

# TAKOMA PARK STORMWATER RESILIENCY STUDY

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Low Impact  
Development  
Center



# AGENDA

- Summary and focus of study
- Discussion of study areas
- Resident assistance
- SWMM modeling and approach
- Q&A

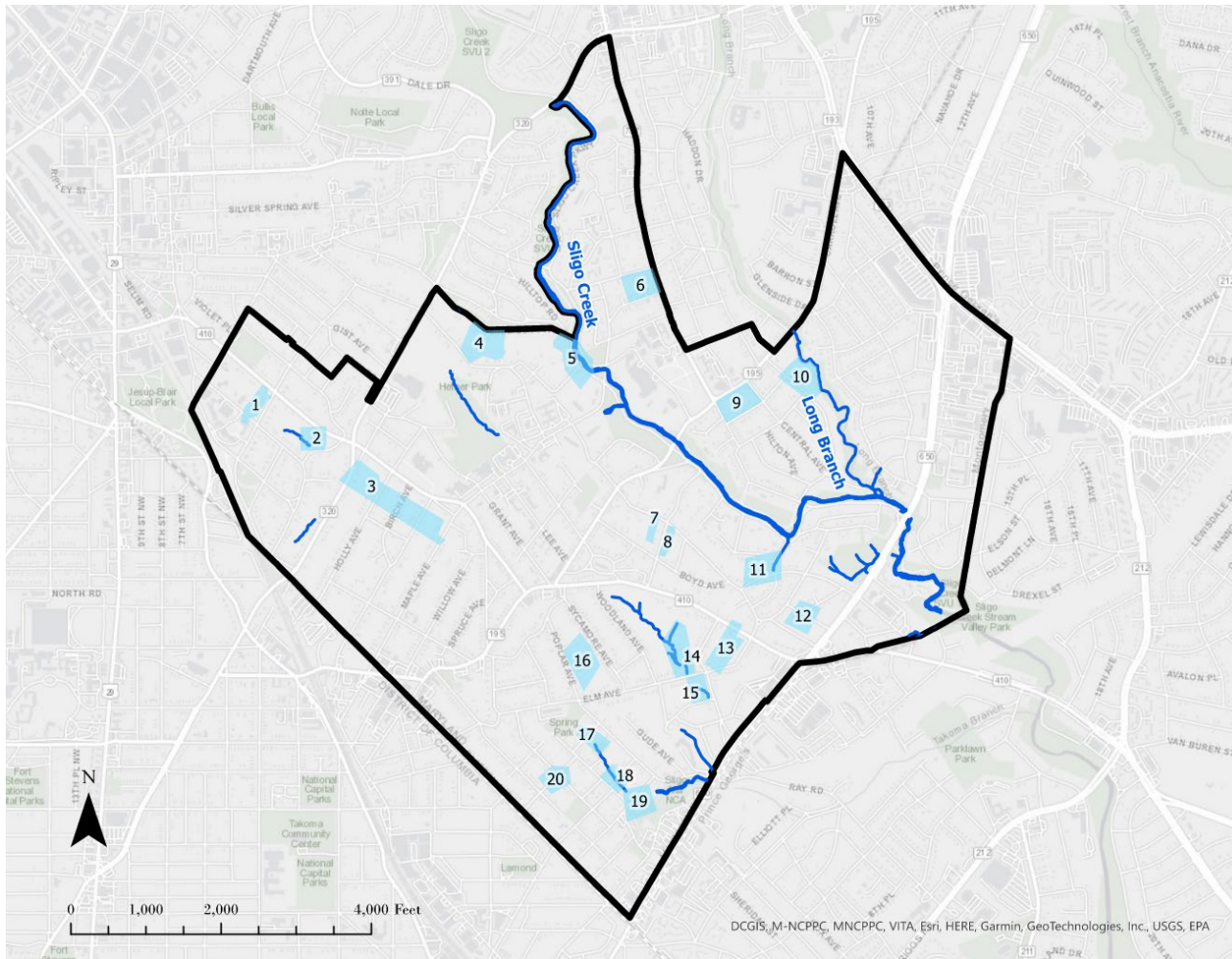


