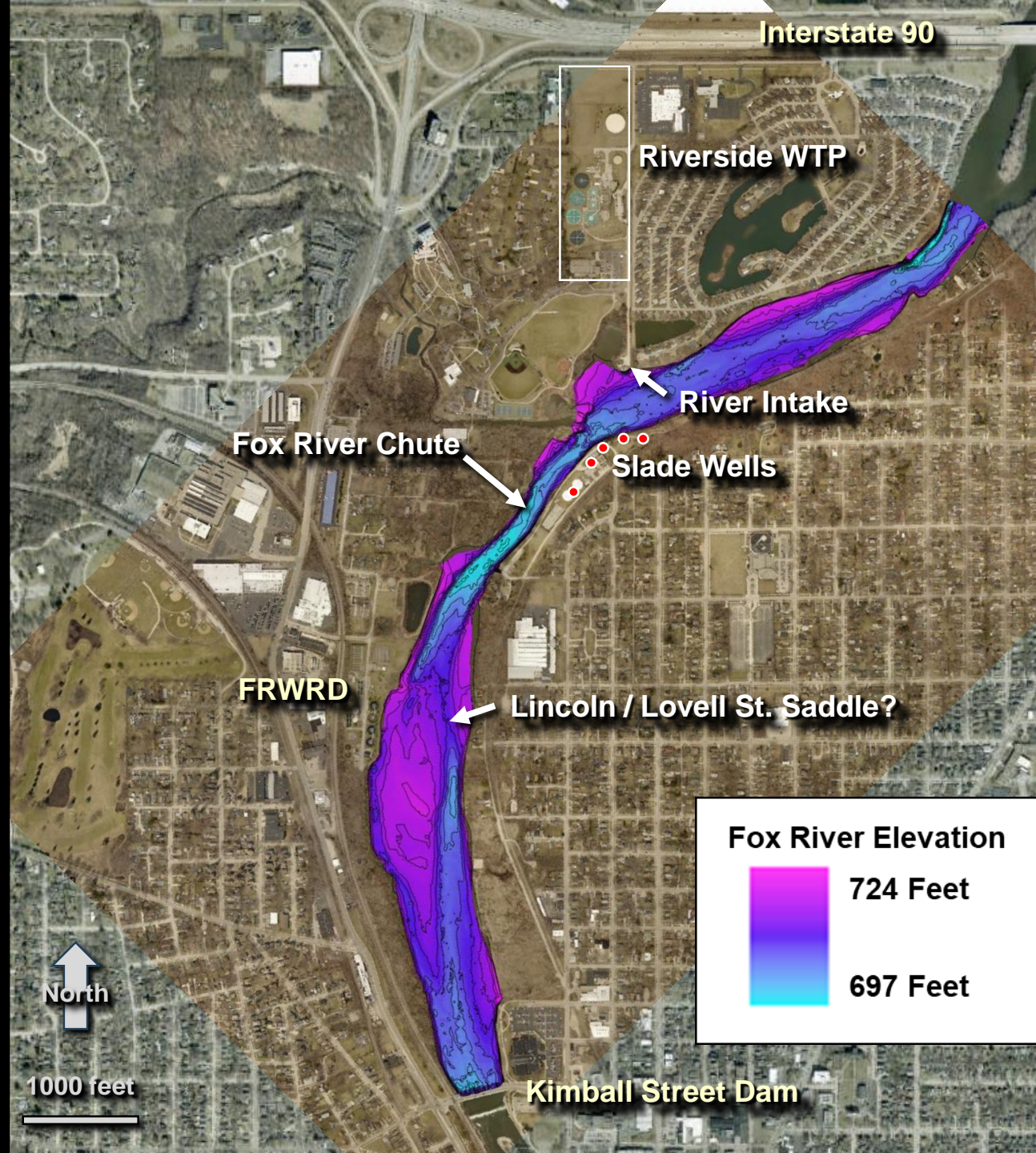




Water Intake Studies Update

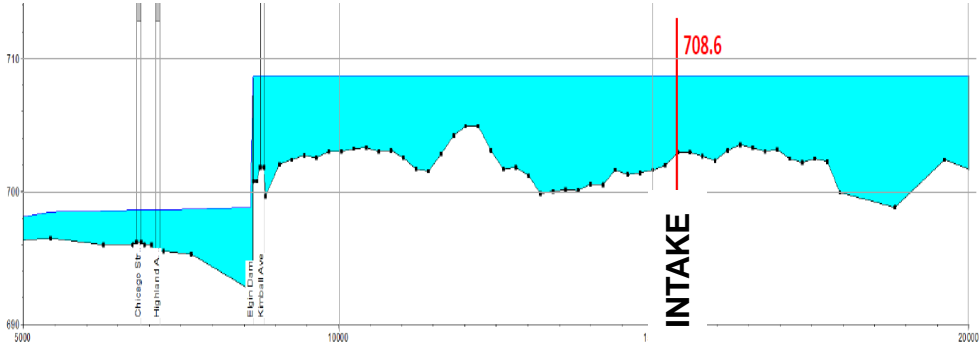




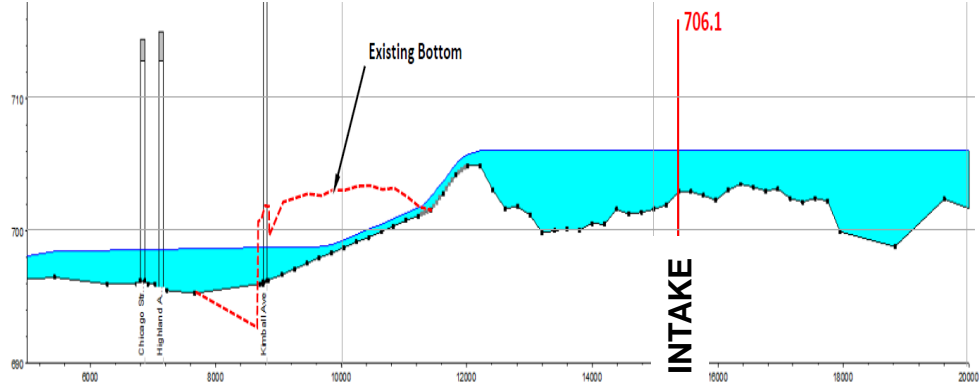
Dam Removal Impacts on River Intake

- Improve Habitat
- Improve Connectivity
- Reduce Sedimentation
- Decrease Pool Elevation

