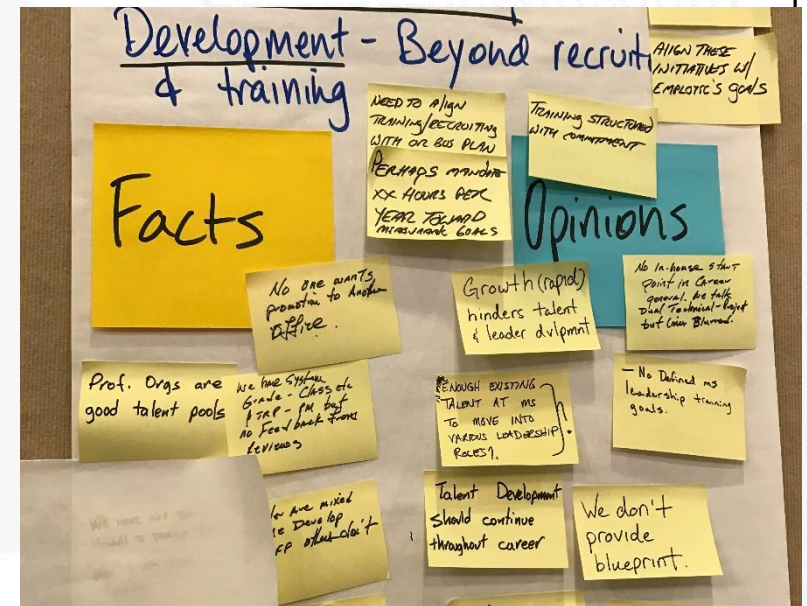


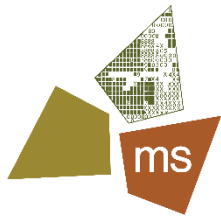


ms consultants, inc.
engineers, architects, planners

Interagency Coordination



Case Studies and Examples



Inter-Agency Innovations?

Blueprint Columbus

- SSO/GI implementation
- Integrated Solutions
- Flood Mitigation
- Inter-Agency Goals

Defiance Bio-Tree Trench

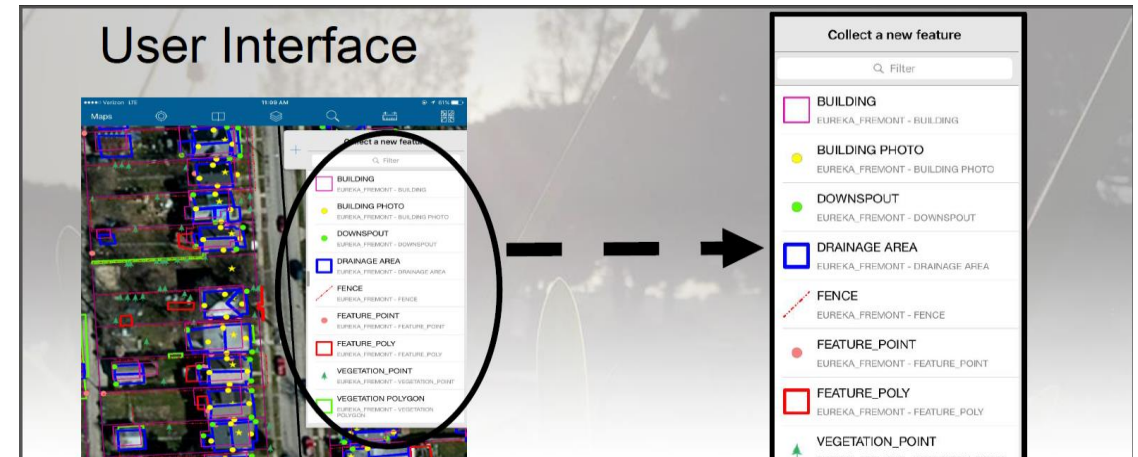
- CSO Integrated Solution
- Cost Savings/LCC Analysis
- Public/Private Coordination

