

MIDLOTHIAN FLOODING ANALYSIS

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What We've Learned in Midlothian:

1. Flooding is widespread across the Village
2. It has various sources
 - ▶ Creek Overbank Flooding
 - ▶ Storm Sewer Related
 - ▶ Sanitary Sewer Related
3. Properties that do flood are often adjacent to those that don't
4. Property owners who don't flood are still concerned about the risk to their property
5. Midlothian impacts and is impacted by communities within the watershed
6. Flooding is historical, and is a symptom of the Village's topography and elevation
7. Ordinances in place since 1972 have sought to offer some level of protection



Outline

- Summary of Flood Problems
 - ▶ Known Problem Areas
 - ▶ CNT Survey Results
- Midlothian Watersheds
- History
 - ▶ Topography
 - ▶ Aerial Photographs from 1939
 - ▶ USGS Quad Maps (1892 and 1901)
 - ▶ Recent Watershed Development
 - MWRD Sewer Permit Ordinance (1972)
 - Watershed Management Ordinance (2014)
- Analysis of Flooding Problems
 - ▶ Data Analysis
 - Topographic and Historical Data
 - FEMA Floodplain
 - Storm Sewer System
 - Sanitary Sewer System
 - Approximate age of structures



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Summary of Known Problem Areas

By Village:  Ditch overtopping issues

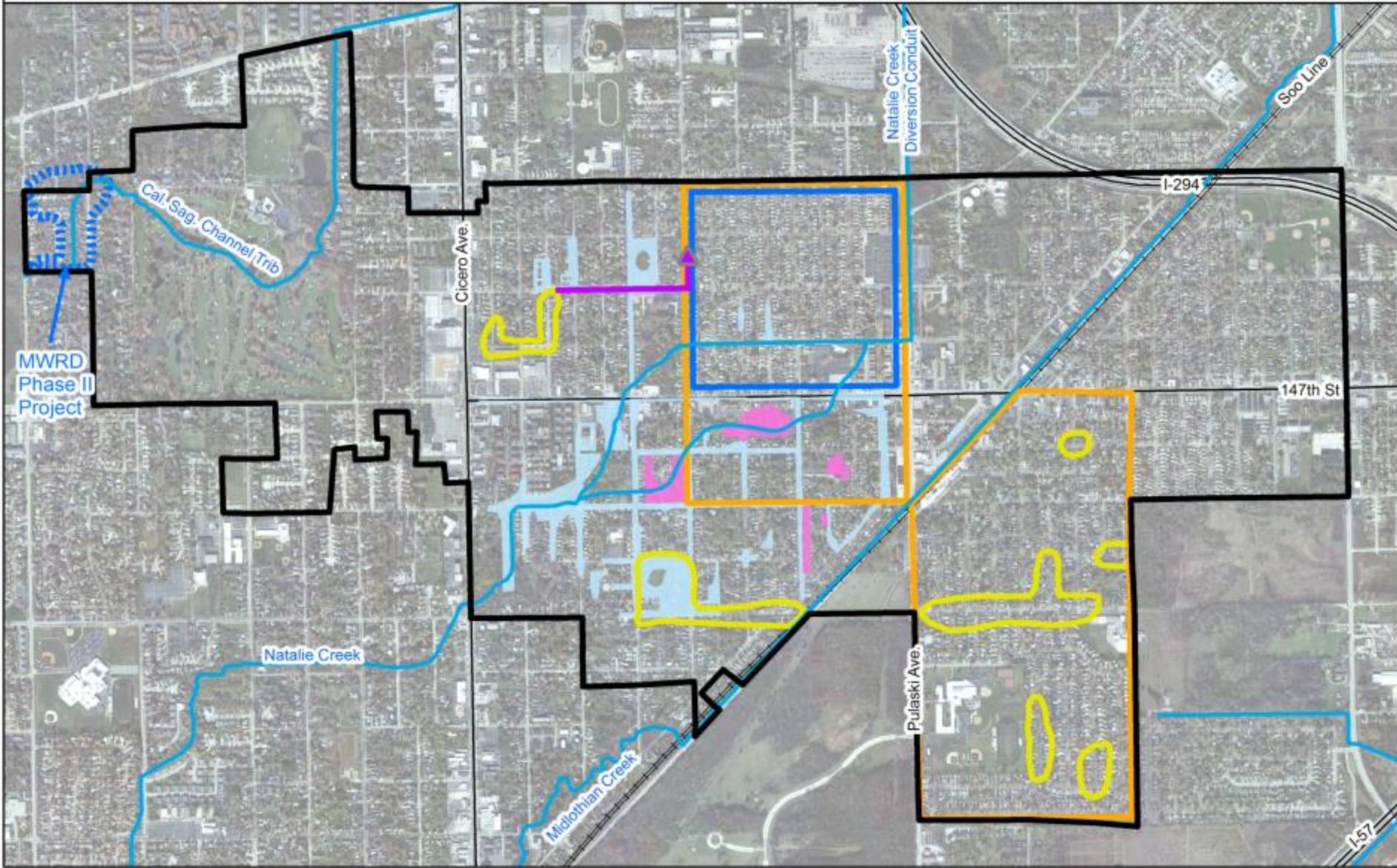
 Sanitary Sewer Backup

 Storm Sewer Backup

 High Water Table

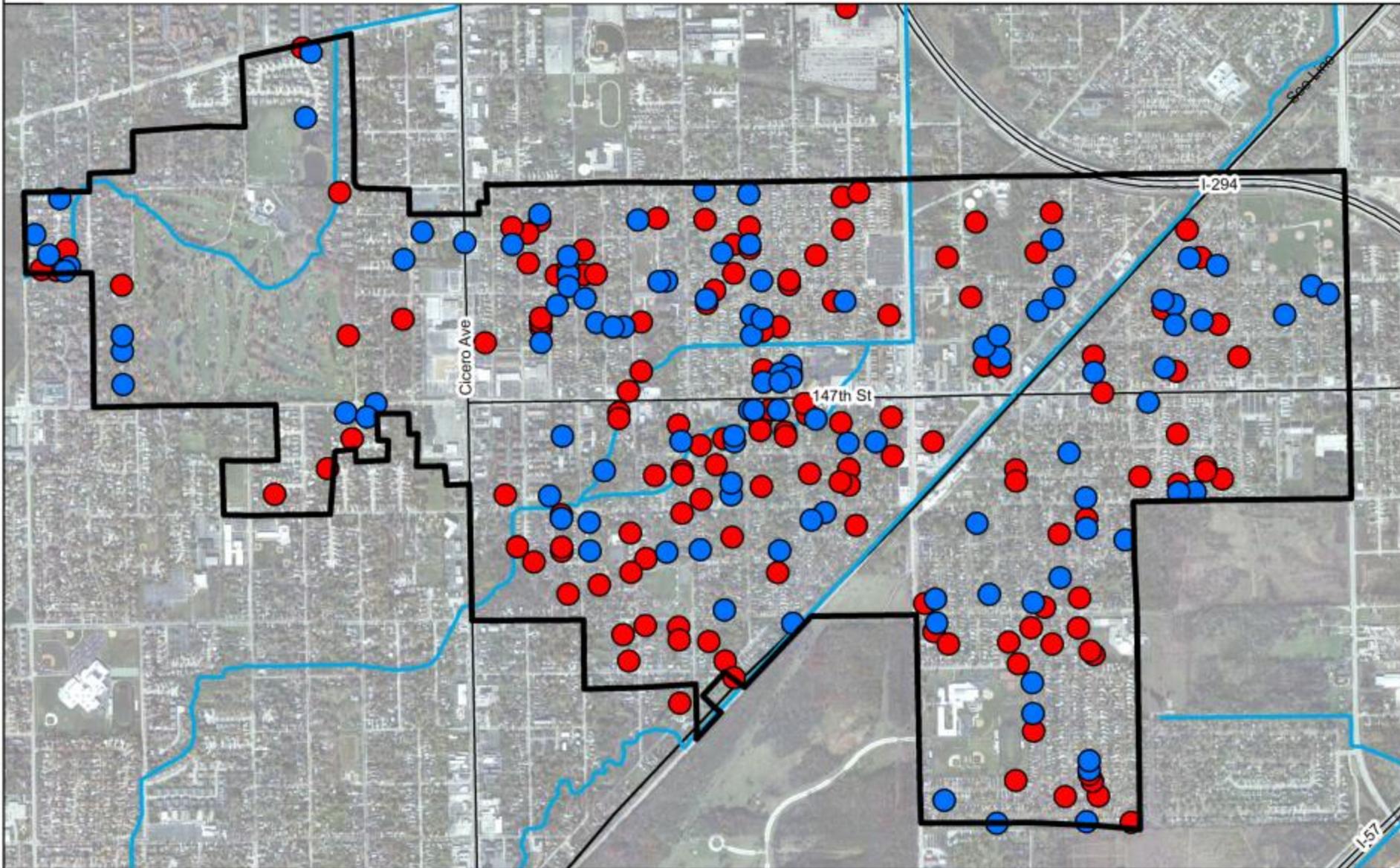
By Floodlothian:  Structure Flooding

 Street/ Yard Flooding



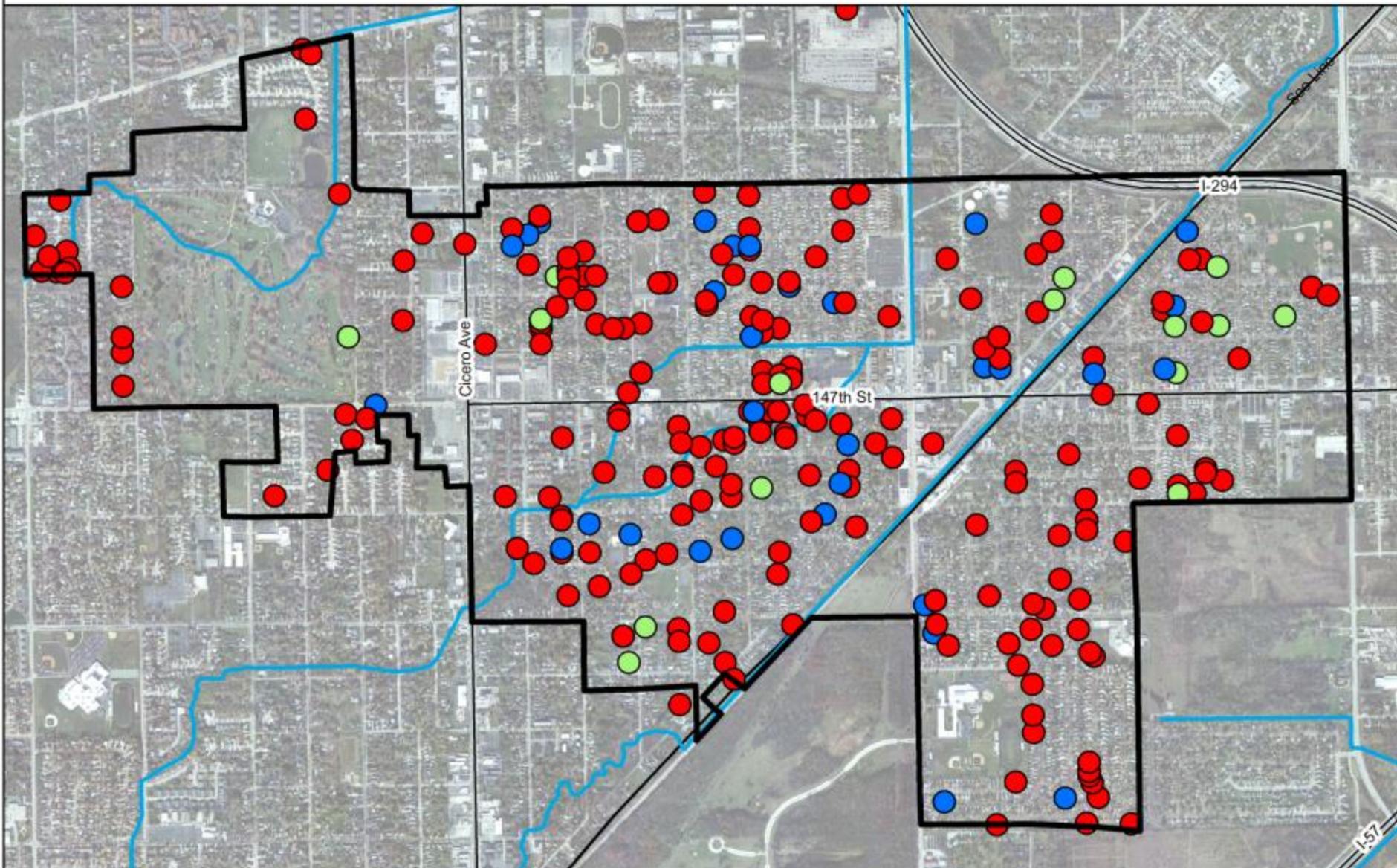
Do you experience flooding?

