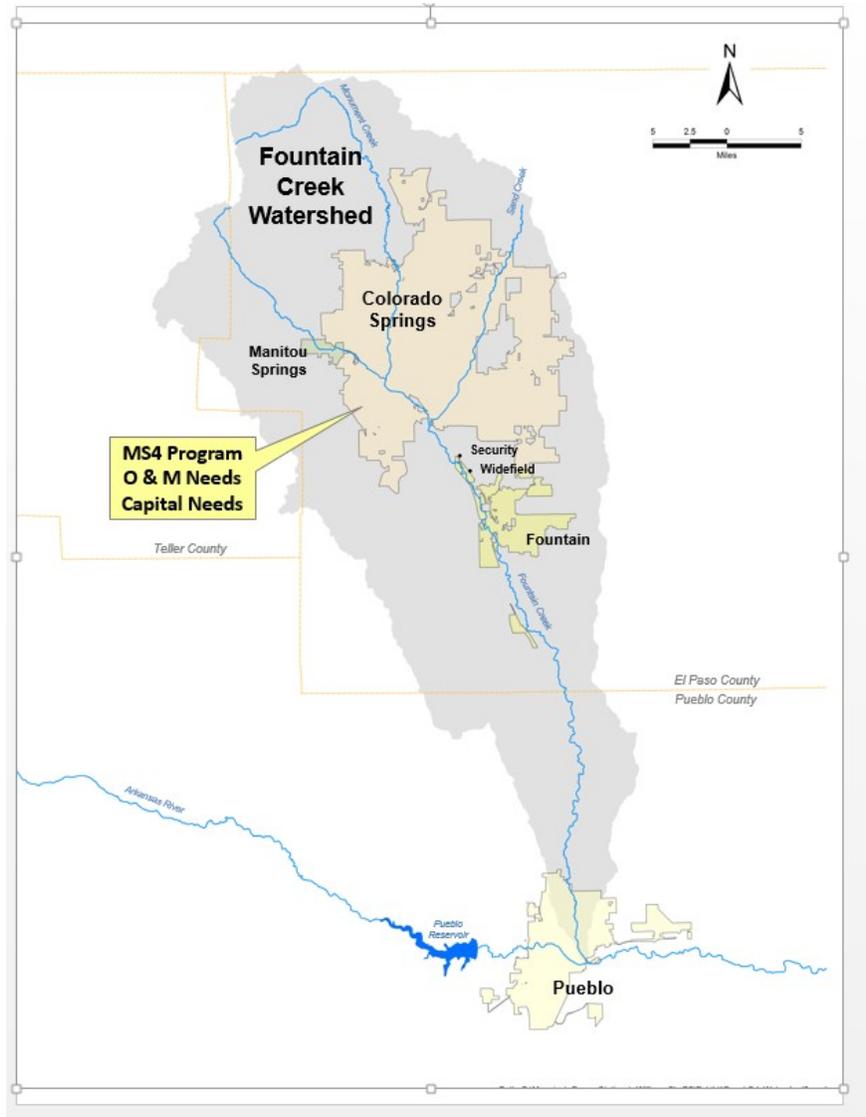


Figure 2-1. Location of Colorado Springs and the Fountain Creek watershed

2.4 Recent History of Stormwater Management in Colorado Springs

The City’s overall stormwater program has evolved over time in response to changes in local conditions and priorities. **Figure 2-2** is a timeline of key milestones in the City’s stormwater program history over the past 20 years. The following milestones are notable in this stormwater program assessment.

- Colorado’s Taxpayer Bill of Rights (TABOR), passed in 1992, provides limits on the authority of governments to raise money through new taxes and on the amount of increased revenue governments can spend. TABOR, combined with a fiscally conservative electorate Colorado Springs, limits the amount of money the City can spend on public works programs like the MS4 Program.
- The Colorado Springs Stormwater Enterprise (SWENT) was formed by the City in 2005 and operated from 2007 to 2009, when it was dissolved in response to a public election. The SWENT performed many of the MS4 Program activities – others remained the responsibility of other City departments – as well as implementing stormwater capital projects. SWENT was funded by a dedicated stormwater fee. After Colorado Springs voters passed an amendment that resulted in termination of SWENT in 2009, all

stormwater management functions returned to the City Public Works Department and other departments and financial obligations returned to the City's General Fund. After that time, funding and staff levels were cut back significantly.

- The prolonged recession that began in the late 2000s significantly affected City revenues and its ability to fund public works programs and maintain staffing levels.
- Natural disasters, such as the Waldo Canyon Fire in 2012 and the September 2013 floods, required City stormwater staff to focus on disaster response, including application for mitigation grants and administration of the projects funded by those grants. These natural disasters required significant expenditures by the City.
- EPA performed an audit of the City's MS4 Program in 2013 and a follow-up inspection in 2015, and asserted deficiencies in the way the Program was being implemented.
- A City-funded Stormwater Needs Assessment report created in 2013 identified a list of over \$535 million in stormwater infrastructure that could be completed in the City.
- The City adopted a new Drainage Criteria Manual (DCM) in 2014 that included a section on stormwater quality policies and design of best management practices (BMPs). The DCM includes a policy that post-development runoff cannot exceed pre-development runoff conditions.
- In November 2014, an effort to create a new regional stormwater authority, including Colorado Springs, El Paso County, and other smaller communities in El Paso County, was rejected by the voters.
- In January 2015, recognizing that additional resources were needed to adequately address current stormwater problems and capital projects, Colorado Springs City Council expressed support for allocating \$16 million per year for 10 years to the stormwater program, and Colorado Springs Utilities (CSU) expressed support for another \$3 million per year (as part of CSU's stream crossing program) for a total of \$19 million per year.
- In April 2016, the City, CSU and Pueblo County signed an Inter-Governmental Agreement (IGA) committing spending for stormwater infrastructure, maintenance and education programs in the amount of \$460 million over the next 20 years (contingent on annual appropriations) to improve the City's stormwater system.

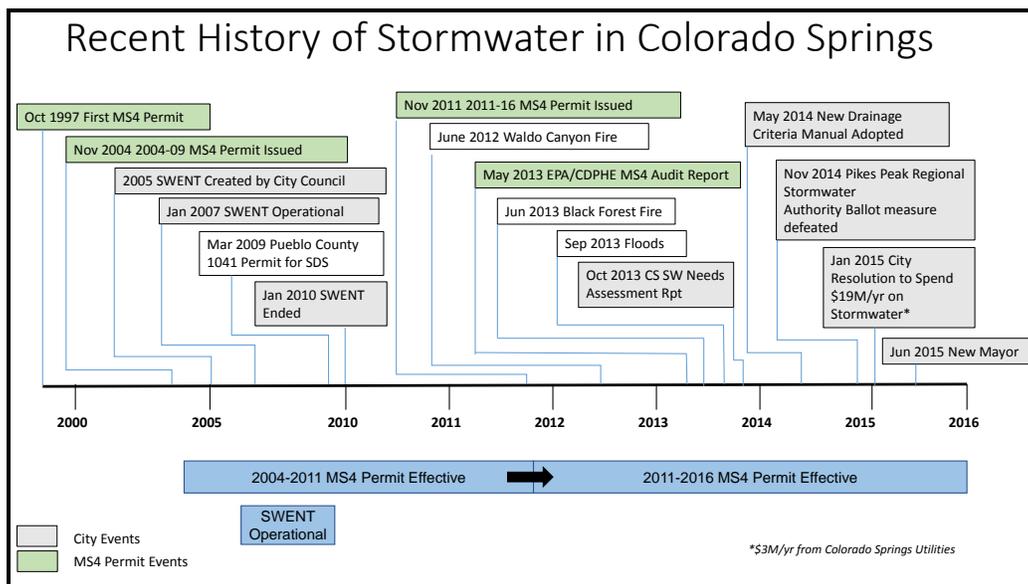


Figure 2-2. Colorado Springs Stormwater Timeline

3.0 STORMWATER PROGRAM ORGANIZATIONAL CHANGES

3.1 New Organizational Structure

The overall stormwater program consists of three primary functions:

- O&M of current drainage and water quality infrastructure
- Design and construction of new stormwater capital projects to address flooding, erosion, and water quality concerns
- Management of activities required by the MS4 permit

Until late in 2015, these three functions were performed by three separate groups within the City Public Works Department. O&M was performed by the Streets Division; capital projects were delivered by the Capital Improvement Program Engineering Program Division; and MS4 activities were managed by a small team in City Engineering.

The City has formed a new Stormwater Division to consolidate most core functions for MS4 permit compliance. The Public Works organization chart with the new Stormwater Division is shown in **Figure 3-1**. The previous Streets Division has been renamed the Operation and Maintenance Division to more accurately reflect its function. Delivery of stormwater capital projects will continue to be the responsibility of the Capital Improvement Program Engineering Program Division.

This reorganization is underway. Stormwater permit compliance activities will be reorganized under three groups:

- Water Quality
- Development and Erosion Control
- Stormwater Projects

The groups' functions are shown in **Figure 3-2**. The Water Quality group is responsible for implementing the municipal, residential, commercial/industrial, illicit discharge, monitoring, and public education BMP activities. The Development and Erosion Control group is responsible for implementing the construction program, including development submittal review and construction site inspections. The Stormwater Projects group is responsible for coordinating O&M and capital project delivery being performed in other divisions and for stormwater management planning

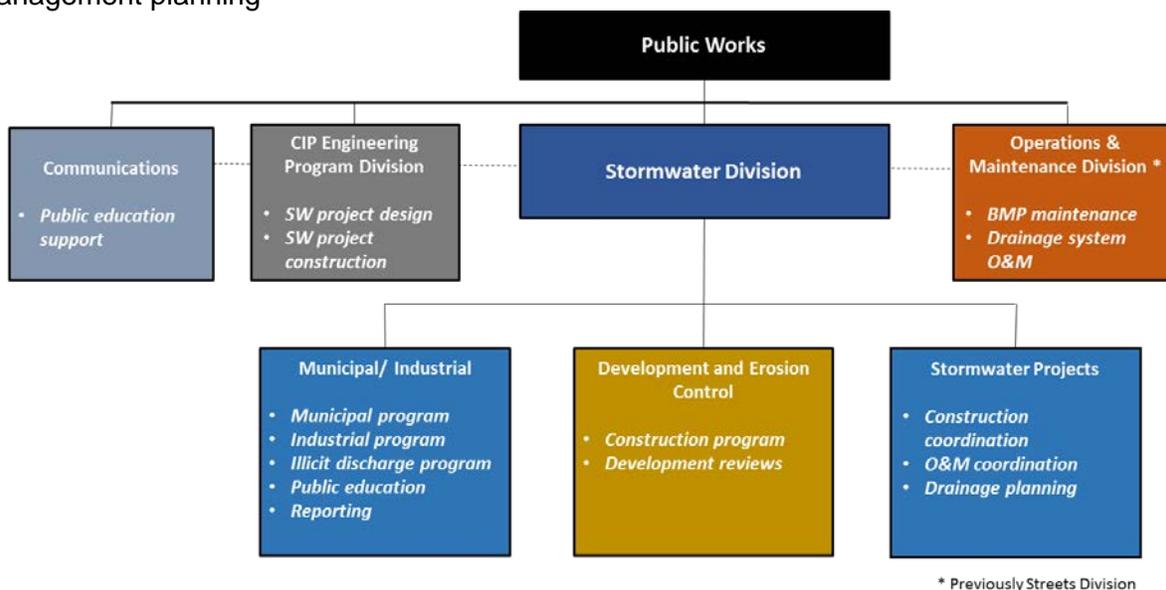


Figure 3-1. New Stormwater Division and Other Public Works Divisions

Water Quality	Development & Erosion Control	Stormwater Projects	Administration
<ul style="list-style-type: none"> - Municipal Facility BMP implementation - Municipal BMP inspections - Industrial Inspections - Industrial Enforcement - Residential / Commercial BMPs - Private BMP Inspections - Private BMP Enforcement - Spill response program - Stormwater monitoring program - Training for SW Division inspectors and reviewers - Training for other departments - Tracking and Reporting - Public Outreach and Communications 	<ul style="list-style-type: none"> - Post-Development BMPs <ul style="list-style-type: none"> - <i>Plan Reviews & Approvals</i> - <i>Construction Inspections</i> - <i>Enforcement</i> - Construction Activities <ul style="list-style-type: none"> - <i>Plan Reviews & Approvals</i> - <i>Inspections</i> - <i>Enforcement</i> - Tracking and Reporting 	<ul style="list-style-type: none"> - Maintain Design Standards - Management, of Stormwater CIP Design and Construction - Stormwater Planning <ul style="list-style-type: none"> - <i>Master Planning</i> - <i>Drainage Basin Planning Studies</i> - <i>Watershed Planning Studies</i> - Project Prioritization - Management of Municipal Facility BMP and Drainage System O&M Inspections - Management of Municipal Facility BMP and Drainage System O&M field work 	<ul style="list-style-type: none"> - Program Admin - Inter-Department Coordination - Reporting to CDPHE

Figure 3-2. Stormwater Division Group Functions

3.2 Staffing Changes and Additions

Implementation of the planned MS4 Program and Capital Delivery Program improvements will require additional staff resources. The City’s current stormwater program (as of January 2016) is supported by 28 full- time equivalents (FTEs). The improved program will require approximately 65 FTEs. Review of other communities showed that a staff of about 50-70 FTEs is typical for a city the size of Colorado Springs (see **Appendix A**).

Figure 3-3 depicts the distribution of stormwater program staff according to their primary function. **Table 3-1** lists staff positions by their primary function in the stormwater program. **Figure 3-4** shows the distribution of stormwater staff positions between the Stormwater Division, Operation and Maintenance Division, and Capital Improvement Program Engineering Program Division.

As shown in **Figure 3-4**, the City will dedicate eight members of the street sweeping group to the stormwater program. These crew members will be cross-trained with the Operation and Maintenance Division so they can assist with drainage maintenance when needed. The City may also add one FTE to its Communications group to support public outreach and involvement activities associated with capital projects and overall stormwater messaging in the community.

Table 3-1. Stormwater Staff Aligned with Primary Stormwater Components

MS4 Program Component	Estimated FTEs Needed
Administration (Managers)	1
Water Quality (Com/Res, Public Outreach, IDDE, Industrial, and Municipal Programs)	5 + 6 shared inspectors with Development and Erosion Control
Stormwater Projects	4
Development and Erosion Control (Construction, New Development and Redevelopment Programs)	4 + 6 shared inspectors with Municipal & Industrial
Stormwater Operations & Maintenance	40
Stormwater Capital Projects	5
Communications	0.25
Total	65

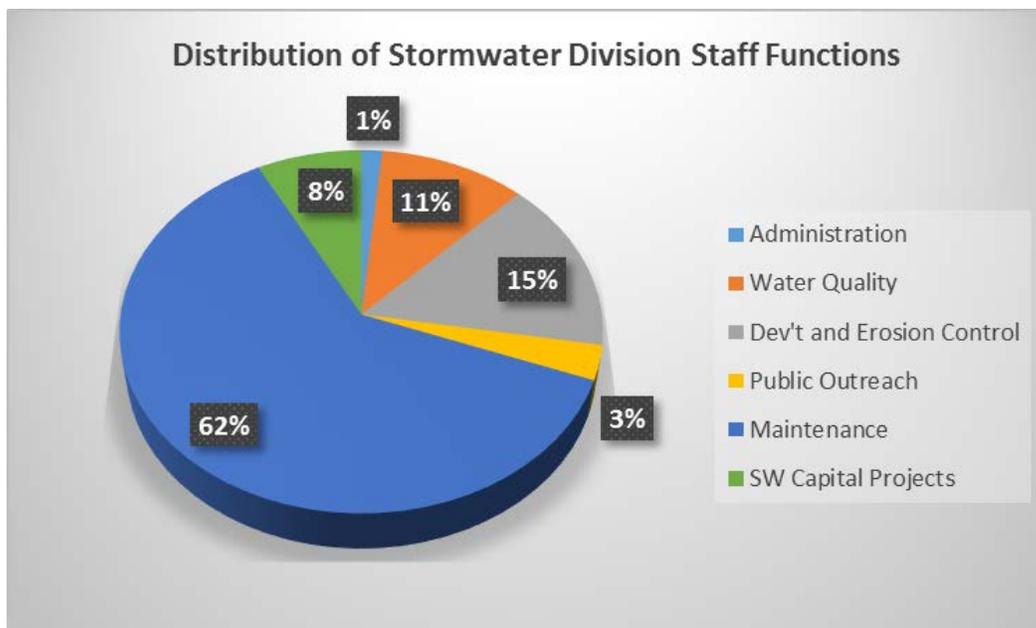


Figure 3-3. Distribution of Stormwater Division Staff by Primary Function

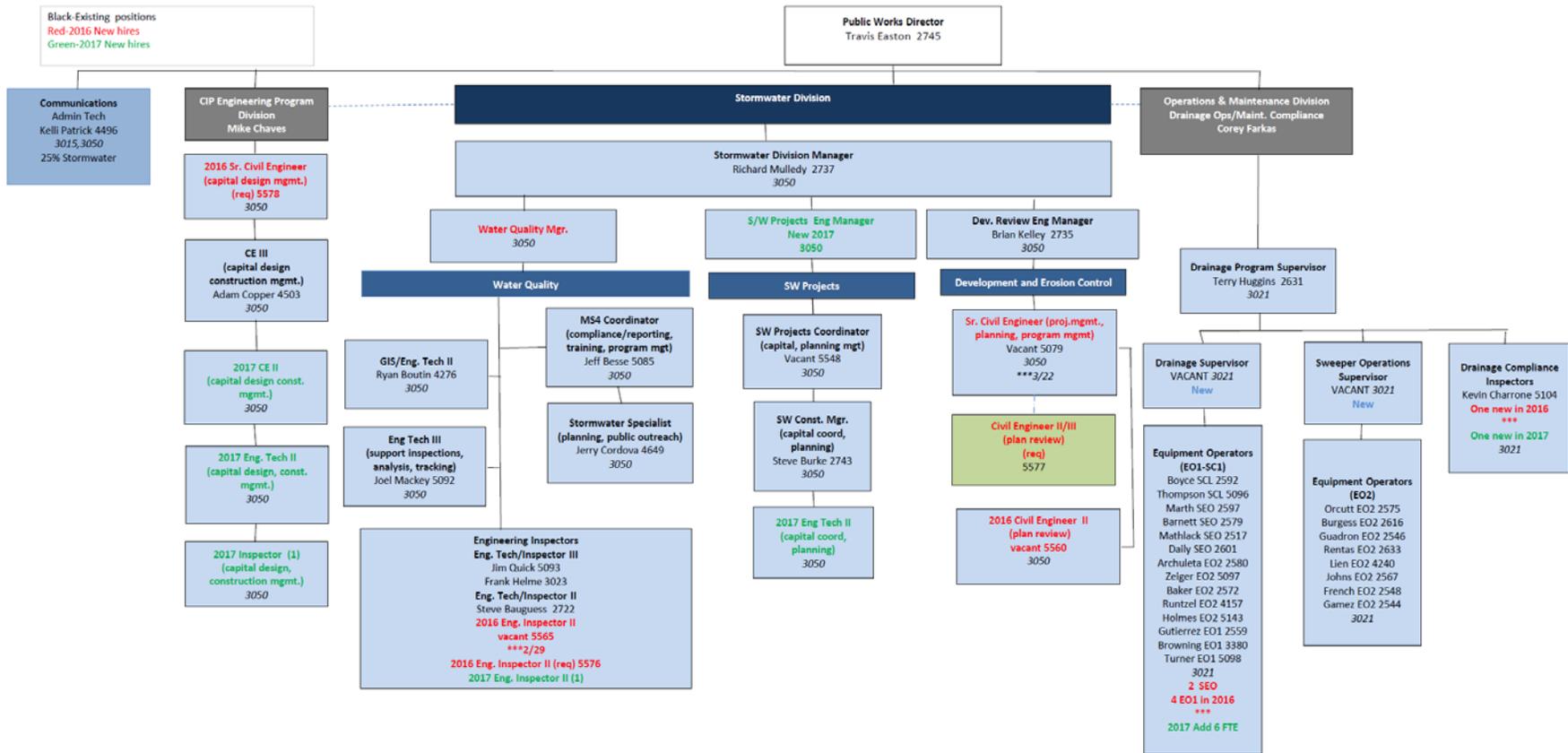


Figure 3-4. Stormwater Staff Organization Chart

The City began hiring by adding two inspectors in late 2015, and has currently (June 2016) filled 40 positions. An increase in stormwater resources from 30 FTEs to 65 FTEs cannot be accomplished immediately. The City plans to transition from the current to the proposed staff over two years. The following factors will be considered in the transition period:

- A key position that was filled in early 2016 is the Stormwater Division Manager. This individual brings immediate credibility to the program and will be directly involved in making future key hires and organizational decisions. Other key hires in 2016 have included a Stormwater Projects Coordinator, Senior Civil Engineer, Civil Review Engineer, and a Stormwater Specialist.
- The City will add staff over a period of two years to ensure that the hiring process is not overwhelmed, adequate training and supervision is in place, people with the appropriate skill sets are identified, and the budget impacts are appropriately managed. **Table 3-2** shows the phased staff increases planned for 2016 and 2017.
- To accelerate upgrading of the MS4 and capital programs, the City may consider staff augmentation options for accessing additional resources for capital project delivery on an immediate but temporary basis. Under this option, staff augmentation using outside contractors would be phased out as new employees are hired.
- The City may also consider entering into a shared services agreement with CSU whereby CSU could provide capital project delivery support or other services to the City, thereby increasing efficiency and controlling costs.

Table 3-2. Phased Staff Additions for Augmenting Stormwater Division Program

Positions to be Filled in 2016	Positions to be Filled in 2017
Stormwater Division Manager	Department Managers (2) – Water Quality and Stormwater Projects Engineering
Stormwater Projects Coordinator	Civil Engineer II (PE) for Capital Improvement Program Engineering
Stormwater Specialist	Engineering Tech II (PE or EIT) for Capital Improvement Program Engineering
Senior Civil Engineer (PE) for Development and Erosion Control	Engineering Tech II (PE or EIT) for Stormwater Projects
Civil Engineer II & III (PE) for Development and Erosion Control	Engineering Inspector II
Senior Civil Engineer (PE) for Capital Improvement Program Engineering	Engineering Tech III (PE or EIT) for Municipal & Industrial
2 Engineering Inspectors II	Drainage Inspector
Drainage Inspector	6 Equipment Operators
6 Equipment Operators	

4.0 MS4 PROGRAM IMPROVEMENT

The City's MS4 Program was developed to protect public health, safety, and the environment by complying with the conditions of the MS4 permit issued to the City by CDPHE. The MS4 permit requires the City to implement best management practices (BMPs) to minimize the effect of urban runoff on water quality. The MS4 Program addresses residential/commercial development, industrial sites, construction sites, municipal operations facilities, and illicit discharges through reviews, inspections, enforcement, and education and outreach.

The MS4 Program Improvement Plan was based on the identification of areas of improvement by City staff and outside consultants (MWH and Ben Urbonas of Urban Watersheds, LLC), comparison of the City program with other similar communities with MS4 permits, review of EPA and State audits of the City's program in 2013 and 2015, and anticipated changes to permit conditions when the City's MS4 permit is reissued in 2016. Recent program challenges are primarily due to the reduction in funding and staffing and reorganizations that have occurred since the City's Stormwater Enterprise was dissolved in 2009.

The City's goal is to have an MS4 Program with the following attributes:

- Compliant program – assures full compliance with MS4 permit conditions
- Sustainable program – has long-term sustainability in terms of financing and staffing
- Proactive program – anticipates changes in MS4 and other environmental program regulations
- Beneficial program – protects and enhances water quality within the watershed
- Cost-effective program – exploits efficiencies and balances MS4 needs with capital project needs

The City's review of its stormwater program found that in general, the plans and processes currently in place are compliant with the requirements of the MS4 permit. The difficulties in recent years (since dissolution of the Stormwater Enterprise) have largely been due to lack of financial and staff resources. As described in the previous section on organization and staffing and the following section on budget, the City is aggressively addressing these areas.

The City's review found opportunities to improve the components of its MS4 Program by enhancing training, tightening enforcement, improving documentation, expanding maintenance, and addressing other specific program needs. Based on its review, the City will implement the following key improvements to its MS4 Program (see **Figure 4-1**):

- A Stormwater Management Plan will be prepared to describe the strategies, activities, BMPs, and resources used to address the MS4 permit requirements.
- Inspections of construction sites, industrial sites, municipal operations facilities, public BMPs, and waterways will be more rigorous and performed by dedicated stormwater inspectors who will receive frequent training.
- Enforcement actions will be more vigorously pursued as appropriate, and supported by the City Attorney's Office and City leaders.
- Documentation and record-keeping will be improved.
- Stormwater Division staff will train City and CSU field personnel to observe and report potential illicit discharges.
- Maintenance issues in the City's waterways will be identified and prioritized annually.
- Development reviews for permanent water quality BMPs will be more rigorous and final approvals will not be granted without an executed maintenance agreement.
- Development review staff will be provided with needed training to ensure compliance with City standards and criteria.

- Methods for citizens to report potential illicit discharges will be improved.
- Public education and outreach activities will be expanded and focus on improving the public's support for the overall stormwater management program.

Additional detail on the planned improvements to the MS4 Program can be found in **Appendix A**.

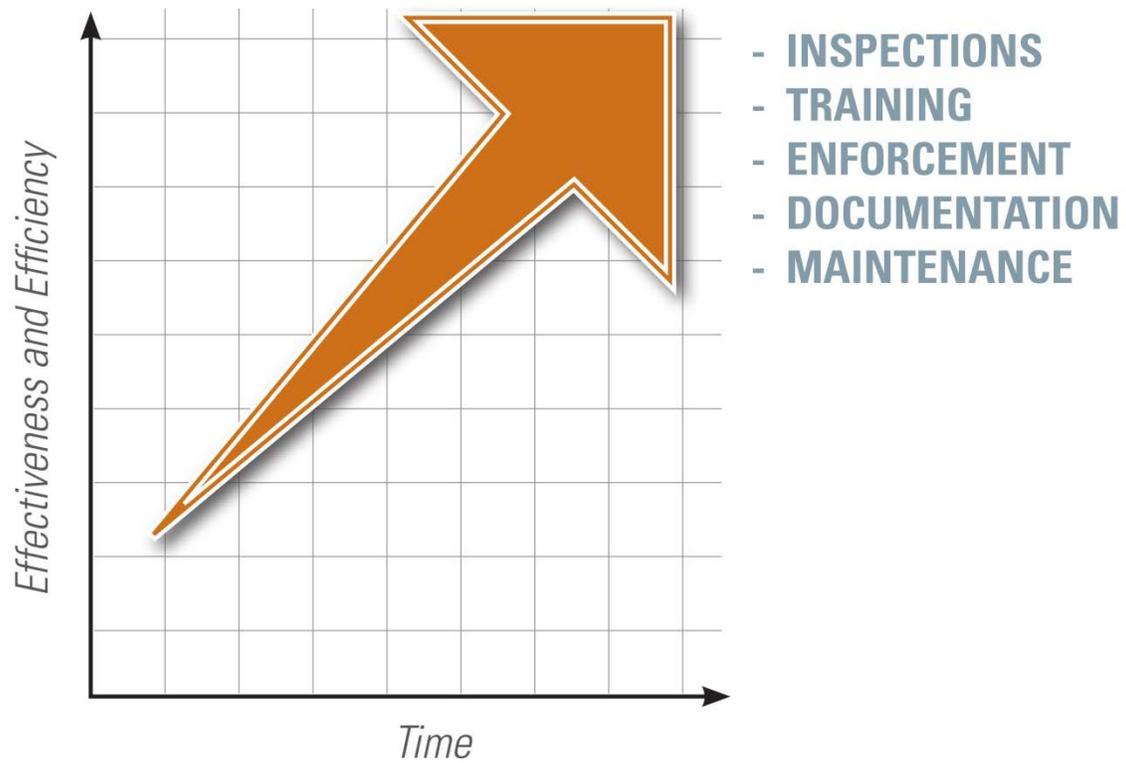


Figure 4-1. Key Elements of MS4 Program Improvement

5.0 CAPITAL PROGRAM IMPROVEMENT

The Capital Program consists of the staff, budget, and project control systems to plan, design, and construct larger-scale stormwater infrastructure projects. The purposes of the Capital Program Improvement Plan are to prepare an updated and reliable CIP List and develop a strategy and improved process for project implementation.

- There are two groups of capital projects being implemented within the Capital Program:
- City Projects: These projects will be implemented by the Public Works Department within the City.
- Creek Crossing Projects: For a number of years, CSU has planned and implemented its Sanitary Sewer Creek Crossings Program with annual expenditures averaging \$3 million per year. These are projects that are specifically targeted to protect CSU facilities in danger of failing due to stormwater or other impacts (e.g., buried sanitary sewers that cross creeks that have eroded, exposing the sanitary sewers to potential failure). CSU's stream crossing projects often have significant stormwater protection features.

The City's Public Works Department and CSU currently coordinate the implementation of both of these sets of projects.

5.1 Project List

The City generated a comprehensive list of potential capital projects to consider for implementation. This list was compiled in the following manner.

City Projects: As a starting point for development of this SPIP, the Master Project List (MPL) from the October 2013, Stormwater Needs Assessment Report (SNA) produced by CH2M HILL, was carefully reviewed and evaluated along with additional City planning studies and projects identified since the SNA was completed. Through these evaluations, several deficiencies with the MPL from the SNA were identified:

- Many projects lacked adequate level of project definition or specific details.
- The SNA involved a limited project validation effort to confirm whether a project was legitimate for inclusion, but did not assess any project in detail.
- The SNA master project list is outdated and does not include projects from recent
- City planning studies, or recent emergency response projects.

The City's stormwater CIP list uses most current available information and reflects current City stormwater needs and project priorities to meet the overall objectives for the City's stormwater program.

Between August 2015 and March 2016, a set of high priority stormwater projects was developed through coordination between the City and Pueblo County. That effort was part of ongoing discussions toward a stormwater Inter-Governmental Agreement (IGA) between the City and Pueblo County, which was completed in April 2016. The firm of Wright Water Engineers (WWE), working on behalf of Pueblo County, presented projects that were proposed for inclusion in the City's stormwater CIP. These projects were identified in the Stormwater Needs Assessment report and in other sources. In addition, several ongoing City stormwater projects that have various levels of project definition were evaluated as part of this effort (see **Table 4-2, Appendix B-1**).

Creek Crossing Projects: CSU staff keep a list of projects to implement under this program. After significant rain events, CSU staff conduct a field inventory of CSU infrastructure near creeks and identify any additional projects that need implemented to protect CSU facilities.

Those projects are added to the Creek Crossings project list and reprioritized. CSU's current list of projects is shown in **Table 5-1**.

Table 5-1. Creek Crossing Project List

Project Name	Three-Year CIP Table (2016-2018)		Comments
	Estimated Construction Start Date	Estimated Total Capital Cost	
1. Monument Creek Stabilization, Phase 2	Jul-16	\$820,000	In Process; Initiation and Design completed in 2015; Waiting on easements; Construction scheduled by Q3 2016 with Closeout in Q4 2016
2. Dry Creek Downstream of Dawson Drive	Mar-18	\$510,000	Initiated August 2015; Design to commence Q1 2017; Construction scheduled March 2018 with Closeout May 2018
3. Clear Spring Ranch Bank Stabilization	Sep-16	\$4,170,000	In Process; Initiated September 2014; Designer hired January 2015; Construction scheduled September 2016 with Closeout May 2017
4. North Douglas Creek upstream from Mark Dabbling Stabilization	Feb-16	\$251,000	In Process; Initiation and Design completed in 2015; Construction Scheduled February 2016 with Closeout in May 2016
5. South Douglas Creek at Sinton Pond, Crossing Elimination	Feb-16	\$176,000	In Process; Initiation and Design completed in 2015; Construction Scheduled February 2016 with Closeout in May 2016
6. Monument Branch Stabilization	Oct-17	\$1,100,000	Initiate January 2016; Hire Designer February 2016; Design commence June 2016; Construction scheduled Q4 2017 with Closeout Q2 2018
7. West Fork Sand Creek Drop Repair	Sep-18	\$500,000	Initiate Design Q1 2018; Construction scheduled Q3 2018 with Closeout Q4 2018
8. Sand Creek stabilization at West Fork Confluence	Sep-18	\$600,000	Initiate Design Q1 2018; Construction scheduled Q3 2018 with Closeout Q4 2018
9. Monument Creek Stabilization Upstream from Pikeview Intake	Apr-18	\$500,000	Initiate Q2 2017; begin Design Q3 2017; Construction scheduled Q2 2018 with Closeout Q3 2018
10. Sand Creek Stabilization Upstream of Barnes Road	Apr-18	\$400,000	Initiate Q2 2017; begin Design Q3 2017; Construction scheduled Q2 2018 with Closeout Q3 2018
Total:		\$9,027,000	

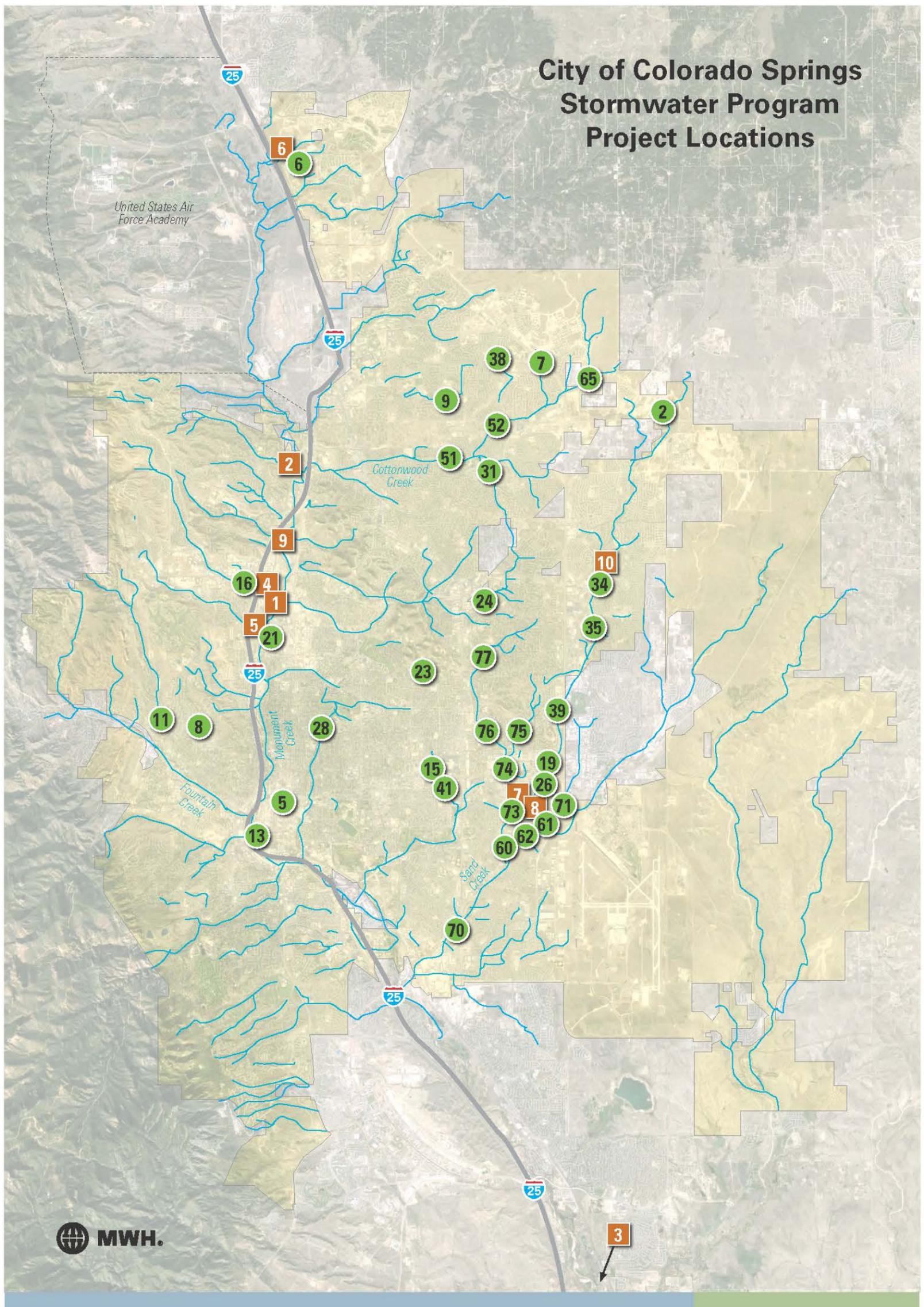
The locations of these projects are shown in **Figure 5-1**. The projects are distributed throughout the City, with a large portion of the projects located along the main drainages of Monument Creek, Sand Creek, and Fountain Creek.

5.2 Project Prioritization

The next step in development of the updated Stormwater CIP List for the City was to evaluate the City project list to arrive at a prioritized list of capital projects that make up the 20-year CIP List. This was done by rating each project according to a set of eight criteria developed collaboratively between staff from the City, the City's consultant team of MWH and Merrick & Company, and through discussion and coordination with WWE, on behalf of Pueblo County. The eight criteria fall into two groups (in no specific order with respect to priority or importance):

- Benefits to stormwater infrastructure itself and the immediately adjacent areas:
 - Project property and public safety
 - Repair/replace failing infrastructure
 - Improve appearance and/or enhance the community
 - Distribute projects within the City
- Enhancing the City's stormwater infrastructure and ability to reduce or eliminate sediment generation and transport, provide detention, and reduce the potential for flooding, thereby providing benefits to areas downstream of Colorado Springs:
 - Enhance sediment/debris capture and control
 - Reduce sediment generation/enhance soil stewardship
 - Improve water quality
 - Provide detention

Figure 5-1. Location Map for Stormwater Projects



- City of Colorado Springs Capital Stormwater Projects (2016-2025)
- Drainageway
- Sanitary Sewer Creek Crossing Project Locations (2016-2018)
- Colorado Springs Corporate Boundary



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The criteria defined above provide a means to evaluate a given project and its characteristics to determine its ability to meet overall stormwater program objectives. Although specific criteria have been defined related to a project's function to improve water quality, all repair, replacement and/or enhancement of stormwater infrastructure will provide a holistic water quality benefit downstream.

The capital stormwater project improvements made across the City over time will work in an integrated fashion to enhance overall water quality within the Fountain Creek watershed and beyond. Projects can provide both primary and incidental benefits for water quality protection, sediment control, and other ecological features. For example, while the primary purpose of a creek stabilization project designed to protect a sewer crossing is to prevent failure of the utility infrastructure, it can have significant incidental sediment control and water quality benefits due to reduced channel erosion and sediment transport downstream. In addition, these projects help avoid impacts to downstream water quality that would result if sewer line crossings were to fail during flooding events. The cumulative benefits from constructed projects under the City's Stormwater Program will have the effect of enhancing overall water quality.

Staff from the City, the City's consultant team, and WWE met on four occasions (November 19, 2015, December 2, 2015, December 16, 2015, and March 30, 2016) to (a) settle upon a master list of capital stormwater projects, and (b) evaluate prioritization of projects on the resulting list. The resulting list of capital projects is contained in **Table 3-1, Appendix B-1** with the following indicated:

- An "X" was placed in a column for a given criterion if a project was deemed to have met the criterion. Each project was evaluated against each of the eight criteria and rated.
- Because downstream benefits are an important factor in determining overall priority for a given capital project, the number of "X's" associated with these four "downstream" criteria were added to create a "Downstream Priority Score" for the project. That score is indicated in a separate column in the table.
- City staff flagged a subset of projects as "Critical City Projects". These were denoted by a "Yes" in that column. Reasons for this City assigning this designation include, for example, that the project is:
 - Able to address a known area of frequent and severe localized flooding
 - Ongoing and must be completed (e.g., FEMA projects). (Note: the FEMA and NRCS projects are not specifically listed, as the majority of funding comes from Federal/ State grants).
 - Able to be rapidly implemented (e.g., design is already done, or design consultant is already under contract).
- At the March 30, 2016 meeting, WWE staff prioritized the subset of 61 projects from the CIP project list that had a downstream benefit (i.e., a "Downstream Priority Score" of one or greater) in rank order.
- Finally, City and consultant staff used all of this input to establish a "City Priority Ranking" of all projects on the master CIP project list (71 projects total).

As shown in **Table 3-1, Appendix B-1**, the City's ranking represents a balance of delivering the high priority City projects while making significant progress on delivering downstream benefits. Of the 71 projects, 61 were agreed upon with WWE to have at least one downstream benefit.

Since the Sanitary Sewer Creek Crossing projects are driven by the need to protect exposed or at-risk utility infrastructure, the priority of those projects is driven by CSU staff judgment on the criticality of each project location. However, the prioritization criteria developed for the City projects also help in identifying the benefits derived from projects. Therefore, a version of the

Creek Crossing project list has been prepared with the prioritization criteria to illustrate project benefits (see **Table 5-1**).

5.3 Validation of Project Costs

The scope, features and cost estimate for each project was additionally reviewed or validated. The Sanitary Sewer Creek Crossing project costs are validated on an annual basis by CSU staff and were not separately validated as part of the effort documented in this report. The following steps were taken to validate the City projects:

- City staff compiled existing information on all projects. The source of information on a number of these projects was the SNA report. The project summary sheets contain a brief project description, location and an overview of project benefits.
- Each project was categorized based on the level of available information. Additional cost estimate analysis was completed and project costs were escalated to January 2016 dollars.
- Each project was analyzed to determine the project duration based on the applicable project delivery stages for the project.
- The project information was summarized into two-page project descriptions.

The City has three ongoing projects in the master project list that are a combination of multiple smaller projects. These include Project 0 (FEMA Projects), Project 1 (Emergency Stormwater Projects) and Project 13 (Water Quality Projects). These three items in the master project list have a budget amount to address some of the actions on these lists each year under the Stormwater Program. FEMA projects are envisioned to continue through 2018. The Water Quality Projects are envisioned to continue through 2020. The Emergency Stormwater Projects are budgeted annually through 2025.

There were two projects from the master project list for which sufficient engineering work was completed to allow full validation of the project cost estimates following the process described above. Those are: Project 2, Sand Creek Pond 3, and Project 11, Camp Creek.

There were 18 projects for which the City established an allowance, but no defined project scope had yet been developed. These include a number of projects from the SNA report where the City assumed a portion of the SNA project work would be done, but did not fully identify which portion or reach of a larger project would be done. These projects will require additional planning to determine a sufficient level of project definition to proceed with procuring design services.

The remaining projects were identified in the SNA report and the budget and scope developed therein was used. The SNA project cost estimates for these projects were escalated to 2016 levels.

5.4 Project Schedule and Cost Distribution

Once the prioritized list of capital projects was established and costs were validated, those projects and costs were scheduled over time. For the City projects, 71 projects have been identified to be completed. The top 37 projects are scheduled to be initiated within the first 10 years of the CPDP.

To help develop the project schedules, five discrete phases were defined for each project:

1. **Initiation:** Once a decision is made to advance a project, the Initiation Stage is implemented to develop a detailed design scope of work.
2. **Hire Design Consultant:** If an outside design consultant is needed, the overall project schedule must account for a procurement process.

3. **Planning/Design/Procurement:** This stage involves the engineering work needed to make broad decision about project alternatives (planning), prepare engineering plans and specifications for the selected alternative (design), and procure a construction firm to construct the project (procurement).
4. **Execution** (Construction): This stage covers the actual construction work.
5. **Closeout** (Work Package Closeout): This stage involves all the steps need to close out a construction project.

Total project costs were then distributed to each phase, for each project.

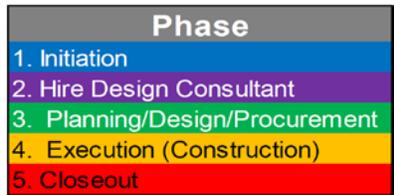
A graphical representation of the project schedules was created for both the City and Creek Crossing projects (see **Figure 5-2** and **Figure 5-3**). The five phases of each project are shown in various colors. As shown in **Figure 5-2**, there will be eight City projects underway in 2016, with a peak of 17 projects underway in 2019.

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Figure 5-3. Projected Schedule for Creek Crossing Projects

Project Name	2016				2017				2018				2019			
	Q1	Q2	Q3	Q4												
1. Monument Creek Stabilization, Phase 2																
2. Dry Creek Downstream of Dawson Drive																
3. Clear Spring Ranch Bank Stabilization																
4. North Douglas Creek upstream from Mark Dabling Stabilization																
5. South Douglas Creek at Sinton Pond, Crossing Elimination																
6. Monument Branch Stabilization																
7. West Fork Sand Creek Drop Repair																
8. Sand Creek stabilization at West Fork Confluence																
9. Monument Creek Stabilization Upstream from Pikeview Intake																
10. Sand Creek Stabilization Upstream of Barnes Road																



6.0 PUBLIC OUTREACH AND COMMUNICATION IMPROVEMENT

The City is in the process of improving its Stormwater Program. Its primary focus is to evaluate and develop a strategy for improving two major components of the Stormwater Program -- the ongoing stormwater system operation, including the MS4 Program, and implementation of capital improvement projects for the stormwater system. To complement and support those efforts, the City has developed a strategy for improving public education and outreach related to the Stormwater Program.

6.1 MS4 Permit Requirements for Outreach

The City's MS4 permit requires the following outreach-related activities:

- Conduct educational activities to promote public reporting of illicit discharges and improper disposal (Part 1.B.1.b.4 of the MS4 permit)
- Implement public educational activities to promote proper management and disposal of potential pollutants (Part 1.B.1.b.5)
- Promote Household Chemical Waste Collection Programs (Part 1.B.1.b.6)
- Conduct educational activities for operators of Industrial Facilities (Part B.1.c)
- Conduct training and education of construction site operators (Part 1.B.1.d.4)

6.2 Assessment of and Improvements to Current Outreach Activities

In response to the requirements of the MS4 permit, City staff perform a number of public outreach activities annually. The City has assessed those current activities and identified the following areas to be the most urgent for improvement.

- **Image/Brand of Stormwater:** The single most common concern of City staff, and the trend most observed in top-of-class cities, is the need to brand "stormwater" efforts by using more direct terms—water quality, clean water, flood protection or prevention, etc. The City will rebrand its stormwater program accordingly.
- **Central Vision/Action Plan:** The stormwater activities of various City departments should be aligned to set goals and achieve necessary objectives. This is critical to properly leveraging City resources.
- **Goals, Measurement, and Reporting Success:** Within the shared vision and plan, goals must be established and performance measured, with updates and redirection at specified intervals. The top-of-class MS4 Programs from other cities set goals for each activity and measure against those goals, with year-after-year increases expected.
- **Public Hotline:** The City's MS4 permit calls for operation of a central phone number for public reporting of illicit discharges and promotion of that number. The current hotline is not dedicated to stormwater; it is part of the police department/fire department dispatch system. The City will implement a more direct hotline and promote its existence to the community.
- **Website Pages:** The City's stormwater website pages are hard to access and less communicative than they could be. The City will update and refine its stormwater website pages with a focus on content-rich graphics and useful information.
- **Annual Report:** The current template used for the Annual Report to regulatory agencies is confining and hard to populate properly. The City will create a template that is efficient for staff to populate and includes clear tracking of goals and achievements.
- **Elevation of Public Education, Outreach, and Involvement:** Currently, the stormwater communication efforts are placed in multiple departments within the City, some of them several layers down within the City's organization. The City will centralize

and/or coordinate public education, outreach, and involvement functions and elevate oversight within the Stormwater Division to a higher level with stated goals, measurable achievements and clearly stated tactics.

Overall, the City’s outreach activities are sound, but with room for improvement. In particular, they have been limited by a lack of resources.

6.3 Outreach Strategy

The City has developed strategies to address the areas above, as well as strategies and tactics targeted specifically at informing the public about the City’s planned capital improvement. The strategies are summarized in **Table 6-1** and specific tactics for all improvement areas are covered in the Public Education and Outreach Program (**Appendix C**). To implement these improvements, the City will add education staff within the Stormwater Division and Outreach/Involvement staff within the Communications group as part of its revitalized stormwater efforts.

Table 6-1. Summary of Public Outreach Strategy

Component	Objective	Audience	Messages
<p>General Public Education and Outreach</p> <p><i>Typically 1-way communication</i></p>	<p>Inform the public and build support for the concept that “stormwater” means clean water and flood protection</p>	<ul style="list-style-type: none"> • General Public • Schoolchildren • Civic groups, HOAs • El Paso/Pueblo elected leaders/staff • EPC/PC business/industry groups • Development community Government/Regulatory agencies • City/CSU employees 	<ul style="list-style-type: none"> • Water quality and flooding prevention are life-saving concerns • Water quality and flooding prevention are the responsibility of all • We must all protect water quality by improving our behavior in small but important ways • Stormwater/drainage facilities can accompany and protect recreational amenities such as trails, bike baths and open space
<p>MS4 Program Public Education and Outreach</p> <p>MS4 permit requirements</p> <p><i>Typically 1-way communication</i></p>	<p>Comply with public communication requirements of the MS4 permit</p> <p>Shape or improve public behavior to stop or prevent pollutants from entering the MS4</p>	<p>Public as Potential Polluters</p> <ul style="list-style-type: none"> • Children • Pet/livestock owners • Auto owners • Property/lawn owners • Commercial sites with chemicals • Industrial facilities • Construction sites (development industry and others) • Targeted businesses (landscapers, mobile washers, carpet cleaners, concrete washout, auto shops, industrial) 	<ul style="list-style-type: none"> • We need to improve our behavior because we all need clean water • Report illicit discharges, spills, dumping (Part 1.B.1.b.4) • Manage and dispose properly (Part 1.B.1.b.5) (pet waste, stock manure, auto supplies like oil, fertilizers, herbicides, all chemicals) • Use Household Chemical Waste Collection Program (Part 1.B.1.b.6) • Be aware of and handle/manage pollutants on sites to prevent runoff into MS4 (Part 1.B.1.c and e) • Be aware of and manage/handle potential pollutants (dust, runoff, chemicals) at construction site to prevent runoff into MS4 (Best Management Practices) site (Part 1.B.1.d.4)

Component	Objective	Audience	Messages
<p>Capital Project Public Involvement</p> <p><i>Typically 2-way communication</i></p> <p><i>May involve public role in decisions</i></p> <p><i>Focused on capital projects</i></p>	<p>Capital Projects Create awareness and support for individual City projects (before, during and after project construction)</p> <p>Gain/maintain support and trust of people nearest projects – convert potential opponents into supporters, keep projects on time/budget</p>	<p>Same General Public as above</p> <p>Residents of Areas Affected by Construction</p>	<ul style="list-style-type: none"> • We are building large projects that will address flooding and water quality problems <ul style="list-style-type: none"> • Problem/solution – we are all part of it • Projects are planned/underway • The process is thoughtful and rational • Public has opportunity for input • Public/business support is important • As projects are completed, note success • Your needs are being considered. <ul style="list-style-type: none"> • We want to minimize inconvenience/maximize benefit • We will listen to you/inform you • Temporary inconvenience for permanent solutions

7.0 STORMWATER PROGRAM BUDGET

This section summarizes the estimated budgets for the MS4/O&M Program and the Capital Program, and ties them to the City's planned annual stormwater expenditures.

7.1 MS4/O&M Program Budget

Table 7-1 shows the estimated annual budget for the improved MS4/O&M program (Stormwater Division and directly related costs in other Public Works departments) for 2016-2020. Budgets for all years are shown in 2016 dollars prior to any escalation. **Figure 7-1** shows the distribution of the Stormwater Division budget among the main functional categories. The majority of budgeted costs are associated with the salary and benefits for the Stormwater Division staff shown previously in **Figure 3-4**.

