Local Stormwater Approach Update

Environment and Natural Resources Working Committee – 5/5/16

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Goals

- Articulate flooding problem areas and causes
- Focus on above-ground solutions such as site-scale green infrastructure and conservation design practices
- Identify locations where further engineering study is needed
- Prioritize areas of the community for implementation

Draft Approach

Task 1:
Data Collection

Task 2:
Data Analysis

2.1
Overland Flow Assessment

2.2
Potentially Vulnerable Areas Assessment

2.3
Heat Map of Reported Flood Locations

Task 3:
Implementation Prioritization

3.1
Potential Problem Area Ranking

3.2
Problem Area Assessment for Priority Catchments

3.3
Opportunity Area Assessment for Priority Catchments

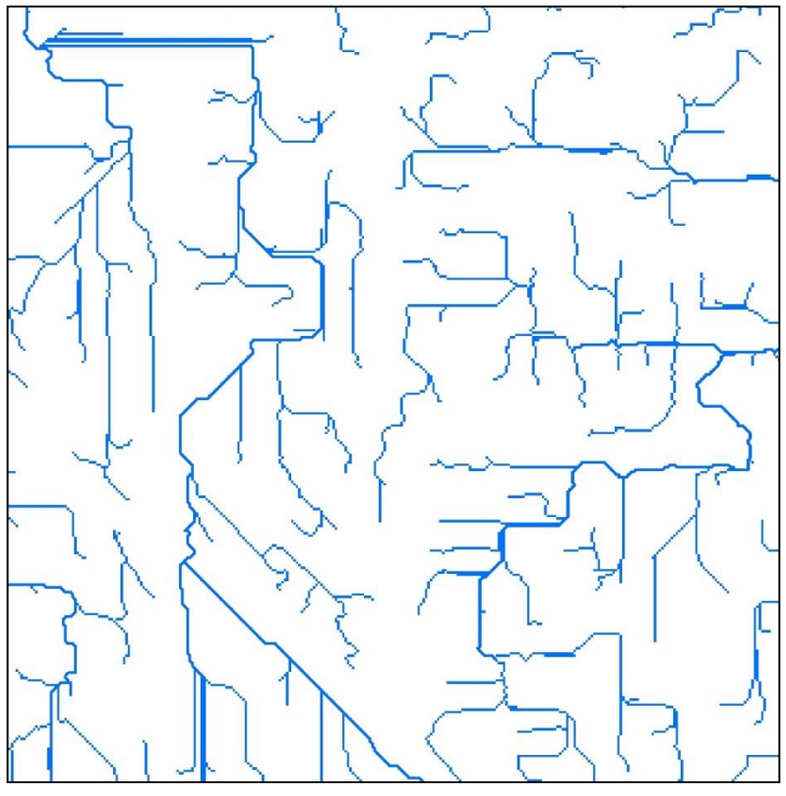
Task 1: Data Collection

- Topography
- Soils
- Floodplains
- NFIP flood claims and local flood data
- FEMA Discovery map data
- Sewer infrastructure
- Impervious cover
- Land use
- Property characteristics (age, presence of basement)
- Urban Tree Canopy (Morton Arboretum)
- Green infrastructure mapping (Chicago Wilderness, others)
- Topographic wetness index (ISWS)
- Pavement conditions
- Capital improvements
- Past and current plan recommendations

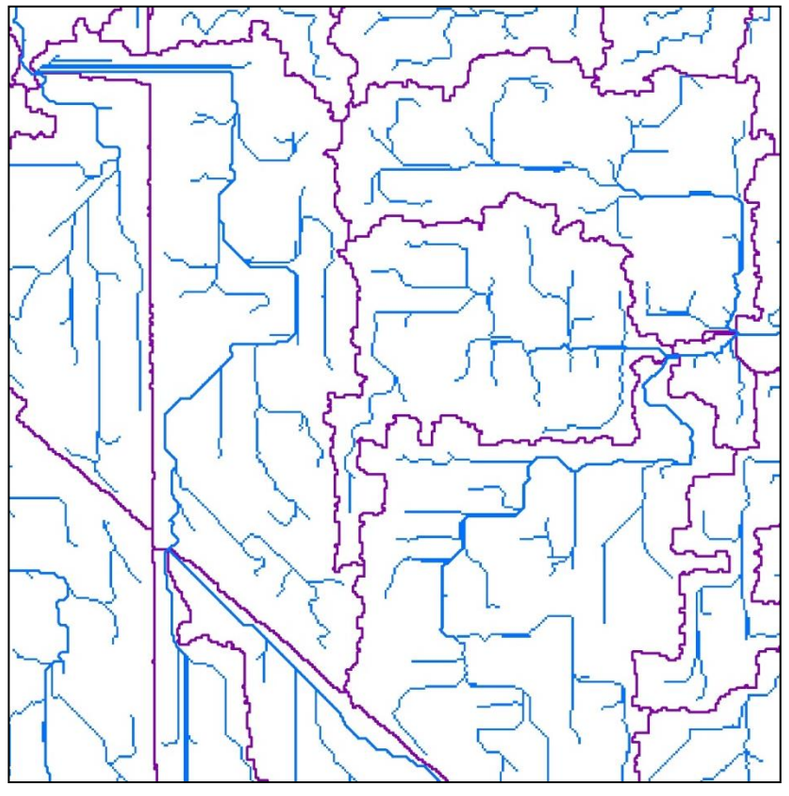
Task 2: Data Analysis

Overland Flow Assessment (Arc Hydro)