● Yes - 57% ● No - 43%



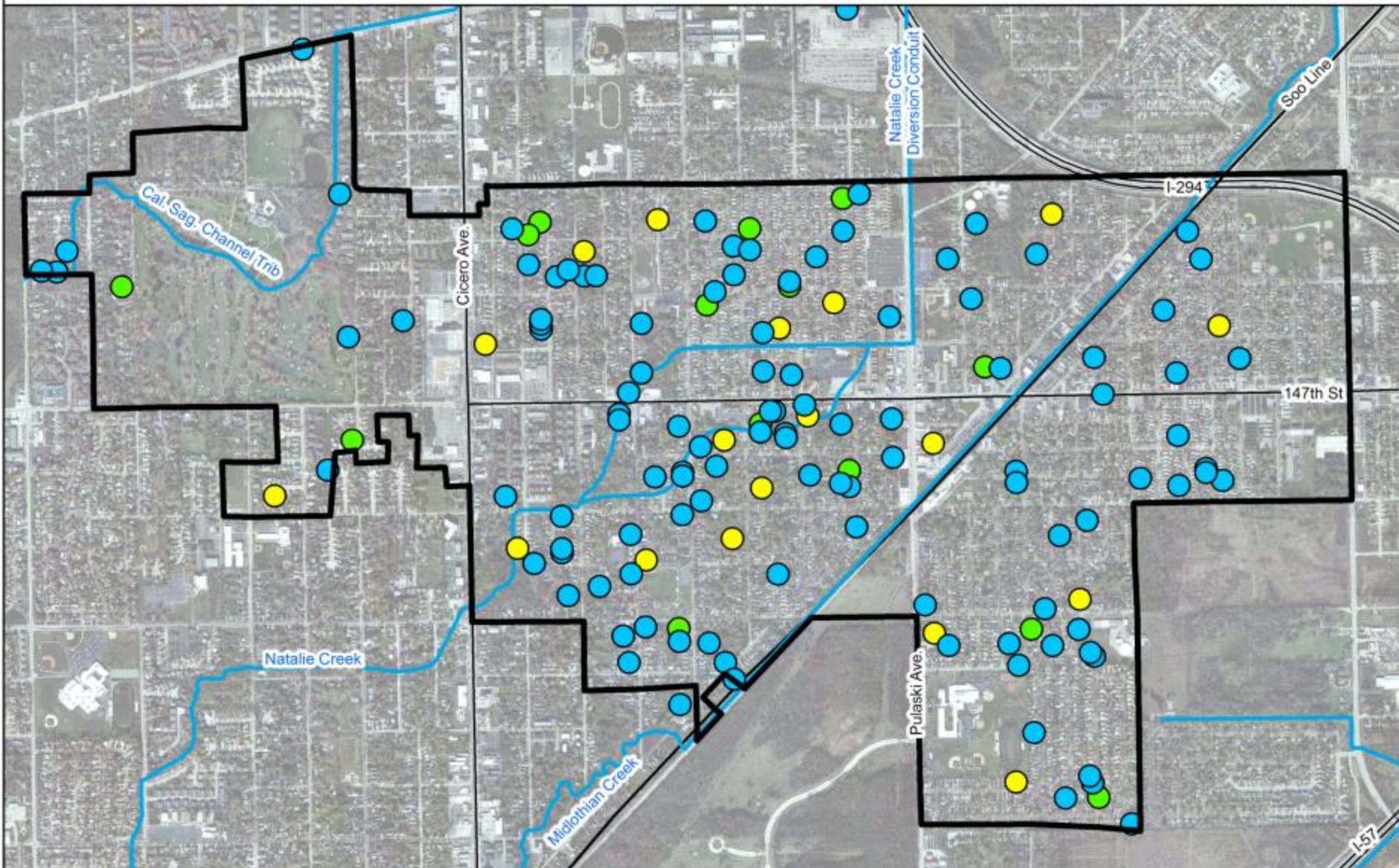
I am concerned about water-related problems on my property?

● Yes - 81% ● No - 12% ● I don't know - 6%



What type of water is experienced?

● Inside ● Street ● Yard

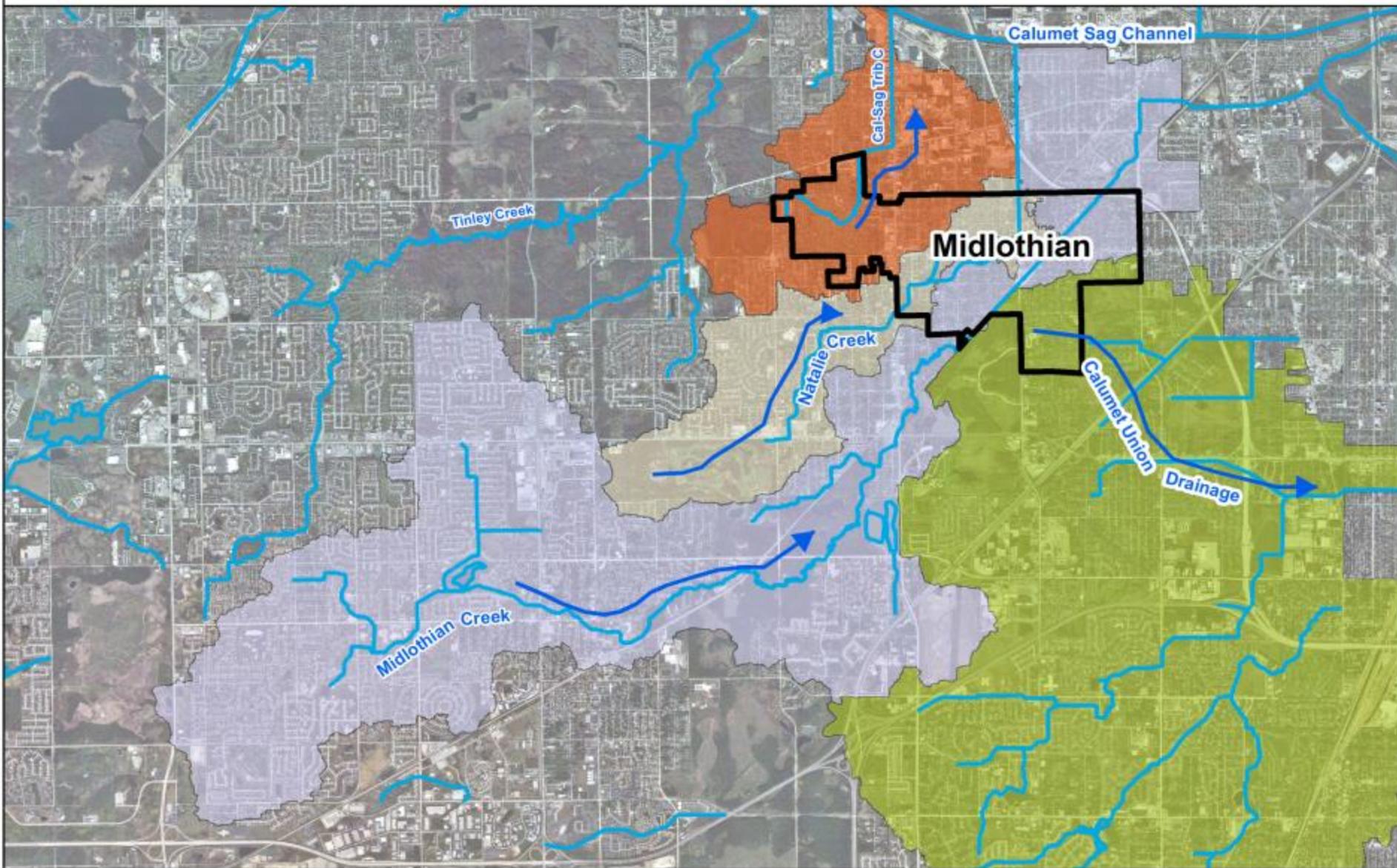


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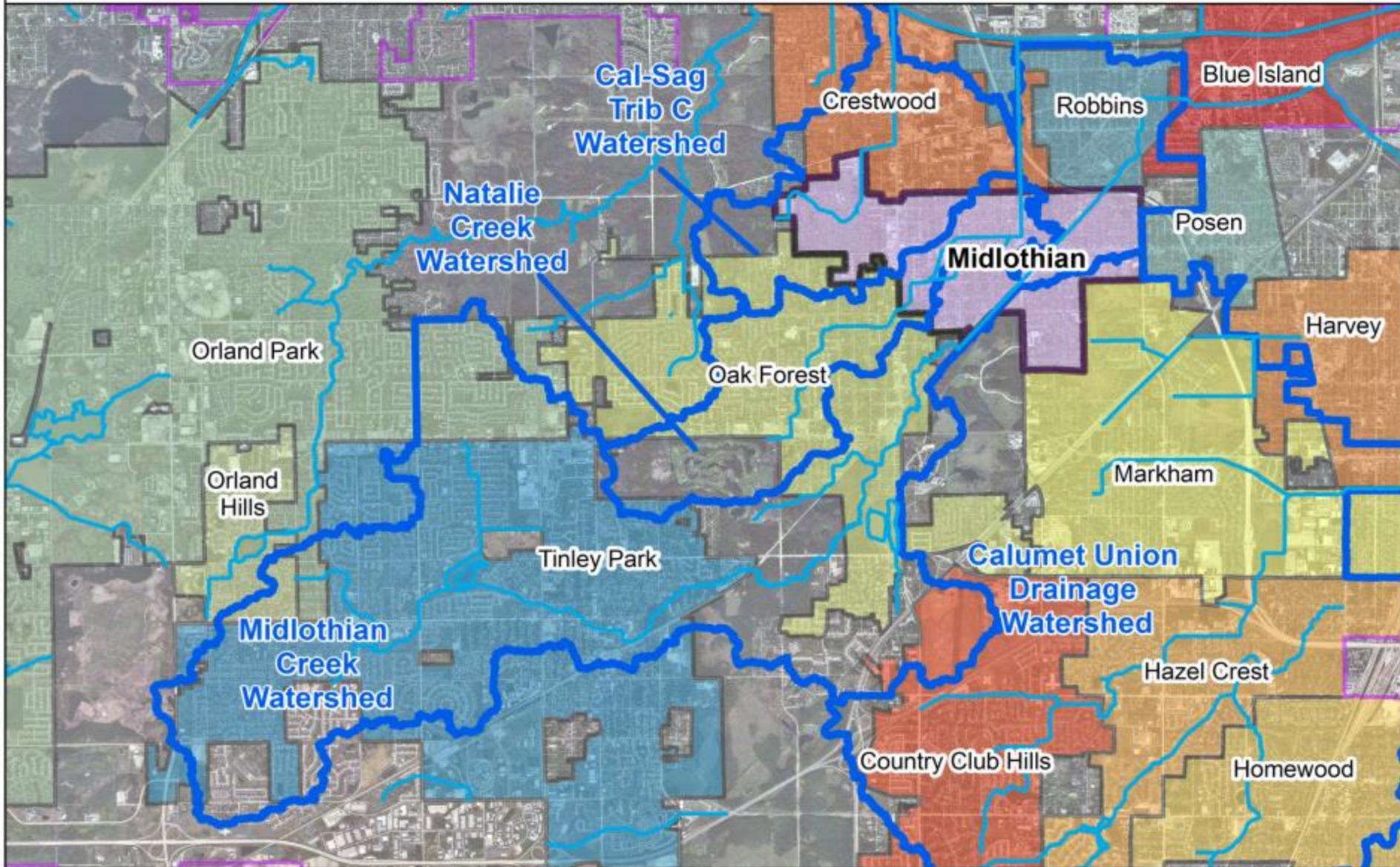
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Village of Midlothian Watersheds



