STORMWATER UTILITY 2023 ANNUAL REPORT

(Big Dry Creek)

WESTMINSTER

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Introduction

The City of Westminster's Stormwater Utility was established in 2001 and provides a wide range of services to the community to promote sustainability, environmental protection, capital improvements, asset management and regulatory compliance. These include:

- Maintenance of existing city-owned drainage facilities (creek channels, pipes, inlets, manholes),
- Funding for capital improvements to the city-owned drainage system (creek channels, pipes, inlets, manholes),
- Water quality monitoring of Big Dry Creek and Little Dry Creek,
- Street sweeping,
- Emergency response to flooding during and after significant storm events,
- Emergency spill response and remediation for hazardous spills,
- Household Hazardous Waste Pick-Up Program,
- Public education and outreach,
- Construction site inspection program,
- Post-construction (detention pond) site inspection program,
- State MS4 permit compliance; and
- Floodplain Administration for compliance with FEMA and Army Corp regulations.

The city's Stormwater Utility is funded from monthly fees charged to residents and businesses. The city's Geographic Information System (GIS) staff determine stormwater fees and maintain an inventory of both impervious surface areas and stormwater infrastructure (i.e., pipes, inlets, ponds, etc.) throughout the city. Residential single-family homes pay a $6.00 flat fee, which forms the basis for all stormwater fees in the city. Considering the average home in Westminster has 3,100 square feet (sq. ft.) of impervious surface, other residential and commercial properties are billed $1.94 per 1,000 sq. ft. of impervious surface ($6.00 / 3100=.001935 * 1000 = $1.94). Once these fees are calculated, the city's Utility Billing Division incorporates them into monthly water bills for each customer (residential and commercial). A recent survey of municipalities has placed Westminster in the lower third in respect to fees, with Erie being the highest at $25.00 per month.

These fees are deposited into the city's Storm Drainage Fund. This enterprise fund was created in 2001 to provide resources to maintain the city's storm drainage system and comply with the requirements set forth in the state-administered Municipal Separate Stormwater System (MS4) permit. This permit is federally mandated in accordance with the Clean Water Act of 1972. Since the fund's creation, its use has been expanded to

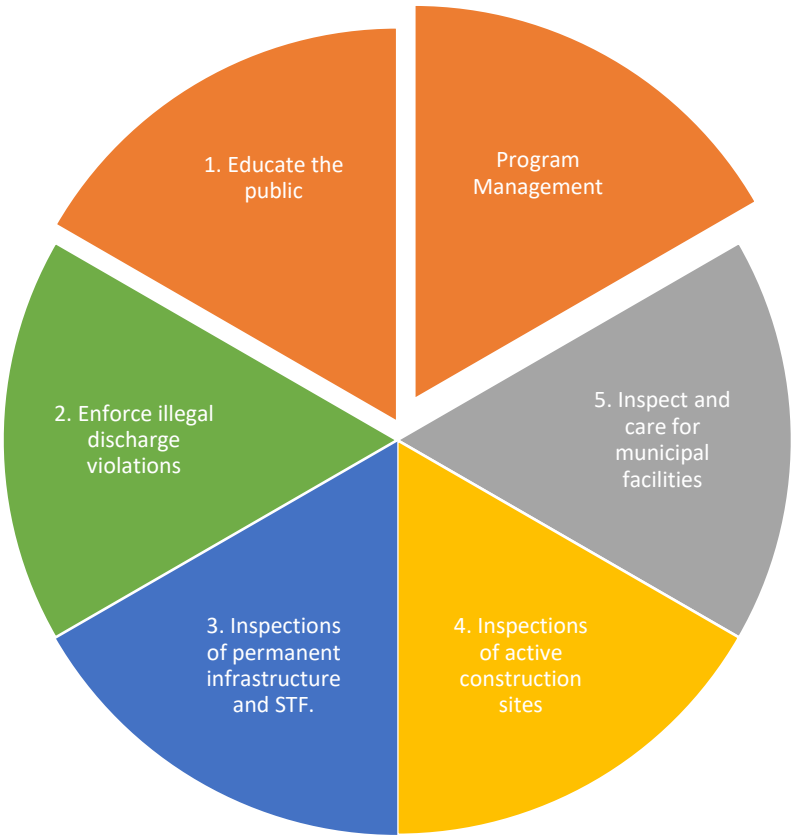
include sustainable operations, infrastructure investment and reinvestment, and activities to protect the city's waterways.