# STUDY GOALS AND FOCUS

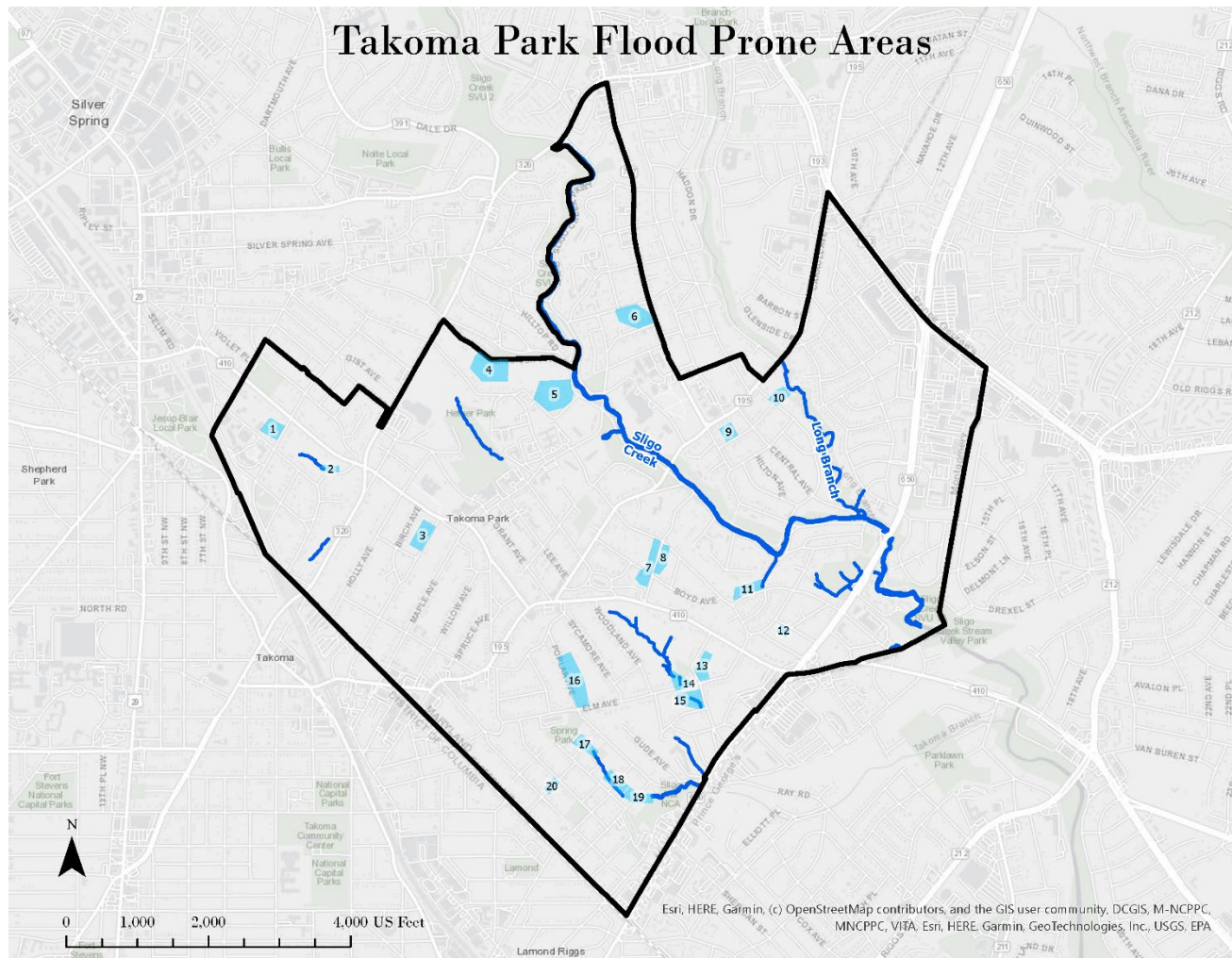
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- Assess study areas compiled by City staff and outreach efforts
- Provide recommendations and assistance to the City
- Detailed study of smaller area