Communities Impacting and Impacted by Midlothian Watersheds

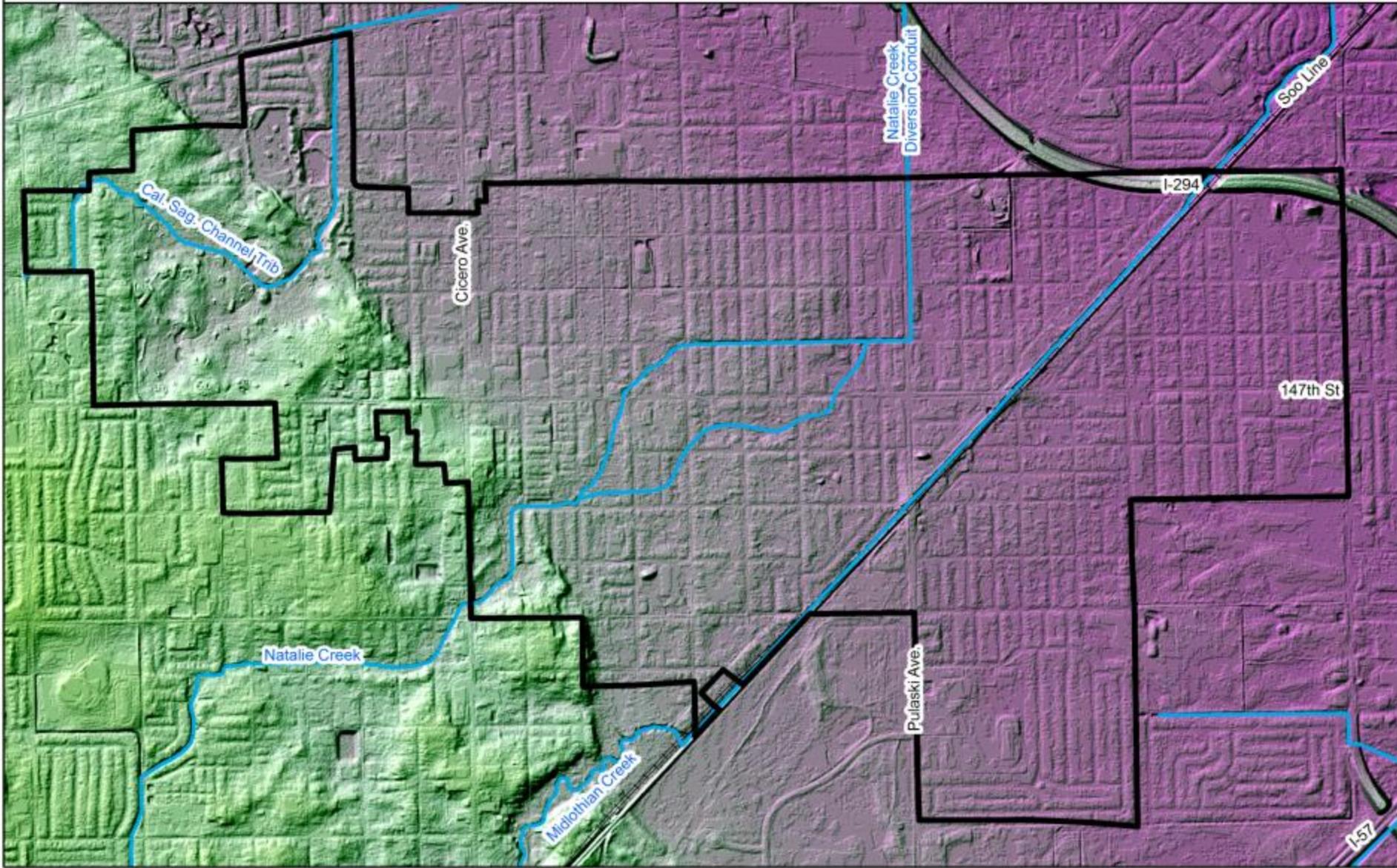
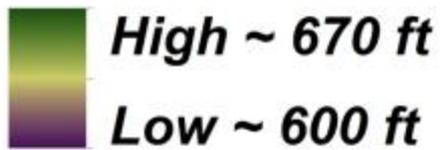


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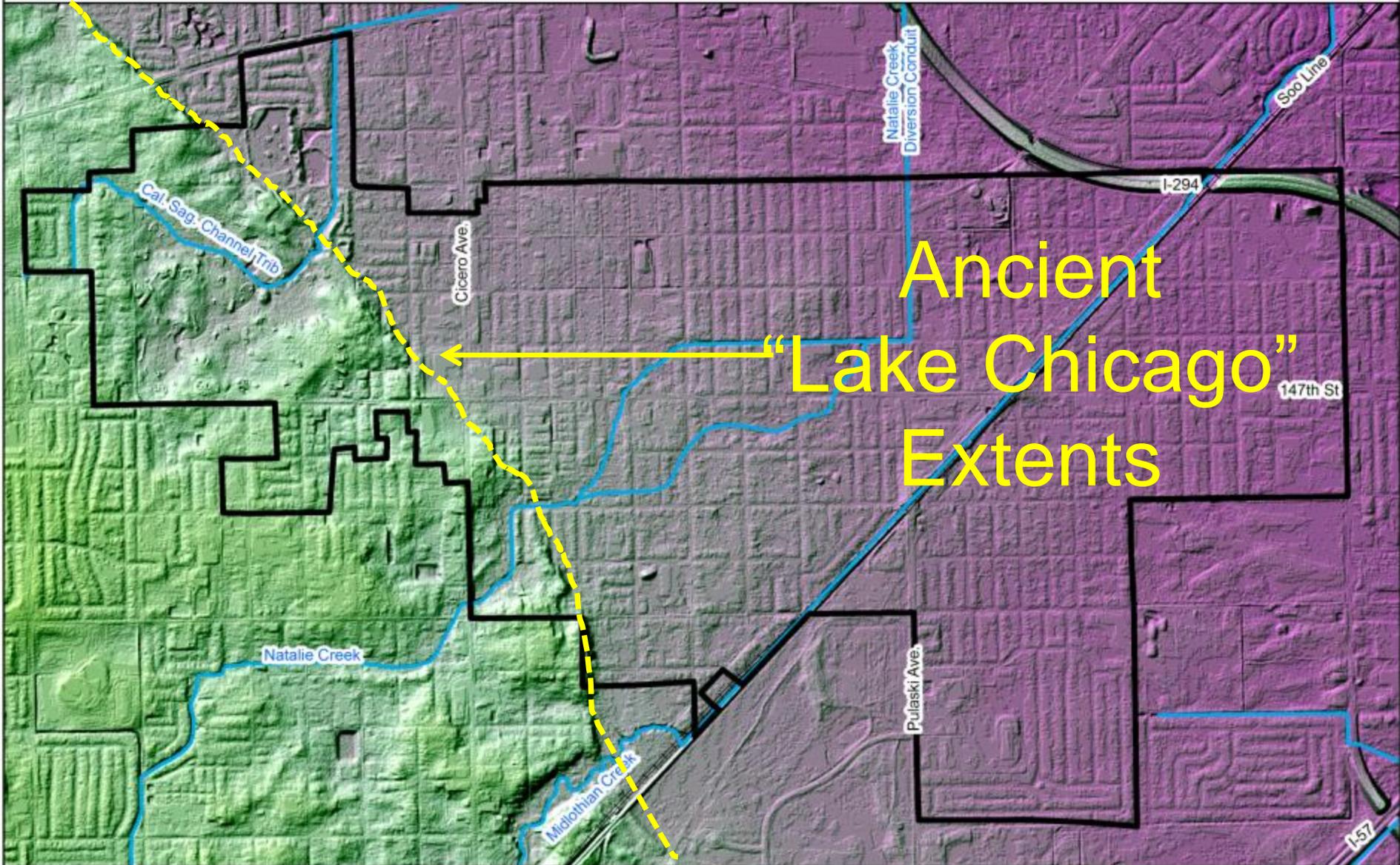
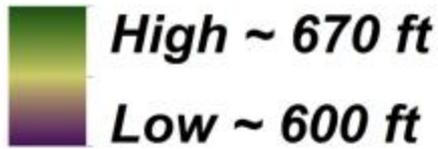
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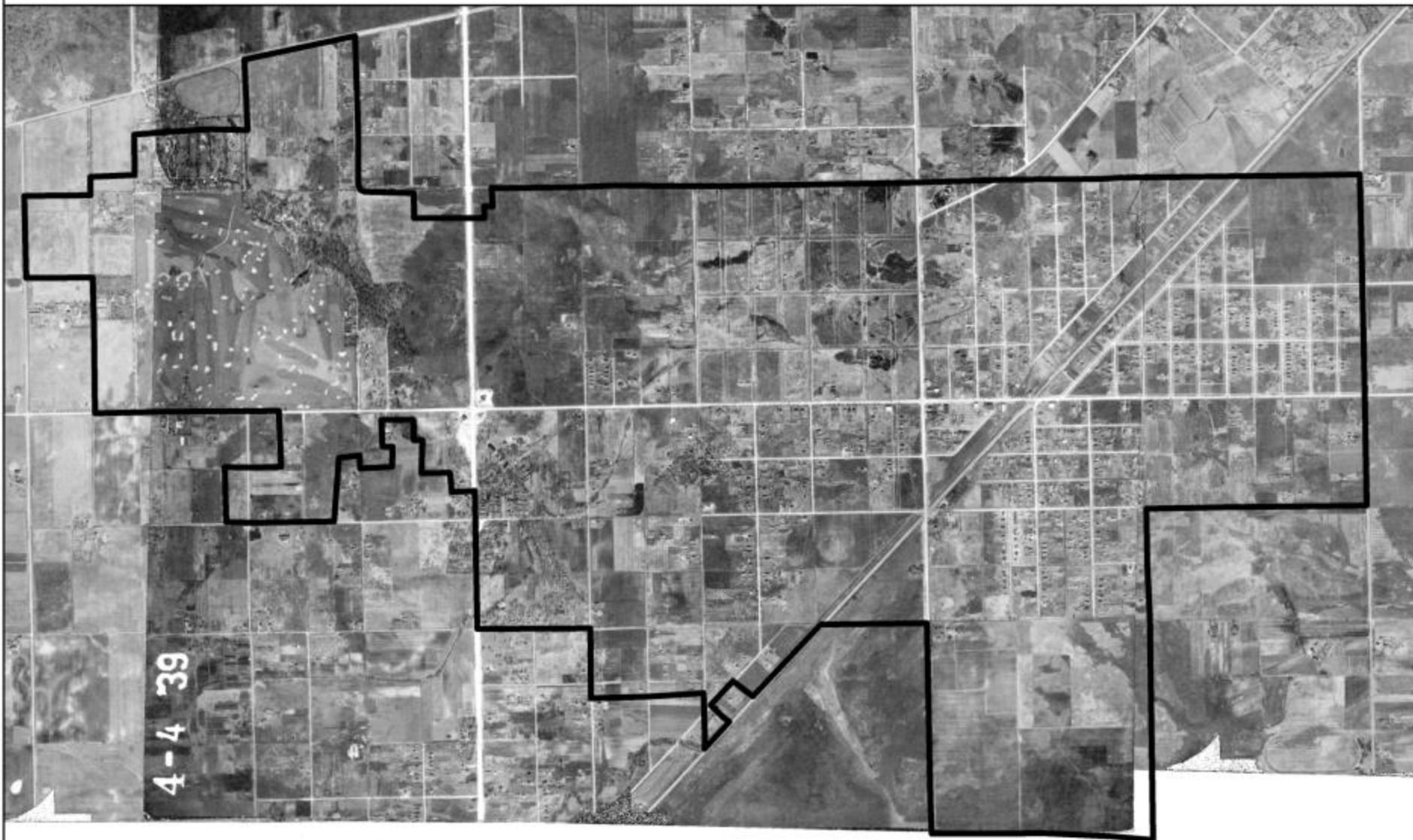
Elevation



