



Ad Hoc Stormwater Utility and Flood Mitigation Advisory Group

December 15, 2022 | 6:00 p.m. | Hybrid (Virtual and In-Person) Meeting

Minutes

Advisory Group Members Present:

A	John Chapman	V	Howard “Skip” Maginniss
P	Dino Drudi	P	Brian Sands
P	John Hill (Chair)	P	Janette Shew
P	Cheryl Leonard	P	Christine Thuot
		P	Katherine Waynick (Vice-Chair)

P = Present A = Absent V = Virtual (on call)

Staff Present: Mitch Dillon, DPI; Amanda Dolasinski, T&ES; Jesse Maines, T&ES Division Chief, Stormwater Management; Terry Suehr, DPI Director; Dan Medina, Stormwater Program Manager; Jonathan Whiteleather, DPI; Erin Bevis-Carver, T&ES Division Chief; Camille Liebnitzky, T&ES

Alex Renew Staff Present: Karen Pallansch, Kelvin Coles, Faith Oviawe, Justin Carl, Caitlin Feehan

Action Items are in bold

The meeting began at 6:00pm. With six Ad Hoc Group members present in person, quorum was met.

1. **Electronic Meeting Notice**

Mr. Hill read the electronic meeting notice.

2. **Approval of the October 20, 2022 Minutes**

The meeting minutes from the October 20, 2022 meeting were approved by a unanimous vote in favor.

3. **Update on Flood Action Program (City Staff)**

Ms. Liebnitzky, Civil Engineer IV/Stormwater Utility Manager, provided an update on the Stormwater Utility Fee and Credit Policy Manual Update.

- a. The Stormwater Utility Fee currently raises approximately \$20M annually for stormwater infrastructure.
- b. Updates to the Credit Policy Manual were approved by City Council in November 2022. Approved changes can be found in the presentation slides. For an online version of the updated manual, click here: [https://www.alexandriava.gov/sites/default/files/2022-11/Stormwater Utility Fee Credit Manual 2022.pdf](https://www.alexandriava.gov/sites/default/files/2022-11/Stormwater%20Utility%20Fee%20Credit%20Manual%202022.pdf)
- c. Ms. Liebnitzky described the online application process to receive stormwater utility credits, which are used to reduce a property owner’s Stormwater Utility Fee by a certain percentage. The application process can be accessed and is detailed here: <https://www.alexandriava.gov/stormwater-management/stormwater-utility-fees-and-credits-for-residential-properties>



- d. Ms. Liebnitzky presented the increase in credits for specific stormwater best management practices. Credits are applied as a percent reduction in an owner's Stormwater Utility Fee. See presentation slides for specific increases.
 - i. A mature tree is considered 12" in diameter or about 38" in circumference at breast height. The maximum awarded credit for mature trees is based on number of trees and property type for the applicant.
 - ii. Dry floodproofing includes measures to floodproof a home, including barriers and raising outdoor HVAC/heat pump. Obtaining funding from the City's Flood Mitigation Pilot Grant Program for a dry floodproofing project does not preclude the project from also obtaining Stormwater Utility Fee credits.
 - iii. Ms. Leonard asked whether a homeowner can install multiple stormwater best management practices on their property and get credits for each. Ms. Liebnitzky indicated that credits are cumulative up to 50%, so the maximum reduction a property owner can see on their Stormwater Utility Fee is 50%. This maximum was increased from 305% with the November 2022 updates to the program.
 - iv. The program is seeing an increase in participation this year.

Mr. Dillon provided an update on the City's Spot Improvement project portfolio (33 projects, \$12M budget). 16 projects are currently in motion (in planning, design, or construction). All projects can be found on the Flood Action Program Dashboard

(<https://alexgis.maps.arcgis.com/apps/dashboards/00d8ebd88e664afabca6496ca82adf1d>)

- a. 6 projects are in planning
 - i. Mount Vernon and Edison Dual CMP Culverts
 - ii. Clifford Fulton & Manning Alleyway (3000 Fulton St. Alleyway) - NEW
 - iii. S Jordan St
 - iv. 612 Beverley Drive
 - v. Carlisle Drive Alley - NEW
 - vi. N Columbus St. Alley - NEW
- b. 8 projects are in design
 - i. Hume Ave. Stormdrain Bypass and Check Valve
 - ii. 3 projects started in October in Arlandria (Edison drainage improvements, W. Reed Ave. curb inlets, Dale Rd. overland relief channel)
 - iii. N Overlook Drive 100% design received
 - iv. Mount Vernon cul-de-sac and inlets
 - v. Headwalls at West Glendale Ave. (Timber Branch) and Ruffner Road (F. Hammond) – NEW
 - (1) A culvert is a pipe that allows water from an open stream or waterway to flow under a roadway or other elevated land area. A headwall is the concrete structure at the start of a culvert that holds the elevated land in place while channeling the stream into the culvert.
- c. 2 projects are under construction
 - i. Park Fairfax inlets – NEW
 - ii. 00 E. Linden Ave. Alleyway Improvements
- d. 1 project was recently completed
 - i. Added work at Clinton-Fulton-Manning is complete



Ms. Dolasinski provided a progress report regarding Flood Action communications.

