STORMWATER UTILITY

2018 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 drainage facilities
- Funding for improvements to the 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
- State permit compliance

Funding for the utility comes 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 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 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 to water customer’s monthly bills.

These fees are deposited into the city’s Storm Drainage Fund. This enterprise fund was created in 2001 to provide resources to the city to comply with the requirements set forth in the state administered Municipal Separate Stormwater System (MS4) permit. The 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 first annual report of activities conducted by utility staff and highlights the value added to the community through the use of stormwater fees in 2018.

**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 damage to property by ensuring the stormwater system is clear of debris and functioning properly. Our Streets Division is a very
important part of the stormwater program and is responsible for open drainage maintenance, street sweeping and miscellaneous storm pipe cleaning. In 2018, the following routine work was completed:

- City roadways swept 5 times (3850 miles) for a total of $155,758.40.
- 2 storm pipe cleaning projects (80th Ave. & Osceola St. and 80th Ave & Newton St.)
- 17 open drainage cleaning projects totaling $124,995.65

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<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Work</th>
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<tbody>
<tr>
<td>4/9/18</td>
<td>98th &amp; Sheridan</td>
<td>Cattails, trees</td>
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<tr>
<td>4/9/18</td>
<td>108th &amp; Eaton</td>
<td>Cattails, willows, trash</td>
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<td>4/9/18</td>
<td>86th &amp; Turnpike Dr.</td>
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<tr>
<td>4/9/18</td>
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<td>Cattails, trees, trash</td>
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<tr>
<td>4/9/18</td>
<td>104th &amp; Wadsworth</td>
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<td>4/24/18</td>
<td>92nd &amp; Independence</td>
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<tr>
<td>5/4/18</td>
<td>148th &amp; Huron</td>
<td>Cattails, tree, inlet, rip rap</td>
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<tr>
<td>6/12/18</td>
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<td>Cattails, tree</td>
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<tr>
<td>6/12/18</td>
<td>132nd &amp; Huron, 90th &amp; Cody</td>
<td>Grass, widen channel</td>
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<td>5/31/18</td>
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<tr>
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<td>8/3/18</td>
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<td>7/17/18</td>
<td>116th &amp; Sheridan - part 2</td>
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<tr>
<td>7/18/18</td>
<td>88th &amp; Lowell</td>
<td>rock &amp; road base, reshape channel</td>
</tr>
<tr>
<td>10/30/18</td>
<td>Turnpike Drive - dead end</td>
<td>trees, trash, reshape channel</td>
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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 control and waste management throughout the city totaling roughly $245,000. Without this work, our stormwater infrastructure and waterways would be more susceptible to flooding as well as an influx of stormwater pollutants.
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 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 and the Wild Westminster Mural project. Starting in 2018, Open Space organized the first “Honor the Land and Stream” waterway cleanup project in Westminster, which gathered volunteers to clear trash and debris from the City’s waterways.

![Image of cleanup project](image1.png)

**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 activities 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 Urban Drainage and Flood Control District (when applicable)
- Receiving bids from contractors
- Notifying adjacent/surrounding property owners of the construction activities

The Stormwater Utility often partners with the Urban Drainage Flood Control District to improve and maintain major drainageways. The District provides technical expertise and funds for many of the City’s stormwater projects. The District’s funds are derived from a property tax collected throughout the special district. The 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. On the other hand, the maintenance projects and
routine maintenance activities do not require matching funds and are provided free of charge from the District.

The following are some project highlights from 2018.

**Big Dry Creek Embankment Stabilization**

In 2012, a Master Drainageway Plan (MDP) was completed for the Big Dry Creek between Standley Lake and the Weld County line at 168th Avenue. The purpose of that study was to identify flood hazards and potential capital improvements to address erosion, stream stability, stream crossings, water quality, and other maintenance needs along the drainageway corridor. The planning study was completed through the Urban Drainage and Flood Control District in partnership with Adams County, the City of Thornton, and the City of Westminster. That study identified approximately $38.6 million in construction improvements within the City of Westminster corporate boundaries.

