

**JUNE 2024** ISSUE 17

**ABOUT US ENEWS ADVISORY GROUP** 

## **MANAGER'S MESSAGE**

**Building a Flood-Resilient Alexandria: Why Design Matters** 



As the City of Alexandria looks ahead to the start of a new fiscal year in July, many are taking time to assess how we have progressed towards addressing the City's flooding issues. Residents have expressed their appreciation for the numerous spot improvement and maintenance projects that are mitigating the localized flooding. However, some ask me why the design process takes so long, especially for the large capacity projects.

Industry studies have revealed that the larger and more complex the project, the more significant the delays with large capacity projects generally taking 20 percent longer than planned. This statistic is frustrating to those who must live with the ongoing construction, and it is something that the City of Alexandria is committed to addressing. Many of the causes of delay during construction can be

directly mitigated by a thorough and detailed

Here's a closer look at why a detailed design process is crucial for large complex projects: Like adding pieces to a finished puzzle: Think of upgrading our drainage system like adding puzzle pieces to a puzzle that is already complete. Our City is full of buildings, streets, pipes, and wires; and now we are trying to squeeze in some much bigger pipes. This requires disassembling some of the puzzle and putting it back together, while maintaining the City's beautiful picture. To avoid problems later, we need to carefully plan where everything goes beforehand. That's why you see crews surveying streets, taking pictures from airplanes, and drilling holes to check what's underground. The design team also uses advanced technologies like optimization design tools that model hundreds of possible design solutions to find the most effective and efficient alternative.

design process.

Getting the price right upfront: A clear and detailed plan helps construction companies give us the best price for the job. We also talk to experts who track material costs like concrete and steel, so we can budget accurately and avoid surprises.

Keeping everyone on the same page: Imagine changing the rules of a game halfway through. If we make big changes to the project during construction, it can cause delays and cost more. To avoid that, we involve many people in the design stage. City departments, utility companies, and neighbors all get to review the design and share their ideas. This helps us understand how construction will affect our community and allows us to plan detours effectively.

**Catching mistakes before they happen:** Even the best plans can have surprises. We use special 3D computer programs to double-check the design for errors. Our engineers also carefully review everything, and the crews surveying underground help us avoid unexpected obstacles. There might still be bumps in the road during construction, but a thorough plan helps us fix them quickly.

The City's Flood Action Team is committed to delivering impactful and sustainable improvements for our community. We understand how disruptive construction work is to our residents, businesses, commuters, and visitors. Shortcuts taken during the design process can lead to issues during construction. Our goal is to address potential construction issues during design, so that we are not solving engineering problems while our residents are living with extended noise and detours. We ask that you continue to engage with us at the community meetings so we can design solutions that maximize the benefit and minimize the disruptions.

Terry Suehr, Director of the Department of Project Implementation Editor's note: The Manager's Message is a periodic editorial authored by senior leaders of the



#### LARGE CAPACITY PROJECTS

Flood Action Alexandria Program.

Design Milestone Reached on the Commonwealth, Ashby, and Glebe **Flood Mitigation Project** 



City staff speak with residents at the Community Open House on May 22 Project leaders have reached a new step in designs for the Commonwealth, Ashby, Glebe Flood Mitigation Project with 60 percent design now complete.

This stage of design builds upon the previous stage of 30 percent reached last fall. It includes a more detailed set of construction drawings completed by the design team. The 60 percent milestone also includes additional project details, including structural design, erosion and sediment control, stormwater management facility design, landscaping, and traffic mitigation plans during construction.

This flood mitigation project is a combination of the top two prioritized large capacity projects and is being designed to provide flood relief for the neighborhood near the intersections of Commonwealth Avenue and E. Glebe Road, and Ashby Street and E. Glebe Road. The City will install new parallel relief sewers to increase stormwater capacity. Designs also include a new outfall to discharge flows to Four Mile Run. The total project cost is estimated at \$50 million. Last month, the City hosted a Public Open House to present on the project plans and to speak with area residents about the anticipated construction impacts. A virtual open house, including the presentation boards and access to share comments or ask questions, is available on the project website.