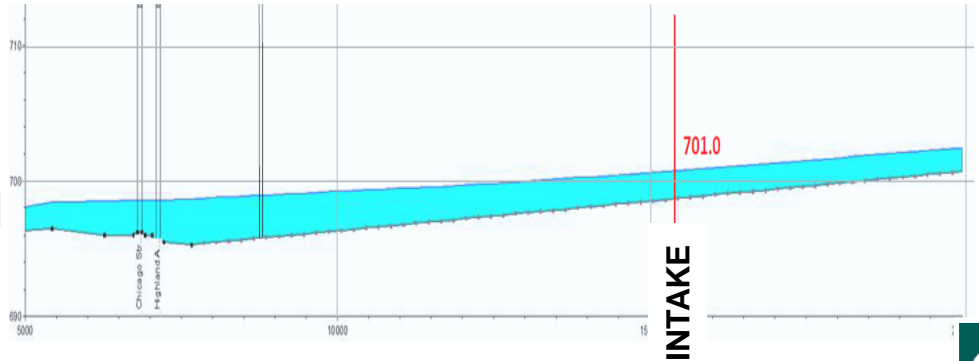
Existing Dam



Dam Removed and Saddle Remains



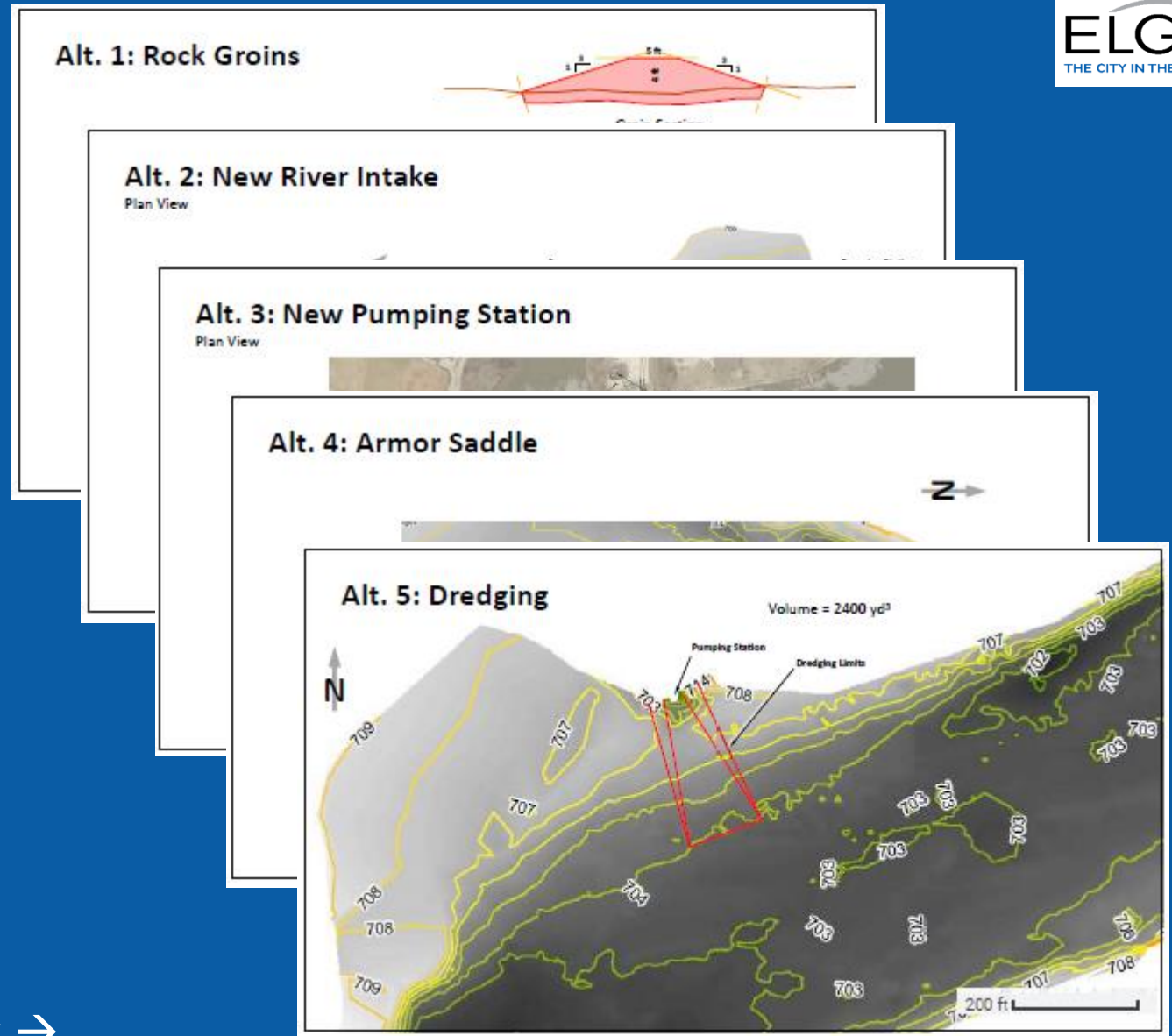
Dam Removed and Saddle Removed



Alternatives / Cost