New equipment will be needed to support the increased stormwater O&M activity. The total estimated budget for acquiring new equipment was \$945,000 in January 2016. Equipment purchased in 2016 is more expensive than previously estimated, requiring more near-term expenditures on equipment. The schedule for adding new equipment will be tied to the schedule for adding new stormwater employees. Approximately \$618,000 will be spent in 2016 and about \$587,000 will be spent in 2017. For long-term budgeting purposes, an annual replacement budget was calculated by amortizing the cost of new equipment over the assumed useful life. For the fleet of heavy equipment and maintenance vehicles under the direction of the Stormwater Division, the annual replacement budget is \$366,000 per year. The City has also committed to leasing eight new street sweepers in 2016 at an annual cost of \$480,000. The cost of these street sweepers will come from the City Budget Office fleet contract, not from the stormwater program.

The maintenance and service budget in **Table 7-1** covers O&M supplies (e.g., riprap, concrete), software, and outside consulting and vendor services. The latter category includes a consultant contract to prepare a Stormwater Infrastructure Master Plan and other consultant services for miscellaneous or emergency projects. Engineering consultant costs for planning and design are included in a separate Public Works Capital Projects budget.

The program administration budget in **Table 7-1** includes the cost of facilities, office equipment, supplies, computers, communication equipment, and other similar costs that would accrue to the Stormwater Division. Estimated program administration costs were based on the City's proposed 2016 budget for the Stormwater Division, expressed on a per capita basis and escalated as the number of employees increases.

Table 7-1. Budget for Stormwater Division and Dedicated Public Works Staff

Budget Category	2016	2017	2018	2019	2020
Labor – City Employees ⁽¹⁾	\$3,077,900	\$4,950,100	\$4,834,000	\$4,834,000	\$4,834,000
Labor – Outsourced	\$0	\$0	\$0	\$0	\$0
Equipment	\$618,400	\$587,400	\$366,000	\$366,000	\$366,000
Maintenance and Services ⁽²⁾	\$1,783,900	\$1,175,000	\$2,015,000	\$1,570,000	\$1,670,000
Program Administration ⁽³⁾	\$127,200	\$180,200	\$239,000	\$239,000	\$239,000
TOTAL	\$5,607,400	\$6,892,700	\$7,454,000	\$7,009,000	\$7,109,000

Notes:

- (1) Budget for 2016 and 2017 based on average of labor at beginning and end of year as the program staffs up
- (2) O&M materials, consultant planning contracts, outside services, USGS monitoring
- (3) Facilities, office equipment, supplies, computers, communications
- (4) All budgets are in 2016 dollars and are not adjusted for escalation

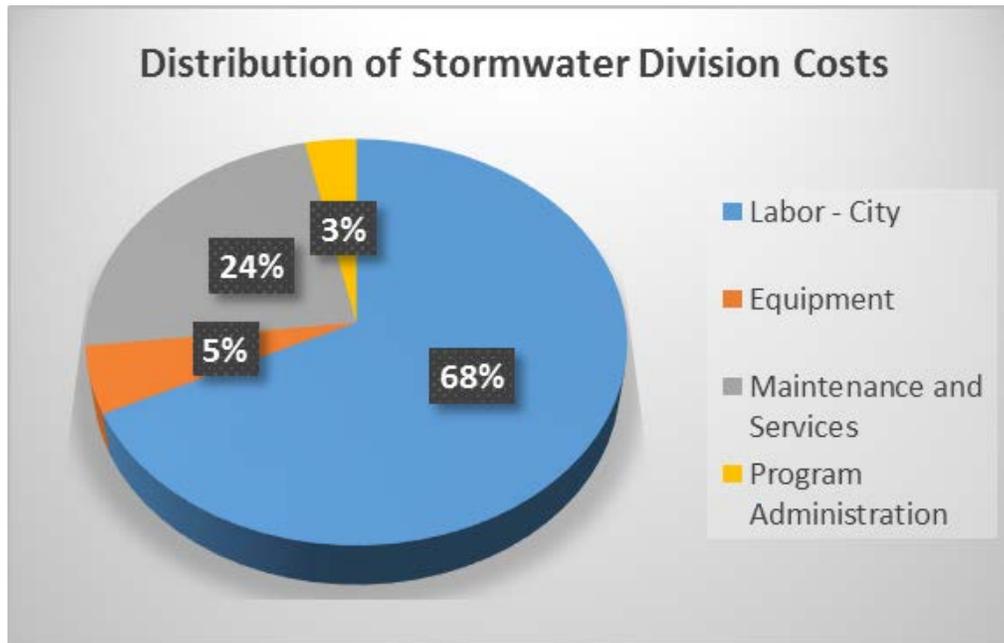


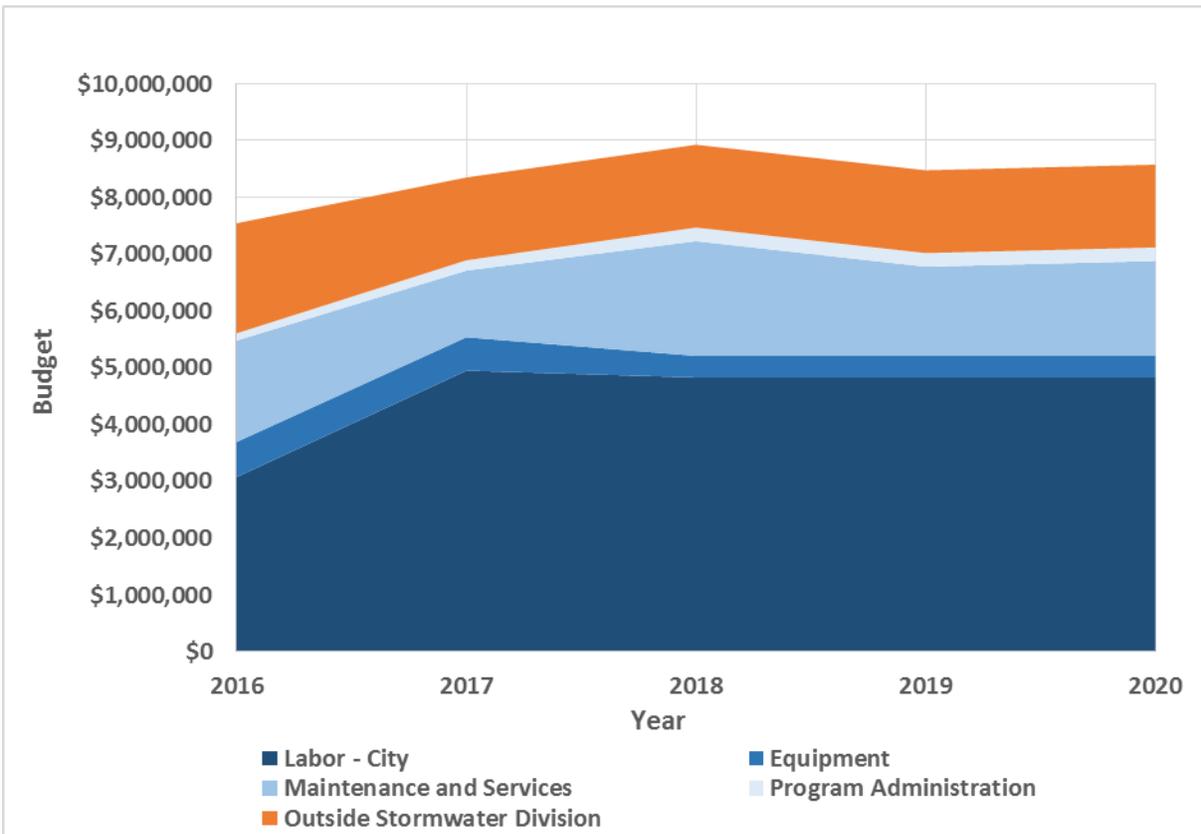
Figure 7-1. Stormwater Division Annual Budget When Division is Fully Staffed

Other City departments and CSU incur costs for activities that support the MS4 Program. These budgeted costs are summarized for 2016 in **Table 7-2**.

Average total annual MS4 stormwater program budget is summarized in **Figure 7-2** for 2016-2020.

Table 7-2. MS4/O&M Budget for Functions Performed Outside Stormwater Division

Entity/Department	Service Provided	Approximate Annual Cost
City Operation and Maintenance	Street sweeping: <ul style="list-style-type: none"> • 8 operators, 1 supervisor • 8 new sweepers, annual lease 	\$438,000 \$480,000
City Fire Department	Spill response	\$225,000
Colorado Springs Utilities	Creek crossing inspection and maintenance (non-capital costs)	\$375,000
City – Other Departments (Communications, Human Resources)	Public outreach, human resources, asset tracking and documentation	Minimal – not included
TOTAL		\$1,518,000



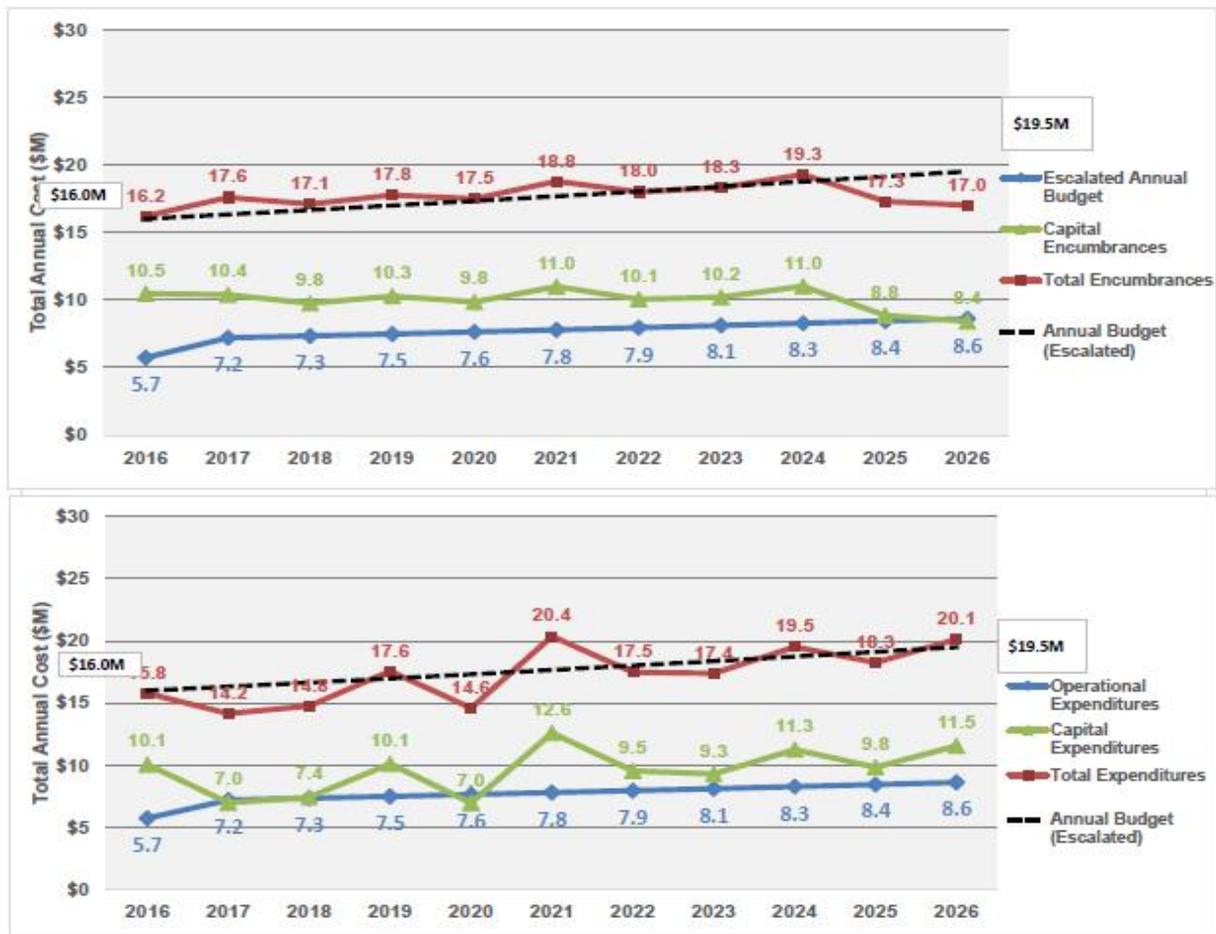
Note: Budgets are in unescalated 2016 dollars.

Figure 7-2. Summary of MS4/O&M Budgeted Costs for 2016-2020

7.2 Combined MS4 and Capital Budget for Stormwater Program

For matching City budgets to anticipated program and project costs, a 10-year cost spreadsheet model was created. The model allows planners to balance staffing levels and capital project start dates to meet the annual budget limitations. In general, funding of the MS4 Program and annual stormwater system O&M was given priority over funding of capital projects. The resulting budget distribution over time is shown in **Figure 7-3**, which shows operational expenditures (MS4/O&M program budget, including all staff costs), capital encumbrances and expenditures (cost to implement capital projects), total encumbrances and expenditures (the sum of those two), and the annual budget. (Encumbered costs are tied to the date at which major capital outlays are required by the City). This occurs at two key project milestones: when final design begins (i.e., a final design consultant contract is awarded) and when construction begins (i.e., a construction contract is awarded.)

In accordance with the IGA with Pueblo County, the average annual budget increases from \$20 million to \$22 million over 10 years, assuming a 2.0 percent escalation rate. The timing of the capital projects has been adjusted to produce total encumbrances that closely track the available budget. With this available budget, approximately 35 projects can be initiated in 10 years, in addition to ongoing FEMA grant-funded projects and a \$1.5 million per year allowance for emergency projects. It is anticipated that this 10-year plan will be updated on an annual basis, as actual costs and progress are documented.



Note: Costs are escalated quarterly starting in January 2016.

Figure 7-3. City Stormwater Program Costs for 2016-2025, Adjusted for Assumed Escalation

With the MS4 Program and O&M requiring an average of \$7.8 million when full staffed, \$9.2 million from the dedicated \$17 million budget from the City remains for capital projects (which does not include the CSU Sanitary Sewer Creek Crossing Program average annual contribution of \$3 million). When the budget of \$1,518,000 from other City departments as summarized in **Table 7-2** is included, the City budget for activities directly related to the MS4, City capital stormwater programs, and CSU Sanitary Sewer Creek Crossing Program is \$21.5 million. This is shown in **Figure 7-4**.

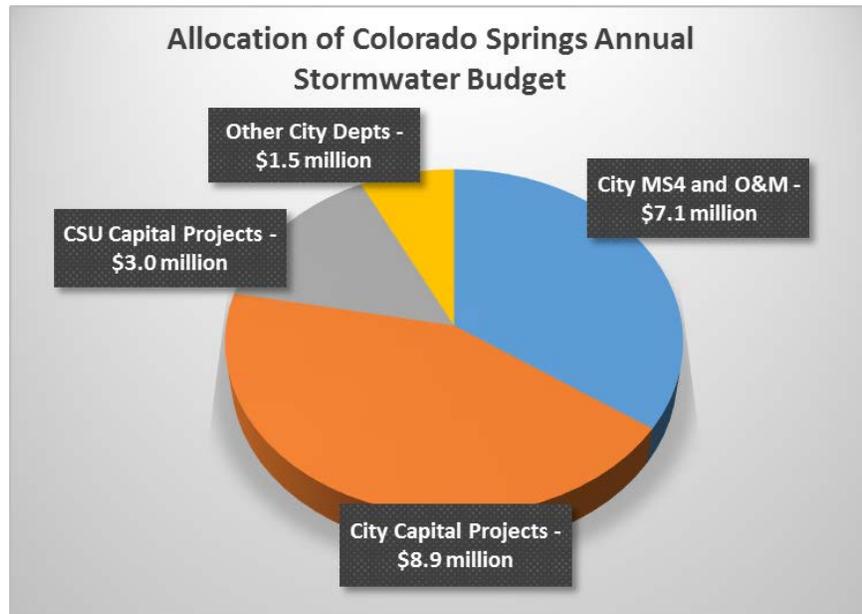


Figure 7-4. Allocation of \$20.5 Million Stormwater Budget with Fully Staffed Program

In the first two years (2016 and 2017), prioritized capital projects will provide significant downstream benefits, as summarized in **Table 7-3**. The number of projects initiated with downstream benefit exceeds 70 percent of the total number of projects initiated, and their associated encumbered costs exceed 60 percent of the total encumbered cost.

Table 7-3. Summary of Downstream Benefits in 2016 and 2017

Category	2016	2017	Total
Number of Projects Initiated			
Total	8	3	11
With Downstream Benefit	5	3	8
% with Downstream Benefit	63%	100%	73%
Encumbered Costs (\$ million)*			
Total	\$7.224	\$7.337	\$14.561
With Downstream Benefit	\$4.929	\$4.002	\$8.931
% with Downstream Benefit	68%	55%	61%

*In 2016 dollars, unescalated

7.3 Total Estimated Stormwater Expenditures in Colorado Springs

Total annual investment in stormwater management and infrastructure within the City of Colorado Springs will greatly exceed the expenditures described above for the MS4/O&M Program and the Capital Delivery Program. Stormwater related expenditures that are not covered in the \$20 million average annual budget include, as examples:

- \$1,518,000 in costs incurred by CSU and City departments outside of the Stormwater Division, as itemized in **Table 7-2**.
- Drainage improvements and stormwater BMPs associated with transportation projects, such as those that are part of Pikes Peak Rural Transportation Authority projects.
- Drainage improvements and stormwater BMPs on municipal facilities such as Colorado Springs Airport.
- Grants received from state and federal agencies for emergency response to floods and wildfires.

- Private investment in stormwater BMPs required by the City for approval of new residential, commercial and industrial developments under its Drainage Criteria Manual (e.g., detention basins, retention basins, bioswales, infiltration trenches, low impact development measures).

8.0 IMPLEMENTATION PLAN

Implementation of the Stormwater Program Implementation Plan will involve a number of key activities in 2016, which are summarized in **Table 8-1**. The activities are shown in four groups, illustrating those involving: the stormwater program as a whole, the MS4/O&M Program, the Capital Program, and public outreach. Detailed 3-month, 6-month, and 12-month checklists are contained in the MS4, Capital Projects, and Public Outreach TMs. As of June 2016 the items in the 3-month category have been completed and the items in the 6-month category are completed or substantially complete.

Table 8-1. Implementation Steps for 2016

Component	Upon Completion of First 3 Months	Upon Completion of First 6 Months	Upon Completion of First Year
Overall Program	<ul style="list-style-type: none"> • Create the new Stormwater Division and re-organize existing departments to align resources that support the Stormwater Program. • Initiate discussions with DOJ/EPA on MS4 program requirements. • Personnel: Hire Stormwater Division Manager 	<ul style="list-style-type: none"> • Finalize 2017 budget 	<ul style="list-style-type: none"> • Seek annual feedback from employees about the effectiveness of the program from their viewpoint. • Retain a consultant to prepare a Comprehensive Stormwater Master Plan. • Complete discussions with DOJ/EPA.
MS4/O&M	<ul style="list-style-type: none"> • Personnel: Hire 2 new inspectors • Address 6 of 12 O&M issues identified in EPA audit and inspection reports. • Tighten requirement for executed Inspection and Maintenance reports for private BMPs • Conduct reviews of 7 residential developments approved without post-construction BMPs identified in EPA inspection. • Review enforcement protocols with inspectors. • Increase funding for USGS monitoring in 2016. 	<ul style="list-style-type: none"> • Upgrade stormwater inspection procedures and checklists. • Conduct refresher training for all current inspectors and City field personnel. • Conduct refresher training for City staff reviewing development submittal and post-construction BMP plans. • Investigate training resources such as manual and videos from third party vendors. 	<ul style="list-style-type: none"> • Begin development of Stormwater Management Plan. • Identify and prioritize problems and create a prioritized O&M project list for O&M Division • Implement a QA/QC process to check the consistency of inspections against inspection procedures. • Update the Inspector Reference Guide to be consistent with the Drainage Criteria Manual.

Component	Upon Completion of First 3 Months	Upon Completion of First 6 Months	Upon Completion of First Year
	<ul style="list-style-type: none"> • Finalize the Joint Funding Agreement with USGS. • Designate a lead inspector to coordinate the MS4 activities. • Designate individuals within the Stormwater Division to have responsibility for tracking, documentation and record-keeping of MS4 activities. • Begin survey of all public waterways, stormwater infrastructure, and public BMPs. • Provide supplemental annual training for inspectors in City procedures for inspection documentation and importance of follow-up and Enforcement. • Review construction site BMP requirements with all construction site inspectors. • Narrow the span of control for the development review function. • Perform an inventory and assessment of all municipal facilities to assure that a current operations and management plan is in place. • Implement an improved stormwater hotline. • Upgrade the stormwater website to include a method for citizens to report illicit discharges. 	<ul style="list-style-type: none"> • Ensure that appropriate enforcement protocols are in place, consistently utilized and appropriately tracked. • Review current City ordinances and update as necessary. • Begin submitting quarterly enforcement reports to Public Works Director. • Meet with City Attorney's Office to assume alignment of objectives on enforcement. • Develop plan for addressing the residual stormwater quality issues created by approving seven residential developments without post-construction BMPs. • Provide refresher training to the City's staff involved in development reviews. • Establish a formal inspection program for drainage infrastructure • Improve coordination with the Utilities Creek Crossing Program. • Formally coordinate efforts with CSU Storm Patrol Program. • Conduct outreach events to the development community (e.g., "Wet Wednesdays") to inform them of the renewed emphasis on stormwater inspections and permit enforcement. • Cross-train inspectors and other stormwater professionals to 	<ul style="list-style-type: none"> • Improve tracking and record-keeping of public outreach activities. • Research inspection software for field application. • Investigate linking the City's asset management system software with the MS4 tracking database. • Maintain an inspector training database to track the training received by all staff members • Research available inspector training tools and resources to determine if these resources could be used to improve the City's program. • Investigate the use of off-the-shelf MS4 Program software for tracking and documenting activities. • Cross-train other staff in Stormwater Division to conduct inspections. • Provide training to non-Stormwater Division staff that have the potential to observe and report on possible illicit discharges. • Train Utilities O&M crews and pretreatment inspectors to observe and report possible illicit discharges when performing their normal duties. • Train Utilities' pretreatment inspectors to be aware of potential stormwater problems. • Consider recording in-house training sessions for future use. • Train inspectors to emphasize the City's determination to enforce its current ordinances and policies.

Component	Upon Completion of First 3 Months	Upon Completion of First 6 Months	Upon Completion of First Year
		<p>conduct construction site inspections.</p> <ul style="list-style-type: none"> • Develop formal construction site inspection QA/QC program. • Review and update current education materials targeting industrial site owners. • Implement documentation and record keeping process and tools for MS4 activities. • Review the industrial site inspection program to identify potential modifications to improve the efficiency of using available resources, and to prioritize sites for inspection. • Validate USGS reporting protocols. • Determine additional water quality monitoring requirements, if any. • Submit Monitoring Program reporting for 4-year analysis ending in 2014, as specified in permit. • Equipment: Acquire computers and related equipment as needed for new hires. • Personnel: Hire Stormwater Program Manager, Stormwater Specialist, Stormwater Operations and Maintenance Manager (Drainage Program Supervisor), GIS/Engineering Tech II, Senior Civil Engineer, and 2 Stormwater Inspectors. 	<ul style="list-style-type: none"> • Provide clear direction on enforcement steps for developers, construction site owner/operators, and industrial site owner/operators. • Implement outreach to local business owners, developers, contractors, and other regulated entities. • Develop schedule to address remaining drainage system O&M issues identified in the EPA audit. • Complete survey of all public waterways, stormwater infrastructure, and public BMPs. • Document improved conditions to CDPHE and EPA. • Review capital program project prioritization, with O&M needs in mind. • Update existing Inspector Reference Guide. • Update existing educational materials targeting construction industry to reflect changes to the City's MS4 Program. • Add requirement for signage at development sites to tell citizens how to report evidence of sediment runoff. • Develop a QA/QC process for development submittal reviews performed by the Development and Erosion Control group. • Prepare a response document describing how stormwater related issues identified with 7 residential

Component	Upon Completion of First 3 Months	Upon Completion of First 6 Months	Upon Completion of First Year
			<p>sites audited by EPA will be addressed.</p> <ul style="list-style-type: none"> • Prioritize industrial site inspections to assure that those sites in business categories or locations with the greatest potential to contribute pollutants to the MS4 are inspected most frequently. • Train other City department staff to observe and report potential illicit discharges. • Train CSU pretreatment staff to observe and report potential illicit discharges. • Identify improved method of tracking responses to illicit discharges. • Prioritize all municipal facilities in the MFRCP for inspections based on their potential to contribute pollutants to the MS4. • Conduct annual meetings with each municipal site operator to review the importance of the stormwater program and provide training on proper municipal site operations. • Update Monitoring Plan to be consistent with MS4 Permit. • Equipment: Acquire computers and related office equipment as needed for new hires, 1 4WD SUV, 1 4WD pickup truck, 1 mini excavator, 1 trailer, 1 vactor truck, 8 regenerative air and mechanical street sweepers (leased).

Component	Upon Completion of First 3 Months	Upon Completion of First 6 Months	Upon Completion of First Year
			<ul style="list-style-type: none"> Personnel: Hire Engineering Inspector II (2), Water Quality Manager, Senior Civil Engineer (2), Civil Engineer II (2), Drainage Inspector and 6 Equipment Operators.
Capital Projects	<ul style="list-style-type: none"> 2016 Capital projects initiated and underway. Draft Program Management Plan (PMP) in process with City-specific items. Project constraints reviewed. Determine need for programmatic tracking (e.g., procurement, permits, land acquisition). New Stormwater on-call <u>construction</u> contracts in place. Personnel: Decide whether to do any “staff augmentation” in 2016, and if so move forward with procuring outside staff 	<ul style="list-style-type: none"> Capital projects underway. Issue design task orders to on-call engineers for required projects. New Stormwater on-call <u>engineering</u> contracts in place or in procurement. Begin implementation of draft PMP process. Personnel: Execute staff augmentation approach. 	<ul style="list-style-type: none"> Capital projects underway. Begin annual reporting on CIP progress Begin annual CIP update process, resulting in an updated project list for 2017.
Public Outreach	<ul style="list-style-type: none"> Upgrade stormwater website. Upgrade public hotline. Begin evaluation of existing tactics for effectiveness and prioritization. Work with Police Department Dispatch to include a water pollution or spills option on its automated navigation menu for callers and retrain call takers for consistency in responding to these calls. 	<ul style="list-style-type: none"> Conduct review of public education and outreach program. Develop working outreach vision and begin a communications action plan for communications and education with Communications group. Identify outreach goals and measurement techniques. Create a measurement matrix for tracking progress. Develop a separate Public Education and Outreach Program for the MS4 Program. Secure community partner entity with at least one joint campaign or other tactic planned. 	<ul style="list-style-type: none"> Implement an outreach program to local business owners, developers, contractors and other regulated entities. Increase public reporting surrounding the MS4 Program activities, particularly related to improvements in the program (“Stormwater Spending Report”, “Stormwater MS4 Program Accomplishments Report”, and “Stormwater Capital Projects Accomplishments Report”). Measure all 2016 tactics and make sure they are entered into new annual report template. Review and revise central vision/communications action plan.

Component	Upon Completion of First 3 Months	Upon Completion of First 6 Months	Upon Completion of First Year
		<ul style="list-style-type: none"> • Upgrade Stakeholder Database. • Schedule at least one city-wide or region-wide water festival aimed at children and parents. • Distribute household hazardous waste brochures. • Evaluate effectiveness of stormwater literacy guide, DVD, brochures, etc. and reshape them accordingly. • Establish and monitor new goals for storm drain marking and Adopt-a- Waterway efforts. • Conduct monthly planning meetings with Communications. • Convert current newsletter into E-news format and get at least one E-news out on stormwater successes or challenges being met. • Hold an initial central visioning and planning meeting for stormwater education and communications staff. 	<ul style="list-style-type: none"> • Enhance cooperative outreach tactics to the public as potential polluters: pet owners, car washers, lawn and household owners, etc. • Secure national partner entity with at least one joint campaign or tactic planned. • Establish at least monthly meetings to move public education and outreach planning and measurement along. • Convert the current stormwater newsletter into ENews format and post at least one ENews on stormwater successes or challenges being met. • Identify and set a date/month for a news media campaign highlighting successful projects. • Identify a possible date for a stormwater festival in concert with CSU and El Paso County. • Begin to inventory available video assets from the City and other partners. • Begin new stakeholder database. • Complete repairs or replacement of “stormwater” pages on the City’s website



City of Colorado Springs Stormwater Program
Implementation Plan

**SUPPLEMENT TO APPENDIX A – MS4
PROGRAM IMPROVEMENT PLAN**

DRAFT DOCUMENT – July 2016

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1.0 INTRODUCTION

The Colorado Springs Stormwater Program Implementation Plan was prepared in January 2016 (SPIP (January 2016)). It includes, in Appendix A, a detailed description of the City's planned improvements to its Municipal Separate Storm Sewer System (MS4) program. The SPIP (January 2016) and Appendix A have been used by the City since preparation as guidance for internal stormwater program management decisions. These have been essential planning documents as the City re-invigorates its stormwater management activities.

The City has made substantial progress since January 2016 implementing the recommendations in the SPIP (January 2016) and Appendix A. The City has gained valuable experience with these recommendations during the past six months. It has from time to time modified its planning recommendations based on that experience.

This document — a Supplement to Appendix A - MS4 Program Improvement Plan (June 2016) (Supplement (June 2016)) — describes the most significant of these modifications. This Supplement (June 2016) focuses upon changes to the Stormwater Division and MS4 program staffing, the Stormwater Division budget, and the schedule for implementing specific MS4 program improvements from the SPIP (January 2016). In addition, a section of the SPIP (January 2016) summarizing the City's MS4 Program is updated to reflect current accomplishments and planning. This Supplement (June 2016) also reflects careful consideration by the City of comments supplied by the U.S. Environmental Protection Agency concerning Appendix A of the SPIP (January 2016).

2.0 STORMWATER PROGRAM STAFFING

Figure 3-4 in the SPIP and Figure 6-1 in Appendix A present a proposed City stormwater program staff organization chart. The chart shows creation of a proposed Stormwater Division drawing from current Public Works MS4 staff, engineers and inspectors, and supported by existing functions in the CIP Engineering Program Division and the Operation and Maintenance Division. The total proposed stormwater program staff support across all divisions in the SPIP (January 2016) was 58 full-time equivalents (FTEs), which would be hired by the end of 2017.

In the course of forming the Stormwater Division and reorganizing functions within the Public Works Department, the City has gained a better understanding of the roles and functions of staffing needed in the Stormwater Division. The stormwater program organization chart currently being used by the City to guide staff functions, lines of reporting, and priorities for new hires is shown in **Figure S-1**. It compares to the January 2016 proposed organization chart as follows.

- The new stormwater program organization will have 65 FTEs, increased from 58 FTEs in the January 2016 proposal. Primary changes are:
 - Addition of 3 management positions within the Stormwater Division, reporting to the Stormwater Division Manager, to provide greater efficiency in reporting and management.
 - Elimination of 2 Engineering Tech positions.
 - Elimination of Stormwater Division responsibility to cover 0.25 FTE of the CIP Engineering Program Division Manager labor cost.
 - Addition of 6 Equipment Operators from the street sweeping group to the stormwater program staff.

- Of the 65 FTEs, 40 positions are currently filled (up from 28 in January 2016). This includes 4 existing positions that are vacant for various reasons. The City will continue to hire new staff strategically and methodically, and plans to fill all positions by the end of 2017.
- The overall organization of the Stormwater Division is very similar to what was originally proposed. Three managers are now shown over each of the three functional groups within the Division to improve efficiency of reporting to the Stormwater Division Manager, and all inspectors are now shown as reporting up through a new Water Quality Manager.
- As noted previously, the Drainage Program under the Operations and Maintenance Division now includes all the current and future street sweeper operator positions

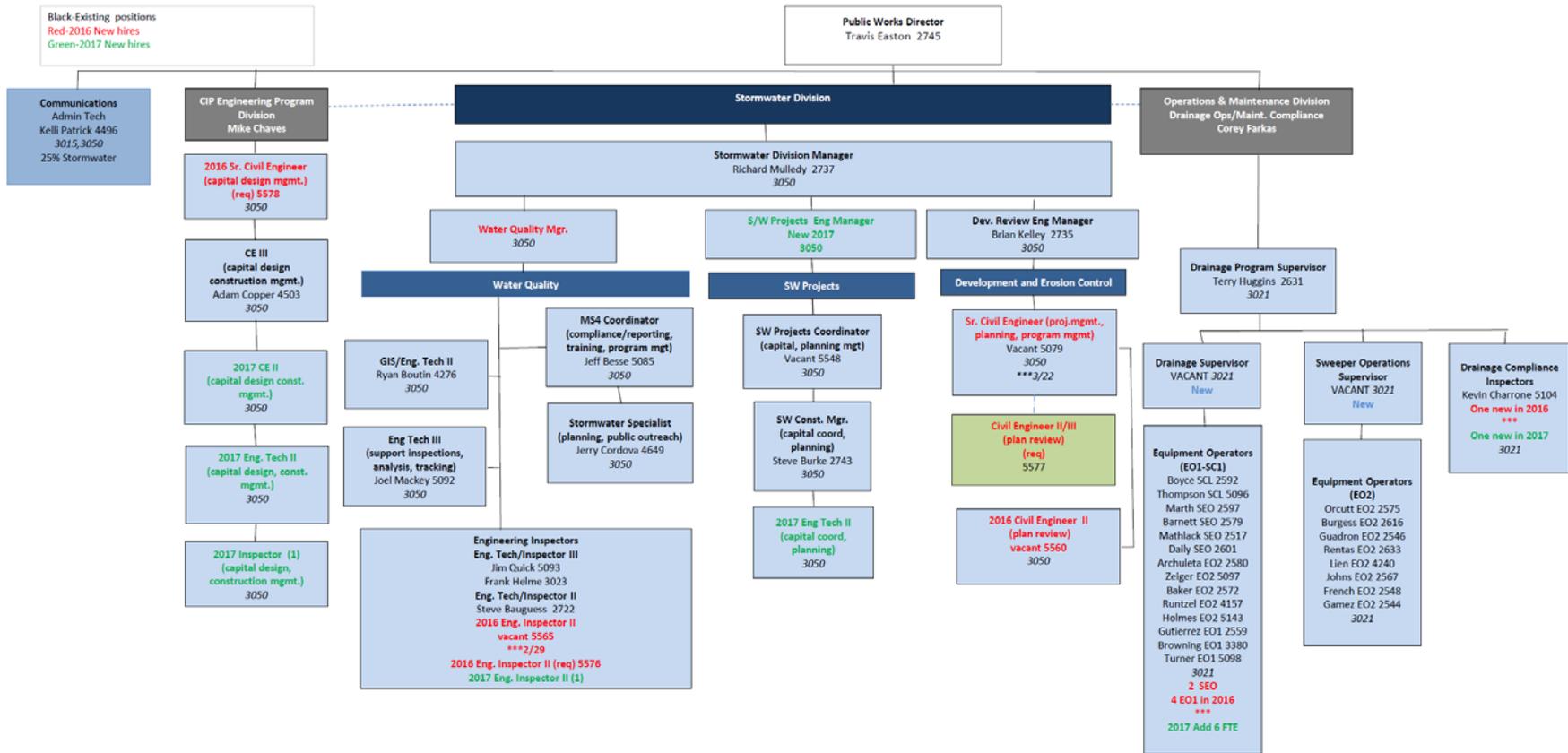


Figure S-1. Updated Stormwater Program Organization Chart (June 2016)

3.0 MS4 AND OPERATION AND MAINTENANCE PROGRAM BUDGET

When the January 2016 SPIP was prepared, the City already had an adopted budget for 2016. Therefore some adjustments were necessary in the proposed Stormwater Division budget to adapt to the approved budget and to reflect actual costs versus assumed costs for certain staff positions, equipment, etc. In addition, reallocation of some costs between the Capital and O&M categories was necessary to align with the City budgeting process.

The 2017 budget process began in May 2016. Experience in the first 5 months of 2016 influenced preparation of a draft 2017 Stormwater Division budget to reflect current priorities and needs.

The Stormwater Division budget and estimated costs for other stormwater program activities as proposed in January 2016 are shown in Section 7 of the SPIP and Section 8 of Appendix A. Proposed budgets are provided for the first five years of the new Stormwater Division (2016-2020). Based on the first 5 months of implementing the new program and the constraints imposed by the previously approved 2016 City budget, the following key budget adjustments have been needed and are reflected in the following tables.

- Labor costs for new hires are higher than estimated in January 2016. This affected the draft 2017 budget and shifted more cost into the Labor category.
- Costs for certain professional services and studies primarily related to capital projects were moved from the MS4/O&M portion of the budget to the Capital Projects portion of the City budget to reflect City policy for tracking those costs. This affected the draft 2017 budget by reducing the Services budget for the MS4/O&M portion of the Stormwater Division.
- The adjusted budget for the Services line item includes consultant time to support the City in improving its stormwater program until the full complement of Stormwater Division staff can be hired and trained. This has the largest effect on the 2016 budget.
- Actual equipment costs have been almost twice the cost estimated in the SPIP (January 2016). The 2016 and 2017 equipment budgets are similar to what was proposed in the SPIP (January 2016), but the actual cost for acquiring all required equipment will have to be spread out over more years in order to acquire all the required equipment.

The original and revised budgets for the Stormwater Division and dedicated Public Works staff for 2016 and 2017 are shown in **Table S-1**. This updates the information for 2016 and 2017 shown in Table 7-1 in the SPIP and Table 8-2 in Appendix A. Overall the actual budgeted expenditures for 2016 and 2017 are very close to what was planned in January 2016.

Table S-1. Update to 2016 and 2017 Stormwater Program Budgets (June 2016)

Budget Item	Proposed 2016 Budget in January 2016	Actual 2016 Budget in June 2016	Proposed 2017 Budget in January 2016	Draft 2017 Budget in June 2017	Comments
Labor - City Employees	\$3,052,000	3,077,898	\$4,302,000	\$4,950,075	
Labor – Outsourced	\$0	\$0	\$0	\$0	
Equipment	\$453,000	\$618,377	\$422,00	\$587,400	Includes heavy equipment and minor equipment
Maintenance and Services	\$1,667,000	\$1,783,909	\$2,165,00	\$1,175,000	
Maintenance	\$540,000	\$703,601	\$600,000	\$615,000	Includes supplies and materials, including MFRCPC costs; staff time is in Labor category
Services	\$1,127,000	\$1,080,308	\$1,565,000	\$560,000	Includes consultant support, specialists, USGS monitoring cost share, public outreach
Program Administration	\$136,000	\$127,211	\$181,000	\$180,225	Includes office equipment, supplies, non-labor costs
2016 Labor, Equipment, O&M, Program Admin	\$5,308,000	\$5,607,395	\$7,065,000	\$6,892,700	2016 budget includes \$310,367 rolled over from 2015

When the proposed overall stormwater program budget including both capital and MS4/O&M services was prepared for the SPIP (January 2016), it was assumed that the City would supplement internal labor with outside services for staff augmentation to provide the same level of effort as would be generated with the full suite of positions envisioned in the Stormwater Division organization chart. This option was not possible due to limitations in the previously approved 2016 budget and capital project obligations associated with the Pueblo County Intergovernmental Agreement (IGA) related to the Southern Delivery System. This change is reflected in the updated overall Stormwater Division budget in Figure 7-3 of the SPIP and Figure 5-1 in Appendix B.

4.0 MS4 PROGRAM IMPROVEMENT IMPLEMENTATION PLAN SCHEDULE

Section 9 in Appendix A describes a plan for implementing the proposed improvements to the MS4/O&M portion of the City's stormwater program over the 2016-2017 time period. Section 8 in the SPIP (January 2016) shows the schedule for proposed improvements to the MS4/O&M, Capital, and Public Outreach in 2016.

As the City has implemented stormwater program improvements in the first 5 months of 2016, it has rearranged some priorities. These changes are based upon a better understanding of program realities internally as well as external drivers including the Pueblo County IGA and coordination with EPA and the State of Colorado. As a result, the proposed implementation schedule in Table 9-1 of Appendix A has been adjusted based on accomplishments to date and current plans for the next 18 months. The revision is presented in **Table S-2**.

One of the key activities for the first year is to start a Stormwater Infrastructure Master Plan (SIMP). As described in Appendix A, this would be a compilation and update of past information on stormwater capital and O&M projects and planning studies and would put all projects on the same foundation. The City may expand the SIMP to include a database of permanent Best Management Practices used in the City.

Table S-2. MS4 Program Improvement Implementation Plan – June 2016

Intended Period of Implementation			
Program Element	Completed or In Progress	6 to 12 Months	12 to 24 Months
Organization Changes	<ul style="list-style-type: none"> • Create the new Stormwater Division and re-organize existing departments to align resources that support the Stormwater Program 		
Staff Additions	<ul style="list-style-type: none"> • 2 Stormwater Inspectors • Stormwater Program Manager • Stormwater Specialist • Stormwater Operations and Maintenance Manager (Drainage Program Supervisor) • GIS/ Engineering Tech II • Senior Civil Engineer 	<ul style="list-style-type: none"> • Water Quality Manager • Senior Civil Engineer (2) • Engineering Inspector II (2) • Civil Engineer II (2) • Drainage Inspector • Equipment Operators (6) 	<ul style="list-style-type: none"> • Engineering Tech II • Drainage Inspector • Equipment Operators (6) • Senior Civil Engineer/ PM • Civil Engineer II • Engineering Tech II • Engineering Tech II
Equipment Additions	<ul style="list-style-type: none"> • Computers and related office equipment as needed for new hires 	<ul style="list-style-type: none"> • Computers and related office equipment as needed for new hires • 1 4WD SUV • 1 4WD pickup truck • 1 mini excavator • 1 trailer • 1 vactor truck • 8 regenerative air and mechanical street sweepers (leased) 	<ul style="list-style-type: none"> • Computers and related office equipment as needed for new hires • 1 4WD SUV • 1 4WD pickup • 1 confined space van or camera truck • 1 backhoe • 1 dump truck • 1 dump truck (tandem) (1 in 2018) • 1 skid steer (1 in 2018) • 1 trailer (in 2018) • 1 vactor truck (in 2018)

Intended Period of Implementation

Program Element	Completed or In Progress	6 to 12 Months	12 to 24 Months
Stormwater Management Plan		<ul style="list-style-type: none"> • Begin Stormwater Management Plan 	<ul style="list-style-type: none"> • Complete Stormwater Management Plan
Inspections	<ul style="list-style-type: none"> • Designate a lead inspector to coordinate the MS4 activities. • Upgrade stormwater inspection procedures and checklists. 	<ul style="list-style-type: none"> • Identify and prioritize problems and create a prioritized O&M project list for O&M division • Implement a QA/QC process to check the consistency of inspections against inspection procedures. • Update the Inspector Reference Guide to be consistent with the Drainage Criteria Manual. • Research inspection software for field application. 	
Enforcement	<ul style="list-style-type: none"> • Review enforcement protocols with inspectors. • Ensure that appropriate enforcement protocols are in place, consistently utilized and appropriately tracked. • Review current City ordinances and update as necessary. • Begin submitting quarterly enforcement reports to Public Works Director. • Meet with City Attorney's Office to assure alignment of objectives on enforcement. 	<ul style="list-style-type: none"> • Train inspectors to emphasize the City's determination to enforce its current ordinances and policies. • Provide clear direction on enforcement steps for developers, construction site owners/operators, and industrial site owner/operators. • Implement outreach to local business owners, developers, contractors, and other regulated entities. 	

Intended Period of Implementation

Program Element	Completed or In Progress	6 to 12 Months	12 to 24 Months
Documentation and Record-Keeping	<ul style="list-style-type: none"> • Designate individuals within the Stormwater Division to have responsibility for tracking, documentation and record-keeping of MS4 activities. • Implement full documentation and record keeping process and tools for MS4 activities. 	<ul style="list-style-type: none"> • Investigate linking the City's asset management system software with the MS4 tracking database. • Improve tracking and record-keeping of public outreach activities • Investigate the use of off-the-shelf MS4 Program software for tracking and documenting activities. 	
Training	<ul style="list-style-type: none"> • Conduct refresher training for all current inspectors and City field personnel • Conduct refresher training for City staff reviewing development submittals and post-construction BMP plans • Investigate training resources such as manuals and videos from third party vendors. 	<ul style="list-style-type: none"> • Maintain an inspector training database to track the training received by all staff members • Research available inspector training tools and resources to determine if these resources could be used to improve the City's program. • Cross-train other staff in Stormwater Division to conduct inspections. • Provide training to non-Stormwater Division staff that have the potential to observe possible illicit discharges. • Train Utilities O&M crews to observe and report possible illicit discharges when performing their normal duties. • Train Utilities pretreatment inspectors to be aware of potential stormwater problems • Consider recording in-house training sessions for future use. 	<ul style="list-style-type: none"> • Conduct refresher training annually for all inspectors. • Conduct refresher training annually for Stormwater Division staff to perform inspections. • Conduct refresher training annually for all City staff performing development reviews. • Consider additional training opportunities for developers and builders.

Intended Period of Implementation

Program Element	Completed or In Progress	6 to 12 Months	12 to 24 Months
Planning		<ul style="list-style-type: none"> • Retain a consultant to prepare a Comprehensive Stormwater Master Plan. • Seek annual feedback from employees about the effectiveness of the program from their viewpoint. 	<ul style="list-style-type: none"> • Seek annual feedback from employees about the effectiveness of the program from their viewpoint.
Stormwater Operation and Maintenance Program	<ul style="list-style-type: none"> • Address 6 of 12 O&M issues identified in EPA audit and inspection reports. • Begin survey of all public waterways, stormwater infrastructure, and public BMPs. • Establish a formal inspection program for drainage infrastructure • Improve coordination with the Utilities Creek Crossing Program. • Formally coordinate efforts with CSU Storm Patrol Program. 	<ul style="list-style-type: none"> • Develop schedule to address remaining drainage system O&M issues identified in the EPA audit and inspection reports that require capital project solutions. • Complete survey of all public waterways, stormwater infrastructure, and public BMPs. • Document improved conditions to CDPHE and EPA. • Review capital program project prioritization, with O&M needs in mind. 	<ul style="list-style-type: none"> • Address remaining drainage system O&M issues identified in the EPA audit and inspection reports that don't require capital project solutions (may require Corps of Engineers permits).
Construction Program	<ul style="list-style-type: none"> • Provide supplemental annual training for inspectors in City procedures for inspection documentation and importance of follow-up and enforcement. • Review construction site BMP requirements with all construction site inspectors • Conduct outreach to the development community (e.g., "Wet Wednesdays") to inform them of the renewed emphasis on stormwater inspections and permit enforcement. • Cross-train inspectors and other stormwater professionals to conduct construction site inspections. • Develop formal inspection QA/QC program. 	<ul style="list-style-type: none"> • Update existing Inspector Reference Guide. • Update existing educational materials targeting construction industry to reflect changes to the City's MS4 Program. • Add requirement for signage at development sites to tell citizens how to report evidence of sediment runoff 	<ul style="list-style-type: none"> • Consider additional training opportunities for developers and builders.

Intended Period of Implementation

Program Element	Completed or In Progress	6 to 12 Months	12 to 24 Months
Residential / Commercial Program	<ul style="list-style-type: none"> • Tighten requirement for executed Inspection and Maintenance reports for private BMPs • Conduct reviews of 7 residential developments approved without post-construction BMPs identified in EPA inspection. • Narrow the span of control for the development review function • Develop plans for addressing the residual stormwater quality issues created by approving 7 residential developments without post-construction BMPs • Provide refresher training to the City's staff involved in development reviews. 	<ul style="list-style-type: none"> • Develop a QA/QC process for development submittal reviews performed by the Development and Erosion Control group • Prepare a response document describing how stormwater related issues identified with 7 residential sites audited by EPA will be addressed. 	<ul style="list-style-type: none"> • Implement plans for addressing the residual stormwater quality issues created by approving 7 residential developments without post-construction BMPs
Industrial Program	<ul style="list-style-type: none"> • Review and update current educational materials targeting industrial site owners. • Review the industrial site inspection program to identify potential modifications to improve the efficiency of using available resources, and to prioritize sites for inspection. 	<ul style="list-style-type: none"> • Prioritize industrial site inspections to assure that those sites in business categories or locations with the greatest potential to contribute pollutants to the MS4 are inspected most frequently. • Train other City department staff to observe and report potential illicit discharges. • Train CSU pretreatment staff to observe and report potential illicit discharges. 	
Municipal Facility Program	<ul style="list-style-type: none"> • Perform an inventory and assessment of all municipal facilities to assure that a current operations and management plan is in place 	<ul style="list-style-type: none"> • Prioritize all municipal facilities in the MFRCP for inspections based on their potential to contribute pollutants to the MS4. • Conduct annual meetings with each municipal site operator to review the importance of the stormwater program and provide training on proper municipal site operations. 	<ul style="list-style-type: none"> • Conduct annual meetings with each municipal site operator

Intended Period of Implementation

Program Element	Completed or In Progress	6 to 12 Months	12 to 24 Months
Illicit Discharge Program	<ul style="list-style-type: none"> • Implement an improved stormwater hotline. • Upgrade the stormwater website to include a method for citizens to report illicit discharges. • Advertise methods for citizens to report illicit discharges. 	<ul style="list-style-type: none"> • Train other City department staff to observe and report potential illicit discharges. • Train other CSU creek crossing maintenance staff to observe and report potential illicit discharges. • Identify improved method of tracking responses to illicit discharges 	<ul style="list-style-type: none"> • Refresher training for other City department staff • Refresher training for CSU creek crossing maintenance staff
Public Education and Outreach Program	<ul style="list-style-type: none"> • <i>Completed in late 2015:</i> Conducted review of public education and outreach program • Develop working outreach vision and begin a communications action plan for communications and education with Communications group. • Identify outreach goals and measurement techniques. • Create a measurement matrix for tracking progress. • Upgrade stormwater website. • Upgrade public hotline. • Begin evaluation of existing tactics for effectiveness and prioritization. • Develop a separate Public Education and Outreach Program for the MS4 Program. • Secure community partner organizations with at least one joint campaign or other tactic planned. • Upgrade stakeholder database. • Schedule at least one citywide or region-wide water festivals aimed at children and parents. 	<ul style="list-style-type: none"> • Implement an outreach program to local business owners, developers, contractors, and other regulated entities • Increase public reporting surrounding the MS4 Program activities, particularly related to improvements in the program (“Stormwater Spending Report”, “Stormwater MS4 Program Accomplishments Report”, and “Stormwater Capital Projects Accomplishments Report”). • Measure all 2016 tactics and make sure they are entered into new annual report template. • Review and revise central vision/communications action plan. • Enhance cooperative outreach tactics to the public as potential polluters: Pet owners, car washers, lawn and household owners, etc. • Secure national partner entity with at least one joint campaign or tactic planned. 	<ul style="list-style-type: none"> • Conduct 2-3 media campaigns annually to highlight successful projects. • Continue activities started previously.

Intended Period of Implementation

Program Element	Completed or In Progress	6 to 12 Months	12 to 24 Months
Public Education and Outreach Program	<ul style="list-style-type: none"> • Distribute household hazardous waste brochures. • Evaluate effectiveness of stormwater literacy guide, DVD, brochures, etc. and reshape them accordingly. • Establish and monitor new goals for storm drain marking and Adopt-a-Waterway efforts. • Conduct monthly planning meetings with Communications. • Convert current newsletter into E-news format and get at least one E-news out on stormwater successes or challenges being met. 		
Monitoring Program	<ul style="list-style-type: none"> • Increase funding for USGS monitoring in 2016 • Finalize the Joint Funding Agreement with USGS. • Validate USGS reporting protocols. • Determine additional water quality monitoring requirements, if any. • Submit Monitoring Program reporting for 4-year analysis ending in 2014, as specified in permit. 	<ul style="list-style-type: none"> • Update Monitoring Plan to be consistent with MS4 Permit. 	<ul style="list-style-type: none"> • Review monitoring program every 12 months and modify as necessary.



