Regional Stormwater Analysis

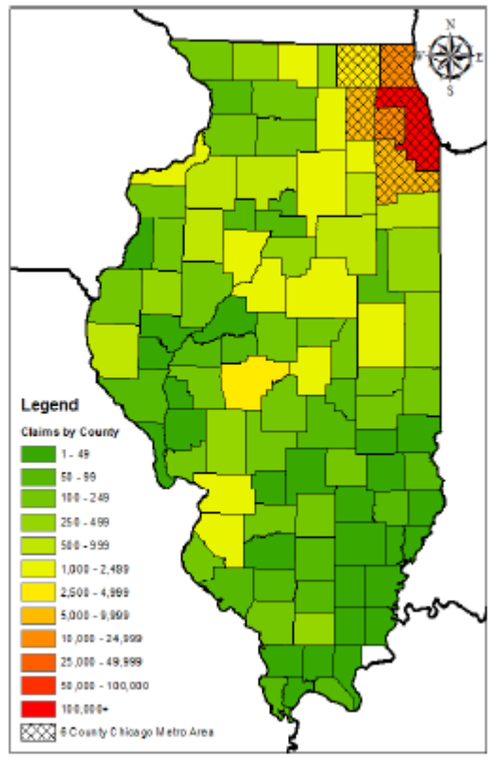
Environment and Natural Resources Committee
August 4, 2016

Agenda

- Context
- GO TO 2040 recommendations
- Goals and potential applications
- Draft regional analysis
- ON TO 2050 Stormwater Strategy Paper

Context

- Findings of the Urban Flooding Awareness Act
  - 85% of all payouts in the state were in 6 counties in NE IL (2007-2014).
  - Over 90% of flooding damage claims were outside the mapped floodplain (2007-2014).
- Local Analysis
  - LTA experience and flooding issues
- Support from MacArthur Foundation to explore this issue at the local and regional scale



GO TO 2040 on Stormwater Management

Integrating land use policies and site planning with water resources.

- Identifies compact development, redevelopment, water conservation, and green infrastructure as techniques.
- Identifies watershed plans as a mechanism for identifying where stormwater management retrofits should be located.
- Recommends county stormwater ordinances not just rely on detention, but also reduce runoff volume and promote green infrastructure.
- Develop sources of financing for stormwater retrofits.
- Indicator – acres of impervious surface

GO TO 2040 on Flooding

Focused on riverine-based flooding and water quality impacts.