This report highlights the value added to the community through the use of stormwater fees in 2023.

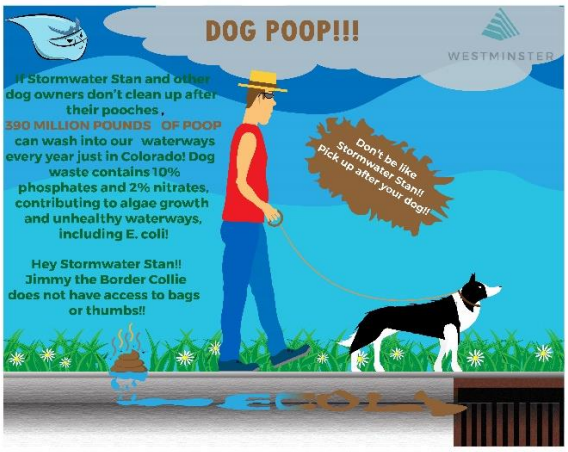
State Permit Compliance

A driving factor for all of the accomplishments described in this report is compliance with the state MS4 permit. Polluted stormwater runoff from urbanized areas is commonly transported through storm sewers, and then often discharged, untreated, into local water bodies. Permit requirements are in place to require local jurisdictions, like Westminster, to conform to best practices for engineering design, pollution prevention, public education, and facility operations to reduce the level of pollution in waterways from urban runoff.

Westminster has operated under an MS4 permit since 2003 when they were first issued the permit by the Colorado Department of Public Health and Environment. The city's current permit, effective July 1, 2016, is 63 pages long and describes requirements in five broad categories:



1. Public Education and Outreach: Educate residents and members of the business community to help reduce water quality impacts associated with pollutants in stormwater runoff.



2. Illicit Discharge Detection and Elimination: Develop, implement and enforce a program to detect and eliminate spills, illegal dumping and other non-stormwater discharges into the City's storm sewer system.
3. Post-Construction Stormwater Management: Prevent or minimize impacts to stormwater from new development or redevelopment by ensuring that stormwater treatment facilities (e.g. SFT's, detention ponds, rain gardens) operate as designed and are maintained.
4. Construction Site Pollutant Control: Develop, implement and enforce a program to reduce the discharge of pollutants from construction activities.
5. Pollution Prevention/Good Housekeeping for Municipal Operations: Develop and implement an operation and maintenance program to prevent or reduce pollutants from municipal operations.

In November 2019, the city conducted an internal full program audit, ensuring compliance with state and federal environmental regulations. City staff are very passionate about water quality and would like to leave it to the next generation in

better condition than it is now. We strive to not only make Westminster the most sustainable city in the nation, but also one in which our residents are proud to live in.

Maintenance by the City and Volunteers

As development increases throughout the city, drainage infrastructure will lose the capacity to handle the amount of water for which it was designed. Sediment, trash, debris, and chemical pollutants are washed into the drainage system, which then accumulates, eventually overwhelming the capacity of inlets, channels, culverts and pipes. This can lead to an increased flood risk, resulting in property damage.

The Stormwater Utility is dedicated to minimizing flood damage to property by ensuring the stormwater system is clear of debris and functioning properly. The Stormwater Utility works closely with other groups in the City, including the Streets Division and Parks, Recreation and Libraries Department, to accomplish this goal:

- Our Streets Division is an integral part of the stormwater program and is responsible for street sweeping. Public streets within City limits are swept quarterly.

- The City's Parks, Recreation and Libraries Department is a vital contributor in the Stormwater Utility's success by managing contracts for detention basin maintenance, dog and goose waste control, and waste management throughout the city, totaling approximately $250,000.

