

*Controlling Combined
Sewer Overflow within
Bloomingdale /
LeDroit Park
Communities*



August 21, 2014

Agenda

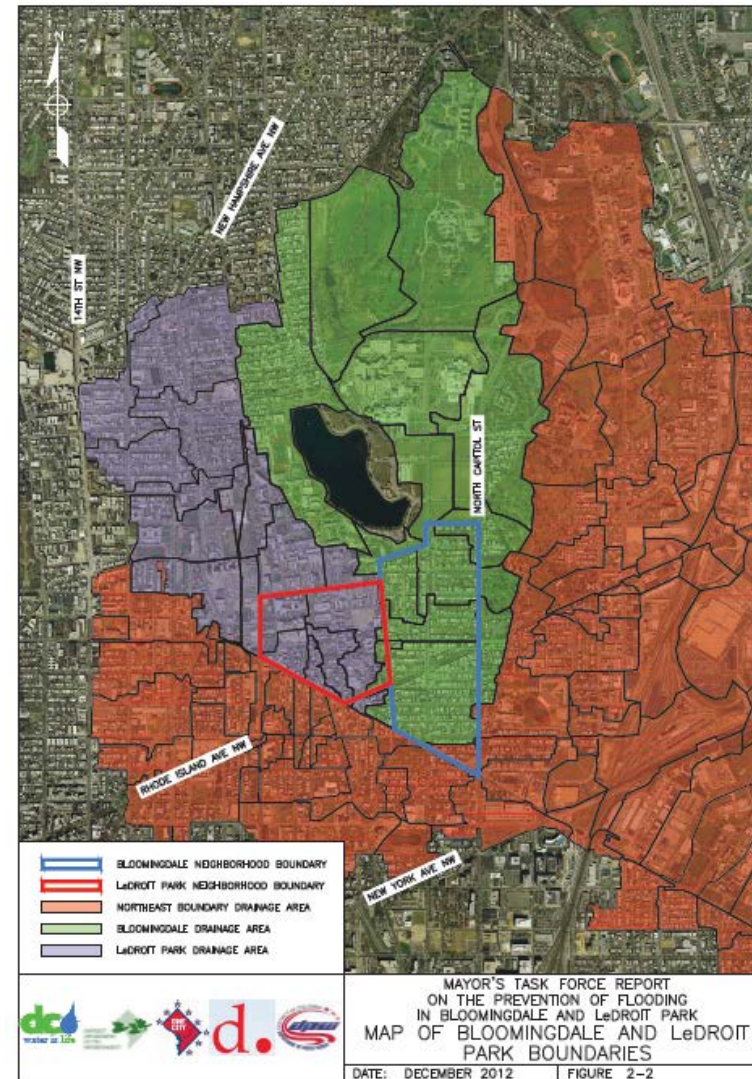
- Background
- Immediate Improvements
- Mid-Term Improvements
- Long – Term Improvements (By Others)
- Questions

History of Flooding

A History of Flooding

The area defined by the Mid City East was once the location of the headwaters of Tiber (Goose) Creek, the District's largest stream. By the early 20th century, most of the neighborhoods developed and the stream was diverted into the Northeast Boundary Sewer. This sewer system was expanded and connected throughout the early 20th century. Today the Northeast Boundary Trunk Sewer (NEBT)—a combined sewer/stormwater system—is the major sewer serving the Mid City East area. Flooding occurred soon after the NEBT Sewer was constructed. More than half a dozen studies dating back to the 1950s document the issue of flooding. The combination of population growth, the unique low-lying topography of the area, and an antiquated sewer system that is too small to accommodate the area today continues to cause problems in this area.

Today the neighborhoods that comprise the Mid City East area are dense urban settings with a high degree of impervious surfaces. Impervious areas include building rooftops, roads, sidewalks, alleys, and paved surfaces such as parking lots. The non-impervious areas within the Mid City East drainage area include open spaces such as lawns (i.e. front and backyards), grass areas, small parks, cemeteries, recreational and sport fields, and above ground rail road system. Each neighborhood has a different degree of impervious surfaces. LeDroit Park has one of the highest amounts of impervious surfaces, with over 69% of the total area being impervious. Bloomingdale's impervious surfaces account for 44% of the entire drainage area. While impervious surfaces have not increased substantially in the last ten years, the population has increased by over 10%, placing increased demand on the sewer system.



