

# **SPRINGBROOK#1 STREAMS LAKES MEANDER FEASIBILITY STUDY**

Joseph Tebrugge – Director of Engineering

Department of Engineering

November 29, 2022

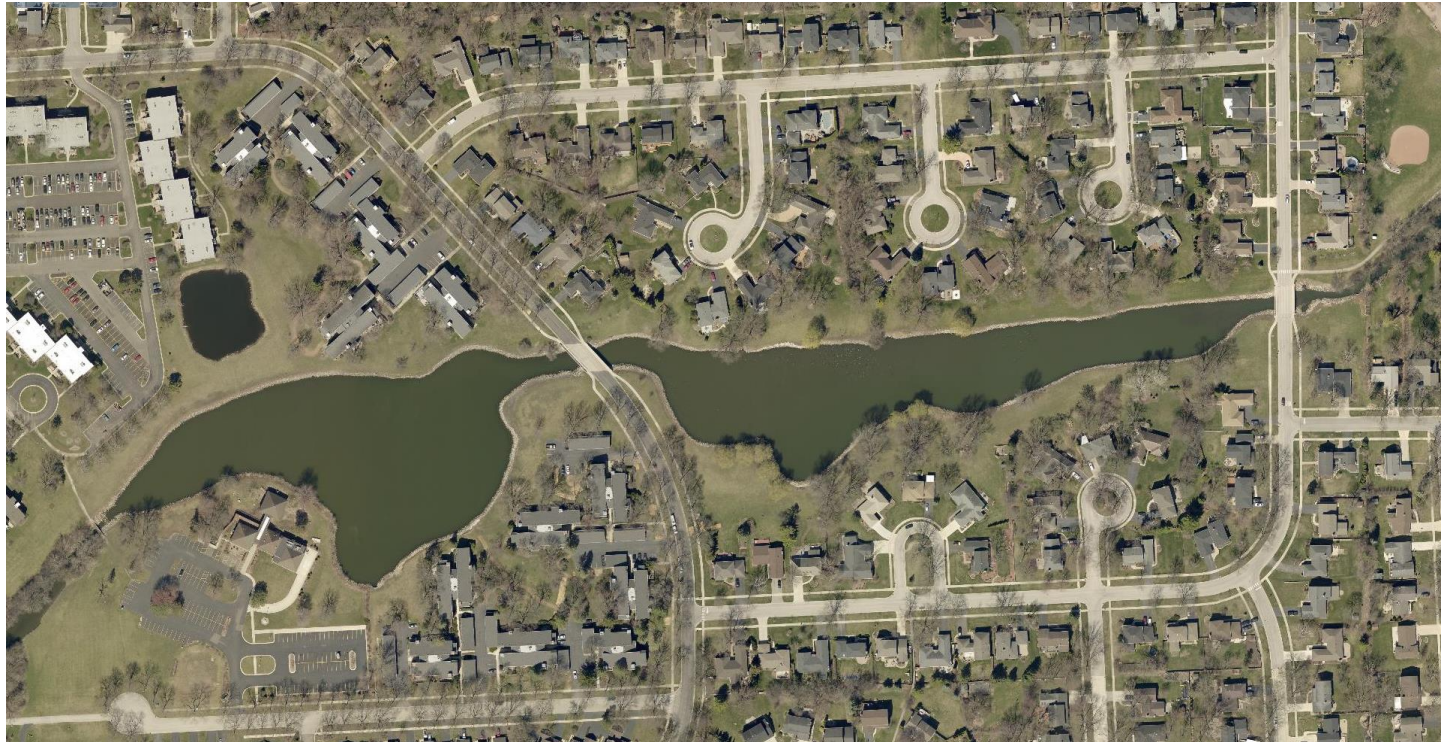


# Streams Lakes Sedimentation Issue





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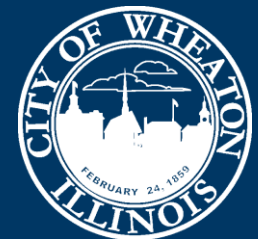
# Streams Lakes Sedimentation Issue

