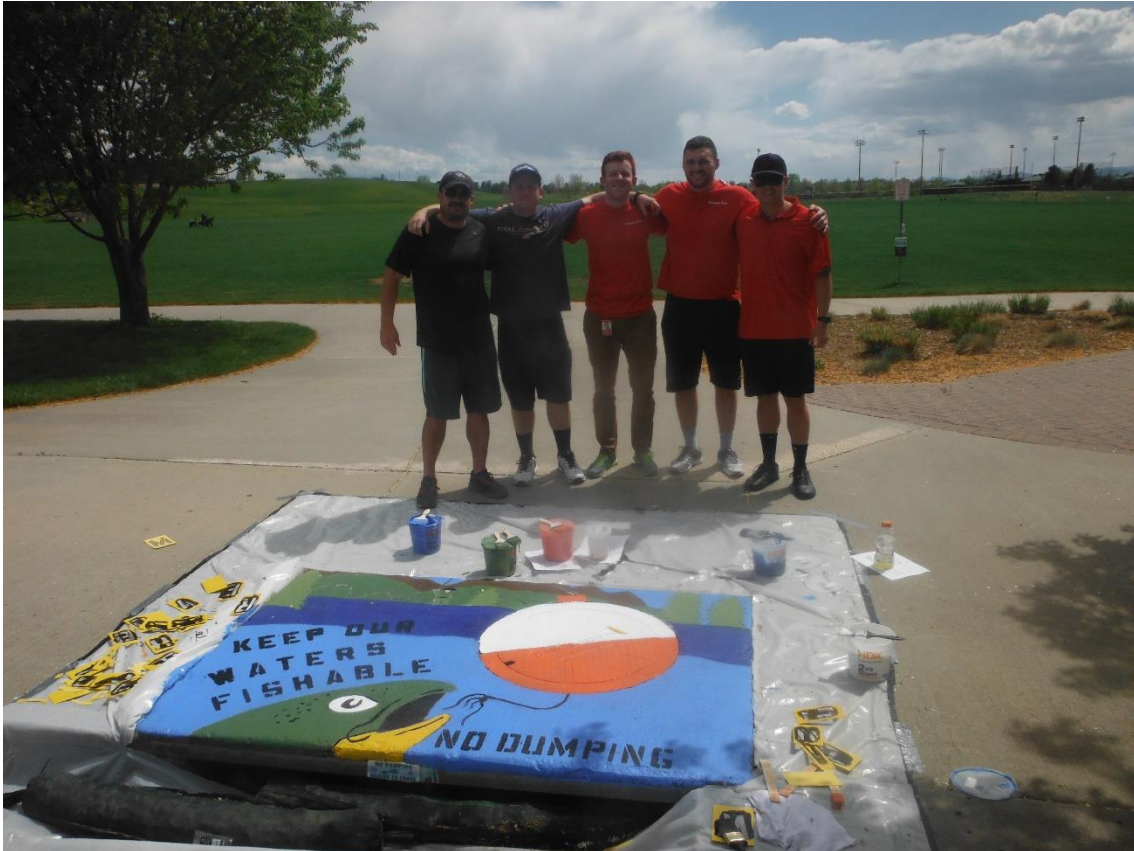




WESTMINSTER



STORMWATER UTILITY

Stormwater Utility 2019
Annual Report

The City of Westminster's Stormwater Utility provides a range of services to the community to promote sustainability, environmental protection, and regulatory compliance. These include:

- Maintenance of existing city-owned drainage facilities,
- Funding for improvements to the city-owned drainage system,
- Street sweeping,
- Emergency response to flooding during and after significant storm events,
- Emergency spill response and remediation for hazardous spills,
- Household Hazardous Waste Program,
- Public education and outreach,
- Construction site inspection program,
- Post-construction site inspection program, and
- State permit compliance.

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 (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).

These fees are deposited into the city's Storm Drainage Fund. This enterprise fund was created in 2001 to provide resources for the city 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 is the second annual report of activities conducted by city staff and highlights the value added to the community through the use of stormwater fees in 2019.

