

SPRINGBROOK#1 STREAMS LAKES MEANDER FEASIBILITY STUDY

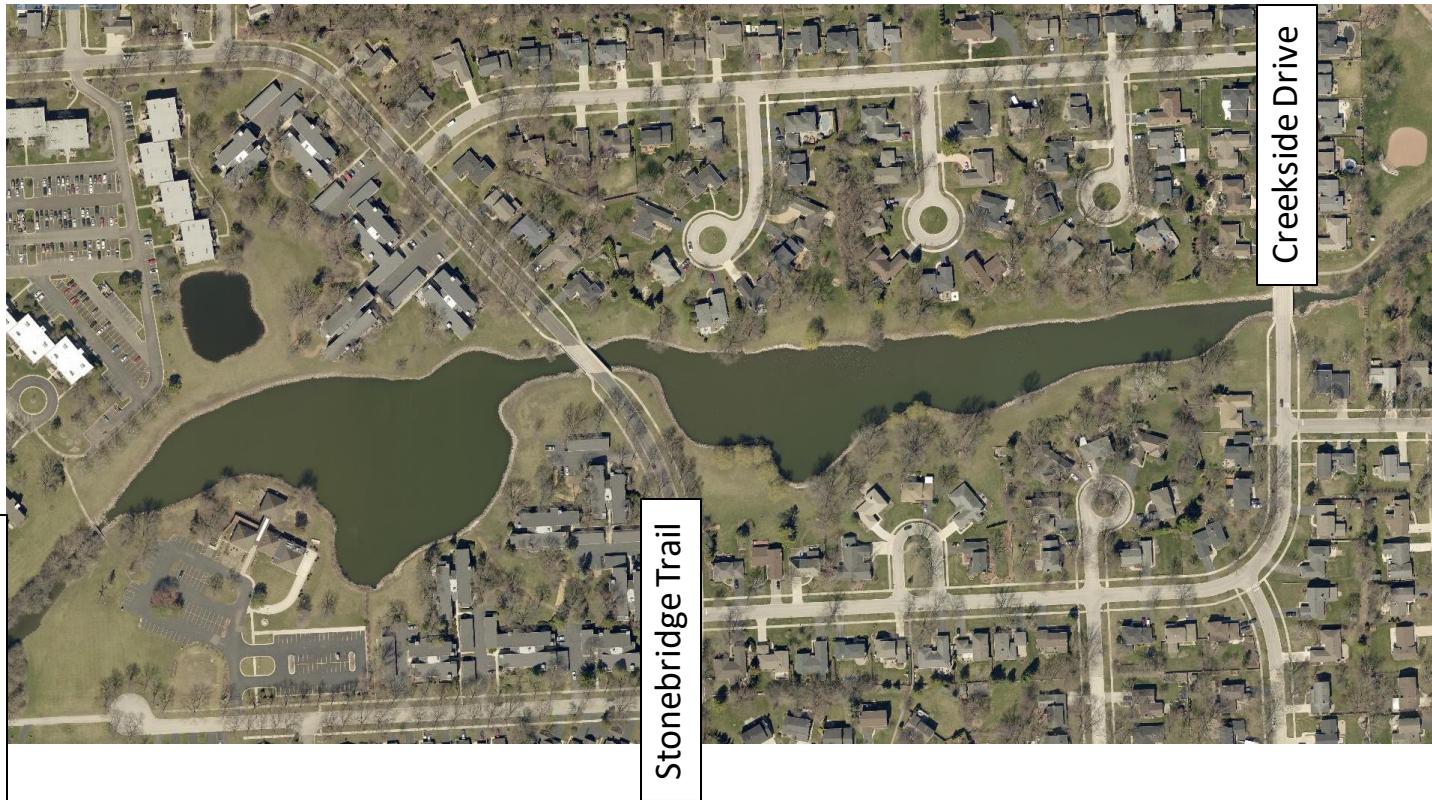
Joseph Tebrugge – Director of Engineering

