SEIDLS LAKE TREE TRENCHES

Presentation for
LMRWMO
Board of Managers
2020

Joe Barten
LMRWMO Administrator

LMRWMO
LOWER MISSISSIPPI RIVER
WATERSHED MANAGEMENT ORGANIZATION

City of SOUTH ST. PAUL Minnesota

METROPOLITAN COUNCIL

VITAL STATISTICS

Seidls Lake - DNR Waterbody

- Seidls Lake is a landlocked 6.5-acre DNR protected waterbody located within the popular recreational amenity of Seidl's Lake Park.
- The Seidls Lake watershed is approximately 400 acres spread over the communities of and Inver Grove Heights, South St. Paul, & West St. Paul.

Issues:

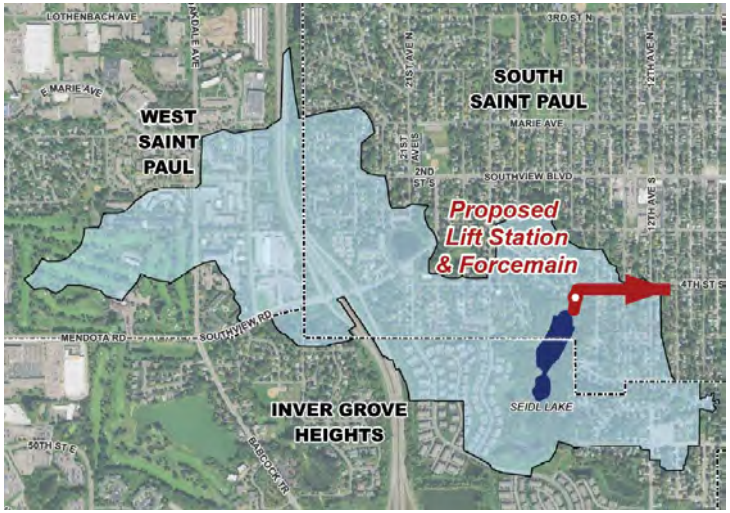
- Landlocked basin with no natural outlet causes water fluctuations of up to 15 feet.
- Causes vegetation and habitat die-off
- Concentrations of contaminants
- Steep barren slopes and eroded shorelines
- Degraded water quality from grade B in 1998 to "D" in 2008
- Damaged park amenities and habitat

Working Towards Improvement:

- Cities have already implemented water quality improvement projects totaling over $800,000

Proposed Improvements:

- Stormwater pumping station and forcemain to control water levels
- Potential shoreline restoration
- Fishing pier
- Programmed park space



