



**City of Atlanta**  
Mayor Kasim Reed

Department of Watershed Management

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**Southeast Atlanta  
Green Infrastructure  
Initiative: Permeable  
Paver Roadways**

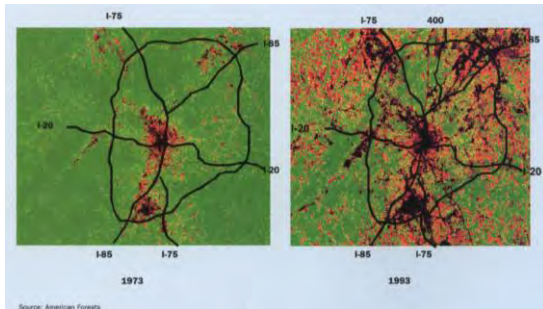
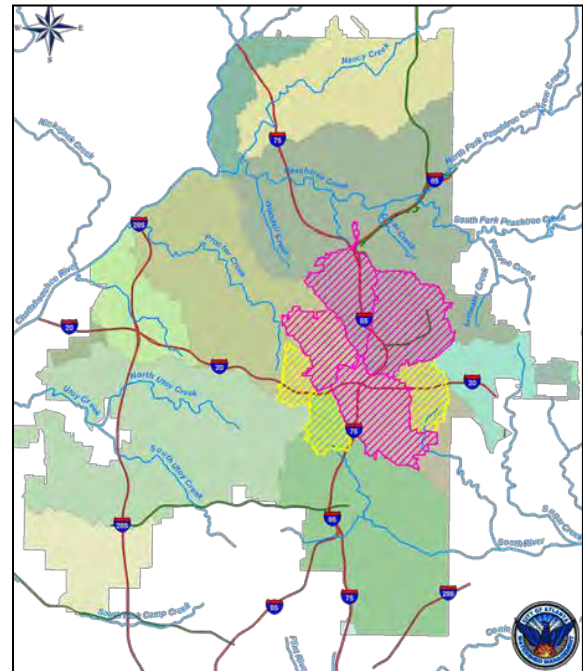
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**Cory Rayburn, CPESC, CFM, EnvSP**  
*Construction Project Manager*

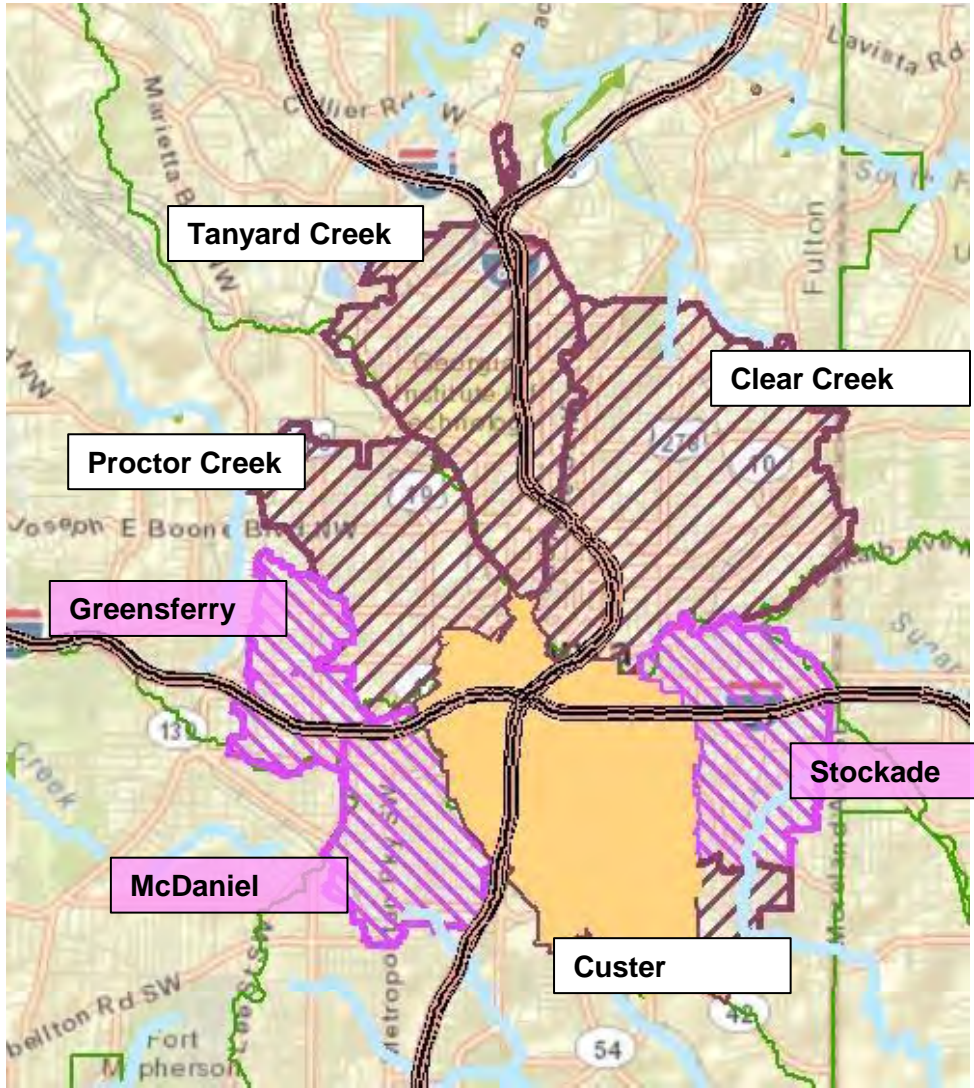
**SESWA Spring Seminar**  
April 15, 2016