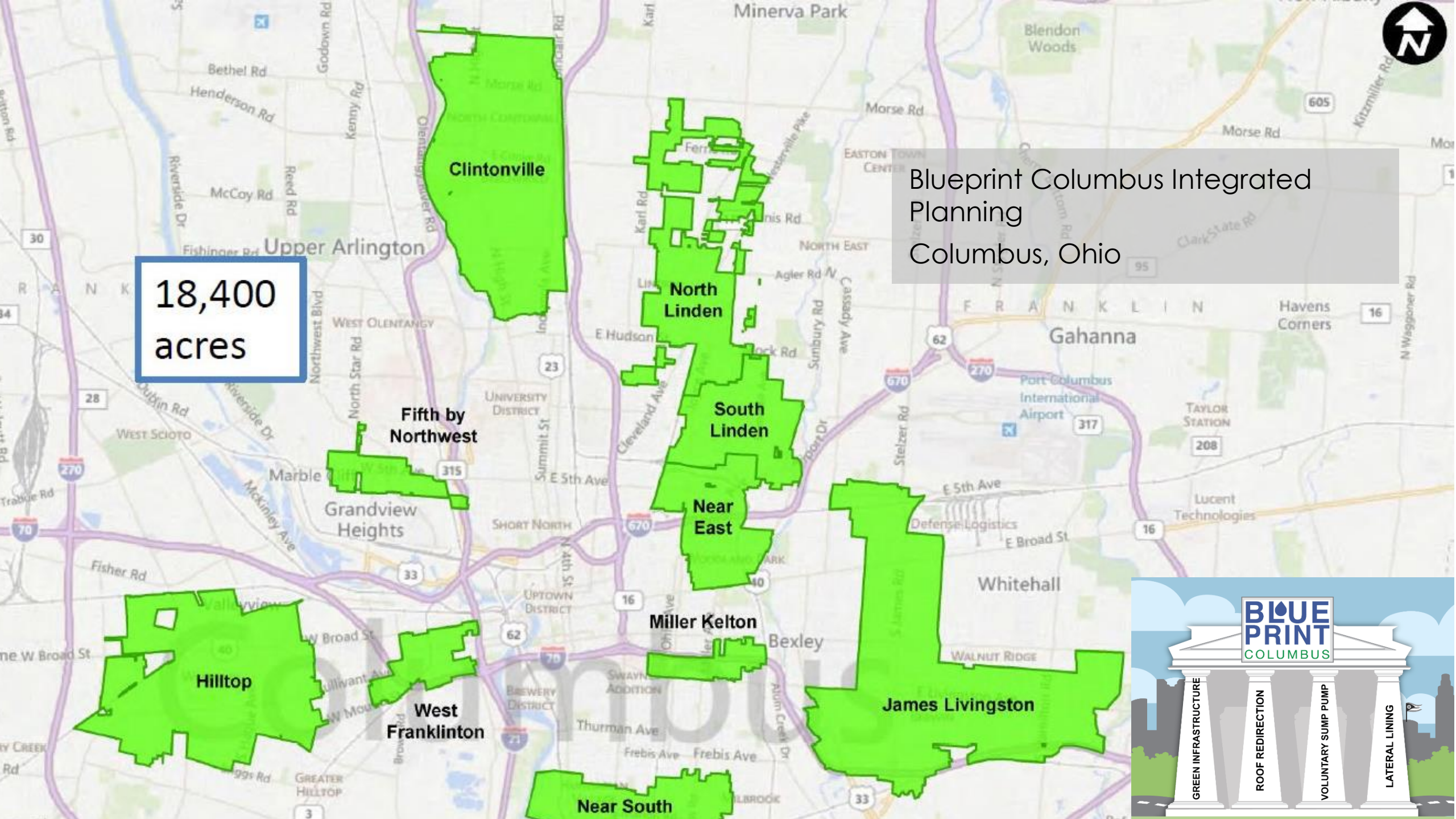
Dellrose Street

- Innovative Design
- Monitoring Opportunities
- LCC-Franklin County Jail
- Inter-Agency Coordination

DPS Regional Basins

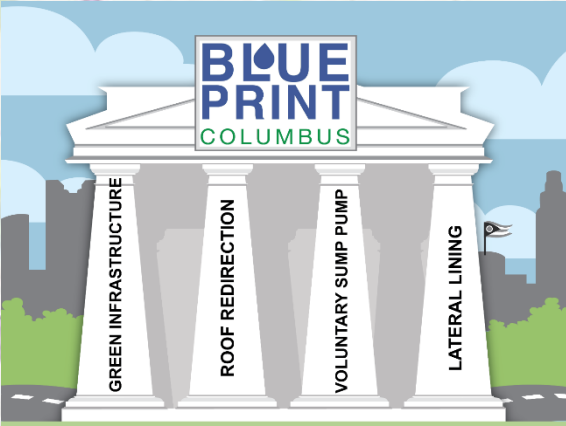
- Quantity Control
- Flood Control
- Inter-Agency Coordination





18,400
acres

Blueprint Columbus Integrated
Planning
Columbus, Ohio

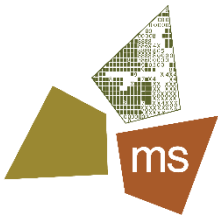




Pre-Cleaning



Post-Cleaning



Blueprint Columbus Integrated Planning

- First Water Quality Driven Consent Order in the US
- Addressing WQ
- Mitigating Flooding
- Neighborhood Revitalization/Vacant Parcel Conversion
- Re-training on GI Maintenance