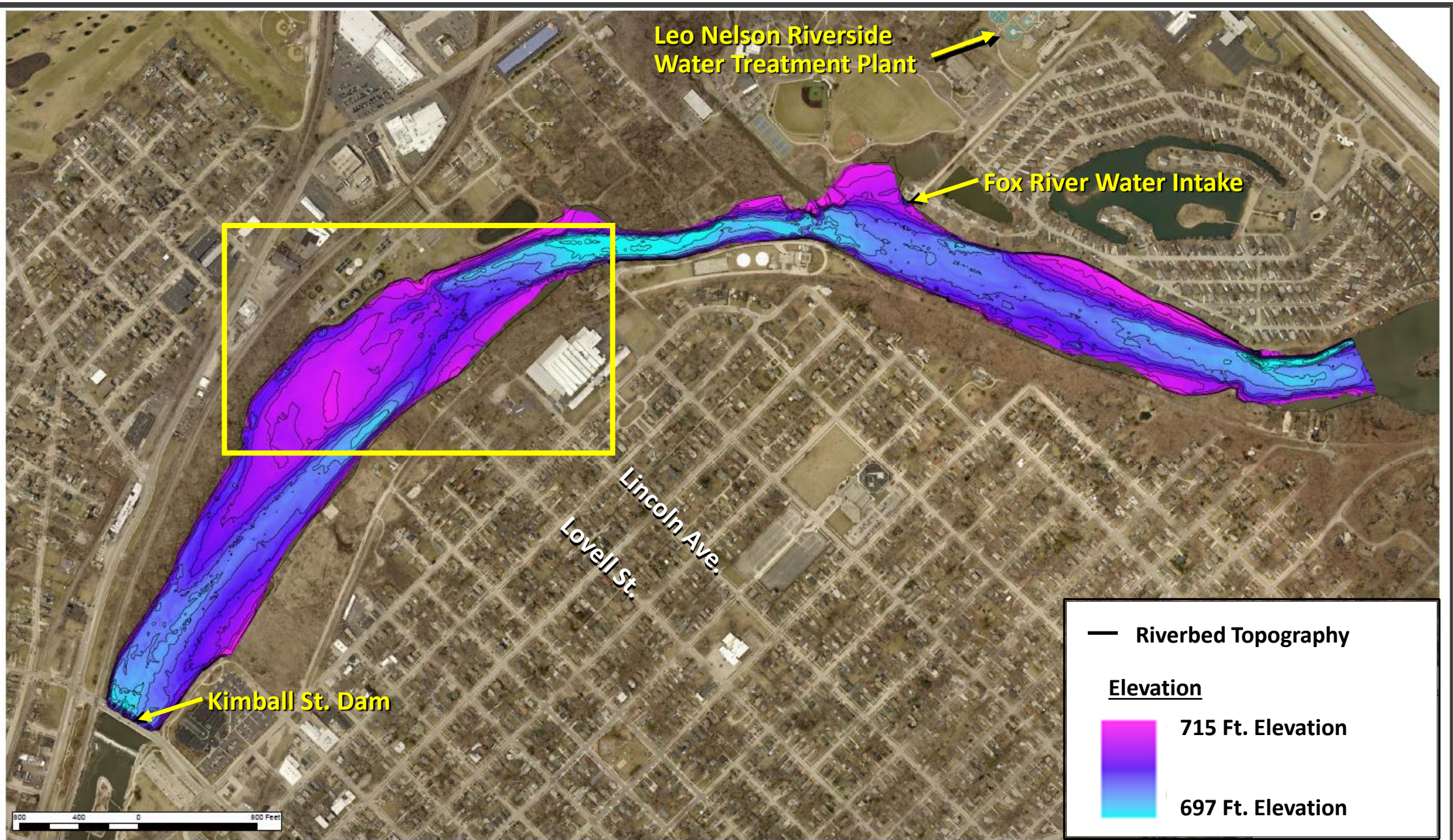
1) Rock Groins	\$1.8M
2) New Intake	\$4.4M
3) New Pumping Station	\$18.2M
4) Armor Saddle	\$2M – \$6M
5) Annual Dredging	\$34.5M