Lakes Created in 1969 and 1970 by a Private Developer





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## Lakes Created in 1969 and 1970 by a Private Developer

### Dredged in:

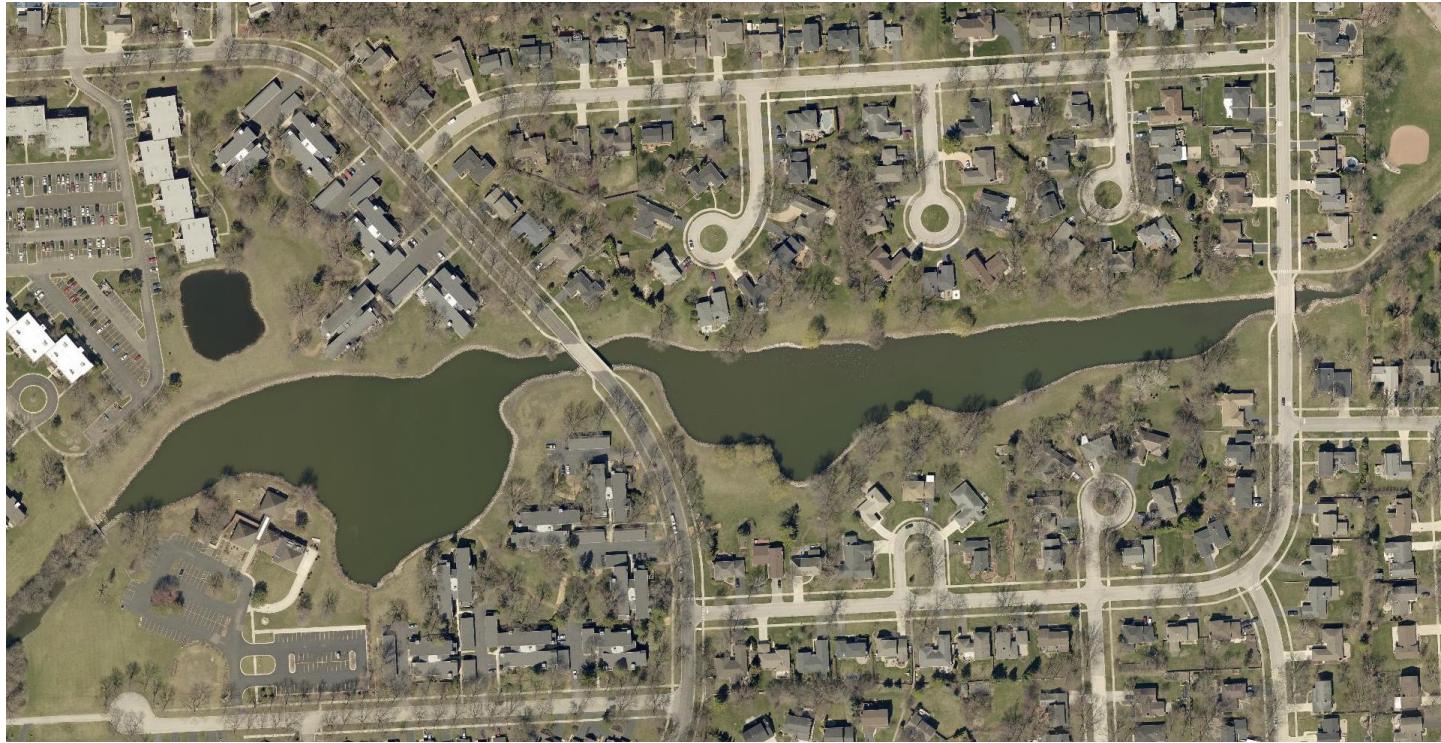
- 1977
- 1982
- 1987
- 1998
- 2009
- 2016





