



Lake Redstone Protection District Potential Dredging Project Update

Annual Meeting Aug. 5th, 2017

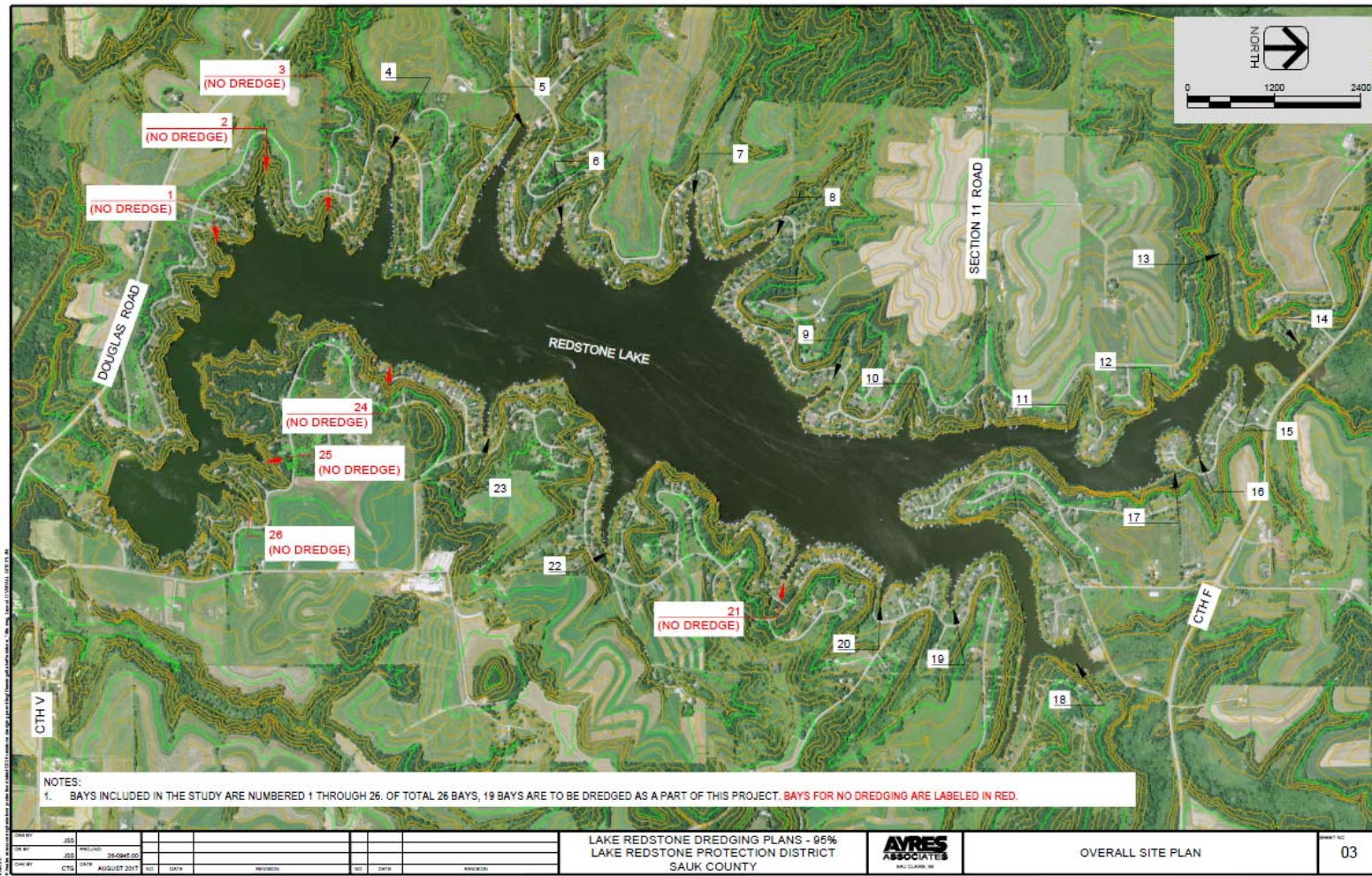
AVRES
ASSOCIATES

Background Summary

- Sediment Sampling Report
 - Sediment Sampling, Measure Lake Depths, Estimate Volume of Deposited Sediment
 - Hydrographic Survey of 26 bays on Nov. 19th/20th 2015.
 - Sampling, coring, probing of lake sediments on various trips from Nov. 2015-Feb. 2016.
 - Looked at 26 bays identified by LRPD
 - Report Submitted April 2016

Overview of Bays

- Total of 26 bays included in 2015 survey
 - Results: Presented total volume of material below water depth of **5.0 feet** that can be dredged.
 - **100,033 CY TOTAL without restrictions** on shoreline offset and slope of dredge to attain desired depth
 - Results showed some bays have little sediment, so not included in dredging plan
- Total of 19 bays included in 2017 dredge plans
- Graphic of bays planned for dredging on following slide



