Park Ridge Flood Study

City Council Update on Feasibility Report

January 12, 2015

History

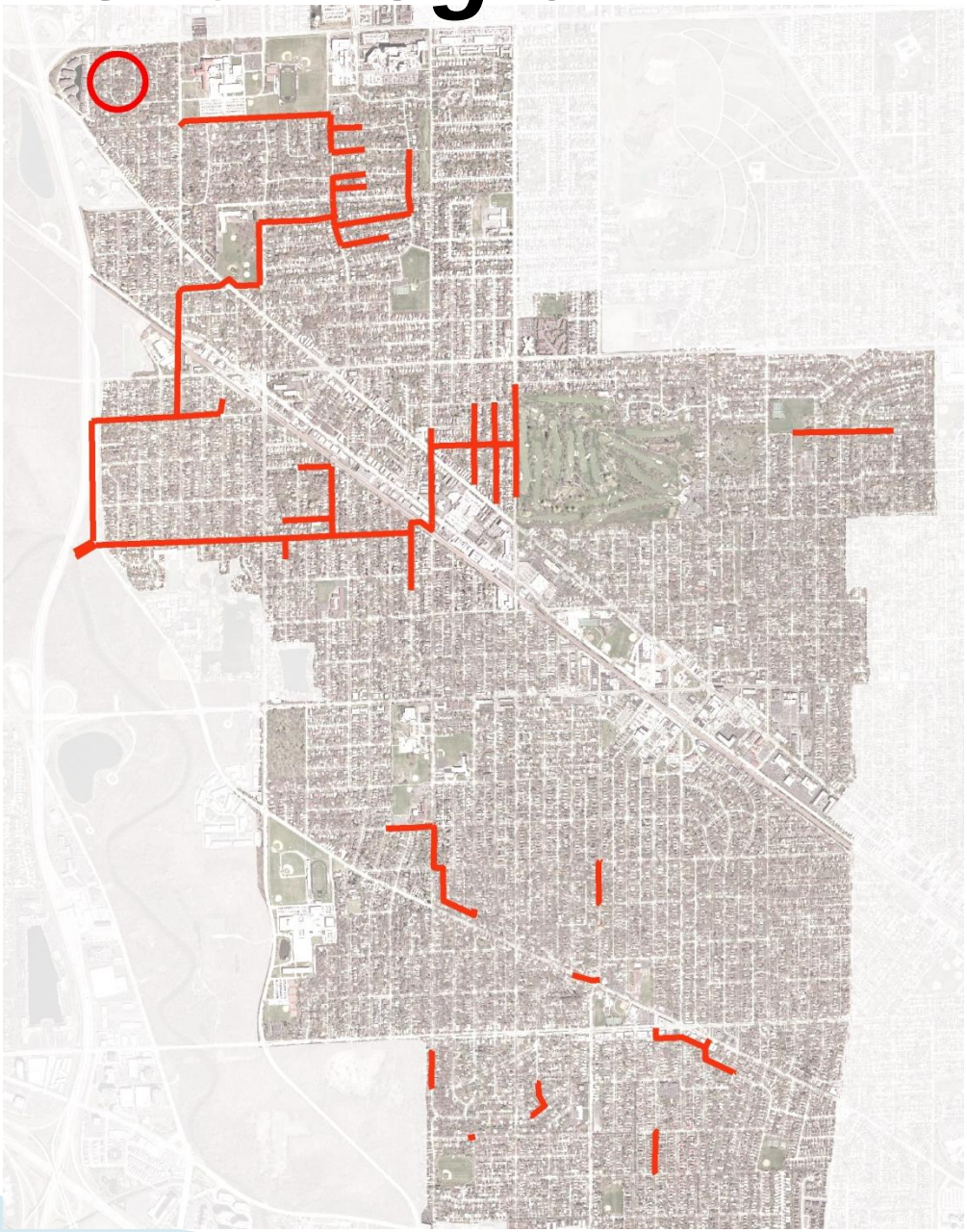
- ***September 2008 Storm***
- ***2009 Flood Study***
  - ***Flood questionnaires***
  - ***Identified major problem areas***
  - ***Limited modeling***
  - ***Proposed some concept projects***
- ***Citywide Sewer Study***
  - ***Undertaken to answer "what happens if" questions***

Citywide Sewer Study - Summary

- ***Entire City included in study***
  - ***Determined existing hydraulic parameters, performance, restrictions, etc.***
- ***12 Concept Projects Identified***
  - ***Chosen based on density of flooding problems or availability of sewer capacity***
- ***Led to Sewer Improvement Program***

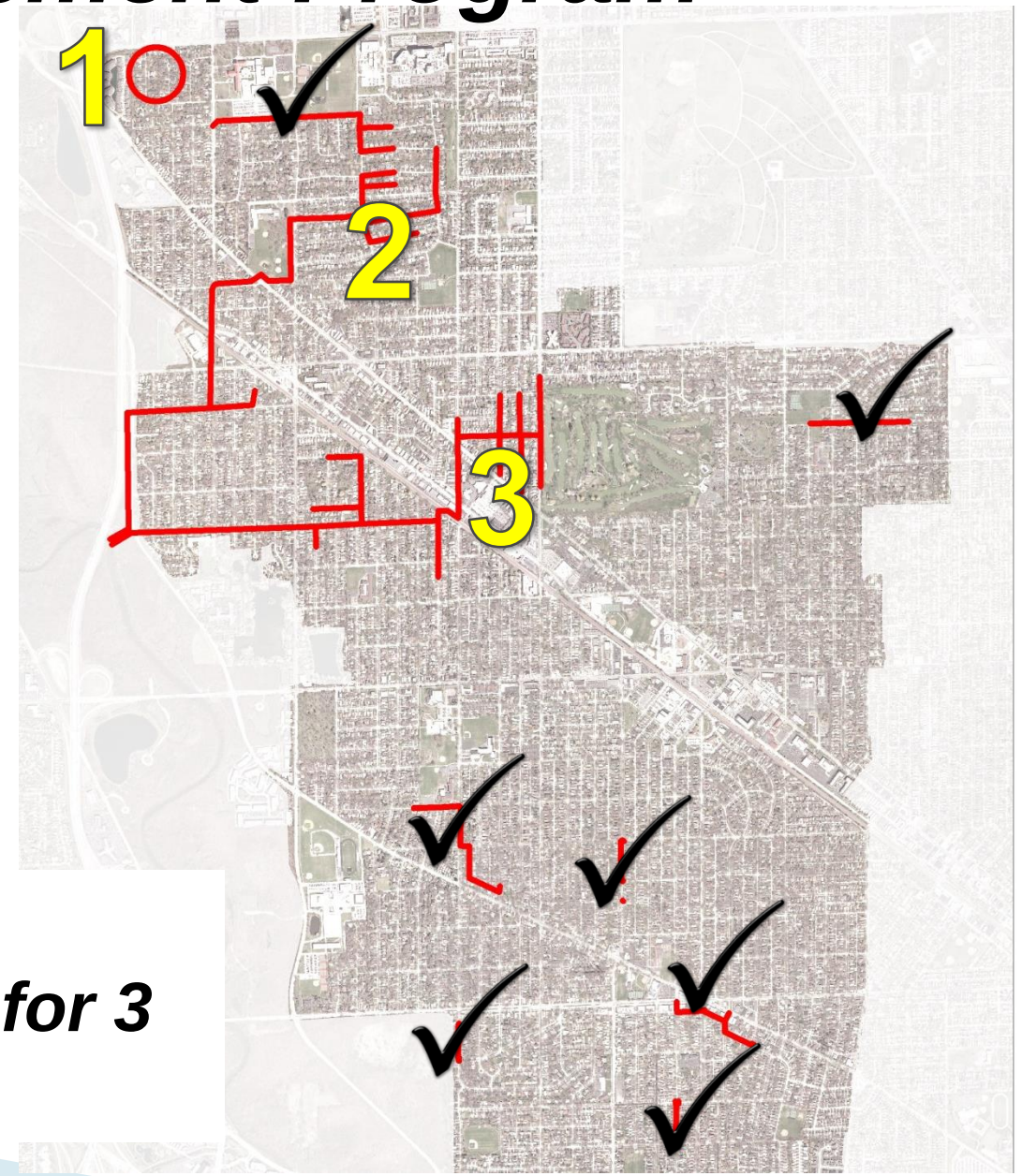
Sewer Improvement Program

- *12 projects*
- *City bonded $5.3 Million to fund 1st phase*
- *Completed final design and construction of 7 projects*



Sewer Improvement Program

- *12 projects*
- *City bonded $5.3 Million to fund 1st phase*
- *Completed final design and construction of 7 projects*
- *Commissioned Feasibility Study for 3 largest projects*