BLUE
PRINT
COLUMBUS

CONCEPTUAL BIRD'S EYE



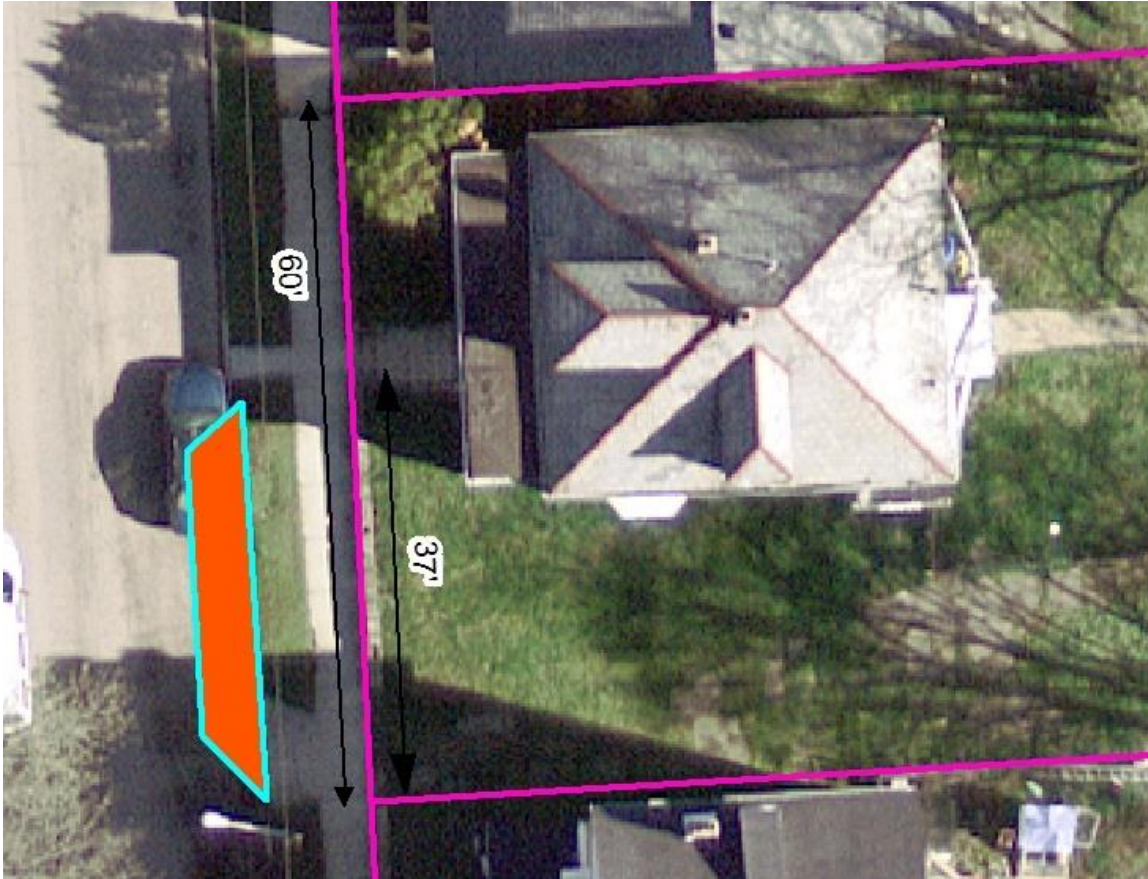


Inter-Agency Workshops





Lessons Learned



Public Perception

- Bump-Outs
- Permeables
- Buy-in from adjacent neighbors

Inter-Agency Coordination

- Workshops
- Spec Development
- Buy-in from all agencies involved

Integrated Planning is a Win-Win