Background

Background NEB Drainage Area

Northeast Boundary Drainage Area (NEB) serves the Bloomingdale neighborhood

- Part of the District's Combined Sewer System
- One (1) pipe in street serves both sanitary collection and storm water runoff
- Built-out in the early 1900s

Northeast Boundary Trunk (NEBT) Sewer

- Major sewer serving the NEB Drainage area
- Constructed circa 1870-1880



2012 Flood events and volume



flood

2012 Flood events and volume

Rainfall Summary for Major 2012 Storms

Date	Duration	Rainfall (inches)	NOAA Point Precipitation
6/29/12 "Derecho"	30-min	0.5	< 1 year storm
7/10/2012	1-hour	1.96	10 year storm
7/18/2012	30-minute	1.35	5 year storm
7/19/2012	15-min	0.94	5 year storm
9/2/2012	2-hour	2.78	10 year storm

Source: DC Clean Rivers Project

LeDroit Park Immediate Improvement

Florida Ave NW—500 and 600 Blocks



Bloomingdale / LeDroit Park Infrastructure Improvements:
Concept Plan

key: 1 Catch Basin Retrofits and Replace Inlets



Bloomingtondale Immediate Improvements

Rhode Island Ave NW—100 Block



Bloomingtondale / LeDroit Park Infrastructure Improvements:
Concept Plan

- key:**
- 1 Permeable Pavement + Underground Storage
 - 2 Rain Garden + Underground Storage
 - 3 Underground Storage
 - 4 Catch Basin Retrofits