Maintenance

As development increases throughout the city, drainage infrastructure can lose the capacity to handle the amount of water for which it was designed. Sediment, trash, and debris is 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 toward minimizing flood damage to property by ensuring the stormwater system is clear of debris and functioning properly. Our **Streets Division** is an integral part of the stormwater program and is responsible for open drainage maintenance, street sweeping and miscellaneous storm pipe cleaning. In 2019, the following routine work was completed:

2019 Streets Division Maintenance		
Maintenance Type	Number of Projects/Miles	Cost
Drainage Maintenance	12 projects	\$86,422.82
Street Sweeping	1,107 miles of roadway	\$138,559.65
Pipe/Inlet Cleaning	660 feet	\$438.75

The City’s Parks, Recreation and Libraries Department is a vital contributor toward the Stormwater Utility’s success by managing contracts for open drainage maintenance, inlet cleaning, detention basin maintenance, goose waste control and waste management throughout the city totaling approximately \$245,000. In 2019, the following work was conducted:

2019 Parks/Open Space Division Maintenance		
Maintenance Type	Number of Projects/Miles	Cost
Drainage Maintenance	19 projects	\$143,958



Last, but certainly not least, the City’s Open Space Division contributes greatly to the success of the Stormwater Utility. The preservation of City open space is extremely important not only for stormwater 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, organizing fantastic events and projects, such as the Earth Day Festival. In 2019, Open Space organized the second “Honor the Land

and Stream” waterway cleanup project in Westminster, which gathered volunteers to remove trash and debris from the City’s waterways.



Honor the Land and Streams





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:

- 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 revenue along with the Mile High Flood District (District) (when applicable);
- Receiving bids from contractors; and
- Notifying adjacent/surrounding property owners of the construction activities.

The Stormwater Utility often partners with the District to improve and maintain major drainageways. They provide technical expertise and funds for many of the City's stormwater projects. Funds are derived from a property tax collected throughout the special district. 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 and are provided free of charge from the District.

The following page summarizes some project highlights from 2019.

Big Dry Creek and Hylands Creek Embankment Stabilization

In 2019, executive leadership supported the collaboration and partnership between the Stormwater Utility and the Public Works and Parks, Recreation and Libraries departments to focus district and capital improvement funds on the City Park area, where the greatest priorities and needs exist. Coincidentally, the Public Works department had plans to replace the Big Dry Creek sanitary interceptor pipe as a priority project, which is located in the same City Park area.



Through inter-departmental collaboration, the Stormwater Utility will be focusing on drainage improvements within Big Dry and South Hylands Creek through the City Park area to flatten out the existing 15-foot vertically-incised embankments (creek edge) for increased public access and city activity programming. Boulder-sized drop structures will be constructed to mimic the natural cascade of creek water downhill as it flows through the park space. New trails and pedestrian bridges will be added to improve access and increase horizontal space for both bicyclists and pedestrians. Additional park amenities, possibly Pickle Ball courts, are also under consideration for construction in this City Park area. Simultaneous implementation of these capital projects from the three different city departments will ultimately reduce costs and resources in addition to decreasing the total construction time and Big Dry Creek commuter trail closure time. Alternate routes around the trail system will be put in place during construction to keep free flow of commuter cyclists moving through the area.



These Big Dry and South Hylands Creek projects are being combined together into a larger project to address degraded channels and embankments, frequent pedestrian underpass flooding issues, and poor accessibility grades on the trail system. Pre-design is complete on the South Hylands Creek section with final design to be completed in conjunction with the Big Dry Creek portion. The Big Dry Creek pre-design analysis, with alternatives selection and permitting, will begin in 2020 with final design on both creeks immediately following.

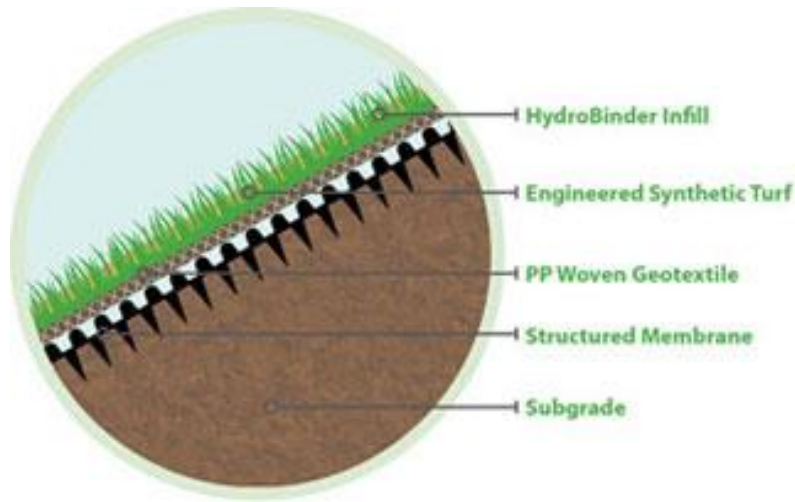


Public participation meetings will be scheduled to hear our citizens' needs and thoughts about the projects. Construction is expected to begin sometime in 2022 and be completed in 2024. Projects like these take several years to accumulate funds, design, permit and execute. Total costs for drainage and creek improvements including trail construction, pedestrian bridge construction and partial sanitary sewer realignment is expected to be around \$7 million with half of the funds coming from Mile High Flood District and half from the stormwater enterprise fund.

