Colorado Department of Transportation (CDOT) Phase I MS4 Inspection Report
Colorado Water Quality Control Division Permit #COS000005

Inspection Dates: March 30 – April 2, 2015

Prepared by the U.S. Environmental Protection Agency Region 8, NPDES Enforcement Unit

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I. General Inspection Information	
Inspection Date(s): March 30 - April 2, 2015	**Inspection Type:** MS4 Stormwater, Phase I
Entry Time: 9:00 AM	**Exit Time:** 3:55 PM
NPDES ID Number: COS000005	**Inspecting Agencies:** Environmental Protection Agency, Region 8 Colorado Department of Public Health and Environment
Facility Location Information	
Site/Facility Location: CDOT Headquarters Administrative Offices Colorado Department of Transportation 4201 E. Arkansas Avenue Denver, CO 80222	Mail Report to: Rick Willard CDOT Hydrologic Resources Unit Lead 4201 E. Arkansas Avenue Denver, CO 80222

II. Contact Information		
	Name(s)/Title	Telephone/Email
Primary MS4 Program Contacts: ***(indicate primary MS4 lead present during inspection)***	Rick Willard/ CDOT Hydrologic Resources Unit Lead /Primary MS4 Coordinator/Lead during the inspection	303-757-9343
	Additional staff interviewed during the inspection are mentioned in the applicable section(s) of the inspection report and/or listed in Section XV of this report.	
Authorized Official(s):	Joshua Laipply – Chief Engineer	303-757-9170
EPA Inspectors:	Alysia Tien, U.S. EPA Region 8 – Inspector	303-312-7021
	Stephanie DeJong, U.S. EPA Region 8 – Inspector	303-312-6362
	Kacy Sable, U.S. EPA Region 8 – Inspector	303-312-6193
	Natasha Davis, U.S. EPA Region 8 – Inspector	303-312-6225
Colorado Department of Public Health and Environment (CDPHE) representatives present during the inspection:	Nathan Moore, CDPHE Water Quality Control Division	303-692-3555
	Lisa Knerr, CDPHE Water Quality Control Division	303-692-3004
	Liz Lemonds, CDPHE Water Quality Control Division	303-692-3515
	Megan Shirley, CDPHE Water Quality Control Division	303-692-6421
	Kendra Kelly, CDPHE Water Quality Control Division	303-692-3387
	Joe Campbell, CDPHE Water Quality Control Division	303-638-2356

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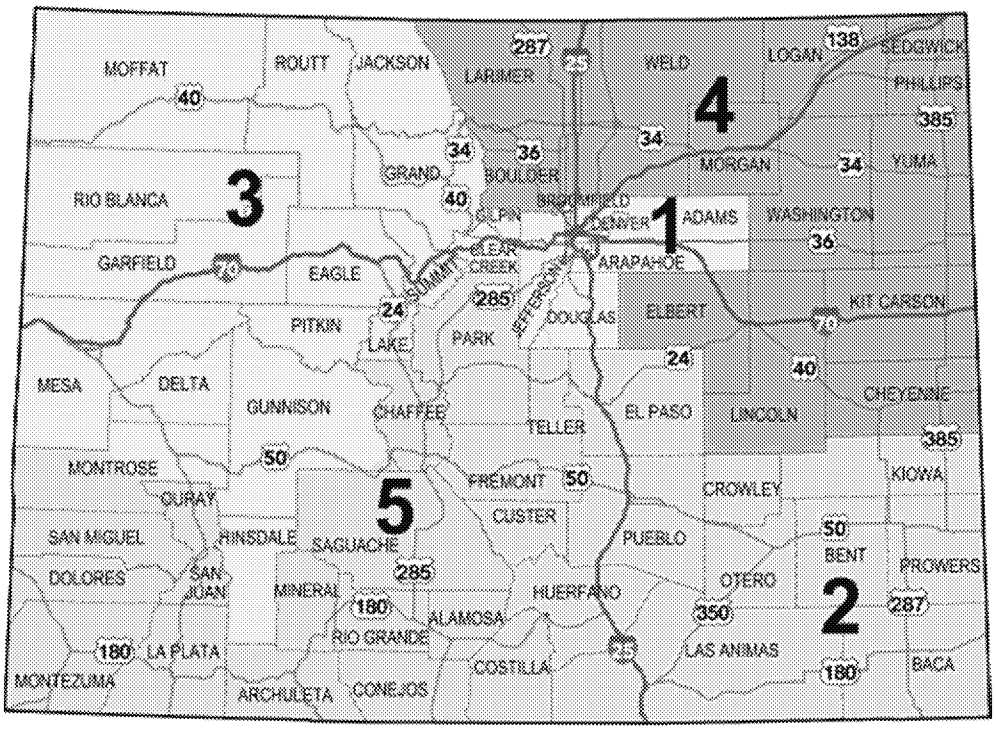
III. Permit Information	
Is the permit on site and available? Yes	
Effective Date: February 1, 2007	**Expiration Date:** January 31, 2012 (administratively extended)
Any co-permittees (if so, list contact information above): N/A	
Permit area:	Areas within CDOT jurisdiction, statewide (as defined per Part I.A.3 of the Permit).
Receiving Water(s): Multiple receiving waters across the State of Colorado	

IV. MS4 Program Areas Inspected			
Public Education & Outreach	No	Public Involvement & Participation	No
Illicit Discharge Detection and Elimination (IDDE)	Yes	New Development/Redevelopment (NDRD)	Yes
Industrial Facilities	No	Construction Sites Program	Yes
Pollution Prevention (PP) and Good Housekeeping	Yes	Stormwater Monitoring	No
Program Management	Yes	Compliance Schedule	No

V. CDOT Information

MS4 Description: Administration of the CDOT municipal separate storm sewer system (MS4) stormwater permit (Permit) was coordinated through the CDOT Headquarters office, located at 4201 E. Arkansas Avenue, Denver, CO 80222, with additional direct implementation of Permit conditions and compliance activities occurring at each of five separate Regional offices.

Prior to 2013, CDOT consisted of six Regions. In 2013, CDOT merged the Region 1 and Region 6 areas to create one Region, Region 1. At the time of the inspection, the CDOT MS4 was functionally divided into five Regions as illustrated on the following map obtained from the CDOT website (https://www.codot.gov/about/regions.html).



Number of employees primarily administering the MS4 program: 7 full time equivalents (FTEs) designated for overall program coordination (with one current vacancy) of Headquarters and additional FTE vary by Region.

Number of outfalls: According to the *Outfalls Mapped Lat Long* Excel file, there are 4,095 outfalls identified.

VI. Inspection Details

The inspection was prompted as part of the EPA's Municipal Infrastructure National Enforcement Initiative. The purpose of the inspection was to verify compliance with the CDOT's MS4 permit number COS000005 (the Permit). The EPA inspectors and representatives from the Colorado Department of Public Health and Environment (CDPHE) arrived at CDOT's Headquarters office on March 30, 2015. The EPA inspectors presented their credentials. The inspection consisted of an opening conference to discuss the inspection process, a records review, interviews with personnel, and field visits to CDOT Regional maintenance facilities, New Development/Redevelopment (NDRD) sites, and construction sites. The inspection concluded with an official close-out meeting on April 2, 2015 at the Headquarters office. At the time of the close-out, the EPA requested additional documentation be provided by CDOT after the inspection.

This inspection report includes findings identified from both the inspection and review of documentation received both before and after the inspection. Each program section of this report includes a list of findings identified by the EPA. Inspection photos are attached (**Error! Reference source not found.**).

Description of the weather conditions:

The average air temperature in the Denver, Colorado Springs, Pueblo, and Canon City areas for the majority of the inspection was in the 70s before it dropped down to the 40s (° F). Inspectors did not observe precipitation during field visits between March 30 and April 1, 2015. Inspectors observed precipitation on the final day of the inspection on April 2, 2015. Below is a summary of precipitation data gathered from the NOAA website between March 21 and the date of each site visit.

Region	Vicinity	Latitude/ Longitude of monitoring station	Precipitation for 24-hour measurement period of 3/21/15 through date of site visit	Precipitation on date(s) of site visits	Site visit date(s)
1	Aurora	39.742°N, 104.819°W	3/26/15 - 0.37 in	0.00 inches	3/31/15
1	Golden	39.708°N, 105.160°W	3/24/15 - 0.07 in	0.00 inches	4/1/15
1	Westminster	39.826°N, 105.041°W	3/24/15 - 0.03 in 3/26/15 - 0.16in	0.00 inches	4/2/15
2	Colorado Springs (north)	38.944° N, 104.782° W	3/26/15 - 0.16 in	0.00 inches	3/31/15
2	Pueblo	38.290° N, 104.498° W	3/25/15 - 0.08 in	"Trace"	4/1/15
2	Canon City	38.430° N, 105.231° W	3/26/15 - 0.13 in	0.00 inches	4/1/15
4	Boulder	40.013°N, 105.206°W	3/25/15 - 0.15 in	0.00 inches	4/1/15
4	Superior	39.957°N, 105.186°W	3/25/15 - 0.12 in 3/26/15 - 0.01 in	0.00 inches	4/1/15

VII. Overview of Program Areas

Program Management (PM): CDOT's stormwater MS4 program is permitted by CDPHE under permit number COS000005 (the Permit). The MS4 program is primarily coordinated through the CDOT Headquarters office by Mr. Rick Willard, with responsibilities for implementation of CDOT's Stormwater Management Program managed within each CDOT Regional office for that particular Region. The Stormwater Management Program is documented through various CDOT programmatic documents and in annual report submissions to CDPHE that summarize the previous calendar year's MS4 program activities.

Overall Program Administration:

Guidance throughout CDOT for compliance with the Permit is provided through the main Headquarters CDOT office by Mr. Willard. Each CDOT Regional Office has a Regional Water Pollution Control Manager who is responsible for implementing/coordinating MS4 program elements in their geographic areas for the Construction Sites and New Development/Redevelopment (NDRD) programs. The Illicit Discharge Detection and Elimination (IDDE) and Pollution Prevention (PP) programs are coordinated through CDOT Headquarters staff with Region/facility-specific implementation occurring collaboratively between CDOT Headquarters staff and Regional contacts. CDOT Headquarters representative Joshua Laipply is the signatory and holder of the Permit.

Direct implementation/administration of Permit conditions and Permit compliance activities occur at each of the five Regional offices, primarily operated separately and independently of the CDOT Headquarters office and other Regional offices. Communication occurs between the Regional offices and the CDOT Headquarters office; however, procedures, policies, and program plans as a whole are developed and disseminated from the CDOT Headquarters office to the Regional offices. The Regional offices are then responsible for dissemination of the information, as appropriate, to entities such as Regional maintenance facilities and construction sites. Interaction with external entities (e.g., local cities) occurs both directly through the Regional offices and through the CDOT Headquarters office.

Illicit Discharge Detection and Elimination (IDDE) Program:
As part of CDOT's IDDE program, IDDE training is provided to new hires and maintenance personnel. In addition, pamphlets and cards are developed and distributed to the general public to communicate CDOT hotline information. Citizens and/or the State Patrol notify CDOT of illicit discharges using the hotline. Complaints are then routed to Mr. Willard and then to Ms. Rozellynn Hall. Complaint information is recorded on standardized forms. These forms consist of an internal CDOT reporting form, a public phone call form, and a close-out form. Follow-up inspection activities may be performed to locate the source of any discharges as well as responsible parties, and this may include sampling. If a responsible party is identified, a letter is drafted to the responsible party to try to resolve the discharge. If the responsible party is unwilling to address the discharge and clean up the spill, CDOT has the ability to refer the case to CDPHE, the State Attorney General's office, or the State Patrol for further enforcement action. CDOT does not have enforcement authority to handle illicit discharges directly.

The EPA reviewed an example of an illicit discharge in Denver for a July 7, 2012 incident where concrete saw cutting water was discharged into a storm drain on Federal Boulevard and 14th Avenue. CDOT was able to work with the company to clean the inlet and train the company's workers to contain concrete cutting slurry.

Construction Sites Program:
Each CDOT Region has staff responsible for MS4 stormwater program implementation of the Construction Sites Program. As part of the Construction Sites Program implementation, CDOT maintains construction stormwater management plans (SWMPs) for each construction site. The overarching program document is CDOT's 2011 *Standard Specifications for Road and Bridge Construction* (referred to as the Green Book), which is designed for utilization across all of the CDOT Regions as standard provisions, specifications, requirements, and guidelines related to construction procedures. CDOT also maintains a 2002 *Erosion Control and Stormwater Quality Guide* and a 2004 *Drainage Design Manual*, which are referenced in the Permit as documents to be used as the technical criteria for construction stormwater BMPs.

The process for construction projects begins with a series of "scoping" meetings in which personnel from multiple specialty areas meet to discuss the needs of the project (including requirements for water quality considerations). After the scoping phase is complete, CDOT determines which of two primary types of construction project development routes it will utilize: "design-bid-build" or "design-build" projects. With "design-bid-build" projects, CDOT representatives explained that CDOT maintains control of the projects and is involved in the design phase through completion of the project. For these types of projects, CDOT is responsible for developing the project SWMP before contracting out implementation of the project.

With "design-build" projects, CDOT develops the overall project design (approximately 30% of the design) and then contracts out the rest of the project through completion. With these types of projects, CDOT indicated that the contractor is responsible for obtaining coverage under CDPHE's Construction General Permit and for meeting all water quality requirements. As such, a more limited portion of the project is implemented by CDOT, and the contractors have a larger role in the design and build of the project. CDOT also indicated that the contractors typically use CDOT's SWMP template document, and then CDOT reviews the contractor's SWMP for completeness and adequacy.

Inspections/Enforcement:
CDOT indicated that there are four different types of inspections. These include daily inspections performed by the sub-contractor with the CDOT-certified site-specific Transportation Erosion Control Supervisor (TECS), bi-weekly inspections performed with oversight from the site-specific CDOT Project Engineer (PE), monthly audits performed by CDOT's Regional Water Pollution Control Manager, and RECAT inspections, which are oversight inspections performed by CDOT Headquarters inspector(s). A minimum of 60 RECAT inspections are performed each year.

After an inspection/audit, ESCAN software is utilized to generate a report to be distributed to the contractor, CDOT's PE, and the Regional Water Pollution Control Manager. The enforcement process is outlined in section 208.09 of the Green Book. CDOT Headquarters staff stated that for issues identified during an inspection/audit, a formal documented mechanism referred to as a "speed memo" (also called a 105 letter) can be utilized, which requires stormwater issues to be addressed within 48 hours. However, the EPA observed that speed memos are often not issued until after 48 hours. During the opening conference, the EPA inspectors were told contractors were given 48 hours to begin correcting or completely correct the issues, which is inconsistent with the Green Book. The Green Book requires issues to be corrected as soon as possible but no later than 48 hours after the notification. The Green Book states in section 208.09, "Correction shall be made as soon as possible but no later than 48 hours from the date of notification to correct the failure."

EPA inspectors were also told that if stormwater issues identified are not addressed after 48 hours, the PE has the ability to charge the contractor liquidated damages of $875 per day, which implies the PE may or may not charge liquidated damages based on the PE's decision. This is inconsistent with the Green Book, which states in section 208.09, "The Contractor will be charged liquidated damages in the amount of $875 for each calendar day after the 48 hour period has expired, if one or more" of the issues continue.

EPA inspectors were also told that if the concern is not addressed within 72 hours, the PE has the ability to issue a stop work order. This is inconsistent with section 208.09 of the Green Book, which does not require a stop work order to be issued.

The PE for any given construction site is responsible for both ensuring that projects remain on schedule and for making final enforcement decisions at the construction sites (e.g. issuing stop work orders, assessing liquidated damages, etc.). Any corrective actions are entered into the CARL database and ESCAN.

New Development/Redevelopment (NDRD) Program:
Each CDOT Region has staff responsible for MS4 stormwater program implementation of the NDRD Program. CDOT Headquarters representatives indicated designs related to NDRD permanent water

quality features (PWQFs) are discussed during the initial "scoping" phase of a construction project. CDOT indicated it uses a three-tiered system for selection of PWQFs. Mr. Willard indicated the highest tier level (Tier 1) is utilized unless it is not feasible and, in no case is anything lower than Tier 2 utilized. CDOT does not have a formalized procedure to document tier determinations and relies on its design engineers to determine the most feasible alternatives considering cost/economic feasibility. However, CDOT Headquarters representatives indicated that in general, a standard of 100% water quality capture volume and 80% total suspended solids (TSS) removal is utilized. At the end of the construction process, the contractor verifies that the PWQFs are built per the approved specifications on their projects and CDOT personnel certify the verifications.

Maintenance and Inspections:
During the opening conference, CDOT indicated that CDOT staff perform inspection and maintenance activities of PWQFs that have not been delegated to a local city/municipality for maintenance. When the PWQF is designated as a local city/municipality's responsibility pursuant to Colorado Revised Statute 43-2-135, intergovernmental agreements (IGAs) are implemented. The IGAs also include other highway related asset responsibilities. These agreements are intended to delegate inspection and maintenance responsibilities for PWQFs to local cities/municipalities. However, it is not clear exactly how many IGAs are active, with which cities/municipalities CDOT has IGAs, and for which PWQFs CDOT has IGAs. CDOT Headquarters representatives explained that if an IGA is in place, there is little, if any, CDOT oversight performed to ensure that inspections and maintenance are being performed by the city/municipality under the IGA.