# Streams Lakes Sedimentation Issue

## Sediment Transport and Natural Equilibriums



# Streams Lakes Sedimentation Issue

Sediment Transport and Natural Equilibriums

Broken Sidewalk Concrete erosion control





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Sediment Transport and Natural Equilibriums

Broken Sidewalk Concrete erosion control

Impaired water quality - IEPA



## DuPage River/Salt Creek Watershed TMDL Report

**Draft Stage 3 Report**

**March 2019 Public Notice**



1021 North Grand Avenue East  
P.O. Box 19276  
Springfield, Illinois 62794-9276



# Streams Lakes Sedimentation Issue

Sediment Transport and Natural Equilibriums

Broken Sidewalk Concrete erosion control

Impaired water quality - IEPA

Low Dissolved Oxygen – BOD Sink





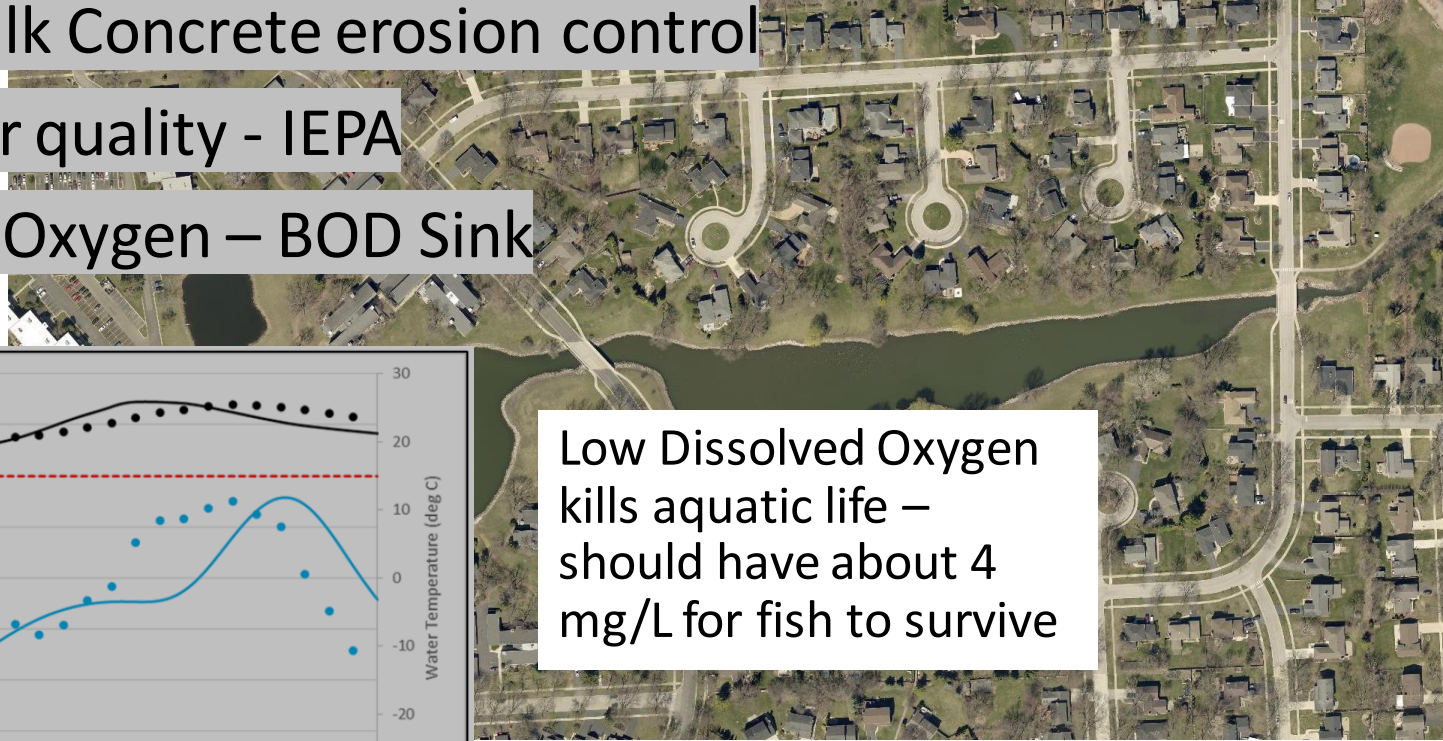
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Sediment Transport and Natural Equilibriums

