Cedar Lake Restoration Dredging

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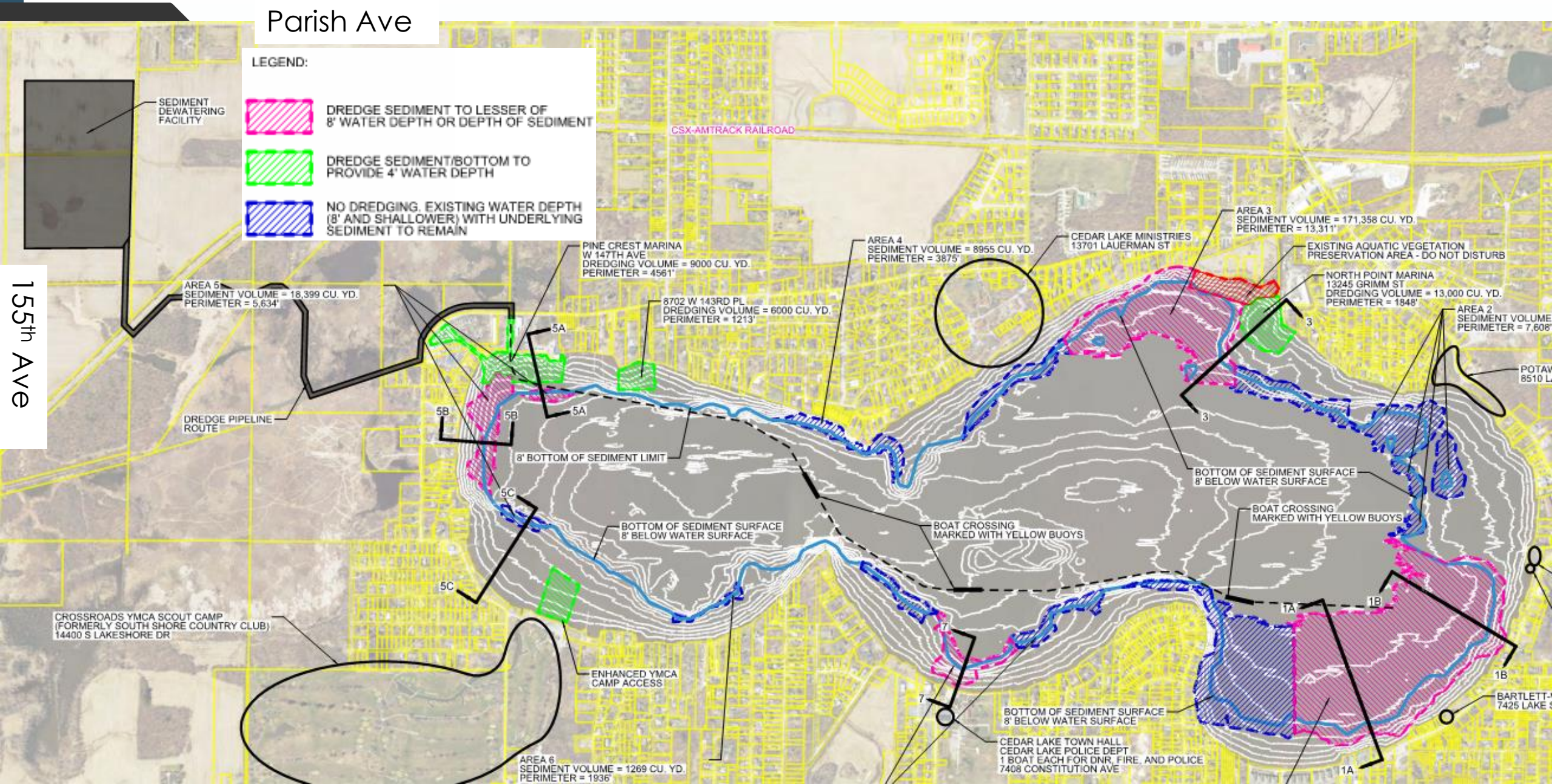