# Study Areas



# Study Area Refinement

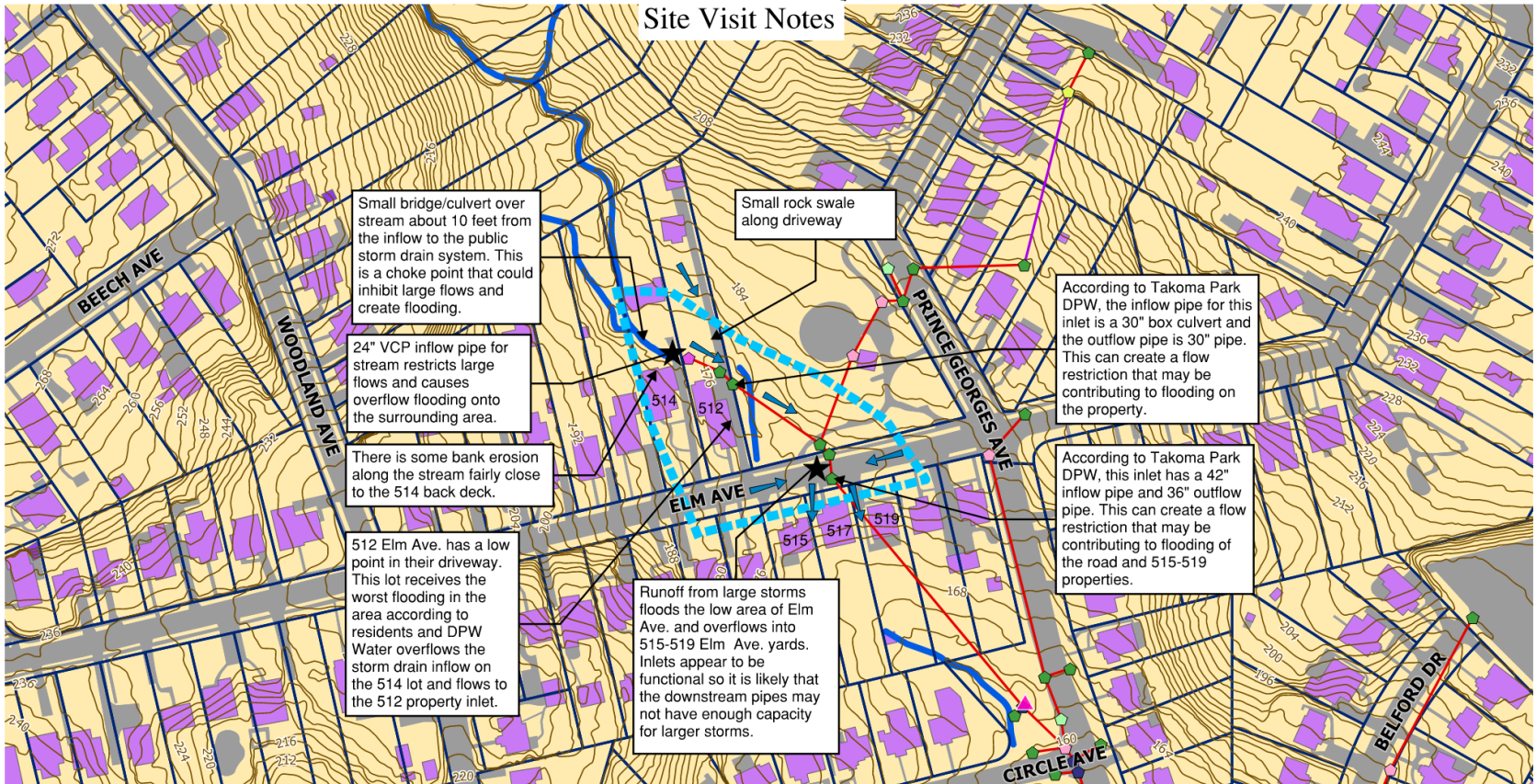




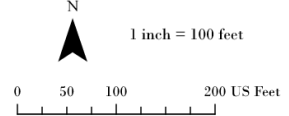
# Study Area Investigation

## Takoma Park Study Area 14

### Site Visit Notes



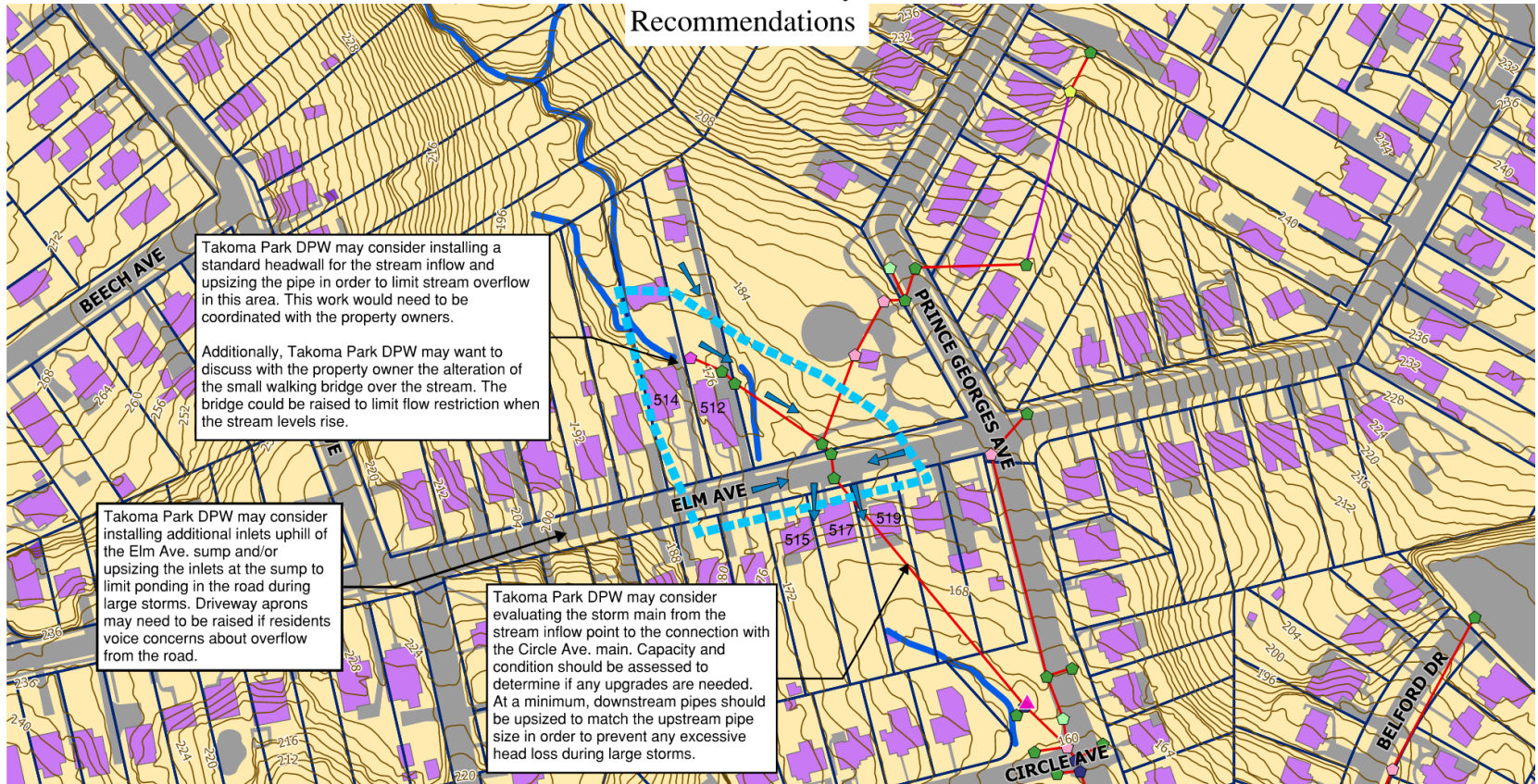
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|-----------------------------------|-------------------|------------------------|-------------------|------------------|
| Property Lines                    | Pervious Surfaces | Storm Drain Conveyance | Inlet             | Runoff Flow Path |
| 2 ft Contours (2020)              | Streams           | Ditch                  | Manhole Structure | Point of Concern |
| Study Area                        | Buildings by Roof | Pipe                   | Pipe Connection   |                  |
| Stormwater BMPs                   | Flat              | Storm Drain Structures | Pipe Direction    |                  |
| Roads, Sidewalks, Driveways, etc. | Gable             | End Wall               | Projecting Pipe   |                  |



# Study Area Recommendations

## Takoma Park Study Area 14

### Recommendations



Takoma Park DPW may consider installing a standard headwall for the stream inflow and upsizing the pipe in order to limit stream overflow in this area. This work would need to be coordinated with the property owners.