Colorado Springs Stormwater Program

APPENDIX B

CAPITAL PROGRAM DELIVERY PLAN REPORT

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1.0 INTRODUCTION

1.1 Purpose

The City of Colorado Springs (City) is in the process of conducting a comprehensive review of its Stormwater Program. The purpose of the review is to identify areas of improvement and develop a comprehensive plan to address them. The Stormwater Program Implementation Plan (SPIP) documents the City's approach to addressing MS4 permit requirements and capital stormwater infrastructure needs throughout the City.

The purpose of this component of the SPIP, the Capital Program Delivery Plan (CPDP), is to document a delivery strategy for identified capital stormwater projects that are needed to meet the City's overall goals of building and maintaining stormwater infrastructure as part of the Stormwater Program. The CPDP provides the following components that will serve to guide the City's implementation of stormwater infrastructure projects moving forward:

- A prioritized Capital Improvements Projects (CIP) master list. The City has collaborated with Wright Water Engineers (WWE), a consultant to Pueblo County, to develop and identify projects with substantial benefits to Colorado Springs' downstream neighbors.
- An implementation approach to complete the top priority stormwater capital projects from the CIP over the next 10 years, including estimated costs, project start year and implementation schedules, and annual budget requirements.
- A draft Program Management Plan (PMP) detailing the processes and procedures to be followed for delivering stormwater capital projects in a coordinated, programmatic manner, achieving efficiency in cost and schedule. The draft PMP is bound separately from this report.

1.2 Project Categories

Two categories of capital projects are being implemented as part of the City's Stormwater Program:

- **City Projects:** These capital stormwater improvement projects will be implemented by the City's Public Works Department under the direction of the Stormwater Division. They include a variety of project types and configurations that provide channel stabilization, peak flow attenuation, sediment capture and stormwater quality enhancements.
- **Utilities Creek Crossing Projects:** These projects will be implemented by Colorado Springs Utilities (CSU or Utilities) in close coordination with the City's Stormwater Division. These projects will protect CSU facilities that cross or parallel open channels and are at risk of failing due to stormwater runoff impacts (e.g., buried sanitary sewers that cross creeks that have eroded, exposing the sanitary sewers to potential failure). These projects will benefit the stormwater program by reducing stream erosion and channel degradation.

1.3 Capital Improvements Project (CIP) List

The evaluations documented herein yielded a prioritized list of capital stormwater projects, which resulted in the CIP List shown in **Table 1-1, Summary of City of Colorado Springs Capital Improvements Projects List, Appendix B-1**. Table 1-1 is a summary listing of the CIP master

list that includes all the projects that were prioritized by the City in collaboration with WWE. This summary listing excludes various additional items of information used in the rating and prioritization process. This report documents the approach used to identify, screen and select the capital projects in Table 1-1, along with the methodology for updating project costs and sequencing projects to establish the 10-year project delivery plan.

1.4 Development of CPDP

The City of Colorado Springs developed this CPDP with contracted assistance from MWH Americas, Inc. and Ben Urbonas (Urban Watersheds LLC).

2.0 BACKGROUND

There have been numerous watershed and planning studies completed over the years that assessed the stormwater needs for the City. In October 2013, CH2M HILL completed a Stormwater Needs Assessment Report (SNA) for the City of Colorado Springs. The SNA involved identification and review of over 18 stormwater master plans and studies previously completed by the City. That process yielded a Master Project List and projected total capital costs to complete that list of well over \$500 million. As a starting point for development of this SPIP, the Master Project List (MPL) from the SNA was carefully reviewed and evaluated along with additional City planning studies and projects identified since the SNA was completed. Through these evaluations, several deficiencies with the MPL from the SNA were identified:

- Many projects lacked adequate level of project definition or specific details.
- The SNA involved a limited project validation effort to confirm whether a project was legitimate for inclusion, but did not assess any project in detail.
- The SNA master project list is outdated and does not include projects from recent City planning studies, or recent emergency response projects.

During the latter part of 2015 and early 2016, as part of an Inter-Governmental Agreement (IGA) negotiation between Pueblo County, the City of Colorado Springs and its utility enterprise, Colorado Springs Utilities, a series of meetings were held between the IGA parties and their respective consulting engineers. These meetings were designed to discuss projects included in the SNA and other studies in order to prioritize a list of projects to be included in an updated City Stormwater CIP list that could be included as part of the final IGA. The resulting project list was used in the development of this CPDP. The processes followed for developing the updated Stormwater CIP list during the IGA negotiation meetings are discussed further in Section 3.0.

The City's stormwater CIP list presented in this CPDP uses most current available information and reflects current City stormwater needs and project priorities to meet the overall objectives for the City's stormwater program. The following sections document the evaluations conducted and explain the development of the City's updated capital stormwater program.

2.1 Capital Projects

The following is an overview of the capital projects that have been considered for inclusion in the City's Stormwater CIP:

- **City Projects:** In August 2015, an initial set of high priority stormwater projects was developed through coordination between the City and Pueblo County (see **Table 2-1 August 2015 Stormwater Capital Project List, Appendix B-1**). That effort was part of the recently completed stormwater IGA between the City and Pueblo County. The firm of Wright Water Engineers (WWE), working for Pueblo County, presented projects that were proposed for inclusion in the City's stormwater CIP. These projects were identified in the SNA report and in other sources (see **Table 2-2 Wright Water Engineers Project List, Appendix B-1**). In addition, several ongoing City stormwater projects that have various levels of project definition were evaluated as part of this effort.

- **Utilities Creek Crossing Projects:** CSU has planned and implemented its “Sanitary Sewer Creek Crossings Program,” with annual expenditures averaging \$3 million/year. CSU staff maintain a list of projects to implement under this program. That list is updated at least annually based on effects of storm events on utility infrastructure that crosses or parallels waterways. An evaluation and risk rating of each creek crossing location has been conducted by CSU over the last several years and was completed in 2015 for all existing crossings. Ratings are based on stream and watershed conditions, amount of pipe cover, pipe size and type, and existing hardening or protection measures. Each crossing is assigned a re-inspection frequency (ranging from 1 to 10 years) based on risk level with the highest risk crossings inspected following each significant storm event. CSU staff review rainfall and stream gauge data following significant runoff events and conduct inspections of utility infrastructure near creeks to identify additional projects that need to be implemented to protect CSU facilities. Those projects are added to the Creek Crossings project list and the list is reprioritized. CSU’s current list of projects is shown in **Table 2-3 Utilities Creek Crossing Project List (Appendix B-1)**.
- **Financing:** For purposes of this report, it was assumed that the projects will be implemented over time on a “pay as you go” basis. No debt financing is assumed.
- **Templates:** The capital project delivery guidelines, procedures and standards developed by the Utilities Southern Delivery System (SDS) Program were used as a model for the City’s Stormwater Program PMP.

2.2 Project Delivery Stages

Capital projects are typically delivered in discrete phases, termed “delivery stages.” Following City of Colorado Springs terminology and assuming a design-bid-build delivery method, the following five stages have been established for use in developing the project sequencing and annual CIP cost forecasting summarized in this report.

1. **Initiation:** Once a decision is made to advance a project, the Initiation Stage is implemented to develop a detailed design scope of work. The design may be outsourced via a Request for Proposals (RFP) for design services provided by an outside design consultant, or may be performed with internal City personnel (if appropriate and available).
2. **Hire Design Consultant:** If an outside design consultant is needed, the overall project schedule must account for a procurement process, including RFPs, evaluating submittals, conducting interviews, and contract negotiations with the selected consultant. This process generally takes between four to six months to complete.
3. **Planning/Design/Procurement:** This stage involves the engineering work needed to make broad decisions about project alternatives (planning), preparing engineering plans and specifications for the selected alternative (design), and procuring a construction firm to construct the project (procurement).
4. **Execution (Construction):** This stage covers the actual construction work, beginning from notice to proceed to substantial completion through final completion of the construction efforts.
5. **Closeout (Work Package Closeout):** This stage involves the steps needed to closeout a construction project.

2.3 Definition of Cost Escalation

Project capital costs developed in prior studies have been reviewed and escalated to January 2016 dollars. As those costs are distributed over the 10-year period, they have also been escalated on a quarterly basis to the year in which they are initiated. A cost escalation index was selected after considering various industry-standard available indices and used to quantify the cost escalation factor.

2.3.1 Choosing a Cost Escalation Index

Colorado Springs has in the past, through CSU, relied on two industry standard indices to regularly update projections of construction costs of the Utilities SDS project. The indices CSU used are Engineering News-Record's National Construction Cost Index (ENRCCI) and IHS Global Insight's non-residential Construction Index. The IHS Global Insight index was used for forward forecasting cost escalation from current periods to future periods.

IHS Global Insight is a worldwide company offering economic and financial analysis, forecasting, and market intelligence using a combination of expertise, models, data, and software. The information it supplies is valuable to the Stormwater Program, as it projects national construction cost index values and annual percentage change on a quarterly basis over two years, and then annually for subsequent years.

The IHS Global Insight index is valid for capital projects in the Stormwater Program because: (1) it includes pricing for construction labor, structural steel, steel fabrication, and cement, all of which are common elements of stormwater capital projects, and (2) an independent, long-term escalation projection is available from IHS Global Insight to use in estimating an escalation factor for future costs.

For these reasons, the Stormwater Program will use the IHS Global Insight index for all capital cost escalation calculations.

2.3.2 Establishing an Cost Escalation Factor

The cost estimates previously prepared for each of the individual projects in the Stormwater CIP were done in different studies, at different times, and using different basis of cost estimating. Therefore, the capital project cost estimates from the prior stormwater studies had to be updated to a more reliable and consistent basis. To accomplish this, the project costs developed in the previous studies from 2012 and 2013 were escalated forward to the 2016 report period. The annual escalation rate, derived from the IHS Global Insight data, and used in updating the capital project cost estimates was divided by four to derive a quarterly escalation rate used in the cost model developed as part of this update of the City's Stormwater Program. The prior study project costs were then escalated quarterly to arrive at the updated 2016 cost for each project.

The following trends are seen in the IHS Global Insight index data and were considered in evaluating the appropriate level of capital cost escalation to apply for the update to the City's Stormwater Program CIP (see **Figure 2-1 IHS Global Insight Index Trends, Appendix B-1**):

- Over the last five years (2011-2015), the IHS Global Insight index ranged from -2.6 percent to +3.2 percent, with an average of 1.45 percent.
- From 2016 and forward, IHS Global Insight predicts an upward trend in costs ranging from +2.1 percent to +3.7 percent, with an average of +3.2 percent. (It should be noted

that the City of Colorado Springs will continue to evaluate the cost escalation rate in future years to account for changing economic conditions.)

Evaluation of the index trends described above was necessary in order to establish an appropriate cost escalation rate that addresses factors that affect future Stormwater Program project costs. Based on these trends, an annual median value cost escalation rate of 3.4 percent was determined to be appropriate for the projects under the Stormwater Program and was initially used in forecasting 2016 estimated project costs forward to a project's future start year. This equated to a 0.85 percent quarterly increase in capital project costs. However, based on the commitments included in the IGA between Pueblo County and the City issued in May 2016, an annual median value cost escalation rate of 2.0 percent for capital projects was identified and was used for the purposes of cost escalation factoring in the cost modeling described herein. This equates to a 0.50 percent quarterly increase in capital project costs. The cost model performed the cost escalation computations on a quarterly basis to best reflect accurate estimates of future project capital costs.

3.0 PROJECT PRIORITIZATION

The next step in development of the updated Stormwater CIP list for the City was to evaluate and prioritize the two capital project lists referenced in section 2.1 to arrive at a single list of capital projects that make up the 20-year Stormwater CIP list. This was done by rating each project according to a set of eight criteria. These eight criteria were developed collaboratively between City staff, the City's consultant team of MWH and Merrick and Company, and through discussion and coordination with WWE on behalf of Pueblo County.

3.1 Prioritization Criteria

The following eight criteria are not presented in any specific order with respect to priority or importance. The initial four criteria focus on more localized benefits that may be realized from the repair/replacement or enhancement of stormwater infrastructure within the City of Colorado Springs. While these criteria specifically focus on more localized benefits, projects meeting these four criteria may also contribute benefits to downstream areas due to overall improvement of the stormwater system and enhanced water quality.

The final four criteria specifically address project characteristics that produce a downstream benefit, specifically to meet Pueblo County requests, as settled upon with WWE through the coordination effort. These final four criteria address project characteristics that reduce sediment generation, improve water quality, capture transported sediments and provide stormwater detention for peak flow attenuation. The following describe the attributes of each of the eight criteria applied to rate the identified capital stormwater projects.

Protect property and public safety

This criterion relates to the basic function of containing stormwater within storm drains, channels and/or basins to minimize or reduce the risk of flooding-related property damages or endangering people's lives. Examples would be increasing channel capacity, stabilizing a channel embankment to prevent further erosion, or increasing the size of a stormwater detention basin. The City of Colorado Springs Drainage Criteria Manual (DCM) includes guidance on appropriate levels of protection for different drainage basin sizes and types of drainage infrastructure.

Repair/replace failing infrastructure

This criterion applies to infrastructure that has reached the end of its useful life either due to age or damage, and must be repaired or replaced in order for the facility to continue to perform its intended function. An examples would be a lined concrete channel where the concrete has deteriorated thereby allowing erosion of the subgrade materials.

Improve appearance and/or enhance the community

Stormwater channels, detention/retention basins, and floodplains are often designed to be multi-use facilities creating public amenities, providing visual enhancement, wildlife habitat and recreational opportunities. An example would be a stream that is kept in a relatively natural state and has a recreational trail next to it.

Distribute projects within the City

Stormwater improvement needs exist throughout the City of Colorado Springs. It is important that capital improvements be made throughout the City, in order to provide stormwater protection benefits and a similar level of service to all areas within the City boundaries. This will enhance public support of stormwater control efforts. As such, the City must advance a

program of stormwater capital improvements that achieve goals while providing improvements over time throughout the City.

Enhance sediment/debris capture and control

Proposed sediment capture and control projects must facilitate settling of sediment and debris (e.g., downed vegetation) from channels that have elevated sediment and debris loads, or in watershed areas that contribute to those channels. The project must also provide a means for routine maintenance and removal of sediment captured and stored in the facility or drainage feature. The objective is to minimize the excess volume of sediment transported downstream.

Reduce sediment generation/enhance soil stewardship

One key method to reduce sediment generation is through bank stabilization. The goal is to stabilize channel banks that are currently actively eroding and contributing additional sediment load to the channel. Eroding channel reaches where bank erosion is worsening, as documented with historic photographs, aerial imagery, or topographic data, will receive higher priority.

A second key method to reduce sediment generation is through channel grade control. Proposed channel grade control projects must stabilize and/or reduce the gradient of channels that are currently degrading. The proposed channel grade control features must take into consideration the geomorphology of the channel and its equilibrium channel slope. Eroding channel reaches where channel incision is worsening, and/or where a substantial inventory of sediment is readily available to be mobilized, as documented with historic photographs, aerial imagery, or topographic data, will receive higher priority. This has an incidental benefit of also providing some degree of water quality enhancement.

Another key method to reduce sediment generation is to provide for channel restoration and/or floodplain preservation. To do so, proposed projects must preserve, expand, or otherwise enhance existing floodplains. This has an incidental benefit of also providing some degree of water quality enhancement.

A final key method to reduce sediment generation is to implement soil stewardship measures throughout the watershed to reduce soil erosion and the volume of sediment transported in the Fountain Creek channel.

Improve water quality

Stormwater mobilizes and transports pollutants from the watershed surface and from the drainage system itself, and can adversely affect receiving water quality. Water quality improvement benefits are typically associated with projects such as stormwater basins with Water Quality Capture Volume (WQCV) features, Low Impact Development (LID) strategies such as bioretention and grass swales, preservation of riparian and wetland vegetation in drainageways to filter runoff and induce sediment deposition, and other specific approaches where transport of pollutants in stormwater is reduced by facilitating the capture and removal of sediment and associated pollutants prior to being discharged downstream.

Provide detention

Detention provides a method for reducing downstream peak flow rates such that post-development flows more closely resemble pre-development conditions in basins where detention is provided. Proposed detention projects will provide full spectrum detention as

defined in the City's Drainage Criteria Manual. Within the Fountain Creek watershed, proposed projects located in basins that have channels with active bed or bank erosion will receive higher priority.

The criteria defined above provide a means to evaluate a given project and its characteristics to determine its ability to meet overall stormwater program objectives. Although specific criteria have been defined related to a project's function to improve water quality, all repair, replacement and/or enhancement of stormwater infrastructure will provide a holistic water quality benefit downstream.

The capital stormwater project improvements made across the City over time will work in an integrated fashion to enhance overall water quality within the Fountain Creek watershed. Projects can provide both primary and incidental benefits for water quality protection, sediment control, and other ecological features. For example, while the primary purpose of a creek stabilization project designed to protect a sewer crossing is to prevent failure of the utility infrastructure, it can have significant incidental sediment control and water quality benefits due to reduced channel erosion and sediment transport downstream. In addition, these projects help avoid impacts to downstream water quality that would result if sewer line crossings were to fail during flooding events. The cumulative benefits from constructed projects under the City's Stormwater Program will have the effect of enhancing overall water quality.

3.2 Project Prioritization

The overarching objectives of the proposed projects, with respect to the Fountain Creek watershed, are to: (1) reduce downstream flooding potential by reducing peak flow rates; (2) reduce the generation and transport of sediment in excess of natural equilibrium conditions; and reduce downstream concentration of pollutants found in run-off. Each of the proposed projects within the City are to be designed in accordance with the requirements of the DCM.

After rating the projects using the eight criteria listed above, proposed projects may be assigned higher priority by giving consideration to the following factors: (1) the project is deemed time-sensitive due to project-specific factors (e.g., project addresses critical infrastructure protection, project is connected to another City Public Works project, project has FEMA or NRCS funding); (2) the project is located on a tributary to Fountain Creek or on the main stem of Fountain Creek in reaches with observable channel bed or bank erosion; or (3) the potential for the project to be rapidly implemented (e.g., a design is already underway or completed).

City staff, the City's consultant team, and WWE met on four occasions (November 19, 2015, December 2, 2015, December 16, 2015, and March 30, 2016) to (a) settle upon a master list of capital stormwater projects, and (b) evaluate prioritization of projects on the resulting list. The list of projects was developed by combining information from the following source studies or investigations:

- August 2015 Projects: The August 2015 Stormwater Projects (**Table 2-1 August 2015 Stormwater Capital Project List, Appendix B-1**), which were numbered 0 through 31 in the master project list.
- WWE Projects: Of the 43 projects initially presented by WWE at the November 19, 2015 meeting (**Table 2-2 Wright Water Engineers Project List, Appendix B-1**), 10 were already listed in **Table 2-1**. These 10 projects were not repeated, but a "WWE" annotation was added to these 10 project names to track their origin on the master project list. The remaining 33 WWE projects are numbered 32 through 64 in the master project list.

- **Additional WWE Projects:** At the meeting on December 16, 2015, WWE introduced an additional 13 projects identified through research into older prior studies. These projects were added and evaluated and were numbered 65 through 77 in the master project list.

Using the eight criteria presented above, participants developed a prioritized version of the master project list, included herein in **Table 3-1 City Capital Project Prioritization (Appendix B-1)**, with the following designations:

- An “X” was placed in a column for a given criterion if a project was deemed to have met the criterion. Each project was evaluated against each of the eight criteria and rated.
- Because downstream benefits are an important factor in determining overall priority for a given capital project, the number of “X’s” associated with these four “downstream” criteria were added to create a “Downstream Priority Score” for the project. That score is indicated in a separate column in the table.
- City staff flagged a subset of projects as “Critical City Projects”. These were denoted by a “Yes” in that column. Reasons for this City assigning this designation include, for example, that the project is:
 - Able to address a known area of frequent and severe localized flooding
 - Ongoing and must be completed (e.g., FEMA projects). (Note: the FEMA and NRCS projects are not specifically listed, as the majority of funding comes from Federal/ State Grants).
 - Able to be rapidly implemented (e.g., design is already done, or design consultant is already under contract).

At the December 16, 2015 meeting, WWE staff prioritized the subset of 59 projects from the master project list that had a downstream benefit (i.e., a “Downstream Priority Score” of one or greater) in rank order. Five of the original 78 projects on the list (numbered from 0 to 77) were deleted that were identified by the meeting participants as being duplicated, considered an operations and maintenance activity, included in other identified projects, not included in the SNA verified project list, or related to repair of existing developed infrastructure. The remaining 14 projects included on the master project list at the end of the meeting were not identified by WWE with at least one downstream benefit.

Following the December 16, 2015 meeting with WWE, City and consultant staff used all of this input to establish a “City Priority Ranking” of all projects on the master project list. As shown in **Table 3-1 City Capital Project Prioritization (Appendix B-1)**, the City’s ranking represents a balance of high priority City projects with those projects rated with the highest downstream benefits score.

At the March 30, 2016 meeting, WWE, City and consultant staff reviewed the compiled master project list to agree on a 1-year (2016), 5-year (2016-2020) and 20-year (2016-2035) prioritized list of capital projects. Two projects from the original list of 73 projects were deleted by the meeting participants and agreed to be completed with emergency stormwater projects related funding. Two additional projects were identified by WWE to have downstream benefits that were not identified during the previous analysis. The final list of prioritized capital projects included a total of 71 projects, 61 of which were identified by the meeting participants to have at least one downstream benefit. The top priority projects identified and scheduled for completion in the first two years of the delivery plan are discussed in Section 5.4.

CSU's Sanitary Sewer Creek Crossing Program (SSCCP) identifies projects that respond to the need to protect exposed or at-risk utility infrastructure. The prioritization of those projects has typically been determined by CSU staff based on their judgment of the criticality of each utility crossing project location. These projects are in addition to the identified City Stormwater Program capital projects and integrate stormwater considerations into the creek crossing protection designs. The prioritization criteria developed for the City capital projects were determined to also have applicability to the projects identified through the SSCCP. Therefore, the SSCCP project list has been re-evaluated in light of these criteria to better illustrate project benefits from these crossing projects in meeting overall City Stormwater Program objectives (see **Table 3-2 Creek Crossing Project Benefits, Appendix B-1**).

4.0 DEVELOPMENT OF PROJECT INFORMATION

Information about each of the City's capital stormwater projects was compiled and documented. The scope, features and cost estimate for each project was reviewed or validated as part of this effort.

The SSCCP project costs are validated on an annual basis by CSU staff, and were not separately validated as part of the effort documented in this report. CSU staff typically query the SSCCP project database one or more times annually to evaluate the top 20 projects with the highest rating and risk scores and reprioritize as necessary with other known priority projects based on current inspection data.

4.1 Definition of Capital Cost Components

The capital costs presented in this report include typical cost components for project implementation including planning, engineering, permitting and construction. Capital costs shown herein are based on a conceptual level of project definition and, for most of the projects, no design engineering has yet been performed. As such, the costs should be considered planning level costs to be refined once engineering and design efforts have been performed.

The components of the overall project capital costs are summarized in **Table 4-1 Definition of Capital Cost Components (Appendix B-1)** and discussed below:

- **Construction Value:** The “estimated construction cost” is usually derived using rough quantity estimates and unit cost factors. A “construction contingency” is then added to account for constructed items that have not been identified during early planning stages.
- **Soft Costs:** Soft costs are non-construction items that are incurred over the course of project implementation. They are defined as a percentage of the Construction Value. The soft cost percentage values shown in **Table 4-1 Definition of Capital Cost Components (Appendix B-1)** were established based on past City experience and MWH's experience on other programs. The following soft costs have been defined for this work:
 - **City Staff Costs:** Various City staff will work on the capital projects (e.g., stormwater engineers, administrative staff and procurement staff) so this cost category is accounted for in the in the overall project cost estimates.
 - **City Staff Augmentation:** This involves hiring outside consultants to augment existing City staff to help implement a project. This includes outside program management or other support services.
 - **Design:** Cost associated with hiring an engineering consulting firm to perform preliminary and final design services for the project.
 - **Construction Management:** Cost associated with hiring an engineering or construction management firm to provide construction management services.
 - **Engineering Services during Construction:** Cost associated with having a design engineering firm support City staff during the construction phase. These services are often provided by the same firm that performs the design.
 - **Legal:** City legal staff provide legal input to projects such as for contract reviews.
 - **Land Transactions:** Capital projects often require acquisition of land rights including rights-of-way, temporary construction easements, permanent easements, and fee title land purchases. The City's practice is to accrue these costs against

projects. Each project cost estimate includes costs for land acquisition as appropriate.

- **Project Contingency:** The project contingency addresses overall uncertainty that exists regarding the scope and project cost at the planning stage. It is multiplied by the sum of the Construction Value and Soft Costs. For the purposes of this document, project contingency has been defined in two components:
 - **Design Contingency:** Accounts for uncertainty related to design since project definition is limited to the planning stage. Design Contingency is set at 25 percent in the early planning phase and typically decreases as the design progresses and uncertainty about project costs is reduced.
 - **Construction Changes Contingency:** Accounts for changes that occur after a construction contract is bid and a contract is awarded. It covers risk of change orders and claims. This contingency ranges from 10 to 15 percent.
- **Escalation:** Project overall capital costs have been escalated as previously described. Escalation computations were included within the cost spreadsheet model presented later in this report.

4.2 Validation Approach

The following steps were taken to validate the City projects:

- City staff provided available information on each project, as listed in **Tables 1-1 City Capital Improvement Projects List and 2-1 August 2015 Stormwater Capital Project List (Appendix B-1)**. The source of information on a number of these projects was the SNA report, which was also the initial source of project information for **Table 2-2 Wright Water Engineers Project List (Appendix B-1)**. This information was compiled into project summary sheets for each project (included in **Appendix B-2**). The project summary sheets contain a brief project description, location and an overview of project benefits.
- Each project was categorized based on the level of available information. Additional cost estimate analysis was completed and all project costs were escalated to January 2016 dollars.
- Each project was analyzed to determine the project duration based on the applicable project delivery stages for the project.
- The project information was summarized into two-page project descriptions.

4.3 Assessment of City Capital Stormwater Project Costs

The City's capital stormwater project costs are summarized in **Table 4-2 City Capital Project Costs (Appendix B-1)**, which contains the following information for the projects included on the master project list:

- Project number and name
- If the project was identified from **Table 2-1 August 2015 Stormwater Capital Project List (Appendix B-1)** that estimated total capital cost is shown.
- Information on the project obtained from the SNA which included:
 - Associated SNA project number

- Class A or B determination per SNA (Class A projects had more available information than Class B).
- Associated SNA project cost
- Comments summarizing conclusions about to what extent each project was validated
- Validated cost as described in this report, expressed in 2016 dollars
- Indication as to whether the project has potential to be “fast tracked.” A project has that potential if it meets any of these conditions:
 - Design is complete and the project is ready to bid for construction
 - The City has a design consultant under contract and can immediately begin design
 - The project is small enough to use the existing City On-Call Engineering Contract to engage a design firm (the existing contract is limited to less than \$100,000 in design fee, which is roughly equivalent to a capital cost less than \$2.0 million).
 - The City has a recent similar design that it can adapt with minimal additional design effort using City staff (i.e., no outside design consultant procurement needed).

The City has two ongoing projects in the master project list that are a combination of multiple smaller projects. These include Project 0 (FEMA Projects) and Project 1 (Emergency Stormwater Projects). These two items in the master project list have a budget amount to address some of the actions on these lists each year under the Stormwater Program. FEMA projects are envisioned to continue through 2018. The Emergency Stormwater Projects are budgeted annually through 2025.

The FEMA projects consist of repair of damaged channels and infrastructure related to the Presidential Disaster Declaration for 2013 flooding and May-June 2015 rain events. The City is currently working with FEMA to prepare project worksheets for identified projects resulting from these events. Natural Resource Conservation Service (NRCS) projects have also been identified. The budget amounts shown are forecasted grant match dollar amounts; the City is required to contribute approximately 25 percent of the overall costs when seeking outside grant funding to augment Stormwater Program budgets. The budgeted grant match included in the CIP is based on receiving a similar level of FEMA funding in the future.

The Emergency Stormwater Projects consist of ongoing repairs of damaged infrastructure that involve a level of complexity and cost beyond a typical O&M activity. The annual budget is allocated to address unplanned emergency projects and community related projects that arise over the course of a fiscal year. The budget estimate is based on the City’s past experience with these projects, with an assumed allocation of the emergency stormwater projects budget of 15 percent for detention-type projects, 25 percent for channel stabilization and grade control projects, and 60 percent for other stormwater infrastructure improvements.

There were only two projects from the master project list for which sufficient engineering work was completed to allow full validation of the project cost estimates following the process described above. Those are: Project 2, Sand Creek Pond 3, and Project 11, Camp Creek.

There were 18 projects for which the City established an allowance, but no defined project scope had yet been developed. These include a number of projects from the SNA report where the City assumed a portion of the SNA project work would be done, but did not fully identify which portion or reach of a larger project would be done. These projects will require additional

planning to determine a sufficient level of project definition to proceed with procuring design services.

The remaining projects were identified in the SNA report and the budget and scope developed therein was used. The SNA project cost estimates for these projects were escalated to 2016 levels following the approach described previously.

4.4 Capital Stormwater Project Validation

The following contains a description of the two projects for which a detailed project validation analysis was performed.

4.4.1 Project 2—Sand Creek Pond 3

Design of the Sand Creek Pond 3 project was recently completed by Kiowa Engineering. The City released a Request for Bids for this project in November 2015 and anticipates awarding a construction contract in January 2016. The cost estimate was developed by Kiowa Engineering.

This project was originally estimated at \$1,200,000 and was originally a detention basin only. The project now includes an inflow drop structure. The construction value is based on an Engineer's estimate of \$1,073,000 for the detention basin and \$1,378,000 for the inflow drop structure. Validation consisted of an item by item review of the costs for each bid item. Using Colorado Department of Transportation (CDOT) unit rates for individual components or bid items, the project costs were found to be approximately 88 percent of the Engineer's estimate from Kiowa. As such, it was concluded that the Engineer's estimate is reasonable and was used as the basis for development of this project's capital cost estimate (\$3,076,000) for inclusion in the Stormwater Program CIP.

4.4.2 Project 11—Camp Creek

This project originally included portions of projects CS-002 and CS-003 from the SNA and involves replacing an existing concrete channel with a natural channel, including increasing hydraulic capacity of bridges crossing the creek. The City retained Wilson & Company to study this project. Wilson and Company estimated a total construction cost of \$30,000,000 for the complete length of Camp Creek. Following completion of Wilson's study, City staff adjusted the project definition assuming that only a portion of the total reach of Camp Creek identified in Wilson and Company's study that did not include major bridge reconstruction would be completed. This portion included the reach from Chambers Street to Water Street. Based on the Wilson estimate, City staff pro-rated the total estimated capital cost for this shorter reach to be \$4,250,000, or approximately \$2,400,000 in construction value.

To validate Project 11, MWH evaluated Wilson & Company's adjusted Engineer's estimated construction value. Quantities generated from Wilson's study were compared against CDOT unit prices for each project element to produce an estimate of the total construction value. Starting with the full length Camp Creek project (capital cost estimate of \$36,900,000, construction cost estimate of \$30,000,000), the construction value was adjusted to align with the scope of work for the shortened reach of channel to be improved. The revised estimated construction value yielded from this analysis was computed to be \$2,400,000. This confirmed the revised estimated construction value for this project as included in the master project list for the City's Stormwater Program CIP.

4.5 Assessment of Creek Crossing Project Costs

The Creek Crossing project costs are typically assessed by CSU staff by evaluating an Engineer's estimate based on construction design plans or by the order of magnitude of a project based on schematic designs. The resulting costs are summarized in **Table 2-3 Utilities Creek Crossing Project List (Appendix B-1)**.

5.0 CAPITAL PROJECT SCHEDULES AND COST DISTRIBUTION

Once the prioritized list of capital projects was established and costs were validated, those projects and costs were scheduled over time. Seventy-one projects have been identified to be completed. The top 37 projects are scheduled to complete within the first 10 years of our CPDP.

5.1 Schedule Assumptions

To create project schedules, a number of assumptions were made, including the following:

- Project name and number
- MWH validated cost in 2016 dollars
- Three questions that relate to lengthening a project's schedule, such as estimating whether each project will need to:
 - Hire an outside design consultant
 - Acquire land (temporary or permanent easements, or fee title)
 - Address environmental documentation or permitting issues
- Estimates of the duration of each project by the five phases identified earlier. An algorithm was created to help estimate these durations as described below:
 - A project's capital cost size generally impacts its duration. The three cost categories established were <\$1M, \$1M-5M, and >\$5M. These were termed Small, Medium, and Large Size, and durations were assumed for each phase. (Note that durations were kept to even increments of three months to allow the cost model to more easily distribute costs by quarter.)
 - For the design phase duration, if a project does not involve either land acquisition or environmental/permitting issues, then the shortest design duration is assumed. If a project involves either one or the other, then the longer design duration is assumed.
 - It is important to note that this algorithm was used to provide a rational basis for establishing an initial estimate of project durations. As specific information is developed on a given project, the algorithm values can be overridden in the cost model with more specific estimates to update and refine the CIP completion strategy over time.
- The final set of assumptions for the cost model deals with spreading a project's total capital cost over the five phases. To do so, a percentage distribution of capital costs by phase was developed. As with the phase durations, as specific information is developed on a given project, the cost distribution values can be overridden in the cost model with more specific estimates.

5.2 City Project Cost Distribution

The results and assumptions for the City projects were used to create a Microsoft Excel spreadsheet-based cost model that evaluates the variation of project start dates and enables the spread of capital costs over time by project phase. This yields a year-by-year plan of total capital expenditures required to accomplish the list of priority projects.

However, because both annual MS4 Program costs and City Capital Project costs accrue against the annual City budget, the cost model also includes annual MS4/O&M costs and balances the available budget for capital projects in a given year with costs for MS4-related

activities. Appendix A to the Stormwater Program Implementation Plan contains the *MS4 Program Improvement Report* which describes the components comprising the annual MS4/O&M costs.

The cost model contains the following components (see **Figure 5-1. Summary of Cost Model, Appendix B-1**):

- **Full Operational Expenditures** (un-escalated): A summary of the annual operational (non-capital) costs. These costs are developed in other sections within the model.
- **Capital Projects**: A list of the 37 priority project names, start dates, and capital costs. It is in this location that the project start date can be adjusted (one of the most common activities when using the model) based on the City's priority (highest priority projects scheduled first). Capital costs and duration assumptions are captured elsewhere in the model. (Note that City priority project No. 9, Sand Creek Stabilization South of Platte, is not included in this model as the project is funded through FEMA grant funds with City match dollars encumbered in 2015.)
- **Total Annual Cost** (graphics): The annual operational and capital costs, along with an overall total for both encumbrances and expenditures. This total is measured against the annual City budget.
- **Distribute Costs**: This must be activated each time a project start date is changed, to trigger the model to recalculate.
- **Operations Cost % of Labor**: This is a component of the operational expenditures. It covers miscellaneous administrative labor costs. These figures are adjusted elsewhere in the model.
- **Escalation Rates**: All costs were estimated in January 2016 dollars and escalated over time. Different escalation rates were established for Capital, Labor, and Maintenance Services & Equipment.

The model was used to shift project start dates to achieve an anticipated yearly encumbered cash flow as close as possible to the target budget for both capital and O&M expenditures. The final result is shown in **Figure 5-2 City Costs for 2016-2025 (Appendix B-1)**.

5.3 Creek Crossing Project Cost Distribution

Because the Creek Crossing projects are less complex and do not involve a blend of O&M costs, a cost model was not needed to distribute these costs over time. The cost distribution was done manually.

5.4 Project Schedules

A graphical representation of the project schedules was created for both the City and Creek Crossing projects (see **Figure 5-3 Schedule for City Stormwater Capital Projects** and **Figure 5-4 Schedule for Creek Crossing Projects, Appendix B-1**). The five phases of each project are shown in different colors to distinguish them visually. As shown in **Figure 5-3 Schedule for City Stormwater Capital Projects (Appendix B-1)**, there will be eight projects underway in 2016 (nine including Sand Creek Stabilization South of Platte), with a peak of 17 projects being initiated, already underway, or being closed out in 2019.

The top nine priority projects are scheduled and funded to commence in 2016, as seen in **Table 3-1 City Capital Project Prioritization (Appendix B-1)**. In 2017, the next three priority projects (priority ranking 10, 11 and 12) are scheduled to commence.

The first 12 projects to be initiated in years one and two, and the reasons they were prioritized and selected, are as follows:

- 1) **Sand Creek Pond 3** – This project involves a new full-spectrum detention basin with a water quality capture volume, one that exceeds the minimum WQCV in the criteria manual, and a drop structure on Sand Creek. This project is needed to capture, detain and provide water quality treatment for municipal runoff from a large area of previously constructed development. This project was identified by both the City and WWE with the highest priority ranking, and meets all four downstream benefit criteria. Design of the project was completed in late 2015 and construction is anticipated to begin in 2016.
- 2) **FEMA Projects** – Related to the Presidential Disaster Declaration for 2013 flooding and May/June 2015 rain events, the City has worked with FEMA to secure funding to complete ongoing projects and to prepare project worksheets for future projects. These projects are critical to stabilize soils after recent emergency incidents, which also provides significant downstream benefits by preventing extreme amounts of erosion and sediment transport from wildfire burn and flood damaged areas. Furthermore, grant match dollar amounts secure additional Federal funding, thereby leveraging City resources and increasing overall program capital expenditures annually.
- 3) **King Street Detention Pond** – This project includes construction of a new outlet structure, improved maintenance access, and retrofit of the existing detention basin capacity and outlet structure to provide full spectrum detention and water quality enhancement. This project has a completed design and is ready for rapid implementation.
- 4) **Water Quality Project – America the Beautiful Park** – A new Olympic Museum development project is planned and scheduled for construction in 2016. This project allows the City to capitalize on the new development construction and construct a full spectrum detention basin that will capture and detain flows from portions of the downtown area prior to discharge to Fountain Creek.
- 5) **USAFA Drainages (Northgate Area)** – The Northgate area in the northern portion of the City has seen rapid urban growth over the past 20 years. Several natural drainages from this area were severely damaged in recent storms with extensive channel and bank erosion occurring. The project involves construction of channel stabilization and grade control measures along three Monument Branch tributaries. Stabilization of a Colorado Springs Utilities Sanitary Sewer Force Main along the eastern border of the USAFA is also included as part of the project work.
- 6) **Emergency Stormwater Projects** – In addition to the stormwater CIP master project list, the City has maintained a list of projects that are identified based on emergency-related needs and new concerns that arise over the course of a fiscal year. These typically involve localized neighborhood and/or intersection flooding, building flooding or other flooding-related needs not previously identified as part of a specific capital project. The City evaluates the prioritization of these needs on an annual basis with approximately \$1.5 million per year of the capital stormwater budget to address these needs. This level of budget allocation to address these needs was determined based on the City's past experience and judgment.

- 7) **Fairfax Tributary Detention Pond** – This project includes design and construction of a new full spectrum detention basin that provide water quality improvements to stormwater runoff and reductions of peak flows downstream. It was selected due to its watershed location and downstream water quality benefits. .
- 8) **Downtown Drainage Improvements** – Pikes Peak Avenue in downtown Colorado Springs is scheduled to be resurfaced in 2016. As part of this effort, the existing stormwater conveyance system that is located within that roadway will be upsized to provide increased stormwater conveyance capacity thereby reducing flooding potential that was experienced in the area in recent past. The project is scheduled to be completed during the resurfacing activities to minimize overall costs and disturbance to adjacent properties.
- 9) **Sand Creek Stabilization South of Platte** – This project includes design and construction to stabilize of the existing Sand Creek channel downstream of the Platte Avenue Bridge to a point north of Karr Road. Stabilization measures are scheduled to include channel bank stabilization and installation of multiple drop structures within the channel to stabilize channel flows and reduce sediment transport. This project was selected based on awarded grant funding in 2016 from the US Federal Emergency Management Agency (FEMA) and the associated downstream benefits within the Sand Creek watershed.
- 10) **Cottonwood Creek Detention Basins** – This project involves design and construction of seven detention basins along Cottonwood Creek to provide a comprehensive solution for this tributary watershed to Monument Creek. Each of the planned detention basins will incorporate full spectrum detention features that provide water quality improvements to stormwater runoff and reductions of peak flows downstream.
- 11) **Rangewood Tributary Detention Pond** – This project includes design and construction of a new full spectrum detention basin that provide water quality improvements to stormwater runoff and reductions of peak flows downstream. It was selected due to its watershed location and downstream water quality benefits.
- 12) **Cottonwood Creek Detention Pond – Bridle Pass Drive** – Similar to the Rangewood Tributary Detention Pond, this project includes design and construction of a new detention basin that provide water quality improvements to stormwater runoff and reductions of peak flows downstream. It was selected due to its watershed location and downstream water quality benefits.

5.5 Project Locations

The locations of the City and Sanitary Sewer Creek Crossing projects are shown in **Figure 5-5 Location Map for Stormwater Projects (Appendix B-1)**. The projects are distributed across the City boundaries, with a large portion of the projects located along the main trunks of Monument Creek, Sand Creek, and Fountain Creek.

In addition, a map summarizing the history of City drainage basin master plan studies is provided (see **Figure 5-6 History of City Drainage Basin Master Plans, Appendix B-1**). As shown, the City has 32 drainage basins, with drainage basin planning studies prepared as far back as 1964.

6.0 NEXT STEPS

The immediate next steps in advancing the City's Stormwater Program Implementation Plan include moving the identified priority capital projects forward in 2016. Action items were divided into three components:

- Actions to be completed within the first three months of program implementation
- Actions to be completed within the first six months
- Actions to be completed by the end of the first year

In addition, activities related to long-term CIP implementation were identified.

6.1 By End of the First Three Months

By the end of the first three months, a number of capital projects will be underway (see **Figure 5-3 Schedule for City Stormwater Capital Projects, Appendix B-1**).

The Stormwater Program's Program Management Plan (PMP) is in the process of being drafted and will provide the policy and procedural guidance for the City to manage the delivery of the projects under its Stormwater Program CIP programmatically to achieve overall program objectives. By the end of the first three months, the draft PMP will be in process to begin addressing City-specific project implementation items and will be the procedural guidance manual for delivery of projects starting in 2017.

Capital Program staff will review the projects in 2016 and identify any common issues or constraints. Based on that review, staff will determine the need for programmatic (i.e., across all projects) tracking of any issues (e.g., procurement, permits, land acquisition).

The City is in the process of implementing new stormwater on-call construction contracts. By the end of the first three months, those contracts will be in place and the on-call contractors ready and available to accept assignments to support City Stormwater Division activities.

Under the current staffing plan, there are plans to potentially add engineering staff to the capital projects group in 2016. However, the City may want to augment existing capital projects staff with consultant staff to assist with project management and/or programmatic tasks. By the end of the first three months, the City will decide whether to do any "staff augmentation" in 2016, and, if they do, will move forward with procuring outside support.

6.2 By End of the First Six Months

The City has had on-call engineering contracts in place for some time and intends to update those contracts to more specifically reflect the Capital Program needs. By the end of the first six months, the new stormwater on-call engineering contracts will be either in place or in the procurement phase.

In addition, a number of projects will be underway (see **Figure 5-3 Schedule for City Stormwater Capital Projects, Appendix B-1**). Design task orders will have either been issued to on-call engineers or in the procurement stage for a number of these projects.

The draft requirements of the PMP will be in place and a QA/QC process will begin to verify implementation of those requirements.

The staff augmentation approach if chosen will be implemented or be in the process of being implemented.

The City recognizes its need to review recently completed development projects for implementation of appropriate permanent post-construction Best Management Practices/BMPs (e.g., detention ponds, infiltration swales) consistent with the City's Municipal Separate Stormwater Sewer System (MS4) permit and Drainage Criteria Manual. This matter is discussed more fully in the MS4 Program Improvement Plan report, which is Appendix A to the SPIP.

The City is in the process of reviewing those development projects and determining whether solutions are needed to mitigate water quality impacts from runoff from those areas. A solution in some areas may potentially involve construction of capital stormwater projects to mitigate water quality impacts. Capital projects identified for that purpose may be added to the capital project list presented in this CPDP and prioritized as appropriate based on the criteria developed by the City and WWE.

6.3 By End of the First Year

Upon completion of the first year, a number of projects will be underway (see **Figure 5-3 Schedule for City Stormwater Capital Projects, Appendix B-1**).

Annual reporting on CIP progress will begin, contributing to the overall Stormwater Program reporting process.

The annual CIP planning process adopted by the City for the Stormwater Program will be implemented, resulting in an updated project list for 2017.

6.4 Annual CIP Planning Process

The City recognizes that on-going planning is necessary to address all future City stormwater planning needs. Within the MS4 Program Improvement Plan, developed as part of the SPIP, the City has planned and budgeted funds to develop a Stormwater Infrastructure Master Plan (SIMP). The purpose of the SIMP is to collect, standardize, and integrate information on water quality BMPs, stormwater capital projects, and operations and maintenance (O&M) projects needed to address current and future stormwater conditions in the City. The SIMP is scheduled to be completed in 2018 and is intended to consolidate information from various current and historical sources (i.e., drainage basin planning studies, drainage master plans, project lists, BMP inventories) into a comprehensive, uniform plan that is actionable by the City.

Upon completion of the SIMP, the stormwater CIP must be updated to reflect the most up-to-date prioritization of planned projects that incorporates new project needs that may arise in a given year based on updated planning and studies and as seasonal events may require. After completion of the SIMP, the City Stormwater Division staff will maintain and update the plan and stormwater CIP annually as necessary.

APPENDIX B-1 – TABLES AND FIGURES

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Table 1-1: City Capital Improvement Projects List

City Priority Ranking	Colorado Springs Stormwater Program Implementation Plan Project Name	Capital Cost (2016\$)
1	2. Sand Creek Pond 3	\$3,076,000
2	0. FEMA Projects ¹⁾	\$2,081,000
3	8. King Street Detention Pond (WWE CS-013)	\$250,000
4	13. Water Quality Project--America the Beautiful Park Detention Basin ²⁾	\$2,500,000
5	6. USAFA Drainages (Northgate Area)	\$2,000,000
6	1. Emergency Stormwater Projects ³⁾	\$7,500,000 (First 5 years)
7	7. Fairfax Tributary Detention Pond (WWE CS-330)	\$398,000
8	5. Downtown Drainage Improvements	\$2,250,000
9	26. Sand Creek Stabilization south of Platte (WWE CS-018) ⁵⁾	\$5,290,000
10	65. Cottonwood Creek Detention Basins (PR-2,6,7,9,11,14)	\$2,740,000
11	31. Rangewood Tributary Detention Pond (WWE CS-333)	\$750,000
12	52. Storage Bridle Pass Drive Construct new pond to improve 2 yr flows (CS-332)	\$1,591,000
13	9. South Pine Creek Detention Pond (WWE CS-335)	\$461,000
14	15. Citadel Mall Neighborhood Improvements (CS-374)	\$1,053,000
15	23. North Chelton Road (CS-057)	\$1,370,000
16	11. Camp Creek--Phase 1 (WWE CS-002 and CS-003) (Redefined) ⁴⁾	\$4,356,000
17	41. Storage Wagner Park Detention - downstream of Bijou Detention Storage Required (CS-360)	\$704,000
18	38. Storage Austin Bluffs Parkway upstream of Research (CS-331)	\$754,000
19	51. Storage Cottonwood Park (west side) (CS-334)	\$3,768,000
20	34. Storage Sand Creek Detention Pond 2 Complete Detention Pond 2 on Sand Creek south of Barnes (CS-105)	\$1,025,000
21	24. Park Vista (Siferd Low Water Crossing) (CS-232)	\$3,750,000
22	70. CS-239 Grade Control Upper Hancock Channel - Hancock to Academy, 78+33 to	\$1,236,000
23	16. North Douglas Natural Channel	\$3,500,000
24	19. Galley Road Channel (WWE CS-258) Sand Creek between Galley and Platte Avenue	\$2,000,000
25	21. Monument Creek at Talemine (CS-011)	\$1,778,000
26	35. Side Channel Sand Creek - segment 107, reach SC-5 1700lf channel stabilization (CS-261)	\$1,242,000
27	39. Grade Control Palmer Park Channel - Galley Rd. to Palmer Park, 300+00 to (CS-259)	\$6,594,000
28	28. Shooks Run Channel - Cache La Poudre St. to Patty Jewett Golf Course (CS-326)	\$3,500,000
29	77. CS-265 Grade Control Sand Creek Upper West Fork - Maizeland to South Carefree 3 drop structures	\$420,000
30	76. CS-254 Channel/Grade Control Sand Creek Upper West Fork - Galley to Murray 1730lf channel stabilization, 2 drop structures	\$2,006,000
31	75. CS-262 Channel/Grade Control Upper Sand Creek - W. Fork to Palmer Park Blvd. 1550lf channel stabilization, w/drop structures	\$1,192,000
32	74. CS-252 Channel Sand Creek Lower West Fork - Emory to Platte Ave. 1000lf channel stabilization	\$2,383,000
33	73. CS-025 Channel/Grade Control Sand Creek West Fork - Main stem to Wooten Construct drop structures & streambank protection	\$2,206,000
34	61. Channel/Grade Control Sand Creek (CS-040)	\$3,507,000
35	60. Channel/Grade Control Sand Creek (CS-039)	\$3,908,000
36	71. CS-246 Channel/Grade Control Sand Creek Lower Center Tributary - No Name to East Fork	\$458,000
37	62. Channel/Grade Control East Fork of Sand Creek (CS-041)	\$7,464,000
38	55. Grade Control Fountain Blvd. Channel - Chelton Rd. to Fountain Blvd., (CS-243)	\$2,553,000
39	54. Grade Control Chelton Road Channel - Academy to Chelton, 96+97 (CS-241)	\$1,593,000
40	69. CS-240 Channel/Storm Drain Lower Sand Creek Tributaries 2,3, and 4 - Main Stem to Academy	\$867,000
41	67. CS-238 Channel/Grade Control Lower Hancock Channel - Downstream 1500lf channel stabilization, 2 drop structures	\$1,247,000
42	66. CS-268 Channel/Grade Control Las Vegas St. Channel - ATSF RR to Peterson Fld Trib. 700lf channel stabilization, 2 drop structures	\$1,545,000
43	72. CS-247 Channel/Grade Control Sand Creek Middle Center Tributary - Powers to No Name 300lf channel stabilization, 3 drop structures	\$175,000
44	68. CS-130 Channel Hancock Expressway Channel East of Astrozon Undermining of infrastructure.	\$72,000
45	20. Gold Medal Point Channel (WWE CS-339)	\$750,000
46	57. Channel/Grade Control Cottonwood Creek - Academy to Union Construct flood control and stream restoration projects (CS-004)	\$5,840,000
47	59. Channel/Grade Control Cottonwood Creek - Monument Creek to Academy Construct flood control and stream restoration projects. (CS-005)	\$13,232,000
48	58. Channel/Grade Control Rangewood Channel - Main Stem to Balsam 7400lf channel stabilization, w/drop structures (CS-343)	\$5,066,000
49	63. Channel/Grade Control Cottonwood Creek - Rangewood to Woodmen 5300lf channel stabilization, w/drop structures (CS-337)	\$3,768,000
50	45. Channel/Grade Control Fountain Creek - W. Cimmaron St. to N end of Drake Power (CS-306)	\$1,298,000
51	46. Channel/Grade Control Fountain Creek - N end Drake Power Plant to south end of (CS-307)	\$1,941,000
52	18. Fountain Creek - Drake Power Plant to Shooks Run (WWE CS-308 and CS-309)	\$2,250,000
53	43. Channel/Grade Control Fountain Creek - Shooks Run to Fountain Mutual Canal Channel stabilization, 2 drop structures (CS-310)	\$11,854,000
54	53. Channel/Grade Control Fountain Creek - Fountain Mutual Canal to US 24 Bypass Channel stabilization, 2 drop structures (CS-311)	\$9,921,000
55	36. Channel/Grade Control Fountain Creek - US 24 Bypass to Spring Creek Channel stabilization, 2 drop structures (CS-312)	\$4,636,000
56	50. Channel/Grade Control Fountain Creek - Spring Creek to Mobile Home Park Channel stabilization, 3 drop structures (CS-313)	\$3,803,000
57	32. Channel/Grade Control Fountain Creek - Mobile Home Park to N end El Pomar Sports (CS-314)	\$4,235,000

City Priority Ranking	Colorado Springs Stormwater Program Implementation Plan Project Name	Capital Cost (2016\$)
58	33. Channel/Grade Control Fountain Creek - N end El Pomar Sports Park to S end El (CS-315)	\$4,551,000
59	22. Monument Creek Mobile Home Park (CS-139)	\$478,000
60	64. Channel/Grade Control Chelton Dr. Channel - Chelton Dr to Airport Rd 2400lf channel stabilization, 2 drop structures (CS-359)	\$1,487,000
61	25. Pine Creek Outfall into Monument Creek (CS-047)	\$1,250,000
62	49. Channel/Grade Control Templeton Gap Rd. Channel - Powers to Tutt 4400lf channel stabilization, w/drop structures (CS-342)	\$3,077,000
63	40. Storage Mount Woodmen Court Drainage Sedimentation pond outfalls directly onto private property (CS-064)	\$515,000
64	12. Shooks Run Improvements	\$3,000,000
65	27. Shooks Run Channel - Bijou Street Culvert & Channel Stabilization (CS-054a)	\$1,500,000
66	29. Shooks Run Improvements - Phase 3 (CS-054b)	\$1,500,000
67	4. Old Annexation Drainage Improvements	\$2,800,000
68	14. Briargate Drainage Improvements (CS-344)	\$1,641,000
69	30. Skyway Area Improvements (CS-235 & CS-296)	\$457,000
70	48. Channel/Storm Drain Columbia Road Drainage (CS-045)	\$2,088,000
71	17. Dry Creek Channel (WWE CS-007)	\$1,386,000

Footnotes:

- 1) Total anticipated FEMA Grant City match portion through 2018: Budgeted \$1,081,000 (2016); \$500,000 (2017); \$500,000 (2018).
- 2) Total Capital Cost includes 5 detention ponds, one per year at \$500,000 each between 2016-2020. First pond to be initiated with America the Beautiful Park detention basin in 2016.
- 3) Emergency Stormwater Projects list total capital cost (2016-2020); budgeted at \$1.5 Million per year ongoing.
- 4) Additional channel lining removal projects along Camp Creek channel may be done as funding becomes available.
- 5) Funding for capital cost shown is FEMA grant funding and City grant match encumbered in 2015. No 2016 City capital contribution for this project.
- 6) See 2016 and 2016-2020 Project lists for additional detail on project funding.
- 7) Total estimated project capital cost is shown for each project. Total Stormwater Control Program yearly capital expenditures depend on the number of projects underway and the project phase(s) performed in a given year. Total yearly capital expenditures will be presented in the annual reporting of the City's Stormwater Control Program performance.

