

City of Colorado Springs Phase I MS4 Inspection Report
Colorado Discharge Permit System, Permit # COS000004

Inspection Dates: August 18, 2015–August 19, 2015

Prepared by
PG Environmental, LLC

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NATIONAL DATABASE INFORMATION	
Inspection Date(s): August 18–19, 2015	Inspection Type: MS4 Storm Water, Phase I
Entry Time: 8:00 a.m.	Exit Time: Approximately 4:30 p.m.
NPDES ID Number: COS000004	EPA Lead Inspection

Facility Location Information:(Name/Location/Mailing Address)	
Site/Facility Location: City of Colorado Springs City Engineering Division 30 S. Nevada Street, Suite 401 Colorado Springs, CO 80901	Mail Report to: Tim Mitros, Engineering Development Review and Stormwater Manager City of Colorado Springs 30 S. Nevada Street, Suite 401 Colorado Springs, CO 80901

Contact Information		
	Name(s)/Title	Telephone
Onsite Representatives:	Tim Mitros / Engineering Development Review (EDR) and Stormwater Manager	719-385-5061
	Jeff Besse / Stormwater Quality Coordinator / Engineering Development Review / Stormwater	719-385-5566
	Joel Mackey / Engineering Inspector / Engineering Development Review / Stormwater	719-385-5097
	Steve Kuehster / Senior Civil Engineer/ Engineering Development Review	719-385-5412
	Steve Burke / Civil Engineer / City Engineering	719-385-5078
	Cole Platt / Program Supervisor / Stormwater	719-385-6822
	Kevin Charron / Inspector / Stormwater	719-385-6816
Authorized Official(s)	Tim Mitros / Engineering Development Review and Stormwater Manager	719-385-5061
Co-Permittees Contact Information:	N/A	
Regulatory Inspectors:	Natasha Davis / U.S. Environmental Protection Agency (EPA) / Region 8–Inspector	303-312-6225
	Wes Ganter / PG Environmental, LLC / EPA Region 8– Contract Inspector	303-279-1778
	Jared Richardson / PG Environmental, LLC / EPA Region 8–Contract Inspector	303-279-1778
	Anthony D’Angelo / PG Environmental, LLC / EPA Region 8–Contract Inspector	303-279-1778

Permit Information			
Is the permit on site and available? Yes			
Effective Date: November 1, 2011		Expiration Date: October 31, 2016	
Area served by MS4: Colorado Springs Area: 194 square miles (2010 Census Bureau)	Population served by MS4: Colorado Springs Population: 426,388 (2011 Estimated Census Bureau)	City of Colorado Springs City Engineering Division 30 S. Nevada Street, Suite 401 Colorado Springs, CO 80901	
		Latitude of above-listed facility: 38°49'57.93" N.	Longitude of above-listed facility: 104°49'20.31" W.
Any co-permittees (if so, list contact information above): None.			
Permit area:	City of Colorado Springs, Colorado		
Receiving Water(s): The Colorado Springs municipal separate storm sewer system (MS4) discharges into waters of the state, including Monument and Fountain Creeks and subsequently into the Arkansas River.			
Regulatory Inspector's source(s) of information: City of Colorado Springs MS4 Colorado Discharge Permit No. COS000004; City of Colorado Springs annual reports; <i>City of Colorado Springs Drainage Criteria Manual, Volume 2</i> , dated May 2014 (DCM Vol 2); <i>Urban Storm Drainage Criteria Manual, Volume 3</i> , dated November 2010 (USDCM Vol 3); <i>City of Colorado Springs O&M Program Procedures</i> , dated January 2013; 2010/2011 City of Colorado Springs Census Bureau Statistics; Colorado Springs City Code and Ordinances; EPA Region 8 February 2013 MS4 inspection report; October 2013 <i>City of Colorado Springs Stormwater Needs Assessment</i> report (prepared by CH2MHill; hereafter CH2MHill Report); interviews with onsite representatives and documents referenced below in the section entitled "Documents Reviewed During the Inspection."			

MS4 Program Areas Inspected During the Inspection			
Commercial/Residential Management	Yes	Illicit Discharges Management	No
Maintenance of Structural Controls	Yes	New Development and Redevelopment	Yes
Industrial Facilities Program	No	Construction Sites Program	No
Pollution Prevention/Good Housekeeping for Municipal Operations	No	Public Involvement/Participation/Outreach	No
Monitoring Program	No	Program Management	Yes

Inspection Details

The City of Colorado Springs (hereinafter, the City) encompasses approximately 194 square miles (2010) and has an estimated population of 426,388 persons (2011) within its boundary. Discharges from the City of Colorado Springs, Colorado MS4 are regulated under the *Colorado Discharge Permit System (CDPS) Stormwater Management Program* Permit # COS000004 (hereafter, the Permit). At the time of EPA's inspection, the City's Public Works Division maintained responsibility for ensuring compliance with the Municipal Separate Storm Sewer (MS4) permit. Within the Public Works Division, the Engineering Development Review (EDR) and Stormwater Team were the main departments carrying out the responsibilities of the MS4 programs. Implementation of the City's MS4 programs also involved coordination with other programs and entities, including the United States Geological Survey (USGS), City Code Enforcement, and Colorado Springs Utilities. Three people have been granted authority to manage the stormwater program: Tim Mitros, Engineering Development Review and Stormwater Manager; Steve Kuehster, Senior Civil Engineer; and Jeff Besse, Stormwater Quality Coordinator.

The 2013 inspection of the City's MS4 program by EPA Region 8 and this 2015 follow-up inspection by EPA Region 8 and EPA's contractor, PG Environmental, LLC, (hereinafter, EPA Inspection Team) was prompted as part of the EPA Municipal Infrastructure National Enforcement Initiative, which includes Phase I MS4s with populations greater than 100,000 in an urbanized area. The purpose of the inspection was to verify compliance with the City's MS4 Permit. Upon arrival at the facility, the EPA inspector displayed credentials and outlined the process of the inspection to the onsite representatives. The inspection was largely field-based, and its purpose was to evaluate compliance with the City's MS4 program areas for new development and redevelopment, overall operation and maintenance of the MS4 and post-construction controls (hereafter referred to as permanent BMPs). The inspection consisted of a brief opening conference, records review, personnel interviews, field site visits, and an official closing conference via conference call on August 25, 2015. Field site visits included project sites described in the CH2MHill Report, public and private permanent BMPs, regional water quality controls, MS4 outfalls, and MS4 infrastructure. The EPA inspection occurred on August 18, 2015 and August 19, 2015 at the Colorado Springs City Administration Building with the close-out conference call occurring on August 24, 2015 from approximately 8:00 a.m. until 9:00 a.m. Additional information on the records reviewed before, during and after the field site visit are listed on page 32 of this report. The EPA Inspection Team observations of each site are found in Appendix A. Photographs of each site are included in Appendix B. Exhibits referenced in the observations are included in Appendix C. The EPA Inspection Team did not evaluate all components of the City's MS4 program and this report should not be considered a comprehensive evaluation and implementation of each individual program element. The City remains responsible for complying with all Permit requirements and performing on-going evaluations of its programs.

Inspection Weather Details

Description of the weather conditions (e.g., temp., precipitation amount, etc.) for the 5 days preceding the inspection: Prior to the inspection, temperature highs averaged approximately 88 °F. Measurable precipitation was recorded on August 13, 2015 and August 16, 2015 (refer to table below). Source of weather information: NOAA National Climatic Data Center (<http://www.ncdc.noaa.gov/>).

Weather conditions prior and during the inspection:

Station Name	Date	Max Temp (degrees Fahrenheit)	Precipitation Amount (inches)
GHCND:USW00093037_COLORADO SPRINGS MUNICIPAL AIRPORT CO US	August 13, 2015	90	0.25
GHCND:USW00093037_COLORADO SPRINGS MUNICIPAL AIRPORT CO US	August 14, 2015	88	0.01
GHCND:USW00093037_COLORADO SPRINGS MUNICIPAL AIRPORT CO US	August 15, 2015	93	0.02
GHCND:USW00093037_COLORADO SPRINGS MUNICIPAL AIRPORT CO US	August 16, 2015	86	0.56
GHCND:USW00093037_COLORADO SPRINGS MUNICIPAL AIRPORT CO US	August 17, 2015	84	0.00
GHCND:USW00093037_COLORADO SPRINGS MUNICIPAL AIRPORT CO US	August 18, 2015	73	0.00
GHCND:USW00093037_COLORADO SPRINGS MUNICIPAL AIRPORT CO US	August 19, 2015	66	0.00

Program Management (PM) Review Finding

Finding 1PM: Failure to Provide Adequate Resources to Develop, Implement, and Enforce the MS4 Program

1PM Permit Requirements:

Part I.B, Terms and Conditions, of the Permit states, “The permittee must develop, implement, and enforce a CDPS Stormwater Management Program, in accordance with Part I.B of this permit, designed to reduce the discharge of pollutants from the MS4 to the “maximum extent practicable” (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Colorado Water Quality Control Act (25-8-101 et seq., C.R.S.) and the Colorado Discharge Permit Regulations (61). Implementation of Best Management Practices (BMPs) consistent with the provisions of the CDPS Stormwater Management Program and the other requirements in this permit constitutes compliance with the standard of reducing pollutants to the MEP.”

And

Part I.B.2, Legal Authority, of the Permit states, “The permittee shall insure legal authority exists and is maintained to control discharges to and from the MS4.”

And

Part I.B.3, Resources, of the Permit states, “The permittee shall provide adequate finances, staff, equipment, and support capabilities to implement the CDPS Stormwater Management Program.”

1PM Other Considerations:

Article 8 Stormwater Quality Management and Discharge Control Code, Article 8 – Stormwater Enterprise (SWENT), Section 14.8.101.A.4: Legislative Declaration express the following principle: *“An effective and fair funding system for necessary public stormwater facilities is desirable and should be established. Service charges or fees should be established by City Council in amounts sufficient to defray the development, capital improvements, operations and maintenance costs of the public stormwater drainage system and should be charged to properties located within the City of Colorado Springs, both residential and nonresidential, that benefit from the stormwater service provided by the City.”*

1PM Observations:

During the inspection, City representatives stated they were fully aware of the lack of resources to adequately implement the MS4 program, and cited the termination of the City’s SWENT in 2009 and overall lack of political, managerial, and community support for the City’s MS4 program as contributing factors. Specifically, City representatives stated that the City lacked resources to adequately maintain and repair stormwater-related infrastructure. This also was identified in the EPA February 2013 MS4 inspection report. The City’s response to the EPA February 2013 MS4 inspection report, dated June 28, 2013, stated, “[I]ong term, the City is exploring funding solutions for the stormwater program that include a stormwater utility and regional stormwater authority similar to the Southeast Metro Stormwater Authority (SEMSWA).” The EPA Inspection Team observed, at the time of the inspection, that little progress had been made by the City since the EPA February 2013 inspection to provide adequate

funding, staff, and equipment to implement the MS4 program to reduce the discharge of pollutants from the MS4 and protect water quality to the maximum extent practicable.

Also in 2013, the City contracted with CH2MHill to conduct a stormwater infrastructure needs assessment. The resulting CH2MHill Report, dated October 11, 2013, and reviewed in preparation for the 2015 inspection, identified approximately 230 necessary stormwater infrastructure repair projects with an estimated total cost of approximately \$530 million dollars. During the 2015 follow-up inspection, the EPA Inspection Team visited 13 project locations identified in the CH2MHill report, and five other MS4 locations. The Inspection Team observed that most of the longstanding neglect and damage depicted in the 2013 report still existed at the time of the inspection. Specifically, of the 13 MS4 locations visited based on the CH2MHill Report, only 1 site had been repaired. The remaining sites had not been repaired and were in a similar or more degraded condition than documented by CH2MHill in 2013. The EPA Inspection Team also visited five other MS4 locations that demonstrated long-term neglect and were in need of significant repair. The following photographs are examples of the types of stormwater infrastructure degradation observed during this inspection:



View of significant erosion and scouring of N. Douglas Creek downstream of I-25 box culvert outlet. The vertical dirt embankment was estimated to be approximately a 40 feet high. Portions of the concrete box culvert were present in N. Douglas Creek below the area of this photograph. Also, note that the Creek bed would have been approximately even with the base of the culvert at the time the culvert was constructed and at the time of the 2015 Inspection it appears to be almost 6 feet lower. In addition there is significant undercutting beneath the base of the culvert.



View of CS – 222, Rockrimmon Channel concrete drop structure.

In response to questions raised by the EPA Inspection Team, Mr. Tim Mitros (Stormwater Manager) stated that the City’s current funding for 2015 consisted of approximately \$3 million dollars from the City’s general fund and \$7 to \$8 million dollars from grants. Mr. Mitros also stated that the City’s MS4 stormwater program is expected to receive funding for 2016 of approximately \$16 million dollars from the general fund and \$3 million dollars from the Colorado Springs Utilities fund.

The EPA Inspection Team requested the City’s capital improvement project (CIP) list for 2015 to 2019. In response, the City provided a document titled “Five-Year All Funds CIP Plan Detail,” which contained a list of 105 projects totaling approximately \$100 million, organized in alphabetical order (refer to Appendix C – MS4 Inspection Exhibit Log, Exhibit 23). Of the 105 projects on the CIP list, it appeared that four stormwater oriented projects were included and slated for funding in 2015:

- Companion Drainage Projects – \$412,000.
- Drainage Basin Planning Studies – \$150,000.
- Emergency Drainage Repairs High Priority – \$500,000.
- Infrastructure Damage Repair – \$80,000.

In reviewing the CIP list, the EPA Inspection Team observed that some bridge replacement projects and, conceivably, trail improvements projects may include stormwater infrastructure improvements, but this could not be determined by the project title. Additionally, a project titled “High Priority CIP Projects (TBD)” with a 2015 estimated cost of \$19.7 million dollars is included on the list with no additional detail; thus, the EPA Inspection Team could not determine if this relates to stormwater infrastructure projects.

The City had also shared a list of approximately 80 projects totaling \$11 million dollars that it suggested would be completed if funds were received from the U.S. Federal Emergency Management Agency (FEMA). The EPA Inspection Team observed that a majority of the projects on this list were related to maintenance and repairs of City owned and operated stormwater ponds and basins as well as stormwater infrastructure.

Commercial/Residential (CR) Management Program

Finding 1CR: The City is not Conducting Maintenance of Structural Controls

1CR Permit Requirements:

Part I.B.1.a, Commercial/Residential Management Program, of the Permit states:

"The permittee shall continue to implement the previous Division-approved Commercial/Residential Management Program. The program shall include the following areas.

- 1) Maintenance of Structural Controls. The permittee shall continue to implement a program of routine maintenance activities for municipally-owned structural controls to reduce pollutants (including floatables) in discharges from the MS4. This program shall include the following activities:
 - a) Sediment, trash and debris shall be periodically removed from municipally-owned detention facilities. The frequency of removal shall be based upon visual inspection by CCS personnel.*
 - b) Trash and debris shall be periodically removed from municipally-owned, open-channel drainageways. The permittee shall implement and document procedures for this activity by October 1, 2012, and notify the Division that this requirement has been met in the following Annual Report, due April 1, 2013.*
 - c) Trash and debris shall be periodically removed from municipally-owned storm sewer inlets on an as-needed basis at locations known to accumulate these materials. Other municipally-owned inlets, catch basins, siphons and storm sewers shall be cleaned of debris as determined necessary by CCS personnel. The permittee shall implement and document procedures for this activity by October 1, 2012, and notify the Division that this requirement has been met in the following Annual Report, due April 1, 2013."**

And

Part II.A.7, Proper Operation and Maintenance, of the Permit states, "The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures."

1CR Observations:

The EPA Inspection Team observed numerous instances of what appeared to be long-term deterioration and maintenance stormwater needs within the City. This included sediment, trash, vegetative growth, debris, and deteriorated infrastructure. The following photographs and Table 1 are examples of unmaintained and deteriorated City MS4 stormwater needs observed during this inspection:



View of CS – 130 concrete lined MS4 conveyance channel. Close-up view of vegetative growth (e.g., shrubs) and accumulated debris in the channel.



View of CS – 060 Hancock Expressway Drainage channel. View in channel of trash, debris, accumulated sediment, vegetative growth, and deteriorated concrete channel lining at the culvert pipe inlet trash rack and within the concrete lined channel itself.

Table 1: Stormwater infrastructure sites visited during the Inspection that denotes inadequate operation and maintenance. The EPA Inspection Team observations of each site are found in Appendix A. Photographs of each site are included in Appendix B. Exhibits referenced in the observations are included in Appendix C.

EPA Inspection Date	ID or Functional Location	Feature Description	Photos	Exhibits
08/18/2015	CS – 015	Storm drain outlet	43 to 45	N/A
08/18/2015	CS – 022 545 Popes Valley Drive – Chiramonte Property (CH2MHill Report)	Erosion and scouring below MS4 outfall	58 to 63	9 to 13
08/19/2015	CS – 060 Hancock Expressway Drainage (CH2MHill Report)	Peterson Field drainage channel and culvert	64 to 71	14
08/19/2015	CS – 130 (CH2MHill Report)	Concrete-lined MS4 conveyance channel to Sand Creek	72 to 81	N/A
08/19/2015	CS – 137 902 Teal Court (CH2MHill Report)	MS4 conveyance to Spring Creek	82 to 87	N/A
08/19/2015	CS – 362 Spring Creek near 3667 E. Bijou Street (CH2MHill Report)	Culvert embankment stabilization	88 to 91	N/A

The CH2MHill Report provided an independent assessment of the current backlog of stormwater capital needs within the City. The CH2MHill Report includes a Project Description for each site containing, among other information, a summary of the problem as well as a source document for the issues identified at each site. This report’s assessment relied on available sources of information, which in many cases was based on limited data or decades-old planning studies. According to the 2013 Project Description for the CH2MHill Report sites identified in Table 1 above, some of the design and/or maintenance issues were identified as long as 20 plus years ago.

- The summary of the problem and source document for CS – 222 states “Repair outfall...” and the source was a PPRTA – Stantec Field Assessment (2010 – 2012); indicating the City assessed the need for improvements at least 3 years ago. As further described in Appendix C – MS4 Inspection Exhibit Log, Exhibits 9 through 13, a drainage report from the 1970s annotated the expected high run-off velocities from the Pebblewood subdivision.
- The source document for CS – 060 includes the City’s 2006 – 2010 Capital Improvements Program and Needs Assessment; which indicates that the improper grading of the culvert pipe underneath Hancock Expressway was identified at least 9 years ago (and still has not been repaired).

- The source document for CS – 130 is the SWENT database and the Project Description documented the undermining and unmaintained concrete channel MS4 infrastructure. It should be noted that this issue was identified prior to the SWENT which was disbanded in 2009 (and still has not been addressed).
- The summary of the problem for CS – 137 states that nearby “[r]esidents (1998) complain that rear of complex smells very badly in the drainage ditch” indicating that the ditch may not have been installed to a grade that allowed proper drainage and decomposing organic matter caused a foul odor in the area.
- The source document for CS – 362 is a Spring Creek Drainage Basin study from 1993 indicating that the concrete channel sizing and at least some of the presently existing erosion problems were identified at least 20 years ago.

Additional EPA Inspection Team observations regarding operation and maintenance needs of City-owned MS4 stormwater conveyances and infrastructure include:

- Significant erosion downgradient of CS – 015 storm drain inlet located at the intersection of S. Rockrimmon Boulevard and Rim View Drive, which subsequently drains to Rockrimmon Channel.
- An unmaintained and deteriorated concrete wing wall below the MS4 outfall, and erosion and scouring of the channel bank in the vicinity of the in-stream structure and outfall for CS – 222.
- Significant erosion and scouring and the formation of a large ravine adjacent to and downgradient of the City’s MS4 outfall for CS – 022.
- The photos CH2MHill included in their 2013 report for location CS – 060 showed accumulated trash and debris on the culvert pipe inlet trash rack. Additional accumulated sediment, trash, debris and vegetative growth was observed by the EPA Inspection Team at this location during the inspection. The Streets Department staff stated that they did not have any records of maintenance at this location; therefore, it appeared that the additional accumulated sediment, trash, debris, and vegetative growth observed at this location at the time of the inspection was due to a lack of maintenance at this site.
- An unmaintained/deteriorated (e.g., undercut) concrete lined MS4 conveyance channel with accumulated sediment and dense vegetative growth was observed at CS – 130 location, which subsequently drains to Sand Creek.
- The EPA Inspection Team observed accumulated sediment and debris and the need for street cleaning activities at the CS – 362 location on Bijou Street. It did not appear that the City had performed any street cleaning activities recently at this location.

Post Construction: New Development and Redevelopment (ND) Program Findings

Finding IND: Failure to Ensure Post-construction Permanent BMPs are Designed, Approved, and Installed in Accordance with MS4 Program Requirements.

1ND Permit Requirements:

Part I.B.1.a, Commercial/Residential Management Program, of the Permit states:

"The permittee shall continue to implement the previous Division-approved Commercial/Residential Management Program. The program shall include the following areas.

Part I.B.1.a.2, New Development and Redevelopment section of Permit states:

The permittee must implement and enforce a program to address stormwater runoff from projects for which construction activities disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale that discharge into the MS4. The program must ensure that controls are in place that would prevent or minimize water quality impacts. The permittee must:

- a) Implement and document strategies which include the use of structural and/or non-structural BMPs appropriate for the community, that address the discharge of pollutants from projects, or that follow principles of low-impact development to mimic natural (i.e., pre-development) hydrologic conditions at sites to minimize the discharge of pollutants and prevent or minimize adverse in-channel impacts associated with increased imperviousness. Strategies must include specific consideration to require BMPs that address specific pollutant sources associated with projects for industrial and commercial land uses determined to have an increased potential to cause an impact on stormwater runoff quality. Minimum technical requirements for required structural BMPs shall be documented and be based on those specified in the Drainage Criteria Manual Volume II or equivalent and be in accordance with good engineering, hydrologic and pollution control practices;*
- b) Use an ordinance or other regulatory mechanism to address post- construction runoff from projects and to implement the requirements of this section, I.B.1.a(2), to the extent allowable under State or local law;*
- c) Implement and document procedures to determine if the BMPs required under Item (a), above, are designed and installed in accordance with program requirements;*
- d) Implement and document procedures, including procedures to enforce the requirements to maintain BMPs when necessary, to ensure adequate long-term operation and maintenance of BMPs consistent with the Permittee's program requirements. Any modification to the BMPs design shall be documented prior to the modification occurring.*
- e) Implement and document an enforcement program, which addresses appropriate responses to common noncompliance issues, including those associated with both installation (subparagraph (c), above) and long-term operation and maintenance (subparagraph (d), above) of the required control measures;*

- f) *Implement procedures and mechanisms to track the location of BMPs required under Item (a), above, and document whether the BMPs are constructed and operating as required by subsection (d), above, at the time of inspection and in accordance with the Permittee's program. The permittee shall implement and document procedures to include tracking of BMPs by **October 1, 2012**, and notify the Division that this requirement has been met in the following Annual Report, due **April 1, 2013**.*

1ND Other Requirements:

Chapter 7 Stormwater Quality Management and Discharge Control Code, Article 7 Subdivision Regulations, Part 15, Grading Plans and Erosion and Stormwater Quality Control Plans, Section 7.7.1504: Erosion and Stormwater Quality Control Plans require:

"The erosion and stormwater quality control plan shall require the design, implementation and maintenance of BMPs as set forth in the most recent version of the "Drainage Criteria Manual, Volume II: Stormwater Quality Policies, Procedures And Best Management Practices", and shall include the plan elements as set forth in the manual, including a cost estimate for all erosion and stormwater quality control measures, prior to filing with the City Engineer."

City of Colorado Springs Drainage Criteria Manual, Volume 2, dated May 2014 (DCM Vol 2), and resolution 135-02 which has codified the manual as part of City code requirements.

City O&M Program Procedures, dated January 2013.

1ND Observations:

The EPA Inspection Team observed, at the time of the inspection, that the City did not appear to implement program procedures as described in the City New Development and Redevelopment program description, O&M procedures, City ordinance 7.7.1504, and DCM, Vol 2 to ensure that public and private development and redevelopment plans for permanent BMPs were submitted to EDR with the required design plans prior to approval and issuance of a grading permit.

This issue was also identified in the EPA February 2013 MS4 inspection report. Specifically, in 2013 EPA observed and reported that the *City O&M Program Procedures*, dated January 2013, states, "EDR staff utilizes the Erosion and Stormwater Quality Control Plan Checklist for their reviews and approval". However, the checklist (refer to Appendix C – MS4 Inspection Exhibit Log, Exhibit 22) did not contain elements addressing the DCM Vol 2 Four-Step Process (1-Runoff Reduction Practices; 2-BMPs with WQCV; 3-Stabilize Drainageways; 4-Need for Industrial/Commercial BMPs), and BMP selection (e.g., WQCV, pollutants of concern (POCs) and pollutant removal, runoff reduction, flow attenuation) as outlined in the City's DCM Vol 2.

The City's 2013 Annual Report documented the following number of plans reviewed and approved:

- 213 drainage reports reviewed.
- 117 drainage reports finalized/filed.
- 126 grading and erosion control plans reviewed.
- 86 grading and erosion control plans finalized/filed.
- 46 drainage construction plans (plan and profile) reviewed.

- 37 drainage construction plans (plan and profile) finalized/filed.

At the time of the inspection, the City did not know the number of the plans reviewed and approved as identified in the 2013 Annual Report included permanent BMPs and whether or not these plans included the appropriate design requirements as outlined in DCM Vol 2. It was unclear at the time of the inspection how the City would ensure submittal of appropriate design elements in the future, when the EDR checklist does not contain elements addressing the DCM Vol 2 Four-Step Process or other requirements.

The EPA Inspection Team observed, at the time of the inspection, that the City did not ensure that public and private permanent BMPs were properly designed, approved, and installed in accordance with the City program description, O&M procedures, ordinances, and DCM Vol 2. Specifically, the EPA Inspection Team visited a private development, extended detention basin (EDB) (a permanent BMP). A review of the as-built plans by the EPA Inspection Team confirmed that the EDB design that was submitted by the developer and subsequently approved by the City was not in accordance with DCM Vol 2. For example, the City-approved plans specified an EDB pipe inlet invert elevation that was approximately 1 foot lower than the EDB outlet pipe invert. This created (as would be expected) a larger than appropriate micropool, standing water, and lack of proper EDB function. The private development design engineer was unwilling to rectify the improper design in response to observations made by the City O&M Inspector. The engineer's position, apparently was based on the City approval of the facility's improper design plans. For additional details refer to Appendix A – MS4 Inspection Field Site Details, Appendix B – MS4 Inspection Photograph Log, and Appendix C – MS4 Inspection Exhibit Log for:

- ID – 158 Morning Star at Bear Creek.

The EPA Inspection Team visited another private development EDB (a permanent BMP) and reviewed City inspection records. The City O&M Inspector's inspection records noted that this EDB outlet structure was constructed twice at the wrong elevation, affecting the micropool design and potentially the overall EDB effectiveness. The City O&M inspector documented the improper construction issues in inspection reports; however, effective corrective action appears not to have been taken prior to the City's granting a Certificate of Occupancy (CO) for the site. For additional details refer to Appendix A – MS4 Inspection Field Site Details, Appendix B – MS4 Inspection Photograph Log, and Appendix C – MS4 Inspection Exhibit Log for the following ID:

- ID – 57 Veterans Administration Hospital.

The EPA Inspection Team observed, at the time of the inspection, that the City failed to use its ordinance and available regulatory mechanism to ensure new development and redevelopment permanent BMPs were properly designed and installed. Specifically, the EPA Inspection Team requested, at the time of the inspection, to review examples of the City's use of its ordinances to address noncompliance with the requirement to submit private new development and redevelopment design and plan information (e.g., Inspection and Maintenance plans (IM), Stormwater Maintenance Agreement Worksheet (SMAW), Maintenance Agreements (MA)). During the 2015 Inspection, City representatives stated that, in response to such non-compliance, the City either has not invoked the ordinance (and so there was no documentation), or has not documented the reference and use of the ordinance and regulatory processes.

Finding 2ND: Failure to Properly Operate and Maintain Post-construction Permanent BMPs and Use Ordinance or Regulatory Mechanisms to Ensure Long-term Operation and Maintenance of Post-construction Permanent BMPs

2ND Permit Requirements:

Part I.B.1.a.2, New Development and Redevelopment section of Permit states:

The permittee must implement and enforce a program to address stormwater runoff from projects for which construction activities disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale that discharge into the MS4. The program must ensure that controls are in place that would prevent or minimize water quality impacts. The permittee must:

- a) Implement and document strategies which include the use of structural and/or non-structural BMPs appropriate for the community, that address the discharge of pollutants from projects, or that follow principles of low-impact development to mimic natural (i.e., pre-development) hydrologic conditions at sites to minimize the discharge of pollutants and prevent or minimize adverse in-channel impacts associated with increased imperviousness. Strategies must include specific consideration to require BMPs that address specific pollutant sources associated with projects for industrial and commercial land uses determined to have an increased potential to cause an impact on stormwater runoff quality. Minimum technical requirements for required structural BMPs shall be documented and be based on those specified in the Drainage Criteria Manual Volume II or equivalent and be in accordance with good engineering, hydrologic and pollution control practices;*
- b) Use an ordinance or other regulatory mechanism to address post- construction runoff from projects and to implement the requirements of this section, I.B.1.a(2), to the extent allowable under State or local law;*
- c) Implement and document procedures to determine if the BMPs required under Item (a), above, are designed and installed in accordance with program requirements;*
- d) Implement and document procedures, including procedures to enforce the requirements to maintain BMPs when necessary, to ensure adequate long-term operation and maintenance of BMPs consistent with the Permittee's program requirements. Any modification to the BMPs design shall be documented prior to the modification occurring.*
- e) Implement and document an enforcement program, which addresses appropriate responses to common noncompliance issues, including those associated with both installation (subparagraph (c), above) and long-term operation and maintenance (subparagraph (d), above) of the required control measures;*
- f) Implement procedures and mechanisms to track the location of BMPs required under Item (a), above, and document whether the BMPs are constructed and operating as required by subsection (d), above, at the time of inspection and in accordance with the Permittee's program. The permittee shall implement and document procedures to include tracking of BMPs by **October 1, 2012**, and notify the Division that this requirement has been met in the following Annual Report,*

due April 1, 2013.

And

Part II.A.7, Proper Operation and Maintenance, of the Permit states, "The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures."

2ND Other Requirements:

City of Colorado Springs Drainage Criteria Manual, Volume 2, dated May 2014 (DCM Vol 2), and resolution 135-02 which has codified the manual as part of City code requirements.

City O&M Program Procedures, dated January 2013.

Chapter 7 Stormwater Quality Management and Discharge Control Code, Article 7 Subdivision Regulations, Part 15, Grading Plans and Erosion and Stormwater Quality Control Plans, Section 7.7.1527: Inspections, Maintenance, and Enforcement of Permanent Stormwater Best Management Practices require:

"A. Responsible Party Inspection And Maintenance Required:

Permanent stormwater quality BMPs, ... shall be inspected and maintained by the responsible party, in accord with the provisions of this section and in accord with the measures outlined in the most recent version of the DCM, volume II."

"C. Inspection And Maintenance Plan; Maintenance Agreement:

- 1. An inspection and maintenance plan (IM plan) shall be developed by the owner concurrently with the design of the facility and submitted with the erosion and stormwater quality control plan for approval by the City Engineer. The IM plan shall specify the responsible party and those responsible for inspection and maintenance (i.e., property owner, homeowners' association), owner and responsible party contact information, facility address, list recommended inspection and maintenance activities and frequencies, access, specify approximate annual maintenance costs, and specify responsibilities for financing maintenance. The responsible parties shall perform inspections of stormwater BMPs on a periodic basis in accordance with the approved IM plan, document the inspection(s), and submit an annual inspection report to the City Engineer, as outlined in the IM plan.*
- 2. The City shall provide a template of a maintenance agreement for completion by the responsible party. A signed maintenance agreement shall be submitted by the owner to City Engineering. The approved maintenance agreement shall be recorded with deed records to ensure that the maintenance agreement is bound to the property in perpetuity. The City Engineer will not release the erosion and stormwater quality financial assurance until the maintenance agreement is recorded at the responsible party's expense."*

"D. Inspection By City:

1. ...If maintenance activities are not completed in a timely manner or as specified in the approved plan or if there exists an immediate danger to public health or safety as a result of the BMP, the City Engineer, other City staff under the direction of the City Engineer, or a contractor engaged by the City, may enter upon the subject private or public property and complete the necessary maintenance and/or repair at the responsible party's expense.
2. If deficiencies are noted during City inspections, the City will notify the owner by U.S. mail, first class, postage prepaid with a certificate of mailing, at the property's legal address listed in the records of the El Paso County Assessor's Office. The responsible party shall have twenty (20) business days or other time frame mutually agreed to between the City Engineer and the responsible party to correct the deficiencies. The City Engineer will then conduct a follow up inspection to verify the repairs. If repairs are not undertaken or are not found to be done properly, the City Engineer may complete the necessary maintenance at the responsible party's expense."

"E. Notice Of Violation: In the event that the IM plan annual inspection report is not submitted by the responsible party to the City Engineer, the City Engineer will notify the owner of the missed inspection report by U.S. mail, first class, postage prepaid with a certificate of mailing, at the property's legal address listed in the records of the El Paso County Assessor's Office. The responsible party will have twenty (20) business days to complete the inspection and mail it to the City Engineer. A notice of violation (NOV) may be issued by the City Engineer if an inspection is not submitted after the twentieth business day. The notice will include a date which will be identified as the "date of notice of violation" for purposes of appeal rights."

2ND Observations:

Table 2: Post-construction controls (permanent BMPs) visited during the inspection evidencing failures to properly operate and maintain

EPA Inspection Date	ID or Functional Location	Feature Description	Photos	Exhibits
08/18/2015	ID – 158 Morningstar at Bear Creek	Private permanent BMP, extended detention basin (EDB)	5 to 9	1 to 4
08/18/2015	ID – 57 VA Hospital	Private permanent BMP, EDB	10 to 15	5 to 8
08/19/2015	ID – 44 / Pond No. 512 / Sand Creek Detention Basin No. 1	In-stream regional water quality detention basin	109 to 125	15 to 18
08/19/2015	ID – 070 Woodmen Ridge Apartments	Private permanent BMP, EDB	126 to 132	19 to 21
08/19/2015	Forest Meadows Drive and Vollmer Drive	Detention/wetland mitigation pond, Sand Creek	133 to 144	N/A

The EPA Inspection Team observed, at the time of the inspection, that the City was not implementing program procedures as described in the City New Development and Redevelopment program description, O&M procedures, and DCM, Vol 2 to ensure that public and private development and redevelopment plans for permanent BMPs were submitted to EDR along with the required inspection and maintenance (IM) plans, "Stormwater Maintenance Agreement Worksheet" (SMAWs), and maintenance agreements (MAs). Among other issues, this failure precludes long-term O&M requirements from being defined for each development prior to approval and issuance of a grading permit.