# Background

- City's Department of Watershed Management
  - Serves 1.2 million (450,000 night)
- Consent Decree
  - CSO – completed 2008
  - SSO – extension granted 2027
- 2<sup>nd</sup> highest W&S rates in the country
- Stormwater Utility Fee
  - Adopted in 1999
  - Overturned - \$7 million refunded



# Custer CSO Basin Location



- Heart of Atlanta
- Highly impervious
- Piped Streams
- Repeated Flooding

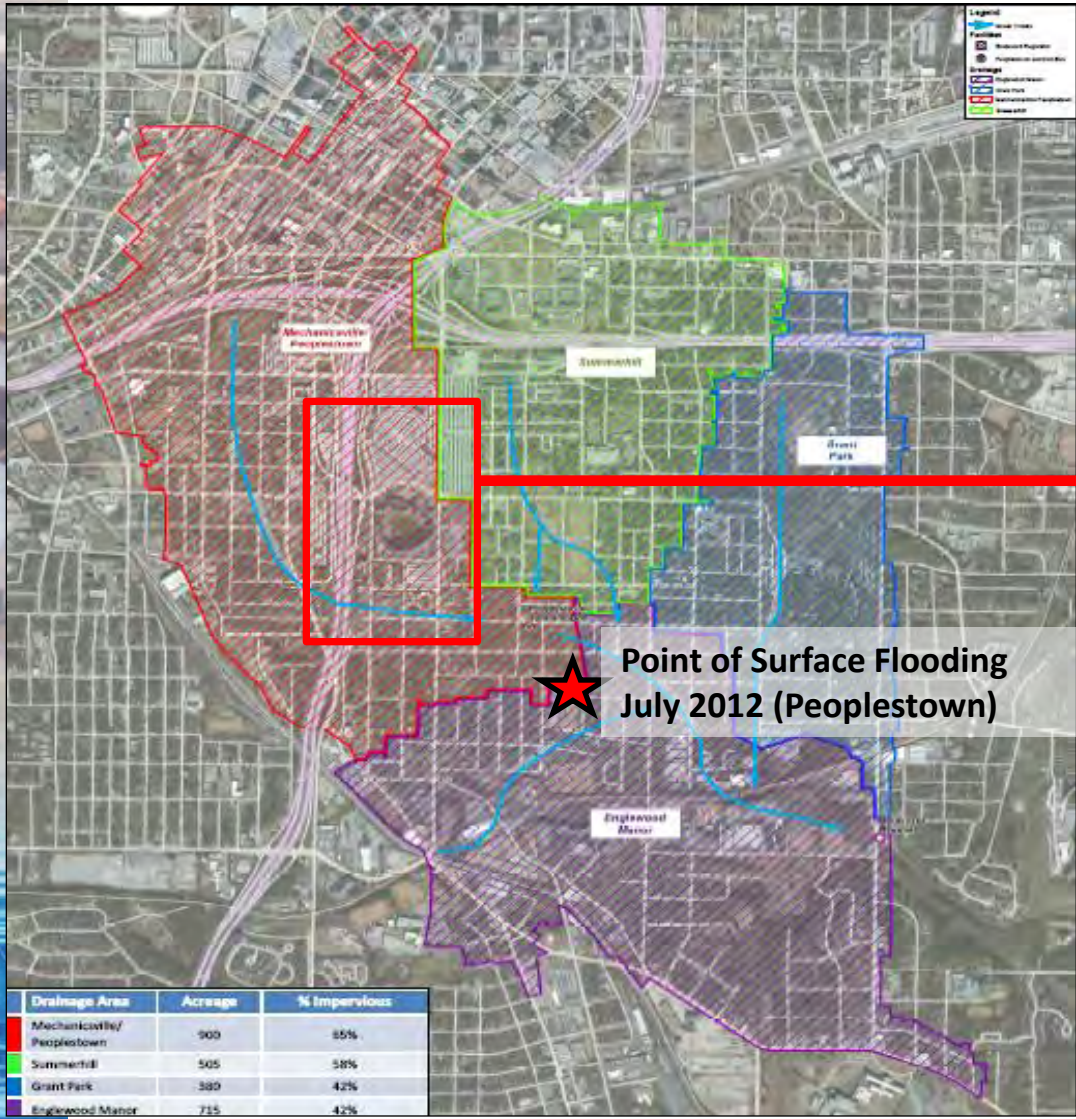
Separated

Combined

# Top ten wet weather events in Custer Ave Basin 2000 – 2012

Rank	Date	Recurrence Level
<b>1</b>	<b>7/9/2012</b>	<b>10-25 year</b>
2	8/31/2006	5-10 year
<b>3</b>	<b>7/11/2012</b>	<b>2-5 year</b>
4	9/29/2009	2-5 year
5	7/3/2012	2-5 year
6	5/5/2003	2-5 year
7	7/20/2011	2 year
8	8/20/2000	2 year
9	6/3/2001	2 year
10	8/28/2009	2 year