When CDOT staff inspect PWQFs and identify maintenance needs, the CDOT Maintenance staff are notified to address the issue. In many cases, multiple requests for PWQF maintenance are communicated to CDOT Maintenance staff, but many maintenance needs remain unaddressed for months to years due to a lack of maintenance personnel and equipment resources.

CDOT Headquarters utilizes a database called SAP to inventory its PWQFs. However, this database does not include the entire universe of PWQFs and does not identify which PWQFs are under an IGA. There is no complete inventory of IGAs. CDOT's inspections of PWQFs are entered into a database called SWIT. CDOT is in the process of creating a PWQF geospatial inventory called OTIS.

Pollution Prevention/Good Housekeeping for Municipal Operations (PP) Program:
CDOT's Headquarters office primarily coordinates the Pollution Prevention Program activities for its maintenance facilities. CDOT maintenance facilities are required by Part I.B.5 to have a Facility Runoff Control Plan (FRCP) that is developed using the CDOT FRCP template. Inspections of CDOT maintenance facilities are coordinated by Mr. Bob McDade. Mr. McDade also conducts annual inspections of CDOT maintenance facilities except for those in Region 3, which are conducted by Mr. Tripp Minges. Mr. McDade indicated that advanced notice of up to six months is given for inspections at the maintenance facilities. Headquarters recommends 30-day inspections be performed at CDOT maintenance facilities by maintenance facility staff. 30-day inspections were occurring in Regions 1, 2, and 4, but it is unknown if these inspections were occurring in other Regions. During the self-inspections, the facility site map and FRCP are reviewed, and a site walk is performed to identify any issues (e.g., used oil storage issues, stormwater discharges, BMP maintenance needs, etc.). For annual inspections, an inspection write-up is developed and sent to the specific maintenance facility. Monthly inspections are recorded by the maintenance facility staff and kept with the FRCP.

At the time of the EPA's inspection, Mr. McDade indicated CDOT was in the process of transitioning all of its documents into electronic records to be housed in CDOT's SAP database, but CDOT still maintained hardcopy documentation of program documents. Training records for the Pollution Prevention Program for training provided to CDOT maintenance facilities is also housed in the SAP database. In Region 2, the EPA inspectors observed that the 905 Erie yard in Pueblo had annual training records with the FRCP. The Canon City Transportation Maintenance Facility representatives stated their training records were also housed at the 905 Erie yard in Pueblo.

Mr. McDade indicated that future CDOT Pollution Prevention Program implementation (e.g., annual audits and follow-up procedures for CDOT maintenance facilities) would be transferred from the CDOT Headquarters office to the Regional offices.

VIII. Findings and Corrective Actions Summary Table

Finding Number – Title	Additional Information Requested	Corrective Action(s)	Recommended Actions (s)
Program Management - PM			
1PM – The MS4 program appeared to lack adequate resources and equipment for Maintenance and Regional staff to maintain permanent water quality features (PWQFs) and conduct future Pollution Prevention inspections at maintenance facilities.		x	
2PM – CDOT Headquarters and Regional staff are not consistently aware of the requirements in the Stormwater Management Programs, and the Stormwater Management Programs are not being consistently implemented.		x	x
3PM – CDOT has not ensured training for staff on requirements of the MS4 permit and associated CDOT programs.		x	x
4PM – The Permit boundaries were unclear to several CDOT personnel.		x	x
Illicit Discharge Detection and Elimination Program - ID			
1ID – CDOT does not have adequate legal authority for illicit discharges, as required to have been submitted with CDOT's permit application.		x	
Construction Sites Program - CS			
1CS – The Green Book does not require stop work orders to be issued for discharges to state waters or other egregious non-compliance instances.		x	
2CS – CDOT failed to ensure compliance with the Construction General Permit, enforce according to the Green Book, and implement sanctions for chronic failures at design-bid projects.		x	x
3CS – CDOT failed to follow the Green Book procedure for several construction sites across Regions by failing to issue and collect liquidated damages for corrective actions that went beyond 48 hours.		x	
4CS – CDOT has no formal mechanism to address chronic noncompliance by contractors as long as corrective actions occur within 48 hours.		x	

Finding Number – Title	Additional Information Requested	Corrective Action(s)	Recommended Actions (s)
5CS – Contractors' failures to meet Construction General Permit and Green Book requirements were not identified by CDOT inspectors and a contractor Transportation Erosion Control Supervisor inspector during oversight inspections at CDOT construction sites.		x	
New Development/Redevelopment Program - ND			
1ND – The inventory of CDOT PWQFs was incomplete and inaccurate.		x	
2ND – CDOT does not have a complete list of PWQFs with intergovernmental agreements (IGAs) and is not ensuring long-term maintenance or proper operation and maintenance of PWQFs with IGAs.		x	
3ND – CDOT was not ensuring long-term maintenance of PWQFs.		x	
4ND – There is a lack of funding for long-term maintenance of CDOTs PWQFs.	x	x	
Pollution Prevention Program - PP			
1PP – CDOT maintenance facilities were not fully implementing facility runoff control plans (FRCPs), updating or amending FRCPs, and FRCPs did not address all required items.		x	
2PP – The 18500 East Colfax Avenue maintenance facility did not have the most recent updated FRCP on-site.		x	
3PP – Potential non-allowable stormwater discharges have occurred at maintenance facilities in Region 2.	x	x	

IX. Program Management (PM) Findings

1PM – The MS4 program appeared to lack adequate resources and equipment for Maintenance and Regional staff to maintain permanent water quality features and conduct future Pollution Prevention inspections at maintenance facilities.

1PM Permit Requirements:
Part I.B.3 of the Permit states, "The permittee shall provide adequate finances, staff, equipment, and support capabilities to implement the Stormwater Management Programs."

1PM Findings:
At the time of the inspection, maintenance concerns were identified for a number of New Development/Redevelopment (NDRD) permanent water quality features (PWQFs) that were observed during the EPA site visits (see findings 3ND and 4ND). In addition, Mr. McDade indicated that the future implementation of the CDOT Pollution Prevention (PP) Program (e.g. annual audits and follow-up procedures for CDOT maintenance facilities) would be transferred from the CDOT Headquarters office to the Regional offices.

Resource concerns were identified by the EPA in CDOT Region 2, in which the one inspector, Ms. Erickson, was tasked with the inspection of over 87 PWQFs (conducting annual inspections), 15 active construction sites (requiring monthly inspections), and 9 construction sites at the stabilization phase (requiring monthly inspections). Ms. Erikson made multiple statements indicating the lack of maintenance observed by the EPA was a result of a lack of PWQF maintenance resources. She stated that the Maintenance Division does not have enough resources to maintain PWQFs, and as more PWQFs are added in Region 2, she will not have enough time to inspect all of them to ensure they are maintained. She stated she is already working 50-55 hours per week. She also stated maintenance has access to a vacuum truck, but it is not available all the time, and Region 2 had to rent a piece of equipment in the past in order to conduct their maintenance activities. Mr. Andy Stecklein in Region 2 stated that maintenance schedules are not prescribed for PWQFs, because maintenance resources have not been added to the Region 2 budget since CDOT started installing PWQFs. It was indicated by CDOT Headquarters personnel that the additional CDOT PP responsibilities would also be delegated to this Ms. Erickson. Additional PWQF maintenance resource issues are described in finding 4ND.

There was no indication of any future plan to increase resources or personnel for either the implementation of CDOT's NDRD or PP Program implementation.

1PM Corrective Actions:
Conduct a review of CDOT's Stormwater Management Program resources and evaluate whether these resources are adequate for implementation of the current Stormwater Management Program as well as whether these resources will be adequate for future implementation. Provide the EPA and CDPHE with a summary of:

1. The Stormwater Management Program resources review;
2. What additional resources, if any are needed, and include a time frame for obtaining these resources; and
3. A plan to ensure adequate resources (personnel and equipment) are provided in the future.

2PM – CDOT Headquarters and Regional staff are not consistently aware of the requirements in the

Stormwater Management Programs, and the Stormwater Management Programs are not being consistently implemented.

2PM Permit Requirements:
Part B.1 of the Permit states, "CDOT shall operate the following Stormwater Management Programs. The Programs and program areas as submitted by CDOT, and all approved updates, are hereby incorporated by reference, including any additions or changes made by the Division."

Part I.B.1.e.1.d of the Permit states, "CDOT shall develop and implement training sessions for CDOT staff on the requirements of the MS4 permit and associated CDOT programs at the annual Winter Conferences, in the region offices or other venues, as deemed the most effective. CDOT shall report to the Division within 12 months after the permit effective date on the new 8-hour erosion control supervisor training that is now required for engineers, new environmental trainings to meet the new CDOT 10-hour training requirement, general MS4 awareness classes in each Phase II region, and the updated illicit discharge detection and elimination training for the regions."

2PM Findings:
At the time of the inspection, the CDOT Regions did not appear to consistently implement MS4 Stormwater Management Programs documents, and CDOT Headquarters did not appear to be aware of how Regions were or were not implementing MS4 Stormwater Management Program documents.

This was apparent during the inspection of the NDRD program. At the time of the inspection, CDOT did not have a complete inventory of its PWQFs (see finding 1ND) and neither Region 1 nor 4 had a clear understanding of MS4 boundaries in the Regions (see finding 4PM).

This was also apparent when comparing how CDOT Headquarters described the implementation of the construction program with the Green Book, and then evaluating how Regions 1, 2, and 4 were implementing the construction program.

- During the opening conference, the EPA inspectors were told by HQ staff that contractors were given 48 hours to correct or begin correcting the issues, which is inconsistent with the Green Book that requires issues to be corrected as soon as possible but no later than 48 hours after the notification. The Green Book states in section 208.09, "Correction shall be made as soon as possible but no later than 48 hours from the date of notification to correct the failure."
- After 48 hours, if the concern is not addressed, the EPA inspectors were told by HQ staff that the PE had the ability to charge liquidated damages of $875 per day, which implies they may or may not charge liquidated damage. This is inconsistent with the Green Book, which states that the contractor will be charged liquidated damages. The Green Book states in section 208.09, "The Contractor will be charged liquidated damages in the amount of $875 for each calendar day after the 48 hour period has expired, that one or more" of the issues continue.
- As discussed in findings 2CS and 3CS, CDOT Regions are not consistently implementing the Green Book.

2PM Corrective Actions:
In addition to the corrective actions listed in findings 4PM, 2CS, 3CS, and 1ND, ensure CDOT Headquarters and Regional staff are trained on the requirements of the MS4 permit and associated CDOT programs. Ensure CDOT Headquarters and Regional staff implement the Stormwater Management Programs. Provide the EPA and CDPHE with a summary of how CDOT plans to accomplish this.

2PM Recommended Actions:
It is recommended CDOT develop a self-audit and corrective actions program to ensure the Stormwater Management Program is consistently implemented throughout the Regions.

3PM – CDOT has not ensured training for staff on requirements of the MS4 permit and associated CDOT programs as necessary to achieve compliance with the conditions of the permit.

3PM Permit Requirements:
Part I.B.1.e.1.d of the Permit states, "CDOT shall develop and implement training sessions for CDOT staff on the requirements of the MS4 permit and associated CDOT programs at the annual Winter Conferences, in the region offices or other venues, as deemed the most effective. CDOT shall report to the Division within 12 months after the permit effective date on the new 8-hour erosion control supervisor training that is now required for engineers, new environmental trainings to meet the new CDOT 10-hour training requirement, general MS4 awareness classes in each Phase II region, and the updated illicit discharge detection and elimination training for the regions."

Part II.A.3 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."

3PM Findings:
At the time of the EPA inspection, it was identified that the CDOT Region 2 primary inspector, Ms. Erikson, had not received training and communication regarding the Construction Sites Program, NDRD inspection procedures, PWQF maintenance procedures, or PWQF inventory needed to implement the MS4 program. She stated that when she arrived, no one in the Region 2 office was aware that she was responsible for evaluating PWQFs, which is something she realized on her own when she developed a partial inventory of PWQFs based on paper inspection records. It was noted that when Ms. Erickson came to CDOT over two years ago, she had a lot of relevant stormwater experience.

A copy of a PowerPoint used to train staff on CDOT's NDRD program (*PWQ Training Revised 12_9_14* PowerPoint file) was reviewed by the EPA. However, it appears the training is not reaching all staff who implement the MS4 Stormwater Management Program. It is unknown who has received this training and whether it has been required for all staff that implement the MS4 Stormwater Management Program.

There were also access issues in Region 2 at many of the PWQF locations that raised health and safety concerns (e.g. the inspector having to jump fences because no key had been provided to her for access to the location, crawling under barbed wire). This observation was discussed with Region 2 management, and they indicated access issues would be addressed.

3PM Corrective Actions:
Ensure CDOT personnel receive adequate training and information to implement the MS4 program. Submit to the EPA and CDPHE a roster of who has received MS4 program training, and describe how CDOT intends to ensure MS4 employees receive training.

3PM Recommended Actions:
It is recommended safety training be provided as part of any MS4 program training, if it is not already.

4PM – The Permit boundaries were unclear to several CDOT personnel.

4PM Permit Requirements:
Part I.A.3 of the Permit states, "This permit covers state and interstate highways and their right-of-ways within the jurisdictional boundary of CDOT served by, or otherwise contributing to discharges to state waters from, municipal separate storm sewers owned or operated by CDOT that are within the following areas:

a) The Cities of Aurora, Colorado springs, Denver, and Lakewood herein referred to as the Phase I permit coverage areas; and
b) The urbanized and CDPHE-designated areas; and the Cherry Creek Watershed, including any permitted Non-Standard MS4s that are within the urbanized areas of the counties, municipalities, and the Cherry Creek watershed, herein referred to as the Phase II permit coverage areas.

If additional geographical areas are designated after permit issuance, the permittee will have 90 days to evaluate how to implement its programs into the newly designated areas and provide a schedule for implementation."

In a letter dated February 29, 2008, CDPHE designated additional areas of cities outside of the census designated urbanized area and Cherry Creek Reservoir drainage basin. The letter states:

"Part I.A.3.b of the permit requires that CDOT's permit coverage area include "CDPHE-designated" areas as part of CDOT's "Phase II permit coverage areas." Therefore, CDOT's MS4 permit will include the additional areas that are designated by CDPHE, as discussed above, effective March 10, 2008.

In summary, the new permit coverage areas added through this designation include all areas within the jurisdiction of the following cities that lie outside of the census designated areas and the Cherry Creek Reservoir drainage basin (i.e., the cities' previous permit coverage areas). With these designations, CDOT's permit coverage will includes the incorporated portions of all permitted MS4 cities in Colorado.

Cities with newly designated permit areas*:
City of Arvada, Town of Berthoud, City of Boulder, City of Brighton, City of Centennial, City of Cherry Hills Village, City of Columbine Valley, City of Commerce City, City of Edgewater, City of Englewood, Town of Erie, City of Evans, City of Federal Heights, City of Fort Collins, City of Fountain, City of Glendale, City of Golden, City of Grand Junction, City of Greeley, City of Greenwood Village, City of Lafayette, City of Littleton, City of Lone Tree, City of Longmont, City of Louisville, City of Loveland, City of Manitou Springs, Town of Monument, City of Northglenn, Town of Palisade, Town of Parker, City of Pueblo, City of Sheridan, Town of Superior, City of Thornton, City of Westminster, City of Wheat Ridge
*Because several of these cities were 100% within a Census Designated Area and/or the Cherry Creek Reservoir drainage basin, the new designation does not change the actual permit boundaries for those cities.

<u>Implementation Schedule</u>
In accordance with Part I.A.3 of the permit, CDOT has 90 days following designation to evaluate how to implement its programs into the newly designated areas and provide a schedule for implementation…."

Part II.A.3 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."

4PM Findings:
At the time of the inspection, CDOT staff did not appear to have adequate training to identify the permit boundaries to ensure that implementation of stormwater controls necessary to achieve compliance with the conditions of the Permit. CDOT Headquarters, Region 1, and Region 4 personnel indicated that it was difficult to know the boundaries of the MS4 when city boundaries were constantly growing and changing. Region 2 personnel did not indicate this was an issue for them. In CDOT Headquarters, Region 1 and Region 4, this caused confusion about when a PWQF was required to be installed and which PWQFs were within CDOT's MS4 boundary and therefore were CDOT's responsibility to ensure long-term maintenance. CDOT Headquarters, Region 1 and Region 4 staff stated that the 2000 census data should be used to delineate the MS4 boundary exclusively. However, CDOT must also consider that as Phase I and Phase II MS4 jurisdictional boundaries change the CDOT MS4 boundary changes as well.

4PM Corrective Actions:
Review the Permit boundaries in which the MS4 requirements apply, including census designated urbanized areas and the jurisdictional boundaries of all Phase I and Phase II MS4s. Provide adequate training to ensure the MS4 program is implemented within the all Permit boundaries.

4PM Recommended Actions:
If CDOT plans to use OTIS as part of its MS4 program implementation, the MS4 boundary within OTIS may also need to be updated to be in compliance with the Permit coverage area, including the census designated urban areas as well as the up-to-date jurisdictional boundaries of Phase I and Phase II MS4s.

X. Illicit Discharge (ID) Detection and Elimination Findings

1ID – CDOT does not have adequate legal authority for illicit discharges, as required to have been submitted with CDOT's permit application.