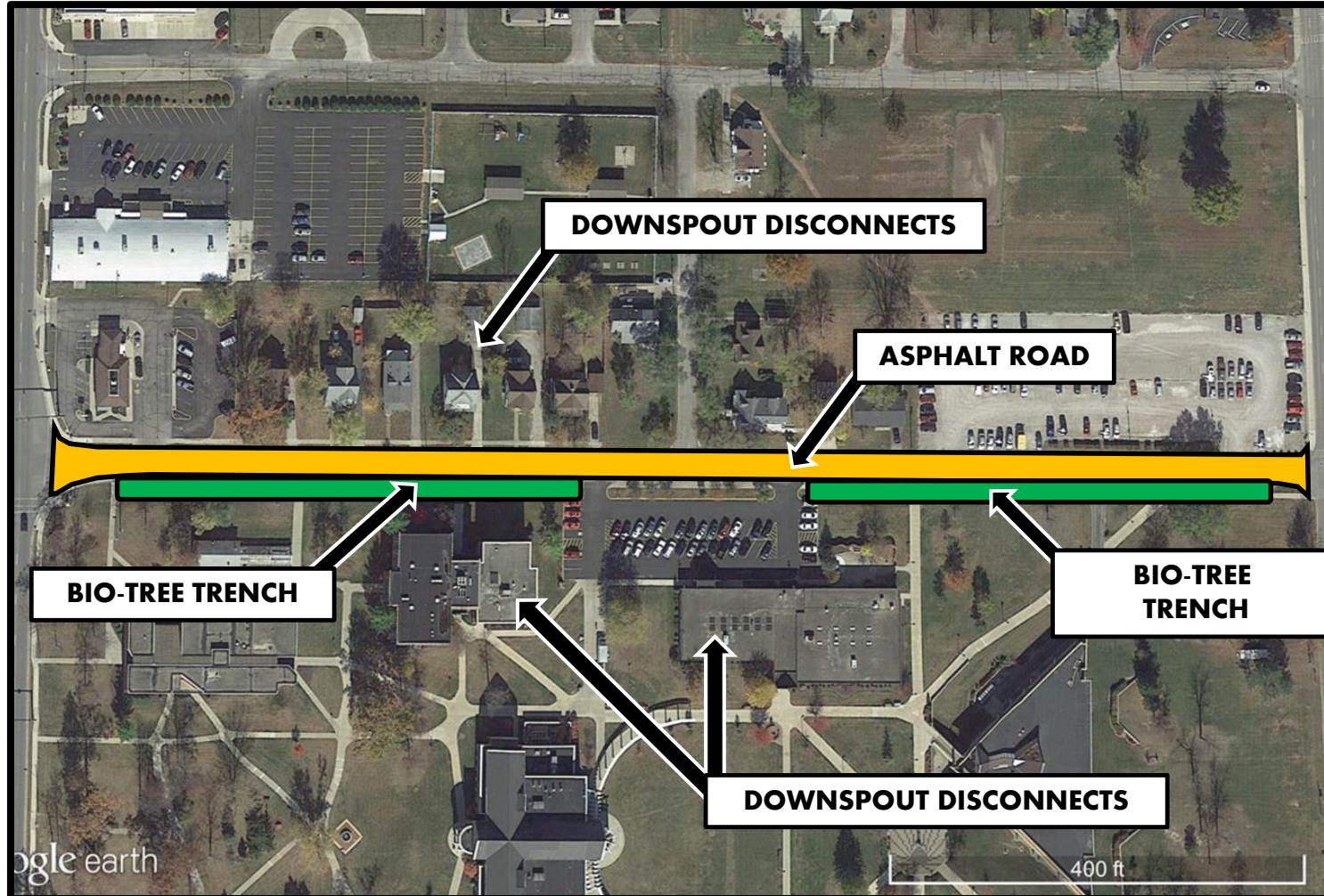
- BP vision has evolved
- Water Quality first but direct benefit with Quantity
- Cost effective

Defiance Bio-Tree Trench
Defiance, Ohio





Lessons Learned



Chose GSI based on Site Suitability

- Coordination with other components of project (construction sequencing)

