

Kane-DuPage Soil &
Water Conservation
District

Land Use Opinion Report





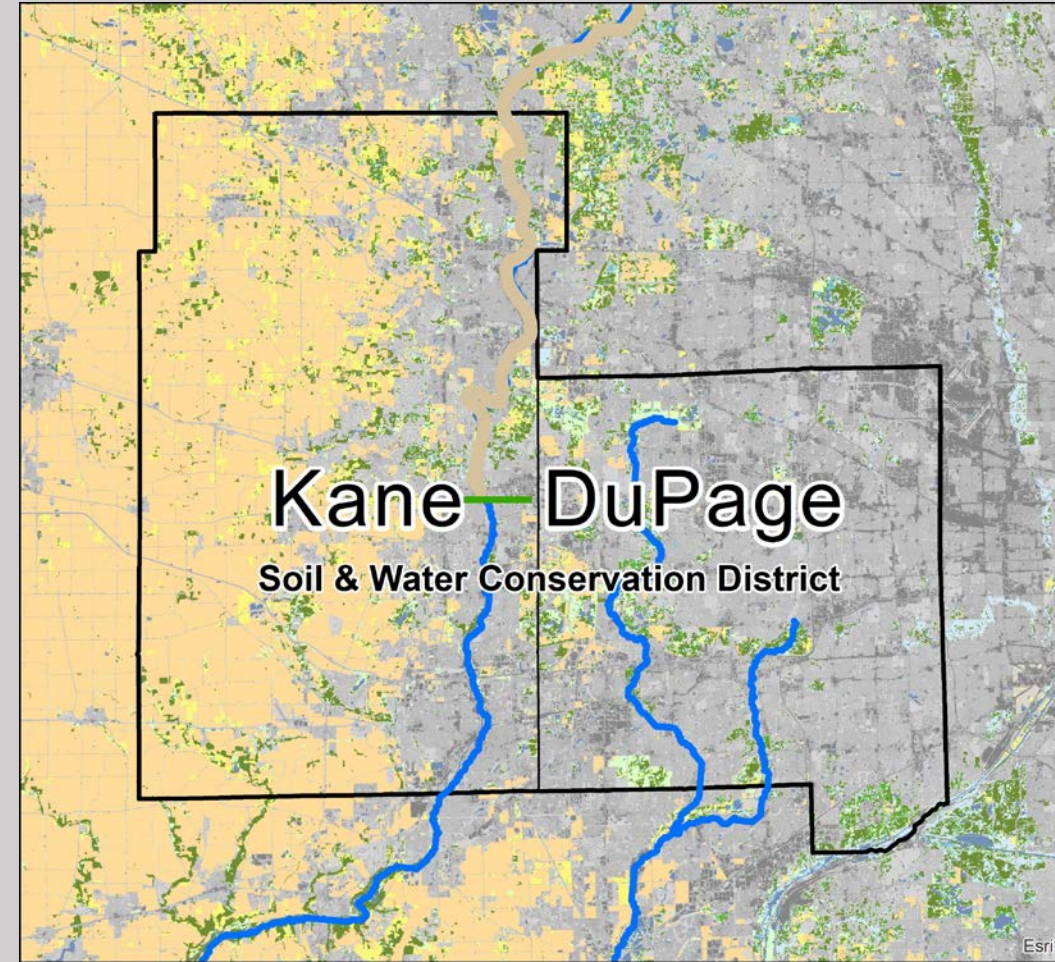
District Goals

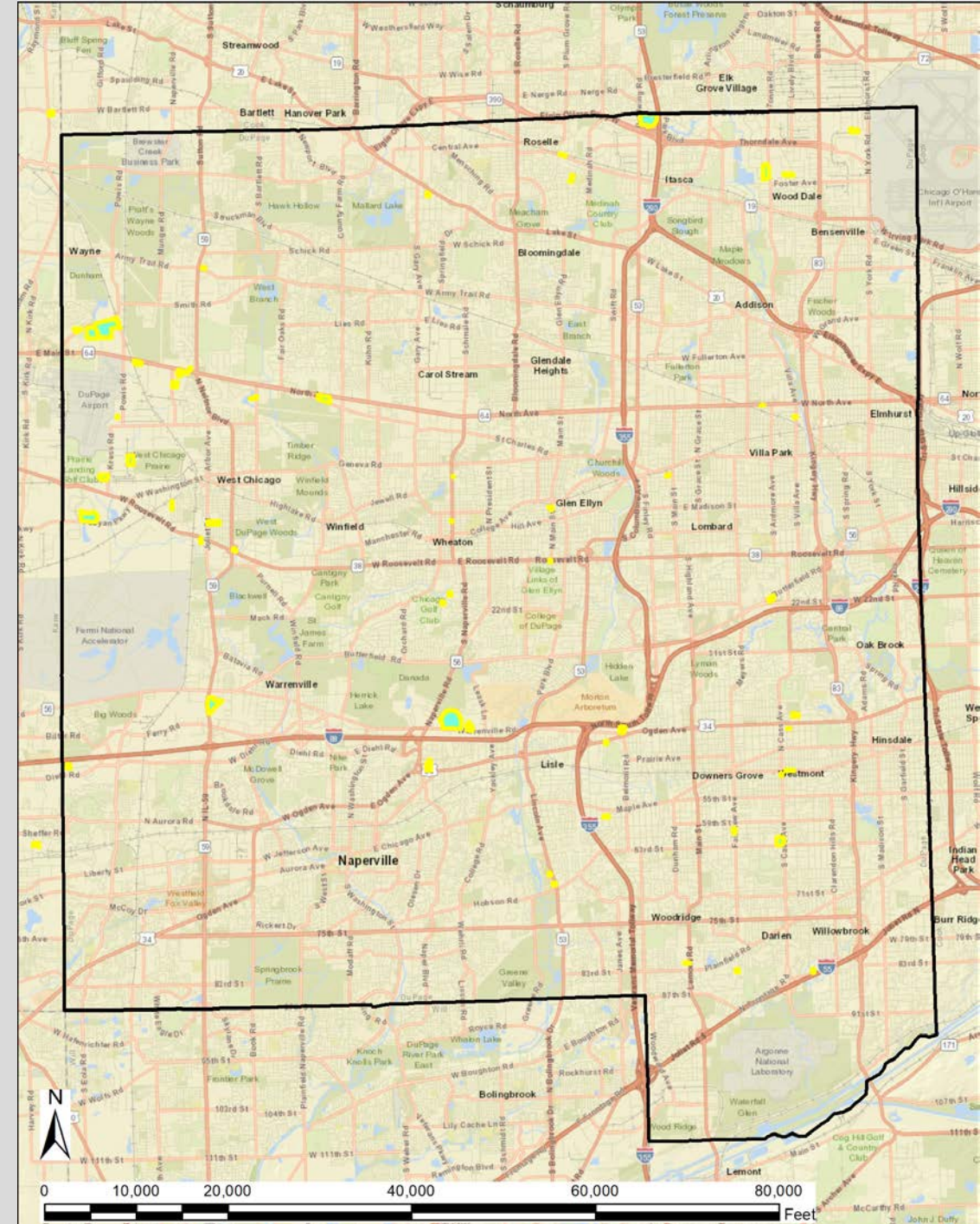
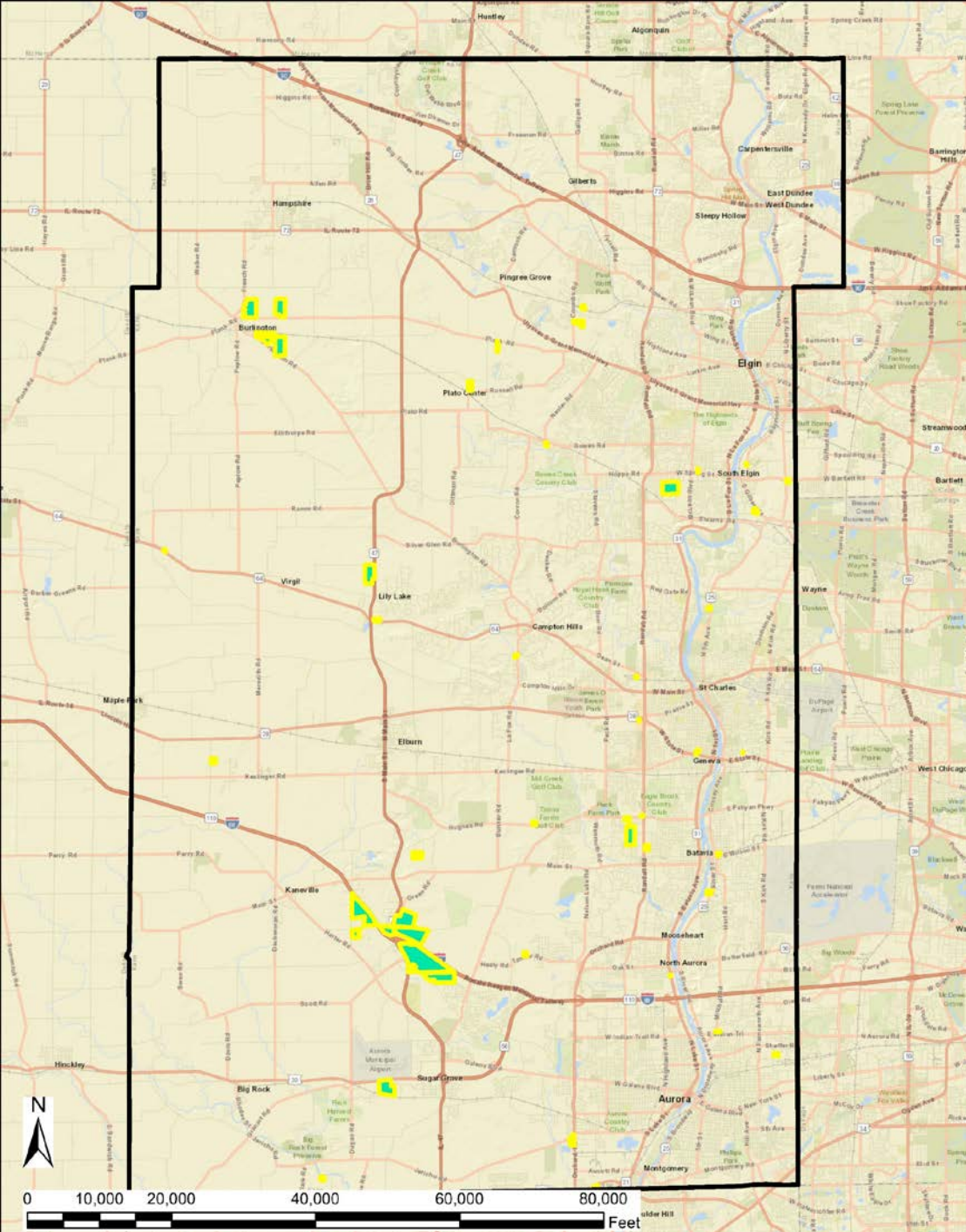
- Provide cost-share opportunities for farmers and municipalities
- Promote responsible land development and green infrastructure through LUO report and soil erosion/sediment control reviews
- Perform unbiased, compliance inspections for construction projects
- Educate citizens on the importance of soil and water conservation

