

# 2019 Stormwater Program Annual Review

## CITY OF CAÑON CITY



PREPARED BY CITY OF CAÑON CITY  
STORMWATER PROGRAM





# CITY OF CAÑON CITY

**Stormwater**

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## 2019 Annual Program Review

### Introduction

In 2003, the City of Cañon City was issued a permit for “Stormwater Discharges Associated with Municipal Separate Storm Sewer Systems (MS4s)” from the Colorado Department of Public Health and Environment (CDPHE). This permit was renewed in 2008, with little to no change. The 2003 permit required Cañon City to develop, implement and enforce a Colorado Discharge Permit System (CDPS) Stormwater Management Plan. The program had to be designed to reduce the discharge of pollutants from our storm sewer system to the maximum extent practicable to protect the water quality of the Arkansas River and Four Mile Creek, and to satisfy the appropriate water quality requirements of the Colorado Water Quality Control Act and Colorado Discharge Permit Regulations. The permit also required that the City of Cañon City do a written annual review of the program and submit an annual report to the State.

The MS4 discharge permit contained six areas the City must address in its Stormwater Management Plan.

These areas were:

- MCM1. Public Education and Outreach on Stormwater Impacts
- MCM2. Public Involvement/Participation
- MCM3. Illicit Discharge Detection and Elimination
- MCM4. Construction Sites Runoff Control
- MCM5. Post-construction Stormwater Management
- MCM6. Pollution Prevention/Good Housekeeping for Municipal Operations.

Each of the six areas has several program elements which have been used to meet the goals of the Stormwater Management Plan.

On April 15, 2016, CDPHE issued a revised “Stormwater Discharges Associated with Municipal Separate Storm Sewer Systems (MS4s)” permit. The new permit became effective on July 1, 2016. The new permit is structured slightly different from the previous permits and has several new requirements with compliance deadlines to meet. Although the permit structure varies from the previous permits the same six areas are included in the permit requirements. An additional requirement of a Program Description Document is also included in the new permit.

This annual review looks at each of these elements to assess the City of Cañon City’s compliance status and the effectiveness of our programs. This report contains a breakdown of activities completed to meet the requirements of the current permit, including any requirements with compliance deadlines during 2019.

### Supplemental Information

In late 2018, the City of Cañon City upgraded its asset management database from Cartegraph Navigator to Cartegraph OMS. The upgrade allows the City to not only track information and inspections on assets as was previously done, but also allows for a more accurate accounting of tasks and costs associated with those assets. The database was also expanded to include City assets other than just Stormwater. Recordkeeping with the OMS

database began in 2019 with adjustments to the methods and information tracked continuing throughout the year in order to provide the best information possible.

The City of Cañon City also introduced a web-based application known as SeeClickFix late in 2019. This application allows citizens and City employees to submit concerns they have to City departments on a wide range of City assets and allows City employees to track and address these concerns. SeeClickFix integrates with Cartegraph OMS for those departments, such as Stormwater, that use both databases. Information for many of the following sections contains data from both Cartegraph OMS and SeeClickFix.

## **Section 1. Program Description Document (PDD)**

The PDD is a requirement in the 2016 revised permit. To meet this requirement the City of Cañon City's Stormwater Program must develop and maintain records in the form of a program description document. The PDD must contain a list of citations for documents and electronic records used to comply with the requirements of the permit. It must contain a current organizational chart and citations for the most recent version of documents, the date of the document and the location where the documents are kept. The PDD is a fluid document, kept up-to-date as program elements are modified to meet permit requirements and compliance dates.

The PDD for the City of Cañon City's Stormwater Program was completed on December 11, 2018. A statement was posted to the Stormwater webpages on the City of Cañon City's website stating:

“PUBLIC NOTICE:

The City of Cañon City administers a general permit for stormwater discharges associated with Municipal Separate Storm Systems (MS4) in accordance with Colorado's Discharge Permit System (CDPS). The City of Cañon City maintains a Program Description Document that is available upon request to the public for review and comment.”

The PDD was updated twice during 2019 to reflect changes to information and documents concerning the Stormwater Program. To date there have not been any requests from citizens to review the PDD.

## **Section 2. Public Involvement/ Participation**

The goal of the Public Participation/Involvement area of our stormwater permit is to provide a method for the public to be involved with the City's stormwater management program by providing feedback through a variety of methods. Assessment of effectiveness in this category is a subjective evaluation as it is difficult to directly track the effect each of the elements used to meet this requirement has on public awareness and participation.

The 2016 revised permit clarified the public notice, feedback and recordkeeping requirements. All public notices concerning stormwater are documented in a yearly program documentation spreadsheet maintained by the Stormwater Technician. The public can provide feedback through email, in person, via social media and applications, or by phone, all of which is documented in the Cartegraph OMS Requests database.

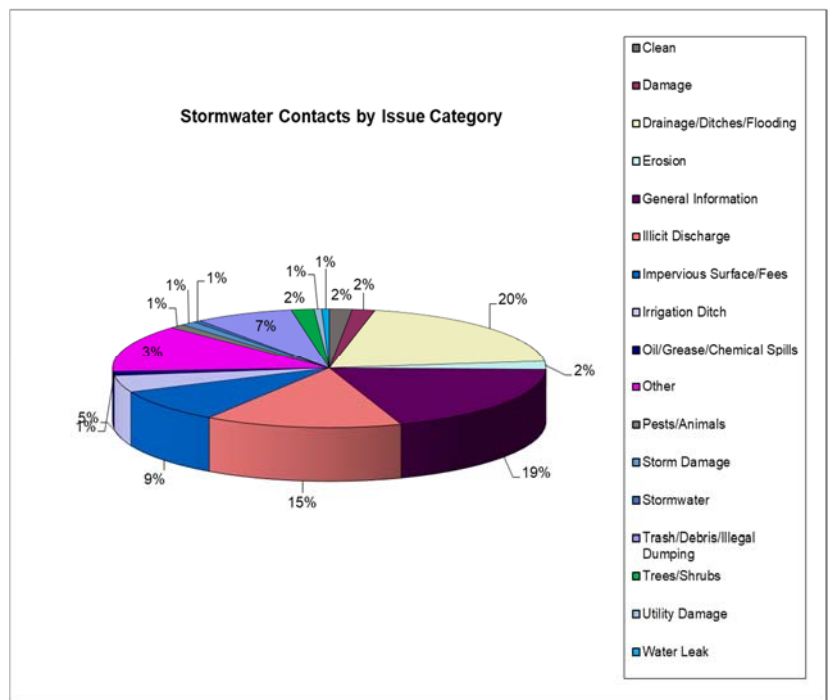
**Discussion of Elements:** All programs listed below were ongoing in 2019, and will continue to be utilized during 2020. These elements are addressed in the PDD.

**1. Public Notices:** The City of Cañon City complies with the Colorado Sunshine Act for public notice as set forth in Colorado Revised Statutes. All public meetings are posted on a public bulletin board inside City Hall at least 24 hours in advance of any public hearing. A notice is also printed in the local newspaper and posted on social media. Meeting schedules, agendas and minutes are posted on the City of Cañon City's website.

**2. Contact Information Availability:** Contact information for the City of Cañon City’s Stormwater Program is available through the quarterly Stormwater Newsletters and on the web page. It is also included in any newspaper articles and public service announcements. All City of Cañon City field staff have the Stormwater Technician’s direct line in order to report any suspected illicit discharges.

**3. Feedback:** The quarterly Stormwater Newsletters encourage everyone to get involved by calling, emailing or writing in with their questions, complaints or ideas. Additionally City employees and citizens can submit concerns about a variety of issues, including Stormwater, through SeeClickFix. A database is kept of contacts (categorized by method of contacts such as phone, email, letters, “in person”, social media and website report form) concerning stormwater issues with the intent to better track the effectiveness of the public education and outreach programs, as well as to assist in identifying areas and concerns which may need more public outreach. The database also assists in capital project planning. Contacts are broken into broader categories of issues then further assigned to narrower classifications of issues such as clogged culverts or blocked storm drains to facilitate these decisions. The log represents those contacts handled directly by the Stormwater Technician, submitted through SeeClickFix or handled by other departments or staff that the technician is made aware of. During 2019, 177 contacts were taken by the Stormwater Technician or submitted through SeeClickFix. Of those contacts, 26 were directly concerning illicit discharges. The following table and chart show the breakdown of the broader issue categories.

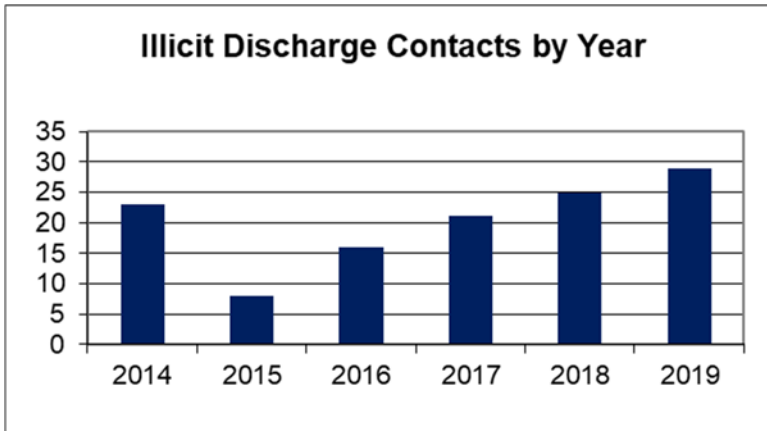
Issue Category	# of Contacts	% of Contacts
Clean	3	1.7
Damage	3	1.7
Drainage/Ditches/Flooding	35	19.8
Erosion	4	2.3
General Information	34	19.2
Illicit Discharge	26	14.7
Impervious Surface/Fees	16	9
Irrigation Ditch	8	4.5
Oil/Grease/Chemical Spills	2	1.1
Other	23	13
Pests/Animals	2	1.1
Storm Damage	2	1.1
Stormwater	1	0.6
Trash/Debris/Illegal Dumping	13	7.3
Trees/Shrubs	3	1.7
Utility Damage	1	0.6
Water Leak	1	0.6



Ten of the contacts the Stormwater Technician handled or that were assigned to the Stormwater Program by SeeClickFix were directed to other departments such as Code Enforcement, Parks or Streets as they did not pertain to stormwater issues. With the update of the OMS database and the expansion of departments using OMS and/or SeeClickFix many categories of issues were deleted or added, making a comparison between the categories for each year difficult. Overall calls to the Stormwater Program were down from 284 in 2018, to the 177 during 2019. This is likely due to the lack of large storms during the year which precipitated a significant number of calls in 2018.

