Integrating Stormwater Management into Land Use Planning

Environment and Natural Resources Working Committee – 9/2/15

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GO TO 2040
Stormwater-Related Recommendations

- Integrate land use policies and site planning with water resources
- Reduce runoff volume
- Use site-scale green infrastructure to manage stormwater
- Develop sustainable sources of financing

Why Address Localized Flooding in Land Use Planning?

- Typically a common concern, but communities lack resources to address.
- Municipalities control land use and development patterns which affect how stormwater is generated and can form a key part of the solution.
- Can help reduce stress on municipal budgets, wastewater treatment costs, private property damage and loss, and improve water quality.

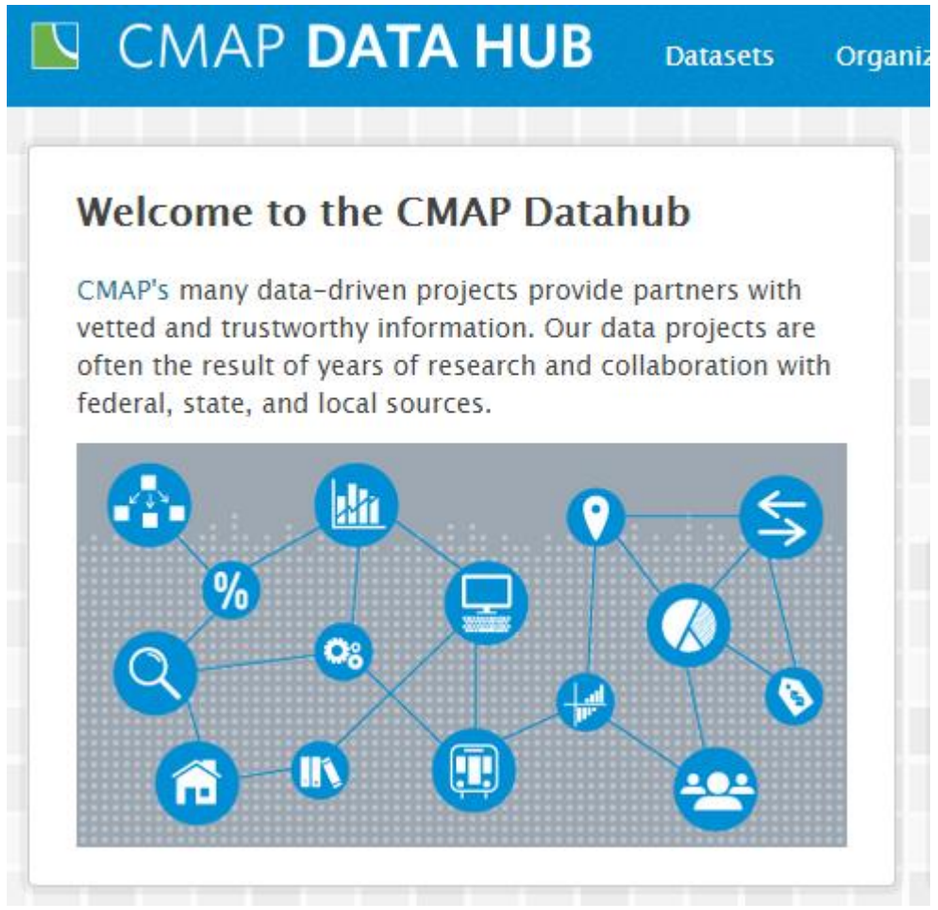
Overview

- Funded through the MacArthur Foundation and Cook County CDBG-DR
- Goal to integrate better stormwater management decisions into:
  - Local planning (comprehensive and other plans)
  - Municipal operations and budgeting decisions
  - Data and information sharing
  - Transportation planning and programing

Overview

- Develop series of datasets and analytical methods
- Test datasets and methods in pilot communities
- Expand coverage of datasets to broader region
- Host shareable data on the Data Hub
- Create internal white paper for CMAP staff