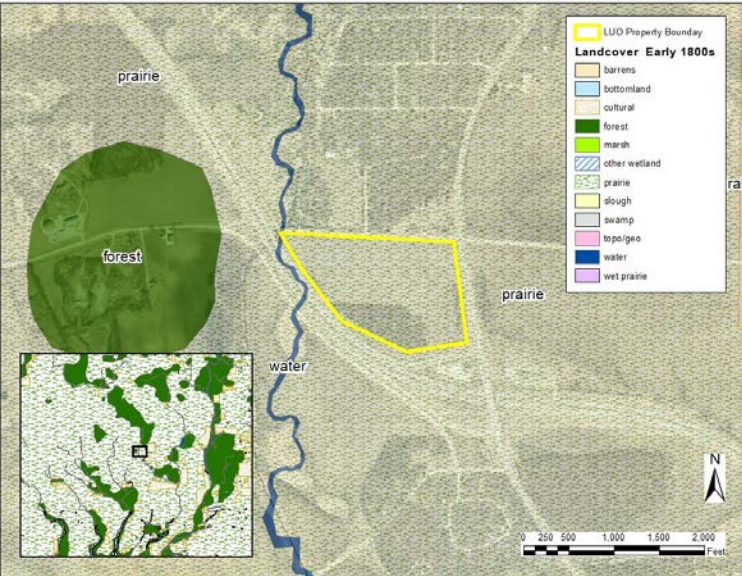


Overview of KDSWCD Land Use Opinion Program

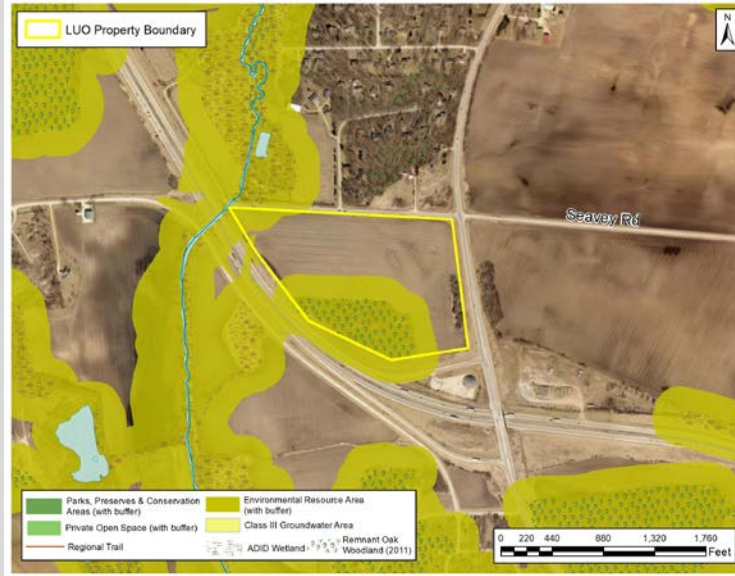
- Local unit of government under the Illinois Department of Agriculture
- **Natural Resource Inventory report mandated by the Illinois SWCD Act of 1972**
 - “... District shall make all-natural resource information available to the appropriate county agency or municipality in the promulgation of zoning ordinances or variances... **to issue its written opinion concerning the petition or proposal...**”
- **Goal:** Alert the applicants and decision makers about possible problems that may occur if the capabilities of the land are ignored.



