



WIN-WIN PARTNERSHIPS with Stormwater and Park Projects

Patrick Blandford, PE
Robby Bryant, PLA



OBJECTIVES

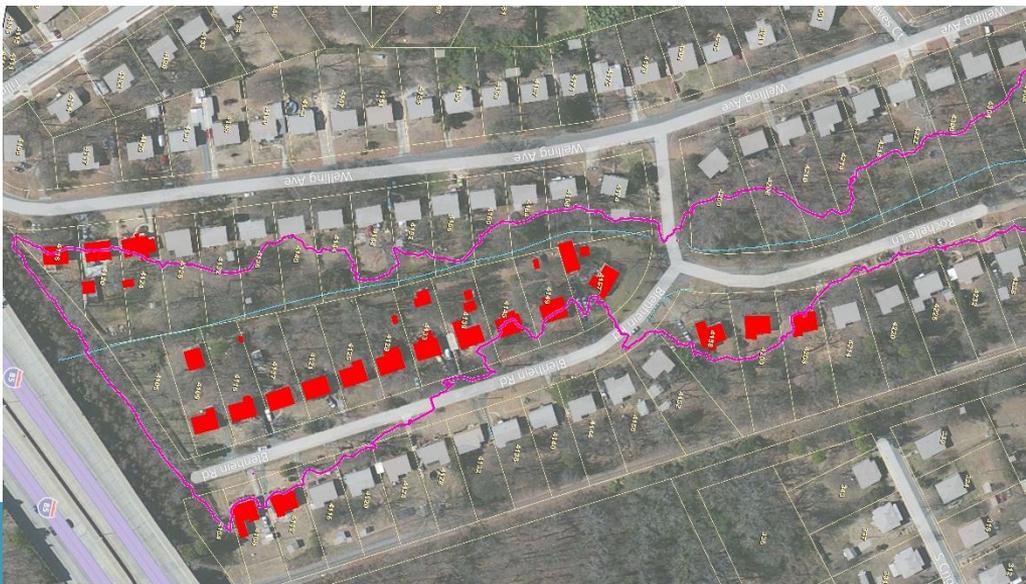
- Share Our Experience
- Highlight the Co-Benefits
- Present the Collaboration Process
- Provide Lessons Learned
- Recap the Project Outcomes



Blenhein SDIP| Charlotte, NC

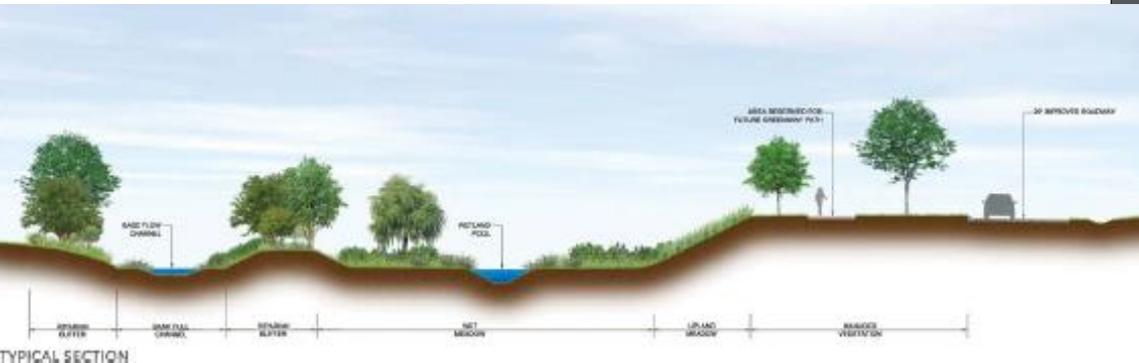
PROJECT BACKGROUND

- City of Charlotte Storm Water Services
- Impacts
 - Structural Flooding
 - Overtopping Roads
- Contributing Issues
 - I-85 Culvert Capacity
 - Upstream Development
- Studied Previously Twice Before



CONCEPTUAL PLANNING

- Three Concepts Presented to Stakeholders
 - Environmental
 - Recreational
 - Low Impact
- Key Input
 - Limit Site Interaction
 - Provide Wild Appearance





PROPOSED SIDEWALK & 2' VALLEY GUTTER ALONG WELLING AVENUE (THOMASBORO - HOSKINS NIP PHASE 3)

2'-VALLEY GUTTER

WELLING AVE.

RESTORED STREAM CHANNEL (970 L.F.)
WETLAND AREA 'A'

WETLAND AREA 'B'

WETLAND AREA 'C'

IMPROVED TRIPLE BOX CULVERT

STABILIZED STREAM CHANNEL (1,250 L.F.)

ROCHELLE LN.

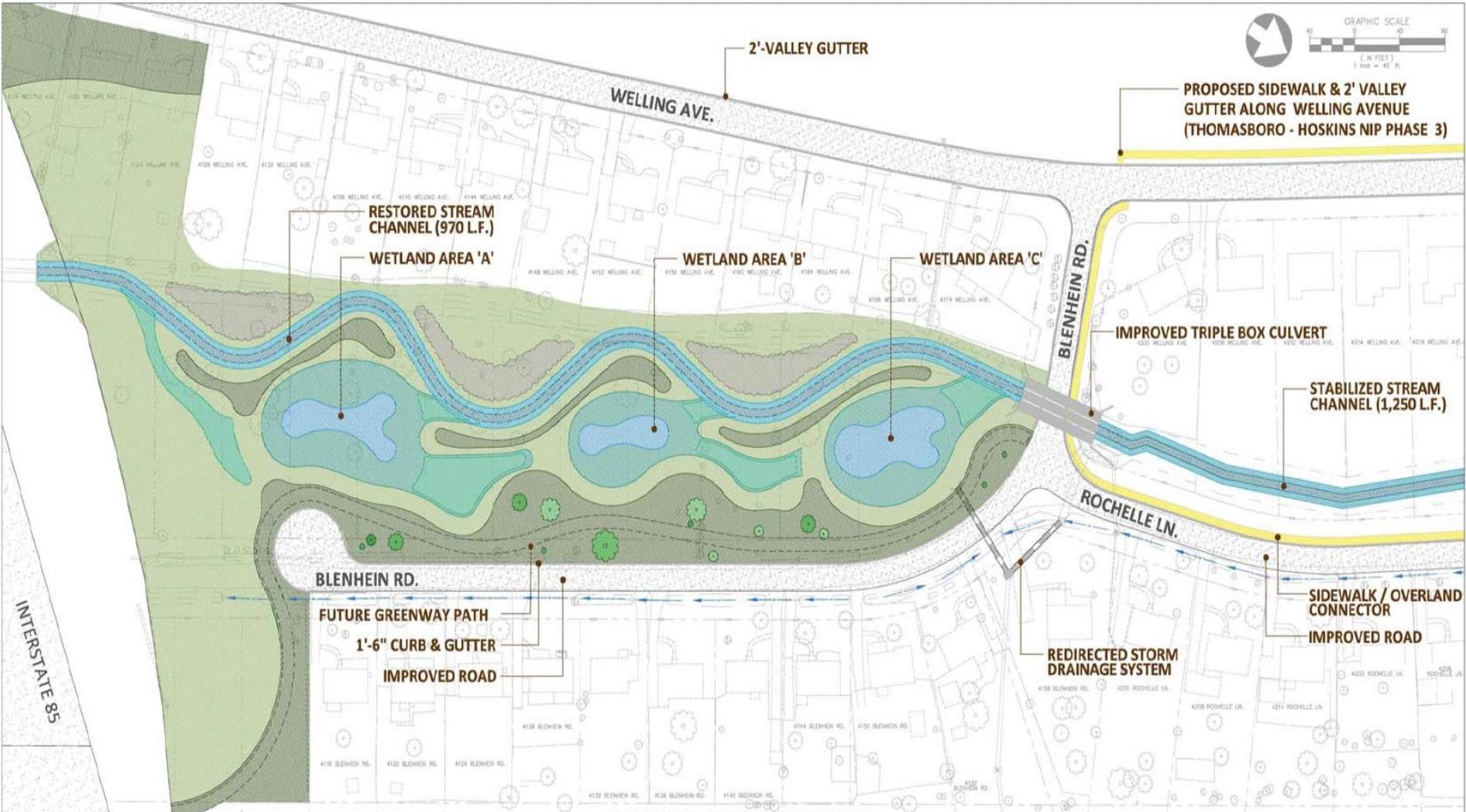
BLENHEIN RD.

