Proposed South Wilmington Wetland Restoration Project

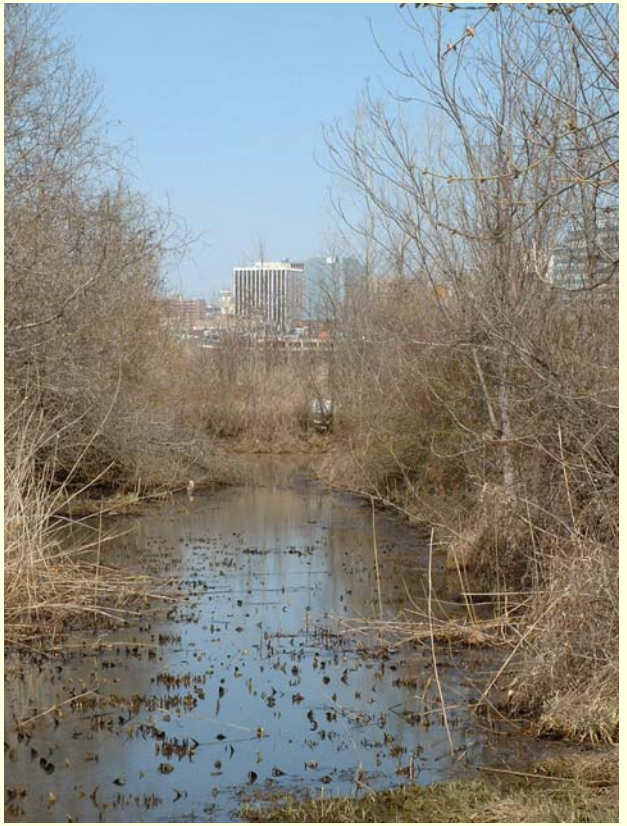
How we got here...

South Wilmington Wetland

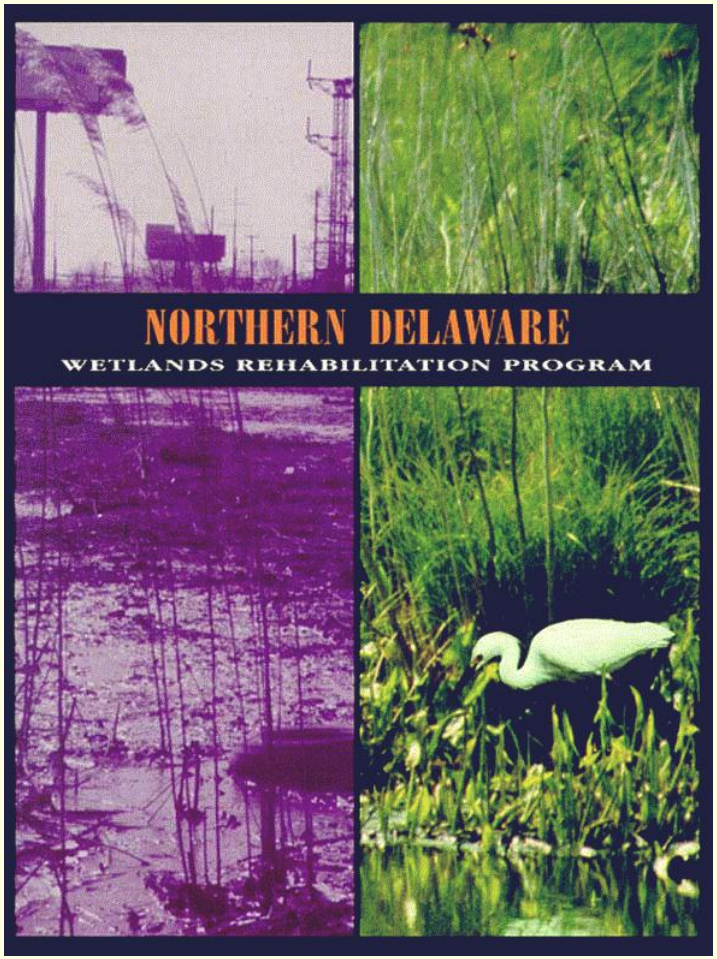
- 27-acre degraded wetland
- Christina Watershed
- Central feature of South Wilmington

A shared goal…

- Restoration of Wetland identified by:
  - Northern DE Wetlands Rehabilitation Program
  - SAMP South Wilmington Neighborhood Plan
  - South Wilmington Drainage Plan
  - Walnut Street Urban Renewal Plan