- a. Readership of the Flood Action newsletter has increased.
- b. Ms. Dolasinski continues to create content on social media and the Flood Action Alexandria website.
- c. New project-specific websites are being generated for the Hume Ave Bypass project, the Commonwealth-Ashby-Glebe flood mitigation project, and the Edison St and Dale St project.
- d. Mr. Hill asked if many people are accessing the project Dashboard. Ms. Dolasinski indicated that there was a spike in usage when the Dashboard was released.

4. Informational Session: Large Project Updates - Commonwealth-Ashby-Glebe Project

Dr. Medina provided in-depth detail on the Commonwealth-Ashby-Glebe flood mitigation project.

- a. Dr. Medina showed a map of the project area (see slides).
- b. Reasons for current flooding include stormwater pipes that are old (not sized for current standards), large storms that are larger than what pipes were designed for, and low points in the land and roadways where water collects.
- c. Dr. Medina showed a heat map of where flooding is occurring based on modeling of the project area in the 10-year design storm. The model results match where flooding complaints are received.
- d. The design contractor hired by the City is Jacobs Engineering.
- e. The design process so far builds upon the 2016 CASSCA study, includes development of a model of existing flooding conditions, applies cloud-based optimization, and accounts for future climate conditions. The designer tested hundreds of thousands of solutions and identified the one that optimizes flood mitigation benefits and cost.
- f. The proposed solution includes 1.5 miles of new, large stormwater bypass pipes and some green infrastructure. The large, proposed bypass storm sewer (7'x5') will be ~17-feet deep to fit around existing pipes (water, sanitary, gas, etc.) and gets larger near the outfall to Four Mile Run. Some utility relocation is required. When water in the existing storm sewer system starts overflowing, stormwater overflows in a diversion structure to the new bypass pipe. See slides for a map of the proposed solution and what the project will look like underground.
- g. The City is considering two slightly different variations of the proposed solution (A4 and A4 Upsized).
- h. Work is limited to roadways and is not intended to impact sidewalks or adjacent properties.
- i. The model shows that the proposed solution reduces flooding but does not eliminate flooding for the current design 10-year storm and future 2070 climate condition. The City and Jacobs are exploring options to improve performance.
- j. The project is projected to cost ~\$35M to construct, but will provide ~\$45M in benefits (avoided damage to properties by implementing the project) over the course of the project lifespan. This demonstrates that the project benefits outweigh the costs.
- k. The design will take approximately 19 more months to complete. The more detailed project design will account for many factors, including cost, schedule, constructability (particularly around utilities and power lines), maintenance, noise, maintenance of traffic, parking, and access to schools and homes. See slides for a more complete list.



1. Next steps include refining what is included in the design, survey (surface and underground utilities), performing soil tests, and prioritization of other projects in the Four Mile Run watershed.

Questions from the Ad Hoc Group:

- a. Ms. Waynick asked whether the project is still on schedule. Dr. Medina indicated yes.
- b. Ms. Waynick asked whether the new bypass pipe will just receive overflow from the existing stormwater pipe or also receive some flow from existing inlets directly. Dr. Medina indicated it will be a combination of both.
- c. Ms. Waynick asked whether this project addresses sewer backups as well as stormwater flooding. Dr. Medina indicated this project primarily addresses stormwater flooding.
- d. Ms. Waynick asked whether the demolition of the Cora Kelly School will impact the project timeline. Dr. Medina indicated no, demolition of the Cora Kelly School (anticipated in 2027) will be conducted after the construction of the flood mitigation project.
- e. Mr. Drudi asked whether the design accounts for high water elevations at the project outfall, particularly in larger storm events, and what the topography is of the Four Mile Run outfall compared to the elevation of the project area. Mr. Medina indicated that the design accounts for sea-level rise, and when the outfall backs up, it does not backup very far into the stormwater pipe because the land and pipes slope upward as they move inland.
- f. Ms. Waynick indicated that there is discussion for allowing high-rise buildings in certain areas of the Four Mile Run watershed. Ms. Waynick asked whether the City is considering holding developers to a higher standard for stormwater management, should the high-rises be allowed. Dr. Medina indicated that the City is not currently assessing this as part of this project, however the City's current stormwater design standards are strict regardless of building type.
- g. Mr. Sands and Mr. Drudi expressed favor for alternative A4 Upsized since the additional cost is small compared to the additional benefit the adjustment provides.
- h. Mr. Drudi asked whether a pipe 17 feet below the surface may be so low that it will be flooded by Four Mile Run. Dr. Medina indicated the pipe slopes toward Four Mile Run. The design will account for the water elevation in the stream.
- i. Ms. Leonard asked whether the spot improvement projects occurring now are reflected in the model results. Dr. Medina indicated the spot improvement projects may be reflected in the model.
- j. Ms. Thuot asked whether the City used the NOAA Atlas Data to develop design storms for the analysis. NOAA's nearest data collection point is Reagan Airport. Dr. Medina indicated that the City recently underwent a study to define City-specific design storms, which includes sea level rise.

5. Informational Session: Large Project Updates – AlexRenew Projects (RiverRenew and Commonwealth Avenue Interceptor)

Ms. Karen Pallansch (CEO of Alex Renew Enterprises), Faith Oviawe (engineer and communications), Kelvin Coles (engineer), and Justin Carl (program manager) provided in-depth detail on the RiverRenew Tunnel and Commonwealth Interceptor Project.

Background Information:



- a. AlexRenew treats wastewater for the City of Alexandria and parts of Fairfax County at the AlexRenew Water Resource Recovery Facility (wastewater treatment plant). VA American Water is responsible for providing clean drinking water to the City (cleaning the water and piping it to customers). The City of Alexandria is responsible for sanitary (wastewater), stormwater, and combined sewer pipes (except for the largest pipes, called interceptors). Combined sewers carry sanitary and stormwater flow mixed. When combined sewers reach capacity, they overflow causing combined sewage to discharge into the environment.
- b. The largest combined and sanitary sewers in the City are called interceptors. Smaller City pipes bring sewage to the interceptors, then the interceptors bring sewage to the AlexRenew Water Resource Recovery Facility for treatment. Some interceptors also require pump stations to push flow along the pipe. Interceptor pipes and certain pump stations are owned by AlexRenew. See slides for a map of interceptor and pump station locations in the City.
- c. AlexRenew is regulated by the State (VADEQ) through a permit, which is a legally enforced document regulating the discharge of wastewater pollutants to waterways and the sizing of interceptor pipes.
- d. AlexRenew is funded solely by customer utility fees.
- e. The group discussed that the terms 10-year, versus 100-year, versus 200-year storm events refer to storms of different sizes (200-year is the largest). However, the same storm may be called something different depending on which metric or data set is used to define it.

RiverRenew Tunnel:

- a. Alex Renew is mandated to reduce CSOs by 2025. AlexRenew is currently working on a major tunnel through a program called RiverRenew, which addresses water quality in the Potomac River by reducing combined sewer overflows (CSOs). The tunnel's purpose is water quality improvement and will not address flooding within the City of Alexandria. The RiverRenew project will cost over \$600M when complete. Additional information on the RiverRenew program can be found here: <https://www.riverrenew.com/> and via social media.

Commonwealth Ave Interceptor:

- a. The AlexRenew team explained why sanitary sewer backups occur due to Inflow & Infiltration (I&I). Sometimes sanitary sewer pipes do not just contain wastewater. Rainwater can get in via improperly connected rainwater downspouts or via manhole covers. In addition, stormwater and groundwater can enter sanitary pipes that are cracked. Ms. Waynick also mentioned that many basement drains or backyard drains often connect to the sanitary sewer and allow rainwater in. This excess non-sanitary flow (I&I) can overwhelm the pipes much beyond what the pipe was designed for and cause sanitary sewer backups into homes. **See video at 1:20:00 for a summary of why sanitary sewer backups occur.** I&I into sanitary sewers is not caused by or related to overflows from the combined sewer. Apart from sewer backups which impact human health and properties, I&I is also an issue for meeting permits and keeping pipe infrastructure intact.
- b. AlexRenew models and data show that the Commonwealth Interceptor is sized correctly for how it is designed to operate but is experiencing significant amounts of I&I which is stressing the interceptor during rain events. As part of the RiverRenew program, AlexRenew is increasing the size of part of the Commonwealth Interceptor from the AlexRenew Water Resource Recovery Facility to Duke St. This increase, along with the RiverRenew pump station being installed



currently at the plant, can relieve sanitary sewer backups along the length that is being replaced, but will not relieve other parts of Del Ray.