Table 2-1. August 2015 Stormwater Capital Project List

Dept Rank	Project Name	2016	2017	2018	2019	2020	Grand Total
0	Estimated 2016 Award-May 2015 Flood FEMA Grant Match	1,081,082					1,081,082
	Estimated 2017 Award-May 2015 Flood Grant Match		500,000				500,000
	Estimated 2018 Award-May 2015 Flood Grant Match			500,000			500,000
1	Emergency Stormwater Projects	1,700,000	1,200,000	1,500,000	1,500,000	1,500,000	7,400,000
2	Sand Creek Pond 3	1,200,000					1,200,000
3	Dam Repairs	400,000					400,000
4	Old Annex Drainage Improvements	1,000,000	1,800,000				2,800,000
5	Downtown Drainage Improvements	750,000	1,500,000				2,250,000
6	USAFA Drainages (Northgate area)	500,000	1,500,000				2,000,000
7	Fairfax Tributary Detention Pond	400,000					400,000
8	King Street Detention Pond	250,000					250,000
9	South Pine Creek Detention Pond	500,000					500,000
10	Erindale Drainage Improvements	500,000					500,000
11	Camp Creek	750,000	2,000,000	1,500,000			4,250,000
12	Shooks Run Improvements	500,000	500,000	1,000,000	1,500,000		3,000,000
13	Water Quality Projects	500,000	500,000	500,000	500,000	500,000	2,500,000
(blank)	Briargate Drainage Improvements				1,500,000		1,500,000
	Citadel Mall Neighborhood Improvements		250,000	3,000,000			3,250,000
	Douglas Creek Repairs				1,500,000		1,500,000
	Dry Creek Channel					1,500,000	1,500,000
	Fountain Creek - Drake Power Plant to Shooks Run					750,000	750,000
	Galley Road Channel					2,000,000	2,000,000
	Gold Medal Point Channel				750,000		750,000
	Monument Creek at Talemine					1,000,000	1,000,000
	Monument Creek Mobile Home Park				500,000		500,000
	North Chelton Road		1,500,000				1,500,000
	Park Vista (Siferd Low Water Crossing)		250,000	3,500,000			3,750,000
	Pine Creek Outfall into Monument Creek				1,250,000		1,250,000
	Sand Creek Stabilization south of Platte				2,000,000		2,000,000
	Shooks Run Channel - Bijou St. Culvert and Channel Stabilization					1,500,000	1,500,000
	Shooks Run Channel - Cache La Poudre St. to Patty Jewett Golf Course					3,500,000	3,500,000
	Shooks Run Improvements - Phase 3				1,500,000		1,500,000
	Skyway Area Improvements				500,000		500,000
	Rangewood Tributary Detention Pond					750,000	750,000
Grand Total		9,531,082	11,500,000	11,500,000	13,000,000	13,000,000	58,531,082

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Table 2-2. Wright Water Engineers Project List

10-year Plan for Colorado Springs Stormwater Infrastructure Improvements					
Year	Project Number*	Project Description*	Project Costs*	Yearly Project Costs*	Design / O&M Costs
1	CS-330	Storage Research Parkway at Powers	\$ 391,832	\$ 16,321,374	\$ 3,000,000
	CS-333	Storage Rangewood Tributary at Dublin Blvd.	\$ 659,927		
	CS-335	Storage South Pine Creek Lexington at Bordeaux	\$ 453,700		
	CS-314	Channel/Grade Control Fountain Creek - Mobile Home Park to N end El Pomar Sports	\$ 4,171,942		
	CS-315	Channel/Grade Control Fountain Creek - N end El Pomar Sports Park to S end El	\$ 4,484,154		
	CS-013	Storage King Street Detention Pond Construct new outlet structure and improve maintenance	\$ 431,000		
	CS-018	Channel/Grade Control Sand Creek Downstream of Platte Construct stormwater drop structures, streambank protection	\$ 2,944,535		
	CS-308	Channel/Grade Control Fountain Creek - Drake Power Plant to S. Tejon St. Channel stabilization, 1 drop structure	\$ 1,784,284		
	CS-105	Storage Sand Creek Detention Pond 2 Complete Detention Pond 2 on Sand Creek south of Barnes	\$ 1,000,000		
2	CS-309	Channel/Grade Control Fountain Creek - S. Tejon St. to Shooks Run Channel stabilization, 1 drop structure	\$ 2,868,916	\$ 16,499,507	\$ 3,000,000
	CS-261	Channel Sand Creek Main Stem - segment 107, reach SC-5 1700lf channel stabilization	\$ 1,224,043		
	CS-312	Channel/Grade Control Fountain Creek - US 24 Bypass to Spring Creek Channel stabilization, 2 drop structures	\$ 4,567,880		
	CS-222	Channel Rockrimmon Channel at Rockrimmon/Pro Rodeo Int. Repair damage to channel at outlet	\$ 97,475		
	CS-331	Storage Austin Bluffs Parkway upstream of Research	\$ 742,418		
	CS-259	Grade Control Palmer Park Channel - Galley Rd. to Palmer Park, 300+00 to	\$ 6,496,775		
	CS-064	Storage Mount Woodmen Court Drainage Sedimentation pond outfalls directly onto private property	\$ 502,000		
3	CS-360	Storage Wagner Park Detention - downstream of Bijou Detention Storage Required	\$ 693,237	\$ 16,189,700	\$ 3,000,000
	CS-106	Channel/Grade Control Sand Creek Main Stem Phase III - Fountain Creek Confluence	\$ 2,200,000		
	CS-310	Channel/Grade Control Fountain Creek - Shooks Run to Fountain Mutual Canal Channel stabilization, 2 drop structures	\$ 11,678,463		
	CS-051	Storage Spring Run Detention Ponds	\$ 1,618,000		
4	CS-306	Channel/Grade Control Fountain Creek - W. Cimmaron St. to N end of Drake Power	\$ 1,278,558	\$ 16,369,935	\$ 3,000,000
	CS-307	Channel/Grade Control Fountain Creek - N end Drake Power Plant to south end of	\$ 1,912,125		
	CS-021	Channel Templeton Gap Floodway Reconstruct levee and floodway.	\$ 10,626,551		
	CS-258	Grade Control Galley Road Channel - Platte Ave. to Galley Rd., 270+00	\$ 2,552,701		
5	CS-045	Channel/Storm Drain Columbia Road Drainage	\$ 2,037,000	\$ 15,446,517	\$ 3,000,000
	CS-342	Channel/Grade Control Templeton Gap Rd. Channel - Powers to Tutt 4400lf channel stabilization, w/drop structures	\$ 3,031,540		
	CS-313	Channel/Grade Control Fountain Creek - Spring Creek to Mobile Home Park Channel stabilization, 3 drop structures	\$ 3,746,560		
	CS-334	Storage Cottonwood Park (west side)	\$ 3,712,090		
	CS-332	Storage Bridle Pass Drive Construct new pond to improve 2 yr flows	\$ 1,567,327		
	CS-007	Channel/Grade Control Dry Creek Channel Construct stormwater channel and stream bank protection	\$ 1,352,000		
6	CS-311	Channel/Grade Control Fountain Creek - Fountain Mutual Canal to US 24 Bypass Channel stabilization, 2 drop structures	\$ 9,774,574	\$ 15,467,501	\$ 3,000,000
	CS-241	Grade Control Chelton Road Channel - Academy to Chelton, 96+97	\$ 1,569,152		
	CS-243	Grade Control Fountain Blvd. Channel - Chelton Rd. to Fountain Blvd.,	\$ 2,515,203		
	CS-339	Channel/Grade Control Gold Medal Pt. Channel 550lf channel stabilization, w/drop structures	\$ 1,608,572		
7	CS-259	Grade Control Palmer Park Channel - Galley Rd. to Palmer Park, 300+00 to	\$ 6,496,775	\$ 17,241,214	\$ 3,000,000
	CS-004	Channel/Grade Control Cottonwood Creek - Academy to Union Construct flood control and stream restoration projects.	\$ 5,753,740		
	CS-343	Channel/Grade Control Rangewood Channel - Main Stem to Balsam 7400lf channel stabilization, w/drop structures	\$ 4,990,699		
8	CS-005	Channel/Grade Control Cottonwood Creek - Monument Creek to Academy Construct flood control and stream restoration projects.	\$ 13,036,340	\$ 16,887,032	\$ 3,000,000
	CS-039	Channel/Grade Control Sand Creek	\$ 3,850,692		
9	CS-040	Channel/Grade Control Sand Creek	\$ 3,455,554	\$ 14,521,383	\$ 3,000,000
	CS-041	Channel/Grade Control Sand Creek	\$ 7,353,739		
	CS-337	Channel/Grade Control Cottonwood Creek - Rangewood to Woodmen 5300lf channel stabilization, w/drop structures	\$ 3,712,090		
10	CS-359	Channel/Grade Control Chelton Dr. Channel - Chelton Dr to Airport Rd 2400lf channel stabilization, 2 drop structures	\$ 1,465,049	\$ 15,905,049	\$ 3,000,000
	CS-002	Channel 31st Street Drainage Way, Phase 1 Replace existing undersized concrete channel with greenway. Camp Creek/Upper Fountain Creek.	\$ 8,910,000		
	CS-003	Channel 31st Street Drainage Way, Phase 2 Replace existing undersized concrete channel with greenway. Camp Creek/Upper Fountain Creek.	\$ 5,530,000		
Total				\$ 160,849,212	\$ 30,000,000
				\$ 190,849,212.00	

*From CH2M Hill. City of Colorado Springs Stormwater Needs Assessment. Prepared for the City of Colorado Springs. October 11, 2013.

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Table 2-3. Utilities Creek Crossing Project List

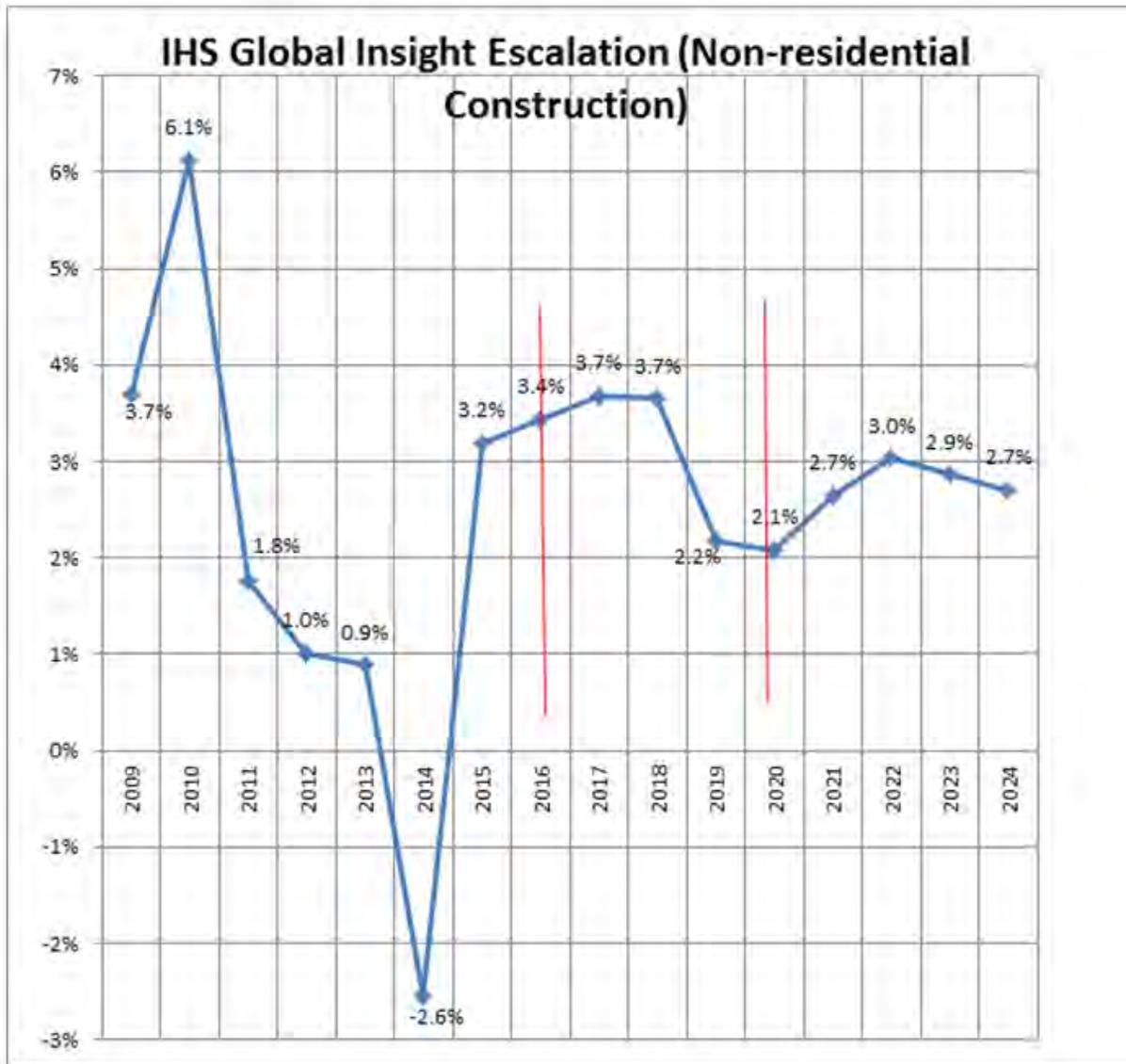
Capital Project Summary

Colorado Springs Utilities (Utilities) Sanitary Sewer Creek Crossing Program

Project Name	Three-Year CIP Table (2016-2018)		Comments
	Estimated Construction Start Date	Estimated Total Capital Cost	
1. Monument Creek Stabilization, Phase 2	Jul-16	\$820,000	In Process; Initiation and Design completed in 2015; Waiting on easements; Construction scheduled by Q3 2016 with Closeout in Q4 2016
2. Dry Creek Downstream of Dawson Drive	Mar-18	\$510,000	Initiated August 2015; Design to commence Q1 2017; Construction scheduled March 2018 with Closeout May 2018
3. Clear Spring Ranch Bank Stabilization	Sep-16	\$4,170,000	In Process; Initiated September 2014; Designer hired January 2015; Construction scheduled September 2016 with Closeout May 2017
4. North Douglas Creek upstream from Mark Dabling Stabilization	Feb-16	\$251,000	In Process; Initiation and Design completed in 2015; Construction Scheduled February 2016 with Closeout in May 2016
5. South Douglas Creek at Sinton Pond, Crossing Elimination	Feb-16	\$176,000	In Process; Initiation and Design completed in 2015; Construction Scheduled February 2016 with Closeout in May 2016
6. Monument Branch Stabilization	Oct-17	\$1,100,000	Initiate January 2016; Hire Designer February 2016; Design commence June 2016; Construction scheduled Q4 2017 with Closeout Q2 2018
7. West Fork Sand Creek Drop Repair	Sep-18	\$500,000	Initiate Design Q1 2018; Construction scheduled Q3 2018 with Closeout Q4 2018
8. Sand Creek stabilization at West Fork Confluence	Sep-18	\$600,000	Initiate Design Q1 2018; Construction scheduled Q3 2018 with Closeout Q4 2018
9. Monument Creek Stabilization Upstream from Pikeview Intake	Apr-18	\$500,000	Initiate Q2 2017; begin Design Q3 2017; Construction scheduled Q2 2018 with Closeout Q3 2018
10. Sand Creek Stabilization Upstream of Barnes Road	Apr-18	\$400,000	Initiate Q2 2017; begin Design Q3 2017; Construction scheduled Q2 2018 with Closeout Q3 2018
Total:		\$9,027,000	

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Figure 2-1. IHS Global Insight Index Trends



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Table 3-1: City Capital Project Prioritization

Colorado Springs Stormwater Program Implementation Plan															
Project Name	Total Estimated Capital Cost (2016\$) ^{(1) (2)}	Prioritization Criteria (see notes below)									Priority Ranking			Comments	Projected Project Dates
		Protect Public Safety/Property	Improve Failing Infrastructure	Enhance Community	Distribute Within the City	Enhance Sediment/Debris Capture	Reduce Sediment Generation/Enhance Soil Stewardship	Improve Water Quality	Provide Detention	Downstream Priority Score	Critical City Project	WWE "Downstream Benefit" Ranking	City Priority Ranking		
2. Sand Creek Pond 3	\$3,076,000			X		X	X	X	X	4	Yes	1	1	Readiness for Implementation. Already out to bid; to be awarded in January 2016.	2016
0. FEMA Projects ⁽³⁾	\$2,081,000	X	X	X		X	X	X		3	Yes	6	2	Readiness for Implementation. On-going.	2016-2018
8. King Street Detention Pond (WWE CS-013)	\$250,000			X	X	X		X	X	3	Yes	7	3	Readiness for Implementation. Can re-use existing design.	2016-2017
13. Water Quality Project--America the Beautiful Park Detention Basin ⁽²⁾	\$2,500,000			X		X		X	X	3	Yes	9	4	Readiness for Implementation. Olympics Museum under construction in 2016.	2016-2017
6. USAFA Drainages (Northgate Area)	\$2,000,000	X		X				X		1	Yes	16	5	Multiple impacts and sites. CSU will do force main protection in project area in the future.	2016-2017
1. Emergency Stormwater Projects ⁽³⁾	\$7,500,000	X	X	X						0	Yes		6	Readiness for Implementation. On-going annual budget.	2016-2020
7. Fairfax Tributary Detention Pond (WWE CS-330)	\$398,000			X	X	X	X	X	X	4		5	7		2016-2017
5. Downtown Drainage Improvements	\$2,250,000	X	X							0	Yes		8	Reduce downtown flooding. Increase pipe size in Pikes Peak Avenue. Conduct during road project scheduled in same area during 2016.	2016-2017
26. Sand Creek Stabilization south of Platte (WWE CS-018) ⁽⁵⁾	\$5,290,000	X		X				X		1		22	9	High priority. FEMA grant funding (see footnote 5).	2016-2018
65. Cottonwood Creek Detention Basins (PR-2,6,7,9,11,14)	\$2,740,000					X	X	X	X	4		2	10		2017-2019
31. Rangewood Tributary Detention Pond (WWE CS-333)	\$750,000			X	X	X	X	X	X	4		3	11	Cottonwood Creek. Bundle with Project 20 (located next to each other).	2017-2018
52. Storage Bridle Pass Drive Construct new pond to improve 2 yr flows (CS-332)	\$1,591,000			X	X	X	X	X	X	4		4	12	Include channel improvements.	2017-2019
9. South Pine Creek Detention Pond (WWE CS-335)	\$461,000			X	X			X	X	2		14	13	Cottonwood Creek	2018-2019
15. Citadel Mall Neighborhood Improvements (CS-374)	\$1,053,000	X	X	X						0	Yes		14	Localized flooding. Design to evaluate detention retrofit.	2018-2019
23. North Chelton Road (CS-057)	\$1,370,000		X	X	X					0	Yes		15	Localized flooding.	2018-2019
11. Camp Creek--Phase 1 (WWE CS-002 and CS-003) (Redefined) ⁽⁴⁾	\$4,356,000	X	X	X				X		1	Yes	18	16	Readiness for Implementation. Channel improvements. Cost shown is for downstream structure and channel restoration/lining removal.	2018-2019
41. Storage Wagner Park Detention - downstream of Bijou Detention Storage Required (CS-360)	\$704,000			X	X	X		X	X	3		8	17	Spring Creek drainage	2018-2019
38. Storage Austin Bluffs Parkway upstream of Research (CS-331)	\$754,000			X	X	X		X	X	3		10	18	Cottonwood Creek drainage	2019-2020
51. Storage Cottonwood Park (west side) (CS-334)	\$3,768,000			X	X	X		X	X	3		11	19	Cottonwood Creek drainage	2019-2021
34. Storage Sand Creek Detention Pond 2 Complete Detention Pond 2 on Sand Creek south of Barnes (CS-105)	\$1,025,000					X		X	X	3		12	20	Currently have 50 year protection. Build out to 100-year capacity.	2019-2021
24. Park Vista (Siferd Low Water Crossing) (CS-232)	\$3,750,000	X		X						0	Yes		21	Localized flooding. Evaluate property acquisition and detention storage.	2020-2022
70. CS-239 Grade Control Upper Hancock Channel - Hancock to Academy, 78+33 to	\$1,236,000					X	X			2		13	22	Desire for provision for regular sediment removal.	2020-2022
16. North Douglas Natural Channel	\$3,500,000	X	X					X	X	2	Yes	15	23	Redefine project to address reach between I-25 and railroad to east. City has conceptual design for channel stabilization project.	2020-2021
19. Galley Road Channel (WWE CS-258) Sand Creek between Galley and Platte Avenue	\$2,000,000	X		X				X		1		19	24	Portions of original scope have been completed by CSU. Additional reach to be improved.	2020-2022
21. Monument Creek at Talemine (CS-011)	\$1,778,000	X		X				X		1		17	25		2020-2021
35. Side Channel Sand Creek - segment 107, reach SC-5 1700lf channel stabilization (CS-261)	\$1,242,000	X		X				X		1		20	26		2021-2025
39. Grade Control Palmer Park Channel - Galley Rd. to Palmer Park, 300+00 to (CS-259)	\$6,594,000	X		X				X		1		21	27	On Sand Creek drainage.	2021-2025
28. Shooks Run Channel - Cache La Poudre St. to Patty Jewett Golf Course (CS-326)	\$3,500,000	X	X	X				X		1		23	28	Bundled and phased with other Shooks Run.	2021-2025
77. CS-265 Grade Control Sand Creek Upper West Fork - Maizeland to South Carefree 3 drop structures	\$420,000							X		1		24	29		2021-2025
76. CS-254 Channel/Grade Control Sand Creek Upper West Fork - Galley to Murray 1730lf channel stabilization, 2 drop structures	\$2,006,000							X		1		25	30		2021-2025
75. CS-262 Channel/Grade Control Upper Sand Creek - W. Fork to Palmer Park Blvd. 1550lf channel stabilization, w/drop structures	\$1,192,000							X		1		26	31		2021-2025
74. CS-252 Channel Sand Creek Lower West Fork - Emory to Platte Ave. 1000lf channel stabilization	\$2,383,000							X		1		27	32		2021-2025
73. CS-025 Channel/Grade Control Sand Creek West Fork - Main stem to Wooten Construct drop structures & streambank protection	\$2,206,000							X		1		28	33		2021-2025
61. Channel/Grade Control Sand Creek (CS-040)	\$3,507,000	X		X				X		1		29	34		2021-2025
60. Channel/Grade Control Sand Creek (CS-039)	\$3,908,000	X		X				X		1		30	35		2021-2025
71. CS-246 Channel/Grade Control Sand Creek Lower Center Tributary - No Name to East Fork	\$458,000							X		1		31	36		2021-2025
62. Channel/Grade Control East Fork of Sand Creek (CS-041)	\$7,464,000	X		X				X		1		32	37		2021-2025
55. Grade Control Fountain Blvd. Channel - Chelton Rd. to Fountain Blvd., (CS-243)	\$2,553,000	X		X				X		1		33	38	Portions of original scope have been completed by CSU	2026-2035
54. Grade Control Chelton Road Channel - Academy to Chelton, 96+97 (CS-241)	\$1,593,000	X		X				X		1		34	39	On main stem of Sand Creek.	2026-2035
69. CS-240 Channel/Storm Drain Lower Sand Creek Tributaries 2,3, and 4 - Main Stem to Academy	\$867,000							X		1		35	40		2026-2035
67. CS-238 Channel/Grade Control Lower Hancock Channel - Downstream 1500lf channel stabilization, 2 drop structures	\$1,247,000							X		1		36	41		2026-2035
66. CS-268 Channel/Grade Control Las Vegas St. Channel - ATSF RR to Peterson Fld Trib. 700lf channel stabilization, 2 drop structures	\$1,545,000							X		1		37	42		2026-2035
72. CS-247 Channel/Grade Control Sand Creek Middle Center Tributary - Powers to No Name 300lf channel stabilization, 3 drop structures	\$175,000							X		1		38	43		2026-2035
68. CS-130 Channel Hancock Expressway Channel East of Astrozon Undermining of infrastructure.	\$72,000							X		1		39	44		2026-2035
20. Gold Medal Point Channel (WWE CS-339)	\$750,000	X		X				X		1		40	45	Cottonwood Creek. Could bundle with Project 31 (located next to each other)	2026-2035

Table 3-1: City Capital Project Prioritization

Project Name	Total Estimated Capital Cost (2016\$) ^(1,7)	Prioritization Criteria (see notes below)								Priority Ranking			Comments	Projected Project Dates			
		Protect Public Safety/Property	Improve Failing Infrastructure	Enhance Community	Distribute Within the City	Enhance Sediment/Debris Capture	Reduce Sediment Generation/Enhance Soil Stewardship	Improve Water Quality	Provide Detention	Downstream Priority Score	Critical City Project	WWE "Downstream Benefit" Ranking			City Priority Ranking		
57. Channel/Grade Control Cottonwood Creek - Academy to Union Construct flood control and stream restoration projects (CS-004)	\$5,840,000	X		X			X					1		41	46	Portions of original scope may have been completed by CSU	2026-2035
59. Channel/Grade Control Cottonwood Creek - Monument Creek to Academy Construct flood control and stream restoration projects. (CS-005)	\$13,232,000	X		X			X					1		42	47		2026-2035
58. Channel/Grade Control Rangewood Channel - Main Stem to Balsam 7400lf channel stabilization, w/drop structures (CS-343)	\$5,066,000	X		X			X					1		43	48		2026-2035
63. Channel/Grade Control Cottonwood Creek - Rangewood to Woodmen 5300lf channel stabilization, w/drop structures (CS-337)	\$3,768,000	X		X			X					1		44	49		2026-2035
45. Channel/Grade Control Fountain Creek - W. Cimmaron St. to N end of Drake Power (CS-306)	\$1,298,000	X		X			X					1		45	50		2026-2035
46. Channel/Grade Control Fountain Creek - N end Drake Power Plant to south end of (CS-307)	\$1,941,000	X		X			X					1		46	51		2026-2035
18. Fountain Creek - Drake Power Plant to Shooks Run (WWE CS-308 and CS-309)	\$2,250,000	X		X			X					1		47	52		2026-2035
43. Channel/Grade Control Fountain Creek - Shooks Run to Fountain Mutual Canal Channel stabilization, 2 drop structures (CS-310)	\$11,854,000	X		X			X					1		48	53		2026-2035
53. Channel/Grade Control Fountain Creek - Fountain Mutual Canal to US 24 Bypass Channel stabilization, 2 drop structures (CS-311)	\$9,921,000	X		X			X					1		49	54		2026-2035
36. Channel/Grade Control Fountain Creek - US 24 Bypass to Spring Creek Channel stabilization, 2 drop structures (CS-312)	\$4,636,000	X		X			X					1		50	55		2026-2035
50. Channel/Grade Control Fountain Creek - Spring Creek to Mobile Home Park Channel stabilization, 3 drop structures (CS-313)	\$3,803,000	X		X			X					1		51	56		2026-2035
32. Channel/Grade Control Fountain Creek - Mobile Home Park to N end El Pomar Sports (CS-314)	\$4,235,000	X		X			X					1		52	57	Fountain Creek.	2026-2035
33. Channel/Grade Control Fountain Creek - N end El Pomar Sports Park to S end El (CS-315)	\$4,551,000	X		X			X					1		53	58	Fountain Creek.	2026-2035
22. Monument Creek Mobile Home Park (CS-139)	\$478,000	X		X			X					1		54	59	CSU has done partial work in the area, but not the complete project.	2026-2035
64. Channel/Grade Control Chelton Dr. Channel - Chelton Dr to Airport Rd 2400lf channel stabilization, 2 drop structures (CS-359)	\$1,487,000	X		X			X					1		55	60		2026-2035
25. Pine Creek Outfall into Monument Creek (CS-047)	\$1,250,000	X		X			X					1		56	61		2026-2035
49. Channel/Grade Control Templeton Gap Rd. Channel - Powers to Tutt 4400lf channel stabilization, w/drop structures (CS-342)	\$3,077,000	X		X			X					1		57	62		2026-2035
40. Storage Mount Woodmen Court Drainage Sedimentation pond outfalls directly onto private property (CS-064)	\$515,000	X	X				X					1		58	63		2026-2035
12. Shooks Run Improvements (CS-319 through CS-329 minus CS-326)	\$3,000,000	X	X	X			X					1		59	64	Bundled and phased with other Shooks Run	2026-2035
27. Shooks Run Channel - Bijou Street Culvert & Channel Stabilization (CS-054a)	\$1,500,000	X	X	X			X					1		60	65	Bundled and phased with other Shooks Run	2026-2035
29. Shooks Run Improvements - Phase 3 (CS-054b)	\$1,500,000	X	X	X			X					1		61	66	Bundled and phased with other Shooks Run	2026-2035
4. Old Annexation Drainage Improvements	\$2,800,000	X	X	X	X							0			67	Five neighborhoods experiencing significant flooding.	2026-2035
14. Briargate Drainage Improvements (CS-344)	\$1,641,000	X	X	X								0			68	Replacing failing infrastructure.	2026-2035
30. Skyway Area Improvements (CS-235 & CS-296)	\$457,000	X	X		X							0			69		2026-2035
48. Channel/Storm Drain Columbia Road Drainage (CS-045)	\$2,088,000	X	X	X								0			70		2026-2035
17. Dry Creek Channel (WWE CS-007)	\$1,386,000	X		X	X							0			71	Increasing channel capacity.	2026-2035
42. Channel/Grade Control Sand Creek Main Stem-Phase III - Fountain Creek Confluence (CS-106)																Not on the SNA "Validated" project list-- Appears to overlap with other validated SNA projects and may be redundant.	
47. Channel-Templeton Gap Floodway Reconstruct levee and floodway (CS-021)																Delete - Channel Lining; Replacement of Existing Facilities. Removed from list, per WWE (12/16/15).	
78. CS-264 Channel Sand Creek Upper West Fork - Raindrop to North Carefree 2200lf channel stabilization																Remove from list, per WWE (12/16/15).	
56. Grade Control Palmer Park Channel - Golley Rd. to Palmer Park, 300+00 to (CS-259)																Redundant with Project 39. Delete.	
10. Erindale Drainage Improvements																Change to an "Emergency" project. Likely a maintenance effort. Remove from this capital projects list.	
44. Storage Spring Run Detention Ponds (CS-051)																Not on the SNA "Validated" project list--remove.	
3. Dam Repairs																Remove from list, per WWE (03/30/16). To be completed with Emergency Stormwater Projects funding.	
37. Channel Rockrimmon Channel at Rockrimmon/Pro Rodeo Int. Repair damage to channel at outlet (CS-222)																Area identified in previous MS4 inspections. Project being completed with Emergency Stormwater Project funding in 2016. Removed from list following 03/30/16 Meeting with WWE.	

Prioritization Criteria:
 1. Protect local property and public safety
 2. Repair/replace failing infrastructure
 3. Improve appearance and/or enhance community
 4. Distribute projects within the City
Downstream benefits:
 5. Enhance sediment/debris capture and control (e.g., debris basins)
 6. Reduce sediment generation/Enhance soil stewardship (e.g., bank stabilization, channel stabilization, channel grade control, floodplain preservation/enhancement)
 7. Improve water quality
 8. Provide detention (i.e., reduce downstream flows)

Footnotes:
 1) Total anticipated FEMA Grant City match portion through 2018: Budgeted \$1,081,000 (2016); \$500,000 (2017); \$500,000 (2018).
 2) Total Capital Cost includes 5 detention ponds, one per year at \$500,000 each between 2016-2020. First pond to be initiated with America the Beautiful Park detention basin in 2016.
 3) Emergency Stormwater Projects list total capital cost (2016-2020); budgeted at \$1.5 Million per year ongoing.
 4) Additional channel lining removal projects along Camp Creek channel may be done as funding becomes available.
 5) Funding for capital cost shown is FEMA grant funding and City grant match encumbered in 2015. No 2016 City capital contribution for this project.
 6) See 2016 and 2016-2020 Project lists for additional detail on project funding.
 7) Total estimated project capital cost is shown for each project. Total Stormwater Control Program yearly capital expenditures depend on the number of projects underway and the project phase(s) performed in a given year. Total yearly capital expenditures will be presented in the annual reporting of the City's Stormwater Control Program performance.

Table 3-2. Creek Crossing Project Benefits

Colorado Springs Utilities Sanitary Sewer Creek Crossing Project Benefits
Colorado Springs Stormwater Program Implementation Plan

Prioritization Criteria (see notes below)

Project Name	Total Estimated Capital Cost (2016\$)	Prioritization Criteria (see notes below)								Comments	Projected Project Dates
		Protect Public Safety/Property	Improve Failing Infrastructure	Enhance Community	Distribute Within the City	Enhance Sediment/Debris Capture	Reduce Sediment Generation/Enhance Soil Stewardship	Improve Water Quality	Provide Detention		
1. Monument Creek Stabilization, Phase 2	\$820,000	X	X				X			Channel Stabilization and Grade Control; Also provides some incidental water quality	2016
2. Dry Creek Downstream of Dawson Drive	\$510,000	X	X				X			Channel Stabilization and Grade Control; Also provides some incidental water quality	2017-2018
3. Clear Spring Ranch Bank Stabilization	\$4,170,000	X	X				X			Bank Stabilization; Also provides some incidental water quality	2016-2017
4. North Douglas Creek upstream from Mark Dabbling Stabilization	\$251,000	X	X				X			Channel Stabilization and Grade Control; Also provides some incidental water quality	2016
5. South Douglas Creek at Sinton Pond, Crossing Elimination	\$176,000	X	X				X			Channel Stabilization and Grade Control; Also provides some incidental water quality	2016
6. Monument Branch Stabilization	\$1,100,000	X	X				X			Channel Stabilization and Grade Control; Also provides some incidental water quality	2016-2018
7. West Fork Sand Creek Drop Repair	\$500,000	X	X				X			Channel Stabilization and Grade Control; Also provides some incidental water quality	2018
8. Sand Creek stabilization at West Fork Confluence	\$600,000	X	X				X			Channel Stabilization and Grade Control; Also provides some incidental water quality	2018
9. Monument Creek Stabilization Upstream from Pikeview Intake	\$500,000	X	X				X			Channel Stabilization and Grade Control; Also provides some incidental water quality	2017-2018
10. Sand Creek Stabilization Upstream of Barnes Road	\$400,000	X	X				X			Channel Stabilization and Grade Control; Also provides some incidental water quality	2017-2018
Total (2016-2018)	\$9,027,000										

Prioritization Criteria:

1. Protect local property and public safety
2. Repair/replace failing infrastructure
3. Improve appearance and/or enhance community
4. Distribute projects within the City

Downstream benefits:

5. Enhance sediment/debris capture and control (e.g., debris basins)
6. Reduce sediment generation/Enhance soil stewardship (e.g., bank stabilization, channel stabilization, channel grade control, floodplain preservation/enhancement)
7. Improve water quality
8. Provide detention (i.e., reduce downstream flows)

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Table 4-1. Definition of Capital Cost Components

Colorado Springs Stormwater Program Implementation Plan			
Components			Comments
Construction Value			
Estimated Construction Cost	x		
Construction Contingency	30%	of x	
Subtotal--"Construction Value"	y		
"Soft Costs"			
City Staff Costs	0%	of Construction Value	Stormwater staff (PM, admin), contracts, procurement, O&M support. These City staff costs are not charged against CIP projects.
City Staff Augmentation	9.0%	of Construction Value	Outside consultant. Supplement City staff to handle increased project output during first year as City staffs up.
Design	10%	of Construction Value	Outside consultant. Includes conceptual and final design.
Construction Management	8.5%	of Construction Value	Outside consultant
Engineering Services During Construction	2.0%	of Construction Value	Outside consultant
Environmental & Permitting	1.7%	of Construction Value	Cost to purchase mitigation or pay permit fees. Consultant time under Program Management.
Legal	0.0%	of Construction Value	City legal staff handle these activities, and do not charge CIP projects.
Land Transactions	8.0%	of Construction Value	Easements and fee title purchases.
Subtotal--"Soft Costs"	39%		
Design Contingency	25%	of Construction Value + Soft Costs.	Decreases as design progresses.
Construction Changes Contingency	15%	of Construction Value + Soft Costs.	Held constant until construction starts. Covers change orders and claims.
Project Contingency	40%	of Construction Value + Soft Costs	
TOTAL CAPITAL COST	195%	of Construction Value, w/o escalation	

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Table 4-2: City Capital Project Costs

Colorado Springs Stormwater Program Implementation Plan							
Stormwater Needs Assessment (SNA) Information [a.k.a. CH2M Hill Study]							
Project Name	Previous Estimated Total Capital Cost	Associated SNA Project No.	Class A or B	Associated SNA Project Cost (\$)	Comments	MWH Updated Cost (2016 \$)	Potential "Fast Track" Project? (yes/no, see note)
0. FEMA Projects	\$2,081,082	None	None		Projects underway. No validation. Use City budget number.	\$2,081,000	No
1. Emergency Stormwater Projects	\$7,500,000	None	None		Annual budget (\$1.5M). No validation. Use City budget number. First 5 years shown.	\$7,500,000	Yes
2. Sand Creek Pond 3	\$1,200,000	None	None		Kiowa Engineering/M&S completed design; construction contract awarded early 2016; construction in process. Validated. Per City direction, now includes both pond and drop structure.	\$3,076,000	Yes <i>Under Construction</i>
3. Dam Repairs	\$400,000	None	None		No scope. No validation. Allowance. City to move to Emergency Stormwater Projects. Deleted from list per 03/30/16 review mtg.	\$400,000	Yes
4. Old Annexation Drainage Improvements	\$2,800,000	None	None		No scope. No validation. Allowance.	\$2,800,000	No
5. Downtown Drainage Improvements	\$2,250,000	None	None		No scope. No validation. Allowance.	\$2,250,000	No
6. USAFA Drainages (Northgate Area)	\$2,000,000	None	None		No scope. No validation. Allowance. Matrix study to ID projects (early 2016).	\$2,000,000	No
7. Fairfax Tributary Detention Pond (WWE)	\$400,000	CS-330	Class A	\$391,832	No validation. Use SNA figure, escalated to 2016.	\$398,000	Yes
8. King Street Detention Pond (WWE)	\$250,000	CS-013	Class A	\$431,000	No scope. No validation. Allowance.	\$250,000	Yes
9. South Pine Creek Detention Pond (WWE)	\$500,000	CS-335	Class A	\$453,700	No validation. Use SNA figure, escalated to 2016.	\$461,000	Yes
10. Erindale Drainage Improvements	\$500,000	CS-111	Class A	\$4,081,658	Changed to an "Emergency" project. Likely a maintenance effort. Deleted from list per 12/16/15 review mtg.	\$500,000	Yes
11. Camp Creek (WWE)	\$4,250,000	CS-002 and CS-003	Class A		Superseded by Wilson report. Validated.	\$4,356,000	Yes
12. Shooks Run Improvements	\$3,000,000	CS-319 through CS-329 minus CS-326	Class A	\$19,382,364	Total in CH2M Hill for these projects is \$53,901,434. Envision Shooks Run study is revisiting and prioritizing projects. No scope. No validation. Allowance.	\$3,000,000	No
13. Water Quality Projects	\$2,500,000	None	Class A		City to study. No scope. No validation. Allowance.	\$2,500,000	No
14. Briargate Drainage Improvements	\$1,500,000	CS-094 and CS-344	Class A	\$1,608,572	No validation. Use SNA figure, escalated to 2016.	\$1,641,000	Yes
15. Citadel Mall Neighborhood Improvements	\$1,000,000 \$2,250,000	CS-374	Class A	\$1,036,997	5-Year CIP Table value changed by City. No validation. Use SNA figure, escalated to 2016.	\$1,053,000	Yes
16. North Douglas Natural Channel	\$1,500,000	CS-017	Class B	\$930,000	Updated cost based on 2014 conceptual design cost provided by City. No validation. Allowance.	\$3,500,000	Yes
17. Dry Creek Channel (WWE)	\$1,500,000	CS-007	Class B	\$1,352,000	No validation. Use SNA figure, escalated to 2016.	\$1,386,000	Yes
18. Fountain Creek - Drake Power Plant to Shooks Run (WWE)	\$2,250,000 \$750,000	CS-308a, CS-308b, CS-309a & CS-309	Class A	\$6,250,666	5-Year CIP Table value changed by City. No scope. No validation. Allowance.	\$2,250,000	No
19. Galley Road Channel (WWE)	\$2,000,000	CS-258	Class A	\$2,552,701	No scope. No validation. Allowance.	\$2,000,000	No
20. Gold Medal Point Channel (WWE)	\$750,000	CS-339	Class A	\$1,608,572	No scope. No validation. Allowance.	\$750,000	No
21. Monument Creek at Talemine	\$1,750,000 \$1,000,000	CS-011	Class A	\$1,752,131	5-Year CIP Table value changed by City. No validation. Use SNA figure, escalated to 2016.	\$1,778,000	Yes
22. Monument Creek Mobile Home Park	\$500,000	CS-139	Class B	\$468,000	No validation. Use SNA figure, escalated to 2016.	\$478,000	Yes
23. North Chelton Road	\$1,500,000	CS-057	Class A	\$1,337,000	No validation. Use SNA figure, escalated to 2016.	\$1,370,000	Yes
24. Park Vista (Siferd Low Water Crossing)	\$3,750,000	CS-232	Class A	\$8,726,457	No scope. No validation. Allowance.	\$3,750,000	No
25. Pine Creek Outfall into Monument Creek	\$1,250,000	CS-047	Class B	\$2,796,000	No scope. No validation. Allowance.	\$1,250,000	Yes
26. Sand Creek Stabilization south of Platte (WWE)	\$2,000,000	CS-018	Class A	\$2,944,535	Scope being approved. No validation. Allowance. Current FEMA funded project to commence in 2016.	\$5,290,000	Yes
27. Shooks Run Channel - Bijou Street Culvert & Channel Stabilization	\$1,500,000	CS-054a	Class A	\$9,275,090	Envision Shooks Run study is revisiting and prioritizing projects. No scope. No validation. Allowance.	\$1,500,000	No <i>Wait for study</i>
28. Shooks Run Channel - Cache La Poudre St. to Patty Jewett Golf Course	\$3,500,000	CS-326	Class A	\$34,519,070	Envision Shooks Run study is revisiting and prioritizing projects. No scope. No validation. Allowance.	\$3,500,000	No <i>Wait for study</i>
29. Shooks Run Improvements- Phase 3	\$1,500,000	CS-054b	Class A	\$32,944,683	Envision Shooks Run study is revisiting and prioritizing projects. No scope. No validation. Allowance.	\$1,500,000	No <i>Wait for study</i>
30. Skyway Area Improvements	\$500,000	CS-235 & CS-296	Class A	\$446,022	No validation. Use SNA figure, escalated to 2016.	\$457,000	Yes
31. Rangewood Tributary Detention Pond (WWE)	\$750,000	CS-333	Class A	\$659,927	No scope. No validation. Allowance.	\$750,000	Yes
32. Channel/Grade Control Fountain Creek - Mobile Home Park to N end El Pomar Sports (CS-314)	N.A.	CS-314	Class A	\$4,171,942	WWE nominated project. Use SNA figure, escalated to 2016	\$4,235,000	No
33. Channel/Grade Control Fountain Creek - N end El Pomar Sports Park to S end El (CS-315)	N.A.	CS-315	Class A	\$4,484,154	WWE nominated project. Use SNA figure, escalated to 2016	\$4,551,000	No
34. Storage Sand Creek Detention Pond 2 Complete Detention Pond 2 on Sand Creek south of Barnes (CS-105)	N.A.	CS-105	Class B	\$1,000,000	WWE nominated project. Use SNA figure (unconfirmable MPL cost), escalated to 2016	\$1,025,000	No
35. Channel Sand Creek Main Stem - segment 107, reach SC-5 1700lf channel stabilization (CS-261)	N.A.	CS-261	Class A	\$1,224,043	WWE nominated project. Use SNA figure, escalated to 2016	\$1,242,000	No
36. Channel/Grade Control Fountain Creek - US 24 Bypass to Spring Creek Channel stabilization, 2 drop structures (CS-312)	N.A.	CS-312	Class A	\$4,567,880	WWE nominated project. Use SNA figure, escalated to 2016	\$4,636,000	No
37. Channel Rockrimmon Channel at Rockrimmon/Pro Rodeo Int. Repair damage to channel at outlet (CS-222)	N.A.	CS-222	Class A	\$97,475	Project being completed with Emergency Stormwater Project funding in 2016. Deleted from list per 03/30/16 review mtg.	\$98,900	No
38. Storage Austin Bluffs Parkway upstream of Research (CS-331)	N.A.	CS-331	Class A	\$742,418	WWE nominated project. Use SNA figure, escalated to 2016	\$754,000	No
39. Grade Control Palmer Park Channel - Galley Rd. to Palmer Park, 300+00 to (CS-259)	N.A.	CS-259	Class A	\$6,496,775	WWE nominated project. Use SNA figure, escalated to 2016	\$6,594,000	No
40. Storage Mount Woodmen Court Drainage Sedimentation pond outfalls directly onto private property (CS-064)	N.A.	CS-064	Class B	\$502,000	WWE nominated project. Use SNA figure (unconfirmable MPL cost), escalated to 2016	\$515,000	No
41. Storage Wagner Park Detention - downstream of Bijou Detention Storage Required (CS-360)	N.A.	CS-360	Class A	\$693,237	WWE nominated project. Use SNA figure, escalated to 2016	\$704,000	No
42. Channel/Grade Control Sand Creek Main Stem Phase III - Fountain Creek Confluence (CS-106)	N.A.	CS-106	Not on VPL	\$2,200,000	Not on the SNA "Validated" project list. Deleted from list per 12/16/15 review mtg.	\$2,233,000	No