This issue was also identified in the EPA February 2013 MS4 inspection report. Specifically, in 2013 the EPA observed and reported that the *City O&M Program Procedures*, dated January 2013, states, "EDR staff utilizes the Erosion and Stormwater Quality Control Plan Checklist for their reviews and approval." However, the checklist (refer to Appendix C – MS4 Inspection Exhibit Log, Exhibit 22) does not contain elements addressing BMP maintenance (e.g., IM Plans, SMAWs) as required in the City's DCM Vol 2.

Additionally, the *City O&M Program Procedures* clearly requires that projects requiring permanent BMPs after June 2008 must submit an IM plan and MA with the plans for the project in order to obtain approval for the project. The procedure states:

"New development and redevelopment with disturbance over 1 acre and occurring after June 2008 requires permanent BMPs with an Inspection and Maintenance (IM) Plan and a Maintenance Agreement (MA) (exception that public BMPs do not require an MA). Inspection and Maintenance Plans (IM Plans) are prepared as stand-alone documents and developed concurrently with the design of the facility and submitted with the Erosion and Stormwater Quality Control Plan for approval" and that "Engineering Development Review reviews the IM plans and MAs to ensure requirements for a new submittal are met. Submittals for private require a completed Stormwater Maintenance Agreement Worksheet (SMAW), a completed Appendix A project specific information, Standard Operating Procedure (SOP) specific to the permanent BMPs proposed for submitted project, Inspection and Maintenance forms for each permanent BMP type, Annual Inspection and Maintenance Reporting forms and a copy of the approved Erosion and Stormwater Quality Control Plans. The SMAW and IM Plan are forwarded to the O&M inspector after review by EDR."

At the time of the 2015 Inspection, City representatives stated that approximately 50 to 70 private permanent BMPs had been constructed (EPA is not sure about the timeframe), but IM plans or signed formal MAs had not yet been developed and approximately 22 of the BMP owners/entities had not signed MAs. According to City representatives, these private entities had provided financial assurances (which were being held for their respective permanent BMPs) to the City; however, City representatives explained that these assurances were not substantial enough for the City to maintain these private BMPs indefinitely. At the time of the inspection the City was unable to clarify how it planned to ensure submittal of appropriate IM plans, and MAs in the future or ensure long-term operation and maintenance of private permanent BMPs in the future, including those BMPs owned by entities refusing to accept maintenance responsibilities.

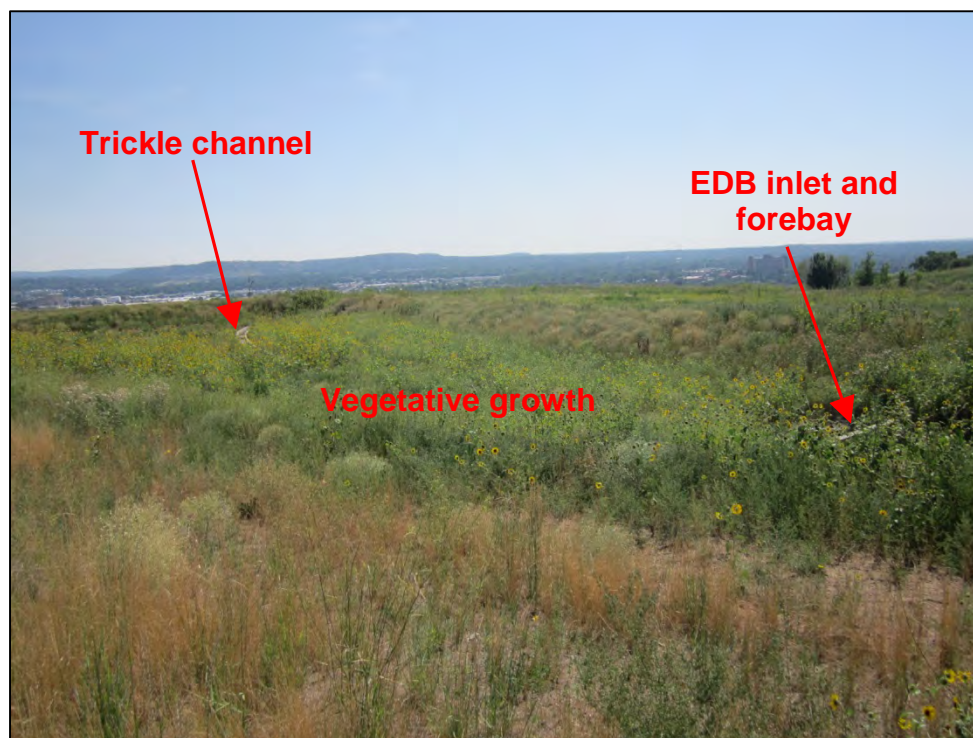
The City's 2013 Annual Report documented the following number of plans reviewed and approved:

- 213 drainage reports reviewed.
- 117 drainage reports finalized/filed.
- 126 grading and erosion control plans reviewed.
- 86 grading and erosion control plans finalized/filed.

- 46 drainage construction plans (plan and profile) reviewed.
- 37 drainage construction plans (plan and profile) finalized/filed.

At the time of the inspection, the City did not know the number of these plans that included IM plans and MAs. However, based on site visits performed, information reviewed, and discussions with City representatives in the field, the EPA Inspection Team observed that the operation and maintenance requirements of permanent BMPs were not being implemented in accordance with City program procedures.

The EPA Inspection Team observed, at the time of the inspection, that the City did not ensure that public and private permanent BMPs were maintained in accordance with the City's program description, O&M procedures, ordinances, and DCM Vol 2. Specifically, the EPA Inspection Team visited three private and two public permanent BMPs. The three private sites did not have IM plans or MAs, and they were observed to be unmaintained. The two public sites also did not have IM plans and also were observed to be unmaintained. For example, the permanent BMPs were observed with accumulated sediment, unstabilized areas of disturbance, dense vegetative growth, and trash and debris accumulation.



View of ID-57 VA Hospital Extended Detention Basin. Note the extensive dense vegetative growth throughout the basin.

For additional details refer to Appendix A – MS4 Inspection Field Site Details, Appendix B – MS4 Inspection Photograph Log, and Appendix C – MS4 Inspection Exhibit Log for:

- ID – 158 Morning Star at Bear Creek.
- ID – 57 Veterans Administration Hospital.

- ID – 44 Sand Creek Detention Pond No. 1.
- ID – 070 Woodmen Ridge Apartments.
- Forest Meadows Drive and Vollmer Drive – Detention/Wetland Mitigation Pond.

The City ordinance and *O&M Program Procedures* require the submittal of an IM plan and MA concurrently with the submittal of "Grading, Erosion and Stormwater Quality Plans"; however, no such submittals had been received for the facilities visited. The EPA Inspection Team observed, at the time of the inspection, that the City failed to use its ordinance and available regulatory mechanisms to address noncompliance with these requirements to ensure that new development and redevelopment permanent BMPs were maintained to ensure the long term effectiveness. Specifically, the EPA Inspection Team requested, at the time of the inspection, to review examples of the City's use of its ordinances for failures to submit the required private new development and redevelopment design and plan documents (e.g., IM, SMAW, MA), lack of annual self-inspection (due at the end of April each year); as well as failures by private parties to maintain permanent BMPs. City representatives stated that, in response to these instances of non-compliance, the City either has not invoked the ordinance (and so there was no documentation), or has not documented the reference and use of the ordinance and regulatory processes.

Additionally, the City ordinance and *O&M Program Procedure* define City oversight inspection requirements to include an inspection during construction, after construction is complete, and once it had been in operation for a certain time, typically 3 years. In the event deficiencies in BMP operation and maintenance, such as those observed by the EPA Inspection Team (refer to Appendix A – MS4 Inspection Field Site Details, Appendix B – MS4 Inspection Photograph Log, and Appendix C – MS4 Inspection Exhibit Log IDs identified above), are identified during City inspections, the City is required to provide the responsible party with verbal notification and the City O&M Inspector is required to conduct a follow up inspection within 7 business days to determine if corrective actions have been completed. The EPA Inspection Team review of the City's permanent BMP inspection documentation and observed that the City was not conducting follow up inspections in accordance with the program-required frequency or ensuring corrective actions were completed in a timely manner. If corrective actions are not completed, the City program procedures and ordinances state that a correction of deficiencies letter or notice of violation (NOV) will be issued to the responsible party. The City, however, had not done this for any of the sites the EPA Inspection Team visited. Further, it did not appear that the City had conducted necessary maintenance activities at the responsible party's expense.

Minimization of Adverse Impacts (MAI) Review Findings

Finding 1MAI: Failure to Minimize or Prevent the Discharge of Pollutants Adversely Affecting Human Health or Environment

Finding 1MAI Permit Requirements:

Part I.B, Terms and Conditions, of the Permit states, “The permittee must develop, implement, and enforce a CDPS Stormwater Management Program, in accordance with Part I.B of this permit, designed to reduce the discharge of pollutants from the MS4 to the “maximum extent practicable” (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Colorado Water Quality Control Act (25-8-101 et seq., C.R.S.) and the Colorado Discharge Permit Regulations (61).

And

Part II.A.8, Minimization of Adverse Impacts, of the Permit states, “The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or environment.”

And

Part II.A.7, Proper Operation and Maintenance, of the Permit states, “The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures.”

1MAI Observations:

The EPA Inspection Team observed, at the time of the inspection, several locations where the City failed to minimize or prevent discharges that had a reasonable likelihood of adversely affecting human health and/or the environment.

The following three specific examples are included in this report:

- CS – 022 545 Popes Valley Drive – Chiramonte Property.
- CS – 017 Location No. 2.
- CS – 222 Rockrimmon Channel at Pro Rodeo Drive

The Chiramonte property private residence is located at 545 Popes Valley Drive. It has experienced significant flooding and property damage, apparently for many years, as a result of stormwater infrastructure operation in the up-gradient and adjoining Pebblewood at Pinecliff subdivision, which was improperly designed, operated, and maintained. As further described in Appendix C – MS4 Inspection Exhibit Log, Exhibits 9 through 13, a drainage report from the 1970s annotated the expected high run-off velocities from the Pebblewood subdivision. The City appears to have been first alerted to the problem in 1995. In 1995, the City noted that the drainage system is a public system with City maintenance responsibilities. At some point between 1995 and 2014, runoff from the up-gradient subdivision created severe erosion of the hillside (ravine formation), which is now threatening private property on the two

adjoining properties on the bluff as well as the down-gradient Chiramonte property. Documented damage to private property was publicly reported by Colorado Springs-based KRDO news in 2014.



View of CS – 022 significant erosion and scouring downgradient of the City’s MS4 outfall from the Pebblewood at Pinecliff subdivision, including the formation of a large ravine and numerous erosion gullies.

At the time of the inspection, the City stated that it had contracted with a contractor to design a remedy, but that a preliminary design plat plan was under development at the time of the Inspection. The City did not provide a specific date for the start of construction. Particularly given the length of time the City has been aware of this problem, the City has not taken all reasonable steps to minimize or prevent this discharge from adversely affecting the environment and downgradient private properties. It should also be noted that the City’s proposed remedy did not appear to comply with the four-step process as outlined in the City’s DCM Vol 2 standards.



View of evidence of previous stormwater runoff and erosion adjacent to the Chiramonte private property. The City had installed straw bales and sandbag BMPs along the property boundary.

CS – 017 Location No. 2 box culvert is located along North Douglas Creek, immediately east of Interstate 25. At the time of the inspection, the EPA Inspection Team and City representatives accessed the location on foot. The box culvert, shown in Appendix B – MS4 Inspection Photograph Log, Photographs 35, 36, and 37, clearly exhibits the impact of long-standing neglect. Concrete wing walls from the box culvert, drainage infrastructure, and sediment were observed in North Douglas Creek immediately downstream of the degraded box culvert. A substantial area surrounding the box culvert had been severely eroded, resulting in significant sediment discharges to the creek. The discharge of these pollutants was adversely affecting the environment and also posed a public health concern as access to the site was not restricted or marked as a hazard. The following photograph shows some of the adverse effect on the environment and the potential for harm to human health.



View, facing upstream and toward I-25, of erosion and scouring, concrete debris, old CMP culvert pipe, and sediment deposition in North Douglas Creek.

A neglected and severely degraded in-stream control was observed on Rockrimmon Channel at the southern intersection of Rockrimmon Boulevard and Pro Rodeo Drive. The in-stream control showed years, possibly decades, of neglect, resulting in exposed rebar, unsupported concrete, collapsed concrete wing walls, and the discharge of pollutants into Rockrimmon Channel (refer to [Appendix B – MS4 Inspection Photograph Log, Photographs 46 through 52](#)). Concrete wing walls from the box culvert, drainage infrastructure, and sediment were observed in Rockrimmon Channel immediately downstream of the control. The discharge of these pollutants was adversely affecting the environment and also posed a public health concern as access to the site was not restricted or marked as a hazard.



View, facing upstream, of unmaintained and deteriorated concrete drop structure in Rockrimmon Channel. Note the significant deterioration and undercutting of the concrete drop structure.

EPA Inspection Date	ID or Functional Location	Feature Description	Photos	Exhibits
08/18/2015	CS-141 (CH2MHill Report)	Shooks Run channel, grade control and stream stabilization	1 to 4	N/A
08/18/2015	CS – 016 Location No. 2	S. Douglas Creek channel, grade control and stream stabilization	18 to 25	N/A
08/18/2015	CS – 017 Location No. 1 (CH2MHill Report)	N. Douglas Creek channel, grade control and stream stabilization	26 to 34	N/A
08/18/2015	CS – 017 Location No. 2 (CH2MHill Report)	N. Douglas Creek channel, grade control and stream stabilization	35 to 42	N/A
08/18/2015	CS – 015	Storm drain outlet	43 to 45	N/A
08/18/2015	CS – 222 Rockrimmon Channel at Pro Rodeo Drive (CH2MHill Report)	Rockrimmon channel, grade control and stabilization	46 to 57	N/A

EPA Inspection Date	ID or Functional Location	Feature Description	Photos	Exhibits
08/18/2015	CS – 022 545 Popes Valley Drive – Chiramonte Property (CH2MHill Report)	Erosion and scouring below MS4 outfall	58 to 63	9 to 13
08/19/2015	CS – 130 (CH2MHill Report)	Concrete-lined MS4 conveyance channel to Sand Creek	72 to 81	N/A
08/19/2015	CS – 137 902 Teal Court (CH2MHill Report)	MS4 conveyance to Spring Creek	82 to 87	N/A
08/19/2015	CS – 259 Sand Creek along Space Drive (CH2MHill Report)	Channel, grade control and stream stabilization	92 to 108	N/A

Staff Interviewed During the Inspection	
Name	Title
Tim Mitros	EDR and Stormwater Manager
Jeff Besse	Stormwater Quality Coordinator/ EDR / Stormwater
Joel Mackey	O&M Engineering Inspector / EDR/Stormwater
Steve Bodette	Engineering Inspector / EDR / Stormwater
Steve Kuehster	Senior Civil Engineer / EDR
Steve Burke	Civil Engineer / City Engineering
Cole Platt	Program Supervisor / Stormwater
Kevin Charron	Inspector / Stormwater

Documents Reviewed During the Inspection	
(Note: May not include all supplemental documentation and information received and/or reviewed related to the Colorado Spring MS4 inspection)	
Document Title / Author	Date:
MS4 Phase I Permit and Fact Sheet for the City of Colorado Springs/ CDPHE	Effective November 1, 2011
City Storm Sewer Outfalls and CDPS Permittees map, City of Colorado Springs	None
<i>City of Colorado Springs Drainage Criteria Manual, Volume 2</i> , Stormwater Quality Policies, Procedures and Best Management Practices (BMPs), City of Colorado Springs Engineering Division	May 2014
The <i>City of Colorado Springs Drainage Criteria Manual, Volume 2</i> , Addendum No. 1 – Operations and Maintenance of Stormwater Best Management Practices, City of Colorado Springs	None
CDPS MS4 Colorado Springs COR-000004 program descriptions, City of Colorado Springs	2013 Annual report
<i>O & M Program Procedures</i> , City of Colorado Springs	January 15, 2013
Article 8 <i>Stormwater Quality Management and Discharge Control Code</i> , City of Colorado Springs	February 2013
Annual reports	Varies
The <i>City of Colorado Springs Drainage Criteria Manual, Volume 2</i> , Addendum No. 2 – Alternative or Innovative Best Management Practices / City of Colorado Springs	None

Federal NPDES Storm Water Inspection – MS4

Appendix A: MS4 Inspection Field Site Details

City of Colorado Springs Phase I MS4 Inspection Report
Colorado Discharge Permit System, Permit #: COS000004

Inspection Dates: August 18, 2015–August 19, 2015

Federal NPDES Storm Water Inspection – MS4

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Federal NPDES Storm Water Inspection – MS4

EPA Inspection Date	ID or Functional Location	Feature Description	EPA Findings	Photos	Exhibits
08/18/2015	CS-141	Shooks Run channel/ grade control and stream stabilization	<p>The EPA Inspection Team observed, at the time of the inspection, that a Shooks Run stream stabilization project, located in-stream near the confluence with Fountain Creek, did not appear to have been properly constructed and maintained. According to City representatives, Colorado Springs Utilities (CSU) had completed the Shooks Run stabilization project at this location in 2010. This stabilization project, based on field conditions, appeared to consist of non-grouted rip-rap boulder channel and embankment slope lining along with a concrete retaining wall. These stabilization practices had not been maintained and did not appear to be adequately functioning at the time of the inspection. The EPA Inspection Team observed large boulders and broken pieces of the concrete retaining wall scattered about the Shooks Run channel. New project bid plans, specifications and details provided by the City outlined grouted rip-rap boulders to be installed lining the Shooks Run embankment slopes, two grouted rip-rap boulder drop structures, and rip-rap lining of the channel bottom; however, the previous CSU project work did not appear to employ the same specifications and details resulting in boulders and debris scattered throughout the Shooks Run channel. Additionally, the City’s new project plans did not discuss long-term operation and maintenance requirements. At the time of the inspection, City representatives were not aware of any past inspection and maintenance activities conducted by the City or CSU at this location. It should be noted that the project may have been constructed and/or prioritized due to an existing 66-inch sanitary sewer line crossing Shooks Run at this location. Refer to Appendix B, Photograph Log for supporting photo documentation.</p>	1 to 4	N/A

Federal NPDES Storm Water Inspection – MS4

EPA Inspection Date	ID or Functional Location	Feature Description	EPA Findings	Photos	Exhibits
08/18/2015	ID – 158 Morningstar at Bear Creek	Private permanent BMP (EDB)	<p>The EPA Inspection Team observed, at the time of the inspection, that a private development extended detention basin (EDB) permanent BMP had not been submitted, approved, or constructed (as-built) in accordance with DCM Vol 1 and 2; USDCM Vol 3 and did not have an inspection and maintenance (IM) plan or long-term operation and maintenance agreement (MA) to ensure the continued function of the EDB. Based on the EPA Inspection Team review of submitted design plans (approved by the City on September 10, 2013) and as-built plans (dated October 3, 2014; Sheet 1 of 2) provided by Joel Mackey (City Engineering Inspector), along with field observations by the EPA Inspection Team, it was observed that the EDB approved design plans identified the EDB northeast pipe inlet invert elevation and associated forebay to be constructed approximately one foot lower than the EDB’s outlet pipe invert elevation creating a larger micropool. The EPA Inspection Team observed the EDB’s northeast pipe inlet and forebay submerged/inundated with standing water and no flow from the EDB’s outlet pipe. As a result the EDB’s forebay design (i.e., energy dissipation and sediment removal) was impaired along with the drain time for water quality capture volume (WQCV) and did not appear to be in accordance with USDCM Vol 3, Chapter 4 Treatment BMP T-5 and T-12 Fact Sheets. City representatives did not provide information supporting justification for a design change to achieve equivalent or better water quality benefit.</p> <p>Additionally, the EPA Inspection Team observed, at the time of the inspection, that the City had not yet obtained an IM plan or MA to ensure the continued function of the EDB. This was not in accordance with the City’s New Development and Redevelopment post-construction MS4 program descriptions/procedures, DCM Vol 2, and City ordinance 7.7.1527 requirements. The above mentioned documents state that facility owners disturbing greater than or equal to one acre of land requiring permanent BMPs after June 2008 must submit an IM plan and MA along with design</p>	5 to 9	1 to 4

Federal NPDES Storm Water Inspection – MS4

EPA Inspection Date	ID or Functional Location	Feature Description	EPA Findings	Photos	Exhibits
			<p>plans; however, this had not been implemented at the time of the inspection. City representatives stated that construction had completed approximately April 2015 and the Certificate of Occupancy (CO) had been issued for this facility. The EPA Inspection Team observed, at the time of the inspection, accumulated sediment in the western inlet forebay and it was unclear who the responsible party for maintenance at the facility would be due to the lack of an IM plan and MA. The City Engineering Inspector, Mr. Mackey, provided the EPA Inspection Team with City O&M inspection reports for the EDB from November 2013 to February 2015. These inspection reports identified EDB design issues without any formal resolution (i.e., corrective measures, enforcement) and the reports' checklist items did not appear to depict the forebay, outlet, WQCV, or elevations issues observed at the time of the inspection.</p> <p>Further, it did not appear that the City was implementing the Four-Step Process 1-Runoff Reduction Practices; 2-BMPs with WQCV; 3-Stabilize Drainageways; 4-Need for Industrial/Commercial BMPs) as outlined in the City's DCM Vol 2.</p> <p>Refer to Appendix B, Photograph Log, for supporting photo documentation and Appendix C, Exhibit Log, for supporting documentation.</p>		
08/18/2015	ID – 57 VA Hospital	Private permanent BMP (EDB)	<p>The EPA Inspection Team observed, at the time of the inspection, that a private development EDB which did not have an IM plan or long-term MA to ensure the continued function of the EDB, may not have been constructed in accordance with approved plans, and was not maintained. As stated by Joel Mackey (City Engineering Inspector), the Veterans Affairs (VA) Hospital project was completed in early 2015, but the City had not yet obtained an IM plan or MA for the onsite EDB. This was not in accordance with the City's New Development and Redevelopment post-construction MS4 program descriptions, DCM Vol 2, and City ordinance 7.7.1527</p>	10 to 15	5 to 8

Federal NPDES Storm Water Inspection – MS4

EPA Inspection Date	ID or Functional Location	Feature Description	EPA Findings	Photos	Exhibits
			<p>requirements. Additionally, the EDB trickle channel and outlet structure may not have been constructed in accordance with the approved plans. The EPA Inspection Team review of City provided EDB inspection reports from January 2013 to January 2015 documented that the outlet structure elevation was too high affecting the 2.5 foot minimum micropool depth. From these reports corrections to the outlet structure appeared to have been made by the contractor twice, but it did not appear to be satisfactory to the City Engineering Inspector. No additional information was provided by the City to ensure proper as-built and function of the EDB. Further, the EPA Inspection Team observed, at the time of the inspection, that the EDB was unmaintained. Specifically, accumulated sediment and debris was observed at both inlets, within the inlet forebay, at the outlet structure and screened orifice plate, and extensive dense vegetative growth was observed throughout the basin. The City's most recent inspection report (dated January 27, 2015) documented these maintenance issues; however, no corrective actions had been implemented in the field at the time of the inspection.</p> <p>It should be noted that no further information regarding correction actions or measures were provided by the City for the VA Hospital's EDB installation and maintenance issues.</p> <p>Refer to Appendix B, Photograph Log, for supporting photo documentation and Appendix C, Exhibit Log, for supporting documentation.</p>		
08/18/2015	CS – 016 Location No. 1	S. Douglas Creek channel/ grade control and stream stabilization	The EPA Inspection Team observed, at the time of the inspection, a completed concrete channel lining project in Douglas Creek located along the Sinton Trail near Intel Way. City representatives stated that this in-stream channel lining project had been completed approximately one to one and one-half years ago. It was not known at the time of the inspection if the City or the City's contractor needed to obtain or had obtained required	16 to 17	N/A

Federal NPDES Storm Water Inspection – MS4

EPA Inspection Date	ID or Functional Location	Feature Description	EPA Findings	Photos	Exhibits
			permits for working in this State Water (Douglas Creek). Refer to Appendix B, Photograph Log, for supporting photo documentation.		
08/18/2015	CS – 016 Location No. 2	S. Douglas Creek channel/ grade control and stream stabilization	The EPA Inspection Team observed, at the time of the inspection, a deteriorated concrete bank stabilization measure implemented in-stream of S. Douglas Creek, erosion, scouring, and deposition of sediment in the creek bottom, as well as trash and debris within Douglas Creek. Specifically, the EPA Inspection Team observed what appeared to be a newly constructed in-stream low-water crossing (Texas Crossing) with evidence of recent creek bank and culvert pipe overtopping, channel erosion and scouring, and accumulated debris and deposition of sediment near the crossing. City representatives provided the EPA Inspection Team with handwritten plans/drawings (dated April 23, 2014) outlining the specifications and details for the Texas Crossing; however, it did not appear that these had been prepared in accordance with DCM Vol 1 and 2; and did not have inspection and maintenance requirements to ensure the continued function of the crossing for the long-term. Additionally, a concrete bank stabilization measure was observed unmaintained with dislodged pieces of concrete debris scattered about the Douglas Creek channel. As stated by City representatives, the concrete bank stabilization measure had been installed in-stream by the City’s Streets Division approximately six years ago. The EPA Inspection Team observed that the concrete bank stabilization measure was deteriorated and had not been maintained in effective operating condition. Further, the EPA Inspection Team observed trash and debris within Douglas Creek at the time of the inspection. Refer to Appendix B, Photograph Log, for supporting photo documentation.	18 to 25	N/A
08/18/2015	CS – 017 Location No. 1	N. Douglas Creek channel/ grade control and stream stabilization	The EPA Inspection Team observed, at the time of the inspection, a lack of maintenance for in-stream stabilization measures, significant deposition of sediment in the Douglas Creek channel and Mark Dabling Boulevard box culvert, and trash and debris within the creek itself. The EPA Inspection Team observed a recently completed Douglas Creek in-stream bank stabilization and drop structure project near Mark Dabling Boulevard. City	26 to 34	N/A

Federal NPDES Storm Water Inspection – MS4

EPA Inspection Date	ID or Functional Location	Feature Description	EPA Findings	Photos	Exhibits
			<p>representatives stated that this project had been completed within the last one to two years. Evidence of significant deposition of sediment, geotextile fabric (presumably from the project), and non-grouted boulders were observed scattered about Douglas Creek within the vicinity of the project. Additionally, an in-stream grouted drop structure was observed unmaintained (e.g., evidence of undercutting) just upstream of the confluence with Monument Creek. Further, the EPA Inspection Team observed a wastewater manhole riser and pipe encasement adjacent to and within N. Douglas Creek downstream of Mark Dabling Boulevard. According to a follow-up e-mail provided to the EPA Inspection Team from Mr. Brian McCormick (Colorado Springs Utilities (CSU)), this manhole and wastewater pipe encasement had been abandoned and CSU was planning to remove these along with a project on Monument Creek in 2016.</p> <p>Refer to Appendix B, Photograph Log, for supporting photo documentation.</p>		
08/18/2015	CS – 017 Location No. 2	N. Douglas Creek channel/ grade control and stream stabilization	<p>The EPA Inspection Team observed, at the time of the inspection, significant erosion and scouring of the Douglas Creek channel, concrete debris, and deposition of sediment within the creek itself. This stretch of N. Douglas Creek downstream of the I-25 box culvert outlet to just below the Norfolk Southern railroad bridge was observed with significant erosion and scouring (e.g., 40 to 50 foot embankments), concrete debris and old CMP culvert pipes, unstabilized/unmaintained bank stabilization measures, and significant deposition of sediment. It did not appear to the EPA Inspection Team, at the time of the inspection that this stretch of Douglas Creek had been inspected or that in-stream control measures had been maintained. Additionally, there appeared to be a general lack of source control BMPs to address flow attenuation and channel degradation. Refer to Appendix B, Photograph Log, for supporting photo documentation.</p>	35 to 42	N/A
08/18/2015	CS – 015	Storm drain outlet	<p>The EPA Inspection Team observed, at the time of the inspection, significant erosion downgradient of a storm drain outlet at the intersection of S. Rockrimmon Boulevard and Rim View Drive. Specifically, the EPA</p>	43 to 45	N/A

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EPA Inspection Date	ID or Functional Location	Feature Description	EPA Findings	Photos	Exhibits
			<p>Inspection Team observed a lack of source control BMPs for flow attenuation associated with stormwater runoff from the upgradient private residential development areas and City streets. The EPA Inspection Team observed minor dry weather flow from the outlet of the storm drain structure and erosion and unstabilized embankments in the downgradient channel below the outlet which subsequently drains to Rockrimmon Channel. City representatives (Jeff Besse and Joel Mackey) stated that Rockrimmon Channel ‘always’ has flow. It should be noted that the storm drain outlet lacked flow energy dissipation practices (e.g., level spreader, rip-rap) to minimize erosion and potential sediment transport. Based on field observations and discussions it did not appear that this storm drain inlet, outlet, or tributary channel had ever been inspected or maintained by the City. Refer to Appendix B, Photograph Log, for supporting photo documentation.</p>		
08/18/2015	CS – 222 Rockrimmon Channel at Pro Rodeo Drive	Rockrimmon Channel grade control and stabilization	<p>The EPA Inspection Team observed, at the time of the inspection, what appeared to be long-term deterioration of Rockrimmon Channel, an unmaintained in-stream concrete drop structure, and an unmaintained/deteriorated MS4 outfall located downstream of the intersection of Rockrimmon Boulevard and Pro Rodeo Drive. Specifically, the EPA Inspection Team observed concrete and metal rebar debris from an unmaintained and deteriorated concrete drop structure in the channel, an unmaintained and deteriorated concrete wall below the MS4 outfall, and erosion and scouring of the channel bank in the vicinity of the in-stream structure and outfall. Additionally, deposition of sediment was observed in the channel along with an unmaintained Rockrimmon Channel tunnel rock lining. It did not appear to the EPA Inspection Team, at the time of the inspection that inspection and maintenance activities had been conducted for quite some time at this location or that appropriate controls had been implemented. Refer to Appendix B, Photograph Log, for supporting photo documentation.</p>	46 to 57	N/A

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EPA Inspection Date	ID or Functional Location	Feature Description	EPA Findings	Photos	Exhibits
08/18/2015	CS – 022 545 Popes Valley Drive – Chiramonte Property	Erosion and scouring below MS4 outfall	<p>The EPA Inspection Team observed, at the time of the inspection, a subject property owned by Mike and Laurel Chiramonte who have had their residence and private property impacted (flooding and property damage) by stormwater runoff from the City’s Pebblewood at Pinecliff subdivision MS4 outfall located upgradient of this private residence. Specifically, the EPA Inspection Team observed significant erosion and scouring downgradient of the City’s MS4 outfall including the formation of a large ravine and numerous erosion gullies from what appeared to be the result of long-term stormwater runoff from this upgradient subdivision. It did not appear that the City had implemented any source control BMPs or MS4 outfall BMPs (i.e., outfall lined ditch) to minimize or reduce the impacts to downgradient areas below the City’s MS4 outfall. The EPA Inspection Team review of the Pebblewood and Pinecliff subdivision drainage report and correspondence clearly documented the potential for high runoff velocities from this development, need for outfall lined channels, and the City as having the ultimate maintenance responsibility. It did not appear at the time of the inspection that the City had clearly defined or conducted inspection and maintenance of this MS4 infrastructure. City representatives provided the EPA Inspection Team with proposed remediation plans, dated March 10, 2015. It should be noted that these proposed plans appeared to include the addition of a stormwater pipe to convey stormwater flows below the City’s MS4 outfall directly to the Popes Valley drainage and subsequently to Monument Creek. It was unclear to the EPA Inspection Team from the City provided plans if any source control or water quality control BMPs would be implemented as part of the project or what entity would be responsible for the long-term inspection and maintenance of the proposed infrastructure improvements. It did not appear that the City was implementing the Four-Step Process 1-Runoff Reduction Practices; 2-BMPs with WQCV; 3-Stabilize Drainageways; 4-Need for Industrial/Commercial BMPs) as outlined in the City’s DCM Vol 2 as part of this remediation project.</p>	58 to 63	9 to 13

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EPA Inspection Date	ID or Functional Location	Feature Description	EPA Findings	Photos	Exhibits
			Refer to Appendix B, Photograph Log, for supporting photo documentation and Appendix C, Exhibit Log, for supporting documentation.		
08/19/2015	CS – 060 Hancock Expressway Drainage	Peterson Field drainage channel and culvert	<p>The EPA Inspection Team observed, at the time of the inspection, the Peterson Field concrete lined conveyance channel and culvert pipe beneath the Hancock Expressway near Clarendon Drive that did not appear to be properly installed and maintained. Specifically, the culvert pipe beneath Hancock Expressway did not appear to be installed at the proper grade to convey flow as standing water was observed within the culvert pipe during dry weather. Trash, debris, unmaintained/deteriorated concrete lining, and accumulated sediment was observed within the concrete lined conveyance channel and on the trash rack at the culvert pipe inlet beneath Hancock Expressway. It should be noted that the 2013 CH2MHill Report previously identified the culvert pipe installation issue and accumulated trash and debris at the culvert pipe inlet trash rack; however, these items had not been addressed in the field at the time of the inspection. Additionally, the EPA Inspection Team observed an old storm drain inlet protection BMP within the Peterson Field concrete lined conveyance channel located upstream at the Newton Drive box culvert crossing. City representatives stated that the City Streets Division was responsible for maintenance on this channel; however, they were unaware of the last maintenance activities conducted at this location. The Peterson Field drainage channel drains to Sand Creek.</p> <p>Refer to Appendix B, Photograph Log, for supporting photo documentation and Appendix C, Exhibit Log, for supporting documentation.</p>	64 to 71	14
08/19/2015	CS – 130	Concrete lined MS4 conveyance channel to Sand Creek	<p>The EPA Inspection Team observed, at the time of the inspection, an unmaintained/deteriorated concrete lined MS4 conveyance channel with accumulated sediment and dense vegetative growth located along Hancock Expressway between King Soopers, Astrozon Boulevard and Sand Creek. City representatives stated that this conveyance channel receives stormwater runoff from the Hancock Expressway roadway and associated upgradient stormshed and subsequently discharges to Sand Creek. Additionally, the</p>	72 to 81	N/A

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EPA Inspection Date	ID or Functional Location	Feature Description	EPA Findings	Photos	Exhibits
			EPA Inspection Team observed a deteriorated (e.g., undercut) Sand Creek bank stabilization control near the MS4 conveyance channel outfall to Sand Creek and deposition of sediment and rip-rap boulders scattered about and within Sand Creek downgradient of a constructed in-stream drop structure. Refer to Appendix B, Photograph Log, for supporting photo documentation.		
08/19/2015	CS – 137 902 Teal Court	MS4 conveyance to Spring Creek	The EPA Inspection Team observed, at the time of the inspection, an MS4 culvert CMP pipe conveyance at the Teal Court cul-de-sac that had not been maintained and significant deposition of sediment in Spring Creek. Specifically, accumulated sediment and debris was observed at the culvert pipe inlet, outlet, and within the pipe itself. Based on information provided to the EPA Inspection Team this culvert pipe had historically been a source of flooding complaint issues by local residents. The EPA Inspection Team observed an overland conveyance from the Teal Court culvert pipe outlet to a second culvert CMP pipe outlet into what appeared to be a wetland area behind the residences with no clear connection to the adjacent Spring Creek. Additionally, the EPA Inspection Team observed significant deposition of sediment in Spring Creek located behind these residences. City representatives did not appear to be aware of installation or maintenance issues with this MS4 conveyance and City documented maintenance activities for these MS4 conveyances were not conducted or available at the time of the inspection. Refer to Appendix B, Photograph Log, for supporting photo documentation.	82 to 87	N/A
08/19/2015	CS – 362 Spring Creek near 3667 E. Bijou Street	Culvert embankment stabilization	The EPA Inspection Team observed, at the time of the inspection, a Spring Creek box culvert embankment stabilization control that had not been maintained and accumulated sediment on Bijou Street directly adjacent to storm drain inlets which drain directly to Spring Creek. Specifically, the EPA Inspection Team observed an unmaintained concrete bank stabilization control (e.g., undercut) and accumulated sediment adjacent to and within the storm drain inlet which subsequently drains directly to Spring Creek. It should be noted that this location was directly adjacent to the City Fire Department logistics and transportation office. It did not appear to the EPA	88 to 91	N/A

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EPA Inspection Date	ID or Functional Location	Feature Description	EPA Findings	Photos	Exhibits
			Inspection Team at the time of the inspection that the City had performed any street cleaning activities at this location recently. Refer to Appendix B, Photograph Log, for supporting photo documentation.		