In 2018, city staff and contractors re-evaluated conditions along Big Dry Creek in order to prioritize the previously planned improvements included in the 2012 study. In the year ahead, the City will begin the process of developing 60% design plans on the top 2-3 improvements to assist with budgeting and scheduling of those improvements to coincide with available funding. Over the next few years, the city will partner with Urban Drainage and Flood Control District (UDFCD) to finalize design for the top priority areas and complete construction.

**Big Dry Creek**: Urgent 18-foot tall cutbank below houses, sewer line and trail.
South Hylands Creek at 104th Ave

The City is partnering with UDFCD to leverage $963,000 in capital project funds for a 1:1 match with UDFCD funds to stabilize South Hylands Creek south of 104th Avenue and west of Sheridan Blvd. The project scope consists of evaluating channel segments and making recommendations of to improve drainage and protect exposed sanitary sewer infrastructure. Work will likely include, but is not limited to, laying back embankment, installation of boulder drop structures, using concrete sculpted drop structures, sediment removal and alternatives to capturing sediment before it enters the affected box culvert. The project will also include installation of a concrete paved, maintenance road adjacent to both creek segments. Engineering design began in 2018 and the project will continue over the next several years.
Brittany Oaks Drainage Improvements

The Brittany Oaks Subdivision is located in the area of West 90th Avenue and Allison Court, just west of Wadsworth Parkway. In 2008, the City received complaints from the residents regarding stormwater ponding and overtopping the curb and gutter on West 90th Avenue, north of Balsam Court. This stormwater would flow into residents’ properties after overtopping the curb. Since the West 90th Avenue roadway is at a higher elevation than Balsam Court by a few feet, city staff concluded that installing a storm inlet that discharges to the curb and gutter on Balsam Court would solve the drainage issue. This solution was constructed and operated as designed. Unfortunately, the additional stormwater conveyed down Balsam Court to relieve the ponding on West 90th Avenue transferred the drainage issue downstream to the intersection of West 90th Place and Balsam Court. In this vicinity, resident homes are a few feet lower in elevation than the West 90th Place roadway. During minor rain events, the sidewalk south of the intersection is overtopped and began flooding residential properties.

In 2017, city staff determined conveying the stormwater in a pipe from the existing inlet on the south side of West 90th Avenue down Balsam Court to a nearby detention pond would provide a permanent solution. Construction of these improvements was completed in 2018. In addition, this project included the construction of an earth berm along the east side of the Brittany Oaks common sodded area to provide extra protection against stormwater draining to adjacent properties.
Before

City Park Channel Improvements:
The City Park Channel Lower Reach Project, located along the south side of W. 120th Avenue between Osceola Street and Federal Boulevard, was substantially completed in 2018. Historically, most of the flows in City Park Channel run along the south side of 120th Avenue, adjacent to the Bradburn Subdivision and crosses under 120th Avenue at Osceola Street. For a major flood event, the water in the channel overtopped 120th Avenue. The Lower Reach Project will now allow minor flows to continue to flow under 120th Avenue with the additional flows being directed easterly along the south side of W. 120th Avenue to Big Dry Creek. The work has included clearing and grubbing, channel improvements and a crossing under the existing trail.

After
The City of Westminster engaged 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 performed to:

- Identify drainage improvement needs throughout the City,
- Estimate costs for construction and maintenance,
- 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 will be completed in 2019. Work completed in 2018 included:

- Revisiting all drainageways and updating the previous findings based on existing conditions, identifying areas of bank erosion, invert degradation, sedimentation, culvert roadway crossings, and other risks or needs.
Work to be completed in 2019 will finalize the following:

- Determine recommended improvements based on the site investigations and updates to the drainageway and storm systems assessment previously completed by Muller Engineering Company.

- Incorporate recently completed major drainageway planning improvements from UDFCD 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.

- 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.

Big Dry Creek was not originally included as part of the scope of work for the 2018 Drainageway Study, however the City of Westminster and the Urban Drainage and Flood Control District partnered to provide funding to assess the additional 13 miles of creek through the City with a similar scope of work, i.e. provide an assessment of existing conditions; provide recommendations for improvements; update conceptual design cost estimates; and provide a prioritization of improvements along the stream.