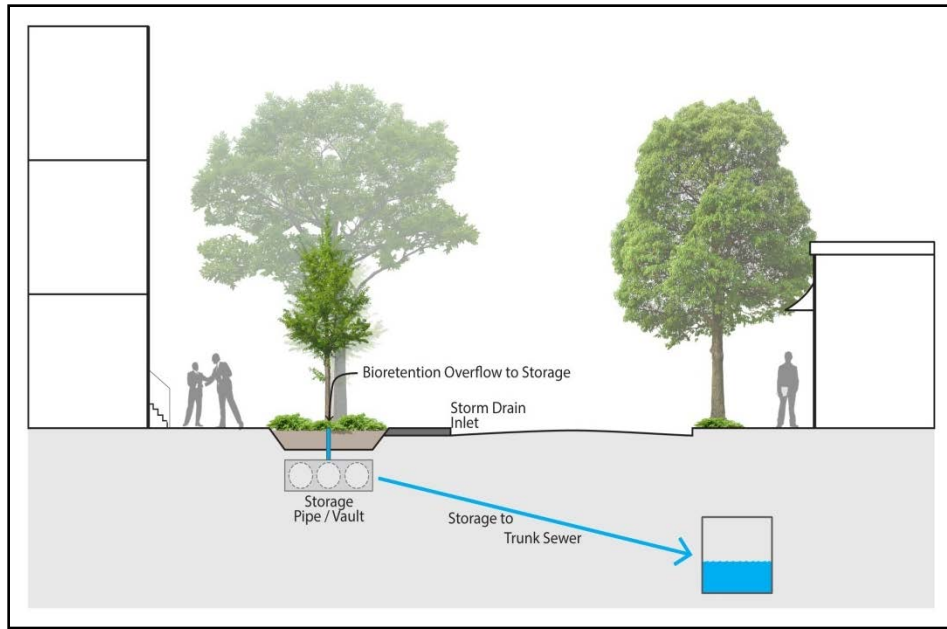
Bloomingtondale Immediate Improvements

Rhode Island Ave NW—100 Block



Bloomingtondale Immediate Improvements

Rhode Island Ave NW—100 Block

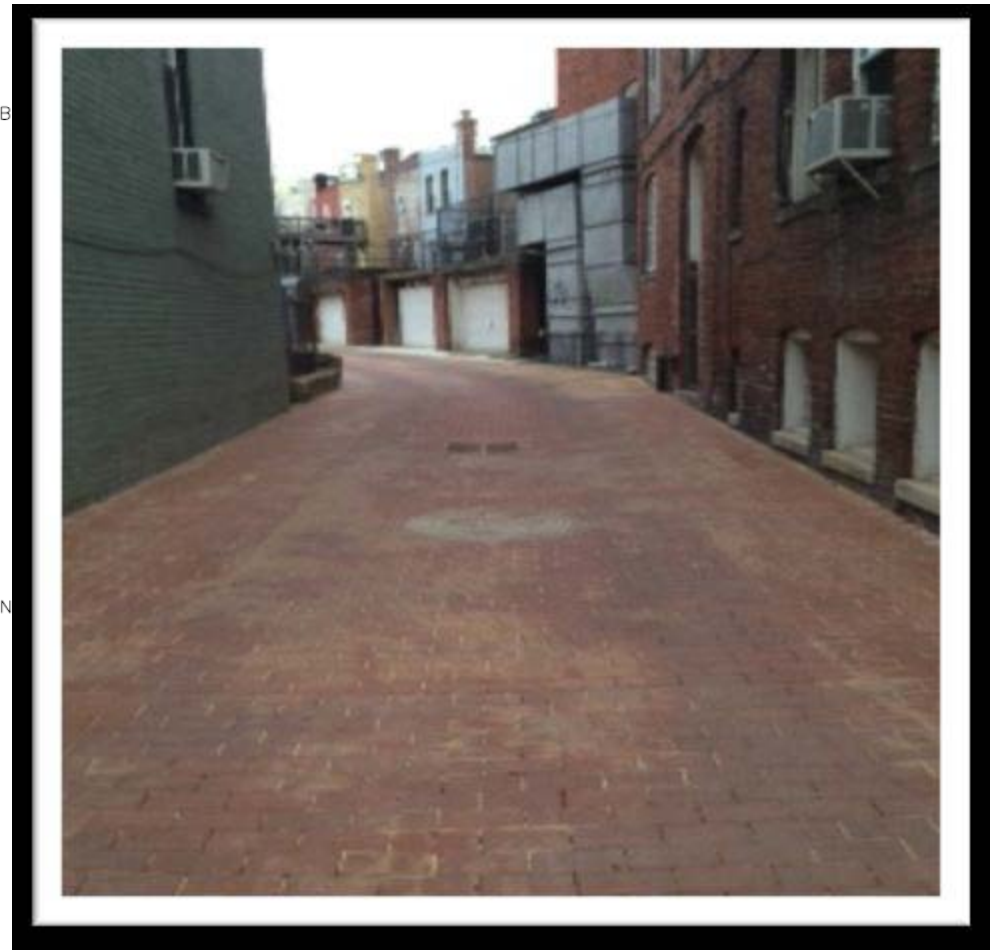
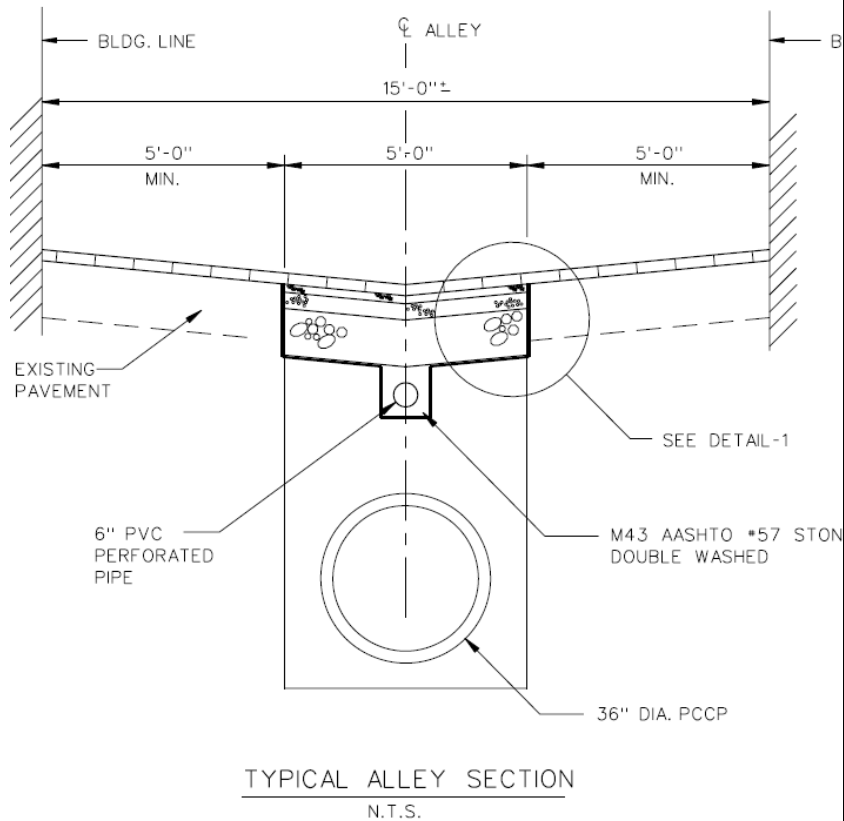