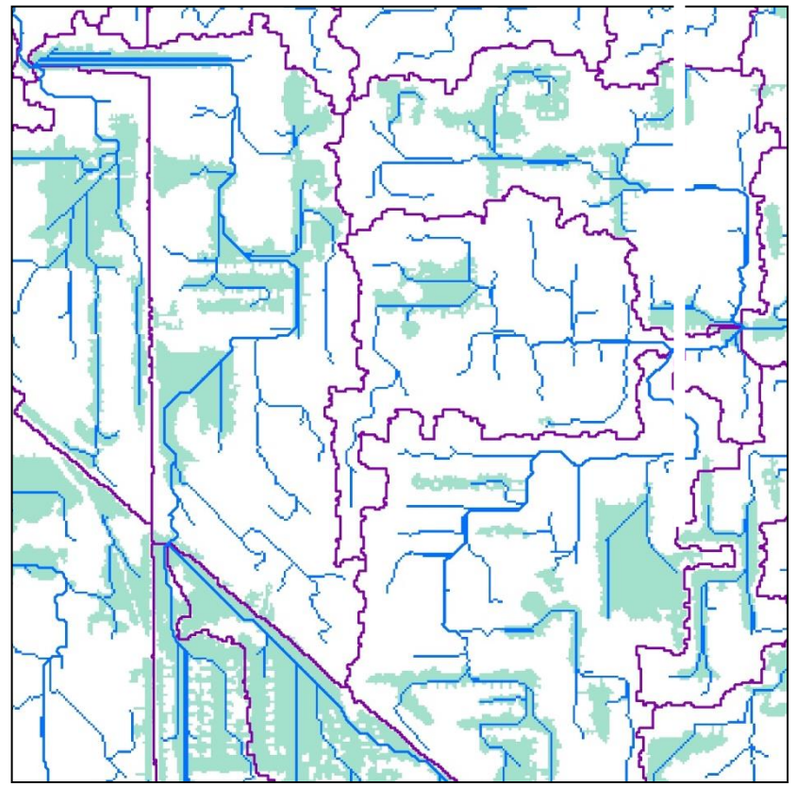
- Data inputs: hydrology, watersheds, digital elevation model (DEM)
- Data outputs:



Flowpaths



Catchments



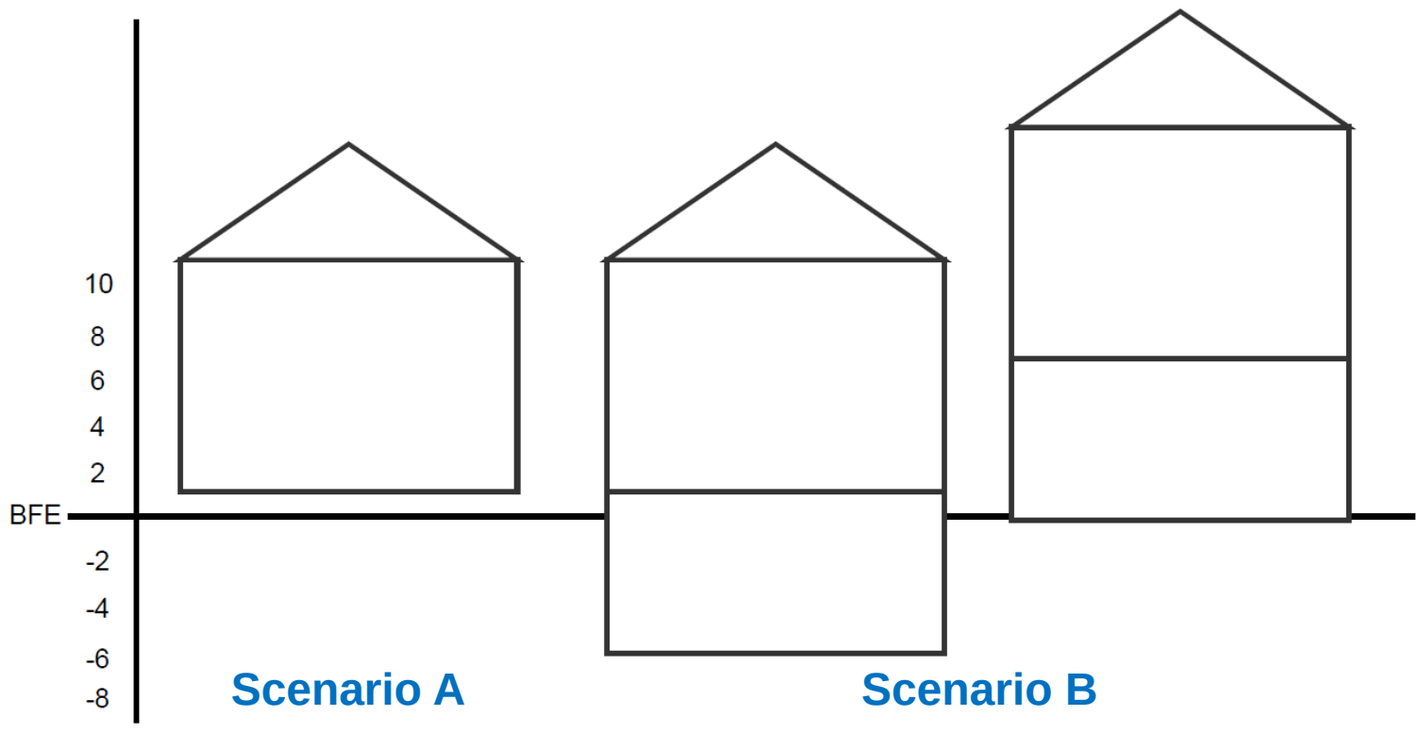
Depressions

Task 2: Data Analysis (cont.)