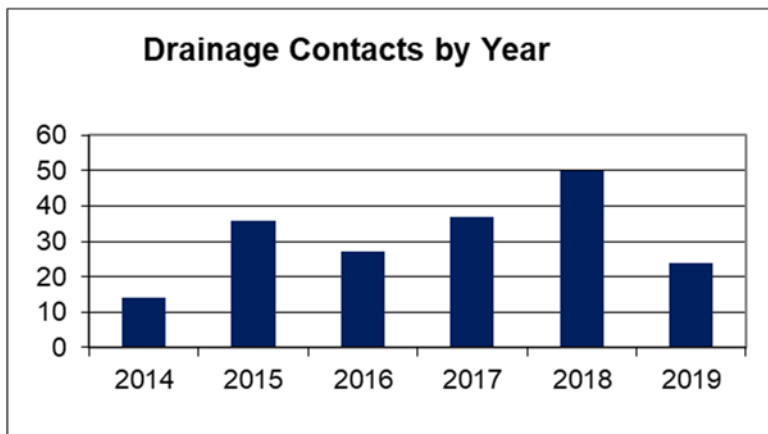
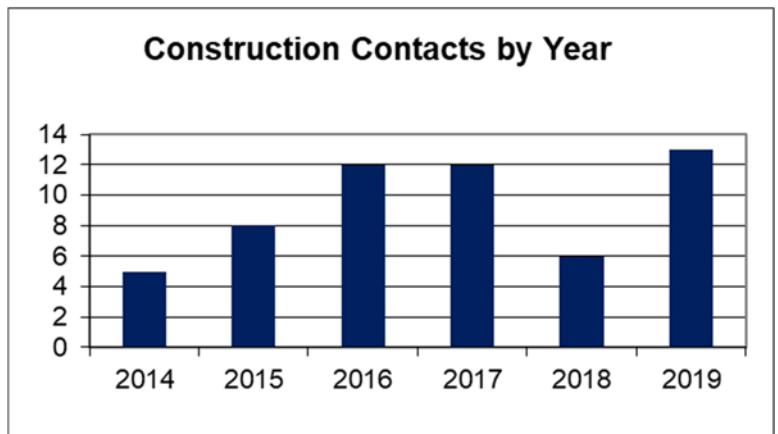
Some of the narrower stormwater categories were carried over in the OMS database which allows for tracking trends in the amount of calls received each year for each category. The following graphs show the contacts for some of the categories for the last five years. Variability in categories may be attributed to better tracking of the

contacts, training of municipal employees, public education and outreach efforts and general variability of issues throughout the year.



The amount of illicit discharge contacts has varied in the last five years (see adjacent chart). Variability is influenced by the number of actual illicit discharges which occurred, community awareness and municipal employee training. (See Section 4 *Illicit Discharge Detection and Elimination* for a more complete discussion.)

Construction calls show an overall upward trend, with the exception of 2018. These types of calls include both complaints about construction and requests for construction-related stormwater information.



Drainage calls vary yearly. This could be due to the amount of precipitation received during the year. For example: the spring of 2015 was exceptionally wet, while 2016 was a drier year and significant storms occurred in July, 2018.

Statistical analysis of the data is not done, but the graphs generated from tracking contacts show general trends. Overall, it appears that the Public Outreach efforts of the Stormwater Program have been successful in increasing awareness of stormwater issues and in providing an avenue for the citizens and employees of Cañon City to participate in the program.

The database also facilitates tracking of other aspects, such as how the contact was made and how the contact information for the Stormwater Program was obtained, in order to determine how effective our outreach efforts

are. During 2019 the primary method of contact was through the phone, followed by in-person contacts. As SeeClickFix was not fully introduced to the public until very late in the year, this mode of contact will be tracked carefully to see how well it is working. The method of obtaining stormwater contact information primarily was through prior contact, the receptionist at City Hall and training. The charts below show the breakdown of each. The method of contact is not consistently tracked (i.e. people are not consistently asked how they obtained the information). This is an area that needs strengthened.

Mode of Contact	Number	%
Email	20	11.3
In Person	29	16.4
Phone	109	61.5
SeeClickFix	15	8.5
Text	4	2.3

How Contact information was Obtained	Number	%
Compliance Notice	5	2.8
Inspection Letter	3	1.7
Internet	8	4.5
Newsletter	10	5.6
Other	2	1.1
Personal Contact	12	6.8
Prior Contact	46	26
Receptionist	28	15.8
Referral	6	3.4
Social Media	4	2.3
Training	18	10.2
Unknown	32	18.1
Water Bill	1	0.6
Website Report Form	2	1.1

The OMS database maps the locations of received requests, which then can be exported to analyze which areas may need extra outreach and to assist in prioritizing infrastructure maintenance and capital projects.

With the upgrade to the OMS database, tasks can now be assigned to specific requests which allows various City departments to track labor and material costs associated with those requests. The data can also be analyzed to see how long tasks associated with the requests took to complete and the amount of time for the request to be closed. In 2019, 44 tasks were entered into the OMS database associated with requests. Of those 34 tasks were investigations; the rest were a combination of debris removal, grading, enforcement actions and other miscellaneous tasks. Approximately 74 hours were spent by the Stormwater Technician and Public Works addressing various requests at an approximate cost of \$2,745.00.

**Action Items for New Permit Requirements:**

1. Documentation of the City of Cañon City’s Public Notice Process along with a database was created to maintain copies of any public notices concerning the Stormwater Program and comments received as part of the Public Notice Process. The database was completed by January 1, 2018, well before the January 1, 2019, deadline. [The City Clerk posts public notices in advance of meetings per the Colorado Sunshine Act for public notice as set forth in Colorado Revised Statutes. In addition, all meeting agendas and minutes are posted on the City of Cañon City’s website, including those pertaining to stormwater issues. Meetings are also posted on the City’s social media accounts such as Facebook. Social Media posts which incorporate stormwater issues are copied and kept in a stormwater file on the Stormwater Technician’s computer as well as being entered into the Annual Report Documentation spreadsheet.](#)
2. The PDD requirements for Public Involvement/Participation were completed prior to the January 1, 2019 deadline. [The PDD was completed on December 11, 2018 and a public notice announcement was added to the City’s website on the same day.](#)

3. Tracking of public comments and City's responses on the PDD: [If any comments are received, the comments will be forwarded to the City Engineer or Stormwater Technician for formal response. Comments and responses are kept in a folder on the Stormwater Technician's computer.](#)
4. Tracking of information submitted by the public and maintaining records of such information and any actions taken in response by the City is done through the OMS database.

### **Section 3. Public Education and Outreach**

The Public Education and Outreach program strives to increase the public's awareness of potential local water quality problems associated with stormwater runoff. Its goal is to give people the information and tools they need to lessen their impact on stormwater runoff, which in turn can improve our local water quality. Assessment of effectiveness in this category is a subjective evaluation as it is difficult to directly track the effect each of these measures has on public awareness, participation and behavioral changes.

The revised permit lists the following requirements:

- 1) The permittee must implement a public education program to promote behavior change by the public to reduce pollutants in discharges from the MS4. Education and outreach activities, individually or as a whole, must address the impacts of stormwater discharges on water bodies, the steps the target audience can take to reduce pollutants in stormwater runoff, and water quality impacts associated with illicit discharges and improper disposal of waste.

- 2) The permittee must provide information to businesses and the general public regarding the permittee's prohibitions of and the water quality impacts associated with illicit discharges as part of the public education program. The information must include the following:

- A) The permittee must determine the targeted businesses that are likely to cause an illicit discharge or improperly dispose of waste. At a minimum, the permittee must identify at least one type of business and a list of those businesses that fit the identified type of business.

- B) The permittee must develop and implement at least one education and outreach activity to those businesses identified. Educational materials and activities, individually or as a whole, must describe water quality impacts associated with illicit discharges and the improper disposal of waste, the behaviors of concern, and actions that the business can take to reduce the likelihood of illicit discharges and the improper disposal of waste.

- 3) The permit provides a table of education and outreach activities that the permittee must choose from to implement during the year. At least four from the table must be implemented each year with at least two of those from the Active and Interactive choices. Activities can vary from year to year as long as at least four are done.

- 4) As part of their public education program, the permittee must specifically address the reduction of water quality impacts associated with nitrogen and phosphorus (nutrients) in discharges from the MS4.

- A) The permittee must determine the targeted sources that are contributing to, or have the potential to contribute, nutrients to the MS4's receiving waters.

- B) The permittee must prioritize which targeted sources are likely to obtain a reduction in nutrient discharges through education and must distribute educational materials or equivalent outreach to these. The educational materials or outreach must describe stormwater quality impacts associated with nitrogen and phosphorus in stormwater runoff and illicit discharges, the behaviors of concern, and actions that the target source can take to reduce nutrients.

The permit also details the types of written procedures, documentation and recordkeeping required to meet these requirements. Some of the requirements have an associated compliance date, which are discussed under the "Action Items for new permit requirements" section.

The following elements were used to meet our permit requirements during 2019.

## **Discussion of Elements:**

**1. Educational Materials and Activities (from the provided table in the permit):** The 2016 revised permit contains a table of the Education and Outreach Activities which may be used to meet the permit requirement. The table contains both Passive Outreach and Active/Interactive Outreach. The permittee must implement *at least* four activities each year and at least two have to be from the Active/Interactive column. The activities can vary each year as long as they meet the requirements. The City of Cañon City's past and current activities are in accord with the activities contained in this table. As a whole, the activities address the impacts of stormwater discharges on our receiving waters and steps the general public and businesses can take to reduce their impact on stormwater runoff and thereby our local waterways. All the following programs were utilized during 2019.