- c. AlexRenew is currently considering increasing the Commonwealth Interceptor size from Duke St. to Braddock Rd. to relieve pressure in the interceptor. Additional information on the Commonwealth Interceptor Project can be found here: <https://alexrenew.com/major-projects/commonwealth-interceptor-upgrade-project>
- d. A full solution to sanitary sewer backups will require infrastructure modifications from homeowners, the City, and AlexRenew.

Questions from the Ad Hoc Group:

- a. Mr. Hill asked whether the Hooffs Run Bypass project and the Commonwealth Interceptor Project will conflict with each other. Dr. Medina indicated the two projects require coordination. Mr. Maines indicated that coordination is especially needed at the King Street and Commonwealth Ave. bridges where multiple major pipes and Hooffs Run converge and are restricted by the bridge structures.
- b. Mr. Sands asked what would trigger moving forward with the extension of the Commonwealth Interceptor Project. Ms. Pallansch indicated that the extension is being evaluated currently and will depend on the project cost and AlexRenew funding (rates set by a Board).
- c. Mr. Drudi asked whether the Commonwealth Interceptor Project increases pipe capacity. The AlexRenew team indicated that the interceptor project helps reduce pressure by increasing the pipe capacity and improving flow with the pump station that AlexRenew is currently building at the Water Resource Recovery Facility.
- d. Ms. Waynick asked whether there are water quality issues at the northern end of Commonwealth Ave. Ms. Pallansch indicated that there are no sanitary outflows into Four Mile Run. All sanitary flow is collected near the Four Mile Run pump station, then pumped to the AlexRenew Water Resource Recovery Facility via the Commonwealth Avenue Interceptor.
- e. Mr. Drudi asked whether adding another pump station next to the Four Mile Run Pump Station would help with sewer backups. The AlexRenew team indicated no, the primary reason for the backups is capacity in pipes getting to the existing pump station.
- f. Mr. Drudi asked whether the flooding at Pitt & Gibbon could be addressed by AlexRenew and the RiverRenew tunnel. The AlexRenew team and City indicated no and clarified that flood mitigation at Pitt & Gibbon will be provided through the Pitt & Gibbon project the City is currently working on. City staff concurred.
- g. Ms. Bevis-Carver outlined that the City will soon be installing manhole inserts and lining sewer pipes to reduce I&I into the sanitary sewer system. The City is also looking into developing a program to address I&I on private property into the sanitary sewer, including disconnecting downspouts that are connected directly into the sanitary system through private sewer laterals.

6. Discussion of Next Steps re Committee Work Plan for 2022-23

- a. Mr. Hill asked the Ad Hoc Group to thoughtfully share the information presented in this meeting with their respective neighborhoods and communities.
- b. The Commonwealth-Ashby-Glebe project will be presented to the Del Ray neighborhood association in January.



- c. The City is available to speak at neighborhood meetings, particularly about the Stormwater Fee Credit program.
- d. There are several upcoming City budget deadlines, including meetings with the City Manager at end of February and public hearings in March. Mr. Hill asked whether these meetings would be good opportunities for the Ad Hoc Group to show support for the Flood Action program and capital costs. Mr. Maines indicated that the memorandum of support from the Ad Hoc Group is sufficient.
- e. Mr. Drudi asked whether the permanent continuity of the Ad Hoc Group is still being considered. Mr. Hill indicated that he and Councilman Chapman are working towards making the Ad Hoc Group a permanent group that does not require annual renewal.
- f. Ms. Thuot saw in the December Flood Action newsletter that a walkthrough was conducted by the City in October 2022 for Flood Action projects. Residents asked Ms. Thuot whether residents can participate and be notified of walkthroughs in advance. Mr. Whiteleather indicated that the purpose of the walkthrough was for design engineers to collect technical project data and information. The City indicated that future walkthroughs will be more appropriate for the public to participate. The Ad Hoc Group indicated that walkthroughs are helpful for public understanding.
- g. The City is hosting an introductory community meeting for the three Arlandria spot improvement projects on December 20, 2022 at 6:30pm. Ms. Waynick can provide direct contacts to Mr. Dillon. The City provided informational mailers to those near the projects.

7. Public Comments

No public comments were received.

8. Adjourn 8:07pm

The Ad Hoc Group members present voted unanimously in favor.