Who We Are

1 City Engineer
3 Senior Engineers
1 Mid-Level Engineer (vacant)
1 Engineering Technician

1 Stormwater Program
1 Administrator
Stormwater Utility Asset Manager (vacant)

1 Environmental Program Analyst

2 Site Inspectors (1 vacant)

What We Do

- Provide engineering design
- Review site plans
- Inspect sites
- Manage projects and construction
- Provide engineering assistance to other departments
- Implement the City’s Stormwater Program
- Ensure public health and safety in storm drainage and flood control
- Manage FY2023 budgets:
  - $1.5 million Engineering budget
  - $4.4 million Stormwater budget

More than 1,000 Site Inspections in 2022

more than 100 Engineering Plan Reviews in 2022 for public & private projects

26 Active CIP Projects
Reviewing Site Plans (major and minor)

Requires many steps and collaboration among departments:

- Reviewing the DCSM and Plan Review Checklist
- Stormwater Review
- Erosion and Sediment Control Review
- Transportation Review
- Confirm Compliance with Comprehensive Plan and Trans
- Traffic Impact Analysis
- Utility Review & Excavation Permit
- General Engineering Review
Engineering Inspections

Protect our public infrastructure
- ensure materials and installation meet standards for public/private projects
- inspect utility construction
- inspect road construction and ensure third party inspections

Protect the environment
- review for erosion and sediment control to ensure minimal environmental impact

Oversee Construction
- ensure contractors build according to approved plans
- issue non-conformance stop-work orders
- maintain inspection records

Collaborate with customers
- conduct pre-construction meetings
- prepare punch lists for final bond release

Collaborate with Planning and Development Department
- review site improvement, erosion control, excavation, right-of-entry, land disturbance, lot grading, and demolition permits
2022 Highlights

- Monthly dam and pond inspections
- Faster GoGov response to resident concerns
- Faster response to drainage complaints
- More pond maintenance

- Strengthened relationships with VDOT and Prince William County
- Interviewed and selected engineering consultants for next 5-year on-call contracts for land development, stormwater, floodplain, and transportation needs

- Staff increased technical certifications and training
- Developed screening and inspection apps with GIS

- Stormwater management program oversight

- Multiple road and pedestrian improvement projects under construction
- Multiple projects advanced in design
- Approximately $100 million in transportation/stormwater projects

- Grant and funding applications
2022 Project Highlights

Grant Avenue Phase I (T-021) Construction

Goals:
- Create a visually appealing gateway to the City’s historic downtown
- Lane reductions between Prince William Street and Wellington Road
- Improved pedestrian and bicycle safety
- Improved water and electrical service

Status:
- Design complete
- Community meetings in January, 2022
- Easements complete
- Utility relocation (water/electric)
- Advertised project for bid
- Construction anticipated Spring 2023
Route 28/Nokesville Road Widening T-042 - Construction

**Goals:**
- Widen to 6 lanes and install a dual left turn lane
- Improve pedestrian and vehicular safety and connectivity

**Status:**
- Estimated completion in May 2023

Mathis Avenue Improvements T-086

**Goals:**
- Improve pedestrian safety and connectivity between two historic districts
- Promote investment in Mathis Corridor
- Improve traffic safety and implement traffic calming

**Status:**
- Engineering design 60% complete
- Public engagement meetings and surveys completed in Spring 2022
- Pursuing grant opportunities for full construction funding
Dean Drive Extension T-030 - Construction

Goals:
- Provides opportunity for economic development
- Extends Dean Drive from existing cul-de-sac to the animal shelter
- Adds bike lane and curb-n-gutter
- Improves drainage at intersection of Dean Drive and Foster Drive
- Improves pedestrian connectivity

Status:
- Community meeting in January, 2021
- Electric undergrounding and Utility relocation completed
- Water transmission replacement undergrounding complete
- Construction contract awarded and underway
- Anticipated completion Spring 2023