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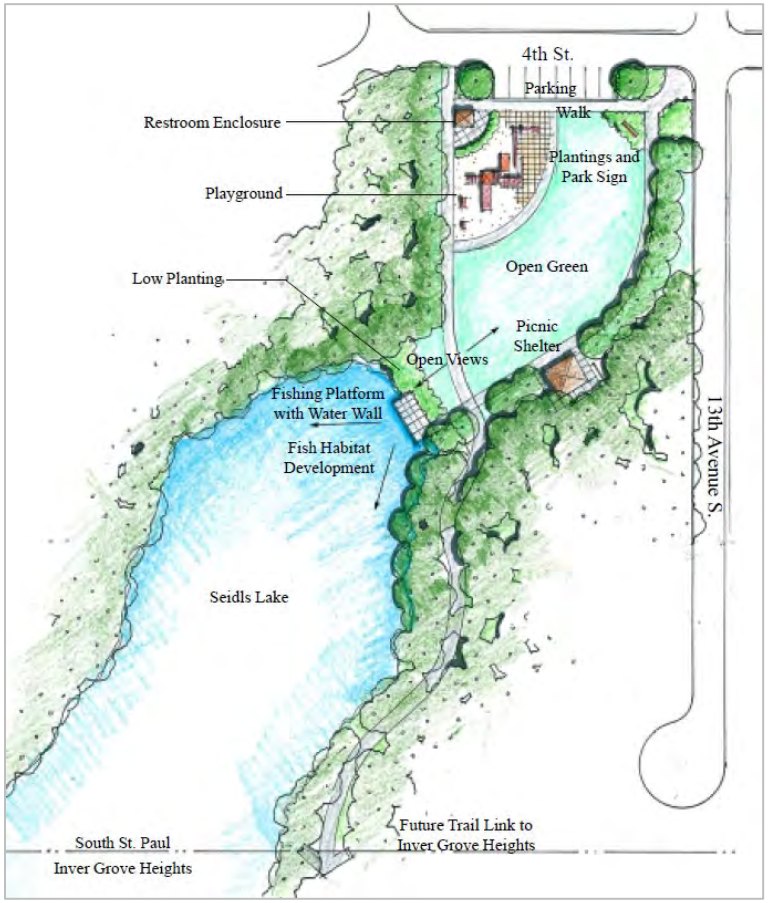
