



# Combined Sewer Overflow (CSO) Remediation Plan

## Background

In July 2001 – after a 3-year process of study and citizen input – the federal EPA and state EPD approved the City's plan to eliminate water quality violations from combined sewer overflows (CSOs). The City's plan involved a combination of tunnels and separation of selected sewer areas. The City submitted a refined plan to EPA and EPD that would increase the water quality benefits of proposed portions of the plan and reduce the lengths of the proposed CSO tunnels. EPA and EPD are expected to approve the revised plan.

Under the Refined CSO Remediation Plan, the City will:

- Separate the Greensferry and McDaniel CSO Basins and the Stockade Sub-basin (Custer CSO Basin). This plan would increase the city's total separated area from 85% to about 90%, and eliminate two CSO facilities.
- Construct a deep-rock tunnel storage and treatment system to capture and store combined storm water and sewage flow for conveyance to two new CSO treatment facilities for near-secondary treatment before discharge to the Chattahoochee or South Rivers.
- The number of overflows will be reduced from 60+ per year at 6 existing facilities to an average of only 4 per year at the 4 remaining facilities. The remaining overflows will be screened, disinfected and dechlorinated before discharge to a receiving stream, and will meet water quality standards.

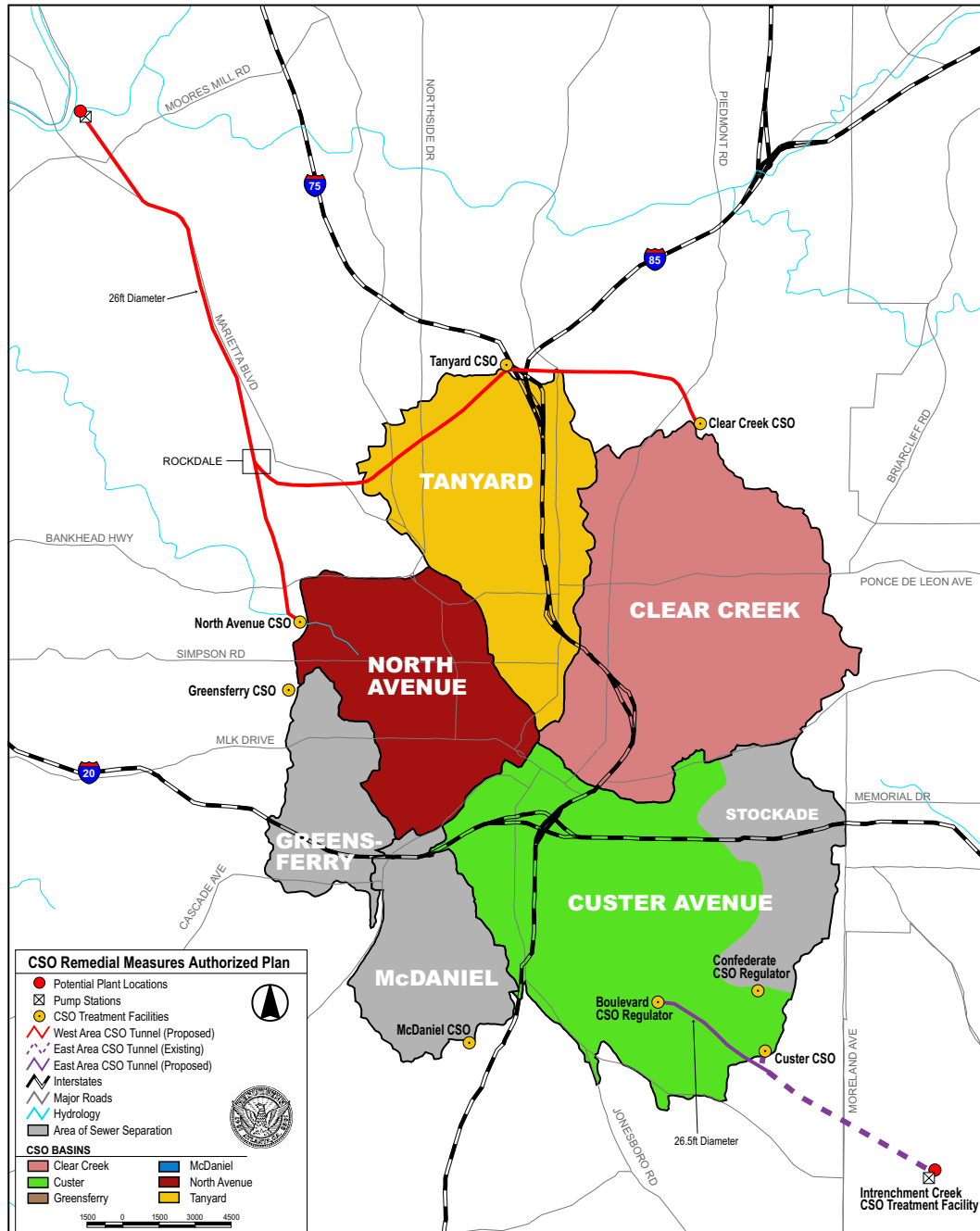
## Storage and Treatment System

The storage and treatment system involves capturing and storing combined sewer overflows. The overflows are stored in large underground excavated tunnels in bedrock similar to the rock of Stone Mountain. When the rainfall is over, the captured CSO volume is conveyed to a separate treatment system for removal of pollutants and ultra-violet disinfection before discharge to receiving waters.