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

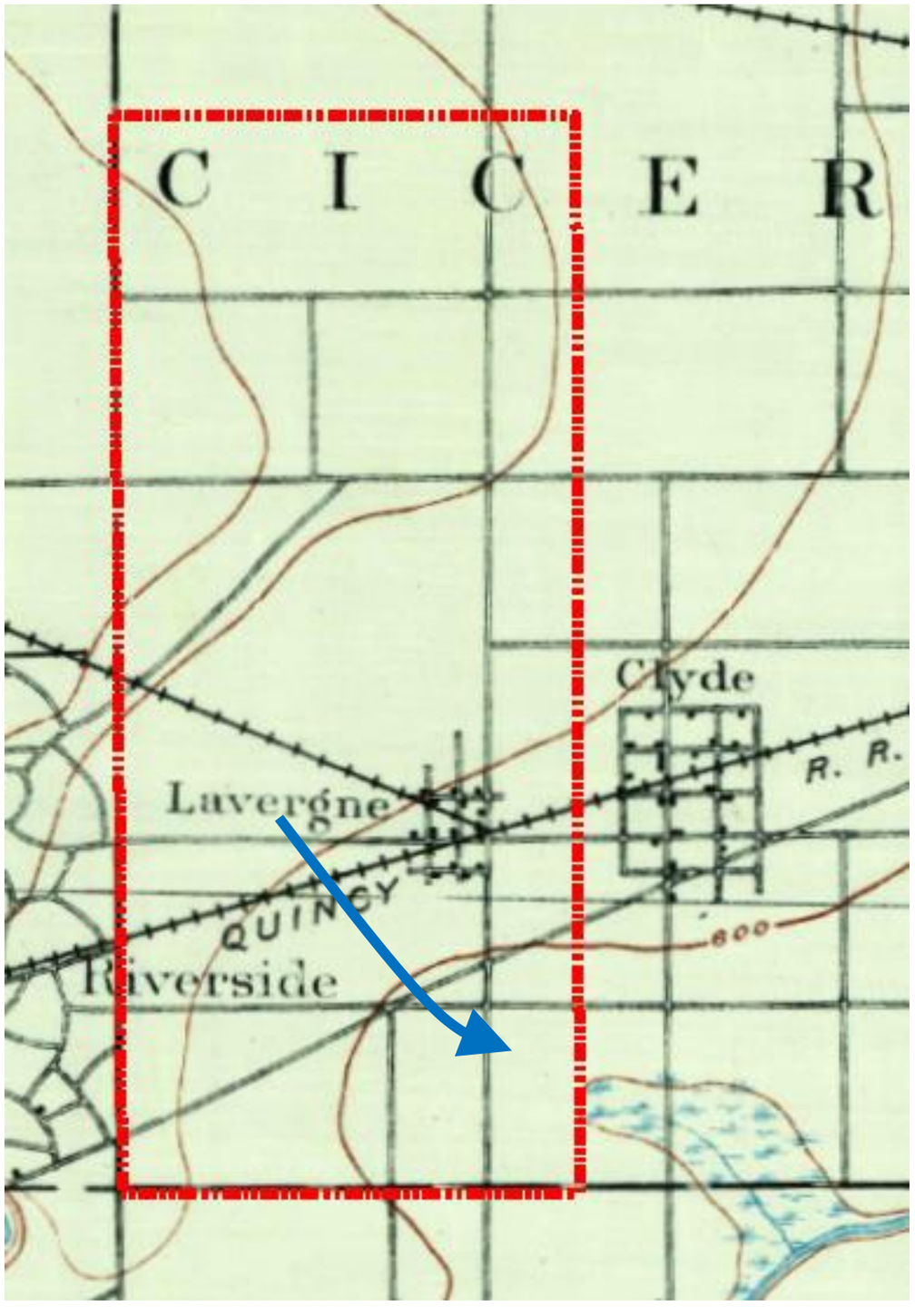


Overview

- 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

Local Approach