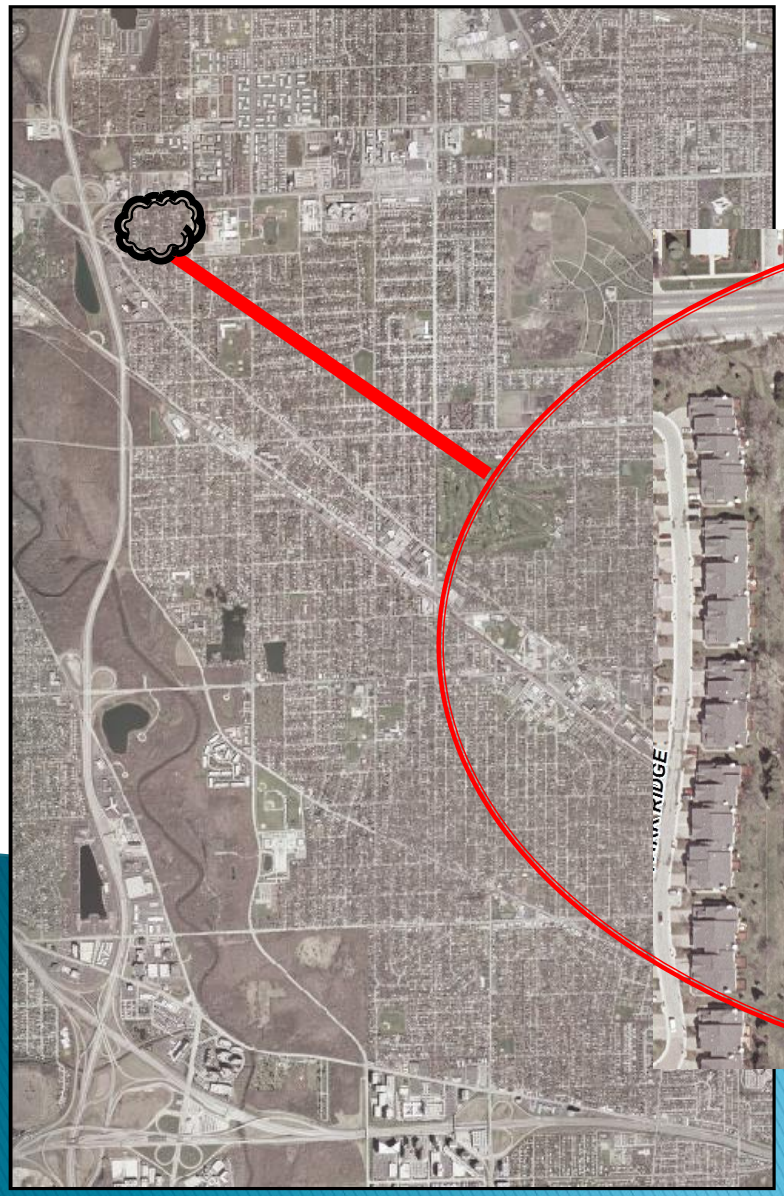


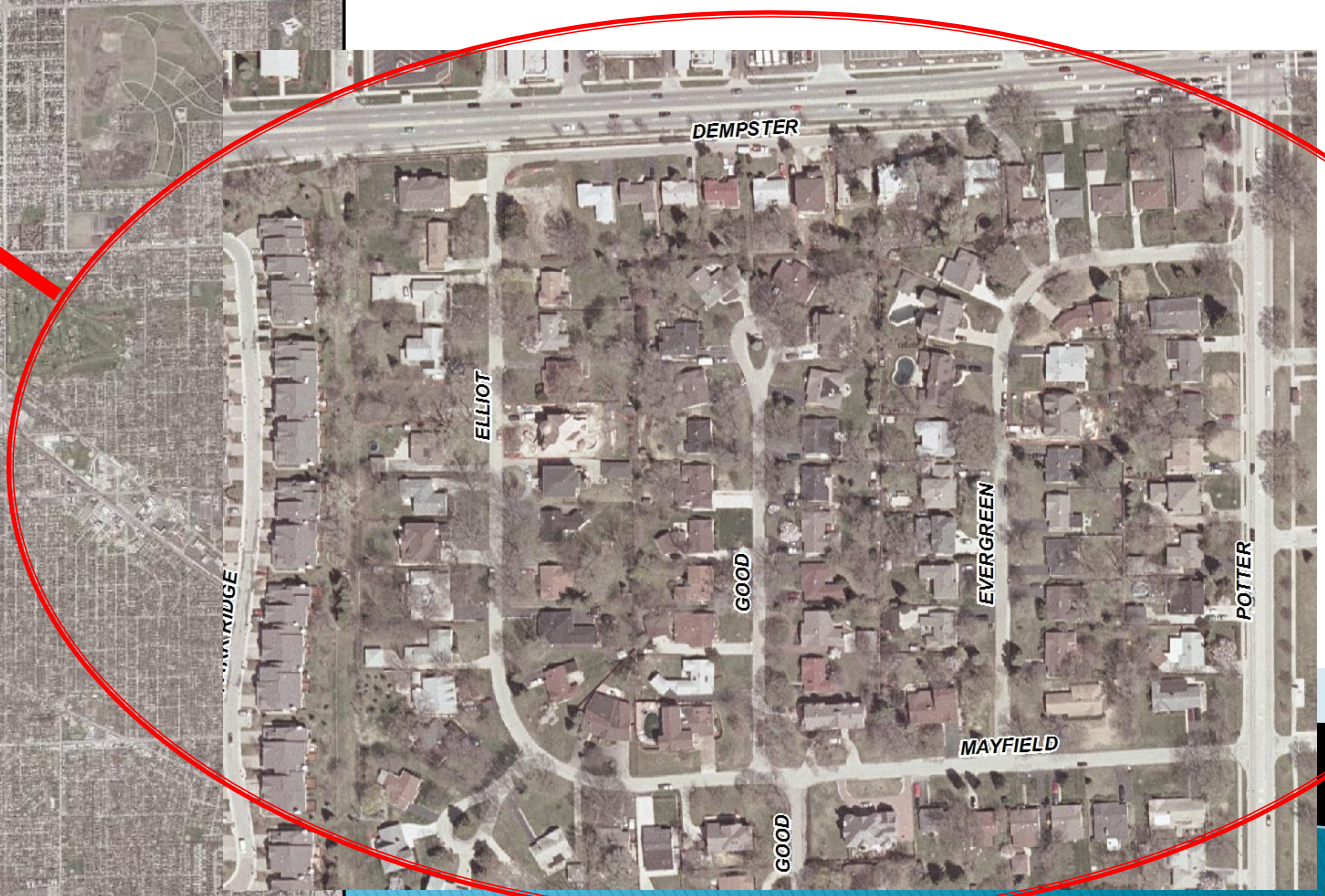
Sewer Improvement Program

- ***Design Criteria***
  - ***Varied for each type of project***
    - ***Projects dependent on existing sewer capacity***
      - ***Criteria – "make improvements where possible"***
      - ***Based on results of Sewer Study***
      - ***No negative impacts to other areas***
    - ***Projects with new outfalls***
      - ***Evaluated 10- and 100-year protection levels***


Mayfield Study Area

Mayfield Study Area





Existing Condition

Existing Conditions

100-Yr Inundation Area

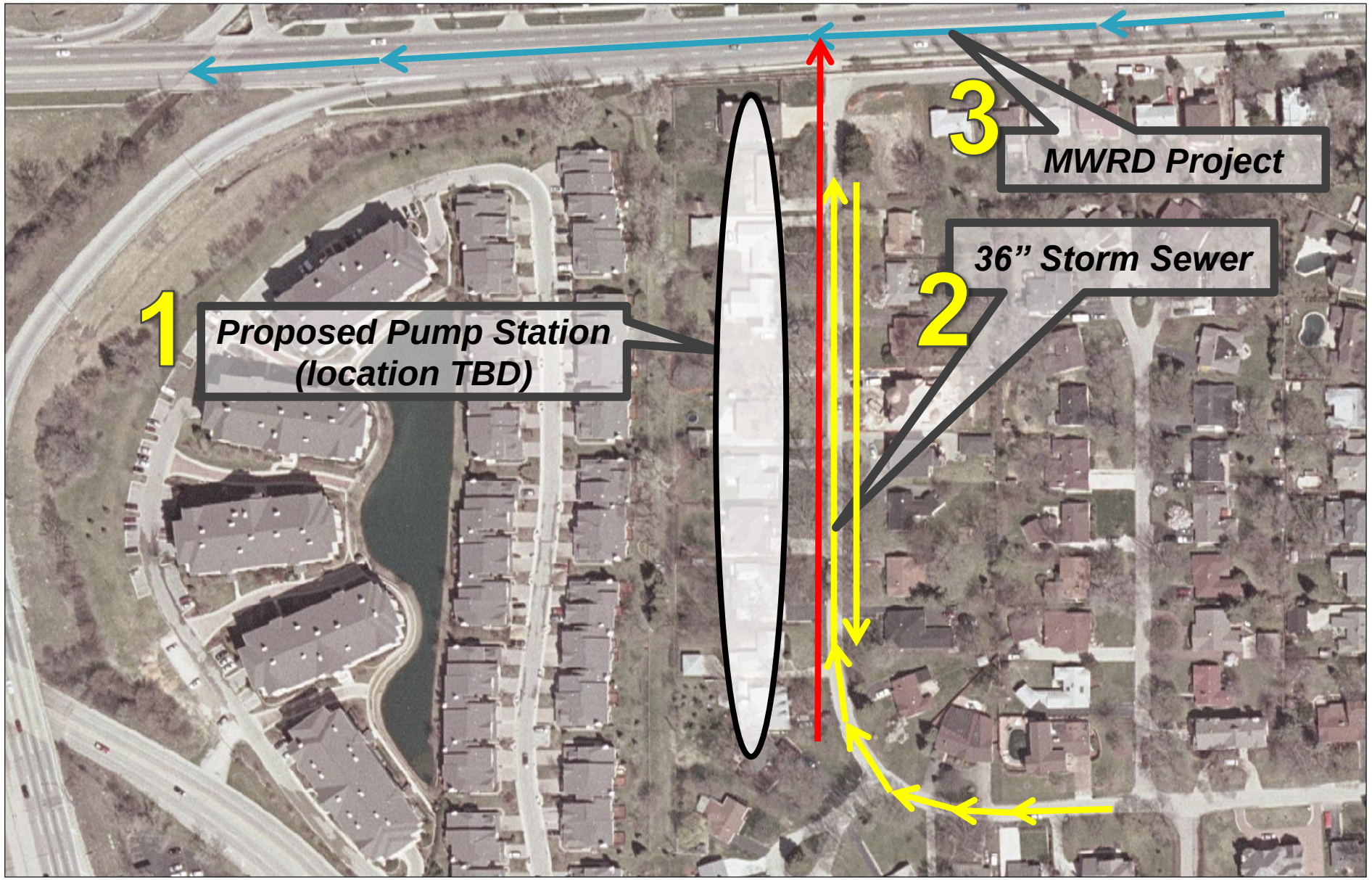
- ***24 hour storm = 7.6”***
- ***Approx. 23 homes at risk of flooding***

Recommended Improvement

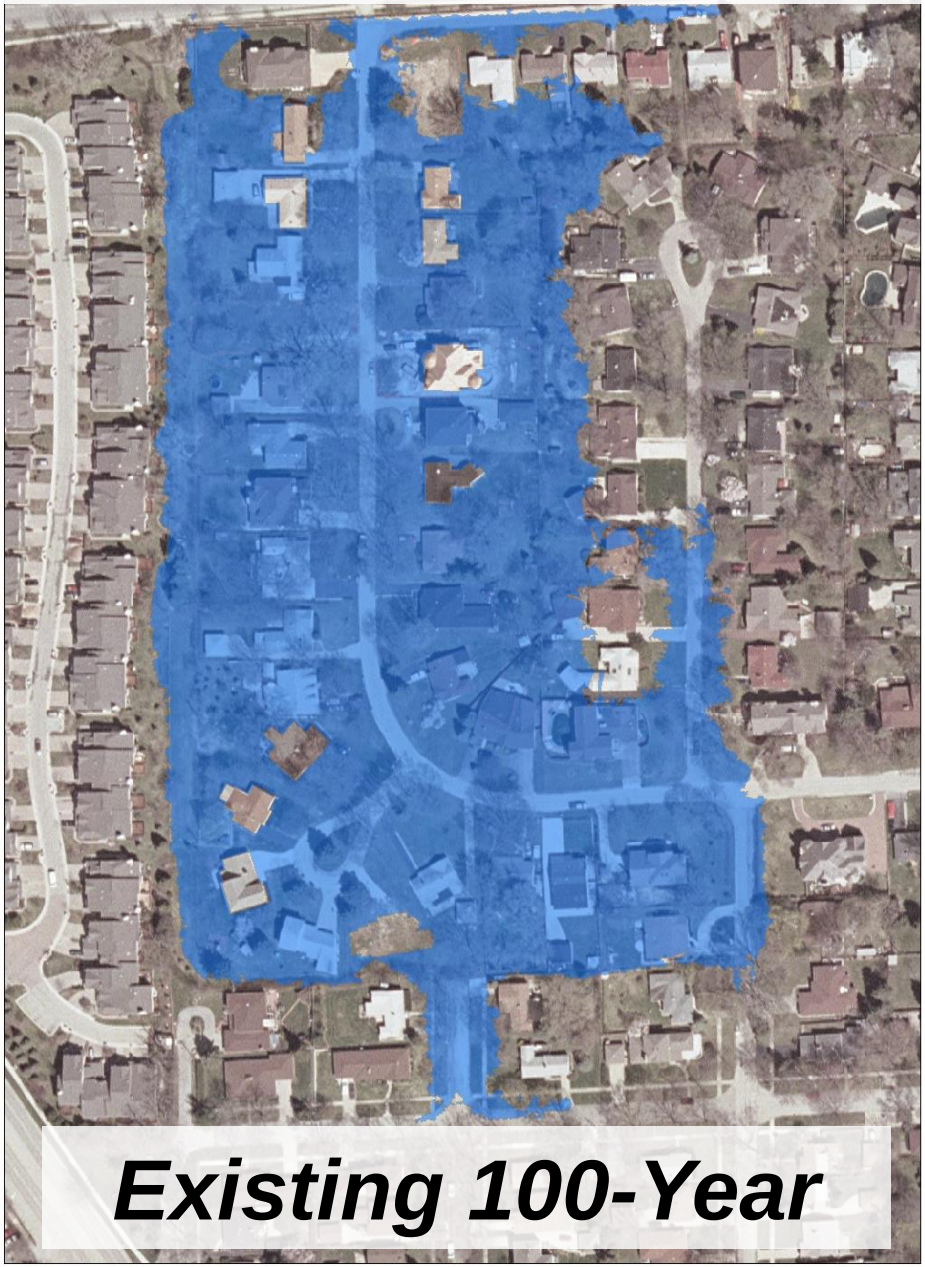
New Pump Station

- *Upgrading existing station does not make sense*
  - *Downstream improvements would also be needed*
- *New pump station proposed*
- *New storm sewers to convey runoff to pump*

Proposed Improvements



Proposed Improvements



Permitting/Approvals

- *MWRD*
  - *If part of MWRD project, no other approvals needed*
  - *IGA expected to be provided soon (Spring 2015)*
  - *Spring 2016 construction expected*
- *IDOT*
  - *Preliminary meetings during feasibility study*
  - *We expect MWRD to handle IDOT coordination*