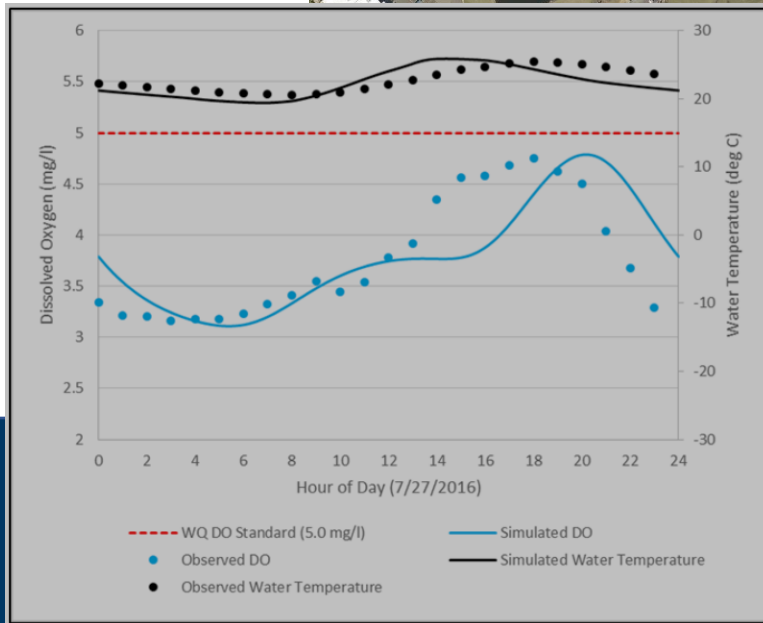
Broken Sidewalk Concrete erosion control

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Low Dissolved Oxygen – BOD Sink



Low Dissolved Oxygen  
kills aquatic life –  
should have about 4  
mg/L for fish to survive