Potentially Vulnerable Areas Assessment

A. Properties less than 1′ above depressional areas (>1.5′)

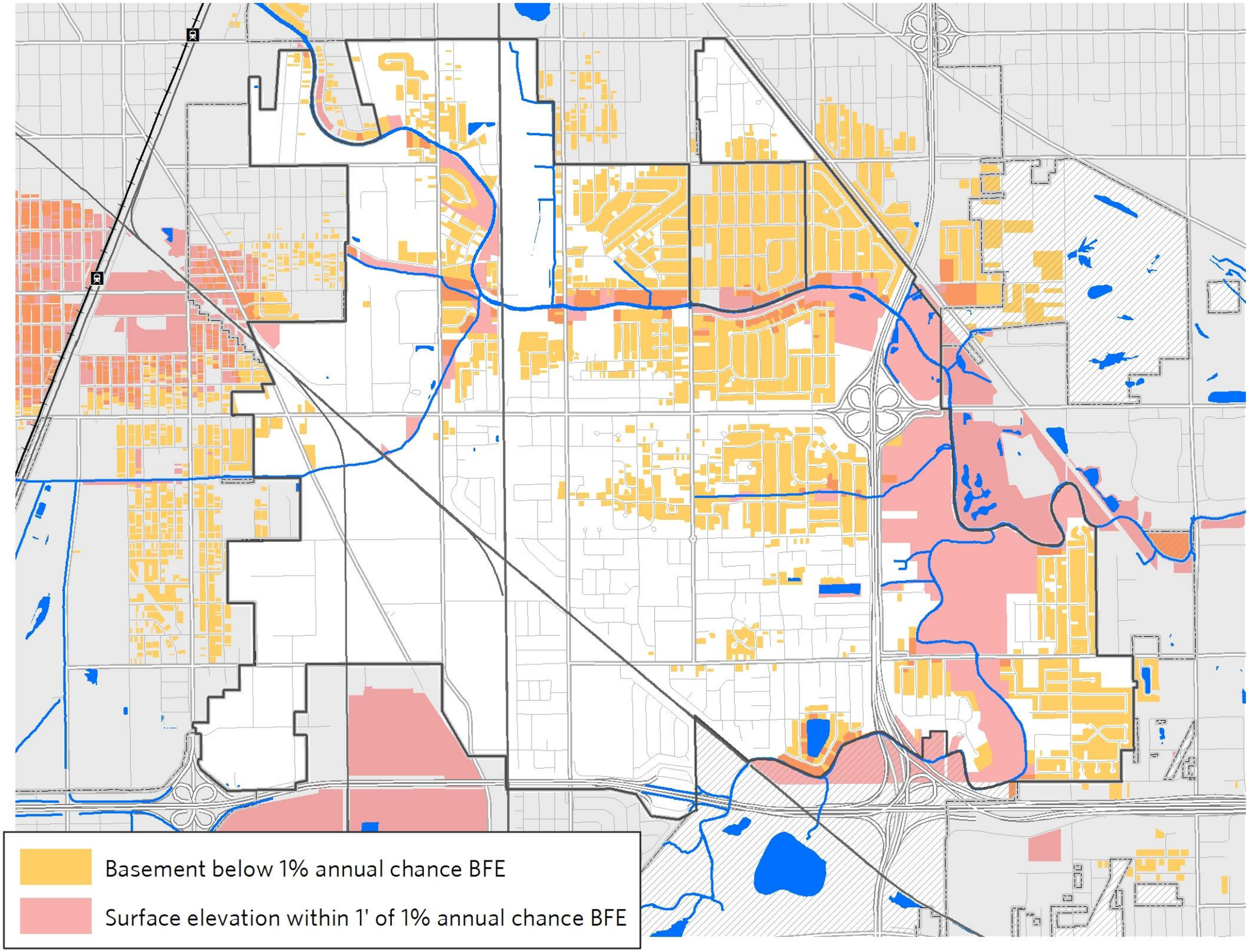
B. Basements below the 1% annual chance base flood elevation (BFE)



(A) Properties less than 1′ above depressional areas

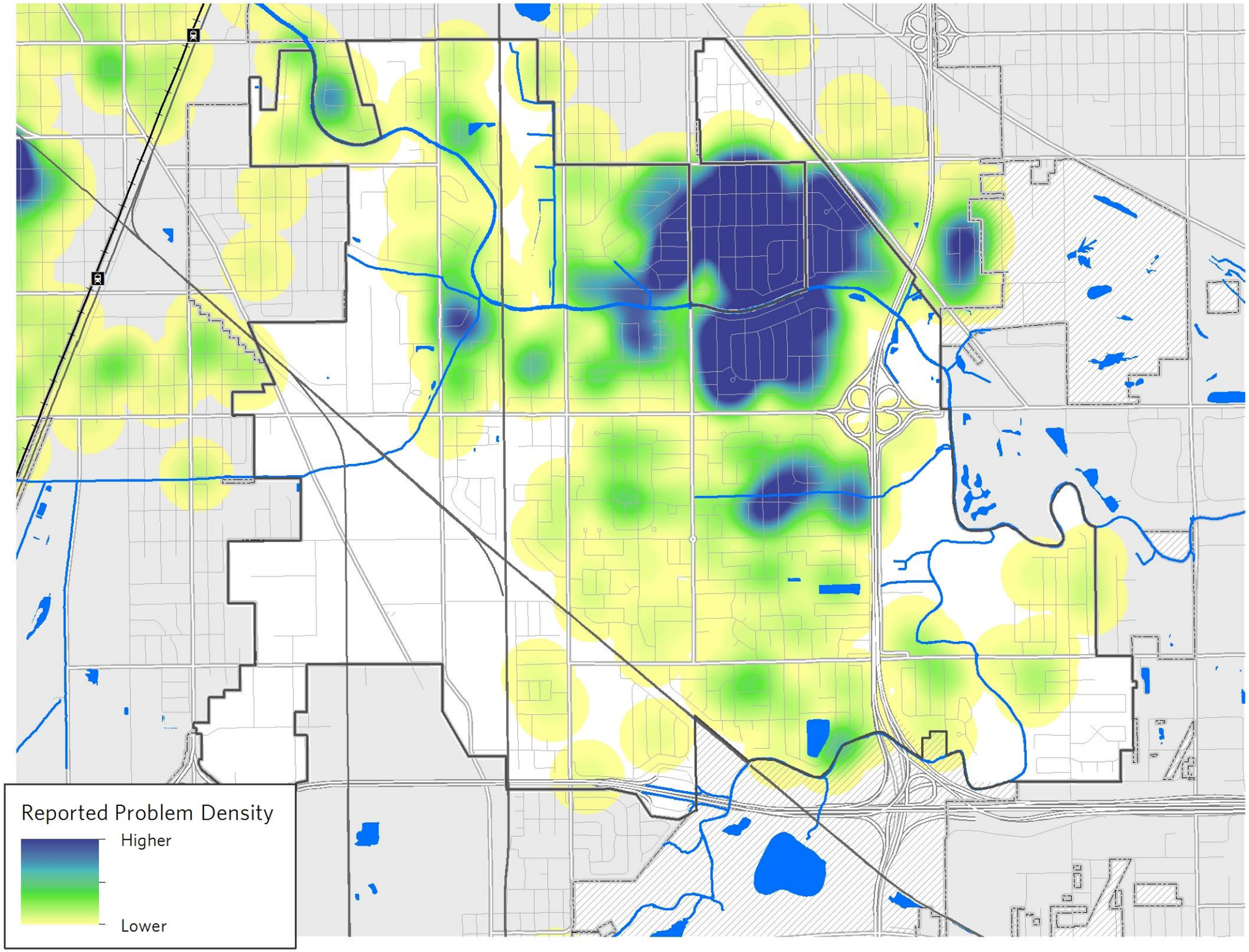
*Where depth is greater than 1.5 feet

(B) Basements below the 1% annual chance BFE



Task 2: Data Analysis (cont.)