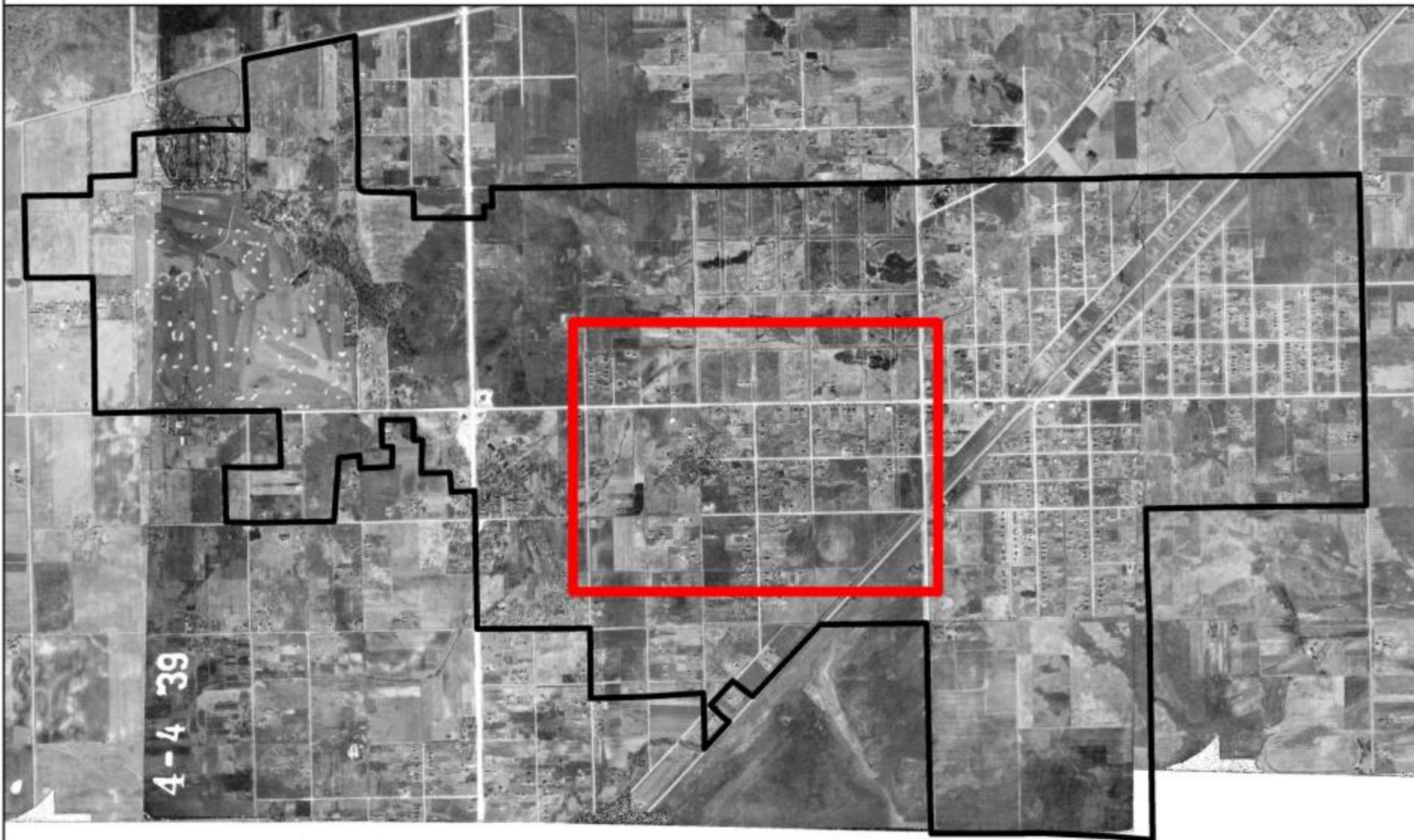
Elevation



Historic Aerial Photos - 1939



Historic Aerial Photos - 1939



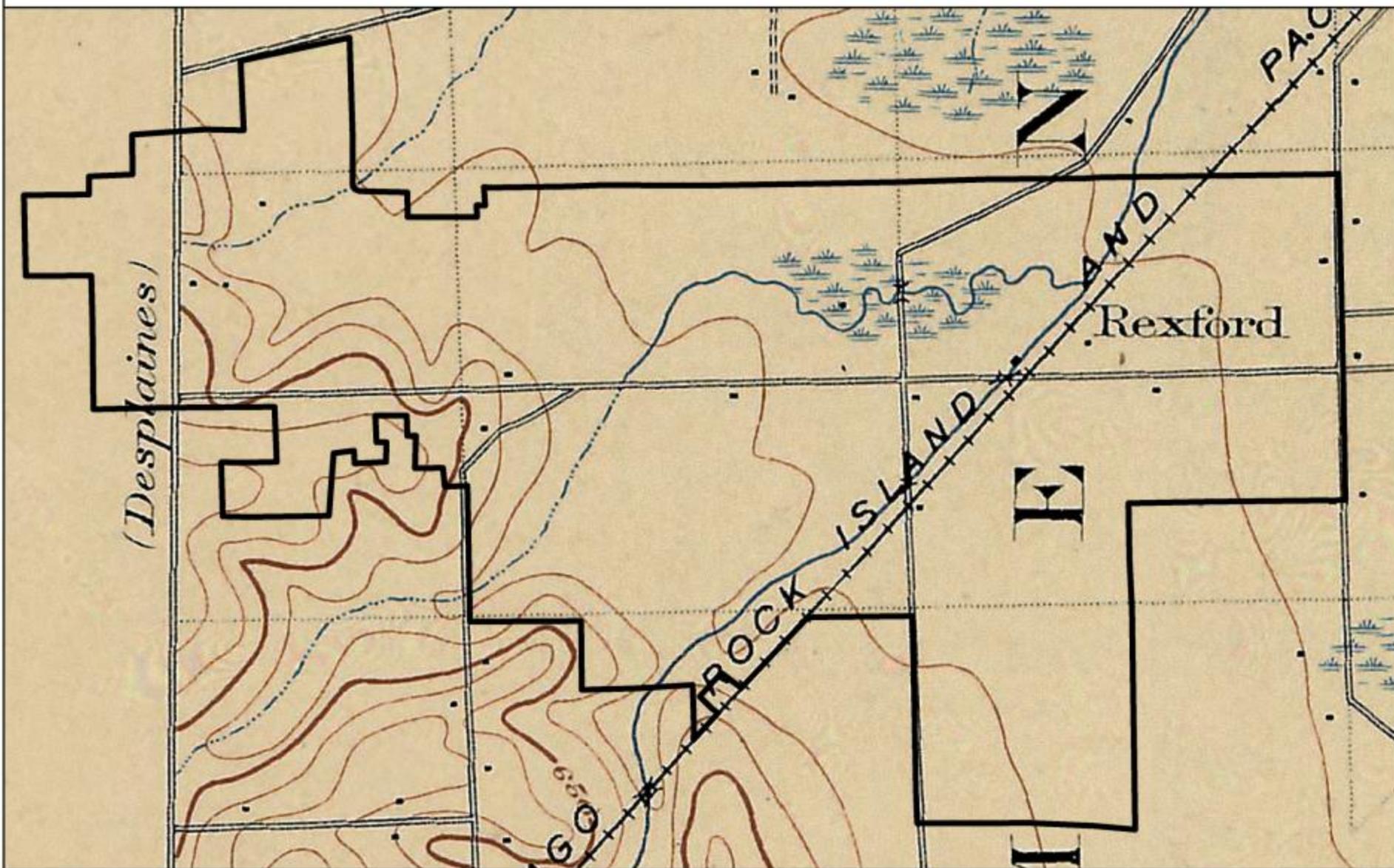
Historic Aerial Photos - 1939

(Zoomed in)