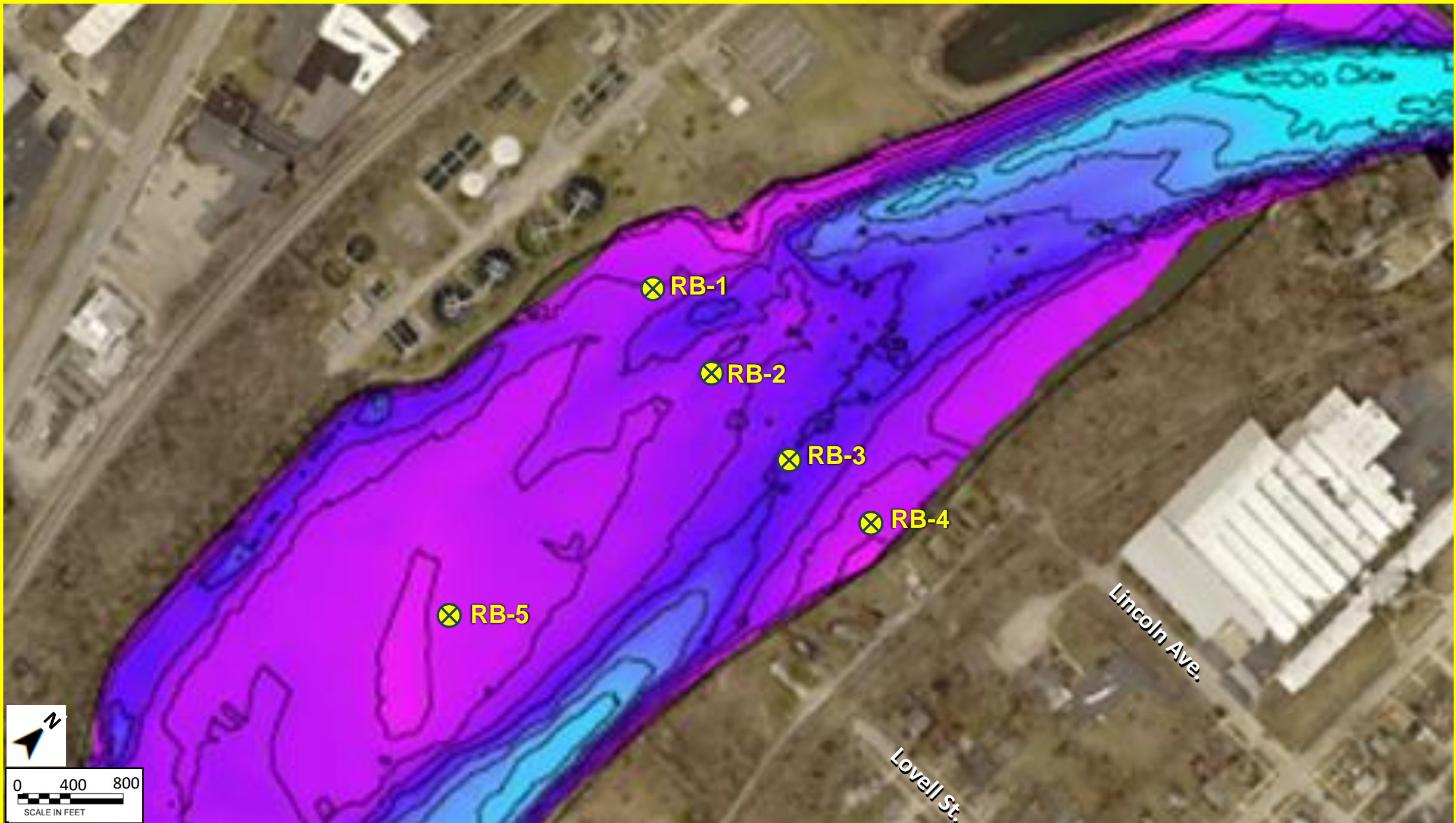
Saddle Competence Is Key →
Soil Borings





SOIL BORING RESULTS





⊗ RB-1

⊗ RB-2

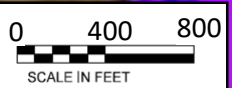
⊗ RB-3

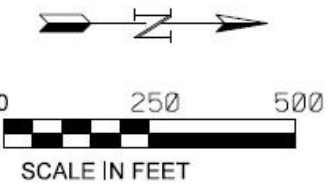
⊗ RB-4

⊗ RB-5

Lincoln Ave.

Lovell St.