Estimated Cost

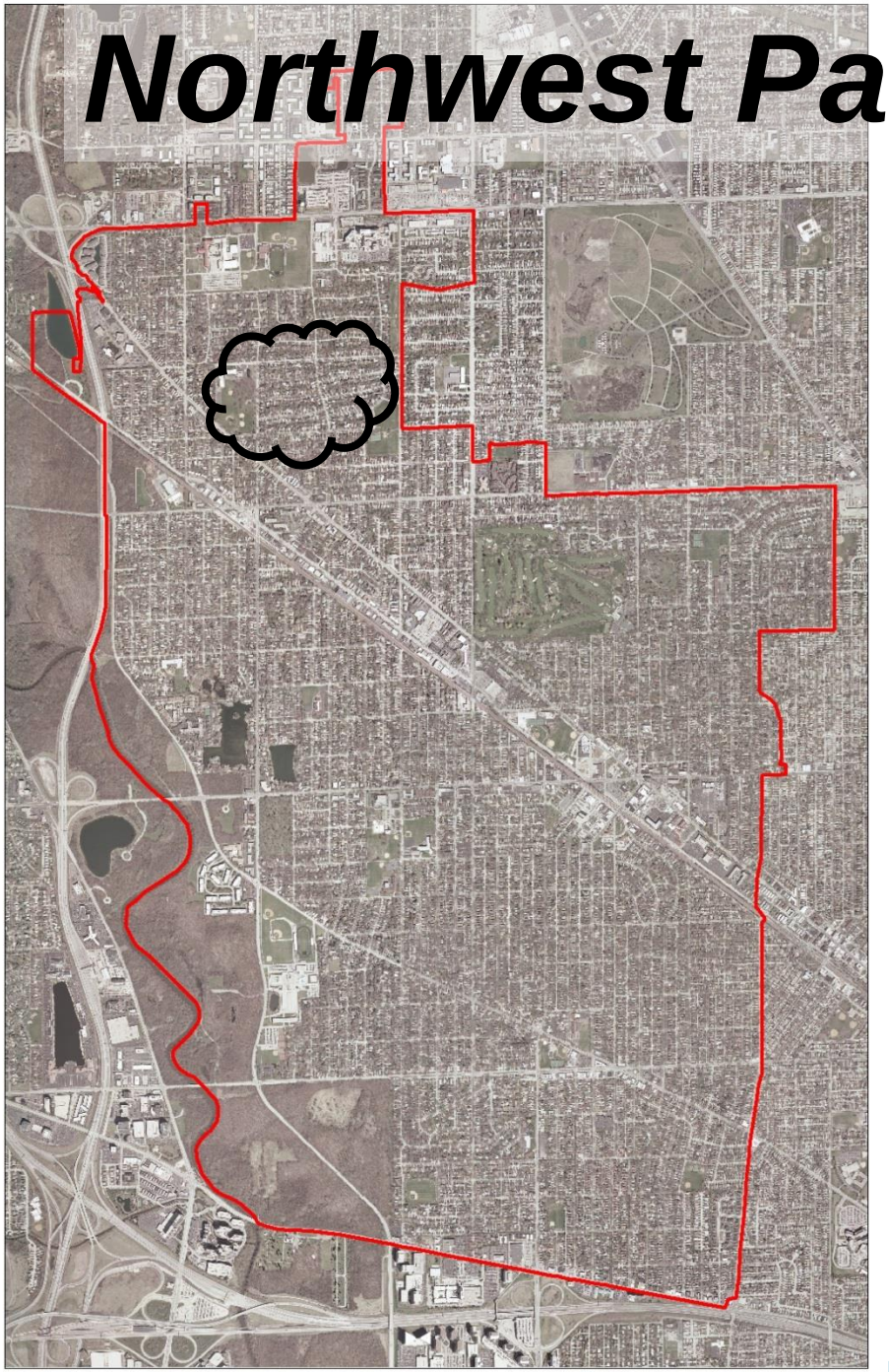
100-yr Protection for all homes

- ***Estimated Cost = $3.3M***
- ***Including cost of property acquisition and associated costs***
- ***100-yr protection for 23 homes***
  - ***Ponding limited to yard areas and below low-entry elevation***