Heat Map of Known Problem Areas/Flood Response



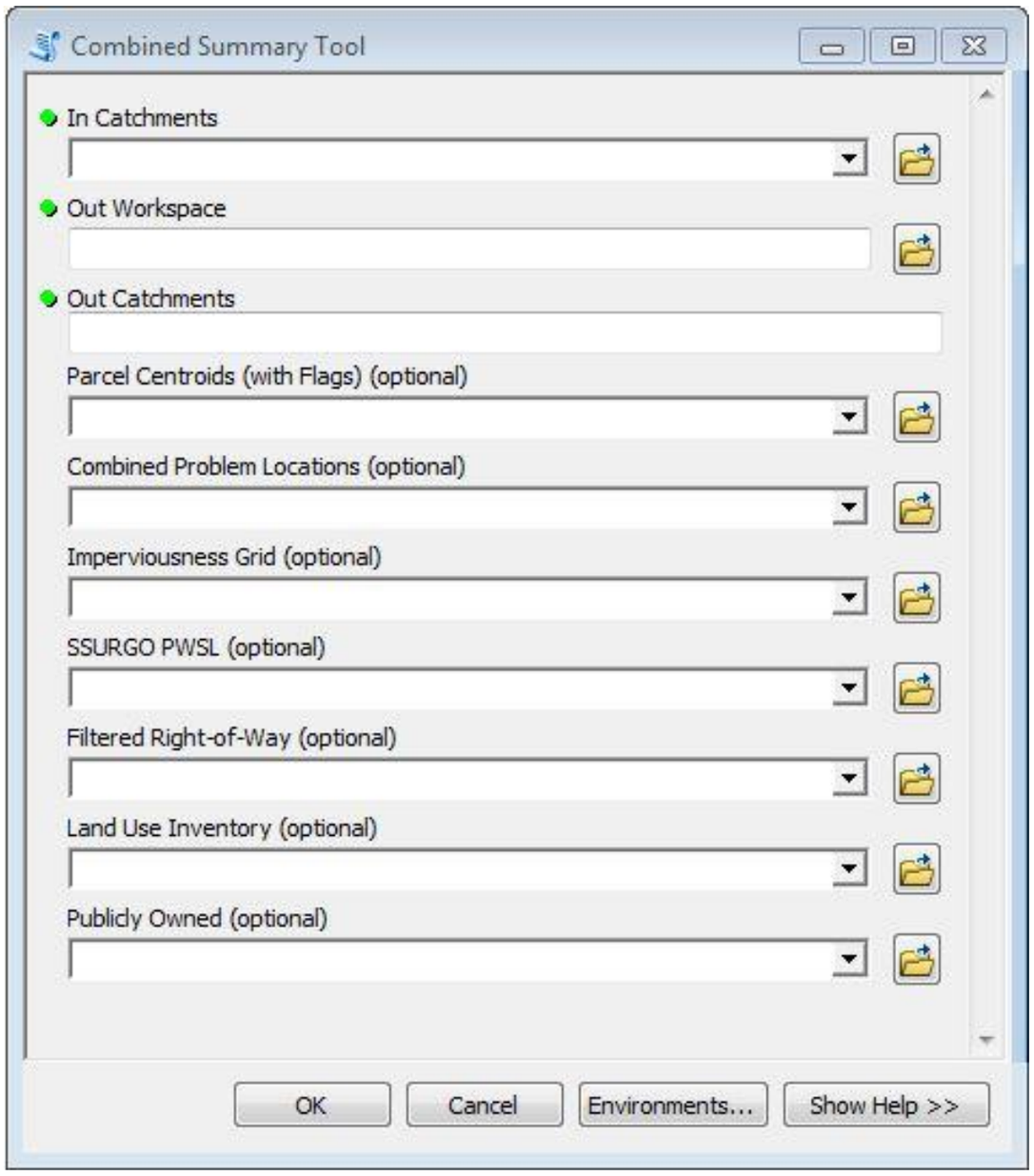
Task 3: Implementation Prioritization

- Rank areas for implementation
- Focused on urban flooding
- Informed by community goals
- Assess priority catchments for flood type to provide tailored solutions