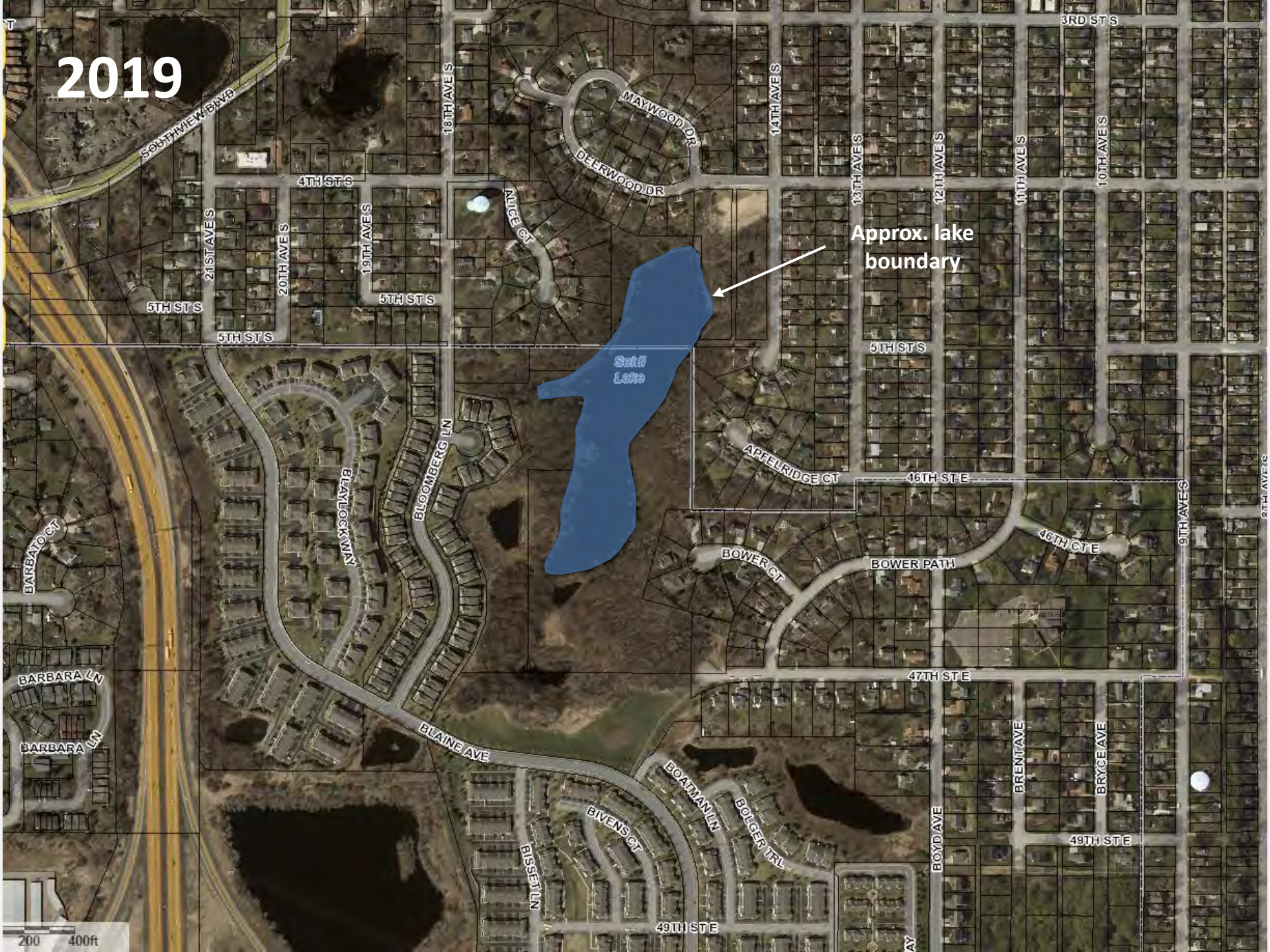
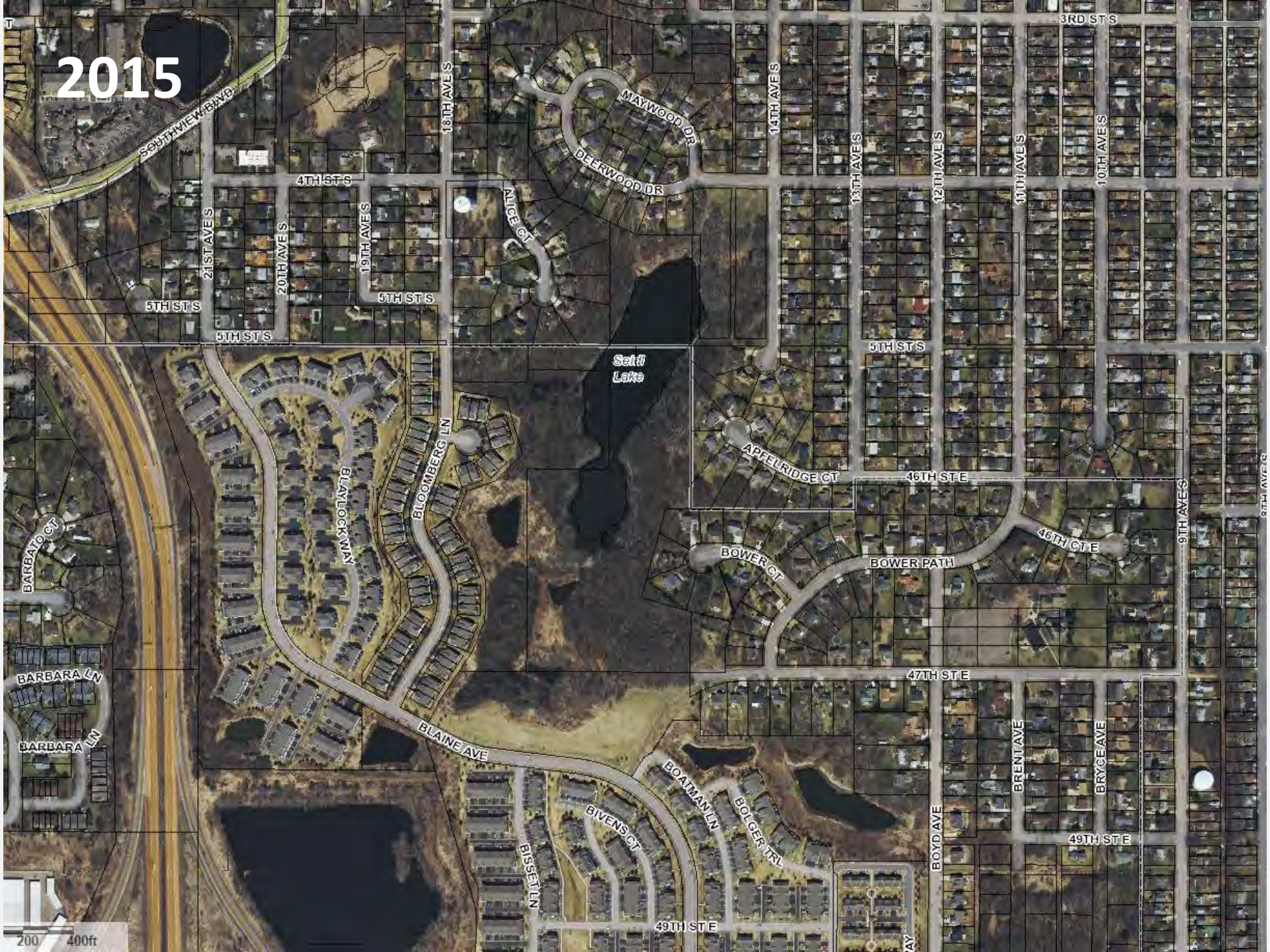
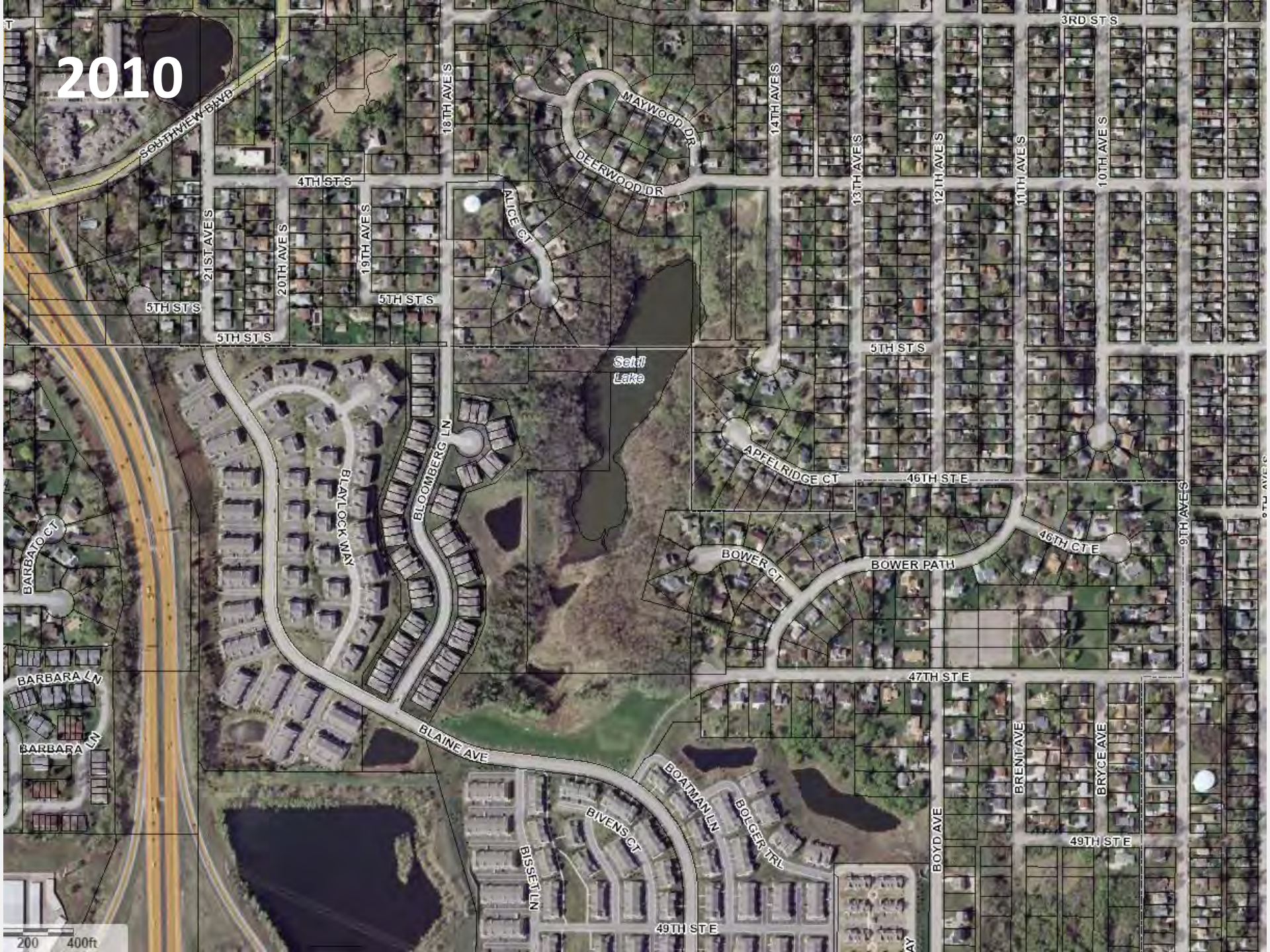