- ***2013 Estimated Cost***

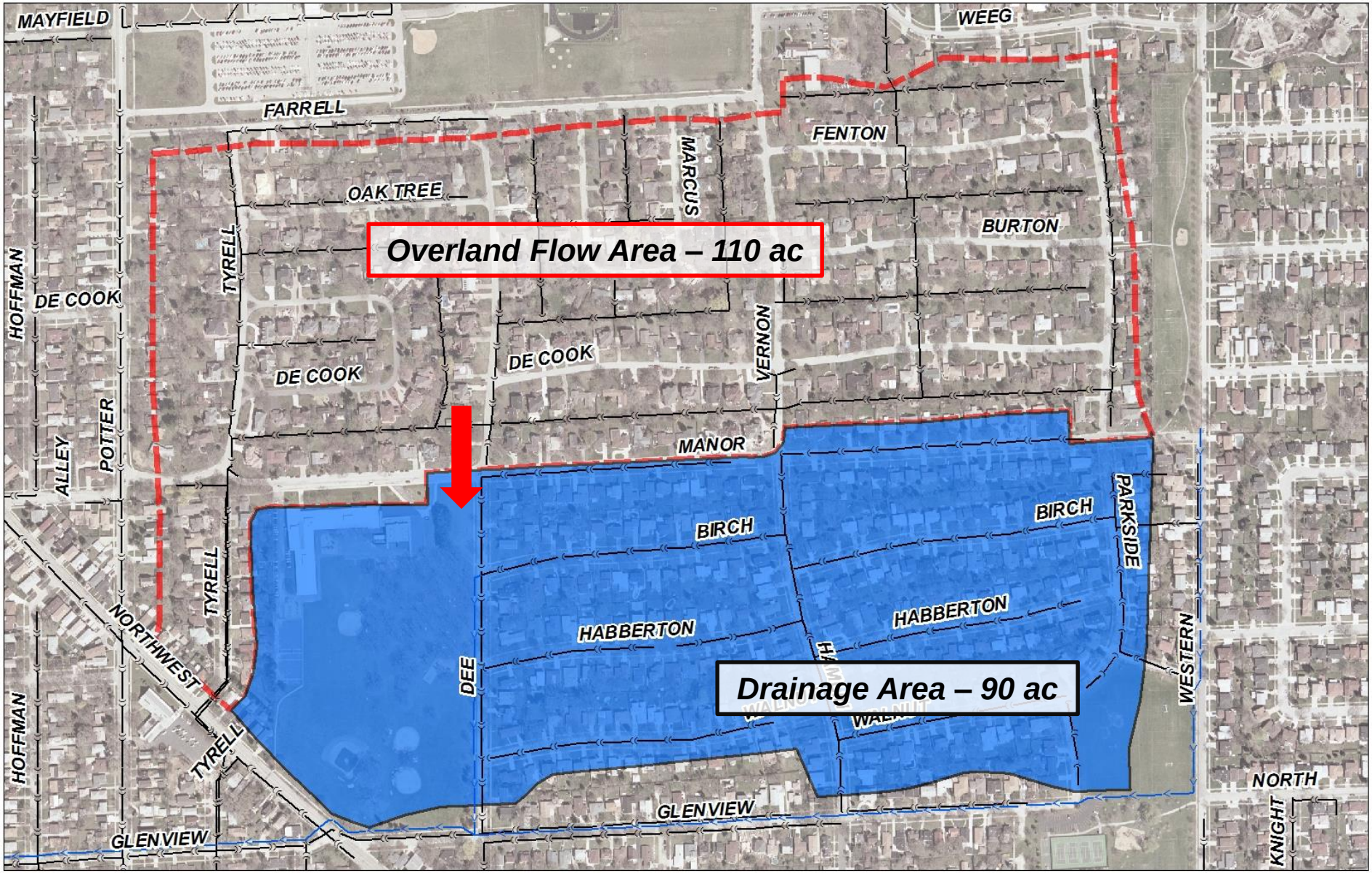
Northwest Park Area

Northwest Park Study Area

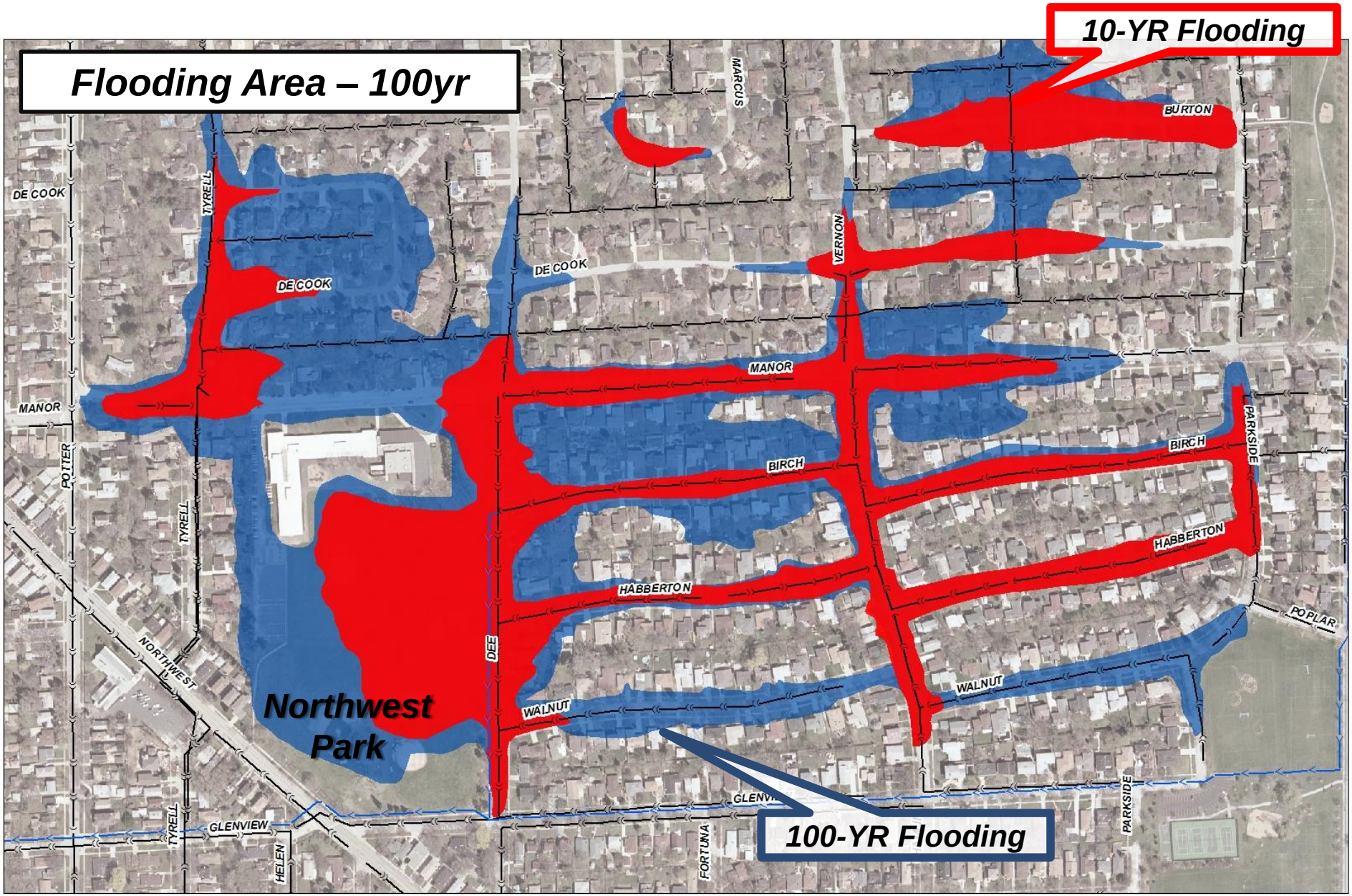


Existing Conditions

Existing Conditions

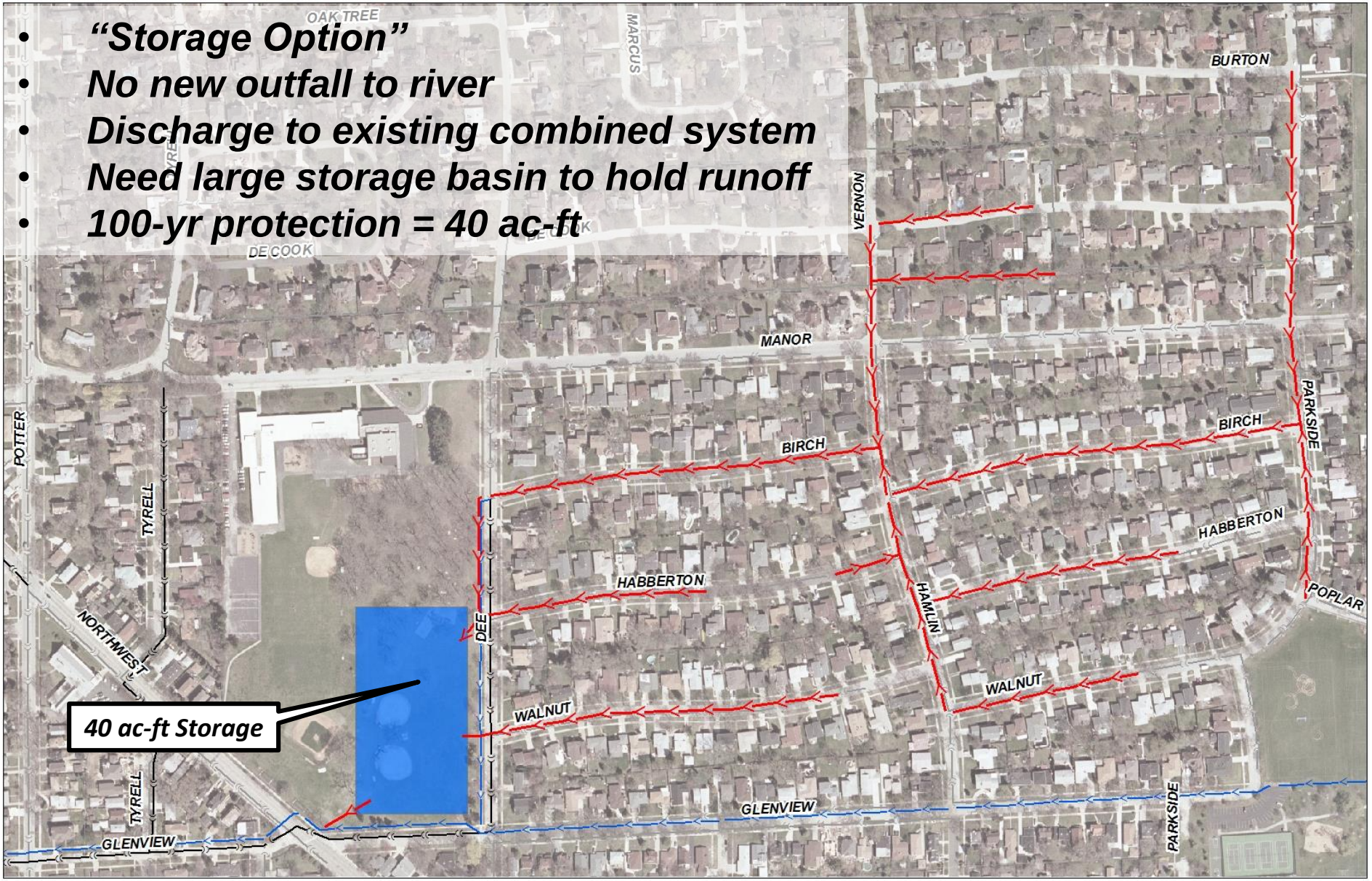


Existing Conditions



Feasibility Concept

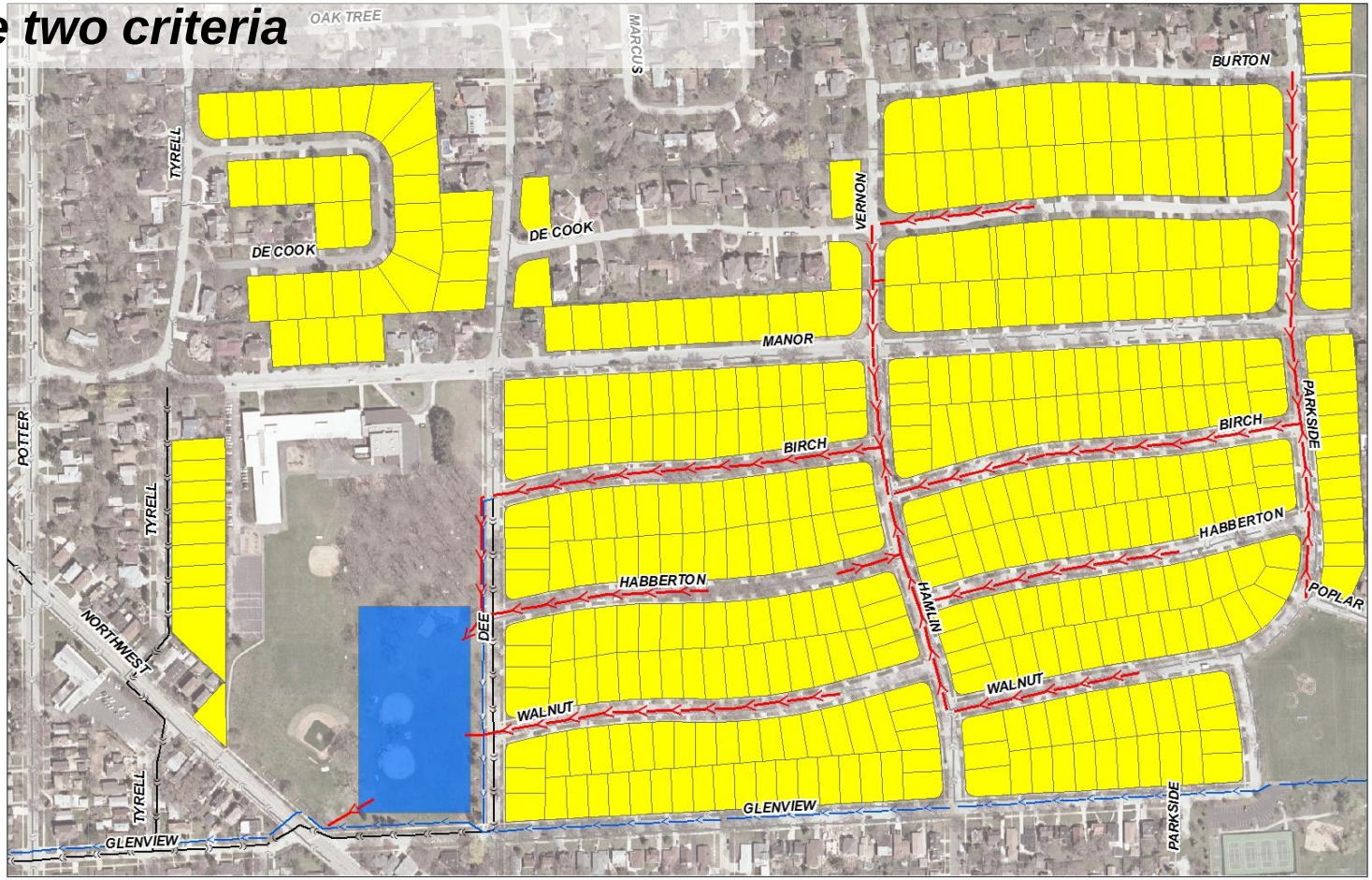
- *"Storage Option"*
- *No new outfall to river*
- *Discharge to existing combined system*
- *Need large storage basin to hold runoff*
- *100-yr protection = 40 ac-ft*



Feasibility Concept (100-YR)

Quantifying Benefits

- #1 - Reduction in 10-yr water level (>1')
- #2 - Elimination of ponding in 100-yr storm
- Approximately 418 total properties meet one of these two criteria



Feasibility Concept

Estimated Cost

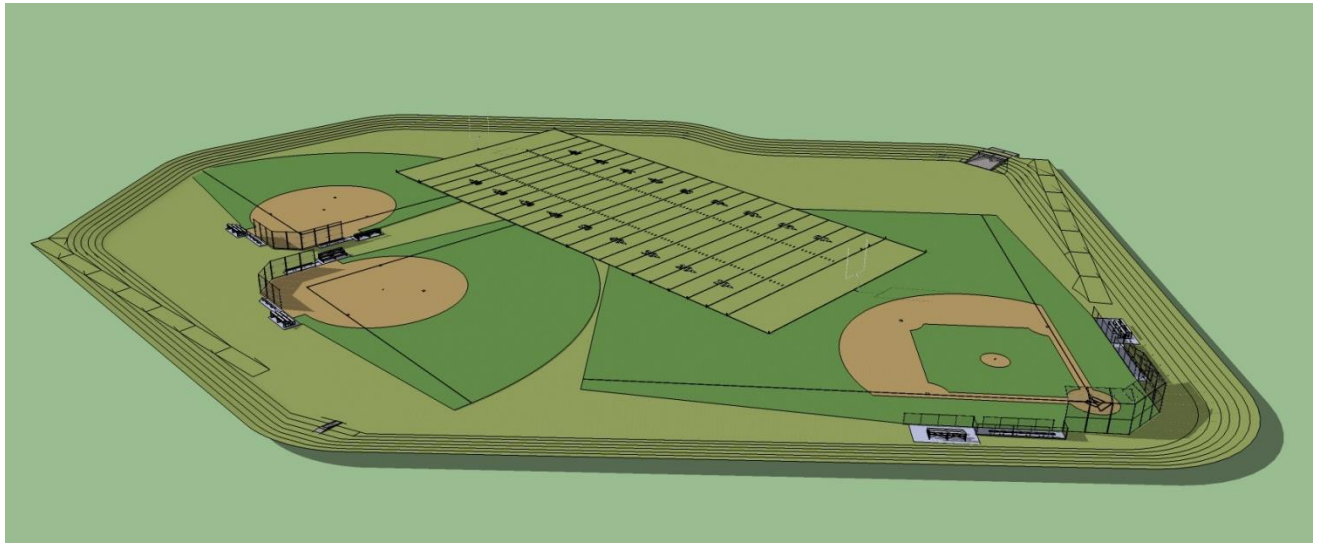
- ***100-yr Protection = $16.6M***
  (assuming surface storage)

- ***2013 Estimated Cost***

Park District Coordination

- ***Met several times to explain project and receive feedback***
- ***Developed renderings of project and how park facilities can be incorporated***
- ***Coordination is ongoing***