The West tunnel will store and convey overflows from the west area of Atlanta to a new dedicated treatment facility located on the site of the decommissioned steam plant next to the existing R.M. Clayton WRC. At this facility, the combined sewage and stormwater will undergo far more advanced treatment than that provided at existing facilities before being discharged into receiving waters. The advanced treatment includes both physical and chemical processes that remove more suspended solids and metals, filtration and disinfection by ultraviolet (UV) light that destroys virus and bacteria to protect public health. The UV disinfection is comparable in effectiveness to traditional chlorine disinfection but is more protective of aquatic life.

The East CSO tunnel, which is an extension of an existing tunnel, will convey flows from the east area of Atlanta to the Intramural Creek CSO facility for treatment before discharge to Intramural Creek in DeKalb County. The Intramural Creek CSO facility will be upgraded to provide enhanced treatment.

As parts of the combined sewer system are separated, this same system can be used to treat storm water runoff from the urban core portion of the CSO area, which includes the central part of Atlanta, encompassing downtown, Midtown (near Piedmont Park), the Georgia Tech and Georgia Dome areas, and parts of east Atlanta near Grant Park. Storm water is a significant source of pollution in our streams and rivers.



CSO Master Plan  
Option 1 - Separate McDANIEL, Greensferry, and Stockade



# Preliminary Community Impact Considerations Refined CSO Plan Implementation

## **West Tunnel Construction**

1. Notice to Proceed

July 2004

2. Mobilization and site preparation:

Three months

(includes site-specific work such as:

- Moving in and setting up staff and crew facilities (trailers)
- Moving in heavy equipment (front end loaders, backhoes, etc.)
- Erecting silt fences, other erosion and sediment control measures
- Clearing and grubbing)

Pre-blast survey and monitoring

Easements and land acquisitions as required (predesign of alignment confines easements and acquisitions to commercial or vacant properties where possible)

3. Shaft construction

8 - 10 months

- Truck traffic as rock and soil are removed and hauled away
- Very little noticeable construction activity on the site (most work is underground)
- Occasional blasting
- Shafts are the main point for material entry and exit

4. Install Tunnel Boring Machine and begin boring

May 2005 (Duration: 18-20 months)

- Very little noticeable construction activity on the site (most work is underground); however, may involve moving some of the construction activities to the next shaft location; shafts are the main point for material entry and exit.
- No blasting
- Truck traffic as rock and soil are removed and hauled away
- Tunnel is lined as you go; multiple shafts allow you to line while tunneling

**Milestone Completion Date for West Tunnel**

**October 2007**

## **East Tunnel Construction**

1. Notice to Proceed

June 2004

2. Mobilization and site preparation:

Three months

(includes site-specific work such as:

- Moving in and setting up staff and crew facilities (trailers)
- Moving in heavy equipment (front end loaders, backhoes, etc.)
- Erecting silt fences, other erosion and sediment control measures
- Clearing and grubbing)

3. Shaft construction 4.5 months
- Truck traffic as rock and soil are removed and hauled away
  - Very little noticeable construction activity on the site (most work is underground)
  - Occasional blasting
  - Shafts are the main point for material entry and exit
4. Install Tunnel Boring Machine and begin boring May 2005 (Duration: 6 months)
- Very little noticeable construction activity on the site (most work is underground); however, may involve moving some of the construction activities to the next shaft location; shafts are the main point for material entry and exit.
  - No blasting
  - Truck traffic as rock and soil are removed and hauled away
  - Tunnel is lined as you go

### Milestone Completion Date for East Tunnel

January 2007

### Sewer Separation – Greensferry, McDaniel, Stockade Sub-basin

1. Prior to start of physical construction
- Geotechnical investigation (soil borings)
  - Topographic surveying
  - Utility siting and marking (during design and immediately prior to construction start)
2. Notice to Proceed (Stockade only) Summer 2003
3. Notice to Proceed (other basins) August 2004\*
- \*(Milestone date is 2005; early start anticipated)
- Close streets where work is to begin
  - Establish storage areas (usually vacant lots)
  - Bring in sewer pipes, heavy equipment to move in heavy equipment (front end loaders, backhoes, etc.)
  - Tunnel boring equipment

### Milestone completion dates for sewer separation:

- West Area / Greensferry September 2007
- East Area / McDaniel April 2007
- East Area / Stockade June 2007

### Schedule of Major CSO Projects - Construction

Project	District/NPU	CDStart Date	CD Finish Date
Intrenchment Creek CSO Plant Upgrade	N/A	July 11, 2004	Nov. 7, 2006
East Area Tunnel Construction	1, 12 W	June 22, 2004	Oct. 31, 2007
West Area Dechlorination Upgrade	3, 6, 8 F, E, K	Oct. 2, 2004	Nov. 29, 2005
East Area Dechlorination Upgrade	1, 12 W	Oct. 2, 2004	Nov. 29, 2005
West Area Tunnel Construction	3, 6, 8, 9 D, E, F, K	Nov. 28, 2004	Nov. 7, 2007
West Area Treatment Plant	8, 9 A	Sept. 1, 2005	Oct. 15, 2007
Greensferry Sewer Separation	3, 9 K, L, T	Aug. 19, 2005	Sept. 27, 2007
East Area Phase I Sewer Separation	1, 4, 12 N, S, V, W, X	May 6, 2005	Apr. 18, 2007 (McDaniel) June 8, 2007 (Custer)