# Contributing Conditions



Drainage Basin	Total Area (acres)	% Impervious	Impervious Area (acres)	Roadway Area (acres)
Mechanicsville / Peopletown	900	65%	582	220
Summerhill	505	58%	293	110
Grant Park	380	42%	162	55
Englewood Manor	715	42%	301	62



# Historical Perspective Map of Atlanta 1886



**Peoplestown Junction  
Box Location**

# Mayor's Commitment to the Community

- Assessment of drainage/capacity issues
  - Caused by capacity limits in the combined sewer system (CSS)
  - Multiple areas affected; Peoplestown, Summerhill, and Mechanicsville
- Long-term solution to reduce flooding
  - Assessment of issues
  - Phased approach
  - Follow-up community meetings



# Assessment of Issues

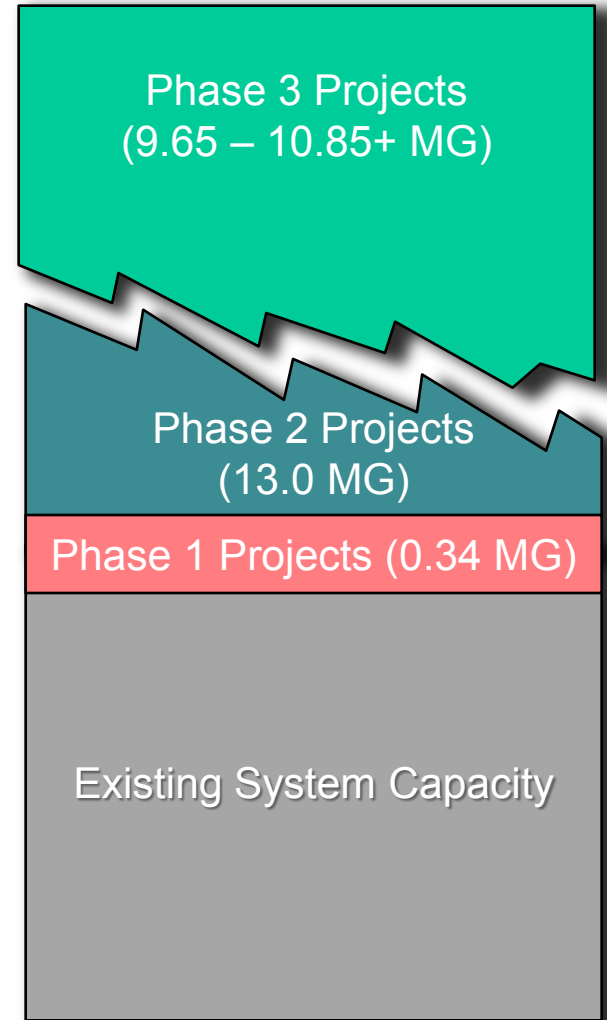
- Exceed capacity in the Combined Sewer System