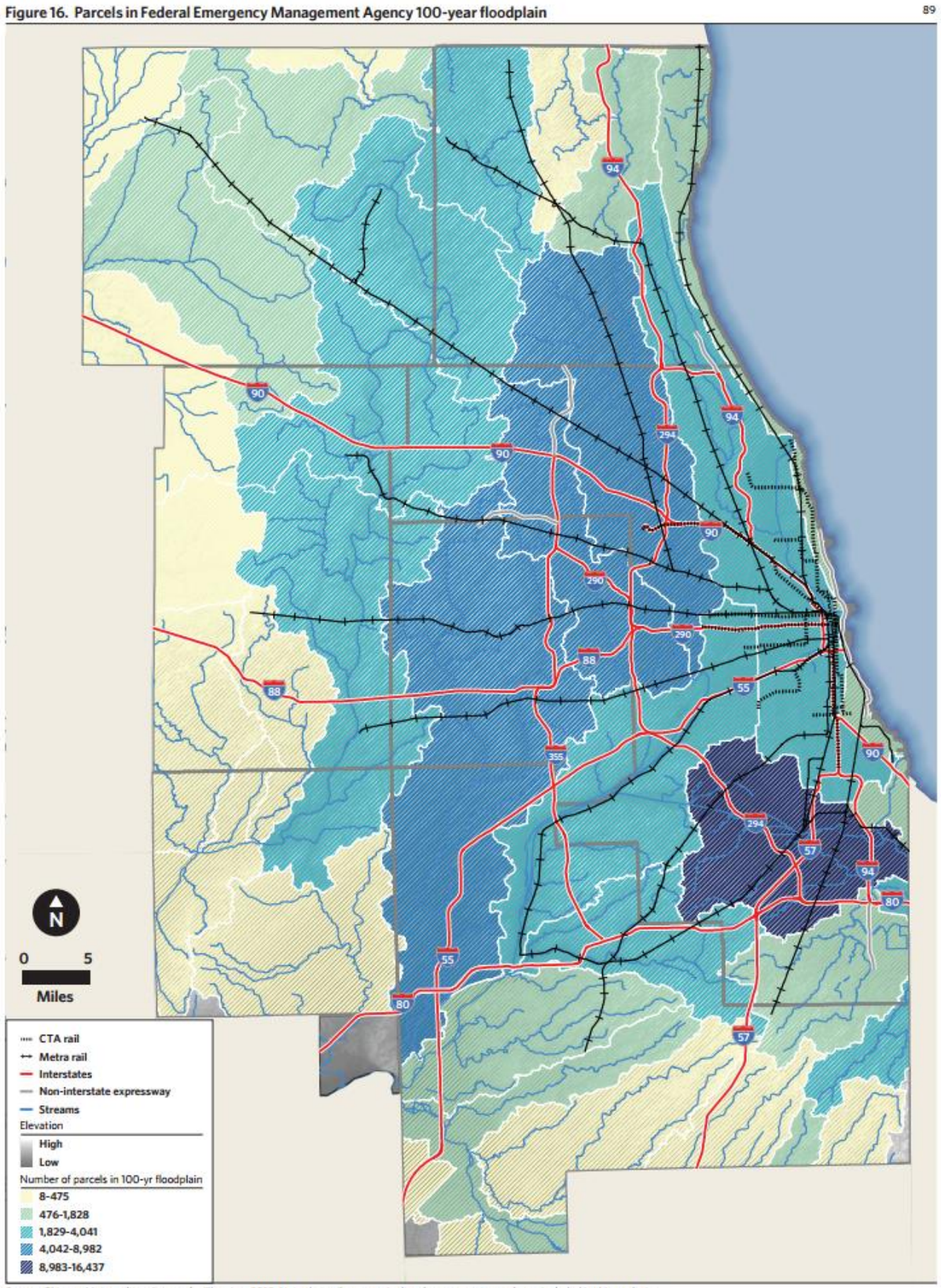


Figure 16. Parcels in Federal Emergency Management Agency 100-year floodplain

Source: Chicago Metropolitan Agency for Planning, 2010. Note that only non-agricultural, non-vacant parcels are included in this analysis.

