



THE AUDITOR OF PUBLIC ACCOUNTS LOCALITY STORMWATER UTILITY REPORTING FORM

The purpose of this form is to implement the following locality stormwater utility reporting requirement established by Paragraph D.1. of Item 2 of the Fiscal Year 2017-2018 State Budget ([Chapter 836](#) of the 2017 Acts of Assembly): *Each locality establishing a utility or enacting a system of service charges to support a local stormwater management program pursuant to §15.2-2114, Code of Virginia, shall provide to the Auditor of Public Accounts by October 1 of each year, in a format specified by the Auditor, a report as to each program funded by these fees and the expected nutrient and sediment reductions for each of these programs. For any specific stormwater outfall generating more than \$200,000 in annual fees, such report shall include identification of specific actions to remediate nutrient and sediment reduction from the specific outfall.*

Each locality subject to the reporting requirement set forth above shall complete and submit this report form each year to the Auditor of Public Accounts by October 1, in an electronic format emailed to LocalGovernment@apa.virginia.gov. **The report as of Fiscal Year 2018 (or applicable reporting period) is due by October 1, 2018.**

SECTION 1 – LOCALITY INFORMATION

Locality Name: City of Roanoke

Contact Name/Title: Dwayne D'Ardenne, Stormwater Utility Manager

Contact Address: 1802 Courtland Rd NE, Roanoke, VA 24012

Contact Email: Dwayne.D'Ardenne@RoanokeVA.gov

Contact Phone: 540.853.5900

Report Completion Date: October 1, 2018

SECTION 2 - STORMWATER UTILITY FEES

For your stormwater utility fees provide the following information from your most recent audited annual financial report.

Financial Statement Fund Name: 03 – Stormwater Utility Fund*

Fiscal year: FY2017-2018

Revenues	Expenditures	Ending Fund Balance or Net Position
\$6,837,071**	\$8,709,755***	\$3,127,865****

Please provide any additional detail/clarification below about the financial information provided at Section 2, if needed.

- *All figures in the table are preliminary and subject to change as the FY2017-2018 annual financial statement has not yet been completed.
- **As required by State Code and City ordinance, all revenue from the stormwater utility fee is credited to the Stormwater Utility Proprietary Fund. Other amounts credited to the fund include transfers from bond proceeds, and revenue from VDOT revenue sharing program and DEQ SLAF (Stormwater Local Assistance Fund) program.
- ***Expenditures from the fund totaled \$8,709,755. The expenditures included \$5,133,602 for operating expenses including maintenance, water quality, and debt service as well as \$3,576,153 for multi-year capital projects. Historically, expenditures from the 03-Stormwater Utility Fund have exceeded the revenue from the stormwater utility fee. Expenditures beyond the utility fee revenue were made possible via revenue from bond funds and VDOT revenue sharing funds.
- ****The balance is split between operations and multi-year capital projects; including remaining bond funds and VDOT revenue sharing funds.

SECTION 3 – FUNDED PROGRAMS AND OTHER MAJOR ACTIVITIES

Provide a brief description of each major program funded by the utility fee system and, where applicable, the expected nutrient and sediment reductions for each of these programs.

A. Operations & Maintenance Program

Water Quality Improvement Program

Clean Water Act 303(d) Program/Watershed Master Plans

During FY2017-2018, the City of Roanoke continued our collaborative and multi-year Urban Stormwater Research project with the Virginia Tech Department of Civil & Environmental Engineering. The desired outcome from this research is a comprehensive master plan toward the eventual restoration and “delisting” of all impaired stream segments within City limits that are currently identified as part of the Clean Water Act 303(d) program. As a point of fact, segments of the Roanoke River and 11 of its tributaries having watersheds within City Limits are currently on the 303(d) list for various impairments including: Benthic (Sediment), Bacteria, PCBs, Water Temperature, and/or Mercury in Fish Tissue. The FY2017-2018 Urban Stormwater Research focused upon completion of the Trout Run Watershed Master Plans (WMP) as well as starting the Peters Creek WMP. These WMPs provide the necessary information and analysis for long-term implementation planning as well as assisting with prioritization of stormwater improvement projects toward protection and restoration of local surface water quality. These WMPs are based on field collected and verified data including physical and biological make-up of the main drainage channel of the watershed; the configuration of the stormwater pipe system that drains to this channel; and the characteristics of the watershed’s land surface that dictate hydrology and water quality. These WMPs identify Goals, Objectives, and Action Items toward the “delisting” desired outcome. The City’s overall water quality improvement Goals are as follows:

- Maximize watershed resiliency and sustainability which will reduce flooding, in-stream erosion, sediment loads, and bacteria loads while increasing base flow in dry channels, biological life, recreation, and aesthetics.