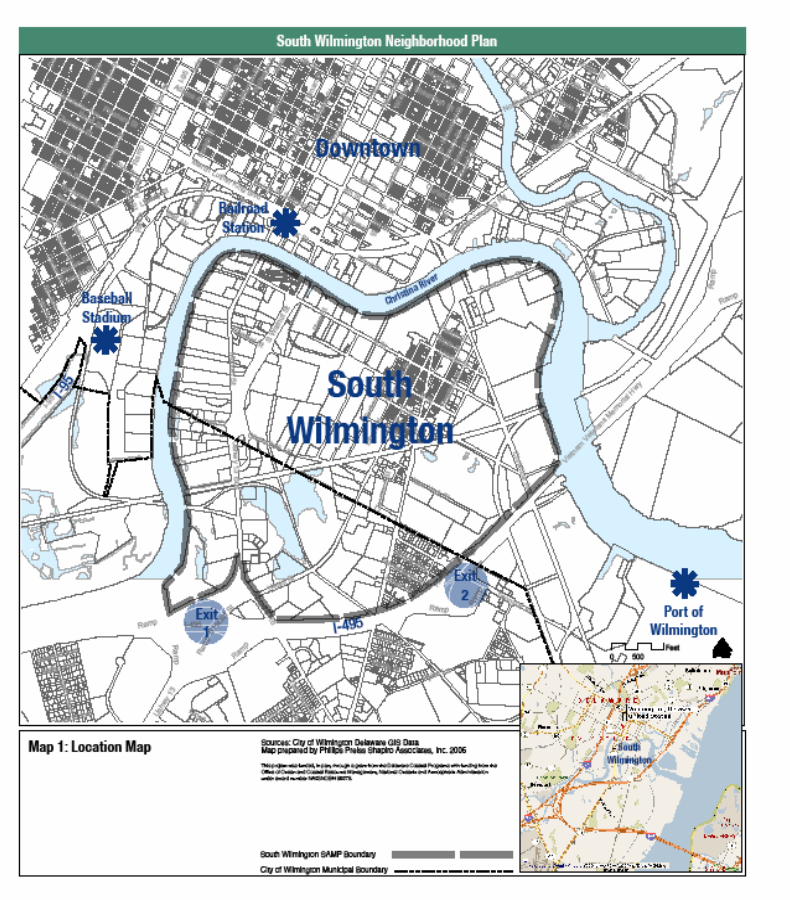
Northern Delaware Wetlands Rehabilitation Program



- NDWRP (1994) identified the South Wilmington Wetland as “extremely degraded”
- 200 fragmented acres in South Wilmington were identified as candidates for restoration, but further work was not initiated
- The NDWRP has restored >11 marshes, including Broad Dyke, Gambacorta and Peterson Refuge.

South Wilmington
Special Area Management Plan

- Cooperative Revitalization Effort
- Environmental Justice Community
- Goal: To revitalize South Wilmington in a manner that is socially, economically and environmentally sustainable.

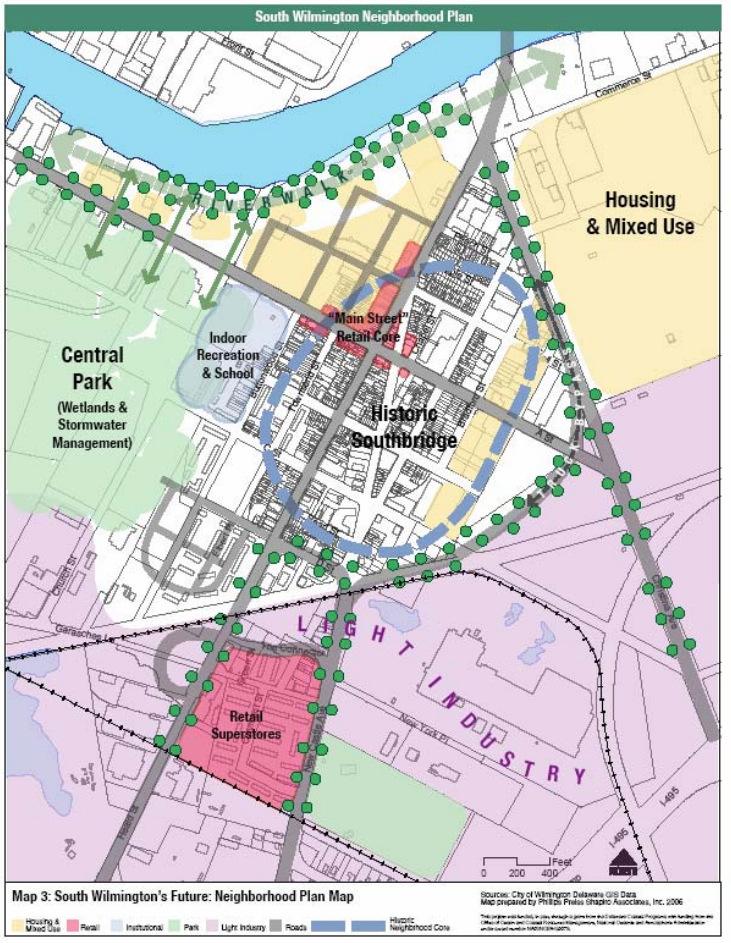


SAMP Themes

- *Brownfields & Underutilized properties*
- *Drainage and Flooding*
- Housing condition and availability
- Jobs & Employment
- Retail Services
- Crime Prevention
- Traffic
- Development Pressure
- “Gentrification and Displacement”