Additionally, Takoma Park DPW may want to discuss with the property owner the alteration of the small walking bridge over the stream. The bridge could be raised to limit flow restriction when the stream levels rise.

Takoma Park DPW may consider installing additional inlets uphill of the Elm Ave. sump and/or upsizing the inlets at the sump to limit ponding in the road during large storms. Driveway aprons may need to be raised if residents voice concerns about overflow from the road.

Takoma Park DPW may consider evaluating the storm main from the stream inflow point to the connection with the Circle Ave. main. Capacity and condition should be assessed to determine if any upgrades are needed. At a minimum, downstream pipes should be upsized to match the upstream pipe size in order to prevent any excessive head loss during large storms.



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|-----------------------------------|--------------------------|-------------------------------|-------------------|--|
| Property Lines                    | Pervious Surfaces        | <b>Storm Drain Conveyance</b> | Inlet             | Runoff Flow Path                               |
| 2 ft Contours (2020)              | Streams                  | Ditch                         | Manhole Structure | N<br>1 inch = 100 feet<br>0 50 100 200 US Feet |
| Study Area                        | <b>Buildings by Roof</b> | Pipe                          | Pipe Connection   |  |
| Stormwater BMPs                   | Flat                     | <b>Storm Drain Structures</b> | Pipe Direction    |  |
| Roads, Sidewalks, Driveways, etc. | Gable                    | End Wall                      | Projecting Pipe   |  |



# Resident Assistance Document

## Stormwater Runoff Management Techniques



### **Technique #1: Ensure that Positive Drainage is Maintained through Site Grading**

Lawns and paved surfaces should be sloped or “graded” to maintain positive drainage. Surface runoff should be able to flow away from homes and other structures toward the public right-of-way. Depending on surrounding topography, maintaining positive drainage may require the use of graded landforms such as swales to direct water flow between lots and around buildings. When making grading adjustments, care must be taken to avoid changes that cause runoff to flow to a neighboring property.



Grading can be used to maintain positive drainage without directing runoff to neighboring properties.  
Image Credit: City of Edmonton, AB, Canada  
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### **Technique #2: Direct and Reinforce the Path of Overland Flow**

Overland flow can be directed by creating a shallow swale for water to follow. A winding flow path lined with erosion-resistant material such as stone will help to slow water and reduce erosion. Vegetation can be used to further stabilize paths and reduce flow velocity. On particularly steep slopes, terracing may be necessary. Consult a professional landscape contractor to determine the best approach for your property.

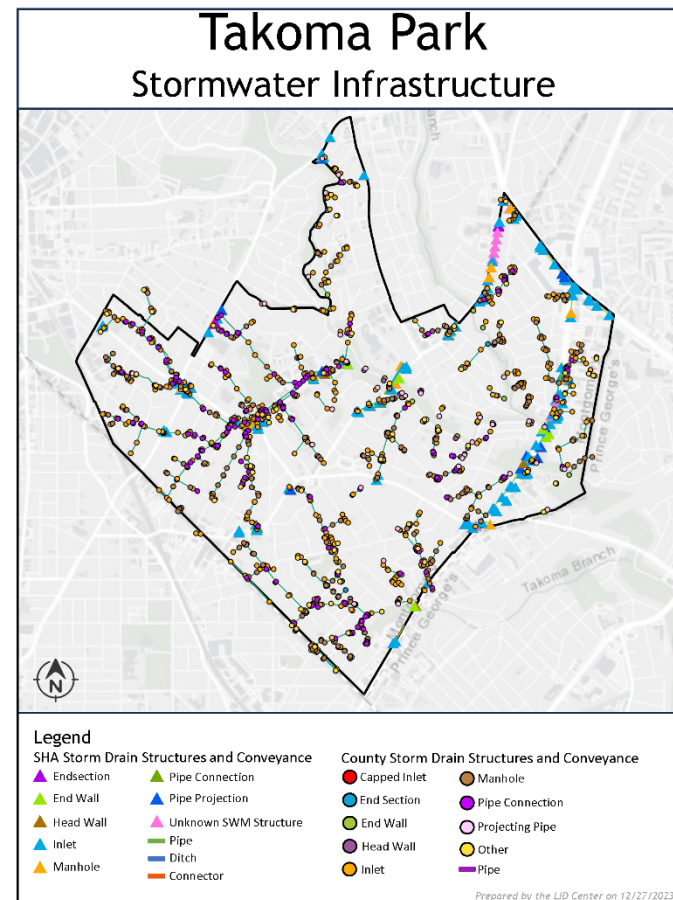


Overland flow paths can be used to direct storm water flows and reduce erosion.