FUTURE GREENWAY PATH
1'-6" CURB & GUTTER
IMPROVED ROAD

REDIRECTED STORM DRAINAGE SYSTEM

SIDEWALK / OVERLAND CONNECTOR
IMPROVED ROAD

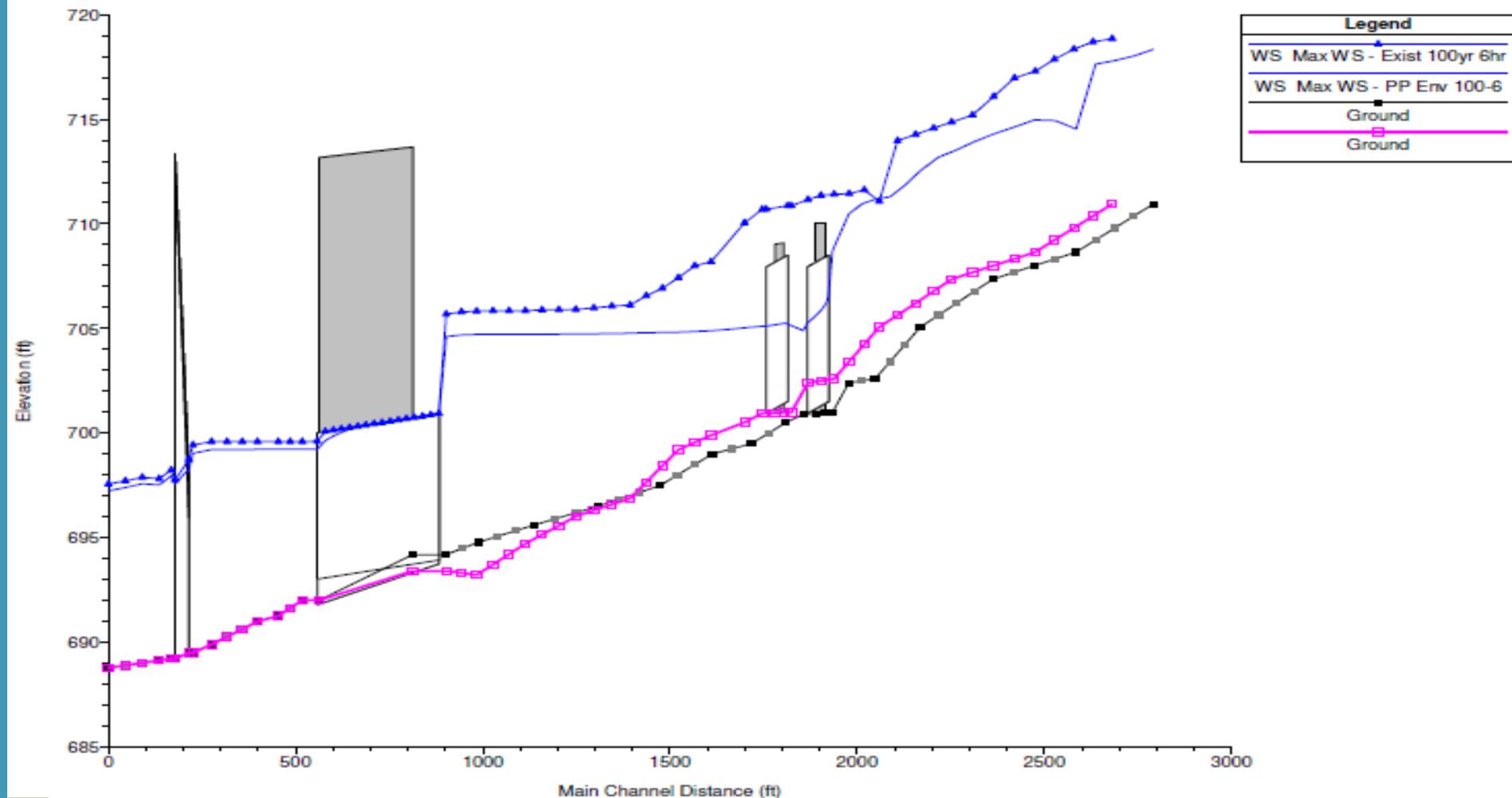
INTERSTATE 85



Blenhein

Plan: 1) PP Env 100-6 10/7/2011 2) Exist 100yr 6hr 10/7/2011

Geom: Prop Preferred Environmental



PROJECT OUTCOMES

- Lessons Learned
 - Stakeholder Development was Critical

- Shared Success
 - Flood Risk Reduced for 19 Homes
 - Established Future Connectivity for Greenway and Carolina Thread Trail



central park | chesterfield, mo



1. BOATHOUSE

- The boathouse includes concessions, boat rental, dock, and seating areas.

2. PEDESTRIAN BRIDGE

- The bridge contains a built in gazebo that takes advantage of scenic views of the lake and stream/waterfalls that flow into the lake.

3. AMPHITHEATER

- The 1500 to 2000 person amphitheater includes a covered stage with changing rooms. A concessions/restroom facility is located at the northern end of the amphitheater. A driveway provides access to a handicap parking lot, turnaround area, and service entrance. Additional parking for the amphitheater is provided by the adjacent parking decks.

4. STREETSCAPE

- A new park road with parallel parking (46 spaces), sidewalks, and plaza areas provides a streetscape edge along the western edge of the park. The streetscape provides a transition zone between the park and the adjacent office retail development. Three plaza areas line the streetscape at key intersections along the road; the southern plaza contains a fountain, the central plaza is a veterans memorial plaza, and the northern plaza is an entry plaza to the amphitheater. All plazas contain artwork.

5. LINEAR PARK

- A lawn area adjacent to the streetscape provides space for passive recreation. Informal picnics and relaxation. A retaining wall defines the space and separates the lawn from the woodland and amphitheater below.

6. LAKE TRAIL

- A trail runs along the entire perimeter of the lake providing connections between the site features. A spur trail connects extends from the lake trail to the adjacent riparian trail.

7. STREAM

- Recirculating stream terminating in a waterfall. The stream begins as a fountain in the streetscape plaza above.

8. DRY STREAM

- The existing dry stream is enhanced with boulders and plantings.

9. RESTROOM

- A restroom facility is added near the existing pavilion and playground.

10. PICNIC AREA

- A picnic area is located overlooking the lake and adjacent to the boathouse.

11. PAVILION

- A pavilion is located overlooking the lake and across from the YMCA.