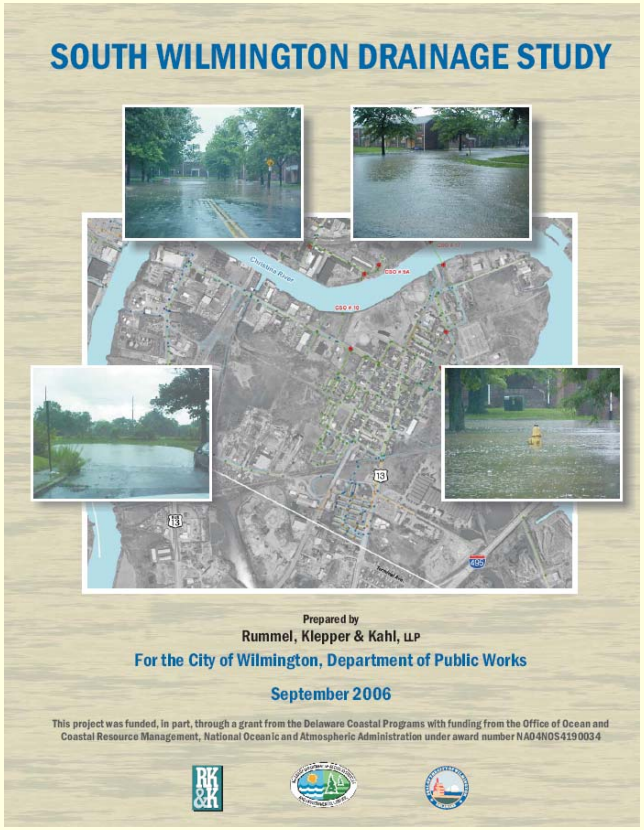
South Wilmington Neighborhood Plan

- Vision: Take a checkerboard of historic homes, public housing, waterfront luxury housing and mixed-use sites, brownfields, bisecting corridors, floodplains and wetlands, and create a single neighborhood rich in heritage, racial and social diversity, superior ecology and shared community amenities, including a substantial new park at the heart of the neighborhood.



South Wilmington Drainage Study

- Identified, characterized and provided potential solutions for chronically flood prone areas in South Wilmington
- 3 of 8 areas identified caused by lack of hydraulic capacity in Combined Sewer Outfall (CSO).
  - Solution = disconnect street drainage from CSO and direct stormwater to restored South Wilmington Marsh



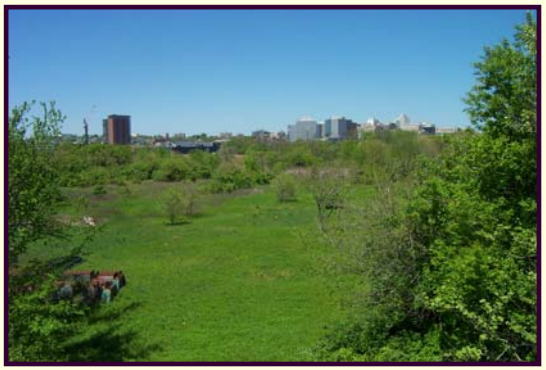
South Walnut Street
Urban Renewal Plan (2007)

- Redevelopment Plan for Western portion of South Wilmington
- Proposed high density residential and commercial
- Relies on ability to handle stormwater through restored wetland
- Uses wetland as community amenity/green space
- Provides framework for use of eminent domain for public purposes (environmental clean up, parks, drainage, etc.)