Department of Engineering

November 29, 2022



Streams Lakes Sedimentation Issue



Streams Lakes Sedimentation Issue



Streams Lakes Sedimentation Issue

Lakes Created in 1969 and 1970 by a Private Developer



Streams Lakes Sedimentation Issue



Streams Lakes Sedimentation Issue

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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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



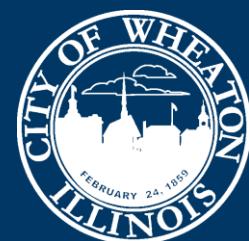
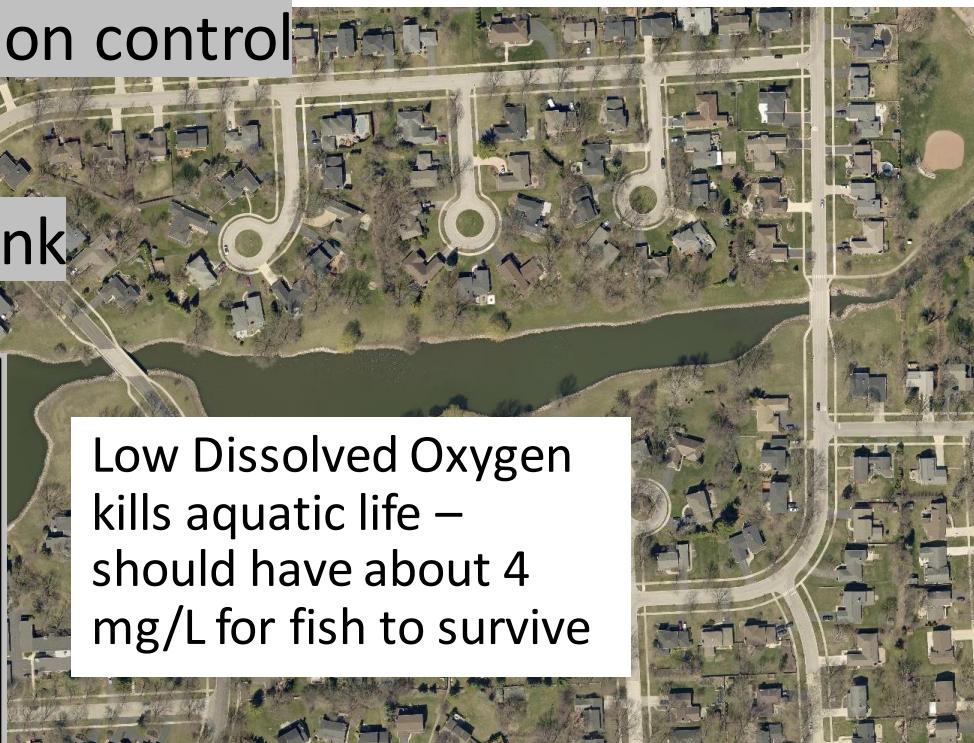
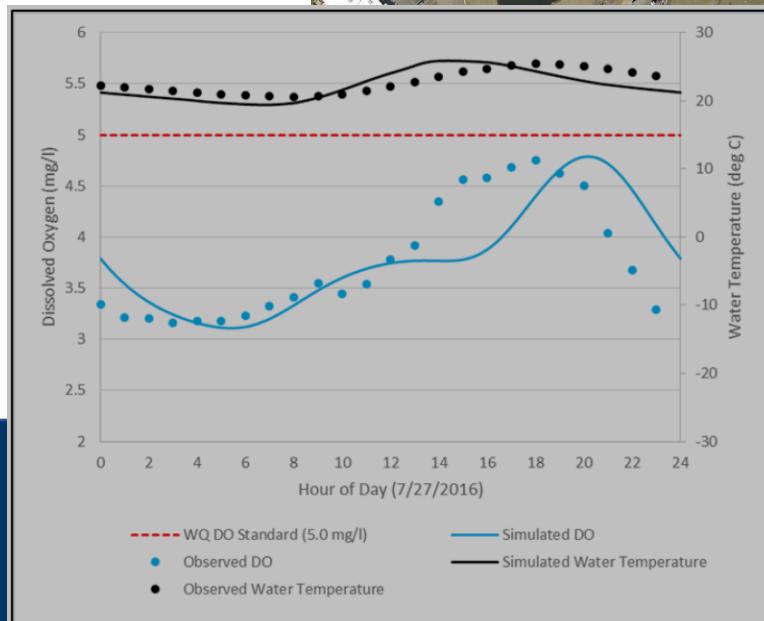
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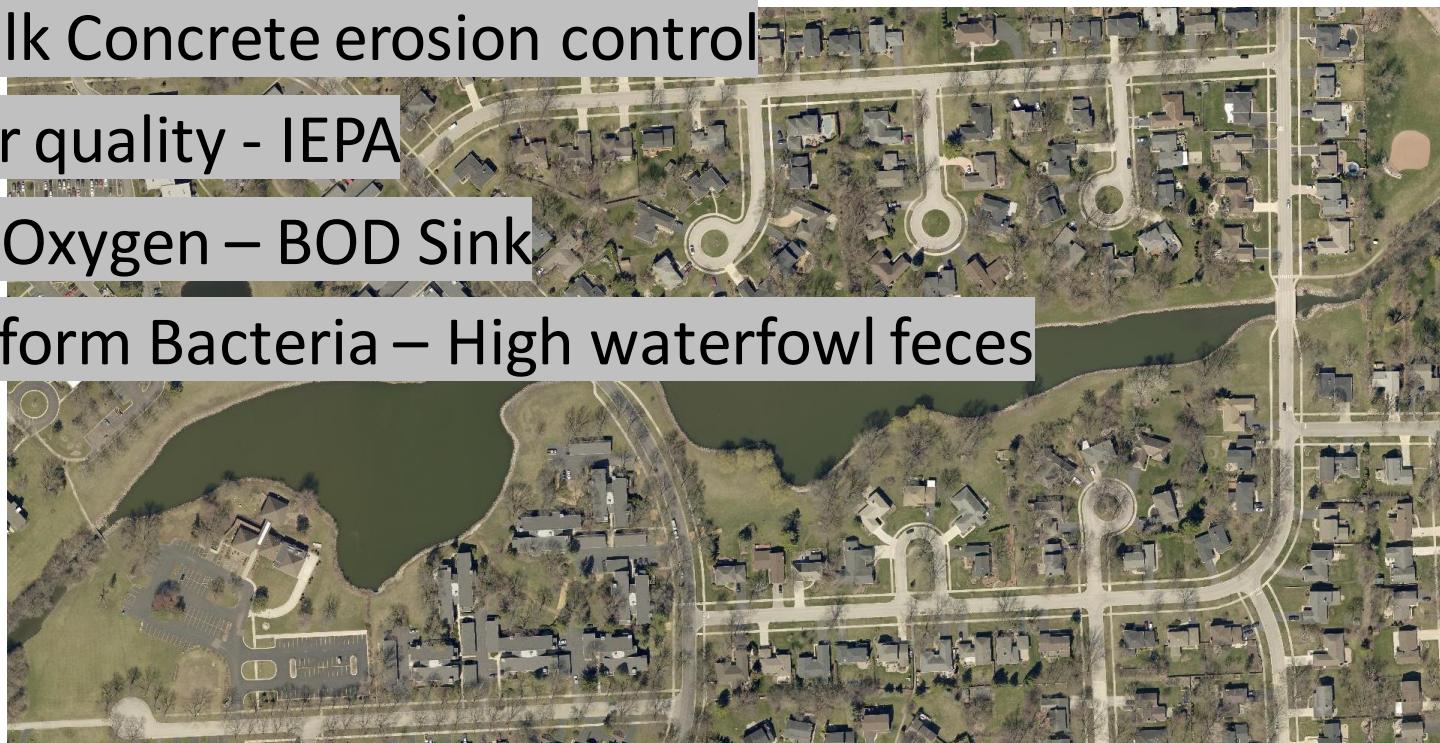
Sediment Transport and Natural Equilibriums