### **i. Passive Outreach:**

A. Radio/television/movie theater advertisement: Twelve different 30-second public service announcements concerning stormwater were aired on local radio stations during 2019 for a total air time of 322 minutes (5.37 hours). Five stormwater/water-related programs were run on CCTV-Channel 19 with a total air time of 168.8 hours. Radio public service announcements are rotated and new ones added throughout the year. Newspaper notices were also run in conjunction with the leaf pick-up program which includes stormwater information.

B. Distribute educational materials by brochure: Several different types of brochures are handed out during festivals at which the Stormwater Program has a booth. A complete list of brochures, activity books and giveaways is maintained by the Stormwater Technician. Titles and/or descriptions of each brochure, activity book and giveaway are listed as well as the amount given out at each event.

C. Distribute educational materials by fact sheet: Fact sheets are also often available at the Stormwater Program's booth during festivals. A rain barrel fact sheet is available in the information kiosk in the main lobby of City Hall. Additionally, several of the Code Enforcement and Planning and Zoning Fact Sheets available in the kiosk address trash and waste.

D. Stormwater related signage: The City of Cañon City does have stormwater related signage as well as pet waste stations. Mapping of these signs and stations was begun in 2018 and will continue until all are mapped and entered into the OMS database.

E. The City of Cañon City's Stormwater webpages contain information for the public ranging from informational brochures about water quality, illicit discharges and construction stormwater runoff control to children's activity booklets. The website was revised somewhat in format and content when the City's website was revised in late 2019. Current editions of the newsletters, the annual program review, updated manuals and other content were added during the year. Additionally, various announcements or articles were posted under the City News section. Visits to the stormwater webpages are now tracked, beginning in January, 2018, via monthly reports. During January through mid-November 2019, 3,117 webpage visits were recorded. Tracking was not done after the City website was updated (the last half of November and December). The webpage script required to generate the monthly reports was re-established in February, 2020; tracking will resume from February on.

### **ii. Active and Interactive Outreach**

A. **Ongoing advertisement/promotion of a stormwater hotline number or other method to report an illicit discharge:** Contact information is provided in each of the quarterly Stormwater Newsletters, on the public service announcements aired by radio and on the City's website. With the implementation of the SeeClickFix application, the public can now report issues via their phone or computer. Reports entered



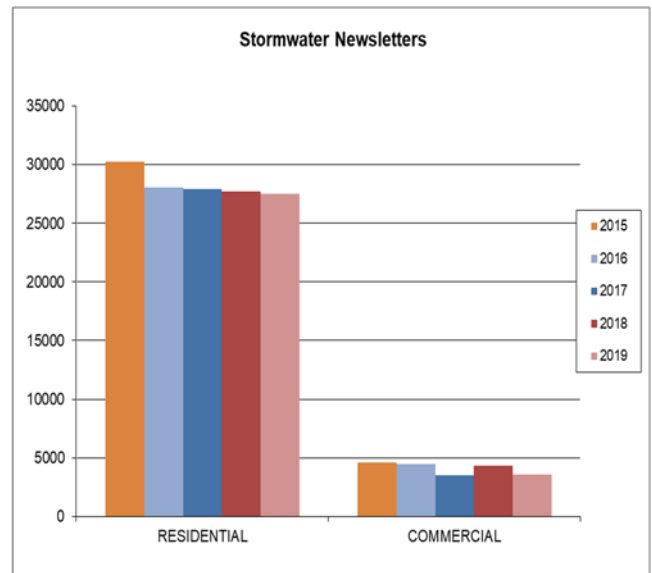
into the application are automatically assigned to a City department and an email notification is sent to the contact person for that department.

**B. Ongoing advertisement/promotion on how to get more information about the stormwater program:** Contact information is provided in each of the quarterly Stormwater Newsletters, on the public service announcements aired by radio and on the City’s website.

**C. Ongoing social media program:** The City of Cañon City has a Facebook page and Twitter account. Thirty-eight stormwater-related posts were included on the City’s Facebook page during 2019. The posts covered a wide range of topics including the Cañon Proud clean-up and other various clean-up events, pollution prevention information, a video on picking up pet waste and the Public Arts Mural Program.

**D. Web site that is interactive or contains stormwater information that includes actions that can be taken to reduce stormwater pollution:** The City of Cañon City’s Stormwater webpages contain much information for the public ranging from informational brochures about water quality, illicit discharges and construction stormwater runoff control to children’s activity booklets. Information about what citizens and businesses can do to lessen their impact on stormwater runoff is found under the “What Can I Do To Help?” link.

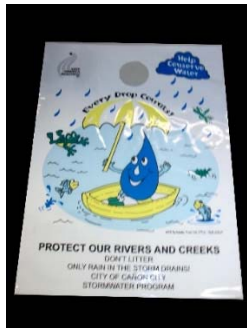
**E. Newsletter (hard copy or electronic):** Quarterly Stormwater Newsletters are sent out with City water bills and are available on the City of Cañon City’s website. Each newsletter addresses stormwater concerns and provides information about the Stormwater Program and the prevention of illicit discharges. The public is encouraged to contact us with their concerns and questions or if they have suggestions for future topics or programs (newsletters include the Stormwater Program’s contact information). During 2019, 27,524 newsletters were sent to residents and 3,609 newsletters were sent to commercial establishments. The adjacent graph compares the amount of newsletters sent out each year from 2014 through 2018. Beginning in 2018, the residents and businesses that receive their water bill via email also received the stormwater newsletter by email. A total of 2,828 newsletters were emailed throughout the year.



**F. Promotion of existing local stormwater/environmental events or program that help protect water quality:** The City of Cañon City promoted its Stormwater Program and various events through social media, the City’s website and articles in the Cañon City Daily Record on the Public Arts Mural Program. The Stormwater Technician also appeared on the local radio station’s (KRLN) Morning Line to promote the Public Arts Mural Program, stormwater education and to discuss stormwater utility fees. The City also promoted Code Enforcement clean up events and the “Clean Up Green Up Arkansas River” event.

**G. Distribute promotional items or giveaways:** Brochures, activity books, fact sheets and other items are all given out during presentations, events and festivals where the Stormwater Program has a booth. An inventory is maintained of all items used as giveaways, as well as a spreadsheet listing how many of each item was given out during each event. During 2019, 407 activity books, fact sheets and brochures

were given out. Other giveaways include magnets with contact information for the Cañon City Stormwater Program, pet waste baggie dispensers, crayon packets and litter bags. During 2019, 224 magnets, 42 litter bags, 171 crayon packets and 221 pet waste baggie dispensers were given out.



Litter Bag



Pet Waste Baggie Dispenser



Crayon Packet



Magnet

**H. Participate in or sponsor a water festival which involves populations that exist within the permit boundary:** The City of Cañon City Stormwater Program participated in the planning and execution of a water festival with the Cañon Exploratory School. The festival was held for third and fourth grade school children from the Cañon Exploratory School. Ninety students attended and twelve demonstrations of the “Stormwater Soup” exercise and the EnviroScape were performed. The “Stormwater Soup” exercise requires that the students participate in the making of the “soup”.



**I. Participate in or sponsor a service project:** In 2018, the Cañon City Stormwater Program partnered with Mountain View Core Knowledge School to sponsor a Public Arts Mural program designed to involve local K-12 students in the creation of murals near waterways to replace several existing murals which are fading, peeling or have had graffiti sprayed over them. The City approved funds for a 3-year project in which students will research environmental themes for murals, submit artwork and paint the actual murals. The first murals at the 4<sup>th</sup> Street Viaduct were completed in July, 2019. The murals replaced all but one of the existing murals which were peeling and faded. The theme for the mural project was “Clean Environment: The People and Animals That Depend On It”. From the 134 submitted art works, 66 were chosen to be featured during an art show at the Fremont Center for the Arts where the public could vote on their favorite art pieces. On-line voting was also offered through the City of Cañon City’s website. The top 10 pieces of art work were submitted to City Council to choose the one piece of art work which would be featured on the largest support. Thirty-one additional pieces of art work were chosen by the committee to be incorporated into the murals. Over 70 adults and children voluntarily participated in the painting of the murals, spending over 250 hours on the project. A sign was erected at the



site acknowledging all the artists and volunteers on the project.

**J. Participate in or sponsor a stormwater or environmental presentation:** Three presentations were given during 2019 by the Stormwater Program. A rain barrel workshop was conducted by the Stormwater Program in conjunction with the Pueblo Community College's Senior Mini-College. The workshop had 29 attendees; 21 rain barrels and hardware were given to attendees through a drawing. The Stormwater Technician also gave a presentation on the Phase II MS4 permit construction and post-construction requirements at the 2019 Regional Stormwater Seminar and a presentation on the City's updated Grading, Erosion and Sediment Control requirements. For further discussion of these presentations please see Section 5.

**K. Participate in or sponsor a stormwater or environmental event:**

i. The City of Cañon City's Code Enforcement Department held a Fall Clean-Up event in 2019. A 30-yard dumpster was provided for residents of Cañon City to bring items for disposal during the one day event. The dumpster was filled with items such as furniture, yard clippings, fencing supplies and building materials.

ii. The City of Cañon City also participates in the Cañon Proud clean up event every year. The City provided 127 vouchers for dumping at the Twin Enviro Landfill for a cost of \$1,714.50.

iii. The City of Cañon City financially assists the Upper Arkansas Area Council of Governments' recycling program. During 2019, the City gave the program \$13,067.00.

iv. The Stormwater Technician participated in the Small Business Revolution Main Street Clean-up event.

**L. Participate in or sponsor community project based programs that investigate watershed health and meet applicable school Science, Technology, Engineering and Math (STEM) standards:** The Stormwater Program participated in the planning for the 2019 Teaching Environment Naturally (TEN) course for Fremont County teachers, held from June 4 - 7, 2019. During the course of the program the Stormwater Technician conducted a mini-rain barrel workshop, giving away 3 rain barrels and hardware kits. Twenty-nine local K-12 teachers attended the course. A total of 120 activity sheets and fact sheets were also given out.



The Stormwater Program also participated in the STEM Day at the Royal Gorge Museum and History Center. Approximately 20 children and adults attended.