In 2023, the following routine work was completed:

2023 Maintenance			
Division	**Maintenance Type**	**Number of Projects/Miles**	**Cost**
Stormwater Utility	Drainage Maintenance	45 projects	$356,803.40
Streets	Street Sweeping	4,123 curb miles	$230,415.28

Drainage Maintenance Project:

Before

After

Street Sweeping

The City's Open Space Division and City volunteers contribute greatly to the success of the Stormwater Utility. The preservation of City open space is extremely important not only for stormwater and floodplain management, but also for aesthetics and overall environmental health. Open space provides pervious areas, which act as natural buffers for stormwater, helping to reduce the volume of water entering our waterways along with providing water quality. Our Open Space Division also provides education and outreach to the residents of Westminster by organizing fantastic events and projects.

The City organizes two waterway cleanup events each year:

- The Great Global Cleanup in April, and
- The Honor the Land and Stream in November.

The 2023 Great Global Cleanup volunteer event drew in 1,150 volunteers while the fourth annual Honor the Land and Stream waterway cleanup event drew in approximately 95 volunteers. If you are interested in signing up for future, please email the City at ggc@cityofwestminster.us and hls@cityofwestminster.us. **We couldn't do it without all of our awesome volunteers!**

In 2023 the City's Stormwater Utility team partnered with Westminster High School and Mountain Range High School to provide local high school students the opportunity to assist City staff in painting stormwater inlets. Through this partnership City staff, Westminster High School staff and students, and Mountain Range High School staff and students worked together to beautify, and ultimately, bring attention to local stormwater inlets and associated sidewalks. To see this year's artwork, stop by Front Range Community College, Westminster RTD Station, or Mountain Range High School!

Great Global Cleanup

Honor the Land and Streams

Stormwater Inlet Painting

City Construction Projects

The City's stormwater engineers are responsible for the construction of several drainage projects every year. Before construction begins, there are multiple steps the City and contractors must take to assure the effectiveness of the project. These procedures include:

- Public Outreach - Gathering input from affected or surrounding property owners during the design process,
- Designing the improvements and preparing plans,
- Acquiring the necessary easements for the proposed work,
- Appropriating funding from the Stormwater Utility along with the Mile-High Flood District (District) (when applicable),
- Advertising and receiving bids from contractors, and
- Notifying adjacent/surrounding property owners of the construction activities.
- Construction of capital improvements.
- Planting trees and vegetation and maintaining through establishment.

The Stormwater Utility often partners with the Mile-High Flood District (District) to improve and maintain major drainageways. They provide technical expertise and funds for many of the City's stormwater projects. District funds are derived from a property tax collected throughout the participating metro area communities and counties. The Districts' mill levy was increased in 2018, allowing for expanded support and services. Obtaining District funds for major improvement projects requires the City to match funds. However, maintenance projects and routine maintenance activities do not require matching funds from the city. The City typically receives about $200,000 in maintenance work paid for by the District each year.

The following project summarize some work highlights from 2023.

Streambank Stabilization at Westcliff:

The City of Westminster teamed up with the District to improve Big Dry Creek's water quality and flood management capabilities, and make it more resilient to intense storm runoff events. Ultimately, we will be repairing and stabilizing streambanks from Wadsworth Boulevard to 112th Avenue. In the first quarter of 2023, we began with the section of Big Dry Creek between Wadsworth Boulevard and Westcliff Parkway. Phase I of this project was completed from January 2023 to April 2023. Phase II of the project began in December 2023 and will be substantially completed by February 2024. The next project will occur throughout City Park and will begin in late winter/early spring of 2024.

These projects will address Big Dry Creek's stream erosion, instability, flood management, and maintenance needs. Years of urban runoff has led to steep, unsafe streambanks. This erosion is compromising sewer pipes and trails, which require

protection from further damage. Mitigating these risks will allow our community to continue to safely enjoying activities along the Big Dry Creek for years to come.

Typical project work includes site-specific construction activities that rebuild and reestablish existing, neglected, or damaged drainage facilities with structural problems, such as:

- Local channel grading, stabilization, and replanting
- Vegetation management
- Trash and debris cleanup
- Weed and noxious vegetation control
- Tree thinning
- Sediment removal
- Revegetation
- Reconstructing or replacing grade control structures, box culverts and retaining walls

More information on this project can be found on the City's website (https://www.westminsterco.gov/streambankrestoration).