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Appendix B: MS4 Inspection Photograph Log

City of Colorado Springs Phase I MS4 Inspection Report
Colorado Discharge Permit System, Permit #: COS000004

Inspection Dates: August 18, 2015–August 19, 2015

Federal NPDES Storm Water Inspection – MS4

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Federal NPDES Storm Water Inspection – MS4

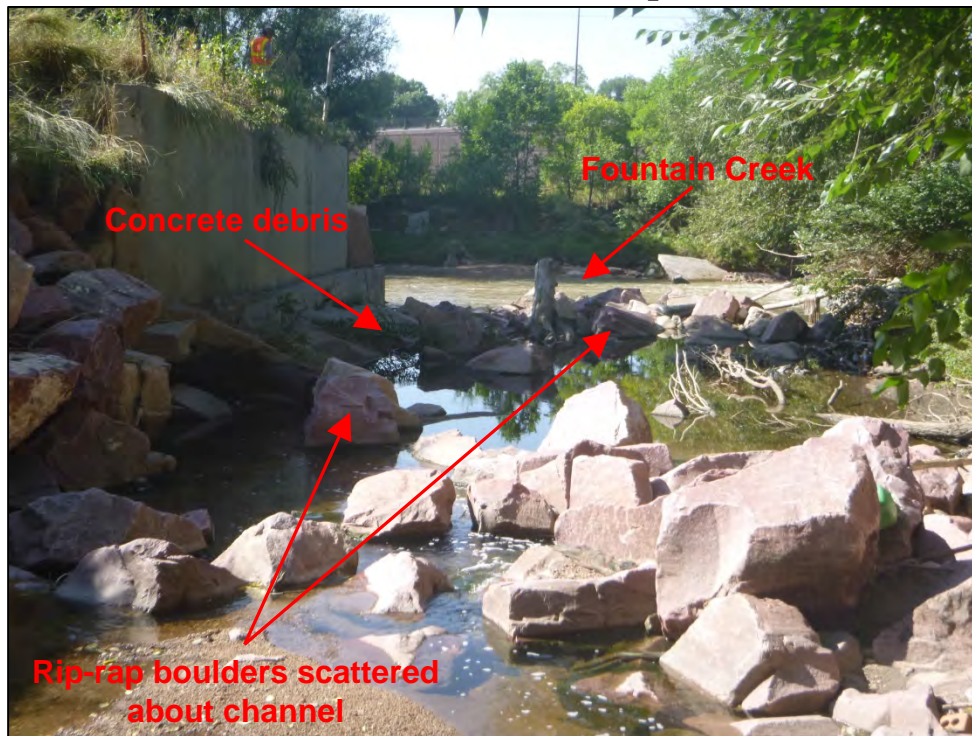


Photograph 1. View of unmaintained rip-rap boulders and channel lining on Shooks Run near the confluence with Fountain Creek.



Photograph 2. View of rip-rap boulders and debris scattered throughout the Shooks Run channel near the confluence with Fountain Creek.

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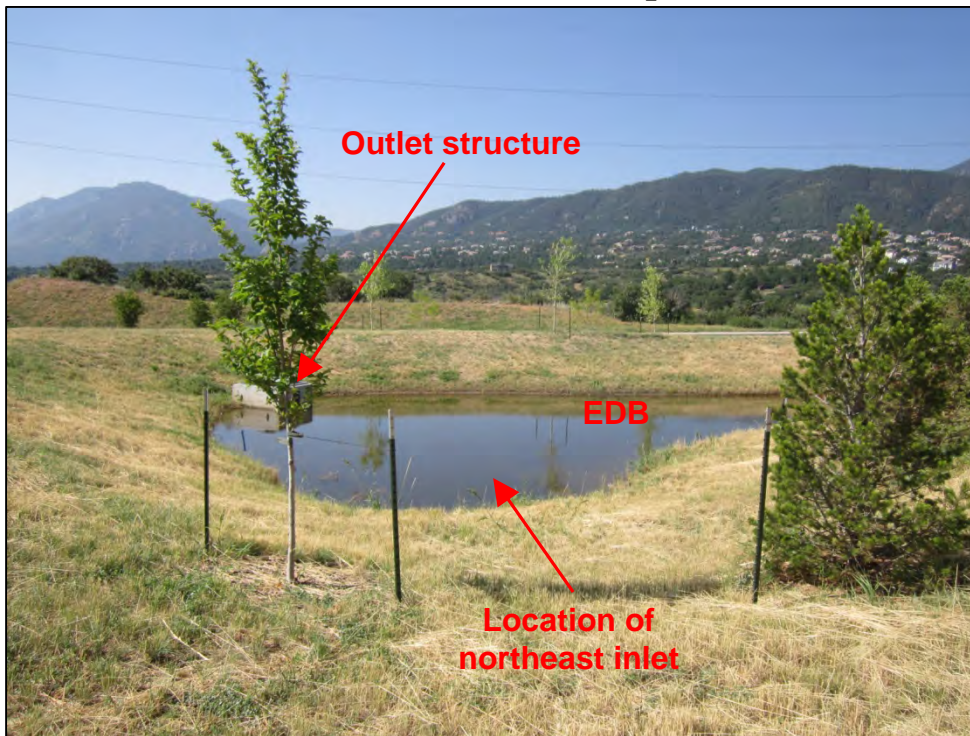


Photograph 3. View of rip-rap boulders scattered throughout Shooks Run channel near confluence with Fountain Creek. Also note the concrete retaining wall debris located in Shooks Run.

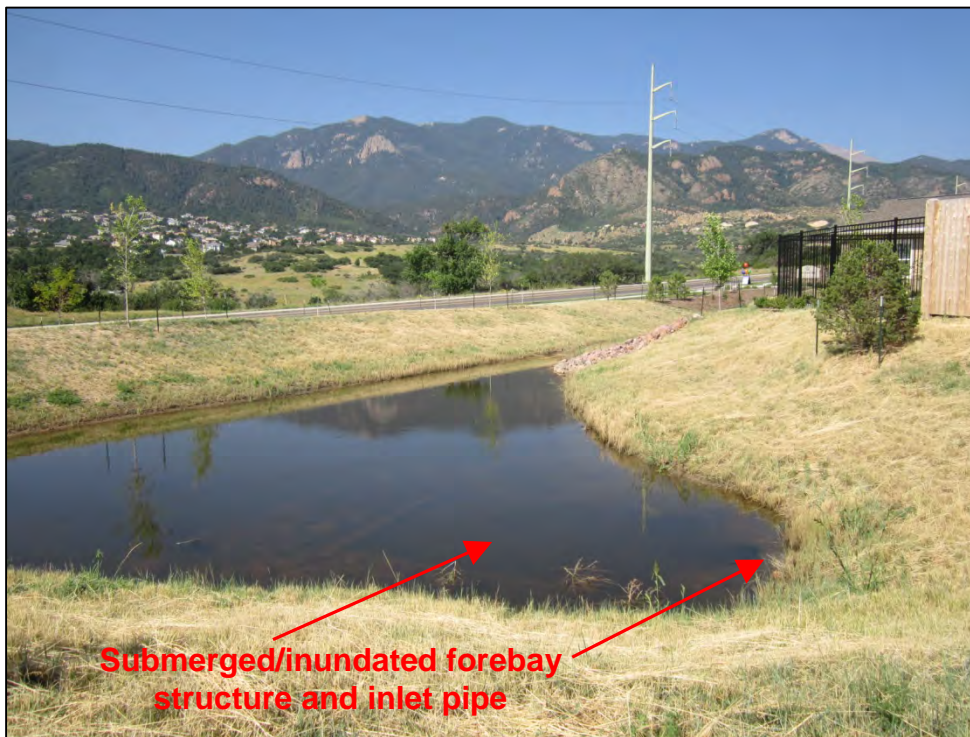


Photograph 4. Close-up view of the rip-rap boulders, concrete debris, and waste scattered throughout the Shooks Run channel near the confluence with Fountain Creek, shown in Photographs 2 and 3 above.

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Photograph 5. View of ID-158 Morning Star at Bear Creek EDB and associated outlet structure and northeast inlet. Note the standing water within the EDB during dry weather. The drain time for WQCV did not appear to be in accordance with specifications and details.



Photograph 6. View of EDB submerged/inundated northeast inlet forebay structure.

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Photograph 7. Close-up view of the EDB submerged/inundated northeast inlet pipe and forebay structure, shown in Photographs 5 and 6. Note that the elevation of this inlet pipe and forebay was approximately one foot lower than the EDB outfall pipe.

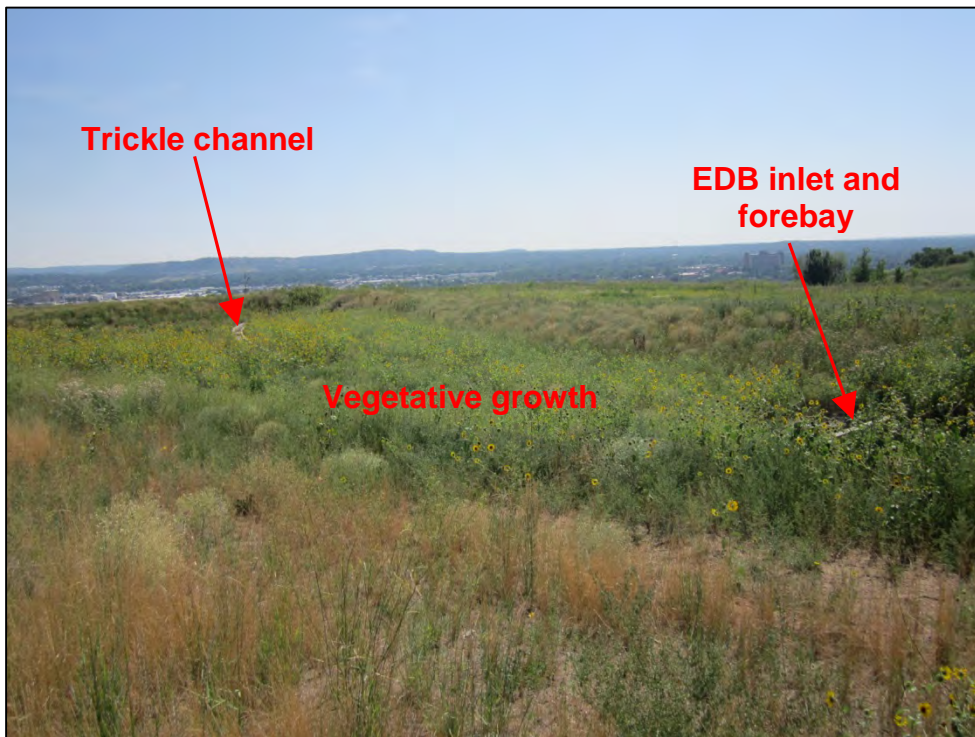


Photograph 8. Additional close-up view of the submerged/inundated northeast inlet pipe and forebay structure, shown in Photograph 7. Note the forebay design (i.e., energy dissipation and sediment removal) was impaired due to the elevations of these structures being approximately one foot lower than the outfall pipe invert.

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Photograph 9. View of accumulated sediment and debris in the western inlet forebay. Note that this did not appear to have been identified on City inspection reports. Also note that the western inlet forebay had not been adequately maintained.



Photograph 10. View of ID-57 VA Hospital EDB. Note the extensive dense vegetative growth throughout the basin.

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Photograph 11. View of ID-57 VA Hospital EDB inlet forebay with accumulated sediment and debris.



Photograph 12. View of accumulated sediment and vegetative growth at additional inlet pipe to the VA Hospital EDB.

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Photograph 13. View of vegetative growth in flow dissipation (rip-rap) device downgradient of the inlet pipe, shown in Photograph 12.



Photograph 14. View of accumulated sediment and debris within the trickle channel and micropool adjacent to the outlet structure. Also note the dense vegetative growth adjacent to the EDB outlet structure.

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Photograph 15. Close-up view of accumulated debris on the outlet structure screen orifice plate.



Photograph 16. View, facing downstream, of CS – 016 Location No. 1 completed concrete channel lining project on Douglas Creek near Intel Way.

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Photograph 17. View, facing upstream, of CS – 016 Location No. 1 completed concrete channel lining project on Douglas Creek near Intel Way.



Photograph 18. View of CS – 016 Location No. 2 in-stream low water crossing (Texas Crossing).

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Photograph 19. View of recent evidence of creek bank and culvert pipe overtopping with deposition of sediment.



Photograph 20. Close-up view of accumulated trash and debris at culvert pipe inlets on the upstream side of the Douglas Creek low water crossing.

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Photograph 21. View facing downstream of Douglas Creek low water crossing. Note the deposition of sediment within the Douglas Creek channel downstream of the low water crossing culvert pipe outlets.

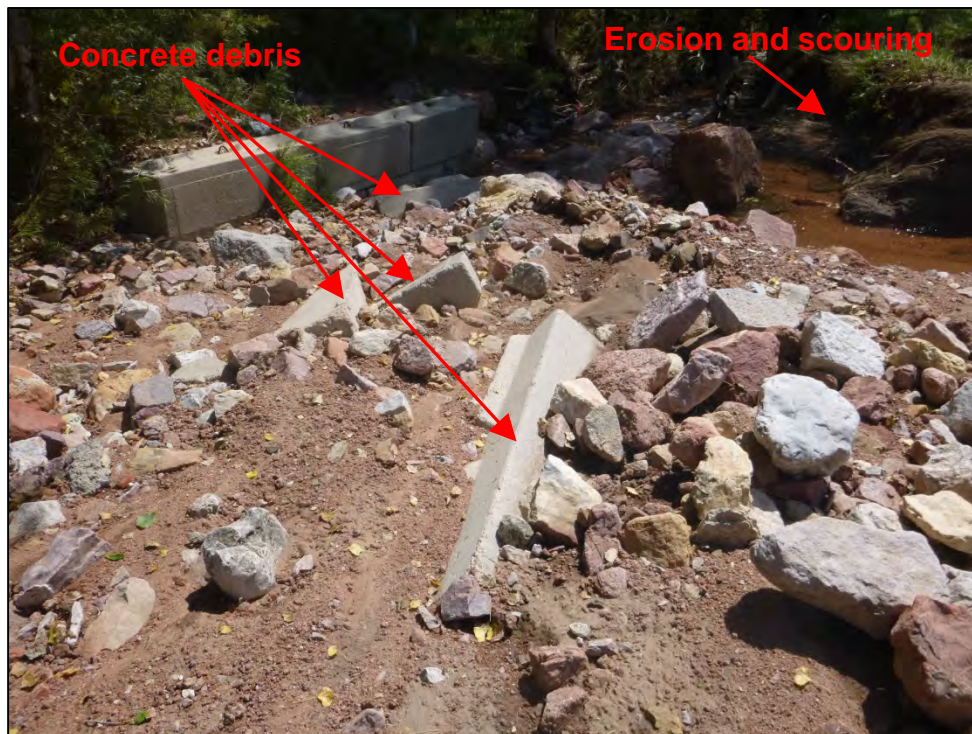


Photograph 22. View of an unmaintained and deteriorated concrete bank stabilization measure. Also note the deposition of sediment within Douglas Creek.

Federal NPDES Storm Water Inspection – MS4



Photograph 23. View, facing upstream, of an unmaintained and deteriorated in-stream concrete bank stabilization measure. Note the deposition of sediment and erosion and scouring of the Douglas Creek channel.

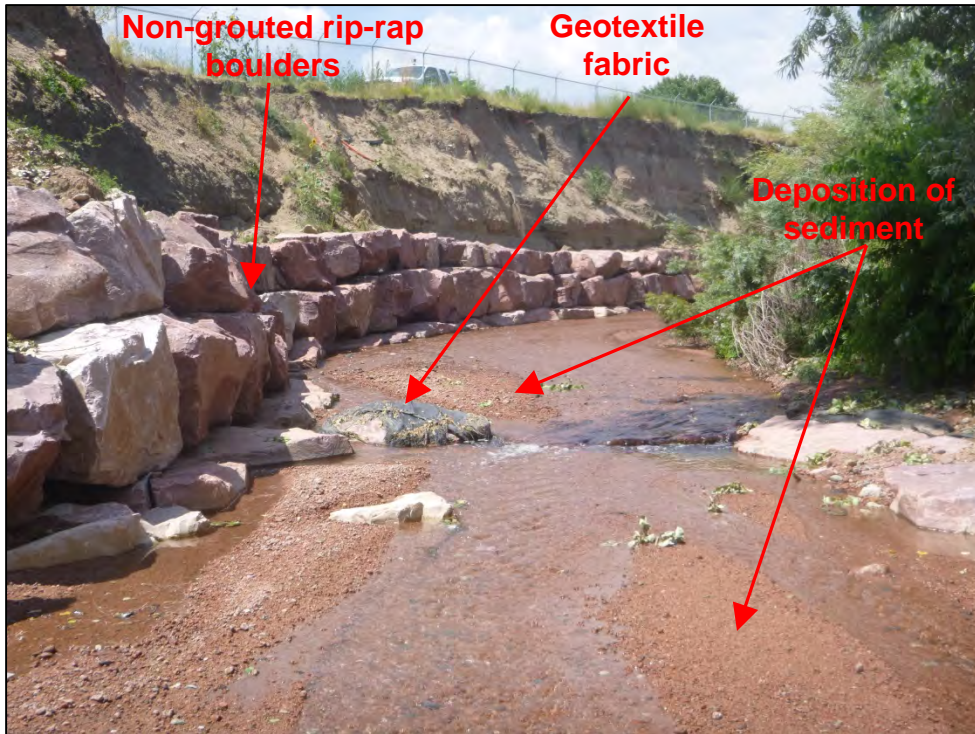


Photograph 24. View, facing downstream, of concrete debris scattered about Douglas Creek, located downgradient of the unmaintained and deteriorated concrete bank stabilization measure shown in Photographs 22 and 23.

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Photograph 25. View of trash and debris in Douglas Creek.



Photograph 26. View, facing upstream, of CS – 017 Location No. 1 N. Douglas Creek bank stabilization project. Note the non-grouted rip-rap boulders utilized for bank stabilization, deposition of sediment within the channel, and geotextile fabric.

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Photograph 27. Close-up view of torn and deteriorated geotextile fabric on in-stream rip-rap. Note that the geotextile appeared to be placed in Douglas Creek along with the rip-rap as part of the recent channel/grade control project.

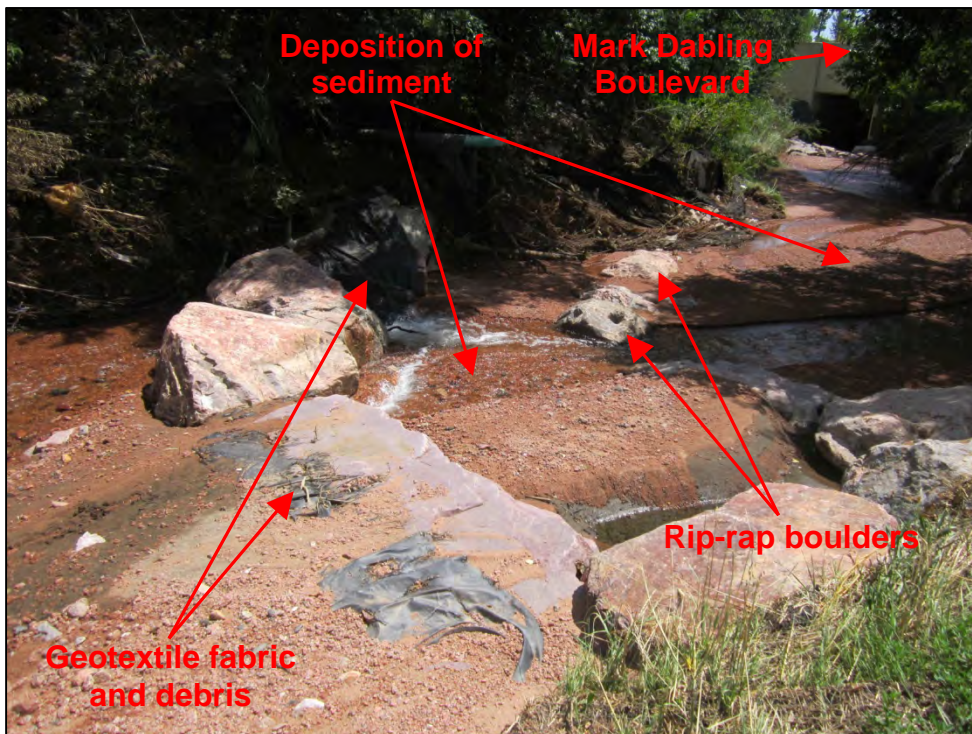


Photograph 28. View, facing upstream, of significant deposition of sediment within Douglas Creek adjacent to the stream bank stabilization project.

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Photograph 29. View, facing upstream, of Douglas Creek. Note the geotextile fabric, debris, and rip-rap boulders scattered about the channel. Also note the deposition of sediment in the channel.



Photograph 30. View, facing downstream, of Douglas Creek. Note the geotextile fabric, debris, and rip-rap boulders scattered about the channel. Also note the deposition of sediment in the channel.

Federal NPDES Storm Water Inspection – MS4

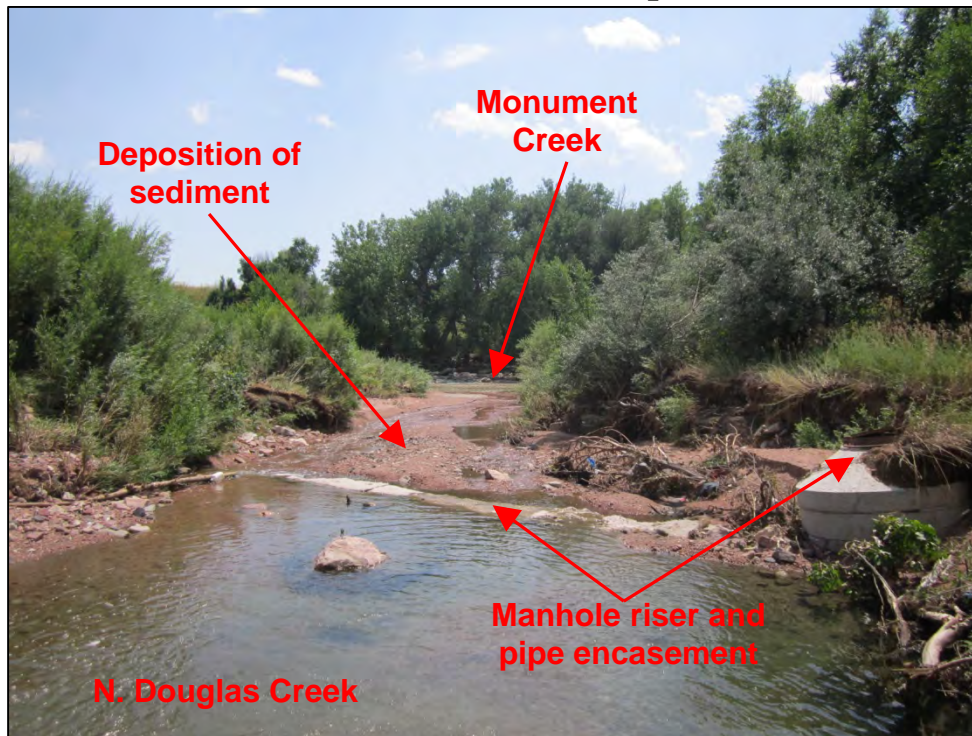


Photograph 31. Close-up view of significant deposition of sediment in the box culvert under Mark Dabling Boulevard on N. Douglas Creek.



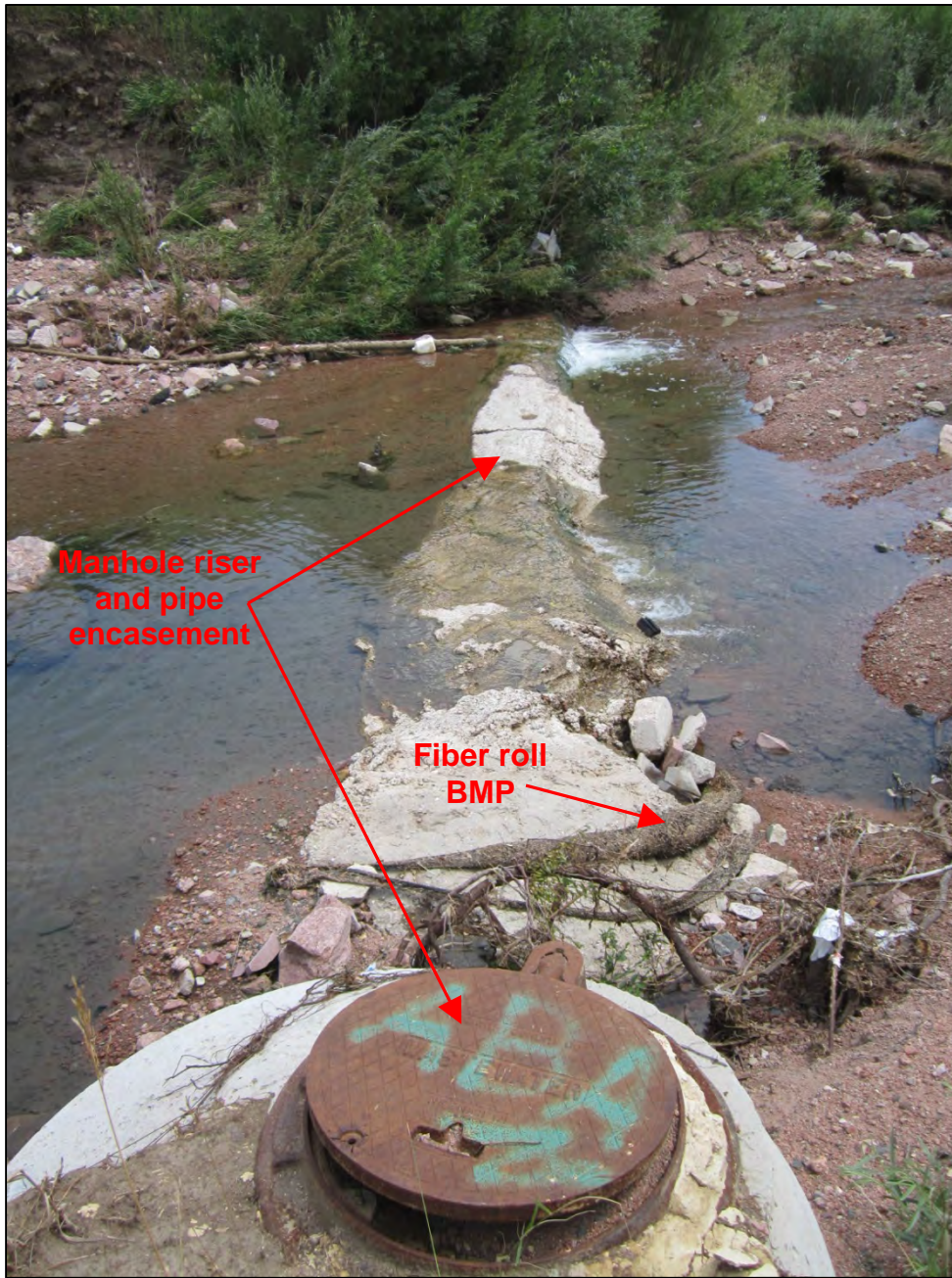
Photograph 32. View of unmaintained in-stream drop structure in N. Douglas Creek downstream of Mark Dabling Boulevard.

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Photograph 33. View of abandoned wastewater manhole riser and pipe encasement downstream of Mark Dabling Boulevard near the confluence of N. Douglas Creek and Monument Creek. Also note the deposition of sediment near the confluence.

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Photograph 34. Additional view of abandoned wastewater manhole riser and pipe encasement crossing N. Douglas Creek, shown in Photograph 33. Note what appears to be a fiber roll BMP in the foreground.

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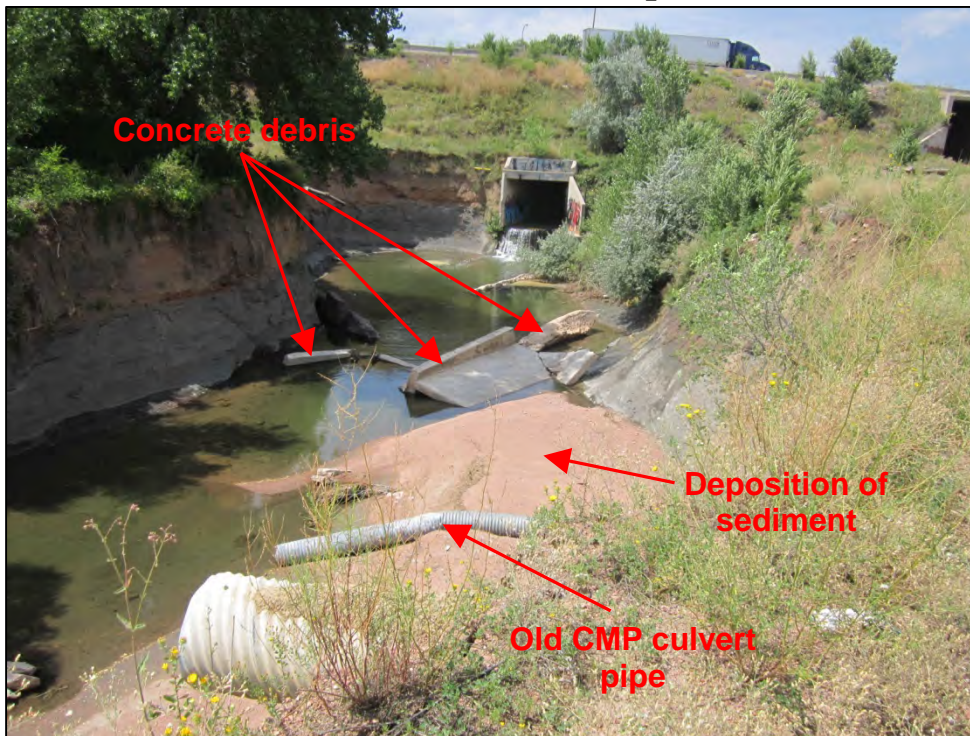


Photograph 35. View of significant erosion and scouring of N. Douglas Creek downstream of I-25 box culvert outlet. The vertical embankment was estimated to be approximately 40 feet high. Portions of the concrete box culvert were present in N. Douglas Creek below the area of this photograph. Also, note that the creek bed would have been approximately even with the base of the culvert at the time the culvert was constructed and at the time of the 2015 Inspection it appears to be almost 6 feet lower. In addition, there was significant undercutting beneath the culvert.