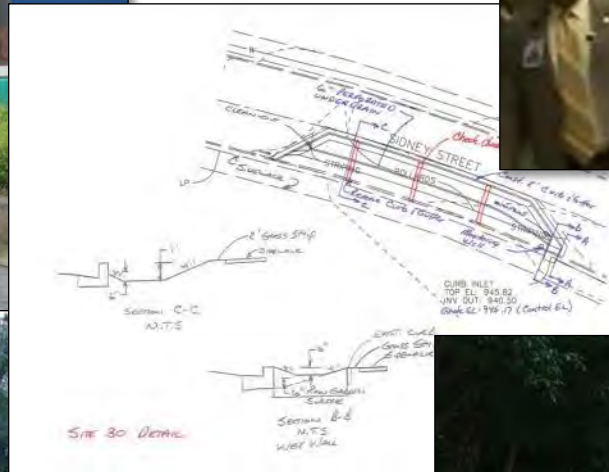
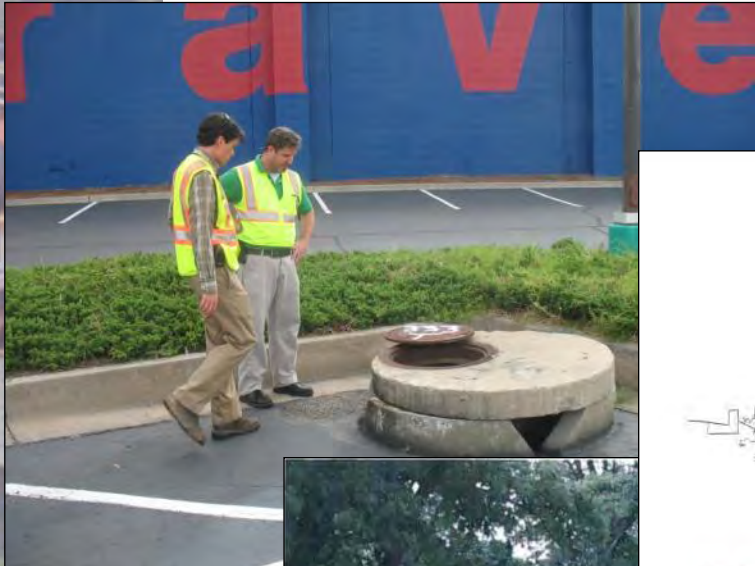
# Overview of Solutions - Phased Approach

- Immediate Response – **Completed**
  - Catch basin & inlet cleaning
  - Raising curbs
- Phase 1 Projects – **Completed**
  - Green Infrastructure Projects (bioswales, rain gardens, revegetation)
- Phase 2 Projects
  - Media Lot CSS storage vault – **Completed**
  - Permeable pavers – Under Construction
- Phase 3 Projects – In progress
  - Connally Trunks CSS storage vaults
  - Capacity Relief Project