Before Streambank Stabilization:

After Streambank Stabilization:

2023 Asset Management Program

The City of Westminster's Stormwater Infrastructure Assessment project continued throughout 2023 to evaluate and, in some cases, find stormwater infrastructure throughout the city. Assessments, such as these, are common for sanitary sewer and drinking water lines but have only recently been applied to stormwater lines in the United States. Westminster is the first community in Colorado to perform this service.

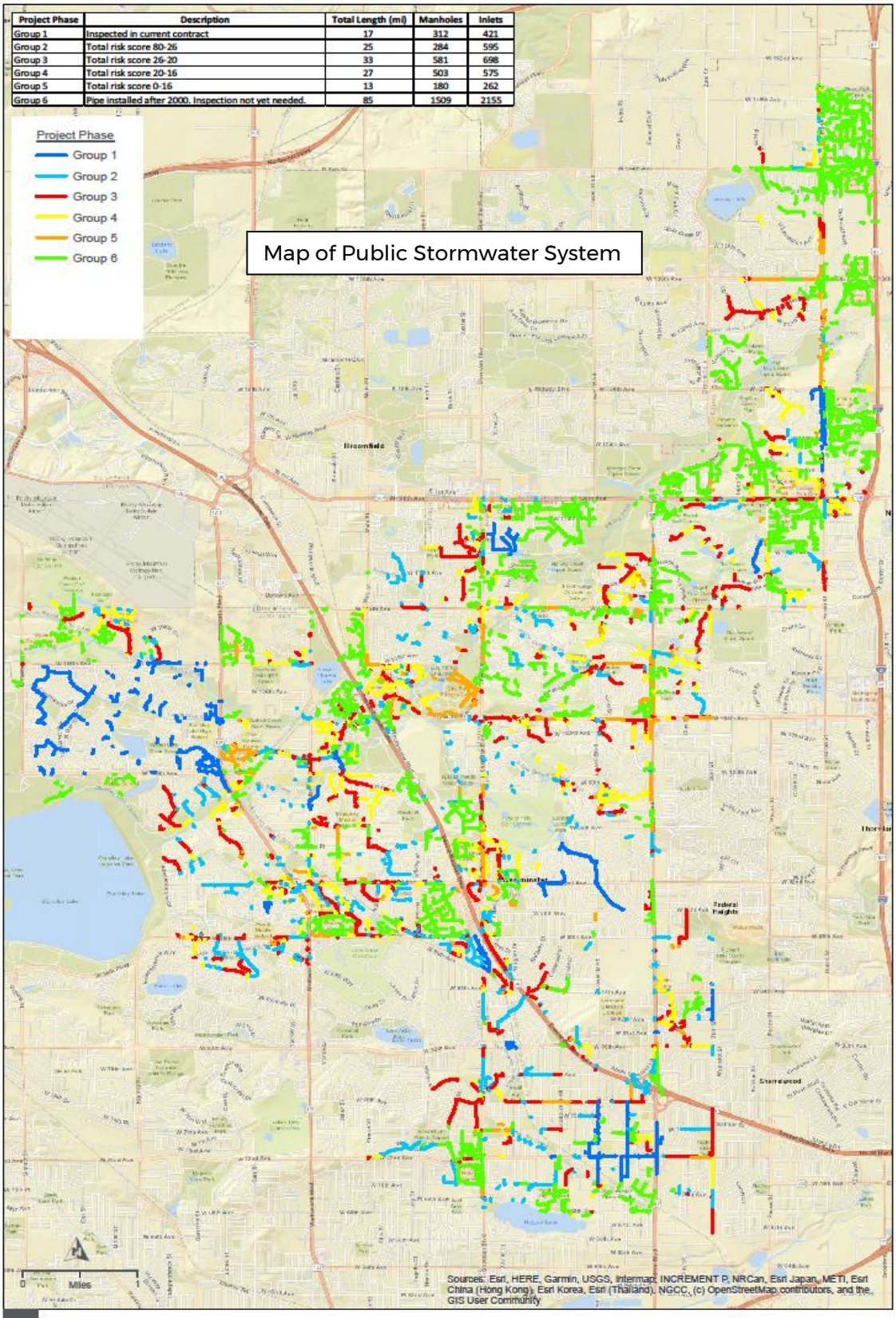
The City owns an estimated $600,000,000 of storm pipe, inlets, outlets and manholes based on 2023 replacement costs, including $150,000,000 of pipes, inlets and manholes located within CDOT right-of-way that was legislated to be the City's maintenance and replacement responsibility. Altogether, the City is responsible to repair and/or replace a $600,000,000 asset consisting of approximately 217 miles of pipe and over 8,000 manholes, inlets and outlets owned and maintained by the City. This does not include privately-owned infrastructure; taking this privately-owned infrastructure into account would add approximately 50% more in cost.