T Street Section



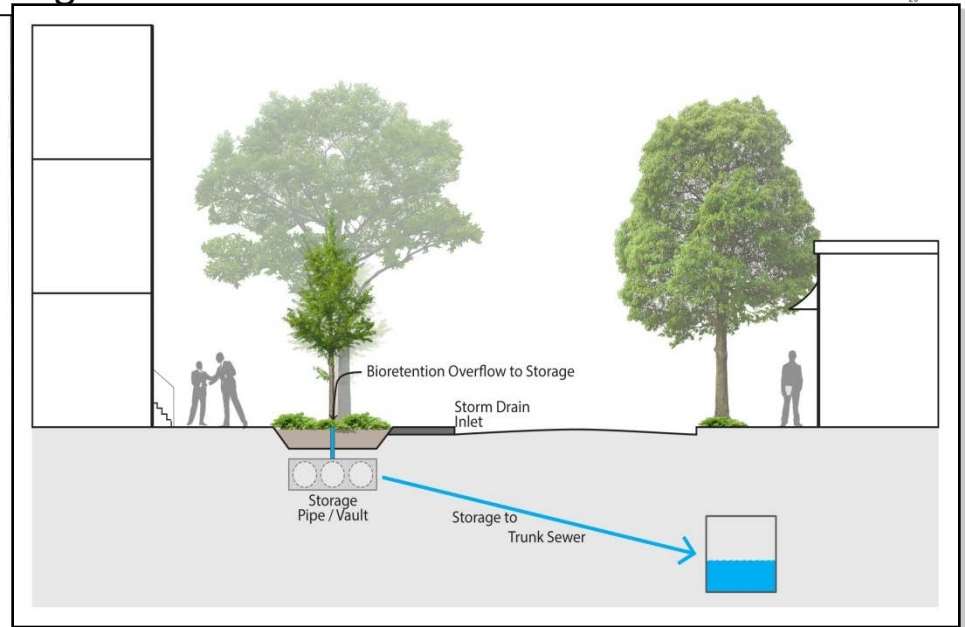
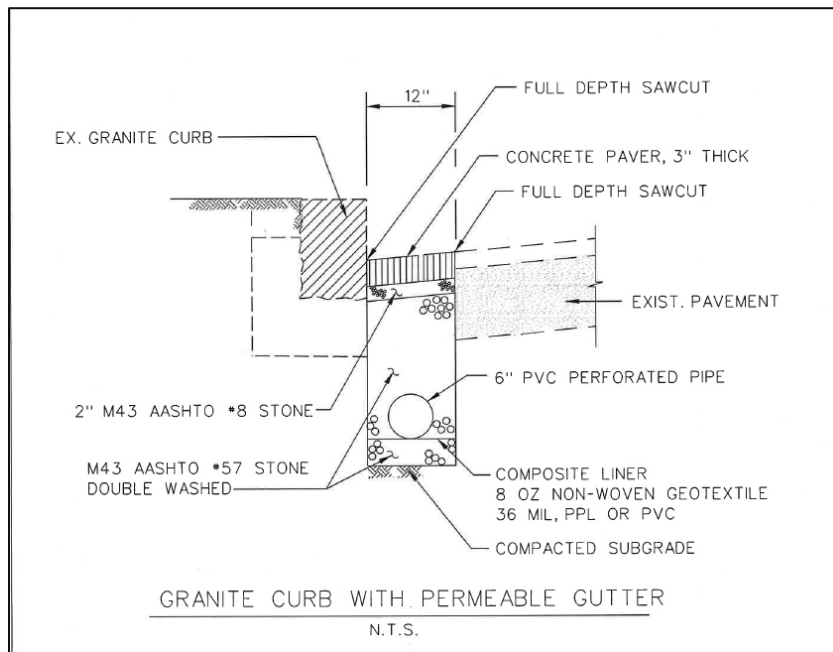
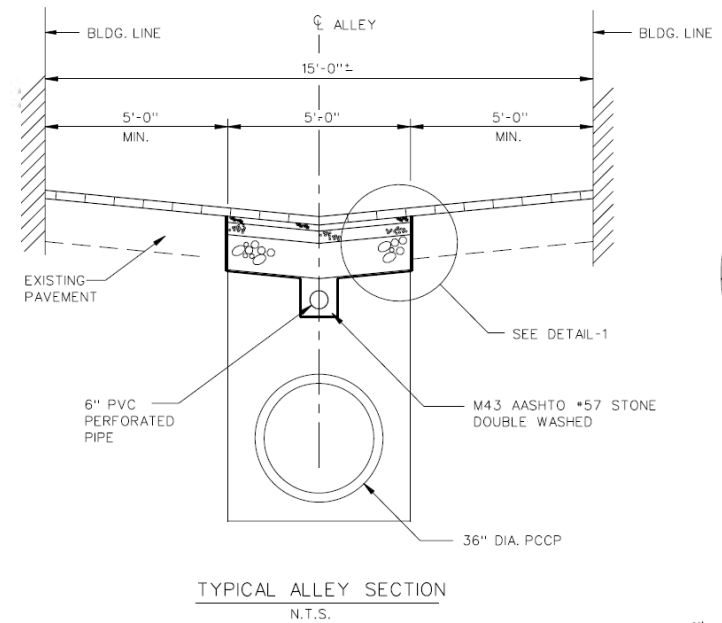
Bloomingtondale Immediate Improvements