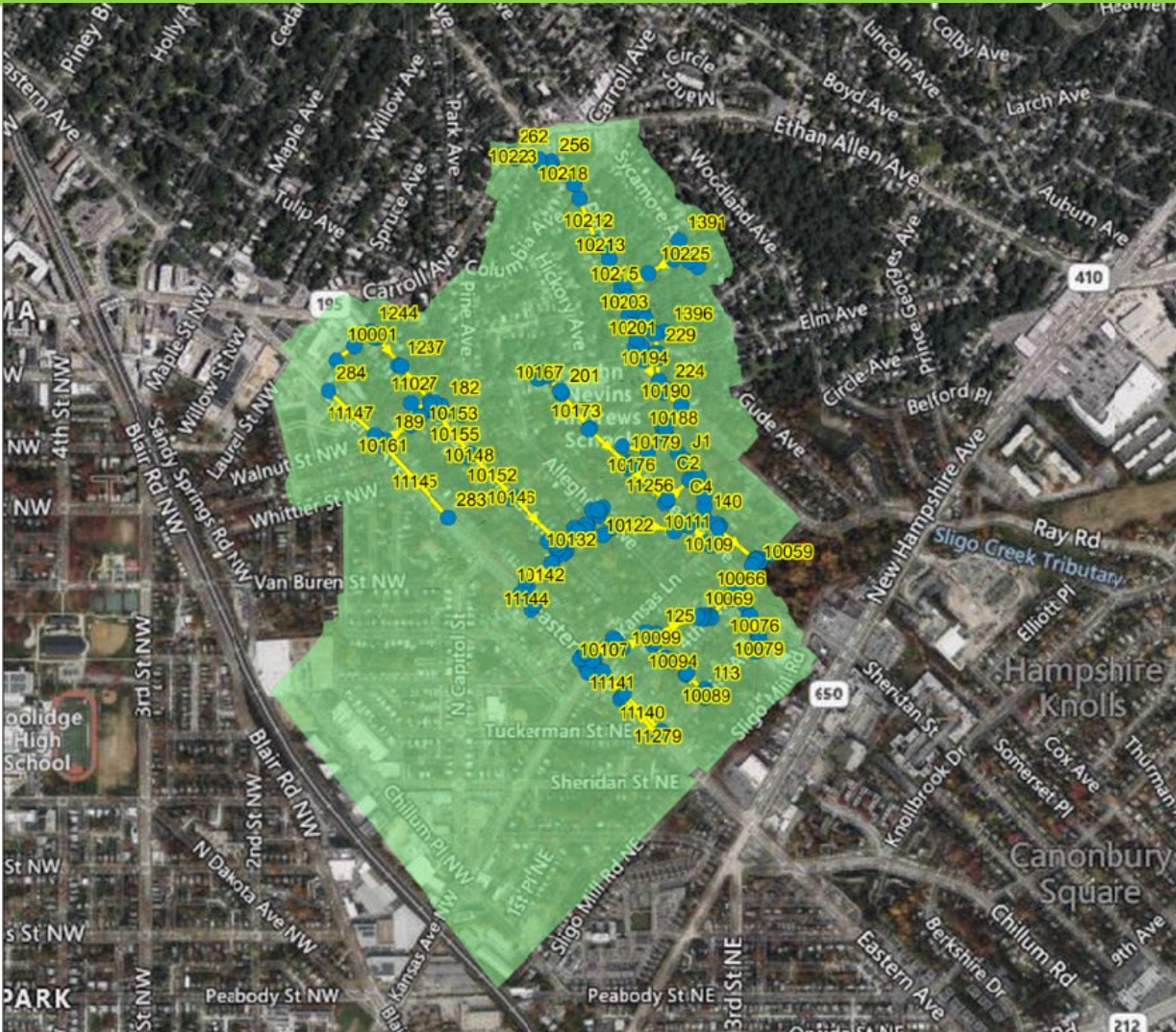


# SWMM MODEL

- Modeling Approach
  - Storms and Scenarios
- Limitations
  - What can it tell us?
- Use and recommendations