Broken Sidewalk Concrete erosion control

Impaired water quality - IEPA

Low Dissolved Oxygen – BOD Sink

High Fecal Coliform Bacteria – High waterfowl feces



Streams Lakes Sedimentation Issue

Previous studies have determined that:

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



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- 2) There is not room to keep the lakes and create a separate channel



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- 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



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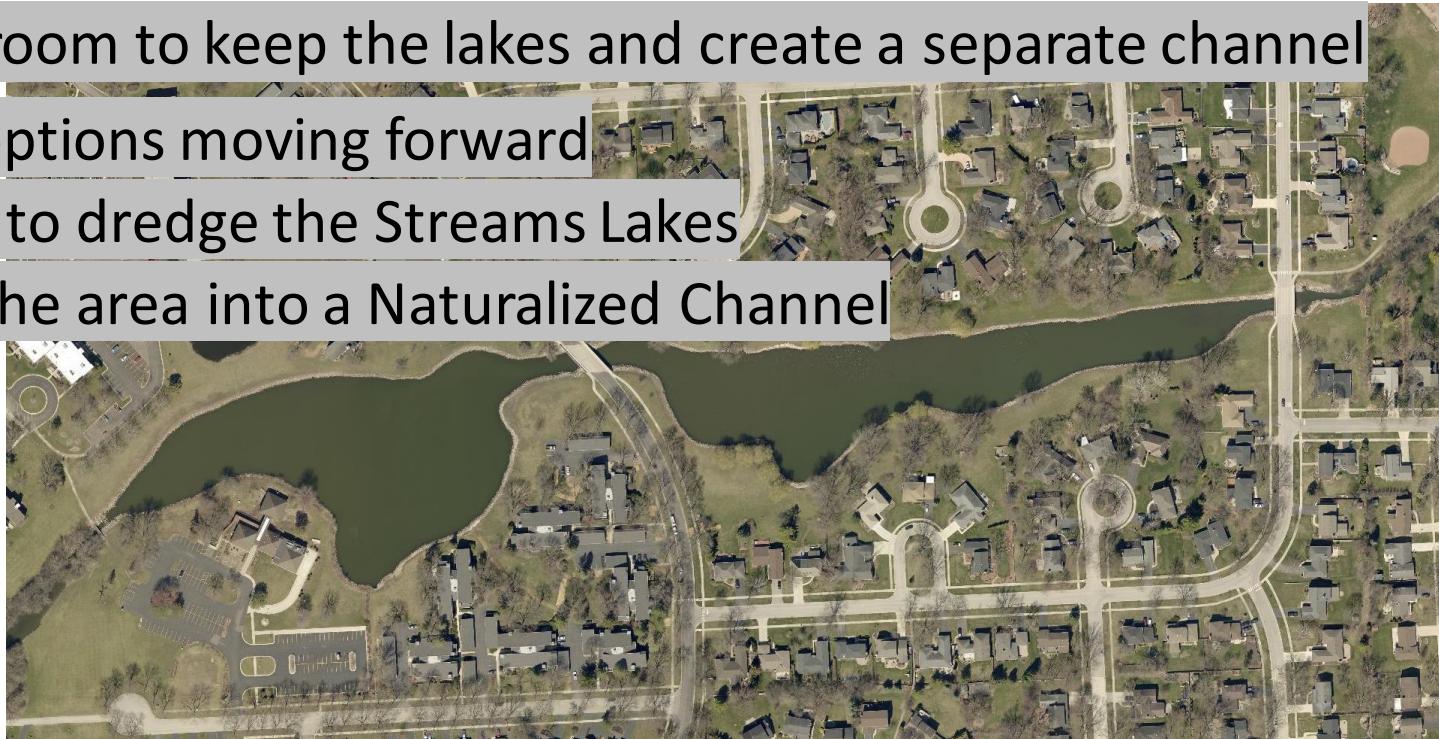
- 1) There is no way to make dredging easier or less expensive
- 2) There is not room to keep the lakes and create a separate channel
- 3) There are 3 options moving forward
 - a) Continue to dredge the Streams Lakes