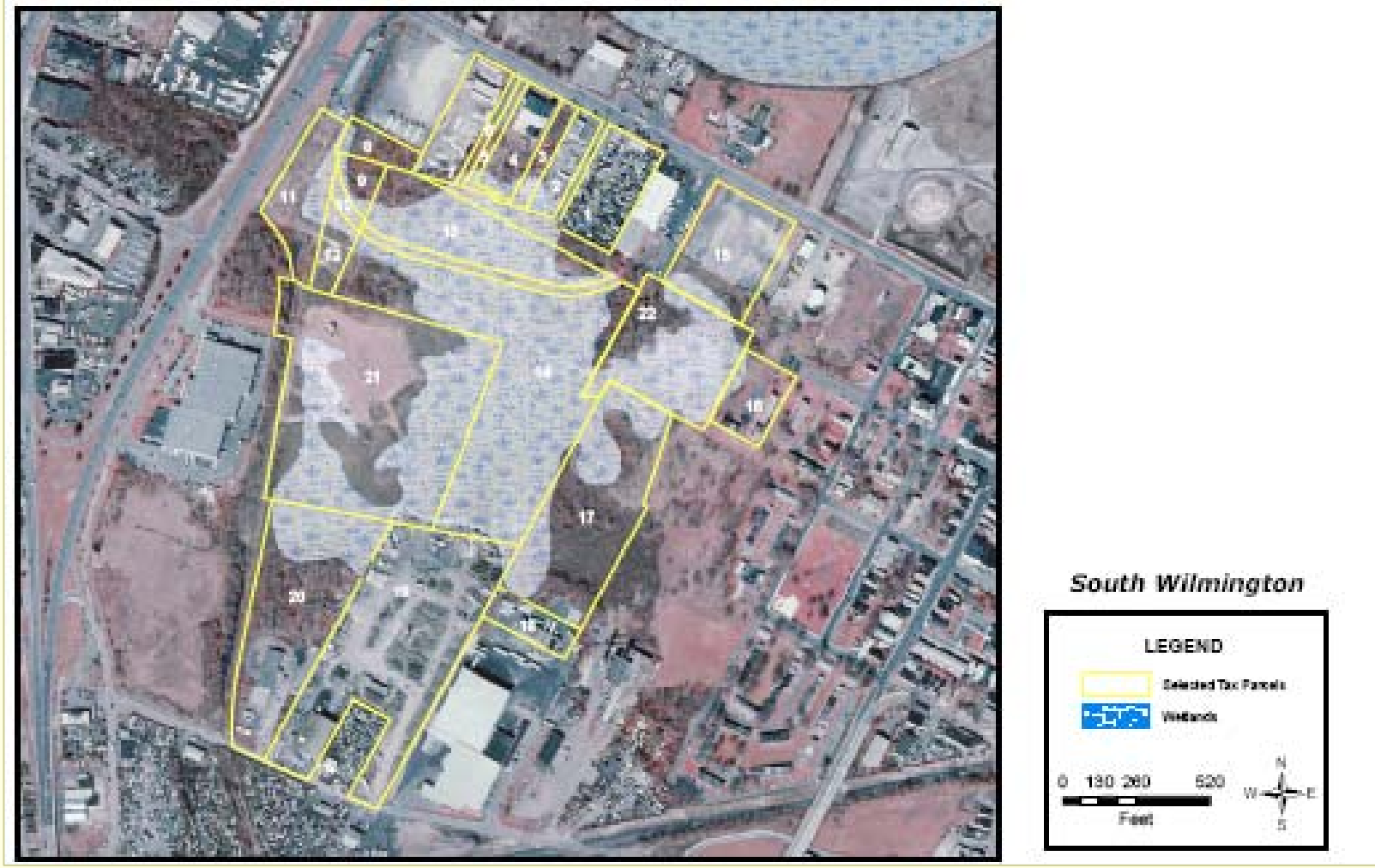
Proposed South Wilmington Wetland Restoration Project