ORIENTATION & HISTORY – SEIDLS LAKE

LMR WMO
LOWER MISSISSIPPI RIVER
WATERSHED MANAGEMENT ORGANIZATION


2019
Approx. lake boundary
Still Lake
SOUTHVIEW BLVD
MAYWOOD DR
DEERWOOD DR
18TH AVE S
14TH AVE S
13TH AVE S
12TH AVE S
11TH AVE S
10TH AVE S
3RD ST S
4TH ST S
5TH ST S
21ST AVE S
20TH AVE S
19TH AVE S
TYLICE CT
APPELRIDGE CT
46TH ST E
46TH CT E
9TH AVE S
BOWER CT
BOWER PATH
BLOOMBERG LN
BLAYLOCK WAY
BARBATO CT
BARBARA LN
BLAINE AVE
47TH ST E
BOATMAN LN
BOLGER TRL
BIVENS CT
BISSETT LN
BOYD AVE
BRENT AVE
BRYCE AVE
49TH ST E
200
400ft


2015
SOUTHVIEW BLVD
18TH AVE S
MAYWOOD DR
DEERWOOD DR
14TH AVE S
13TH AVE S
12TH AVE S
11TH AVE S
10TH AVE S
3RD ST S
4TH ST S
ALICE CT
21ST AVE S
20TH AVE S
19TH AVE S
5TH ST S
5TH ST S
5TH ST S
5TH ST S
Seitl Lake
BLOOMBERG LN
BLAYLOCK WAY
APFELRIDGE CT
46TH ST E
9TH AVE S
BARBATO CT
BOWER CT
BOWER PATH
46TH CT E
BARBARA LN
BARBARA LN
47TH ST E
BLAINE AVE
BOATMAN LN
BOLGER TRL
BIVENS CT
BISSET LN
BOYD AVE
BRENT AVE
BRYCE AVE
49TH ST E
49TH ST E
200
400ft


2010
SOUTHVIEW BLVD
18TH AVE S
MAYWOOD DR
DEERWOOD DR
14TH AVE S
13TH AVE S
12TH AVE S
11TH AVE S
10TH AVE S
3RD ST S
4TH ST S
ALICE CT
21ST AVE S
20TH AVE S
19TH AVE S
5TH ST S
5TH ST S
5TH ST S
5TH ST S
Seitl Lake
BLOOMBERG LN
BLAYLOCK WAY
APFELRIDGE CT
46TH ST E
9TH AVE S
BARBATO CT
BOWER CT
BOWER PATH
46TH CT E
BARBARA LN
BARBARA LN
47TH ST E
BLAINE AVE
BOATMAN LN
BOLGER TRL
BIVENS CT
BISSET LN
BOYD AVE
BRENT AVE
BRYCE AVE
49TH ST E
49TH ST E
200
400ft


2005
SOUTHVIEW BLVD
18TH AVE S
MAYWOOD DR
DEERWOOD DR
14TH AVE S
13TH AVE S
12TH AVE S
11TH AVE S
10TH AVE S
3RD ST S
4TH ST S
ALICE CT
21ST AVE S
20TH AVE S
19TH AVE S
5TH ST S
5TH ST S
5TH ST S
5TH ST S
Seitl Lake
BLAYLOCK WY
BLOOMBERG LN
APFELRIDGE CT
46TH ST E
9TH AVE S
BARBATO CT
BOWER CT
BOWER PATH
46TH CT E
BARBARA LN
BARBARA LN
47TH ST E
BLAINE AVE
BOATMAN LN
BOLGER TRL
BIVENS CT
BISSET LN
BOYD AVE
BRENT AVE
BRYCE AVE
49TH ST E
49TH ST E
200
400ft


2000
Approx. 2019 lake boundary
Approx. 2000 lake boundary
Sediment Lake
SOUTHVIEW BLVD
18TH AVE S
MAYWOOD DR
DEERWOOD DR
14TH AVE S
13TH AVE S
12TH AVE S
11TH AVE S
10TH AVE S
3RD ST S
4TH ST S
21ST AVE S
20TH AVE S
19TH AVE S
TYLER CT
5TH ST S
BLOOMBERG LN
BLAYLOCK WAY
APPELRIDGE CT
46TH ST E
9TH AVE S
BARBATO CT
BOWER CT
BOWER PATH
46TH CT E
BARBARA LN
47TH ST E
BLAINE AVE
BOATMAN LN
BOLGER TRL
BIVENS CT
BISSET LN
BOYD AVE
BRENT AVE
BRYCE AVE
49TH ST E
200
400ft


1991
SOUTHVIEW BLVD
18TH AVE S
MAYWOOD DR
DEERWOOD DR
14TH AVE S
13TH AVE S
12TH AVE S
11TH AVE S
10TH AVE S
3RD ST S
4TH ST S
ALICE CT
21ST AVE S
20TH AVE S
19TH AVE S
5TH ST S
5TH ST S
5TH ST S
5TH ST S
Setil Lake
BLOOMBERG LN
BLAYLOCK WAY
APFELRIDGE CT
46TH ST E
9TH AVE S
46TH CT E
BOWER CT
BOWER PATH
BARBATO CT
47TH ST E
BARBARA LN
BARBARA LN
BLAINE AVE
BOATMAN LN
BOLGER TRL
BIVENS CT
BISSET LN
BOYD AVE
BRENT AVE
BRYCE AVE
49TH ST E
49TH ST E
200
400ft


1970
SOUTHVIEW BLVD
18TH AVE S
MAYWOOD DR
DEERWOOD DR
14TH AVE S
13TH AVE S
12TH AVE S
11TH AVE S
10TH AVE S
3RD ST S
4TH ST S
21ST AVE S
20TH AVE S
19TH AVE S
7TH CT
5TH ST S
5TH ST S
5TH ST S
5TH ST S
Seitl Lake
BLOOMBERG LN
BLAYLOCK WY
APPELRIDGE CT
46TH ST E
9TH AVE S
BARBATO CT
BOWER CT
BOWER PATH
46TH CT E
BARBARA LN
BARBARA LN
47TH ST E
BLAINE AVE
BOATMAN LN
BOLGER TRL
BIVENS CT
BISSET LN
BRENT AVE
BRYCE AVE
BOYD AVE
49TH ST E
49TH ST E
200
400ft


1957
SOUTHVIEW BLVD
4TH ST S
5TH ST S
5TH ST S
5TH ST S
5TH ST S
3RD ST S
18TH AVE S
MAYWOOD DR
DEERWOOD DR
14TH AVE S
13TH AVE S
12TH AVE S
11TH AVE S
10TH AVE S
21ST AVE S
20TH AVE S
19TH AVE S
TYLER CT
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BOLGER TRL
BIVENS CT
BISSET LN
BOYD AVE
BRENT AVE
BRYCE AVE
49TH ST E
49TH ST E
200
400ft