Thomas Street NW—100 Block



Mid – Term Options

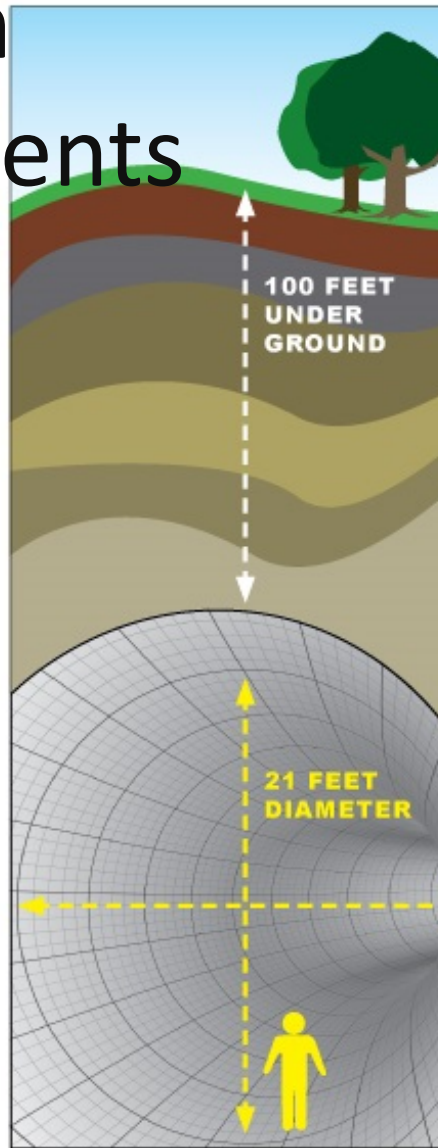
- Retrofit Alley with Permeable Brick / Concrete Material
 - With or Without Underground Storage
- Retrofit Curb and Gutter with Permeable Brick / Concrete Material
- Curb Extensions with Bioretention Cells
 - With or Without Underground Storage