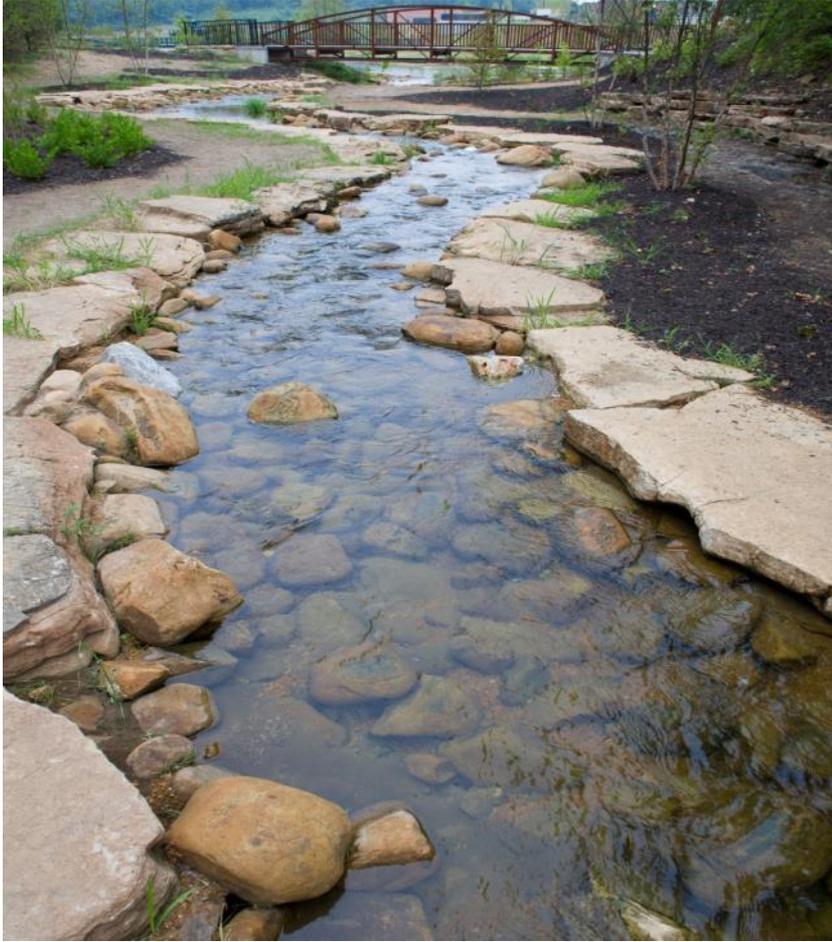
12. SPILLWAY BRIDGE

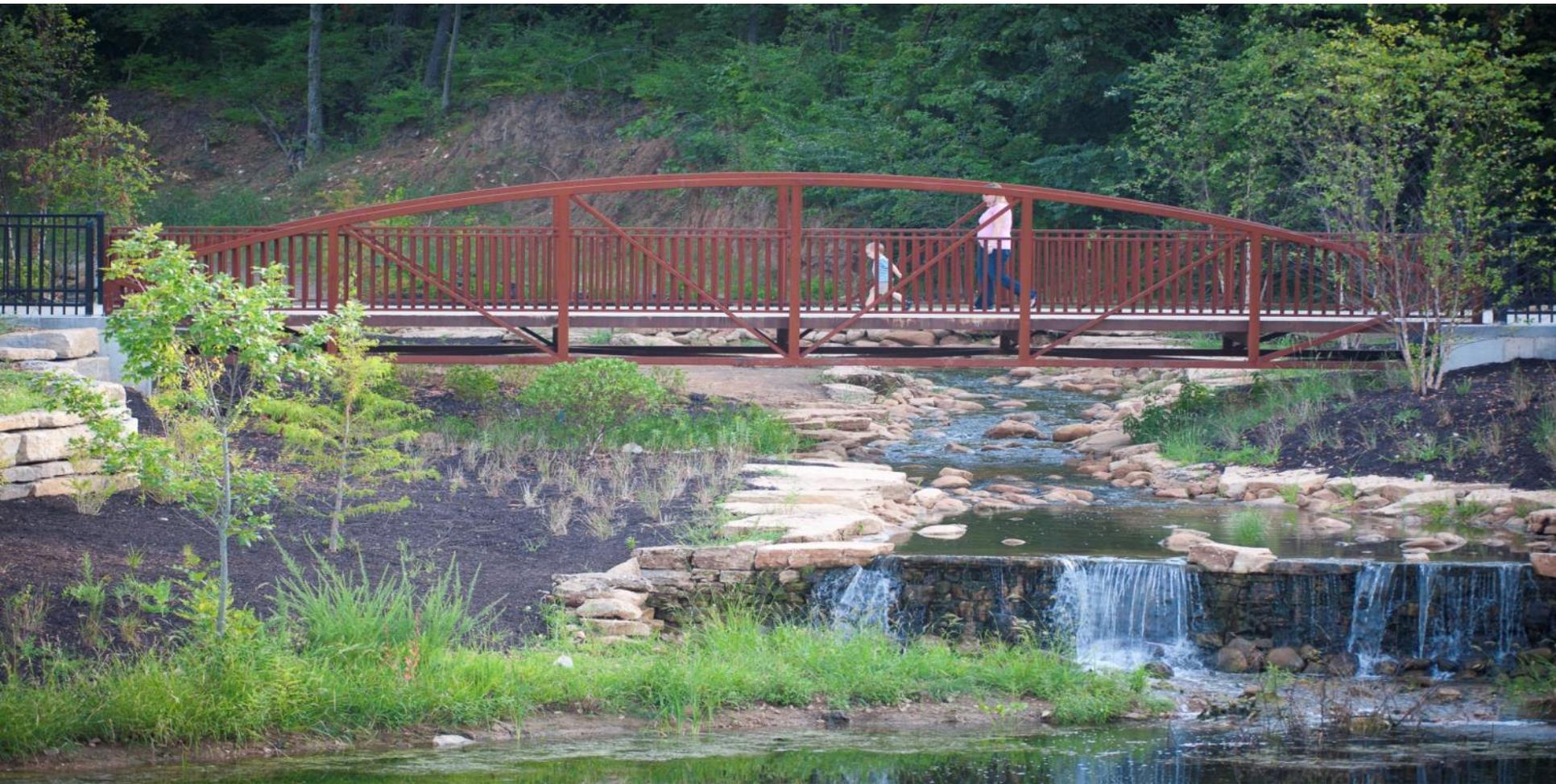
- A pedestrian bridge is constructed over the lake spillway to create a continuous route around the lake.