Separated Outfall Pipe

Collapsed Outfall Pipe

The value of the public system is around $500M and has a 50-year design life. The city implemented national standards for inspection and classifying storm drainage pipes, manholes, inlets and outlets. The City's mapping data has been outdated for several years and, in older sections of Westminster, the pipe alignments were merely a best guess due to lack of records. Locating buried pipes relied heavily on institutional knowledge and, as a result, some pipe damages occurred during construction projects due to inaccurate location marking. Updating this information will reduce these damages in the future and prevent costly repairs.

Project Phase	Description	Total Length (mi)	Manholes	Inlets
Group 1	Inspected in current contract	17	312	421
Group 2	Total risk score 80-26	25	284	595
Group 3	Total risk score 26-20	33	581	698
Group 4	Total risk score 20-16	27	503	575
Group 5	Total risk score 0-16	13	180	262
Group 6	Pipe installed after 2000. Inspection not yet needed.	85	1509	2155



HDR

STORMWATER CONDITION ASSESSMENT PHASING

FIGURE 2 CITY OF WESTMINSTER

Over the next few years, the public stormwater drainage system will be fully mapped, inspected and captured on close-circuit television (CCTV) media. This information will be integrated into the City's existing geographic information system (GIS). The stormwater group will be categorizing the inspection results for criticality and risk to prioritize areas for immediate repairs, minor repairs, pipe lining, maintenance and future monitoring. The project will also recommend a level of service for the stormwater program to address future preventative maintenance of the system.

Household Hazardous Waste Program

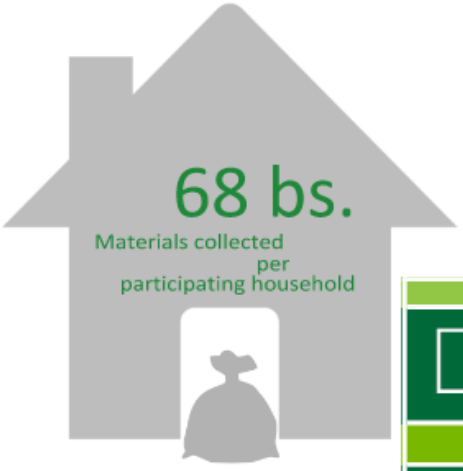
In an effort to prevent hazardous wastes from entering the storm system the City of Westminster offers a door-to-door household hazardous waste (HHW) collection program to collect and properly dispose of or recycle HHW directly from single and multifamily residences within the city boundaries. This program is designed for Westminster residential use only with items derived from retail sales to the general public. Items must relate to reasonable activities of a homeowner and resident such as car care, lawn and garden care, pool cleaning, home maintenance, health care, recreation, and arts and crafts. The program will not accept wastes that derive from commercial activity including home improvement contractors.

Residents have the ability to call and schedule inspections from 6:00 a.m. to 7:00 p.m. Monday through Friday or schedule a collection electronically via website. For more information on this free program, please visit:
https://www.cityofwestminster.us/Residents/TrashRecycling/Recycling/HouseholdHazardousWaste