Contractor Education

- How the GSI works
- Material Specifications

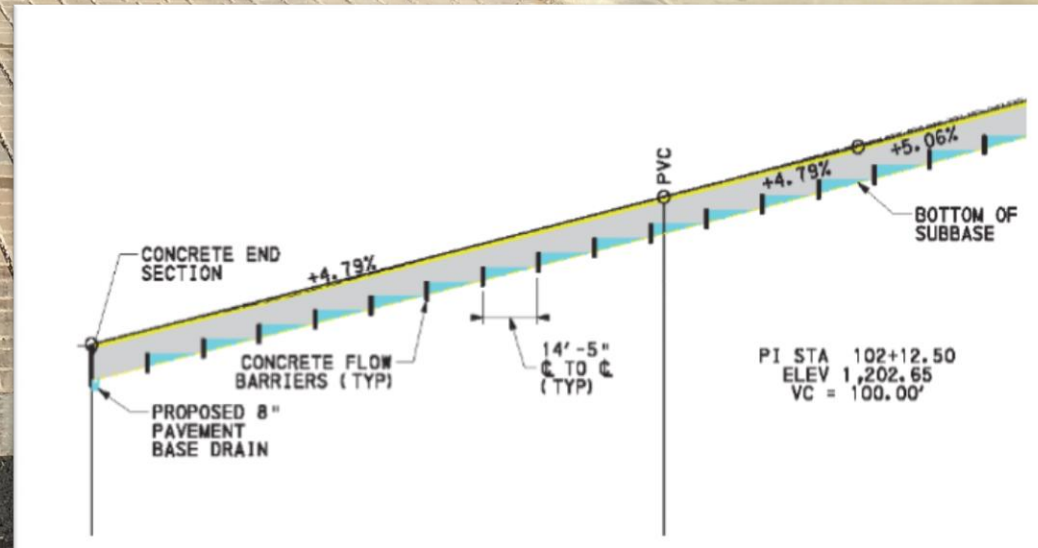
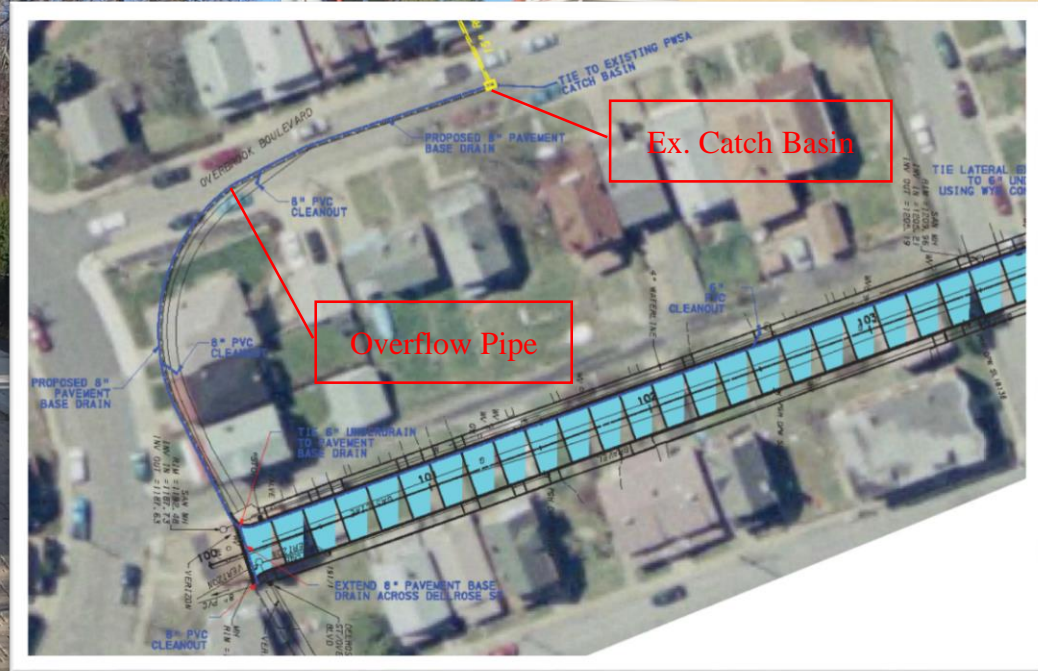
Economic Driver

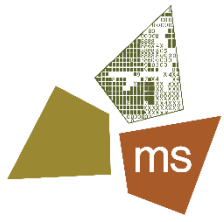
- Eliminate Catch Basin
- No right of way acquisition
- Dual-Use
- Quantify indirect costs

Outreach

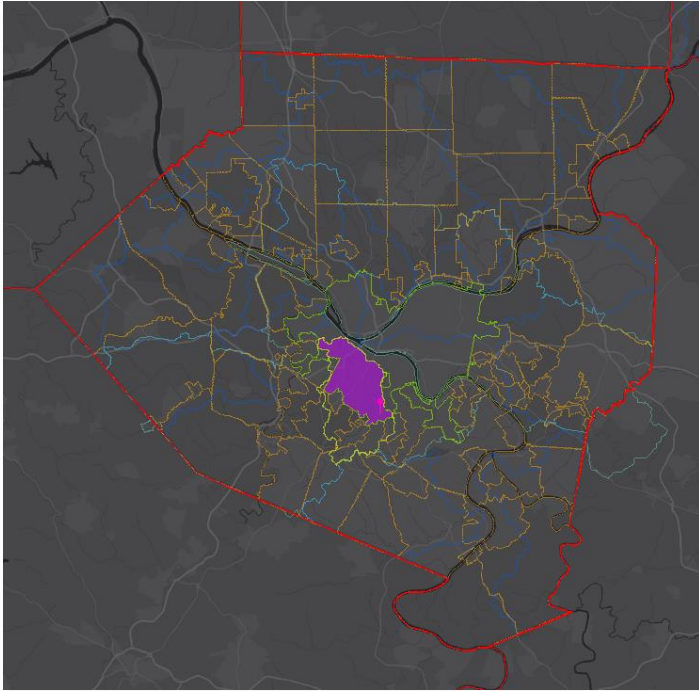
- Public/Private Coordination

Dellrose Street Green Infrastructure Pittsburgh, Pennsylvania





Dellrose Street-Sawmill Watershed

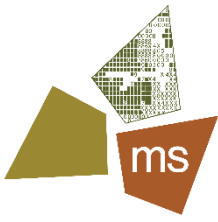




Dellrose Street-Sawmill Watershed

- It is encouraged, where feasible to use best management practices (BMPs) to achieve an approved method of surface/stormwater collection, conveyance, detention, and/or retention for stormwater which may minimize or even eliminate the use of PWSA sewer conveyance conduits. Stormwater facilities on private property are usually regulated by other agencies including, but not limited to City of Pittsburgh, Allegheny County Health Department (ACHD), and Pennsylvania Department of Environmental Protection (DEP). The Stormwater Management for the City of Pittsburgh property surface/stormwater information for the City end of Chapter 2. county/state stormwater