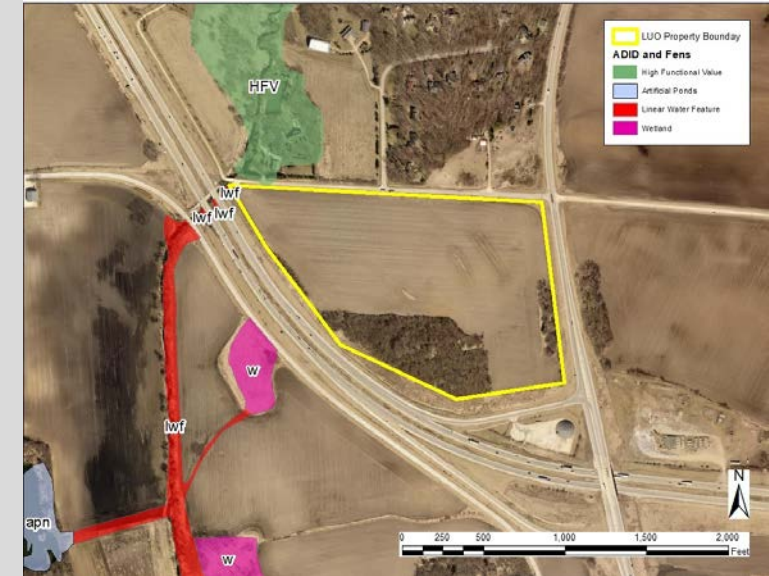




Historical Land Cover

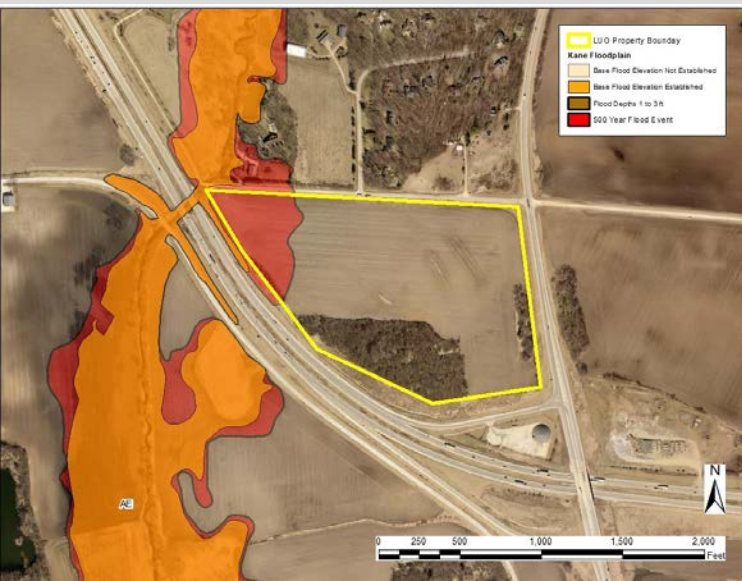


Kane County 2040 Green Infrastructure

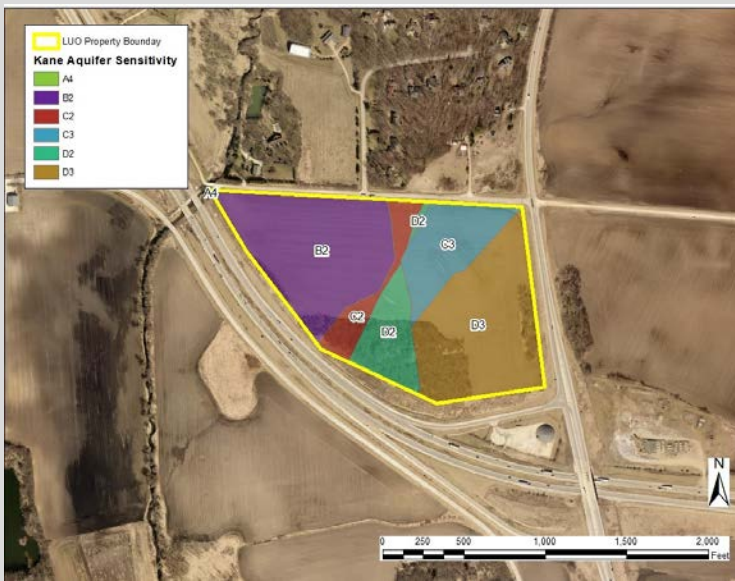


County Wetland Data

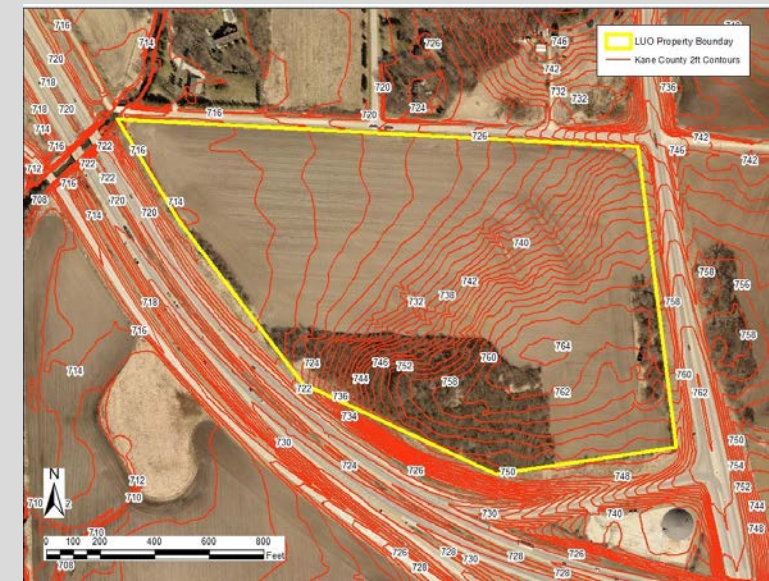
Regulatory Floodplain



Aquifer Sensitivity



Topographic Maps



Site Inspection

A site inspection was conducted by Resource Assistant, Jennifer Shroder on August 28, 2018. The following photos were taken during this inspection and reflect the site conditions at that time.



WEATHER:

LUO NUMBER:

DATE:

NAME:

TOPOGRAGHY

Slope:

Gradient:

Slope Length:

DRAINAGE

Existing Drainage Pattern:

Direction of Flow:

Offsite Connections:

GROUND COVER

Trees:

Grassy Area:

Unique Vegetation:

ADJACENT FEATURES

Streams:

Roads:

Buildings:

SOILS

Erodability:

Permeability:

WETLANDS

Size:

Seasonality:

MISC NOTES

WETLANDS

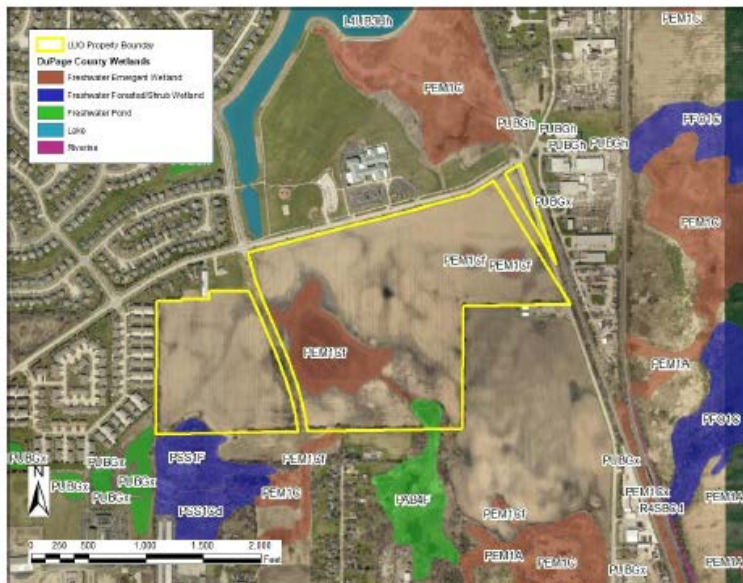


Figure 2: DuPage County Wetlands
Wetlands of DuPage County Illinois. <http://gis.dupageco.org/arcgis/rest/services/OpenData>. 2015 DuPage County.

County Wetland Inventory

Figure 3: National Wetland Inventory Map

United States Department of the Interior, Fish and Wildlife Service, National Wetlands Inventory Photo Year 1983-1984, Digitized 1985-1986.



National Wetland Inventory

WETLANDS PHOTOS



Figure 4: Wetlands photos



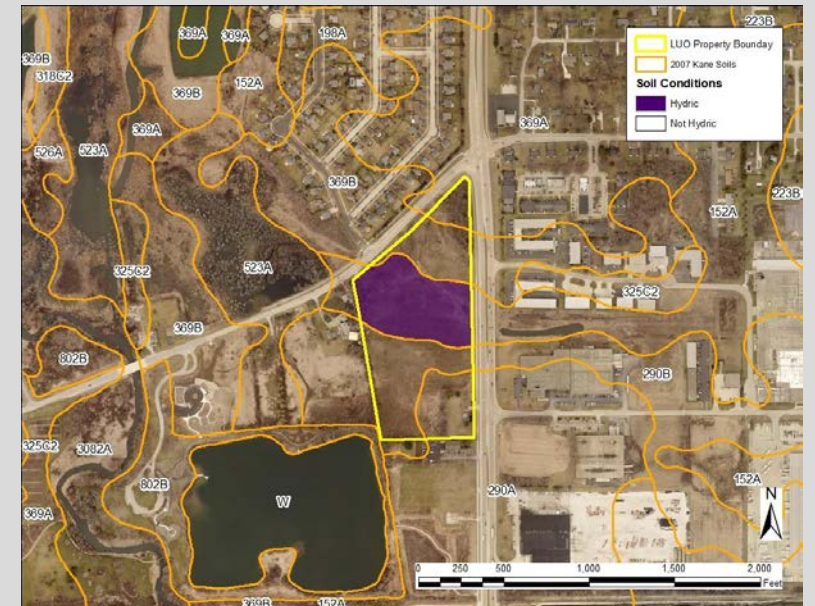
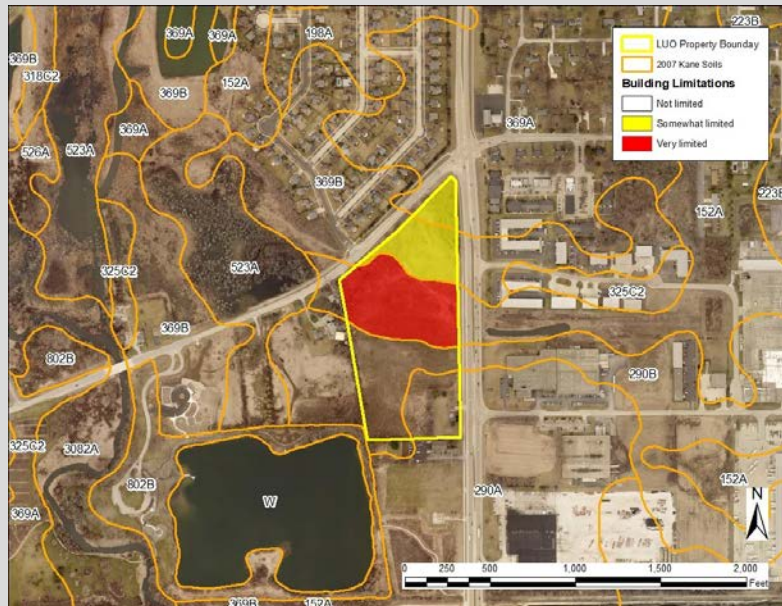
Point 1: Facing southeast



Point 2: Facing southwest

Other elements for opinion criteria

- Land Evaluation and Site Assessment (LESA) prime agriculture scores
- Other web soil survey information (building limitations, hydric soils, septic limitations, highly erodible land, etc.)
- Stormwater management, SESC concerns and relevant regulations



Overview of the results

LAND USE OPINION

Land Use Opinion: The most current natural resource data indicates the following concerns for this site: **Wetlands, Floodplain, Soil Limitations, LESA – Prime Farmland, Soil Erosion and Sediment Control, and Stormwater Management.** Based on the information in this report, it is the opinion of the Kane-DuPage Soil and Water Conservation District Board that this site **may not be suited** for land use change **unless** the previously mentioned concerns are addressed.

Petitioner: [Redacted]
Contact Person: [Redacted]
Unit of Government Responsible for Permits: Village of Sugar Grove
Acreage: 41.41
Property Address /PIN#: [Redacted]
Existing Land Use: Agriculture
Surrounding Land Use: Agriculture
Proposed Land Use: Residential/Commercial

Natural Resource Concerns

Land Cover in the Early 1800's: This site is located in an area previously identified as prairie. (See page 2 for more information.)