1937
SOUTHVIEW BLVD
18TH AVE S
MAYWOOD DR
DEERWOOD DR
14TH AVE S
3RD ST S
4TH ST S
21ST AVE S
20TH AVE S
19TH AVE S
NICE CT
13TH AVE S
12TH AVE S
11TH AVE S
10TH AVE S
5TH ST S
Schill Lake
APPELRIDGE CT
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200
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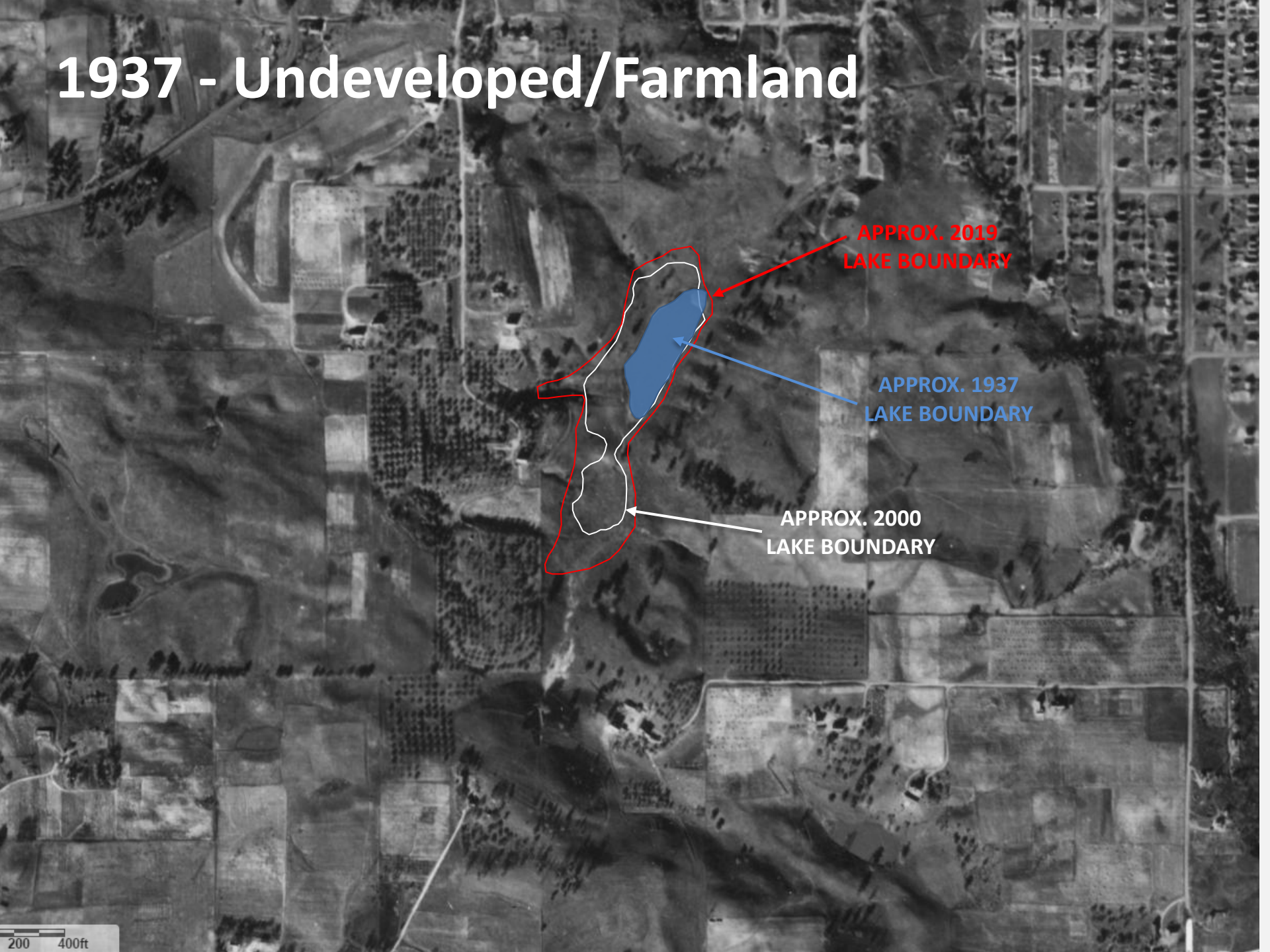
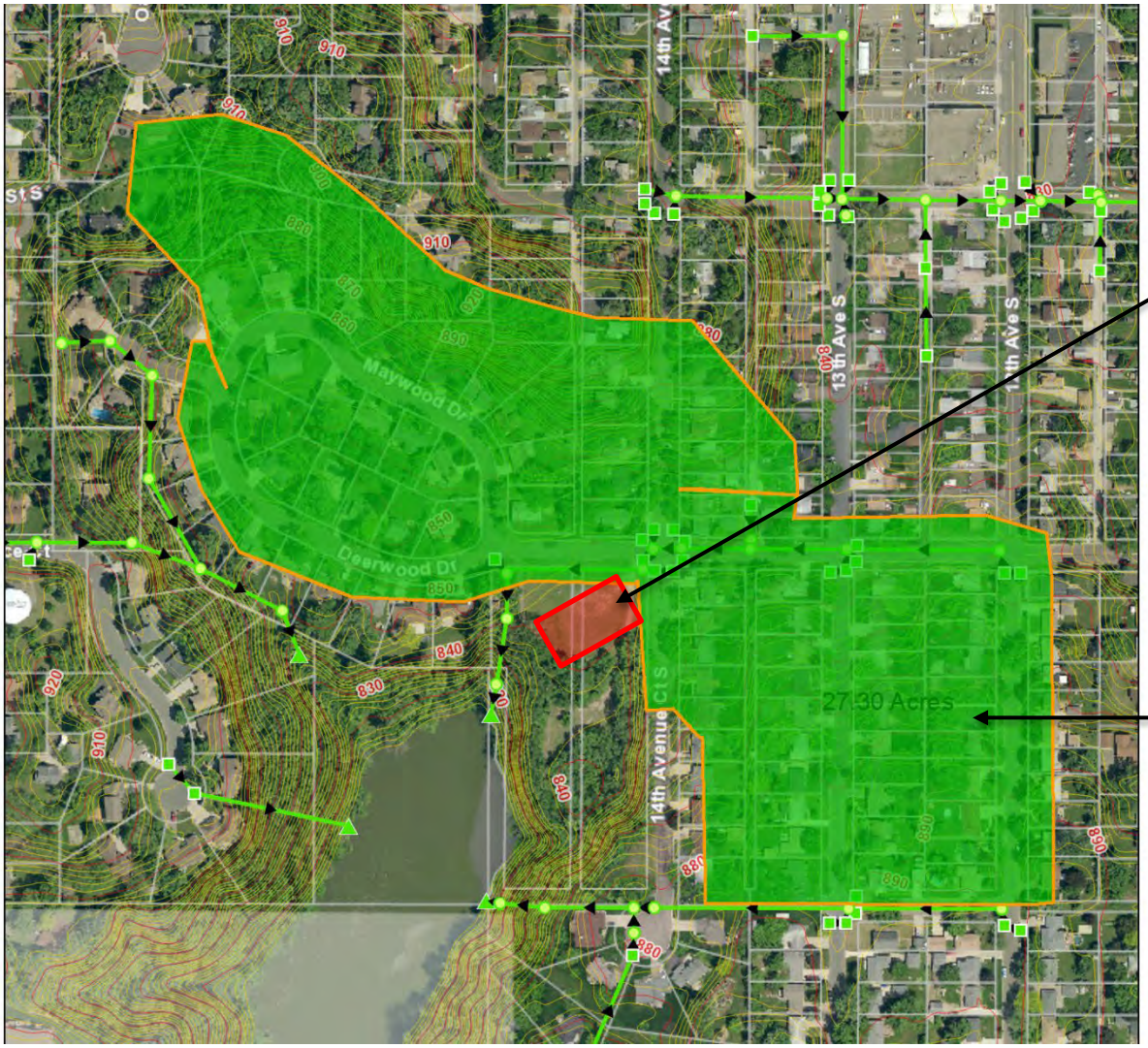
1937 - Undeveloped/Farmland



