

# ***Headwaters Drainage Study***

## ***Frequently Asked Questions***

### ***What is the purpose of the Headwaters Drainage Study?***

The purpose of the Headwaters Drainage Study is to:

- Evaluate existing conditions and identify “pinch points” in the drainage system,
- Address drainage issues within the community,
- Foster stakeholder engagement, and
- Inform future stormwater management system repairs and City capital improvement projects.

Additional project background information can be found on the City’s project page located here: <https://www.gaithersburgmd.gov/government/projects-in-the-city/headwaters-drainage-study>

### ***How many Community Outreach events will occur throughout the duration of the project?***

Community Meeting #2 is planned for Spring 2023 and a Final Public Hearing is planned for late Summer 2023 – Fall 2023.

### ***Has flooding changed over the time a resident has lived in Gaithersburg for more than ten (10) years?***

High-intensity storm events appear to be more frequent today compared to the previous ten (10), twenty (20), thirty (30) years. New development, increased impervious surface, and aging stormwater infrastructure are capable of altering drainage patterns and flooding intensity.

### ***How was the project study area boundary chosen?***

The project study area boundary was chosen for several reasons listed below:

- The study boundary contains the majority of existing drainage issues identified by City staff and through community feedback,
- Compared to the rest of Gaithersburg, the study area depicts older stormwater infrastructure,
- The study area is located at the headwaters of Gaithersburg jurisdiction where three (3) watersheds meet, and
- The smaller study area will be used as a pilot project to help develop a methodology to better analyze the remainder of the City in the future.

### ***What is a BMP?***

Best Management Practice: The primary method to control stormwater runoff is the use of best management practices (BMP). Stormwater BMPs are devices, practices, or methods that are used to manage stormwater runoff by controlling peak runoff rate, improving water quality, and managing runoff volume.

To view examples of Stormwater BMPs and additional information, please visit the following link: <https://www.montgomerycountymd.gov/water/stormwater/practices.html>

### ***What does it mean for a BMP to “treat” stormwater?***

BMPs are used to treat water in several ways depending on which practice is used.

Treatment examples include:

- Natural infiltration practices (native vegetation, shrubs, plants, trees, etc.),
- Underground storage holding tank or aboveground land depression which collect runoff and allow pollutants to settle out before reaching local streams, and
- Other devices, practices, and structures that naturally separate pollutants, oil, and sediment prior to being released into local streams.

### ***Why do we care about phosphorus and nitrogen nutrients?***

Runoff can push large amounts of nutrients from fertilizers, pet waste, and other sources into rivers and streams. These nutrients can produce algae and harmful low-oxygen dead zones that are harmful for aquatic life.

### ***Is there a system or vertical profile under a grass swale?***

A grass swale is an open channel that collects stormwater from hard surfaces and allows it to soak into the ground, reducing the amount of runoff leaving the road or property. Grass covering the side slopes and swale bottom provides a filtration surface for the water and helps to reduce flow velocity.

Grass swales can be:

- Natural,
- Have stone or concrete check dams across the width of the swale to help reduce flow velocity, promote infiltration, and prevent erosion,
- Have a special soil vertical profile to increase infiltration, or
- A combination of the above designs.

### ***What type of models will be used and when will that work occur?***

The most common models used will be EPA SWMM and HEC-RAS software. Models will be used to simulate both surface flow and underground pipe flow data. Modeling

work is planned to take place from Winter 2022 to Spring 2023 and be completed prior to Community Meeting #2.

***Will water sampling/monitoring take place during the study?***

There is no water sampling/monitoring planned to take place during the study. The study focuses on stormwater drainage infrastructure.

***How do we know if there is a sedimentation issue in underground pipes?***

During Winter 2022/2023, closed-circuit television (CCTV) operations will be conducted to view high priority area pipe segments.

***What is the process for installing stormwater infrastructure on private property?***

- 1) For work on private property, the owner would be responsible for obtaining design, permitting, and construction approval. The owner would also be responsible for maintenance of the improvements.
- 2) If the City provides a strategy to repair an area on private property through a CIP project, the City could fund the project or do it as a cost share with the private property owner. Either the City or the private property owner could be responsible for any legal documents needed for the work and or the future maintenance of the project depending on the agreement.
- 3) For work in the City right-of-way, the City usually would fund this through its budget (CIP), and be responsible for permitting, construction, and maintenance. If the work is in the right of way, the City doesn't need any outside approval or legal agreements unless the improvements also include work on adjacent (private) property. The City has done these type of projects many different ways so it's more on a case by case basis.