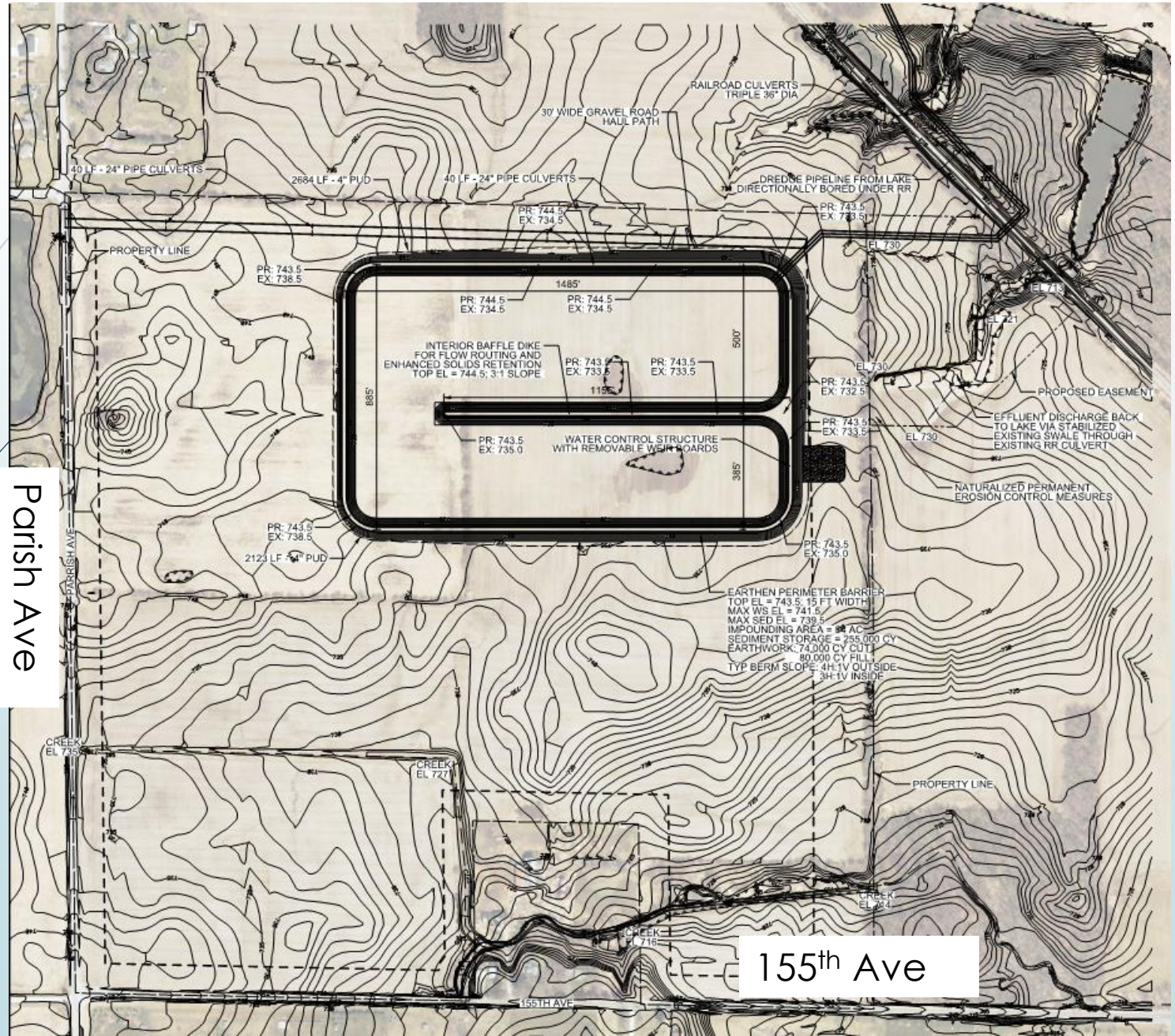
Overview - Water Depths 8' or less with Significant Organic Sediment Deposits