GO TO 2040 Implementation efforts

Value of Stormwater Utilities

Recommendations to the IGA

Climate Adaptation Guidebook

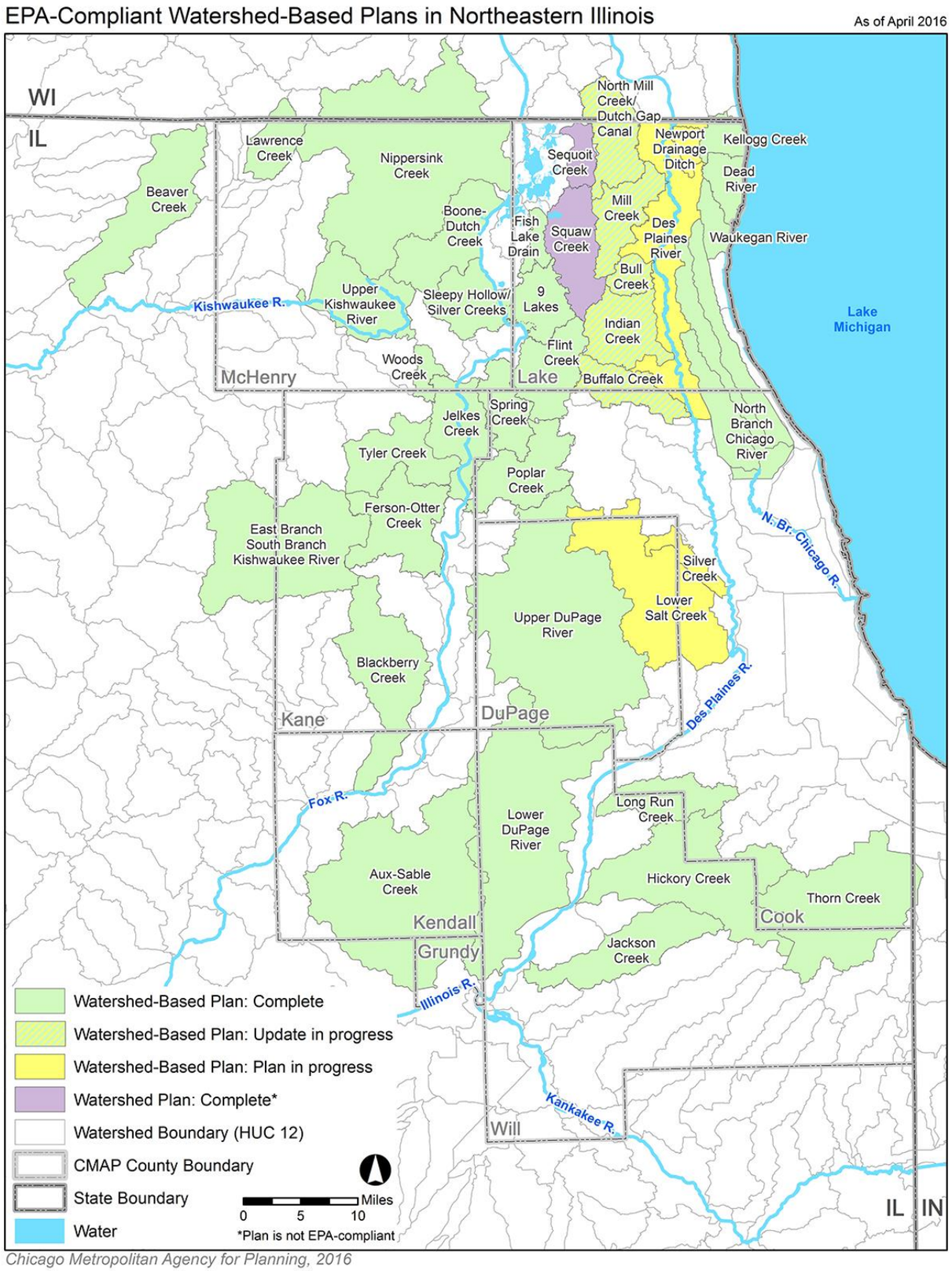
Watershed Plans

LTA Plans with stormwater components

LTA Ordinance updates

Calumet Stormwater Collaborative

Other impervious reduction work, like parking strategies



Chicago Metropolitan Agency for Planning, 2016

Goal of the regional analysis

Identify priority clusters across the region with the greatest flooding mitigation needs.

- **Consider future risk.** increasing urbanization and changing precipitation.
- **Calculate a composite score.**
  - Identify urban and riverine flooding separately.
  - Identify priority clusters across the region as well as rescaled within local geographies.

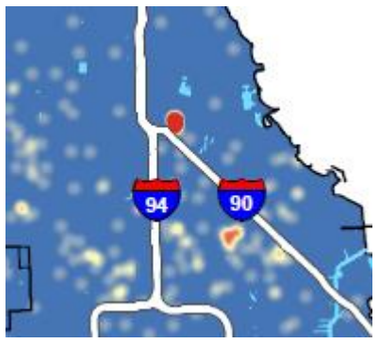
Potential applications

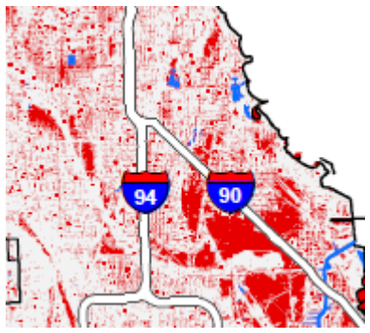
- Prioritize and inform CMAP local planning work.
- Potential connections to watershed planning efforts.
- ON TO 2050 layers: flood risk, climate vulnerability.
- Could inform open space preservation and/or restoration priorities.
- Potential criteria for partner programs or funding efforts

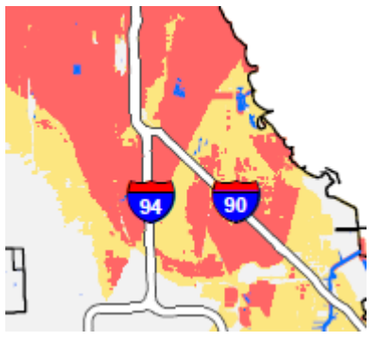
Draft Regional Analysis

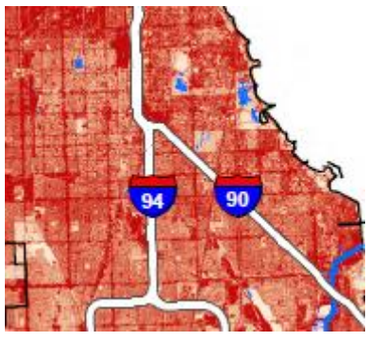
- Assistance from Conservation Design Forum/Geosyntec
- Using subzones
- Cook County so far, expanding soon to Will and DuPage
- Scoring urban and riverine flooding separately using the 100 and 500-yr floodplains