# Streams Lakes Sedimentation Issue

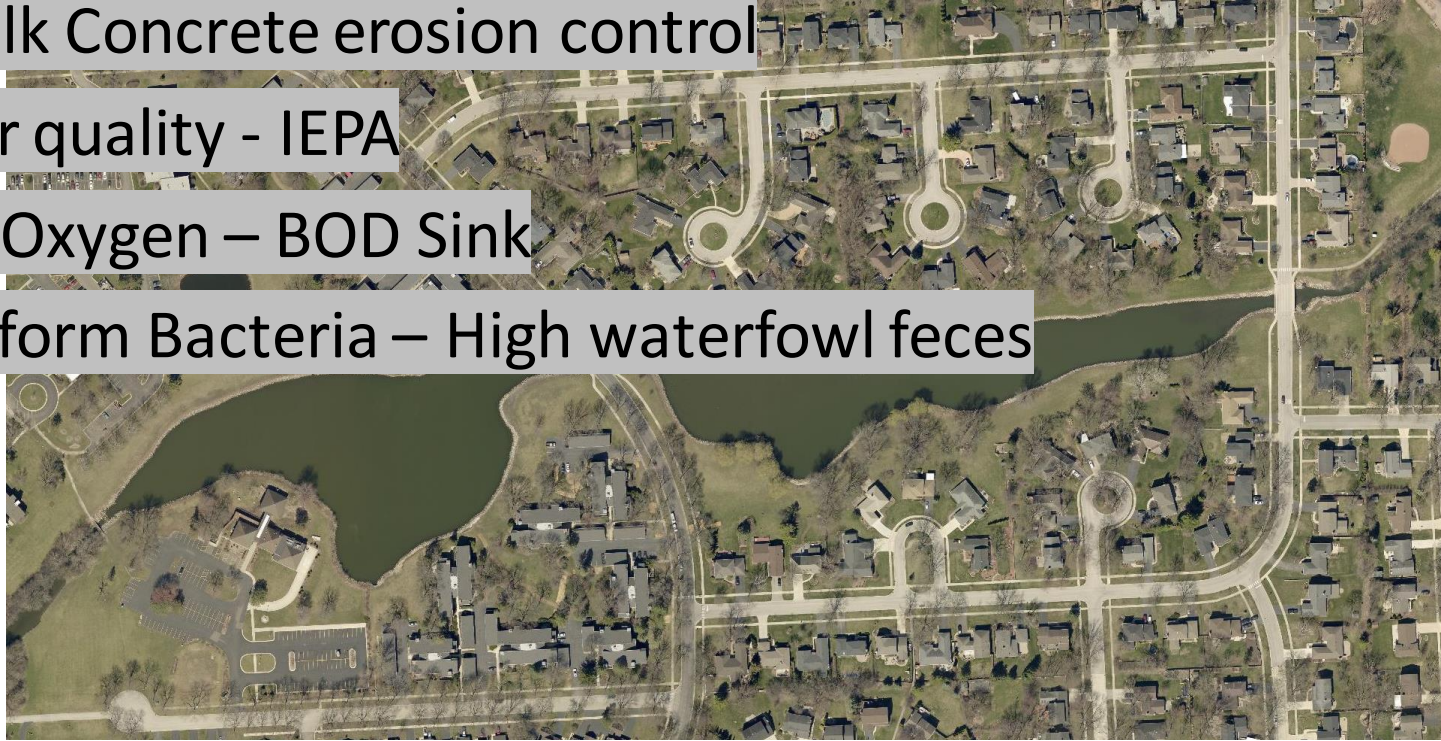
Sediment Transport and Natural Equilibriums

Broken Sidewalk Concrete erosion control

Impaired water quality - IEPA

Low Dissolved Oxygen – BOD Sink

High Fecal Coliform Bacteria – High waterfowl feces





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- 1) There is no way to make dredging easier or less expensive



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- 3) There are 3 options moving forward