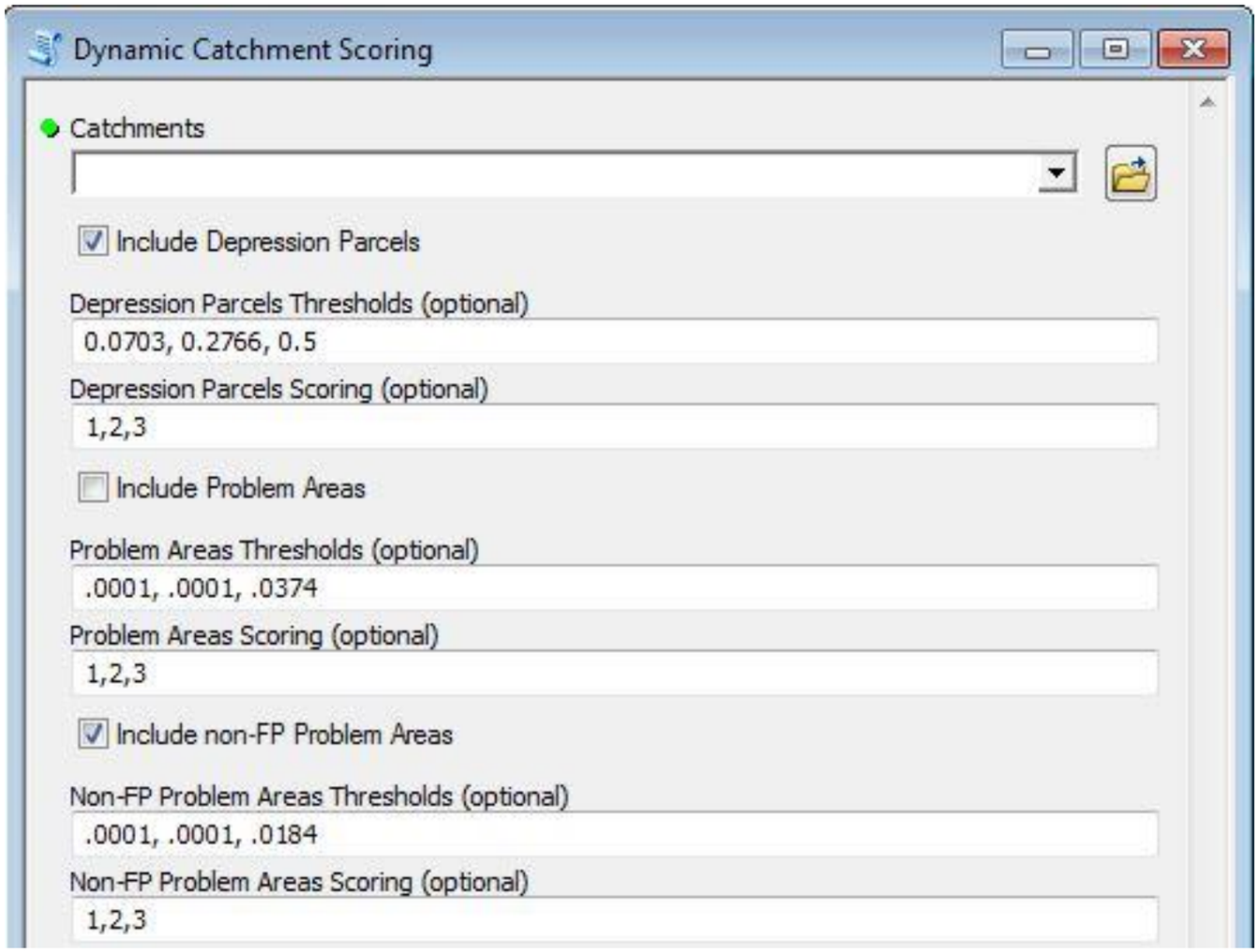
Task 3: Implementation Prioritization (cont.)

Python Script Tools

Summary Calculation



Dynamic Scoring

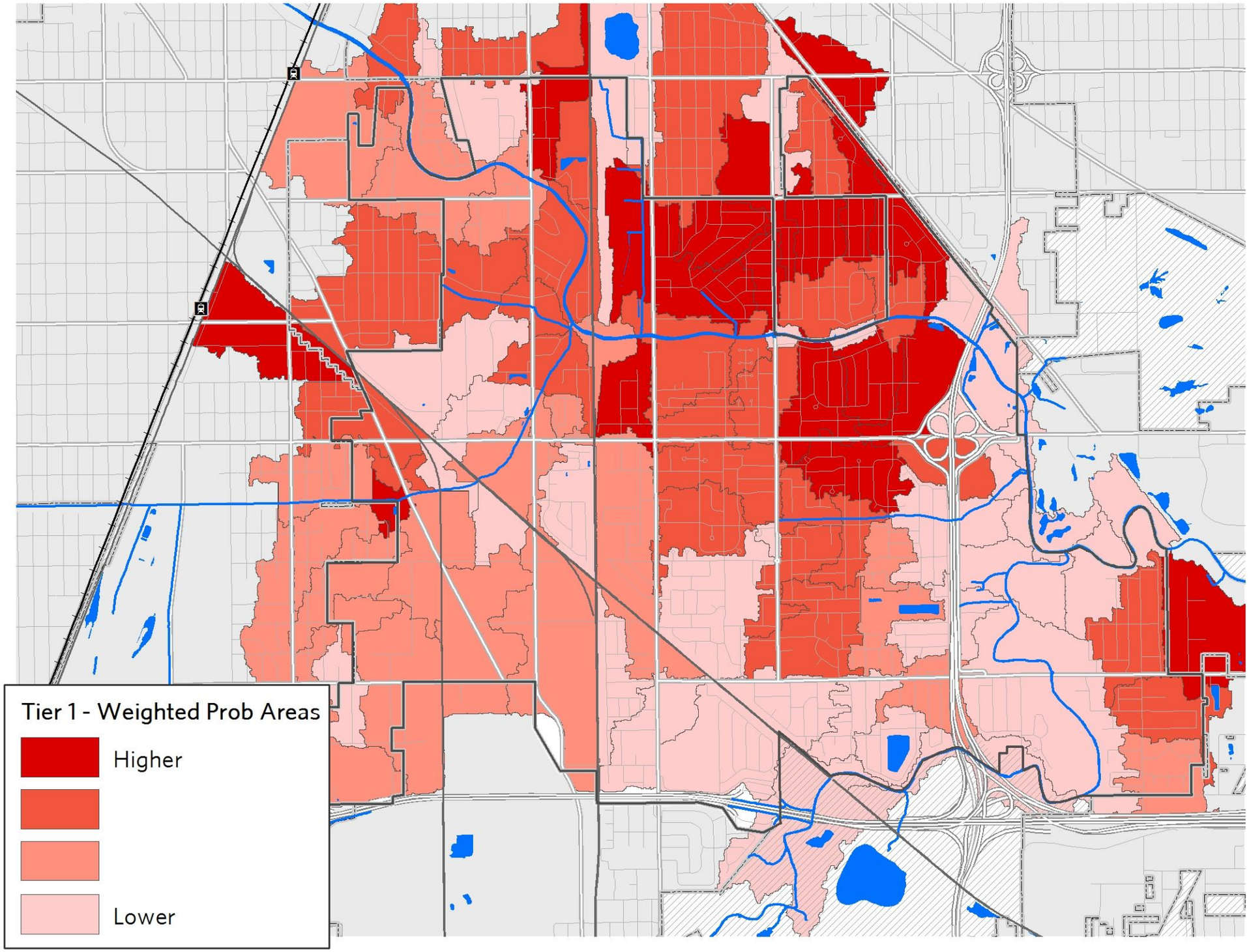


Task 3: Implementation Prioritization (cont.)