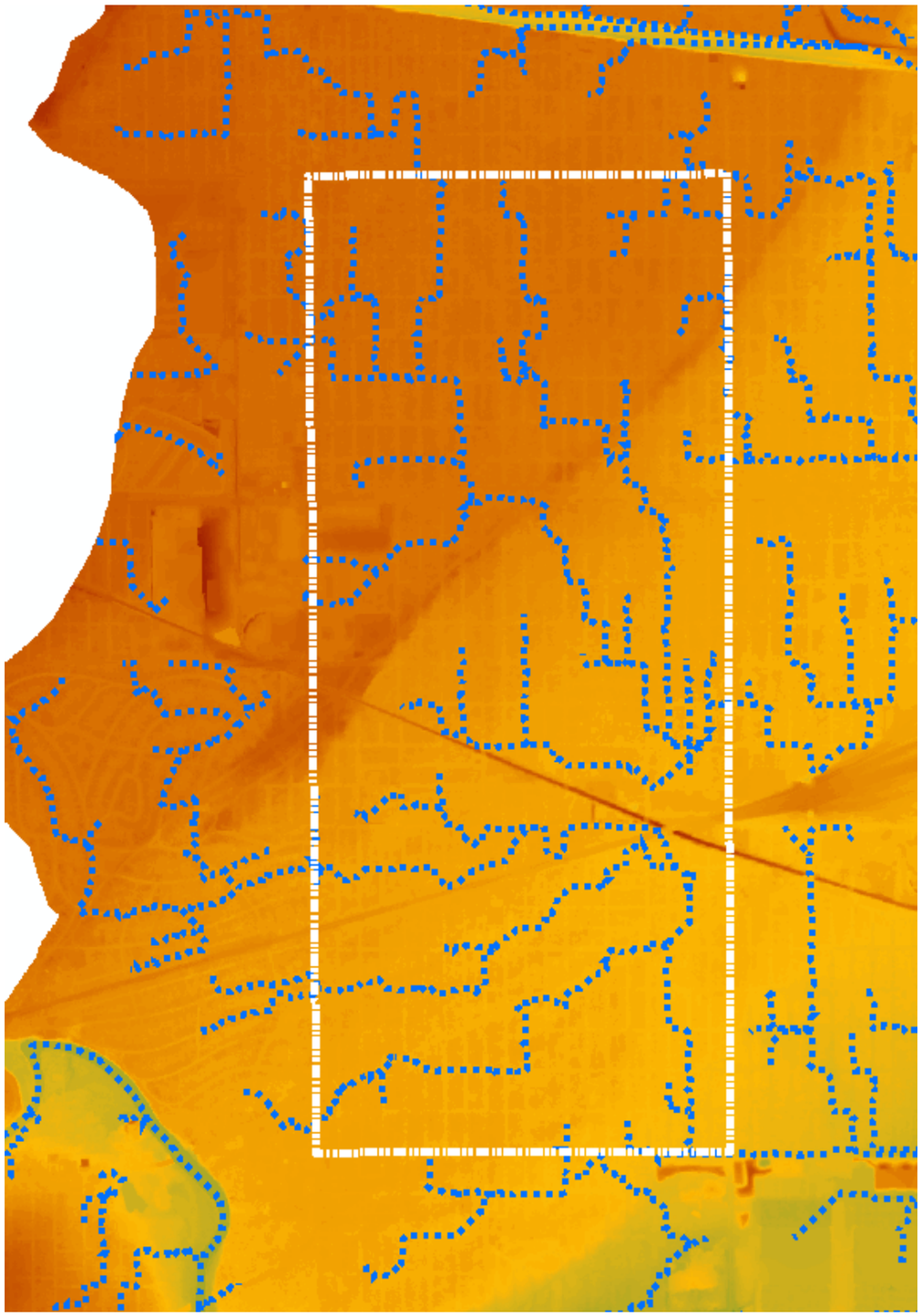
1. **Data Collection**
   - Historic conditions
   - Topography
   - Soils
   - Floodplains
   - Impervious cover
   - Land use
   - Repetitive flood claims and local flood data