2023

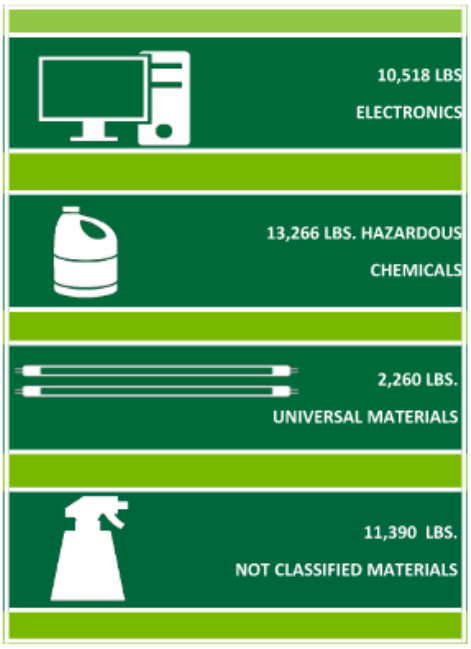
ANNUAL REPORT

WEST MINSTER, CO



84%

Materials sent to be recycled



WM
WASTE MANAGEMENT

At Your Door

Special Collection℠

Illicit Discharge Detection and Elimination (IDDE) Program

An illicit discharge is defined as any discharge that is not composed entirely of rainwater or snowmelt. According to the US EPA's 2000 National Water Quality Inventory, 39% of assessed river and stream miles, 46% of assessed lake acres, and 51% of assessed estuarine square miles do not meet water quality standards. The top causes of impairment include siltation, nutrients, bacteria, metals (primarily mercury), and oxygen-depleting substances. Polluted stormwater runoff, including runoff from urban/suburban areas and construction sites, is a leading source of this impairment.

The City maintains an IDDE program that is managed by the Stormwater Utility staff City operations and maintenance staff and construction site inspectors also play an important role in identifying illicit discharge problems and responding to clean-up requests. However, all Public Works, Community Development, Parks, Police, and Fire Department staff across the city, along with the public, play a huge role in locating, identifying and reporting potential illicit discharges. The total discharge reports identified in the table below summarize the total amount of calls/complaints to the city. *Please note that not all reports lead to escalated enforcement, some discharges are not identified upon further investigation and often times a responsible party is not identified.*

2023 Illicit Discharge Program	
Total Illicit Discharge Reports	80
Verbal Warnings/Education	15
Escalated Enforcement	0
Remediation Costs	$13,333.10

To report an illicit discharge, please contact the Stormwater Hotline at 303-706-3367 or email us at stormwaterhotline@cityofwestminster.us. **Please provide the nature of the discharge, pictures of the discharge (if available) and the responsible party (if applicable).**

Illicit Discharges

WHAT IS AN ILLICIT DISCHARGE?

Any discharge to the storm sewer system that is not composed entirely of stormwater, except discharges that are exempt under Westminster City Code 8-11-8.

WHAT IS THE STORM SEWER SYSTEM?

Systems including pipes, ditches, culverts, swales, curbs, gutters and waterways that convey stormwater downstream.

ARE THESE ILLICIT DISCHARGES REALLY THAT BIG OF A DEAL?

Yes!!! The substances that flow into the storm sewer system are UNTREATED, and can seriously damage water quality, having major impacts on aquatic life and public health!
The City can also fine you **$999** *per violation per day!! (W.M.C 8-11-10)*

How Do I Report Illicit Discharges and Where Do I Learn More??

Stormwater Holtine:
303-706-3367

City website:
www.cityfwestminster.us/stormwater

Grease Overflow near Storm Inlet:

Trash Overflow near Storm Inlet:

Construction Site Inspection Program

To comply with current permit requirements, the City's Stormwater Utility started a new citywide construction site inspection program in the fall of 2017. The purpose of the program was to verify that appropriate stormwater control measures were in place and properly maintain at every active construction site to prevent pollution of the City's storm sewers and waterways. Inspections are conducted by city staff and documented in digital reports with photographs. Where deficiencies and city code violations exist, construction site managers are required to respond in writing with a description and photos of their corrective actions.

Well Maintained Stormwater Control Measures:

Poorly Maintained Stormwater Control Measures:

If a pattern of violations exists, city staff will escalate enforcement actions, including stop work orders, notices of violation, and fines. The goal of enforcement is always to educate, ensure compliance and prevent pollution.

2023 Construction Site Inspection Program	
Construction Sites Inspected	33
Total Inspections Conducted	594
Notices of Violation	10
Stop Work Orders	1
Fines Issued	0

Stormwater Treatment Facility (STF) Program

STFs are permanently constructed facilities or technologies designed to improve the quality of stormwater from roads, parking lots, residential neighborhoods, commercial areas and industrial sites. In addition, STFs reduce flooding by providing temporary storage during larger storm events. STF's include, but are not limited to, extended detention basins, low impact development technologies, and underground storage systems.