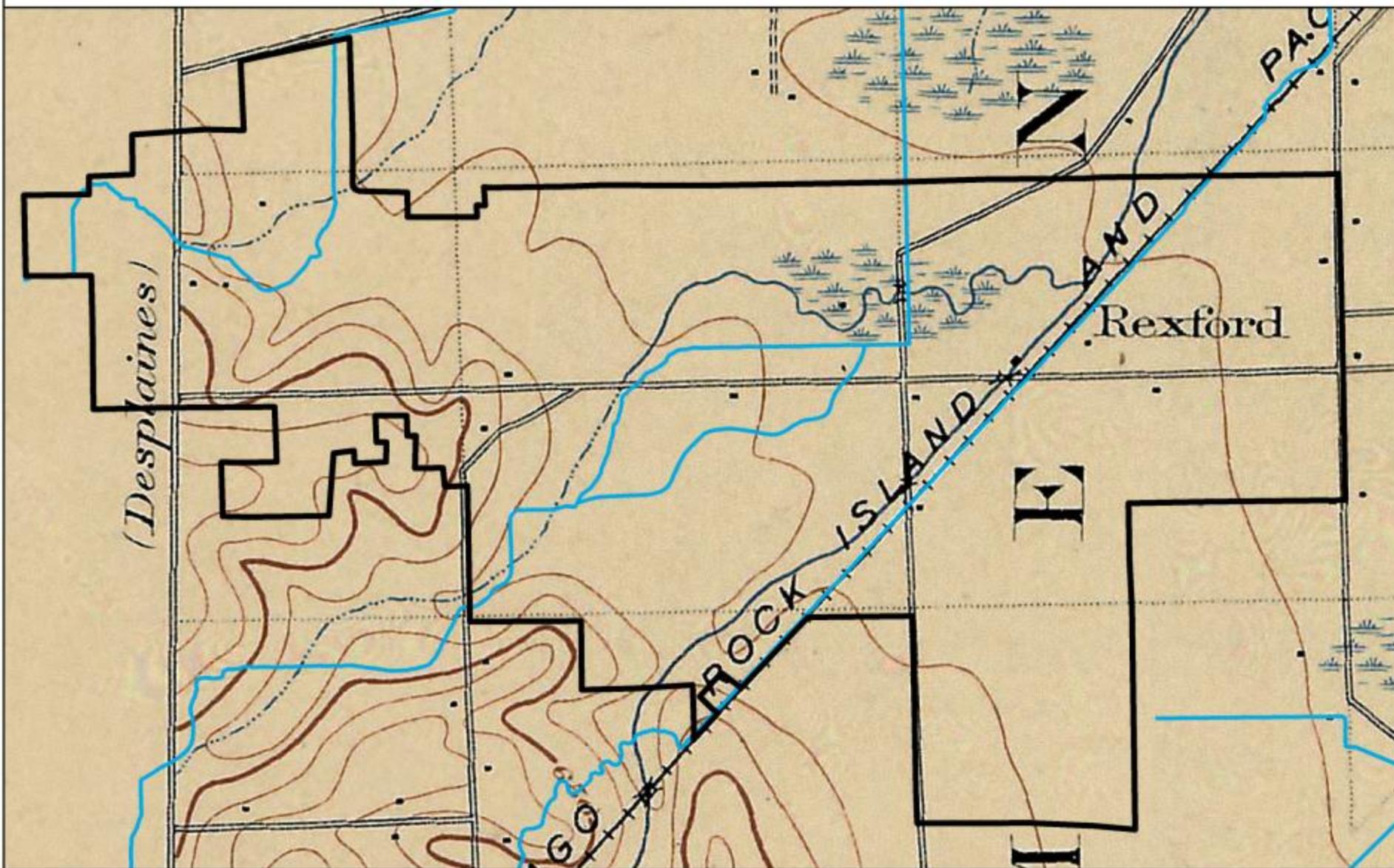
USGS Quad Map - 1901

10 foot contours



USGS Quad Map - 1901

10 foot contours

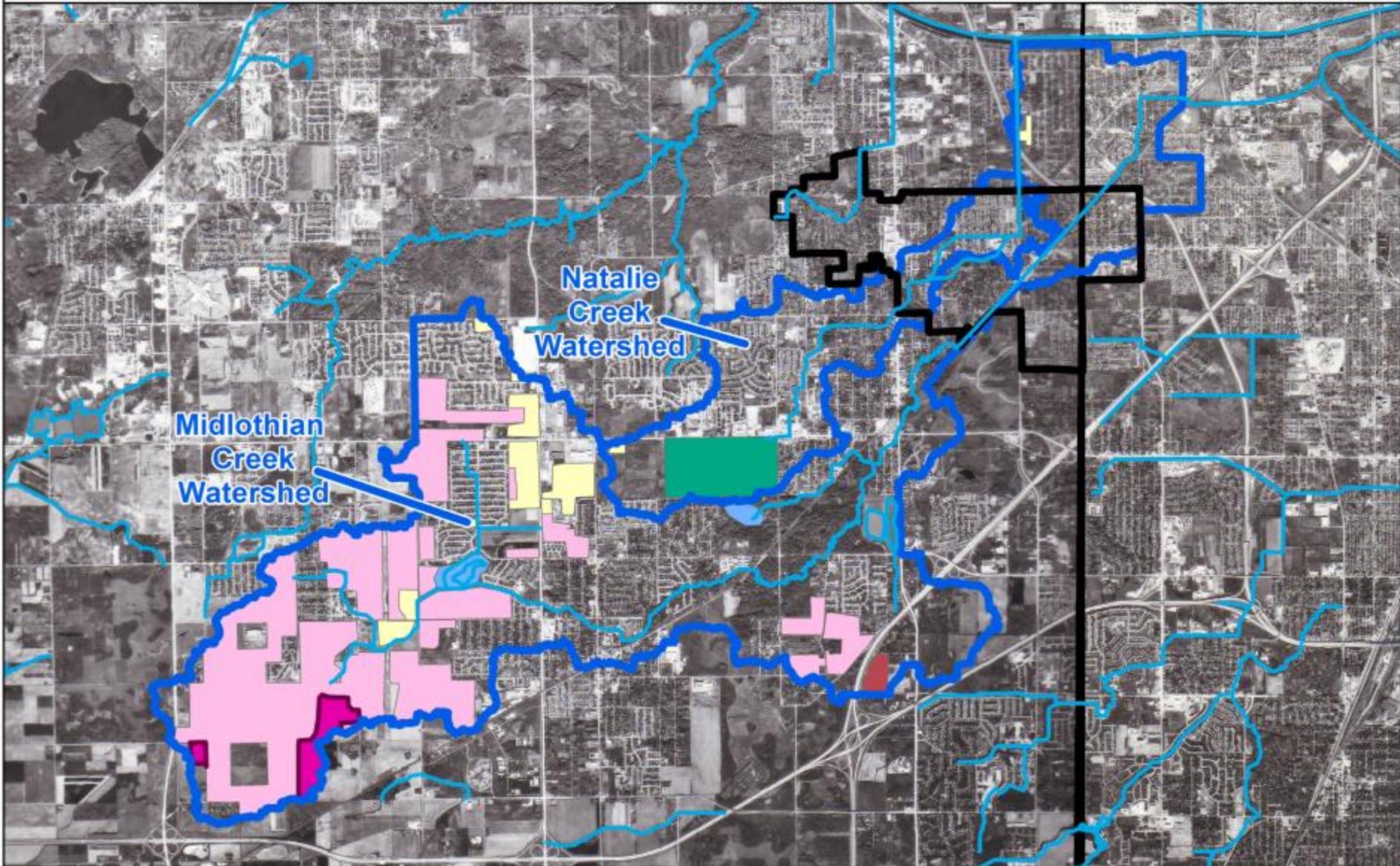
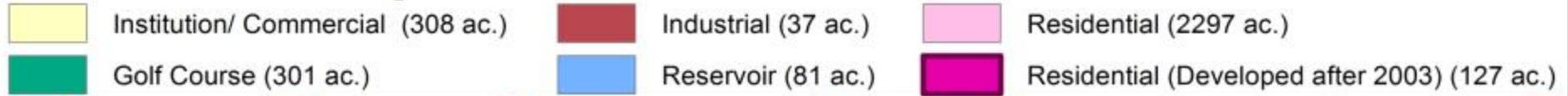


Ordinance timeline summary

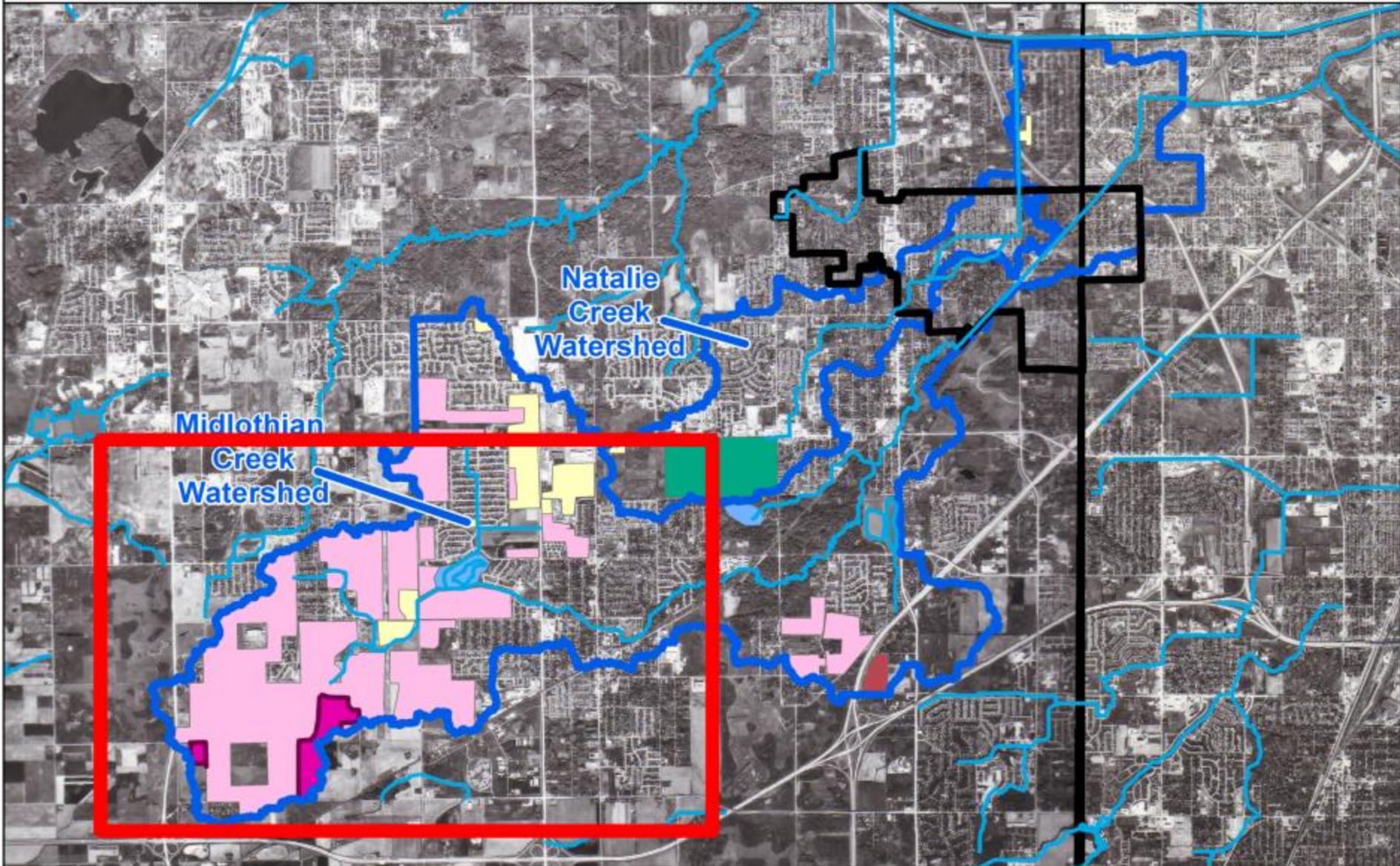
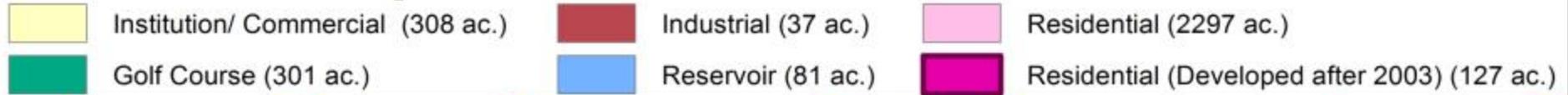
- **MWRD Sewer Permit Ordinance (1972)**
 - ▶ Required that the post-developed release rate of stormwater runoff not exceed the undeveloped conditions runoff rate for up to a 3-year event
 - ▶ Applied to developments sized 5 acres or greater and located in separate sewer
- **Watershed Management Ordinance (2014)**
 - ▶ Stormwater detention requirements for new development are more restrictive
 - ▶ Volume control generally applies to parcels 0.5 acre or greater
 - ▶ Detention requirements generally apply to parcels 1 acre or greater