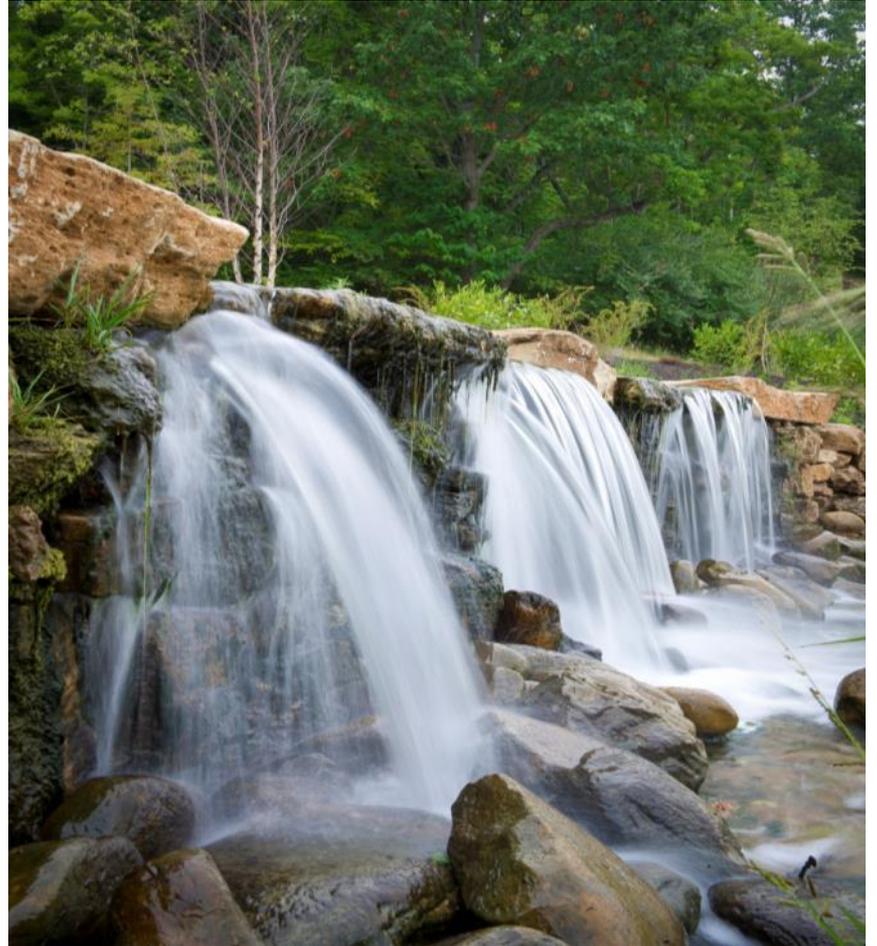
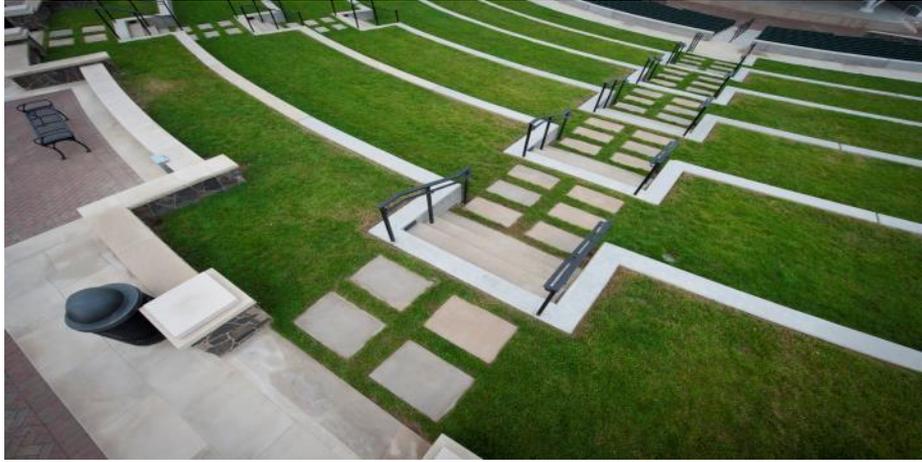
CENTRAL PARK