1ID Permit Application Requirements:
40 CFR 122.26(d)(2) requires large MS4s, such as CDOT, to include the following in its permit application: "Part 2. Part 2 of the application shall consist of:

(i) Adequate legal authority. A demonstration that the applicant can operate pursuant to legal authority established by statute, ordinance or series of contracts which authorizes or enables the applicant at a minimum to:

(A) Control through ordinance, permit, contract, order or similar means, the contribution of pollutants to the municipal storm sewer by storm water discharges associated with industrial activity and the quality of storm water discharged from sites of industrial activity;

(B) Prohibit through ordinance, order or similar means, illicit discharges to the municipal separate storm sewer;

(C) Control through ordinance, order or similar means the discharge to a municipal separate storm sewer of spills, dumping or disposal of materials other than storm water;

(D) Control through interagency agreements among coapplicants the contribution of pollutants from one portion of the municipal system to another portion of the municipal system;

(E) Require compliance with conditions in ordinances, permits, contracts or orders; and

(F) Carry out all inspection, surveillance and monitoring procedures necessary to determine compliance and noncompliance with permit conditions including the prohibition on illicit discharges to the municipal separate storm sewer."

1ID Findings:
CDOT does not have enforcement authority when an illicit discharge occurs. This includes a lack of penalty authority. Mr. Willard stated he could send a letter to those responsible for illicit discharges, but CDOT does not have the authority to halt such discharges. Illicit discharges are sometimes referred to CDPHE. Other DOTs have incorporated enforcement authority in their state statute, and such authority is a pollution prevention tool that can be used incentivize compliance and prevent illicit discharges. It does not appear CDOT was able to demonstrate adequate legal authority in its permit application.

1ID Corrective Actions:
Submit to the EPA and CDPHE a summary of why CDOT has adequate legal authority and individually address A-F in the permit application requirement above, or indicate how and when CDOT will obtain such adequate legal authority.

XI. Construction Sites Program Findings

1CS – The Green Book does not require stop work orders to be issued for discharges to state waters or other egregious non-compliance instances.

1CS Permit Requirements:
Part I.B.1.a of the Permit requires CDOT to implement its Construction Sites Program. The overarching Construction Sites Program document is CDOT's 2011 *Standard Specifications for Road and Bridge Construction* (referred to as the Green Book).

Part I.B.1.a.1.b of the Permit requires CDOT to implement "contract provisions or other regulatory mechanism to require erosion and sediment controls at construction sites, as well as sanctions and internal management procedures to ensure compliance with the CDOT Construction Sites Program and CDPS general discharge permits associated with construction activity, to the extent allowable under State or local law." This Permit provision includes ensuring construction projects comply with the Colorado Discharge Permit System (CDPS) general permits, including the CDPS general permit for *Stormwater Discharges Associated With Construction Activity* number COR-30000 (Construction General Permit) and with the Construction Sites Program (Green Book) specifications. This authority must include the issuance of an immediate stop work order in the case of discharges to state waters. The Permit states, "As part of the enforcement methodology, CDOT will perform the following steps to ensure that compliance with the CDOT Construction Sites Program and CDPS general discharge permits associated with construction activity is maintained:

i) Projects not in compliance are subject to one or more of the following actions or the equivalent, escalating to the level necessary to bring the project into compliance:…
-issuance of an immediate stop work order in the case of discharges to state waters or other egregious non-compliance instances."

Section 208.09 of the Green Book states beginning at the bottom of page 112, "When a failure meets any one of the following conditions, the Engineer *may* immediately issue a Stop Work Order in accordance with subsection 105.01 irrespective of any other available remedy:

(1) If may endanger health or the environment.
(2) It consists of a spill or discharge of hazardous substances or oil which may cause pollution of the waters of the state.
(3) It consists of a discharge of stormwater which may cause an exceedance of a water quality standard." (*emphasis added)*

1CS Finding:
Regarding stop work orders, section 208.09 of the Green Book states under which circumstances a stop work order *may* be issued. Although the Green Book states a stop work order *may* be issued under various circumstances, it does not require the issuance of a stop work order for discharges to state waters or other egregious non-compliance instances.

1CS Corrective Actions:
CDOT's new permit, issued in 2015, no longer requires a stop work order in specific instances.

2CS – CDOT failed to ensure compliance with the Construction General Permit, enforce according to

the Green Book, and implement sanctions for chronic failures at design-bid projects.

2CS Permit Requirements:
Part I.B.1.a.1.b of the Permit requires CDOT to have procedures to ensure compliance by contractors with the Construction General Permit. It states, "CDOT's program shall include contract provisions or other regulatory mechanisms to require erosion and sediment controls at construction sites, as well as sanctions and internal management procedures to ensure compliance with the CDOT Construction Sites Program and CDPS general discharge permits associated with construction activity, to the extent allowable under State or local law. These procedures must address all sites found to be out of compliance within the permit coverage area, including those sites subject to RECAT inspections."

Part I.B.1 of the Construction General Permit states, "Facilities must implement the provisions of the [stormwater management plan] SWMP as written and updated, from commencement of construction activity until final stabilization is complete, as a condition of this permit."

Part I.B.3 of the Construction General Permit states, "Facilities must implement the provisions of the SWMP as written and updated, from commencement of construction activity until final stabilization is complete, as a condition of this permit. The Division reserves the right to review the SWMP, and to require the permittee to develop and implement additional measures to prevent and control pollution as needed."

Part I.C.3.c of the Construction General Permit states, "Best Management Practices (BMPs) for Stormwater Pollution Prevention - The SWMP shall identify and describe appropriate BMPs, including, but not limited to, those required by paragraphs 1 through 8 below, that will be implemented at the facility to reduce the potential of the sources identified in Part I.C.3.b to contribute pollutants to stormwater discharges. The SWMP shall clearly describe the installation and implementation specifications for each BMP identified in the SWMP to ensure proper implementation, operation and maintenance of the BMP."

Part I.D.8 of the Construction General Permit states, "Adequate site assessment must be performed as part of comprehensive Inspection and Maintenance procedures, to assess the adequacy of BMPs at the site, and the necessity of changes to those BMPs to ensure continued effective performance. Where site assessment results in the determination that new or replacement BMPs are necessary, the BMPs must be installed to ensure on-going implementation of BMPs as per Part I.D.2.

Where BMPs have failed, resulting in noncompliance with Part I.D.2, they must be addressed as soon as possible, immediately in most cases, to minimize the discharge of pollutants."

Part I.D.2 of the Construction General Permit states, "Facilities must select, install, implement, and maintain appropriate BMPs, following good engineering, hydrologic and pollution control practices. BMPs implemented at the site must be adequately designed to provide control for all potential pollutant sources associated with construction activity to prevent pollution or degradation of State waters."

Part I.D.1.a of Construction General Permit states, "Stormwater discharges from construction activities shall not cause, have the reasonable potential to cause, or measurably contribute to an exceedance of any water quality standard, including narrative standards for water quality."

The CDPHE Water Quality Control Commission is responsible for adopting water quality standards for surface water and groundwater in Colorado. CDPHE's Water Quality Control Commission Regulation 31.11 states, "All surface waters of the state are subject to the following basic standards; however, discharge of substances regulated by permits which are within those permit limitations shall not be a basis for enforcement proceedings under these basic standards:

(1) Except where authorized by permits, BMPs, 401 certifications, or plans of operation approved by the Division or other applicable agencies, state surface waters shall be free from substances attributable to human-caused point source or nonpoint source discharge in amounts, concentrations or combinations which:

(a) for all surface waters except wetlands;

(i) can settle to form bottom deposits detrimental to the beneficial uses. Depositions are stream bottom buildup of materials which include but are not limited to anaerobic sludges, mine slurry or tailings, silt, or mud."

Part I.B.1.a.1.b of the Permit also requires enforcement to bring the construction project into compliance, including the issuance of an immediate stop work order in the case of discharges to state waters and monetary penalties for chronic failure to comply with CDOT requirements and where other enforcement processes have failed to obtain compliance. It states, "As part of the enforcement methodology, CDOT will perform the following steps to ensure that compliance with the CDOT Construction Sites Program and CDPS general discharge permits associated with construction activity is maintained:

i) Projects not in compliance are subject to one or more of the following actions or the equivalent, escalating to the level necessary to bring the project into compliance:

-notification of the project site condition to the Contractor, Project Engineer, Resident Engineer and Program Engineer

-follow up inspection

-notification to the Project Engineer, Resident Engineer, Program Engineer, and Regional Transportation Director requiring that estimated payments dealing with erosion control and water quality be withheld until compliance is achieved. The Contractor will also be notified of the requirement.

-development of a plan that details how water quality permit non-compliance will be avoided in the future.

-issuance of an immediate stop work order in the case of discharges to state waters or other egregious non-compliance instances.

-for chronic failure to comply with CDOT requirements, and where the above processes have failed to obtain compliance, notification to the Project Engineer, Resident Engineer, Program Engineer, and Regional Transportation Director requiring that estimated payments in addition to those dealing with erosion control and water quality be withheld and/or penalties be assessed that include negation of any economic benefit from noncompliance. The Contractor will also be notified of the requirement."

Section I.B.1.a.2 of the Permit requires sanctions for chronic failure to comply with the Construction Program. It states, "CDOT shall develop new procedures and/or document existing procedures to

improve individuals' and Contractors' performance in implementing the Construction Program, including sanctions for those individuals and Contractors that have a record of chronic failure to comply with or enforce the program requirements. The procedure must include a mechanism to track compliance records of individuals and Contractors, including those subject to the actions required in subparagraph 1)b)i) of this section. These procedures shall be submitted to the Division via a Technical Memorandum within **12 months** after the permit effective date. Implementation of the approved procedures shall occur within **18 months** of the permit effective date."

Part I.B.1.a of the Permit requires CDOT to implement its Construction Sites Program. The EPA was provided the Green Book as the overarching program document for CDOT's Construction Sites Program.

> Section 208.09 of the Green Book addresses failure of contractors to perform erosion control and states, "Liquidated damages will be applied for failure to comply with the [Construction General Permit] and these [Green Book specifications], including but not limited to" fourteen specifically listed items. It goes on to state, "The Engineer will immediately notify the Contractor in writing of each incident of failure to perform erosion control in accordance with the [Construction General Permit], including, but not limited to items (1) through (14) above. Correction shall be made as soon as possible but no later than 48 hrs from the date of notification to correct the failure. The Contractor will be charged liquidated damages in the amount of $875 for each calendar day after the 48 hour period has expired, that one or more of the incidents of failure to perform the requirements of [the Construction General Permit], including, but not limited to items (1) through (14) above, remains uncorrected."

2CS Findings:
The following two construction sites illustrate CDOT's failure to ensure compliance with the Construction General Permit, enforce according to the Green Book, and implement sanctions for chronic failures at construction sites, specifically for design-bid projects.

I-25 Project - Kiewit
The EPA reviewed the I-25 widening project north of Colorado Springs (I-25 project). Kiewit was the contractor that performed the work. The I-25 project extended from just south of Highway 105 in Monument to just north of Woodmen Road in Colorado Springs. Work began at the end of March 2013, and the final walk-through with CDOT occurred on January 20, 2015 and February 4, 2015. At the time of the EPA's inspection, CDOT had taken control of the I-25 project, and it had almost reached final stabilization. As such, the EPA did not visit the I-25 project aside from driving by the project during the course of other site visits.

The primary CDOT Region 2 inspector, Ms. Erickson, was interviewed about her inspections and related work for the I-25 project. CDOT's inspection reports were reviewed from May 6, 2013 through March 24, 2015, which were a combination of monthly audits, post-storm inspections, and RECAT inspections. The information provided by Ms. Erickson and these reports indicate that CDOT identified inadequate BMPs, CDOT identified repetitive findings, Kiewit failed to correct findings within 48 hours on multiple occasions with CDOT's knowledge, and Kiewit failed to meet the requirements of the Construction General Permit.

Nature of Kiewit's non-compliance

An inspection report labeled "I-25 Post Rain Event Inspection. Northbound lane. Aug 23, 2013" was reviewed. Based on the August 23, 2013 inspection report, there were no or limited BMPs to control erosion at the I-25 Project, and the inspection report shows evidence of the resulting discharge of sediment to Pine Creek, Black Squirrel Creek, Jackson Creek, and Teachout Creek. The inspection report provides direction to Kiewit for adding and cleaning out BMPs. This inspection report was one example showing impacts to waters as a result of Kiewit's inaction and CDOT's failure to ensure compliance with the Construction General Permit, failure to enforce according to the Green Book, and failure to implement sanctions for chronic failures of Kiewit to comply with Green Book requirements. As demonstrated by this inspection report, Kiewit failed to comply with Parts I.D.2 (BMPs shall be adequately designed), I.D.8 (adequate site assessments shall assess adequacy of BMPs), and I.D.1.a (stormwater discharges shall not cause or contribute to exceedance of any water quality standard) of the Construction General Permit, all of which are cited in full above.

- Photos 1 and 2 in the August 23, 2013 inspection report show concrete culvert inlets that appear to be approximately 80-90% full with sediment, and the report noted that this was due to a lack of upstream BMPs. The report also stated for both photos 1 and 2, "Replace erosion logs around the inlet. Temporarily or permanently stabilize associated slopes discharging to the inlet. Add check dams to bare channels. Alternatively, add a compacted berm at the end of the channel with an excavated sediment trap at in front of it."

- Additional photos in the August 23, 2013 inspection report show similar inlets where a straw wattle in front of the inlet appears to have been overcome with sediment (photos 6, 7, 9, 10, 11, and 19) or there was no protection around the inlet (photos 15, 17, 24, and 25). A significant amount of erosion appears around some inlets, as evidenced by rills and other channels where erosion appears to have occurred (photos 2, 6, 9, 11, 19, and 25).

- Photo 3 in the August 23, 2013 inspection report shows a concrete channel containing sediment and a disturbed hill with rills above the channel to the left. No BMPs are visible on the hill. The report states, "Temporarily or permanently stabilize associated slopes discharging to the ditch or install toe protection at toe of slope."

- Photos 4 and 5 of the August 23, 2013 inspection report show a detention pond at Woodmen Road with an outfall to Pine Creek. Photo 5 shows evidence of sediment discharged to Pine Creek through the outlet. The report states, "Block the outlet structure and use the permanent detention pond as a sediment trap until the upstream features are stabilized and the wall of the detention pond are also stabilized. Add a maintenance plan for the sediment trap to the SWMP."

- Photo 26 of the August 23, 2013 inspection report shows a disturbed drainage with no BMPs from mile marker 159.7 to 150 along I-25 and notes that a disturbed drainage of this length and associated slopes are "typically seen on this project with no BMPs, except erosion logs at the inlet."

- Photos of creek crossings in the August 23, 2013 inspection report show a lack of BMPs in the area, rills on the hillsides above the creeks, and sediment plumes in the creeks (photos 12, 16, and 22). Creeks included Black Squirrel Creek at mile marker 154, Jackson Creek at mile marker 157.8, and Teachout Creek at mile marker 159.5. The report noted that each of these areas was covered under a 404 permit, a sediment plume was in the creek, and instructed consultation with

the Army Corps of Engineers for direction on cleaning up the area and installing proper BMPs to prevent discharge.

Chronic failures of Kiewit to comply with the Construction General Permit
Below is a summary of Kiewit's failure to follow BMP specifications, implement BMPs in the SWMP, and maintain BMPs identified during CDOT's 26 inspections of the I-25 project between May 6, 2013 and January 22, 2015. CDOT conducted more than one inspection during some months. The repetitive nature of some categories of failures by Kiewit, with many of these occurring during consecutive months, demonstrates the chronic nature of Kiewit's noncompliance with the Construction General Permit and chronic failure to implement CDOT requirements. Kiewit failed to comply with Parts I.D.2 (BMPs shall be adequately designed), I.D.8 (adequate site assessments shall assess adequacy of BMPs), I.B.1 (the SWMP shall be implemented), and I.C.3.c (the SWMP shall include BMP specifications) of the Construction General Permit, all of which are cited in full above.