Kane County Green Infrastructure Plan: This site is located in an area indicated as Environmental Resource Area (with buffer). (See page 3.)

Wetlands: The National Wetland Inventory map does not identify wetlands on this site. However, the ADID wetland map identifies a wetland area adjacent to this site. In the event that any indications of wetlands are identified on this site during the proposed land use change, a wetland delineation specialist who is recognized by the U.S. Army Corps of Engineers should determine the exact boundaries and value of any wetlands. (See page 4 & 5 for more wetland information.)

Floodplain: There are floodplain areas identified on this site. (See page 6.)



Streams: A stream has been identified adjacent to this site. (See page 7.)

Regulations: Please note that additional permits are required for any development impacting wetlands, streams or floodplain areas. Please see page 8 for regulation information.

Aquifer Sensitivity: This site is classified as having a moderately high to moderately low potential for aquifer contamination. (See page 9.)

Topography and Drainage: Please refer to page 10 for information regarding site topography and drainage.

Stormwater: See page 12 for information regarding stormwater management.

Soil Erosion: Any development on this site should include a soil erosion and sediment control plan. (See page 12.)

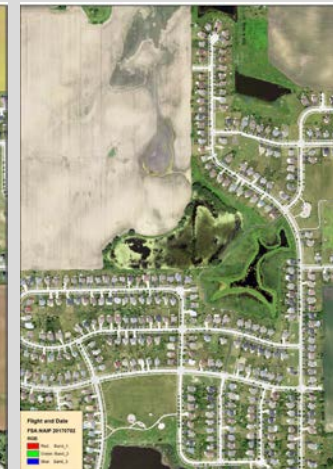
Work for Winter 2019/2020

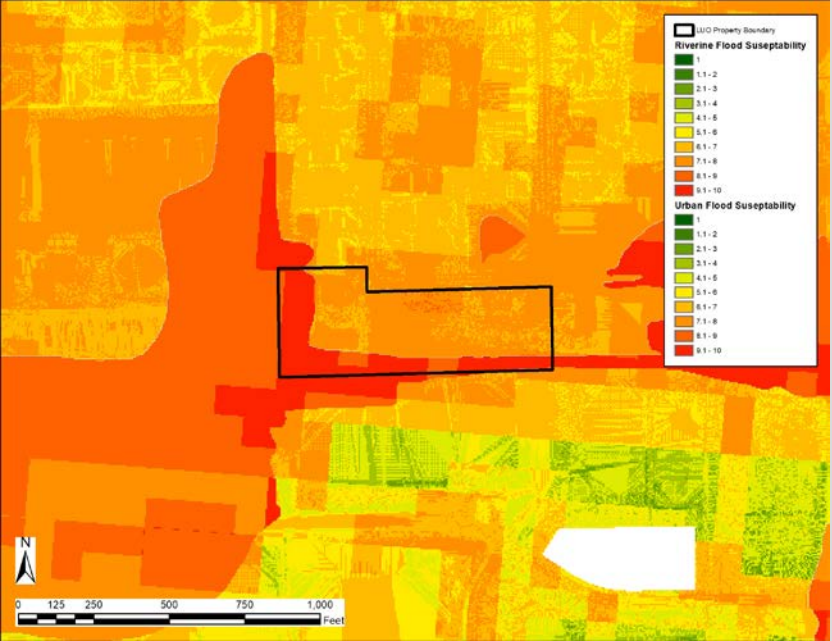
- Form Land Use Opinion Committee, open to all those interested
- KDSWCD has hired on, Mark Bramstedt, a former USDA Natural Resource Conservation Service Soil Scientist with 40+ years of experience
- Reach out to municipalities for additional report expectations/desires
- Updating the opinion criteria



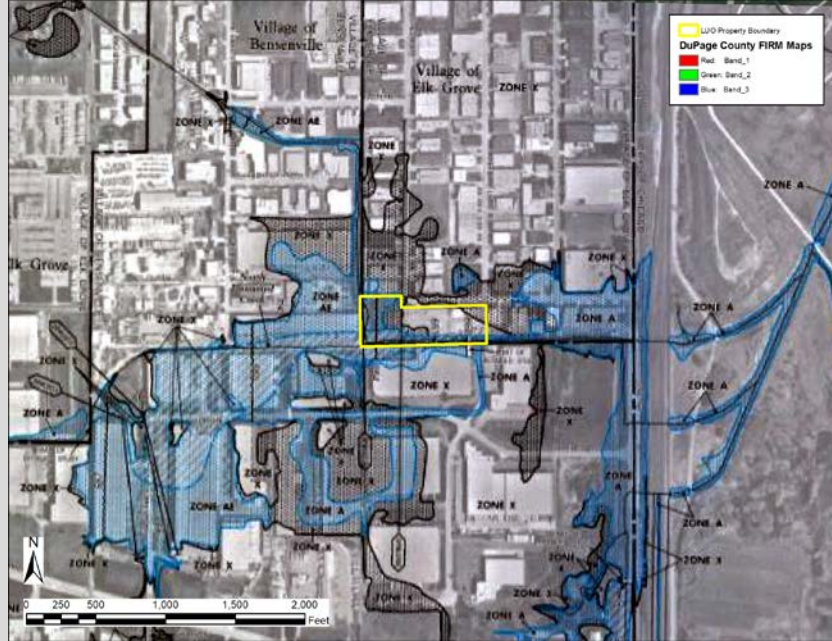
What else can the report provide?