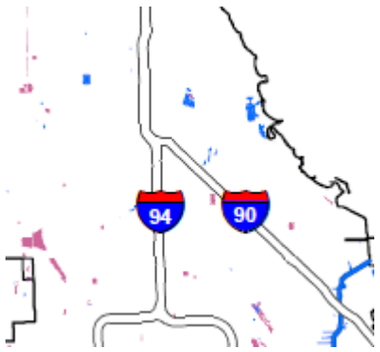
Draft Regional Analysis











Potential Problem Area Scoring

1. Reported problem areas via FEMA repetitive loss properties and NFIP claims
2. Residential properties intersecting with the Topographic Wetness Index
3. Residential properties with a mean elevation that is within 6′ of the nearest FEMA Base Flood Elevation
4. Impervious Cover
5. Potential Wetland Soils

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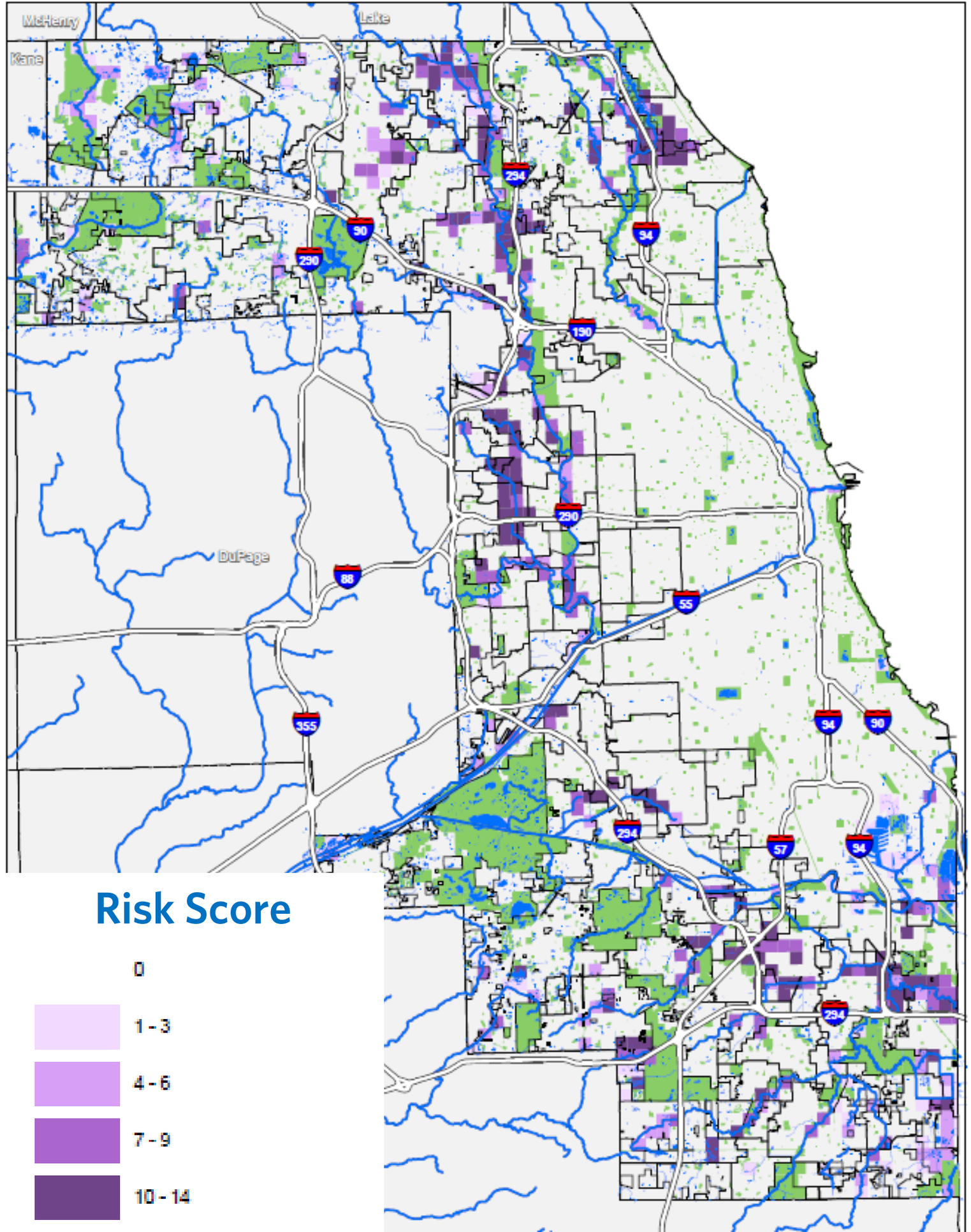
Regional Analysis: Riverine Score