- Erosion logs (straw wattles) or rock socks were >50% full, overtopped, or otherwise not maintained during 12 of 26 inspections (5/6/13, 6/5/13, 8/22/13, 8/23/13, 8/28/13, 9/30/13, 10/30/13, 2/26/24, 6/2/14, 7/1/14, 7/24/14, and 10/24/14). This failure was identified during seven of eight CDOT inspections between May 6 and October 30, 2013.
- Silt fences were >50% full or otherwise not maintained during 13 of 26 inspections (5/6/13, 8/28/13, 9/30/13, 10/30/13, 12/16/13, 2/26/14, 3/19/14, 4/28/14, 5/29/14, 6/29/14, 7/1/14, 7/24/14, and 11/19/14).
- Vehicle tracking control was not implemented or not maintained during six of 26 inspections (5/6/13, 6/5/13, 9/30/13, 6/29/14, 7/1/14, and 8/19/14).
- Other BMPs were not maintained during five of 26 inspections (6/5/13, 4/28/14, 7/24/14, 10/24/14, and 11/16/14).
- BMPs were missing around inlet and outlet structures during eight of 26 inspections, and this occurred repeatedly in August, September and October of 2013 (8/22/13, 8/28/13, 9/30/13, 10/30/13, 4/28/14, 5/29/14, 8/19/14, and 10/24/14).
- Perimeter BMPs were missing during six of 26 inspections (5/6/13, 8/28/13, 9/30/13, 11/19/13, 4/28/14, and 5/29/14).
- Soil stock piles were missing BMPs during three of 26 inspections (5/6/13, 10/30/13, and 10/24/14).
- Other BMPs were not installed per the SWMP during six of 26 inspections (5/6/13, 8/28/13, 11/19/13, 4/28/14, 6/29/14, and 10/24/14).
- Rock check dams were not installed per specifications during seven of 26 inspections with this failure occurring during five of eight inspections between August 28, 2013 and March 19, 2014 (8/28/13, 11/19/13, 12/16/13, 2/26/14, 3/19/14, 6/29/14, and 9/17/14).
- Erosion blankets failed and/or were not installed per specifications during 10 of 26 inspections with this failure occurring during eight consecutive inspections between June 2 and November 19, 2014 (9/30/13, 4/28/14, 6/2/14, 6/29/14, 7/1/14, 7/24/14, 8/19/14, 9/17/14, 10/24/14, and 11/19/14).
- Stabilization measures were not installed per specifications or were not complete during five of 26 inspections (8/28/13, 3/19/14, 4/28/14, 7/24/14, and 11/19/14).
- Damage to seeded and mulched areas, including erosion, were not immediately repaired as required by the specifications during nine of 26 inspections with this occurring during five consecutive inspections between August 28 and December 16, 2013 (8/28/13, 9/30/13, 10/30/13, 11/19/13, 12/16/13, 3/19/14, 7/24/14, 10/24/14, and 11/19/14).

- Other BMPs were not installed per the specifications during four of 26 inspections (8/28/13, 9/30/13, 8/19/14, and 9/17/14).

Evidence of discharges to waters from I-25 project
CDOT's inspection reports also demonstrate impacts to waters from sediment on multiple dates from the I-25 project. As a result, Kiewit failed to comply with Part I.D.1.a of the Construction General Permit by causing, having the reasonable potential to cause, or measurably contributing to an exceedance of the water quality standard in CDPHE's Water Quality Control Commission Regulation 31.11. This water quality standard states that water will be free from substances attributable to human-caused point source or nonpoint source discharge in amounts, concentrations or combinations which form bottom deposits detrimental to the beneficial uses.

- The August 23, 2014 inspection report shows the detention pond outfall to Pine Creek (photo 5 of the report), and sediment is visible below the outfall. At Black Squirrel Creek, rills are shown leading into the creek and there are no BMPs along the creek as shown in photo 12 of the report; the caption notes a sediment plume in the creek. At Jackson Creek, there are no BMPs along the creek and flow paths into the creek are visible in photo 16 of the report. Photo 22 of the report shows no BMPs along Teachout Creek.
- The August 28, 2013 inspection report shows no BMPs along the Middle Tributary of Black Squirrel Creek with sediment in the channel and no BMPs above Teachout Creek. It also shows a silt fence near mile marker 158.75 that did not extend then entire length of a "wetland," and the silt fence was overtopped with sediment in sections. The inspection comments on page 33 of the report state, "The storm event resulted in multiple discharges from the site, including Waters of the State."
- The September 30, 2013 inspection report shows no BMPs along Black Forest Creek.
- The November 19, 2013 inspection report shows no BMPs along Jackson Creek.
- The April 28, 2014 inspection report shows no BMPs with no stabilization around Black Forest Creek and no BMPS (aside from mulching) in some areas along Teachout Creek. The report includes a photo at Teachout Creek showing a large rill leading into the creek.
- The March 19, 2014 inspection report indicates that BMPs around the outlet for Jackson Creek have not been maintained, and a photo of sediment on top of a broken silt fence. The caption for the photo indicates the silt fence may have been pushed over by grading activities.
- The May 29, 2014 inspection report shows a disturbed hillside above Jackson Creek with only a silt fence on a small portion of the left side of the hill. Most of the hill has no BMPs.
- The July 24, 2014 inspection report shows an eroded area around the wing wall above Jackson Creek, several rills along the hillside above Jackson Creek, and includes a photo showing rills and sediment that over topped a silt fence by Jackson Creek into a "wetland" area. Rills are also shown leading into Black Forest Creek, and the report notes that BMPs in the area had failed at least twice and need to be stronger.

Failure of Kiewit to select, install, implement, and maintain BMPs following good engineering, hydrologic and pollution control practices:
Ms. Erickson stated that Kiewit was told multiple times during CDOT's monthly audit inspections that the BMPs being used on the site would not be adequate and that "more aggressive" BMPs needed to be installed. She stated that in her inspection reports, it was indicated that there was too much area draining to too small of a BMP, but Kiewit did not upgrade the BMPs. Ms. Erickson stated she knew the BMPs were too small, because upon visual assessment, she observed that small rain events resulted in the need

for significant BMP maintenance. CDOT documented in several inspection reports that BMPs were not adequate to handle the flows. According to Ms. Erickson, Kiewit received the inspection reports through the inspection database system along with the PE, and was therefore aware of the inspection findings. Kiewit failed to select, install, implement, and maintain BMPs following good engineering, hydrologic and pollution control practices, as required by Part I.D.2 of the Construction General Permit. Kiewit failed to address the inadequacy of the BMPs, as required by Part I.D.8 of the Construction General Permit. By failing to address chronic noncompliance and escalate enforcement (issuing liquidated damages, issuing stop work orders) CDOT failed to ensure Kiewit complied with Part I.D.2 the Construction General Permit. See findings 1CS, 3CS, and 4CS for more details on CDOT's failure to address chronic noncompliance and escalate enforcement. Below are examples where CDOT's inspection reports document the inadequate BMPs.

- In the June 5, 2013 inspection report, Finding #5 states, "The current plan is to cut to final configuration including checks as they pave. However this phasing allows there to be a large disturbed area draining to a few culverts in the short interim. Install additional sediment controls until configuration is achieved. For example, we discussed putting a berm around the culverts to create a ponding…" The rest of the sentence is cut off from the copy provided to the EPA.
- In the August 22, 2013 inspection report, it states under an unnumbered finding on page 5, "The area discharging to Teachout Creek has large bare areas. The ditches leading to Teachout Creek to do not contain check dams. It has been noted by the on-site ECS that sediment transport during rain events is not significant in this area, however a BMP at the end of the ditch (such as a reinforced silt fence or compacted berm) is needed as a precaution. All ditches in the same situation on the site also need a similar BMP installed as a precautionary measure."
- In the August 28, 2013 inspection report, Finding #6 states, "Area upstream of [Teachout Creek] needs additional sediment controls." The corrective action indicates that the US Army Corps of Engineers instructed Kiewit to leave downstream sediment as is and to look into willow staking these areas. Finding #9 states that surface roughening was not enough on steep slopes. Finding #11 states, "Only protection is inlet protection which has been overwhelmed…Install additional BMPs upstream..." Finding #12 states regarding a silt fence along Monument Creek, "The only sediment control in place is a reinforced silt fence along bank. Large (acres) drain here. Need additional BMPs upstream of reinforced silt fence (checks and/or sediment trap) and BMP needed along top of box and upstream of banks." The inspection comments on page 33 of the inspection report state, "Many findings occurred repeatedly and should be addressed site wide, not just at the locations noted in the inspection. They are as [follows]: multiple locations need perimeter control (in particular tracked slopes still need a sediment control at base), on steep and/or long slopes tracking does not appear adequate and additional BMPs are required (for example tackifier, rows of Erosion Control Log, Blanket, etc.), there are large open areas where the only BMP is at the inlet and additional BMPs are required upstream. In general much more redundancy is needed."
- In the September 30, 2013 inspection report, an unnumbered finding on page 18 of the report indicates that controls are needed in the flow line above an inlet. No BMPs are shown in the photo above the inlet.
- In the December 16, 2013 inspection report, an unnumbered finding on page 11 of the report states, "The erosion log around the inlet culvert is not an adequate BMP by [itself], because of large amount of disturbed area draining to the inlet. Enhance inlet protection or add some upstream BMPs."

- In the February 26, 2014 inspection report, an unnumbered finding on page 8 of the report states, "The [BMPs] in the ditch line are continually overwhelmed by sediment, which is filling downstream culverts. Reinforce and repair existing logs. Add additional, more aggressive, taller, [BMPs] such as straw bales."
- In the July 24, 2014 inspection report, an unnumbered finding on page 16 of the report states regarding an area where rills led into Black Forest Creek, "Repair areas of damage with a stronger BMP, as the areas in the photo have failed at least twice."
- In the September 17, 2014 inspection report, an unnumbered finding on page 8 of the report states regarding the Black Squirrel Creek area, "It appears that the ditch is inadequately designed to receive anticipated flows. Design amendment is required to avoid anticipated future illicit discharge in the area…" The finding on page 10 stated regarding No Name Creek, "Ditchline has not been properly contoured or armored to receive anticipated stormwater flow. Design amendment is required to avoid anticipated future illicit discharges in the area…"

Failure of Kiewit to implement corrective actions within 48 hours
Kiewit failed to implement several corrective actions within 48 hours. Some corrective actions took less than 10 days, but many took weeks or months to implement. The August 19, 2014 inspection report notes on page 33 that multiple findings exceeded the 48 hour time frame for corrections. In addition, there were some corrective actions that were never noted as corrected. The March 24, 2015 inspection report notes seven findings from September 18, 2014; October 24, 2014; and November 19, 2014 that remained uncorrected.

Following the EPA's inspection, CDOT provided a summary spreadsheet for various construction projects in all five Regions that included the number of corrective actions/findings, number of findings not corrected within 48 hours, number of findings not corrected in 96 hours, the number of 105 speed memos issued, the number of 105 speed memos with liquidated damages issued, and the total amount in liquidated damages associated with a project. Multiple corrective actions/findings can be addressed on one 105 speed memo. For the I-25 project, there were 223 corrective actions/findings, 69 corrective actions that went beyond 48 hours, 53 corrective actions that went beyond 96 hours, and 15 105 speed memos issued, two of which included liquidated damages.

According to the Green Book specification 208.09, liquidated damages will be applied for contractors failing to comply with the Construction General Permit and Green Book specifications. If corrections are not made within 48 hours from the date of notification from the PE, the contractor is charged $875 for each calendar day after the 48 hour period that one or more failure remains uncorrected. Although two 105 speed memos with liquidated damages were issued for the I-25 project, none were collected. In addition, corrective actions took well beyond 48 hours for 69 findings following several of CDOT's inspections. Based on the March 24, 2015 inspection report, seven corrective actions from September, October, and November 2014 were never completed, as stated above. CDOT failed to implement the liquidated damages provision of the Green Book for the I-25 project.

Examples of the corrective actions that took much longer (>10 days) are listed below.

- The February 26, 2014 inspection report notes broken silt fence, erosion logs that need maintenance, installation of additional erosion logs, finishing of final stabilization where it is incomplete, and addition of BMPs in ditch lines where BMPs are overwhelmed, that were corrected in 30 days.

- Seeding repairs are noted in the March 19, 2014 inspection report and were completed in 43 days.
- A stabilization finding noted in the April 28, 2014 inspection report was addressed through stabilization measures implemented 16 days later.
- Gullies noted in the April 28, 2014 inspection report were addressed in 63 days.
- The June 2, 2014 inspection report identifies two locations with gullies under failing erosion blankets that were fixed in 25 and 28 days. One area with a failing erosion blanket was to be redesigned, but this corrective action plan was not entered into the database until 28 days later. It is unknown when the corrective action by Kiewit actually occurred since only the corrective action plan was entered.
- The June 29, 2014 inspection report identifies an area where the erosion blanket is overwhelmed by concentrated flow and the flow created a gulley. The ditchline was reshaped, sprayed with Bio Earth, and reblanketed in 11 days.
- The July 24, 2014 inspection report notes erosion around the wing wall along Jackson Creek, and the slope was not repaired for 20 days. Temporary stabilization had not been applied as required, which was corrected with dirt glue in 28 days. Stabilization failed in an area, which was not corrected for 27 days. An area that had been seeded/mulched where a gully formed was regraded, reseeded/mulched, and erosion control logs were placed around the inlet after 125 days had passed. An area with an erosion blanket was installed without seeding underneath, and Green Book specification 216 requires soil retention covering to have seeding underneath; this was not corrected was not was corrected for 120 days .
- The August 19, 2014 inspection report notes two locations where permanent slope drains need to be installed, which were addressed in 65 and 94 days. Rock check dam spacing findings were corrected in 65 days. Rock that needed to be added to a drainage that was eroded was done in 65 days.

According to Ms. Erickson, she recommended the PE issue a stop work order for on-going BMP issues, and a stop work order was supposed to have been issued for the entire I-25 project in July 2014. However, Ms. Erickson indicated that a full stop work order may not have been issued, as she continued to observe contractors working at the site. There was no indication in the documentation provided to the EPA that a stop work order was issued by the PE. The August 19, 2014 inspection report states in the comments section on page 33, "In talking to the PE [liquidated damages] have been assessed and a schedule has been agreed upon to correct present findings (note 6 findings have not been addressed from last monthly conducted on 7/23/2014). The PE should continue to assess [liquidated damages] as necessary and review section 208.09 to pursue Stop Work order."

Highway 36 Project - Ames Construction, Inc.

On January 6, 2014 CDPHE issued a Notice of Violation (NOV) to Ames Construction, Inc. (Ames) for violations of CDPHE's Construction General Permit (authorization to discharge number COR03J245), at the construction project along Highway 36 (Highway 36 project). It was noted that Ames also held coverage under the Construction General Permit for the Highway 36 project under authorization to discharge number COR03L343. An inspection was conducted by CDPHE on April 11, 2013 that identified violations of the Construction General Permit, which included an inadequate SWMP and site map, some areas of the site were not adequately protected with stormwater controls, many BMPs were not properly installed and/or maintained, and some pollution sources were not adequately controlled. On January 6, 2014, CDPHE issued a Notice of Violation (NOV), and on July 9, 2014, CDPHE issued a

penalty for $95,000 to Ames for violations found during CDPHE's April 11, 2013 inspection at the Highway 36 project.

Some of the violations identified by CDPHE had been previously identified by CDOT during CDOT's monthly audit inspections of the Highway 36 project, while other violations in the NOV did not appear in previous CDOT inspections.

Failure of Ames to select, install, and implement BMPs following good engineering, hydrologic and pollution control practices

Ames failed to select, install, implement, and maintain BMPs following good engineering, hydrologic and pollution control practices, as required by Part I.D.2 of the Construction General Permit.

- Paragraphs 18.a, 18.b, and 18.c of the NOV, CDPHE identifies only a single BMP at inlets and outlets above Big Dry Creek and the need for additional BMPs to control the impacts of runoff from disturbed areas upgradient of areas with concentrated flow. CDPHE also identifies inadequate BMPs northwest of the US-36 and Highway 121 intersection where sandbags are present but without BMPs in upgradient disturbed areas. The NOV states the sandbags are "not installed according to good engineering, hydrologic, and pollution control practices due to not providing appropriate ponding capacity." Northwest of the US-36 and Highway 121 intersection, gravel bags are observed at the inlet, conveyance, and outlet to the "Sill-Terhar wetland" with no BMPs in upgradient disturbed areas.
- Paragraph 18.d of the NOV cites an area on the west side of US-36 along the bridge approach to the Burlington Northern Railroad bridge where BMPs are specified but not installed. Stormwater in this area flows to Lower Church Lake.
- Paragraph 18.e of the NOV cites a 10-acre disturbed area near the crusher yard with only a silt fence downgradient that exceeds the maximum drainage capacity specification for a silt fence of ¼ acre per 100 feet of silt fence. Paragraph 18.e. Stormwater from this area eventually flows to Lower Church Lake.
- Paragraph 18.g of the NOV cites a lack of BMPs for soil stockpiles and slopes to prevent erosion, a gravel bag BMP that was not installed per specifications, and an unprotected drainage culvert, which would eventually discharge to Lower Church Lake.
- Paragraphs 18.f of the NOV cites the installation of a temporary berm without stabilizing the berm per specifications. Stormwater from this area eventually flows to Lower Church Lake.
- Paragraph 18.h of the NOV cites a lack of adequate BMPs to prevent sediment flowing under Jersey barriers onto the highway resulting in sediment in stormwater flowing onto the highway, which then flows into storm sewers and waters.
- Paragraph 18.i of the NOV cites the lack of implementation of street sweeping, which is included in the SWMP.
- Paragraph 18.j cites vehicle tracking control that does not extend to the pavement.
- Paragraph 18.k of the NOV cites soil stockpiles without BMPs in areas where stormwater flows into storm sewers.
- Paragraph 18.l of the NOV cites several construction waste stockpiles with no BMPs per the SWMP.
- Paragraph 18.m of the NOV cites no BMPs to manage stormwater in an area of equipment repair and servicing. Numerous petroleum spills were observed in this area.
- Paragraph 18.n of the NOV cites a total lack of BMPs or BMPs not installed per specifications in the culverts near Church Ranch Boulevard and Big Dry Creek.
- Paragraph 18.o of the NOV cites a total lack of BMPs near the Westminster Boulevard bridge.

Failure of CDOT to identify noncompliance by Ames with the Construction General Permit
Paragraph 12 of the NOV identifies five issues with the SWMP and site map that were identified during the inspection CDPHE conducted on April 11, 2013, and these issues did not appear in any CDOT's monthly audits conducted prior to the CDPHE inspection.