CHESTERFIELD, MO













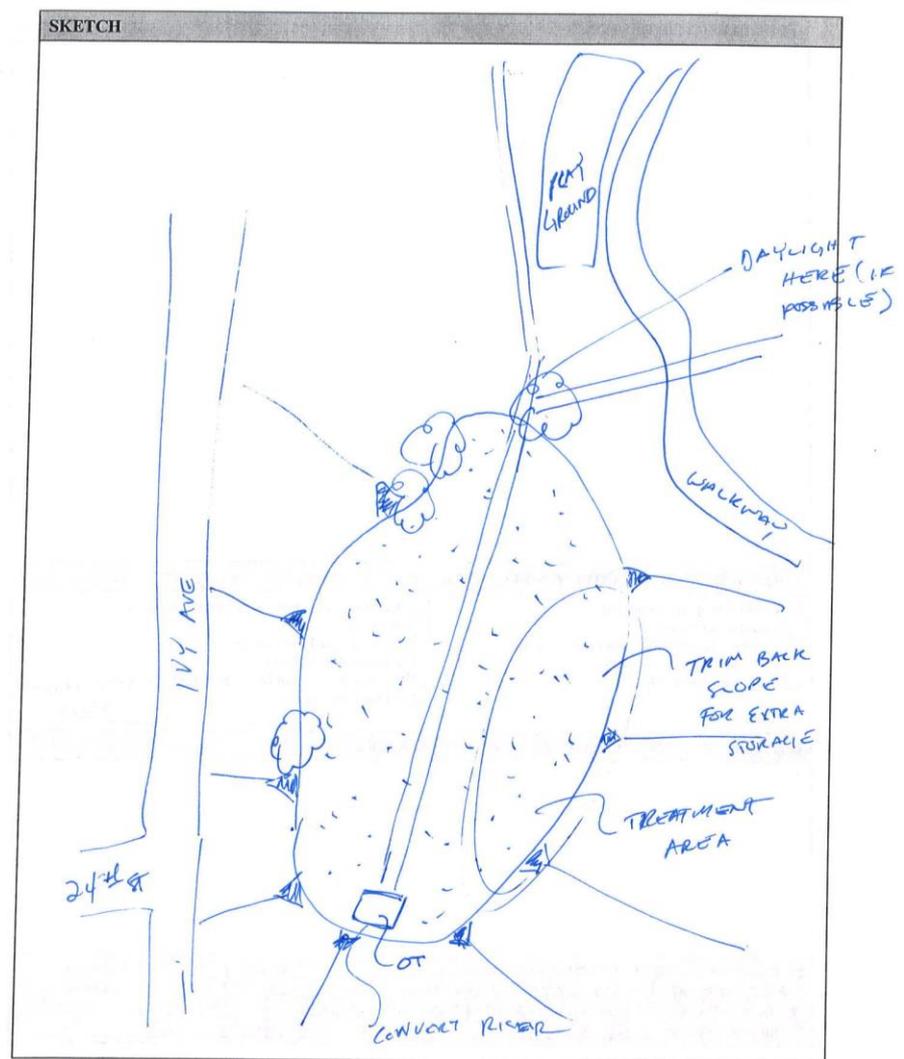


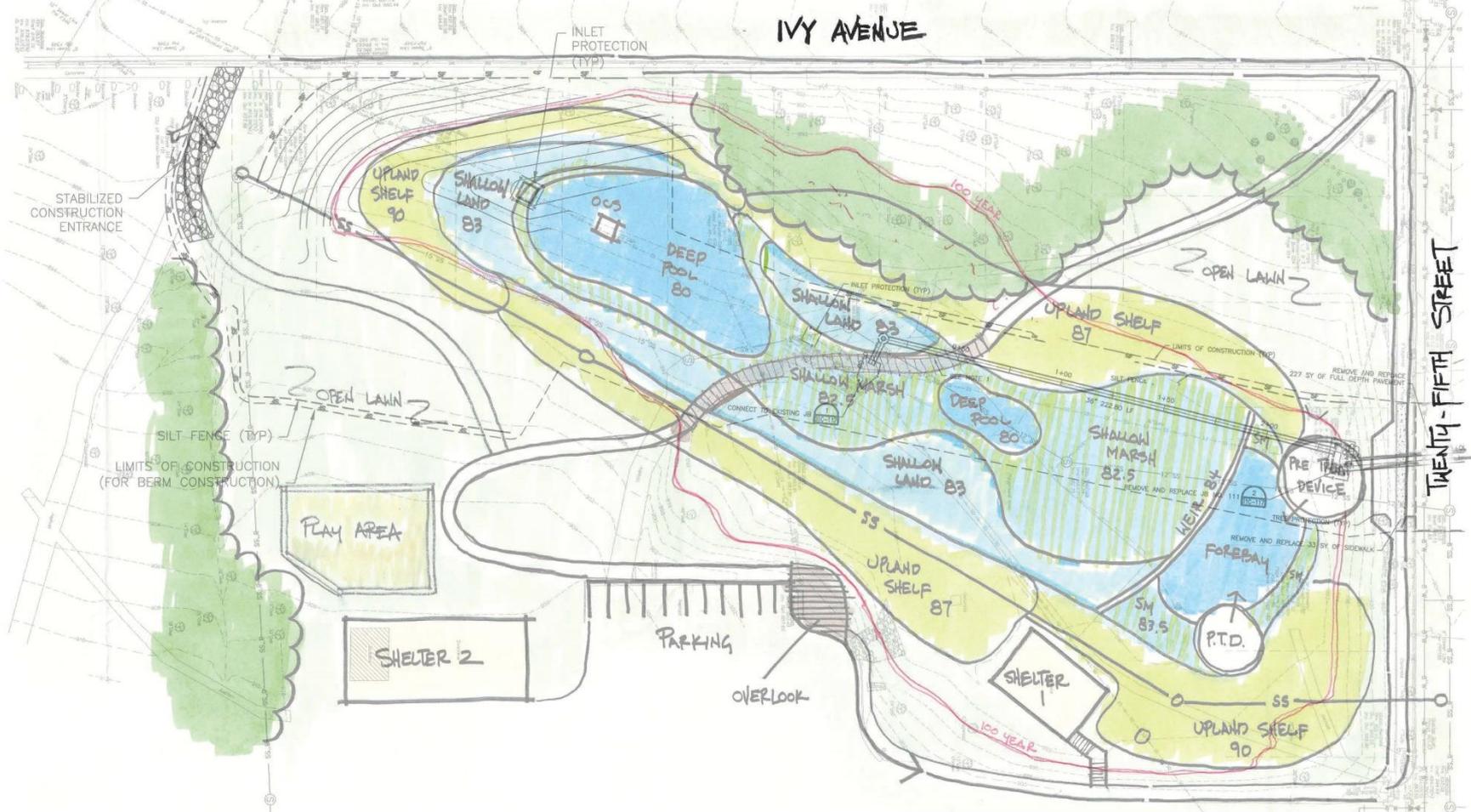
AMPHITHEATER
FREE CONCERTS
June 21st
Groove Thang
June 25th
The Phins
July 16th
Griffin &
The Gargoyles
July 20th
That 80's Band
August 13th
Soulard
Blues Band
August 27th
Erin Bode

Blum Park| Winston-Salem, NC

OPPORTUNITY FOR NEW DIRECTION

- BMP Retrofit Study
 - Peters Creek Master Plan Study
 - Identified for Daylighting to Detention Facility
 - Site Ranked High Watershed and City to Date
 - Wetland Chosen for Nutrient/Bacteria Removal
 - PTRP Influence
- Parks' Interaction
 - Facilities Flooded too Frequently
 - Park Attracting Undesirable Action





BLUM PARK BMP

WINSTON-SALEM, NORTH CAROLINA











PROJECT OUTCOMES

- Lessons Learned
 - Floatables Incorporation and Design
 - Inundation “Bounce” on Vegetation
 - Maintenance First
 - Detail in Construction Staging
- Successes Shared
 - Park Director Eager to Partner Again
 - Increased Aesthetics and Desirability for Use
 - Education and Outreach – Added Value



historic fourth ward park | atlanta, ga



This is one of those rare public projects that has captured the imagination of everyone involved. The year-long design process brought residents, stormwater engineers, and landscape architects together as equals around a common table.