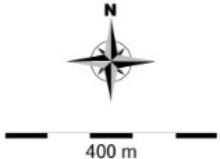


# MODEL STUDY AREA

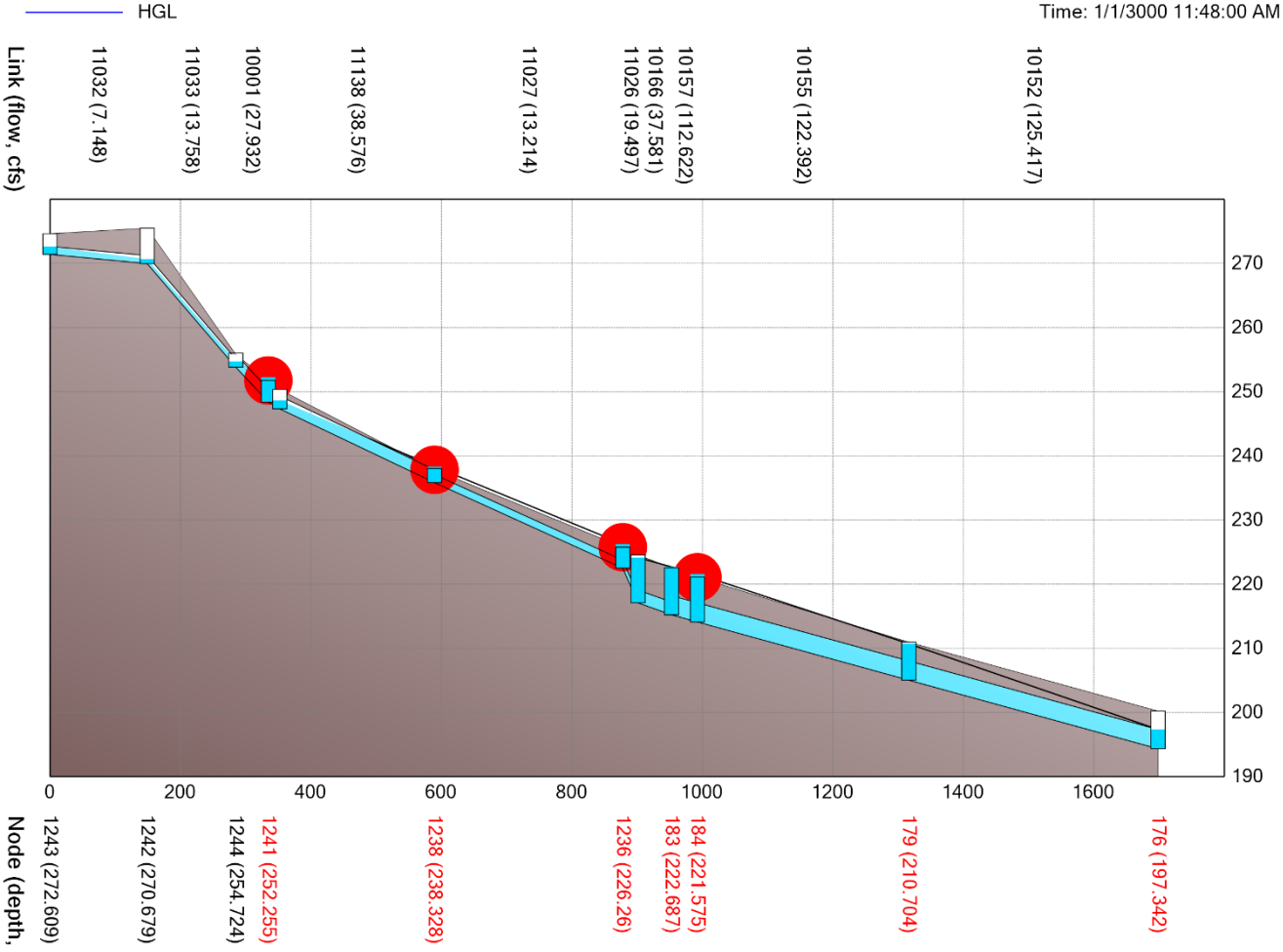


## Legend

- Junctions
- ▲ Outfalls
- + Dividers
- Conduits
  - Visible
  - Major System
  - ARM Subcatchments