- Minimize watershed hazards to public health, safety, and property which will reduce flooding, flood insurance costs, flood repair costs, in-stream erosion, sediment loads, and bacteria loads while increasing base flow in dry channels, biological life, recreation, and aesthetics.
- Connect citizens, businesses, students, and other stakeholders to their watershed which will reduce illicit discharges while increasing property values, treatment from private BMPs, community education, watershed knowledge base, recreation, and aesthetics.

Related to the question of specific stormwater outfalls generating more than \$200,000 in annual fees, the City's GIS analysis reveals that three outfalls exceed that threshold: Lick Run outfall #600164, Tinker Creek outfall #400561, and Trout Run outfall #600452. As alluded to in the paragraphs above, between FY2015-2018, Watershed Master Plans (WMPs) were completed including the Lick Run, Tinker, and Trout Run watersheds. Combined, all WMPs created to date identify and recommend 97 specific projects valued at over \$64.6M to achieve delisting of those WMP specific watersheds.

Clean Water Act 303(d) Program/TMDL Action Plans for Sediment, Bacteria, and PCBs

On October 1, 2015, the City submitted its Sediment and Bacteria TMDL Action Plan in conjunction with the FY2014-2015 annual MS4 permit report. On October 1, 2016, the City submitted its PCB TMDL Action Plan in conjunction with the FY2015-2016 annual MS4 permit report. These Action Plans outline practices, techniques, and designs to achieve Waste Load Allocations (WLAs) set forth by the DEQ for the impaired segments of the Roanoke River and its 13 tributaries having watersheds within the City limits. The TMDL Action Plans are working documents that follow the aforementioned Watershed Master Plan Goals, Objectives, and Action Items. During FY2017-2018, the following TMDL Action Plan items were completed:

- Stormdrain Maintenance: Removed 319 dry tons of floatables, sediment, and other pollutants upon inspection of 1,111 of the 7,593 stormdrain inlets and 422 linear miles of stormdrain pipe Citywide before they reached one of the 711 stormdrain outfalls that flow directly into the Roanoke River or one of its 13 tributaries having watersheds within City limits.
- Stormdrain System Asset Inventory: During FY2017-2018, the Peters Creek watershed's asset inventory was completed. The stormdrain GIS data layer for this watershed was verified and updated to include: manholes, pipe orientation, termination points, and outfalls. Also, inlets and outfalls were verified Citywide as to responsibility for recurring maintenance: Stormwater Utility, Other MS4, or Private Owner.
- Stormdrain System CCTV Inspection: Using the two CCTV trucks purchased during FY2015-2016, crews verified, mapped, and inspected stormdrain assets as well as investigated illicit discharges. In FY2017-2018, CCTV crews inspected 130,780 linear feet of Stormdrain pipe.
- Illicit Discharge Detection and Elimination (Outfall Reconnaissance): 83 outfalls were inspected in the Murray Run, Ore Branch, and Lick Run watersheds.
- Illicit Discharge Detection and Elimination (Investigation of Reported Incidents): 17 of 17 illicit discharge reports were opened, investigated, resolved, and closed.
- Water Quality Monitoring Agreement: In collaboration with USGS a monitoring station was installed to characterize both streamflow and sediment transport in Lick Run. Monitoring objectives include: near real-time stream levels, water temperature, pH, conductivity, dissolved oxygen and turbidity. As part of the agreement, USGS will use the collected data to determine annual loads of suspended sediment.
- Bacteria Monitoring Program: In-house bacteria monitoring program began during spring of 2017. Since then, data from 1,039 samples has provided Stormwater staff with a basic understanding of