Sudley Road Third Lane T-015

Goals:
- Establish a third NB thru-lane from Grant Ave. to Godwin Dr.
- Construct continuous sidewalk and pedestrian safety improvements at intersections
- New crosswalks
- Pedestrian push-buttons
- Median refuge islands
- Utility betterment

Status:
- Community meeting in May, 2021
- Engineering complete
- Right of Way and easement negotiation in progress
- Currently coordinating required utility relocations
- Construction estimated to begin in 2023
**Sudley Road/Centreville Road Roundabout T-085**

**Goals:**
- reduce travel times and a major bottleneck
- reduce the number of auto and pedestrian accidents
- improve air quality and noise
- lower cost to maintain than traffic lights and hardware
- help create a more beautiful gateway into the city

**Status:**
- 60% Design Complete
- Pending due to funding availability
- July, 2022 public meetings
- public comment survey open

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**Centreville Rd./Liberia Ave. Intersection Improvements T-074**

**Goals:**
- Improve pedestrian safety at intersection
- New Curb Ramps & Crosswalks
- Pedestrian Signal Push-Buttons
- Median Refuge Islands
- Re-Striping Intersection

**Status:**
- Engineering Complete
- Acquisition of one Temporary Construction Easement
- Project out for Bid
- Anticipated construction Spring 2023
Wellington Road Shared-Use Path T-088

Goals:
- Complete 0.35-mile connection in trail system between Prince William St. and Nokesville Rd.
- Pedestrian and bike access across railroad tracks to Jennie Dean Elementary, Dean Park, Micron, and other local points of interest.

Status:
- Engineering 90% Complete
- Design coordination with VDOT and Norfolk Southern is on-going
- Bike & Pedestrian public meeting in May, 2022
- Construction estimated to begin Winter 2023/2024

Gateway Boulevard Sidewalk and Trail T-058 - Construction

Goals:
- New ADA compliant 2,332 linear feet, 10 foot-wide shared-use trail along the north-side of Gateway Boulevard.
- New ADA compliant 2,332 linear feet, 5 foot-wide sidewalk along the south-side of Gateway Boulevard. (future)
- Increased pedestrian and bicycle safety.
- New walking and biking connections for residents and businesses in the Gateway/Airport area.

Status:
- Design complete
- Right of Way acquisition complete
- Eagle nesting season accommodated
- Bike & Pedestrian public meeting in May, 2022
- Project bid and awarded
- Construction estimated to be complete by Summer 2023
**Godwin Drive Shared-Use Path T-059 - Construction**

**Goal:**
Two-way bicycle and pedestrian shared use path (8'-10' wide) from Wellington Road to Winters Branch Trail (approximately 1.5 miles)

**Status:**
- Design Completed
- Bike & Pedestrian public meeting in May, 2022
- Project Bid and awarded
- Construction underway and is anticipated to be complete by Summer 2023

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**Quarry Street Streetscape Project T-087 - Construction**

**Goals:**
- Constructing a new ADA compliant 5 foot-wide sidewalk along the southern portion of Quarry Street.
- New roadway pavement, approximately 450 linear feet, between Main St. and the Messenger Place entrance.

**Status:**
- Design completed
- Bike & Pedestrian public meeting in May, 2022
- Utility undergrounded in summer 2022
- Project bid and awarded; construction to be complete by summer 2023
Looking to the Future

*Projects we're working on*

- Centreville Rd./Liberia Ave. pedestrian improvements
- Grant Avenue streetscape
- Traffic signal conversion from mast arms such as those at Donner and Godwin Drive
- Sudley Road 3rd Lane Northbound
- Liberia Ave. 3rd lane eastbound and additional pedestrian projects like Sudley Road going into design
- Van Metre Homes on Grant Avenue
- Dean Park Improvements Phase I and design of Phase II
- Completion of Route 28
- Godwin Drive Shared Use Path
- Quarry St. sidewalk
- Gateway pedestrian improvements
- Dean Drive
- Jefferson Square
- Didlake
- Kings Landing
- Harris II Building
- The Learning Experience
- Lockheed Martin Pavilion
- Micron expansion
- Zumot Data Center and other Data centers
2022 Stormwater Highlights