Dry Creek Valley Ditch Project

Dry Creek Valley Ditch is located near 100th Avenue and Simms Street running through Westminster, Colorado. The ditch also runs through Broomfield, Colorado into the Great Western Reservoir. This particular segment of the ditch runs through the Countryside subdivision just east of Simms Street and north of 100th Avenue. Within this subdivision, the ditch has been noticeably leaking for several decades. The ditch was constructed in the late 19th century while the subdivision was not constructed until the 1970's. The developers of the subdivision were warned of the leak in the ditch and chose to construct houses adjacent to it anyway. There are four (4) properties with significant standing water and flows through their yards as a result of the leak. The City has invested more than \$220,000 over the last 8 years to try to capture and redirect flows from the leak and into the storm sewer.

To combat this issue, the City installed an advanced revetment system called Hydroturf CS, which is an impermeable fiber-reinforced concrete liner. The installation process involves the placement of a structured geomembrane overlain with a woven geotextile. The geomembrane provides impermeability, while the woven geotextile layer provides a medium for the rest of the system to adhere to. A synthetic turf is then placed over the geotextile, and is infilled with a high-strength cementitious mix. Once this mix is hydrated, all of the layers will cure and harden together to become a single mass of liner.



Before:



After:



2018 Drainageway Study



The City of Westminster contracted Enginuity Engineering Solutions (Enginuity) in 2018 to provide an update to the 2007 Drainageway Study prepared by Muller Engineering Company. The original Storm Drainage Study completed in 2007 was conducted to:

- Identify drainage improvement needs throughout the City;
- Estimate costs for construction and maintenance; and
- Determine prioritization of the identified projects, and inform the city as to the needs for the revenues needed from the Stormwater Utility Fee.

That original study, which identified almost \$75 million of storm drainage improvements has been a foundational tool for the city in determining capital project expenditures as well as developing annual budgets. Over the last 10 years, the city has successfully completed several projects identified in the original study, including five of the 10 major capital projects. With 10 years having passed since the completion of the original effort, the city desired to update the drainage study and build on the original findings. The project kicked off in 2018 and was completed in 2019.

The 2019 scope of work included the following:

- Prioritize and recommend improvements based on the site investigations and updates to the 2007 Drainageway Study;
- Incorporate recently completed major drainageway planning improvements from District studies;

- Estimate costs and prioritize current needs across the system;
- Determine flood risk associated with local stormwater assets, such as detention basins, specifically identifying where backups or failures of outlet structures may result in local flooding; and
- Provide a GIS database of needs and costs that can be used by the City to directly manage future stormwater improvements and maintenance of facilities.

This updated study will provide the city with data and tools to budget and prioritize the most critical areas needing capital improvements and maintenance. In addition, this work will help support asset management and maintenance responsibility as well as state permitting compliance.

FishViews:

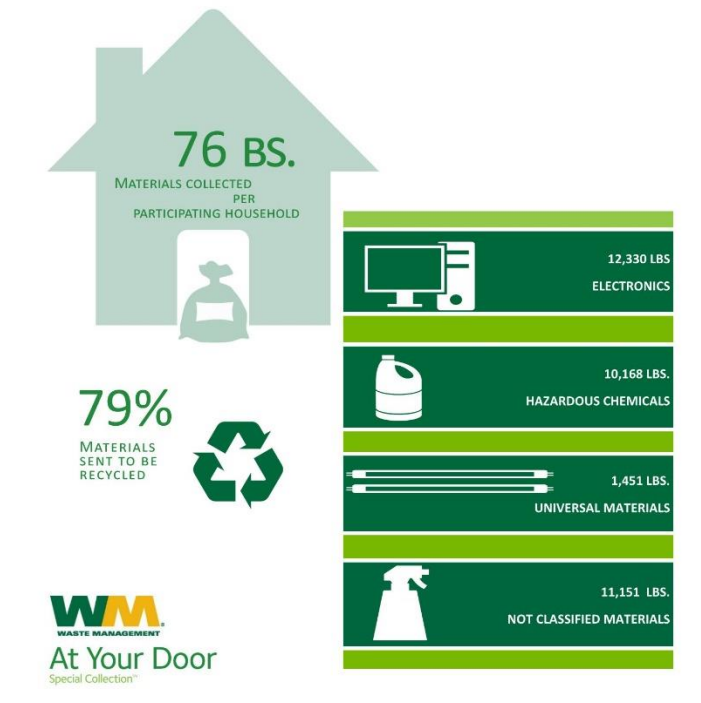
The City has partnered with FishViews to bring a “street view” of all of the 163 miles of drainageways in Westminster. This type of experiment has never been done and will change the way you look at drainageways within your city. FishViews will let you navigate the waterways from your computer or mobile device – revolutionizing the way people gather, analyze and communicate location-based data from waterways. To explore this software, please visit:

<https://fishviews.maps.arcgis.com/apps/MapTour/index.html?appid=da9aac5f1f8848af93a0086c5d29f5b3#>



Household Hazardous Waste Program

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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>

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 percent of assessed river and stream miles, 46 percent of assessed lake acres, and 51 percent 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 in the Engineering Division. 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.*

2019 Illicit Discharge Program	
Total Illicit Discharge Reports	43
Verbal Warnings/Education	8
Escalated Enforcement	3
Remediation Costs	\$63,263.55

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).**

Diesel Fuel Spill (144th Ave. & I-25 exit ramp) - \$20,767.54

Before:



After:



Abandoned Trash Can filled with Petroleum Products (3098 W. 107th Pl.) - \$1,810.11

Before:



After:



Stormwater Mural Project

The city's Stormwater Utility is bringing a nationwide trend to Westminster: integrating public art with public outreach and education around clean water.

Westminster's Stormwater Mural Project is focused on bringing attention to stormwater inlets through colorful murals that are carefully designed to portray a clean water message such as "Only Rain Down the Drain" or "Please Don't Pollute."

In the summer of 2019, three murals were installed at Westminster City Park in the northwestern parking lots. The murals were designed by Westminster staff and painted by volunteer teams from Key Bank. Murals like these are expected to last at least several years and will be monitored and maintained by the Stormwater Utility in the years ahead.

Efficient public education is one of the primary goals for the city's Stormwater Program and we at the city feel that this project is a way to provide this education while involving members of our community. The Stormwater Team plans to expand this program throughout the city, eventually involving local schools and artists alike.

Westminster City Park (far west) – “Scuba Fish”



Westminster City Park (northwestern lot) – “Fisherman”



Westminster City Park (far east) - "Gon' Tubing"



Construction Site Inspection Program

The city's stormwater utility started a new citywide construction site inspection program in the fall of 2017. The purpose of the program is to verify the appropriate stormwater controls at every active construction site to prevent pollution from construction activities from contaminating the city's storm sewers and waterways. Inspections are conducted by contractors and documented in written 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 ensure compliance and pollution prevention.

2019 Construction Site Inspection Program	
Construction Sites Inspected	57
Total Inspections	402
Notices of Violation	16
Stop Work Orders	3
Fines Issued	\$30,800 (2 fines)

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. Construction Site Pollutant Control: Develop, implement and enforce a program to reduce the discharge of pollutants from construction activities.
4. Post-Construction Stormwater Management: Prevent or minimize impacts to stormwater from new development or redevelopment by ensuring that stormwater treatment facilities (e.g. detention ponds, rain gardens) operate as designed and are maintained.
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. We at the city 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.

Looking Ahead

Looking ahead to 2020 and beyond, Westminster's Stormwater Utility team has created a strategy to continue the momentum from this year. All currently pending positions for program management and compliance have been filled, ensuring the city is able to meet all regulatory requirements in the current MS4 permit, and also reduce the reliance on contractors to conduct inspections and follow-up on activities associated with enforcement.

The Stormwater team is looking to progress efforts as it relates to asset management for the stormwater system throughout the city. This entails a multi-year study that will provide an accurate location and condition assessment for all our underground stormwater infrastructure (pipes, manholes, inlets, etc.). In time, this will allow us to perform routine maintenance and repairs on this system, not only providing cleaner water to our downstream neighbors, but also helping to make the city safer for our residents.

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 in future years by producing reports on an annual basis going forward.

THANK YOU FROM ALL OF US AT WESTMINSTER!