Piedmont Park

Midtown Atlanta

City Hall East

Storm Drainage

Residential Development

Beltline

Storm Drainage

Future Park Development

Storm Drainage

2008



2008









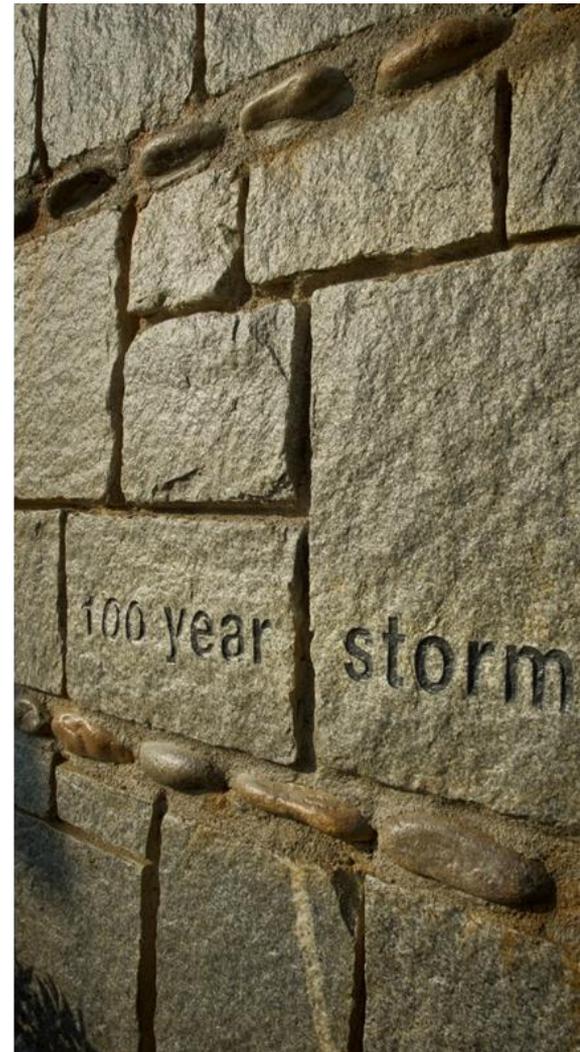
West Section F



West Section H



South Section E





- Water Species
- Wetland Species
- Drought Tolerant
- Southern Heritage



Water Species



Wetland Habitat



Drought Tolerant Vegetation



Southern Heritage Planting















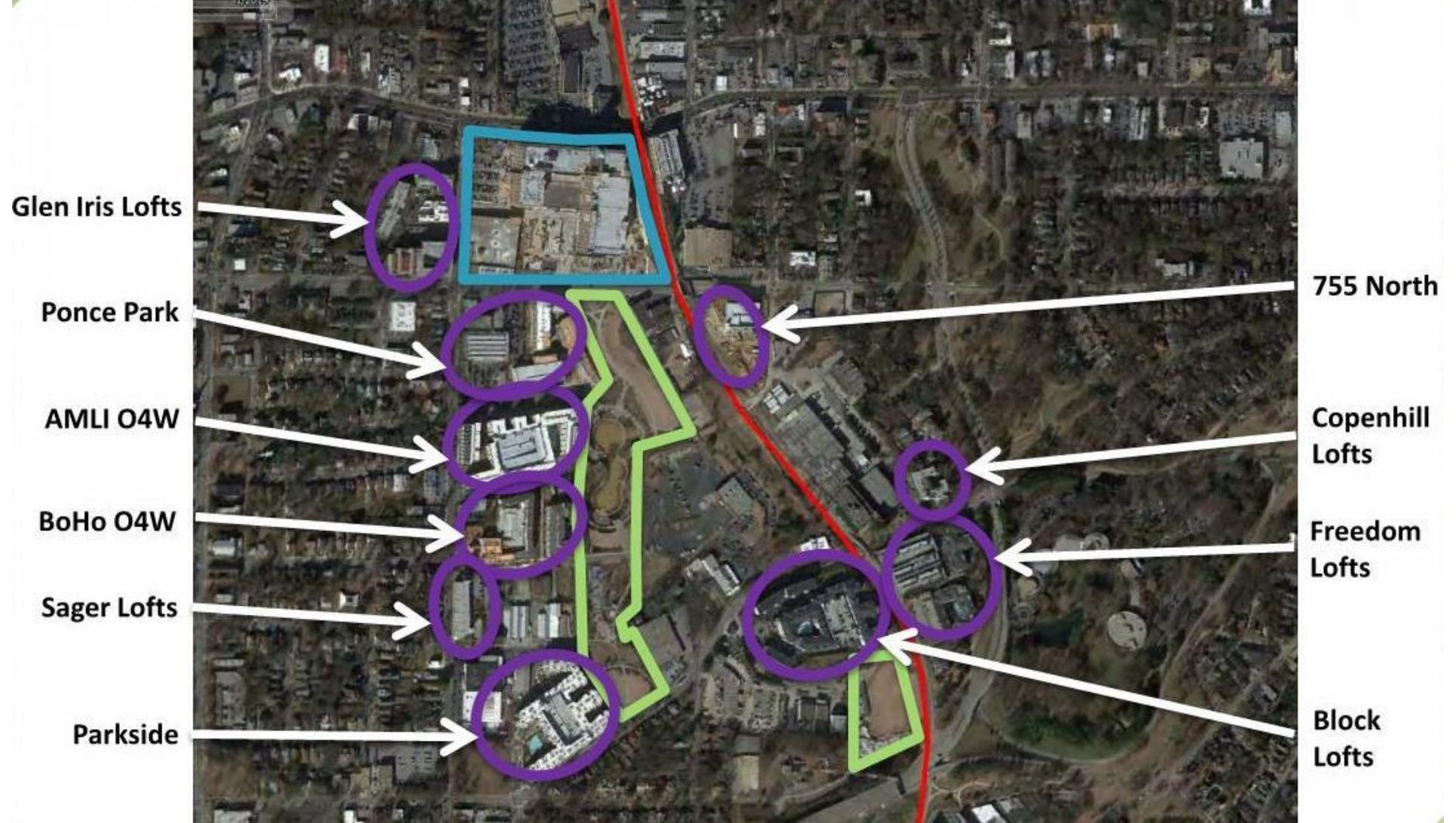




2012

2016





Glen Iris Lofts

Ponce Park

AMLI O4W

BoHo O4W

Sager Lofts

Parkside

755 North

Copenhill Lofts

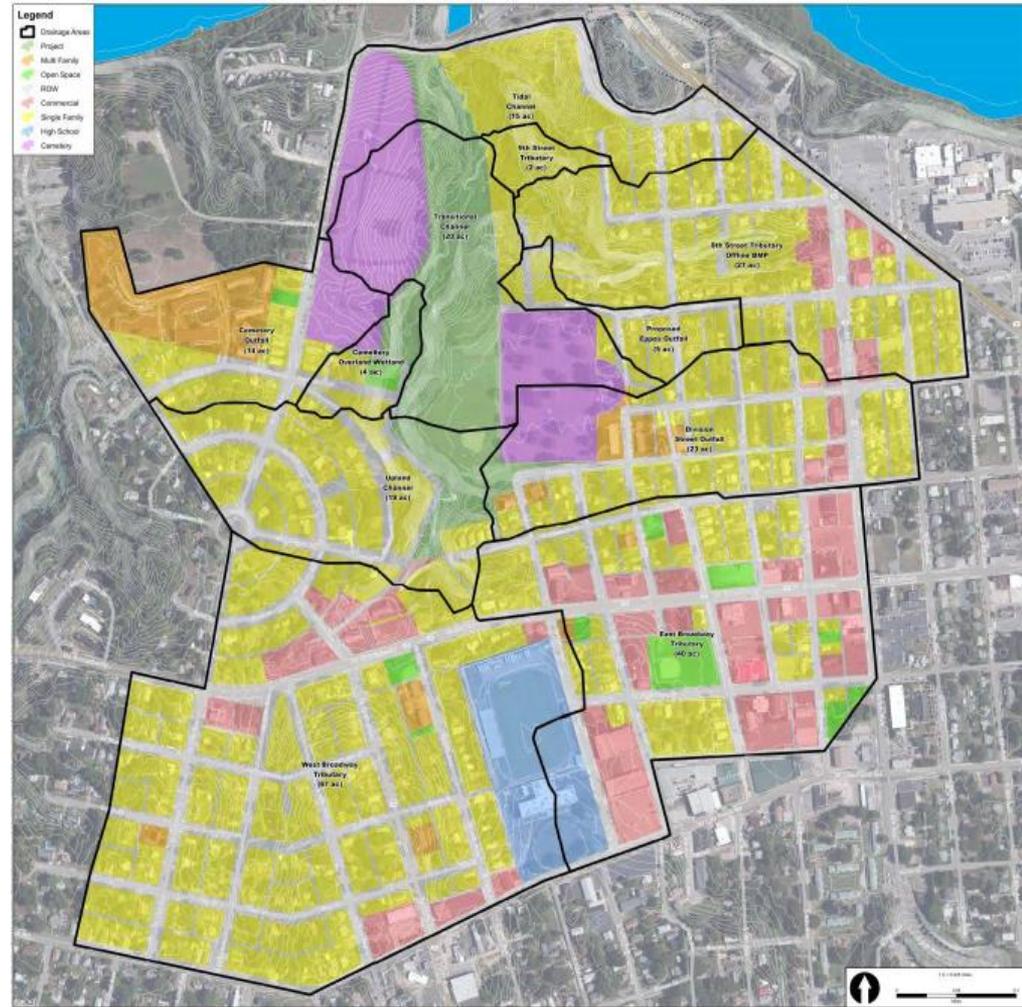
Freedom Lofts

Block Lofts

Marina BMP Park| Hopewell, VA

PROJECT BACKGROUND

- Chesapeake Bay TMDL (5% ,35% and 60%)
- 19 Acre Property
 - Forgotten Area
 - Mostly City Owned Property
- 296 Acre Watershed
 - Mostly Urban
 - 49% Impervious
- Investments along Riverfront
 - Marina
 - Park
 - Riverwalk