Overview and
Current Activities

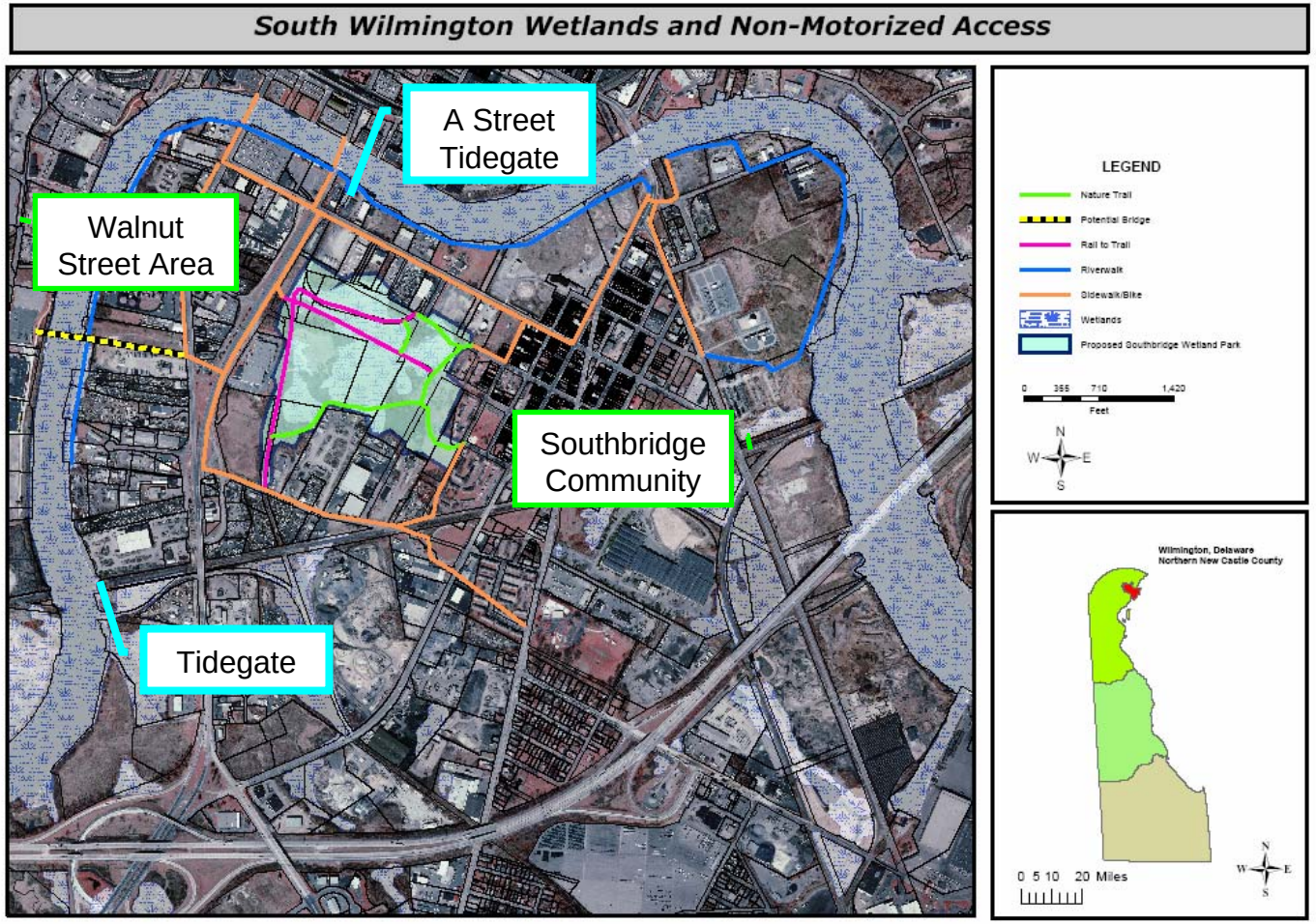
South Wilmington Wetland



Land Ownership & Permissions



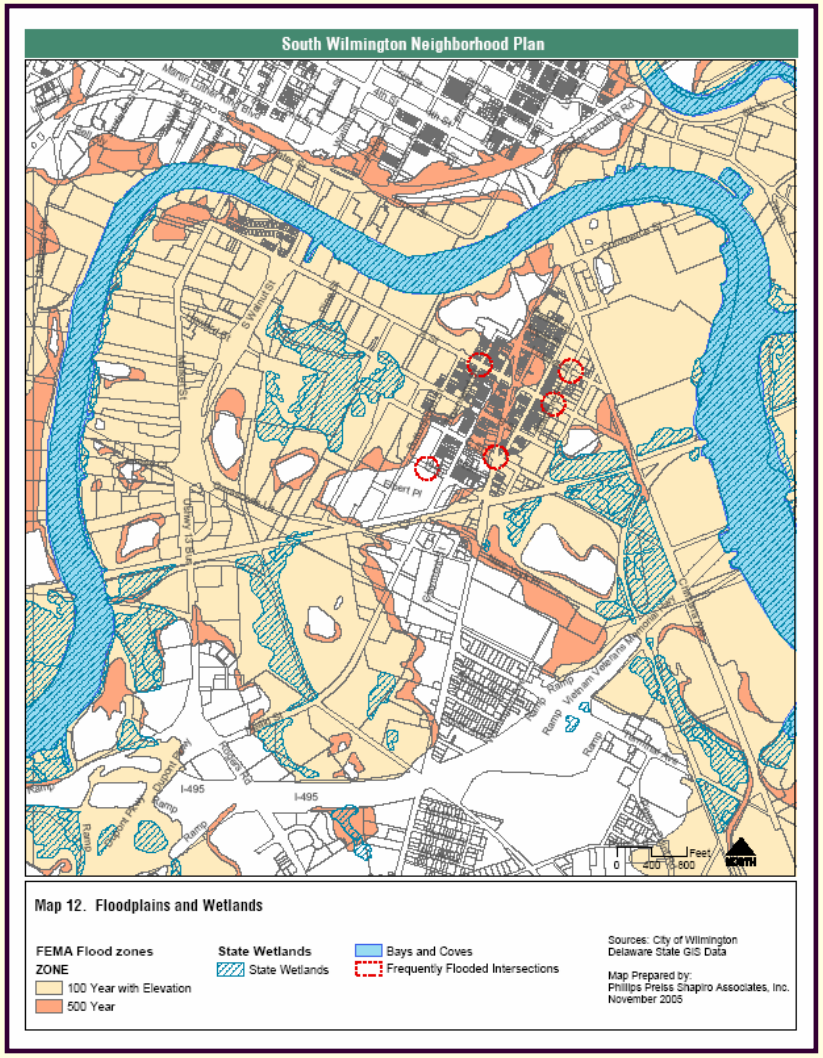
Conceptual Overview



Conceptual Overview

- Improve Urban Wetland Habitat & Wildlife Use
- Attenuate stormwater flooding & reduce or eliminate overflows from CSO # 10.
- Clean-up and restore contaminated area from Brownfield to Greenfield.
- Provide water quality improvements by natural wetland purification
- Restore some of natural landscape hydrology with downstream wetland area.
- Provide public access and interconnection of new and historic community.
- City of Wilmington Public Works has made it clear they will undertake long term management and maintenance of restored wetland area and any infrastructure.