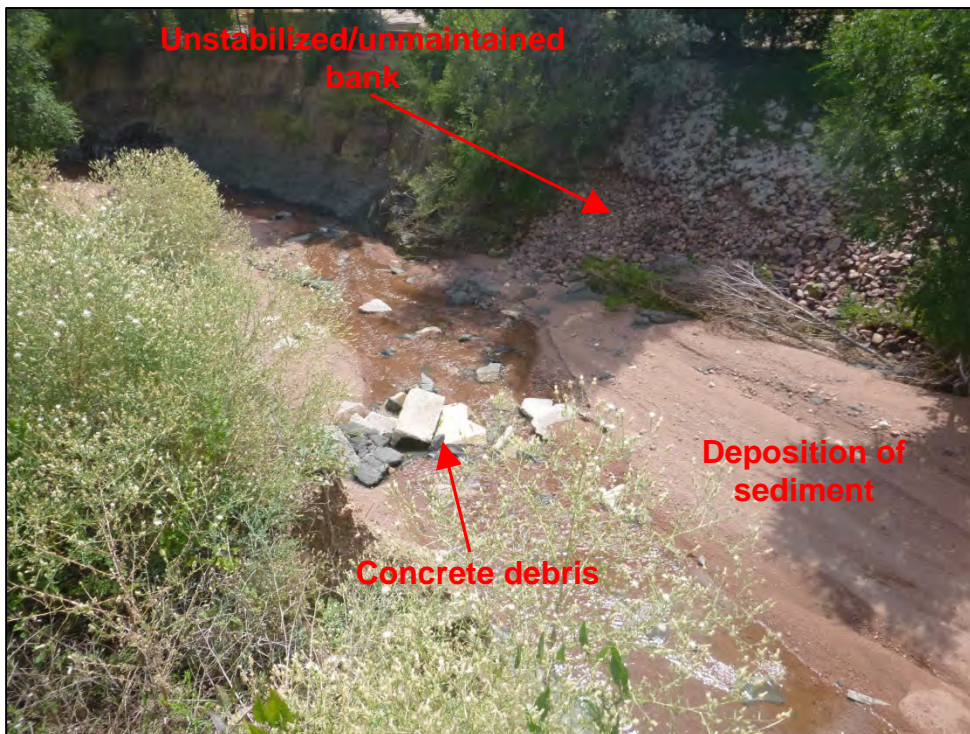


Photograph 36. Additional view of erosion and scouring, concrete debris, and deposition of sediment in the N. Douglas Creek channel downstream of the I-25 box culvert outlet.

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Photograph 37. Additional view, facing upstream, of erosion and scouring, concrete debris, old CMP culvert pipe, and deposition of sediment in the N. Douglas Creek channel.

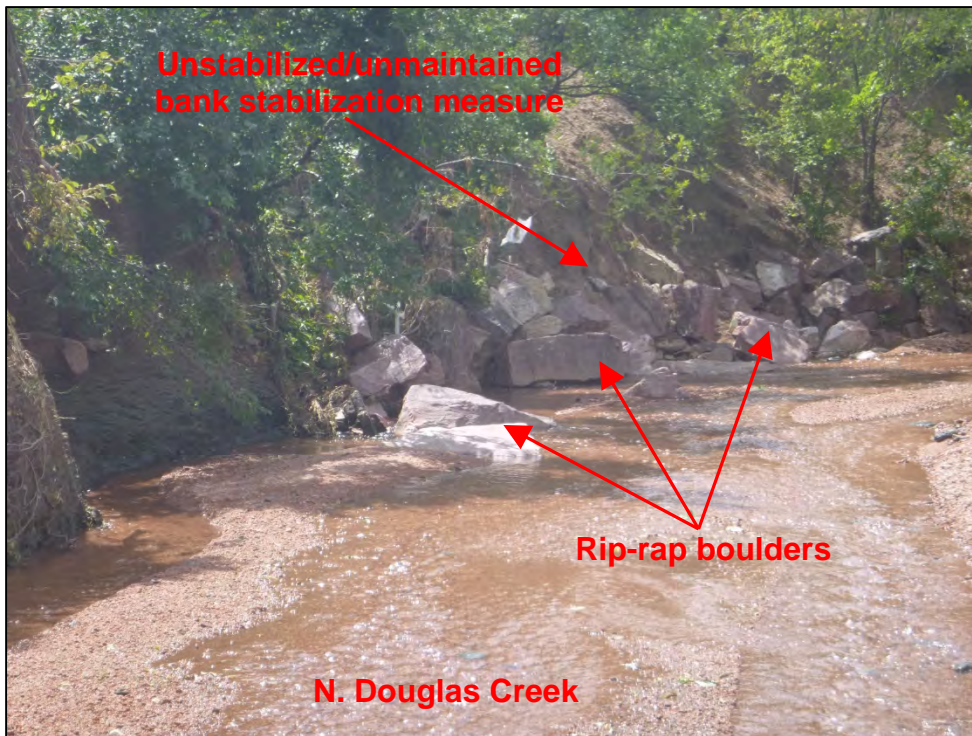


Photograph 38. View of concrete debris and deposition of sediment in N. Douglas Creek. Also note the unstabilized/unmaintained bank stabilization measure along N. Douglas Creek.

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Photograph 39. View of deposition of sediment and rip-rap boulders in the N. Douglas Creek channel.



Photograph 40. View of unstabilized/unmaintained bank stabilization measure along N. Douglas Creek. Note the ungrouted rip-rap boulders scattered about the N. Douglas Creek channel.

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Photograph 41. View of unmaintained bank stabilization measure located just upstream of Norfolk Southern railroad bridge.

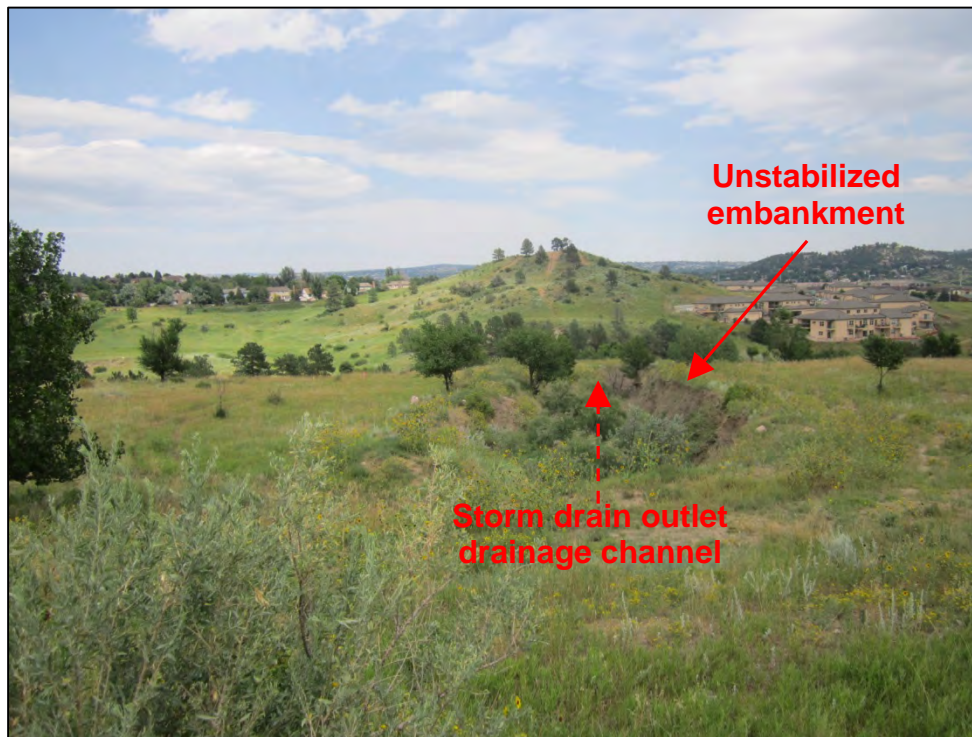


Photograph 42. View of deposition of sediment in N. Douglas Creek located just below the Norfolk Southern railroad bridge. It should be noted that it appeared the railroad may have completed the grouted rip-rap boulder channel stabilization measures in the vicinity of the railroad bridge.

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Photograph 43. View of CS – 015 storm drain inlet on Rockrimmon Boulevard. Note that the upgradient drainage areas from private residential development areas and City streets appeared to lack source control BMPs for flow attenuation.



Photograph 44. View, facing downgradient, of the location of the storm drain outlet and drainage channel for the storm drain shown in Photograph 43. Note the erosion and unstabilized embankments of the drainage channel which subsequently drains to Rockrimmon Channel.

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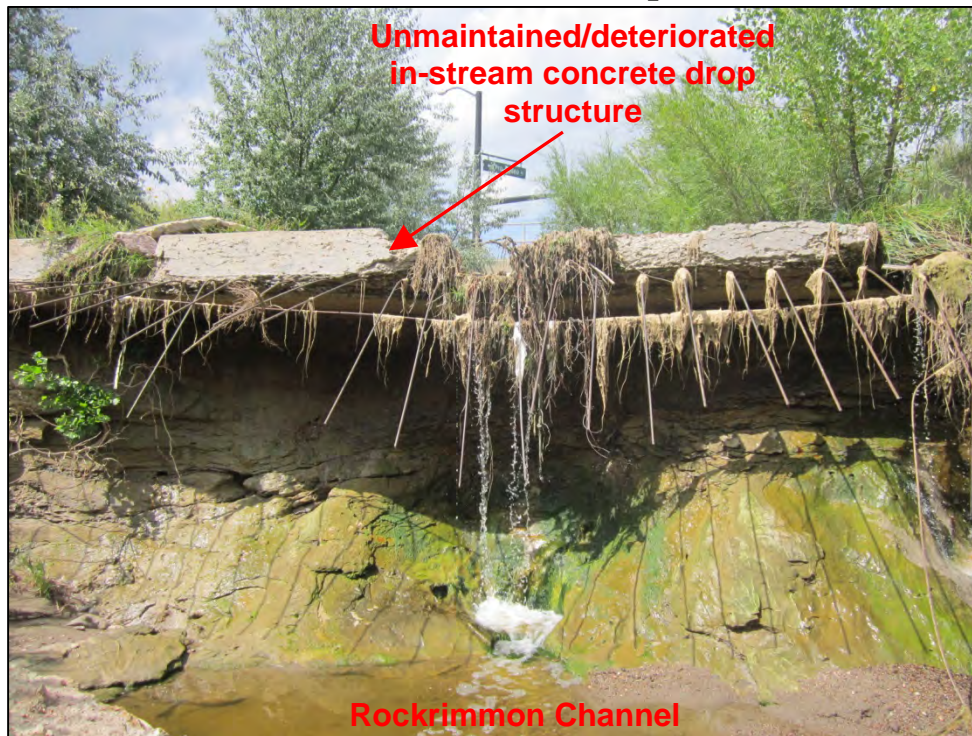


Photograph 45. Close-up view of the drainage channel and unstabilized embankment downgradient of the storm drain outlet for the storm drain shown in Photograph 43.



Photograph 46. View of CS – 222 Rockrimmon Channel unmaintained and deteriorated concrete drop structure. Note the significant long-term deterioration including concrete debris and metal rebar scattered about the channel.

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Photograph 47. View, facing upstream, of unmaintained and deteriorated concrete drop structure, shown in Photograph 46. Note the significant deterioration and undercutting of the concrete drop structure.



Photograph 48. View of deposition of sediment above the deteriorated in-stream drop structure shown in Photograph 47, above.

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Photograph 49. View of unmaintained and deteriorated in-stream concrete drop structure. Note the concrete and metal rebar debris and erosion and scouring of the Rockrimmon Channel bank slopes.



Photograph 50. View of concrete debris scattered about Rockrimmon Channel downstream of the deteriorated concrete drop structure.

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Photograph 51. Close-up view of the concrete debris within the Rockrimmon Channel, shown in Photograph 50.



Photograph 52. Additional view of concrete and metal rebar debris in the Rockrimmon Channel located downstream of the unmaintained drop structure.

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Photograph 53. View of the MS4 outfall pipe to Rockrimmon Channel near the intersection of Rockrimmon Boulevard and Pro Rodeo Drive. Note the deposition of sediment.



Photograph 54. Additional view of the MS4 outfall pipe, shown in Photograph 53. Note the unmaintained and deteriorated concrete wall below the MS4 outfall pipe and lack of flow dissipation device downgradient of the outfall in Rockrimmon Channel.

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Photograph 55. Close-up view of the unmaintained and deteriorated concrete wall below the MS4 outfall pipe, shown in Photograph 54.



Photograph 56. View of Rockrimmon Channel conveyance tunnel under Norfolk Southern railroad bridge and Mark Dabbling Boulevard. Note the unmaintained and deteriorated tunnel rock lining.

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Photograph 57. Close-up view of the unmaintained and deteriorated tunnel rock lining.



Photograph 58. View of CS – 022 significant erosion and scouring downgradient of the City's MS4 outfall from the Pebblewood at Pinecliff subdivision, including the formation of a large ravine and numerous erosion gullies.

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Photograph 59. Close-up view of the MS4 outfall pipe and ravine/cliff area adjacent to the outfall.



Photograph 60. Additional close-up view of the MS4 outfall pipe and ravine/cliff area adjacent to the outfall.

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Photograph 61. View of erosion (e.g., gully formation) and scouring on private property located downgradient of MS4 outfall pipe, shown in Photograph 58.



Photograph 62. Additional view of erosion (e.g., gully formations) on private property located downgradient of the MS4 outfall pipe. Note the location of the Chiramonte private property and residence located directly downstream of this drainage area.

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Photograph 63. View of evidence of previous stormwater runoff and erosion adjacent to the Chiramonte private property. Note the City had implemented straw bales and sand bag BMPs along the property boundary.



Photograph 64. View of CS – 060 Hancock Expressway Drainage culvert pipe outlet to concrete lined channel. Note the culvert pipe did not appear to be installed at the proper grade to convey flow as standing water was observed within the pipe.

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Photograph 65. Close-up view of standing water within the culvert pipe, shown in Photograph 64. Note that this culvert pipe did not appear to have been properly constructed to convey stormwater flow downgradient.

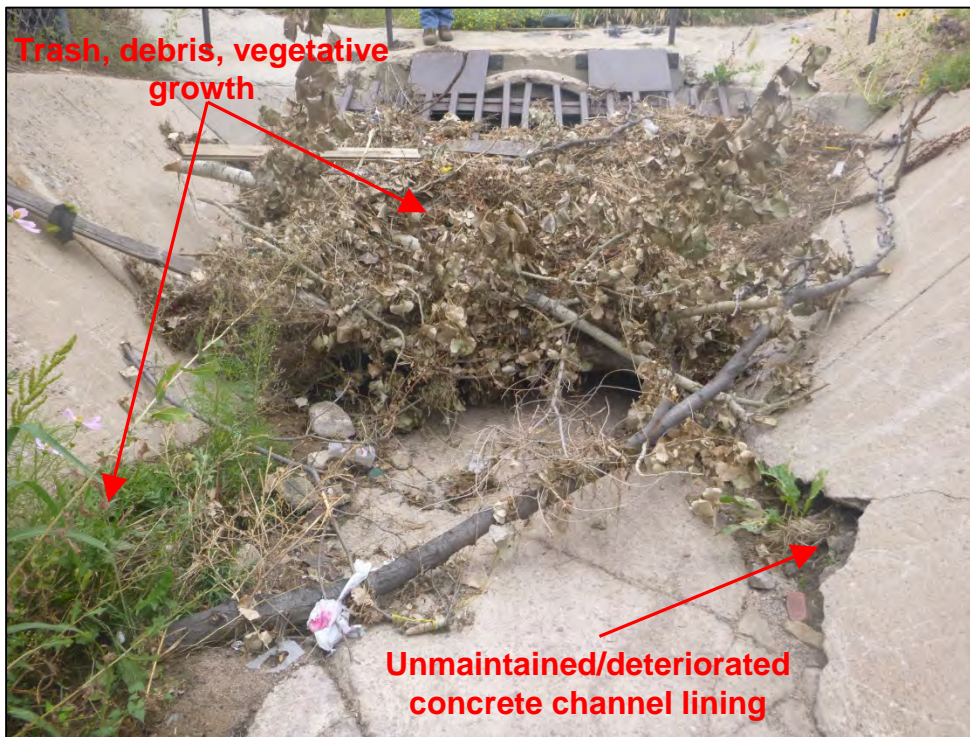


Photograph 66. View, facing upstream, in channel of trash, debris, accumulated sediment and vegetative growth at the culvert pipe inlet trash rack and within the concrete lined channel itself.

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Photograph 67. View, facing downstream, in channel of accumulated sediment, vegetative growth, and debris within the concrete lined channel located just upstream of the culvert pipe inlet trash rack, shown in Photograph 66.

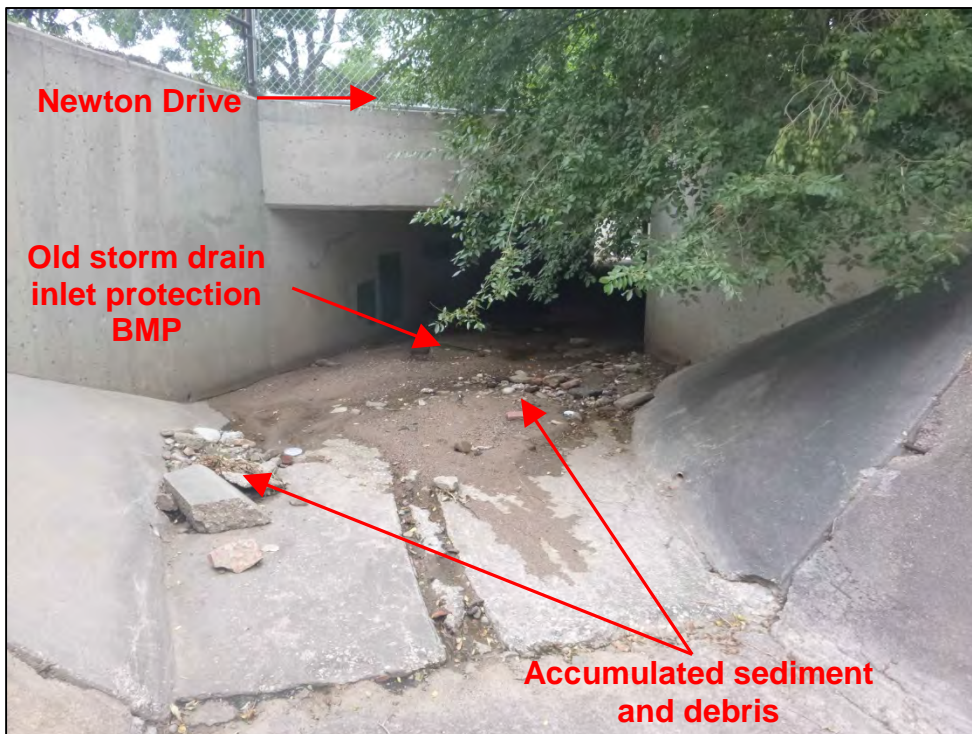


Photograph 68. Close-up view of trash, debris, vegetative growth, and unmaintained/deteriorated concrete channel lining at the culvert pipe inlet trash rack.

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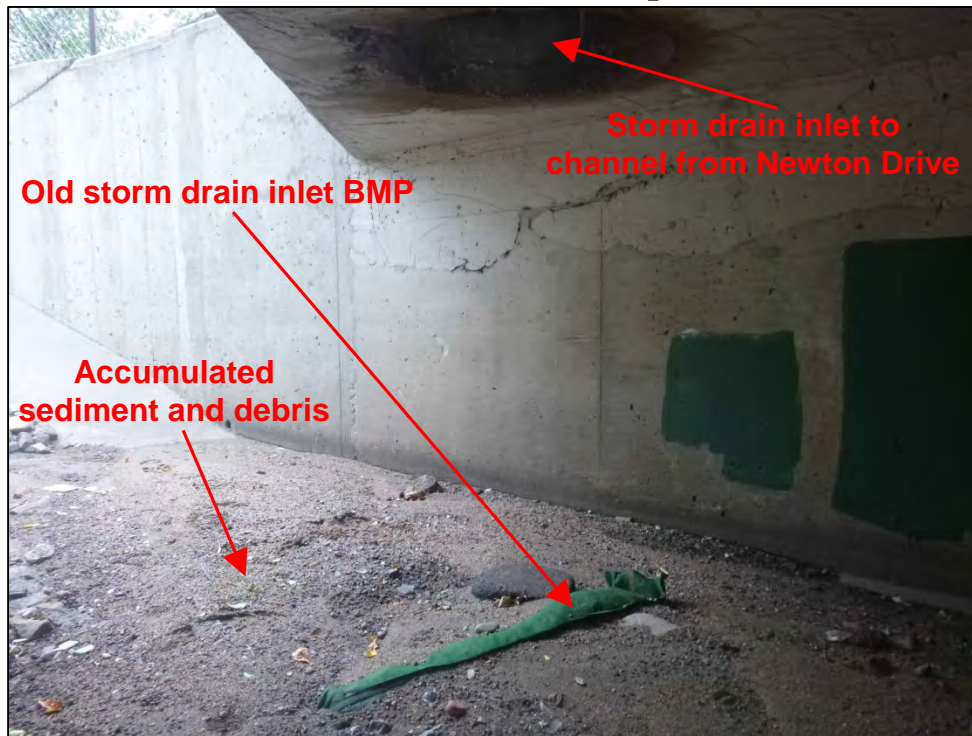


Photograph 69. Additional close-up view of trash and debris at the culvert pipe inlet trash rack. Note the bed box spring frame and other debris accumulation.

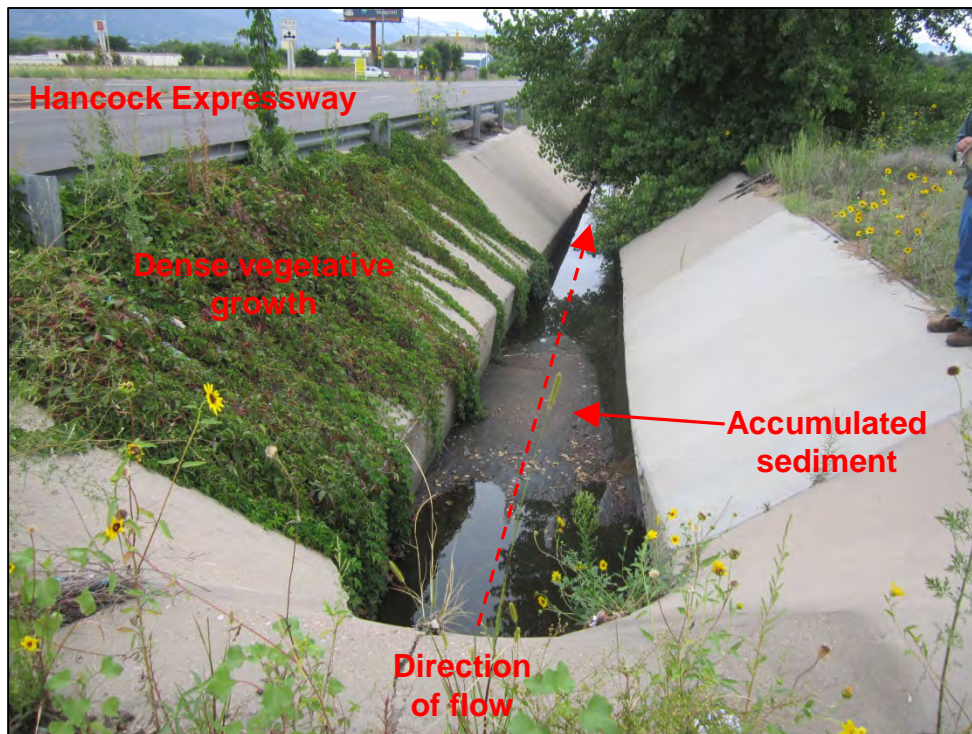


Photograph 70. View, facing upstream, in channel at Newton Drive. Note the accumulated sediment and debris, and old storm drain inlet protection within the channel.

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Photograph 71. Close-up view of old storm drain inlet protection within the channel and box culvert beneath Newton Drive, shown in Photograph 70. Note the accumulated sediment and debris.



Photograph 72. View of CS – 130 concrete lined MS4 conveyance channel. Note the dense vegetative growth and accumulated sediment in the channel located along Hancock Expressway.

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Photograph 73. View of unmaintained/deteriorated (undercut) concrete channel lining.



Photograph 74. Close-up view of deteriorated (undercut) concrete channel lining, shown in Photograph 73.

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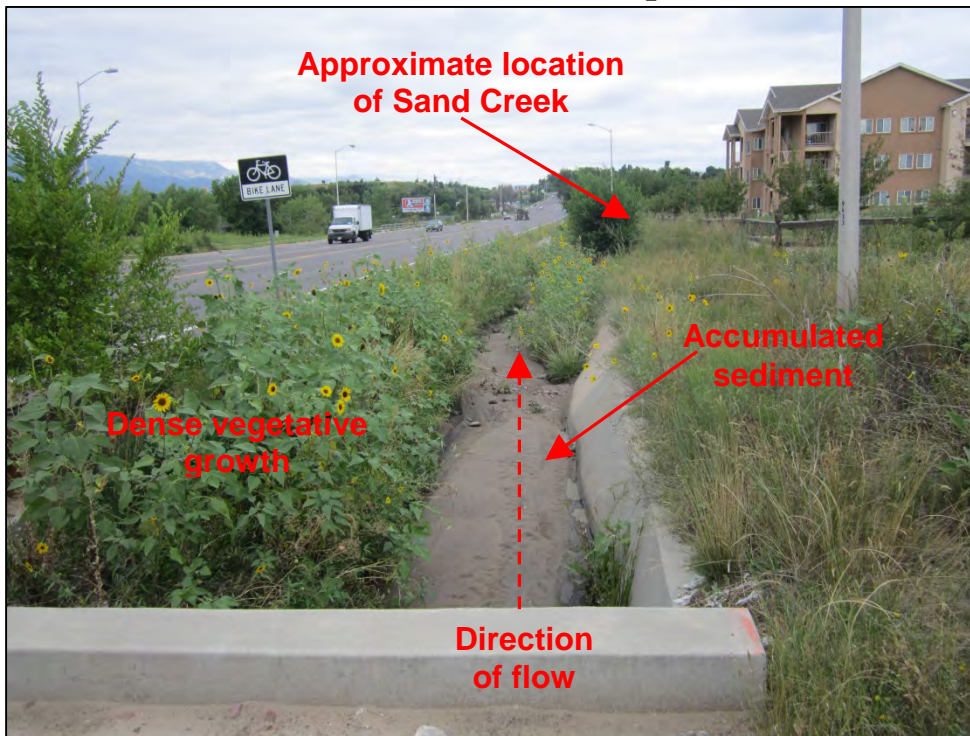


Photograph 75. Additional close-up view of deteriorated (undercut) concrete channel lining.



Photograph 76. View, facing downstream, of concrete lined MS4 conveyance channel located along Hancock Expressway near Astrozon Boulevard. Note the vegetative growth and accumulated sediment in the channel.

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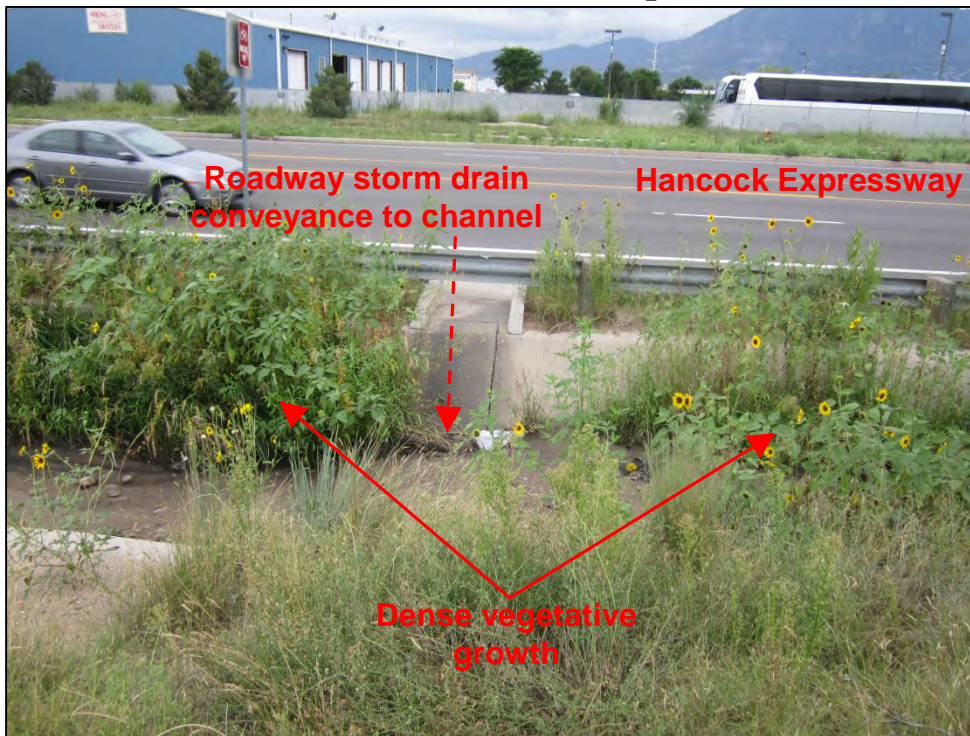


Photograph 77. View, facing downstream, of concrete lined MS4 conveyance channel located along Hancock Expressway near Bentley Point. Note the dense vegetative growth (e.g., shrubs) and accumulated sediment in the channel.



Photograph 78. Close-up view of vegetative growth (e.g., shrubs) and accumulated debris in the channel.

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Photograph 79. View of a Hancock Expressway storm drain conveyance to channel and dense vegetative growth in the channel.



Photograph 80. View of Sand Creek just upstream of MS4 conveyance channel (shown above) outfall. Note the deposition of sediment and rip-rap boulders scattered about Sand Creek in the vicinity of a constructed in-stream drop structure.

Federal NPDES Storm Water Inspection – MS4



Photograph 81. Close-up view of a deteriorated (e.g., undercut) Sand Creek bank stabilization control. Also note the deposition of sediment in Sand Creek.



Photograph 82. View of CS – 137 902 Teal Court and City MS4 culvert CMP pipe inlet.

Federal NPDES Storm Water Inspection – MS4



Photograph 83. Close-up view of accumulated sediment and debris at MS4 culvert pipe inlet, shown in Photograph 82.



Photograph 84. View of accumulated sediment and debris at the City MS4 culvert pipe outlet.

Federal NPDES Storm Water Inspection – MS4



Photograph 85. Close-up view of accumulated sediment and debris at MS4 culvert pipe outlet, shown in Photograph 84. Note the CMP pipe appeared to be at approximately 50 percent capacity due to accumulated sediment and debris within the pipe.



Photograph 86. View of second culvert CMP pipe outlet into what appeared to be a wetland area behind the residences. Note the standing water and trash and debris.

Federal NPDES Storm Water Inspection – MS4



Photograph 87. View of significant deposition of sediment in Spring Creek located behind the private property residences on Teal Court.



Photograph 88. View of CS – 362 Spring Creek near 3667 E. Bijou Street. Note the unmaintained (e.g., undercut) Spring Creek box culvert bank stabilization control.

Federal NPDES Storm Water Inspection – MS4



Photograph 89. View of accumulated sediment on roadway adjacent to a storm drain inlet that drains directly to Spring Creek.

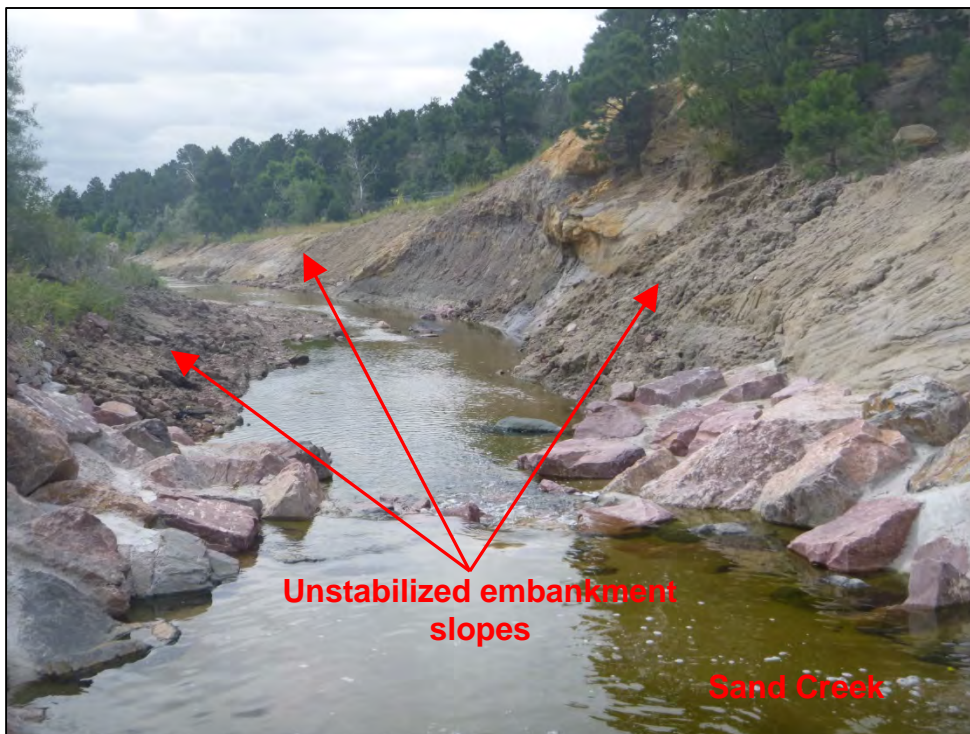


Photograph 90. View of accumulated sediment on the roadway and adjacent to the storm drain inlet on the other side of Bijou Street, shown in Photograph 89. Note that this storm drain inlet also drains directly to Spring Creek.

Federal NPDES Storm Water Inspection – MS4



Photograph 91. View of accumulated sediment at City storm drain outlet (i.e., MS4 outfall) shown in Photograph 90.



Photograph 92. View of CS – 259 channel/grade control and stream stabilization on Sand Creek. Note the unstabilized Sand Creek channel embankment slopes.

Federal NPDES Storm Water Inspection – MS4



Photograph 93. View of unstabilized Sand Creek embankment slopes associated with the project and evidence of a previous release of sediment to Sand Creek.



Photograph 94. View of unstabilized Sand Creek embankment slopes with evidence of erosion (e.g., rill formations).

Federal NPDES Storm Water Inspection – MS4



Photograph 95. Close-up view of the unstabilized Sand Creek embankments slopes with evidence of erosion (e.g., rill formations) and a release of sediment to Sand Creek.



Photograph 96. View of the denuded area of disturbance utilized by the City's contractor as a staging area for the in-stream Sand Creek project located near 1355 Space Center Drive. Note the lack of erosion, sediment, and perimeter controls.

Federal NPDES Storm Water Inspection – MS4



Photograph 97. View of evidence of previous erosion and the release of sediment across the sidewalk toward Sand Creek from the area of disturbance at the staging area, shown in Photograph 96.