While the CDOT inspections conducted September 14, 2012; November 9, 2012; December 19, 2012; and January 17, 2013 point out that BMPs along drainage ways and adjacent to water ways are not adequate, they do not specify the need for upgradient BMPs to control areas of concentrated flow. CDOT does not appear to be verifying compliance with the Construction General Permit, specifically implementation of the SWMP and site map requirements (Parts I.B.1 and I.B.3 of the Construction General Permit), the requirement for the permittee to ensure BMPs are implemented to reduce the potential of pollution sources to contribute pollutants to stormwater discharges (Part I.C.3.c of the Construction General Permit), and the requirement to BMPs are selected, installed, implemented, and maintained following good engineering, hydrologic and pollution control practices (Part I.D.2 of the Construction General Permit).

Chronic failures of Ames to comply with the Construction General Permit
CDOT RECAT inspections show that Ames was chronically failing to address BMP installation and maintenance issues. For example, eight monthly audits occurred from the time CDOT conducted their preconstruction walk thru for the Highway 36 project on August 2, 2012 until the CDPHE inspection on April 11, 2013; four of the eight inspections identify the failure to provide a BMP at the base of soil stockpiles (10/11/12, 11/9/12, 1/17/13, and 3/26/13), six of the eight inspections identify issues with vehicle tracking control (9/14/12, 10/11/12, 11/9/12, 12/19/12, 1/16/13, and 2/19/13), five of the eight inspections note that street sweeping was not being done (9/14/12, 12/19/12, 1/16/13, 2/19/13, and 3/26/13), and seven of the eight show Ames was not maintaining silt fences (8/2/12, 9/14/12, 10/11/12, 12/19/12, 1/16/13, 2/19/13, and 3/26/13). Ames corrected the vast majority of the issues identified within the specified 48 hours. However, the same issues were being identified repeatedly at each monthly inspection, but CDOT was not escalating the enforcement approach to ensure compliance with the Construction General Permit.

Failure of Ames to implement corrective action in 48 hours
CDOT did not follow its internal enforcement escalation procedure for construction violations. Several CDOT monthly audits conducted over the course of the Highway 36 project have corrective actions that were not implemented within 48 hours, which, according to the Green Book specification 208.09, CDOT should have put the contractor on notice, and liquidated damages should have been collected for findings not corrected within 48 hours. For example, one finding from the 4/17/14 monthly audit of the Highway 36 project (COR03J245) regarding silt fence maintenance was not addressed for seven days. Three findings from the 5/28/14 monthly audit of the Highway 36 project (COR03L343) were not addressed until five or six days later. On 6/26/14, CDOT identifies that a concrete washout needs to be cleaned, and that was not addressed for four days. Speed memos and/or liquidated damages were not issued for the failure to address the findings from the April, May, and June 2014 inspection findings of the Highway 36 project. The summary spreadsheet provided by CDOT indicates that for "Phase 2 US 36 Managed Lanes/BRT" (part of the Highway 36 project in Region 4) there are 123 findings/corrective actions, 11 corrective actions that were not completed in 48 hours, and 10 corrective actions that were not completed in 96 hours. No 105 speed memos were issued, and no liquidated damages were assessed. There was no project listed in Region 1 for the Highway 36 project within the summary spreadsheet.

Potential Causes of Findings

According to Regional personnel interviewed, there is a potential conflict of interest when the Water Pollution Control Managers in the Regions need to ask CDOT's PE to issue liquidated damages or a stop work order when Construction General Permit violations are identified or other failures of a contractor to meet specification are identified. The PEs for construction sites are responsible for ensuring that projects remain on schedule *and* for making final enforcement decisions at the sites (e.g. issuing stop work orders, assessing liquidated damages, etc.). This conflict of interest may be a contributing factor to CDOT's lack of implementation of Green Book procedures for enforcement and failure to escalate sanctions to a level high enough to incentivize and ensure contractor compliance with the Construction General Permit and other specifications.

CDOT has a mechanism to terminate a contract or disbar a contractor from working on their projects, but CDOT Headquarters, Region 1, Region 2, and Region 4 personnel indicated that this has never been done. CDOT does not appear to use this tool to ensure contractor compliance.

Based on information provided by Region 2 (Ms. Erickson and Mr. Stecklein, Hydraulics Engineer and Project Manager), CDOT has less control over the SWMP hydraulic aspects of a design-build site than in a design-bid-build project where CDOT develops the SWMP and selects BMPs. Mr. Stecklein stated that he believed many of the issues with the I-25 project were a result of ignorance on the part of Kiewit. He stated that in design-build projects, there is less time for oversight and problems tend to be addressed in a reactionary way. Mr. Stecklein also stated that it is typical to have problems similar to I-25 with design-build projects.

2CS Corrective Actions:

CDOT's new permit, issued in 2015, no longer incorporates the Construction General Permit by reference. The new permit incorporates specific contractor requirements which CDOT must ensure that contractors are adhering to. Update and implement the Construction Sites Program to ensure CDOT requires contractors implement the requirements listed in CDOT's new permit.

2CS Recommended Actions:

It is recommended that CDOT develop an alternative enforcement structure that provides additional pathways to enforcement escalation including oversight of PE decisions by the Water Quality Control Manager and does not rely only on the PE for the construction site to be the responsible party for ensuring that projects remain on schedule *and* for making final enforcement decisions at the sites (e.g., issuing stop work orders, assessing liquidated damages/assets, etc.). It is also recommended that CDOT evaluate its design-build process to determine why these projects tend to have more problems, and then address the root cause(s) of the problems.

3CS – CDOT failed to follow the Green Book procedure for several construction sites across Regions by failing to issue and collect liquidated damages for corrective actions that went beyond 48 hours.

3CS Permit Requirement:

Part I.B.1.a of the Permit requires CDOT to implement its Construction Sites Program. The EPA was provided the Green Book as the overarching program document for CDOT's Construction Sites Program. Section 208.09 of the Green Book addresses failure of contractors to perform erosion control. According to this specification, liquidated damages will be applied for contractors failing to comply with the Construction General Permit and Green Book specifications. If corrections are not made within

48 hours from the date of notification from the PE, the contractor is charged $875 for each calendar day after the 48 hour period that one or more failure remains uncorrected. It states, "Liquidated damages will be applied for failure to comply with the [Construction General Permit] and these [Green Book specifications], including but not limited to" fourteen specifically listed items. It goes on to state, "The [Project] Engineer will immediately notify the Contractor in writing of each incident of failure to perform erosion control in accordance with the [Construction General Permit], including, but not limited to items (1) through (14) above. Correction shall be made as soon as possible but no later than 48 hrs from the date of notification to correct the failure. The Contractor will be charged liquidated damages in the amount of $875 for each calendar day after the 48 hour period has expired, that one or more of the incidents of failure to perform the requirements of [the Construction General Permit], including, but not limited to items (1) through (14) above, remains uncorrected."

3CS Findings:
Following the EPA's inspection, CDOT provided a summary spreadsheet for various construction projects in all five Regions that included the number of corrective actions/findings, number of findings not corrected within 48 hours, number of findings not corrected in 96 hours, the number of 105 speed memos issues, the number of 105 speed memos with liquidated damages issued, and the total amount in liquidated damages associated with a project. This document was an Excel file titled *105_LD_Project Request_3_Years* and updated to correct Region information under the name *EPA_allregions_D*. For the I-25 project, there are 223 corrective actions/findings, 69 corrective actions that went beyond 48 hours, 53 corrective actions that went beyond 96 hours, and 15 105 speed memos issued, two of which included liquidated damages. There were no actual liquidated damages assessed for the I-25 project. For a project titled "Phase 2 US 36 Managed Lanes/BRT" (part of the US 36 project in Region 4) there were 123 findings/corrective actions, 11 corrective actions that were not completed in 48 hours, and 10 corrective actions that were not completed in 96 hours. No 105 speed memos were issued, and no liquidated damages were assessed for the US 36 project. There was no project listed in Region 1 for the portion of the Highway 36 project located in Region 1 within the summary spreadsheet.

A summary of the number of construction sites that had at least one instance under each of these categories is provided below. Across CDOT, there were 107 construction sites with corrective actions that went beyond 48 hours and 86 construction sites with corrective actions that went beyond 96 hours. Each of these construction sites should have had liquidated damages issued and collected. Only 87 construction sites were issued 105 speed memos. Only 22 construction sites had any speed memos issued with liquidated damages. Only 4 sites had liquidated damages collected. This summary does not capture the repetitive nature of corrective actions going beyond 48 hours at a single site, such as at the I-25 project and Highway 36 project. It should be noted that the Highway 36 project was not listed on the summary table for Region 1. It is unknown how many construction sites may be missing from the summary provided by CDOT. CDOT failed to follow the Green Book procedure for numerous construction sites across Regions by failing to issue liquidated damages for corrective actions that went beyond 48 hours.

Region	Number of sites with corrective actions beyond 48 hours	Number of sites with corrective actions beyond 96 hours	Number of sites with speed memos (105 memos) issued	Number of sites with a speed memo that included liquidated damages	Number of sites with liquidated damages

1	37	29	31	11	2
2	20	20	16	4	1
3	8	2	14	3	0
4	36	31	17	4	1
5	6	4	9	0	0
Total	**107**	**86**	**87**	**22**	**4**

3CS Corrective Actions:
Follow the Green Book procedure for construction sites by issuing and collecting liquidated damages for corrective actions that go beyond 48 hours. Indicate in a response how CDOT plans to ensure this is achieved.

4CS – CDOT has no formal mechanism to address chronic noncompliance by contractors as long as corrective actions occur within 48 hours.

4CS Permit Requirement:
Section I.B.1.a.2 of the Permit requires sanctions for chronic failure to comply with the Construction Program. It states, "CDOT shall develop new procedures and/or document existing procedures to improve individuals' and Contractors' performance in implementing the Construction Program, including sanctions for those individuals and Contractors that have a record of chronic failure to comply with or enforce the program requirements. The procedure must include a mechanism to track compliance records of individuals and Contractors, including those subject to the actions required in subparagraph 1)b)i) of this section. These procedures shall be submitted to the Division via a Technical Memorandum within **12 months** after the permit effective date. Implementation of the approved procedures shall occur within **18 months** of the permit effective date."

4CS Findings:
CDOT has no formal mechanism to address chronic violators by contractors as long as corrective actions occur within 48 hours. Contractors can continue to have chronic violations for the same issue without repercussions. Both Headquarters, Region 1, Region 2, and Region 4 personnel indicated that CDOT inspectors use compliance assistance when there are repeat violators and provide on-the-spot training to the violators in an effort to reduce repeat offenses. Ms. Erickson in Region 2 stated that she keeps writing-up the findings in reports and keeps "coaching" the contractor, and they typically come around. During the opening interview, this issue was discussed. When asked about how CDOT addresses repeat, chronic violations that are always fixed within 48 hours, Mr. Minges stated that there does not appear to be an effective mechanism for identification of chronic violators nor a structured way for that information to be shared and communicated to other CDOT representatives, such as Headquarters. Mr. Minges and Mr. McDade explained that there is not a structured process to identify chronic violators, but CDOT is hoping to design a process for the future.

4CS Corrective Actions:
Update the Green Book to include a process to address chronic noncompliance by contractors even if corrective actions are always completed within 48 hours. Ensure there is an infrastructure in place to track chronic noncompliance by contractors. Submit this update to EPA.

5CS – Contractors' failures to meet Construction General Permit and Green Book requirements were not identified by CDOT inspectors and a contractor Transportation Erosion Control Supervisor inspector during oversight inspections at CDOT construction sites.

5CS Permit Requirements:
Part I.B.1.a.1.b of the Permit requires CDOT to have procedures to ensure compliance by contractors with the Construction General Permit. It states, "CDOT's program shall include contract provisions or other regulatory mechanisms to require erosion and sediment controls at construction sites, as well as sanctions and internal management procedures to ensure compliance with the CDOT Construction Sites Program and CDPS general discharge permits associated with construction activity, to the extent allowable under State or local law. These procedures must address all sites found to be out of compliance within the permit coverage area, including those sites subject to RECAT inspections." Relevant Construction General Permit requirements are cited in the Findings section below.

Part I.B.1.a of the Permit requires CDOT to implement its Construction Sites Program. The EPA was provided the Green Book as the overarching program document for CDOT's Construction Sites Program. Relevant Green Book specifications are cited in the Findings section below.

5CS Findings:
The EPA, with assistance from CDPHE, conducted oversight inspections at multiple CDOT construction sites. Contractors' failures to meet Construction General Permit and Green Book requirements were not identified by CDOT and contractor Erosion Control Specialists (TECS) inspector during oversight inspections at CDOT construction sites. A list of the findings identified the construction oversight inspections is provided below:

Region 1:
Inspection Date: April 2, 2015
Time In: 8:00am
Time Out: 12:35pm
EPA Inspectors: Kacy Sable and Natasha Davis

Construction site located near Federal Boulevard and 68th Avenue, in Westminster, CO
On-site Representatives: Brian Reiser (Water Pollution Control Manager CDOT Region 1), Amber Williams (Hydrologic Resource Specialist, CDOT HQ), Trip Minges (Hydrologic Resource Specialist, CDOT HQ) and Susie Hagie (Landscape Architect I, CDOT Region 1), Ernest Martinez (Hamon contractor), Tom Magenis (CDOT PE), and Matt Johnson (Hamon site TECS)

The site was a design-build project with the CDOT contractor, Hamon, to widen the bridge on Federal Boulevard. The EPA followed the site TECS, Matt Johnson, and CDOT inspectors through the site and observed issues identified by both Hamon and CDOT. The EPA's on-site findings included the following, with Green Book and Construction General Permit requirements where applicable:

- The vehicle tracking pad was no longer fully in effective operating condition and tracking was occurring off-site (photo 338). These findings were identified by CDOT and Hamon.
    - Green Book specification 208.04(f) states that BMPs "shall be maintained in effective operating condition." This is also required by Part I.D.7 of the Construction General Permit. Green Book specification 208.04(f) also states, "Whenever sediment collects on the paved surface, the surface shall be cleaned."
- A piece of construction equipment was leaking on the ground (photo 339). CDOT and Hamon did not identify this finding.

    - Green Book specification 208.06(a) states, "The Contractor shall inspect equipment, vehicles, and repair areas daily to ensure petroleum, oils, lubricants (POL) are not leaking onto the soil or pavement."
- The site map showed that dandy bags were being used at certain inlets, but the contractor was using rock socks instead (photo 340). CDOT and Hamon did not identify this finding.
    - Part I.C.2 of the Construction General Permit requires site maps to identify the location of structural BMPs.
- Some rock socks (gravel bags) were not flush with the curb and gutter and did not extend one foot past the end of the inlet (photos 340-341). CDOT and Hamon did not identify this finding.
    - Green Book specification 208.05(q) states, "Gravel bags shall be placed to conform to the surface without gaps." Green Book specification 208.05(j) states, "The ends of inlet protection shall extend a minimum of 1 foot past each end of the inlet."
- Inspections in the SWMP did not list the date when issues identified were corrected. CDOT and Hamon did not identify this finding.
    - Part I.D.6.2.vii of the Construction General Permit requires self-inspection records to include the dates corrective action(s) were taken.

There were several other projects occurring at the same location including a stream diversion so the culvert under the road could be re-sized, earth work and redesign of the park, and a rail line installation. Each project had a different contractor and there was a lack of oversight and coordination. Other portions of the site had BMP deficiencies but were not part of the scope of CDOT MS4 inspection.

<u>Region 2:</u>
Inspection Date: March 31, 2015
Time In: 8:14 a.m.
Time Out: 10:52 a.m.
EPA Inspectors: Stephanie DeJong and Alysia Tien
CDPHE Inspectors: Megan Shirley

Old Ranch Road and Powers Boulevard (SH-21) construction site
On-site Representatives: Sonya Erickson (Water Pollution Control Manager for CDOT's Region 2), Bob McDade (Hydrologic Resource Specialist) and Mike Banovich (Landscape Architect), Yun Han (Project Engineer for CDOT), and Tom Herman (Wildcat contractor).

The site was a design-bid-build project with the CDOT contractor, Wildcat, to construct an underpass for Powers Boulevard under Old Ranch Road. The EPA reviewed records with the Water Pollution Control Manager, Sonya Erickson, and followed her through the site and observed issues identified. The Wildcat representative and other CDOT representatives also walked the site.

During the EPA's oversight inspection, the CDOT inspector did not inspect all discharge points or all BMPs until the EPA inspectors requested to see them. The CDOT inspector indicated that they typically do not inspect all discharge points and BMPs. Maintenance issues needed at some of these locations would not have been otherwise inspected. The CDOT inspector indicated that some minor issues, such as a lack of vehicle tracking control or the failure to use two crossed stakes on straw wattles, would not be pointed out to the contractor during inspections if they were not significant, because she worried it would result in degradation of the working relationship with the contractors.