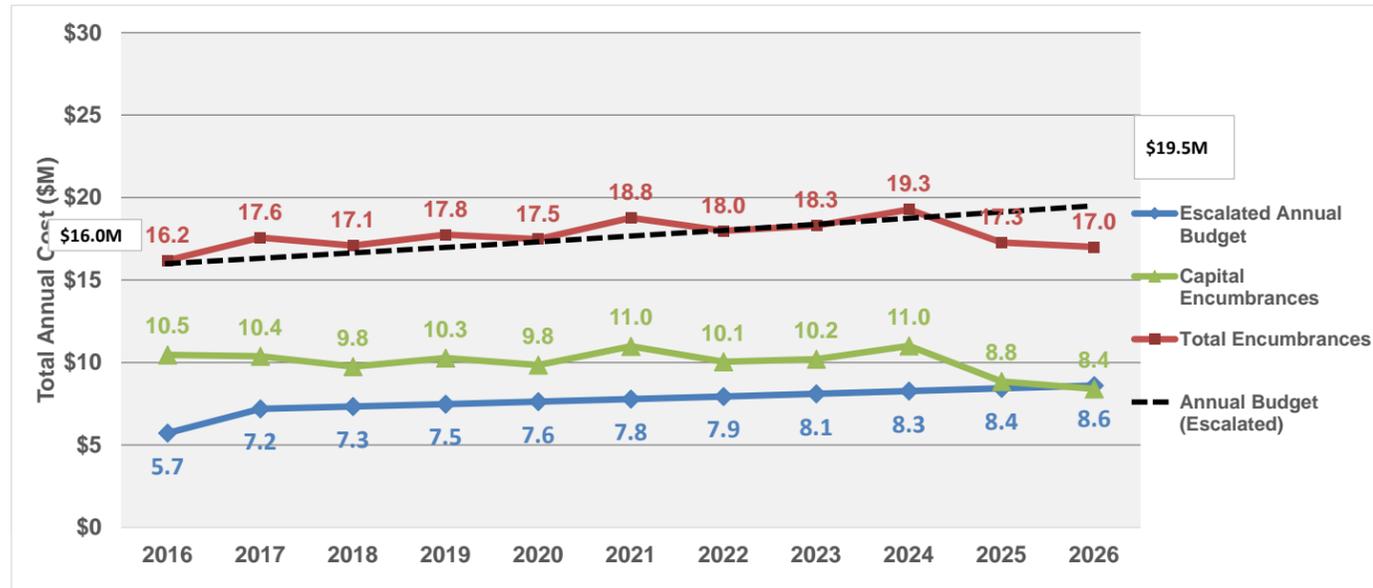
Table 4-2: City Capital Project Costs

Project Name	Previous Estimated Total Capital Cost	Stormwater Needs Assessment (SNA) Information [a.k.a. CH2M Hill Study]			Comments	MWH Updated Cost (2016 \$)	Potential "Fast Track" Project? (yes/no, see note)
		Associated SNA Project No.	Class A or B	Associated SNA Project Cost (\$)			
43. Channel/Grade Control Fountain Creek - Shooks Run to Fountain Mutual Canal Channel stabilization, 2 drop structures (CS-310)	N.A.	CS-310	Class A	\$11,678,463	WWE nominated project. Use SNA figure, escalated to 2016	\$11,854,000	No
44. Storage Spring Run Detention Ponds (CS-051)	N.A.	CS-051	Not on VPL	\$1,618,000	Not on the SNA "Validated" project list. Deleted from list per 12/16/15 review mtg.	\$1,658,000	No
45. Channel/Grade Control Fountain Creek - W. Cimmaron St. to N end of Drake Power (CS-306)	N.A.	CS-306	Class A	\$1,278,558	WWE nominated project. Use SNA figure, escalated to 2016	\$1,298,000	No
46. Channel/Grade Control Fountain Creek - N end Drake Power Plant to south end of (CS-307)	N.A.	CS-307	Class A	\$1,912,125	WWE nominated project. Use SNA figure, escalated to 2016	\$1,941,000	No
47. Channel Templeton Gap Floodway Reconstruct levee and floodway (CS-021)	N.A.	CS-021	Class A	\$10,626,551	Delete from list per 12/16/15 review mtg.	\$10,786,000	No
48. Channel/Storm Drain Columbia Road Drainage (CS-045)	N.A.	CS-045	Class B	\$2,037,000	WWE nominated project. Use SNA figure (unconfirmable MPL cost), escalated to 2016	\$2,088,000	No
49. Channel/Grade Control Templeton Gap Rd. Channel - Powers to Tutt 4400lf channel stabilization, w/drop structures (CS-342)	N.A.	CS-342	Class A	\$3,031,540	WWE nominated project. Use SNA figure, escalated to 2016	\$3,077,000	No
50. Channel/Grade Control Fountain Creek - Spring Creek to Mobile Home Park Channel stabilization, 3 drop structures (CS-313)	N.A.	CS-313	Class A	\$3,746,560	WWE nominated project. Use SNA figure, escalated to 2016	\$3,803,000	No
51. Storage Cottonwood Park (west side) (CS-334)	N.A.	CS-334	Class A	\$3,712,090	WWE nominated project. Use SNA figure, escalated to 2016	\$3,768,000	No
52. Storage Bridle Pass Drive Construct new pond to improve 2 yr flows (CS-332)	N.A.	CS-332	Class A	\$1,567,327	WWE nominated project. Use SNA figure, escalated to 2016	\$1,591,000	No
53. Channel/Grade Control Fountain Creek - Fountain Mutual Canal to US 24 Bypass Channel stabilization, 2 drop structures (CS-311)	N.A.	CS-311	Class A	\$9,774,574	WWE nominated project. Use SNA figure, escalated to 2016	\$9,921,000	No
54. Grade Control Chelton Road Channel - Academy to Chelton, 96+97 (CS-241)	N.A.	CS-241	Class A	\$1,569,152	WWE nominated project. Use SNA figure, escalated to 2016	\$1,593,000	No
55. Grade Control Fountain Blvd. Channel - Chelton Rd. to Fountain Blvd., (CS-243)	N.A.	CS-243	Class A	\$2,515,203	WWE nominated project. Use SNA figure, escalated to 2016	\$2,553,000	No
56. Grade Control Palmer Park Channel - Galley Rd. to Palmer Park, 300+00 to (CS-259)	N.A.	CS-259	Class A	\$6,496,775	Deleted from list per 12/16/15 review mtg. Redundant with Project 39.	\$6,594,000	No
57. Channel/Grade Control Cottonwood Creek - Academy to Union Construct flood control and stream restoration projects (CS-004)	N.A.	CS-004	Class A	\$5,753,740	WWE nominated project. Use SNA figure, escalated to 2016	\$5,840,000	No
58. Channel/Grade Control Rangewood Channel - Main Stem to Balsam 7400lf channel stabilization, w/drop structures (CS-343)	N.A.	CS-343	Class A	\$4,990,699	WWE nominated project. Use SNA figure, escalated to 2016	\$5,066,000	No
59. Channel/Grade Control Cottonwood Creek - Monument Creek to Academy Construct flood control and stream restoration projects. (CS-005)	N.A.	CS-005	Class A	\$13,036,340	WWE nominated project. Use SNA figure, escalated to 2016	\$13,232,000	No
60. Channel/Grade Control Sand Creek (CS-039)	N.A.	CS-039	Class A	\$3,850,692	WWE nominated project. Use SNA figure, escalated to 2016	\$3,908,000	No
61. Channel/Grade Control Sand Creek (CS-040)	N.A.	CS-040	Class A	\$3,455,554	WWE nominated project. Use SNA figure, escalated to 2016	\$3,507,000	No
62. Channel/Grade Control Sand Creek (CS-041)	N.A.	CS-041	Class A	\$7,353,739	WWE nominated project. Use SNA figure, escalated to 2016	\$7,464,000	No
63. Channel/Grade Control Cottonwood Creek - Rangewood to Woodmen 5300lf channel stabilization, w/drop structures (CS-337)	N.A.	CS-337	Class A	\$3,712,090	WWE nominated project. Use SNA figure, escalated to 2016	\$3,768,000	No
64. Channel/Grade Control Chelton Dr. Channel - Chelton Dr to Airport Rd 2400lf channel stabilization, 2 drop structures (CS-359)	N.A.	CS-359	Class A	\$1,465,049	WWE nominated project. Use SNA figure, escalated to 2016	\$1,487,000	No
65. Cottonwood Creek Detention Basins (PR-2,3,6,7,9,11,14)	\$2,673,000	None	N/A	N/A	WWE nominated project at 12/16/15 meeting. Use WWE figure, escalated to 2016.	\$2,740,000	No
66. CS-268 Channel/Grade Control Las Vegas St. Channel - ATSF RR to Peterson Fld Trib. 700lf channel stabilization, 2 drop structures	N.A.	CS-268	Class A	\$1,522,257	WWE nominated project at 12/16/15 meeting. Use WWE figure, escalated to 2016.	\$1,545,000	No
67. CS-238 Channel/Grade Control Lower Hancock Channel - Downstream 1500lf channel stabilization, 2 drop structures	N.A.	CS-238	Class A	\$1,228,112	WWE nominated project at 12/16/15 meeting. Use WWE figure, escalated to 2016.	\$1,247,000	No
68. CS-130 Channel Hancock Expressway Channel East of Astrozon Undermining of infrastructure.	N.A.	CS-130	Class A	\$70,526	WWE nominated project at 12/16/15 meeting. Use WWE figure, escalated to 2016.	\$72,000	No
69. CS-240 Channel/Storm Drain Lower Sand Creek Tributaries 2,3, and 4 - Main Stem to	N.A.	CS-240	Class A	\$853,698	WWE nominated project at 12/16/15 meeting. Use WWE figure, escalated to 2016.	\$867,000	No
70. CS-239 Grade Control Upper Hancock Channel - Hancock to Academy, 78+33 to	N.A.	CS-239	Class A	\$1,218,069	WWE nominated project at 12/16/15 meeting. Use WWE figure, escalated to 2016.	\$1,236,000	No
71. CS-246 Channel/Grade Control Sand Creek Lower Center Tributary - No Name to East Fork	N.A.	CS-246	Class B	\$447,000	WWE nominated project at 12/16/15 meeting. Use WWE figure, escalated to 2016.	\$458,000	No
72. CS-247 Channel/Grade Control Sand Creek Middle Center Tributary - Powers to No Name 300lf channel stabilization, 3 drop structures	N.A.	CS-247	Not on VPL	\$171,000	WWE nominated project at 12/16/15 meeting. Use WWE figure, escalated to 2016.	\$175,000	No
73. CS-025 Channel/Grade Control Sand Creek West Fork - Main stem to Wooten Construct drop structures & streambank protection	N.A.	CS-025	Class A	\$2,173,257	WWE nominated project at 12/16/15 meeting. Use WWE figure, escalated to 2016.	\$2,206,000	No
74. CS-252 Channel Sand Creek Lower West Fork - Emory to Platte Ave. 1000lf channel stabilization	N.A.	CS-252	Class A	\$2,347,994	WWE nominated project at 12/16/15 meeting. Use WWE figure, escalated to 2016.	\$2,383,000	No
75. CS-262 Channel/Grade Control Upper Sand Creek - W. Fork to Palmer Park Blvd. 1550lf channel stabilization, w/drop structures	N.A.	CS-262	Class A	\$1,174,158	WWE nominated project at 12/16/15 meeting. Use WWE figure, escalated to 2016.	\$1,192,000	No
76. CS-254 Channel/Grade Control Sand Creek Upper West Fork - Galley to Murray 1730lf channel stabilization, 2 drop structures	N.A.	CS-254	Class A	\$1,976,777	WWE nominated project at 12/16/15 meeting. Use WWE figure, escalated to 2016.	\$2,006,000	No
77. CS-265 Grade Control Sand Creek Upper West Fork - Maizeland to South Carefree 3 drop structures	N.A.	CS-265	Class A	\$414,128	WWE nominated project at 12/16/15 meeting. Use WWE figure, escalated to 2016.	\$420,000	No
78. CS-264 Channel Sand Creek Upper West Fork - Raindrop to North Carefree 2200lf channel stabilization					WWE nominated project and deleted from list per WWE (12/16/15).		
Notes: A potential "Fast Track" Project is either: (a) ready to bid, (b) has a design consultant contract already in place, (c) can use an On-Call Engineering Contract (generally limited to <\$500k), or (d) can use an existing design, avoiding need to hire a designer.							

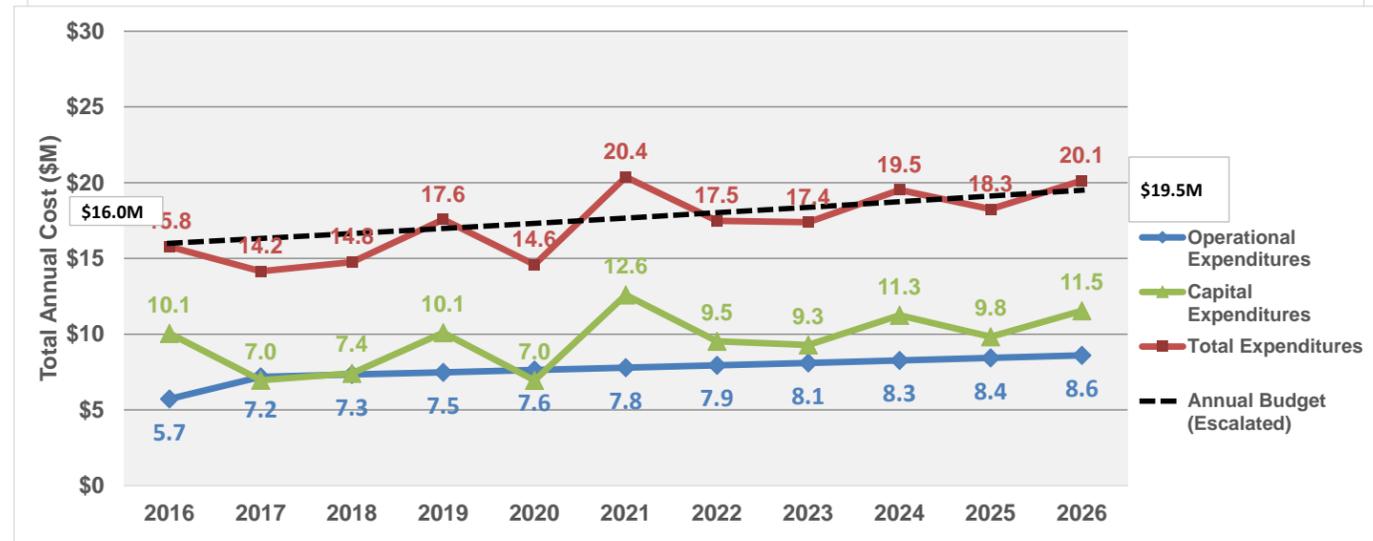
Figure 5-1: Summary of Cost Model

City's MS4/O&M Full Operational Expenditures (Unescalated)		
Labor Annual Cost (unescalated)	\$	3,453,078
Administration Annual Cost (unescalated)	\$	239,219
Equipment Annual Cost (unescalated)	\$	366,200
Maintenance & Services Annual Cost (unescalated)	\$	1,096,977
Engineering Studies	\$	570,000
TOTAL	\$	5,725,474

Capital Projects				
Task ID	Task Name	City Priority	Estimated Start Date	Estimated Total Cost (\$)
2	Sand Creek Pond 3	1	Jan-16	\$3,076,000
0	FEMA Projects	2	Jan-16	\$2,081,000
8	King Street Detention Pond	3	Apr-16	\$250,000
13	Water Qual Project-ATB Park Det.Basin	4	Jan-16	\$500,000
6	USAFA Drainages (Northgate Area)	5	Jan-16	\$2,000,000
1	Emergency Stormwater Projects (Annual Cost)	6	Jan-16	\$1,500,000
7	Fairfax Tributary Detention Pond	7	Apr-16	\$398,000
5	Downtown Drainage Improvements	8	Jan-16	\$2,250,000
65	Cottonwood Creek Detention Basins (PR-2,3,6,7,9,11,14)	10	Jan-17	\$2,740,000
31	Rangewood Tributary Detention Pond	11	Jan-17	\$750,000
52	Storage Bridle Pass Drive Construct new pond to improve 2 yr flows (CS-332)	12	Jan-17	\$1,591,000
9	South Pine Creek Detention Pond	13	Oct-17	\$461,000
15	Citadel Mall Neighborhood Improvements	14	Oct-17	\$1,053,000
23	North Chelton Road	15	Oct-17	\$1,370,000
11	Camp Creek - Phase 1	16	Oct-17	\$4,356,000
41	Storage Wagner Park Detention - downstream of Bijou Detention Storage Required (CS-360)	17	Jan-18	\$704,000
38	Storage Austin Bluffs Parkway upstream of Research (CS-331)	18	Jan-19	\$754,000
51	Storage Cottonwood Park (west side) (CS-334)	19	Oct-18	\$3,768,000
34	Storage Sand Creek Detention Pond 2 South of Barnes	20	Jan-19	\$1,025,000
24	Park Vista (Siferd Low Water Crossing)	21	Oct-19	\$3,750,000
70	CS-239 Grade Control Upper Hancock Channel - Hancock to Academy, 78+33 to	22	Oct-19	\$1,236,000
16	North Douglas Creek Natural Channel	23	Oct-19	\$3,500,000
19	Galley Road Channel	24	Jan-20	\$2,000,000
21	Monument Creek at Talemine	25	Oct-19	\$1,778,000
35	Channel Sand Creek Main Stem - segment 107, reach SC-5 1700lf channel stabilization	26	Oct-20	\$1,242,000
39	Grade Control Palmer Park Channel	27	Oct-20	\$6,594,000
28	Shooks Run Channel - Cache La Poudre St. to Patty Jewett Golf Course	28	Jan-21	\$3,500,000
77	CS-265 Grade Control Sand Creek Upper West Fork - Maizeland to South Carefree 3 drop structures	29	Jan-22	\$420,000
76	CS-254 Channel/Grade Control Sand Creek Upper West Fork - Galley to Murray 1730lf channel stabilization, 2 drop structures	30	Apr-22	\$2,006,000
75	CS-262 Channel/Grade Control Upper Sand Creek - W. Fork to Palmer Park Blvd. 1550lf channel stabilization,	31	Oct-22	\$1,192,000
74	CS-252 Channel Sand Creek Lower West Fork - Emory to Platte Ave. 1000lf channel stabilization	32	Oct-22	\$2,383,000
73	CS-025 Channel/Grade Control Sand Creek West Fork - Main stem to Wooten Construct drop structures & streambank protection	33	Oct-22	\$2,206,000
61	Channel/Grade Control Sand Creek	34	Jan-24	\$3,507,000
60	Channel/Grade Control Sand Creek	35	Jan-24	\$3,908,000
71	CS-246 Channel/Grade Control Sand Creek Lower Center Tributary - No Name to East Fork	36	Jan-25	\$458,000
62	Channel/Grade Control East Fork of Sand Creek	37	Oct-23	\$7,464,000

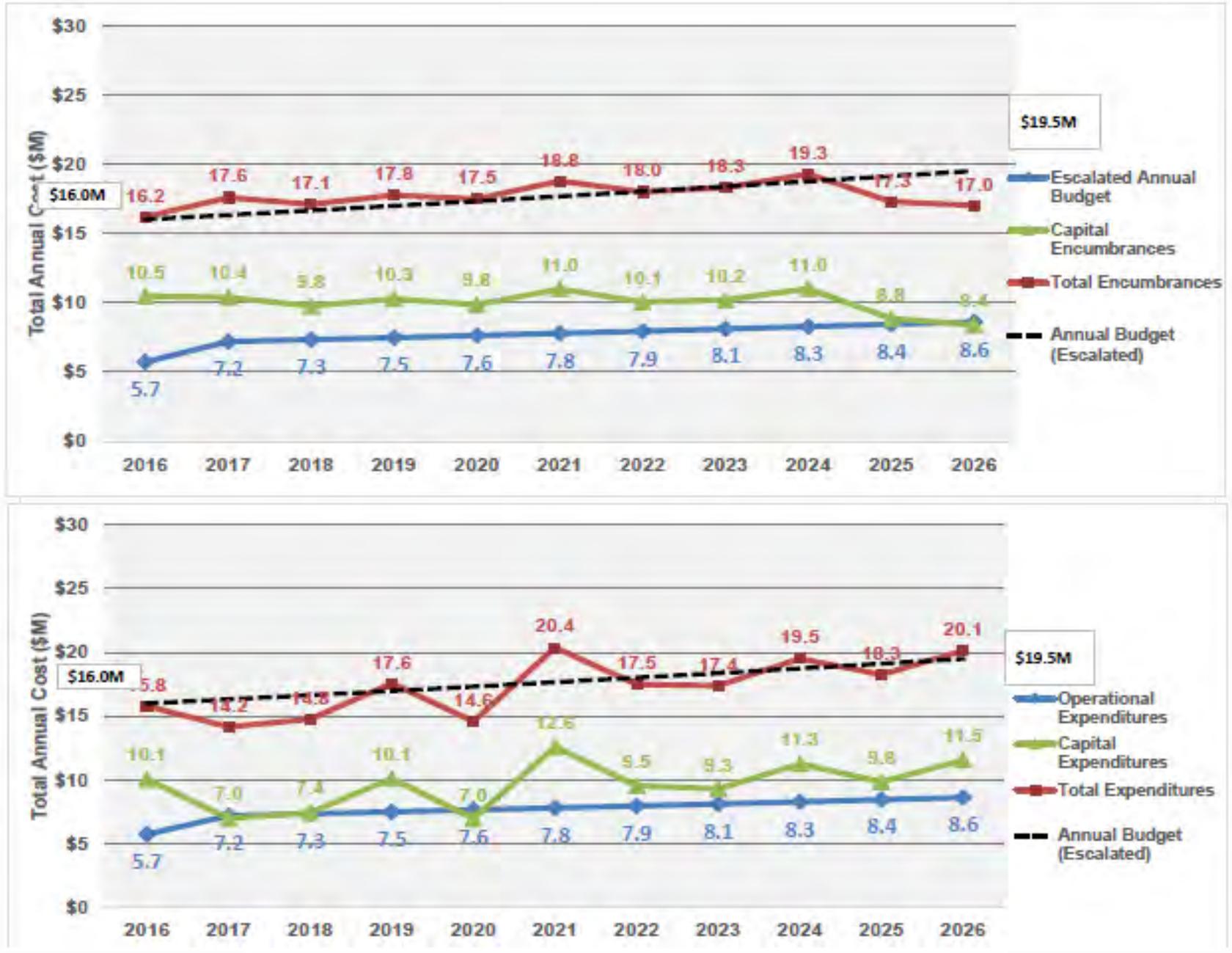


Escalation Rates:	
Capital Cost	2.00%
Labor Cost	3.00%
Maint. Services & Equipment Cost	2.50%
Budget Escalation	2.00%



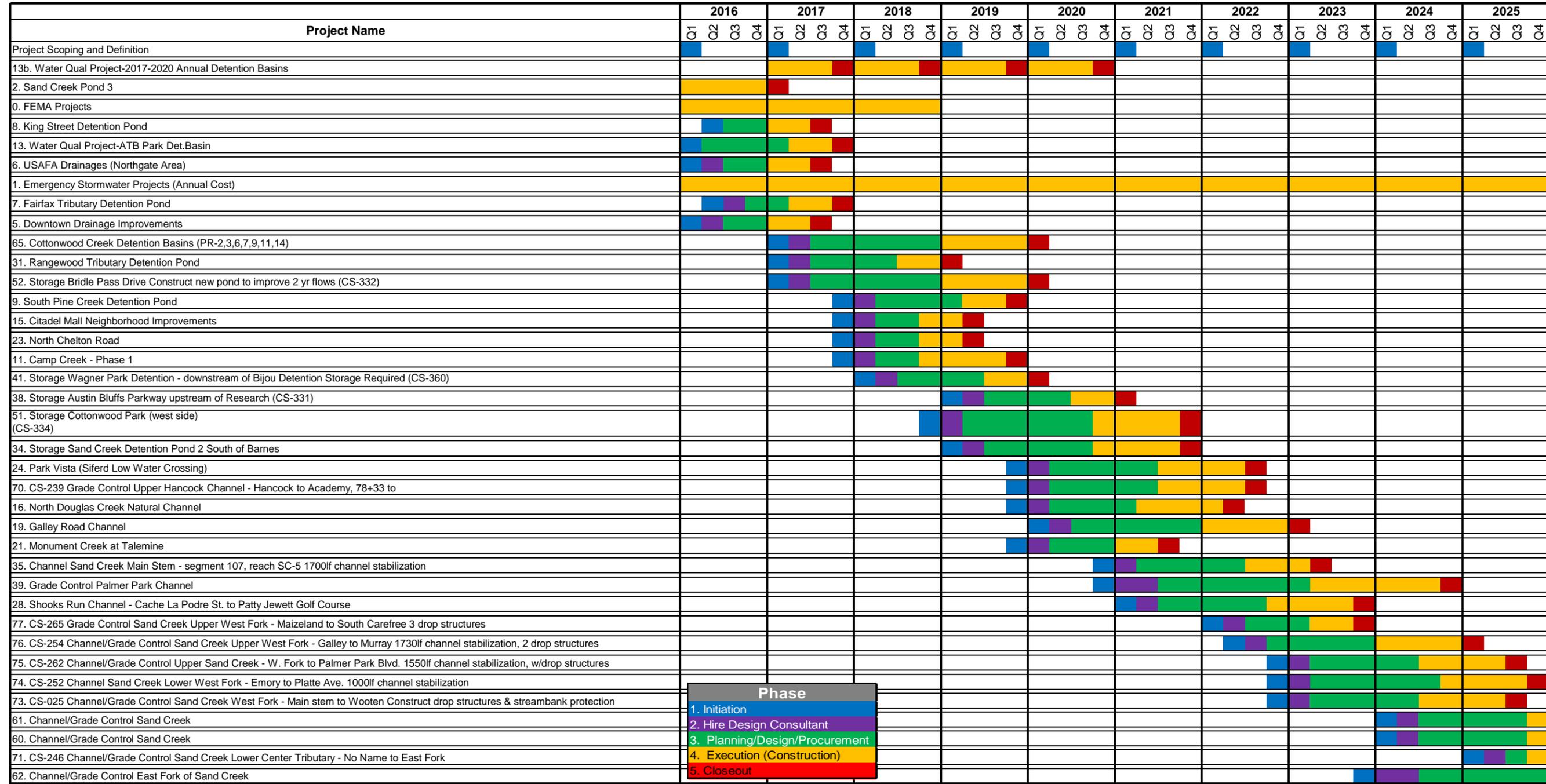
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Figure 5-2. City Costs for 2016-2025



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Figure 5-3: Schedule for City Stormwater Capital Projects



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Figure 5-4. Schedule for Creek Crossing Projects

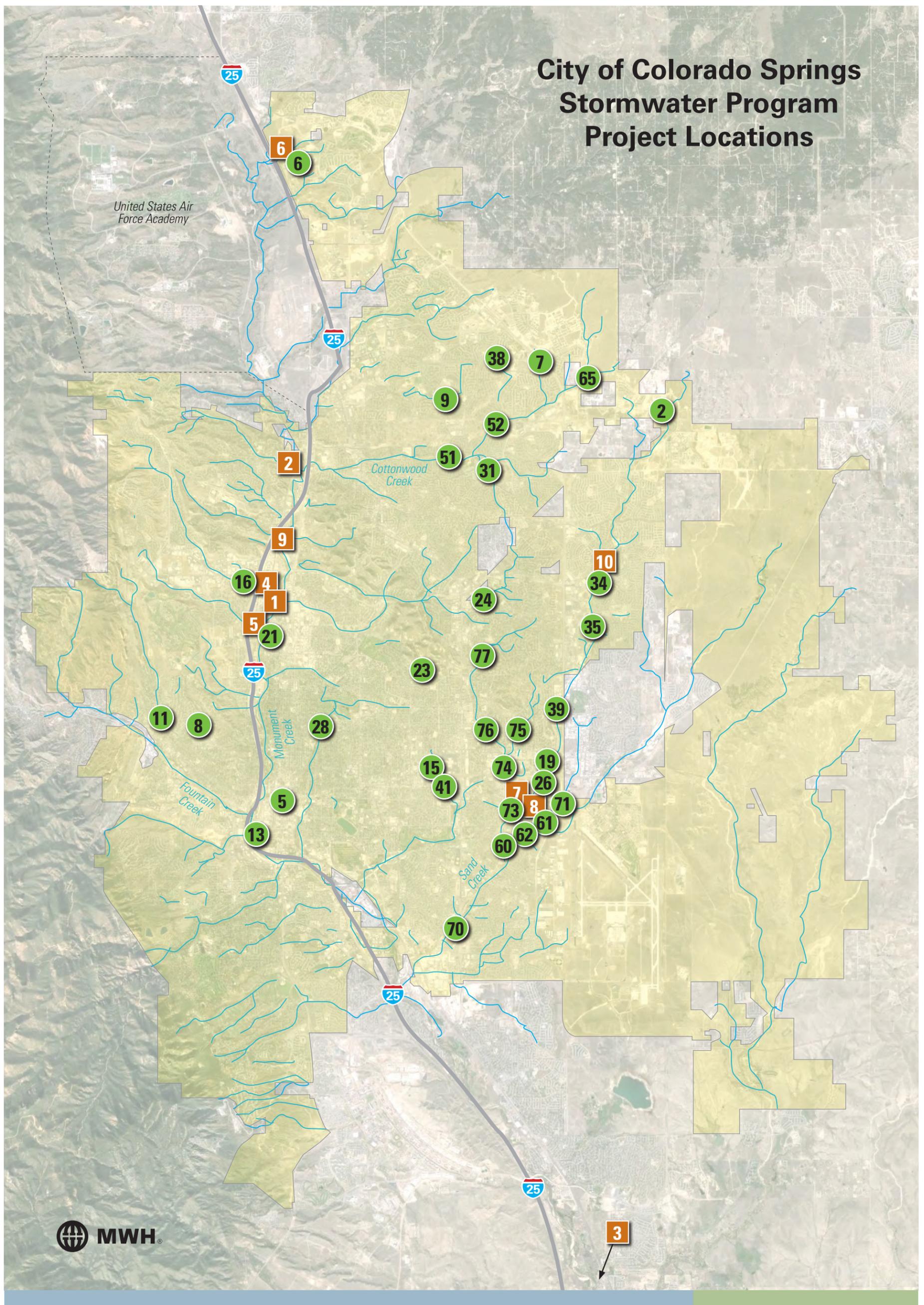
Project Name	2016				2017				2018				2019			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1. Monument Creek Stabilization, Phase 2			Yellow	Red												
2. Dry Creek Downstream of Dawson Drive					Green				Yellow	Red						
3. Clear Spring Ranch Bank Stabilization	Green	Green	Green	Yellow	Yellow	Yellow	Red									
4. North Douglas Creek upstream from Mark Dabling Stabilization	Yellow	Red														
5. South Douglas Creek at Sinton Pond, Crossing Elimination	Yellow	Red														
6. Monument Branch Stabilization	Blue	Purple	Green					Yellow	Yellow	Red						
7. West Fork Sand Creek Drop Repair									Green	Yellow	Red					
8. Sand Creek stabilization at West Fork Confluence									Green	Yellow	Red					
9. Monument Creek Stabilization Upstream from Pikeview Intake					Blue	Green			Yellow	Red						
10. Sand Creek Stabilization Upstream of Barnes Road					Blue	Green			Yellow	Red						

Phase
1. Initiation
2. Hire Design Consultant
3. Planning/Design/Procurement
4. Execution (Construction)
5. Closeout

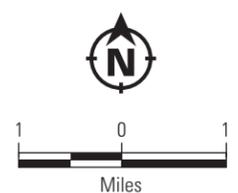
Projected Schedule - For Discussion Purposes Only

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Figure 5-5. Location Map for Stormwater Projects



- City of Colorado Springs Capital Stormwater Projects (2016-2025)
- Sanitary Sewer Creek Crossing Project Locations (2016-2018)
- Drainageway
- Colorado Springs Corporate Boundary

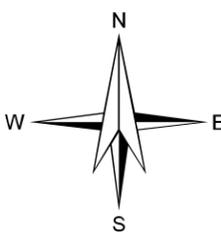
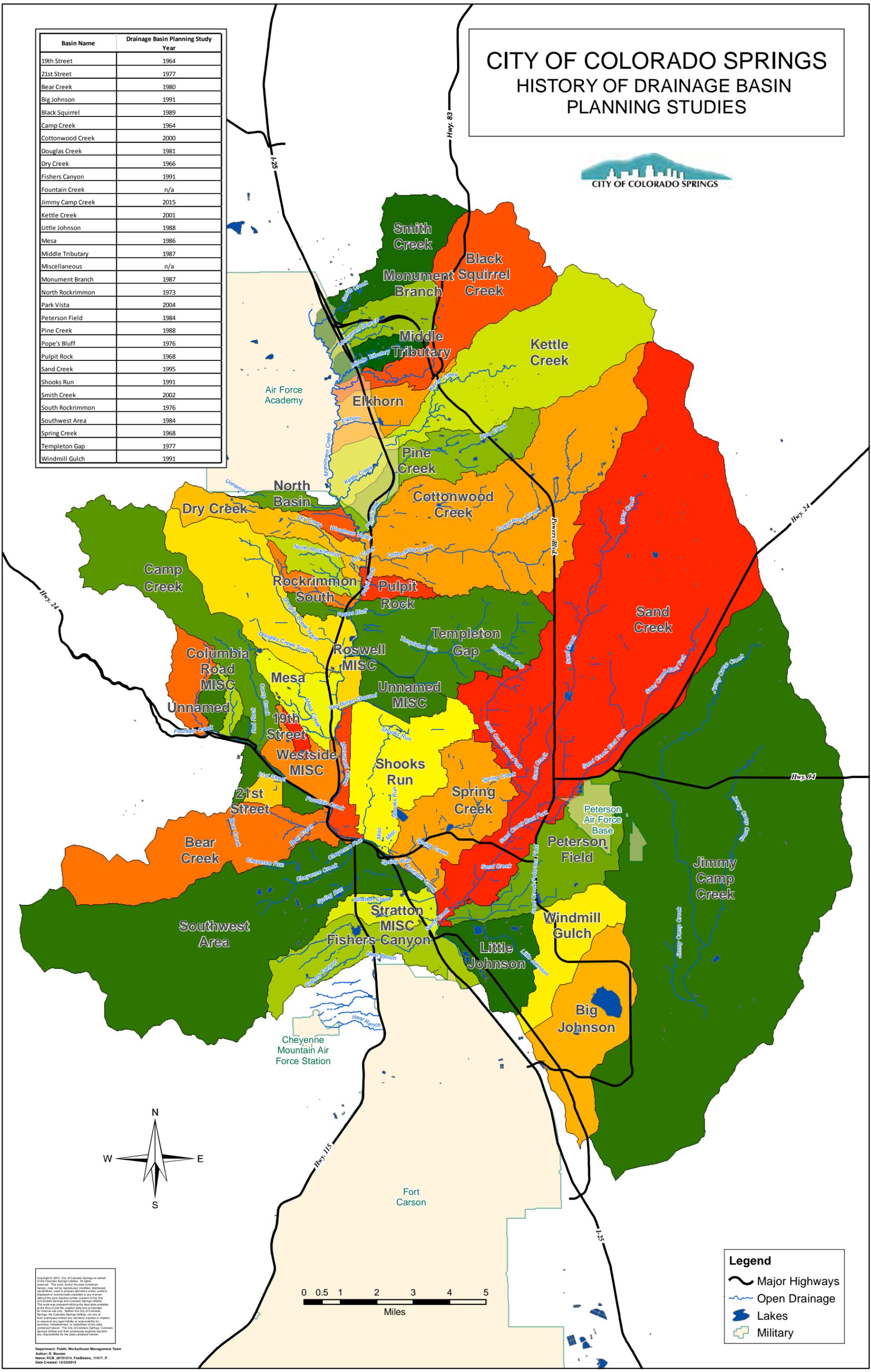


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Figure 5-6. History of City Drainage Basin Master Plans

Basin Name	Drainage Basin Planning Study Year
19th Street	1964
21st Street	1977
Bear Creek	1980
Big Johnson	1991
Black Squirrel	1989
Camp Creek	1964
Cottonwood Creek	2000
Douglas Creek	1981
Dry Creek	1966
Fishers Canyon	1991
Fountain Creek	n/a
Jimmy Camp Creek	2015
Kettle Creek	2001
Little Johnson	1988
Mesa	1986
Middle Tributary	1987
Miscellaneous	n/a
Monument Branch	1987
North Rockrimmon	1973
Park Vista	2004
Peterson Field	1984
Pine Creek	1988
Pope's Bluff	1976
Pulpit Rock	1968
Sand Creek	1995
Shooks Run	1991
Smith Creek	2002
South Rockrimmon	1976
Southwest Area	1984
Spring Creek	1968
Templeton Gap	1977
Windmill Gulch	1991

CITY OF COLORADO SPRINGS HISTORY OF DRAINAGE BASIN PLANNING STUDIES



Legend

- Major Highways
- Open Drainage
- Lakes
- Military

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Department: Public Works/Asset Management Team
Author: R. Bouton
Name: RCB_2015124_FeeBasins_11X17_P
Date Created: 12/23/2015

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APPENDIX B-2 – PROJECT SUMMARY SHEETS

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Project Name:		02. Sand Creek Pond 3			
Type:	D <i>D = Detention C = Channel Stabilization and Grade Controls I = Infrastructure Improvements</i>	Priority:	01		
Estimated Capital Cost (\$2016):	Construction: \$2,420,293 Soft Costs*: 254,131 Contingency: 401,164 Escalation: Total Capital: \$3,075,588 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	Kiowa Engineering Estimates (Sept. 2015)		
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Constructio		5. Closeout			
Project Need:	Project involves construction of a new detention pond and drop structures needed to help manage stormwater flows related to significant development north of Woodmen Road and east of Black Forest Road in northeastern portion of City.				
Background:	Developer of this area was required to contribute funds to construct Sand Creek Detention Pond 2 located adjacent to Sky Sox stadium and Barnes Road. Construction of Sand Creek Detention Pond 3 has become a City responsibility. The scope of work consists of a continuation of detention work in area following completion of Sand Creek Pond 6. (D=75%; C=25%)				
Project Description and Scope:	Construction of Sand Creek Detention Basin No. 3 Western Detention and Water Quality Pond (SCHEDULE A) and Sand Creek Inflow Drop Structure (SCHEDULE B)				
Benefits of Project:	Provide additional detention in surrounding developed area resulting in sediment reduction and improved water quality to area and downstream users. Enhance Community: Drainage becomes an amenity Sediment/Debris removal: debris/sediment basin is included Sediment Generation: Stabilization of channel and/or grade control Water Quality: removes pollutants (heavy metals, sediment, other chemicals...) Detention: Peak flows are reduced. Captured volume is released over time.				

**Project
Location:**





Project Name:		0. FEMA Projects			
Type:	C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	02		
Estimated Capital Cost (\$2016):	2016 Grant Match: \$1,081,082 2017 Grant Match: 500,000 2018 Grant Match: 500,000 Total Match: \$2,081,082	Estimate Source:	City Engineering Estimate		
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Construction)		5. Closeout			
Project Need:	Repair of damaged channels and infrastructure resulting from Presidential Disasters declared for September 2013 flooding and May-June 2015 Storm Events.				
Background:	Related to the Presidential Disaster Declaration for 2013 flooding and May-June 2015 rain events. City is working with FEMA to prepare project worksheets. Natural Resource Conservation Service (NRCS) projects have also been identified. Grant match dollar amounts are the estimated City's contribution (0-25%) to the costs. (C-50%; I-50%).				
Project Description and Scope:	TBD - City working with FEMA to prepare project worksheets. City is additionally working with Colorado Water Conservation Board to identify NRCS related projects.				
Benefits of Project:	Continued maintenance and repair of City stormwater system. Public Safety/Property: Eliminates/reduces damage to public property Failing Infrastructure: Current drainage conveyance system is in need of immediate repair. Enhance Community: Drainage becomes an amenity Sediment/Debris removal: debris/sediment basin is included Sediment Generation: Stabilization of channel and/or grade control Water Quality: removes pollutants (heavy metals, sediment, other chemicals...)				



Project Location:	Throughout Colorado Springs
--------------------------	-----------------------------



Project Name:		08. King Street Detention Pond			
Type:	D <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	03		
Estimated Capital Cost (\$2016):	Construction: \$149,808 Soft Costs*: 28,763 Contingency: 71,429 Escalation: Total Capital: \$250,000 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	City of Colorado Springs 2005 Needs Assessment (2006-2010 CIP and Needs Assessment)		
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Construction)		5. Closeout			
Project Need:	Retrofit existing detention pond to make it a full spectrum detention pond and outfall to provide improved water quality.				
Background:	Associated with 2013 Stormwater Needs Assessment project CS-013, located on west portion of City. Portion of original scope of work previously completed. (D=100%)				
Project Description and Scope:	Construct new outlet structure and improve maintenance access. Retrofit existing detention pond to make it a full spectrum detention pond. Retrofit outfall to provide improved water quality.				
Benefits of Project:	Improve public safety and improve water quality to area and downstream users. Enhance Community: Drainage becomes an amenity Distribute within the City: Project is a neighborhood high priority Sediment/Debris removal: debris/sediment basin is included Water Quality: removes pollutants (heavy metals, sediment, other chemicals...) Detention: Peak flows are reduced. Captured volume is released over time.				

Project Location:





Project Name:		13. Water Quality Projects			
Type:	D <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	04		
Estimated Capital Cost (\$2016):	Construction: \$1,282,841 Soft Costs*: 502,873 Contingency: 714,286 Escalation: Total Capital: \$2,500,000 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	City Engineering Estimate		
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Construction)		5. Closeout			
Project Need:	Detention and/or water quality improvement needs in infill/redevelopment areas in Colorado Springs.				
Background:	City is looking at locations in the City where water quality ponds could be constructed and used by new infill/redevelopment projects. The first proposed location is at Confluence Park. (D=100%)				
Project Description and Scope:	Consultant to be hired in 2016 to design a water quality pond in America the Beautiful Park (formerly Confluence Park). \$500K budgeted each year in 2016-2020. Additional projects to be designed and constructed as additional locations and/or needs are identified.				
Benefits of Project:	Provide detention and/or water quality in developed downtown areas where there are currently no facilities resulting in sediment reduction and improved water quality to area and downstream users. Enhance Community: Drainage becomes an amenity Sediment/Debris removal: debris/sediment basin is included Water Quality: removes pollutants (heavy metals, sediment, other chemicals...) Detention: Peak flows are reduced. Captured volume is released over time.				

**Project
Location:**





Project Name: 06. USAF Academy Drainage (Northgate Area)					
Type:		C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>		Priority:	
				05	
Estimated Capital Cost (\$2016):		Construction: \$1,026,273 Soft Costs*: 402,299 Contingency: 571,428 Escalation: Total Capital: \$2,000,000		Estimate Source:	
		<i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>		City of Colorado Springs 2016 Estimate	
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Constructio		5. Closeout			
Project Need:		Channel Stabilization and Grade Control			
Background:		Several natural drainages onto the USAFA from the Northgate area were severely damaged in recent storms. Matrix Design Group recently hired to prepare the Monument Creek Watershed Restoration Master Plan Study to identify most significant areas to be restored. (C=100%)			
Project Description and Scope:		Project involves channel stabilization of drainages that flow onto the USAFA, including design and construction of stabilization and grade control for Monument Branch from Interstate 25 to Voyager Parkway, approximately 4,500 linear feet.			
Benefits of Project:		Stabilize channels, resulting in sediment load reduction into Monument Creek. Public Safety/Property: Eliminates/reduces damage to public property Enhance Community: Drainage becomes an amenity Sediment Generation: Stabilization of channel and/or grade control			

**Project
Location:**





Project Name:		01. Emergency Stormwater Projects			
Type:	I <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	06		
Estimated Capital Cost (\$2016):	Construction: \$4,559,271 Soft Costs*: 797,872 Contingency: 2,142,857 Escalation: Total Capital: \$7,500,000	Estimate Source:	City Engineering Estimate		
* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs					
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Construction)		5. Closeout			
Project Need:	Repair of Damaged Infrastructure Not Previously Identified				
Background:	Annual budget of \$1.5M to handle unplanned, emergency and community projects that arise over the course of a fiscal year. Dollar estimate is based on City's past experience with assumed allocation of D=15%, C=25%, I=60%. Total funding shown above is for first five years (2016-2020) and extends through 2035.				
Project Description and Scope:	TBD - Repair of unplanned, emergency and smaller community projects that arise over the course of a fiscal year.				
Benefits of Project:	Continued maintenance of current City stormwater infrastructure. Public Safety/Property: Eliminates/reduces damage to public property Failing Infrastructure: Current drainage conveyance system is in need of immediate repair. Enhance Community: Drainage becomes an amenity Sediment/Debris removal: debris/sediment basin is included Sediment Generation: Stabilization of channel and/or grade control Water Quality: removes pollutants (heavy metals, sediment, other chemicals...)				



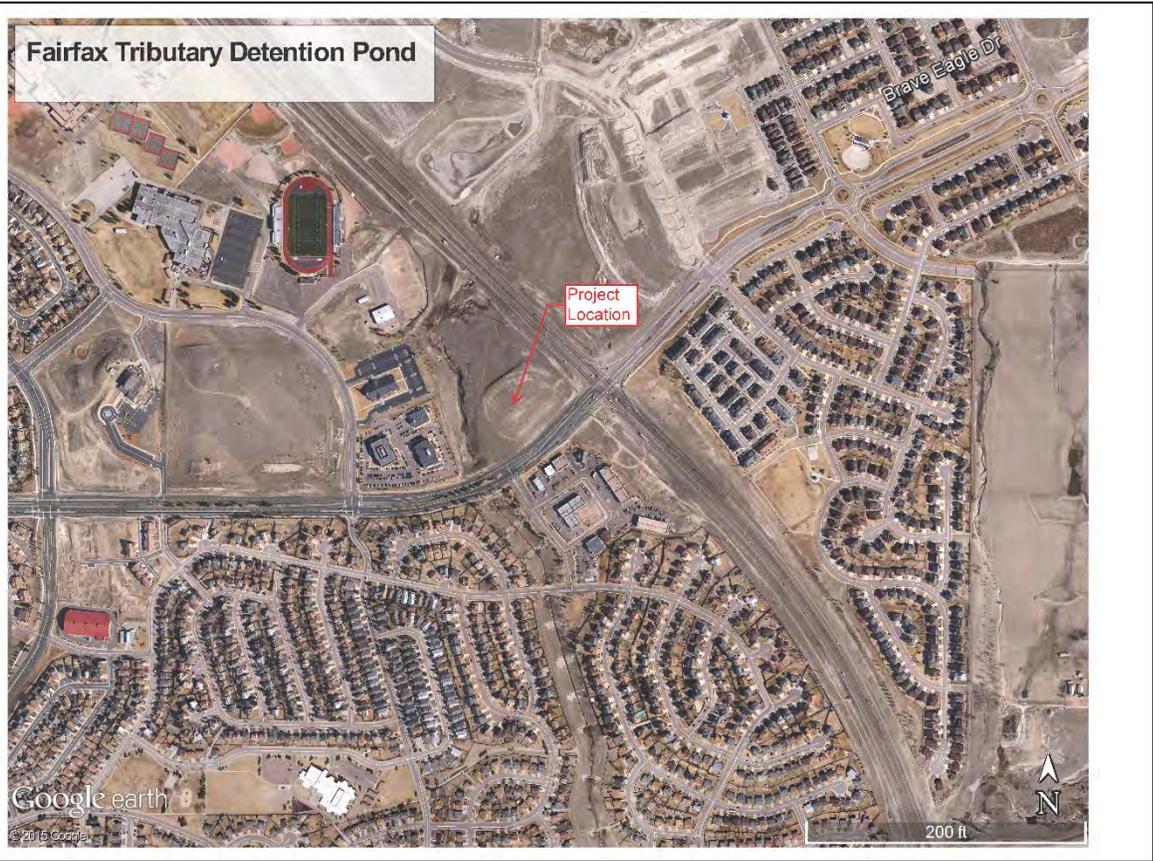
Project Location:

Throughout Colorado Springs



Project Name: 07. Fairfax Tributary Detention Pond				
Type:		D <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	
			07	
Estimated Capital Cost (\$2016):		Construction: \$204,079 Soft Costs*: 79,999 Contingency: 107,754 Escalation: 5,877 Total Capital: \$397,709 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source: Cottonwood Creek Drainage Basin Planning Study (Matrix, 2010)	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Constructio		5. Closeout		
Project Need:		Pond required to reduce peak flows in downstream direction; needed for detention for development in Briargate area.		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-330, located near intersection of Research Pkwy and Powers Blvd in NE portion of City. Information based on Matrix Design Group 2010 draft Cottonwood Creek Drainage Basin Planning Study. (D=100%)		
Project Description and Scope:		Design and construct new detention pond west of Research Parkway and Powers Boulevard intersection.		
Benefits of Project:		Provide additional detention in surrounding developed area resulting in sediment reduction and improved water quality to area and downstream users. Enhance Community: Drainage becomes an amenity Distribute within the City: Project is a neighborhood high priority Sediment/Debris removal: debris/sediment basin is included Water Quality: removes pollutants (heavy metals, sediment, other chemicals...) Detention: Peak flows are reduced. Captured volume is released over time.		

**Project
Location:**





Project Name:		05. Downtown Drainage Improvements			
Type:	I <i>D = Detention C = Channel Stabilization and Grade Controls I = Infrastructure Improvements</i>	Priority:	08		
Estimated Capital Cost (\$2016):	Construction: \$1,241,037 Soft Costs*: 366,106 Contingency: 642,857 Escalation: Total Capital: \$2,250,000 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	City Engineering Estimate		
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Constructio		5. Closeout			
Project Need:	Control localized flooding in downtown Colorado Springs area.				
Background:	Several businesses in the downtown area have experienced flooding due to lack of adequate stormwater conveyance systems. This project involves upsizing the current infrastructure system in Pikes Peak Avenue from Nevada Avenue to Shooks Run.				
Project Description and Scope:	Design and construct approximately 2,500 linear feet of storm sewer conveyance system along Pikes Peak Avenue from Nevada to Shooks Run. System to be designed to handle and convey up to a 100-year storm event.				
Benefits of Project:	Continued maintenance of current City stormwater infrastructure. Public Safety/Property: Eliminates/reduces damage to public property Failing Infrastructure: Current drainage conveyance system is in need of immediate repair.				

**Project
Location:**





Project Name:		26. Sand Creek Stabilization South of Platte			
Type:	C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	09		
Estimated Capital Cost (\$2016):	Construction: \$2,714,491 Soft Costs*: 1,064,080 Contingency: 1,511,429 Escalation: Total Capital: \$5,290,000 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	Sand Creek Channel Improvements Study (Ayres Associates, 2013)		
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Construction)		5. Closeout			
Project Need:	Channel stabilization and grade control				
Background:	Associated with Stormwater Needs Assessment project CS-018 involving stabilizing the existing channel downstream of the Platte Avenue Bridge. (C=100%)				
Project Description and Scope:	Design and install improvements, including channel/bank stabilization and installation of grade control drop structures, within Sand Creek south of Platte Avenue Bridge based on proposed phasing plan. Project is funded using FEMA grant funds with City match applied in 2015.				
Benefits of Project:	Stabilize channel resulting in reduction of sediment transport into Sand Creek and ultimately into Fountain Creek. Public Safety/Property: Eliminates/reduces damage to public property Enhance Community: Drainage becomes an amenity Sediment Generation: Stabilization of channel and/or grade control				

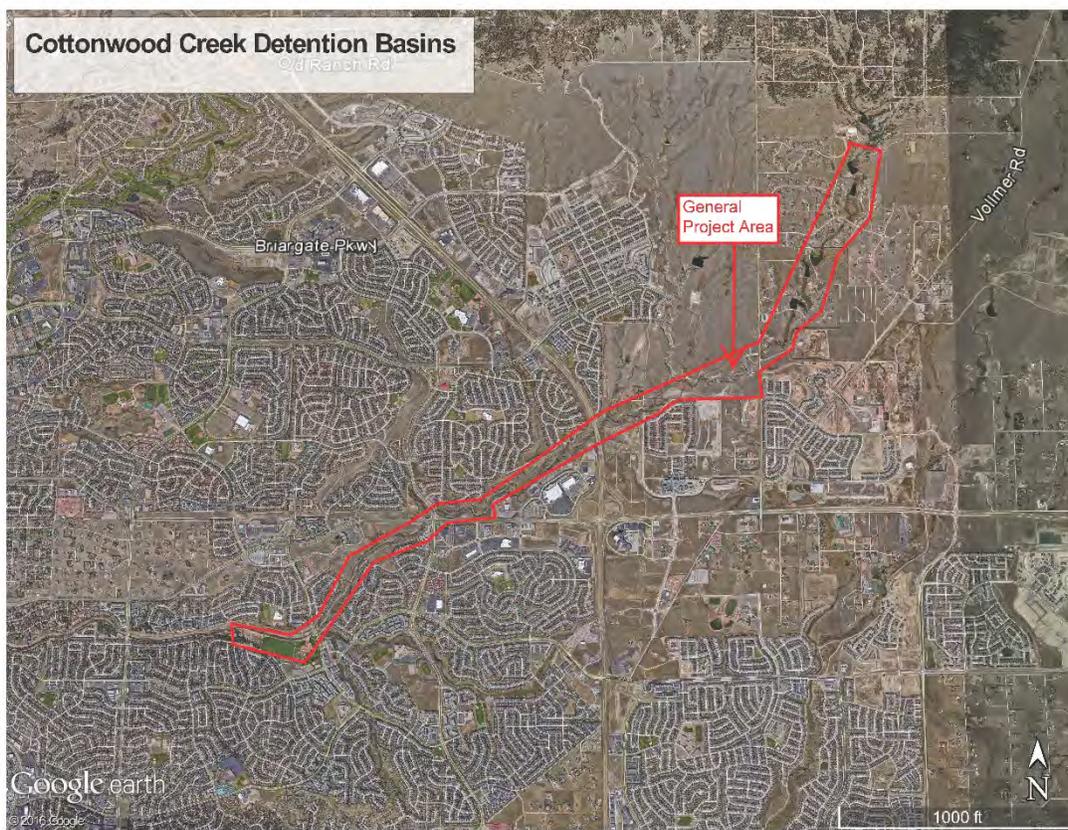
**Project
Location:**





Project Name:		65. Cottonwood Creek Detention Basins		
Type:	D <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	10	
Estimated Capital Cost (\$2016):	Construction: \$ 1,405,904 Soft Costs*: 551,114 Contingency: 715,982 Escalation: 66,825 Total Capital: \$ 2,739,825 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	Wright Water Engineers (WWE) 12/16/2015	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Construction)		5. Closeout		
Project Need:	Detention pond locations identified in older drainage basin studies along the upper portions of Cottonwood Creek that have not been constructed.			
Background:	Wright Water Engineers noted six (6) detention basins along Cottonwood Creek that were identified in drainage basin planning studies conducted in the 1990s that were not constructed during development due to the prudent-line development methodology used in this area.			
Project Description and Scope:	Design and construct the 6 detention ponds (identified as PR-2, PR-6, PR-7, PR-9, PR-11 and PR-14) utilizing full spectrum detention where able.			
Benefits of Project:	Provide additional detention in surrounding developed area resulting in sediment reduction and improved water quality to area and downstream users. Enhance Community: Drainage becomes an amenity Sediment/Debris removal: debris/sediment basin is included Water Quality: removes pollutants (heavy metals, sediment, other chemicals...) Detention: Peak flows are reduced. Captured volume is released over time.			