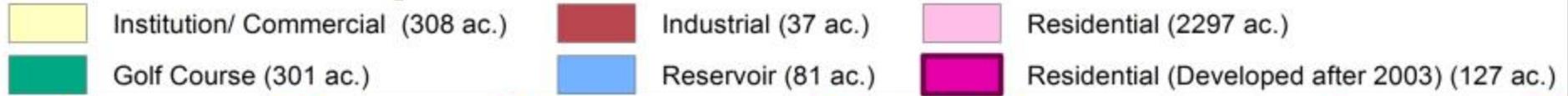
Development in Watershed Since 1978



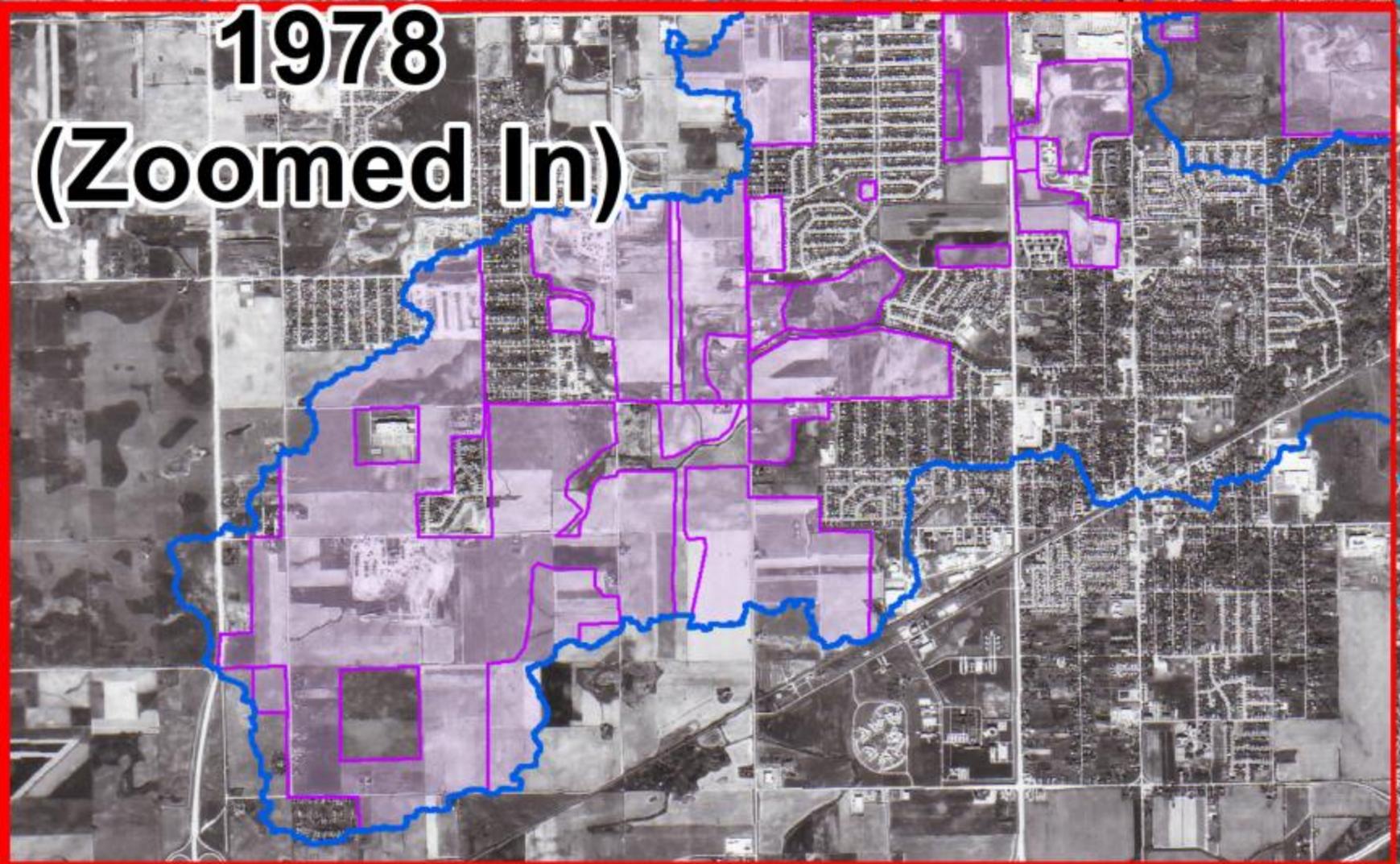
Development in Watershed Since 1978



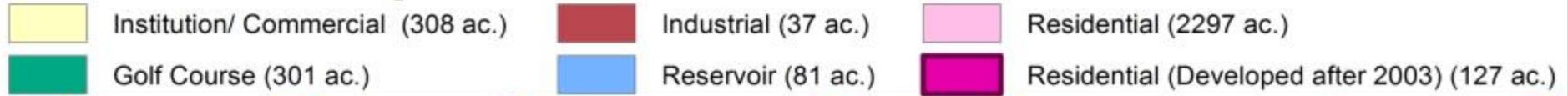
Development in Watershed Since 1978



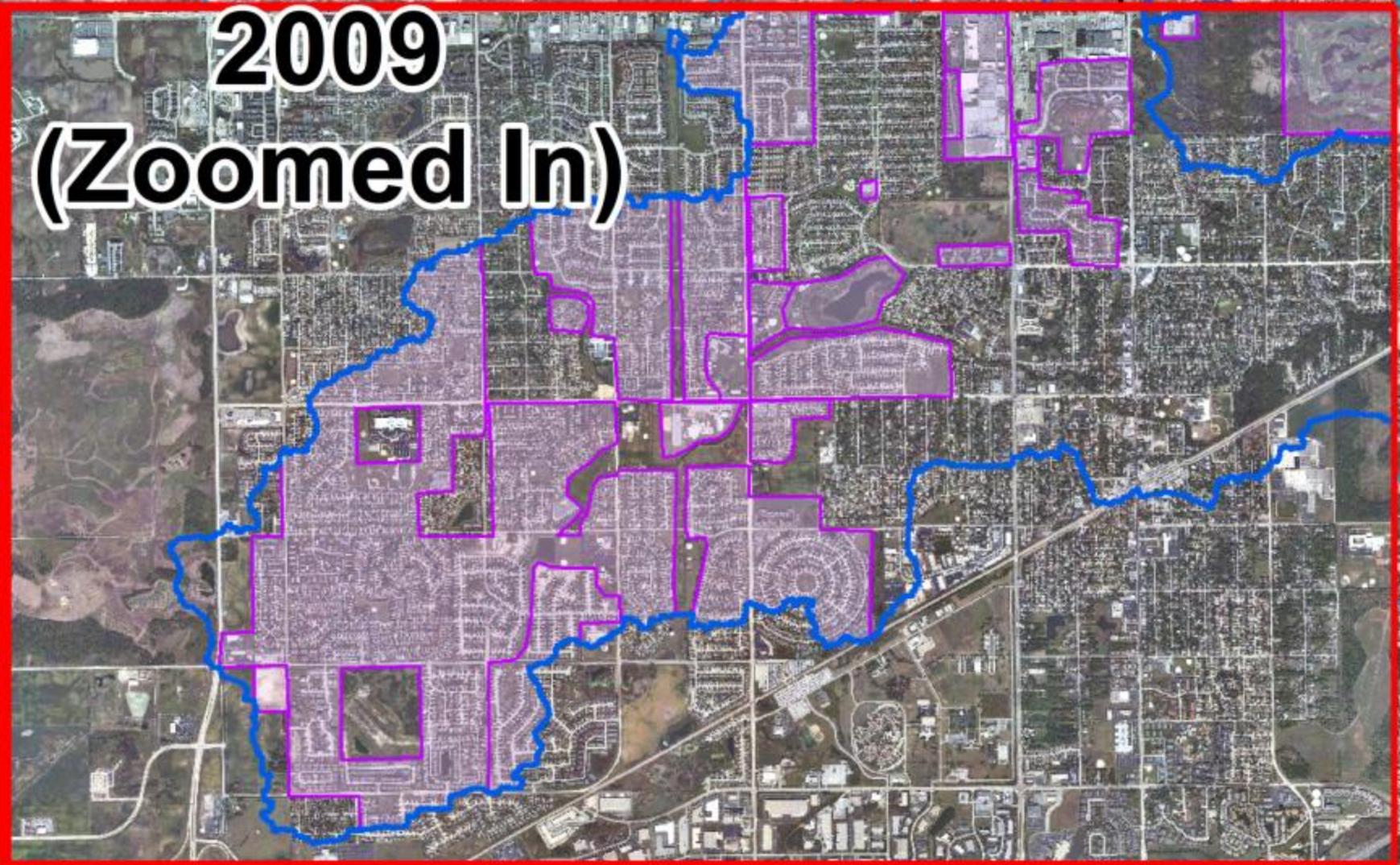
1978
(Zoomed In)



Development in Watershed Since 1978



2009
(Zoomed In)