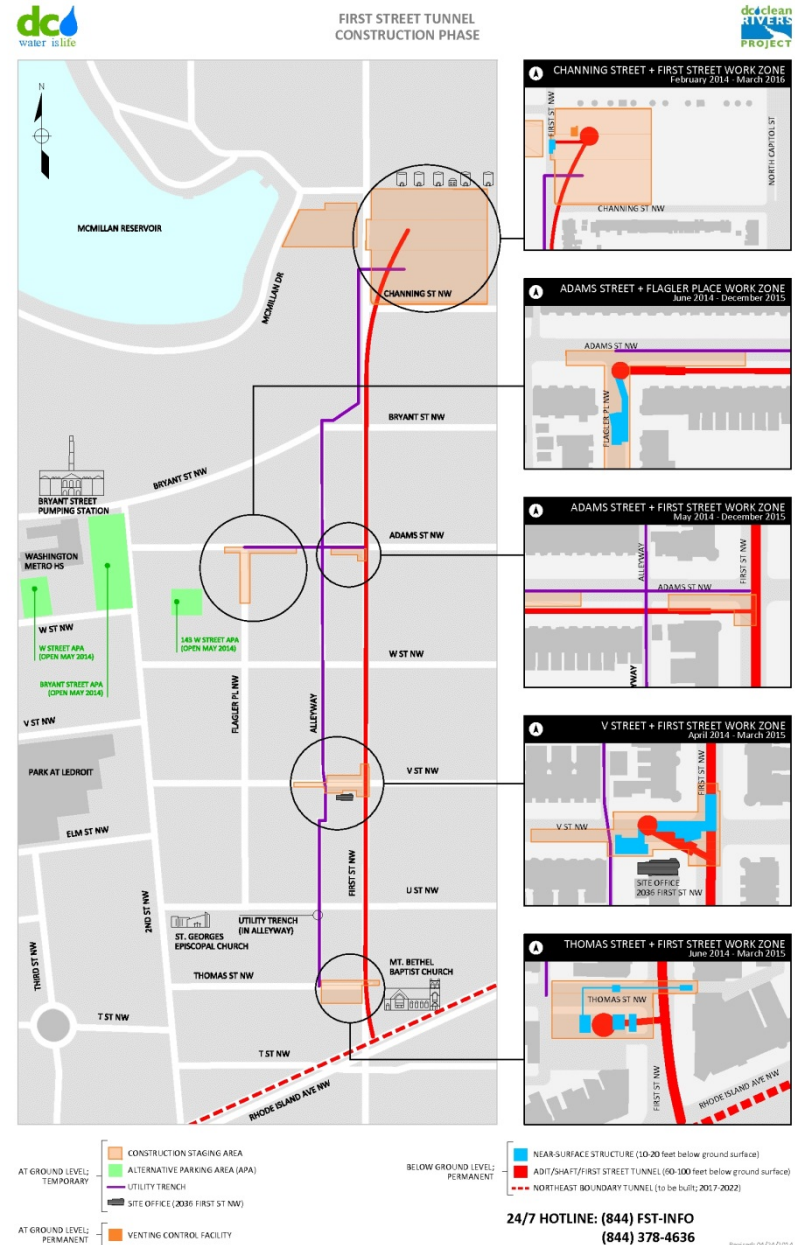
Long-Term Improvements

DC Water will install 18' – 21' diameter pipe (est. completion: March 2016)

Source: DC Water
http://www.dwater.com/workzones/projects/first_street_tunnel/details.cfm



Miles of huge underground tunnels will prevent combined sewer overflows (CSOs)





Questions

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