Extended Detention Basin (EDB)

Bioretention Basin (Low Impact Development Technology)

The goal of the STF Program is to ensure that STFs are functioning and maintained properly through inspection and providing education and outreach as well as reviewing designs and inspecting all STFs for new development or redevelopment. The City is required to inspect all STF's throughout the city, including those that are municipally owned, equating to roughly 400 facilities. The team works directly with developers, Homeowners Associations (HOA's), private property managers, other City departments and commercial property owners to achieve this goal.

The table below outlines the inspection and follow-up efforts by city staff.

2023 STF Inspection Program	
Developments/Subdivisions	47
Total Inspections	65

Example City-Owned STF at Westminster Station

Floodplain Management

Flooding is a natural process but is also the most common and widespread of all weather-related natural disasters. Flood losses averaged nearly $17 billion per year between 1990 and 2018 in the United States. Floodplains help to store and absorb floodwater to reduce damage to structures from flood events. The City reviews private development projects and City capital improvement projects to ensure that the floodplain is protected.

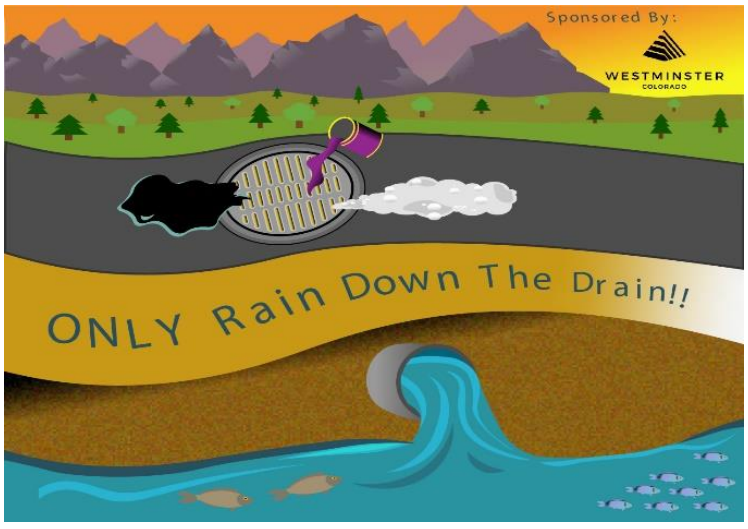
The City is also part of the Federal Emergency Management Agency's Community Rating System (CRS) which is a voluntary incentive program that recognizes and encourages community floodplain management practices that exceed the minimum requirements of the National Flood Insurance Program (NFIP). Over 1,500 communities participate nationwide. In CRS communities, flood insurance premium rates are discounted to reflect the reduced flood risk resulting from the community's efforts that address the three goals of the program:

1. Reduce and avoid flood damage to insurable property
2. Strengthen and support the insurance aspects of the National Flood Insurance Program
3. Foster comprehensive floodplain management

Westminster residents can receive up to a 20% discount on flood insurance premiums.

Lastly, the City provides property protection advice and site visits. If you have flooding on your property and need assistance or require property protection advice or a site visit, please contact the City's Floodplain Manager, Heather Otterstetter at: hotterst@westminsterco.gov or 303-658-2370.