# Immediate Response

- Begin tangible solutions in 30 days

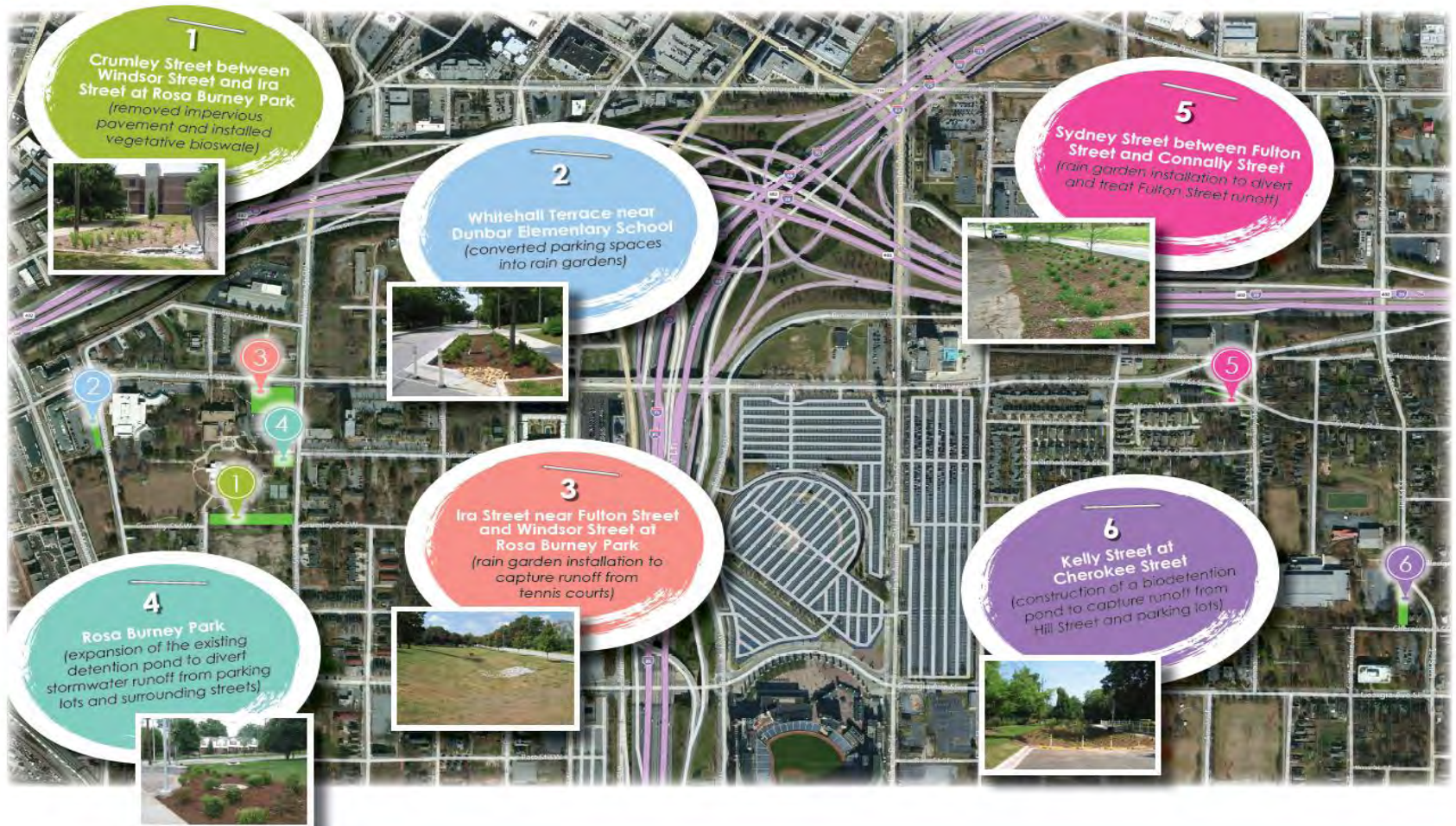


# Phase 1 Projects- Completed

- Use of Green Infrastructure; mimics nature

## Southeast Atlanta Green Infrastructure Initiative Phase 1 - Peopletown, Mechanicsville and Summerhill

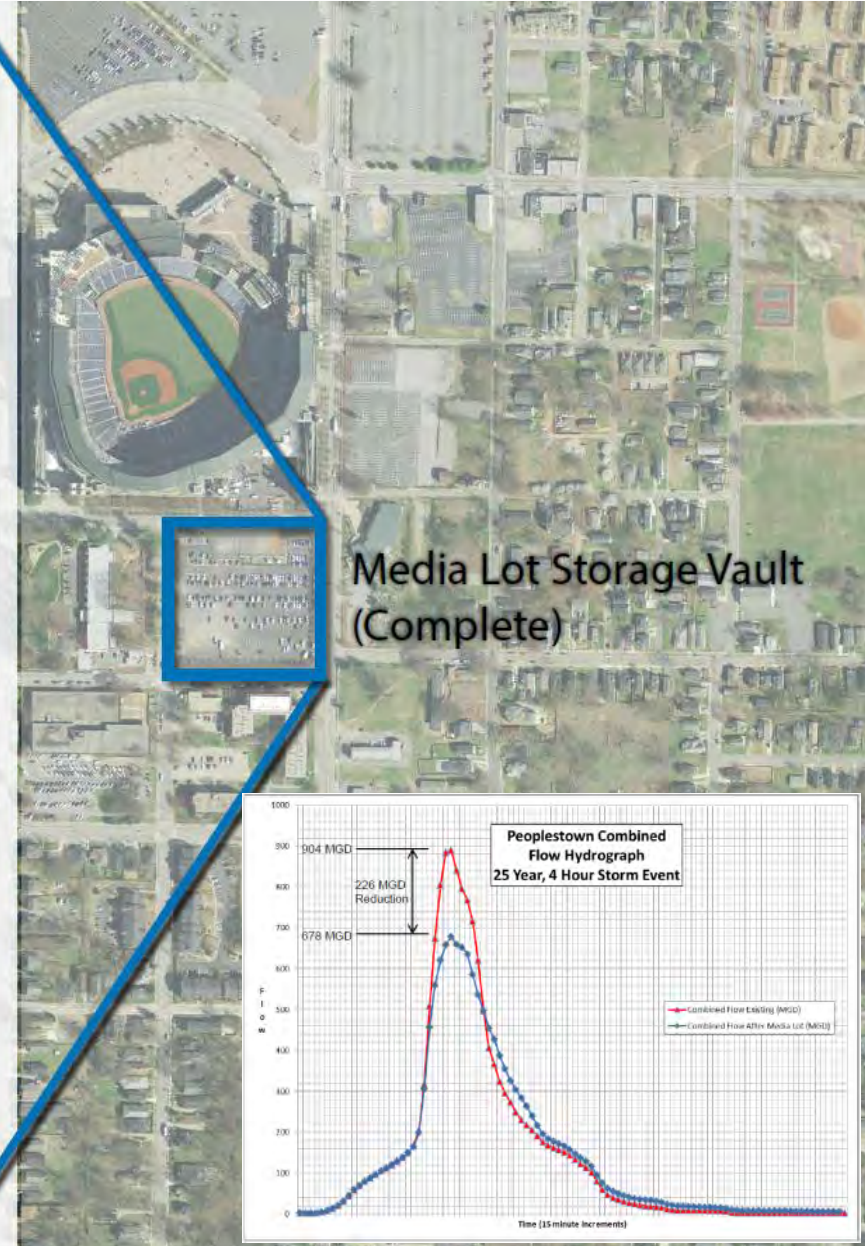