**Project
Location:**





Project Name:		31. Rangewood Tributary Detention Pond			
Type:	D <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	11		
Estimated Capital Cost (\$2016):	Construction: \$384,852 Soft Costs*: 150,862 Contingency: 214,286 Escalation: Total Capital: \$750,000 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	Cottonwood Creek Drainage Basin Planning Study (Matrix, 2010)		
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Construction)		5. Closeout			
Project Need:	Pond required to reduce peak flows in downstream direction. Needed for detention due to development in area.				
Background:	Associated with 2013 Stormwater Needs Assessment project CS-333, located near intersection of Dublin Blvd and Gold Medal Point in NE portion of City. Site selected due to land availability. (D=100%)				
Project Description and Scope:	Design and construction of new full spectrum detention and water quality pond west of Dublin Blvd.				
Benefits of Project:	Provide additional detention in surrounding developed area resulting in sediment reduction and improved water quality to area and downstream users. Enhance Community: Drainage becomes an amenity Distribute within the City: Project is a neighborhood high priority Sediment/Debris removal: debris/sediment basin is included Water Quality: removes pollutants (heavy metals, sediment, other chemicals...) Detention: Peak flows are reduced. Captured volume is released over time.				

Project Location:





Project Name:		52. Cottonwood Creek Detention Pond - Bridle Pass Drive (CS-332)			
Type:	D <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	12		
Estimated Capital Cost (\$2016):	Construction: \$ 816,316 Soft Costs*: 319,996 Contingency: 431,015 Escalation: 23,510 Total Capital: \$1,590,837 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	Cottonwood Creek Drainage Basin Planning Study (Matrix, 2010)		
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Construction)		5. Closeout			
Project Need:	Pond required to reduce peak flows in downstream direction. Needed for detention due to development in area.				
Background:	Associated with 2013 Stormwater Needs Assessment project CS-332, located north of Bridle Pass Drive and south of Cottonwood Creek. Site selected due to land availability. (D=100%)				
Project Description and Scope:	Design and construction of new full spectrum detention and water quality pond north of Bridle Pass Drive.				
Benefits of Project:	Provide additional detention in surrounding developed area resulting in sediment reduction and improved water quality to area and downstream users. Enhance Community: Drainage becomes an amenity Distribute within the City: Project is a neighborhood high priority Sediment/Debris removal: debris/sediment basin is included Water Quality: removes pollutants (heavy metals, sediment, other chemicals...) Detention: Peak flows are reduced. Captured volume is released over time.				

**Project
Location:**





Project Name:		09. South Pine Creek Detention Pond			
Type:	D <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	13		
Estimated Capital Cost (\$2016):	Construction: \$236,302 Soft Costs*: 92,630 Contingency: 124,768 Escalation: 6,806 Total Capital: \$460,506 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	Cottonwood Creek Drainage Basin Planning Study (Matrix, 2010)		
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Constructio		5. Closeout			
Project Need:	Pond required to reduce peak flows in downstream direction. Needed for detention due to development in area. Site selected due to land availability.				
Background:	Associated with 2013 Stormwater Needs Assessment project CS-335, located along South Pine Creek South Run at intersection of Lexington Dr and Bordeaux Dr. SNA information based on Matrix Design 2010 draft Cottonwood Creek Drainage Basin Planning Study. (D=100%)				
Project Description and Scope:	Design and construct new detention pond in vacant parcel north of Lexington Drive and Bordeaux Drive intersection.				
Benefits of Project:	Provide needed detention from area developments resulting in sediment reduction and improved water quality to area and downstream users. Enhance Community: Drainage becomes an amenity Distribute within the City: Project is a neighborhood high priority Sediment/Debris removal: debris/sediment basin is included Water Quality: removes pollutants (heavy metals, sediment, other chemicals...) Detention: Peak flows are reduced. Captured volume is released over time.				

**Project
Location:**





Project Name:		15. Citadel Mall Neighborhood Improvements			
Type:	I <i>D = Detention C = Channel Stabilization and Grade Controls I = Infrastructure Improvements</i>	Priority:	14		
Estimated Capital Cost (\$2016):	Construction: \$546,780 Soft Costs*: 205,043 Contingency: 285,174 Escalation: 15,555 Total Capital: \$1,052,552	Estimate Source:	Spring Creek Drainage Basin Planning Study (URS, 1993)		
* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs					
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Construction)		5. Closeout			
Project Need:	No existing storm drainage system in area, resulting in localized flooding issues.				
Background:	New construction of storm drain system and/or detention pond in area of Citadel Mall; public outreach will be required. Associated with 2013 Stormwater Needs Assessment (SNA) project CS-374. (I=100%)				
Project Description and Scope:	Design and install storm sewer system along Chelton Road to Dale Street with potential for detention pond on Citadel Mall property.				
Benefits of Project:	Reduce flooding in area and improvement of area storm water conveyance. Public Safety/Property: Eliminates/reduces damage to public property Failing Infrastructure: Current drainage conveyance system is in need of immediate repair. Enhance Community: Drainage becomes an amenity				

**Project
Location:**





Stormwater Capital Program Project Summary

Project Name:		23. North Chelton Road			
Type:	I <i>D = Detention C = Channel Stabilization and Grade Controls I = Infrastructure Improvements</i>	Priority:	15		
Estimated Capital Cost (\$2016):	Construction: \$755,888 Soft Costs*: 222,987 Contingency: 358,125 Escalation: 33,425 Total Capital: \$1,370,425 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	City of Colorado Springs 2005 Needs Assessment (2006-2010 CIP and Needs Assessment)		
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Constructio		5. Closeout			
Project Need:	Control localized flooding				
Background:	Associated with Stormwater Needs Assessment project CS-057 related to flooding issues on Marlborough Rd, Kent Ln, San Carlos Circle and properties on North Chelton Rd due to runoff from adjacent basin to north and inadequate storm sewer infrastructure. (I=100%)				
Project Description and Scope:	Design and construction of a new storm sewer system for area.				
Benefits of Project:	Continued upgrade and maintenance of current City stormwater infrastructure. Failing Infrastructure: Current drainage conveyance system is in need of immediate repair. Enhance Community: Drainage becomes an amenity Distribute within the City: Project is a neighborhood high priority				

**Project
Location:**





Project Name: 11. Camp Creek – Phase I				
Type:		C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	
			16	
Estimated Capital Cost (\$2016):		Construction: \$2,371,652 Soft Costs*: 739,955 Contingency: 1,138,393 Escalation: 106,250 Total Capital: \$4,356,250	Estimate Source:	
		<i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Wilson & Company and City Engineering Estimate	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Constructio		5. Closeout		
Project Need:		Significant repairs of natural and concrete-lined channel needed from Garden of the Gods Park to confluence with Fountain Creek near Colorado Avenue.		
Background:		Associated with SNA projects CS-002 and CS-003 and involves replacing an existing concrete channel with a natural channel and upsizing bridges. Additionally includes native channel stabilization and detention through Garden of the Gods Park. City retained Wilson & Co. to conduct a study of the area, which estimated a total of \$36M to complete. (C=25%; I=75%)		
Project Description and Scope:		City to define a segment of Camp Creek that is most logical to construct and meets the target capital budget of \$4.25M and commence with design (to potentially include improvements between Chambers Street and Water Street or area north of 30 th Street)		
Benefits of Project:		Needed maintenance of current stormwater infrastructure and upstream channel through Garden of the Gods park, resulting in sediment reduction and improved water quality to area and downstream users along Fountain Creek. Public Safety/Property: Eliminates/reduces damage to public property Failing Infrastructure: Current drainage conveyance system is in need of immediate repair. Enhance Community: Drainage becomes an amenity Sediment Generation: Stabilization of channel and/or grade control		



Project Name: 41. Wagner Park Detention – Spring Creek Downstream of Bijou (CS-360)				
Type:		D <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>		Priority:
				17
Estimated Capital Cost (\$2016):		Construction: \$ 361,061 Soft Costs*: 141,536 Contingency: 190,640 Escalation: 10,399 Total Capital: \$ 703,636		Estimate Source:
		<i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>		Spring Creek Drainage Basin Planning Study (URS, 1993)
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Construction)		5. Closeout		
Project Need:		Erosion and collapse of banks noted. Study notes that the crossing at downstream of the Pikes Peak Avenue crossing is inadequate to convey 100-year flow.		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-360, located in Spring Creek drainage basin Bijou Street and Pikes Peak Avenue, East of Stanford Street and west of Delaware Drive. Identified in 2013 Stormwater Needs Assessment with estimated project cost of \$693,237 (D=100%)		
Project Description and Scope:		Design and construction of new full spectrum detention pond in Wagner Park or possible area south of Wagner Park.		
Benefits of Project:		Provide additional detention in surrounding developed area resulting in sediment reduction and improved water quality to area and downstream users. Enhance Community: Drainage becomes an amenity Sediment/Debris removal: debris/sediment basin is included Water Quality: removes pollutants (heavy metals, sediment, other chemicals...) Detention: Peak flows are reduced. Captured volume is released over time.		

**Project
Location:**





Project Name: 38. Austin Bluffs Tributary Detention Pond – Upstream of Research (CS-331)				
Type:		D <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	
			18	
Estimated Capital Cost (\$2016):		Construction: \$ 386,676 Soft Costs*: 151,577 Contingency: 204,165 Escalation: 11,136 Total Capital: \$ 753,554 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source: Cottonwood Creek Drainage Basin Planning Study (Matrix, 2010)	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Construction)		5. Closeout		
Project Need:		Pond required in area to reduce peak flows in the downstream direction. Needed for detention due to development in area. Site selected due to land availability.		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-331, located north of Research Parkway and west of Powers Boulevard. Identified in 2013 Stormwater Needs Assessment with estimated project cost of \$742,418 (D=100%)		
Project Description and Scope:		Design and construction of new full spectrum detention pond.		
Benefits of Project:		Provide additional detention in surrounding developed area resulting in sediment reduction and improved water quality to area and downstream users. Enhance Community: Drainage becomes an amenity Sediment/Debris removal: debris/sediment basin is included Water Quality: removes pollutants (heavy metals, sediment, other chemicals...) Detention: Peak flows are reduced. Captured volume is released over time.		

**Project
Location:**





Project Name: 51. Cottonwood Creek Detention Pond – West Side Cottonwood Park (CS-334)					
Type:		D <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>		Priority:	
				19	
Estimated Capital Cost (\$2016):		Construction: \$ 1,933,380 Soft Costs*: 757,885 Contingency: 1,020,825 Escalation: 55,681 Total Capital: \$3,767,771		Estimate Source:	
		<i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>		Cottonwood Creek Drainage Basin Planning Study (Matrix, 2010)	
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Construction)		5. Closeout			
Project Need:		Pond required to reduce peak flows in the downstream direction. Needed for detention due to development in area. Site selected due to land availability.			
Background:		Associated with 2013 Stormwater Needs Assessment project CS-334, located on the west end of Cottonwood Park, east of Union Boulevard and east of Rangewood Boulevard. Identified in 2013 Stormwater Needs Assessment with estimated project cost of \$3,712,090 (D=100%)			
Project Description and Scope:		Design and construction of new full spectrum detention pond.			
Benefits of Project:		Provide additional detention in surrounding developed area resulting in sediment reduction and improved water quality to area and downstream users. Enhance Community: Drainage becomes an amenity Sediment/Debris removal: debris/sediment basin is included Water Quality: removes pollutants (heavy metals, sediment, other chemicals...) Detention: Peak flows are reduced. Captured volume is released over time.			

**Project
Location:**





Project Name: 34. Sand Creek Detention Pond 2 – Detention Pond Completion (CS-105)				
Type:	D <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>		Priority:	20
Estimated Capital Cost (\$2016):	Construction: \$ 525,965 Soft Costs*: 206,178 Contingency: 267,857 Escalation: 25,000 Total Capital: \$ 1,025,000 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	City of Colorado Springs Engineering Department	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Construction)		5. Closeout		
Project Need:	Existing detention pond was constructed to the 50-year flood event and does not have adequate storage capacity.			
Background:	Associated with 2013 Stormwater Needs Assessment project CS-105, located south of Barnes Road. Identified in 2013 Stormwater Needs Assessment as a Class B, medium priority project with estimated unconfirmable project cost of \$1,000,000 (D=100%)			
Project Description and Scope:	Design and construction of existing detention pond expansion to 100-year flood event holding capacity.			
Benefits of Project:	Provide additional detention in surrounding developed area resulting in sediment reduction and improved water quality to area and downstream users. Enhance Community: Drainage becomes an amenity Sediment/Debris removal: debris/sediment basin is included Water Quality: removes pollutants (heavy metals, sediment, other chemicals...) Detention: Peak flows are reduced. Captured volume is released over time.			

**Project
Location:**





Project Name: 24. Park Vista (Siferd Low Water Crossing)					
Type:		I <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>		Priority:	
				21	
Estimated Capital Cost (\$2016):		Construction: \$1,924,261 Soft Costs*: 754,310 Contingency: 1,071,429 Escalation: Total Capital: \$3,750,000 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>		Estimate Source:	
				City Engineering Office	
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Construction)		5. Closeout			
Project Need:		Siferd low water crossing regularly floods across roadway resulting in hazardous driving conditions for motorists. Channel and bridge construction with the possibility of detention in area necessary for safe water crossing.			
Background:		Associated with Stormwater Needs Assessment project C-232 related to unengineered channel with no culvert beneath roadway resulting in sheet flow from channel over roadway and back into channel on other side of road. (C=25%; I=75%)			
Project Description and Scope:		Design channel and bridge improvements with the possibility for detention. The project will include the construction of a new bridge to replace the Siferd Low Water Crossing with possible design and construction of a detention pond in the area of the crossing to reduce flows.			
Benefits of Project:		Provide safer water crossing across roadway and improved stormwater conveyance in area. Public Safety/Property: Eliminates/reduces damage to public property Enhance Community: Drainage becomes an amenity			

**Project
Location:**





Project Name: 70. Upper Hancock Channel (Sand Creek) - Hancock to Academy (CS-239)				
Type:		C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	
			22	
Estimated Capital Cost (\$2016):		Construction: \$ 634,411 Soft Costs*: 248,689 Contingency: 334,969 Escalation: 18,271 Total Capital: \$ 1,236,340 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source: Sand Creek Channel Improvements Study (Ayres Associates, 2013)	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Construction)		5. Closeout		
Project Need:		Channel stabilization needed.		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-239. Identified in 2013 Stormwater Needs Assessment with estimated project cost of \$1,218,069 (C=100%)		
Project Description and Scope:		Design and construction of three (3) drop structures in Upper Hancock channel (Sand Creek drainage basin) between Hancock Road and Academy Boulevard.		
Benefits of Project:		Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship.		

**Project
Location:**





Project Name:		16. North Douglas Creek Natural Channel			
Type:	C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	23		
Estimated Capital Cost (\$2016):	Construction: \$1,795,977 Soft Costs*: 704,023 Contingency: 1,000,000 Escalation: Total Capital: \$3,500,000	Estimate Source:	North Douglas Creek Supplemental Study (Matrix Design Group, 2014)		
* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs					
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Construction)		5. Closeout			
Project Need:	Channel stabilization and grade control.				
Background:	Associated with 2013 Stormwater Needs Assessment project CS-017 between I-25 and Monument Creek to the south. Identified in 2013 Stormwater Needs Assessment with an unconfirmable estimated project cost of \$930,000. North Douglas Creek Supplemental Study prepared by Matrix Design Group and Wilson & Company in 2014 estimated project cost at approximately \$3.5M. Partial stabilization work between railroad crossing east of I-25 and Mark Dabbling Boulevard to the southeast completed in 2015 (C=100%)				
Project Description and Scope:	Design and install improvements, including channel/bank stabilization and installation of grade control drop structures, between I-25 and railroad crossing to the east. Cost estimate based on a supplemental study and conceptual design completed by Matrix Design Group in 2014 of North Douglas Creek south of I-25.				
Benefits of Project:	Stabilize channel and banks, resulting in sediment load reduction through North Douglas Creek drainage basin near the confluence with Monument Creek. Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship.				

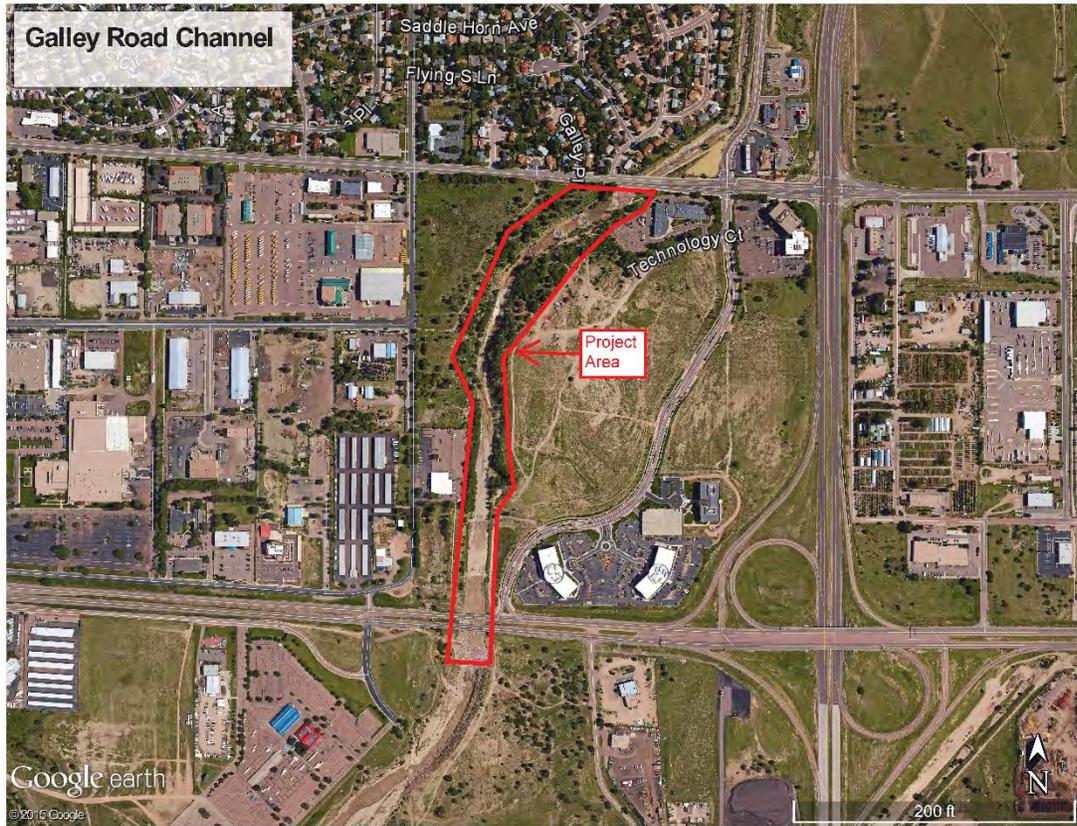
**Project
Location:**





Project Name:		19. Galley Road Channel			
Type:	C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	24		
Estimated Capital Cost (\$2016):	Construction: \$1,026,272 Soft Costs*: 402,299 Contingency: 571,429 Escalation: Total Capital: \$2,000,000 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	Sand Creek Channel Stabilization East Platte Ave to Constitution Ave (ICON Engineering, 2010)		
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Construction)		5. Closeout			
Project Need:	Channel stabilization and grade control.				
Background:	Associated with 2013 Stormwater Needs Assessment project CS-258. (C=100%)				
Project Description and Scope:	Design and construct bank stabilization and grade control structures along Sand Creek channel from Platte Avenue to Galley Road				
Benefits of Project:	Stabilize channel and banks, resulting in sediment load reduction through Sand Creek channel in eastern portion of City. Public Safety/Property: Eliminates/reduces damage to public property Enhance Community: Drainage becomes an amenity Sediment Generation: Stabilization of channel and/or grade control				

Project Location:





Project Name:		21. Monument Creek at Talamine			
Type:	C <i>D = Detention C = Channel Stabilization and Grade Controls I = Infrastructure Improvements</i>	Priority:	25		
Estimated Capital Cost (\$2016):	Construction: \$912,568 Soft Costs*: 357,727 Contingency: 481,836 Escalation: 26,282 Total Capital: \$1,778,413 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	Monument Creek at Talamine Alternative Analysis (CH2M Hill, 2009)		
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Constructio		5. Closeout			
Project Need:	Channel stabilization and grade control; stabilize eroding streambank.				
Background:	Associated with Stormwater Needs Assessment project CS-011 related to exposed sanitary sewer line, steep banks near businesses, undercutting of toe of slope and bank erosion. (C=100%)				
Project Description and Scope:	Design and construction of bank stabilization and grade control in identified area.				
Benefits of Project:	Stabilize channel and banks, resulting in sediment load reduction through Monument Creek drainage basin in central portion of City above confluence with Fountain Creek. Public Safety/Property: Eliminates/reduces damage to public property Enhance Community: Drainage becomes an amenity Sediment Generation: Stabilization of channel and/or grade control				

**Project
Location:**

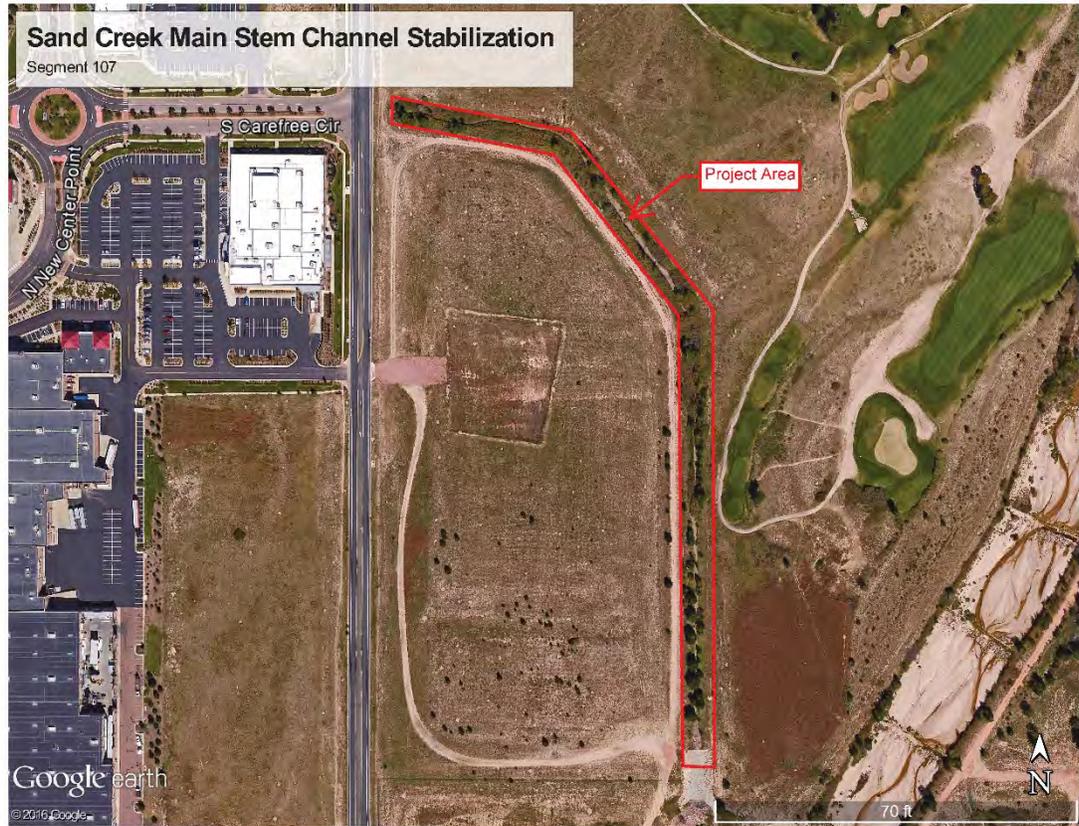




Stormwater Capital Program Project Summary

Project Name: 35. Sand Creek Main Stem Channel Stabilization – Segment 107 (CS-261)				
Type:		C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>		Priority: 26
Estimated Capital Cost (\$2016):		Construction: \$ 637,522 Soft Costs*: 249,909 Contingency: 336,612 Escalation: 18,361 Total Capital: \$ 1,242,404		Estimate Source: Sand Creek Drainage Basin Planning Study Preliminary Design Report (Kiowa Engineering, 1996)
* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs				
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Construction)		5. Closeout		
Project Need:		Channel stabilization of 1,700 liner feet of Sand Creek tributary east of Powers Boulevard north of Constitution Avenue.		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-261, located east of Powers Boulevard and north of Constitution Avenue within Sand Creek. Identified in 2013 Stormwater Needs Assessment with estimated project cost of \$1,224,043 (C=100%)		
Project Description and Scope:		Design and construction of approximately 1,700 linear feet of channel stabilization measures along Sand Creek between Powers Boulevard and Constitution Avenue.		
Benefits of Project:		Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship.		

**Project
Location:**





Stormwater Capital Program Project Summary

Project Name: 39. Palmer Park Channel – Galley Road to Palmer Park (CS-259)				
Type:		C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	
			27	
Estimated Capital Cost (\$2016):		Construction: \$ 3,383,737 Soft Costs*: 1,326,426 Contingency: 1,786,612 Escalation: 97,452 Total Capital: \$6,594,227 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	
			Sand Creek Stabilization East Platte Avenue to Constitution Avenue (2010, ICON Engineering, Inc.)	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Construction)		5. Closeout		
Project Need:		Channel stabilization along Sand Creek between Galley Road and Palmer Park Road.		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-259. Identified in 2013 Stormwater Needs Assessment with estimated project cost of \$6,496,775 to install 13 drop structures. (C=100%)		
Project Description and Scope:		Design and construction of 13 drop structures along Sand Creek channel between Galley Road and Palmer Park Road.		
Benefits of Project:		Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture		

**Project
Location:**





Project Name: 28. Shooks Run Channel - Cache La Pudre St to Patty Jewett Golf Course					
Type:		C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>		Priority:	
				28	
Estimated Capital Cost (\$2016):		Construction: \$1,795,977 Soft Costs*: 704,023 Contingency: 1,000,000 Escalation: Total Capital: \$3,500,000		Estimate Source:	
				Drainage Basin Planning Study Shooks Run (Wilson and Company, 1993)	
		* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs			
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Constructio		5. Closeout			
Project Need:		Channel stabilization and grade control			
Background:		Associated with Stormwater Needs Assessment project CS-326 related to flooding and erosion damage due to inadequate capacity and lack of stabilization measures in existing channel in area between Cache la Poudre Street and Patty Jewett Golf Course.			
Project Description and Scope:		Update to the Shooks Run Drainage Basin Planning Study is underway. City expects to have a preliminary list of projects and costs in 2017. Allowance is designated for improvements that can be implemented once the study is complete.			
Benefits of Project:		Provide needed channel stabilization through the Shooks Run area which will result in sediment reduction to confluence with Fountain Creek and reduction in flooding potential in area. Public Safety/Property: Eliminates/reduces damage to public property Failing Infrastructure: Current drainage conveyance system is in need of immediate repair. Enhance Community: Drainage becomes an amenity Sediment Generation: Stabilization of channel and/or grade control			

**Project
Location:**





Stormwater Capital Program Project Summary

Project Name: 77. Sand Creek Upper West Fork – Maizeland to South Carefree Circle (CS-265)				
Type:		C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	
			29	
Estimated Capital Cost (\$2016):		Construction: \$ 215,692 Soft Costs*: 84,551 Contingency: 113,885 Escalation: 6,212 Total Capital: \$ 420,340 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	
			Sand Creek Drainage Basin Planning Study Preliminary Design Report (Kiowa Engineering, 1996)	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Construction)		5. Closeout		
Project Need:		Channel stabilization needed.		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-265 based on 1996 drainage basin planning study preliminary design report, located along Sand Creek Upper West Fork between Maizeland and South Carefree Circle. Identified in 2013 Stormwater Needs Assessment with estimated project cost of \$414,128 (C=100%)		
Project Description and Scope:		Design and construction of three (3) drop structures.		
Benefits of Project:		Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship.		

**Project
Location:**





Stormwater Capital Program Project Summary

Project Name: 76. Sand Creek Upper West Fork – Galley Road to Murray Blvd (CS-254)				
Type:		C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>		Priority:
				30
Estimated Capital Cost (\$2016):		Construction: \$ 1,029,571 Soft Costs*: 403,592 Contingency: 543,614 Escalation: 29,652 Total Capital: \$ 2,006,429 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>		Estimate Source:
				Sand Creek Drainage Basin Planning Study Preliminary Design Report (Kiowa Engineering, 1996)
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Construction)		5. Closeout		
Project Need:		Channel stabilization needed.		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-254 based on 1996 drainage basin planning study preliminary design report, located along Sand Creek Upper West Fork between Galley Road and Murray Boulevard. Identified in 2013 Stormater Needs Assessment with estimated project cost of \$1,976,777 (C=100%)		
Project Description and Scope:		Design and construction of 1,730 linear foot channel stabilization project including two (2) drop structures.		
Benefits of Project:		Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship.		

**Project
Location:**





Stormwater Capital Program Project Summary

Project Name: 75. East Branch West Fork Sand Creek- West Fork to Galley Rd (CS-262)				
Type:		C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	
			31	
Estimated Capital Cost (\$2016):		Construction: \$ 611,541 Soft Costs*: 239,724 Contingency: 322,893 Escalation: 17,612 Total Capital: \$ 1,191,770 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	
			Sand Creek Drainage Basin Planning Study Preliminary Design Report (Kiowa Engineering, 1996)	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Construction)		5. Closeout		
Project Need:		Channel stabilization needed.		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-262 based on 1996 drainage basin planning study preliminary design report, located along the east branch of Sand Creek West Fork from the confluence with Sand Creek West Fork to Palmer Park Boulevard. Identified in 2013 Stormwater Needs Assessment with estimated project cost of \$1,174,158 (C=100%)		
Project Description and Scope:		Design and construction of 1,550 linear foot channel stabilization project including drop structures.		
Benefits of Project:		Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship.		

**Project
Location:**





Stormwater Capital Program Project Summary

Project Name: 74. Sand Creek Lower West Fork – Emory to Platte Avenue (CS-252)				
Type:		C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	
			32	
Estimated Capital Cost (\$2016):		Construction: \$ 1,222,914 Soft Costs*: 479,382 Contingency: 645,698 Escalation: 35,220 Total Capital: \$ 2,383,214 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	
			Sand Creek Drainage Basin Planning Study Preliminary Design Report (Kiowa Engineering, 1996)	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Construction)		5. Closeout		
Project Need:		Channel stabilization needed.		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-252 based on 1996 drainage basin planning study preliminary design report, located along the lower west fork of Sand Creek between Emory Circle and Platte Avenue. Identified in 2013 Stormwater Needs Assessment with estimated project cost of \$2,347,994 (C=100%)		
Project Description and Scope:		Design and construction of 1,000 linear foot channel stabilization project.		
Benefits of Project:		Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship.		

**Project
Location:**





Project Name: 73. Sand Creek West Fork Stabilization – Main Stem to Wooten (CS-025)				
Type:		C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	
			33	
Estimated Capital Cost (\$2016):		Construction: \$ 1,131,905 Soft Costs*: 443,707 Contingency: 597,645 Escalation: 32,599 Total Capital: \$ 2,205,856 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source: City of Colorado Springs 2006-2010 Capital Improvements Program and Needs Assessment (2005)	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Construction)		5. Closeout		
Project Need:		Channel and bank erosion identified.		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-025, located along the main stem of the west fork of Sand Creek to Wooten Road. Identified in 2013 Stormwater Needs Assessment with estimated project cost of \$2,173,257 (C=100%)		
Project Description and Scope:		Design and construction of channel stabilization measures including installation of drop structures and streambank protection.		
Benefits of Project:		Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship.		

**Project
Location:**





Project Name: 61. Sand Creek Stabilization – Karr to W. Fork Sand Creek Confluence (CS-040)				
Type:		C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	
			34	
Estimated Capital Cost (\$2016):		Construction: \$ 1,799,768 Soft Costs*: 705,509 Contingency: 950,277 Escalation: 51,833 Total Capital: \$ 3,507,387 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source: Sand Creek Channel Improvements Study (Ayres Associates, 2013)	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Construction)		5. Closeout		
Project Need:		Area of Sand Creek observed to be cutting deeper year over year, threatening to undermine drop structures upstream. If lost, the drop structure directly downstream of the Platte Avenue bridge over Sand Creek would likely cause the closure of Platte Avenue at this location.		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-040, with estimated project cost of \$3,455,554. Drop structure at Karr Road built in 2012; according to 2013 SNA aerial photography does not indicate significant downcutting and erosion to banks (no nearby structures or infrastructure). (C=100%)		
Project Description and Scope:		Design and construction of channel stabilization measures along Sand Creek between Karr Road and confluence with East and West Forks of Sand Creek.		
Benefits of Project:		Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship.		

**Project
Location:**





Project Name: 60. Sand Creek Channel Stabilization – Fountain to Airport (CS-039)					
Type:		C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>		Priority:	
				35	
Estimated Capital Cost (\$2016):		Construction: \$ 2,005,569 Soft Costs*: 786,183 Contingency: 1,058,940 Escalation: 57,760 Total Capital: \$3,908,452		Estimate Source:	
		<i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>		Sand Creek Channel Improvements Study (Ayres Associates, 2013)	
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Construction)		5. Closeout			
Project Need:		Aggressive cutting observed eroding banks and creek bottom in area; drop structures required to dissipate energy and limit future erosion.			
Background:		Associated with 2013 Stormwater Needs Assessment project CS-039, located between Fountain Boulevard and Airport Road. Identified in 2013 Stormater Needs Assessment with estimated project cost of \$3,850,692 (C=100%)			
Project Description and Scope:		Design and construction of channel stabilization measures along Sand Creek between Fountain Boulevard and Airport Road.			
Benefits of Project:		Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship.			

**Project
Location:**





Stormwater Capital Program Project Summary

Project Name: 71. Sand Creek Lower Center Tributary – No Name to East Fork Trib (CS-246)				
Type:		C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>		Priority:
				36
Estimated Capital Cost (\$2016):		Construction: \$ 235,106 Soft Costs*: 92,162 Contingency: 119,732 Escalation: 11,175 Total Capital: \$ 458,175 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>		Estimate Source: Sand Creek Drainage Basin Planning Study Preliminary Design Report (Kiowa Engineering, 1996)
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Construction)		5. Closeout		
Project Need:		Channel stabilization needed.		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-246 based on 1996 drainage basin planning study preliminary design report. Identified in 2013 Stormwater Needs Assessment as a Class B medium priority project with estimated project cost of \$447,000 (C=100%)		
Project Description and Scope:		Design and construction of 800 linear foot channel stabilization project with three (3) drop structures.		
Benefits of Project:		Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship.		

**Project
Location:**





Project Name: 62. East Fork Sand Creek from Mainstem Confluence to Below Powers (CS-041)				
Type:		Priority:		
C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>				37
Estimated Capital Cost (\$2016):		Estimate Source:		Sand Creek Channel Improvements Study (Ayres Associates, 2013)
Construction: \$ 3,830,073 Soft Costs*: 1,501,388 Contingency: 2,022,278 Escalation: 110,306 Total Capital: \$ 7,464,045 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>				
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Construction)		5. Closeout		
Project Need:		Aggressive cutting observed eroding banks and creek bottom in area; drop structures required to dissipate energy and limit future erosion.		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-041, located between Powers Boulevard and confluence with mainstem of Sand Creek. Identified in 2013 Stormwater Needs Assessment with estimated project cost of \$7,353,739 (C=100%)		
Project Description and Scope:		Design and construction of channel stabilization measures along Sand Creek between Powers Boulevard and confluence with mainstem of Sand Creek.		
Benefits of Project:		Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship.		

**Project
Location:**





Project Name: 55. Fountain Blvd Channel (Sand Creek) – Chelton Rd to Fountain Blvd (CS-243)				
Type:	C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>		Priority:	38
Estimated Capital Cost (\$2016):	Construction: \$ 1,310,002 Soft Costs*: 513,520 Contingency: 691,681 Escalation: 37,728 Total Capital: \$2,552,931 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	Sand Creek Channel Improvements Study (Ayres Associates, 2013)	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Construction)		5. Closeout		
Project Need:	Channel stabilization along Sand Creek between Fountain Boulevard and Chelton Road.			
Background:	Associated with 2013 Stormwater Needs Assessment project CS-243. Identified in 2013 Stormwater Needs Assessment with estimated project cost of \$2,515,203 to install 3 drop structures. (C=100%)			
Project Description and Scope:	Design and construction of 3 drop structures along Sand Creek channel between Fountain Boulevard and Chelton Road.			
Benefits of Project:	Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship			

**Project
Location:**





Project Name: 54. Chelton Road Channel (Sand Creek) – Academy to Chelton (CS-241)					
Type:		C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>		Priority:	
				39	
Estimated Capital Cost (\$2016):		Construction: \$ 817,267 Soft Costs*: 320,369 Contingency: 431,516 Escalation: 23,537 Total Capital: \$1,592,689		Estimate Source:	
				Sand Creek Channel Improvements Study (Ayres Associates, 2013)	
		* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs.			
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Constructio		5. Closeout			
Project Need:		Channel stabilization along Sand Creek between South Academy Road and Chelton Road.			
Background:		Associated with 2013 Stormwater Needs Assessment project CS-241. Identified in 2013 Stormater Needs Assessment with estimated project cost of \$1,569,152 to install 2 drop structures. (C=100%)			
Project Description and Scope:		Design and construction of 2 drop structures along Sand Creek channel between Academy and Chelton Roads.			
Benefits of Project:		Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship			

**Project
Location:**





Stormwater Capital Program Project Summary

Project Name: 69. Lower Sand Creek Tributaries 2, 3, and 4 - Main Stem to Academy (CS-240)				
Type:		C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	
			40	
Estimated Capital Cost (\$2016):		Construction: \$ 444,634 Soft Costs*: 174,297 Contingency: 234,767 Escalation: 12,805 Total Capital: \$ 866,503 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	
			Sand Creek Drainage Basin Planning Study Preliminary Design Report (Kiowa Engineering, 1996)	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Construction)		5. Closeout		
Project Need:		Channel stabilization needed.		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-240 based on 1996 drainage basin planning study preliminary design report. Identified in 2013 Stormwater Needs Assessment with estimated project cost of \$853,698 (C=50%; I=50%)		
Project Description and Scope:		Design and construction of 500 linear foot channel stabilization project with 1,520 linear feet of storm drain installation along reach.		
Benefits of Project:		Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship.		

**Project
Location:**





Project Name: 67. Lower Hancock Channel Stabilization (Sand Creek) - Downstream (CS-238)				
Type:		C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	
			41	
Estimated Capital Cost (\$2016):		Construction: \$ 639,642 Soft Costs*: 250,740 Contingency: 337,730 Escalation: 18,422 Total Capital: \$ 1,246,534 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source: Sand Creek Drainage Basin Planning Study Preliminary Design Report (Kiowa Engineering, 1996)	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Constructio		5. Closeout		
Project Need:		Channel stabilization needed.		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-238 based on 1996 drainage basin planning study preliminary design report. Identified in 2013 Stormater Needs Assessment with estimated project cost of \$1,228,112 (C=100%)		
Project Description and Scope:		Design and construction of 1,500 linear foot channel stabilization project with two (2) drop structures along Lower Hancock channel of Sand Creek drainage basin.		
Benefits of Project:		Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship.		

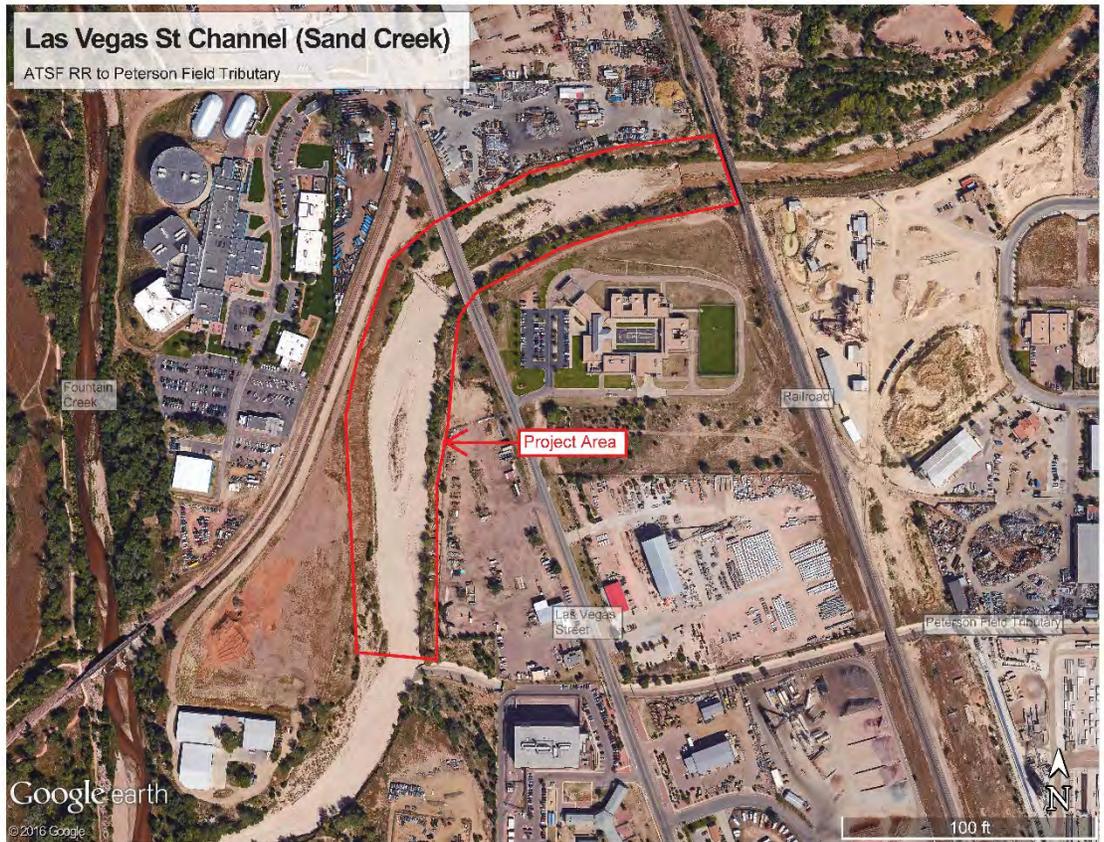
**Project
Location:**





Project Name: 66. Las Vegas St Channel (Sand Creek)–ATSF RR to Peterson Fld Trib (CS-268)				
Type:		C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	
			42	
Estimated Capital Cost (\$2016):		Construction: \$ 792,842 Soft Costs*: 310,794 Contingency: 418,621 Escalation: 22,834 Total Capital: \$ 1,545,091 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	
			Sand Creek Drainage Basin Planning Study Preliminary Design Report (Kiowa Engineering, 1996)	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Constructio		5. Closeout		
Project Need:		Channel stabilization needed.		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-268 based on 1996 drainage basin planning study preliminary design report. Identified in 2013 Stormater Needs Assessment with estimated project cost of \$1,522,257 (C=100%)		
Project Description and Scope:		Design and construction of 700 linear foot channel stabilization project with two (2) drop structures along Las Vegas channel (Sand Creek drainage basin).		
Benefits of Project:		Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship.		

**Project
Location:**





Stormwater Capital Program Project Summary

Project Name: 72. Sand Creek Middle Center Tributary – Powers Blvd to No Name (CS-247)				
Type:		C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	
			43	
Estimated Capital Cost (\$2016):		Construction: \$ 89,940 Soft Costs*: 35,256 Contingency: 45,804 Escalation: 4,275 Total Capital: \$ 175,275 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	
			Sand Creek Drainage Basin Planning Study Preliminary Design Report (Kiowa Engineering, 1996) (Not Included in 2013 Stormwater Needs Assessment Validated Projects List)	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Constructio		5. Closeout		
Project Need:		Channel stabilization needed.		
Background:		Included in City of Colorado Springs original Master Projects List reviewed as part of the 2013 Stormwater Needs Assessment (CS-247); however the project was not included as part of the 2013 Stormwater Needs Assessment Validated Projects List, likely because the improvements may have already been completed or partially completed. (C=100%)		
Project Description and Scope:		Design and construction of 300 linear foot channel stabilization project with three (3) drop structures.		
Benefits of Project:		Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship.		