Potential Problem Area Ranking

- FEMA repetitive loss and NFIP claims
- Reported problem areas
- Potentially vulnerable properties
- Age of structure
- Impervious cover
- Hydric/potential wetland soils

Potential Problem Area Ranking



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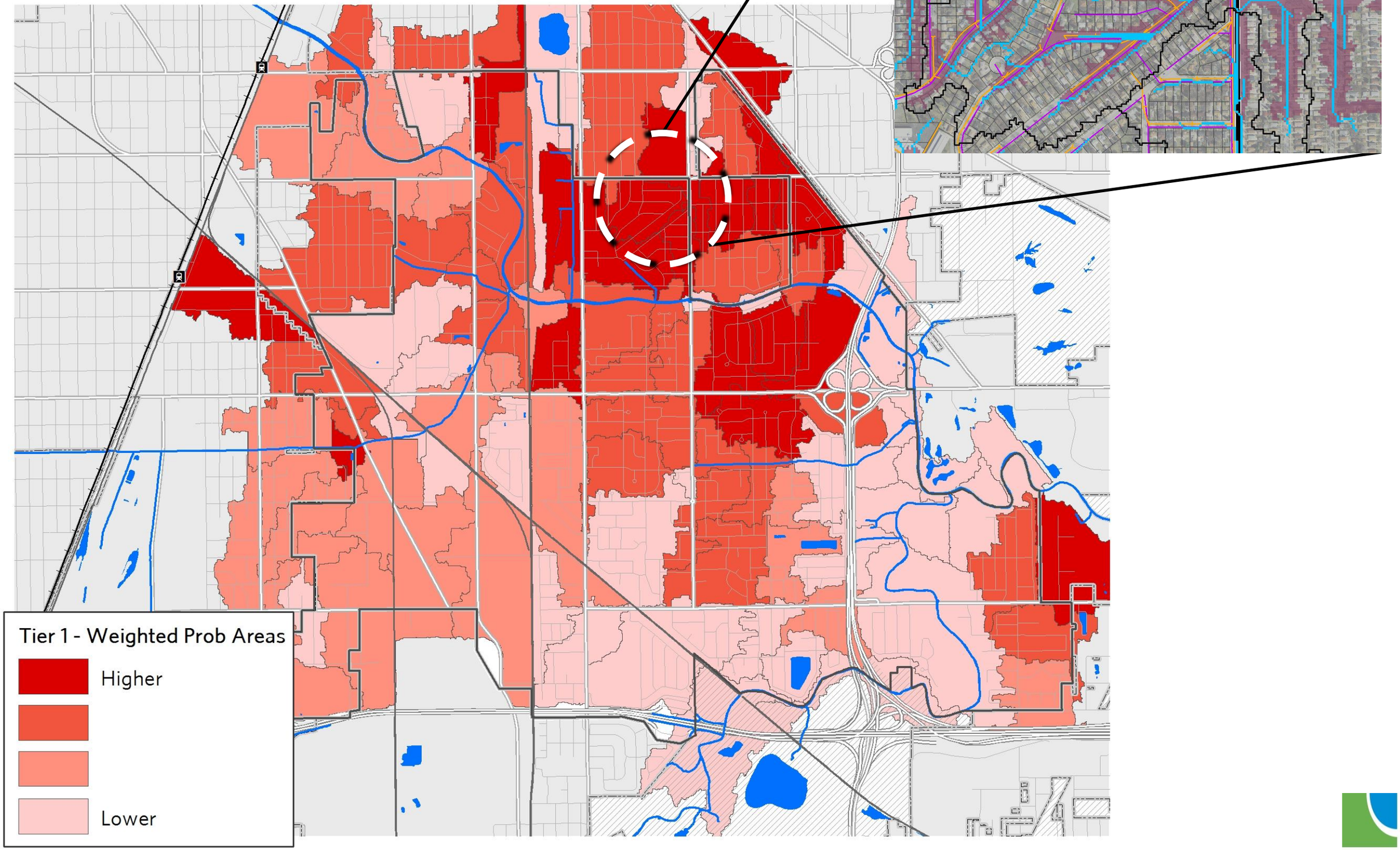
Problem Area Assessment for Priority Catchments