Photograph 98. View of the unstabilized Sand Creek embankment slope located downgradient of the City contractor's staging area for the project. Note that stormwater runoff from this staging area may have been accentuating erosion of this Sand Creek embankment slope.

Federal NPDES Storm Water Inspection – MS4



Photograph 99. Close-up view of a previous release of sediment across the sidewalk from the City contractor's unstabilized area of disturbance (i.e., staging area), shown in Photograph 97. Note the lack of erosion, sediment, and perimeter controls.

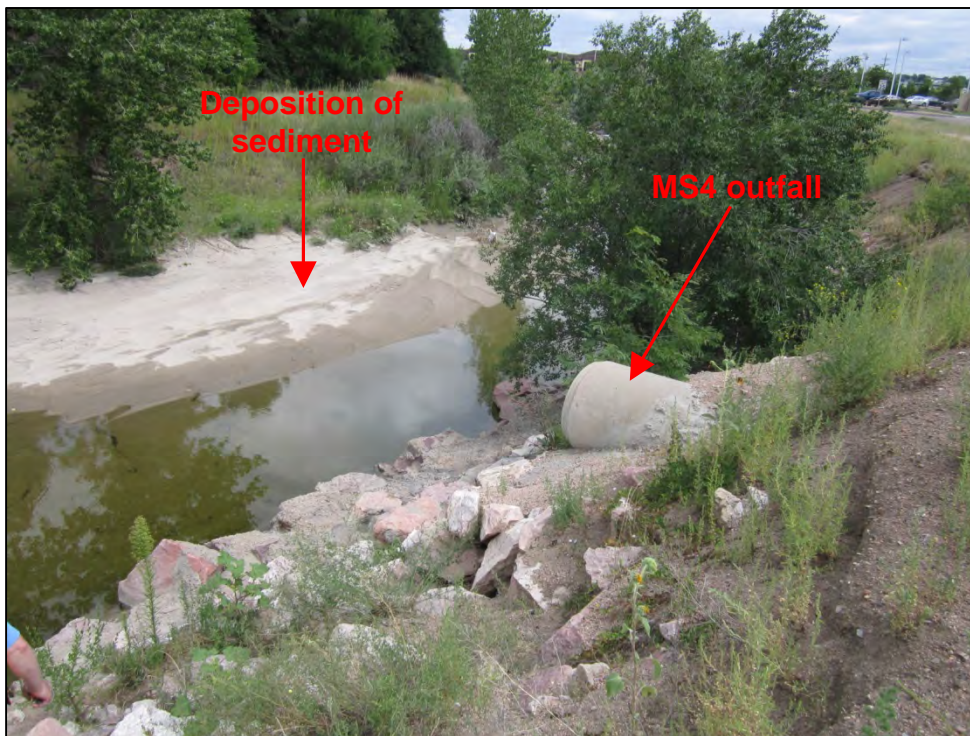


Photograph 100. View, facing downgradient, of the release of sediment across the sidewalk, shown in Photograph 99. Note the evidence of the previous release of sediment and deposition of sediment into Sand Creek.

Federal NPDES Storm Water Inspection – MS4



Photograph 101. View, facing upgradient, toward the unstabilized area of disturbance (i.e., staging area) and close-up of the evidence of the previous release and deposition of sediment to the Sand Creek embankment slope.



Photograph 102. View of deposition of sediment in Sand Creek adjacent to a City MS4 outfall.

Federal NPDES Storm Water Inspection – MS4



Photograph 103. View of an in-stream engineered drop structure. Note the deposition of sediment upstream and downstream of the structure.



Photograph 104. View of BMPs (turf reinforcement mats) implemented in Sand Creek. Note the turf reinforcement mats were observed deteriorated and unmaintained.

Federal NPDES Storm Water Inspection – MS4

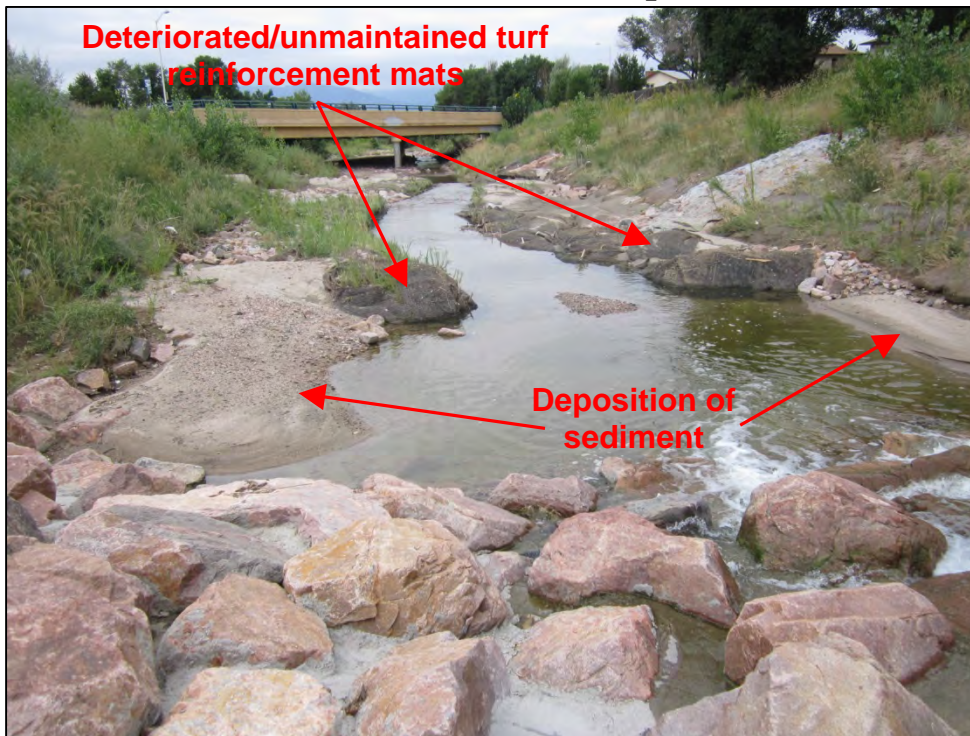


Photograph 105. Additional view of deteriorated and unmaintained turf reinforcement mat BMPs implemented in Sand Creek downstream of an engineered in-stream drop structure, shown in Photograph 103.



Photograph 106. View of deteriorated and unmaintained turf reinforcement mat BMPs implemented in Sand Creek. Also note the unmaintained (e.g., undercut) grouted rip-rap boulder in-stream engineered drop structure.

Federal NPDES Storm Water Inspection – MS4

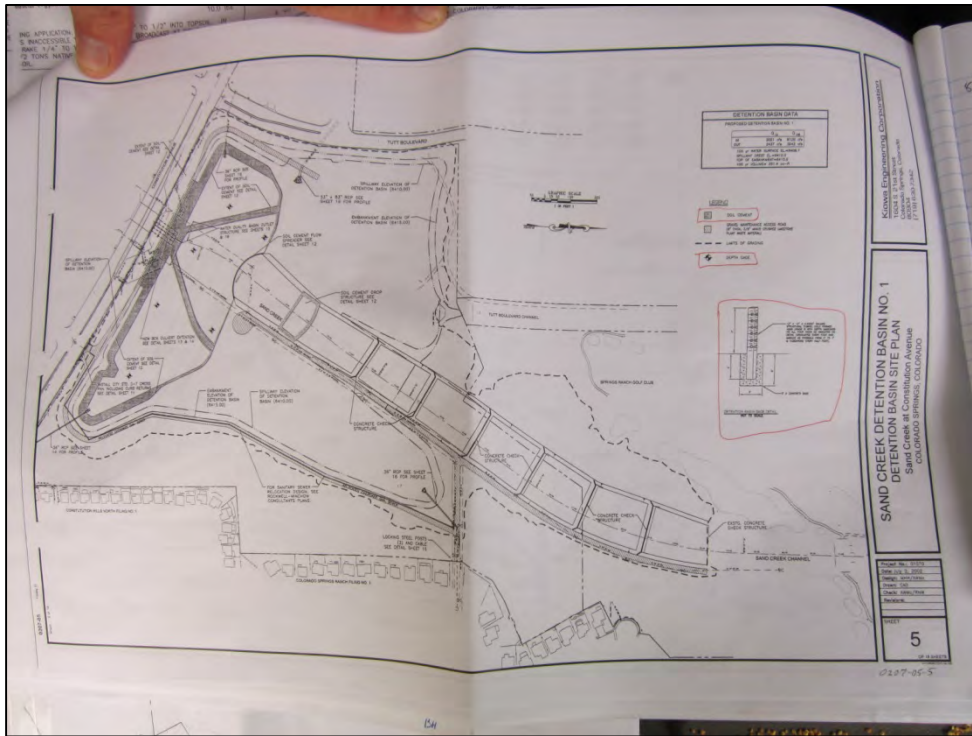


Photograph 107. Additional view of deteriorated and unmaintained turf reinforcement mat BMPs in Sand Creek downstream of drop structure shown in Photograph 106. Also note the deposition of sediment.

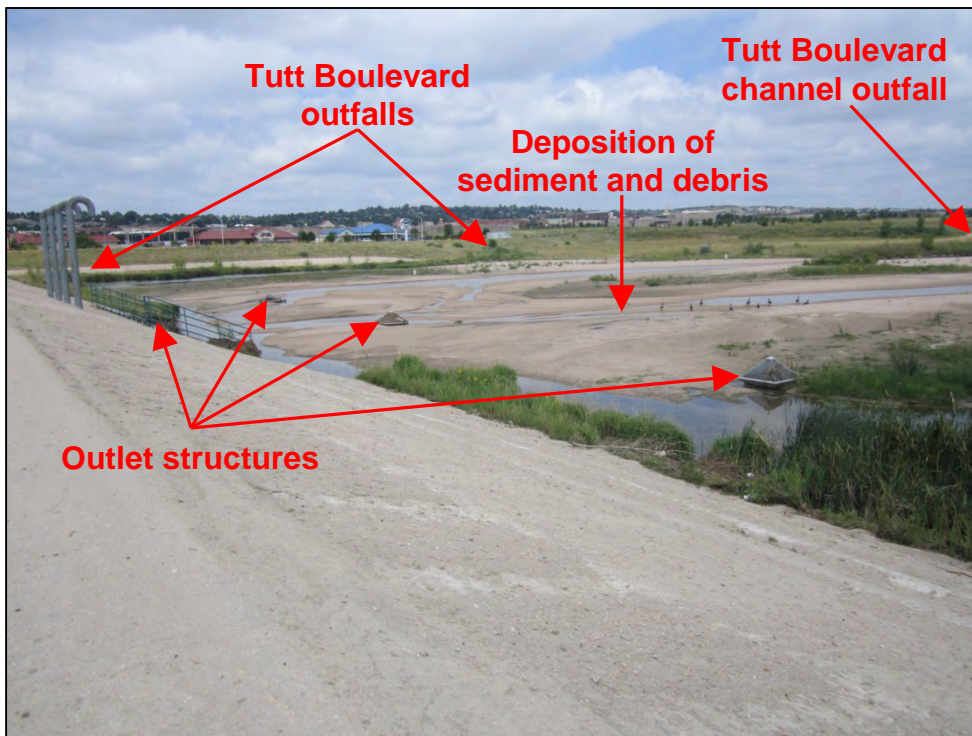


Photograph 108. View of deteriorated and unmaintained turf reinforcement mat BMPs implemented in Sand Creek. Note the in-stream BMPs had been implemented below a grouted rip-rap stormwater conveyance channel (i.e., potential area of concentrated flow) outfall.

Federal NPDES Storm Water Inspection – MS4

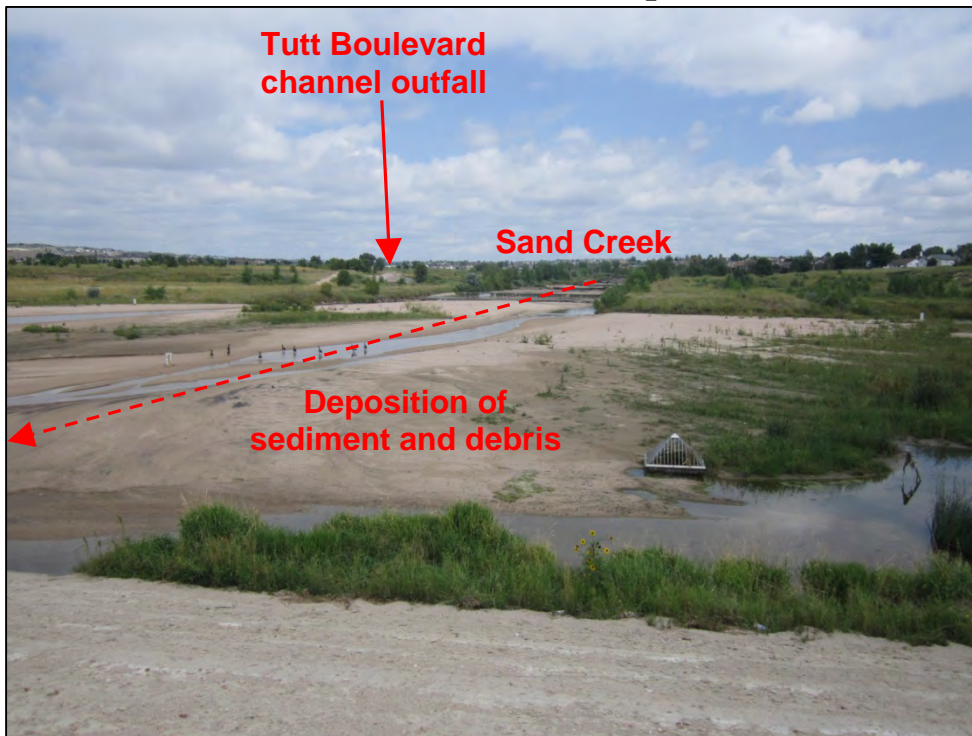


Photograph 109. View of ID – 44 / Pond No. 512 / Sand Creek Detention Basin No. 1 site plans dated July 2002.

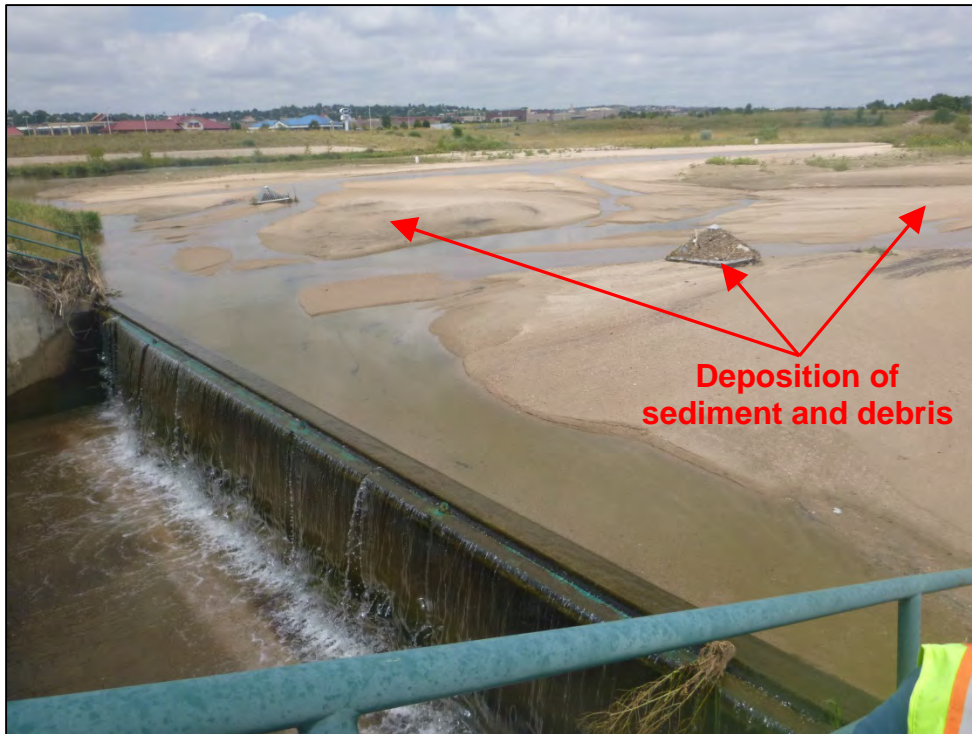


Photograph 110. Vantage point view of Sand Creek Detention Basin No. 1, Tutt Boulevard outfalls, and Tutt Boulevard channel outfall. Note the outlet structures and deposition of sediment and debris in the basin.

Federal NPDES Storm Water Inspection – MS4

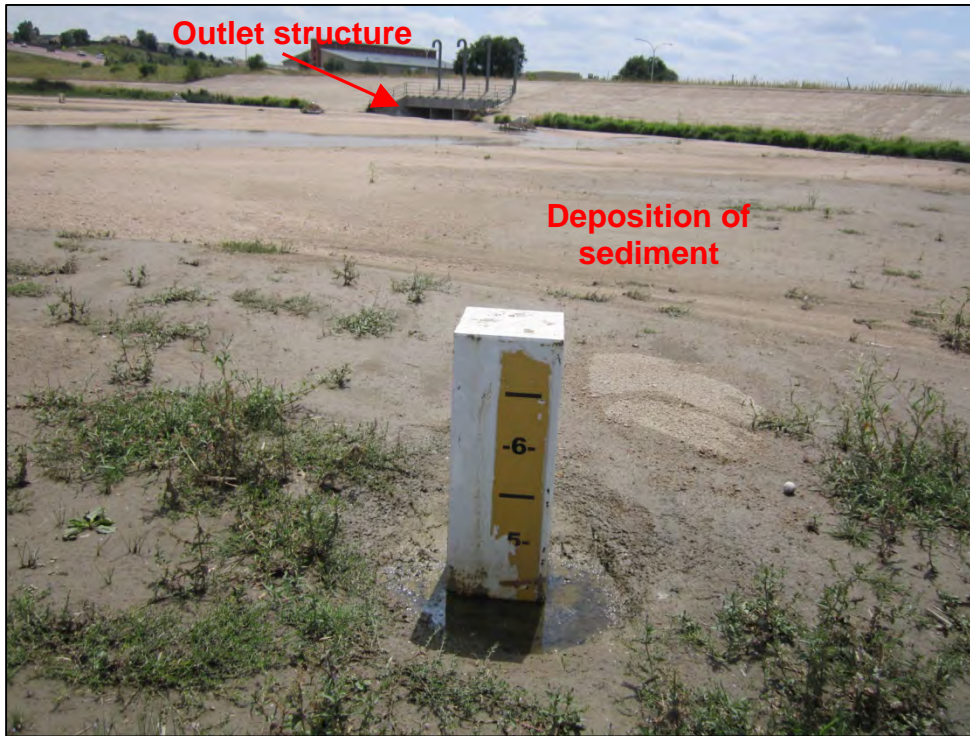


Photograph 111. View, facing upstream, of the deposition of sediment and debris in the detention basin.

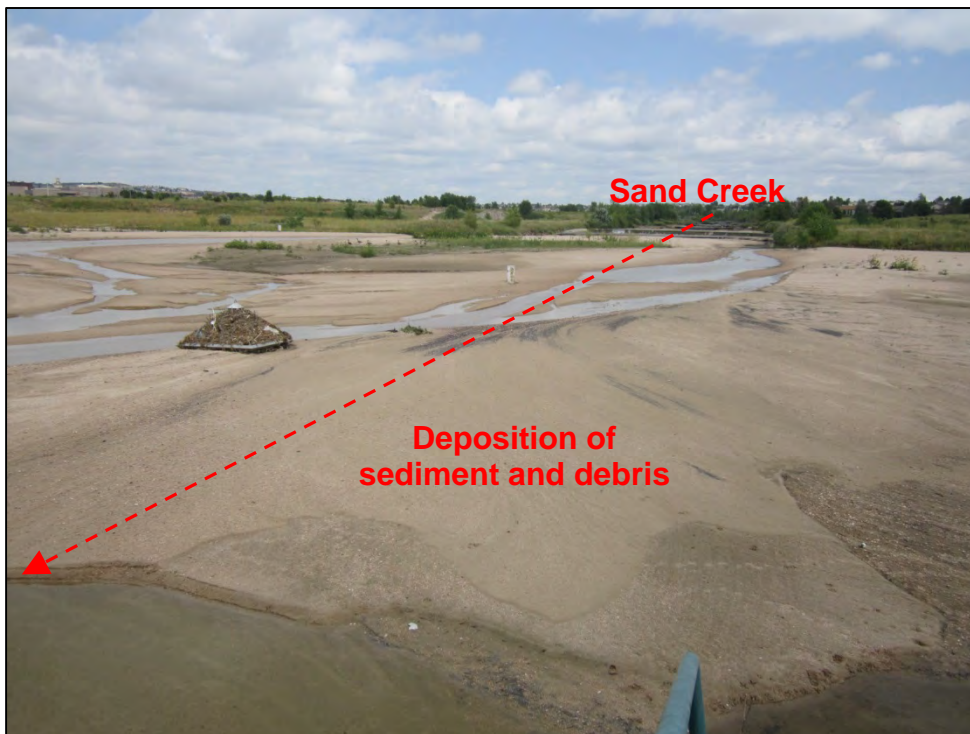


Photograph 112. Close-up view of the deposition of sediment and debris adjacent to the outlet structures.

Federal NPDES Storm Water Inspection – MS4



Photograph 113. View of one of six fixed vertical sediment markers with a reading of approximately four and one-half feet.



Photograph 114. Additional view, facing upstream, from outlet structure of the deposition of sediment and debris in the detention basin.

Federal NPDES Storm Water Inspection – MS4

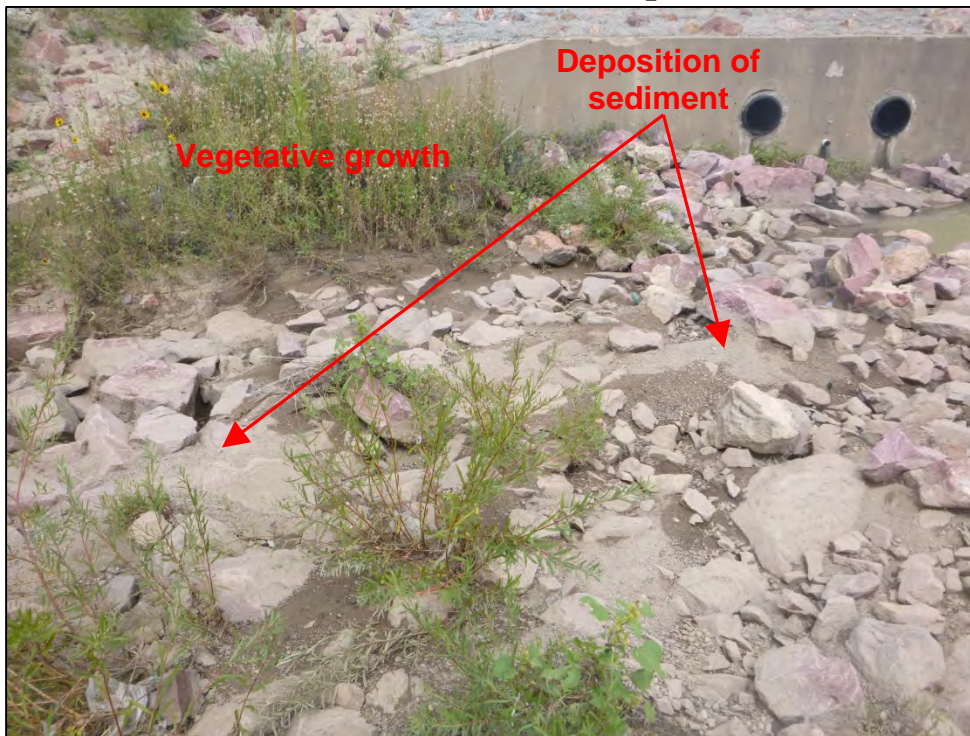


Photograph 115. Additional view of one of six fixed vertical sediment markers with a reading of approximately five feet.

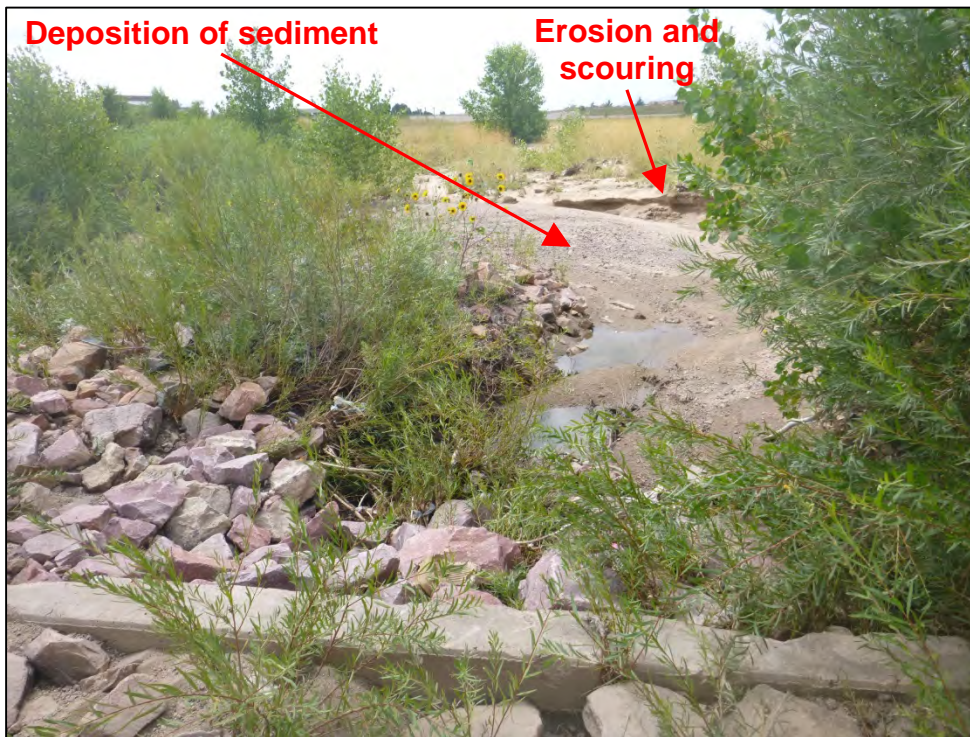


Photograph 116. View, facing upstream, of Tutt Boulevard channel outfall to the Sand Creek Detention Basin No. 1, shown in Photograph 111.

Federal NPDES Storm Water Inspection – MS4

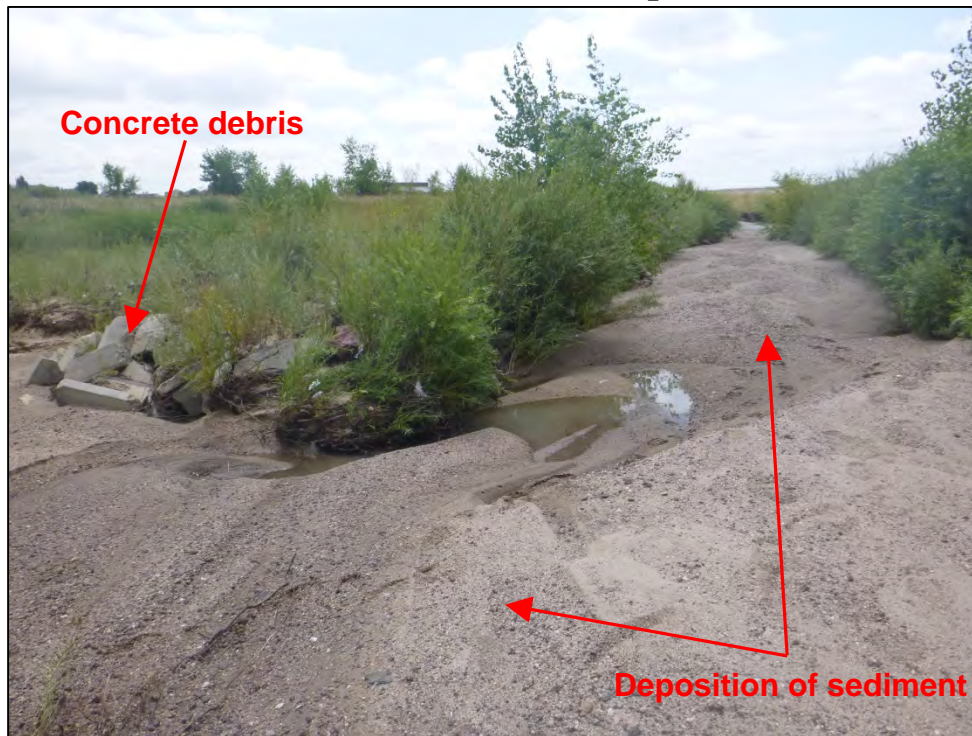


Photograph 117. View of the deposition of sediment and vegetative growth at the Tutt Boulevard channel outfall. Note the rip-rap flow dissipation device had become mired with accumulated sediment and did not appear to have been adequately maintained.



Photograph 118. View, facing downstream, of Tutt Boulevard channel outfall. Note the deposition of sediment and erosion and scouring of the channel, which subsequently drains to the Sand Creek Detention Basin No. 1.

Federal NPDES Storm Water Inspection – MS4

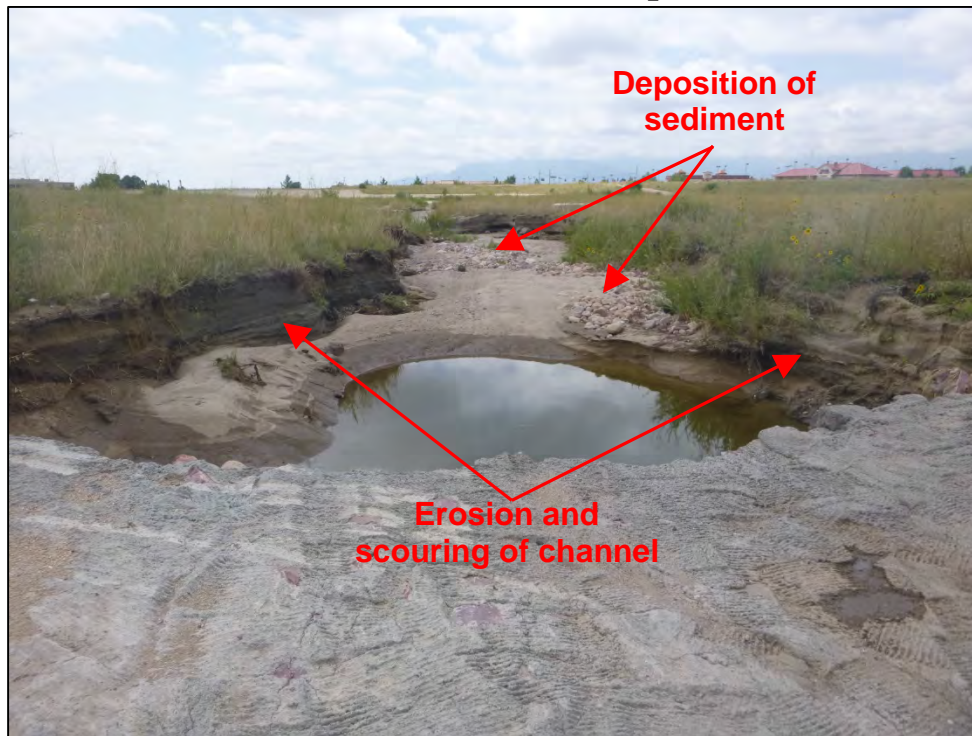


Photograph 119. View, facing downstream, below the Tutt Boulevard channel outfall. Note the significant deposition of sediment and concrete debris in the channel.

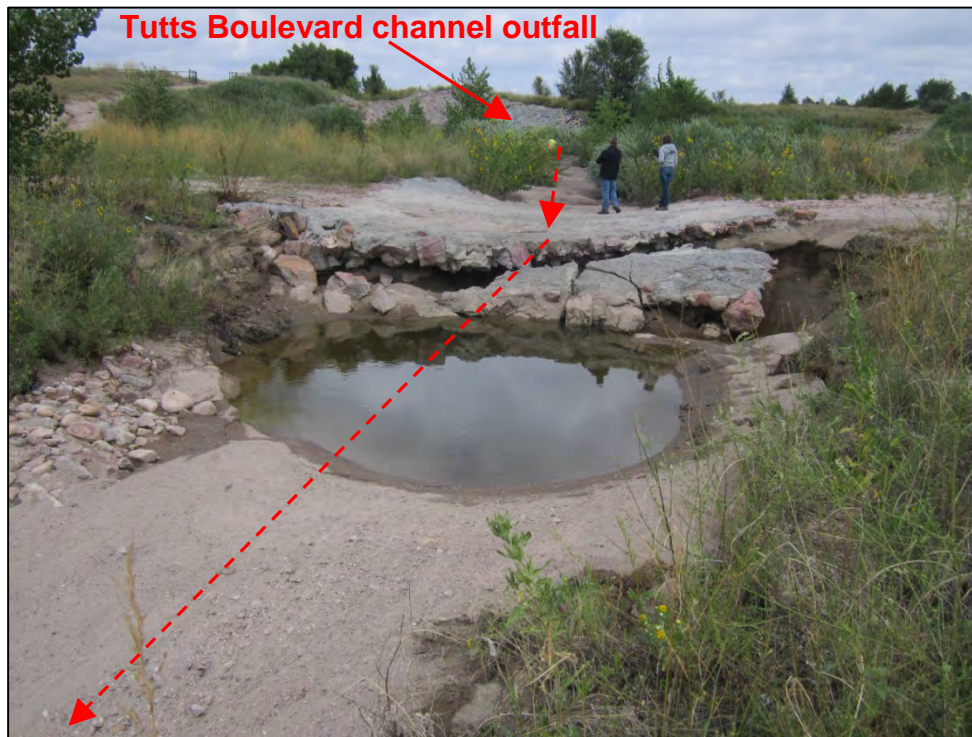


Photograph 120. Close-up view of the concrete debris in the channel, shown in Photograph 119.

Federal NPDES Storm Water Inspection – MS4



Photograph 121. View, facing further downstream, of the Tutts Boulevard channel, which subsequently drains to the Sand Creek Detention Basin No. 1. Note the deposition of sediment and erosion and scouring of the channel.



Photograph 122. View, facing upstream, of a deteriorated and unmaintained concrete channel crossing downgradient of the Tutts Boulevard channel outfall which drains to Sand Creek Detention Basin No. 1.