2019 - 83 YEARS OF DEVELOPMENT


Tree Trench
Project Area
27.3 acre
Residential
Drainage Area
27.30 Acres
Maywood Dr
Deerwood Dt
13th Ave S
14th Avenue Ct S

FUNDING

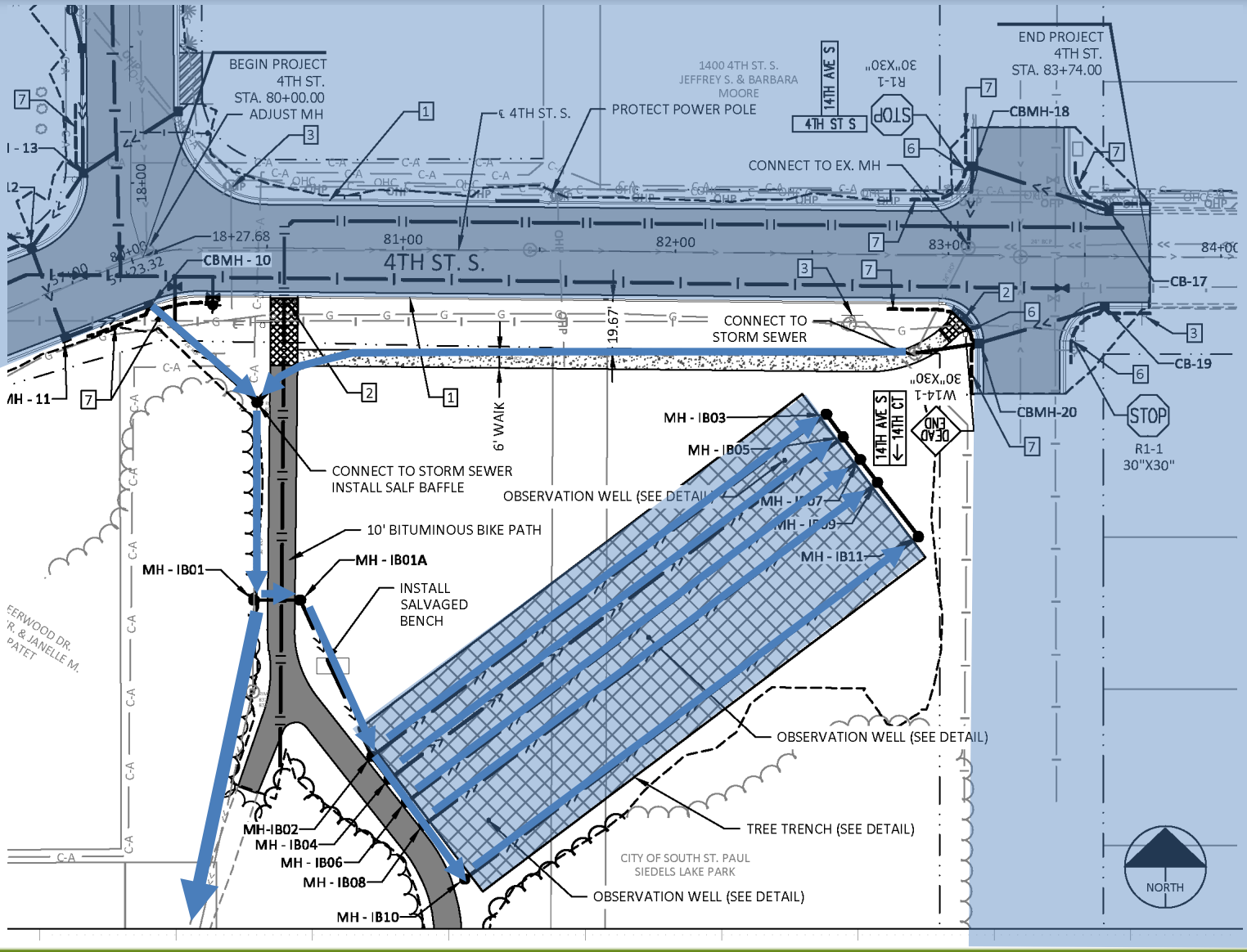
City of South St. Paul CIP - $157,605

Construction and project engineering

LMRWMO via 2017 Met. Council Stormwater Grant - $150,000

Project construction and sign installation

DESIGN AND ENGINEERING



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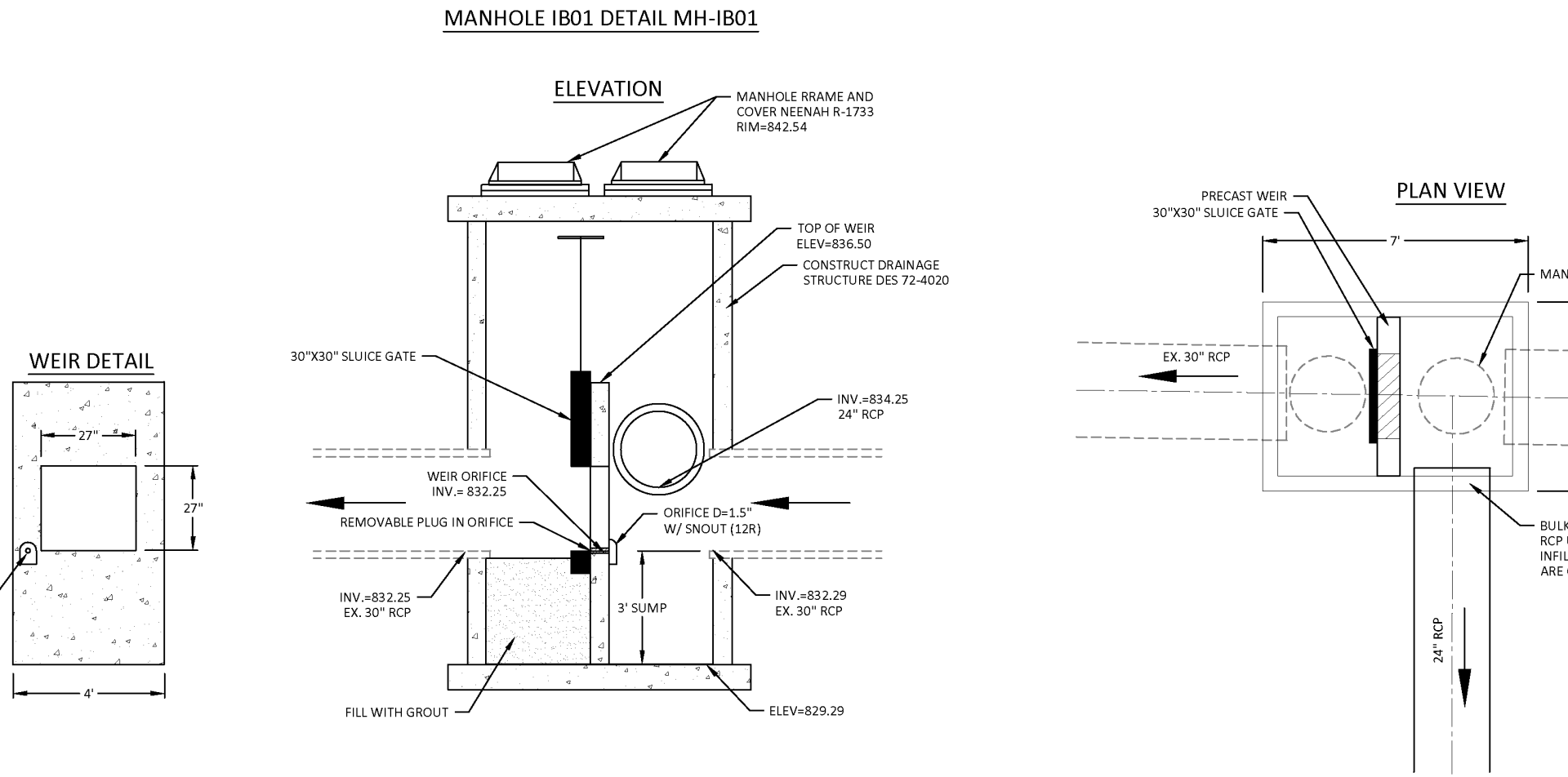