Streams Lakes Sedimentation Issue

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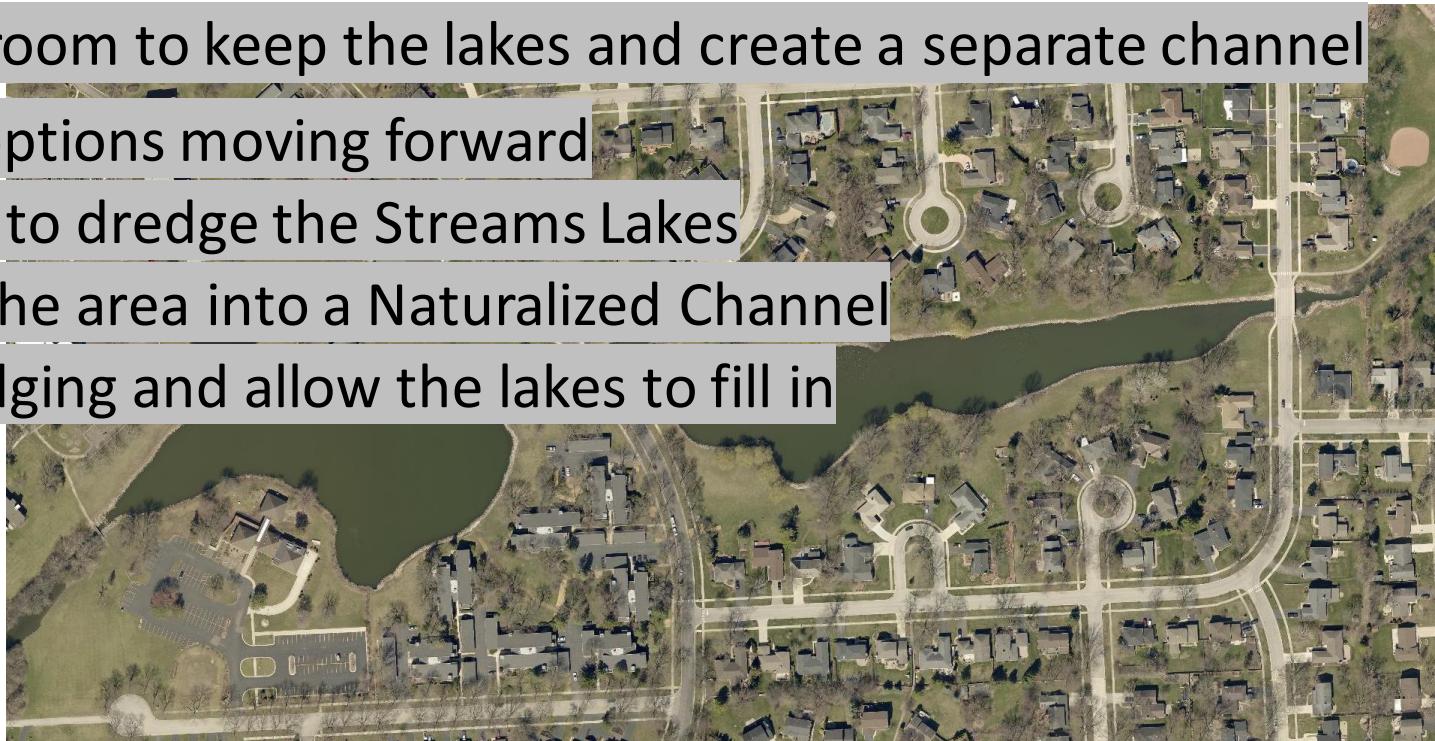
- 1) There is no way to make dredging easier or less expensive
- 2) There is not room to keep the lakes and create a separate channel
- 3) There are 3 options moving forward:
 - a) Continue to dredge the Streams Lakes
 - b) Convert the area into a Naturalized Channel