What We Do

- Ensure compliance with the City’s Permit (Submission of Annual report to DEQ)
- Ensure City facilities follow pollution prevention and good housekeeping procedures
- Implement our Chesapeake Bay and Local Sediment TMDL requirements (TMDL = total maximum daily load = “pollution diet”)
- Ensure public health and safety in storm drainage and flood control
- Address public drainage complaints (over 40 in the last year)

- Provide public education and involvement opportunities
- Prepared Emergency Action Plan for State facility
- Applied for SLAF grants

- Applied for SLAF grants
- Manage deferred maintenance on SWM facilities
- Manage Stormwater/Floodplain projects

- Prevent illicit discharges (pollution) from entering our storm sewer system/local water bodies
- Inspect and maintain the City’s stormwater management facilities (e.g., ponds, bioretentions)
- Manage the Stormwater Utility Program and Inspections
2022 Stormwater Projects

Euclid/Sills Warehouse SW Pond Retrofit  D-009

Goals:
- Retrofit Existing Dry Pond to a Level 1 extended detention pond that will provide water quality & quantity controls
- TMDL credit for both the Chesapeake Bay and Local Sediment TMDL

Status:
- Design- 60% with floodplain study
- Estimated construction in Fall 2024

Liberia Plantation Stream Restoration D-027

Goals:
- Repair 1,800 LF of eroded stream banks along Flat Branch Creek through the Liberia Plantation
- Gain TMDL credits and floodplain study
- Use natural channel design and floodplain restoration techniques

Status:
- Design 60% complete
- Estimated completion in Fall 2024
Round Elementary SW Pond Retrofit D-036

Goals:
- Retrofit existing dry pond to increase flood storage capacity and improve conveyance system to decrease offsite flooding and fix an outfall issue under Godwin Drive by replacing a culvert.

Status:
- Conceptual Design Complete
- Design in process

Round Elementary Stream Restoration D-036

Goals:
- Repair 2,000 LF of eroded stream banks to two tributaries of Cannon Branch from the school to Godwin Drive
- Gain TMDL credits
- Use natural channel design and floodplain restoration techniques

Status:
- TMDL Credit Analysis Complete
- Design in process
**Winters Branch Pond Retrofit D-037**

**Goals:**
- Rehabilitation and dredging of Winters Branch Pond and forebay
- Enhance pond features to include a viewing platform with educational signs and creation of a water trail

**Status:**
- Design 100% complete and project is out to Bid
- Estimated construction in Spring 2023

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**Lucasville Regional SW Facility Retrofit D-039**

**Goals:**
- Retrofit wet pond to a Level 2 wet pond that provides water quantity and quality controls.
- Gain TMDL Credit

**Status:**
- Design- 100% Complete & out for Bid
- Estimated construction in Spring 2023
- Received SLAF grant funding for a portion of this project
Stonewall Park C-048

Goals:
- Renovate fields playground, pavilion, tennis court, sports court
- Add lighting and walking trail
- Stormwater enhancements to support park & MS-4 program

Status:
- Stormwater concept plan/ feasibility study complete
- Design in process

Dean Park C-017

Goals:
- To add additional recreational fields to support the community
- Educational signs at SWMFs
- Phase II Design to start Spring 2023

Status:
- Phase 1 –design completed
- Project out for bid
- Construction starts Spring 2023
New Britain Regional Pond Retrofit D-043

Goals:
- Retrofit dam to classify the dam as non state-regulated
- Retrofit existing City stormwater management facility for TMDL pollution reduction credits

Status:
- Feasibility study complete
- Design underway

Stormwater Capital Maintenance
Stormwater Facility Maintenance D-029

Goals:
- Continued non-routine maintenance of 24 city stormwater management facilities (SWMFs)

Status:
- Status – ongoing
- Completed
  - Sumner Lake
  - Jackson Manor
  - Cannon Industrial Regional Pond
  - Lee Manor
Stormwater Capital Maintenance
Drainage Maintenance & Construction D-035