- UAV flyovers
- Promote site-specific green infrastructure options
- Productivity of soils remaining undisturbed for other beneficial habitats
- Historical imagery references
 - Land use change and growing season results





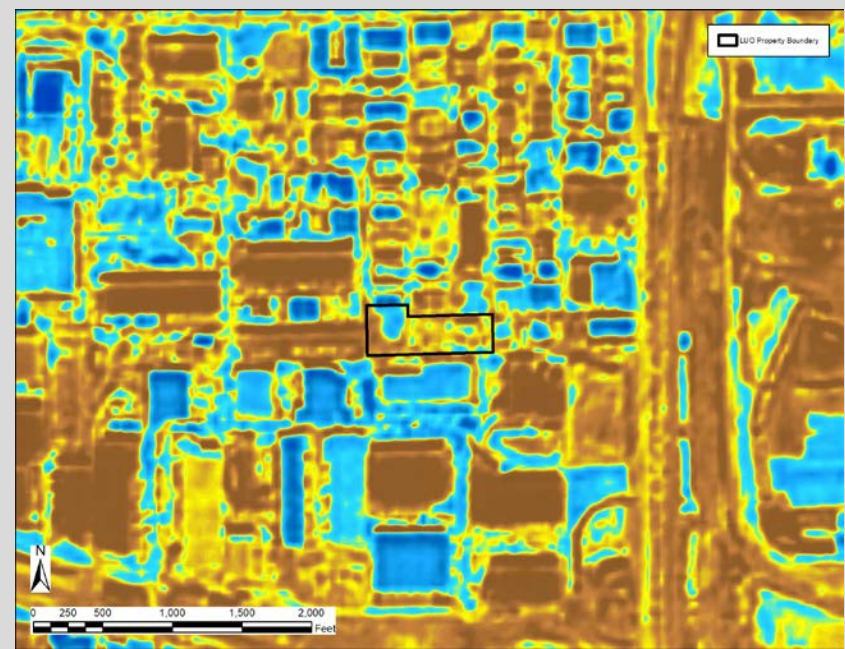
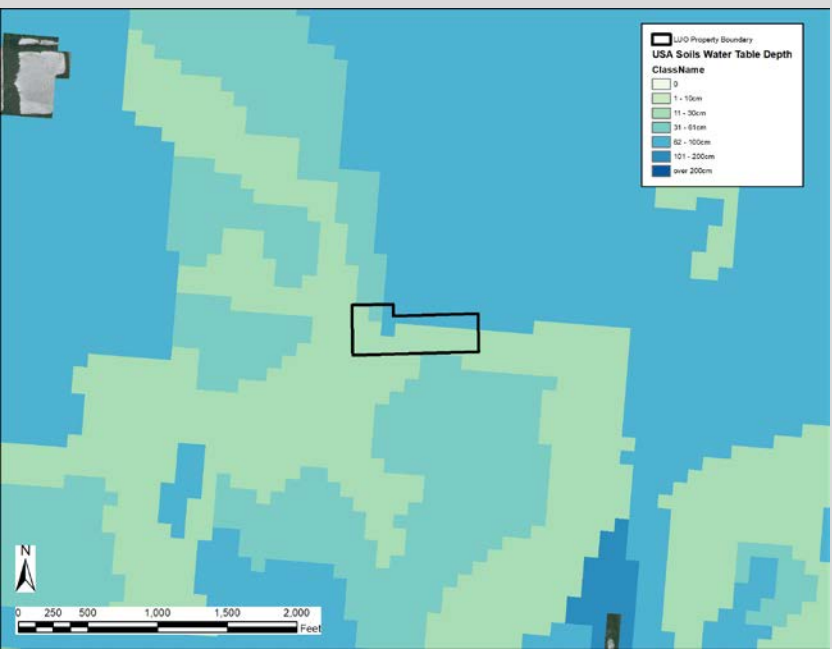
CMAP Flood Susceptibility
Depth to Water Table