Completed Sites



# Phase 2 Project – Media Lot Vault Completed



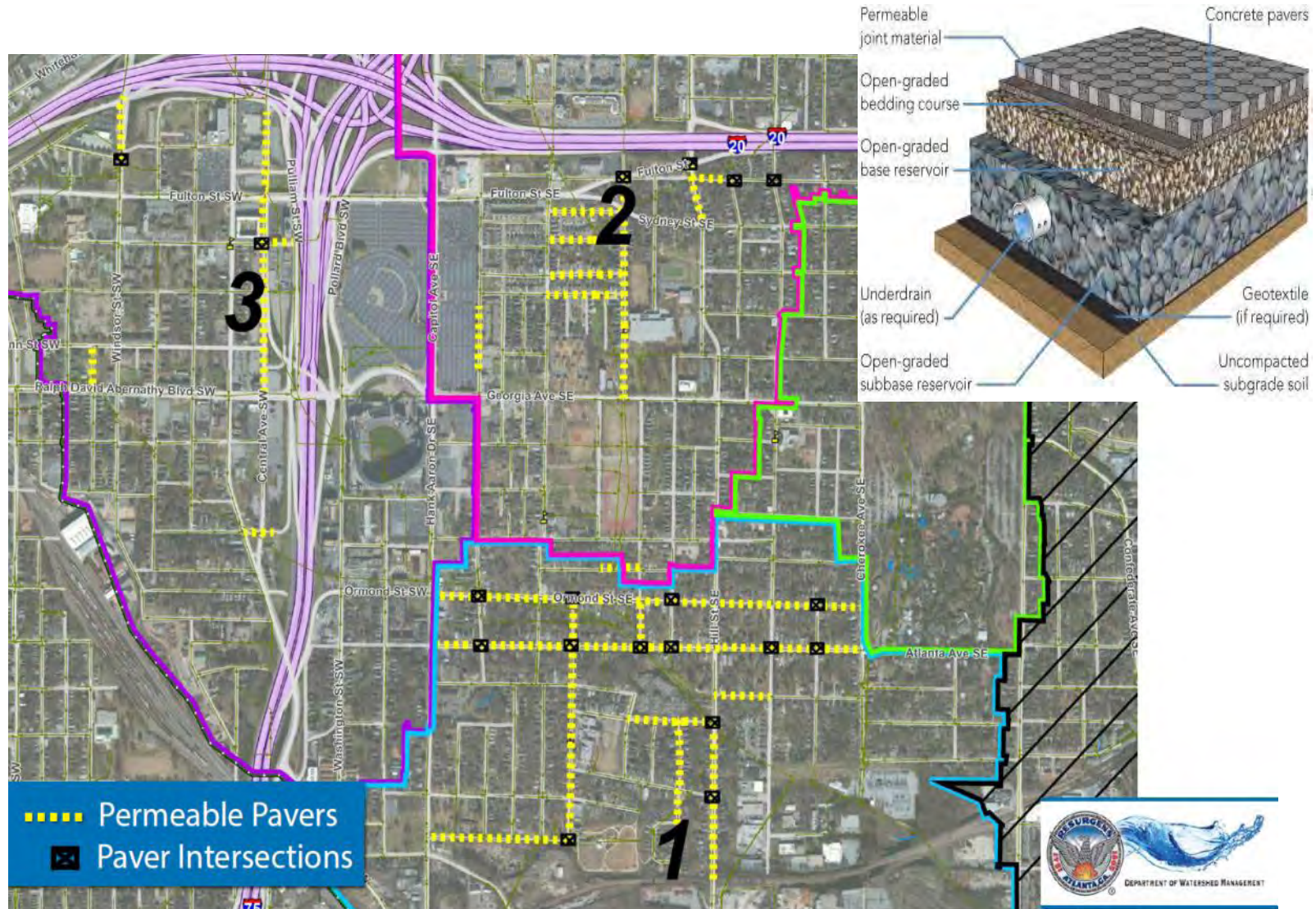
During Construction



View Inside Vault

# Phase 2 Project – Pavers Under Construction

- Approximately 6 miles Permeable Pavers



# Construction Sequence

- Excavation
- Aggregate reservoir