Once completed in 2019, the updated study will provide the city with data and tools to budget and prioritize the most critical areas in need of capital improvements and maintenance. In addition, this work will help support asset management and maintenance responsibility as well as state permitting compliance.
Household Hazardous Waste Program

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

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. To address this problem, EPA established the National Pollutant Discharge Elimination System (NPDES) program as part of the Clean Water Act to regulate stormwater discharges. Enforcement and oversight of illicit discharges was then delegated to the State of Colorado by the EPA, which is then passed down to the City of Westminster.

The City’s IDDE program 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 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.

In 2018, there were 23 illicit discharge reports throughout the city, all of which were resolved with cleanup, remediation, and follow up actions. Four of these reports resulted in verbal warnings from enforcement staff and two resulted in escalated enforcement. To report an illicit discharge, please contact the Stormwater Hotline at 303-706-3367 or email us at stormwaterhotline@cityofwestminster.us.

Port-o-let spill at 94th Ave. & Sheridan Blvd.
Stormwater Mural Project

The city's stormwater team is bringing a nationwide trend to Westminster: integrating public art with public outreach and education about 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 2018, four murals were installed around city storm drains. Three of the murals were painted by city staff and volunteer teams from Key Bank at Squires Park, Carroll Butts Park, and Westminster City Park. The fourth was commissioned as part of the Imagine Westminster event. Murals are expected to last at least several years, and will be monitored and maintained by the Stormwater Program team in the years ahead.

We have already received immediate feedback demonstrating the effectiveness of public art as an educational tool. Neighbors of the parks stopped to talk with staff working onsite, asking questions and praising the concept and the artwork. The Colorado Public Works Journal also recognized Westminster’s stormwater murals, and 9News showcased one of the murals in their coverage of Imagine Westminster.

Public education is a requirement of the city's stormwater permit and the murals directly support regulatory compliance. We hope to expand the Stormwater Mural Project in the future.
Carroll Butts Park - 4201 W 94th Ave

Squires Park - 3450 W 99th Ave

Westminster Center Park - 4801 W 92nd Ave
Construction Site Inspection Program

The city’s stormwater utility started a new program of construction site inspections citywide in the fall of 2017. The purpose of the program is to verify the appropriate controls are in place 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. 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.

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<thead>
<tr>
<th>2018 Construction Site Inspection Program</th>
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<tbody>
<tr>
<td>Construction Sites Inspected</td>
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<tr>
<td>Total Inspections</td>
</tr>
<tr>
<td>Notices of Violation</td>
</tr>
<tr>
<td>Stop Work Orders</td>
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<tr>
<td>Fines Issued</td>
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State Permit Compliance

A driving factor for all of the accomplishments described in this report is compliance with the state Municipal Separate Storm Sewer System (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 they were first issued 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 December 2016, an independent third-party audit identified significant gaps in Westminster’s MS4 compliance program. Developing new program areas, including Illicit Discharge Detection and Elimination and Construction Site Inspections, has been the Stormwater Utility’s top priority in 2017 and 2018. As of the end of 2018, only a few compliance gaps remain, specifically in regards to municipal operations, and the city is on track to close those gaps in 2019.

Looking Ahead

Looking ahead to 2019 and beyond, Westminster’s Stormwater Utility team has created a strategy to continue the momentum from this year. A foundation for these plans is being built in 2019 and 2020 when four new positions will be created. These positions will form a new stormwater compliance workgroup, with a coordinator in a supervisory role, an analyst, and two inspectors. This level of staffing will ensure 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 activities associated with enforcement. Increased staffing will also enable the city to update the Storm Drainage Criteria Manual, last published in 1999 and to begin development of a comprehensive asset management system for the Stormwater Utility.

This is the first annual report for Westminster’s Stormwater Utility, and documents a year of achievements that support compliance and sustainability. The city’s stormwater 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!