**M. Stormwater booth at a community event:** A Stormwater Program booth is set up at one or more local festivals. EnviroScape demonstrations, short presentations and giveaways are all available at the booth. The giveaways include items such as information brochures, children's activity books, litter bags, magnets, crayon packets and pet waste baggie dispensers. The number of visitors to the booth and demonstrations are recorded, as are how many items are given out. Programs are evaluated and updated continually in order to reach as many people as possible and to promote interest and participation in the programs. The following table lists the festivals at which the Stormwater Program had a booth in 2019, along with the approximate number of visitors and the demonstrations done with the EnviroScape:

Festival/Event & Dates	# of Visitors	# of Demonstrations
Safety Jam 6/8/2019	370	56
National Night Out 8/6/2019	139	20



**N. Pet waste stations:** The Cañon City Parks Department provides pet waste stations with bags, trash cans and signage at all City parks, along the Riverwalk and along the Hogback Trail. Pet waste stations have also been added to the trail network in the Dawson Ranch Subdivision. In 2019, the Parks Department spent \$1,250 on Mutt Mitts.



Sign

**2. Illicit Discharge Education to Businesses and the Public:** The quarterly Stormwater Newsletters and radio PSAs often address the issue of illicit discharges. Both are disseminated or directed to businesses as well as the general public. The newsletters and PSAs also provide tips for preventing contamination of stormwater runoff. The Stormwater Program webpages on the Cañon City website contain a section on what businesses can do to minimize and/or prevent contamination of stormwater runoff. In 2018, the Stormwater Program determined that construction contractors, restaurants and window washers should be targeted as likely sources of illicit discharges or improper disposal of waste. During 2019, outreach was targeted to construction contractors as the primary type of business which may cause an illicit discharge. Outreach consisted of 149 newsletters mailed to Cañon City licensed contractors addressing construction site BMPs, illicit discharges, updated City regulations, and permitting.

**3. Nutrients:**

The revised 2016 permit has the additional requirements of determining targeted sources that are contributing to, or have the potential to contribute nutrients to our receiving waters and to distribute educational materials or equivalent outreach to prioritized target audiences. Targeted sources of nutrients have been determined to be fertilizers, pet/animal waste and yard waste. Information about nutrient impacts is already included in most of the Stormwater Program’s brochures and presentations; however, the 2<sup>nd</sup> and 3<sup>rd</sup> Quarter Stormwater Management Program Newsletters specifically contained information on nutrients and how to minimize and/or prevent impacts from them. The newsletters were distributed as an insert with the water bills and via email to all Cañon City residents and businesses. Additionally, a series of Facebook posts during National Pollution Prevention week contained information on the prevention of nutrient pollution.

#### **4. Summary of Expenditures:**

With the upgrade to the Cartegraph OMS database, it is now easier to track time and costs associated with the education and outreach activities conducted by the Stormwater Program. The following table shows the time and additional costs for each activity from January 1 through December 31, 2019. The table does not include any costs incurred for programs conducted through other departments such as Code Enforcement or Parks.

<b>Activity</b>	<b>Labor Hours</b>	<b>Other Cost</b>	<b>Total Cost</b>
Newsletters	35.25	\$3219.02	\$4714.34
Public Arts Mural Program	113.68	\$914.99	\$6149.01
Project Rain Barrel Workshop	42.25	\$30.62	\$2207.19
TEN Teachers Course	59.50	\$9.22	\$2773.67
STEM Day Museum	2.00	\$5.00	\$89.84
2019 Regional Stormwater Seminar (time/resources only)	52.25	\$0	\$2281.13
Outreach Giveaways	6.50	\$0	\$275.73
Canon Exploratory School Water Day	9.00	\$215.88	\$696.22
PSAs	3.50	\$0	\$148.47
Safety Jam Booth	9.00	\$215.88	\$696.22
Website Updates	6.50	\$0	\$275.73
National Night Out Booth	6.00	\$156.26	\$466.22
2020 Regional Stormwater Seminar (time/resources only)	7.75	\$0	\$381.10
2020 Public Arts Mural Program	1.00	\$0	\$42.41
<b>Totals</b>	<b>354.18</b>	<b>\$4,609.85</b>	<b>\$20,941.70</b>

#### **Action Items for New Permit Requirements:**

1. Create a list of the targeted business types that are likely to cause an illicit discharge or improperly dispose of waste and list the local businesses under each type. Document the procedures used to create list. This will be completed prior to the July 1, 2018 deadline. [The list of targeted businesses was completed on 5/14/2018. Procedures to determine the targeted businesses are detailed in the Stormwater Technician's Reference Manual.](#)
2. Conduct consistent outreach to the targeted businesses and document. This will begin prior to the compliance date of July 1, 2018. [Education and outreach to targeted business types has been ongoing periodically since 2010. Beginning with the contractor newsletter in 2018, outreach and education will be and has been done more consistently \(at least once a year\).](#)
3. Documentation of any signs and all pet waste stations. Permanent stenciling/markers of storm drains are already tracked in Cartegraph. [GPS mapping of stormwater signage and pet waste stations began in 2018, and will continue until all are entered into the database.](#)
4. Determine targeted sources of nutrients and conduct outreach to prioritized targets. Document procedures and outreach. [Targeted source determination procedures and a list of targeted sources were completed by the deadline of January 1, 2018 and are contained in the Stormwater Technician's Reference Manual.](#)
5. Outreach on nutrients will begin as per the permit's July 1, 2018 beginning compliance date. [Nutrients are addressed in many of our brochures and fact sheets and will continue to be addressed through these avenues and during presentations. Documentation of specific outreach concerning nutrients is contained in the Annual Report Documentation spreadsheet.](#)

#### **Section 4. Illicit Discharge Detection and Elimination**

The revised MS4 permit clarifies the requirements for illicit discharge detection and elimination including more detailed requirements on regulatory mechanisms, tracing and removing a discharge, enforcement responses, priority areas and training. Recordkeeping is also clarified.

The City of Cañon City's Illicit Discharge Detection and Elimination (IDDE) program identifies sources of potential illegal discharges and actual discharges to the City's storm sewer system in order to reduce the frequency of these discharges and to protect the water quality of the Arkansas River and Four Mile Creek. Public education

and municipal employee training are important elements in this program. Inspections of the storm sewer discharge pipes (outfalls) on the Arkansas River and Four Mile Creek, as well as water quality testing if discharges are found are integral parts of the program.

**Discussion of Elements:** All programs listed were ongoing in 2019 and will continue during 2020.

**1. Storm Sewer System Map:** The revised permit requires the permittee to maintain a current map of the location of all MS4 outfalls within the permit boundary. The City of Cañon City maintains a map of all storm sewer infrastructure including storm drains, pipes, culverts, manholes and outfalls in ArcMap and through the Cartegraph OMS database. Outfall inspections and mapping of new outfalls continued during 2019. Outfalls are assigned to a category in the Cartegraph database based upon the primary type of flow. Many outfalls, though, will carry several types of flow (i.e. ground water, irrigation return and storm runoff). The categories and numbers of outfalls are listed in the table below. An outfall is the point where a municipal storm sewer discharges to waters of the United States. A major outfall is a pipe with an inside diameter of 36 inches or more or where stormwater enters waters of the United States from a drainage area of more than 50 acres. An outfall pipe with an inside diameter of 12 inches which drains land zoned for industrial activities is also considered a major outfall; these have been separated into the Industrial Discharge category. Outlets are the structural point where BMPs such as detention basins empty to areas other than a waterbody. Facility outlets are the point at which a municipal facility discharges to the storm sewer system (including a street). This category was added in 2016 in preparation for the new permit requirements. Footing/Foundation and Roof Drains are only mapped if they discharge directly to a drainage or waterbody.

The Cañon City Stormwater Program has mapped a total of 556 active outfalls, outlets and other drainage end points located along the Arkansas River, Four Mile Creek and the various drainages and irrigation canals throughout the City. The City of Cañon City has jurisdiction over 250 of them; County or State Agencies have jurisdiction for 27 and 279 are under private jurisdiction. The breakdown for each category as well as the number mapped during 2019 (new, rebuilt and previously identified but unmapped) is detailed in the following table. Two outfalls in an industrial zone were disconnected from their source in 2017 and removed in 2019.

Category	Total Number	Number Mapped in 2019
Facility Outlet	14	0
Footing/Foundation Drain	58	0
Groundwater Drain	34	0
Industrial Discharge	4	0
Irrigation Return	152	3
Major Outfall	23	0
Outfall	190	0
Outlet	33	0
Roof Drain	48	0

The footing/foundation and roof drains, groundwater drains and irrigation returns do not require yearly inspections or monitoring but are often noted during annual inspections of drainage channels. The City of Cañon City is currently not required to monitor industrial discharge outfalls as these are covered under separate discharge permits; again, these are often noted during other inspections. Outlets are inspected annually with the various BMPs and facilities. Outfalls and major outfalls are inspected annually (time permitting). The outfall database in Cartegraph and the mapping assist in prioritizing inspections of the outfalls. During 2019, 127 inspections were conducted on outfalls, drains and outlets. The following table shows the breakdown of inspections.