The City will review the 60 percent design and provide comments to be addressed in the 90 percent submission, which is anticipated to be completed this fall.

Alternative Design Solutions Requested in Hooffs Run Culvert **Bypass Project** 



The planning phase continues on a <u>complex project</u> to bring flood relief to neighbors, homeowners, and businesses along the Hooffs Run and Timber Branch culverts. Following initial alternatives received from the design team, the City is requesting modifications

in order for staff to measure the benefits of each one, based on aspects like upstream and downstream storage and conveyance. Once received, possible solutions will be evaluated to move to a more detailed feasibility

analysis. The design team continues to investigate potential solutions to mitigate flooding in the area without negatively impacting conditions in other locations in the city. As the study progresses, a City contractor will be installing two sensors to collect flow data and water levels at identified

locations in the storm sewer system. The data will help improve the hydraulic model for the project, which the design teams use to evaluate the performance of proposed solutions.

See More Large Capacity Projects -

### SPOT IMPROVEMENT PROJECTS

**Oakland Terrace – Timber Branch Channel Wall Reconstruction Project Nears Construction** 





Construction is expected to begin this month on a project to replace a retaining wall along Timber Branch near Oakland Terrace. In May, the City hosted a public meeting with residents in the area to share information about the project. Following a pre-construction meeting, the City is working with the contractor to process all necessary permits and preparing for commencement of construction. It's expected to be complete later this year. The contractor will be replacing more than 200 feet of an existing concrete retaining wall with a

reinforced vegetated wall. The \$300,000 project will help protect the nearby sewer line, as well as stabilize the stream bank to reduce the chance of further erosion and mitigate flooding in the neighborhoods near Oakland Terrace.

#### Planning Phase Complete on Bellefonte Avenue and Valley Drive **Storm Sewer Improvement Projects**



The City is moving forward with two projects to provide flood relief to residents during intense rain events.

The Bellefonte Avenue Storm Sewer Improvement Project will increase the size and capacity of pipes and inlets in the area of E. Bellefonte Avenue and E. Howell Avenue. This work will help reduce flooding by accommodating extra rainfall during intense rain events. The project is expected to cost approximately \$1,600,000.

Similar work will be done during the Valley Drive Storm Sewer Improvement Project to provide flood relief for residents in the Valley Drive and Crestwood Drive neighborhoods. This project is expected to cost approximately \$3,700,000.

The City has completed the planning phase on both projects. Additionally, the City has conducted a neighborhood flooding study, which includes an evaluation of the project sites, Closed Circuit Television (CCTV) inspections, cost estimates, and the development of possible solutions.

The two projects will proceed to design and construction phases in the next few months.

Final Design Phase Continues on Hume Avenue Stormdrain Bypass Project



The City continues to make progress in designing a project to bring flood relief to homes on Hume Avenue and E. Raymond Avenue. In February, the City completed review of the 90 percent design. The next step will be to complete additional geotechnical investigations.

Geotechnical investigations provide important information needed prior to construction, including soil conditions and the location of subsurface gas lines. The design phase on this project proceeded in three phases, including the 30 percent schematic plans, 60 percent design plans, and final construction drawings. The Hume Avenue Stormdrain Bypass Project includes installation of an alternate storm sewer along Hume Avenue to bypass the existing pipe in the backyards of the townhomes on the south side of Hume Avenue. New storm sewer pipes and storm inlets will also be installed along E. Raymond Avenue to capture stormwater flows before they can collect in low-lying areas. The final design plans will be completed following the geotechnical investigation.

Door hangers will be distributed to homes in the area before work on the geotechnical investigation begins.