Streams Lakes Sedimentation Issue

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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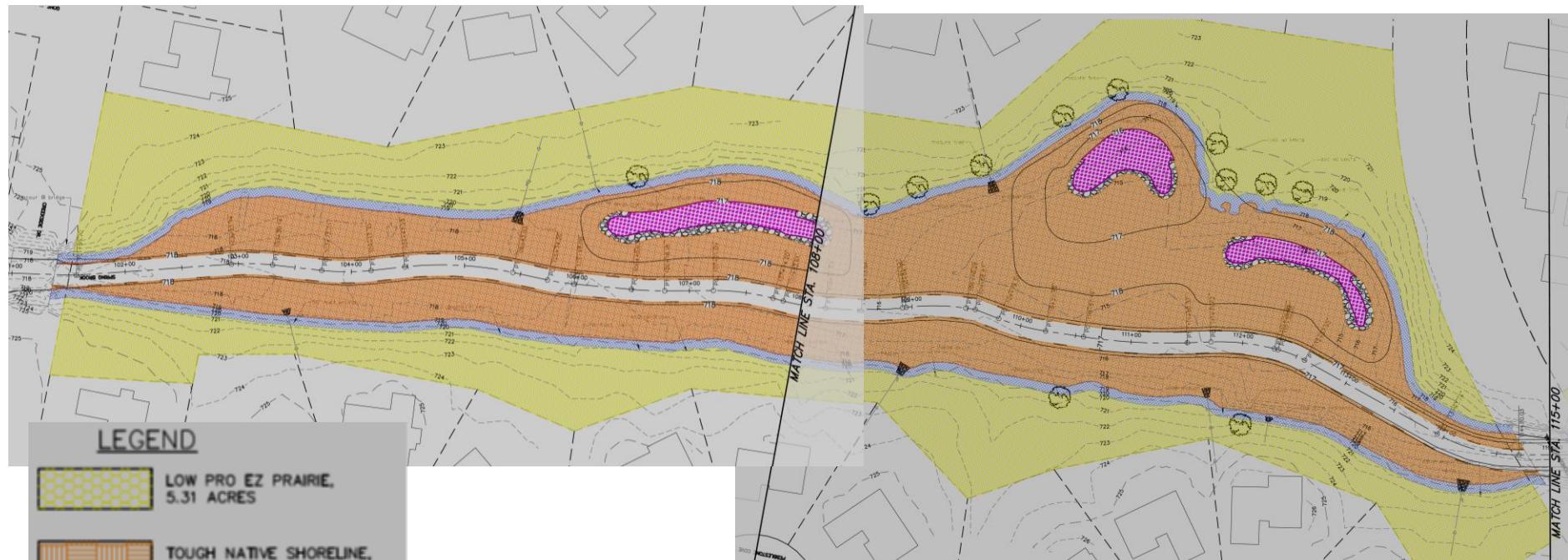
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DETERMINED THAT IS WAS POSSIBLE TO CONSTRUCT A
NATURALIZED CHANNEL