Category	Annual/Routine Inspections	Complaint	Courtesy	Illicit Discharge	Initial	Re-Inspection
Facility Outlet	5		1			
Groundwater Drain	7					
Irrigation Return	16				1	
Major Outfall	8					
Outfall	76	1				
Outlet	9					2
Roof Drains	1					

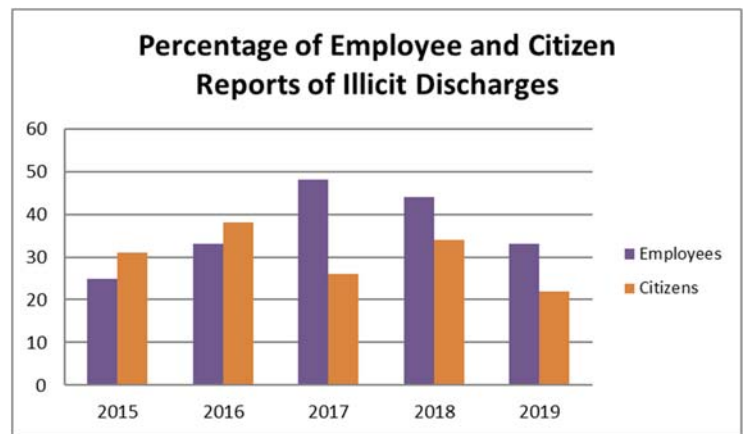
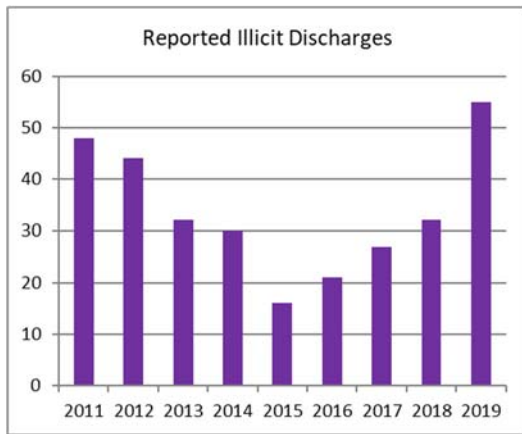
**2. Regulatory Mechanism:** The City of Cañon City adopted Ordinance No. 20, Series of 2005 to establish codes concerning illicit discharges. Some minor changes were made to the Ordinance, effective September 9, 2012 through Ordinance No. 14, Series of 2012 AN ORDINANCE MAKING CERTAIN MINOR AMENDMENTS TO THE CITY’S STORMWATER REGULATIONS. In 2019, the Stormwater Regulations were moved to a new section of municipal code: Title 20 Stormwater Illicit Discharges and Permits (Ordinance No. 12, Series of 2019). Some minor corrections and/or additions were added to the new section. The Ordinance can be viewed on the City of Cañon City’s website at [www.canoncity.org](http://www.canoncity.org).

**3. Tracing an Illicit Discharge:** The revised permit requires the permittee to implement procedures to respond to reports or identifications of illicit discharges. The procedures and tools needed to trace the illicit discharge must be documented. The City of Cañon City had previously implemented an Illicit Discharge Detection and Elimination Manual (IDDE Manual) which documented the required procedures and tools. The manual was reviewed and revised in 2017 to ensure consistency with the permit requirements and again in 2019 in keeping with the municipal code Title changes. The full manual may be viewed at: <https://www.canoncity.org/DocumentCenter/View/356/Illicit-Discharge-Detection-and-Elimination-Manual-PDF>

**4. Removing an Illicit Discharge:** The permit requires that the permittee must have written procedures requiring the cessation and removal of illicit discharge, including removal of any surface residue and pollutant sources. The IDDE Manual contains these procedures.

**i. Discussion of the Illicit Discharge Program**

Fifty-five incidents of potential illicit discharges were investigated during 2019, resulting in 124 initial and follow-up inspections. Of the 55 reported or discovered discharges 2 were excluded discharges, 9 were potential discharges and the rest were prohibited discharges. Reported discharges had declined between 2011 and 2015 then rose again. The increase in investigations since 2015 may be due to better awareness and reporting of potential illicit discharges. The significant increase in prohibited discharges during 2019 is mainly due to increased oversight and enforcement on single family residential construction sites. The following graph on the left portrays the trend. The Request database in Cartegraph assists in tracking how many reports of illicit discharges the Stormwater Program receives from citizens and employees (*See Section 3. Public Participation/Involvement*). The following graph on the right shows the reports received from each category as a percentage of the total number of reported illicit discharges each year.



Illicit discharges are assigned a category in the Cartegraph database to assist in identifying types of pollutants which may need targeting through our Public Education program. The following table shows how many discharges were reported for each category during the year. The database in Cartegraph allows for comparisons between categories each year which enables staff to see trends and adjust outreach accordingly.

Category	Investigations	Category	Investigations
Accident	1	Illicit Connection	0
Automotive Discharge	4	Leaking Dumpster	0
Blocked Flowlines	3	Non-hazardous Spill	0
Construction – Concrete Washout	2	Other	5
Construction – No BMPs	5	Pesticide/Herbicide/Fertilizer	1
Construction – Other	2	Pet Waste	0
Construction – Sediment Release	19	Power Washing	2
Hazardous Spill	0	Prohibited Discharges – Other	3
Illegal Dumping – Drainage	0	Restaurant Oil/Grease	1
Illegal Dumping – Flowline	1	Sediment	3
Illegal Dumping – Inlet	0	Sewage	1
Illegal Dumping – Other Area	1	Yard Waste	1
Illegal Dumping – Waterbody	0		

Water quality sampling is done when needed to assist in determining the source of the discharge. No sampling events were conducted in 2019. Benthic macroinvertebrate sampling of the Arkansas River and Four Mile Creek was not conducted in 2019 due to time and budgetary constraints.

**5. Enforcement Response:** The revised permit requires that the permittee must implement written enforcement procedures and actions to eliminate the source of the illicit discharge when identified/reported, discourage responsible parties from willfully or negligently repeating or continuing illicit discharges and discourage future illicit discharges from occurring. The IDDE Manual contains these procedures which the Municipal Code allows for.

Investigations resulted in the illicit discharge enforcement measures shown in the adjacent table. All illicit discharges were corrected and cleaned up. One resulted in \$416.00 fine to cover costs of clean-up by the City.

Enforcement Action	Number
Verbal Warning	31
Notice of Non-Compliance	10
Notice of Violation & Enforcement Action w/ fine	1
Letters detailing violation/corrective action	1



The database in Cartegraph facilitates tracking of other aspects of illicit discharge reports and investigations such as repeat violators. Eight parties had multiple violations during the year in 2019; seven of which were single family residential builders. One was a commercial construction site which had two violations. The Cartegraph OMS database also maps the locations of illicit discharges to show areas which may need extra outreach or monitoring.

Cartegraph OMS also allows for tracking of time and costs associated with investigating illicit discharges and any associated clean-up costs. During 2019, approximately 51.45 hours were invested in addressing illicit discharges at an approximate cost of \$2,306.71.

**6. Priority Areas:** The permit requires that the permittee must locate priority areas with a higher likelihood of having illicit discharges. The database and mapping of illicit discharges assists in determining areas of past illicit discharges and areas where illicit discharges are concentrated. Land use is also taken into account when determining priority areas. Using these criteria, which are documented in the IDDE Manual, the following areas were deemed priority areas for the City of Cañon City:

- NW Cañon from 2<sup>nd</sup> Street to 9<sup>th</sup> Street; Main Street to Pine Ave
- Businesses along the Water Street Channel from Rainbow Drive to 12<sup>th</sup> Street
- Businesses along Fremont Drive and East Main Street

**7. Training:** Training must be held for applicable municipal staff so they may recognize and appropriately respond to illicit discharges observed during typical duties. Illicit Discharge training was held for new hires and temporary employees on July 17, 2019. The 13 City employees trained included 4 Code Enforcement Officers, 1 Engineering, 1 Facilities, 3 Parks, 3 Streets and 1 Water Distribution. Attendees learned what to look for, how to respond and where the priority areas are. Training materials included a PowerPoint presentation and the MS4 RAINcheck video. In addition the employees each received a copy of the City of Cañon City's Pollution Prevention O&M Manual. Four Rain Check Pocket Reference books were also given out to interested employees.

#### **Action Items for New Permit Requirements:**

1. Develop written procedures for updating the Storm Sewer Map. [Written procedures for updating and maintaining the storm sewer map are contained in the Stormwater Technician Reference Manual which was created in 2017 and is revised as needed.](#)
2. Review ordinances/municipal code and revise as necessary. [Stormwater Municipal Codes were reviewed and updated into their own Title 20. The review and update were approved by City Council on May 6, 2019 \(Ordinance No. 12, Series of 2019\).](#)
3. Update the IDDE manual. [The updates were completed in 2017. Additional updates to reflect the new Municipal Code Title 20 were completed on September 23, 2019.](#)
4. Document written procedures for enforcement to ensure consistency. [The written procedures are included in the revised IDDE Manual. This was completed before the January 1, 2018 deadline.](#)
5. Develop written list of priority areas. [Written procedures were created for determining priority areas. The procedures are contained in the IDDE Manual. This was completed by the January 1, 2018 deadline.](#)
6. Revise training to include the priority areas. [Update documentation of training to include recordkeeping requirements. This was completed before January 1, 2018.](#)
7. Review Cartegraph database forms to ensure all requirements are included for recordkeeping. [This was completed before January 1, 2018. The information from Cartegraph Navigator was transferred to Cartegraph OMS and has been updated in keeping with the tracking information required.](#)

## Section 5. Construction Sites

The Construction Sites Runoff Control area of our Stormwater Management Program is designed to reduce, as much as possible, sediment and other construction-related pollutants from entering our storm sewer system or from being discharged into the Arkansas River, Four Mile Creek and other drainages throughout the city. The revised permit contains new and clarified requirements which need to be implemented prior to July 1, 2019. Until all were implemented the City of Cañon City continued to adhere to the previous permit requirements as is stated in the new permit.

**Discussion of Elements:** All programs listed were ongoing during 2019.

**1. Regulatory, Compliance and Exemption Mechanisms:** Ordinance No. 20, Series of 2005 and the City of Cañon City Grading, Erosion & Sediment Control (GESC) Manual were enacted in 2006. They have proved effective in obtaining compliance for construction site stormwater management. Some minor changes were made to the Ordinance, effective September 9, 2012 through Ordinance No. 14, Series of 2012 AN ORDINANCE MAKING CERTAIN MINOR AMENDMENTS TO THE CITY'S STORMWATER REGULATIONS. In 2019, the Stormwater Regulations were moved to a new section of municipal code: Title 20 Stormwater Illicit Discharges and Permits (Ordinance No. 12, Series of 2019). Some minor corrections and/or additions were added to the new section. The Ordinance can be viewed on the City of Cañon City's website at [www.canoncity.org](http://www.canoncity.org). The City of Cañon City's GESC manual was reviewed and revised to ensure compliance with the new and updated requirements in the revised 2016 MS4 Stormwater Discharge Permit. City Council approved the revisions on June 17, 2019 (Resolution No. 18, Series 2019).

**2. Control Measure Requirements:** The City Municipal Code requires the implementation of control measures on all construction sites. The City's GESC manual provides guidance for construction site operators on that implementation.