Approximate Dredge Quantities

LAKE LOCATION	TOTAL DREDGE (CY)	SEDIMENT DREDGE (CY)	SEDIMENT/BOTTOM DREDGE (CY)
YEAR 1	**120,000**	**101,500**	**18,500**
North Point Marina	13,000	6,500	6,500
8702 W 143rd Pl	6,000	3,000	3,000
Pine Crest Marina	9,000	4,500	4,500
YMCA	9,000	4,500	4,500
AREA 7	10,000	10,000	0
AREA 5 A-B	15,000	15,000	0
AREA 1 (PARTIAL)	58,000	58,000	0
YEAR 2	**120,000**	**120,000**	**0**
AREA 1 (REMAINDER)	120,000	120,000	0
YEAR 3	**110,000**	**110,000**	**0**
AREA 3	110,000	110,000	0
TOTAL	**350,000**	**331,500**	**18,500**

Sediment Dewatering Facility



Cedar Lake Restoration

- $5.5 Million Dollar Budget includes:
  - Design and Permitting
  - Construction of Sediment Dewatering Facility (SDF)
  - Construction of new pipe-sleave through CSX RR Embankment for the slurry pipe
  - Replacement of a pipe and repair of the pond outlet within Lake County Parks Property
  - Dredging of Lake – Management of SDF
  - Deconstruction/Restoration of Sediment Dewatering Facility and pipeline route

Schedule

IDNR prefers that dredging does not begin until after the 4th of July Week !!

Cedar Lake

Schedule

		2021	2022		2022										2023							2024							2026 to 2028
		May-Jan	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan - Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan - Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Design	5 Months	10 Months																											
Permit	5 Months	Total																											
Bid / Award																													
Build Basin	8 wk																												
Set pipes	4 wk																												
Pump (CuYd)	120000																												
Winterize Site/pipes	2 wk																												
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Pump (CuYd)	110000																												
Remove pipes	2 wk																												
Final Stabilize Basin	4 wk																												
Alum Treatment	4 wk																												

Major Upcoming Tasks

- Topographic Survey of SDF facility, Railroad Tracks and west side of Parks Property, adjacent to the RR Tracks (Spaceco)
- Geotechnical Borings of SDF (Testing Service Corporation)
- Field Tile Survey of SDF (Huddleston McBride Drainage Company)
- Supplemental Water Quality Testing – mid-June and early August (Integrated Lakes Management)
- Coordination with IDEM for approval of the Sediment/Return Water Testing protocol
- CBBEL Civil Design – Engineering Plans, Specifications, Cost Estimate, and Bid Package Preparation.

Permitting –Approvals - Agreements

- US Army Corps of Engineers – Section 404 Permit (3-5 months from submittal)
  - Not required for Dredging
  - Required for impacts to wetlands and waters for infrastructure
    - SDF, culverts, temporary construction impacts, and
    - Restoration Activities
- Indiana Department of Environmental Management – IDEM (+/- 2 months from Submittal)
  - Section 401 Water Quality Certification (Rule 5 and Dewatering) – Goes with USACE permit
- IDNR - Lake Preservation Act Permit – includes a 30-day Public Notice

  Processing time (+/- 3 Months from submittal)
  - Fish and Wildlife review will be completed under the Lakes Preservation Act Permit Review
- IDNR - Division of Law Enforcement will review "No Wake Zone" modification requests. (Review +/- 2 months from submittal)
- Lake County Parks approval to allow slurry pipe to cross their property (+/- 2 months)
- CSX Railroad Approval to install new pipe underneath railroad tracks. (+/- 2 to 3 months)
- Micic Property Approval to cross their property with the slurry pipe and return water will require a temporary easement (TBD)