Federal NPDES Storm Water Inspection – MS4

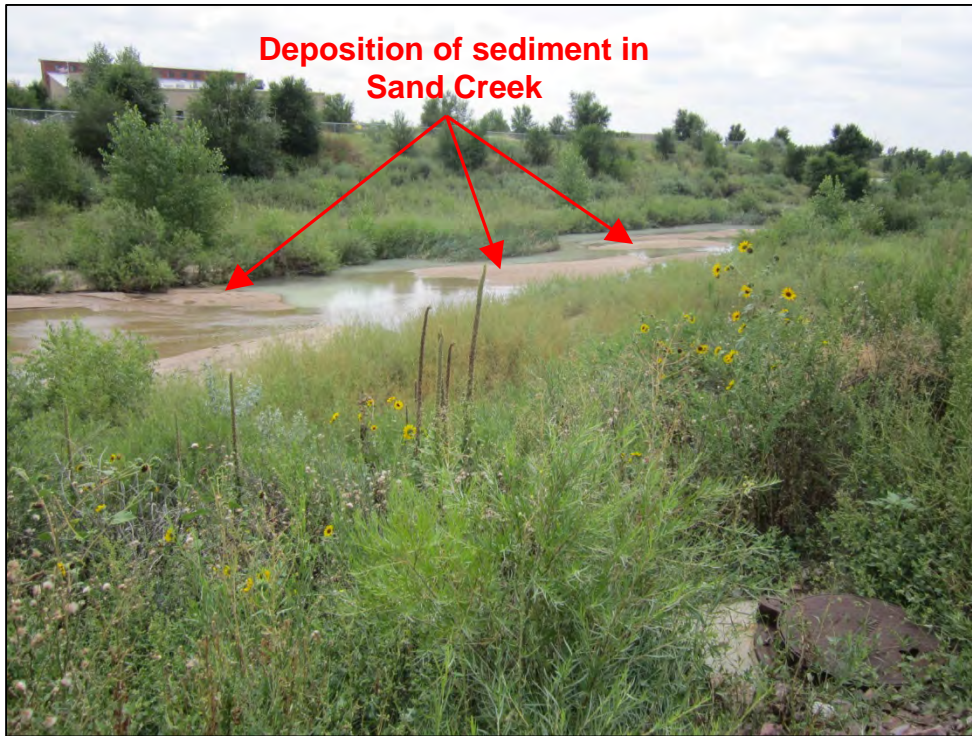


Photograph 123. View of unmaintained (e.g., dense vegetative growth) Tutts Boulevard MS4 outfall rip-rap flow dissipation device, which subsequently drains to Sand Creek Detention Basin No. 1.

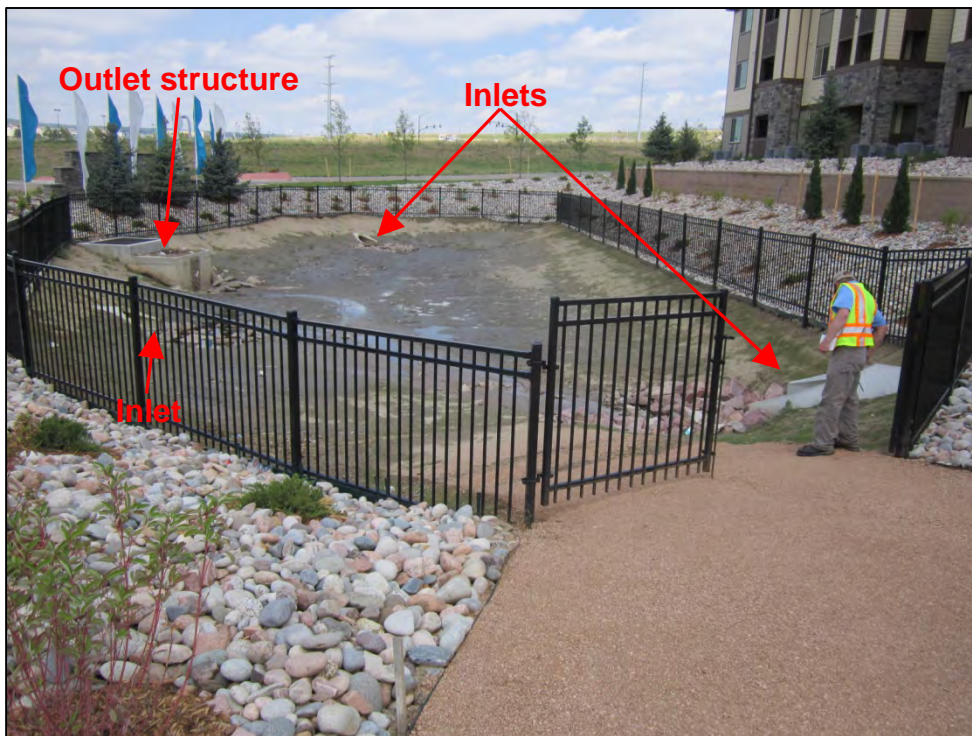


Photograph 124. View of detention basin box culvert outlet to Sand Creek downgradient of the outlet structure at Constitution Avenue.

Federal NPDES Storm Water Inspection – MS4



Photograph 125. View of deposition of sediment in Sand Creek downgradient of the Sand Creek Detention Pond No. 1 (Pond 512) outlet at Constitution Avenue, shown in Photograph 124.



Photograph 126. View of ID – 070 Woodmen Ridge Apartments EDB.

Federal NPDES Storm Water Inspection – MS4



Photograph 127. Close-up view of accumulated sediment and debris at one of the three inlets and associated forebay.

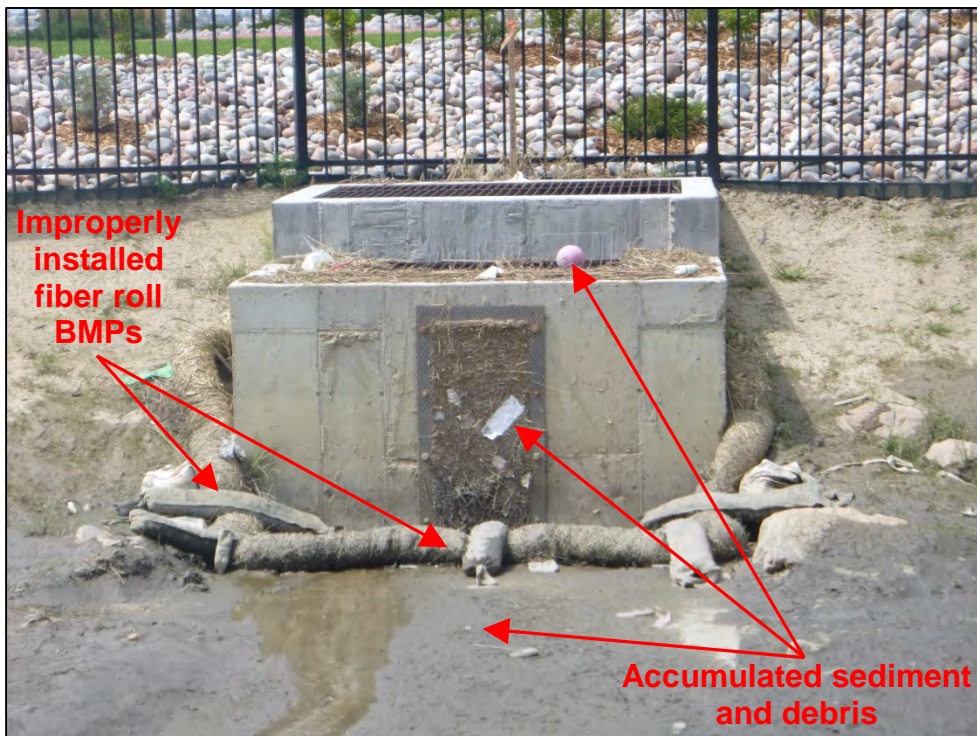


Photograph 128. View of accumulated sediment and debris at an additional inlet and associated forebay.

Federal NPDES Storm Water Inspection – MS4

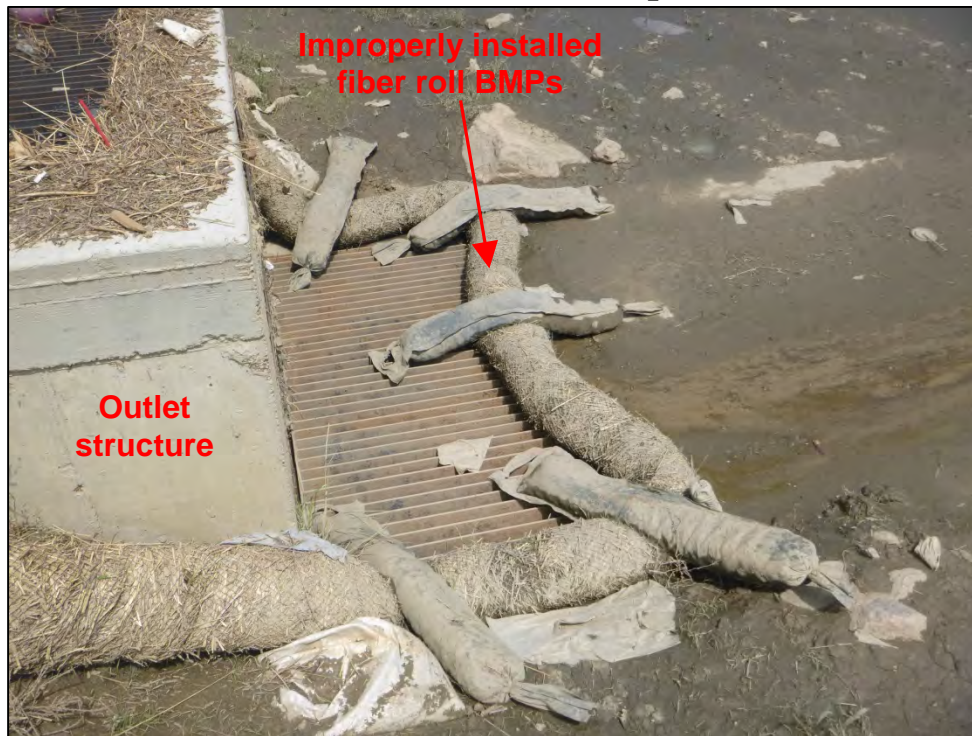


Photograph 129. View of accumulated sediment and debris at additional inlet and forebay. Also note the rip-rap scattered about the EDB.

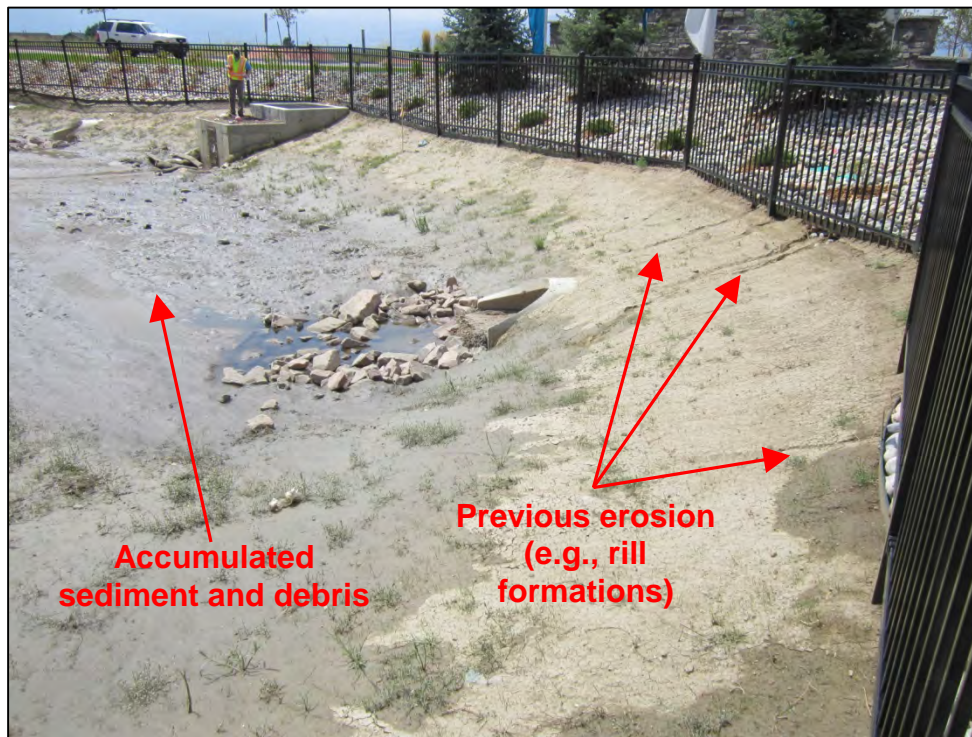


Photograph 130. View of accumulated sediment and debris at outlet structure and on orifice plate. Also note the improperly installed (e.g., not entrenched or staked) fiber roll BMPs at the outlet structure.

Federal NPDES Storm Water Inspection – MS4



Photograph 131. Close-up view of the improperly installed (e.g., not entrenched or staked) fiber roll BMPs at EDB outlet structure. Also note the gravel bags placed on the fiber roll BMP subsequently reducing the effective height of the BMP.



Photograph 132. View of evidence of previous erosion (e.g., rill formations) on the EDB side slopes and accumulated sediment and debris in the basin itself.

Federal NPDES Storm Water Inspection – MS4



Photograph 133. View of Forest Meadows Drive and Vollmer Drive – Detention/Wetland Mitigation. Note the location of the Sand Creek channel, two forebays, wetland pond, and main detention basin.

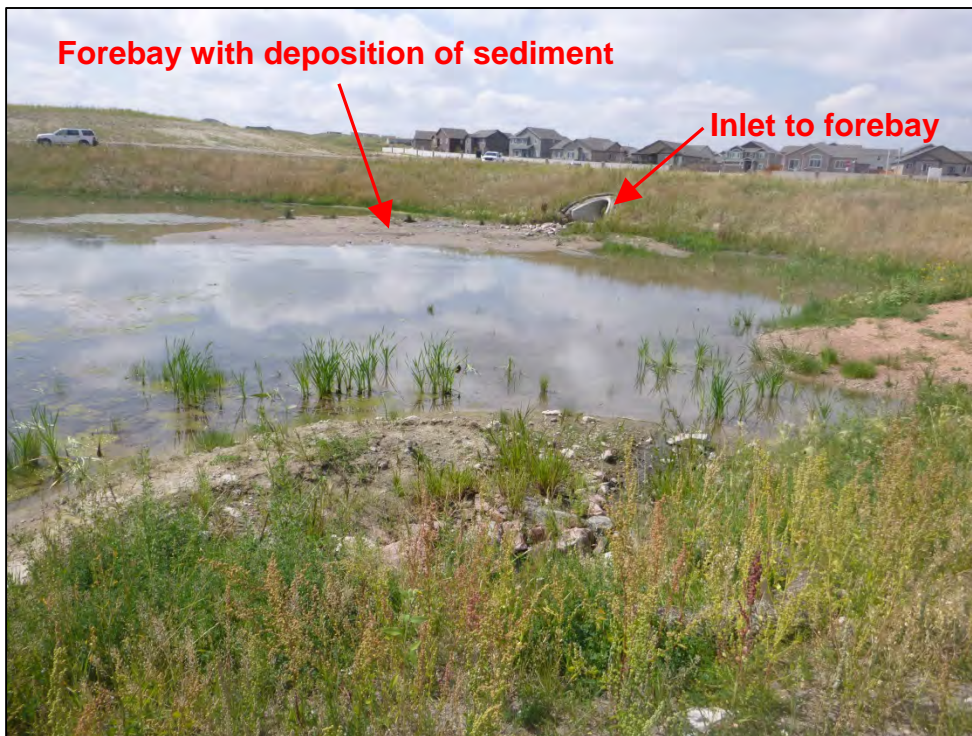


Photograph 134. View of what appeared to be a tributary of Sand Creek and one of two constructed forebays.

Federal NPDES Storm Water Inspection – MS4



Photograph 135. View of second forebay and inlet with deposition of sediment and unmaintained flow dissipation device (e.g., rip-rap scattered in forebay).

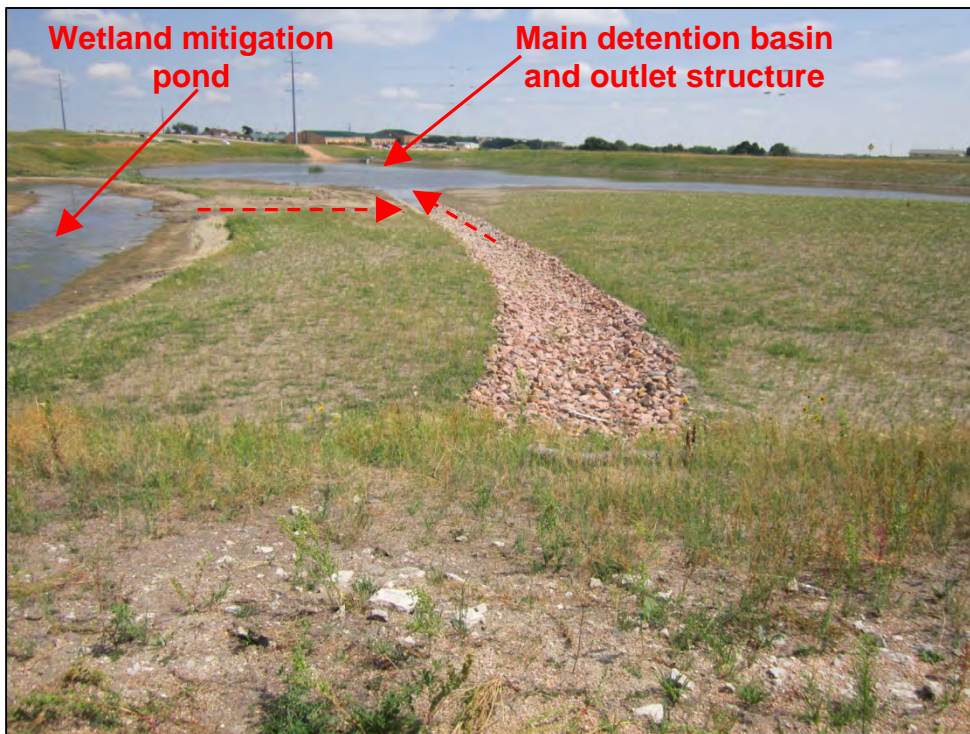


Photograph 136. Additional view of inlet and the deposition and accumulation of sediment in the forebay, shown in Photograph 135.

Federal NPDES Storm Water Inspection – MS4

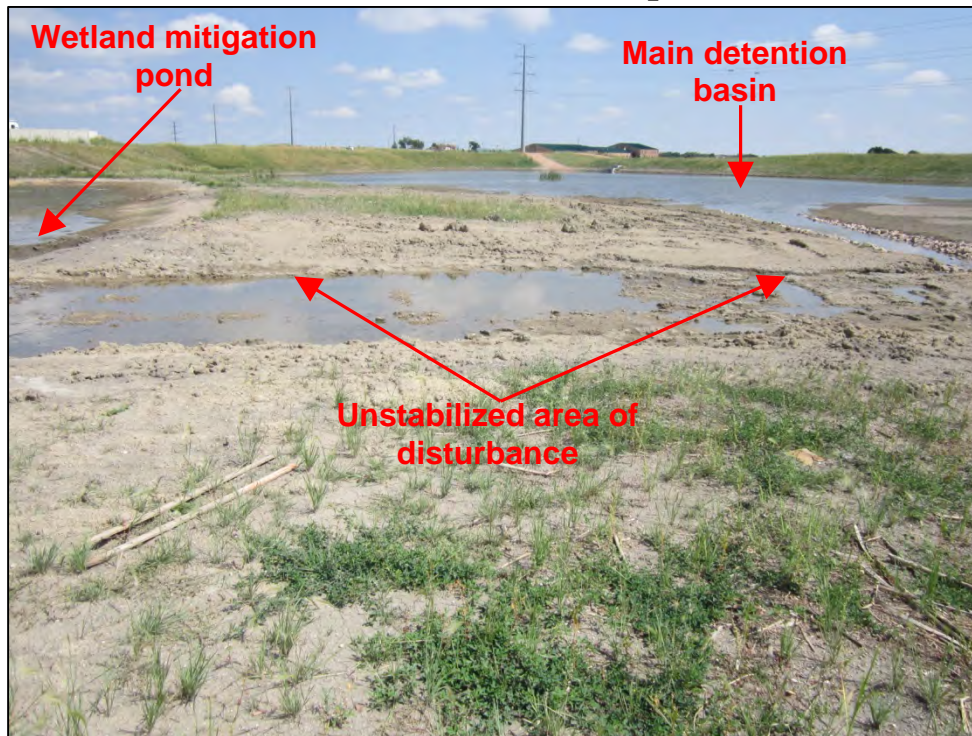


Photograph 137. View of evidence of previous erosion and deposition of sediment in forebay, shown in Photograph 135 and 136.

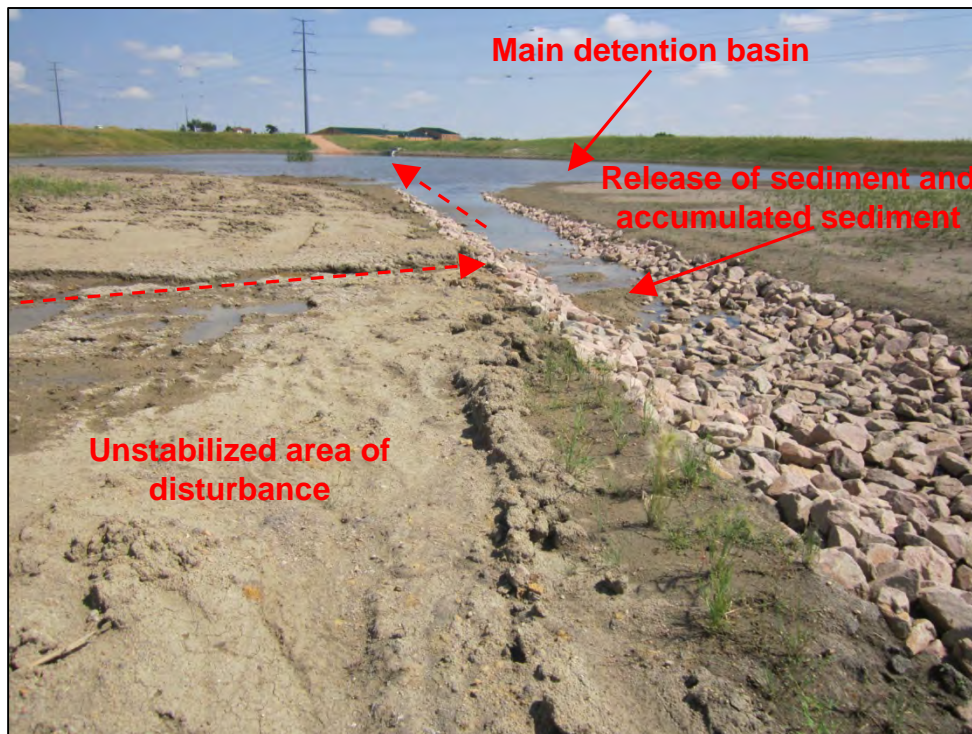


Photograph 138. View of wetland mitigation pond and connection to main detention basin. Note that the area between the wetland mitigation pond and main detention basin was observed unstabilized at the time of the inspection.

Federal NPDES Storm Water Inspection – MS4

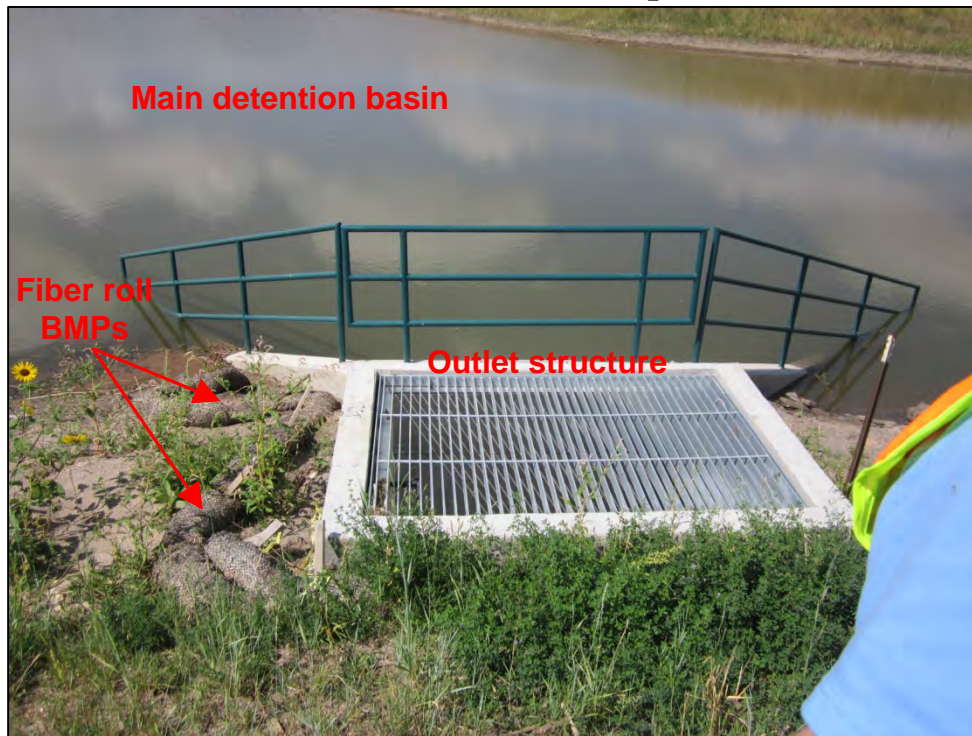


Photograph 139. View of unstabilized area of disturbance between the wetland mitigation pond and main detention basin.



Photograph 140. Close-up view of the unstabilized area of disturbance, shown in Photograph 139. Note the release of sediment and accumulated sediment within the rip-rap lined conveyance channel draining to the main detention basin.

Federal NPDES Storm Water Inspection – MS4



Photograph 141. View of main detention basin outlet structure. Note the improperly installed and maintained fiber roll BMPs located adjacent to the outlet.

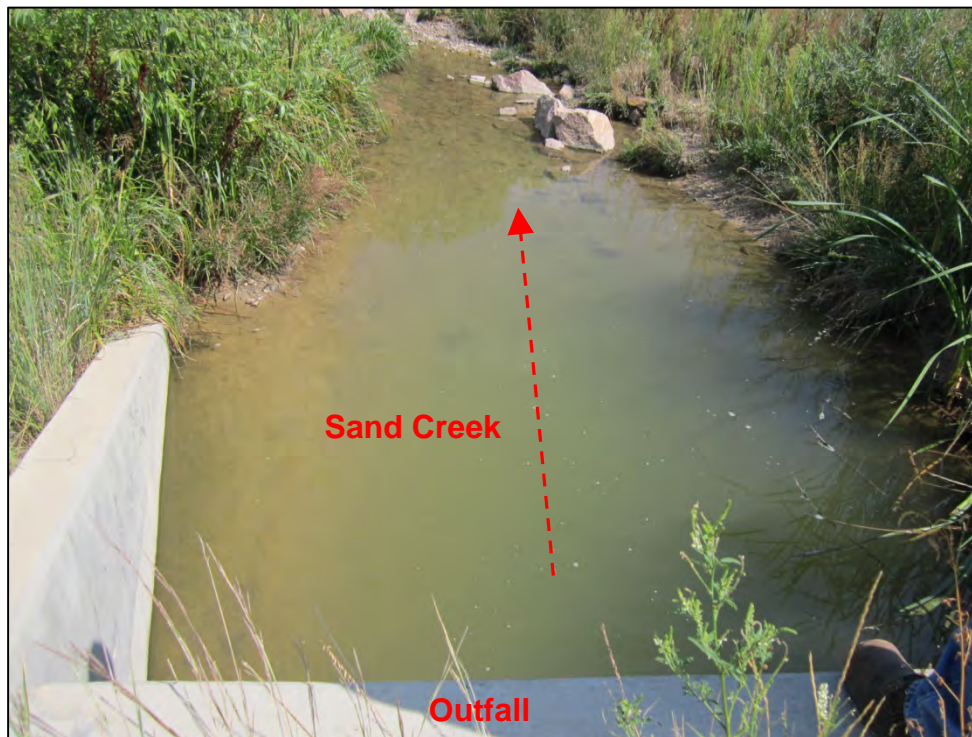


Photograph 142. Close-up view in main detention basin outlet structure. Note that flow was observed flowing through the structure at the time of the inspection.

Federal NPDES Storm Water Inspection – MS4



Photograph 143. View of storm drain inlet with fiber roll BMPs not properly installed (e.g., not staked or entrenched, placed on rip-rap) located adjacent to Woodmen Road. It should be noted that this storm drain inlet is inline with the main detention basin outlet structure conveyance pipe.



Photograph 144. View of main detention basin stormwater conveyance pipe outfall to downstream tributary of Sand Creek.

Federal NPDES Storm Water Inspection – MS4

Appendix C: MS4 Inspection Exhibit Log

City of Colorado Springs Phase I MS4 Inspection Report
Colorado Discharge Permit System, Permit #: COS000004

Inspection Dates: August 18, 2015–August 19, 2015

Federal NPDES Storm Water Inspection – MS4

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Federal NPDES Storm Water Inspection – MS4

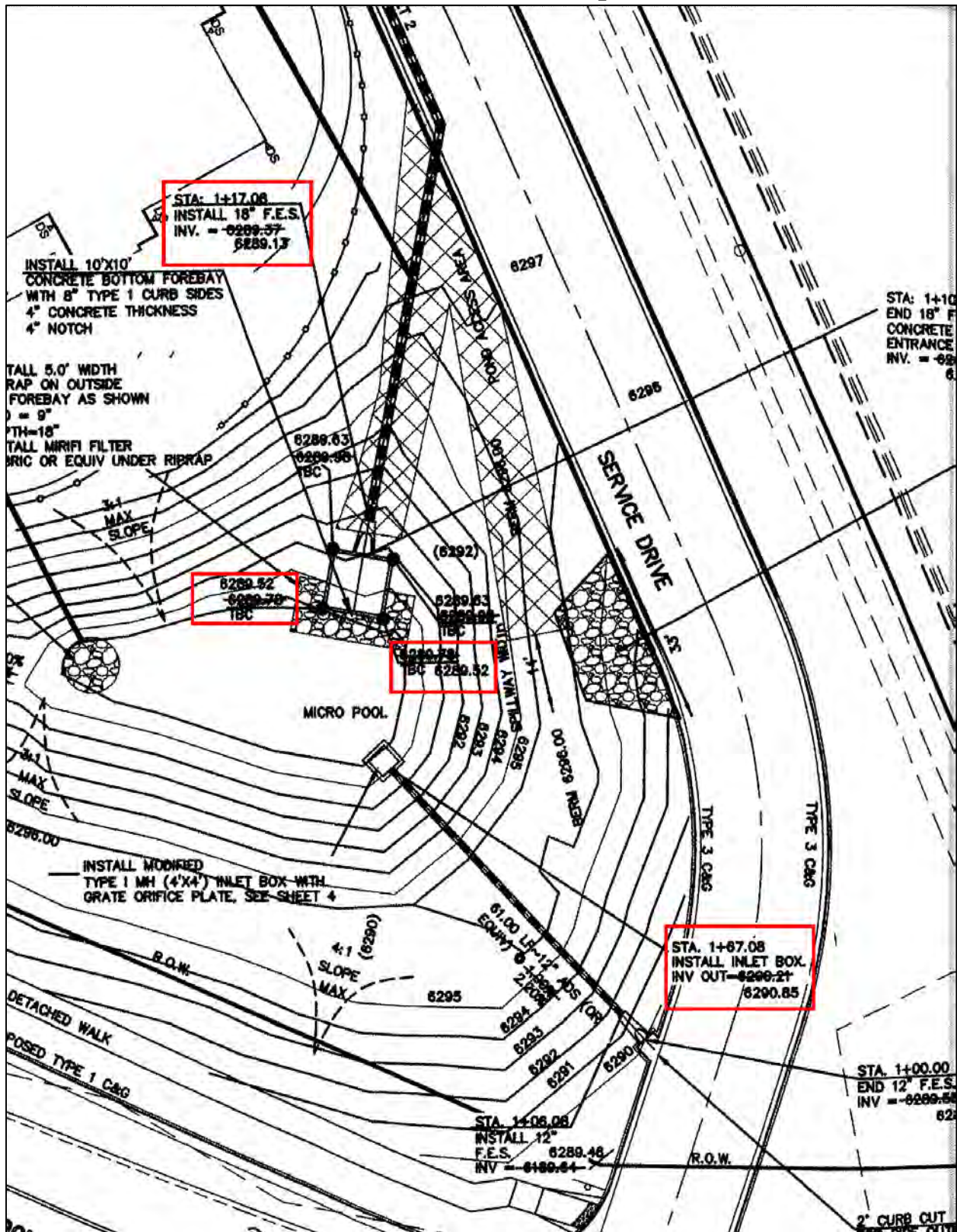


Exhibit 1. Scan of ID-158 Morning Star at Bear Creek EDB as-built plans (dated October 3, 2014; Sheet 1 of 2) provided by Joel Mackey (City Engineering Inspector). Note that the approved design and as-built elevations of the inlet pipe and forebay were approximately one foot lower than the outlet pipe invert resulting in an impaired forebay and drain time for WQCV.