Goals:
- Routine drainage maintenance, or
- Citizen-driven maintenance
- Culvert repair/replacement

Status:
- Completed in 2021-2022
  - Winter Branch Dam Cert. & EAP
  - Outfall Dry Weather Screening
  - Liberia House Access Culvert
  - Stonewall stream repair
  - Grant Ave feasibility
  - Cannoneer CT Outfall Restoration
- Sumner Lake culvert repair/replacement planned for 2023
Addressing Drainage Problems for Residents

When residents find pooling water around their properties, the Engineering Department works to find solutions by:

1. Researching Ownership
2. Assigning Responsibility
3. Designing Cost-Effective Solutions
4. Constructing Improvements

Our staff draws on its extensive training as Department of Environmental Quality (DEQ) Certified Erosion Control Specialists, DEQ Certified Stormwater Management Specialists, and Certified Flood Plain Managers to design improvements for our community.

Staff also try to get ahead of problems by monitoring MS-4 Stormwater Permits, illicit discharges, and facility maintenance. This service is part of the Stormwater Capital Maintenance Drainage Maintenance & Construction (D-035) CIP.
Stormwater Capital Maintenance
Upstream Inspections & Maintenance D-038

Goals:
- Determine maintenance needs through inspections of the storm sewer system and feasibility studies of SWMFs

Status:
- Status – ongoing
- Completed
- Riser inspections at 3 SWMF
- SWMF feasibility studies for 5 SWMF
- Culvert inspection at 1 SWMF
- CCTV of pipes in three priority watersheds
Stormwater MS4 Permit Compliance

Illicit Discharge Detection and Elimination

During dry weather outfall screening, staff checked 270 MS4 outfalls.

Of the 31 illicit discharge investigations:
- 20 were confirmed as illicit discharges
- 12 were resolved
- 4 are closed, but have a “Watch” designation so the City can continue to monitor potential intermittent discharges
- 4 are still open active as open investigations

Grease residue found in City SW inlet. The SW team worked with upstream restaurant to development a grease management plan to prevent future discharges.
Stormwater MS4 Permit Compliance

**SWMF Inspection & Maintenance**

- **SWMF Routine Maintenance**
  - Sediment & trash removal, vegetation removal (interdepartmental)
  - Monthly and/or after major rain events
  - Over 350 visits

- **Mowing (contracted)**
  - 237 visiting to public SWMF for mowing

- **Water Quality Treatment for aquatic weeds and algae (contracted)**
  - 210 visits

- **SWMF Inspections**
  - 10 formal inspections of public SWMF
  - 25 formal inspections of private SMWF

- **Over 350 visits**
Looking to the Future

Stormwater Projects we’re working on

- Sumner Lake Stream Culvert Repair/Replacement
- Stonewall Park SWMF design begins
- Oakenshaw Regional Pond Retrofit design begins

- Cannon Branch/Flat Branch Stream Restoration design begins
- Round SWMF and stream restoration design begins
- New Britain SWMF design begins

- Liberia stream restoration design being completed
- Euclid Sills design completed
- Lucasville Pond retrofit in construction
- Winters Branch SWMF in construction

- Public Facilities Stormwater Management
  - Improvements/Floodplain studies

- Continued maintenance on many SWMF

- Potential SLAF grant awards

- Lucasville and Winters Branch SWMF completed in construction

- Bull Run Watershed Study
  - Funded by National Fish and Wildlife Foundation
  - Aims to prioritize & plan how impaired streams, SWMFs and other infrastructure can be improved/ restored to improve water quality
Engineering Mission Statement

To provide quality engineering design, project management and construction management to ensure that private and public development are well-planned and constructed to serve the Public which enhance the City. Minimize risk to public health and safety through effective operation, management, and maintenance of its storm drainage and flood control assets, to promote appropriate runoff control and reduction practices throughout the City of Manassas, and to restore and enhance water quality in local streams by educating citizens, guiding the development process, and implementing pollution prevention strategies throughout its operation.