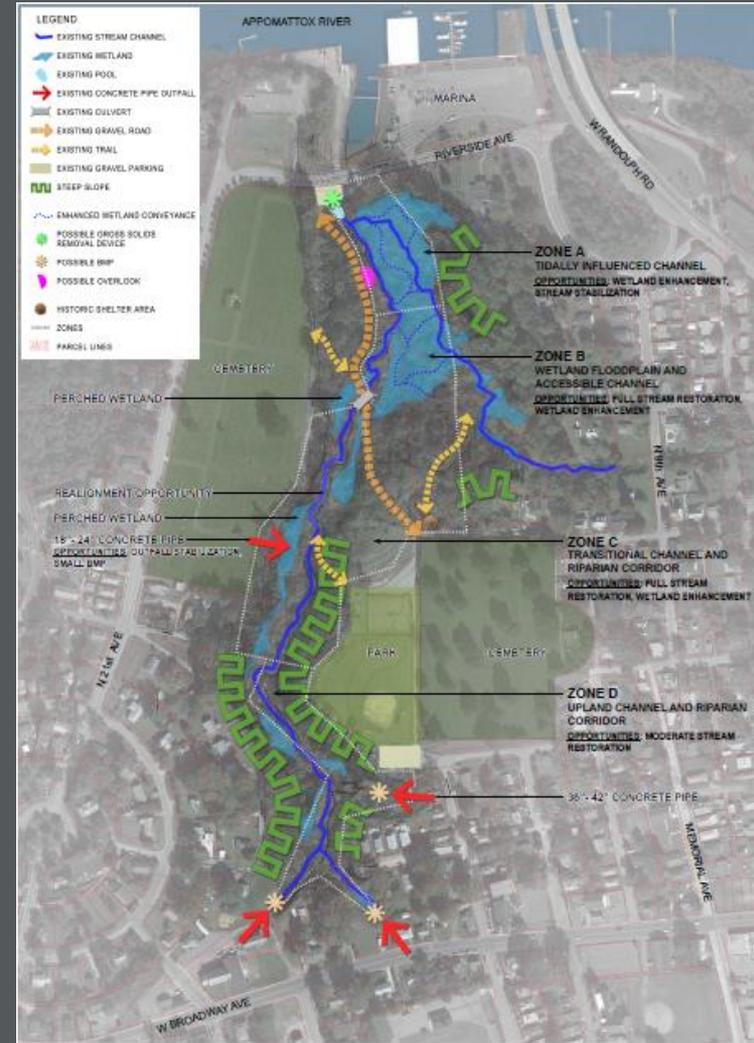
SITE ANALYSIS

- Environmental Considerations

- Tidal Stream
- Non-tidal Stream with Wetland Floodplain
- Transition Channel
- Upland Channel
- Outfall Treatments

- Community Considerations

- Greenway and Connectivity
- Habitat Interaction



PROJECT FEATURES



BIORETENTION BMP



BOARDWALK



STREAMBANK STABILIZATION



WETLAND EXPANSION



NATURE CENTER



PERVIOUS TRAIL HEAD PARKING



PROJECT FEATURES



REGENERATIVE STORMWATER CONVEYANCE BMP



PAVED ROAD



WETLAND ENHANCEMENT



STREAM RESTORATION



INTERPRETATION SIGN

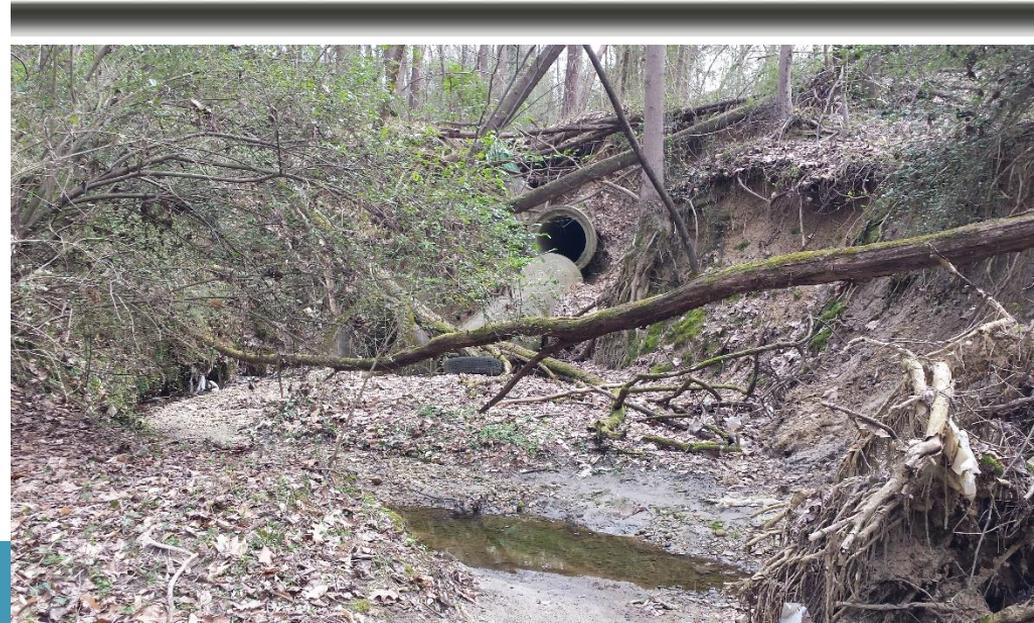
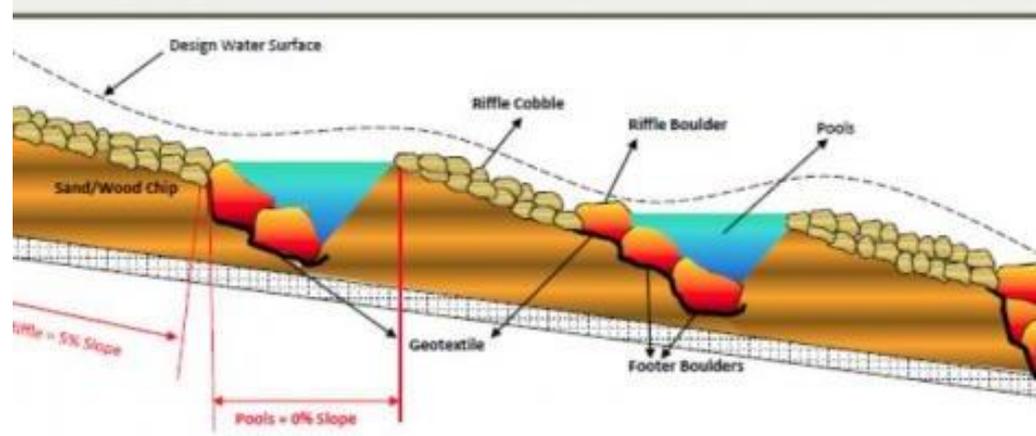


NATURE TRAIL



BAY TMDL STREAM COMPLIANCE

- Stream Restoration/Stabilization
 - 2,364 feet
 - 50,000 loads reduction
- In-Stream/Riparian Processing
 - 859 lbs of TN removed
 - 935 lbs of TP removed
- Floodplain Reconnection Volume
 - Pursued through Wetland Creation
- Regenerative Stormwater Conveyance
 - 72 lbs of TN removed
 - 10 lbs of TP removed