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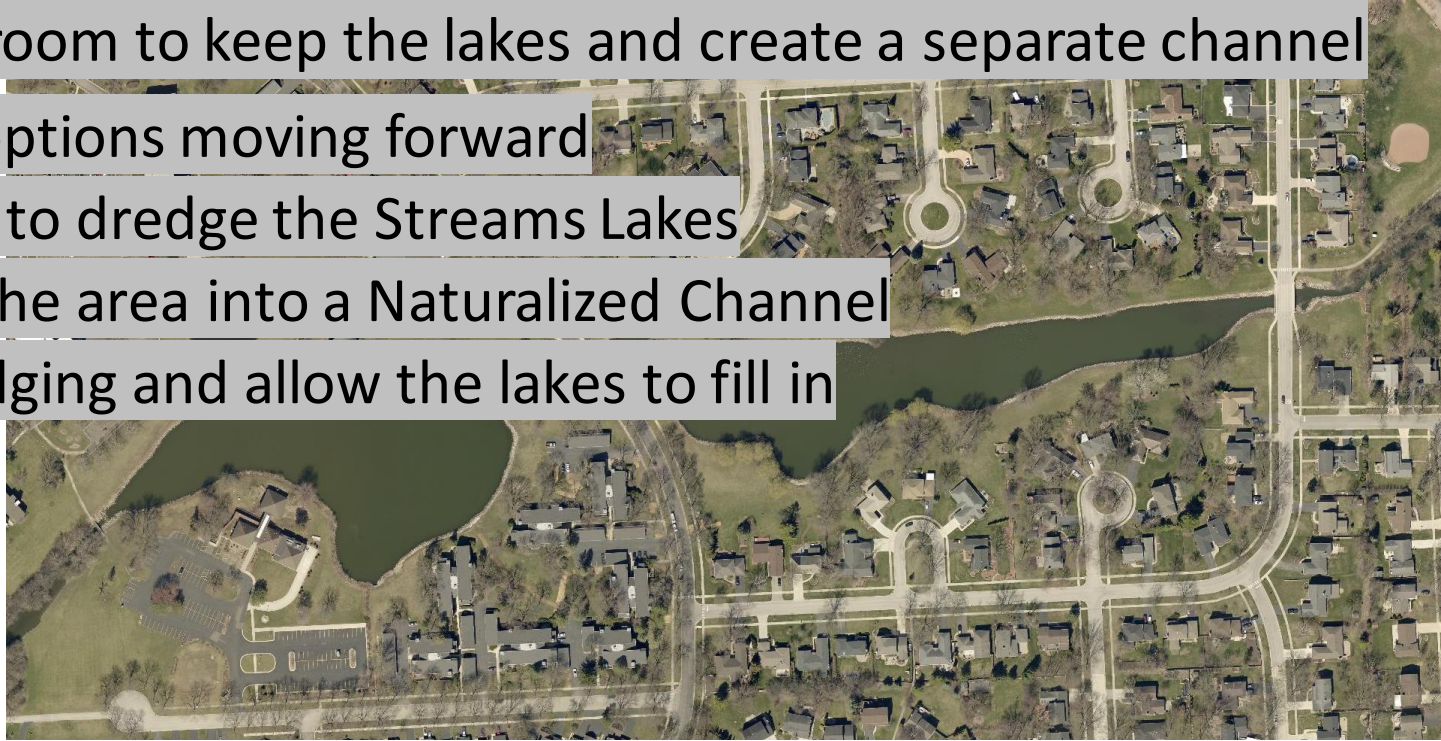
- 1) There is no way to make dredging easier or less expensive
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  - b) Convert the area into a Naturalized Channel



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Previous studies have determined that:

- 1) There is no way to make dredging easier or less expensive
- 2) There is not room to keep the lakes and create a separate channel
- 3) There are 3 options moving forward
  - a) Continue to dredge the Streams Lakes
  - b) Convert the area into a Naturalized Channel
  - c) Stop dredging and allow the lakes to fill in







# Springbrook#1 Streams Lakes Meander FEASIBILITY STUDY

City of Wheaton hired Engineering Resource Associates (ERA)

- ERA
- Performed a topographic survey
  - Analyzed the existing flow regime
  - Analyzed a proposed channel to match the existing forces in the existing flow regime
  - Created preliminary drawings
  - Created initial estimate of costs