**Project
Location:**





Project Name: 68. Hancock Expressway Channel East of Astrozon - Sand Creek (CS-130)				
Type:		Priority:		
<p>I</p> <p><i>D = Detention</i></p> <p><i>C = Channel Stabilization and Grade Controls</i></p> <p><i>I = Infrastructure Improvements</i></p>				44
Estimated Capital Cost (\$2016):		Estimate Source:		SWENT Database Information
<p>Construction: \$ 36,732</p> <p>Soft Costs*: 14,399</p> <p>Contingency: 19,395</p> <p>Escalation: 1,058</p> <p>Total Capital: \$ 71,584</p> <p><i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i></p>				
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Constructio		5. Closeout		
Project Need:		Undermining of infrastructure; broken concrete channel.		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-130. Identified in 2013 Stormater Needs Assessment with estimated project cost of \$70,526 (I=100%)		
Project Description and Scope:		Repair of existing facility.		
Benefits of Project:		<p>Protect Public Safety and Property</p> <p>Enhance Community</p> <p>Enhance Sediment/Debris Capture</p>		

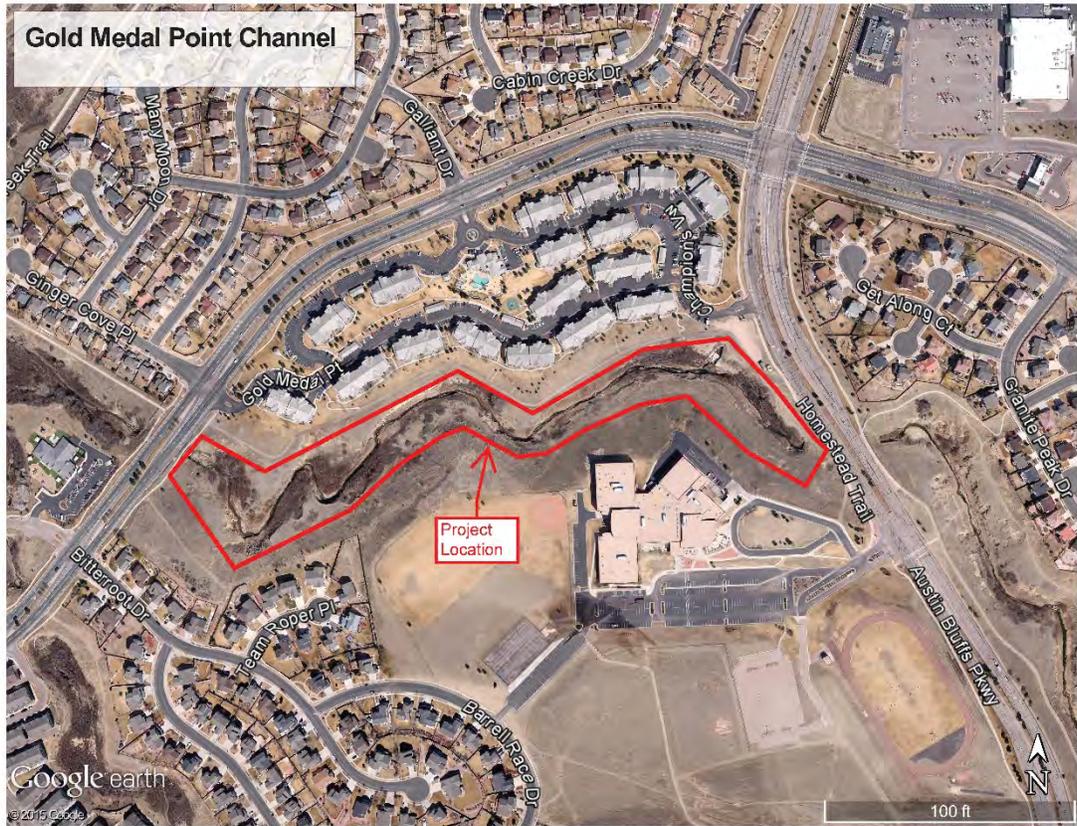
**Project
Location:**





Project Name:		20. Gold Medal Point Channel			
Type:	C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	45		
Estimated Capital Cost (\$2016):	Construction: \$384,852 Soft Costs*: 150,862 Contingency: 214,286 Escalation: Total Capital: \$750,000 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	Cottonwood Creek Drainage Basin Planning Study (Matrix, 2010)		
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Construction)		5. Closeout			
Project Need:	Channel stabilization and grade control of Cottonwood Creek south of Gold Medal Point neighborhood.				
Background:	Associated with 2013 Stormwater Needs Assessment project CS-339. (C=100%)				
Project Description and Scope:	Design and construction of bank stabilization and grade control (drop structures) for 550 LF of existing channel.				
Benefits of Project:	Stabilize channel and banks, resulting in sediment load reduction through Cottonwood Creek drainage basin in eastern portion of City. Public Safety/Property: Eliminates/reduces damage to public property Enhance Community: Drainage becomes an amenity Sediment Generation: Stabilization of channel and/or grade control				

**Project
Location:**





Project Name: 57. Cottonwood Creek Stabilization - Academy to Union (CS-004)					
Type:		C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:		46
Estimated Capital Cost (\$2016):		Construction: \$ 2,996,740 Soft Costs*: 1,174,722 Contingency: 1,582,278 Escalation: 86,306 Total Capital: \$5,840,046	Estimate Source:		Cottonwood Creek - Monument Creek to Academy Boulevard Design Report (AMEC Earth & Environmental, 2009)
		* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs.			
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Constructio		5. Closeout			
Project Need:		Cottonwood Creek noted in study as experiencing sever erosion through this area, requiring design and construction of grade control structures and channel improvements to reduce erosion and damage to adjacent public and private property.			
Background:		Associated with 2013 Stormwater Needs Assessment project CS-004. Identified in 2013 Stormater Needs Assessment with estimated project cost of \$5,753,740. (C=100%)			
Project Description and Scope:		Design and construction of flood control and stream restoration projects along stretch of Cottonwood Creek between Union Boulevard and Academy Boulevard, including stabilization and construction of drop structures. (Portions of this work may have been completed since the issuance of this study).			
Benefits of Project:		Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship			

**Project
Location:**





Project Name: 59. Cottonwood Creek Stabilization - Monument Creek to Academy (CS-005)				
Type:	C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>		Priority:	47
Estimated Capital Cost (\$2016):	Construction: \$ 6,789,760 Soft Costs*: 2,661,586 Contingency: 3,584,994 Escalation: 195,545 Total Capital: \$13,231,885 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs.</i>	Estimate Source:	Cottonwood Creek - Monument Creek to Academy Boulevard Design Report (AMEC Earth & Environmental, 2009)	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Constructio		5. Closeout		
Project Need:	Cottonwood Creek noted in study as experiencing sever erosion requiring design and construction of grade control structures and channel improvements to existing facilities to reduce erosion and damage to adjacent public and private property.			
Background:	Associated with 2013 Stormwater Needs Assessment project CS-005. Identified in 2013 Stormater Needs Assessment with estimated project cost of \$13,036,340. (C=100%)			
Project Description and Scope:	Design and construction of flood control and stream restoration projects along stretch of Cottonwood Creek between Monument Creek and Academy Boulevard, including stabilization and construction of drop structures. (Portions of this work may have been completed since the issuance of this study).			
Benefits of Project:	Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship			

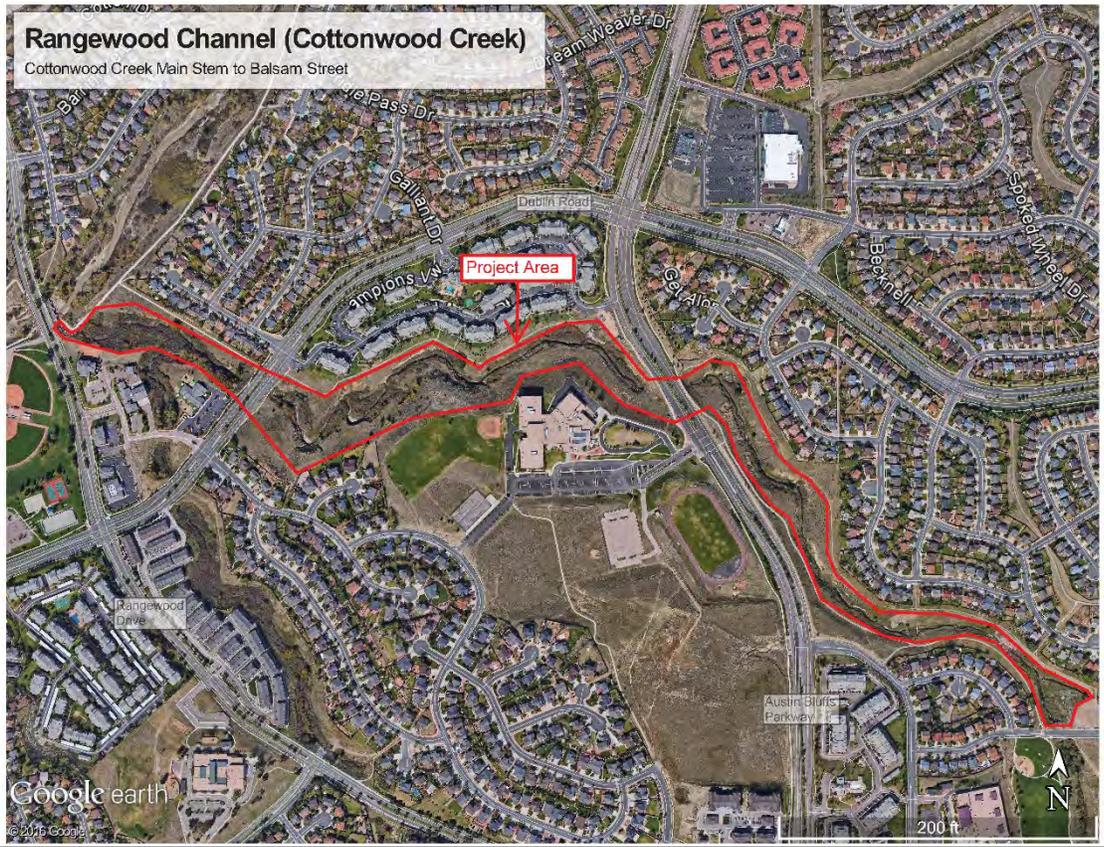
**Project
Location:**





Project Name: 58. Rangewood Channel (Cottonwood Creek) – Main Stem to Balsam (CS-343)				
Type:		C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	
			48	
Estimated Capital Cost (\$2016):		Construction: \$2,599,322 Soft Costs*: 1,018,934 Contingency: 1,372,443 Escalation: 74,860 Total Capital: \$5,065,559 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source: Cottonwood Creek Drainage Basin Planning Study (Matrix, 2010)	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Constructio		5. Closeout		
Project Need:		Channel and bank instabilities noted along Rangewood Channel within the Cottonwood Creek drainage basin.		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-343. Identified in 2013 Stormater Needs Assessment with estimated project cost of \$4,990,699. (C=100%)		
Project Description and Scope:		Design and construction of 7,400 linear foot channel stabilization project with drop structures along main stem of Rangewood Channel.		
Benefits of Project:		Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship		

**Project
Location:**





Project Name: 63. Cottonwood Creek - Rangewood to Woodmen Stabilization (CS-337)				
Type:		C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	
			49	
Estimated Capital Cost (\$2016):		Construction: \$ 1,933,380 Soft Costs*: 757,885 Contingency: 1,020,825 Escalation: 55,681 Total Capital: \$3,767,771 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source: Cottonwood Creek Drainage Basin Planning Study (Matrix, 2010)	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Constructio		5. Closeout		
Project Need:		Channel and bank instabilities identified along Cottonwood Creek between Rangewood Road and Woodmen Road.		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-337, along Cottonwood Creek located between Rangewood Road and Woodmen Road. Identified in 2013 Stormater Needs Assessment with estimated project cost of \$3,712,090 (C=100%)		
Project Description and Scope:		Design and construction of 7,400 linear foot channel stabilization project with drop structures along Cottonwood Creek between Rangewood Road and Woodmen Road.		
Benefits of Project:		Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship.		

**Project
Location:**





Project Name: 45. Fountain Creek – W Cimmaron to N end of Drake Power Plant (CS-306 a&b)				
Type:	C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>		Priority:	50
Estimated Capital Cost (\$2016):	Construction: \$ 665,916 Soft Costs*: 261,039 Contingency: 351,603 Escalation: 19,178 Total Capital: \$1,297,736 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs.</i>	Estimate Source:	Fountain Creek Stabilization & Restoration Plan, Monument Creek to the Colorado Springs City Limit (WHPacific, 2009)	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Constructio		5. Closeout		
Project Need:	Steep eroded banks identified during 2009 assessment along channel with exposed abandoned sewer line.			
Background:	Associated with 2013 Stormwater Needs Assessment project CS-306 a&b, located along Fountain Creek between West Cimmaron Street and north end of Drake Power Plant near I-25. Identified in 2013 Stormater Needs Assessment with a combined estimated project cost of \$1,278,558 (C=100%)			
Project Description and Scope:	Design and construction of channel stabilization measures along Fountain Creek between West Cimmaron Street and North end of Drake Power Plant near I-25, including drop structure construction bank reconstruction			
Benefits of Project:	Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship.			

**Project
Location:**





Project Name: 46. Fountain Creek – N end Drake Power Plant to S end of Plant (CS-307 a&b)				
Type:	C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>		Priority:	51
Estimated Capital Cost (\$2016):	Construction: \$ 995,898 Soft Costs*: 390,392 Contingency: 525,835 Escalation: 28,682 Total Capital: \$1,940,807 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs.</i>	Estimate Source:	Fountain Creek Stabilization & Restoration Plan, Monument Creek to the Colorado Springs City Limit (WHPacific, 2009)	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Constructio		5. Closeout		
Project Need:	High flow velocities through area resulting in erosion and downcutting of the channel between the north and south ends of the Drake Power Plant, adjacent to I-25.			
Background:	Associated with 2013 Stormwater Needs Assessment project CS-307 a&b, located along Fountain Creek between I-25 and the Drake Power Plant. Identified in 2013 Stormater Needs Assessment with a combined estimated project cost of \$1,912,125 (C=100%).			
Project Description and Scope:	Design and construction of channel stabilization measures along Fountain Creek between the north and south ends of the Drake Power Plant near I-25, including grade control and outfall reconstruction.			
Benefits of Project:	Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship.			

**Project
Location:**





Stormwater Capital Program Project Summary

Project Name: 18. Fountain Creek - Drake Power Plant to Shooks Run					
Type:		C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>		Priority:	
				52	
Estimated Capital Cost (\$2016):		Construction: \$1,154,557 Soft Costs*: 452,586 Contingency: 642,857 Escalation: Total Capital: \$2,250,000 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>		Estimate Source:	
				Fountain Creek Stabilization & Restoration Plan (WHPacific, 2009)	
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Construction)		5. Closeout			
Project Need:		Reduction in velocities to reduce erosion and downcutting of Fountain Creek channel and increase bank stabilization.			
Background:		Associated with 2013 Stormwater Needs Assessment (SNA) projects CS-308(a&b) and 309(a&b). Projects involves the stabilization of Fountain Creek between Drake Power Plant and Shooks Run. Allowance is approximately 36% of total SNA estimate for scope. (C=100%)			
Project Description and Scope:		Design and phasing of projects along Fountain Creek from Drake Power Plant to Shooks Run. Projects to include construction of bank stabilization and grade control structures.			
Benefits of Project:		Stabilize channel and banks, resulting in sediment load reduction through Fountain Creek in central portion of City. Public Safety/Property: Eliminates/reduces damage to public property Enhance Community: Drainage becomes an amenity Sediment Generation: Stabilization of channel and/or grade control			

Project
Location:





Project Name: 43. Fountain Creek – Shooks Run to Fountain Mutual Canal (CS-310 a&b)				
Type:		C <i>D = Detention C = Channel Stabilization and Grade Controls I = Infrastructure Improvements</i>	Priority:	
			53	
Estimated Capital Cost (\$2016):		Construction: \$6,082,533 Soft Costs*: 2,384,353 Contingency: 3,211,576 Escalation: 175,177 Total Capital: \$11,853,639	Estimate Source:	
		<i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs.</i>	Fountain Creek Stabilization & Restoration Plan, Monument Creek to the Colorado Springs City Limit (WHPacific, 2009)	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Constructio		5. Closeout		
Project Need:		Erosion and sediment deposit identified; channel banks documented as unstable during 2009 study. Channel stabilization and grade control needed along Fountain Creek through the identified area.		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-310 a&b, located along Fountain Creek between Shooks Run and Fountain Mutual Canal south of the downtown Colorado Springs area along I-25. Identified in 2013 Stormater Needs Assessment with a combined estimated project cost of \$11,678,463 (C=100%)		
Project Description and Scope:		Design and construction of channel stabilization measures along Fountain Creek between Shooks Run confluence and Fountain Mutual Canal, including drop structure construction and potential property acquisitions to complete scope of work.		
Benefits of Project:		Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship.		

**Project
Location:**

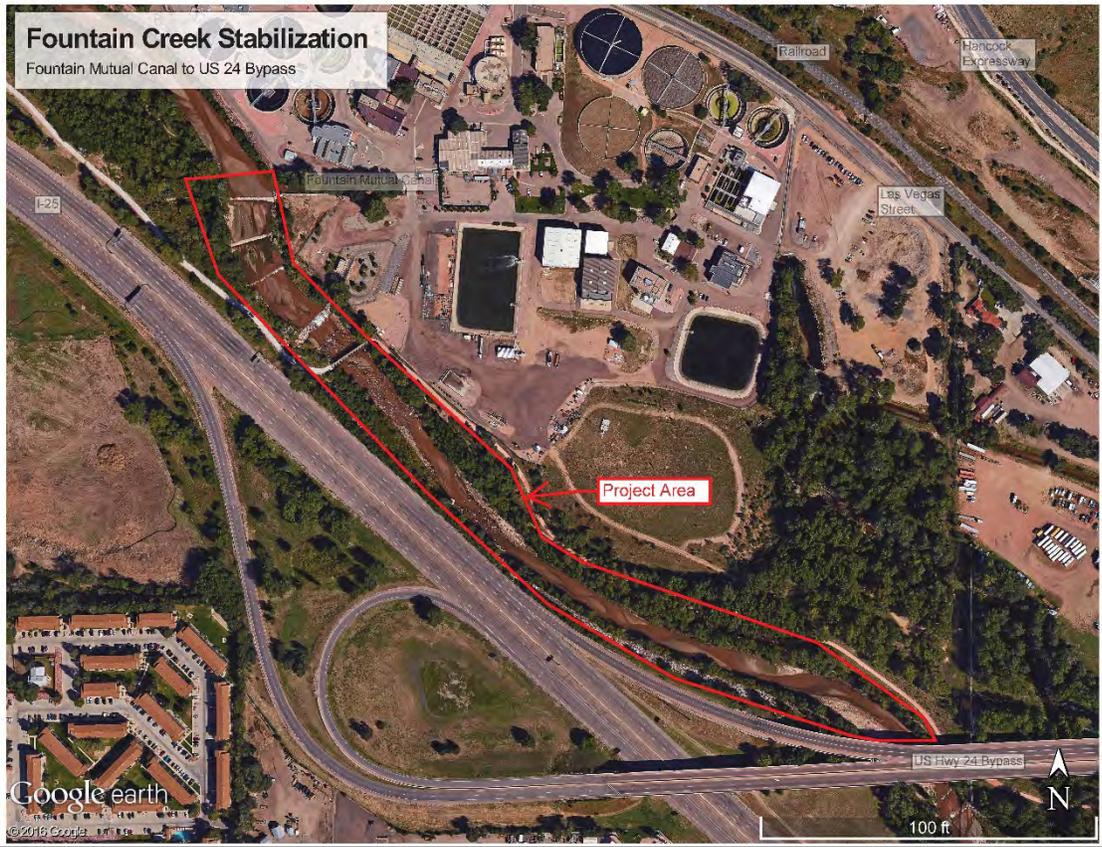




Stormwater Capital Program Project Summary

Project Name: 53. Fountain Creek - Fountain Mutual Canal to US 24 Bypass (CS-311 a&b)				
Type:		C <i>D = Detention C = Channel Stabilization and Grade Controls I = Infrastructure Improvements</i>	Priority:	
			54	
Estimated Capital Cost (\$2016):		Construction: \$ 5,090,924 Soft Costs*: 1,995,642 Contingency: 2,688,008 Escalation: 146,619 Total Capital: \$9,921,193 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs.</i>	Estimate Source:	
			Fountain Creek Stabilization & Restoration Plan, Monument Creek to the Colorado Springs City Limit (WHPacific, 2009)	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Constructio		5. Closeout		
Project Need:		Channel stabilization and grade control needed due to high flow velocities identified resulting in erosion and downcutting of the channel, sediment deposition and unstable channel banks.		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-311 a&b. Identified in 2013 Stormater Needs Assessment with a combined estimated project cost of \$9,774,574 (C=100%).		
Project Description and Scope:		Design and construction of channel stabilization measures along Fountain Creek between Fountain Mutual Canal and US Highway 24 bypass, including drop structure construction and potential property acquisitions to complete scope of work.		
Benefits of Project:		Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship.		

Project Location:





Project Name: 36. Fountain Creek – US 24 Bypass to Spring Creek (CS-312 a&b)				
Type:		C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	
			55	
Estimated Capital Cost (\$2016):		Construction: \$ 2,379,104 Soft Costs*: 932,609 Contingency: 1,256,167 Escalation: 68,518 Total Capital: \$ 4,636,398 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	
			Fountain Creek Stabilization & Restoration Plan, Monument Creek to the Colorado Springs City Limit (WHPacific, 2009)	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Constructio		5. Closeout		
Project Need:		Extreme erosion and safety concerns throughout the reach between US Highway 24 and Spring Creek, with vulnerability of utilities and transmission towers observed.		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-312 a&b, located along Fountain Creek between US Highway 24 and Spring Creek within the city limit boundaries. Identified in 2013 Stormater Needs Assessment with a combined estimated project cost of \$4,567,880 (C=100%)		
Project Description and Scope:		Design and construction of channel stabilization measures along Fountain Creek within the city limits between US Highway 24 and Spring Creek, including a drop safety evaluation and construction of at least 2 drop structures.		
Benefits of Project:		Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship.		

**Project
Location:**





Project Name: 50. Fountain Creek Stabilization - Spring Creek to Mobile Home Park (CS-313)				
Type:		C <i>D = Detention C = Channel Stabilization and Grade Controls I = Infrastructure Improvements</i>	Priority:	
			56	
Estimated Capital Cost (\$2016):		Construction: \$ 1,951,333 Soft Costs*: 764,923 Contingency: 1,030,304 Escalation: 56,198 Total Capital: \$3,802,758 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs.</i>	Estimate Source: Fountain Creek Stabilization & Restoration Plan, Monument Creek to the Colorado Springs City Limit (WHPacific, 2009)	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Constructio		5. Closeout		
Project Need:		Channel stabilization and grade control needed due to vertical degradation of the stream and lateral migration of the creek identified, resulting in encroachment to existing electric transmission towers.		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-313 a&b. Identified in 2013 Stormater Needs Assessment with a combined estimated project cost of \$3,746,560 (C=100%).		
Project Description and Scope:		Design and construction of channel stabilization measures along Fountain Creek between Spring Creek confluence to the north and mobile home park to the south, including channel realignment and drop structure construction.		
Benefits of Project:		Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship.		

**Project
Location:**





Stormwater Capital Program Project Summary

Project Name: 32. Fountain Creek – Mobile Home Park to N El Pomar Sports Park (CS-314 a&b)				
Type:		C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	
			57	
Estimated Capital Cost (\$2016):		Construction: \$ 2,172,886 Soft Costs*: 851,771 Contingency: 1,147,285 Escalation: 62,579 Total Capital: \$ 4,234,521 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	
			Fountain Creek Stabilization & Restoration Plan, Monument Creek to the Colorado Springs City Limit (WHPacific, 2009)	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Construction)		5. Closeout		
Project Need:		Erosion at Circle Drive Bridge along banks extending over 800 linear feet upstream with high vertical banks observed (10' to 30' in height).		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-314 a&b. Identified in 2013 Stormwater Needs Assessment with combined estimated project cost of \$4,171,942 (C=100%)		
Project Description and Scope:		Design and construction of channel stabilization measures along stretch of creek channel, along with construction of two drop structures, channel realignment in areas, bridge abutment protection, and bank protection.		
Benefits of Project:		Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship.		

**Project
Location:**





Stormwater Capital Program Project Summary

Project Name: 33. Fountain Creek – N end El Pomar Sports Park to S end of Park (CS-315 a&b)				
Type:	C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>		Priority:	58
Estimated Capital Cost (\$2016):	Construction: \$ 2,335,497 Soft Costs*: 915,515 Contingency: 1,233,142 Escalation: 67,262 Total Capital: \$ 4,551,416 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	Fountain Creek Stabilization & Restoration Plan, Monument Creek to the Colorado Springs City Limit (WHPacific, 2009)	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Constructio		5. Closeout		
Project Need:	Erosion along banks of Fountain Creek adjacent to El Pomar park.			
Background:	Associated with 2013 Stormwater Needs Assessment project CS-315 a&b. Identified in 2013 Stormater Needs Assessment with combined estimated project cost of \$4,484,154 (C=100%)			
Project Description and Scope:	Design and construction of channel stabilization measures along Fountain Creek adjacent to El Pomar Park with fomalization of existing drop structure.			
Benefits of Project:	Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship.			

**Project
Location:**





Project Name: 22. Monument Creek Mobile Home Park				
Type:	C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>		Priority:	59
Estimated Capital Cost (\$2016):	Construction: \$246,151 Soft Costs*: 96,492 Contingency: 125,357 Escalation: 11,700 Total Capital: \$479,700 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	SWENT Database Information	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Constructio		5. Closeout		
Project Need:	Channel stabilization and grade control; drainage escaping existing storm sewer system and eroding bank of Monument Creek near existing homes, a trail and a roadway.			
Background:	Associated with 2013 Stormwater Needs Assessment project CS-139. (C=100%)			
Project Description and Scope:	Design and construction of bank stabilization and grade control adjacent to the Monument Creek Mobile Home Park.			
Benefits of Project:	Stabilize channel and banks, resulting in sediment load reduction through Monument Creek drainage basin in central portion of City above confluence with Fountain Creek. Public Safety/Property: Eliminates/reduces damage to public property Enhance Community: Drainage becomes an amenity Sediment Generation: Stabilization of channel and/or grade control			

**Project
Location:**





Project Name: 64. Chelton Dr. Channel Stabilization - Chelton Dr to Airport Rd (CS-359)				
Type:		C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	
			60	
Estimated Capital Cost (\$2016):		Construction: \$ 763,046 Soft Costs*: 299,114 Contingency: 402,889 Escalation: 21,976 Total Capital: \$ 1,487,025 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	
			Spring Creek Drainage Basin Planning Study (URS Consultants, 1993)	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Constructio		5. Closeout		
Project Need:		1993 study identified potential scour and erosion at the channel. Existing box culvert crossing at Chelton Road was identified as inadequate in conveying 100-year flow.		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-359. Identified in 2013 Stormater Needs Assessment with estimated project cost of \$1,465,049 (C=100%)		
Project Description and Scope:		Design and construction of 2,400 linear foot channel stabilization project with two (2) drop structures along Chelton Drive channel (Spring Creek drainage basin) between Chelton Drive and Airport Road.		
Benefits of Project:		Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship.		

**Project
Location:**





Project Name:		25. Pine Creek Outfall into Mounument Creek			
Type:	C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	61		
Estimated Capital Cost (\$2016):	Construction: \$641,420 Soft Costs*: 251,437 Contingency: 357,143 Escalation: Total Capital: \$1,250,000 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	City of Colorado Springs 2005 Needs Assessment (2006-2010 CIP and Needs Assessment)		
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Construction)		5. Closeout			
Project Need:	Channel stabilization and grade control; repair of existing facilities				
Background:	Associated with Stormwater Needs Assessment project CS-047 related to severe erosion behind The Margarita at Pine Creek Restaurant (west of I-25) due to unstable bank and channel bed resulting in deep gorge formed due to erosion. (C=100%)				
Project Description and Scope:	Design and construction of selective improvements to Pine Creek to protect the adjoining business, including stabilizing the south bank adjacent to the Margarita.				
Benefits of Project:	Stabilize channel resulting in reduction of sediment transport into Monument Creek and ultimately into Fountain Creek. Public Safety/Property: Eliminates/reduces damage to public property Enhance Community: Drainage becomes an amenity Sediment Generation: Stabilization of channel and/or grade control				

**Project
Location:**





Project Name: 49. Templeton Gap Rd. Channel - Powers to Tutt (CS-342)				
Type:		C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	
			62	
Estimated Capital Cost (\$2016):		Construction: \$ 1,578,927 Soft Costs*: 618,939 Contingency: 833,674 Escalation: 45,473 Total Capital: \$3,077,013 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source: Cottonwood Creek Drainage Basin Planning Study (Matrix, 2010)	
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Constructio		5. Closeout		
Project Need:		Channel stabilization and grade control needed due to identified instabilities along channel.		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-342. Identified in 2013 Stormater Needs Assessment with estimated project cost of \$3,031,540 (C=100%).		
Project Description and Scope:		Design and construction of 4,400 linear feet of channel stabilization measures with drop structures east of Powers Boulevard, north of Dublin Boulevard.		
Benefits of Project:		Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship.		

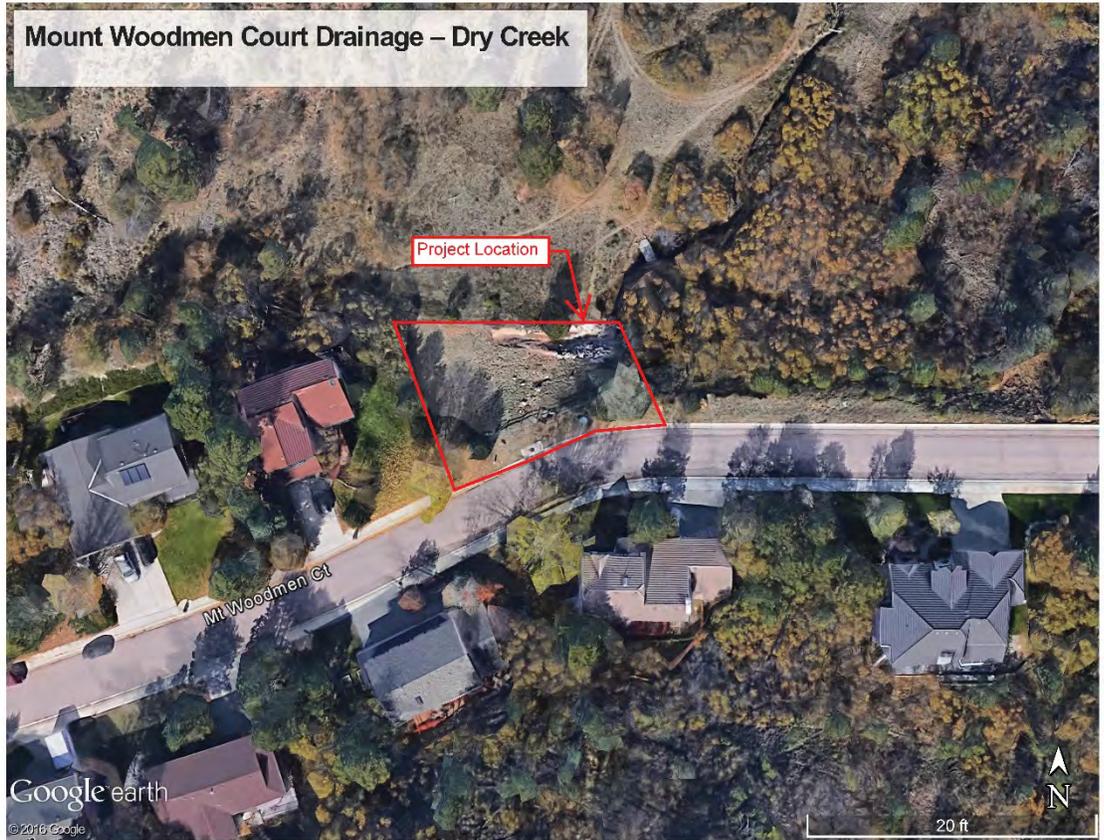
**Project
Location:**





Project Name: 40. Mount Woodmen Court Drainage – Dry Creek (CS-064)				
Type:		D <i>D = Detention C = Channel Stabilization and Grade Controls I = Infrastructure Improvements</i>		Priority:
				63
Estimated Capital Cost (\$2016):		Construction: \$ 264,034 Soft Costs*: 103,501 Contingency: 134,465 Escalation: 12,550 Total Capital: \$ 514,550 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>		Estimate Source:
				City of Colorado Springs 2006-2010 Capital Improvements Program and Needs Assessment (2005)
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Constructio		5. Closeout		
Project Need:		Sedimentation pond in Dry Creek basin outfalls directly onto private property creating a ravine. Pond outfall requires redesign. Just one property with local erosion. No structures threatened.		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-064, located in northwestern portion of City in Dry Creek Drainage Basin. Identified in 2013 Stormater Needs Assessment with estimated an unconfirmed project cost of \$502,000 (D=100%)		
Project Description and Scope:		Repair of existing facilities.		
Benefits of Project:		Provide additional detention in surrounding developed area resulting in sediment reduction and improved water quality to area and downstream users. Enhance Community: Drainage becomes an amenity Sediment/Debris removal: debris/sediment basin is included Water Quality: removes pollutants (heavy metals, sediment, other chemicals...) Detention: Peak flows are reduced. Captured volume is released over time.		

**Project
Location:**





Project Name:		12. Shooks Run Improvements			
Type:	C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	64		
Estimated Capital Cost (\$2016):	Construction: \$1,539,409 Soft Costs*: 603,448 Contingency: 857,143 Escalation: Total Capital: \$3,000,000 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	City Engineering Estimate		
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Constructio		5. Closeout			
Project Need:	Stabilization of Shooks Run drainage channel. Channel is incised and is prone to flooding.				
Background:	Update to the Shooks Run Drainage Basin Planning Study is underway. City expects to have a preliminary list of projects and costs in 2017. Allowance is designated for improvements that can be implemented fairly rapidly once the study is complete.				
Project Description and Scope:	TBD - No specific improvements have been identified at this time.				
Benefits of Project:	Provide needed channel stabilization through the Shooks Run area which will result in sediment reduction and reduction in flooding potential. Public Safety/Property: Eliminates/reduces damage to public property Failing Infrastructure: Current drainage conveyance system is in need of immediate repair. Enhance Community: Drainage becomes an amenity Sediment Generation: Stabilization of channel and/or grade control				

**Project
Location:**





Project Name:		27. Shooks Run Channel - Bijou Street Culvert & Channel Stabilization			
Type:	C <i>D = Detention C = Channel Stabilization and Grade Controls I = Infrastructure Improvements</i>	Priority:	65		
Estimated Capital Cost (\$2016):	Construction: \$769,704 Soft Costs*: 301,725 Contingency: 428,571 Escalation: Total Capital: \$1,500,000 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	City Engineering Estimate		
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Construction)		5. Closeout			
Project Need:	Stabilization of Shooks Run drainage channel. Channel is incised and is prone to flooding.				
Background:	Associated with Stormwater Needs Assessment project CS-054a. Update to the Shooks Run Drainage Basin Planning Study is underway. Allowance is designated for improvements that can be implemented once the study is complete.				
Project Description and Scope:	Consultant to focus design and construction at this location and further south. The scope will include the stabilization of Shooks Run between Bijou Street and Pikes Peak Avenue.				
Benefits of Project:	Provide needed channel stabilization through the Shooks Run area which will result in sediment reduction into Fountain Creek and reduction in flooding potential in surrounding area. Public Safety/Property: Eliminates/reduces damage to public property Failing Infrastructure: Current drainage conveyance system is in need of immediate repair. Enhance Community: Drainage becomes an amenity Sediment Generation: Stabilization of channel and/or grade control				

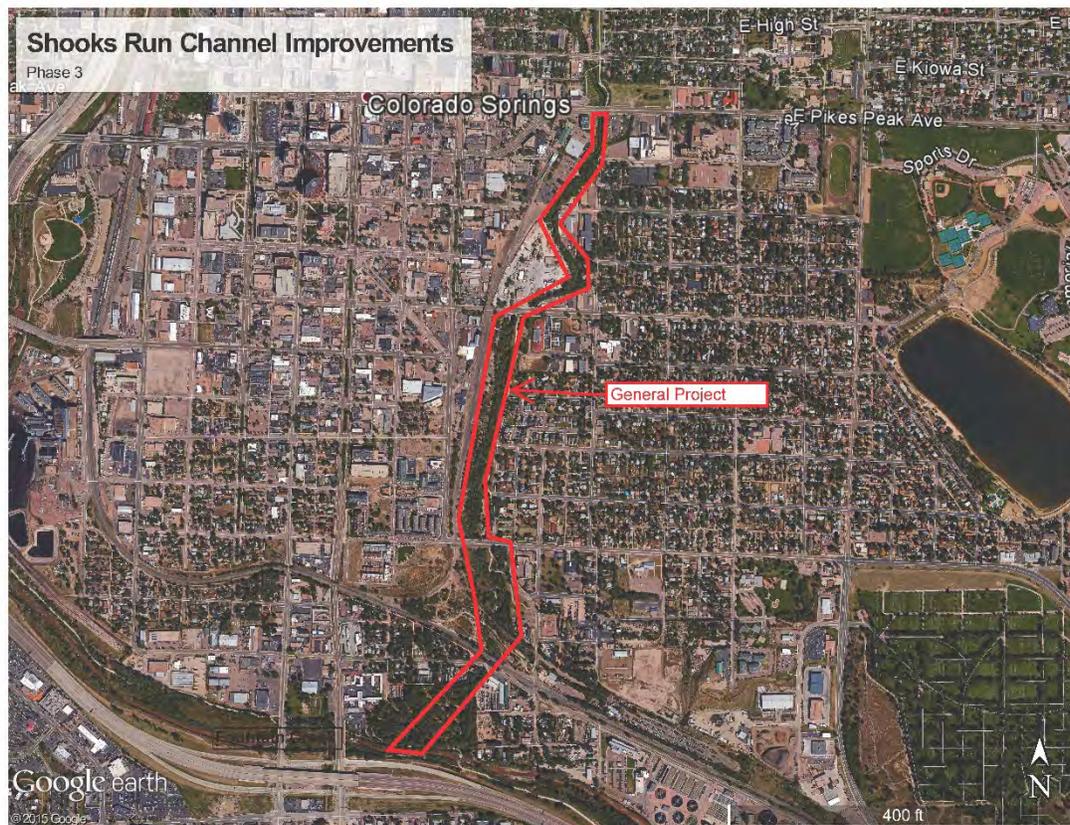
**Project
Location:**





Project Name:		29. Shooks Run Improvements - Phase 3			
Type:	C <i>D = Detention C = Channel Stabilization and Grade Controls I = Infrastructure Improvements</i>	Priority:	66		
Estimated Capital Cost (\$2016):	Construction: \$769,704 Soft Costs*: 301,725 Contingency: 428,571 Escalation: Total Capital: \$1,500,000 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	City Engineering Estimate; Drainage Basin Planning Study Shooks Run (Wilson and Company, 1993)		
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Construction)		5. Closeout			
Project Need:	Stabilization of Shooks Run drainage channel. Channel is incised and is prone to flooding.				
Background:	Associated with Stormwater Needs Assessment project CS-054a and CS-054b. Update to the Shooks Run Drainage Basin Planning Study is underway. Allowance is designated for improvements that can be implemented once the study is complete.				
Project Description and Scope:	Consultant to focus design and construction efforts between Bijou Street and confluence with Fountain Creek. The scope will include the stabilization of Shooks Run from Pikes Peak Avenue to Fountain Creek.				
Benefits of Project:	Provide needed channel stabilization through the Shooks Run area which will result in sediment reduction into Fountain Creek and reduction in flooding potential in surrounding area. Public Safety/Property: Eliminates/reduces damage to public property Failing Infrastructure: Current drainage conveyance system is in need of immediate repair. Enhance Community: Drainage becomes an amenity Sediment Generation: Stabilization of channel and/or grade control				

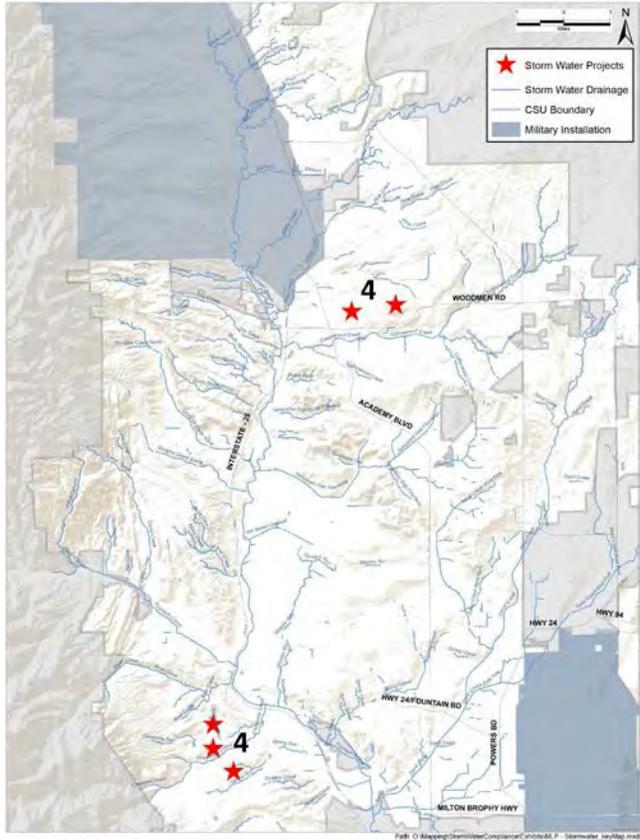
**Project
Location:**





Project Name:		04. Old Annexation Drainage Improvements			
Type:	I <i>D = Detention C = Channel Stabilization and Grade Controls I = Infrastructure Improvements</i>	Priority:	67		
Estimated Capital Cost (\$2016):	Construction: \$1,544,402 Soft Costs*: 455,598 Contingency: 800,000 Escalation: Total Capital: \$2,800,000 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	City Engineering Estimate		
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Construction)		5. Closeout			
Project Need:	Improved drainage conveyance in older annexed areas within City limits.				
Background:	Due to recent heavy rains, older annexed areas experienced significant flooding due to lack of infrastructure. These older areas were constructed with road side ditches that have filled in over the years with sediment. Lack of adequate conveyance facilities have resulted in localized home flooding. The City plans to prioritize work for several areas including Falcon Estates, Rustic Hills, Columbine Estates, Broadmoor, and Skyway. (C=25%; I=75%)				
Project Description and Scope:	TBD - City to hire a consultant to develop a prioritized phased plan for improvements along with recommended solutions and actual cost estimates.				
Benefits of Project:	Improvement to localized stormwater drainage conveyance in areas of need. Public Safety/Property: Eliminates/reduces damage to public property Failing Infrastructure: Current drainage conveyance system is in need of immediate repair. Enhance Community: Drainage becomes an amenity Distribute within the City: Project is a neighborhood high priority				

**Project
Location:**





Project Name: 14. Briargate Drainage Improvements					
Type:		I <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>		Priority:	
				68	
Estimated Capital Cost (\$2016):		Construction: \$904,988 Soft Costs*: 266,971 Contingency: 436,613 Escalation: 32,171 Total Capital: \$1,640,743 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>		Estimate Source:	
				Cottonwood Creek Drainage Basin Planning Study (Matrix, 2010)	
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Construction)		5. Closeout			
Project Need:		Infrastructure improvements to mitigate localized flooding issues due to undersized storm sewer network.			
Background:		Associated with 2013 Stormwater Needs Assessment project CS-344 in Briargate area in the northern portion of the City. SNA information based on Matrix Design 2010 draft Cottonwood Creek Drainage Basin Planning Study. (I=100%)			
Project Description and Scope:		Replacement of existing infrastructure, including approximately 3,700 feet of storm drain construction between Goddard Street and Chapel Hills Drive			
Benefits of Project:		Continued maintenance of current City stormwater infrastructure. Public Safety/Property: Eliminates/reduces damage to public property Failing Infrastructure: Current drainage conveyance system is in need of immediate repair. Enhance Community: Drainage becomes an amenity			

**Project
Location:**





Project Name:		30. Skyway Area Improvements			
Type:		I <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>		Priority:	
				69	
Estimated Capital Cost (\$2016):		Construction: \$237,492 Soft Costs*: 89,060 Contingency: 119,470 Escalation: 11,151 Total Capital: \$457,173		Estimate Source:	
		<i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>		SWENT Database and Bear Creek Drainage Basin Planning Study (Kiowa Engineering, 1991)	
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Construction)		5. Closeout			
Project Need:		Reduction in localized flooding in Skyway neighborhood.			
Background:		Associated with 2013 SNA projects CS-235 and CS-296 related to replacement of 300' of 60" storm drain to prevent collapse of overlying roadway and construction of 1,930LF of 18" to 36" storm drain with inlets due to insufficient storm sewer capacity. (I=100%)			
Project Description and Scope:		replacement of 300' of 60" RCP along Halleys Court road in Bear Creek drainage basin and design and construction of 1,930 LF of 18" to 36" RCP storm drain with inlets farther to the northeast of Halleys Court road.			
Benefits of Project:		Reduce localized flooding and improve stormwater conveyance in the southwestern Skyway neighborhood area. Public Safety/Property: Eliminates/reduces damage to public property Failing Infrastructure: Current drainage conveyance system is in need of immediate repair. Distribute within the City: Project is a neighborhood high priority			

Project Location:





Project Name:		48. Columbia Road Drainage (CS-045)			
Type:	I <i>D = Detention C = Channel Stabilization and Grade Controls I = Infrastructure Improvements</i>	Priority:	70		
Estimated Capital Cost (\$2016):	Construction: \$ 1,071,390 Soft Costs*: 419,985 Contingency: 545,625 Escalation: 50,925 Total Capital: \$2,087,925 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs.</i>	Estimate Source:	City of Colorado Springs 2006-2010 Capital Improvements Program and Needs Assessment (2005)		
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Constructio		5. Closeout			
Project Need:	Identified as a nuisance and cleanup problem in 2005 assessment. No evident or imminent erosion to cause potential damage to infrastructure identified.				
Background:	Associated with 2013 Stormwater Needs Assessment project CS-045. Identified in 2013 Stormwater Needs Assessment as a Class B medium priority project with estimated project cost of \$2,037,000 (C=50%, I=50%).				
Project Description and Scope:	Design and construct upgraded and new storm sewer facilities in Columbia Road and upgraded channel improvements west of Columbia Road from approximately Arnold Drive to Fountain Creek.				
Benefits of Project:	Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture Reduce Sediment Generation/Enhance Soil Stewardship.				



Project Name:		17. Dry Creek Channel			
Type:	C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	71		
Estimated Capital Cost (\$2016):	Construction: \$754,464 Soft Costs*: 235,393 Contingency: 362,143 Escalation: 33,800 Total Capital: \$1,385,800 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	City of Colorado Springs 2005 Needs Assessment (2006-2010 CIP and Needs Assessment)		
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Construction)		5. Closeout			
Project Need:	Improve capacity. Channel overgrown, inadequate conveyance, in need of maintenance.				
Background:	Associated with Stormwater Needs Assessment project CS-007. \$1.385M Escalated Value; originally identified as \$1.5M on revised CIP list being encumbered in 2020. (I=100%)				
Project Description and Scope:	Project to re-establish capacity of the existing Dry Creek channel from Dairy Ranch Road to Carlson Drive in northwestern portion of City.				
Benefits of Project:	Improvement to localized stormwater drainage conveyance in areas of need. Public Safety/Property: Eliminates/reduces damage to public property Enhance Community: Drainage becomes an amenity Distribute within the City: Project is a neighborhood high priority				

**Project
Location:**





Project Name:		10. Erindale Drainage Improvements			
Type:	D <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	DELETED FROM PROJECT LIST (12/16/2015)		
Estimated Capital Cost (\$2016):	Construction: \$272,213 Soft Costs*: 84,930 Contingency: 142,857 Escalation: Total Capital: \$500,000 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	SWENT Database and City of Colorado Springs Estimate		
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Constructio		5. Closeout			
Project Need:	Increase capacity of existing pond. Repair erosion damage to existing channel from flows released from University Park Detention Pond. (Remove sediment from the existing detention pond along with selective improvements to the existing private channel.)				
Background:	Associated with 2013 SNA Project Summary CS-111 in north-central portion of City. University Village Pond outlet has contributed to a ravine that flows downstream between homes. (D=75%; C=25%)				
Project Description and Scope:	Scope to re-evaluate and re-establish detention capacity including modifications to existing outlet to provide full spectrum detention. The downstream channel to be evaluated for damage with selective improvements proposed for critical eroded areas				
Benefits of Project:	Repair erosion and improve capacity in existing pond resulting in sediment reduction and improved water quality to area and downstream users. Public Safety/Property: Eliminates/reduces damage to public property Enhance Community: Drainage becomes an amenity Distribute within the City: Project is a neighborhood high priority Sediment/Debris removal: debris/sediment basin is included Water Quality: removes pollutants (heavy metals, sediment, other chemicals...) Detention: Peak flows are reduced. Captured volume is released over time.				

**Project
Location:**





Project Name:		42. Sand Creek MainStem – Fountain Creek Confluence (CS-106) - DELETED			
Type:	C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	REPETITIVE PROJECT DELETED FROM PROJECT LIST (12/16/2015)		
Estimated Capital Cost (\$2016):	Construction: \$ 1,145,833 Soft Costs*: 449,167 Contingency: 605,000 Escalation: 33,000 Total Capital: \$2,233,000 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	City of Colorado Springs Original Master Projects List (New SWENT 2009 project from 5 year plan) (Not Included in 2013 Stormwater Needs Assessment Validated Projects List)		
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Construction)		5. Closeout			
Project Need:	Channel stabilization and grade control needed along Sand Creek from confluence with Fountain Creek northward to North Academy Boulevard.				
Background:	Included in City of Colorado Springs original Master Projects List reviewed as part of the 2013 Stormwater Needs Assessment (CS-106); however the project was not included as part of the 2013 Stormwater Needs Assessment Validated Projects List, likely because the improvements appear to be included in other smaller project segments along this stretch of the Sand Creek channel. (C=100%)				
Project Description and Scope:	Design and construction of channel stabilization and grade control structures along Sand Creek between the confluence with Fountain Creek and North Academy Boulevard.				
Benefits of Project:	Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture				



<p>Project Location:</p>	<p>Project Deleted: Not included in validated projects list.</p>
---------------------------------	--



Project Name:		44. Spring Run Detention Ponds (CS-051) - DELETED			
Type:	D <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>	Priority:	DELETED FROM PROJECT LIST (12/16/2015) Not Included in 2013 Stormwater Needs Assessment Validated Projects List		
Estimated Capital Cost (\$2016):	Construction: \$ 851,011 Soft Costs*: 333,596 Contingency: 433,393 Escalation: 40,450 Total Capital: \$1,658,450 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>	Estimate Source:	City of Colorado Springs Original Master Projects List (Not Included in 2013 Stormwater Needs Assessment Validated Projects List)		
Current Schedule- Start Dates:					
1. Initiation:		2. Hire Designer		3. Design	
4. Execution (Construction)		5. Closeout			
Project Need:	Not Provided.				
Background:	Included in City of Colorado Springs original Master Projects List reviewed as part of the 2013 Stormwater Needs Assessment (CS-051); however the project was not included as part of the 2013 Stormwater Needs Assessment Validated Projects List. (D=100%)				
Project Description and Scope:	Modify existing Spring Run Reservoir #2 by lowering its water surface elevation, upgrading its spillway and energy dissipater, and construct downstream channel improvements..				
Benefits of Project:	Improved Detention				



<p>Project Location:</p>	<p>Project Deleted: Not included in validated projects list.</p>
---------------------------------	--



Stormwater Capital Program Project Summary

Project Name: 47. Templeton Gap Floodway Reconstruction (CS-021) - DELETED				
Type:		Priority:		DELETED FROM PROJECT LIST (12/16/2015) Repair of Existing Infrastructure
I <i>D = Detention C = Channel Stabilization and Grade Controls I = Infrastructure Improvements</i>				
Estimated Capital Cost (\$2016):		Estimate Source:		Templeton Gap Levee Rehabilitation Project Construction Drawings (Anderson Consulting Engineers, 2010)
Construction: \$ 5,534,662 Soft Costs*: 2,169,587 Contingency: 2,922,302 Escalation: 159,398 Total Capital: \$10,785,949 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs.</i>				
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Constructio		5. Closeout		
Project Need:		Capacity of the Templeton Gap Floodway requires upsizing to convey the 100-year event. As part of FEMA's Map Modernization program, flood protection levees are required to be certified.		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-021, located along the Templeton Gap floodway. Identified in 2013 Stormater Needs Assessment with estimated project cost of \$10,626,551 (I=100%).		
Project Description and Scope:		Design and reconstruction of floodway and levee.		
Benefits of Project:		Protect Public Safety and Property Enhance Community		

**Project
Location:**





Stormwater Capital Program Project Summary

Project Name: 56. Palmer Park Channel – Galley Road to Palmer Park (CS-259) - DELETED				
Type:		Priority:		DELETED FROM PROJECT LIST (12/16/2015) Same Project as Project 39 Above
C <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>				
Estimated Capital Cost (\$2016):		Estimate Source:		Sand Creek Stabilization East Platte Avenue to Constitution Avenue (2010, ICON Engineering, Inc.)
Construction: \$ 3,383,737 Soft Costs*: 1,326,426 Contingency: 1,786,612 Escalation: 97,452 Total Capital: \$6,594,227 <i>* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs</i>				
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Construction)		5. Closeout		
Project Need:		Channel stabilization along Sand Creek between Galley Road and Palmer Park Road.		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-259. Identified in 2013 Stormwater Needs Assessment with estimated project cost of \$6,496,775 to install 13 drop structures. (C=100%)		
Project Description and Scope:		Design and construction of 13 drop structures along Sand Creek channel between Galley Road and Palmer Park Road.		
Benefits of Project:		Protect Public Safety and Property Enhance Community Enhance Sediment/Debris Capture		

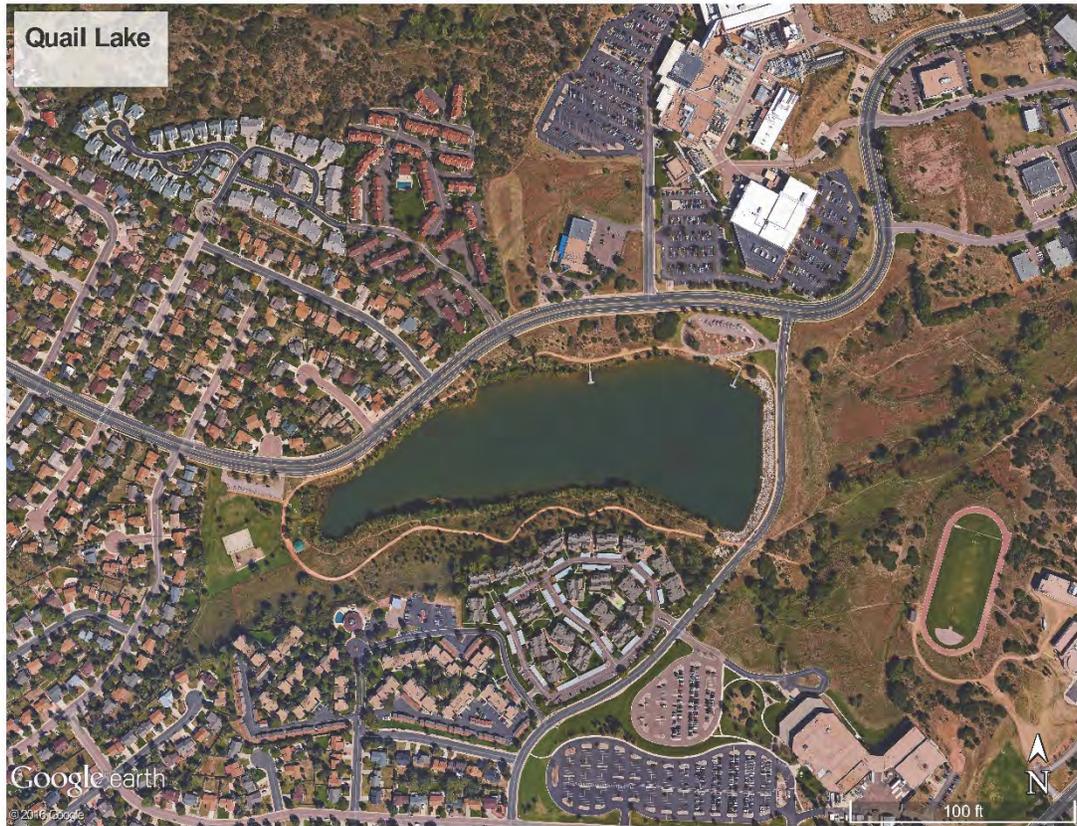
**Project
Location:**





Project Name: 03. Dam Repairs - DELETED				
Type:		Priority:		DELETED FROM PROJECT LIST (03/30/2016) To be completed with Emergency Stormwater Projects funding
I <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>				
Estimated Capital Cost (\$2016):		Construction: \$217,770 Soft Costs*: 67,944 Contingency: 114,286 Escalation: Total Capital: \$400,000		Estimate Source:
		* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs		City Budget Department
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Construction)		5. Closeout		
Project Need:		Project involves various dam repairs within City parks jurisdiction as identified by the State Engineer's Office and based on updated hazard classifications for eight dams.		
Background:		Allowance funds designated to help complete tasks identified on the hazard classification list as well as to procure a consultant to review Quail Lake Dam. Since creation of the list, seepage at the toe of the Quail Lake Dam has occurred. (I=100%)		
Project Description and Scope:		TBD - Procure A/E firm to design fixes for each dam identified and prioritize construction/repair efforts in coordination with City Parks Department.		
Benefits of Project:		Repair functionality of the dams in accordance with the hazard classification findings. Public Safety/Property: Eliminates/reduces damage to public property Failing Infrastructure: Current drainage conveyance system is in need of immediate repair.		