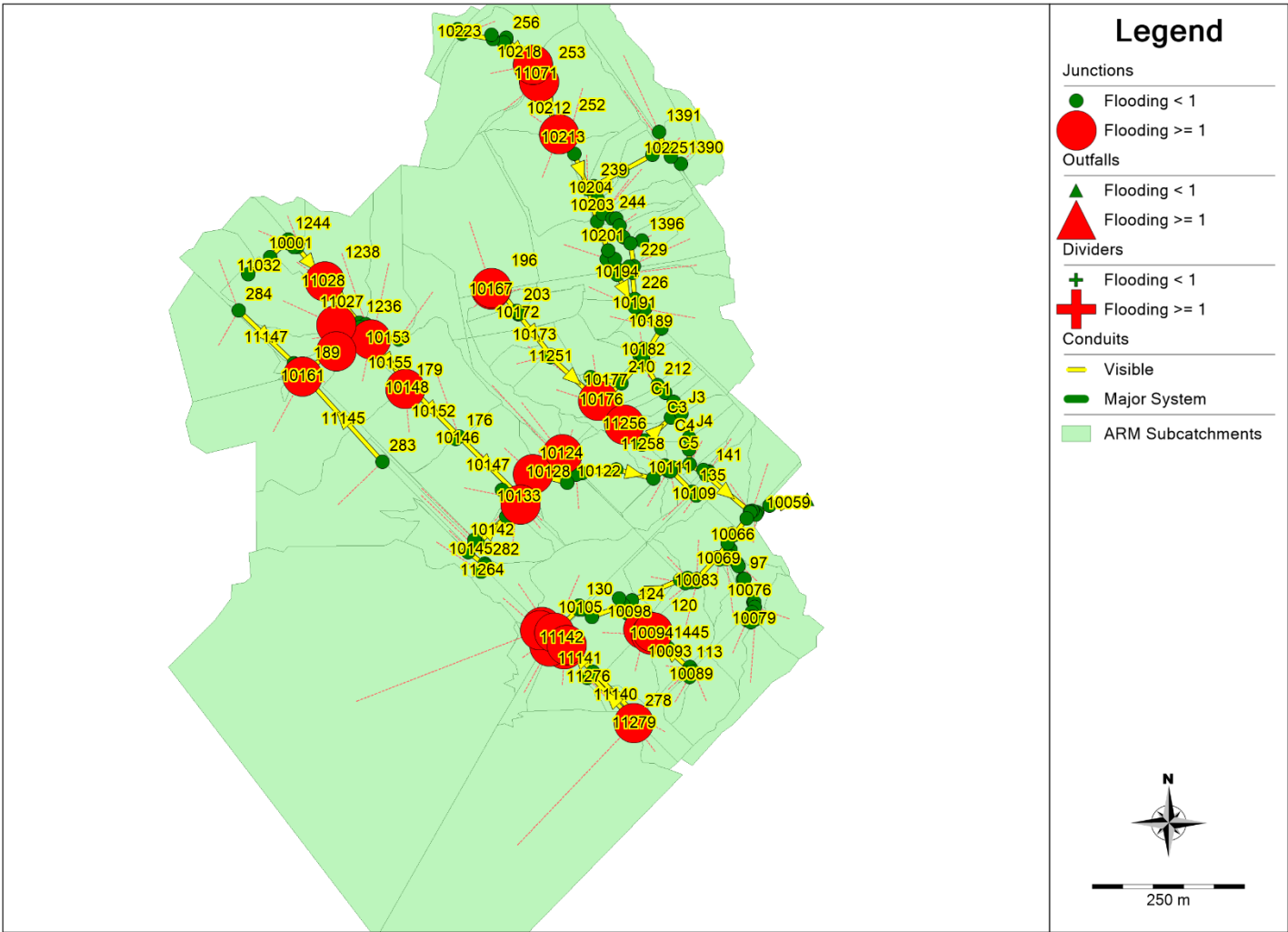


# EXAMPLE OUTPUT PROFILE





# EXAMPLE OUTPUT MAP



# QUESTIONS?

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