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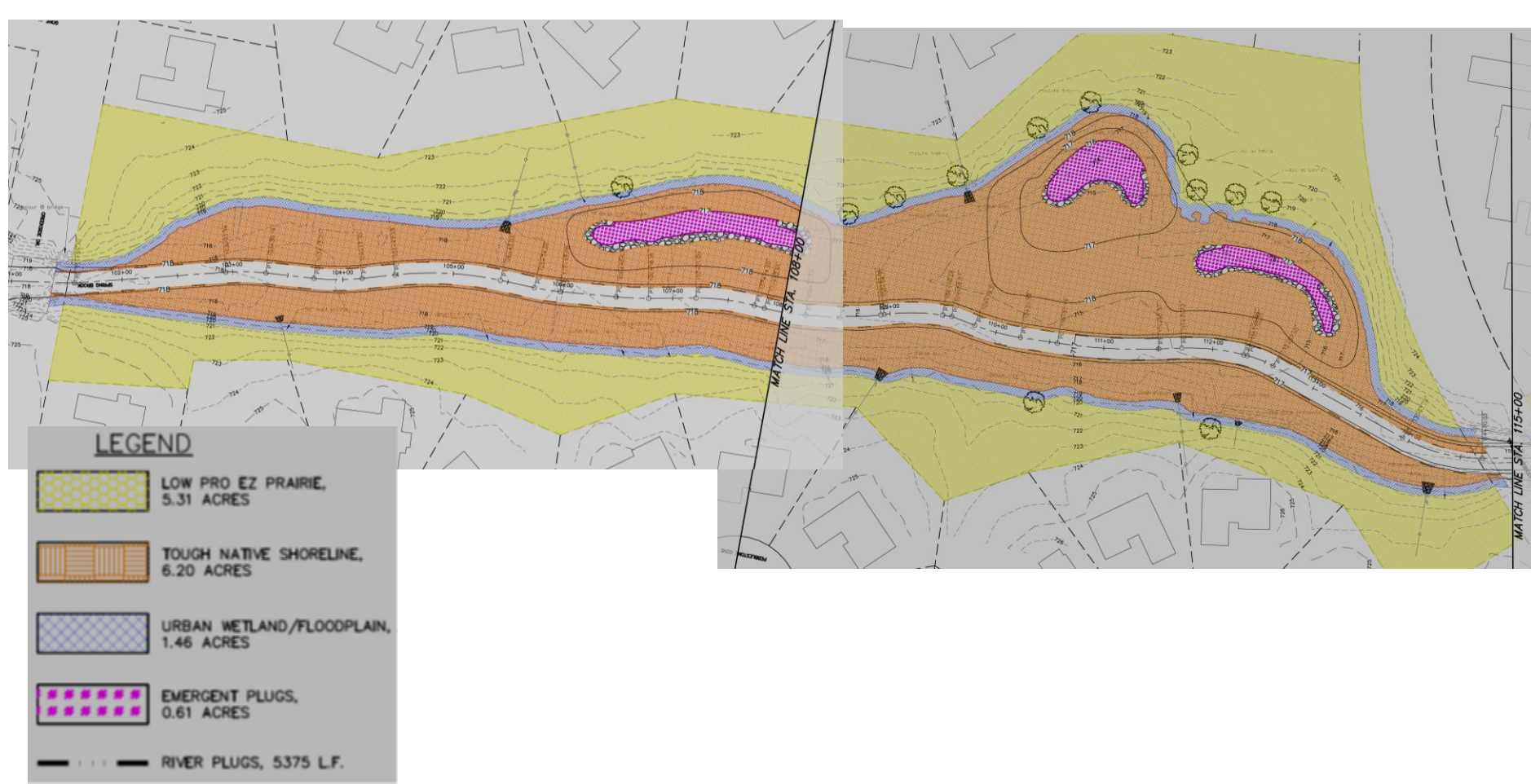
**DETERMINED THAT IT WAS POSSIBLE TO CONSTRUCT A  
NATURALIZED CHANNEL**