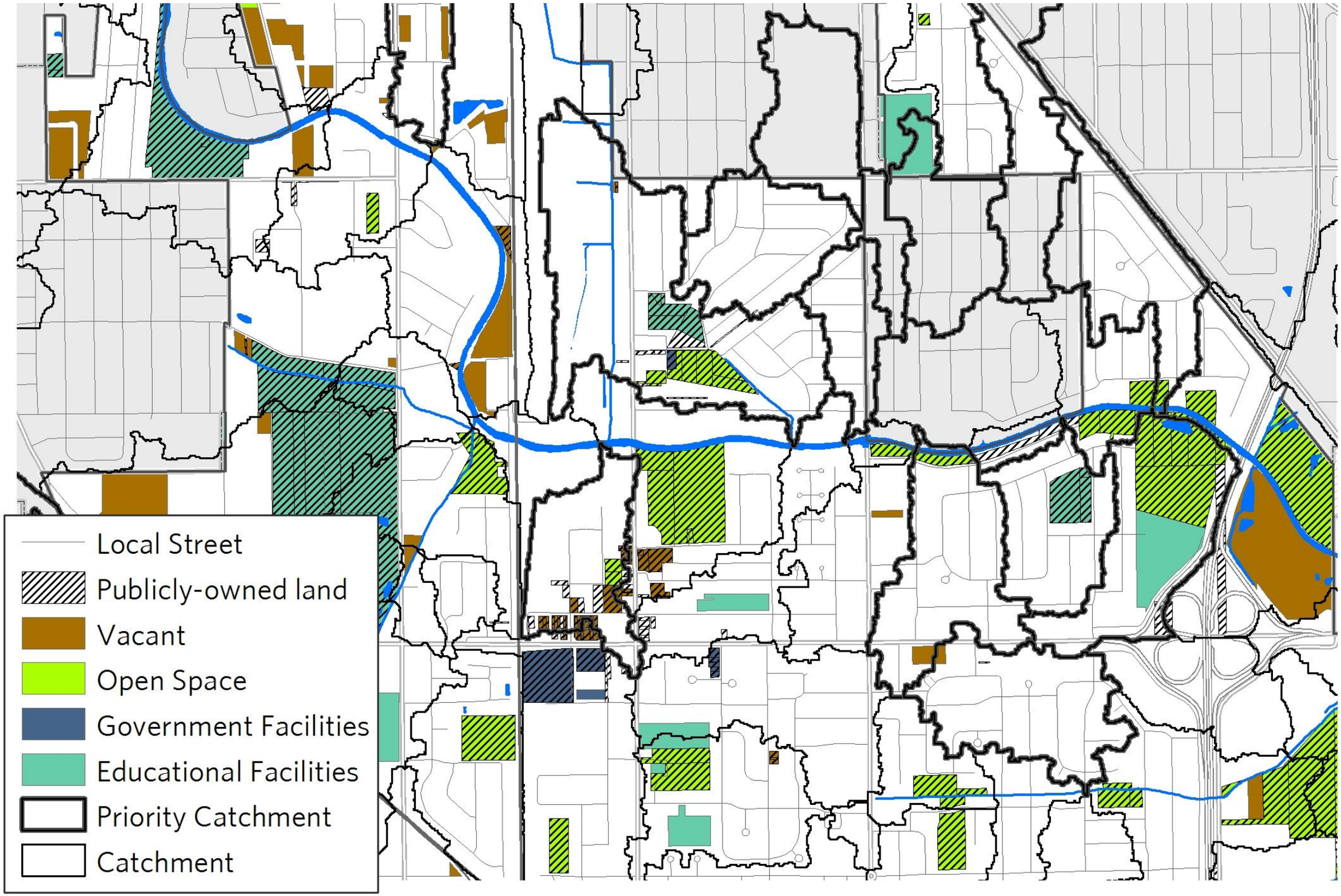


Task 3: Implementation Prioritization (cont.)