The EPA's findings included the following, with Green Book and Construction General Permit

requirements where applicable:

- The CDOT inspector counted a monthly audit inspection for a 14-day inspection for the Construction General Permit. This was most recently done at the site on March 4, 2014. Based on information provided by Ms. Erickson, she does not inspect all BMPs and all disturbed areas.
    - Part I.D.6.b.1 of the Construction General Permit states regarding 24-hour post rain and 14-day inspections, "The construction site perimeter, all disturbed areas, material and/or waste storage areas that are exposed to precipitation, discharge locations, and locations where vehicles access the site shall be inspected for evidence of, or the potential for, pollutants leaving the construction site boundaries, entering the stormwater drainage system, or discharging to state waters. All erosion and sediment control practices identified in the SWMP shall be evaluated to ensure that they are maintained and operating correctly."
- A vehicle access point on the west side of the site along Old Ranch Road did not have vehicle tracking control and sediment had been tracked onto the street (photo 4). This was not identified by the CDOT inspector.
    - Part I.C.3.c.6 of the Construction General Permit requires vehicle tracking controls to be implemented. Green Book specification 208.04(f) states, "Whenever sediment collects on the paved surface, the surface shall be cleaned."
- Wattles throughout the site did not have two crossed stakes per the design criteria (photos 5 and 9-11).
    - The SWMP specifications include two crossed stakes for straw wattles; Part I.C.3.c of the Construction General Permit requires BMP specifications to be included in the SWMP. Part I.B.3 of the Construction General Permit requires the SWMP to be implemented.
- Several straw wattles along the northwest portion of the site were overtopped with sediment or were over 50% full of sediment (photos 6 and 7). This was not identified by the CDOT inspector. The concrete apron prior to the culvert under Powers Boulevard had sediment deposited on it. Some sediment had vegetation on it, but other sediment was likely from the site based on the fact wattles above this area were overtopped (photo 8).
    - Green Book specification 208.04 states, "BMPs shall be continually maintained…including removal of collected sediment when silt depth is 50 percent or more of the height of the erosion control device." Green Book specification 208.05(l) states, "The Contractor shall maintain the erosion logs during construction to prevent sediment from passing over or under the logs."
- Ms. Erikson was not clear on the liquidated damage process and what it means to issue liquidated damages. She said some training from Headquarters would be helpful.

5CS Corrective Actions:
CDOT's new permit, issued in 2015, no longer incorporates all of the requirements from the Construction General Permit. Ensure contractors as well as CDOT are in compliance with the Permit and the Green Book. This includes ensuring CDOT and TCES inspectors are trained on the requirements and enforce those requirements. Indicate in a response how CDOT intends to ensure compliance.

XII. New Development/Redevelopment (ND) Program Findings

1ND – The inventory of CDOT permanent water quality features (PWQFs) was incomplete and inaccurate.

1ND Permit Requirements:
Part I.B.1.b.2 of the Permit states regarding the NDRD program, "CDOT shall develop and implement a mechanism to ensure long-term maintenance of BMPs." The BMPs in this portion of the Permit are PWQFs.

Part I.B.1.f.1.d of the Permit states "CDOT shall update and maintain an inventory of permanent structural controls related to stormwater quality. For the purposes of this program, structural controls are defined as water quality facilities such as stormwater detention ponds, stormwater retention ponds, wet ponds, constructed wetlands for water quality purposes, sand infiltration systems, Stormceptors® or similar devices, and grass swales. CDOT shall inventory the permanent structural controls in accordance with the following schedule…"

1ND Findings:
At the time of the EPA's inspection, CDOT lacked a complete and accurate inventory of permanent water quality features (PWQFs). CDOT Headquarters utilizes a database called SAP to inventory PWQFs. However, this database was not representative of the entire universe of PWQFs. CDOT's inspections of PWQFs are entered into a database called SWIT. CDOT is in the process of creating a PWQF geospatial inventory called OTIS.

Prior to the EPA's inspection, CDOT provided an Excel file list of PWQFs in all Regions titled Statewide Active PWQ Structures_03232015.xlsx. The EPA compared the list of PWQFs provided to the EPA with installed PWQFs listed in CDOT's 2011, 2012 and 2013 Annual Reports. The table below lists 10 examples of PWQFs that were listed as installed on Annual Reports but not listed in the PWQF inventory provided to the EPA.

PWQF Referenced in Annual Report	PWQF Location Identified in Annual Reports	Identified as Installed in Specific Annual Report?	Listed In Table Of PWQFs Provided to the EPA?
1 Water Quality Swale, Administrative Fish Stamps, 2 Extended Detention Basins	I-25 and 84th, Westminster	Yes - 2011	No
1 extended detention pond & grassed lined swales	I-225 & 6th Ave., Aurora, Arapahoe County	Yes - 2011	No
2 Extended Detention Basins, Maintained by City and County of Broomfield	120th, US 36 to SH 121, Broomfield, CO	Yes - 2011	No
Riprap Checks and Grass Lined Swales	SH 21B at Dublin Intersection, Mileposts 147.4 to 148.4, El Paso County	Yes - 2011	No

PWQF Referenced in Annual Report	PWQF Location Identified in Annual Reports	Identified as Installed in Specific Annual Report?	Listed In Table Of PWQFs Provided to the EPA?
Proprietary vault separator system will be installed (BaySavers or Vortech) and a grassy swale	Bridge Replacement, Pueblo	Yes - 2011	No
1 Water Quality Swale, Administrative Fish Stamps, 2 Extended Detention Basins	I-25 & 84th, Westminster	Yes - 2012	No
2 vaults, 10 extended detention basins, 1 porous landscape detention, 11 inlet baskets	US 285 (Hampden) from Kipling to Federal Blvd	Yes - 2012	No
Extended Detention Basin	C-470 and Santa Fe, Littleton, Arapahoe and Douglas, CO	Yes - 2012	No
2 Extended Detention Basins	SH 83, MP 50.6-53.0	Yes - 2013	No
3 Filterras	SH 21: MP 137.6-148.5	Yes - 2013	No

During the inspection, CDOT provided the EPA access to the OTIS database and mapping tool that has the locations of some of the PWQFs. The OTIS database and PWQF inventory provided to the EPA conflicted with each other. There were also examples of inaccurate PWQF locations, inaccurate designations of whether a PWQF that needs to be maintained by CDOT or the municipality, and PWQFs that were not inventoried in either dataset.

The following list identifies additional inconsistencies with the PWQF inventory provided to the EPA that were identified in each of the CDOT Regions inspected by the EPA:

Region 1
Region 1 inspects and maintains only the specifically identified PWQFs that CDOT has not delegated to a municipality through an intergovernmental agreement (IGA) due to the proximity to the highway. There were a few PWQFs identified for inspection using the list of all PWQFs provided to the EPA prior to the EPA's inspection that were not present in the OTIS database. For example, the 2011 Annual Report includes a water quality swale and two extended detention basins installed at the intersection of I-25 and 84th Avenue in Westminster that are not located in either the PWQFs inventory provided to the EPA (as stated in the table above) nor in the OTIS database.

Region 2
Region 2 does not have a complete list of PWQFs. According to Ms. Erickson, she was not provided an inventory of PWQFs. She rebuilt a partial inventory based upon paper copies of inspection reports for PWQFs. The EPA selected two PWQFs that were reported as installed in the 2011 Annual Report to visit during the inspection. These are the grassy swale and riprap located at Powers Boulevard and Dublin Boulevard in Colorado Springs and the 4th Street Bridge vault and grassy swale in Pueblo. Neither of these PWQFs are listed in the PWQF inventory provided to the EPA (as stated in the table above), nor are they listed in the OTIS database. Ms. Erickson was not aware of the existence of these

PWQFs prior to the EPA inspection. It is unknown if the remaining four PWQFs installed in 2011 in Region 2 are in CDOT's inventory.

In addition, some of the PWQF information submitted with the 2011 and 2013 Annual Reports does not appear to be accurate. The 2011 Annual Report indicated at the 4th Street Bridge project an interceptor with a grassy swale was installed, but the swale could not be found during the EPA inspection. The 2013 Annual Report indicated at Highway 50 from Baltimore to Willis that a modified pond and grassy swale were installed, but the swale could not be found during the EPA inspection.

Region 4
Region 4 assets included a PWQF located in the town of Berthoud. This is included in the PWQF inventory provided to the EPA prior to the inspection and in the OTIS database. This wetland feature was described in the PWQF inventory provided to the EPA and in the OTIS database as an extended detention basin with a micro pool. The EPA observed what appeared to be a large wetland feature during the site visit on April 1, 2015. The Region 4 Water Quality Control Manager, Jennifer Gorek, had never inspected the site and was unaware that it was considered a PWQF. Ms. Gorek explained that the wetland feature is not a CDOT asset (PWQF), but rather it was a wetland mitigation project created in 2007 when that portion of Highway 287 was constructed that has since been sold to a private solar company.

The EPA visited three PWQFs in the Boulder and Niwot area, which were identified by Ms. Gorek: a detention basin adjacent to Highway 7 and a parking lot for the Boulder Valley School District, an extended detention basin with a micropool near Highway 119 and Jay Road, and an extended detention basin with a micropool near Highway 119 and Niwot Road. None of these PWQFs are listed in the PWQF inventory provided to the EPA or in the OTIS database.

1ND Corrective Actions:
In order to ensure long-term maintenance of the PWQFs, CDOT must maintain an accurate inventory of their assets. Indicate in a response how CDOT will update its inventory, describe the platform for the inventory (e.g., OTIS or some other inventory tool), and indicate how that inventory will be used to ensure long-term maintenance.

2ND – CDOT does not have a complete list of PWQFs with Intergovernmental agreements (IGAs) and is not ensuring long-term maintenance or proper operation and maintenance of PWQFs with IGAs.

2ND Permit Requirements:
Part II.A.3 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."

Part I.B.1.b.2 of the Permit states, "CDOT shall develop and implement a mechanism to ensure long-term maintenance of BMPs. This will include:

a) Evaluate CDOT's existing mechanisms that ensure long-term maintenance and operation of permanent BMPs and determine whether a need exists to improve them. CDOT will submit its

evaluation and determination of whether there is a need to improve the existing mechanisms to the Division no later than **12 months** after the permit effective date.

b) If it is determined that changes are needed to CDOT's existing mechanisms that ensure long-term maintenance and operation of permanent BMPs, CDOT will identify and consider alternatives for improving the existing mechanisms and/or developing additional mechanisms, and submit a summary to the Division within **24 months** of the permit effective date.

c) If necessary, CDOT will select and implement the preferred alternative mechanism to ensure the long-term maintenance and operation of permanent water quality BMPs within **36 months** of the permit effective date."

2ND Findings:
As discussed previously in this report, some PWQFs are designated as a local municipality's responsibility pursuant to Colorado Revised Statute 43-2-135, and intergovernmental agreements (IGAs) have been put into place. CDOT Headquarters staff do not have an inventory of which PWQFs are covered by intergovernmental agreements (IGAs). Regional staff only have a partial inventory or knowledge of which PWQFs are covered by IGAs. As a result, CDOT is not ensuring long-term maintenance or proper operation and maintenance of PWQFs. The Permit applies to all BMPs implemented to prevent or minimize water quality impacts from projects requiring controls regardless of whether a separate party is conducting maintenance activities.

Region 1
Region 1 staff inspect and maintain only the specifically identified PWQFs that CDOT has not delegated to a municipality through an IGA due to the proximity to the highway. The other PWQFs are stated to be delegated to the municipalities through IGAs. The EPA inspected two PWQFs in CDOT Region 1 and reviewed records for six additional PWQFs. The EPA requested that records for at least one PWQF under an IGA be provided following the inspection. Of the six PWQFs reviewed, it appears that none are covered under an IGA. Additionally, the EPA requested CDOT provide information on maintenance activities and any inspections conducted at PWQFs with IGAs and this was not provided. Therefore, the EPA cannot discern potential problems regarding any particular structure under an IGA.

Region 2
CDOT is not ensuring municipalities are maintaining the structures in Region 2. Pueblo is not maintaining structures signed over to it (4th Street Bridge and Willis Pond). Ms. Erickson stated that if she found a PWQF that required maintenance she would contact the city.

According to the March 23, 2010 Maintenance Contract (IGA) between Pueblo and CDOT for the 4th Street Bridge, Pueblo agreed to maintain "Permanent BMPs." During the EPA site visit, the EPA identified that the manhole covers were buried in dirt and appeared to not have been opened for some time. There was trash and debris in the unit. In one chamber, the as-built diagram showed two inlets and one outlet, but only one inlet and the outlet were visible above the debris. The rip rap below the final outfall to the Arkansas River was covered in trash and sediment. The 2011 Annual Report indicated there was also a grassy swale, but this could not be located. CDOT had not previously inspected this PWQF.

No IGA was available for the Willis Pond, but according to Ms. Erickson, the Willis Pond was an existing pond owned by Pueblo that CDOT used to collect stormwater from a project along Highway 50.

During the EPA site visit, erosion rills were observed on the sides of the pond and there was high vegetation throughout the pond. CDOT noted during its 2014 inspection of this PWQF that that the vegetation "could be mowed." The inlet for CDOT's drain had fallen off. CDOT noted during its 2014 inspection of this PWQF that the inlet was damaged, although it had not completely fallen off at that time. The outlet had debris and sediment in front of it such that the holes in the bottom of the outlet were not visible. There was a large amount of debris on the overflow structure. The 2014 inspection noted that the inlet was damaged.

Region 4
The Region 4 water quality control manager, Jennifer Gorek has inspected 11 PWQFs in Region 4 on an annual basis, which included Highway 7 that was under an IGA. If maintenance issues were identified where an IGA existed, the local municipality would be contacted. Ms. Gorek stated that the inventory of PWQFs within the IGAs was updated annually. However, the IGA for SH 7 assets signed over to Boulder was signed in October 2011 and has a five year term; it is not updated annually. The PWQF EPA inspected on Highway 7 (see **Error! Reference source not found.**) was not included in the IGA scope of work.

Section 5 of the IGA for Highway 7 in Boulder outlines the state and local agency commitments. Section 5, Part B states that the "Maintenance Management Information Manual" is to be used for maintenance services. The EPA is unaware whether this manual includes requirements for PWQFs, and it is unknown if Boulder implements CDOT's *Permanent Water Quality Structure Maintenance Manual, SH 7* for specific PWQFs covered under the IGA, which may be different from the "Maintenance Management Information Manual" listed in the IGA.

Section 5, Part B.2 of the IGA states that "storm sewer inlets and catch basins" are to be maintained along with "drainage structures, excluding storm sewers". The EPA is unaware whether Boulder understands that CDOT interprets this contract to include maintenance of the various PWQFs because PWQFs are not specified in the IGA. Furthermore, a list of the types of maintenance activities in Exhibit A of the IGA does not address stormwater PWQFs nor does the IGA describe the expectation that Boulder must implement the maintenance activities identified by CDOT during CDOT's annual PWQF inspection.

2ND Corrective Actions:
Develop a procedure to ensure long-term maintenance is performed on CDOT's PWQFs and the PWQFs are operating properly, including those that are covered under IGAs or other similar agreements with external entities. Provide a procedure to the EPA and CDPHE describing:

1. How CDOT will keep an accurate inventory of PWQFs covered by an IGA and therefore are to be maintained by the municipality,
2. How CDOT will transmit the information from routine inspection of PWQFs to the local municipality, and
3. How CDOT will verify the maintenance needs transmitted to the local municipality are accomplished.

3ND – CDOT was not ensuring long-term maintenance of PWQFs.

3ND Permit Requirements:
Part II.A.3 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."

Part I.B.1.b.2 of the Permit states, "CDOT shall develop and implement a mechanism to ensure long-term maintenance of BMPs. This will include:

a) Evaluate CDOT's existing mechanisms that ensure long-term maintenance and operation of permanent BMPs and determine whether a need exists to improve them. CDOT will submit its evaluation and determination of whether there is a need to improve the existing mechanisms to the Division no later than **12 months** after the permit effective date.

b) If it is determined that changes are needed to CDOT's existing mechanisms that ensure long-term maintenance and operation of permanent BMPs, CDOT will identify and consider alternatives for improving the existing mechanisms and/or developing additional mechanisms, and submit a summary to the Division within **24 months** of the permit effective date.

c) If necessary, CDOT will select and implement the preferred alternative mechanism to ensure the long-term maintenance and operation of permanent water quality BMPs within **36 months** of the permit effective date."

Part II.A.3 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."

3ND Findings:
Error! Reference source not found. provides a table with all of the PWQFs evaluated by the EPA through a site visit during the EPA's inspection and/or records provided to the EPA. There was an overall failure to maintain the structures installed by CDOT to reduce the discharge of pollutants after construction is complete. A summary of issues identified in the table are listed below.

1. The EPA observed maintenance problems with many of the PWQFs visited during the inspection that require maintenance in Regions 1, 2, and 4.

2. Many of CDOT's PWQF inspection reports identified the same maintenance items in consecutive years, indicating that CDOT was not maintaining the PWQFs or ensuring the PWQFs under IGAs were being maintained.

3. Region 3 does not appear to be conducting any maintenance or checking to see if maintenance is needed at PWQFs. Records for PWQF inspections for the last three years for three randomly selected PWQFs were requested, and no records were provided. The *MS4*

Staffing document Word document provided for Region 3 states, "Once the project has been completed and if there were permanent water quality BMPs installed then either per an IGA and or the Colorado Revised Statutes the local agency will be required to maintain those facilities." However, there are 12 PWQFs located in Region 3 according to the PWQF inventory provided to the EPA, and the only IGA in place in Region 3 is for a PWQF at the Clifton Park and Ride. Region 3 does not appear to be maintaining the remaining 11 PWQFs.