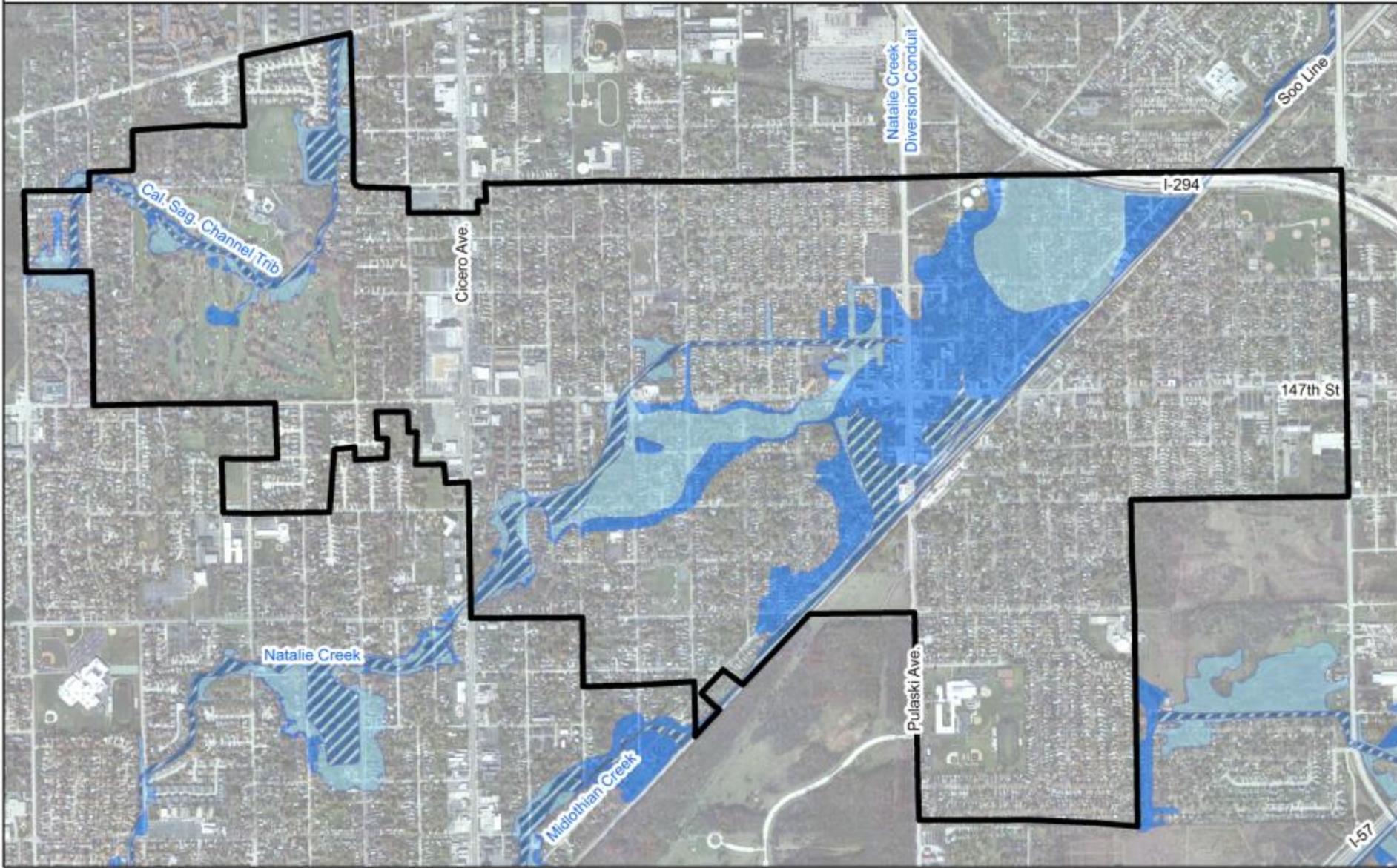
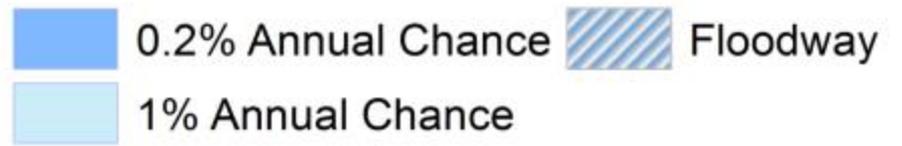


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FEMA Floodplain

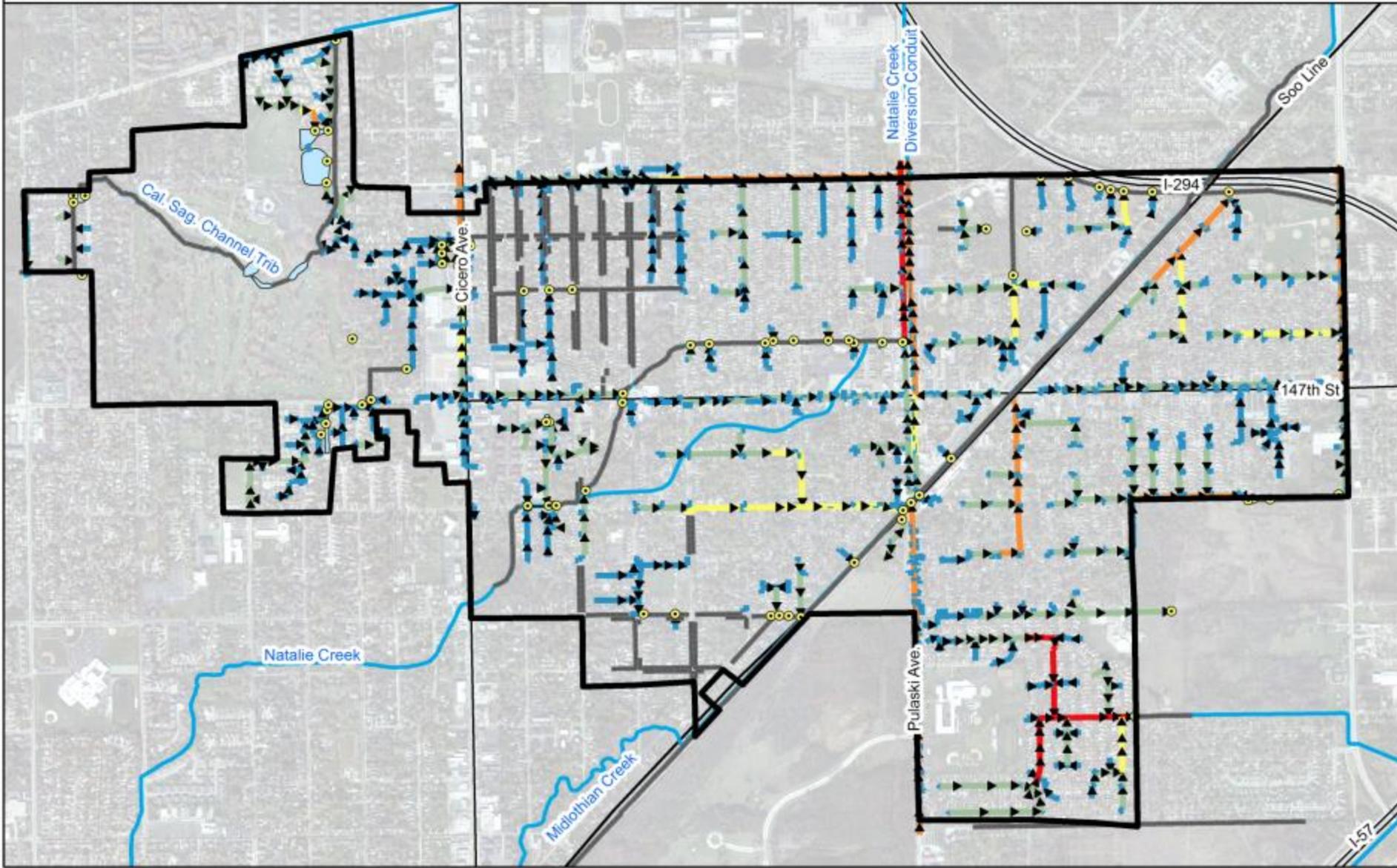


Storm Sewer Network

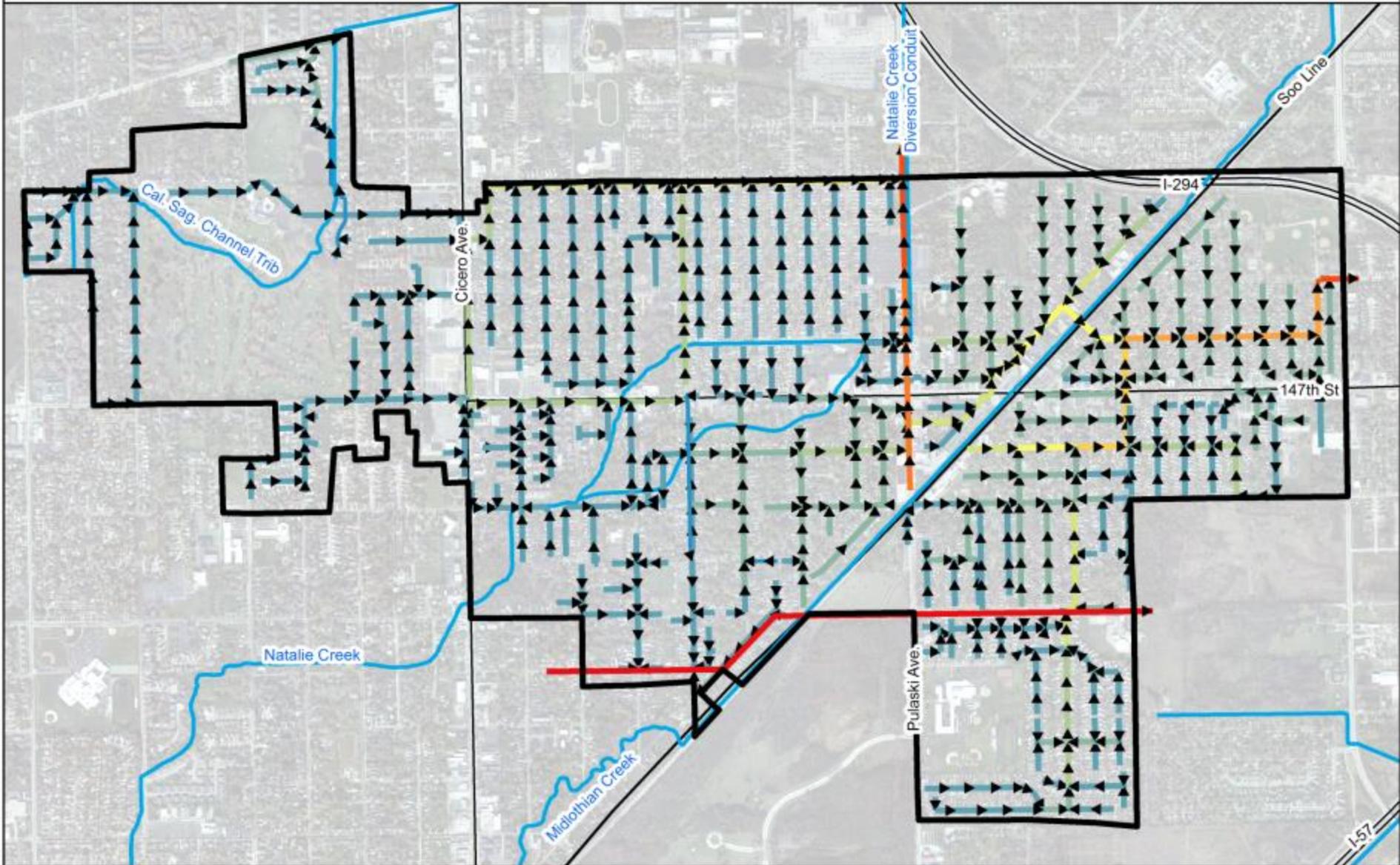
- Storm Sewer Outlet
- Pond
- Drainage ditches

Storm Sewer Size (Or equivalent)

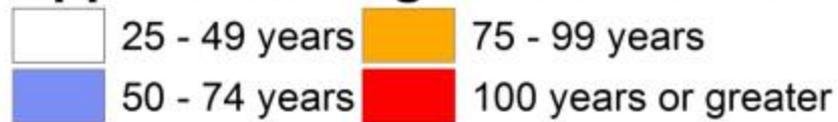
- 6" - 12"
- 12" - 24"
- 24" - 36"
- 36" - 48"
- Large Culvert