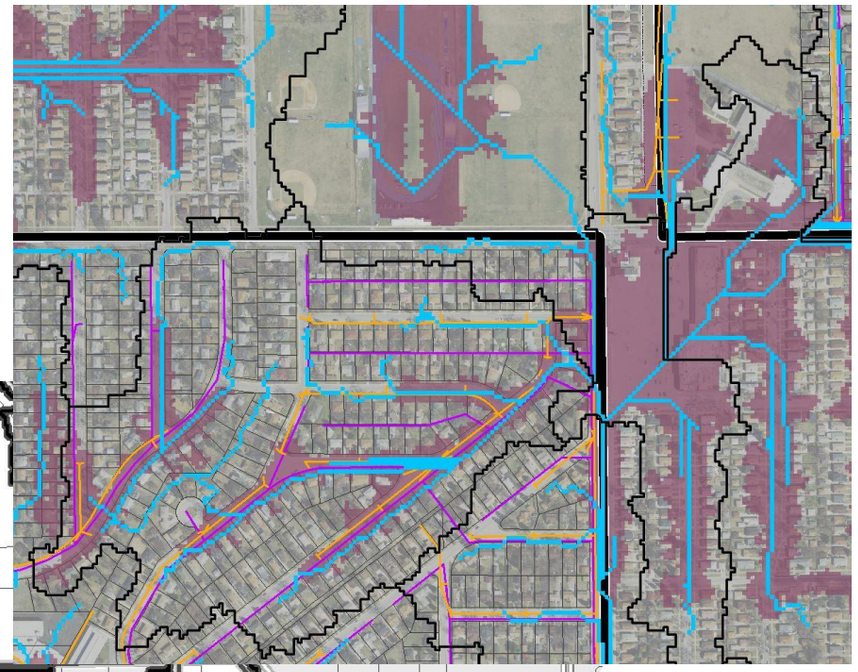
Potential Opportunity Area Ranking

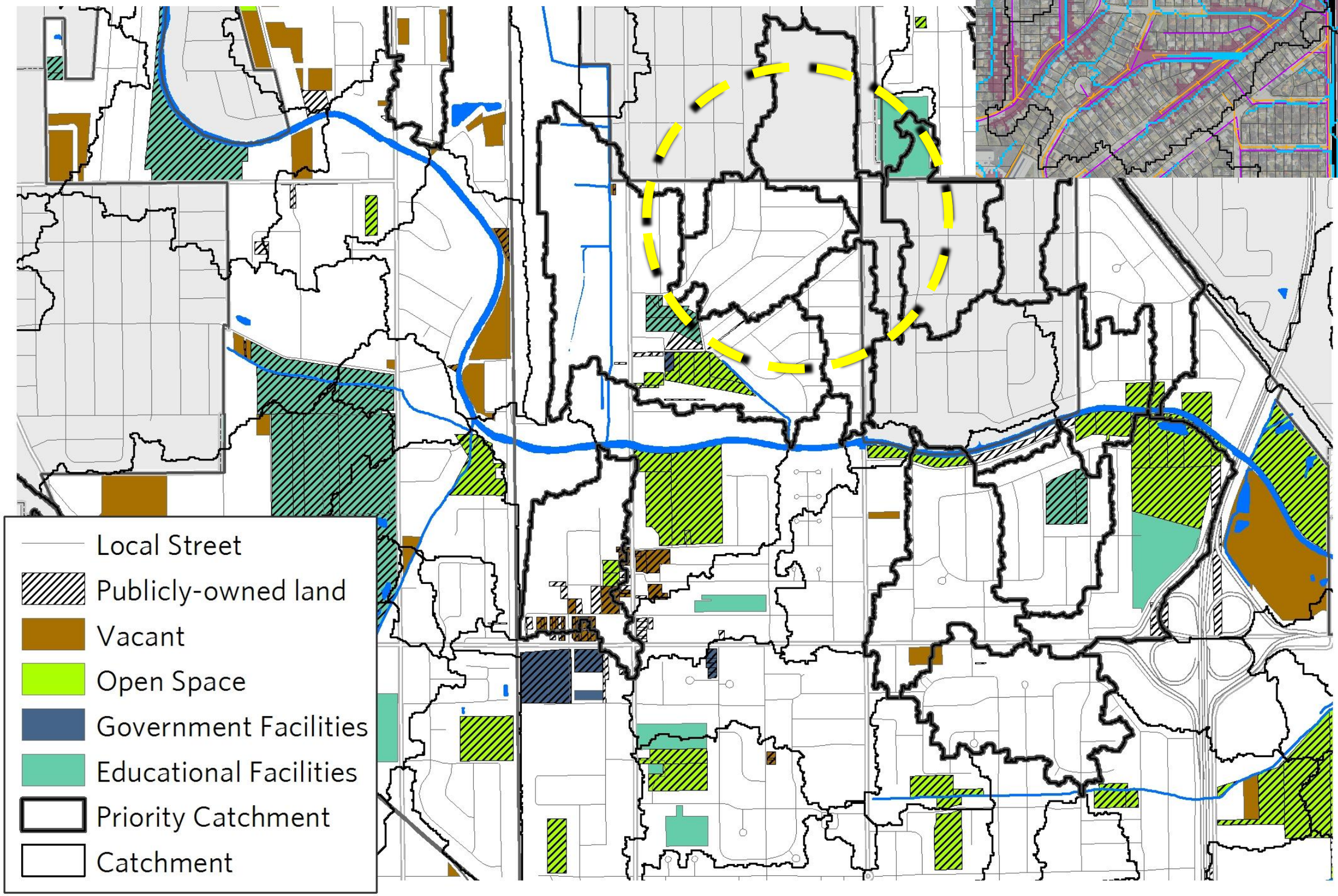
- Public land
- Vacant land
- Schools
- Local streets and alleys
- “Large” residential properties
- Capital projects
- Plan priorities (conservation, redevelopment, community greening)

Problem Area Assessment for Priority Catchments



Opportunity Area Assessment for Priority Catchments





Where we are working

- Berwyn
- Blue Island
- Des Plaines
- Franklin Park
- Midlothian
- Richton Park
- South Holland
- Unincorporated Cook County
  (Maine & Northfield Townships)

Partners

- Blue Island
- Calumet City
- Calumet Park
- Dolton
- Riverdale
- Robbins

rain ready

U.S. Army Corps of Engineers

White Paper

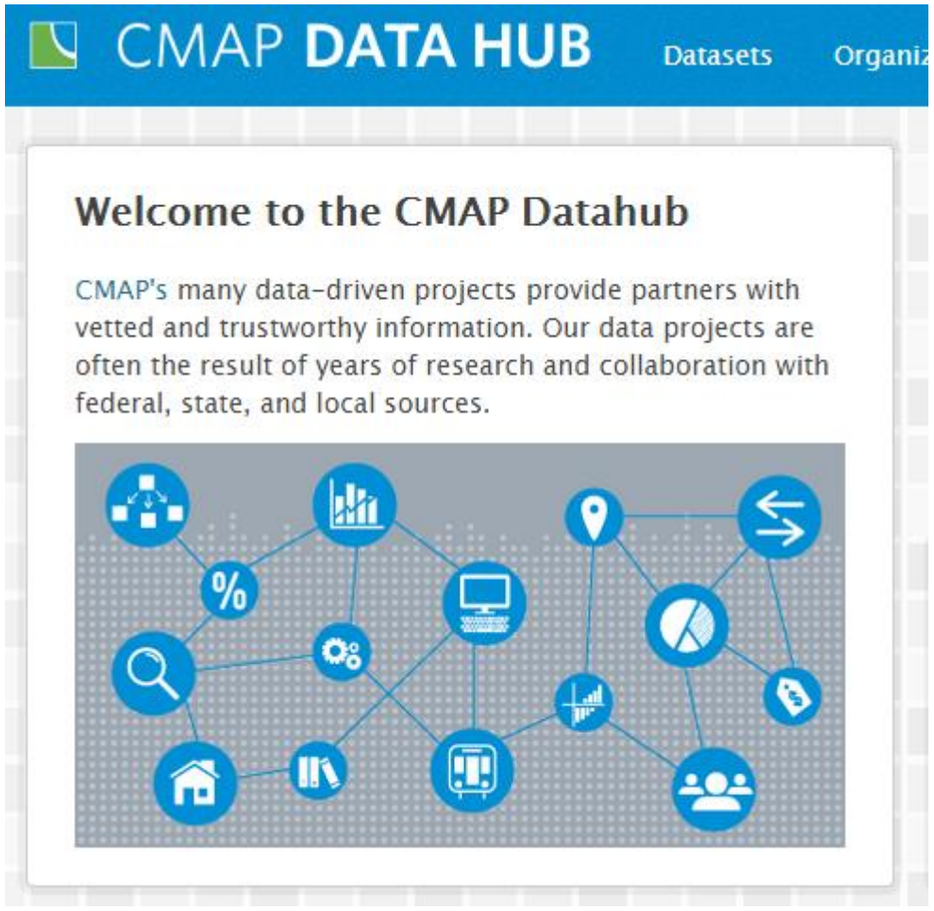
Goal: Provide guidance to CMAP staff on how to integrate stormwater management into comprehensive planning.

Table of Contents

Introduction	Purpose Key concepts
Outreach Process	Questions to ask municipal staff Resident and other stakeholder engagement
Existing Conditions Analysis	Previous plan review Spatial analysis (local approach) Policies & ordinances
Planning Considerations	Municipal-wide strategies Capital stormwater improvements Financing
Resources & References	Glossary

Data Sharing

Provide shareable datasets with municipalities and other partners



https://datahub.cmap.illinois.gov/

Questions?

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