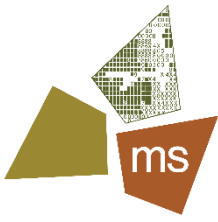




Stakeholders

- Capital Costs
 - City of Pittsburgh DPW
 - Columbia Gas
- Maintenance
 - City of Pittsburgh DPW
- Sewer Authorities
 - PWSA (Conveyance)
 - ALCOSAN (Collection/Treatment)
- Watershed/Surface Water
 - PADEP
 - Allegheny County
 - Saw Mill Run Watershed Association





Lessons Learned

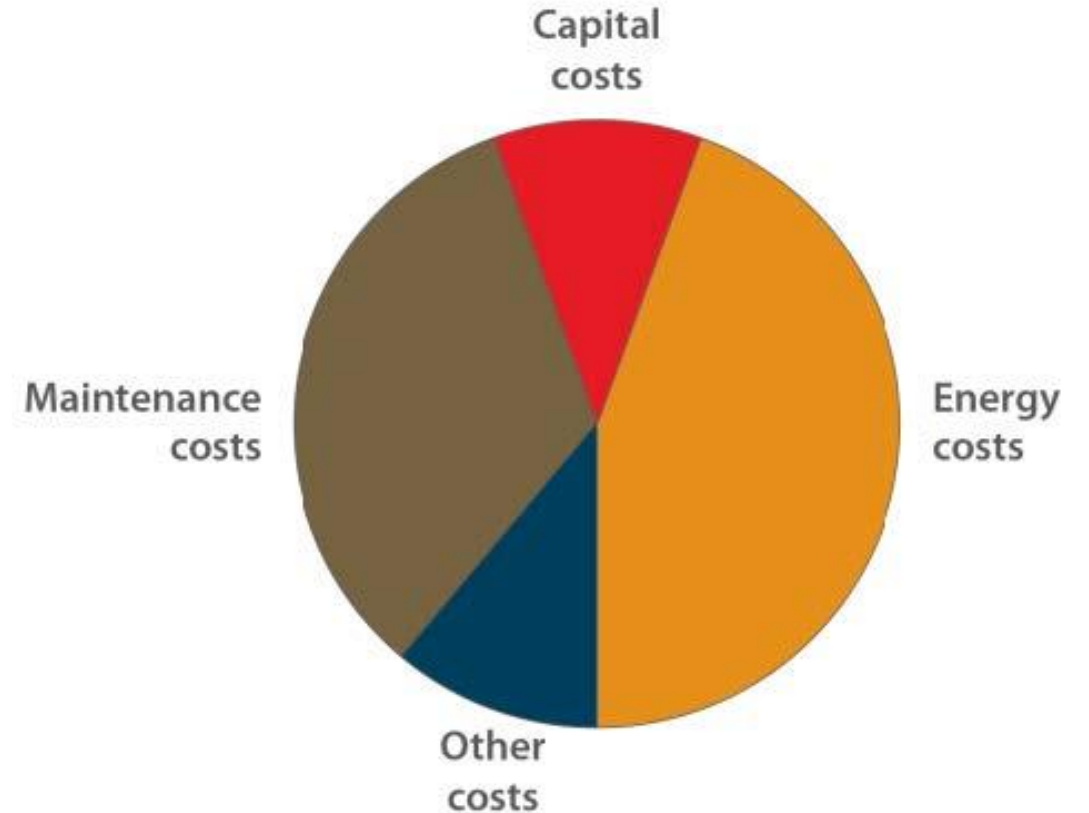
Permeables Work!

- Minimal space disruption
- Integrated into the existing corridor
- Water quality benefit
- Steep slopes are manageable