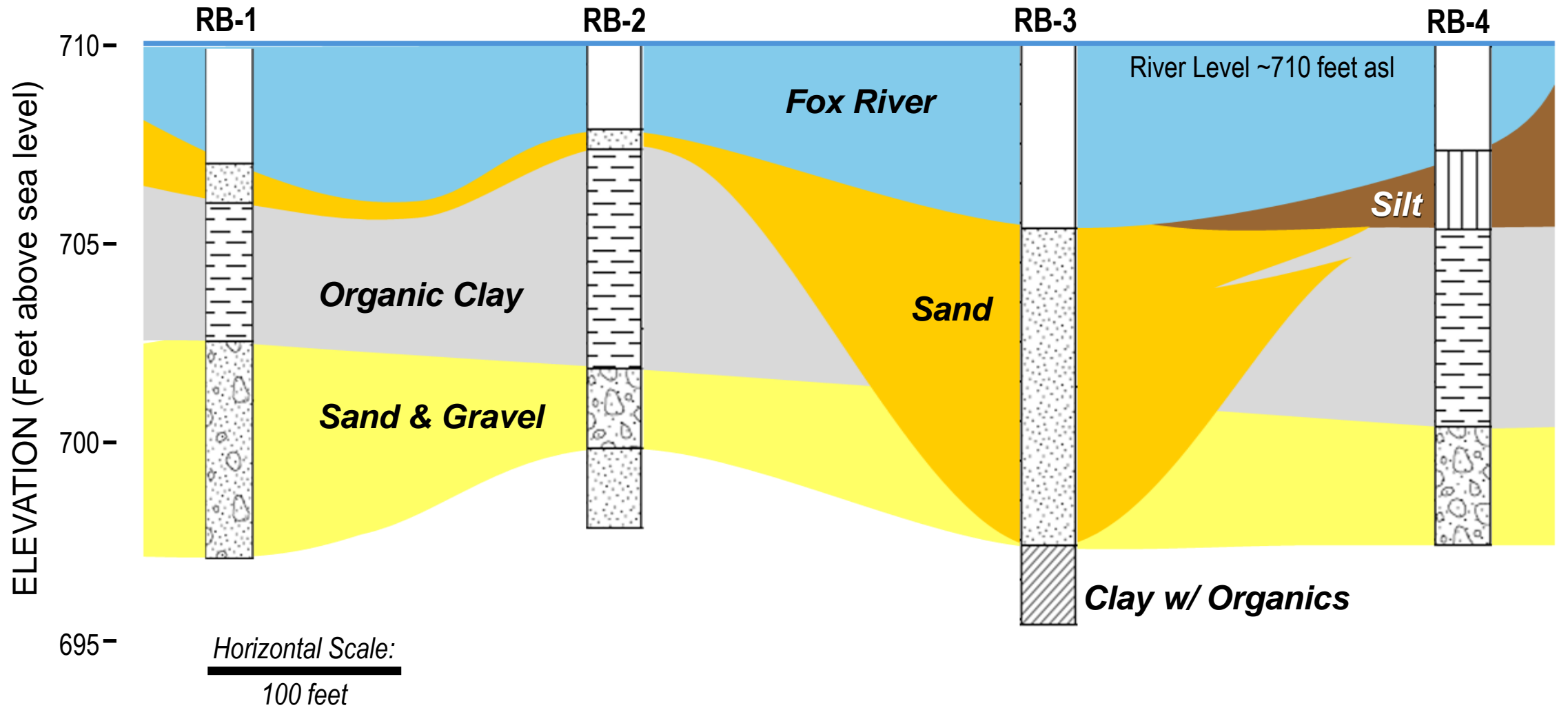
LEGEND

BORING LOCATION



WEST

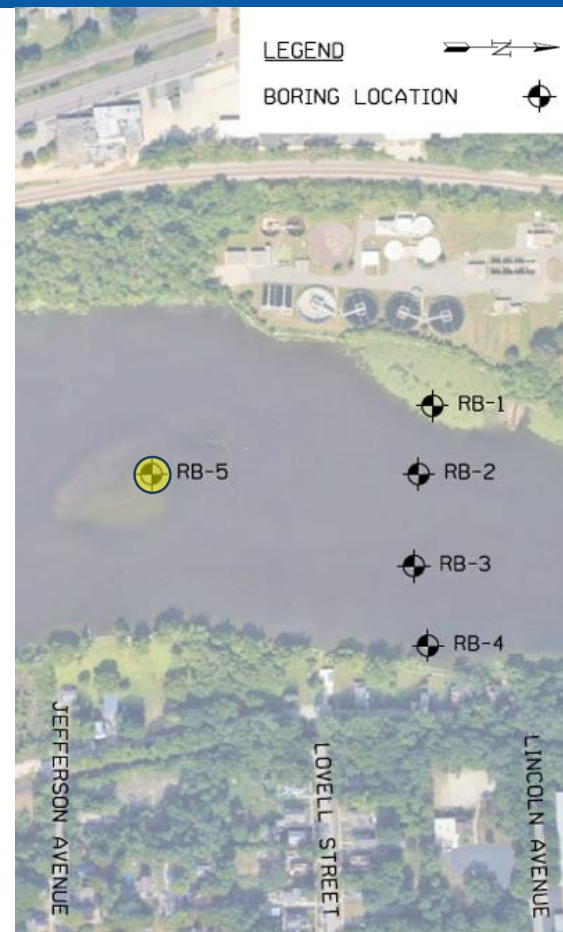
EAST



CLIENT Engineering Enterprises, Inc. PROJECT NAME Fox River Riverbed Characterization
 PROJECT NUMBER 23-2075 PROJECT LOCATION Elgin, IL
 DATE STARTED 12/14/23 COMPLETED 12/14/23 GROUND ELEVATION 711.41 ft HOLE SIZE 3 1/4"
 DRILLING CONTRACTOR GSG Drilling GROUND WATER LEVELS:
 DRILLING METHOD Mud Rotary AT TIME OF DRILLING -- N/A
 LOGGED BY EH CHECKED BY TK AT END OF DRILLING -- N/A
 NOTES Geoprobe 7822DT AFTER DRILLING -- N/A