4. Region 5 only appears to be conducting limited inspections to see if maintenance is needed at PWQFs. Records for PWQF inspections for the last three years for three randomly selected PWQFs were requested. No records were provided for one PWQF, and only a 2012 inspection report was provided for the other two. The *MS4 Staffing &Budget in Region 5* Word document states, "Once the project has been completed and if there were permanent water quality BMPs installed, then either per an IGA and or the Colorado Revised Statutes the local agency will be required to maintain those facilities." However, there are 19 PWQFs located in Region 5 according to the PWQF inventory provided to the EPA, and the IGA for Durango includes only 6.5 miles of Highway 160.

5. There were issues identified with the maintenance manuals, including inaccurate descriptions of the PWQFs and required maintenance activities.

3ND Corrective Actions:
Develop a procedure to ensure that maintenance is performed on CDOT's PWQFs and the PWQFs are operating properly, including those that are covered under IGAs or other similar agreements with external entities. Provide a procedure to the EPA and CDPHE describing how CDOT will ensure long-term maintenance will be accomplished as well as a timeframe for implementing and completing all currently needed maintenance.

4ND – There is a lack of funding provided for long-term maintenance of CDOTs PWQFs.

4ND Permit Requirements:
Part II.A.3 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."

4ND Findings:
CDOT's budget for maintaining PWQFs does not appear to be allocated to the Regional offices in a manner reflective of the inventory within each Region. Additionally, the budget that has been allocated does not appear to be adequate to maintain the PWQFs that were inspected by the EPA. See **Error! Reference source not found.** for details related to maintenance needs observed in Region 1, 2, and 4 at PWQFs. The EPA compiled the following table to demonstrate how funding is not adequate between Regions.

CDOT Region	PWQFs in each Region*	Percent of the total PWQFs*	PWQF Maintenance Budget**
1	141	53.4%	Unknown

2	84	31.8%	$12,480
3	12	4.5%	$0
4	8	3.0%	$11,258
5	19	7.2%	$0
* Compiled from the Excel spreadsheet titled "Statewide Active PWQ Structures_03232015."			
** Compiled from documents titled "R1_EPA WQ Expenditures" "region 2 budget," "MS4 Staffing," "R4 OrgChart MS4 030415," and "MS4 Staffing & Budget Region 5."			

Below are Region specific issues identified related to resources for maintenance of PWQFs.

Region 1
The EPA was not able to determine what budget was allocated specifically to maintenance for PWQFs in Region 1 by reviewing the Excel file titled *R1_EPA WQ Expenditures*. The EPA inspected several PWQFs and other records were reviewed after the EPA's inspection that showed maintenance was needed year after year. See **Error! Reference source not found.** for details related to maintenance needs observed in Region 1.

Region 2
It appears CDOT Region 2 does not have the resources to ensure long term maintenance of the PWQFs. See **Error! Reference source not found.** for details related to maintenance needs observed in Region 2. According to the budget information and inventory information reviewed by the EPA, Region 2 has 31.8% of the PWQF assets in their region but has a similar budget to Region 4 who has only 3.0% of the assets. Furthermore, Ms. Erikson made multiple statements indicating the lack of maintenance observed by the EPA was a result of a lack of PWQF maintenance resources. She stated that the Maintenance division does not have enough resources to maintain PWQFs, and as more PWQFs are added in Region 2, she will not have enough time to inspect them all. She stated she is already working 50-55 hours per week. She also stated maintenance has access to a vacuum truck, but it is not available all the time, and Region 2 had to rent a piece of equipment in the past in order to conduct their maintenance activities. Mr. Stecklein stated that maintenance schedules are not prescribed for PWQFs, because maintenance resources have not been added to the Region 2 budget once CDOT started installing PWQFs.

Region 3
The *MS4 Staffing document* Word document for Region 3 states, "Once the project has been completed and if there were permanent water quality BMPs installed then either per an IGA and or the Colorado Revised Statutes the local agency will be required to maintain those facilities." However, there are 12 PWQFs located in Region 3 and the only IGA in place in Region 3 is for a PWQF at the Clifton Park and Ride. The EPA requested PWQF inspection information for the last three years for three randomly selected PWQFs: 1) CO-070B-RS00004-EN002 (detention pond/wetland system), 2) CO-070B-RS00004-EN003 (on-line storage in storm drain), and 3) CO-070B-RS00004-EN004 (proprietary/manufactured system). No records were provided. There is no indication any resources are allocated to long-term maintenance of PWQFs in Region 3.

Region 5
The *MS4 Staffing & Budget in Region 5* Word document states, "Due to the infrequency of MS4 related projects in the Region there is no staff or budget specifically for MS4 projects…Once the project has been completed and if there were permanent water quality BMPs installed, then either per an IGA and or the Colorado Revised Statutes the local agency will be required to maintain those facilities." However,

there are 19 PWQFs located in Region 5 and the IGA for Durango includes only 6.5 miles of Highway 160.

4ND Additional Information Requested:
Provide the EPA and CDPHE with the following information for each Region:

1. How much funding is allocated for PWQF maintenance in Region 1?
2. Why would CDOT allocate a similar amount of funding to Regions 2 and 4 when the inventory of assets is so much greater in Region 2?
3. With only one IGA in place in Region 3, the Clifton Park and Ride, how is CDOT able to ensure maintain the other PWQFs with no maintenance funding provided to the Region 3 office?
4. With only one IGA in place in Region 5, for 6.5 miles of Highway 160, how is CDOT able to ensure maintenance of all 19 PWQFs located in Region 5 with no maintenance funding provided to the Region 5 office?
5. What additional resources does CDOT need to provide to ensure long-term maintenance of PWQFs? Include a dollar amount and indicate how much would need to be allocated to equipment, FTEs, etc.

4ND Corrective Actions:
Allocate adequate funding to the Regional offices in order to ensure long-term maintenance of PWQFs.

XIII. Pollution Prevention (PP)/Municipal Operations Program Findings

1PP – CDOT maintenance facilities were not fully implementing facility runoff control plans (FRCPs), updating or amending FRCPs, and FRCPs did not address all required items.

1PP Permit Requirements:
Part I.B.1.f.5 of the Permit requires CDOT to develop, implement, and update Facility Runoff Control Plans (FRCPs) at its municipal facilities. It states, "CDOT shall implement the Facility Runoff Control Program, which will include the following elements, in all permit coverage areas:

a) Where not already developed, the permittee shall develop, implement, and keep updated, Facility Runoff Control Plans (FRCPs) for the following CDOT-owned and/or operated facilities that do not have independent CDPS Stormwater permits:

- vehicle maintenance facilities (maintenance includes equipment rehabilitation, mechanical repairs, painting, fueling and lubrication);
- asphalt and concrete batch plants which are not already individually permitted;
- solid-waste transfer stations;
- maintenance and storage yards;
- stockpiles of materials, including stockpiles of road deicing salt, salt and sand, sand, rotomill material; and
- sites used for snow dumps, and/or for temporary storage of sweeper tailings or other waste piles."

Part I.B.1.f.5.c of the Permit states, "FRCPs may be developed individually or grouped together under a general FRCP for facilities with similar operations, as appropriate. General FRCPs shall include any site-specific information necessary to ensure adequate plan implementation. FRCPs shall contain the following:

i) Facility description including the address, type of operation, size of the facility, and receiving water drainage basin.
ii) Vicinity and facility site maps.
iii) Description of potential pollutant sources, including an evaluation of that potential.
iv) Stormwater Management Controls. The description of stormwater management controls shall address the following minimum components, including a schedule for implementing such controls:
    - Runoff control plan administrator
    - Preventive maintenance
    - Good housekeeping
    - Spill prevention and response procedures
    - Best management practices for pollutant sources
    - Evaluation for non-stormwater discharges
    - Employee training
v) Inspection procedures
vi) Reporting procedures. CDOT shall summarize the compliance of facilities with their FRCPs in each year's Annual Report."

Part I.B.1.f.5.f-g of the Permit states:

"f) The permittee must implement the provisions of the FRCP required under this part as a condition of this MS4 permit. The Division reserves the right to review those plans, and to require additional measures to prevent and control pollution as needed.
g) Runoff control plans shall be amended as appropriate at any time, with the revised plans distributed as outlined in paragraph e), above."

Part I.B.1.e.3.b of the Permit states, "Salt and sand storage BMPs shall be implemented at all CDOT sites as necessary to minimize, to the extent practicable, run-on, run-off and salt migration off-site."

1PP Findings:
The EPA, with assistance from CDPHE, performed site visits at multiple CDOT maintenance facilities. A list of the issues identified during on-site visits is provided below.

Region 1
Date: 3/31/2015
Location: Maintenance facility located at 18800 East Colfax Avenue, Aurora
EPA Inspectors: Kacy Sable and Natasha Davis
CDPHE personnel: Lisa Knerr and Joe Campbell
CDOT personnel: Brian Reiser (Water Pollution Control Manager for Region 1), Chris Meacham (FRCP administrator for the facility), Freddie Rameriz (facility inspector), Trip Minges (Hydrologic Resource Specialist, CDOT HQ) and Susie Hagie (Landscape Architect, CDOT Region 1), Amber Williams (Hydrologic Resource Specialist, CDOT HQ)

The 18800 East Colfax Ave facility is the main vehicle and equipment maintenance shop for Region 1. Most repair work for equipment is completed at this facility, and most equipment waiting to be auctioned off is stored at this facility. A wash bay and paint bay are also present at this facility. The EPA inspectors interviewed facility representatives about the operations, reviewed the FRCP, routine inspection reports, and the most recent annual inspection performed on Feb 24, 2015. The FRCP for this facility is combined with the 18500 East Colfax Avenue facility. For the following instance, the EPA found the facility was not implementing or updating its FRCP:

1. The spill kit was located in the back storage area, and on-site staff stated that they were not aware of its location (photo 276). The FRCP map shows the spill kit located at the north end of the facility (photo 274).
    - Parts I.B.1.f.5, I.B.1.f.5.c, and I.B.1.f.5.f of the Permit require the FRCPs to be implemented.
    - Parts I.B.1.f.5 and I.B.1.f.5.f-g of the Permit requires FRCPs to be kept updated and amended as appropriate.

Date: 3/31/2015
Location: Maintenance facility located at 18500 East Colfax Avenue, Aurora
EPA Inspectors: Kacy Sable and Natasha Davis
CDPHE personnel: Lisa Knerr and Joe Campbell
CDOT personnel: Brian Reiser (Water Pollution Control Manager for Region 1), Chris Meacham (FRCP administrator for the facility), Freddie Rameriz (facility inspector), Trip Minges (Hydrologic Resource Specialist, CDOT HQ) and Susie Hagie (Landscape Architect, CDOT Region 1), Amber Williams (Hydrologic Resource Specialist, CDOT HQ)

The 18500 East Colfax Avenue is adjacent to the 18800 East Colfax Avenue facility. The EPA

inspectors reviewed the FRCP and the most recent annual inspection performed on June 10, 2014. For the following instances, the EPA found the facility was not implementing or updating its FRCP or the FRCP did not address all required items:

2. The FRCP provided to the EPA following the inspection, dated June 2014, did not include the following items: the stormwater retention pond (photo 281) or a description of where the stormwater retention pond discharges, and instruction on how to manage pooled stormwater outside of the deicer storage shed (photo 278).
    - Part I.B.1.f.5.c of the Permit requires the FRCP to address stormwater management controls, including BMPs for pollutant sources and good housekeeping.
    - Parts I.B.1.f.5 and I.B.1.f.5.f-g of the Permit requires FRCPs to be kept updated and amended as appropriate.
3. The annual inspection conducted on June 10, 2014 identified the need for the facility to properly clean-up paint spills on the concrete around the outdoor paint storage area. The EPA inspectors observed similar spills in the area on March 31, 2015 (photo 283). The Paint Storage section of the June 2014 FRCP includes a control measure to "Inspect paint storage areas for paint materials, residues, or spills and clean up as necessary." It also includes spill clean-up methods and states, "Use dry cleanup methods (e.g. absorbent, cloths and mops) and dispose of properly."
    - Parts I.B.1.f.5, I.B.1.f.5.c, and I.B.1.f.5.f of the Permit require the FRCPs to be implemented.
4. During the EPA's inspection, active street sweeping was occurring throughout the facility (photo 277) and as well as clean-up of deicer into the storage shed (photo 278). However, deicer would not have been needed in several weeks prior to the EPA's inspection, as there was no snow in the area. The FRCP section on the deicer shed states, "Approximately 24 hours following any storm event always clean and/or excavate pollutant materials from all impervious areas (e.g., apron in front of Solid Deicer Shed, loading area Liquid Deicer, etc.)."
    - Parts I.B.1.f.5, I.B.1.f.5.c, and I.B.1.f.5.f of the Permit require the FRCPs to be implemented.
    - Part I.B.1.e.3.b of the Permit states, "Salt and sand storage BMPs shall be implemented at all CDOT sites as necessary to minimize, to the extent practicable, run-on, run-off and salt migration off-site."
5. Stormwater ponded near the deicer storage shed (photo 278) even though it had not rained or snowed for several weeks prior to the EPA's inspection. Facility representatives were unaware of how to manage this pooled water, and it could potentially contact the deicer inside of the shed. The FRCP did not address how pooled stormwater in this area would be managed.
    - Part I.B.1.f.5.c of the Permit requires the FRCP to address stormwater management controls, including BMPs for pollutant sources.
    - Part I.B.1.f.5.g of the Permit requires FRCPs to be amended as appropriate.
    - Part I.B.1.e.3.b of the Permit states, "Salt and sand storage BMPs shall be implemented at all CDOT sites as necessary to minimize, to the extent practicable, run-on, run-off and salt migration off-site."
6. Staining was observed on the ground within the stormwater conveyance swale near the liquid deicer area, which according to CDOT personnel was magnesium chloride. A pile of solid magnesium chloride was partially exposed to precipitation, which resulted in the staining. It appears this area flows to the stormwater detention basin (photo 281). Facility representatives did not know where the detention basin outfall discharges. The Salt Deicer Storage section of the FRCP lists under control measures, "Storage of deicer product is within a covered shed that effectively reduces the likelihood of stormwater contact."

- Parts I.B.1.f.5, I.B.1.f.5.c, and I.B.1.f.5.f of the Permit require the FRCPs to be implemented.
- Part I.B.1.e.3.b of the Permit states, "Salt and sand storage BMPs shall be implemented at all CDOT sites as necessary to minimize, to the extent practicable, run-on, run-off and salt migration off-site."

Region 2
Date: 4/1/2015
Location: Maintenance facility located at 905 Erie, Pueblo (905 Erie yard)
EPA Inspectors: Stephanie DeJong and Alysia Tien
CDPHE personnel: Megan Shirley
CDOT personnel: Bob McDade (Hydrologic Resource Specialist), Mike Banovich (Landscape Architect), Dan Dees (Equipment Mechanic IV), Todd Dotson (Equipment Mechanic III), and Howard Ray (LTCE Ops I and Heavy Equipment Maintenance Supervisor)

The 905 Erie yard conducts heavy equipment maintenance, such as engine rebuilds and plow, truck, and other equipment repair for Region 2. The representatives were interviewed about the operations, self-inspections, training, and other stormwater aspects of the 905 Erie yard. The inspection team reviewed the FRCP, inspection records, and training records and inspected the yard and outfall into Fountain Creek. For the following instances, the EPA found the facility was not implementing or updating its FRCP or the FRCP did not address all required items:

7. The May 2014 monthly inspection was not conducted. The facility had already identified this and noted it in the FRCP notebook.
    - The FRCP recommends routine audits every 30 days.
8. Hoses outside have been used by janitorial staff to wash down the sidewalk or windows (photo 429). The FRCP states several sections, "NEVER use a hose to wash spills from paved surfaces."
    - Parts I.B.1.f.5, I.B.1.f.5.c, and I.B.1.f.5.f of the Permit require the FRCPs to be implemented.
    - Parts I.B.1.f.5 and I.B.1.f.5.c of the Permit require the FRCPs to be implemented.
9. Some hydraulic hoses on plows, a mower, and a chip spreader were not bagged (photos 431 and 445). Photo 439 shows correctly bagged hydraulic hoses. The FRCP states that the control measure for hydraulic hoses is to connect them in a closed circuit and wrap them with absorbent pads, plastic, or other control measure.
    - Parts I.B.1.f.5, I.B.1.f.5.c, and I.B.1.f.5.f of the Permit require the FRCPs to be implemented.
10. There was a large wash bay building with water on the ground outside (photos 432-436). It was unclear if this was from water dripping off equipment as it was pulled out. There was no berm or obvious slope to keep water in the wash bay building. The FRCP states that washing activities are to take place within the wash bay with the wash bay doors closed and dry clean-up methods are to be used for clean-up of wash water.
    - Parts I.B.1.f.5, I.B.1.f.5.c, and I.B.1.f.5.f of the Permit require the FRCPs to be implemented.
11. A front end loader on the north side of the yard had absorbent pads underneath it to collect oil (photos 437-438). Any stormwater flow would flow over the pads. The FRCP states that absorbent pads are to be disposed of correctly.

- Parts I.B.1.f.5, I.B.1.f.5.c, and I.B.1.f.5.f of the Permit require the FRCPs to be implemented.