- bacteria levels in the Roanoke River and nine (9) of its tributary streams within City limits. Preliminary findings include the following: 1. On average, the Roanoke River and five of its tributaries meet the Recreational Water Quality Standards set forth by the Virginia Department of Health of 235 CFUs/100 ml. (Roanoke River, Carvin Creek, Barnhardt Creek, Tinker Creek, Ore Branch, and Glade Creek); 2. On average, four tributaries do not meet Recreational Water Quality Standards. (Mudlick Creek, Murray Run, Lick Run, and Peters Creek); 3. Regardless of the averages, the Roanoke River and all 9 tributaries in the program have had some samples collected during the 15 month monitoring period that met Recreational Water Quality Standards as well as had some samples collected during the monitoring period that did not meet Recreational Water Quality Standards. Next steps have been identified and will be reported upon in the 2019 report.
- Stream Restoration Projects: 2016 Award of \$150K VADEQ Stormwater Local Assistance Funds which will be leveraged with Stormwater Utility Funds to restore apx. 700 linear feet of Lick Run in lower Washington Park. Contract for this Design/Build project has been executed with an estimated project completion in May 2019. Further, 2017 DEQ SLAF Grants were awarded for three future stream restoration projects: Lick Run at Highland Farm Road with a total project budget of \$405,455 and a project length of 778 feet has been procured and awarded with Final scope of this Design/Build project to be negotiated in the coming weeks; Glade Creek east and west of Gus Nicks with a total budget of \$1,973,400 and a project length of 2921 feet; and finally, a tributary of Lick Run near the Roanoke-Blacksburg Regional Airport with a total budget of \$681,936 and a project length of 1300' feet.
 - Streetsweeping: 2031.66 tons of sediment & debris were removed from a total of 15,682 City lane miles swept which represents an additional 586.82 tons over FY2016-2017.
 - Animal Carcass Collection: 1,392 carcasses were collected, an additional 152 over FY2016-2017 (Animal Carcass Collection reduces bacterial contamination of surface waters via stormwater runoff from the City's stormdrain system.)
 - Mutt Mitt Stations: 12 additional Mutt Mitt Stations have been purchased and installed for a total of 102 Citywide in the Central Business District and along the Lick Run, Tinker Creek, and Roanoke River Greenways. In addition, 35 educational signs were added at existing Mutt Mitt stations.
 - Bacteria-specific and Sediment-specific education/outreach brochures: During FY2017-2018, continued focused distribution of two sediment specific brochures and a pet waste specific brochure:
 - Residential brochure, "Understanding Stormwater Pollution," highlights homeowner level best management practices and is distributed during public outreach events and stormwater presentations.
 - Contractor brochure, "Stormwater Pollution Prevention Requirements," is distributed by the City's "Permit Center" as part of the building permit or street opening permit process. Building Inspectors also distribute to contractors in the field, particularly when compliance problems are identified.
 - Residential bacteria-specific pet waste brochure: The "Here's the Scoop...Do Your Doody & Clean Up After Your Pet" brochure continues to be distributed by veterinary offices, animal shelters, and pet stores within City limits with supply provided by our Utility.
 - PCB-specific education/outreach during FY2017-2018:
 - PCB brochure was mailed to 1745 targeted businesses that include contractors, autobody/repair shops, painting, salvage yards, and other similar businesses.
 - PCB-specific brochure is available for handout at outreach events, presentations, at the lobby kiosk in Noel C. Taylor Municipal Building, and for citizens applying for building demolition permits.

- PCB specific education/outreach training was completed for City staff at the Public Works Service Center (PWSC) which serves as base of operations for employees of Transportation, Solid Waste, Stormwater, Facilities, Fleet, and Parks Maintenance.
- PCB specific checklists were completed by all PWSC Divisions except Facilities and a Municipal Operations PCB Risk Summary Report was created for products and vehicles. Checklist information from Facilities will be incorporated during FY2019

Public Education and Outreach/Connect Stakeholders to their Watersheds

The three Watershed Master Plan objectives under “Connect citizens, businesses, students, and other stakeholders to their watershed” are as follows:

- Provide the community with life-long learning opportunities about their watershed
- Engage the community in revitalizing watershed ecosystem health
- Coach the community to participate in outdoor recreation and stewardship opportunities within their watershed

To that end during FY2014-2015, the City updated its regional Education and Outreach Plan in collaboration with adjoining locality neighbors, Roanoke County and the Town of Vinton. During FY2015-2016 and FY2016-2017, the City’s Stormwater Utility staff created and executed a wide array of education and outreach materials and events including:

- Education/outreach via a completely overhauled Roanoke Stormwater website
- Education/outreach via newly created quarterly electronic newsletter
- Education/outreach via social media with 4-5x weekly Facebook posts to 2,520 followers; 1-2 tweets/day to 1004 Twitter followers; 1-2 pins/week to 157 Pinterest followers; 1-2 posts/week to 339 Instagram followers and 1/week posts to Next Door reaching 6722 members.
- Education/outreach totals: 70,049 total citizens reached (70% of City of Roanoke population) reached through combined outreach efforts from Utility staff and Clean Valley Council (CVC), our contracted local non-profit entity specializing in environmental education/outreach including: Community Wide Public Events, Outreach Events, Educational Programs and Publications, Stream School, Presentation, and Combined Social Media
- CVC is also under contract with the City to coordinate a Citizen Science Benthic Macro-Invertebrate Monitoring Program for the Roanoke River. This program uses the SOP’s developed by Save Our Streams (SOS). Standard operating procedures and QA/QC will be used to deliver Level II quality data. Data will be collected and integrated into an interactive map. There are currently 23 certified monitors plus 7 trained, but not certified volunteers, with more training classes schedule for both fall of 2018 and spring 2019. Monitoring locations will be based on priority risk assessments, monitor’s home watershed, site accessibility, and total number of program participants.

B. Capital Improvement Program

Stormwater Capital Improvement Program/Minimize watershed hazards

The largest objective under the “Minimize watershed hazard to public health, safety, and property” Watershed Master Plan goal is to “Prioritize and construct Capital Improvement Projects that both mitigate neighborhood flood hazards and improve downstream water quality” The City currently has a

backlog of more than 215 such stormwater capital improvement program (CIP) projects. Preliminary design and cost estimates for these projects total more than \$139.2 million. In FY2017-2018, 10 stormwater improvement projects were completed:

- Westover/Edgewood Stormwater Improvement Project
- Trevino/Monterey Phase I Stormwater Improvement Project
- Queen/Courtland Stormwater Improvement Project
- Inglewood/Hartland Stormwater Improvement Project
- Oliver/Troy Stormwater Improvement Project
- 3700 Blk Heatherton Rd Stormwater Improvement Project
- 1600 Blk Blair Rd Stormwater Improvement Project
- Blenheim Rd Stormwater Improvement Project
- 1700 Blk Mercer Rd Stormwater Improvement Project
- 3700 Blk Salem Tpk Stormwater Improvement Project

During FY2019, the following 7 stormwater improvement projects are scheduled to be constructed:

- Troxell/Mabry Av Stormwater Improvement Project
- Washington Park/Lick Run Stream Restoration Project #1
- Cove Rd – Dansbury Dr Stormwater Improvement Project
- 1300-1400 Graybill Rd Stormwater Improvement Project
- Sunrise/Oakland Blvd Stormwater Improvement Project
- 1800-2000 Blk Shenandoah Ave Stormwater Improvement Project
- 2100 Blk Staunton Av Stormwater Improvement Project

Currently, the following 6 stormwater improvement projects are designed, approved, and are (or near) shovel-ready for construction pending right-of-way acquisition and adequate funding:

- Lakecrest/Greenlee Rd (In ROW Acquisition Process)
- 3500 block Windsor Rd (In ROW Acquisition Process)
- Sample/Crown Point Rd Stormwater Improvement Project (In ROW Acquisition Process)
- 4500 block Narrows Ln (In ROW Acquisition Process)
- 1400-1500 24th St Stormwater Improvement Project(In ROW Acquisition Process)
- 1400-1600 Blk Templeton Av (In ROW Acquisition Process)

Finally, 9 other stormwater improvement projects are under active design:

- Victoria St- Caldwell St (95% Designed)
- 22nd St – Cove Rd (90% Designed)
- Hollins/Liberty Rd (90% Designed)
- 3400-3500 Blk Brymoor Rd (85% Designed)
- 19th St/Chapman Av (75% Designed)
- Sherwood/Chesterfield St (65% Designed)
- 2400 Blk Florida Av (50% Designed)
- Salem Ave – 3rd St (25% Designed)
- Trevino/Monterey Phase III - Floodplain Reconnection Project