Edison Street & Dale Street and W. Reed Improvement Projects Near **Final Design** 



The City has completed 90 percent of designs on a project to reduce flooding near the Hume Springs neighborhood and is now working on additional geotechnical investigations. The geotechnical investigations will help locate gas and sewer lines, as well as other underground utilities in the area. The final designs will be completed following the investigations.

As part of the Edison Street Drainage Improvement Project, the City will be upgrading the existing outfall pipe collecting stormwater from the Edison Cul-de-Sac to a larger size, as well as installing additional inlets at the intersection of Edison Street and Mark Drive. The W. Reed and Dale Street Storm Sewer Improvement Project includes installing additional inlets along W. Reed Ave. and upgrading outfall pipes running under Hume Spring Park and the Dale Street Community Garden.

The projects are using a Virginia Community Flood Preparedness Fund (CFPF) grant and local Stormwater Utility funding to accelerate portions of the identified Edison and Dale Large Capacity Project prior to the anticipated funding being available in FY2026. Public notices will be distributed to homes in the project area before the geotechnical

See More Spot Improvement Projects ->





investigations begin.

Alexandria City Council Approves Budget for Fiscal Year 2025 On May 1, the Alexandria City Council approved the budget for Fiscal Year 2025.

Included in the budget is a five percent increase in the annual Stormwater Utility Fee (SWU) from \$308.70 to \$324.10 for a typical single-family home. The SWU fee provides a dedicated, equitable funding source for the City's Stormwater Management Division. These funds are invested in stormwater management services, operations and maintenance of stormwater infrastructure, flood management programs, and capital infrastructure projects. The fee increase maintains funding for the increase in infrastructure investments. The approved budget also includes more than \$23 million in capital funding for FY2025, and more than \$280 million for the Capital Improvement Program (CIP) over a 10-year period to continue funding stormwater management requirements to include the Flood Action Alexandria program.

Fiscal Year 2025 begins July 1.

More than 200 Trees Planted to Celebrate City's Birthday



The tree canopy around Alexandria continues to grow as the City makes progress in its efforts to recognize the City's 275th birthday by planting 275 trees throughout the City.

The project is funded by the Stormwater Utility Fee and is led by the Department of

Transportation and Environmental Services Stormwater Management Division. To date, 215 of the 275 trees are in the ground in specified locations throughout the City. The first tree was planted following a proclamation by the Alexandria City Council at the City's Birthday Kick-off Event on April 6. This was followed by a second tree planting and proclamation during the We Are Eco-City Alexandria event on April 13 as part of Earth Month and Arbor Day celebrations.

The trees will continue to highlight a healthy, thriving City. Urban trees help in reducing nutrient runoff, absorbing stormwater to mitigate flooding, and enhance the City's tree canopy to provide shade and reduce the heat index, lowering the temperature of stormwater flowing into the City's waterways.

Stormwater Management staff are partnering with Recreation, Parks, and Cultural Activities (RPCA) Urban Forestry in selecting locations for each of the trees and executing the project. An interactive map to see locations of all 275 trees is available on the City website. The final tree will be reserved to celebrate the City's 275th Anniversary Commemoration event in July. About the City's 275th Birthday

Alexandria at 275: Connecting to our past to define a brighter future. Since its 1749 founding, the historic City of Alexandria has played a major role in our nation's story and reflected its progress toward inclusivity. Join us at events from April through September as we mark Alexandria's 275th anniversary and embark on the next chapter in our city's vibrant history at alexandriava.gov/ALX275

City of Alexandria Invites Community to Help Clean the Bay



Volunteers help protect the Chesapeake Bay during Clean the Bay Day 2023 The City is recognizing Chesapeake Bay Awareness Week June 1 through June 9, 2024. As a part of this annual event, the City's Stormwater Management Division is hosting a stream cleanup at Oronoco Bay Park on Saturday, June 8, 2024, from 9:00 am to 11:00 am.