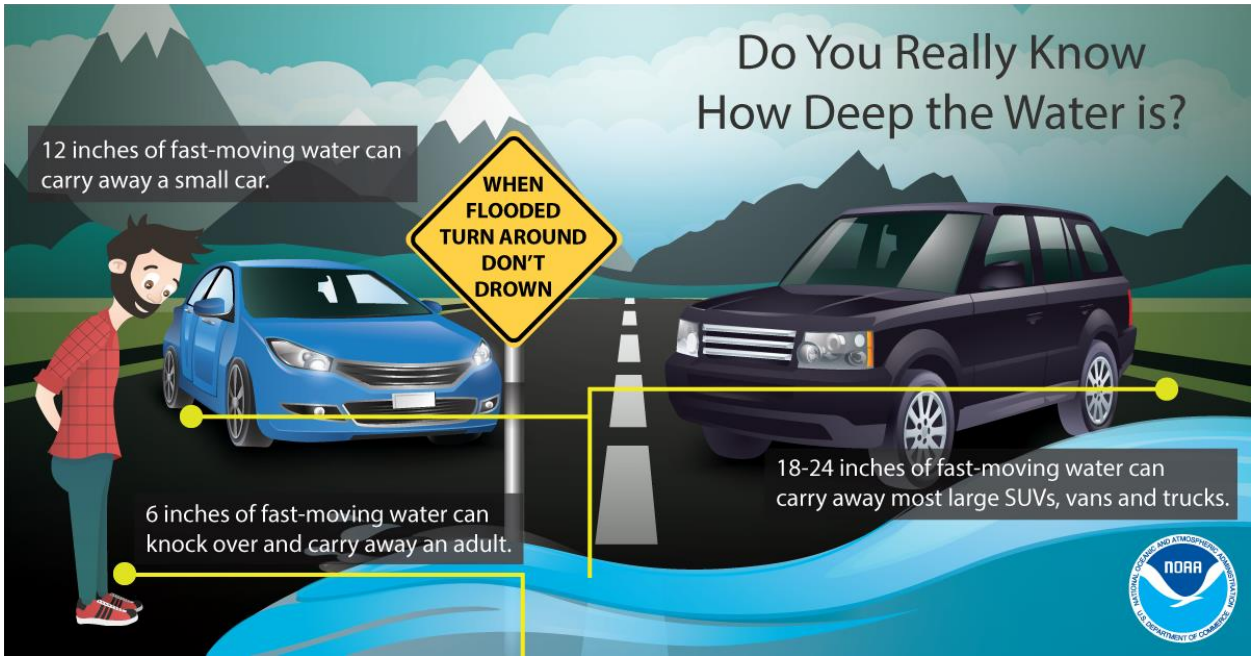
Please help protect our stormwater system and waterways by not dumping into stormwater inlets, ditches or waterways.



Flood Safety

Here are some tips to keep you and your family safe during flood events:

- Don't walk through flowing water.
- Don't drive through a flooded area.
- Stay away from power lines and electrical wires. Report downed power lines to Xcel Energy at 1-200-895-1999.
- Have your electricity turned off by Xcel Energy.
- Don't use electrical appliance that are wet.
- Look out for animals that may have been flooded out of their homes.
- Be alert for gas leaks. Don't smoke or use candles, lanterns or open flames.



Looking Ahead

Continued Streambank Restoration:

Staring in spring 2024, the City of Westminster will continue to improve the Big Dry Creek corridor through additional streambank stabilization efforts. This project is located between West 104th Avenue and Sheridan Boulevard at City Park. Reconnecting the natural floodplain along the Big Dry and Highlands creeks will result in the following benefits:

- Reduced maintenance costs
- A healthier stream
- Improved flood management
- Natural beauty
- More trees
- Nine new pedestrian bridges

Timeline:

- City Park Construction – Winter 2024–Fall 2026
- City Park Vegetation Establishment and Growth – Summer 2026-2031

PROJECT PHASING PLAN

BIG DRY CREEK STREAM RESTORATION | MAY 2023

Old Wadsworth Pipe Installation:

During the first quarter of 2024, the City of Westminster will complete a pipe installation project along Old Wadsworth Boulevard. Previously at this location, surface flows were conveyed via open drainage, in this situation, a roadside ditch. Over the years, as Westminster has continued to develop, surface runoff flows reaching the Old Wadsworth roadside ditch continued to increase causing severe erosion. The current condition consists of a 6-foot deep roadside ditch that is undercutting the roadway and sidewalk and presents a safety concern for pedestrians and drivers. Upon completion of this project, surface flows will be conveyed underground via a 30-inch concrete pipe. The surface will be regraded with a swale, and the area will be revegetated.

This officially documents another year of achievements that support compliance and sustainability! The City's Stormwater Utility Team looks forward to sharing accomplishments and value realized from stormwater fees.

THANK YOU FROM ALL OF US AT WESTMINSTER!

For questions or further information please contact Jacob South at jsouth@westminsterco.gov