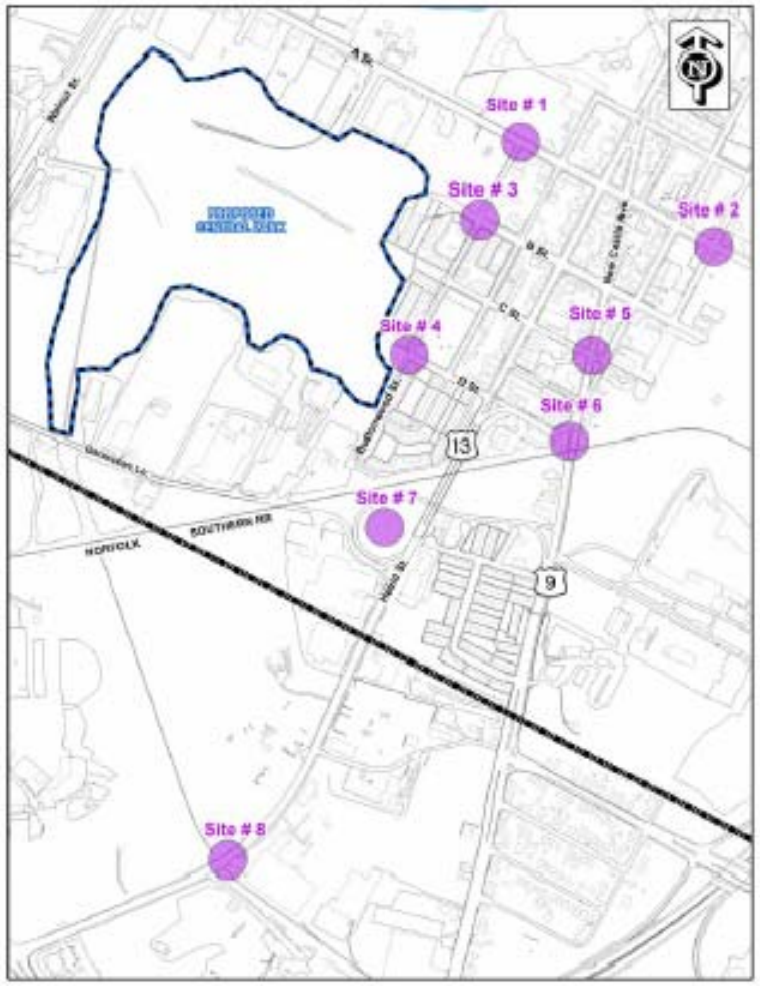
Flooding Issues....



Work to Date

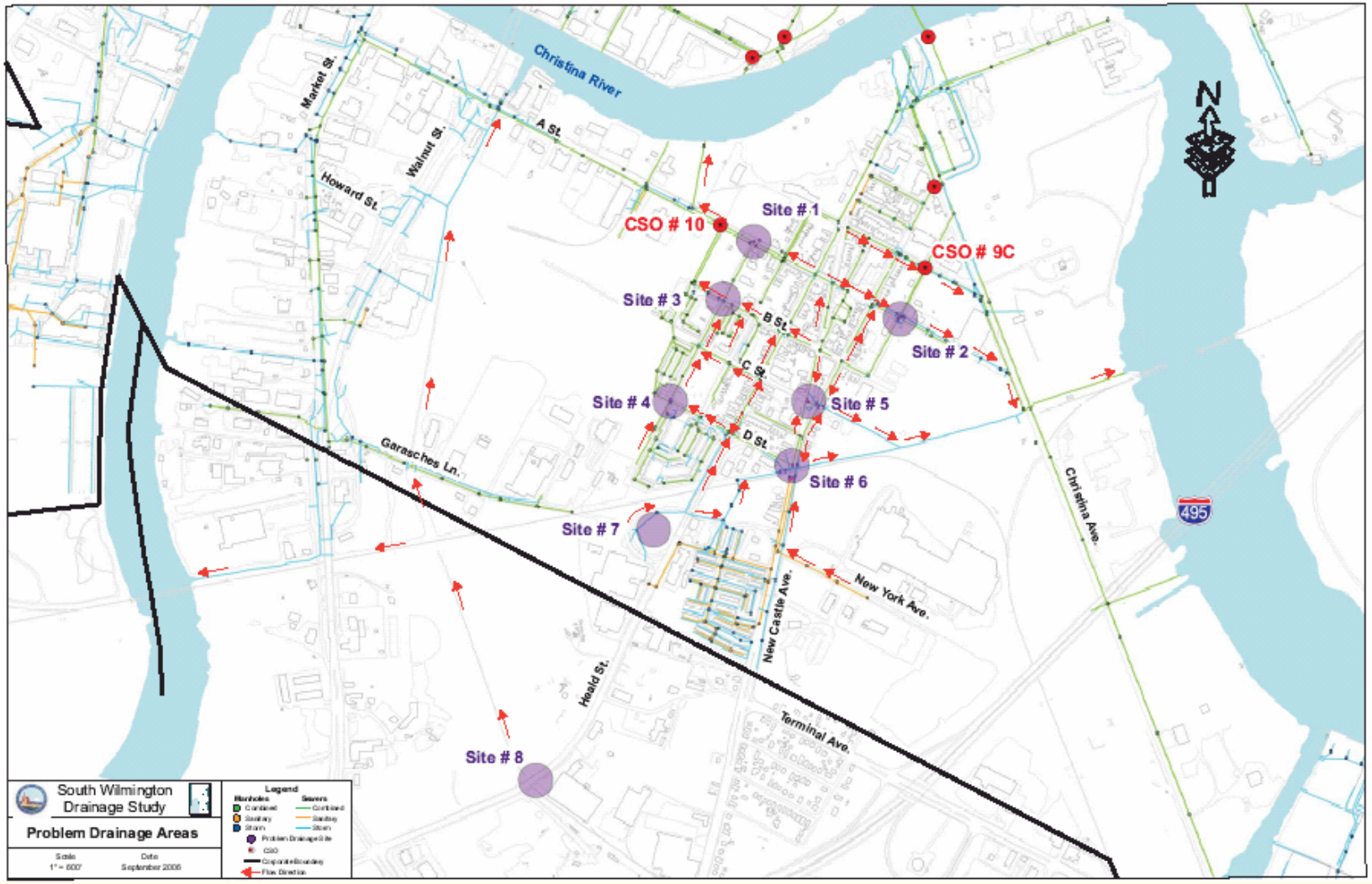
- Drainage Study
- Contaminant Studies conducted on most properties and completed inventory of existing reports and studies (all available in PDF).
- Dye Studies of Drainage System in selected areas.
- Functional Assessment of Wetland Area
- Structural Inspection of Tide Gate
- Water Level Continuous Monitoring