Local Approach

2. Drainage Problem Area Identification

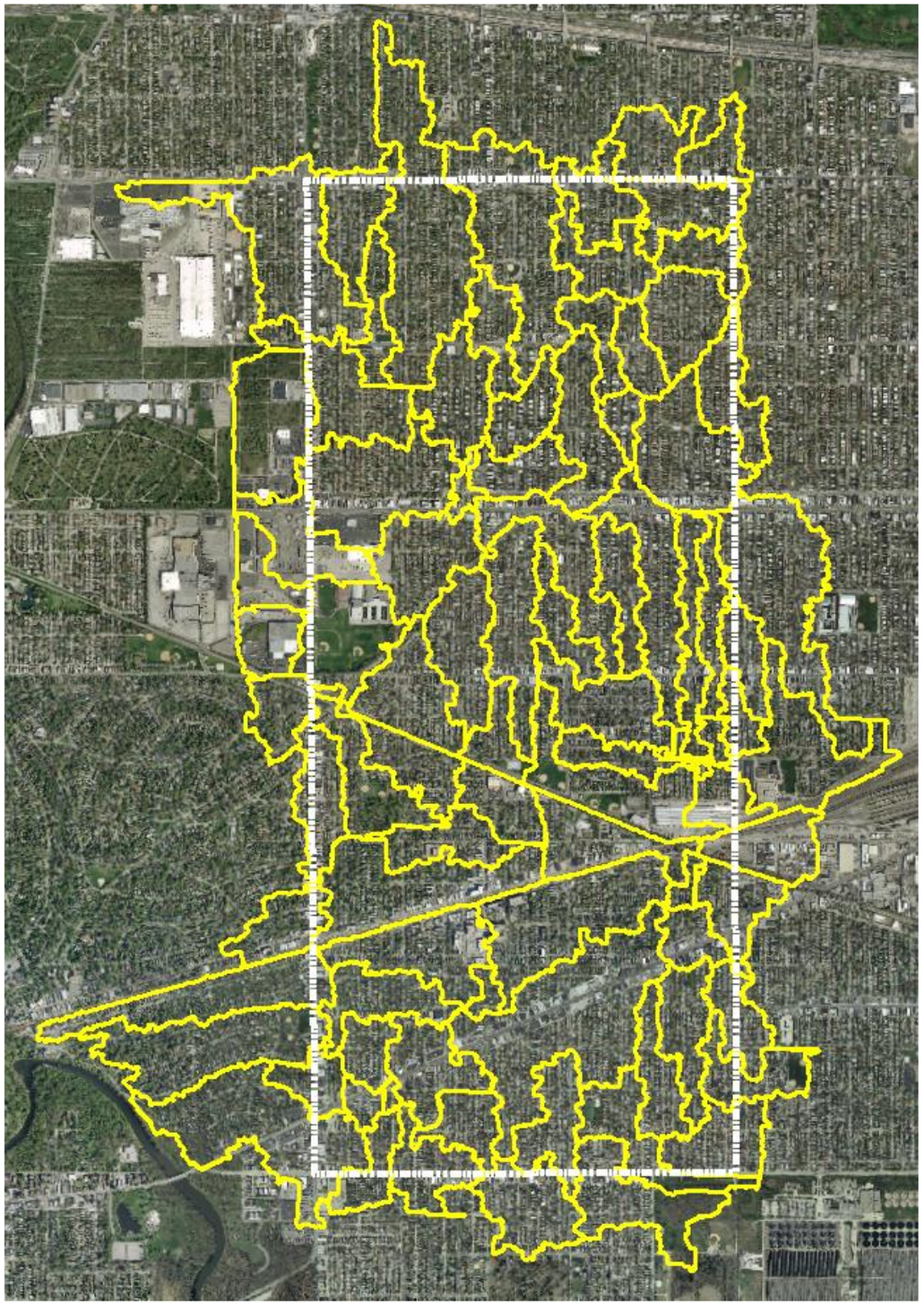
- Define overland flowpaths and depressional areas.