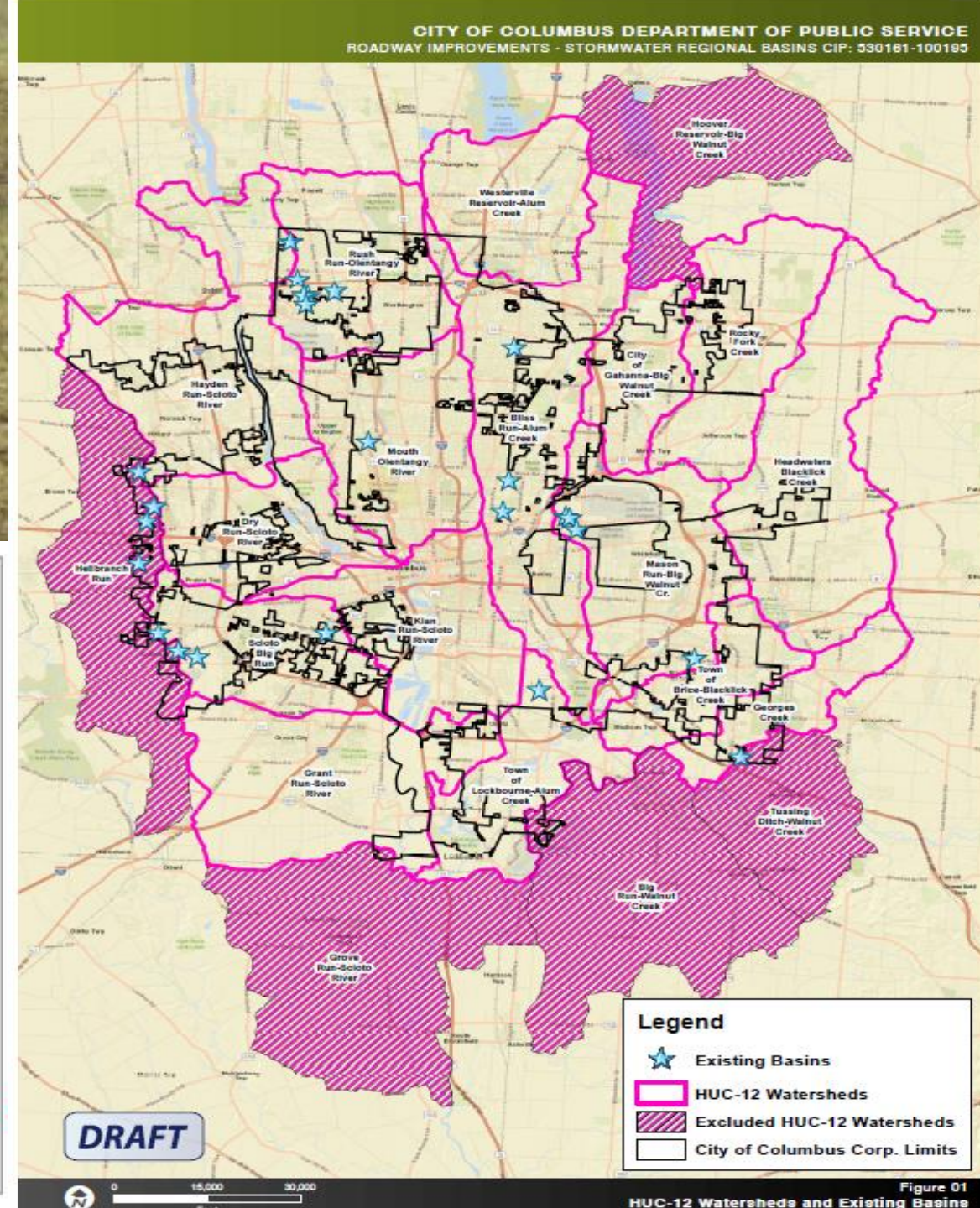
Inter-Agency Coordination

- Leveraging agency dollars from different departments
- Life-cycle costs
- Collaboration on specs.