**3. Site Plan Review:** The procedures for site plan review are addressed through the City of Cañon City's Grading, Erosion and Sediment Control Manual and the Subdivision and Development Regulations. The City Engineer reviews all site plans prior to approval and issuance of any permits for construction within our permit boundaries.

**4. Procedures for Receipt and Consideration of Information Submitted by the Public:** A database is kept of all contacts (phone, email, letters and "in person") concerning stormwater issues with the intent to better track the effectiveness of the public education and participation programs. (*See Section 2. Public Participation/Involvement*). All complaints and concerns are addressed promptly. Any illicit discharge investigations resulting from a complaint or concern submitted by a citizen is logged into the Illicit Discharge database in Cartegraph and can be cross-referenced through the Contact database.

**5. Site Inspections and Enforcement of Control Measures:** Inspections are performed at all applicable construction and post-construction sites as per the schedule provided in the 2016 revised MS4 permit. Appropriate enforcement actions are taken when needed. During 2019, there were 7 open Grading, Erosion and Sediment Control (GESC) permits. Four of those permits were City construction sites which also had State Construction Stormwater Discharge Permits and two are City fill sites which also have a State Construction Stormwater Discharge Permit. The four permits for the City construction sites were completed and closed out during the year.

Due to a clarification in the new permit, after July 1, 2016, Drainage, Erosion and Sediment Control (DESC) permits were no longer required for single family residences being built in subdivisions which have been stabilized, however, contractors are encouraged to still apply for the permit to ensure proper BMPs and drainage are addressed for the site. No DESC permits were issued during 2019. Those single family residential sites which

do not require a DESC permit are addressed through the City’s Illicit Discharge programs should there be an issue at the site.

The revised 2016 MS4 permit contains more robust inspection requirements, including a time line for conducting routine, reduced and compliance inspections. Recordkeeping requirements are also detailed in the permit. With the upgrade of our database to Cartegraph OMS, City GESC and DESC permits are tracked in the database along with all inspections, associated tasks and enforcement actions. The following tables show the number and type of inspections conducted at permitted construction sites during 2019 and enforcement actions taken. It should be noted that the State Construction Stormwater Discharge permit has a slightly different inspection schedule than the MS4 Stormwater Discharge permit. The 5 City sites which also had or have a State construction permit were inspected per the State permit’s schedule which also served to meet our required MS4 permit inspections.

Inspection Type	Number
Compliance	13
GESC Close out	1
Post-Storm	2
Reduced Frequency-Indicator Inspection	18
Reduced Frequency-Inactive Site	2
Reduced Frequency-Winter Conditions Exclusion	2
Re-Inspection	1
Routine	51

Enforcement Action	Number
Verbal Warning	3
Notice of Non-Compliance	1
Stop Work Order	0
Notice of Violation & Enforcement Action w/ fine	0

The Stormwater Permits database in Cartegraph OMS allows for tracking of labor hours and costs for the various tasks, such as inspections, associated with each permit. During 2019, the Stormwater Technician spent approximately 22.5 hours conducting inspections at a cost of \$933.25. The hours spent and the cost do not reflect the labor and costs expended by others conducting inspections.

**6. Training and Education for Construction Site Operators:** This is primarily achieved using the GESC manual and through the plan review process. New information and resources are passed to local contractors and developers when available. Additional training opportunities and outreach offered in 2019 are listed below:

**A. Regional Stormwater Seminar**

Cañon City again joined forces with the City of Pueblo, the Pueblo City-County Health Department, the Pueblo County Engineering and Public Works Department and the Pueblo West Metro District (Southern Colorado Stormwater Education Committee) to host a Regional Stormwater Seminar on February 13, 2019. The seminar was geared toward contractors, developers and engineers who work throughout the region, as well as municipal employees. Featured topics and speakers were:

- Todd Griffeth with a Colorado 811 update
- Jennifer Keyes, Wright Water Engineers: State Construction Permit Update
- Glenda DeBekker, City of Cañon City Stormwater Program: Phase II General Stormwater Permit Requirements – What Do They Mean for You?
- Tyler Dell, Colorado Stormwater Center: Post-Construction BMPs



The seminar was held at CSU-Pueblo and was attended by 78 people, excluding organizers, speakers and vendors. The full report is kept with the MS4 permit documentation for 2019.

## B. GESC Training

The City of Cañon City Stormwater Program conducted a training on October 7, 2019, for local contractors highlighting the updates on the City's Grading, Erosion and Sediment Control requirements and the revised manual. The training also included a section on Right-of-Way permitting through the City. Ten people attended the training. The training included a PowerPoint presentation, copies of the revised GESC manual, the memo on changes to the DESC permitting and residential and commercial building permit packets.



## C. Special Edition Contractor Newsletter

In September, 2019, 149 newsletters were mailed to Cañon City licensed contractors addressing construction site BMPs, illicit discharges, City regulations, the revised GESC manual and permitting.

### **Action Items for New Permit Requirements:**

1. Review the municipal code and ordinances for compliance with new permit requirements. Stormwater Municipal Codes were reviewed and updated into their own Title 20. The review and update were approved by City Council on May 6, 2019 (Ordinance No. 12, Series of 2019).
2. Create a database to track any permitted exclusions. With the upgrade and implementation of Cartegraph OMS database, the City of Cañon City is able to track exclusions allowed by the permit.
3. Update of the GESC Manual to reflect changes in the revised MS4 Permit. The review and update of the GESC manual was completed and approved by City Council on June 17, 2019 (Resolution No. 18, Series 2019), prior to the July 1, 2019 deadline.
3. Review and update, if needed, design standards/criteria. This was completed prior to the July 1, 2019 deadline.
4. Review procedures and documentation in regards to site plan requirements, review and recordkeeping. This was completed prior to the July 1, 2019 deadline.
5. Review inspection procedures and frequencies. Revise as needed to comply with new permit requirements and document. Review and revise inspection forms, if needed. This was completed prior to the July 1, 2019 deadline.
6. Document written procedures for enforcement to ensure consistency. The written procedures must include informal, formal and judicial responses. Revise ordinances if necessary. This was completed by July 1, 2019 and is contained in the GESC Manual.
7. Document training procedures for operators of applicable construction activities and document training. Documentation of training procedures was completed prior to the January 1, 2019 deadline. Trainings are already documented in the Annual Report Program Documentation spreadsheet maintained by the Stormwater Technician.
8. Document procedures for IGAs, MOUs, etc. Written procedures have been created and are documented in the Stormwater Technician's Manual.

## **Section 6. Post-construction Stormwater Management in New Development and Redevelopment**

Per the City of Cañon City's MS4 permit, the Post-construction Stormwater Management program must reduce the stormwater impacts from areas of new development and significant redevelopment as much as possible through planning procedures and enforcement mechanisms. The revised permit contains new and clarified requirements which need to be implemented prior to July 1, 2019. Until all were implemented the City of Cañon City continued to adhere to the previous permit requirements as is stated in the new permit.

**Discussion of Elements:** All programs listed were ongoing during 2019.

**1. Regulatory Mechanisms and Exemptions:** Ordinance No. 20, Series of 2005 and the City of Cañon City Grading, Erosion & Sediment Control (GESC) Manual were enacted in 2006. Some minor changes were made to the Ordinance, effective September 9, 2012 through Ordinance No. 14, Series of 2012 AN ORDINANCE MAKING CERTAIN MINOR AMENDMENTS TO THE CITY’S STORMWATER REGULATIONS. In 2019, the Stormwater Regulations were moved to a new section of municipal code: Title 20 Stormwater Illicit Discharges and Permits (Ordinance No. 12, Series of 2019). Some minor corrections and/or additions were added to the new section. The Ordinance can be viewed on the City of Cañon City’s website at [www.canoncity.org](http://www.canoncity.org).

**2. Design Criteria & Standards and Review & Approval Procedures:** The City of Cañon City’s revised Grading, Erosion and Sediment Control (GESC) manual now contains a section on post-construction permanent BMP design criteria. Additionally, the site plan review process assures that post-construction structural BMPs meet design standards. Inspections during the construction process and final inspections assure that the BMP has been properly constructed. The City Engineer documents all site plan reviews and approvals. Final as-built drawings are kept with the file for the post-construction permanent BMP. All construction inspections of the BMP are entered into the Cartegraph OMS database for that BMP.

**3. Tracking:** Permanent BMPs are recorded, mapped and entered into the Cartegraph OMS database. Three new BMPs on two applicable development sites (a permeable pavement – porous gravel, a Nyloplast Snout and a porous landscape detention) were implemented in 2019. The Snout was installed in Centennial Park, which is not considered an “applicable development site”. Procedures for documenting and mapping new permanent BMPs are contained in the Stormwater Technician’s manual. The following table lists the number of active BMPs and custodianship for maintenance.

BMP Type	Private/Federal/County/State	Municipal
Basins	58	26
Grass Buffer	2	0
Grass Swale	16	1
Porous Landscape Detention	7	2
Porous Pavement – Gravel	2	0
Rock Berm	2	0
Sand Filter	5	0
Sedimentation Basin	0	2
Underground Water Quality Structures	18	12

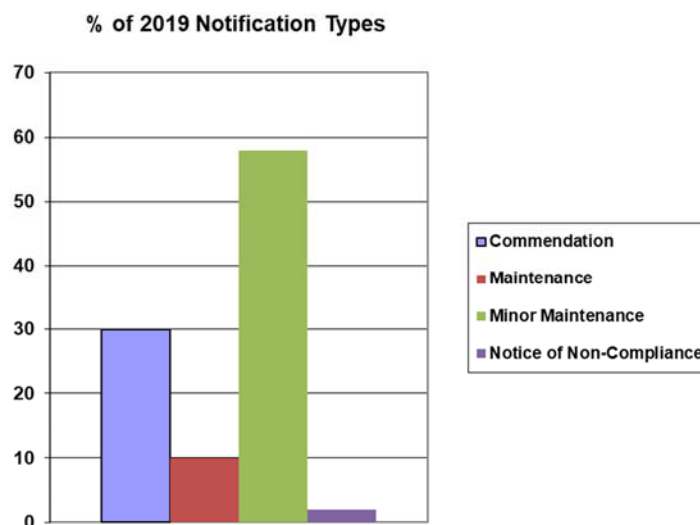
**4. Monitor Long-term Compliance with Enforcement Actions:** The revised 2016 permit requires that permanent post-construction BMPs be inspected at least once a permit term (5 years) to ensure conformity with the site plan and to identify any inadequate BMPs or needed maintenance. Every effort is made to inspect each BMP at least once a year, however, occasionally time constraints prevent a yearly inspection on every BMP. In these situations those BMPs which have shown a history of needing routine maintenance are prioritized for inspection. The results of inspections are entered into the Cartegraph OMS database.