Local Approach

2. Drainage Problem Area Identification

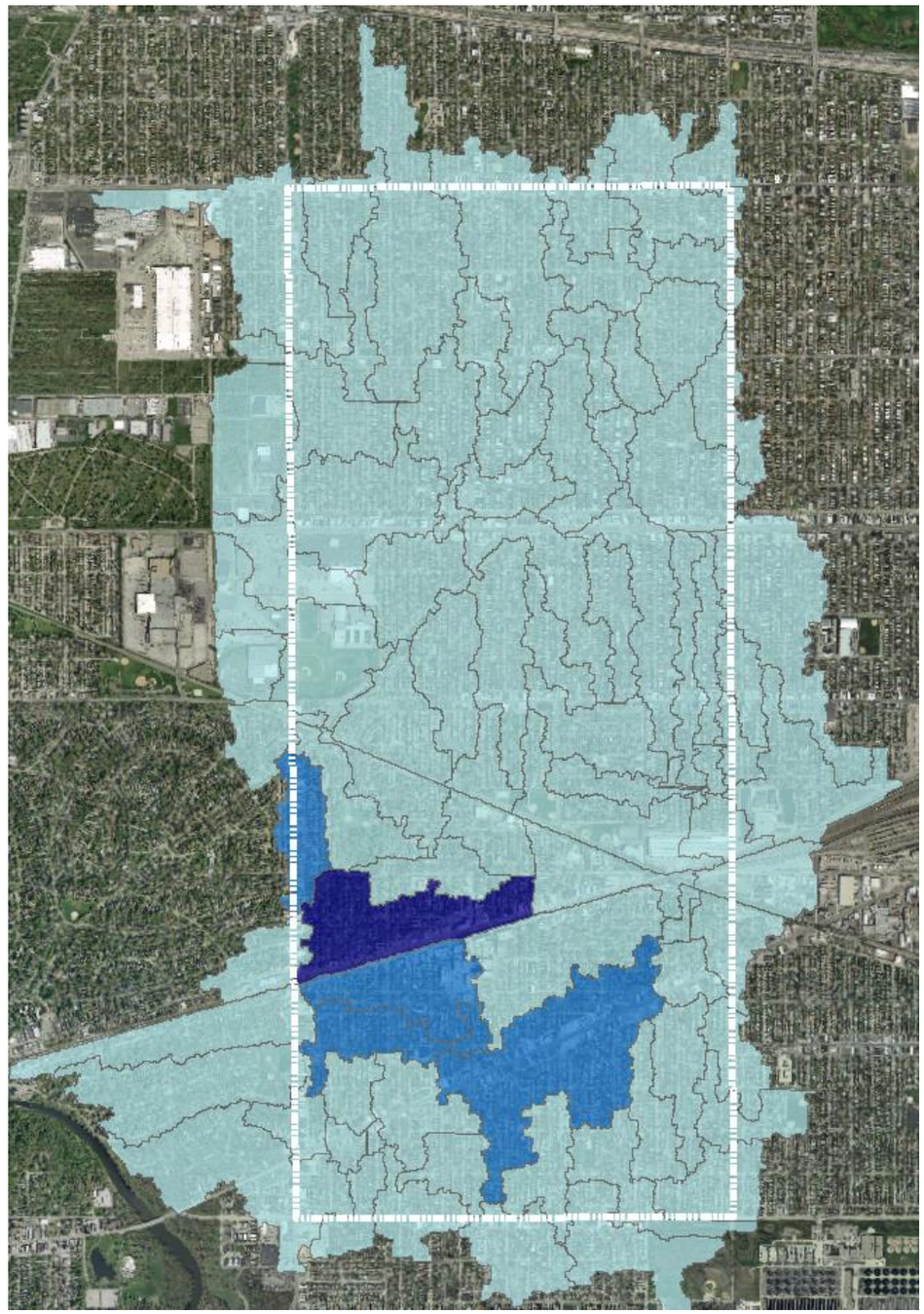
- Define overland flowpaths and depressional areas.
- Delineate catchment areas.