Recommended Future Fishery Restoration

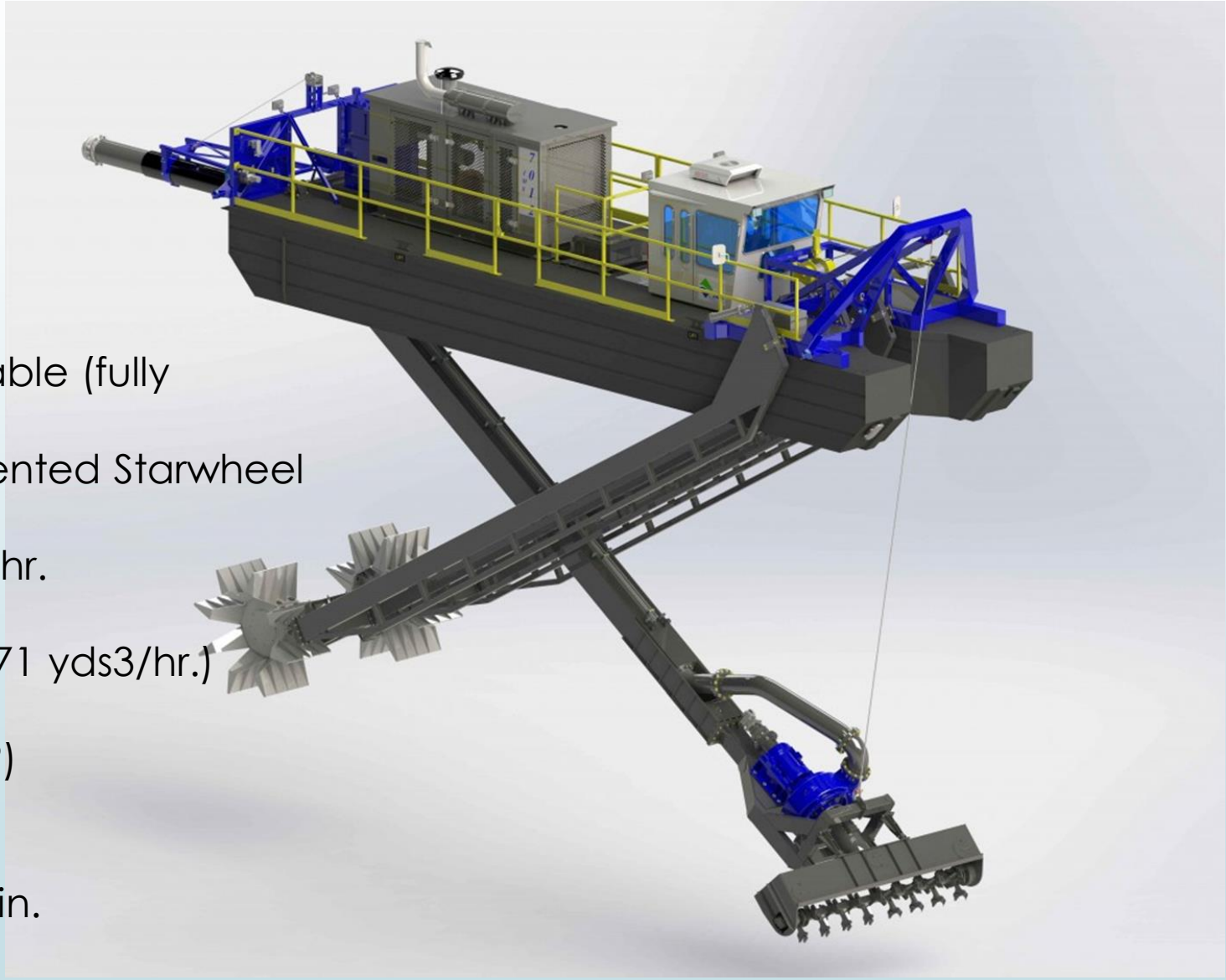
- IDNR to perform complete fishery restoration
- Once dredge project is completed (likely 2024), IDNR would follow-up and perform a complete fishery restoration to remove non-native and invasive species.
  - Alum Treatment must be completed prior to fishery restocking
- Restock and restore native fishery
- IDNR will take care of all aspects of project, including funding
  - Public Outreach
  - Removal – Disposal
  - Restocking
  - Follow up monitoring

Questions?