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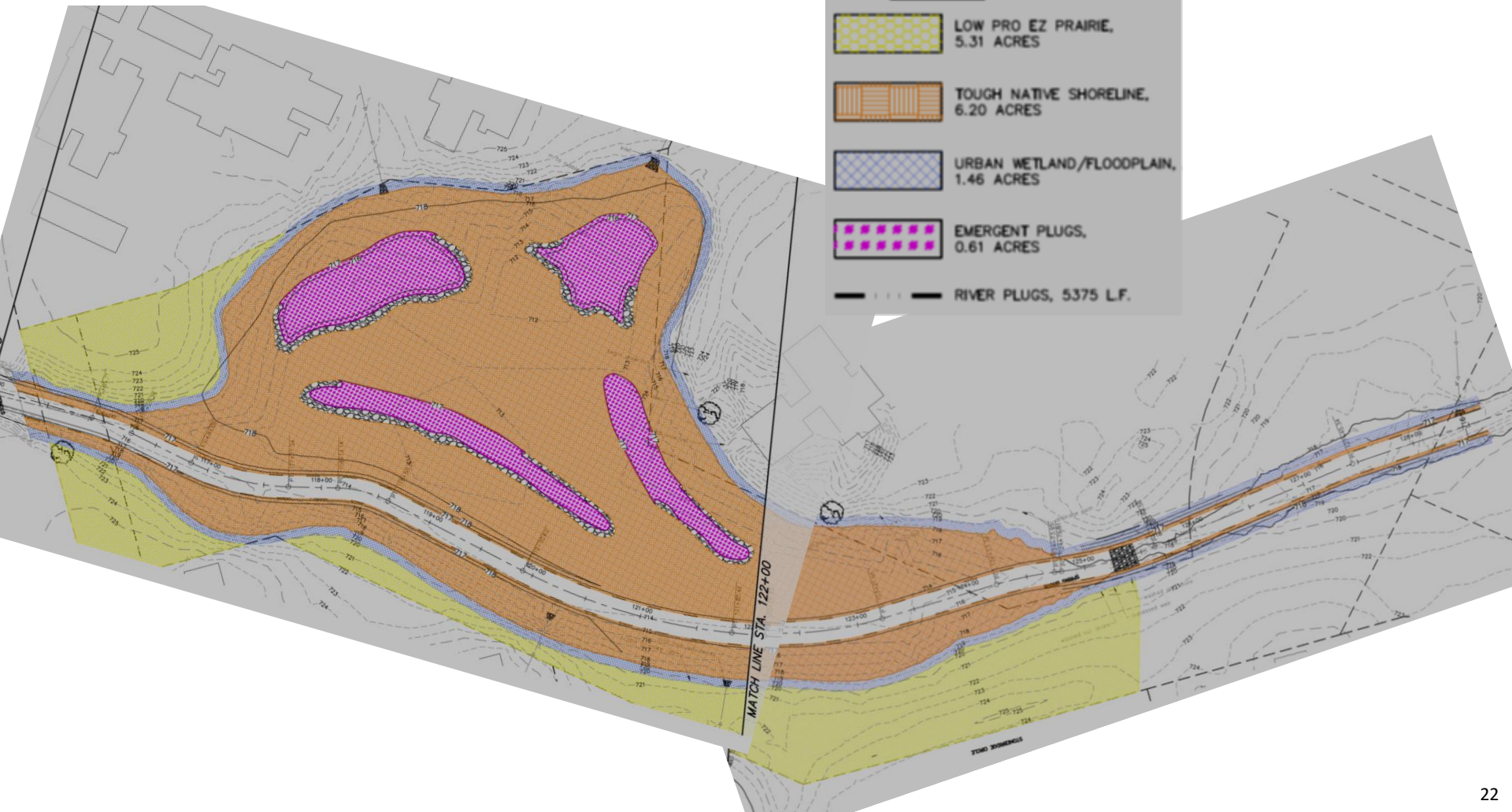
## Proposed East Lake





# Springbrook#1 Streams Lakes Meander FEASIBILITY STUDY

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Initial Engineer's Estimate of Costs = 3 Million

Grants available from:

IEPA 319(h) Grant (60% Max)

DuPage River Salt Creek Workgroup

DuPage County Water Quality Improvement Program (20% Max)



# Springbrook#1 Streams Lakes Meander FEASIBILITY STUDY

## Results of Proposed Meandering and Naturalized Channel

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- Channel would be flanked by a Naturalized floodplain terrace with native grasses which keeps Goose Population away and decreases fecal coliform pollution





# Springbrook#1 Streams Lakes Meander

## FEASIBILITY STUDY

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- Narrows the flow of water and allows sediment transport to continue eliminating Streams Lakes sedimentation problem and improving the water quality
- Removes 5,100 Lineal Feet of broken concrete sidewalk erosion control
- Channel would be flanked by a Naturalized floodplain terrace with native grasses which keeps Goose Population away and decreases fecal coliform pollution
- Introduces additional channel slope and a rock substrate channel bed which will increase the dissolved oxygen in the water improving the water quality

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**THANK YOU  
ANY QUESTIONS?**