Scores all variables for subzones intersecting the 100- and 500-year floodplain



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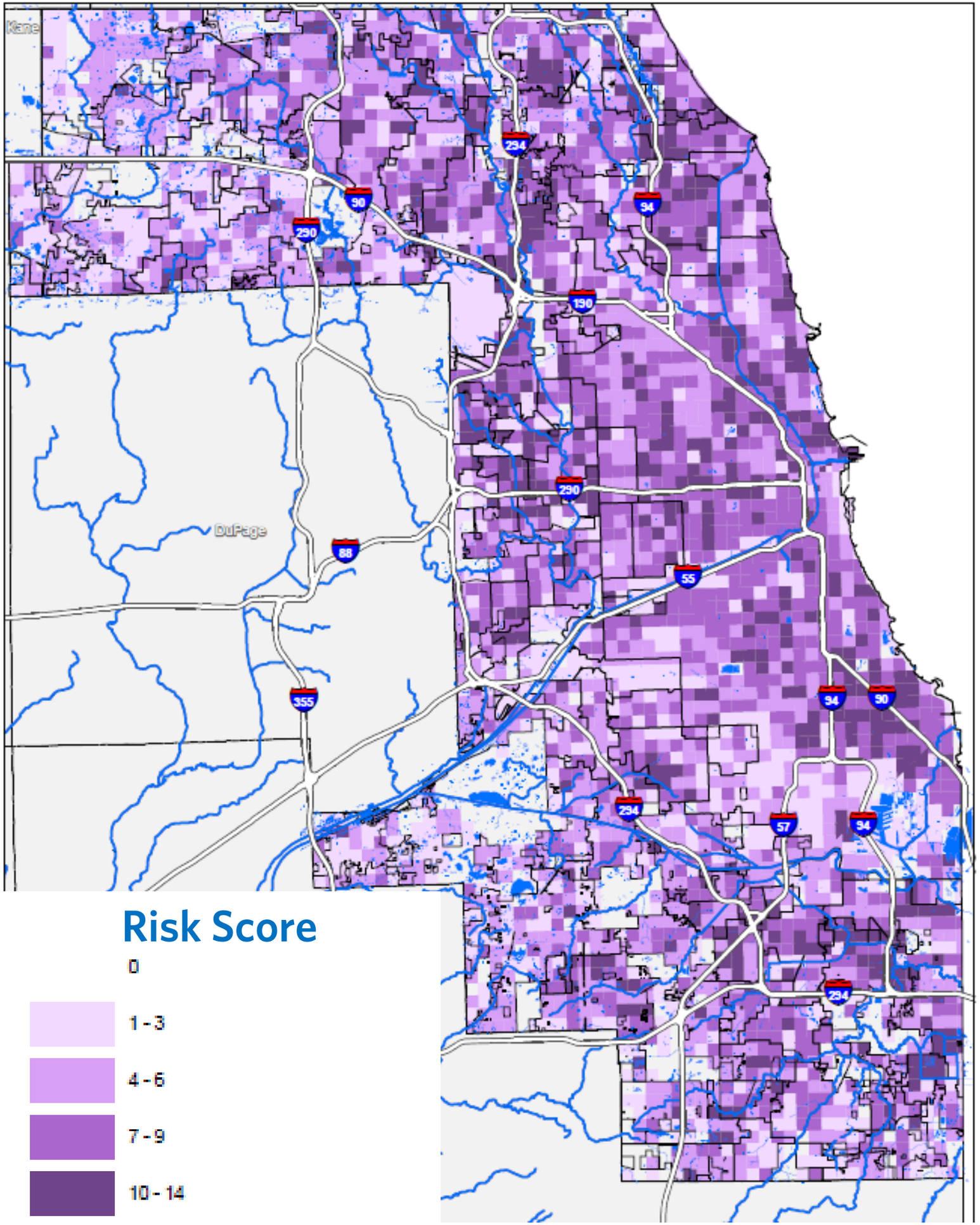
Regional Analysis: Urban Score

Scores all variables in subzones not intersecting the floodplain

For subzones that do intersect the floodplain, we remove riverine-influenced data from that floodplain portion.



Next steps

- Review scoring and weighting system
- Additional datasets:
    - Sewer type – combined or separated sewers?
        - Regional map of service areas does not yet exist; some communities have a mixture of combined and separated sewers.
    - Groundwater table
- Clustering process
- Assessing future risk
- Meet with county stormwater agencies

ON TO 2050: Stormwater Strategy Paper

- Build on previous county and state policy review
- Explore criteria for future land use planning
- Connections to water supply
- Redevelopment and GI retrofit
- Incorporating GI in transportation
- Financing