Founded in 2016 by the Chesapeake Bay Commission, Chesapeake Awareness Week is an opportunity to celebrate the Bay's history, its cultural significance, and to take actions to help protect it. As the largest estuary in the United States, the Chesapeake Bay is the home to 3,600 species of plants and animals and is a critical natural resource for the City. On May 28, 2024, Mayor Justin Wilson and the Alexandria City Council affirmed the City's commitment to protecting the Bay with a proclamation declaring June 1 through June 9, 2024,

as Chesapeake Bay Awareness Week. Community members are invited to participate in the Clean the Bay Day cleanup event to recognize the awareness week. City staff will provide gloves, trash grabbers and bags, and will have first-aid kits available. Participants are encouraged to bring water and wear appropriate clothing, including long pants and closed-toe shoes.

There are several ways to protect the Bay throughout the year, including: - Pick up after pets and dispose waste in a trash can to prevent it from washing into storm

drains. - Keep the city litter-free, as waste dropped on streets, sidewalks, or parks harms the environment and wildlife, and eventually ends up in the Chesapeake Bay.

- Know how much fertilizer to use and don't over fertilize. Or better yet, don't fertilize at all if it isn't necessary! Never fertilize or use pesticides if it is going to rain within 24 hours. Fertilizers and pesticides can end up in streams and harm aquatic life.

If you suspect contamination in our City's waterways, please contact Alex311. For more information on the City's efforts to protect the Chesapeake Bay, please visit the Clean Waterways website.

#### Hurricane Season Begins June 1



The 2024 Atlantic Hurricane Season officially begins June 1, running through November 30. This is the period of the year in which historically, according to the National Hurricane Center (NHC), more than 90 percent of hurricane activity occurs in the Atlantic Ocean.

Tropical storms and hurricanes can cause heavy rain over Alexandria, bringing with it the potential for flooding. Residents are encouraged to take steps to prepare for potential hurricanes and extreme weather by stocking up on

emergency supplies, like flashlights, batteries, water, and medical supplies.

Insurance Program

Photo courtesy of the FEMA National Flood

City staff also encourage residents to purchase flood insurance to further protect their properties. According to the Department of Conservation and Recreation, only three percent of Virginians have flood insurance. However, it's available for anyone to purchase through the Federal Emergency Management Agency (FEMA).

There are a few important tips to be aware of when purchasing flood insurance:

- Most flood insurance policies have a 30-day waiting period before coverage is active, so avoid waiting until the last minute. - Flood insurance policies are not "one size fits all." Some policies may cover damage by

some types of flooding, but not all. - Flood insurance purchased through FEMA is limited for basements. Contact an insurance agent to find more information about policy options.

The City participates in the National Flood Insurance Program's (NFIP) Community Rating System (CRS) program, a voluntary incentive program that recognizes floodplain management practices that exceed minimum federal requirements. Based on these management practices, in October the City received re-certification of a Class 6 Rating from the CRS, which secures flood insurance discounts of up to 20 percent for property owners in FEMA's designated Special Flood Hazard Areas.

In preparation of forecasted storms, crews from the City's Department of Transportation and Environmental Services monitor and clean inlets; after a storm, crews manage debris cleanup. Residents are encouraged to contact Alex311 to report any inlets that may be clogged with debris, downed trees, or other storm cleanup needs. Alex311 can be connected via phone, through the Alex311 app, or online.

Find more related information on the City's Hurricane Preparedness webpage.



## **COMMUNITY MAINTENANCE WORK**



**Routine Maintenance Underway to Remove Vegetation Along Four** Mile Run



In April, the City began maintenance work to remove excess vegetation along the Four Mile Run Levee from the I-395 bridge to downstream of the Mount Vernon Avenue bridge at Four Mile Run.

After vegetation removal

The levee, which was constructed in the 1970s to help mitigate flooding, is part of the City's routine stream and channel maintenance program. The contractor crews are removing and cutting vegetation from the levee.

This maintenance work is done every few years, or as needed based on annual inspections. It helps to maintain the structural integrity of the levee and its capacity to carry floodwaters. The removal is expected to be complete by the end of June.