Park District Coordination

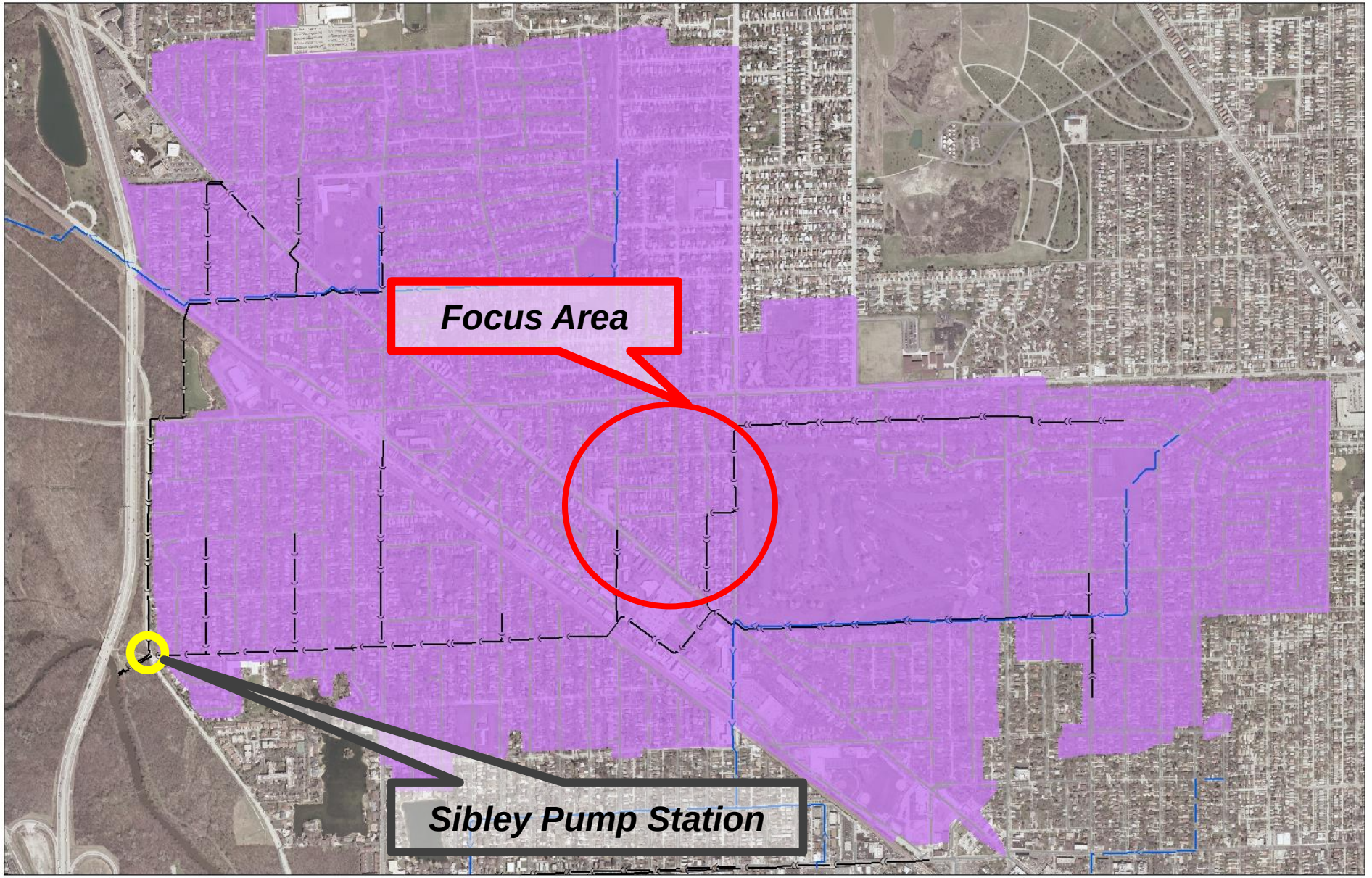



Park Ridge Country Club Area

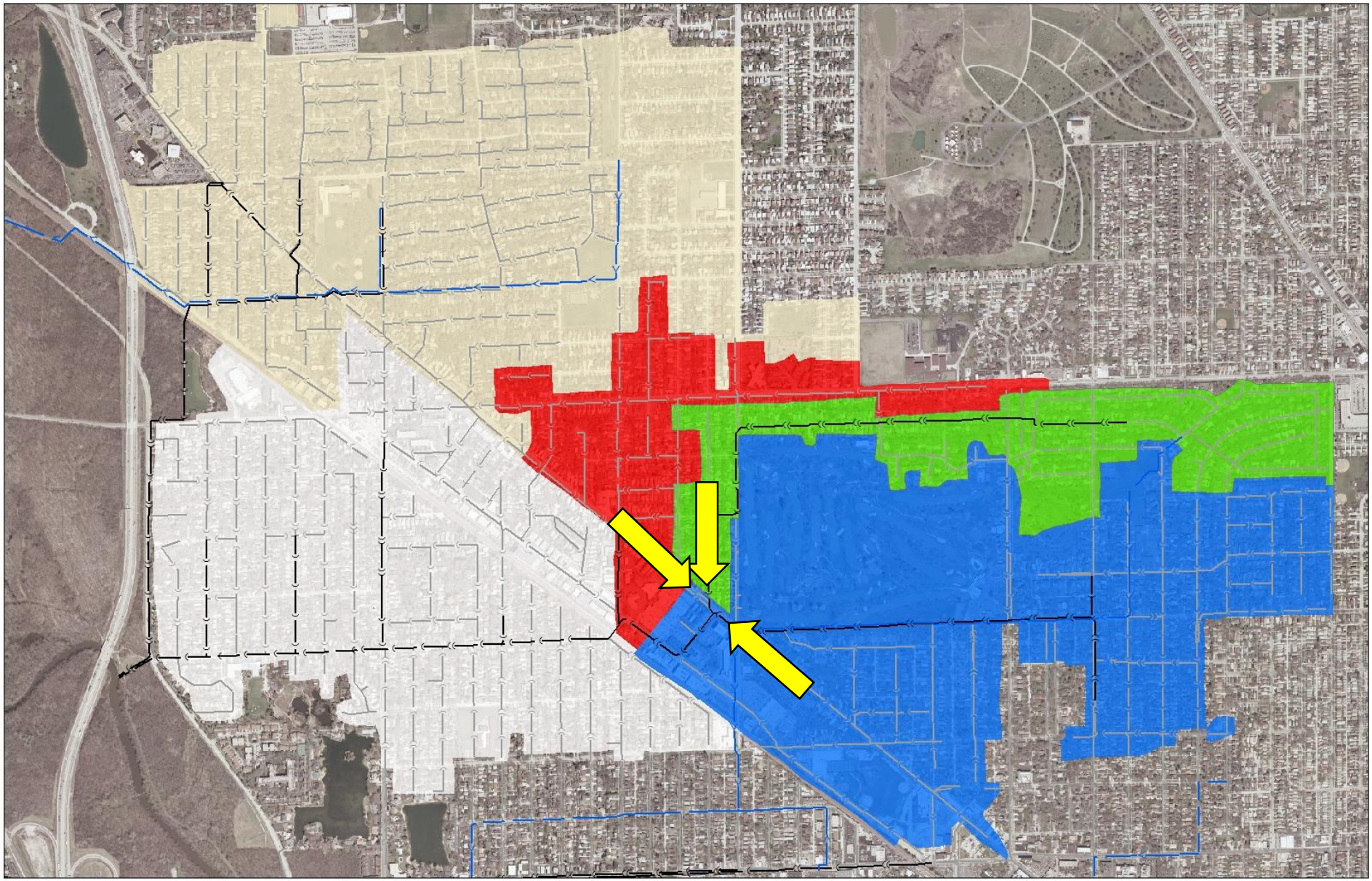
Focus Area


MARGUERITE
HAMLIN
OAKTON
KNIGHT
RENE
BEAU
RENE
CLIFTON
ALLEY
FAIRVIEW
GRACE
AUSTIN
EDGEMONT
SHIBLEY
SEELEY
WILKINSON
TOMAWADEE
LAVERNE
DELPHIA
LINCOLN
GREENWOOD
CYNTHIA
LAHON
SEELEY
HAMLIN
WILKINSON
SEMINARY
NORTHWEST
MARVIN
BUSSE
WESTERN
HAMLIN
HOME
SEMINARY
SIBLEY
ALDINE
DELPHIA
HASTINGS