An inspection report and letter are sent to the custodian of the private BMPs. The letters fall into the categories of commendation, maintenance or minor maintenance. Minor maintenance letters are sent for those BMPs that need minor, routine maintenance such as trash removal. Recipients of the minor maintenance letters have shown a history of good maintenance and a willingness to respond favorably to past maintenance letters. A follow-up inspection is not done on the BMP. Maintenance letters are sent for those BMPs which need more extensive maintenance. The BMP is then re-inspected approximately 30 days later (depending upon the severity of the problem noted) and enforcement procedures are instituted if the corrective maintenance has not been done. For municipal BMPs, the appropriate department receives the inspection report. Tasks are assigned in Cartegraph OMS to address any issues noted on municipal BMPs.

During 2019, a total of 116 inspections were performed on permanent BMPs. The following table shows the breakdown of the inspections. The “Courtesy” category of inspection has been added in response to clarified permit requirements which state that only those BMPs within the permit boundary (City Limit) need to be inspected. Prior to the 2016 revised MS4 permit all municipal BMPs were inspected whether they were inside the permit boundary or not. To remain consistent, those BMPs outside of the permit boundary are still inspected as a courtesy to the department which maintains them.

	Private/Federal/County			Municipal		
	Basins	Storm Vaults	Other BMPs	Basins	Storm Vaults	Other BMPs
<b>Annual</b>	38	11	18	25	6	5
<b>Compliance</b>	0	0	1	0	0	0
<b>Courtesy</b>	0	0	0	1	3	0
<b>Initial</b>	0	0	1	0	1	0
<b>Maintenance</b>	0	0	0	0	1	0
<b>Re-inspection</b>	4	0	1	0	0	0

Forty-two notifications were sent to non-municipal custodians indicating some level of non-compliance (i.e. needing maintenance). Of those, six were maintenance letters and thirty-five were minor maintenance letters. One custodian received a Notice of Non-Compliance for failure to take corrective action after notification of the maintenance needed. Eighteen of the inspections resulted in letters of commendation being sent to non-municipal custodians. The adjacent graph shows the percentages of types of notifications sent out during 2019.



As with other asset databases in Cartegraph OMS, it is easier to track costs and labor associated with inspections performed on the post-construction permanent BMPs. During 2019, approximately 25.5 hours were spent on inspections at a cost of \$1,072.38.

**Action Items for New Permit Requirements:**

1. Create Standard Operating Procedures or other documentation for exclusions. Create database to track required information. [Exclusions for post-construction permanent BMPs are tracked through the Stormwater Construction Permit asset database in Cartegraph OMS.](#)
2. Review applicable ordinances and revise if needed. [Stormwater Municipal Codes were reviewed and updated into their own Title 20. The review and update were approved by City Council on May 6, 2019 \(Ordinance No. 12, Series of 2019\).](#)
3. Review current procedures concerning control measure design, revise if necessary. Review any manuals/design specifications & revise to meet new requirements. Create SOPs if needed. [Design specifications for post-construction permanent BMPs were added to the revised City of Cañon City’s GESC Manual, approved and implemented by City Council on June 17, 2019 \(Resolution No. 18, Series 2019\).](#)
4. Review current procedures for site plans. Revise if necessary. Create SOPs if needed. Revise the Cartegraph database if needed or create a new recordkeeping method. [This was completed prior to the July 1, 2019 deadline.](#)

5. Review, revise and document procedures for construction inspection and acceptance. Revise recordkeeping. This was completed prior to the July 1, 2019 deadline. All inspections conducted during construction of the permanent BMP are recorded in the Cartegraph OMS database for that BMP.
6. Review, revise and document procedures for long-term operation, maintenance and post-acceptance oversight. Revise Cartegraph database forms as needed. This was completed prior to the July 1, 2019 deadline. Inspection procedures and procedures for tracking are contained in the Stormwater Technician Reference Manual. Cartegraph forms have also been revised.
7. Review, revise and document procedures for enforcement response. Revise Cartegraph database forms as needed. This was completed prior to the July 1, 2019 deadline.
8. Document procedures for tracking permanent BMPs. Revise Cartegraph database forms if needed. This has been completed. Procedures are documented in the Stormwater Technician Reference Manual.
9. Document training procedures and revise recordkeeping. All training is documented in the Annual Report Documentation spreadsheet maintained by the Stormwater Technician.
10. Document procedures for IGAs, MOUs, etc. This was completed prior to the January 1, 2019 deadline.

## **Section 7. Pollution Prevention/Good Housekeeping For Municipal Operations**

The focus of this area of the Stormwater Program is to reduce the amount and type of pollution that is generated by municipal operations or from municipally-owned properties to the maximum extent practicable. The revised MS4 permit requires the permittee to implement a program to prevent or reduce water quality impacts from pollutants from facilities and operations that they own, operate or perform *within the permit area*. The permit conditions have a range of compliance dates from July 1, 2017 to July 1, 2021.

**Discussion of Elements:** All programs listed were ongoing during 2019.

### **1. Municipal Facility Runoff Control Measures:**

- A. The permittee shall implement control measures to prevent or reduce potential discharges of pollutants to the MS4 from the following municipal facilities: vehicle maintenance facilities, asphalt and concrete batch plants which do not have a separate permit, solid-waste transfer stations and outdoor storage yards with exposed stockpiles of materials.
- B. The permittee shall implement the following categories as necessary to prevent or reduce the pollutant sources present: preventative maintenance, good housekeeping, spill prevention and response procedures, structural control measures, evaluation of non-stormwater discharges and employee training.
- C. The permittee shall implement written municipal facility inspection procedures which, at a minimum, must include:
  - An annual visual inspection of each applicable municipal facility
  - Verification that written facility procedures and documentation reflect current conditions
  - Observation of locations and areas where stormwater is discharged from a facility
  - Observation of facility conditions, including pollutant sources and control measures.

The recordkeeping requirements for the above permit requirements include the following for each facility:

- Facility identification
- Description of all pollutant sources
- Control measures implemented
- Staff responsible for implemented control measures
- Description of control measures implemented for bulk storage structures

- Inspection records which contain the following: Inspection date, Inspector, Facility ID, Inspection findings including any evidence of polluted discharges leaving the facility and a list of follow-up actions if needed.

Most of these requirements were already being met through the previous permit’s requirements. A Pollution Prevention Operations and Maintenance Manual had been created and implemented on January 1, 2010. The manual was reviewed and revised prior to the July 1, 2017 deadline. No revisions to the manual were implemented during 2019.

A database of all municipal facilities is kept in Cartegraph. Currently there are 63 municipal facilities of which 13 are outside of the permit area. All of the required information is tracked in the database, including inspections. The forms in Cartegraph were reviewed and revised to ensure that all required data is recorded. Two new forms were created to address pollutant sources and pollution potential for each facility in 2017. The following table shows the number of facilities under each City department.

<b>Department</b>	<b>Total # of Facilities</b>	<b># outside of Permit Area</b>
<b>Facilities</b>	2	1
<b>Parks</b>	39	4
<b>Stormwater</b>	6	2
<b>Streets</b>	1	1
<b>Water Distribution</b>	13	4
<b>Water Treatment</b>	2	0

Every effort is made to inspect all municipally owned facilities (including parks) annually. In the event of time constraints, priority is given those facilities which rate higher on the pollution source and pollution potential evaluations. Courtesy inspections are conducted on those facilities outside of the permit area. The results of the inspections are sent to the appropriate department heads. In 2019, 39 inspections were conducted – 29 annual inspections, 7 courtesy inspections and 3 initial. Just over 6 hours were spent inspecting municipal facilities at a cost of \$258.36.

**2. Municipal Operations and Maintenance Procedures:** The permit requires the implementation of control measures that prevent or reduce discharges from applicable municipal operations (activities). The minimum municipal operations that must be addressed include:

- Operation and maintenance of streets, roads, highways
- Operation and maintenance of municipal parking lots
- Operations at maintenance storage yards
- Operations at maintenance shops with outdoor storage areas
- Operation and maintenance of snow dumps/snow disposal areas
- Operation and maintenance of sites used for temporary storage of sweeper tailings or other waste piles
- Park and open space maintenance
- Building maintenance
- New construction of municipal facilities
- Application of pesticides, herbicides and fertilizers
- Large outdoor festivals and events
- Municipal construction activities
- Maintenance, replacement and construction of utilities and the storm system



The Pollution Prevention Operations and Maintenance Manual covers each of these areas in detail, providing standard operating procedures for each department in order to reduce or eliminate any pollutants which may be discharged during municipal activities.

**3. Nutrient Source Reductions:** The permittee must implement a program to prevent or reduce nitrogen and phosphorus in stormwater runoff associated with municipal facilities and operations. The City of Cañon City must evaluate, identify and document municipal operations and facilities that have the potential to contribute nitrogen and phosphorus to stormwater runoff and ultimately to the Arkansas River and Four Mile Creek. The City must then implement control measures to prevent or reduce this from happening. These requirements have a compliance deadline of July 1, 2020.

The Pollution Prevention Operations and Maintenance Manual addresses operations and procedures to reduce or prevent nitrogen and phosphorus in stormwater runoff from municipal facilities and operations. The Cartegraph database forms provide for the evaluation, identification and documentation of the facilities with the potential to contribute nutrients to runoff, as well as the types of control measures implemented to prevent or reduce pollutants from leaving the facility.

**4. Outdoor Bulk Storage Structures of More Than 55 Gallons for Petroleum Products and Other Liquid Chemicals:** The permit requires secondary containment or equivalent protection for any bulk storage structures. Currently municipal facilities within the permit area do not have any bulk storage structures which meet the permit requirements. If at any time such structures are installed within the permit area, secondary containment or equivalent protection will be provided. This requirement has a compliance deadline of July 1, 2021. Secondary containment was installed around the Magnesium Chloride container at the Public Works facility in 2018. This facility is outside of the permit limits.