**SNAPSHOT** 

**Progress Continues on the Sanitary Sewer Asset Renewal Program** In 2020, the City initiated a long-term program to both renew its aging sanitary sewer system and reduce the amount of infiltration and inflow that enters the system. The graphic below shows the status for each work area.

Rehabilitation of sewer manholes and mainlines is ongoing in the Del Ray East area and is anticipated to be completed by October 2024. Inspections in the North Ridge area will be completed by this summer. Staff is currently identifying areas for inspection for Fiscal Year



# FROM THE FLOOD ACTION ADVISORY GROUP

The Summer of 2024 is a turning point for Alexandria's Flood Action Program

Everything that has happened in the prior three years of the program has led to this day. When the City Council approved the budget for FY2025, they confirmed Alexandria's unwavering commitment to the \$260 Million ten-year Flood Action Program that was launched in 2021. Council redoubled that commitment when they established the Stormwater Advisory Committee through the next ten years. And the progress of the City's engineers in completing the "small 'spot projects" and long-postponed culvert maintenance has cleared the playing field so we can now focus on the big projects.

This summer, the designs of the first wave of multi-million-dollar large capacity projects will be made public. The projects are the core of the Flood Action Program. They will fundamentally expand Alexandria's capacity to move stormwater away from our most-flood prone neighborhoods. The project at the intersection of Commonwealth, Ashby and Glebe is the furthest along - the design was shared with the public in May. The projects to address flooding at Pitt and Gibbon, Nethergate, and along Hooff's Run are being designed right now – and the designs will be shared with the public starting this year.

This turning point creates a new responsibility for the Advisory Committee. As Alexandrians who live in the neighborhoods most impacted by stormwater flooding, we will accelerate our efforts to make our neighbors aware as the stormwater projects that were once far off on the horizon are now becoming a reality. A reality that will bring relief from stormwater flooding while also bringing the disruption of big construction projects. The Advisory Committee is working with the City staff to shape an information program to inform neighborhoods how these projects will impact their homes and businesses.

## STORMWATER STEWARD



Lu Zhang is a Civil Engineer in the City's Department of Transportation and Environmental Services Sanitary Infrastructure Division dedicated to improving the quality of life for Alexandrians.

"I'm always fascinated in the real world how engineers can develop innovative solutions to address problems," Zhang said. "I like to do practical work, and to see the work get done, we get to see those things get constructed. I feel really satisfied by seeing the result, that's why I chose to be a civil engineer."

Zhang began working for the City in 2019 as a Civil Engineer III, reviewing site plans to verify the sanitary sewer system has the capacity to support project developments. He also works on assessment and rehabilitation of the combined sewer system. The goal of this project is to fix deteriorated sewer systems and extend their useful life.

Over the last five years, Zhang has been working on assessment and inspection of structures, like manholes, catch basins, inlets, and sewer lines. Now the City is preparing to move on to the design phase, followed by construction. Zhang says it's rewarding to watch these projects progress.

"It's quite challenging when we get there, but I feel so confident that we can get those things done. We are solving a lot of problems," Zhang said.

More recently, Zhang began managing the Sanitary Sewer Asset Renewal Program, a \$36 million program to rehabilitate all City sanitary sewers, manholes, and City-owned portions of lateral sewers. Additionally, in 2021 he began managing the Nethergate Storm Sewer Improvement Project, his first flood mitigation project. Zhang participated in neighborhood outreach to hear from residents how they were impacted by major storm events in 2019 and 2020.

"When we talk to those homeowners, sometimes we can feel their pain," Zhang said. "To be able to rehabilitate our sewer system, to provide people a better sewer system, that makes me so proud of my work. To improve their quality of life is our goal as public servants." Moving forward, Zhang said his goal is to focus on his projects, while growing relationships with the community residents, as well as with wastewater partners.

The Flood Action Alexandria newsletter is produced by City staff. Email us at <u>stormwater@alexandriava.gov</u>.