Drainage Study

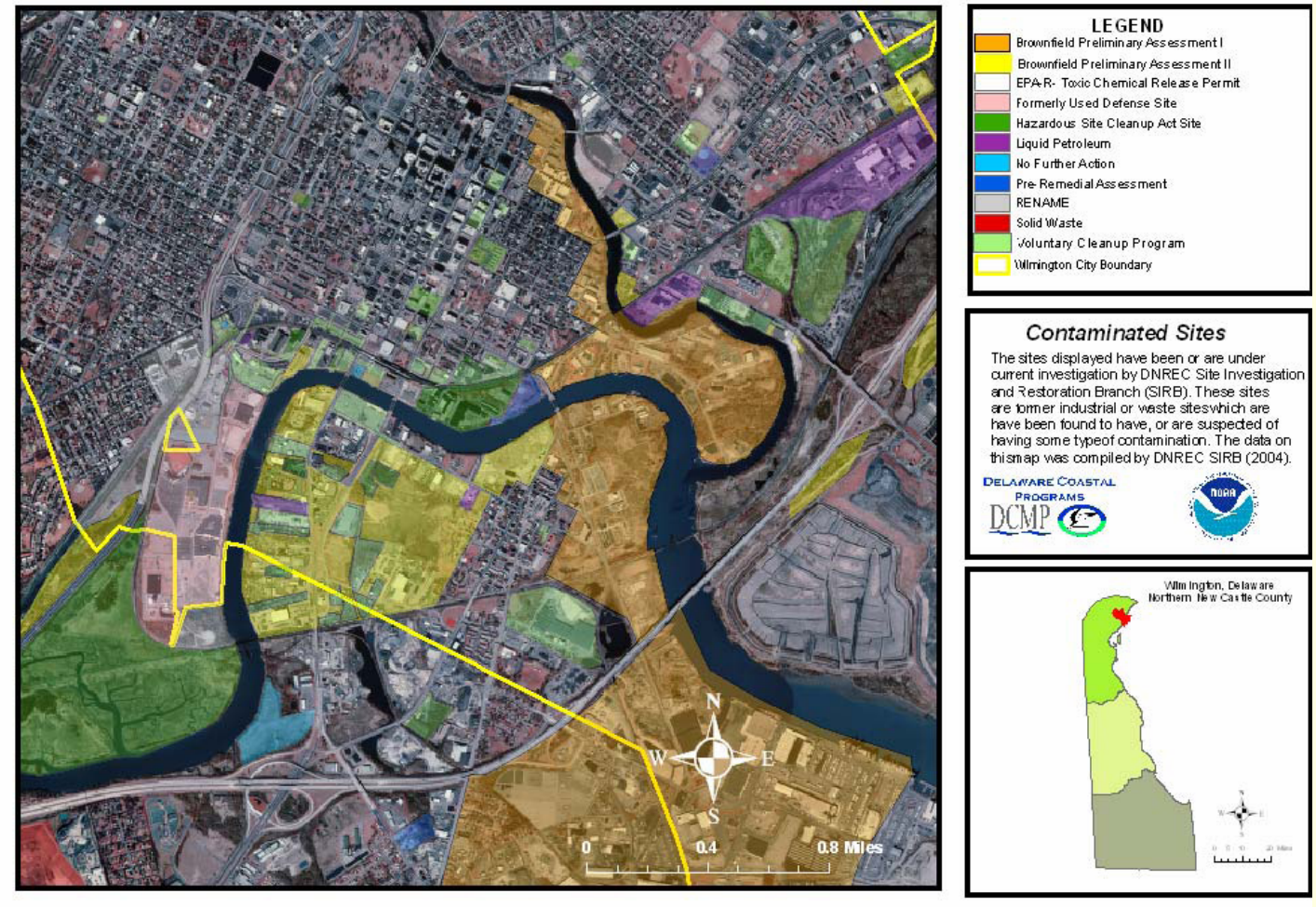


- Comprehensive Study to Look at known “nuisance” drainage problems conducted by RK&K Engineering.
- Identified probable causes for each known problem area.
- Provided recommendations for each area.
- Sites 1,3, & 4 were all linked to a hydraulic limitation of CSO # 10 that could best be improved by separation of stormwater from sewer.
- Walnut street area also connected to CSO # 10.