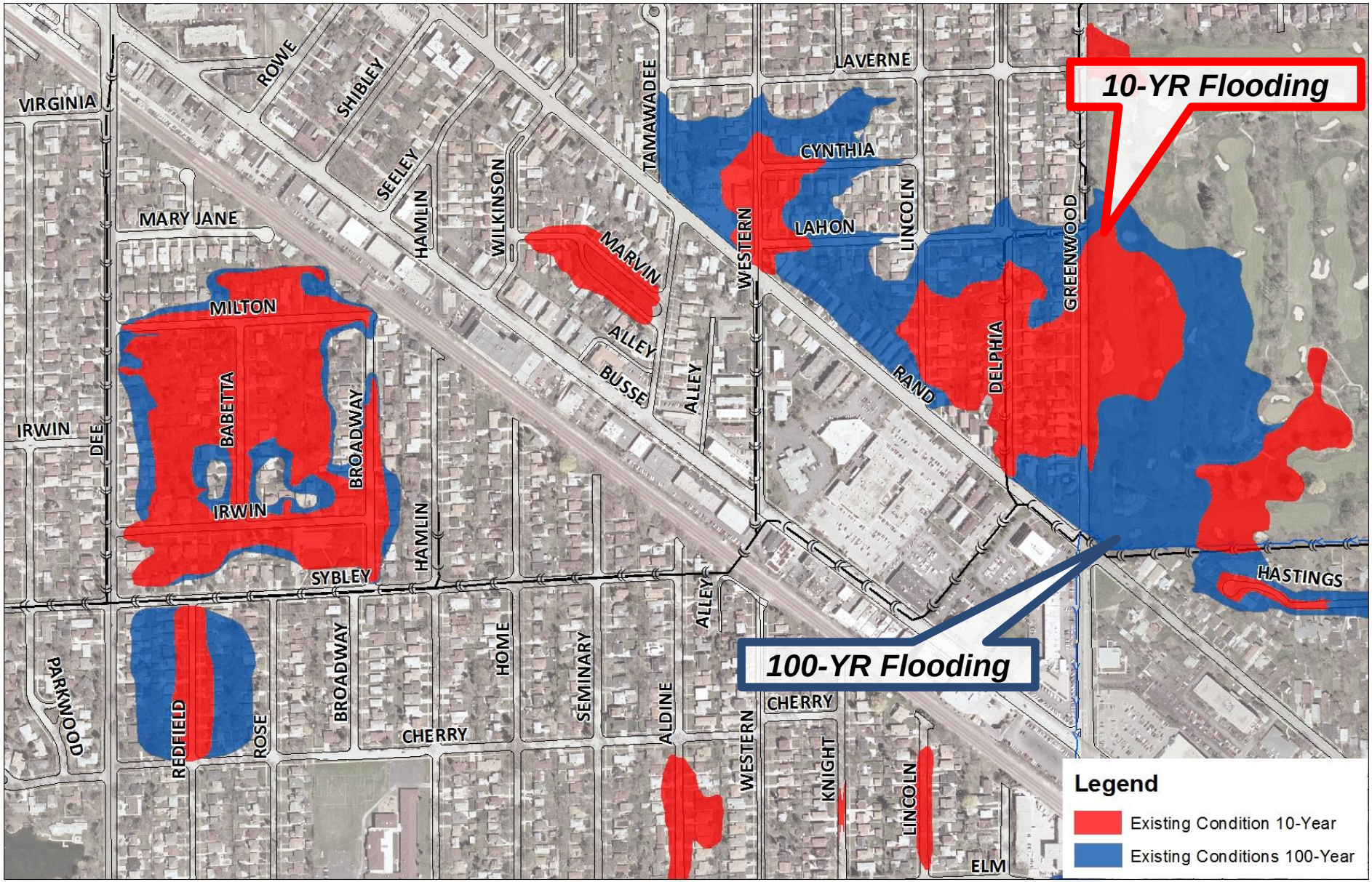
Watershed Area



Watershed Area

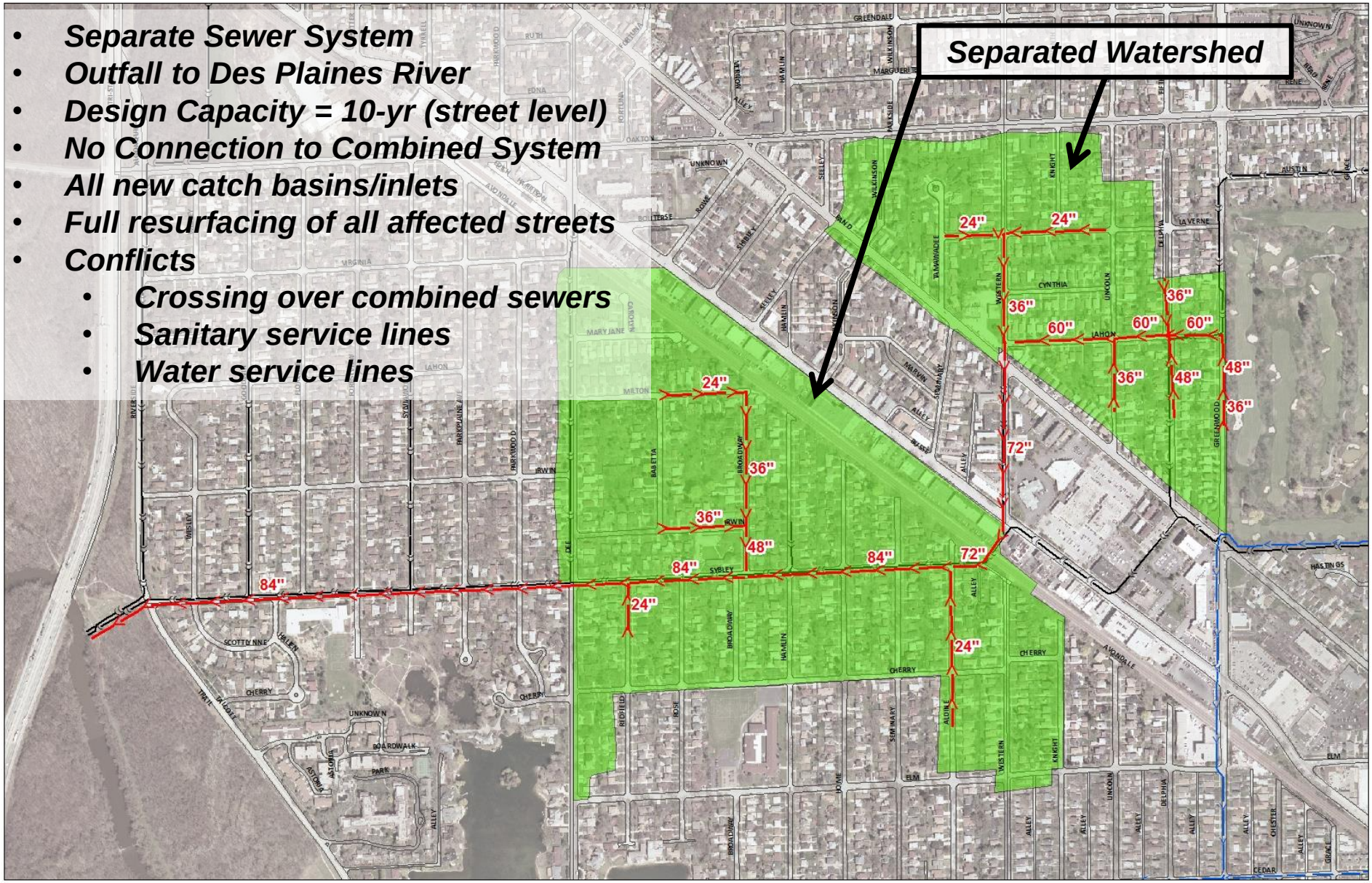


Existing Conditions



Separation Concept

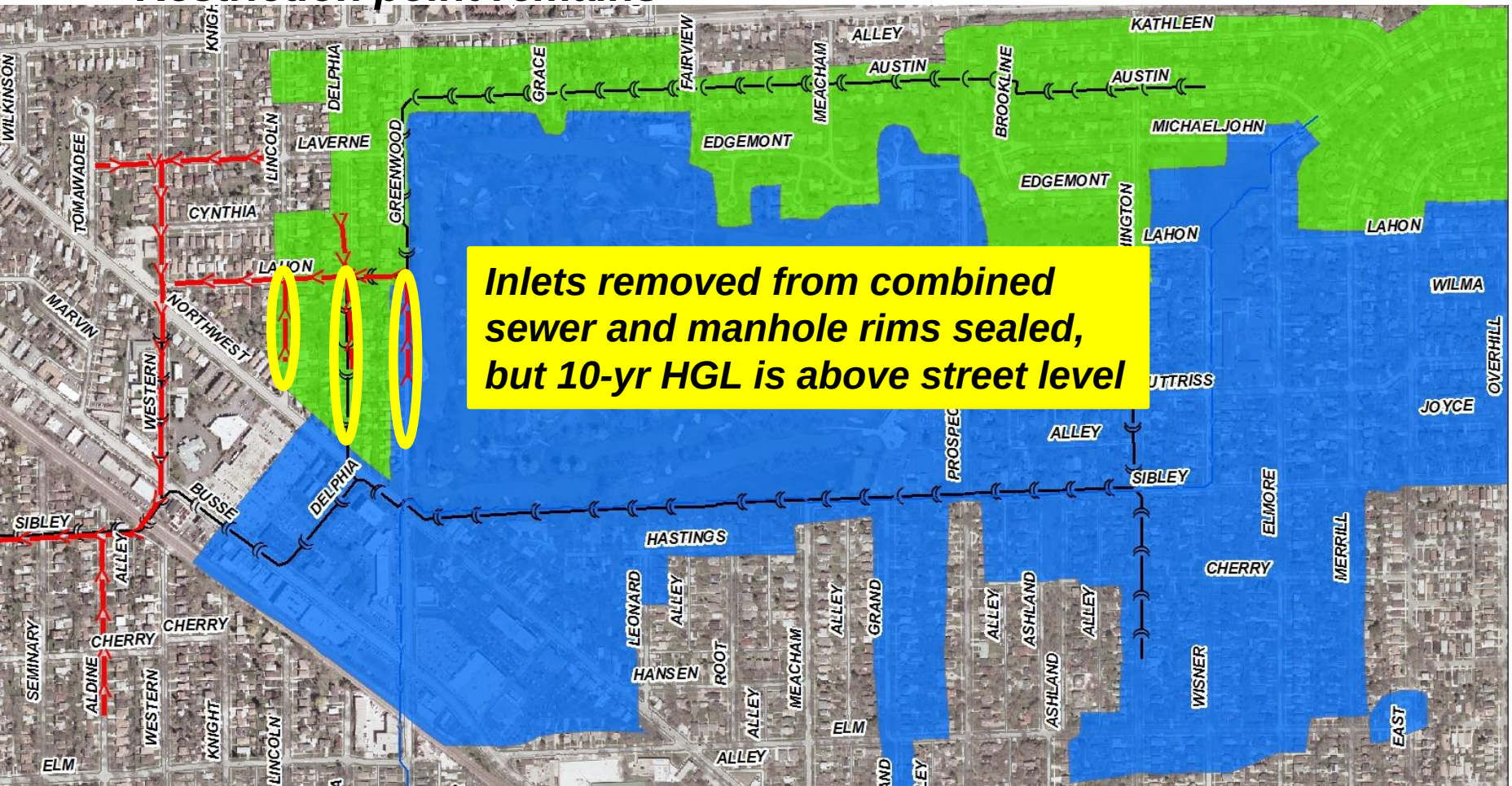
- *Separate Sewer System*
- *Outfall to Des Plaines River*
- *Design Capacity = 10-yr (street level)*
- *No Connection to Combined System*
- *All new catch basins/inlets*
- *Full resurfacing of all affected streets*
- *Conflicts*
  - *Crossing over combined sewers*
  - *Sanitary service lines*
  - *Water service lines*



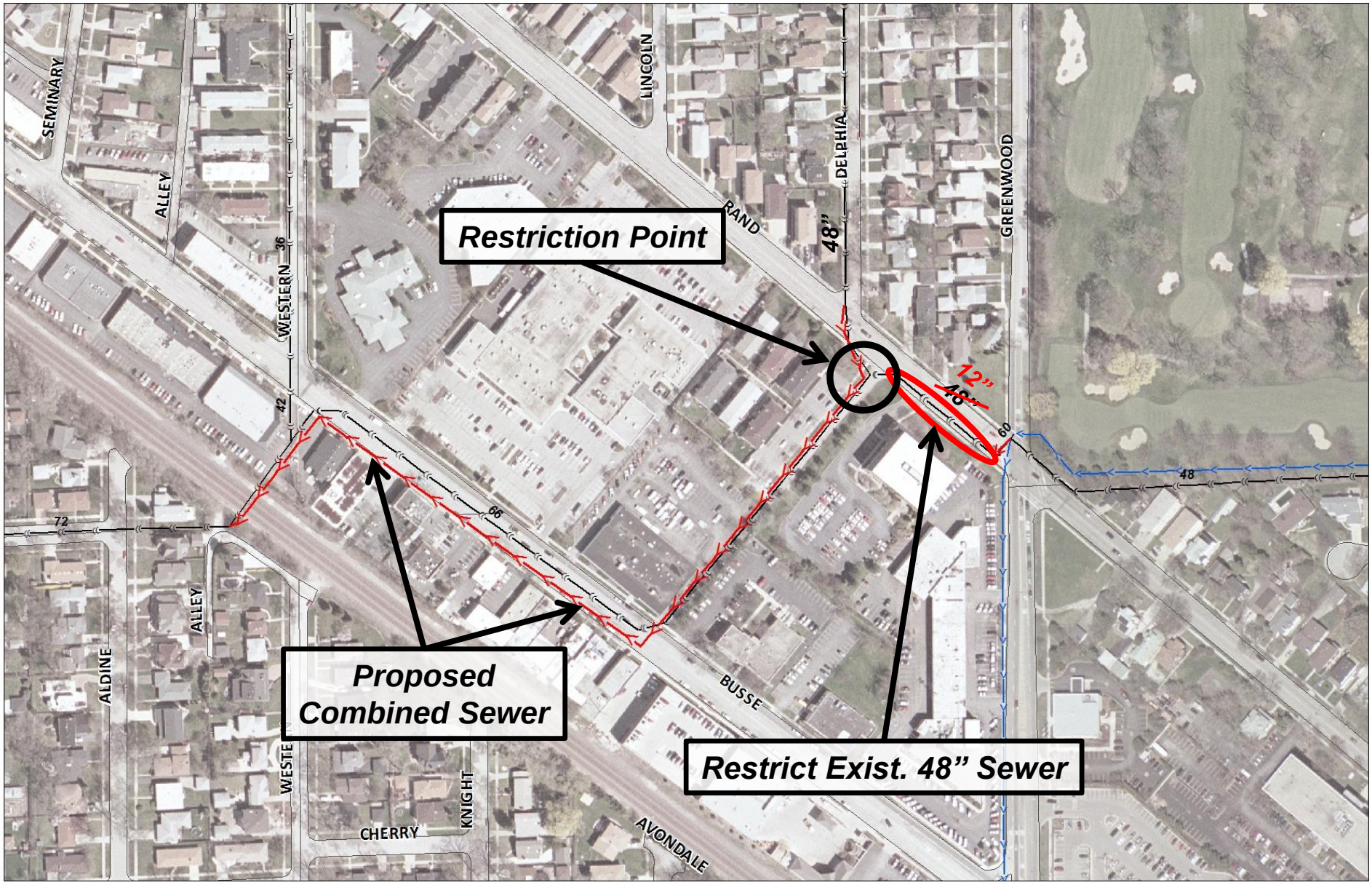
Limitations

Separation has little effect on combined sewer system

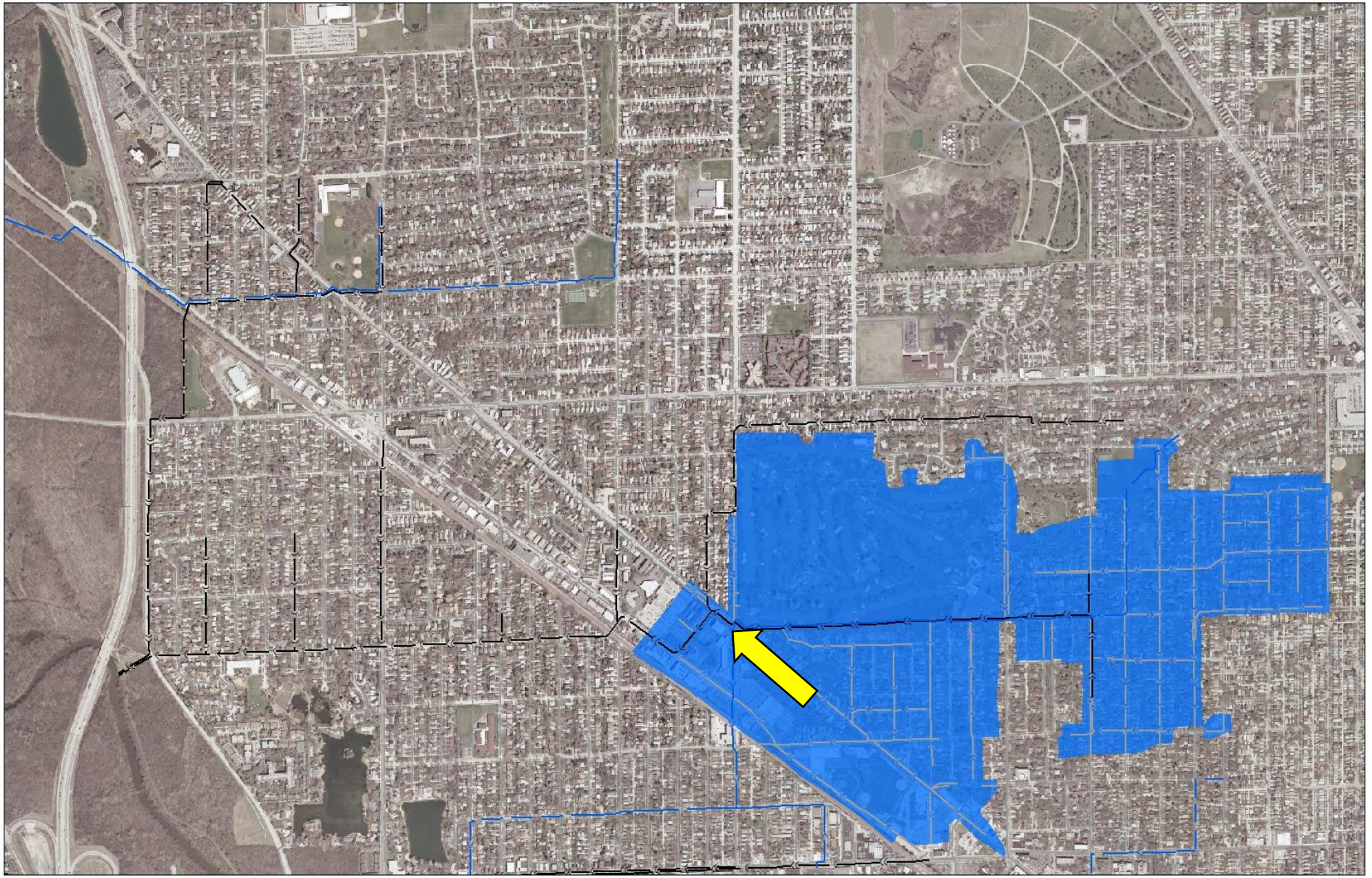
- ***Upstream areas continue to drain through area***
- ***Restriction point remains***