- Paver Installation



# General Challenges

- Utilities (water, sewer, gas, etc.)
- GDOT
- Road Closures & MARTA



# Notable Challenges

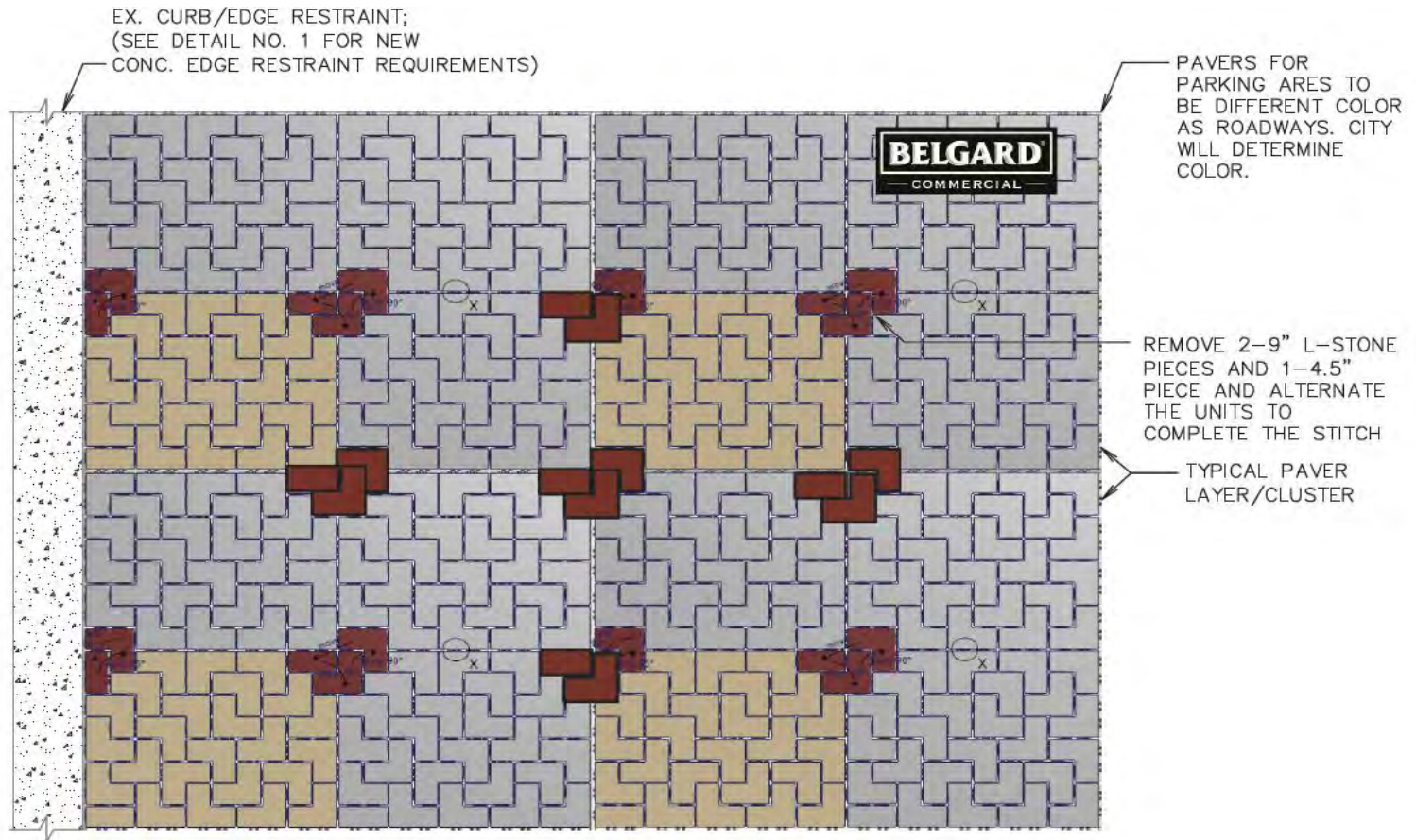
- Concrete wash-off, sedimentation from adjacent development, utility tie-in protocols, & historic street car tracks