Local Approach

2. Drainage Problem Area Identification

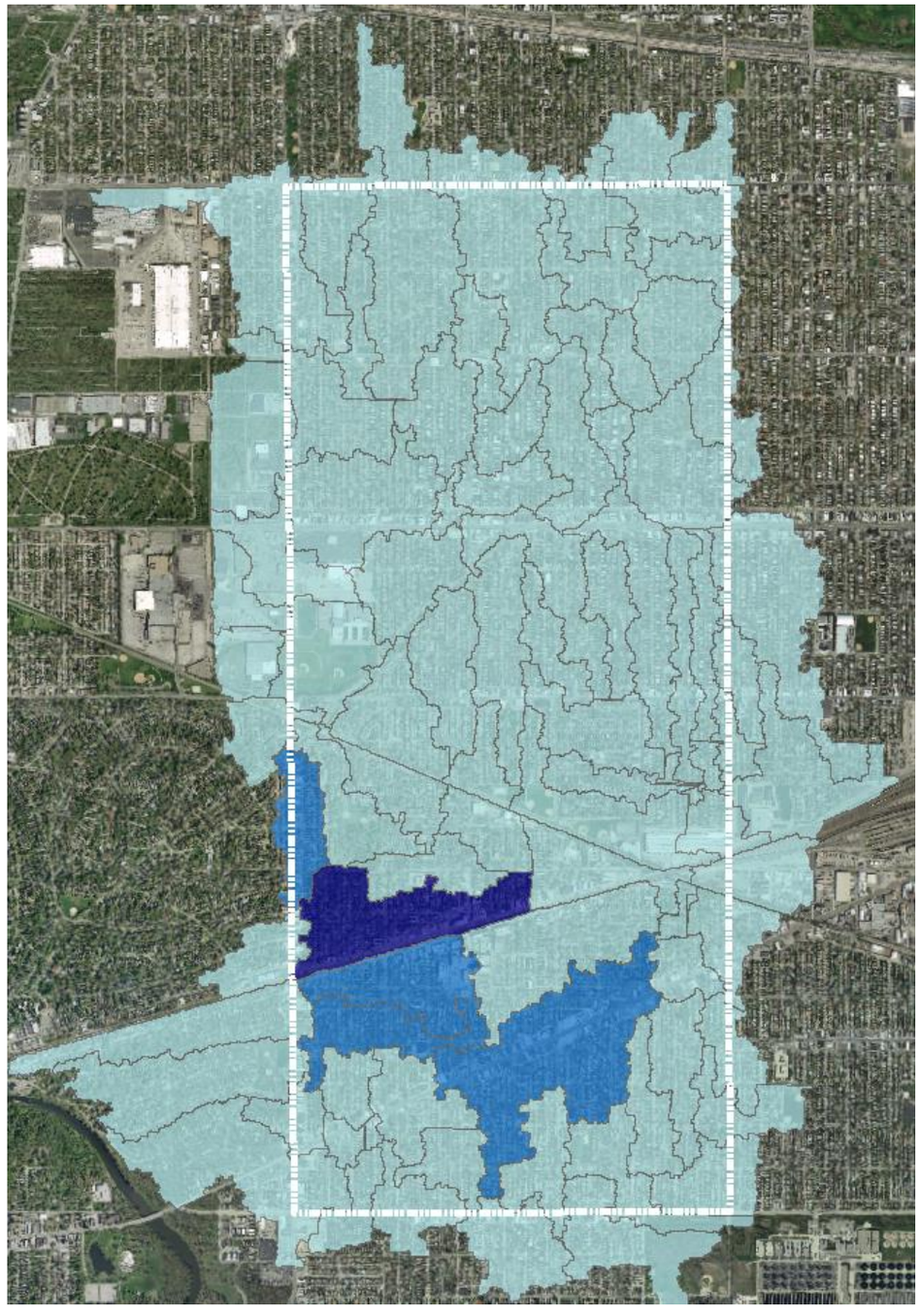
- Define overland flowpaths and depressional areas.
- Delineate catchment areas.
- Perform overlay analysis to identify the most problematic catchment areas based on topography, flood claims, presence of historic streams, etc.



Local Approach

3. **Drainage Improvement Opportunity Area Identification**
   - Perform overlay analysis to prioritize selected catchments based on opportunities and challenges, including:
     - Public and vacant land
     - Planned street reconstruction and sewer separation
     - Areas of shallow groundwater
     - Potential utility conflicts
     - Ability to expand capacity of existing GI strategies
     - Potential for partnerships; grant/funding opportunities

Table 2: Scoring Methodology			
Variable	**Value**	**Score**	**Weighting Factor**
Drainage Problem Areas Identification			
Surface Drainage Assessment Data			
Low areas based on topographic data	No low areas Minor (0.5 - < 1 acre) Major (> 1 acre)	0 5 10	1
Repetitive loss/severe repetitive loss data	Not containing or adjacent Contains or adjacent	0 10	1
Historic stream locations that intersect with developed areas	Not containing or adjacent Contains or adjacent	0 10	1
Reported drainage problem areas (based on citizen complaints and stakeholder input)[1]	Low Medium High	0 5 10	1
Drainage Improvement Opportunity Areas Identification			
Land Use and Parcel Data			
schools, vacant land, public buildings/grounds, parks/open space, and alleys[1]	Low Medium High	2.5 5 10	1
Site-Specific Constraints			
Areas of shallow groundwater	Greater than or equal to 50% of area 25% to < 50% 10% to < 25% < 10%	0 2.5 5 10	
Utility conflicts	Major (>1 conflict) Minor (1 conflict) No conflicts	0 5 10	1
Political, Economic, and Community Characteristics			
Areas with existing GI strategies to expand capacity	Not containing or adjacent Contains or adjacent	0 10	0.5
Planned street/sewer separation projects	Not containing or adjacent Contains or adjacent	0 10	0.5
Grant and funding opportunities	No Yes	0 10	0.5
Potential for partnerships	No Yes	0 10	0.5
Community greening needs	No Yes	0 10	0.5



Local Approach

4. Public Engagement
   - Identify or confirm problem areas
   - Educate residents and property owners
   - Garner public support for GI investment

Potential Recommendations

- Policies and Ordinances
- Engineering and Capital Improvements (site-scale green infrastructure)
- Maintenance and Monitoring
- Financing
- Education