2004 Digital Flood Insurance Rate Maps
Topographic Wetness Index



Normalized Differential Vegetation Index
Normalized Differential Moisture Index



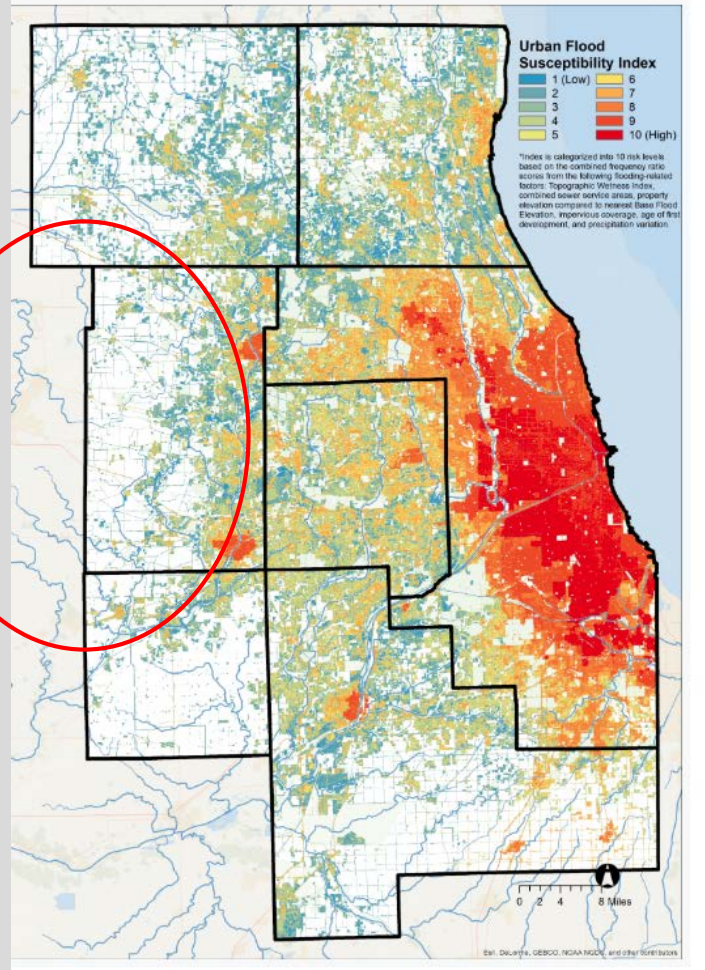


Future Concepts for Evaluation Criteria

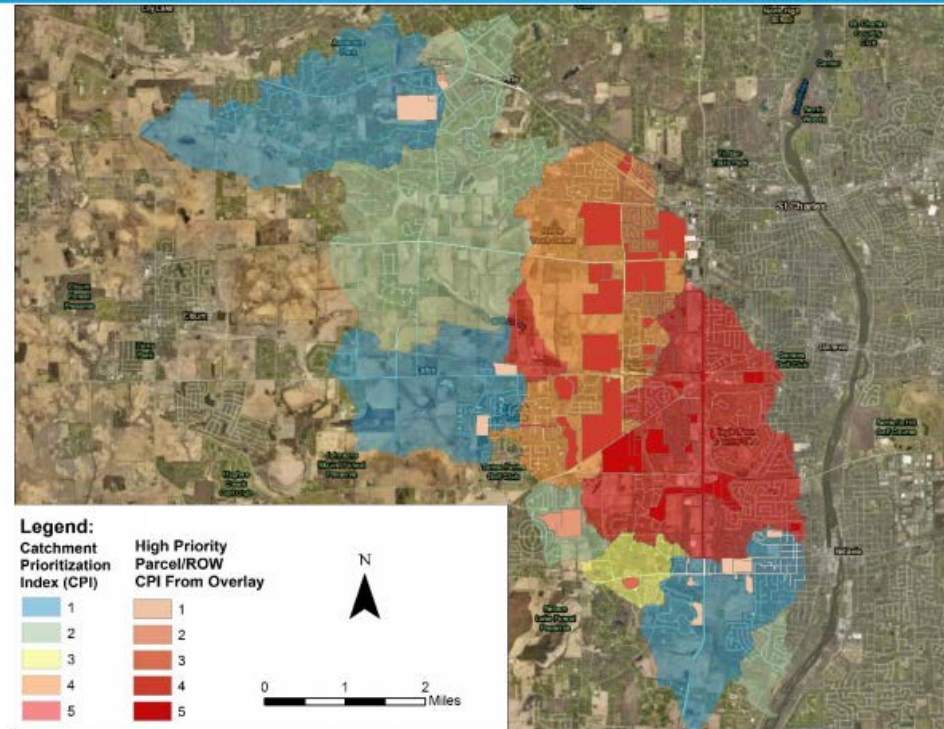
- Watershed/county wide planning-orientated decision making
 - CMAP individual watershed plans, Lands in Transition and Kane ON TO 2050
- Quantify the development impact on flooding susceptibility for surrounding areas/insurance rates downstream
 - Emphasis on up-to-date flooding (4/18-4/19)
- Localized land use and land cover patterns
- Pervious surface vs. impervious surface
- Pre-existing vegetation values (NDVI)
- Endangered species information

Alignment of Principals with CMAP

Regional Urban Flood Susceptibility Index



3. Overlay of catchment prioritization and parcel opportunity - outputs



Geosyntec model results in watershed plans (Mill Creek)

Considerations for the audience

- There is always an on-going need to improve the report for a greater benefit to applicants and decision makers
- Any ideas for datasets out there or ones that need to be created
- Potential sources/citations for proposed-use expertise

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Bibliography

- Green Infrastructure Image DuPage GI (DuPage County Stormwater Management:) <https://www.scarce.org/event/green-infrastructure-seminar-for-ms4-communities/>
- Streambank Stabilization Image: <http://horizonsupplycompany.com/products/environmental/>
- Environmental Education image: <https://www.ecomena.org/environmental-education/>
- Constructed Wetland: <https://www.illica.net/2018-twi-livingston-co-wetland>
- Mark Bramstedt picture: Lasalle County SWCD
- Catchment prioritization and Land Suitability: Geosyntec // Mill Creek Watershed plan: <http://www.foxriverecosystem.org/MillCreek/Docs/MillCrkDraftPlan-7-01-19.pdf>
- CMAP Flood Susceptibility Map: <https://www.cmap.illinois.gov/programs/water/stormwater/flood-index>
- Lane Use Opinion Citations: Kanedupageswcd.org
- USGS, Earth Explorer: FSA:NAIP, Sentinel 2, High Resolution Orthoimagery: <https://earthexplorer.usgs.gov/>
- FEMA Flood Insurance Maps https://www.dupageco.org/EDP/Stormwater_Management/Maps/FEMA_DFIRM_Maps
- DuPage Topographic Wetness Index (Illinois State Water Survey <http://hdl.handle.net/2142/98495>)