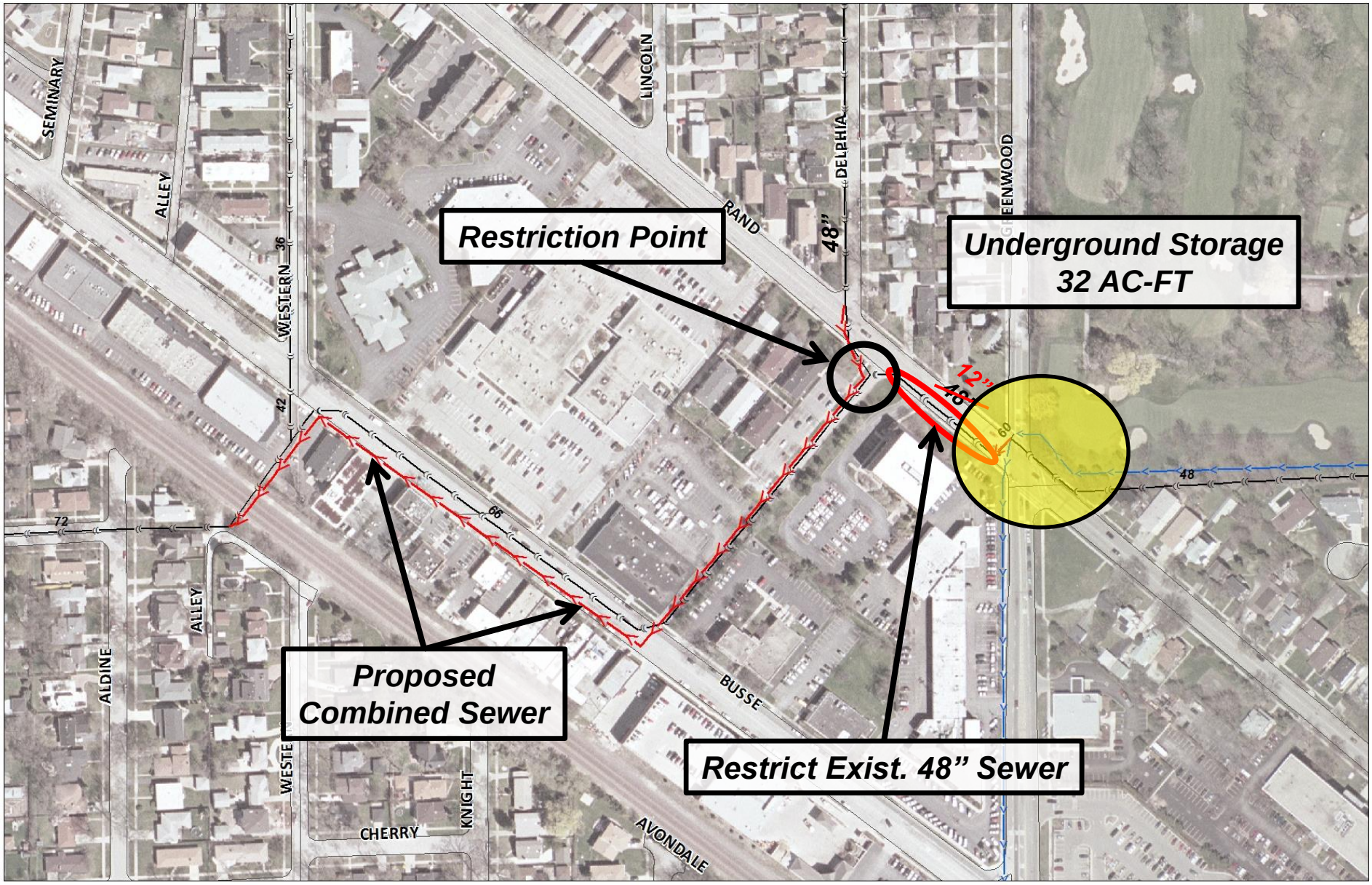
Storage Concept



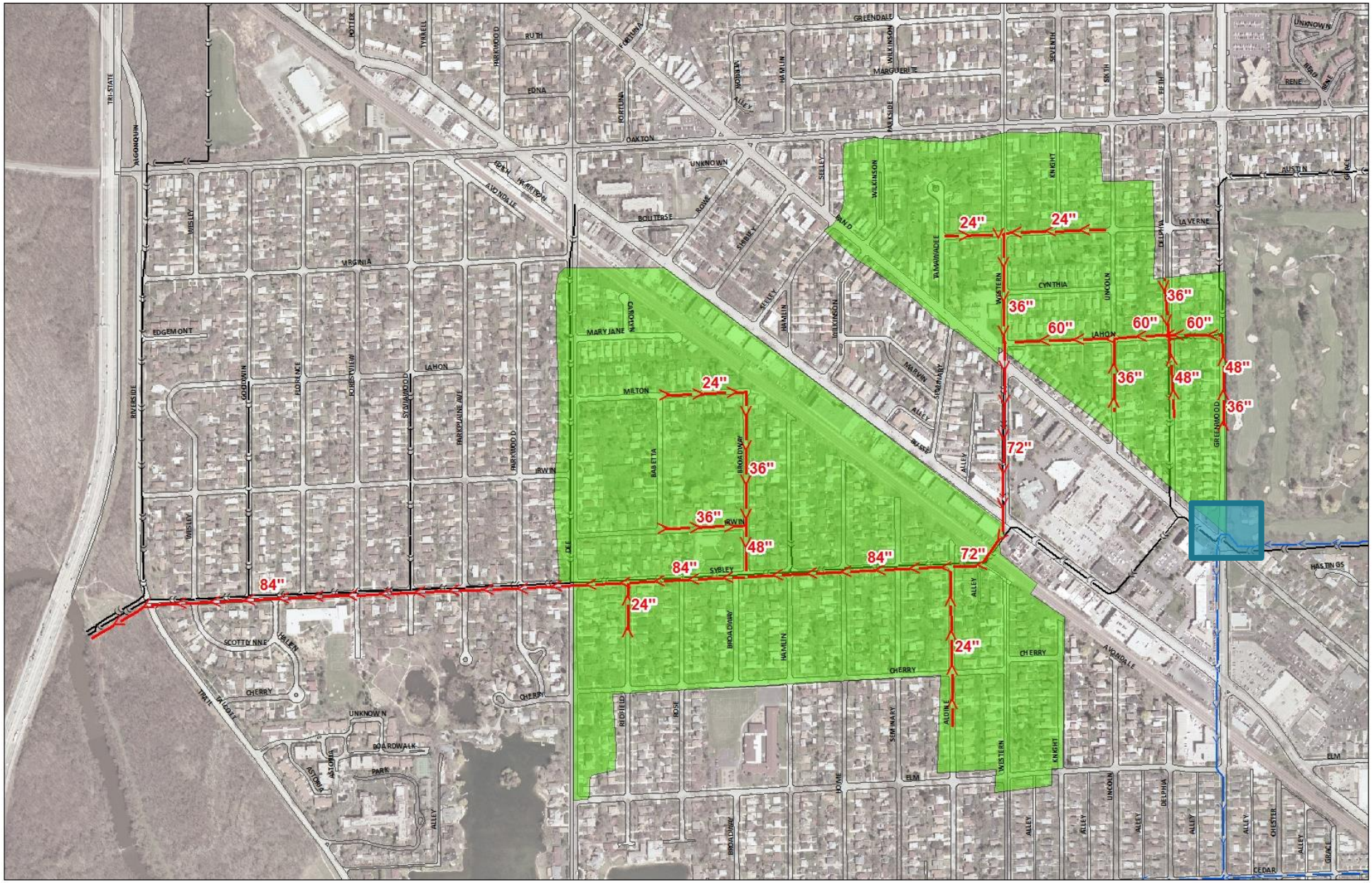
Storage Concept



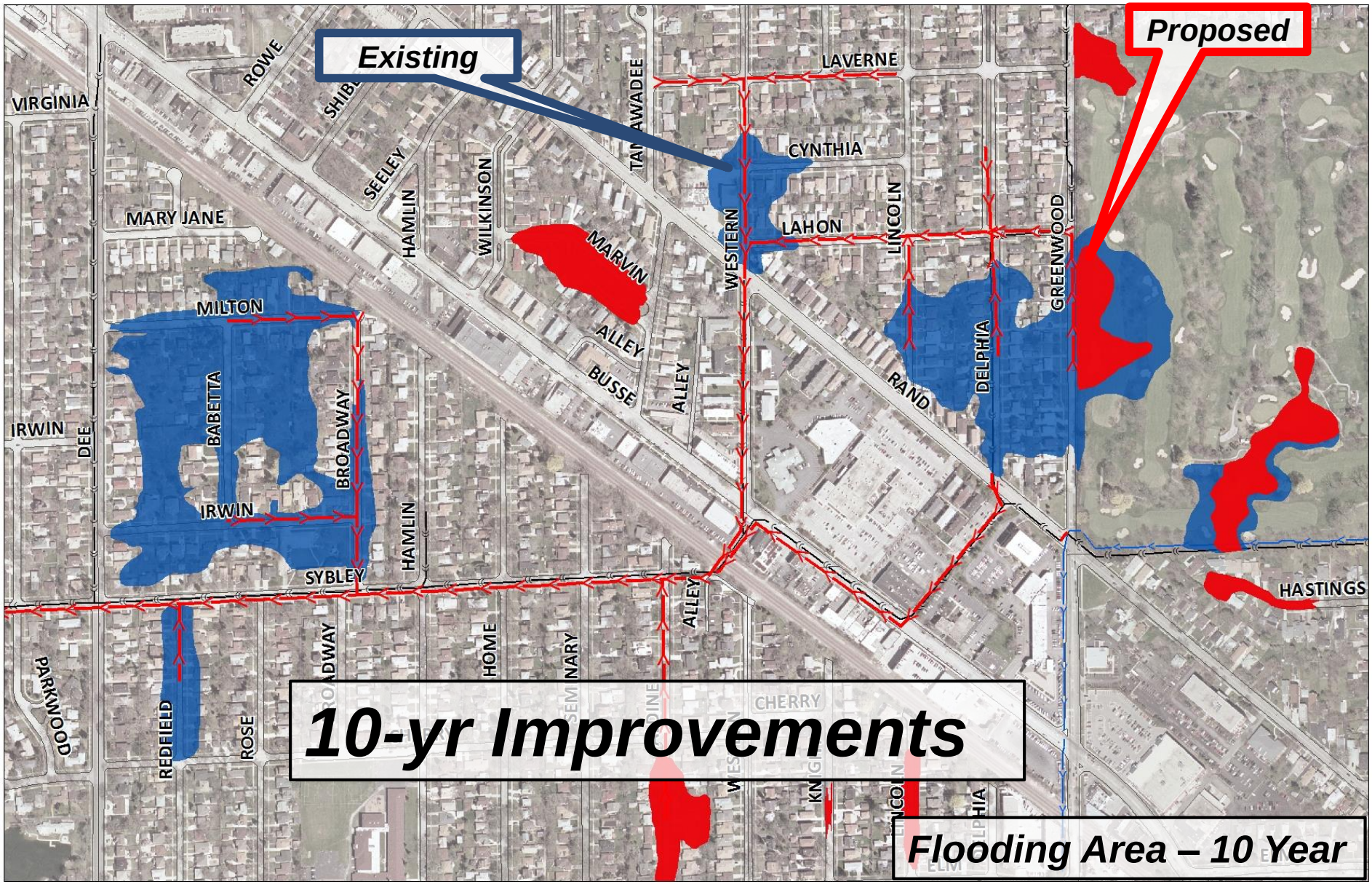
Storage Concept



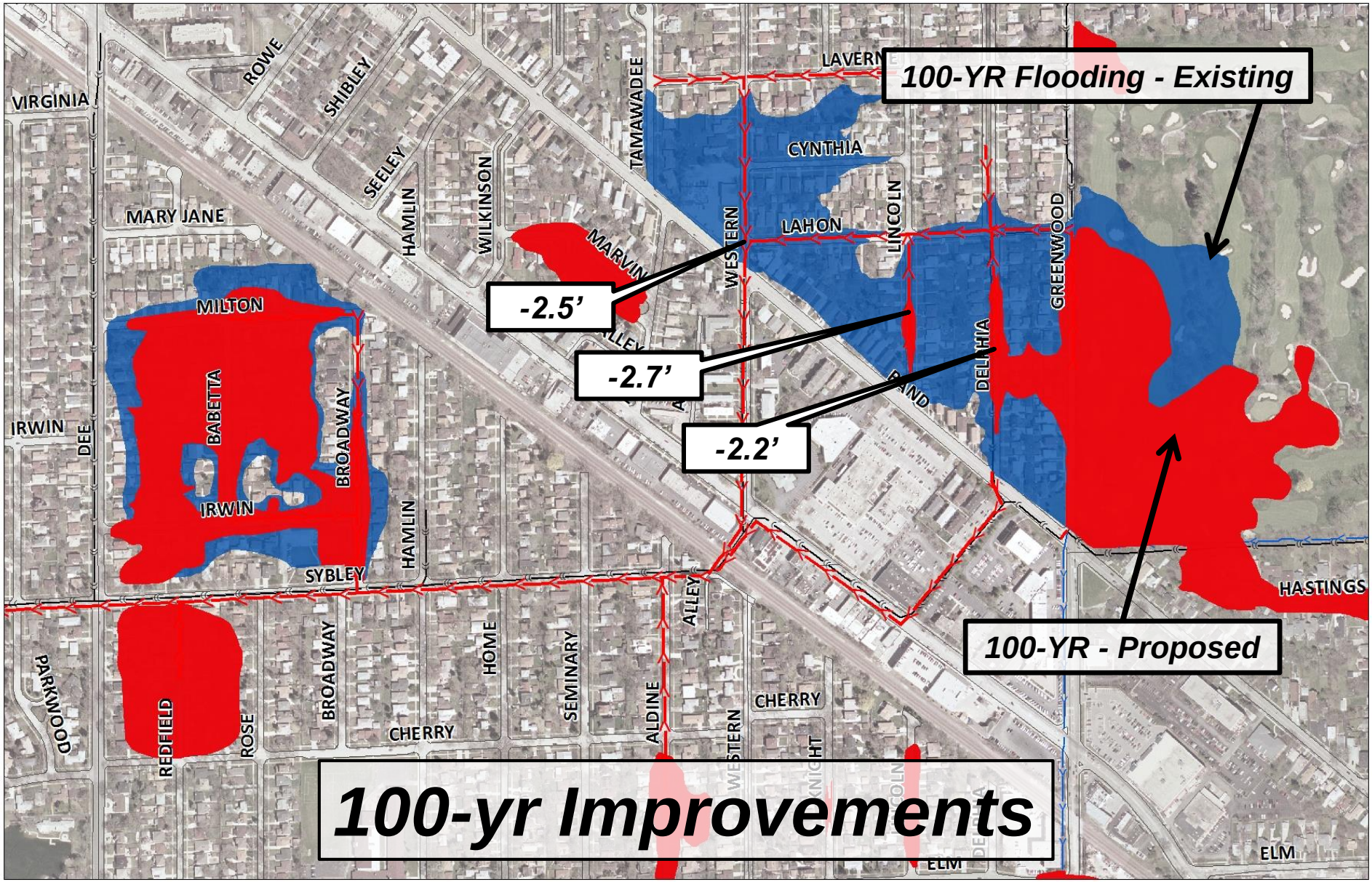
Storage + Separation Concept



Storage + Separation



Storage + Separation

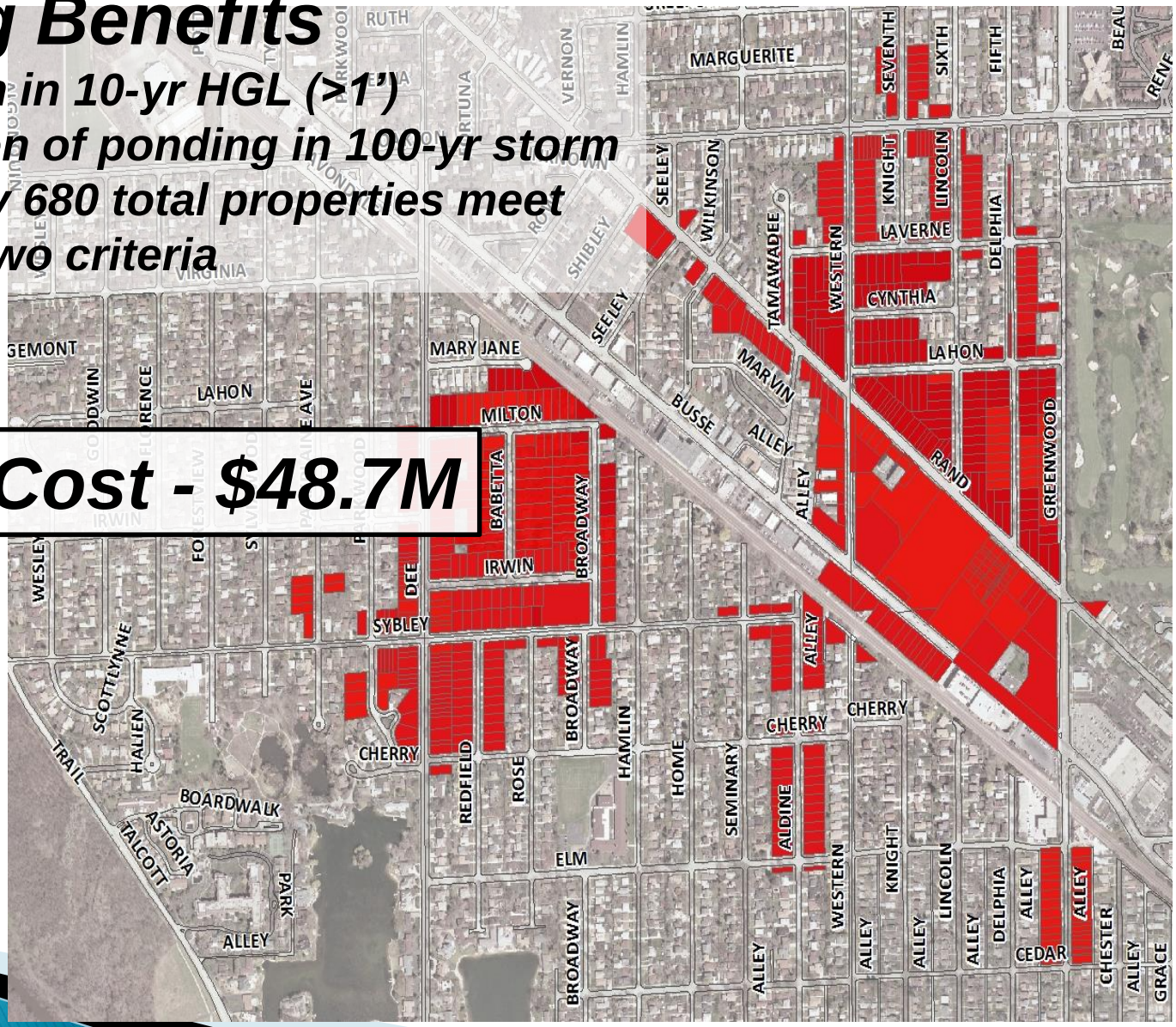


Separation + Storage Concept

Quantifying Benefits

- *#1 - Reduction in 10-yr HGL (>1')*
- *#2 - Elimination of ponding in 100-yr storm*
- *Approximately 680 total properties meet one of these two criteria*

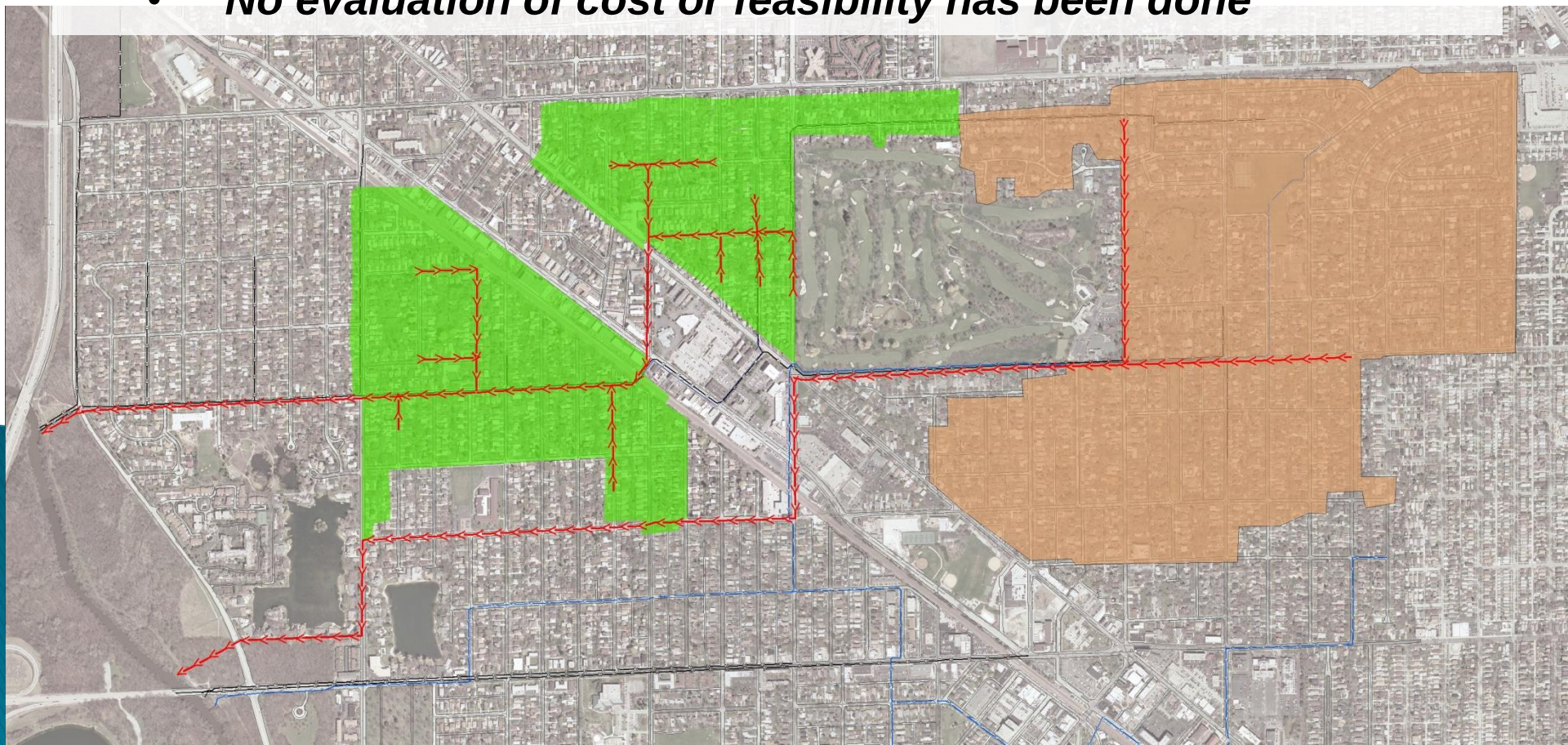
Estimated Cost - $48.7M



Upstream Areas

To get to 100-yr protection, need to reduce or remove upstream runoff

- ***Anything that reduces runoff in this area helps in the flood areas***
- ***Separation would be very expensive and long term project***
  - ***No evaluation of cost or feasibility has been done***



PRCC Area - Summary

- ***Separation and Storage Option***
  - ***10-yr protection including combined sewer system***
    - ***No street flooding for 10-year event***
    - ***2'+ reduction in 100-yr street flooding but not complete elimination***
  - ***Would need location for large storage vault***
  - ***680 property benefits***
  - ***Cost = $48.7M***

  - ***2013 Estimated Cost***

Overall Summary

Location	Scenario	# of Homes Benefitted	Cost
Mayfield	100-yr protection	23	$3.3 Million
Northwest Park	100-yr Storage in Park	418	$16.6 Million
Country Club Area	10-yr, Sewer Separation + Storage	680	$48.7 Million

Questions?