Integrated Planning is a Win-Win



DPS Regional Stormwater Basin Analysis and Flood Control Bank Columbus, Ohio





Lessons Learned

Retrofitting Existing Basins

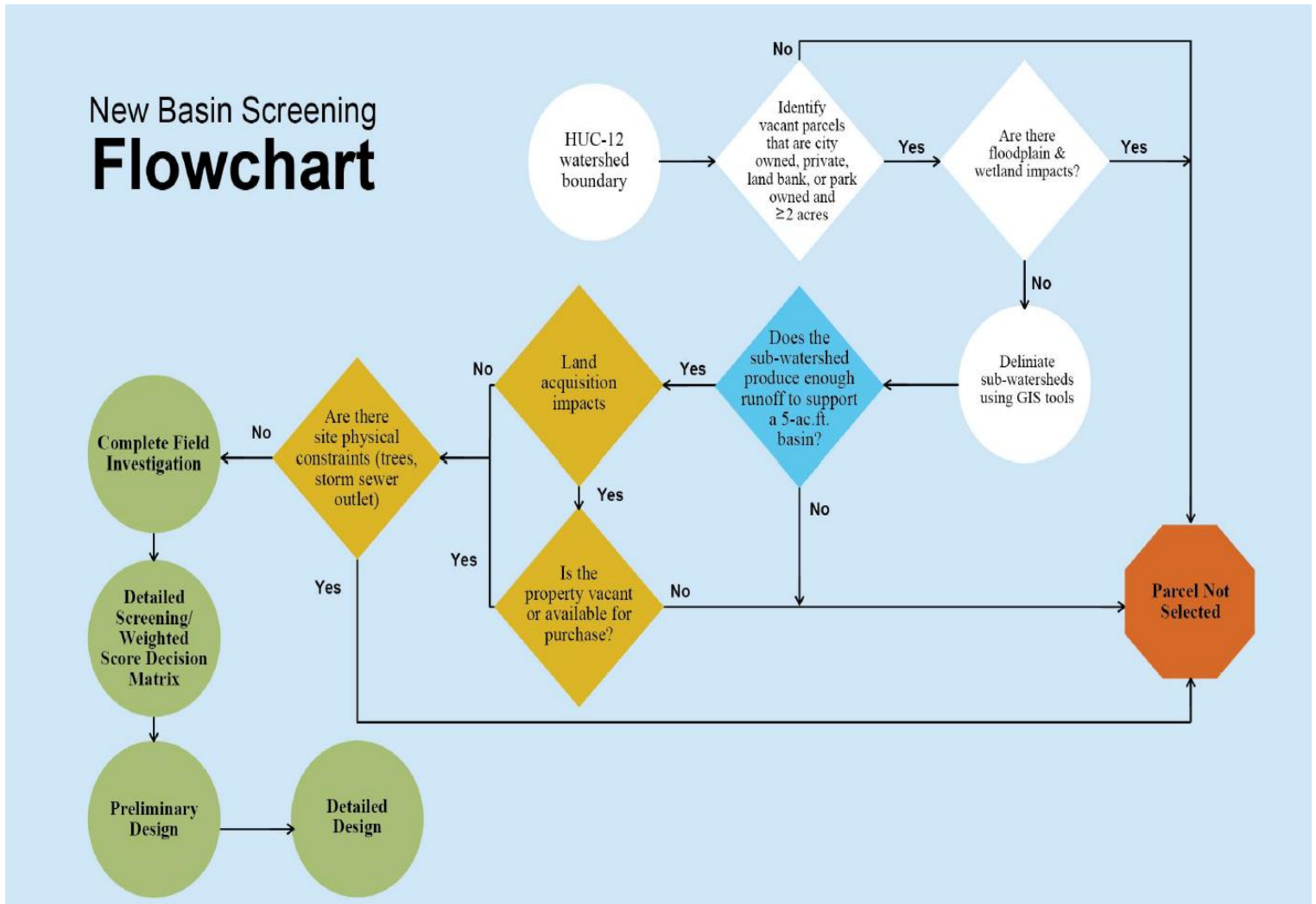
- Low-hanging fruit
- Potential for expansion
- No right of way issues

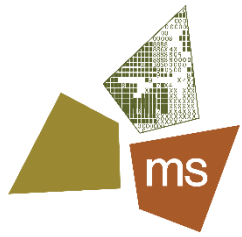
New Regional Basins

- Lifecycle Cost Analysis
- \$ per cfs stored

Interagency Coordination

- Partnership with Parks
- Regional WQ benefits



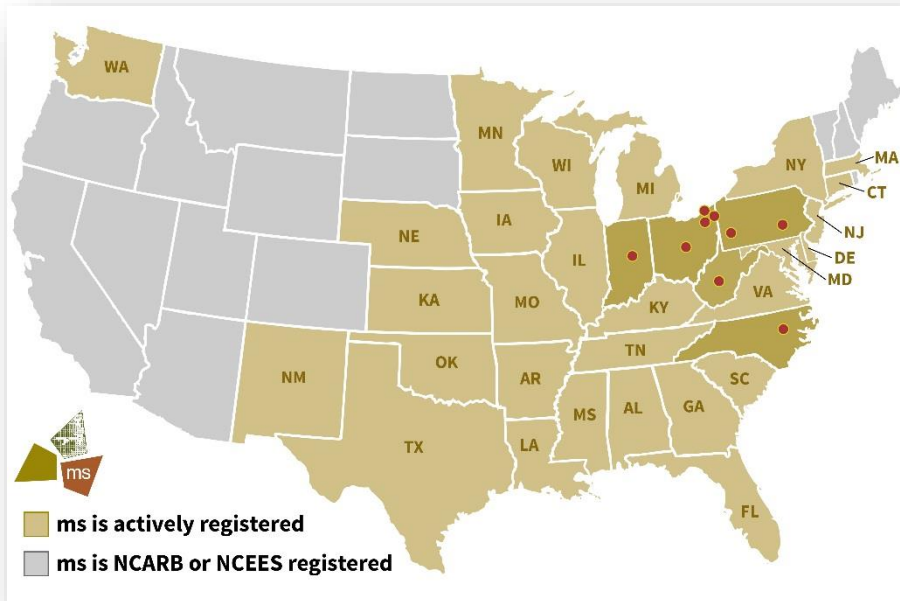


ms Business Units

Transportation
Building Systems

Water

Construction
Energy

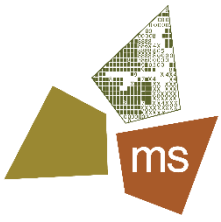


Full Service

In many cases, a typical project process requires that our engineers work with multiple disciplines to design and develop our implemented projects. The advantages of having these services in-house is that the professionals involved work together, generating and sharing ideas on a daily basis, providing **seamless project delivery**.

9 offices in 5 states

Actively registered in 34 states



Discussion

www.msconsultants.com