Dredge Equipment

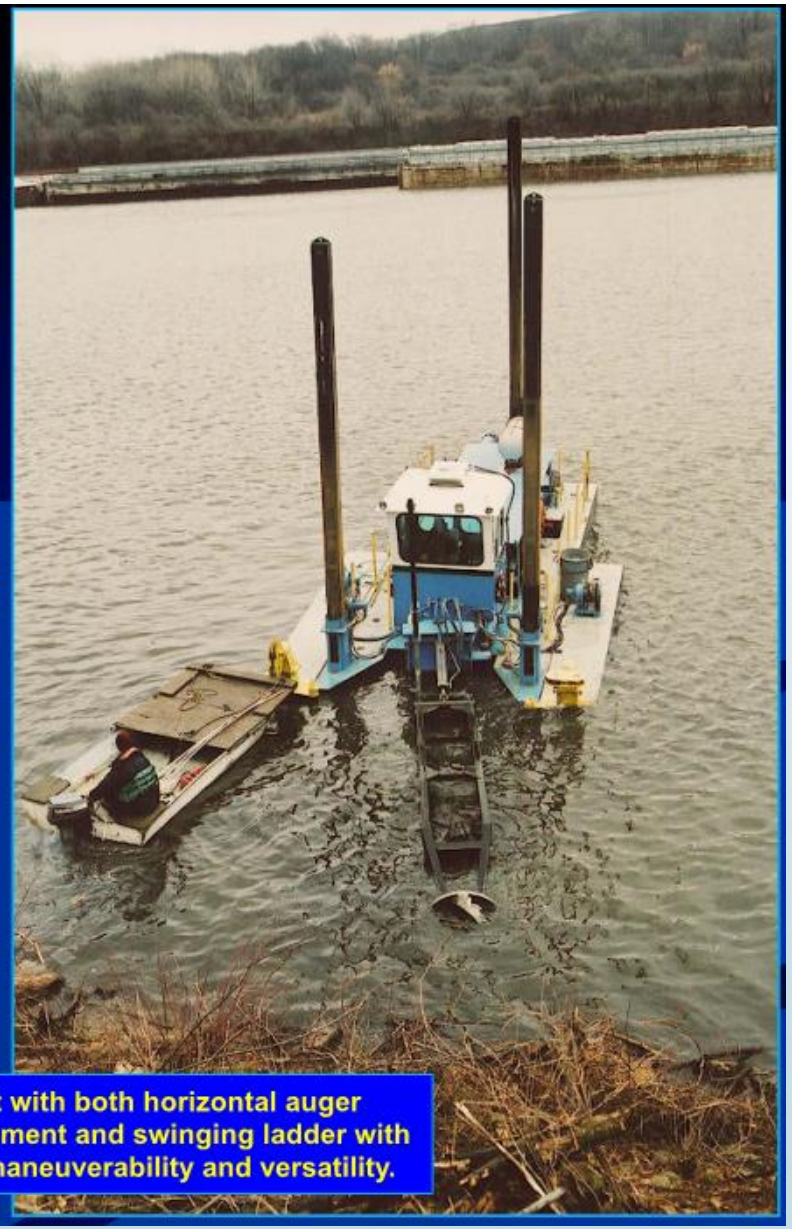
IMS Model 7012 HP Versi-Dredge

http://www.imsdredge.com/lake-dredging/



Transportability – One truck transportable (fully assembled)
Propulsion – Self-Propelled w/IMS patented Starwheel Drive
Nominal Pump Capacity1 -1,135 m3/hr. (1,475yds3/hr.)
Total Solids Capacity2 – 284 m3/hr. (371 yds3/hr.)
Dredging Depth – 9.1 m (30 ft.)
Total Installed Power – 373 kW (500 HP)
Dry Weight – 21,636 kg (47,700 lbs.)
Pipe Diameter – 305 mm (12 in.)
Spherical Solids Passage – 127 mm (5 in.

Dredge Equipment



Hydraulic dredge equipment with both horizontal auger type cutterhead for soft sediment and swinging ladder with basket type cutterhead for maneuverability and versatility.

Hydraulic dredge equipment with conventional upland sediment storage and dewatering facilities.

Hydraulic dredge mobilization and pipeline assembly.

Hydraulic dredge slurry discharge from pipeline and water control structures at dewatering facilities.

Clarifier, Polymers and Clear Return Water

Recovered Soil for Future Beneficial Use