Springbrook#1 Streams Lakes Meander FEASIBILITY STUDY

Proposed East Lake



LEGEND

LOW PRO EZ PRAIRIE,
5.31 ACRES

TOUGH NATIVE SHORELINE,
6.20 ACRES

URBAN WETLAND/FLOODPLAIN,
1.46 ACRES

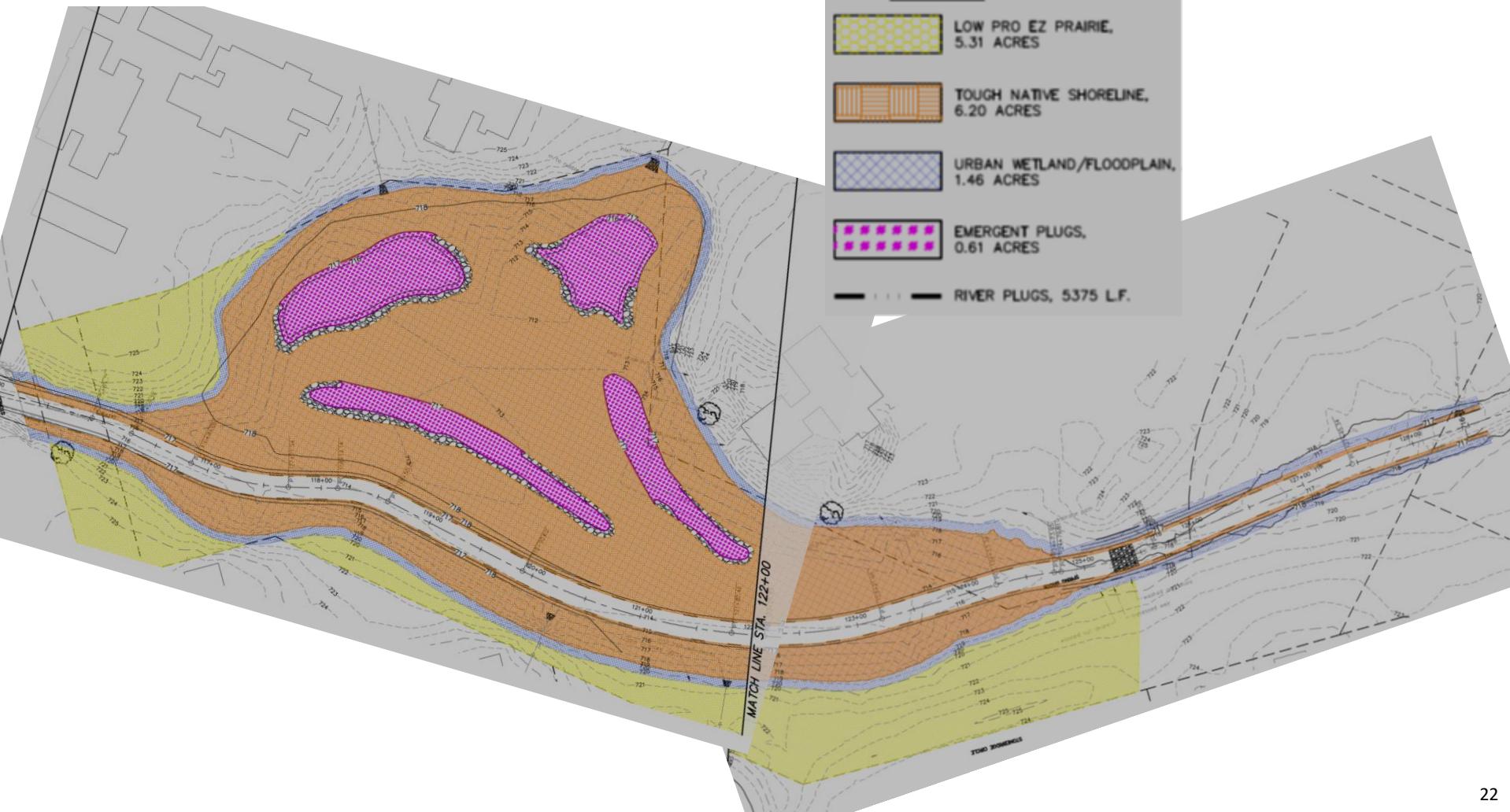
EMERGENT PLUGS,
0.61 ACRES

RIVER PLUGS, 5375 L.F.

Springbrook#1 Streams Lakes Meander FEASIBILITY STUDY



Proposed West Lake



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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

- Narrows the flow of water and allows sediment transport to continue eliminating Streams Lakes sedimentation problem and improving the water quality



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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



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Results of Proposed Meandering and Naturalized Channel

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- 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?