Drainage Study



Contamination Challenges...



South Wilmington Marsh Contaminant Study (Two Largest Parcels)

- In September 2005, SIRB published the findings of the site investigations.
  - Study site was divided into two sections SWM1, the northern portion and SWM2, the southern portion for this study.

- The objective
  - investigate the possible existence of released hazardous substances

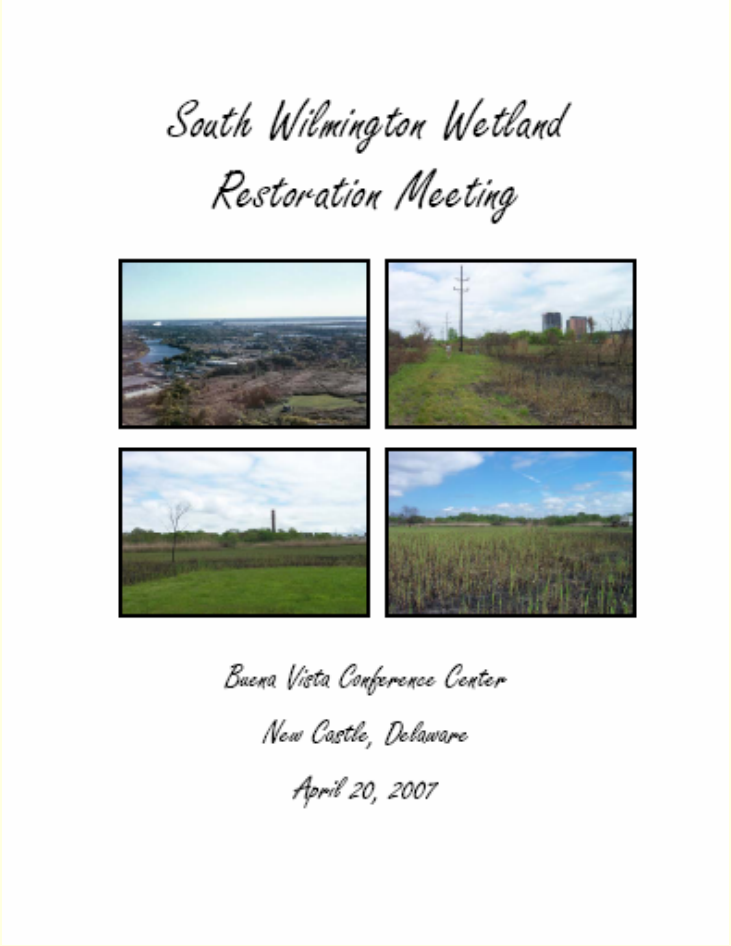
South Wilmington Marsh Contaminant Study (Two Largest Parcels)

- **Recommendations before any restoration:**
  - An ***ecological and human health risk assessment*** should be conducted to determine if the concentrations of metals in the marsh pose a threat to human health and the environment.
  - A ***focused groundwater investigation should be conducted*** on the eastern side of the marsh SWM1 to determine the lateral and vertical extent of contamination and impact to human health and the environment.
    - A focused groundwater investigation should be conducted in and around SWM2 in conjunction with the groundwater investigation of SWM1.
  - The lateral and vertical extent (through the marsh mat) of the fill needs to be determined through completion of a ***Remediation Investigation***. Additional sampling, especially as the fill may be a source for the high levels of metal contamination present in the sediments and groundwater, needs to be completed.
  - *SWM1 surface water samples need to be collected. Additional SWM2 surface water and sediment samples need to be collected.*
  - In order to ***determine preferential pathways for contaminant migration***, the inner connectivity between the marsh, drainage ditches and river as well as groundwater should be investigated.

Functional Assessment

- Contractual work conducted by RK&K
  - Identification of Plant Community
  - Wetland Habitats & Boundaries
  - Hydrology, Soils, & Natural/Landscape Features
  - Inspection of Tidegates
  - Evaluation/Assessments of water level data
  - Evaluation of Data from Dye Studies

South Wilmington Wetland Restoration Workshop



- Identified Next Steps:
  - Compile existing data/reports ✓
  - Concurrently, determine ownership of the lands ✓
  - Scope out the Remedial Investigation that will include:
    - Nature and extent of contamination
    - Fate and transport of contaminants
    - Human health and baseline risk assessments

Funding the Next Steps...

- NOAA CZM
  - currently have $100,000 for additional evaluations/remediation planning
  - developing RFP for initial evaluations
- EPA Brownfield Assessment Grants
  - Deadline for Application is October 12, 2007
- Seeking supplemental funding for remediation and restoration planning and design (and future remediation & restoration)
  - NOAA Restoration Grants
  - DNREC Penalty Funds
  - Community Benefit Agreements
  - Natural Resource Damage Assessment
  - Future CZM base Grant Funds
- Would welcome any technical resources/expertise staff or agencies can provide