12. A plow on the north side of the yard had a drip pan underneath it that was about to overflow (photos 439 and 441). The FRCP states that materials in drip pans are to be disposed of correctly.
    - Parts I.B.1.f.5, I.B.1.f.5.c, and I.B.1.f.5.f of the Permit require the FRCPs to be implemented.
13. There were unlabeled drums that contained citrus acid cleaner and orange cleaner. These were stored in secondary containment by the laboratory on the northeast part of the yard that were not included in the FRCP (photo 442). The Full/Empty Drum/Barrel/Tank Storage section of the FRCP does not have any detail of the area shown in photo 422. The Maintenance Building section of the FRCP states, "Label all barrels, drums, etc. on the site with the contents." The FRCP states in the Audit Checklist, "All drums/barrels/containers in the maintenance building(s) and throughout the facility should be labeled.
    - Part I.B.1.f.5.c of the Permit requires the FRCP to address stormwater management controls, including BMPs for pollutant sources.
    - Parts I.B.1.f.5 and I.B.1.f.5.f-g of the Permit requires FRCPs to be kept updated and amended as appropriate.
14. Pooled water in the bottom of a storm drain leading off the site contained an oily sheen, and the oil/water interceptor plumbed into the storm sewer line just before the discharge point had a black layer on top (photos 453-456). This is a separate oil/water separator from the one on the north side of the main maintenance building. The Site Drainage section of the FRCP states, "Maintain proper maintenance of the oil/sand separator and dispose of materials properly." However, it does not specify what "proper maintenance" means.
    - Part I.B.1.f.5.c of the Permit requires the FRCP to address stormwater management controls, including preventative maintenance and BMPs for pollutant sources.
    - Parts I.B.1.f.5 and I.B.1.f.5.f-g of the Permit requires FRCPs to be kept updated and amended as appropriate.

Date: 4/1/2015
Location: Maintenance facility located in Canon City
EPA Inspectors: Stephanie DeJong and Alysia Tien
CDOT personnel: Bob McDade (Hydrologic Resource Specialist), Mike Banovich (Landscape Architect), and Chuck Kline (Maintenance Supervisor for the Canon City Transportation Maintenance Facility)

Mr. Kline was interviewed about the operations, self-inspections, training, and other stormwater aspects of the Canon City Transportation Maintenance Facility. After reviewing the FRCP and self-inspection records, the EPA inspection team inspected the yard. An irrigation ditch ran through the facility, but it did not appear that stormwater from the facility flowed directly into the ditch. There were no on-site storm drains or nearby storm drains observed. For the following instance, the EPA found the FRCP did not address all required items:

15. A retention pond on the north side of the yard collects stormwater. In addition to collecting stormwater, the pond is utilized for disposal of solids that are removed from the interceptor for the wash pad once a year. It appeared the pond had almost overflowed recently, as indicated by a high staining mark (photos 524-525). This could have resulted in a non-allowable stormwater discharge.

- Part I.B.1.f.5.c of the Permit requires the FRCP to address stormwater management controls, including preventative maintenance and BMPs for pollutant sources.

Region 4
Date: 4/1/2015
Location: Maintenance facility located at 7520 Marshall Road, Boulder
EPA Inspectors: Kacy Sable and Natasha Davis
CDPHE personnel: Kendra Kelly and Joe Campbell
CDOT personnel: Trip Minges (project engineer), Amber Williams (Hydrologic Resource Specialist, CDOT HQ), Anthony Cdebaca (Auditor), and Jennifer Gorek (Water Quality Control Manager, CDOT Region 4)

The EPA inspectors reviewed the FRCP and the most recent annual inspection performed on June 24, 2014. For the following instances, the EPA found the facility was not implementing or updating its FRCP or the FRCP did not address all required items:

16. Staining of magnesium chloride from of the solid deicer storage shed was observed (photo 301). The FRCP states that loose deicer product should be swept back into the shed to avoid tracking or transport in stormwater to other portions of the facility.
    - Parts I.B.1.f.5, I.B.1.f.5.c, and I.B.1.f.5.f of the Permit require the FRCPs to be implemented.
    - Part I.B.1.e.3.b of the Permit states, "Salt and sand storage BMPs shall be implemented at all CDOT sites as necessary to minimize, to the extent practicable, run-on, run-off and salt migration off-site."
17. The EPA observed a decommissioned outfall on site (photo 302). The facility decided to re-grade the area and direct stormwater toward the inlet in photo 304. The FRCP drainage section as well as the site map had not been updated and still showed the decommissioned outfall.
    - Parts I.B.1.f.5 and I.B.1.f.5.f-g of the Permit requires FRCPs to be kept updated and amended as appropriate.
18. The inlet to the detention pond had reduced capacity because it was over half full of sediment and debris (photo 307). The FRCP section on the detention pond does not address preventative maintenance of this structure.
    - Part I.B.1.f.5.c of the Permit requires the FRCP to address stormwater management controls, including preventative maintenance.
    - Parts I.B.1.f.5 and I.B.1.f.5.f-g of the Permit requires FRCPs to be kept updated and amended as appropriate.

1PP Corrective Actions:
Implement the Facility Runoff Control Program, which includes implementing each facility specific FRCP. Evaluate of each of the maintenance facilities listed above and provide the EPA and CDPHE a numbered summary of actions performed to address each of the 18 corresponding numbered failures of CDOT to fully implement FRCPs, update or amend the FRCPs, and address all required items in the FRCPs.

2PP – The 18500 East Colfax Avenue maintenance facility did not have the most recent updated FRCP on-site.

2PP Permit Requirements:
Part I.B.1.f.5.e and g of the Permit states:

"e) Copies of the FRCPs shall be kept on the facility site and on file with the Regional District Office. They shall be submitted to the Division upon request….

g) Runoff control plans shall be amended as appropriate at any time, with the revised plans distributed as outlined in paragraph e), above."

2PP Findings:
Region 1
Location: Maintenance facility located at 18500 East Colfax Avenue, Aurora

The FRCP on-site was dated November 2009 on the cover, June 2012 on the area map page, and July 2012 throughout the rest of the document. The site map was dated May 2012. The FRCP that was provided to the EPA following the inspection was dated June 2014 and the site map was dated June 2014. The FRCP on-site did not include the same maps, accurate address, drainage description, facility description, or potential pollutants as the FRCP provided following the inspection. Part I.B.1.f.5.e and g of the Permit requires the copies of the FRCP to be kept on-site and revised plans to be distributed to the facility site and Regional office.

2PP Corrective Actions:
Ensure facilities have the most recent updated FRCP on-site, and ensure the facilities receive updated copies. Provide the EPA and CDPHE with a response indicating how CDOT will ensure this occurs in the future.

3PP – Potential non-allowable stormwater discharges have occurred at maintenance facilities in Region 2.

3PP Permit Requirements:
Part I.A.1-2 of the Permit authorizes the discharge of stormwater and allowable non-stormwater.

Part I.A.2 of the Permit allows "the discharge of stormwater commingled with flows contributed by process wastewater or stormwater associated with industrial activity, provided such discharges are authorized under separate Colorado Discharge Permit System (CDPS) permits and are in compliance with provisions of those permits."

Part I.B.1.c.1.c of the permit lists several allowable non-stormwater discharges: "landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration to separate storm sewers, uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, individual residential swimming pool and hot tub discharges, individual residential street washing, water-line flushing, flows from riparian habitats and wetlands, flows from emergency fire fighting activities, and water incidental to street sweeping (including associated side walks and medians)and that is not associated with construction."

3PP Findings:
Region 2
The following potential non-allowable stormwater discharges or evidence of such discharges were observed:

Location: Maintenance facility located at 905 Erie, Pueblo (905 Erie yard)

1. The floors in the main shop building lead to a sand/oil interceptor on the north side of the building (photos 419, 421, 422, 425, 426, and 427). Oil was observed in the interceptor. Sometimes facility staff wash the floors into the floor drains. Although Mr. McDade assumed the interceptor was plumbed to the sanitary sewer and this information was added to the FRCP, this has not been confirmed. Some facility representatives thought it may flow to the stormwater outfall. The EPA requested a plumbing diagram after the inspection, but no such information was received.
    - Part I.A.1-2 of the Permit authorizes the discharge of stormwater and allowable non-stormwater. Allowable non-stormwater discharges listed in Parts I.A.2 and I.B.1.c.1.c of the Permit do not include oil or floor wash water.
2. There was a drain in the paint booth building, but it was unknown if it was plumbed to the storm or sanitary sewer (photos 466-467). The FRCP states that the floor drains in the paint booth drain to the sanitary sewer, but CDOT was not able to confirm this. This information was assumed. The EPA requested a plumbing diagram after the inspection, but no such information was received.
    - Part I.A.1-2 of the Permit authorizes the discharge of stormwater and allowable non-stormwater. Allowable non-stormwater discharges listed in Parts I.A.2 and I.B.1.c.1.c of the Permit do not include paint.
3. Hoses outside have been used by janitorial staff to wash down the sidewalk or windows (photo 429). The slope of the facility is such that washwater would flow to on-site storm drains which flow directly to Fountain Creek.
    - Part I.A.1-2 of the Permit authorizes the discharge of stormwater and allowable non-stormwater. Allowable non-stormwater discharges listed in Parts I.A.2 and I.B.1.c.1.c of the Permit do not include wastewater from washing of sidewalks or windows.

Location: Maintenance facility located in Canon City

4. A retention pond on the north side of the yard collects stormwater. In addition to collecting stormwater, the pond is utilized for disposal of solids that are removed from the interceptor for the wash pad once a year. It appeared the pond had almost overflowed recently, as indicated by a high staining mark (photos 524-525). This could have resulted in a non-allowable stormwater discharge.
    - Part I.A.1-2 of the Permit authorizes the discharge of stormwater and allowable non-stormwater. Allowable non-stormwater discharges listed in Parts I.A.2 and I.B.1.c.1.c of the Permit do not include solids or wastewater from washing equipment.

3PP Corrective Actions:
Ensure non-allowable stormwater discharges do not occur. Evaluate of each of the potential non-allowable stormwater discharges listed above, and provide the EPA and CDPHE a numbered summary

of actions corresponding to each of the 4 numbered discharges above to ensure each of these do not occur in the future.

3PP Additional Information Requested:
Provide the EPA and CDPHE with plumbing diagrams for the 905 Erie yard showing the destination of the sand/oil interceptor on the north side of the main building and the drain inside the paint booth building. If no diagram is available, CDOT may need to dye test these drains and collect any dye with a vacuum truck if it discharges through the storm sewer pipes.

XIV. Examples of Primary/Basic CDOT Documents Referenced

(Note- This list is not inclusive of all documentation received and reviewed by the EPA in relation to the EPA inspection of CDOT's MS4 program. Due to the large volume of documentation received, not all documents are listed below.)

Document Title / Author	Date (if available)
1. CDOT Annual Reports (2011, 2012 and 2013 reports and the 2014 interim report on NDRD were provided to the inspectors),	Various
2. Authorization to Discharge Under the Colorado Discharge Permit System issued to CDOT, Permit Number COS000005 (the Permit) and associated Summary of Rationale	December 26, 2006 – January 31, 2012 (administratively extended)
3. *Outfalls Mapped Lat Long* Excel file	-
4. July 7, 2012 IDDE file for concrete saw cutting water discharged into a storm drain on Federal Boulevard and 14th Avenue	July 7, 2012
5. *Standard Specifications for Road and Bridge Construction* (referred to as the Green Book)	2011
6. *Erosion Control and Stormwater Quality Guide*	2002
7. *Drainage Design Manual*	2004
8. *PWQ Training Revised 12_9_14* PowerPoint file	December 9, 2014
9. Letter from CDPHE to CDOT Re: MS4 Permit – Growth Area Designation Colorado Department of Transportation CDPS Cert. No. COS-000005	February 29, 2008
10. CDPS general permit for *Stormwater Discharges Associated With Construction Activity* number COR-30000 (Construction General Permit)	June 30, 2007 – July 1, 2007 (administratively extended)
11. SWMP for "I-25 North Design Build" and associated site maps	February 2013 (SWMP date)
12. *Final Walk Through with Corrective Action* maps for I-25 project	January 20, 2015 and February 4, 2015
13. Inspection reports for inspections/audits conducted by CDOT of the I-25 project	27 inspections/audits dated between May 6, 2013 and March 24, 2015
14. 105 Speed Memos for I-25 project	17 memos dated between June 5, 2013 and November 30, 2014

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Document Title / Author	Date (if available)
15. Notice of Violation (NOV) issued to Ames Construction, Inc. by CDPHE	January 6, 2014
16. Inspection reports for inspections/audits conducted by CDOT of the Highway 36 project	12 inspections/audits dated between August 2, 2012 and June 26, 2014
17. *105_LD_Project Request_3_Years* Excel file (updated to correct Region information under the name *EPA_allregions_D* Excel file)	Undated
18. SWMP, site map, and associated self-inspections for construction site located near Federal Boulevard and 68th Avenue, in Westminster, CO	Reviewed April 2, 2015
19. SWMP, site map, and associated self-inspections for construction site located at Old Ranch Road and Powers Boulevard (SH-21)	Reviewed March 31, 2015
20. Statewide Active PWQ Structures_03232015 Excel file	March 23, 2015
21. Inspection reports for CDOT's inspections of PWQFs (see **Error! Reference source not found.**)	See dates in attachment
22. OTIS database and mapping tool	Undated
23. Maintenance Contract (IGA) between Pueblo and CDOT for the 4th Street Bridge	March 23, 2010
24. IGA for SH 7 assets signed over to Boulder	October 2011
25. *Permanent Water Quality Structure Maintenance Manual* *SH7* *Region 4, Patrol 13* *City of Boulder and Boulder County*	Undated
26. *R1_EPA WQ Expenditures* Excel file	Undated
27. Region 2 Budget Excel file	Undated
28. *MS4 Staffing document* Word document with Region 3 budget information	Undated
29. *MS4 Staffing & Budget in Region 5* Word document	Undated
30. FRCPs and associated documents for: a. 18800 East Colfax Avenue maintenance facility b. 18500 East Colfax Avenue maintenance facility c. 905 Erie yard d. Canon City Transportation Maintenance Facility e. 7520 Marshall Road maintenance facility	Various

XV. Staff/Contractors Interviewed During the Inspection

Note: Due to the number of CDOT personnel and contractors available during the inspection activities, this list may not be inclusive of all individuals present during all inspection activities.

Name, Title (as available)	Contact Information (as available)
Rick Willard; CDOT, Hydrologic Resources Unit Lead	303-757-9343
Rozellynn Hall; CDOT, Hydrologic Resource Specialist	303-757-9975
Amber Williams; CDOT, Hydrologic Resource Specialist	303-757-9814
Bob McDade; CDOT, Hydrologic Resource Specialist	303-757-9127
Mike Banovich; CDOT, Landscape Architect/Ecological Design Unit Lead	303-757-9542
Stephanie Gibson; FHWA, Environmental Program Manager	720-963-3013
Susie Hagie; CDOT Region 1, Landscape Architect I	303-757-9932
Jean Cordova; CDOT/CDPHE Liaison	303-692-3570
Tripp Minges; CDOT, Water Quality Specialist	303-757-9788
Jane Hann; CDOT, Environmental Programs Branch (EPB) Manager	303-757-9630
Greg Fischer; CDOT, Landscape Specialist	303-757-9507
Debra Perkins-Smith; CDOT, Director Division Transportation Development (DTD)	303-757-9525
Joshua Laipply; CDOT, Chief Engineer/Director of Stormwater Compliance	303-757-9190
Trent Josten; CDOT, Auditor	303-757-9688
Basil Ryer; CDOT, Landscape Specialist	303-757-9481
Kimberley Richardson; CDOT, Administrative Assistant III	303-757-9497
Tom Boyce; CDOT, Hydrologic Resources and Ecological Design (HRED) Section Manager	303-512-4053
Brian Reiser; CDOT Region 1, Water Quality Specialist	-
Sonya Erickson; CDOT Region 2, Water Pollution Control Manager	719-227-3260
Andy Stecklein; CDOT Region 2, Hydraulics Engineer and Project Manager	719-659-8216
Rob Frei; CDOT Region 2, Environmental Manager	719-227-3251
Jennifer Gorek; CDOT Region 4, Water Pollution Control Manager	970-350-2264
Ernest Martinez; Hamon contractor for Federal Boulevard and 68th Avenue construction site	-
Matt Johnson; Hamon contractor TECS for Federal Boulevard and 68th Avenue construction site	-
Yun Han; CDOT, Project Engineer for Old Ranch Road and Powers Boulevard (SH-21) construction site	719-227-3230
Tom Herman; Wildcat contractor for Old Ranch Road and Powers Boulevard (SH-21) construction site	719-550-1008
Chris Meacham; CDOT FRCP administrator for 18500 & 18800 East Colfax Avenue maintenance facilities	-
Freddie Rameriz; CDOT facility inspector for 18500 & 18800 East Colfax Avenue maintenance facilities	-
Dan Dees; CDOT Equipment Mechanic IV for 905 Erie yard maintenance facility	-
Todd Dotson; CDOT Equipment Mechanic III for 905 Erie yard maintenance facility	-

Name, Title (as available)	Contact Information (as available)
Howard Ray; CDOT LTCE Ops I and Heavy Equipment Maintenance Supervisor for 905 Erie yard maintenance facility	-
Chuck Kline; CDOT Maintenance Supervisor for the Canon City Transportation Maintenance Facility	-
Anthony Cdebaca; CDOT facility auditor for the 7520 Marshall Road maintenance yard	-