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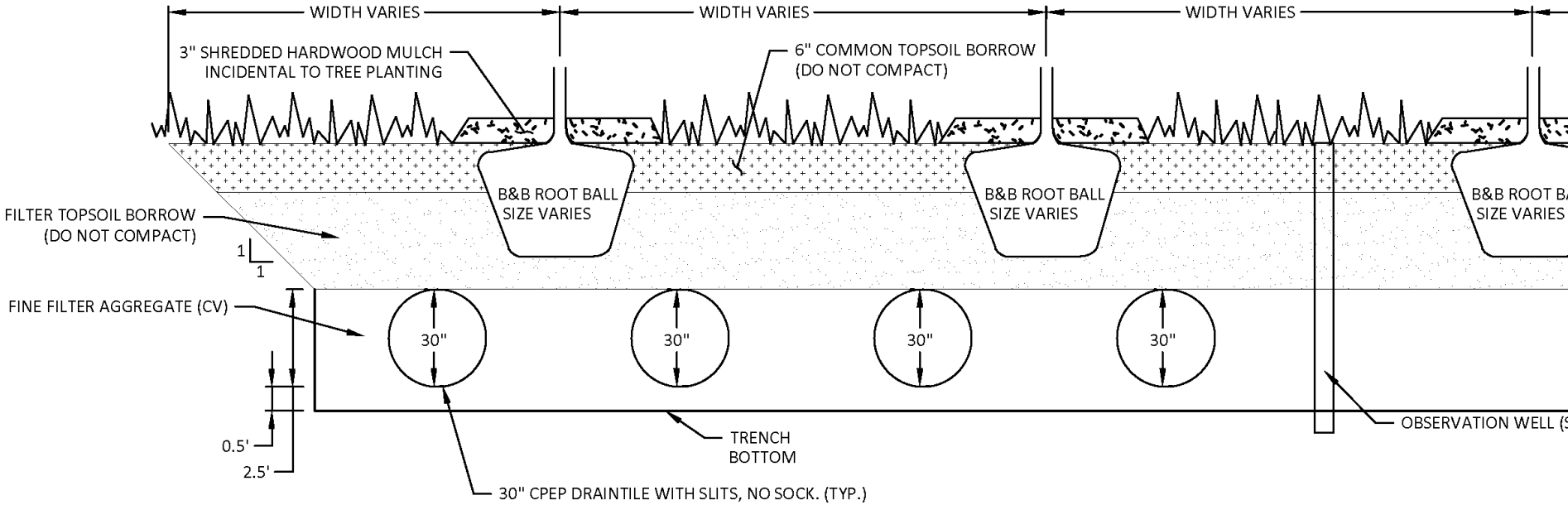

NOTE: ALL DIMENSIONS IN FEET, UNLESS NOTED OTHERWISE

TREE TRENCH


BEFORE


SEIDLS LAKE PARK
SOUTH ST. PAUL
INVER GROVE HEIGHTS
WALKING / HIKING TRAILS
NO ALCOHOL ALLOWED
DOGS MUST BE LEASHED
PARK CLOSES AT 10:00 P
BEFORE


BEFORE


DURING


KOMATSU
PC
360
LCi
Danner Inc.


L5-18


72 X 6.0
DANNER
ST1805-001A
5-24-18


KOMATSU


AFTER

ONE YEAR LATER

OUTREACH - PERMANENT SIGNAGE

ROOTED IN WATER QUALITY IMPROVEMENT

TREE TRENCHES STOP POLLUTANTS FROM ENTERING SEIDL'S LAKE

WHAT DOES THE TREE TRENCH SYSTEM DO?

The Seidl's Lake tree trench system intercepts and filters polluted stormwater from a 27-acre watershed to the north of Seidl's Lake. The underground tree trench prevents almost 10 pounds of phosphorus and over 3,700 pounds of sediment from entering Seidl's Lake. This helps to improve the quality of the lake, reduce the frequency of algal blooms, and recharge groundwater.

The innovative underground storage system collects and treats stormwater, providing water directly to the roots of trees planted in the park. Added benefits of the system include habitat for song birds, shade for park users, and usable park space on top of the system.

The 27-acre watershed to the north of Seidl's Lake that is treated by the tree trench system

HOW DOES IT WORK?

Stormwater runoff from the watershed enters the stormwater diversion structure. The first 1.1 inches of the stormwater enters the underground pipe gallery, filling up the pipes and empty spaces in the surrounding engineered filter soil. Sediment and debris in the water are captured in the pipe system. The tree roots can "drink" the stormwater from above. Excess water soaks into the soil, which recharges the groundwater aquifer.

FUN FACT

THE 4,000,000 GALLONS OF STORMWATER INTERCEPTED BY THE TREE TRENCH SYSTEM COULD FILL NEARLY 370 SWIMMING POOLS!

SSP

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LOWER MISSISSIPPI RIVER
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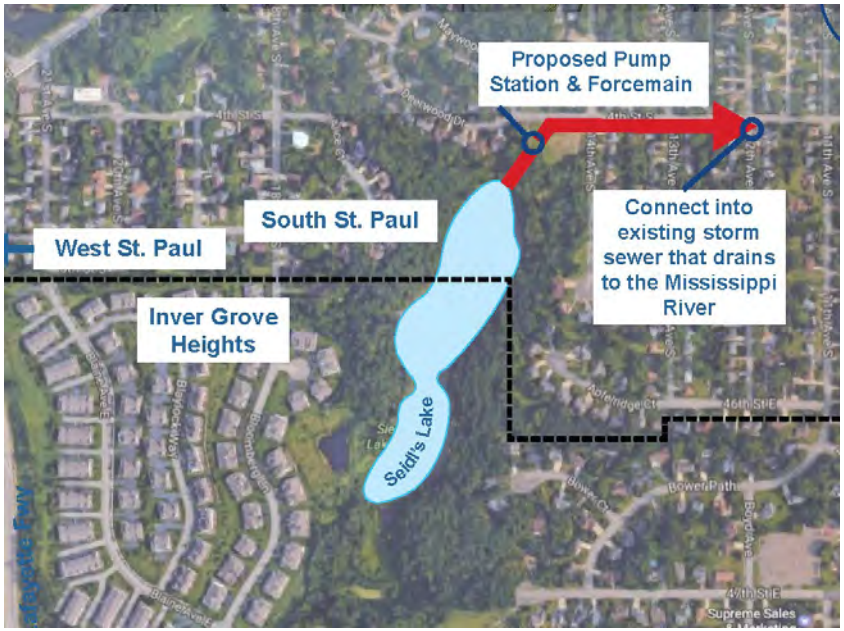
PROJECT BENEFITS

Outcomes (Modeled Pollutant Reductions)

- 3,757 lbs of Suspended Solids captured annually (47% reduction)
- 9.6 lbs of Phosphorus captured annually from entering Seidls Lake
- Infiltrates 11.8 acre feet of stormwater runoff annually
- Native plantings and trees incorporated into site
- Trail improvements

NEXT STEPS – MONITORING, MAINT, LIFT STATION



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