Federal NPDES Storm Water Inspection – MS4

Action: O & M - Extended Detention Basin Inspection **Project Type:** Subdivision **Zip Code:** 80906
Project Name: Morningstar at Bear Creek Filing No. 1 **Subdivision:** Morningstar at Bear Creek Filing No 1
Address/Location: Lower Gold Camp Road & Cresta Road
Action Date: 01/14/2014 **Date Next Routine:** 08/27/2015 **Date Next Follow-up:**
Owner: MVG-MS (LGC Road) **Owner Phone:** 719-339-5185 **Construction Stage:** Construction
Rep. Name: **Rep. Phone:** **Rep. Email:**
Assigned Inspector: Frank Helme **Inspected By:** Joel Mackey

Items	is Used	Maint. Required	Remarks / Actions Necessary
1 Grading Grading & slope grades completed per approved plans?	No	No	
2 Inlets Dispersers installed to decrease flow energy at pond inflow?	No	No	
3 Forebay Forebay built per approved plans? Forebay volume per approved plans?	No	No	
4 Low-Flow Channel Low-flow channel built per approved plans?	No	No	
5 Bottom Stage (micro-pool) Bottom stage (micro-pool) built per approved plans? Bottom stage (micro-pool) volume per approved plans?	No	No	
6 Outlet Works Outlet works built per approved plans? Orifice plate or perforated pipe per approved plans? Trash rack per approved plans?	No	No	
7 Spillway Structure Spillway Structure built per approved plans?	No	No	
8 Access All weather vehicle access to pond bottom, forebay and outlet works?	No	No	
9 Vegetation Seed mix certified/correct per approved plans? Seed mix load ticket verified? Vegetation established adequate to control erosion (at least 70% of pre-disturbance levels)	No	No	
10 WQCV and Elevations WQCV per approved plans? All elevations per approved plans?	No	No	
11 As Built As built plans received for permanent BMP?	No	No	

Project Status: Active **Const. Start Date:** 10/02/2013 **Size of Disturbance (acres):** 4.99

Additional Comments:
 OM093, Received construction details for EDB to be built on site. Plans received will not work and doesn't meet our BMP requirements. Had review engineer contact design engineer and explain the issues with the design. Design engineer is going to correct the issues with the EDB design. Contacted super for site and explained what is going on with the plans and that the design engineer would be getting him new plans for EDB.

Exhibit 2. City's Engineering Inspector inspection report dated January 14, 2014. Note that this report documents that the EDB design plans do not meet City requirements. Also note that the checklist component of this inspection report does not appear to document the issues observed by the EPA inspection in the field regarding the elevation of the northeast forebay, inlet pipe, outlet structure pipe, or WQCV.

Federal NPDES Storm Water Inspection – MS4

Action: **O & M - Extended Detention Basin Inspection** Project Type: Subdivision Zip Code: 80906
 Project Name: Morningstar at Bear Creek Filing No. 1 Subdivision: Morningstar at Bear Creek Filing No 1
 Address/Location: Lower Gold Camp Road & Cresta Road
 Action Date: 08/14/2014 Date Next Routine: 08/27/2015 Date Next Follow-up:
 Owner: MVG-MS (LGC Road) Owner Phone: 719-339-5185 Construction Stage: Construction
 Rep. Name: Rep. Phone: Rep. Email:
 Assigned Inspector: Frank Helme Inspected By: Joel Mackey

Items	Is Used	Mainf. Required	Remarks / Actions Necessary
1 Grading Grading & slope grades completed per approved plans?	No	No	
2 Inlets Dissipaters installed to decrease flow energy at pond inflow?	No	No	
3 Forebay Forebay built per approved plans? Forebay volume per approved plans?	No	No	
4 Low-Flow Channel Low-flow channel built per approved plans?	No	No	
5 Bottom Stage (micro-pool) Bottom stage (micro-pool) built per approved plans? Bottom stage (micro-pool) volume per approved plans?	No	No	
6 Outlet Works Outlet works built per approved plans? Orifice plate or perforated pipe per approved plans? Trash rack per approved plans?	No	No	
7 Spillway Structure Spillway Structure built per approved plans?	No	No	
8 Access All weather vehicle access to pond bottom, forebay and outlet works?	No	No	
9 Vegetation Seed mix certified/correct per approved plans? Seed mix load ticket verified? Vegetation established adequate to control erosion (at least 70% of pre-disturbance levels)	No	No	
10 WQCV and Elevations WQCV per approved plans? All elevations per approved plans?	No	No	
11 As Built As built plans received for permanent BMP?	No	No	

Project Status: Active Const. Start Date: 10/02/2013 Size of Disturbance (acres): 4.99

Additional Comments:
 OM093, OS and east forebay installed with out meeting to address my concerns. OS opening is set higher than forebay causing the forebay to be under water. Called and left a message with design engineer but never heard back.

Exhibit 3. City’s Engineering Inspector inspection report dated August 14, 2014. Note that this report documents that the EDB outlet structure pipe is not at the correct elevation resulting in the EDB’s northeast forebay and inlet pipe to be submerged/inundated. Also note that the checklist component of this inspection report does not appear to document the issues observed by the EPA inspection in the field regarding the elevations of the northeast forebay, inlet pipe, outlet structure pipe, or WQCV.

Federal NPDES Storm Water Inspection – MS4

Action: O & M - Extended Detention Basin Inspection		Project Type: Subdivision	Zip Code: 80906
Project Name: Morningstar at Bear Creek Filing No. 1		Subdivision: Morningstar at Bear Creek Filing No 1	
Address/Location: Lower Gold Camp Road & Cresta Road			
Action Date: 02/20/2015	Date Next Routine: 08/27/2015	Date Next Follow-up:	
Owner: MVG-MS (LGC Road)	Owner Phone: 719-339-5185	Construction Stage: Construction	
Rep. Name:	Rep. Phone:	Rep. Email:	
Assigned Inspector: Frank Helme		Inspected By: Joel Mackey	

Items	Is Used	Maint. Required	Remarks / Actions Necessary
1 Grading Grading & slope grades completed per approved plans?	No	No	
2 Inlets Disipaters installed to decrease flow energy at pond inflow?	No	No	
3 Forebay Forebay built per approved plans? Forebay volume per approved plans?	No	No	
4 Low-Flow Channel Low-flow channel built per approved plans?	No	No	
5 Bottom Stage (micro-pool) Bottom stage (micro-pool) built per approved plans? Bottom stage (micro-pool) volume per approved plans?	No	No	
6 Outlet Works Outlet works built per approved plans? Orifice plate or perforated pipe per approved plans? Trash rack per approved plans?	No	No	
7 Spillway Structure Spillway Structure built per approved plans?	No	No	
8 Access All weather vehicle access to pond bottom, forebay and outlet works?	No	No	
9 Vegetation Seed mix certified/correct per approved plans? Seed mix load ticket verified? Vegetation established adequate to control erosion (at least 70% of pre-disturbance levels)	No	No	
10 WQCV and Elevations WQCV per approved plans? All elevations per approved plans?	No	No	
11 As Built As built plans received for permanent BMP?	No	No	

Project Status: Active	Const. Start Date: 10/02/2013	Size of Disturbance (acres): 4.99
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Additional Comments:
OM093, construction complete, no action on issues with pond because design engineer states that it was built as approve. EDB will not function correctly.

Date Printed: 8/19/2015 4:42:55PM 1 of 1

Exhibit 4. City’s Engineering Inspector inspection report dated February 20, 2015. Note this report documents that the EDB construction is complete but not in accordance with City requirements and therefore “will not function properly.” As shown in Exhibit 1 above, the as-built elevations were within one foot of the design; however, the approved City design plans were not in accordance with DCM Vol 1 and 2, or USDCM Vol 3, Chapter 4 Treatment BMP T-5 and T-12 Fact Sheets.

Federal NPDES Storm Water Inspection – MS4

Action: Project Type: Zip Code:
 Project Name: Subdivision:
 Address/Location:
 Action Date: Date Next Routine: Date Next Follow-up:
 Owner: Owner Phone: Construction Stage:
 Rep. Name: Rep. Phone: Rep. Email:
 Assigned Inspector: Inspected By:

Items	Is Used	Maint. Required	Remarks / Actions Necessary
1 Grading Grading & slope grades completed per approved plans?	No	No	
2 Inlets Dissipaters installed to decrease flow energy at pond inflow?	No	No	
3 Forebay Forebay built per approved plans? Forebay volume per approved plans?	No	No	
4 Low-Flow Channel Low-flow channel built per approved plans?	No	No	
5 Bottom Stage (micro-pool) Bottom stage (micro-pool) built per approved plans? Bottom stage (micro-pool) volume per approved plans?	No	No	
6 Outlet Works Outlet works built per approved plans? Orifice plate or perforated pipe per approved plans? Trash rack per approved plans?	No	No	
7 Spillway Structure Spillway Structure built per approved plans?	No	No	
8 Access All weather vehicle access to pond bottom, forebay and outlet works?	No	No	
9 Vegetation Seed mix certified/correct per approved plans? Seed mix load ticket verified? Vegetation established adequate to control erosion (at least 70% of pre-disturbance levels)	No	No	
10 WQCV and Elevations WQCV per approved plans? All elevations per approved plans?	No	No	
11 As Built As built plans received for permanent BMP?	No	No	

Project Status: Const. Start Date: Size of Disturbance (acres):

Additional Comments:
 OM072, met with super, contractors and surveyors on VA EDB OS. OS micro pool only has 18" of depth, super is going to have all feature surveyed so we can find out where the bust is and consult with design engineer on how to fix.

Exhibit 5. City’s Engineering Inspector inspection report for the VA Hospital dated January 21, 2014. Note that the EDB outlet structure may not have been constructed in accordance with the approved plans.

Federal NPDES Storm Water Inspection – MS4

Action: Project Type: Zip Code:
 Project Name: Subdivision:
 Address/Location:
 Action Date: Date Next Routine: Date Next Follow-up:
 Owner: Owner Phone: Construction Stage:
 Rep. Name: Rep. Phone: Rep. Email:
 Assigned Inspector: Inspected By:

Items	Is Used	Maint. Required	Remarks / Actions Necessary
1 Grading Grading & slope grades completed per approved plans?	No	No	
2 Inlets Dissipaters installed to decrease flow energy at pond inflow?	No	No	
3 Forebay Forebay built per approved plans? Forebay volume per approved plans?	No	No	
4 Low-Flow Channel Low-flow channel built per approved plans?	No	No	
5 Bottom Stage (micro-pool) Bottom stage (micro-pool) built per approved plans? Bottom stage (micro-pool) volume per approved plans?	No	No	
6 Outlet Works Outlet works built per approved plans? Orifice plate or perforated pipe per approved plans? Trash rack per approved plans?	No	No	
7 Spillway Structure Spillway Structure built per approved plans?	No	No	
8 Access All weather vehicle access to pond bottom, forebay and outlet works?	No	No	
9 Vegetation Seed mix certified/correct per approved plans? Seed mix load ticket verified? Vegetation established adequate to control erosion (at least 70% of pre-disturbance levels)	No	No	
10 WQCV and Elevations WQCV per approved plans? All elevations per approved plans?	No	No	
11 As Built As built plans received for permanent BMP?	No	No	

Project Status: Const. Start Date: Size of Disturbance (acres):


Additional Comments:
 OM072, repairs made to OS are wrong, spoke with Super and he is going to have corrections done again.

Date Printed: 8/19/2015 7:31:51AM

1 of 1

Exhibit 6. City’s Engineering Inspector inspection report for VA Hospital dated April 30, 2014. Note this inspection report documents that incorrect repairs were made to the outlet structure.

Federal NPDES Storm Water Inspection – MS4



**EXTENDED DETENTION BASIN (EDB)
INSPECTION FORM**

Date: 1-27-15

Subdivision/Business Name: ID# 57 Inspector: JM

Subdivision/Business Address: _____

Weather: Clear

Date of Last Rainfall: 1-21-15 Amount: 1-2 Inches

Property Classification: Residential Multi Family Commercial Other: VA Hospital
(Circle One)

Reason for Inspection: Routine Complaint After Significant Rainfall Event
(Circle One)

INSPECTION SCORING - For each facility inspection item, insert one of the following scores:

0 = No deficiencies identified 2 = Routine maintenance required
 1 = Monitor (potential for future problem) 3 = Immediate repair necessary
 N/A = Not applicable

FEATURES

1.) Inflow Points

Riprap Displaced

Erosion Present/Outfall Undercut

Sediment Accumulation

Structural Damage (pipe, end-section, etc.)

Woody Growth/Weeds Present

3.) Trickle Channel (Low-flow)

Sediment/Debris Accumulation

Concrete/Riprap Damage

Woody Growth/Weeds Present

Erosion Outside Channel

5.) Outlet Works

Trash Rack/Well Screen Clogged

Structural Damage (concrete, steel, subgrade)

Orifice Plate(s) Missing/Not Secure

Manhole Access (cover, steps, etc.)

Woody Growth/Weeds Present

7.) Upper Stage (Dry Storage)

Vegetation Sparse

Woody Growth/Undesirable Vegetation

Standing Water/Boggy Areas

Sediment Accumulation

Erosion (banks and bottom)

Trash/Debris

Maintenance Access

2.) Forebay

Sediment/Debris Accumulation SFB

Concrete Cracking/Failing

Drain Pipe/Wier Clogged (not draining)

Wier/Drain Pipe Damage

4.) Bottom Stage (Micro-Pool)

Sediment/Debris Accumulation @end of pipe

Woody Growth/Weeds Present

Bank Erosion

Mosquitoes/Algae Treatment

Petroleum/Chemical Sheen

6.) Emergency Spillway

Riprap Displaced

Erosion Present

Woody Growth/Weeds Present

Obstruction/Debris

8.) Miscellaneous

Encroachment in Easement Area

Graffiti/Vandalism

Public Hazards

Burrowing Animals/Pests

Other

Inspection Summary / Additional Comments: _____

OVERALL FACILITY RATING (Circle One)

0 = No Deficiencies Identified 2 = Routine Maintenance Required
 1 = Monitor (potential for future problem exists) 3 = Immediate Repair Necessary

This inspection form shall be kept a minimum of 5 years and made available to the City of Colorado Springs upon request.

Exhibit 8. City’s Engineering Inspector inspection report for VA Hospital dated January 27, 2015. Note that this inspection report documents accumulated sediment and vegetative growth issues with the EDB; however, these issues had not been addressed in the field at the time of the inspection.

Federal NPDES Storm Water Inspection – MS4

'Stormwater Canyon' becomes priority in Colorado Springs

Drainage, erosion problems ignored for 30 years, neighbors say

Scott Harrison

POSTED: 07:33 PM MDT Aug 14, 2014

Print 3

 Tweet 8  Pin it



Colorado Springs Makes "Stormwater Canyon" a Priority

COLORADO SPRINGS, Colo. - An area of northwest Colorado Springs nicknamed the "Stormwater Canyon" could be the face of the city's many drainage issues.

RELATED CONTENT



The canyon is on a bluff between Popes Valley and Pebblewood drives. Runoff from homes above a cliff have eroded a canyon in the bluff which becomes a waterfall during heavy rain.

Stormwater, rocks and other debris have twice this year flooded the home of Mike and Laurel Chiramonte, who live closest to the bottom of the bluff.

"We had no idea this would happen when we bought the home three years ago," Chiramonte said. "We got it on foreclosure, so no one warned us about the drainage. It didn't flood for the first time until May."



Flooding has washed out landscaping and soaked the home's basement, forcing the family to replace part of their driveway. Chiramonte said insurance doesn't cover damage amounting to nearly \$20,000.

Chiramonte is upset that the city won't reimburse them for the damage.

Exhibit 9. KRDO news article dated August 14, 2014 documenting issues with the City's MS4 outfall and impacts to the downgradient Chiramonte property (Page 1 of 2).

Federal NPDES Storm Water Inspection – MS4

"We have documentation for 30 years that this was supposed to be fixed, and it never has been," she said. "We're insulted and angry. It's depressing."

Chiaromonte said she can't even move out of the home because the flooding has decreased its value.

The situation eventually could not only affect other homes below the bluff, but condominiums above the cliff on Pebblewood Drive. The back row of homes is right along the cliff's edge, and erosion is gradually wearing away the ground underneath. A red safety fence has been placed in the area of greatest erosion.

A woman who lives closer to the front of the condominium complex said she has already noticed her property gradually slumping toward the edge.

Tim Mitros, the city's stormwater manager, said the canyon "is a big problem." On Tuesday, he sent workers to the Chiaromonte's home to install hay bales to protect the side facing the drainage.

Mitros said the city will begin finding a permanent solution on Friday.

"We're going to meet with consultants and contractors," he said. "We'll ask contractors to submit proposals on how to correct the situation. This has become a priority."

Mitros said work on the canyon could begin this winter.

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Exhibit 9. KRDO news article dated August 14, 2014 documenting issues with the City's MS4 outfall and impacts to the downgradient Chiramonte property (Page 2 of 2).

Federal NPDES Storm Water Inspection – MS4

DRAINAGE REPORT

PINECLIFF SUBDIVISIONS 1 and 2.

INTERIOR DRAINAGE:

The interior drainage system of Pinecliff Subdivisions 1 and 2 is divided into six (6) basins as shown on the drainage plan.

With subject type terrain the development of this area will minimize grading and therefore surface drainage will follow existing drainage courses where feasible.

As shown, drainage will basically follow roadways, where aligned, to dip slab or catch basins and CMP culverts and outfall into lined ditches.

It is the intent not to necessarily confine surface flow, but direct in portioned areas to prevent flow directly into residences.

The flow arrows show proposed swale and lined ditch alignment which all be so shaped as to carry sufficient runoff. At dip slab crossings, road transition, by slight vertical curves will allow runoff within swales to flow into the dip slabs. This in effect will create a road depression and will not be noticeable to traffic and will drain to low point of the roadway system, as it is proposed the roadways will slope to the low contour. All roadways will be constructed with rollover type curb and gutter.

The area of Pope's Bluff is predominately disintegrated Fikes Peak Granite, resulting in gravelly, sandy surface soils. Outcropping in the area is in the Dawson soil groups.

Due to the terrain, the area in the outer perimeters will have rather high run-off velocities. Within the developed area, however, the grades are moderate.

Q in runoff inches is computed at 1.2.

The area is rustic and mountainous, containing substantial tree and brush coverage, which has prevented erosion in the area.

Drainage structures are required and are indicated on the drainage plan and in the Cost Estimate.

Drainage easements are shown on the Drainage Plan.

Exhibit 10. City provided drainage report for Pinecliff subdivisions in the 1970's. Note the report states that drainages will "outfall into lined ditches" and that high runoff velocities are expected along the outer perimeters.

Federal NPDES Storm Water Inspection – MS4

CS022

Pebblewood @ Pinecliff



CITY ENGINEERING DIVISION
Stormwater and Subdivision

March 1, 1995

Robert Bentzen
Pebblewood at Pinecliff Homeowner's Association
109 E. Fontanero St.
Colorado Springs, CO 80907

RE: Pebblewood at Pinecliff Drainage

Dear Mr. Bentzen:

I have researched our files regarding your request for information on the drainage facilities constructed in conjunction with the Pebblewood at Pinecliff development. Your request relates to Block 1 of this development. The attached map generally shows the drainage facilities constructed with Block 1 and the downstream drainage system constructed with the Pinecliff No. 12 development.

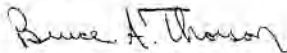
The 18-inch storm sewer through Block 1 was built in accordance with the Pebblewood at Pinecliff Drainage Report, prepared by Ollie Watts consulting engineer. The report was accepted by the City on January 23, 1981 and the Pebblewood at Pinecliff plat was recorded on February 5, 1981. The drainage system was constructed by the developer and is a public system with City maintenance responsibility, except for the storm sewer inlet internal to the site. The plat included a specific drainage easement across Block 1.

The downstream drainage system through Pinecliff No. 12 was not anticipated in the original Drainage Report for that subdivision. This report was accepted by the City on August 10, 1984. It was later determined that an error had been made regarding where the drainage from Pebblewood at Pinecliff entered the lots in Pinecliff No. 12. Finn and Associates, the consulting engineer who prepared the subdivision Drainage Report, prepared a design for the 18-inch relief storm sewer (see attached map) and this system was constructed by the developer in 1988. This system is a public drainage system with City maintenance responsibility. A 15-foot drainage easement was also granted to the City in 1988 for maintenance access.

It is my understanding the owner of lot 11 of Pinecliff No. 12 is concerned with maintenance problems at the inlet to the storm sewer system. I believe the City Street Division has been made aware of the maintenance needs.

If you have any questions, please call me at 578-6212.

Sincerely,



Bruce A. Thorson
Stormwater & Subdivision Manager

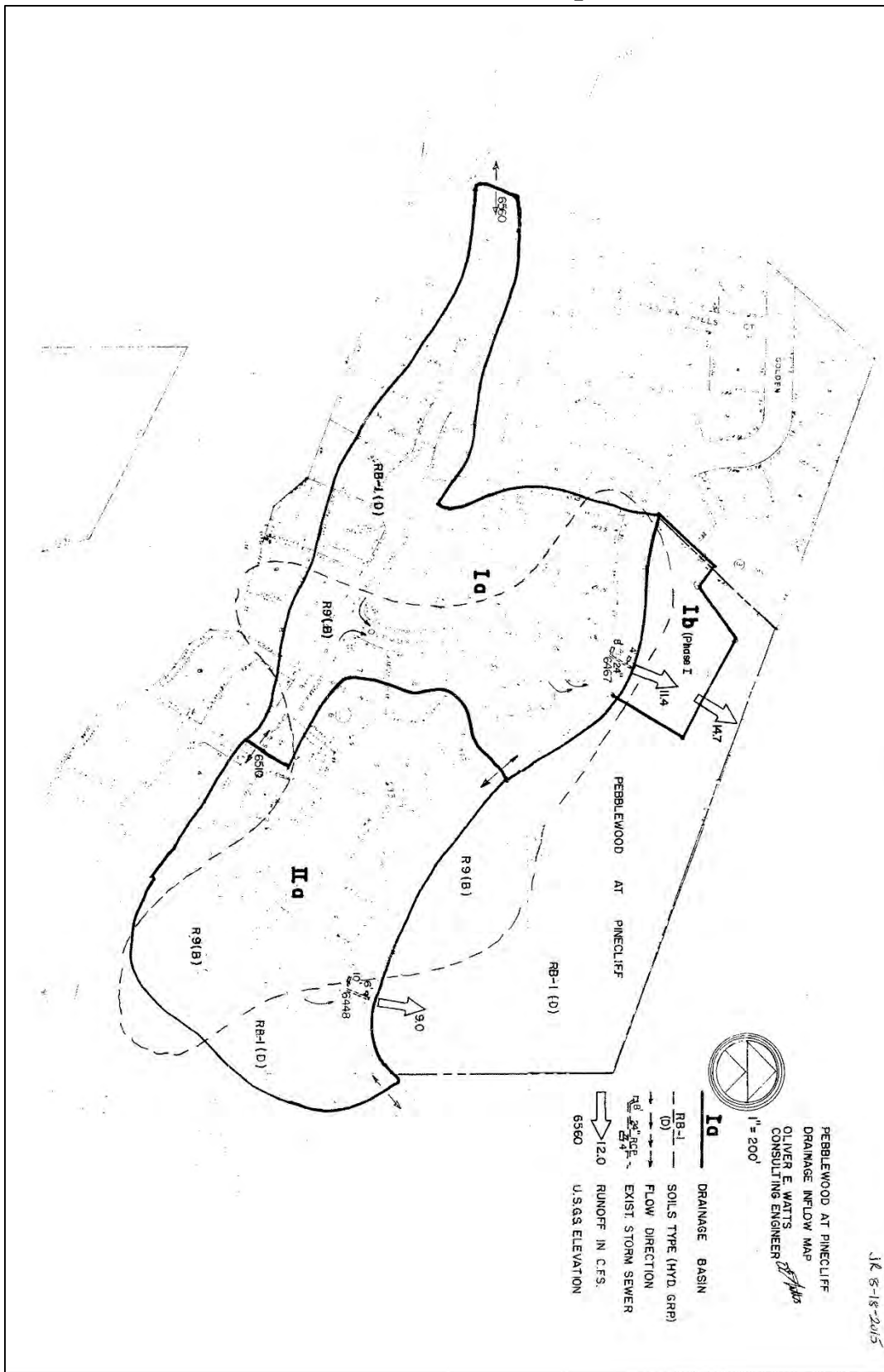
Attachment

c: Leonard Miller, City Engineering Inspector Supervisor
Kim Karr, Street Division Maintenance/Construction Supervisor

101 West Costilla, Suite 122 • TEL 719-578-6212 Stormwater Management/719-578-6208 Subdivision FAX 719-578-6161
Mailing Address: Post Office Box 1575, Mail Code 1110 • Colorado Springs, Colorado 80901-1575

Exhibit 11. City provided letter, dated March 1, 1995, regarding the Pebblewood at Pinecliff drainage. Note the letter outlines that the drainage system is the City's maintenance responsibility.

Federal NPDES Storm Water Inspection – MS4



Federal NPDES Storm Water Inspection – MS4

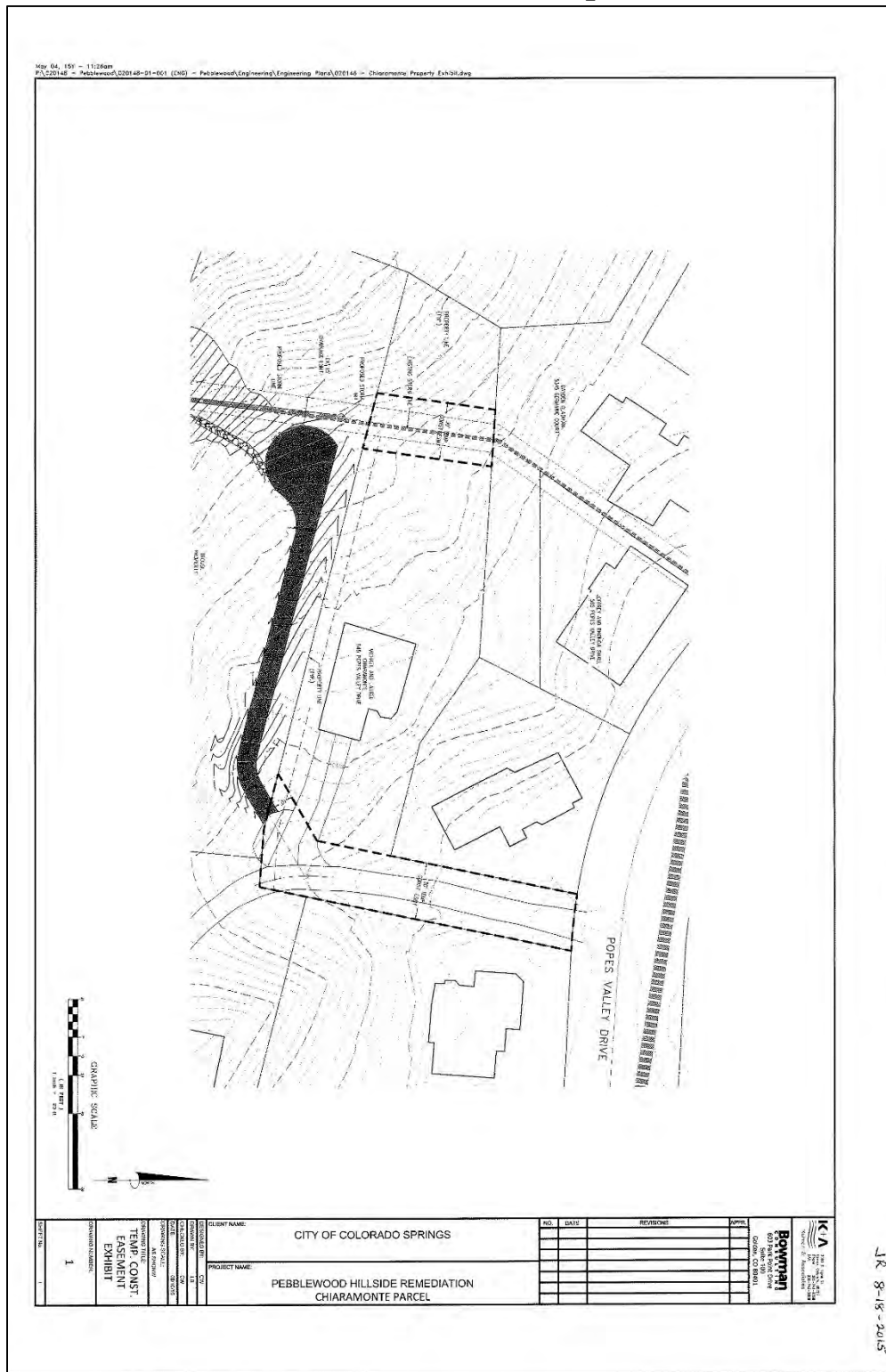


Exhibit 12. City provided proposed plan, dated March 10, 2015, for addressing stormwater runoff from the Pebblewood at Pinecliff MS4 outfall. It should be noted that these proposed plans appeared to include the addition of a stormwater pipe to convey stormwater flows below the City’s MS4 outfall directly to the Popes Valley drainage. It did not appear that the City was implementing the Four-Step Process 1-Runoff Reduction Practices; 2-BMPs with WQCV; 3-Stabilize Drainageways; 4-Need for Industrial/Commercial BMPs) as outlined in the City’s DCM Vol 2 as part of this remediation project (Page 2 of 2).

Federal NPDES Storm Water Inspection – MS4



Exhibit 13. City provided aerial imagery of the Pebblewood and Pinecliff subdivision. Note the large ravine is outlined on this aerial imagery. The Chiramonte property location was added by the EPA Inspection Team.

Federal NPDES Storm Water Inspection – MS4

C:\Users\lheyerd\Desktop\coolpics\Final_PhotoMaps_228pages.mxd lheyerd 10/10/2013



- 100 ft
- Representative Photo Shown Below
- Stream Line
- Photo Location
- Project Site
- Stormwater Infrastructure



Photo: CS-060 (1) x.JPG



Photo: CS-060 (3) x.JPG

CITY OF COLORADO SPRINGS
STORMWATER NEEDS ASSESSMENT
VPL Project Photo Sheets
Project CS-060
 Page 44 of 228

Exhibit 14. Photo Sheet provided in 2013 CH2MHill Report of CS-060. Note the accumulated trash and debris at the culvert pipe inlet trash rack.

Federal NPDES Storm Water Inspection – MS4

NR 08-19-15

POND/WETLAND MAINTENANCE INSPECTION FORM

NOTES/INSPECTOR'S SUMMARY:

Overall Condition of Facility

Total number of concerns receiving a:

(1) Needs Monitoring	19
(2) Routine Repair	6
(3) Immediate Repair Needed	0

MONITOR: 1. TRASH DUMPING
 2. NOXIOUS WEEDS
 3. BANK EROSION - EAST SIDE
 4. OUT FILL EROSION N. SIDE FOOTING

ROUTINE: CLEAN SEDIMENT FROM POND

12/6/2013 6:48 AM

6

G:\City of CS D-Pond (South)\SAND CREEK #1 D-POND #512\#512 BLANK FORM INSP\#512pondwetlandinspection.xls

Exhibit 15. City provided Pond/Wetland Maintenance Inspection Form, dated March 3, 2014 for ID – 44 / Pond No. 512 / Sand Creek Detention Basin No. 1. Note that this inspection report documents the need for six routine repairs including “clean sediment from pond”; however, this did not appear to have been completed in the field at the time of the inspection.

Federal NPDES Storm Water Inspection – MS4

JR 8-19-2015

G:\City of CS D-Pond (South)\SAND CREEK #1 D-POND #512\#512 BLANK FORM INSP\#512 SAND CREEK POND MTN ACTION .xls

POND/WETLAND MAINTENANCE ACTION FORM	
POND # <u>512</u>	NAME OF STRUCTURAL CONTROL <u>SAND CREEK D-POND 1</u>
LOCATION: <u>CONSTITUTION & TUTT</u>	
ACTION REQUESTED: <input checked="" type="checkbox"/> ROUTINE REPAIR	<input type="checkbox"/> IMMEDIATE REPAIR NEEDED
Repairs Needed:	
<div style="border: 1px solid red; padding: 5px; margin: 10px auto; width: 80%;"> <p style="margin: 0;">CLEAN SEDIMENT FROM POND</p> <p style="margin: 0;">FIX ROAD EROSION SE CORNER</p> </div>	
Inspected By: <u>RANDY FAUST</u>	Request Date: <u>3-3-14</u>
Work Performed:	
Equipment Used: _____	
Materials Used: Type(s) _____	Amount(s) _____
Materials Removed: Type(s) _____	Amount(s) _____
Maintenance Supervisor: _____	Service Date(s) _____
INSPECTORS USE ONLY	
Labor Hours: _____	
Labor Costs: _____	
Equipment Costs: _____	
Material Used Costs: _____	
Total Costs: _____	
Inspected By: <u>RANDY FAUST</u>	Completion Date: _____
Telephone Number: <u>385-6816</u>	Follow-up: Yes or No
COMMENTS: SEE CARDEGRAPH	

1/7/2014

1

10:15 AM

Exhibit 16. City provided Pond/Wetland Maintenance Action Form, dated March 3, 2014. Note that this maintenance action form documents the need for repairs including “clean sediment from pond”; however, this did not appear to have been completed in the field at the time of the inspection and no completion date was provided.

Federal NPDES Storm Water Inspection – MS4

JR CS-19-15

POND/WETLAND MAINTENANCE INSPECTION FORM

NOTES/INSPECTOR'S SUMMARY:

Overall Condition of Facility Fair

Total number of concerns receiving a:

(1)	4	Needs Monitoring
(2)	7	Routine Repair
(3)		Immediate Repair Needed

Monitoring:) Animal burrows
Erosion
debiting on vortex device
concrete
soft and boggy spots

Routine:) Fix gate at north end
Fix road erosion on north side and in south east and south west corners
Remove sediment from Pond bottom
Mow East side of pond and remove volunteer trees
Clean north end westside inlet Forebays

9/26/2007 11:33 AM
6
\\Pwstreets\stretts\Mike\2005\ESSDRNG\PROJECTS\RADIO\DIANE\FORMS\draft forms\COPY of pondwetland\mininspectionform draft 9260

Exhibit 17. City provided Pond/Wetland Maintenance Inspection Form, dated April 29, 2015 for ID – 44 / Pond No. 512 / Sand Creek Detention Basin No. 1. Note that this inspection report documents the need for seven routine repairs including “clean sediment from pond” and clean inlet forebays; however, this did not appear to have been completed in the field at the time of the inspection.