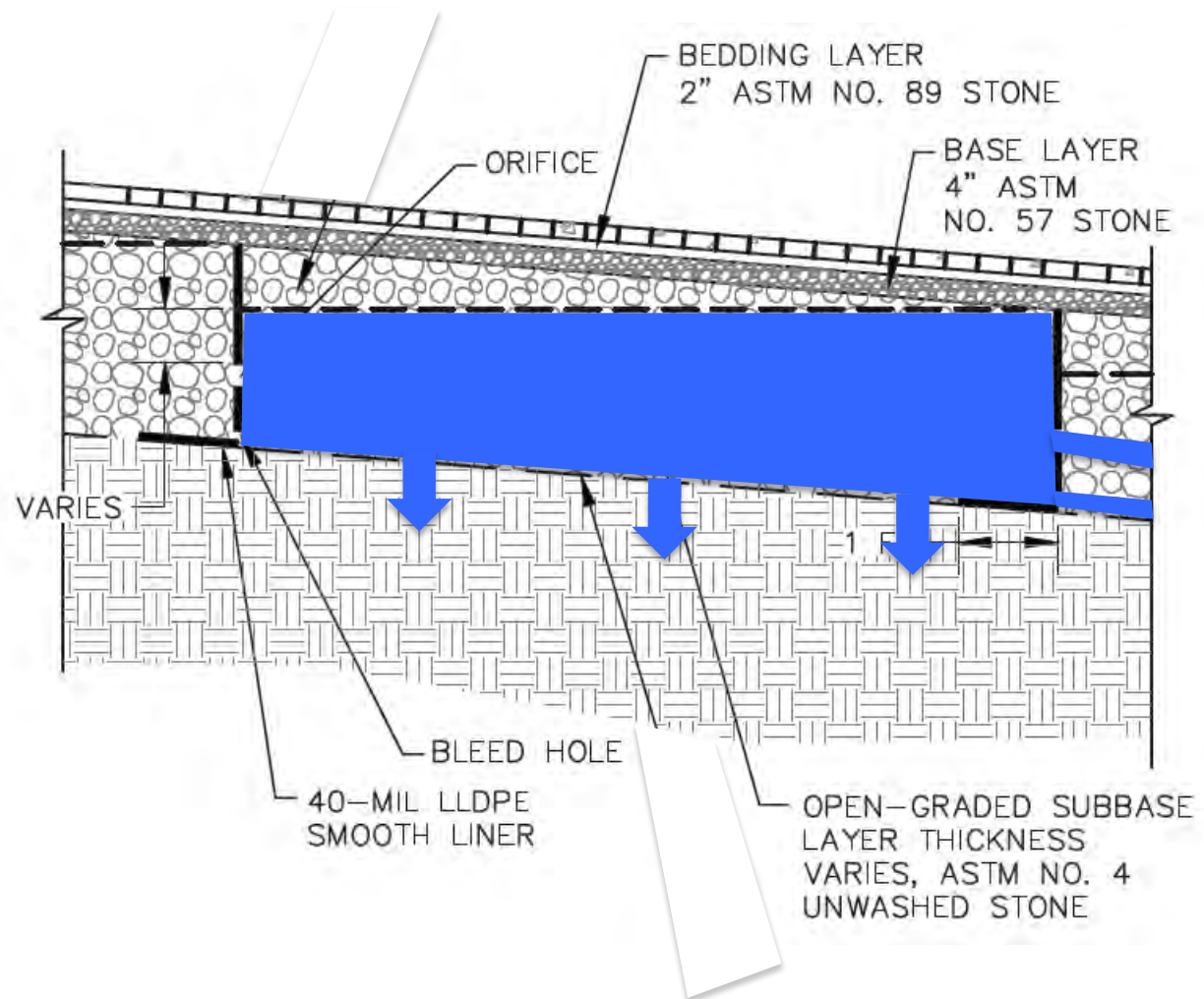
# Unique Design Considerations

- Ideal roadway paver shape and configuration – L-shaped bricks selected



# Unique Design Considerations

- Steep slopes - impermeable liner check dams used



# Unique Design Considerations

- Roads designed to maintain crown



# Unique Design Considerations

- Vegetated Stormwater Planters in conjunction with pavers



# Monitoring efforts

- Underdrain flow monitoring and infiltration wells



# Community Outreach Efforts

- Road closures, utilities affected, temporary access, sanitation pickup, etc.



# All in all...

- Overall Success



# Effectiveness (25 Yr - 4 Hr Storm) – 3.86” rainfall

- Model simulation indicates flood reduction but not elimination of localized flooding





# Phase 3 Projects – Design Phase

- Additional capacity relief needed for localized flooding



# Peoplestown Capacity Relief Ponds

- Detention ponds & Bioretention provides 2MG of storage
- Provides a controlled area for combined sewer spill containment
- Provide aesthetic and passive recreational enhancement



# Questions?

[www.AtlantaWatershed.org/GreenInfrastructure](http://www.AtlantaWatershed.org/GreenInfrastructure)



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