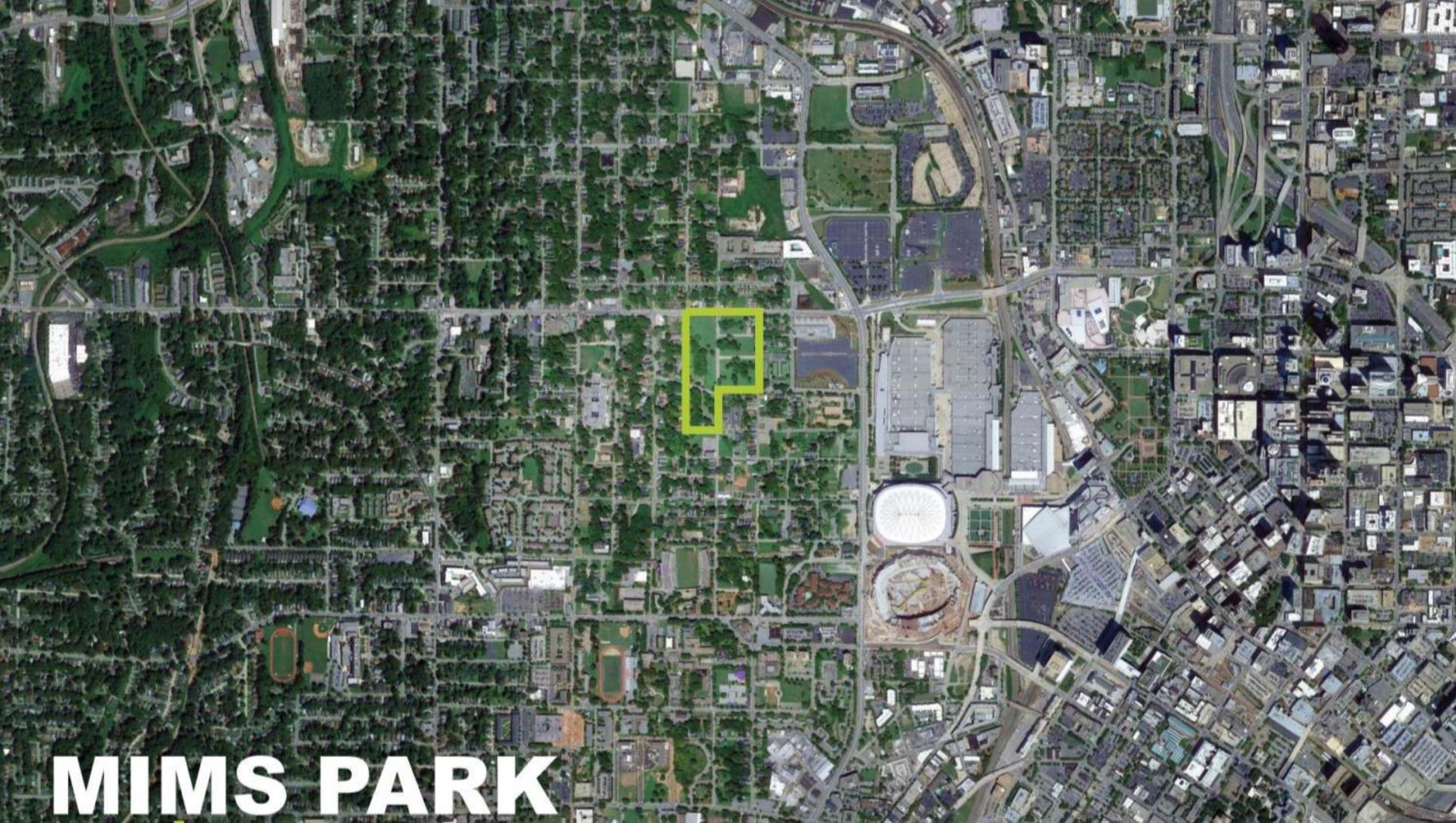


PROJECT OUTCOMES

- \$1.1 million SLAF Grant in 2015
 - Covers 50% of Stormwater Improvements
 - Demonstrated High Cost Effectiveness
- Sediment and Nutrient Reductions
 - Almost Satisfies 2025 Goals for Entire City
- Partnering with other Divisions
 - Additional funding to the project
- Greenway Trail
 - Provides Desired Connectivity
 - Forms Backbone for Maintenance Route

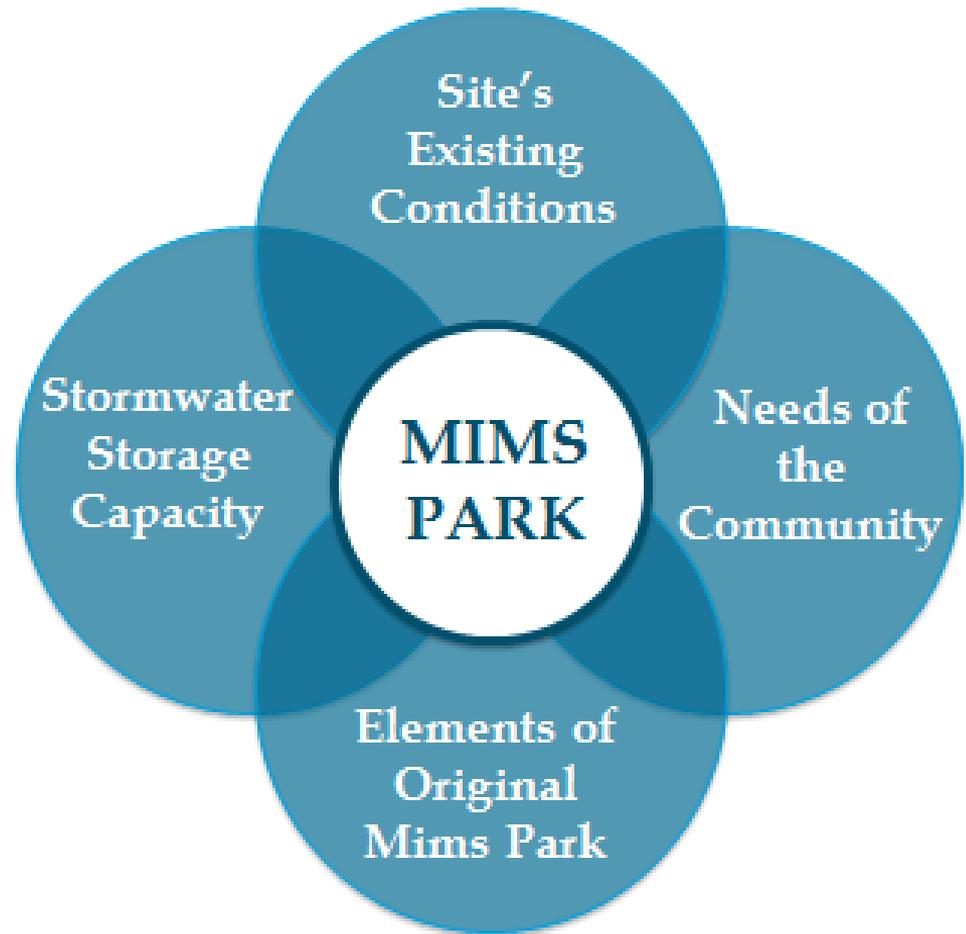


mims park | atlanta, ga



MIMS PARK

Mims Park is Being Shaped with Four Criteria in Mind



The Needs of the Community have been Identified & Prioritized through Civic Engagement Activities

June 25, 2016 – Mims Park 'Play Day'

Recorded information from attendees through 'Dot Exercise'

- 6 boards of 107 total park images were displayed
- Each attendee was given 8 green dot stickers and 8 orange stickers
- Asked to place green dots on images of park elements one would like to see in Mims Park & orange dots on elements one would not like to see in Mims Park





WALNUT ST.

BOULDER
TERRACE

STEPPED
POOLS

THURMOND ST.

OPEN POND

JOSEPH E. BOONE BLVD

LITTORAL PLANTING ZONE

BIORETENTION
CELL

WELCOME
PLAZA

VINE ST.

PICNIC
LAWN

OUTDOOR
CLASSROOM

THE GREAT LAWN

MULTI USE
SPORTS COURT

THE UPPER LAWN

PLAYGROUND

LONG VIEW

SPRAY
AREA

MARKET
PLAZA

TERRACED LAWN

THE KNOTCH

RESTROOM

SHADE
STRUCTURE

RESTROOM

SPENCER ST.

ELM ST.



Perspective Looking South

Upper Proctor Creek Sewer Relief Pond Concept - Perspective Sketch

September 1, 2016









questions