Federal NPDES Storm Water Inspection – MS4

JR 08-19-2015

C:\Documents and Settings\faust.CITY\Local Settings\Temporary Internet Files\OLK1B9\PONDS MTN ACTION FORM DRAFT

POND/WETLAND MAINTENANCE ACTION FORM

POND # 512 NAME OF STRUCTURAL CONTROL Sand Creek Pond #1
 LOCATION: 4th and Constitution

ACTION REQUESTED: ROUTINE REPAIR IMMEDIATE REPAIR NEEDED

Repairs Needed:

1. mow and remove volunteer trees from East side of Pond
2. Remove sediment from pond bottom
3. Fix road Erosion on north bank and W south corners
4. Fix north side gate
5. Clean out inlet forebays

Inspected By: [Signature] Request Date: 4-29-15

Work Performed:

Equipment Used: _____
 Materials Used: Type(s) _____ Amount(s) _____
 Materials Removed: Type(s) _____ Amount(s) _____
 Maintenance Supervisor: _____ Service Date(s) _____

INSPECTORS USE ONLY

Labor Hours: _____
 Labor Costs: _____
 Equipment Costs: _____
 Material Used Costs: _____
 Total Costs: _____

Inspected By: _____ Completion Date: _____
 Telephone Number: _____ Follow-up: Yes or No

COMMENTS:

3/27/2007
1
2:19 PM

Exhibit 18. City provided Pond/Wetland Maintenance Action Form, dated April 29, 2015. Note that this maintenance action form documents the need for repairs including “remove sediment from pond bottom” and “clean out inlet forebays”; however, this did not appear to have been completed in the field at the time of the inspection and no completion date was provided on the form.

Federal NPDES Storm Water Inspection – MS4



Exhibit 19. City provided photograph of ID – 070 Woodmen Ridge Apartments EDB, dated February 3, 2105. Note that the EDB was unstabilized and contained accumulated sediment and debris.

Federal NPDES Storm Water Inspection – MS4



Exhibit 20. City provided photograph of ID – 070 Woodmen Ridge Apartments EDB, dated February 3, 2105. Note that the EDB was unstabilized and contained accumulated sediment and debris.

Federal NPDES Storm Water Inspection – MS4



Exhibit 21. City provided photograph of ID – 070 Woodmen Ridge Apartments EDB, dated February 3, 2105. Note that the EDB was unstabilized and contained accumulated sediment and debris.

Federal NPDES Storm Water Inspection – MS4

JR 8-19-2015



ENGINEERING CRITERIA MANUAL

City Of Colorado Springs

City Engineering

Grading, Erosion And Stormwater Quality Control Plan Checklist

This checklist is to be used when a Grading Plan is required in accordance with Section 7.7.1503/2001 of the City Code (enacted as ordinance 82-56) per Drainage Criteria Manual Volumes I and II. This checklist is not meant to be all inclusive.

Plan Document

The site plan must show, at the minimum, the following:

1. The plan at a scale of 1-inch to 20 feet up to 1-inch to 100 feet. The plan must include:
 - General vicinity map Showing relationship of the site to existing and planned roadways, jurisdictional boundaries, major creeks, and streams.
 - Subdivision name – The name as it appears on the Final Subdivision Plat.
 - General Notes (8) See Grading, Erosion, and Stormwater Quality Control Plan Notes, Engineering Criteria Manual.
 - Cost Estimate of the temporary and permanent BMP's including installation and maintenance until final stabilization is achieved. A unit price list may be obtained from the EDRD office if needed.
 - Signature blocks (3) See Signature Block section, Engineering Criteria Manual.
 - North Arrow and Scale
 - Property lines for the site on which the work will be performed.
 - Areas of soil disturbance – anywhere the ground surface is disturbed.
 - Cut and fill demarcation line.
 - Construction site boundaries – area of soil disturbance and staging areas.
 - Existing topography at one or two foot contour intervals. The map should extend a minimum of 50-feet beyond the property line or beyond the project's soil disturbance limits, whichever is larger.
 - Proposed topography at one or two foot contour intervals. The map should show elevations and extent and the slope of all proposed grading, including building site and driveway grades.
 - Location of any proposed features and structures on this site.
 - Location of all natural features which affect the site specific water quality or adjacent to the site. To include wetlands, highly permeable soils, etc.,.
 - Adjacent existing and proposed development affected by the construction
 - Location of soil stockpiles - Areas designated for topsoil and subsoil storage.
 - Location of critical erosion areas – areas of highly erodable soils.
 - Location of existing or proposed water courses – to include, but not limited to, groundwater springs, streams, wetland, or other surface waters.

Exhibit 22. City EDR Grading, Erosion and Stormwater Quality Control Plan Checklist (Page 1 of 6).

Federal NPDES Storm Water Inspection – MS4



- Location and plans for all drainage features, paved areas, retaining walls, cribbing, and plantings constructed as part of this proposed site.
- Location of temporary or permanent soil erosion and sediment control measures or other features to be constructed in connection with, or as a part of, the proposed work.
- Depict all erosion control measures using the standard map symbols given in the Drainage Criteria Manual Volume 2, Chapters 3 and 4.
- Location and description of any potential natural pollutant sources – practices implemented at the site to control stormwater pollution from the dewatering of uncontaminated groundwater or stormwater from excavations, wells, etc....
- Location of storage equipment, maintenance and temporary disposal areas – for example, areas designated for equipment, building materials, fuel storage, fueling, lubricants, chemical, concrete truck washout, and all temporary construction waste storage.
- Vegetation – existing vegetation to remain and proposed seeding areas
- Location of any dedicated asphalt or concrete batch plants
- Boundaries of the 100-yr floodplain
- Is the site in the City's Streamside Zone - show Streamside zone boundaries
- Soil Types
- Emergency overflow swales - located at all sump inlet locations and be sized for the 100-yr storm event.
- Flow route – flow through and overflow of permanent BMP's and temporary sediment basins.
- Existing utility locations and easements - grading over existing utilities or within dedicated easements is restricted in accordance with general note 8
- Detail Drawings of Temporary BMP's including installation and maintenance.
- Detail Drawings of Permanent BMP's per Drainage Criteria Manual Volume 2, chapter 4.

Narrative Report or SWMP Report

The narrative/SWMP report must contain, at the minimum, the following:

- Name, address, and telephone number of the owner/developer and, the name, address, and telephone number of the professional engineer preparing the *Grading, Erosion, and Stormwater Quality Control Plan*.
- Subdivision Name – The name as it appears on the Final Subdivision Plat.
- Project description - A brief description of the nature and purpose of the land disturbing activity, and project location.
- Existing site conditions - A description of the existing topography, vegetation, drainage, and wetlands on the site to include estimate of percent existing vegetation cover. Also include non-stormwater discharges (e.g. springs, landscape irrigation return flow, etc.)
- Receiving waters – name of receiving water and the size, type, and location of any outfalls. Indicate if discharge to existing storm sewer system and name of ultimate receiving waters.

Exhibit 22. City EDR Grading, Erosion and Stormwater Quality Control Plan Checklist (Page 2 of 6).

Federal NPDES Storm Water Inspection – MS4



- Adjacent areas - A description of neighboring areas such as streams, residential areas, roads, etc., which may be affected by the land disturbance.
- Soils - A brief description of the soils on the site including information on soil type and character.
- Description of potential pollutants - sources such as vehicle fueling, chemical/ fertilizer storage, construction dewatering, concrete washout area, etc.
- Soil Borings/Tests and Groundwater - Soil borings and tests, including groundwater analysis and plan for safe discharge must be included if appropriate.
- Areas and Volume Statement - The total area of the site, the area of disturbance (e.g. cleared, excavated, or graded) involved, and a statement that earthwork cut/fill operations are more or less than 500cy.
- Narrative description of appropriate controls and measures that will be implemented before and during construction activities at the facility. It shall clearly describe the relationship between the phases of construction the proposed sequencing of major activities, BMP's installed under each phase, and the implementation and maintenance of control measures. For example, what BMP's will be implemented during each of the following stages of construction:
 - Clearing and grubbing necessary for perimeter controls
 - Initiation of perimeter controls
 - Remaining clearing and grubbing
 - Road grading
 - Drainage facility installation
 - Utilities installation
 - Final grading
 - Stabilization
 - Removal of temporary control measures

The description of controls shall address the following areas:

- Erosion and Sediment Control. This includes:
 1. Structural Practices - A description of structural site management practices that will minimize erosion and sediment transport.
 2. Non-Structural Practices - A description of interim and permanent stabilization practices, including site-specific scheduling of the implementation of the practices.
- Potential pollutant sources - Identify the location, describe, and plans for waste disposal.
- Materials Handling, and Spill Prevention and Response. The plan shall identify any procedures of materials handled at the site that could contribute pollutants to runoff. Areas where potential spills can occur shall have spill prevention and response procedures identified.
- Timing schedule - indicating the anticipated starting and completion time periods of the site grading, construction sequencing of major activities, including the installation and removal time periods of temporary/construction erosion and sediment control measures.
- Permanent stabilization - A brief description, including specifications, of how the site will be stabilized after construction is completed.
- Owner Inspections and Maintenance of construction BMP's - A description of procedures and a schedule of regular inspections during construction for vegetation, erosion and sediment control measure repair, and other protective measures identified in the plan. A detailed description of the

Exhibit 22. City EDR Grading, Erosion and Stormwater Quality Control Plan Checklist (Page 3 of 6).

Federal NPDES Storm Water Inspection – MS4



ENGINEERING CRITERIA MANUAL

maintenance program for sediment control facilities, including inspection programs, vegetative establishment on exposed soils, method and frequency of removal and disposal of waste materials from control facilities, and disposition of temporary structural measures shall be included.

Standard Grading, Erosion And Stormwater Quality Control Plan Notes

NOTES: The following plan notes may be used as a substitute for the 22 notes called out in DCM Volume II.

1. Any land disturbance by any owner, developer, builder, contractor, or other person shall comply with the Basic Grading, Erosion and Stormwater Quality Control Requirements and General Prohibitions noted in the Drainage Criteria Manual Volume II.
2. No clearing, grading, excavation, filling, or other land disturbing activities shall be permitted until sign off and acceptance of the Grading Plan and Erosion and Stormwater Quality Control Plan is received from EDRD.
3. The installation of the first level of temporary erosion control facilities and BMP's shall be installed and inspected prior to any earth disturbance operations taking place. Call City Stormwater Inspections, 385-5980, 48 hours prior to construction.
4. Sediment (mud and dirt) transported onto a public road, regardless of the size of the site, shall be cleaned immediately.
5. Concrete wash water shall not be discharged to or allowed to runoff to State Waters, including any surface or subsurface storm drainage system or facilities.
6. Soil erosion control measures for all slopes, channels, ditches, or any disturbed land area shall be completed within twenty-one (21) calendar days after final grading or final earth disturbance has been completed. Disturbed areas and stockpiles which are not at final grade but will remain dormant for longer than thirty (30) days shall also be mulched within twenty-one (21) days after interim grading. An area that is going to remain in an interim state for more than sixty (60) days shall also be seeded. All temporary soil erosion control measures and BMP's shall be maintained until permanent soil erosion control measures are implemented.
7. The grading and erosion control plan will be subject to re-review and re-acceptance by EDRD should any of the following occur: grading does not commence within twelve (12) months of the City Engineer's acceptance of the plan, a change in property ownership, proposed development changes, or proposed grading revisions.

Exhibit 22. City EDR Grading, Erosion and Stormwater Quality Control Plan Checklist (Page 4 of 6).

Federal NPDES Storm Water Inspection – MS4



8. The Plan shall not substantially change the depth of cover, or access existing utility lines. Acceptance of this plan does not constitute approval to grade in any utility easement or right-of-way. Approvals to grade within utility easements must be obtained from the appropriate utility company. It is not permissible for any person to modify the grade of the earth on any Colorado Springs Utilities easement or Utility right-of-way without their written approval. The plan shall not increase or divert water towards utility facilities. Any changes to existing utility facilities to accommodate the plan must be approved by the affected utility owner prior to implementing the plan. The cost to relocate or protect existing utilities or to provide interim access is the applicant's expense.

Description of construction activities

Anticipated starting and completion time period of site grading;

Expected date on which the final stabilization will be completed;

Areas - Total area of the site to be cleared, excavated, or graded;

Receiving Waters - Name of receiving waters;

Signature Blocks

Engineer's Statement

This Erosion and Stormwater Quality Control/Grading Plan was prepared under my direction and supervision and is correct to the best of my knowledge and belief. If such work is performed in accordance with the grading and erosion control plan, the work will not become a hazard to life and limb, endanger property, or adversely affect the safety, use, or stability of a public way, drainage channel, or other property.

Signature: _____ Date: _____

Printed Name: _____ Seal

Exhibit 22. City EDR Grading, Erosion and Stormwater Quality Control Plan Checklist (Page 5 of 6).

Federal NPDES Storm Water Inspection – MS4



ENGINEERING CRITERIA MANUAL

Developer's/Owner's Statement

The owner will comply with the requirements of the Erosion and Stormwater Quality Control Plan including temporary BMP Inspection requirements and final stabilization requirements. I acknowledge the responsibility to determine whether the construction activities on these plans require Colorado Discharge Permit System (CDPS) permitting for Stormwater discharges associated with Construction Activity.

Developer/Owner Signature: _____

Name of Developer/Owner: _____ Date: _____

DBA: _____ Phone: _____

Title: _____ Email: _____

Address: _____ Fax: _____

City of Colorado Springs Grading and Erosion Control Review

This grading plan is filed in accordance with section 7.7.1503 (enacted as ord. 82-56) of the code of the City of Colorado Springs, 2001, as amended. Erosion control is reviewed in accordance with the Drainage Criteria Manual, Vol. I (October 1994) and Vol. II (Aug. 2002); latest revisions

_____ Date: _____

For the City Engineer

Notes: _____

Exhibit 22. City EDR Grading, Erosion and Stormwater Quality Control Plan Checklist (Page 6 of 6).

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Five-Year All Funds CIP Plan Detail

	2015	2016	2017	2018	2019	Total
31st Street Bridge over Camp Creek Replacement	\$102,411	-	-	-	-	\$102,411
ADA-Paratransit Bus System - Vehicle Replacement	187,000	-	-	-	-	187,000
Advanced Detection	365,565	365,565	365,565	585,949	-	1,682,644
Airfield Pavement Localized Repair & Maintenance	150,000	150,000	150,000	150,000	150,000	750,000
Airport Fleet Improvement Phase VII- Equipment Replacement	832,424	900,000	1,000,000	1,000,000	-	3,732,424
Airport Other Funded Capital Improvement Projects	2,038,000	-	-	-	-	2,038,000
Airport Safety Area Separation & Rehabilitation	-	-	-	1,111,111	-	1,111,111
Airport Terminal Apron and Trench Drain System Reconstruction	11,087,000	-	-	-	-	11,087,000
Arterial Reimbursements	150,000	150,000	150,000	150,000	150,000	750,000
Bicycle Infrastructure Improvements	97,850	100,785	103,809	106,925	110,132	519,501
Bluestem Prairie Open Space Management Plan	14,000	-	-	-	-	14,000
Building Security Enhancements-Fire	-	-	230,000	300,000	-	530,000
Cache La Poudre over Monument Creek Bridge Rehabilitation	-	-	292,700	2,634,300	-	2,927,000
Cascade Ave over Cheyenne Run Bridge Replacement	65,000	450,000	-	-	-	515,000
CDBG Projects	488,000	-	-	-	-	488,000
Centennial Blvd Extension-Fillmore to Fontanero	1,911,500	-	-	-	-	1,911,500
Centennial Street-Garden of the Gods to Fillmore	4,033,000	-	-	-	-	4,033,000
Cheyenne Canyon Road Bridge Replacement	510,000	-	1,184,220	1,184,220	-	2,878,440
Chelton Rd over Spring Creek Bridge Replacement	-	-	-	-	1,000,000	1,000,000
- Companion Drainage Projects	411,970	411,970	411,970	411,970	411,970	2,059,850
Congestion/Incident Management	411,970	411,970	411,970	411,970	411,970	2,059,850
Cottonwood Trail - Austin Bluffs/ Woodmen Underpass	420,000	-	-	-	-	420,000
Cottonwood Trail - Vincent to Academy	235,000	-	-	-	-	235,000
Credit Card Parking Meters	550,000	-	-	-	-	550,000
Critical Fire Facility Repairs	75,000	-	-	-	-	75,000
Delta Dr over Sand Creek Tributary Bridge Replacement	405,000	-	-	-	-	405,000

Exhibit 23. City provided Capital Improvement Project (CIP) list from 2015 to 2019. It was unclear to the EPA Inspection Team if these proposed projects were actual stormwater related projects (Page 1 of 9).

Federal NPDES Storm Water Inspection – MS4

Five-Year All Funds CIP Plan Detail

		2015	2016	2017	2018	2019	Total
Five-Year All Funds CIP Plan	Downtown Streetscape Project	864,000	740,000	620,000	-	-	2,224,000
	Drainage Basin Planning Studies	150,000	-	-	-	-	150,000
	Driveway Exit - Squad 8 at FDC	-	-	-	350,000	-	350,000
	El Morro Dr over Sand Creek Tributary Bridge Replacement	315,000	-	-	-	-	315,000
	Emergency Bridge Fund	1,186,620	1,186,620	1,186,620	1,186,620	1,186,620	5,933,100
	Emergency Drainage Repairs - High Priority	500,000	-	-	-	-	500,000
	Emergency Generators - Fire	-	-	520,000	300,000	-	820,000
	Emergency Repairs and Equipment Replacement - Parks	50,000	-	-	-	-	50,000
	Emergency Responder Driving Simulators - Police	230,000	-	-	-	-	230,000
	Energy Efficiency Retrofits	273,492	273,492	273,492	273,492	273,492	1,367,460
	Facilities Maintenance - Fire	25,000	-	-	-	-	25,000
	Facilities Maintenance - General City Facilities	250,000	500,000	500,000	500,000	500,000	2,250,000
	Fire Burn Props	-	-	-	-	150,000	150,000
	Fire Driver Testing Course	-	-	-	-	400,000	400,000
	Fixed Route Bus System - Vehicle Replacement	627,000	-	-	-	150,000	777,000
	Gas Chromatograph/Mass Spectrometer - Police	108,000	-	-	-	-	108,000
	High Priority CIP Projects (TBD)	19,793,202	-	-	-	-	19,793,202
	High Priority IT Projects	450,000	450,000	450,000	450,000	-	1,800,000
	High Priority Projects and Facility Needs	500,000	-	-	-	-	500,000
	Infrastructure Damage Repair	80,000	80,000	80,000	80,000	80,000	400,000
	Intersection Improvements - Citywide	823,940	823,940	823,940	823,940	823,940	4,119,700
	Las Vegas & Royer UPRR Crossing Relocation	750,000	-	-	-	-	750,000
	LED Light Replacement	225,000	-	-	-	-	225,000
	Manitou Incline Mitigation Project	512,208	-	-	-	-	512,208
	Midland Trail - Columbia to Ridge Improvements and Right-of-Way	230,000	-	-	-	-	230,000
	Museum Exterior Renovation	299,550	-	-	-	-	299,550
	Museum HVAC Upgrades	200,000	250,000	-	-	-	450,000
	N. Nevada Corridor - Fillmore to Austin Bluffs	2,113,171	-	-	-	-	2,113,171
Old Ranch Road Improvements	1,433,000	-	-	-	-	1,433,000	
On-Street Bikeway Improvements	411,970	411,970	411,970	411,970	411,970	2,059,850	
Open Space Acquisition	50,000	-	-	-	-	50,000	

Exhibit 23. City provided Capital Improvement Project (CIP) list from 2015 to 2019. It was unclear to the EPA Inspection Team if these proposed projects were actual stormwater related projects (Page 2 of 9).

Federal NPDES Storm Water Inspection – MS4

Five-Year All Funds CIP Plan Detail

		2015	2016	2017	2018	2019	Total
Five-Year All Funds CIP Plan	Open Space Stewardship for TOPS Open Space Properties	249,000	-	-	-	-	249,000
	Outdoor Sculpture Preservation	15,000	15,000	15,000	15,000	15,000	75,000
	Park ADA Improvements	150,000	-	-	-	-	150,000
	Park Facility Roof Replacements	100,000	-	-	-	-	100,000
	Parking System Maintenance	120,000	110,000	110,000	110,000	110,000	560,000
	Paseo Road Bridge Replacement	-	-	-	-	-	0
	Pedestrian Improvements-Citywide	686,620	686,620	686,620	686,620	686,620	3,433,100
	Pedestrian Improvements-School and Neighborhood	411,970	411,970	411,970	411,970	411,970	2,059,850
	Pedestrian/Transit Accessibility Grants	1,296,468	389,390	874,666	146,215	-	2,706,739
	Pikes Peak Greenway Corridor Improvements	1,100,000	1,021,000	-	-	-	2,121,000
	Platte Avenue Bridge over Sand Creek	-	1,747,815	3,520,130	8,768,000	-	14,035,945
	Playground Renovations	280,000	-	-	-	-	280,000
	POC 4th Floor Paint and Carpet	-	-	160,000	-	-	160,000
	Powers Blvd. - Platte Ave to Fountain Blvd	4,550,000	-	-	-	-	4,550,000
	Radio Infrastructure (City Share)	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	7,500,000
	Red Rock Canyon Landfill Monitoring	75,000	75,000	75,000	80,000	80,000	385,000
	Red Rock Canyon Management Plan Implementation	250,000	-	-	-	-	250,000
	Red Rock Canyon Purchase Pymnt.	1,005,817	1,122,375	1,123,825	1,128,750	-	4,380,767
	Roadway Safety and Traffic Operations	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	5,000,000
	Rock Island Trail - Pikes Peak Greenway to Templeton Gap	640,000	-	-	-	-	640,000
	Rock Island Trail - Sand Creek Constitution, Phase 2	645,735	-	-	-	-	645,735
	Sand Creek Substation Replacement/Renovation	662,000	3,000,000	-	-	-	3,662,000
	Sertich Ice Rink Chill Tower	21,000	-	-	-	-	21,000
	Shooks Run Bridge Corridor Study and Preliminary Design	1,750,000	-	-	-	-	1,750,000
	Sidewalk/Bus Stop Program on Existing Routes	200,000	200,000	200,000	200,000	200,000	1,000,000
	Sinton Pond Management Plan	10,500	-	-	-	-	10,500
	Skyview Softball Complex Pymnt.	100,000	100,000	100,000	100,000	-	400,000
	Station 3 Renovation	-	-	-	-	1,614,375	1,614,375
	Station 7 Renovation	-	-	-	-	1,127,500	1,127,500
	Station Bathroom Remodels	-	-	-	-	517,625	517,625

Exhibit 23. City provided Capital Improvement Project (CIP) list from 2015 to 2019. It was unclear to the EPA Inspection Team if these proposed projects were actual stormwater related projects (Page 3 of 9).

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Five-Year All Funds CIP Plan Detail

	2015	2016	2017	2018	2019	Total
Stratton Open Space Management Plan	15,000	-	-	-	-	15,000
Street Pavement Improvements	1,853,612	1,500,941	3,448,494	1,901,809	1,694,127	10,398,983
Summit House Design	1,500,000	500,000	8,000,000	8,000,000		18,000,000
Ticket Vending Machines	-	-	166,000	167,000	167,000	500,000
Traffic Sign Federal Mandates	200,000	-	-	-	-	200,000
Traffic Signal System Upgrades - PPRTA	1,521,103	1,521,103	1,521,103	1,521,103	1,521,103	7,605,515
Traffic Signal Upgrades - Grant	579,541	789,480	789,480	789,480	-	2,947,981
Training Tower Upgrade/ Replacement	-	-	-	-	200,000	200,000
University Park Open Space Management Plan	11,500	-	-	-	-	11,500
Ute Valley Park Expansion, Phase II	3,808,500	-	-	-	-	3,808,500
Ute Valley Park Management Plan Implementation and Stewardship	275,000	-	-	-	-	275,000
Vanpool Vehicle Replacement	107,000	-	-	-	-	107,000
Venezia Community Park	6,800,000	350,000	-	-	-	7,150,000
Verde Dr over Spring Creek Bridge Replacement	405,000	-	-	-	-	405,000
Water Footprint Reduction	400,000	-	-	-	-	400,000
W. Colorado Avenue Reconstruction- 31st Street to U.S. Hwy. 24	1,000,000	-	-	-	-	1,000,000
W. Uintah Street Corridor Improvements	617,286	1,782,714	-	-	-	2,400,000
Woodmen Road Corridor - Union Continuous Flow	7,500,000	-	-	-	-	7,500,000
Total by Year	\$100,404,495	\$25,479,720	\$32,868,544	\$38,948,414	\$17,055,414	\$214,756,587

Exhibit 23. City provided Capital Improvement Project (CIP) list from 2015 to 2019. It was unclear to the EPA Inspection Team if these proposed projects were actual stormwater related projects (Page 4 of 9).

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General Fund 5-Year CIP Prioritization Process

In 2013, the CIP Committee consisting of community leaders, City staff and council members conducted a 5-year CIP prioritization process with the following results:

1. Developed project rating criteria based on two tiers of criteria:
 - Tier 1 Criteria included safety, service level and legal mandates
 - Tier 2 Criteria included linkage to other CIP projects, Economic Opportunity Zones or City approved plans (e.g., Strategic Plan or Comprehensive Plan), and financial commitments for funding from Non-General Fund sources
2. Made recommendations for an achievable 5-year CIP plan using a constrained budget model of \$35 million per year.
3. Made recommendations for funding backlogs of capital improvements and capital infrastructure needs; vehicles, radios, cardiac monitors (rolling stock); and maintenance of City facilities and infrastructure.
4. Made policy recommendations that included: increase focus on lifecycle costs, the City's warranty requirement, and funding to maintain the City's infrastructure; review and update the Vehicle Replacement Policy; and create an annual City facilities maintenance fund.

Based on the results and recommendations of the CIP Committee, the following strategies were incorporated into the City's 2014 Five-Year Strategic Plan:

- Develop a five-year CIP program on a biennial basis
- Develop funding strategies to address the backlog of needs
- Develop a plan to address ongoing and deferred maintenance
- Reassess use of City facilities/space to maximize utilization
- Enhance infrastructure development standards to provide a high return on investment
- Renovate or develop infrastructure, roads and buildings, with a low-impact, low-energy approach to reduce long-term maintenance and operating costs

In 2014, 5-Year CIP Plan was updated after reviewing the projects with multi-year funding that were in the 2014-2018 plan and evaluating new project requests for funding in years of 2015-2019.

Exhibit 23. City provided Capital Improvement Project (CIP) list from 2015 to 2019 (Page 5 of 9).

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Pikes Peak Rural Transportation Authority (PPRTA)

The 2015 budgets for PPRTA maintenance, capital projects, and transit are listed below. This is presented for informational purposes only as the City Council does not appropriate PPRTA funds.

Project Name	Capital	Maintenance	Operating
City Engineering			
Centennial Blvd. Extension-Fillmore to Fontanero	\$1,911,500		
Centennial St.-Garden of the Gods to Fillmore	4,033,000		
Emergency Bridge Fund	1,186,620		
Las Vegas & Royer UPRR Crossing Relocation	750,000		
Pedestrian Improvements	686,620		
PPRTA Bridge Repair and Maintenance		1,500,000	
PPRTA Capital Project Maintenance		186,416	
School and Neighborhood Pedestrian Improvements	411,970		
Shooks Run Bridge Corridor Study and Preliminary Design	1,750,000		
W. Colorado Ave. Reconstruction-31 st St. to U.S. Hwy. 24	1,000,000		
Woodmen Road Improvements-Union Continuous Flow	7,500,000		
Subtotal - City Engineering	\$19,229,710	\$1,686,416	\$0
Parks, Recreation and Cultural Services			
Pikes Peak Greenway Corridor Improvements	\$1,100,000		
Subtotal - Parks, Recreation and Cultural Services	\$1,100,000	\$0	\$0
Streets			
Companion Drainage Projects	\$411,970		
PPRTA Chip Seal		1,500,000	
PPRTA Cost Sharing Program		100,000	
PPRTA Crack Seal		800,000	
PPRTA Maintenance Paving - In-House		1,000,000	
PPRTA NV5 Consulting/Management Services		570,000	
PPRTA On-Call Concrete Program		405,140	
PPRTA Pavement/Mill Overlay		4,500,000	
PPRTA Pothole Patching/Repair		536,000	
PPRTA Pre-Overlay Concrete		4,000,000	
PPRTA Project Support		821,689	
PPRTA Structural Repair Digout - In-House		214,000	
Subtotal - Streets	\$411,970	\$14,446,829	\$0

Exhibit 23. City provided Capital Improvement Project (CIP) list from 2015 to 2019 (Page 6 of 9).

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Pikes Peak Rural Transportation Authority (PPRTA)

Project Name	Capital	Maintenance	Operating
Traffic Engineering			
Congestion and Incident Management	\$411,970		
Intersection Improvements	823,940		
Old Ranch Road Improvements and Bridge	1,433,000		
On-Street Bikeway Improvements	411,970		
PPRTA Guardrail Maintenance		150,000	
PPRTA Hazard Elimination/Safety Improvements		610,831	
PPRTA Signs and Markings		1,586,350	
PPRTA Traffic Count Program		90,000	
PPRTA Traffic Signal Maintenance		790,350	
Roadway Safety & Traffic Operations	1,000,000		
Traffic Signal System Upgrades	1,521,103		
Subtotal - Traffic Engineering	\$5,601,983	\$3,227,531	\$0
Transit			
ADA-Paratransit Bus System Vehicle Replacement	\$187,000		
Fixed Route Bus System Vehicle Replacement	627,000		
Sidewalk/Bus Stop Program on Existing Routes	200,000		
Vanpool Vehicle Replacement	107,000		
On-Street Bikeway Improvements			
PPRTA ADA Paratransit Service			4,342,813
PPRTA Contracts and Temporary Personnel			500,000
PPRTA Fixed-Route Service			7,500,950
PPRTA Fuel (ADA Paratransit)			1,041,250
PPRTA Fuel (Fixed-Route)			1,917,493
PPRTA Specialized Transportation Services			375,199
PPRTA Transit Grant Match			8,156,600
Subtotal - Transit (see table below for breakdown of Operating)	\$1,121,000	\$0	\$23,834,305
Total 2015 PPRTA	\$27,464,663	\$19,360,776	\$23,834,305

Transit 2015 Operating Expenses	2015 \$	Reserve \$	2015 Budget
PPRTA ADA Paratransit Service	\$2,375,813	\$1,967,000	\$4,342,813
PPRTA Contracts and Temporary Personnel	67,000	433,000	500,000
PPRTA Fixed-Route Service	5,121,000	2,379,950	7,500,950
PPRTA Fuel (ADA Paratransit)	464,310	576,940	1,041,250
PPRTA Fuel (Fixed-Route)	1,117,493	800,000	1,917,493
PPRTA Specialized Transportation Services	375,199	0	375,199
PPRTA Transit Grant Match - New Grants	1,856,600	0	1,856,600
Total 2015 Transit Operating & Capital Expenses	\$11,377,415	\$6,156,890	\$17,534,305
PPRTA Transit Grant Match - Prior Grants	6,300,000	0	6,300,000
Total 2015 PPRTA Transit Operating Expenses	\$17,677,415	\$6,156,890	\$23,834,305

Exhibit 23. City provided Capital Improvement Project (CIP) list from 2015 to 2019 (Page 7 of 9).

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Restricted Funds Descriptions

This includes revenue from a number of sources, as described below:

Bicycle Tax: The City's \$4 excise tax on new bikes began in 1988 and the revenue goes toward bikeway improvements as recommended in the City's Bicycle Plan.

Conservation Trust Fund (CTF): This is lottery revenue distributed through the Colorado Conservation Trust Program. These funds must be spent on park-related development, renovation, and maintenance.

Enterprise Funds: This is a general category of funds that includes allocations for CIP projects from various City-owned Enterprises. The source of funds comes from revenue earned during the course of conducting business. It includes the Airport, Parking, and Pikes Peak – America's Mountain.

Grant Funds: The City will receive approximately \$39.6 million in grant funds for capital projects in 2015. Below are a few of the categories for capital-related grant funding.

Airport Grant Funds: This funding comes from the Airport Improvement Program (AIP) Grant funded by the federal government, as well as the Colorado Discretionary Aviation Grant.

Community Development Block Grant (CDBG): This funding is allocated by the federal government based on census records of the recipient municipality's population and must adhere to strict federal guidelines. The City's share of the funding must go toward identified Neighborhood Strategy Areas and are spent on public improvements in residential neighborhoods such as sidewalks, curbs, gutter, and pedestrian ramps. These funds cannot go toward the maintenance of existing facilities.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act-Legacy for Users (SAFETEA-LU): These are funds that stem from the federal gas tax revenue, which are administered by the Pikes Peak Area Council of Governments (PPACG). The City competes regionally for federal grants for Transportation Enhancement (TE) projects, Congestion Mitigation and Air Quality (CMAQ) projects, and Surface Transportation (STP) projects. In general, the City receives funding annually in varying amounts according to the Transportation Improvement Program (TIP).

Funding Advancement for Surface Transportation & Economic Recovery (FASTER): These are state funds that stem primarily from daily car rental fees and weight based vehicle registration fee increases. The state allocates funding annually for state and local road and bridge safety projects and provides grants to local governments for Transit and Rail projects.

Other Funds: This is a general category that includes various sources of funding. For any given project, the funds listed here do not easily fall into another category. Examples include energy savings, concession/player fee funding, CTF and TOPS operating, Public Space & Development Fund (PLDO), gift trust funds, and donations.



Exhibit 23. City provided Capital Improvement Project (CIP) list from 2015 to 2019 (Page 8 of 9).

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Pikes Peak Rural Transportation Authority (PPRTA): These funds stem from a 1.0% sales and use tax dedicated to transportation-related improvements in the region. It allocates funding such that 10% of the sales tax revenue goes toward the City's transit program, 35% is for maintenance of the transportation system, and 55% goes to capital projects, which is the only portion of the tax with a scheduled sunset date of 2014. In 2013, the PPRTA Extension was passed by the voters to fund new capital projects through 2025. The PPRTA is an authority comprised of the City of Colorado Springs, El Paso County, the City of Manitou Springs, the Town of Ramah, and the Town of Green Mountain Falls.



Public Safety Sales Tax (PSST): The PSST was approved by voters in the November 2001 El Paso County coordinated election. This 0.4% portion of the increase in the City's Sales and Use Tax is dedicated to funding 20 public safety projects and related operational needs.



Trails, Open Space, and Parks (TOPS): This program uses revenue from a 0.1% sales and use tax, approved by voters in 1997. It was slated to expire in 2009, until an extension was approved by voters in 2003 and will expire in 2025. Over the life of the funds, a minimum of 60% must go toward open space; a maximum of 20% goes toward parks, and another maximum of 20% toward trails. This percentage split may vary from year to year.

Exhibit 23. City provided Capital Improvement Project (CIP) list from 2015 to 2019 (Page 9 of 9).