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY (%)	BLOW COUNTS (N VALUE)	UNCONFINED COMPRESSION (tsf)	▲ SPT N VALUE			
							20	40	60	80
							● Moisture Content			
							10	20	30	40
							□ Unconfined Compression (tsf)			
							2	4	6	8
0		18 inches of air								
		19 inches of water								
5		SAND, trace gravel and silt (SP) - Dark Gray - Very Loose - Saturated	SS 1	0	0-0-0-0 (0)					
			SS 2	8	0-0-0-2 (0)					
			SS 3	50	0-0-0-12 (0)	0.0				2
10		ORGANIC CLAY (OL) - Dark Gray - Very Soft - Very Moist	SS 4	25	1-1-3-6 (4)	0.0				8

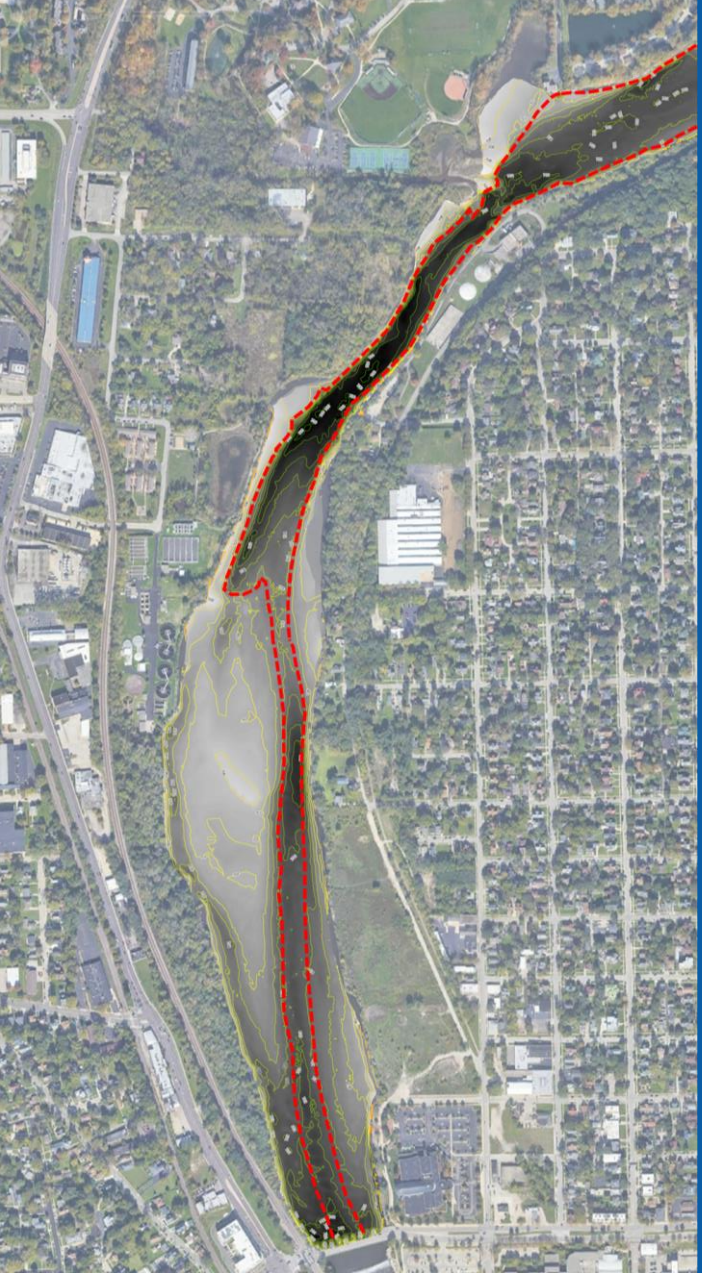
Bottom of borehole at 11.1 feet.



Current River Channel



Channel, No Dam With Saddle



Channel, No Dam & No Saddle



Conclusions

- Can't depend on saddle to keep minimum elevation at pumping station
- To ensure water capacity for City of Elgin need to consider relocating the river intake

Next Steps

- Started 2-d computational model with University of Illinois (target completion 1st quarter 2025)
- What will the channel look like?
- Looking into feasibility of relocating intake, where, what type, how much will it cost?
- Potential for 3-d physical model with University of Illinois depending on 2-d results