**5. Training:** The permit requires that applicable municipal staff be trained to implement good housekeeping and pollution prevention during their regular duties. The training must also include information on trash and its effects on water quality. Municipal Pollution Prevention training was held for new hires and temporary employees on July 17, 2019. The 13 City employees trained included 4 Code Enforcement Officers, 1 Engineering, 1 Facilities, 3 Parks, 3 Streets and 1 Water Distribution. Training materials included a PowerPoint presentation and the MS4 RAINcheck video. In addition the employees each received a copy of the City of Cañon City’s Pollution Prevention O&M Manual. Four Rain Check Pocket Reference books were also given out to interested employees.

Additionally, 9 City employees attended the 2019 Regional Stormwater seminar held on February 13, 2019. The attendees included 2 from Engineering, 3 from Water Distribution, 2 from Streets and 2 from Parks. See Section 5.7 for further details on the seminar.

In addition to the permit requirements The City of Cañon City also conducts inspections on other drainage and stormwater infrastructure such as drainage channels, storm drains, manholes and culverts. Each has its own database in Cartegraph in which is recorded data and inspections on each asset.

<b>Channels</b>	<b>Private</b>	<b>Municipal</b>
<b>Annual</b>	2	22
<b>Complaint</b>	0	1
<b>Construction</b>	0	1
<b>Re-inspection</b>	1	0

The City of Cañon City has jurisdiction over 58 drainage channels; 30 are under private custodianship. During 2019, 27 inspections were conducted on channels. The adjacent chart shows the breakdown for inspection types.

Storm drains are mapped and categorized as part of our Stormwater Program. A percentage of those are inspected yearly. A total of 1,114 storm drains have been identified and mapped to date. Of these, 705 are under municipal jurisdiction, 99 are under county/state/federal jurisdiction and 310 are under private jurisdiction. Like outfalls, inlets are assigned to a primary category in the Cartegraph database. The categories are Irrigation, Irrigation Box, Irrigation Clean-out, Overflow, Storm Clean-out and Storm Inlet. Irrigation boxes/clean-outs and overflows are only mapped when they have the potential to also receive stormwater runoff or are connected to pipes under City streets. The breakdown for each category as well as the number mapped during 2019 (new, previously identified but unmapped and rebuilt/moved inlets) is detailed in the following table.

<b>Category</b>	<b>Total Number</b>	<b>Number Mapped in 2019</b>
Irrigation	2	1
Irrigation Box	3	1
Irrigation Clean-out	229	1
Overflow	16	0
Storm Clean-out	40	2
Storm Inlet	824	0

Sixty-eight inlet inspections were conducted during 2019. The following table shows the inspections done per category of inlet.

<b>Category</b>	<b>Complaint</b>	<b>Courtesy</b>	<b>Initial</b>	<b>Maintenance</b>	<b>Other</b>	<b>Routine</b>
Irrigation	0	0	1	0	0	0
Irrigation Box	0	0	1	0	0	0
Irrigation Clean-out	1	0	3	0	0	1
Overflow	0	0	0	0	0	1
Storm Clean-out	0	0	3	0	0	3
Storm Inlet	3	1	3	2	1	44

Storm manholes are also mapped and categorized as part of our Stormwater Program. A percentage of those are inspected yearly. A total of 218 storm manholes have been identified and mapped to date, but data still needs to be collected for many of them. Of these, 172 are under municipal jurisdiction, 15 are under county/state/federal jurisdiction and 31 are under private jurisdiction. Like outfalls and inlets, manholes are assigned to a primary category in the Cartegraph database. The breakdown for each category as well as the number mapped during 2019 (new, previously identified but unmapped and rebuilt/moved manholes) is detailed in the following table.

<b>Category</b>	<b>Total Number</b>	<b>Number Mapped in 2019</b>
Combination Irrigation/Storm	12	0
Dry Well/Clean-out	4	0
Irrigation Clean-out	20	0
Storm Manhole	177	4
Storm Sump Manhole	1	0
Vault Access	1	0
Vault Clean-out	3	0

Six manhole inspections were conducted during 2019. Of these inspections 2 were initial inspections, 1 was a maintenance inspection and the remaining 3 were routine inspections.

The culverts database currently contains 578 culverts. The City of Cañon City has jurisdiction of 435; 50 are under county/state/federal jurisdiction and 93 are under private jurisdiction. Culverts are divided into two categories based upon the primary type of flow they receive: drainage or irrigation flow. Of the culverts in the database, 402 are classified as drainage and 176 are irrigation. There were 36 inspections conducted on culverts during 2019. All were routine inspections with the exception of one inspection conducted due to a complaint.

Data entry into the storm pipe database began in 2016. Pipes are assigned to a category based on the primary type of flow they carry. The categories are Groundwater, Irrigation, Non-Potable, Potable, Stormwater, Stormwater Siphon and Waste. Currently the database contains 1,916 pipes. The City of Cañon City has jurisdiction over 936 of the pipes; 153 are under county/state/federal jurisdiction and 827 are under private jurisdiction.

Inspections of various stormwater infrastructure such as channels, storm drains, outfalls, manholes and culverts took about 43.5 hours during 2019, at a cost of \$1,846.31. Cartegraph OMS allows for tracking of other tasks such as vegetation management, debris removal, cleaning and repair of municipal stormwater infrastructure along with the associated costs. During 2019, approximately 1,193.75 hours were spent by City employees on stormwater infrastructure maintenance. A total of \$108,820.89 was spent on maintenance tasks by City employees and by the City vegetation management contractor.

Stormwater infrastructure projects completed during 2019:

- Maintenance, repair and replacement of storm water infrastructure in conjunction with the 2A Streets Projects on Main Street, Forge Road, North 12<sup>th</sup> Street, Myrtle Avenue and South 4<sup>th</sup> Street.
- Began design of stormwater capital improvements funded through the Certificates of Participation issued in 2019, for the eight million dollar stormwater capital improvement project. The improvements include the Dawson Ranch/Wolf Park culverts, North 9<sup>th</sup> Street storm sewer replacement, Abbey-Rhodes Avenues drainage improvements and the NE Cañon-WPA drainage improvements.

**Action Items for New Permit Requirements:**

1. Document SOPs for selection, installation, implementation and maintenance of control measures. Prepare Municipal Facility Runoff Control Plans. [This was completed by the July 1, 2017 deadline.](#)
2. Review current SOPs for municipal facilities, revise as necessary. Revise Cartegraph forms as necessary. [This was completed by the July 1, 2017 deadline.](#)
3. Document inspection procedures and revise Cartegraph inspection forms if necessary. [This was completed in 2017, prior to the July 1, 2019 deadline.](#)
4. Review current SOPs for municipal operations, revise as necessary. [This was completed by the July 1, 2017 deadline.](#)
5. Identify, evaluate and document operations and facilities which have the potential to contribute nutrients to the MS4. Create new or revise existing SOPs. [This was completed in 2017, prior to the July 1, 2020 compliance deadline.](#) Implement control measures as necessary. [This will be completed by the July 1, 2020 deadline.](#)
6. Identify sources needing secondary containment, install the containment and document. Currently no municipal facilities within the permit area require secondary containment. [This was done prior to the July 1, 2021 deadline.](#)
7. Review training procedures and documentation. Revise as necessary. [This was completed.](#)

In addition to duties conducted to meet the City of Cañon City's Stormwater Discharge Permit requirements, Stormwater and Engineering personnel also perform additional duties, attend trainings, conferences and meetings of associations the City is a member of. Information on these items follows:

### **Trainings and Conferences:**

1. Subsurface Utility Engineering Requests through Colorado 811
2. SeeClickFix training
3. "Why BMPs Do Not Prevent Erosion or Sediment Discharges" webinar
4. MS4 Inspector Training
5. Colorado Association of Stormwater and Floodplain Managers annual conference

**Memberships/Partnerships:** The City of Cañon City is a member of, or involved in, several councils and associations. The following meetings were attended during 2019:

A. Colorado Stormwater Council (CSC): Cañon City's representative to the CSC attended 8 membership meetings; 4 via conference calls.

B. Urban Drainage and Flood Control District (UDFCD): UDFCD began hosting quarterly meetings with the CDPHE staff again in 2016. Four meetings were attended during the year either through conference calls or in person.

C. The City of Cañon City is a member of the Colorado Association of Stormwater and Floodplain Managers. The annual conference was attended by the City Engineer.

D. The Stormwater Program is also a member of the Southern Colorado Stormwater Education Committee, along with the City of Pueblo, Pueblo County, Pueblo West Metro District and CSU-Pueblo. The committee hosts a seminar each year for construction stormwater education and training of contractors, developers, engineers and municipal employees.

E. A Stormwater Task Force committee was formed in 2017 in partnership with members of the Cañon City Council, Fremont County Commissioners and the Hydraulic Ditch Company. Meetings are mediated by a representative from the Upper Arkansas Area Council of Governments. The mission of the task force is to create a road map to address stormwater issues, in particular funding stormwater infrastructure improvements. The task force has facilitated the funding of a study of the Abbey Detention Basin and stormwater flows intercepted by the Hydraulic Ditch. The latter study will also identify potential primary projects to alleviate some of the flooding of the ditch and surrounding areas. The task force is also working on the concept of an expanded Stormwater Authority which would encompass the populated areas around the Cañon City limits which lie in the county and are not currently under a MS4 permit. One meeting of the task force was held in 2019 concerning the finalization of the study on the Hydraulic Ditch.

F. Stormwater and Engineering personnel participated in the Stormwater Projects Prioritization Committee which was formed to analyze and recommend projects to Cañon City Council for the expenditure of the eight million dollars for stormwater capital improvements funded through Certificates of Participation. The committee was comprised of City employees, council members and local citizens.

G. Stormwater and Engineering personnel also met with representatives from the Dawson Ranch and Wolf Park HOAs and ICON Engineering concerning the culvert replacement project and with property owners along the proposed WPA improvement project.

H. Stormwater and Engineering personnel also attended meetings of the Pueblo Community College – Fremont Campus Crossroads Committee concerning possible flood mitigation along North Sand Creek.