**Project
Location:**

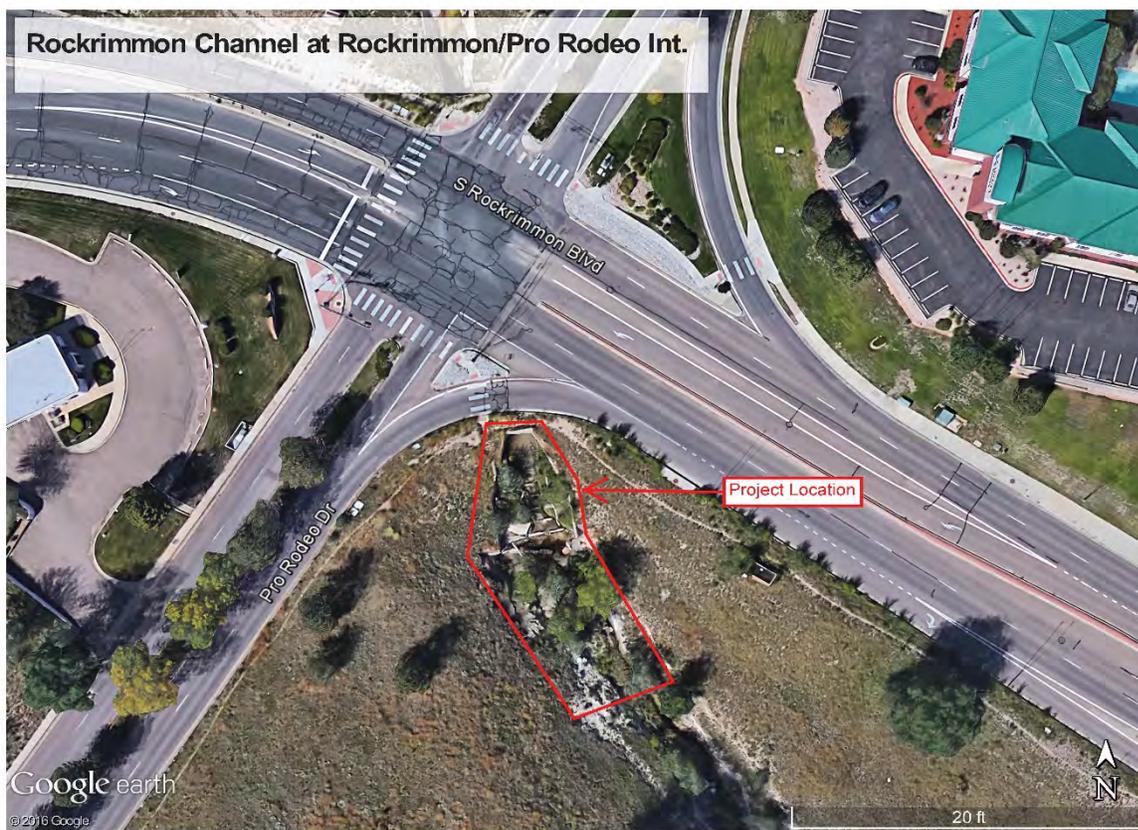




Stormwater Capital Program Project Summary

Project Name: 37. Rockrimmon Channel at Rockrimmon/Pro Rodeo Int. (CS-222) - DELETED				
Type:		Priority:		DELETED FROM PROJECT LIST (03/30/2016) To be completed with Emergency Stormwater Projects funding in 2016
I <i>D = Detention</i> <i>C = Channel Stabilization and Grade Controls</i> <i>I = Infrastructure Improvements</i>				
Estimated Capital Cost (\$2016):		Estimate Source:		PPRTA – Stantec Field Assessment (2010-2012)
Construction: \$ 50,768 Soft Costs*: 19,901 Contingency: 26,806 Escalation: 1,462 Total Capital: \$98,937				
* Soft Costs include design, engineering services during construction, construction management, and environmental, permitting, legal, and land transaction costs				
Current Schedule- Start Dates:				
1. Initiation:		2. Hire Designer		3. Design
4. Execution (Construction)		5. Closeout		
Project Need:		Repair damage to channel at existing outlet.		
Background:		Associated with 2013 Stormwater Needs Assessment project CS-222. Repair outfall (other projects shown in the area include bridge/culvert replacement and roadway improvements). Identified in 2013 Stormwater Needs Assessment with estimated project cost of \$97,475. Observed during 2013 and 2015 USEPA inspections. (I=100%)		
Project Description and Scope:		Design and construction of new outfall outlet.		
Benefits of Project:		Protect public safety and property in area and improve failing infrastructure.		

**Project
Location:**





Colorado Springs Stormwater Program

PUBLIC EDUCATION AND OUTREACH PROGRAM REPORT

Appendix C to the Stormwater Program Implementation Plan Report

DRAFT DOCUMENT – July, 2016

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1.0 INTRODUCTION

The City of Colorado Springs (City) is in the process of improving its Stormwater Program. Its primary focus is to evaluate and develop a strategy for improving two major components of the Stormwater Program -- the ongoing stormwater system operation, including Municipal Separate Storm Sewer System permit activities (MS4 Program), and implementation of capital improvement projects for the stormwater system (Capital Program). To complement and support those efforts, the City has developed a strategy for public education and outreach related to the Stormwater Program.

The three related programs for improving Colorado Springs stormwater management – the MS4 Program Improvement Plan, the Capital Project Delivery Program, and this Public Education and Outreach Program – are summarized in the Colorado Springs Stormwater Program Implementation Plan (SPIP) report. This Public Education and Outreach Program report is Appendix C to the SPIP.

Objectives of the public education and outreach strategy for the Stormwater Program include:

- Define functions and activities for public education, outreach and communications to meet the requirements of the MS4 permit.
- Define functions and activities for public education, outreach and communications in support of capital project implementation. This includes identifying strategies to promote early program successes, such as projects funded with disaster response and mitigation funds (e.g., Federal Emergency Management Agency, Natural Resources Conservation Service).
- Identify strategies to gain public acceptance of, and support for, future stormwater program investments by the City.
- Identify strategies for working with the development community and business community to increase understanding of program requirements and enhance support for low impact development, green infrastructure, and the inspection and enforcement aspects of the MS4 Program.
- Introduce and promote drainage/stormwater infrastructure as a public amenity. Stress the opportunity/result for integration of trails, bike paths, multi-use paths and open space/parks.
- Identify, develop and utilize opportunities for working with surrounding cities, municipalities and public organizations. (Colorado Springs Utilities, Fountain Creek Flood Control and Greenway District, El Paso County, City of Manitou Springs, Old Colorado City, United States Air Force Academy and other bases, Ducks Unlimited, the Sierra Club, Trout Unlimited, etc.

2.0 BACKGROUND

2.1 Responsibility for Public Education and Outreach

Public education, outreach and communications related to stormwater in the City is currently a shared responsibility of the new Stormwater Division and the Communications Group. The Stormwater Division is responsible for education and outreach activities related to stormwater management, stormwater quality, best management practices, and the effect of citizens' behavior on water quality. The Communications Group is responsible for general messaging and news media handling around City and regional stormwater issues as identified by the Mayor, City Council and the Public Works Director.

Current City stormwater public education and outreach efforts are focused primarily on activities required to comply with the MS4 permit. The MS4 public education function is carried out by one person in the Stormwater Division at this time, with occasional help from other Stormwater Division staff. The Communications Group has a staff of four people to manage all communication needs for the City; its involvement in the stormwater program is primarily related to public information associated with stormwater emergencies and other newsworthy events.

2.2 City of Colorado Springs MS4 Permit Requirements

The majority of the City's public education and outreach efforts associated with the Stormwater Program directly support the requirements of the City's MS4 permit. Those requirements include:

- Conduct educational activities to promote public reporting of illicit discharges and improper disposal (Part 1.B.1.b.4 of the MS4 permit)
- Implement public educational activities to promote proper management and disposal of potential pollutants (Part 1.B.1.b.5)
- Promote Household Chemical Waste Collection Programs (Part 1.B.1.b.6)
- Conduct educational activities for operators of Industrial Facilities (Part B.1.c)
- Conduct training and education of construction site operators (Part 1.B.1.d.4)

In response to requirements of the MS4 permit, City staff members perform a number of public education activities annually. These are listed below, along with selected public education and outreach statistics from the 2014 MS4 Annual Report.

- Maintains an Illicit Spill hotline (phone number 719-444-7000, which goes to police department dispatch). The City received 22 calls from the public in 2014.
- Conducts 150 school educational programs that reach 4,500 to 5,000 students a year.
- Participates in community events (e.g., water festivals, creek clean-up days) and conducts presentations reaching at least 800 community members.
- Distributes approximately 27,000 copies of educational brochures addressing:
 - Pet waste
 - Car washing
 - Lawn care
 - Household hazardous wastes
 - Carpet cleaners

- Pesticides, fertilizers, etc.
- Maintains public information pages on the City’s website.
- Holds “Wet Wednesdays” meetings for the business community, in partnership with the Housing & Building Association (HBA) of Colorado (five held in 2015).
- Offers classes, provides brochures and supports inspectors in working with industrial, commercial and construction site operators.
- Broadcasts public service announcements on Channel 18.
- Distributes a Stormwater Literacy Guide and DVD.
- Distributes a stormwater newsletter for industrial site operators (two annually, mailed to 70 people).
- Marks storm drains to assist with pollution prevention (466 storm drains stenciled by school groups in 2014).
- Conducts an “Adopt a Waterway” program to clean up trash. In 2014, the City conducted or participated in 20 events with 1,131 participants, which resulted in collection of 377 trash bags plus 6.2 tons of trash collected during the regional Creek Week Cleanup.

2.3 Review of Best Practices for Public Education and Outreach

In developing its improvement plan for public education and outreach, the City assessed best practices conducted by other cities and stormwater agencies. Stormwater programs from two cities recently named award winners for MS4 permit compliance in contests sanctioned by the U.S. Environmental Protection Agency (USEPA) were assessed, as well as programs from several other cities and/or stormwater districts. The City reviewed outreach practices from the following entities:

- Charlotte, North Carolina, Stormwater Services, winner of the 2015 Water Environment Federation’s first stormwater award, developed in cooperation with the USEPA
- City of Tacoma, Washington, also a winner of stormwater awards
- City of Fort Collins, Colorado
- Southeast Metro Stormwater Authority, Colorado, also known as SEMSWA

Based on this assessment, the following general observations were made regarding stormwater outreach best practices in the industry.

- Brand/image and messaging are aimed at pointing out public benefits in simple terms. Some cities don’t even brand their efforts as “stormwater”-related; others do, but immediately tie those efforts to recognized public benefits (e.g., clean water and flood prevention) that are in plain sight on their websites and other messaging products.
- The most effective stormwater websites contain visual images supported by relatively little text, particularly at the “start” of a visitor’s experience. The deeper a visitor goes into a website, the more text-heavy the content becomes. Many websites contain “before” and “after” images of projects or improvements. Text is written in bullets or short sentences, rather than complex running narrative.
- Hotlines for use by the public to report stormwater problems are dedicated to stormwater or environmental issues, as opposed to being avenues for also reporting crime, safety, transportation, or other concerns. In some cases, cities provide hotline answering

services using city staff; in other cases, cities have arranged with advocacy groups to answer phones and collect data for the city. There is no “one size fits all” approach, but dedication of adequate resources is important. No other examples were found of illicit discharge callers needing to call law enforcement numbers.

- In many city programs, partnerships are emphasized for the purpose of leveraging assets. Examples include cost-sharing for media resources, and use of volunteers for drainage system clean-up events. Partnerships should be productive, creating synergies and generating measureable results.
- Objectives and measurements of public education and outreach effectiveness are clear in many cities’ efforts. Measurements are placed prominently in the jurisdiction’s annual report, which is written in a very readable, non-bureaucratic style.

The City considered these observations when developing strategies for improving its current stormwater public education and outreach program.

3.0 ASSESSMENT OF CURRENT CITY EDUCATION AND OUTREACH PRACTICES

The City has assessed its stormwater efforts through a variety of means, including:

- Comparison against the requirements of the MS4 permit.
- Comparison with efforts of other jurisdictions that have received commendations or awards from the USEPA.
- Review of the USEPA's 2015 Audit of the City of Colorado Springs MS4 program.
- Interviews with its staff members responsible for education and outreach.

Using these sources, the City performed an assessment of key City practices for stormwater education and outreach. Results of that assessment are described below.

- **Image/Brand of Stormwater:** The single greatest concern of City staff, and the trend most observed in top-of-class cities, is the need to brand “stormwater” efforts by using more direct and positive terms — e.g., water quality, clean water, flood protection or prevention, etc. Even cities in which the term stormwater does not appear to have a negative connotation with the public (as it does in Colorado Springs) choose either to avoid the term “stormwater” or to rapidly break the term down into its constituent benefits — clean water and flood protection.
- **Central Vision/Action Plan:** The objectives and activities of various City departments for stormwater communications should be aligned in order to set goals and achieve necessary objectives. Currently, public education activities are accomplished by a single staff person within the City’s Stormwater Division, which is part of the Public Works Department. More high-level, strategic communication and media handling is currently conducted by a member of the City’s Communications staff who also supports communications activities in several other City departments. There is a need to develop a single, functional, shared vision and plan among the groups responsible for public communications to accomplish shared objectives. Similarly, certain communication functions are carried out in small parts by project managers, inspectors and others associated with the Stormwater Division or other City departments. Setting goals, measuring performance and reporting success are difficult in this type of dispersed model and would be improved by closer coordination among the responsible parties.
- **Goals, Measurement and Reporting Success:** Within the shared vision and plan, goals must be established and performance measured, with updates and redirection at specified intervals. Current resources have limited the ability of staff to conduct this type of effort. Tasks such as repairing or revising the website or making the hotline more functional wait while other tasks may command more resources. By setting goals and measuring performance against those goals, the path to achieving overall objectives is clearer and corrections are easier to identify. The top-of-class MS4 Programs from other cities set goals for each activity and measure against those goals, with year-after-year increases expected.
- **Public Stormwater Hotline:** The City’s MS4 permit calls for operation and promotion of a central phone number for public reporting of illicit discharges. The current hotline is not dedicated to stormwater; it is part of the police department/fire department dispatch system. In addition, the hotline is not adequately promoted and is somewhat difficult and

confusing for the public to use. As a result, the current hotline may not encourage public reporting of illicit discharges and illegal dumping, as well as other polluting behaviors. In 2014, the public made 22 calls to the City reporting possible illicit discharges. The City of Charlotte, North Carolina, with a population approximately twice the size of Colorado Springs (793,000 vs. 440,000), received more than 20 times the number of calls reporting illicit discharges.

- **Website Pages:** The City's stormwater website pages represent a significant opportunity for improvement. The basic issues include the following.
 - Lack of a single menu page with introductory content – “what is stormwater and why should the public care.” The stormwater page that should contain this content appears to be blank using two different browsers; it contains only a navigation bar at the left.
 - Lack of a consistent path to enter the stormwater content. Drilling down through Public Works on the City's website produces the blank menu page mentioned above; searching with the City's website search engine does not lead to that menu page, but leads to a list of pages with broken links.
 - Many pages lack “back” buttons so users get stuck and cannot go back easily.
 - Older brochures that contain dated branding are still up on the website (although not accessible) and could be replaced with public domain (e.g., USEPA) brochures for now.
 - There are pages composed largely of text written in running narrative, with long blocks of text or lists of content that may not be available due to broken links. This also serves to discourage users from learning more about the topic and/or taking helpful actions.
- **Annual Report:** The current Annual Report format appears limited in scope, and its format may lack the flexibility to report all of the good work that staff is doing to regulatory agencies and the public. To compensate for the format limitations, staff have prepared additional spreadsheets that are filed with regulatory agencies but are not always readily available to the public on the stormwater website. The City will find or adapt an Annual Report template that is easier for staff to populate and consider creating more user-friendly reports for the community.
- **Elevation of Public Education, Outreach and Involvement:** Currently, the stormwater communication efforts are placed several layers down within the City's organization. The City will elevate the three communication efforts within the Stormwater Division to a more direct reporting level with stated goals, measureable achievements and clearly stated tactics.

Action items to address these challenges are discussed in more detail in the following sections.

4.0 COMPONENTS OF PUBLIC EDUCATION, OUTREACH AND INVOLVEMENT

For purposes of clarity, three categories were established for grouping activities directed toward the public.

- General Public Education and Outreach (General Outreach),
- MS4 Program Public Education and Outreach (MS4 Education), and
- Capital Project Public Involvement (CIP Involvement).

These categories support the success of the City's Stormwater Program and are planned and executed using the same basic considerations: "What is the objective of the communication?" "Who are the audiences?" "How can messages be tailored to encourage action or behavioral change?" "What tactics will be used to deliver those messages?" The three components are defined below.

4.1 General Public Education and Outreach

General Public Outreach and Outreach (General Outreach) is typically a one-way communication process and serves an overarching purpose: to inform the public about the stormwater system and its benefits and to develop/maintain public support for efforts to reduce pollution and otherwise protect the system. While General Outreach shares some of the same audiences, messages and tactics as MS4 Education, it includes additional components as well.

The objectives of the General Outreach efforts are broad and meant to support the efforts of public education to change behavior. Public outreach messages are, in a sense, foundational and go more to educating the public on the importance and benefits of the stormwater system and how it helps to protect clean water and reduce the risk of flooding.

The audiences of the General Outreach efforts are the general public, as with MS4 Education, but are expressed at a higher, broader level, to mirror the broader, high-level messages.

The messages for the General Outreach efforts are a blend of clean water and flood protection messages – very high-level: "Water quality and flood protection are important to us all – they affect important values of life, health, safety and property concerns. They are the responsibility of the whole community."

An important component of General Outreach is to inform the public about the City's commitment through its drainage review criteria to make new development more protective of clean water and less impactful on downstream flooding. These efforts are often referred to as Low Impact Development (LID) and/or "green" development.

4.2 MS4 Program Public Education and Outreach

MS4 Program Public Education and Outreach (MS4 Education) is typically a one-way communication associated with activities required by the City's MS4 permit. This requirement is aimed at protecting water quality in streams, lakes and other bodies of water by keeping pollutants out of the MS4. Pollution in this context is associated with storm runoff and low flows containing sediment, chemicals, pet waste, trash and other materials.

The objective of the MS4 Education efforts is to meet the MS4 permit requirements, which have a primary goal of shaping and/or improving public behavior to prevent pollutants from entering the stormwater system.

The primary audience of the MS4 Education efforts is various segments of the general public: children, pet/livestock owners, automobile owners, property owners, etc. In addition, Public Education targets owners of commercial/industrial sites, owners/operators of construction sites, and specific types of businesses with the potential to pollute.

The messages of the MS4 Education efforts are tied to MS4 permit language: “We must improve our behaviors to meet federal water quality requirements – i.e., protect clean water.” Those messages need to relate to specific components of the permit requirements, prompting the audiences to:

- Report illicit discharges, spills, and dumping (Part 1.B.1.b.4 of the MS4 permit)
- Properly manage and dispose of potential pollutants (pet waste, stock manure, automotive fluids, fertilizers, herbicides, all chemicals) (Part 1.B.1.b.5)
- Use the Household Chemical Waste Collection Program (Part 1.B.1.b.6)
- Be aware of and properly handle/manage pollutants on commercial and industrial sites to prevent runoff into the MS4 (Part 1.B.1.c and e)
- Be aware of and properly manage/handle potential pollutants (sediment, dust, runoff, chemicals) at construction sites to prevent runoff into the MS4 (Best Management Practices) (Part 1.B.1.d.4)

4.3 Capital Project Public Involvement

Capital Project Public Involvement (CIP Involvement) is typically a two-way communication process. For the Stormwater Program, public involvement efforts will particularly focus on individual construction projects.

The objective of the CIP Involvement efforts is to build on general education and outreach, while specifically developing awareness and support for individual capital investment projects and the capital investment program as a whole. It also includes the objective of gaining and maintaining trust from the people immediately adjacent to construction projects, those most likely to be inconvenienced during construction. In addition, it serves as a mechanism to promote citizen involvement (e.g., stream clean-up initiatives) to advance stormwater program objectives. Meeting this objective can provide a positive benefit to the construction projects by converting local residents from opponents into supporters; this can help a project stay on time and on budget.

The audiences for the CIP Involvement efforts are many of the same audiences for MS4 Education and General Outreach, but the messages are more about the need for flood protection (stormwater) efforts and related to specific projects associated with the City’s planned capital investment program. One key addition to the audiences for CIP Involvement are the people most directly affected by construction: residents and businesses near the planned projects, who will need high-quality construction communication efforts to minimize the inconveniences they experience as a result of construction.

The communication strategy associated with each of these categories is summarized in **Table 4-1**.

Table 4-1. Summary of General Public Outreach, MS4 Program Public Education, and Capital Project Public Involvement Communication Strategy

Component	Objective	Audience	Messages	Tactics
<p>General Public Education and Outreach</p> <p><i>Typically 1-way communication</i></p>	<p>Inform the public and build support for the concept that “stormwater” means clean water and flood protection</p>	<ul style="list-style-type: none"> • General Public • Schoolchildren • Civic groups, HOAs • El Paso/Pueblo elected leaders/staff • EPC/PC business/industry groups • Development community Government/Regulatory agencies • City/CSU employees 	<ul style="list-style-type: none"> • Water quality and flooding prevention are life-saving concerns • Water quality and flooding prevention are the responsibility of all • We must all protect water quality by improving our behavior in small but important ways • Stormwater/drainage facilities can accompany and protect recreational amenities such as trails, bike baths and open space. 	<ul style="list-style-type: none"> • Image/brand by benefit to public: Clean Water, Flood Protection and public amenity – not “stormwater” • Central vision and action plan that guides all staff efforts • Annual Report: Make annual reports make transparent and attractive to public/stakeholders • Dedicated public hotline • Website pages that focus on clean water and flood protection – not “stormwater” • Optimize use of the City’s Channel 18 and video-making assets • Engage public support for public education and outreach plan • Identify, develop and utilize opportunities for working with surrounding cities, municipalities and public organizations. (Colorado Springs Utilities, Fountain Creek Flood Control and Greenway District, El Paso County, City of Manitou Springs, Old Colorado City, United States Air Force Academy and other bases, Ducks Unlimited, the Sierra Club, Trout Unlimited, etc.
<p>MS4 Program Public Education and Outreach</p> <p>MS4 permit requirements</p> <p><i>Typically 1-way communication</i></p>	<p>Comply with public communication requirements of the MS4 permit</p> <p>Shape or improve public behavior to stop or prevent pollutants from entering the MS4</p>	<p>Public as Potential Polluters</p> <ul style="list-style-type: none"> • Children • Pet/livestock owners • Auto owners • Property/lawn owners • Commercial sites with chemicals • Industrial facilities • Construction sites (development industry and others) <p>Targeted businesses (landscapers, mobile washers, carpet cleaners, concrete washout, auto shops, industrial)</p>	<ul style="list-style-type: none"> • We need to improve our behavior because we all need clean water. • Report illicit discharges, spills, dumping (Part 1.B.1.b.4) • Manage and dispose properly (Part 1.B.1.b.5) (pet waste, stock manure, auto supplies like oil, fertilizers, herbicides, all chemicals) • Use Household Chemical Waste Collection Program (Part 1.B.1.b.6) • Be aware of and handle/manage pollutants on sites to prevent runoff into MS4 (Part 1.B.1.c and e) • Be aware of and manage/handle potential pollutants (dust, runoff, chemicals) at construction site to prevent runoff into MS4 (Best Management Practices) site (Part 1.B1.d.4) 	<ul style="list-style-type: none"> • Interim fixes for website and illicit discharge hotline: Fix broken links and retrain staff/revise recorded call tree • Stakeholder database: expand and update • Public as potential polluters: Educate and inform to shape/improve behavior • Continue visits to targeted businesses and facilities • Construction, commercial and industrial site operators: Educate to shape/improve behavior • Prioritize community partnerships to leverage resources • Establish other partnerships with statewide and national organizations • School programs: Continue but review balance with other tasks/requirements • Water festival: Conduct at least one with community partners • Newsletter: Convert to ENews and increase frequency • Media campaigns: Conduct 2-3 annually • Presentations to key community groups – Council of Neighbors and Organizations (CONO), Established Neighborhood or Homeowner Associations, Business Groups, and Industry Associations (4-6 annually) • Distribute Household Hazardous Waste brochures and meet with El Paso joint messaging. • Stormwater Literacy Guide and DVD: Evaluate effectiveness, set goals and track progress • Update use of brochures and re-tool to match the new branding and messaging focus • Storm drain stenciling: Continue but set goals and measure/report • Adopt a Waterway: Continue but set goals and measure/report • Low-Impact “Green” Development: inform public about implementation of the Drainage Criteria Manual and LID efforts
<p>Capital Project Public Involvement</p> <p><i>Typically 2-way communication</i></p> <p><i>May involve public role in decisions</i></p> <p><i>Focused on capital projects</i></p>	<p>Capital Projects</p> <p>Create awareness and support for individual City projects (before, during and after project construction)</p> <p>Gain/maintain support and trust of people nearest projects – convert potential opponents into supporters, keep projects on time/budget</p>	<p>Same General Public as above</p> <p>Residents of Areas Affected by Construction</p>	<ul style="list-style-type: none"> • We are building large projects that will address flooding and water quality problems <ul style="list-style-type: none"> • Problem/solution – we are all part of it • Projects are planned/underway • The process is thoughtful and rational • Public has opportunity for input • Public/business support is important • As projects are completed, note success • Your needs are being considered. <ul style="list-style-type: none"> • We want to minimize inconvenience/maximize benefit • We will listen to you/inform you • Temporary inconvenience for permanent solutions 	<ul style="list-style-type: none"> • Inform the public about the capital projects program <ul style="list-style-type: none"> ○ Mayor/council and community leaders becoming the face of program ○ Defining capital projects for first year and beyond ○ Explaining the rationale and funding mechanism ○ Explaining how construction work will be done ○ Using a strategic subset of the stakeholder database to send ENews to business and community leaders ○ Celebrating completed projects and next steps (events, signage, website, news media, social media) ○ Consider creation of a public task force ○ Conduct tours of projects underway ○ Conduct neighborhood meetings near future projects ○ Create a Construction Hotline (may be the same as the spill hotline) to provide affected residents/businesses with a central place to report issues ○ Cultivate and promote spokespeople from areas near projects and HOA/interest groups • Conduct single-project involvement activities with neighbors and residents near projects

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5.0 PLANNED TACTICS FOR PUBLIC EDUCATION, OUTREACH AND INVOLVEMENT

This section presents the planned activities or tactics for public education and outreach. The tactics are grouped into three areas:

- General Outreach tactics
- MS4 Education tactics
- CIP Involvement tactics

5.1 General Outreach

The current City stormwater education and outreach efforts contain many of the appropriate foundational components, but a more robust, well-balanced approach to Public Education, Outreach and Involvement is needed. At the highest level, the key objective for this new effort is to communicate to the community about all of the good work being done and planned at the City and to enlist public support. This communication with the public (and all stakeholders) is critical to building trust in the City for current and future efforts. The following are suggested common tactics of a robust, effective Public Education, Outreach and Involvement effort.

5.1.1 Branding/Image by Benefit

Rebranding or establishing a completely new image can be a complicated and costly affair for an organization if it focuses time and resources on logos and slogans and other techniques from the world of advertising. The City will not take that approach. Rather, re-branding or re-imaging Stormwater Division functions as benefits to the community could be done in a relatively straightforward way in the crafting of products such as the hotline, website pages, brochures, events and virtually all deliverables. For example, instead of website pages with the title “Stormwater,” the City could use the title “Clean Water” or “Flood Protection” and develop content with that focus. Similarly, stormwater/drainage facilities should be introduced and promoted as opportunities to integrate and protect trails, bike paths, open space/parks and other public amenities. Necessary coordination with Water Resources and other water staff at Colorado Springs Utilities would not just help the Stormwater Division; it would leverage the efforts of all City (and Utilities) employees in pursuit of the same goals.

5.1.2 Central Vision and Action Plan/Internal Communication and Coordination

As introduced above, a common, communicated vision and action plan would best leverage the energy and actions of staff to achieve shared objectives. A critical component of this plan would be prioritization of tasks to guide staff efforts. For example, the MS4 program staff currently conduct 150 school programs a year – as many as three per week during the school year – but the stormwater pages on the City’s website contain many broken links and the illicit discharge hotline is not promoted and difficult for the public to use. Prioritization of tasks is critical to guiding staff and/or outside resources to accomplish shared goals. Similarly, the City is exploring greater centralization of communication functions to achieve consistent goal-setting, measurement and reporting of success. One option under consideration is to hold a facilitated staff visioning and planning workshop(s) to create a communications plan and then schedule ongoing staff “core team” meetings with identified objectives. These ongoing core team meetings would occur at least monthly, but perhaps twice monthly at the outset, to produce a central vision, guiding principles and a communications plan that includes goals, measurement and reporting of success.

5.1.3 Annual Reporting

While the USEPA and CDPHE require annual reports, the City may have some latitude to meet requirements in a more transparent, readable format. The annual report is an opportunity to document the City's successes and should be prepared with an eye toward what goals were or could yet be identified for future years and measured against. Essential topics to be covered include Stormwater Spending, Stormwater MS4 Program Accomplishments and Stormwater Capital Project Accomplishments, either as three separate reports or one integrated report. One example under consideration is the Charlotte, North Carolina annual report, which is much more user-friendly and visual than the Colorado Springs report.

5.1.4 Public Hotline

The hotline, as required in the City's MS4 permit, is a central phone number for the public to use in reporting perceived illicit discharges, illegal dumping and other potential polluting activities. A hotline also could assist the City with public reporting of concerns at capital project construction sites or other stormwater concerns. The current hotline is a local city number in use for Police Department and Fire reports of a non-emergency nature (not 911.) As a result, callers about illicit spills or pollution may effectively compete with callers for law enforcement or firefighting resources on a phone line whose automated phone tree does not mention pollution or illicit spills.

The City is reviewing improvement options, including:

- Creating a dedicated number that leads to stormwater staff during the day and voicemail at night, and triggers an e-mail to staff.
- Creating a dedicated number that leads to a Public Works administrative assistant during the day and voicemail at night, which triggers an e-mail to Stormwater Division staff.
- Arranging for a community group to answer those calls – such as 211. In Charlotte, N.C., the community created 311 for stormwater-related pollution calls. A new 311 is being pursued in Colorado Springs right now, so perhaps this would work here as well.
- At a minimum: Arranging for the PD/FD dispatch's automated phone tree to contain a reference to spills or pollution and re-train dispatch staff to manage these calls effectively.

5.1.5 Website

Public access to stormwater website pages is difficult and the pages themselves are not effective communication tools. Public communication professionals consider websites to be "home base," one of the top one or two communication tools an organization can have. All outreach should drive user traffic to the website, and the website should direct interested users to additional information, and back to the website. That makes repairing broken links and updating or removing outdated content a top priority. Initially, the City intends to devote staff time to repair broken links and/or update or take down outdated content. Longer term, the City is considering creation of new pages that clearly re-brand the mission and focus of the Stormwater Program and provide many more resources to users. One option under consideration is the use of private vendors to accomplish this task.

Questions/needs that content on these website pages will address include:

- Why is protecting the MS4 important? (e.g., clean water or water quality)
- What are the pollutants that put clean water most at risk and where do they come from? (e.g., motor oil, pet waste, sediment)
- What can we each/all do to achieve that goal? (e.g., change behavior)
- How can someone report a case of possible pollution? (e.g., online form, reference hotline number)
- Why is flooding protection important? (e.g., life and property protection)
- What is the city doing about flooding protection? (e.g., operation and maintenance program, capital program)
- Where can we learn more about these issues? (e.g., link to reliable sources)

While usable, accessible content is the most important concern, the City recognizes that the presentation of information is key. Ample research indicates that users are most attracted to photos and graphics that help tell the story. The City will consider the use of photos and graphics, including “before” and “after” pictures to show initial problems and solutions. Ample visual content exists related to clean water and flooding protection – both local, familiar content and public domain content that would work in many communities. The City will consider emulating the pleasing, informative website content at Charneck.org (Charlotte, N.C.) and SEMSWA.org.

One type of content that will be presented in its original form are stormwater-related ordinances, City Code or other laws, particularly those related to land development and building. Yet this content will be made more approachable with the addition of “Frequently Asked Questions” –style content available through related links.

The City also intends to add a critical feature to the stormwater web pages – the opportunity for users to sign up for future updates (ENews, etc.). This method can greatly add to the stakeholder database because users self-select for inclusion. They are interested in the content when the City supplies it and will tend to read it.

5.1.6 Optimize Use of City’s Channel 18 and Video-Making Assets

The City owns a Cable TV Channel (Channel 18) and equipment for making videos and other products to air on Channel 18, to post on the City’s website and to share with partner organizations for use on their websites, in social media, etc. This is a tremendous asset that would leverage efforts in all three areas (Education, Outreach and Involvement) and drive traffic to the City’s website and hotline. The City plans an assessment of existing City videos that would naturally lead to a plan to create new videos to bridge gaps in content not otherwise available.

5.1.7 Public Support for Public Education and Outreach Plan

The City is considering providing the public with opportunities to have input into the Public Education and Outreach Plan, as well as other related best management practices. One very effective technique locally has been to engage known public groups through presentations at those groups’ scheduled meetings. Examples include the Council of Neighbors and Organizations (CONO) and its member homeowner and neighborhood associations. These targeted outreach opportunities have been found to be more successful than community-wide public meetings without organizations as anchors.

5.2 MS4 Program Public Education and Outreach Tactics

5.2.1 Stakeholder Database

The City will expand and update a stakeholder database with available contact information, particularly e-mail addresses, using existing City lists, lists from CSU and Memorial Hospital (if permitted), as well as community partners such as HBA. The stakeholder database will include distinct audience groups such as car washes, dog washes and pet stores, veterinarians, paint stores, home improvement stores, farm and ranch supplies, garden centers, automotive stores, service stations, and landscaping companies. This database will be used for new eNews communications (to replace the newsletter, discussed below) and other communication at regular intervals. The goal is for several thousand recipients.

5.2.2 Public as Potential Polluters

The City will continue to identify, prioritize and educate the public and members of all stakeholder groups (pet owners, auto owners, homeowners, etc.) about pollution risks and responsibilities associated with their interest and set goals for education of each group. Staff may use GIS technologies to map these targeted entities to assist with prioritization. Specific activities include:

- Continue with visits to automotive stores, pet stores and garden stores to provide brochures or other educational materials
- Seek access to stores' e-mail lists, social media or determine whether they can send out e-mails on the City's behalf. A partnership with even one large home-improvement retailer could be very strategic.
- Hold education events at paint, automotive and other stores
- Set and document goals and achievements

5.2.3 Construction Sites, Industrial Facilities and Commercial Sites

The City will continue to identify, prioritize and educate operators and staff of construction sites, industrial facilities and commercial sites about prevention of illicit discharges, dumping and related behaviors. Staff may use GIS technologies to map these targeted entities to assist with prioritization. Specific activities include:

- Continue with the "Wet Wednesday with HBA" program but expand
- Incentivize previous participants to recruit new ones
- Discuss best practices such as placing signs at construction sites saying, "If you see erosion or runoff here, call XXX-XXXX."
- Enlist HBA leadership in recruiting and recognizing participants
- Conduct tours of regulated facilities for VIPS and community leaders as ambassadors to earn/maintain support for regulation.
- Report progress more prominently than before in Annual Report
- Set and document goals and achievements

5.2.4 Community Partnerships

The City will prioritize establishing community partnerships for the purposes of implementing shared campaigns with coordinated messaging. Potential partners include:

- Colorado Springs Utilities

- Housing and Building Association
- Association of General Contractors
- Chamber of Commerce
- El Paso County Stormwater Department and related departments
- Fountain Creek Watershed, Flood Control and Greenway District
- City of Manitou Springs
- Old Colorado City business organization
- United States Air Force Academy and other bases
- Ducks Unlimited
- Sierra Club
- Trout Unlimited
- U.S. Fish and Wildlife
- National Forest Service

5.2.5 Other Partnerships

The City will seek out and establish partnerships with other stormwater entities statewide and nationally for purposes of shared tactics and information. Such entities include:

- Southeast Metro Stormwater Authority (SEMSWA)
- Charlotte, N.C., Stormwater Program and other high-performing entities
- Colorado Stormwater Council
- Colorado LIVE LIKE YOU LOVE IT
- Keep it Clean Partnership (Colorado)

5.2.6 School Programs

The City will continue school programs – both clean water and flooding safety/awareness (Ditch the Ditches), with a new focus on:

- Balancing the level of school contact with other Stormwater communications responsibilities.
- Recruiting partner organizations to conduct some school programs to meet shared goals.

5.2.7 Festivals

The City will participate annually in at least one city-wide or region-wide water festival aimed at children and parents. One example might be to increase involvement in Creek Week Cleanup sponsored by the Fountain Creek Watershed, Flood Control and Greenway District. Such a festival would be best held at a sporting or recreational venue near a waterway.

5.2.8 Newsletter

The City will convert the twice-yearly hard copy, mailed newsletter (sent to about 70 people inside and outside the City) into a quarterly ENews dedicated to one topic per quarter. Timing would need to coincide with and leverage other efforts, such as seasonal events. Creation of a template could be a task for a vendor. The new ENews product will be e-mailed to the new, growing stakeholder list.

5.2.9 Media Campaigns

The City will conduct two to three “media campaigns” (with partner agencies or entities as appropriate) during the year. Options include conducting a water quality campaign during low-flow periods and flooding protection messages during higher flow periods. Specific activities include:

- Establish protection of clean water as a community goal
- Use public service announcements (PSAs) and City-generated or partner-generated videos on Channel 18, paid advertising, earned news stories, bus ads, bus shelter ads and social media
- Increase work with media partner (as before with KKTV Channel 11) to generate ads or PSAs for airing on commercial stations. Example: KKTV previously produced ads to support the Ditch the Ditches campaigns.
- Ask CSU to consider dedicating a bill stuffer to joint messaging

5.2.10 Presentations to Key Community Groups – Speakers Bureau

The City will create or adapt a presentation about clean water, flood protection and associated Stormwater topics and projects (PowerPoint or similar) and present it to key community groups, such as:

- Established neighborhood or homeowner associations and Council of Neighbor and Organizations (CONO).
- Business groups (Regional Business Alliance, Board of Realtors, Apartment Association, etc.)
- Industry associations and groups (development community, plumbers, painters, car washes, pool companies, hot tub companies, etc.)

A reasonable goal would be making 4-6 presentations per year.

5.2.11 Household Hazardous Waste Brochures

The City will continue distributing Household Hazardous Waste brochures and meet with El Paso County on other means of joint messaging.

5.2.12 Stormwater Literacy Guide and DVD

The City will evaluate its Stormwater Literacy Guide and DVD; if still valid, the City will set goals and track progress. One option is to re-cut the DVD into shorter segments that are more compatible with social media and website use. A good example of such a short, single topic video exists on the City of Pueblo stormwater webpage. It might be possible to arrange for co-branding of that video for shared use.

5.2.13 Brochures

The City will evaluate its use of brochures (27,000 were distributed in 2014). If this broad distribution continues, each brochure will be re-tooled to match the new branding and messaging focus on clean water and/or flood protection. USEPA maintains a large list of brochures and related materials for consideration. Retooling could be a task for an outside vendor.

5.2.14 Storm Drain Stenciling

The City will continue storm drain stenciling to support anti-pollution messaging, but will set goals and measure and report progress.

5.2.15 Adopt a Waterway Program

The City will continue the Adopt a Waterway program but set goals and measure and report progress. This program invites community groups – civic groups, schools, business groups – to adopt creeks, streams or other waterways by agreeing to hold two cleanups per year. Adopters get signage as recognition and other benefits.

5.2.16 Low-impact “Green” Development

The City will begin to inform the public and key stakeholders about its implementation of the new Drainage Criteria Manual and associated low impact development (LID) and green infrastructure efforts designed to achieve clean water objectives and reduce flooding risk. Tactics include presentations to targeted public groups such as CONO and its member HOAs; presentations to industry and business groups with specific emphasis on the HBA; and sharing of success stories with the public via the website, ENews, videos, news media stories and other means. Regarding the HBA, it would be particularly helpful to cultivate “champions” within HBA to become the public faces of a new development sensibility. HBA should be given the opportunity to “lead” in this effort – as a means of image improvement and self-policing.

5.3 Capital Project Public Involvement Tactics

5.3.1 Inform the Public about the Capital Program

Much of the City’s efforts are focused on water quality-related recommendations related to compliance with the City’s MS4 permit. But City staff members have observed that the public is inclined to view various parts of the City’s stormwater effort as one initiative – and thus, the City will inform the public about the Capital Program (stormwater projects) as a whole. Specific activities include:

- The mayor/council and community leaders becoming the face of a rollout of new clean water and pollution protection efforts
- Promoting capital projects for first year and beyond through ENews, website, news media, Springs TV and social media
- Explaining the rationale and funding mechanism
- Explaining how construction work will be done (private industry) and help to promote procurement effort (business outreach)
- Using a strategic subset of the stakeholder database to send ENews to business and community leaders
- Celebrating completed projects and next steps (events, signage, website, news media, social media)
- Considering creation of a public task force
- Conducting tours of projects underway for VIPs and community leaders as ambassadors to earn and maintain support
- Conduct neighborhood meetings near future projects
- Create a Construction Hotline (may be the same as the spill hotline) to provide affected residents/businesses with a central place to report issues
- Cultivate and promote spokespeople from areas near projects and HOA/interest groups

5.3.2 Conduct Single-Project Involvement Activities

The City will conduct single-project-based communication and issue mitigation with property owners and neighbors in areas around projects. This tactic will include:

- Centralize this function among field liaisons as part of new project teams – not capital project managers, so they can focus on technical needs
- Deliverables for property owners and businesses that include mailings, door hangers, website map dedicated to each project
- Manage traffic impacts if any (Cone-Zone app, social media and other)

6.0 NEXT STEPS

The following next steps are envisioned for moving the public education and outreach efforts forward in 2016 and beyond.

6.1 Interim Fixes for Immediate Needs

Within 60 days:

- Fix broken links on existing stormwater webpages so that users can access content already available.

Within 90 days:

- Work with Police Department Dispatch to include a water pollution or spills option on its automated navigation menu for callers and retrain call takers for consistency in responding to these calls.

6.2 Within Six Months

- Hold an initial central visioning and planning meeting for stormwater education and communications staff with these expectations:
 - Discuss and agree on a working central vision for stormwater communications and education
 - Discuss a new brand/image, even if preliminary
 - Develop working outreach vision and begin a communications action plan for communications and education with Communications group
 - Identify outreach goals and measurement techniques
- Create a measurement matrix for tracking progress
- Upgrade stormwater website and public hotline
- Begin evaluation of existing tactics for effectiveness and prioritization
- Develop a separate Public Education and Outreach Program for the MS4 Program
- Secure community partner organizations with at least one joint campaign or other tactic planned
- Upgrade stakeholder database
- Identify an administrative assistant with skill and time to create an Excel or similar database – request content from CSU, Memorial Hospital and other City entities – also possibly El Paso County
- Schedule at least one citywide or region-wide water festivals aimed at children and parents
- Distribute household hazardous waste brochures
- Evaluate effectiveness of stormwater literacy guide, DVD, brochures, etc. and reshape them accordingly
- Establish and monitor new goals for storm drain marking and Adopt a Waterway efforts
- Conduct monthly planning meetings with Communications

- Convert current stormwater newsletter into ENews format and get at least one ENews on stormwater successes or challenges being met
- Identify social media campaign opportunities to create an “editorial calendar” of topics and timing

6.3 Within 12 Months

- Establish at least monthly meetings to move public education and outreach planning and measurement along. Items to be discussed during the meetings include:
 - Discuss and select cooperative outreach tactics to the public as potential polluters: Pet owners, car washers, lawn and household owners, etc. (Communications could/should support public education)
 - Discuss and select cooperative tactics to identify and educate operators of industrial and commercial facilities and construction sites.
 - Identify potential community partner organizations and national partner organizations and preliminary discussion of outreach to be done during first six months
- Implement an outreach program to local business owners, developers, contractors, and other regulated entities
- Identify and set a date/month for a news media campaign highlighting successful projects – likely the FEMA or EWP emergency projects. Focus on testimonials from affected property owners and residents and “before” and “after” pictures or short videos.
- Identify a possible date for a stormwater festival in concert with CSU and El Paso County
- Begin to inventory available video assets from the City and other partners
- Complete repairs or replacement of “stormwater” pages on the City’s website. The website serves as a central information repository and all other communication tactics should drive traffic to it. When users visit the website they must find content and value or they won’t come back.
 - Establish a “menu” page with basic “what is stormwater and why do we care” content. Rebrand “stormwater” pages as clean water and flooding protection pages. Introduce concept that stormwater/drainage facilities often offer recreational areas such as open space and trails and also protect such public amenities. Create up to 10 new pages displaying visual content. Emergency projects completed in 2016 (Powers Boulevard undermining, Rockrimmon home protection, concrete channel at Patty Jewett Golf Course are good content to show successes.) Also forecast upcoming Federal Emergency Management Agency (FEMA) and Emergency Watershed Protection (EWP) projects with photos of current (problem) conditions. Highlight recent flood recovery efforts such as those covered in the Upper Fountain Creek and Cheyenne Creek Restoration Master Plan. Work to ensure that modern analytics are in place to track usage of these pages.
- Increase public reporting surrounding the MS4 Program activities, particularly related to improvements in the program (“Stormwater Spending Report”, “Stormwater MS4 Program Accomplishments Report”, and “Stormwater Capital Projects Accomplishments Report”).

- Measure all 2016 tactics and make sure they are entered into new annual report template
- Review and revise central vision/communications action plan
- Secure national partner entity with at least one joint campaign or tactic planned

6.4 Within 18 Months

- Replace Police Department/Fire Department dispatch hotline with a truly dedicated stormwater hotline. Create and promote a new number that leads to stormwater staff directly during the day and takes a voicemail and generates an automated e-mail message at night. Begin call-by-call tracking of use. Preparation for a new hotline should include a script and protocols for new call takers. Also connect with CSU Customer Care and Dispatch to arrange for calls to CSU to be forwarded appropriately. Other options are included in Section 3.0.
- Conduct 2-3 media campaigns annually to highlight successful projects
- Continue activities started previously

6.5 Summary

By the end of the first 18 months, the following tactics – or replacements – are to be underway.

- Establish new brand/image for stormwater efforts for public-facing communication efforts
- Complete new, re-branded website pages and measure activity
- Implement, promote and measure new, dedicated public hotline
- Establish a working version of a central vision and an communications action plan and review periodically
- Hold planning meetings at least monthly
- Distribute quarterly ENews (water quality and flood protection messages) to growing stakeholder database (at least 1,000 names by that time)
- Evaluate existing tactics for effectiveness and balance with other tactics, including:
 - School programs (for balance with other tactics)
 - Brochures
 - Literacy Guide and DVD.
- Prepare and two execute social media campaigns
- Implement and measure the following tactics:
 - Educating the public as potential polluters
 - Educating operators of industrial/commercial facilities and construction sites. Example: At least one professional association or industry group associated with each business type on board as partner in communications, such as Housing and Building Association
 - At least one news media campaign resulting in generally positive coverage of successful projects (emergency or other capital)
- One festival planned for 2018

- Establish new goals and measure progress on storm drain marking and Adopt-a-Waterway efforts

6.6 Continuous Improvement

Upon completion of the first 18 months, the following additional ongoing tactics – or replacements – are to be complete.

- Produce new videos (city and/or coordinated partners) on a coordinated schedule.
- Review website pages at least once monthly for small updates and once since inception for overall refresh.
- Validate effectiveness of public hotline and perform anonymous calls at least monthly to review performance.
- Have measurement of all tactics nearly complete for 2016 and embedded in the shell of new annual report template.
- Review and revise central vision and communications action plan as needed.
 - Revisions will be needed
 - Include measuring component for community and other partners to have input

7.0 REQUIRED RESOURCES

Currently the Stormwater Division has one staff person responsible for implementing the MS4 program public education and outreach activities. The Communications Group provides general stormwater outreach support as needed in response to newsworthy items, emergencies, etc.

Table 7-1 presents an estimate of the hours needed for the stormwater public education and outreach tasks described in this report. The required full-time equivalent (FTE) staff level was estimated assuming an FTE provides 36 hours per week, accounting for vacation, sick time and holidays. It is estimated that at least two FTEs are needed in addition to current staff to perform the public education and outreach activities. The City plans to fulfill the one FTE in stormwater public education with two new staff working on those duties part time; additional assistance beyond what the Communications Group can perform may be fulfilled with consultant support.

Table 7-1. Ongoing Public Outreach Labor Requirements*

Task/Activities	Weekly Labor Requirement (hrs/week)
Public Education (within Public Works Stormwater Division)	
Update/maintain website pages devoted to MS4-related messages/social media	4
Maintain tracking of hotline calls, ensure follow up and reporting	2
Write/edit/format and e-mail quarterly or monthly ENews	2
Attend staff meetings/coordinate with peers	4
Conduct 3 school programs per week (current reported rate)	10
Maintain stakeholder database	1
Pursue/leverage organization partnerships	2
Plan/conduct festival(s)	2
Conduct education for construction site operators and commercial/industrial sites	8
Distribute El Paso County Hazardous Waste brochures	1
Participate in writing/editing videos and other material for Springs TV	1
Conduct education for public as potential polluters (not schools)	5
Plan/conduct storm drain stenciling/Adopt a Waterway	3
Do presentations for key community groups	4
Maintain data to feed into annual report/attack MS4 compliance	4
Total Hours	53
FTEs	1.5
Stormwater Communications (within Communications Office)	
Managing/coordinating communication strategies and activities among all Stormwater-related entities at City	8
Develop/maintain Stormwater communications plan for all Stormwater entities	2
Coordinate with other City Communications staff for information and consistency	2
Maintain/update/create website pages related to capital projects	4
Leading City Stormwater capital improvement projects outreach to public	6

Task/Activities	Weekly Labor Requirement (hrs/week)
Attend staff and construction meetings, coordinate with peers	6
Conduct presentations for key community groups about capital projects	3
Write, edit or repurpose videos and other content for Springs TV	4
Conduct news media messaging and follow up regarding capital projects	5
Train/cultivate and facilitate media interviews with subject matter experts	4
Build/maintain partner relationships with industry/business groups such as HBA	2
Manage and conduct social media campaigns for all Stormwater entities	3
Conduct neighborhood meetings near projects	2
Conduct tours of capital project sites to develop/maintain support	3
Contribute to or write quarterly or monthly Capital Projects ENews	2
Maintain data to feed into annual report	2
Build/maintain relationships with project neighbors, prevent/handle issues	8
Total Hours	66
Total FTEs	1.8

* Average requirement after initial "start-up" activities are completed -- after first year. Also assumes 80 percent available time (vacations, holidays, sick time) or 36 hours/week per FTE