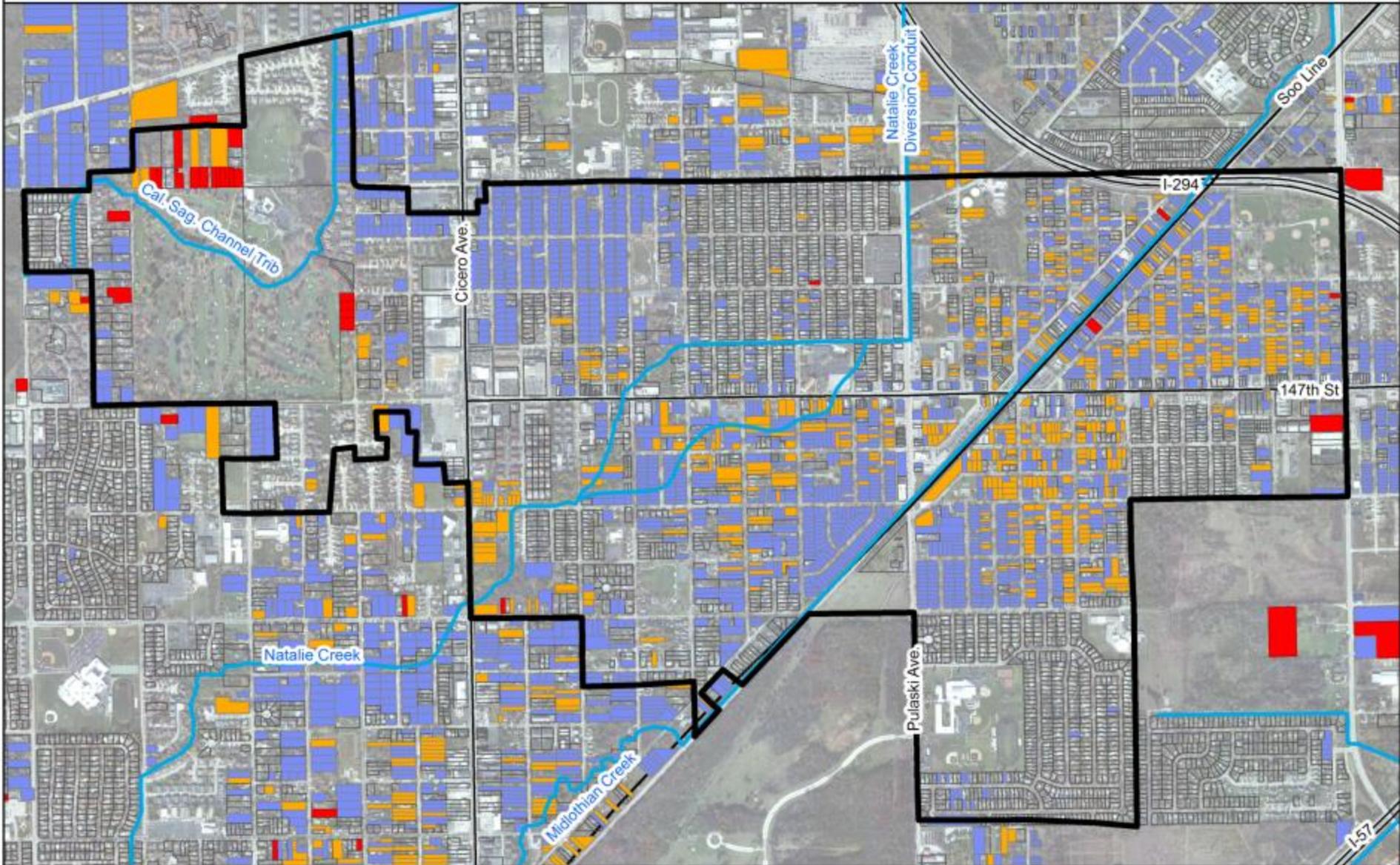
Sanitary Sewer Network



Approximate age of structure on parcel



(Less than 25 and unknown - not shown)



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Rain and River Gages

⊕ Cook County Rain Gage

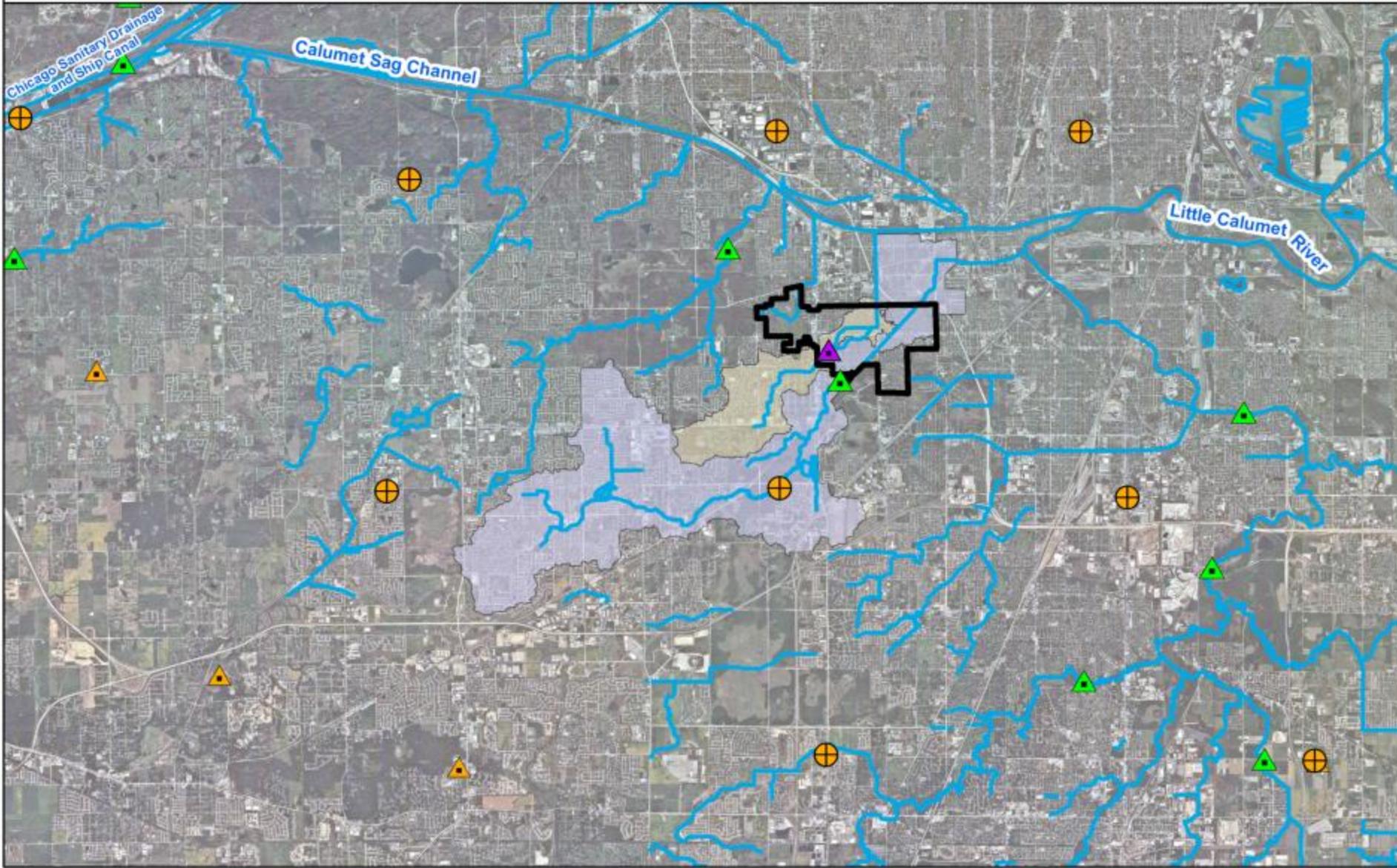
▲ USGS Rain Gage

▲ USGS Rain and River Gage

▲ USGS River Gage

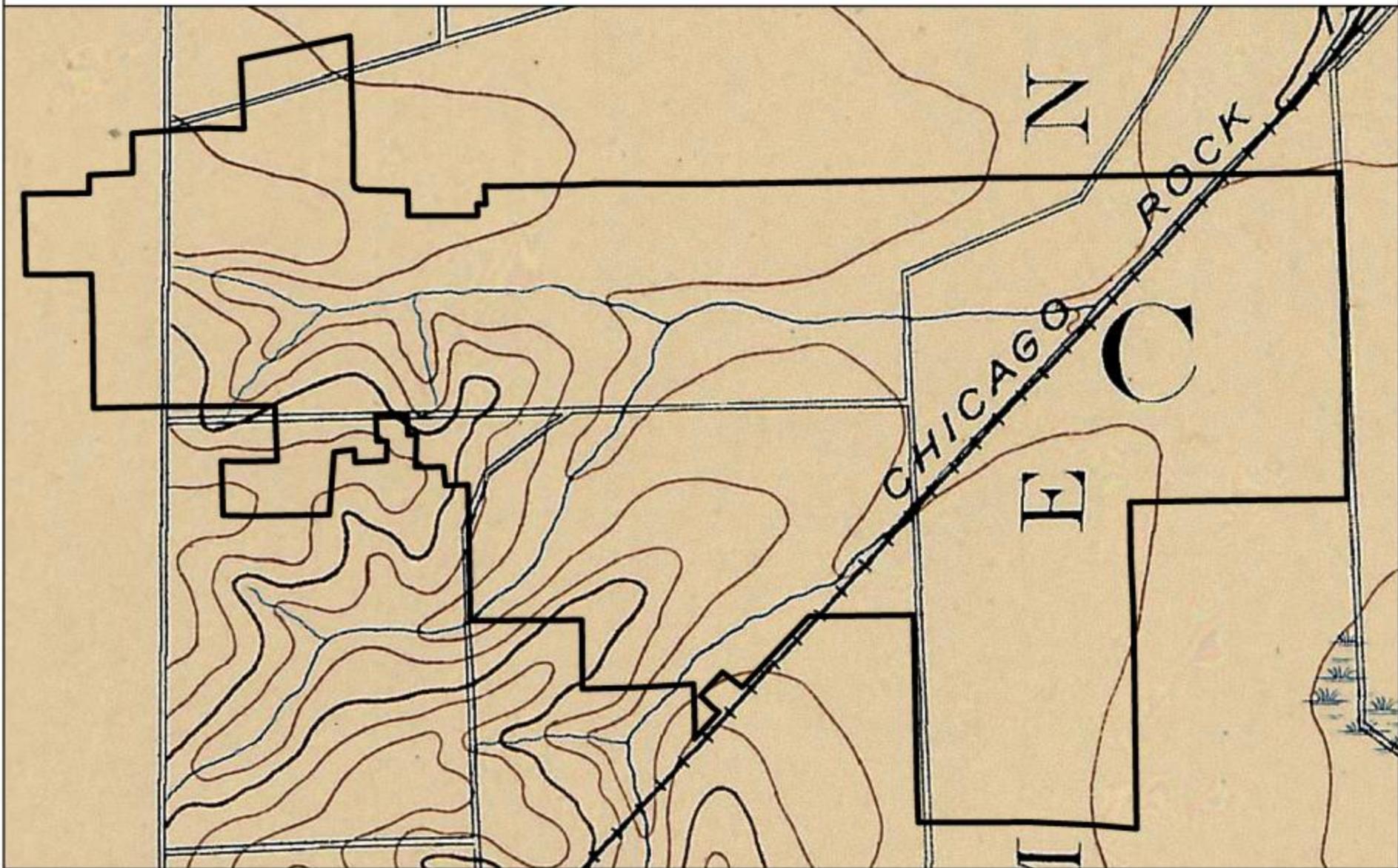
Midlothian Creek Watershed

Natalie Creek Watershed



USGS Quad Map - 1892

10 foot contours



USGS Quad Map - 1892

10 foot contours