Volume 2015-2016 study summary

Bay ID	Average Sediment Depth (ft)	Area Less than 5 feet deep (SF)	Volume of Sediment (CY) – not revised from DNR	Go/No Go on Dredging Bays
1	0.1	0	0	No Go
2	2.8	12880	1279	No Go
3	3.8	1704	242	No Go
4	2.0	42689	3219	
5	2.6	14135	1335	No Go
6	3.2	5643	669	No Go
7	3.1	35137	4067	
8	3.1	35137	3985	
9	3.5	44859	5815	
10	2.3	16874	1437	
11	3.9	8602	1248	
12	3.5	13187	1709	
13	2.8	121764	12684	
14	3.8	7155	1016	
15	3.6	14774	1984	
16	3.8	33265	4620	
17	4.7	10453	1807	
18A	4.1	166900	25413	
18B	3.5	130424	16907	
19	3.8	14832	2060	
20A	2.5	10834	1003	
20B	3.8	11158	1550	
21	1.0	10431	386	No Go
22	2.7	39335	3885	
23	2.0	14728	1091	
24	2.7	2843	281	No Go
25	3.5	844	109	No Go
26	2.8	2213	232	No Go
		Total Vol (no limits)	100,033	Total Vol Revised

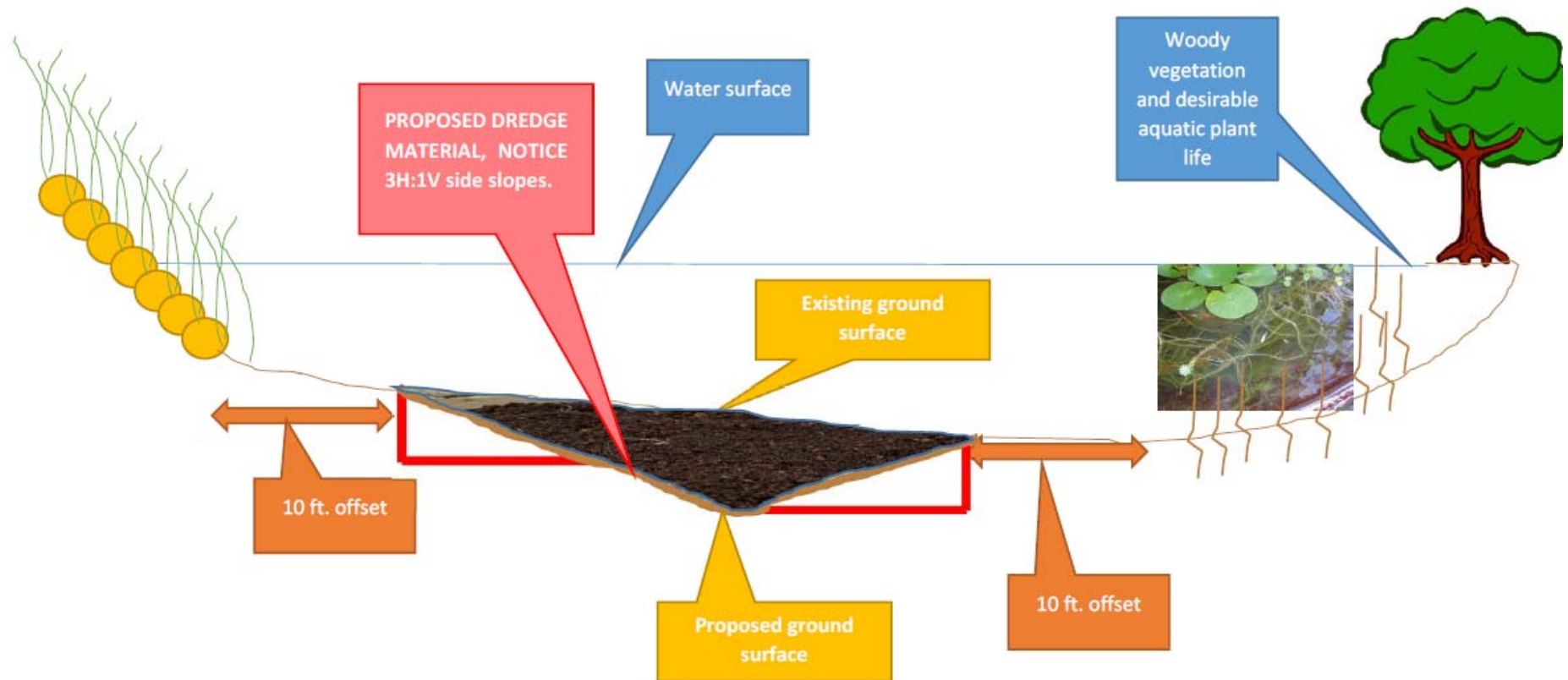
Background Summary

- Dredging Permit Assistance
 - Meet with LRPD Board to Develop Conceptual Plan
 - Completed January 4th, 2017
 - Coordinate Pre-Permit Meeting with DNR as required for dredging projects
 - Completed March 29th, 2017
 - June 1st, 2017 Field Trip completed as result of this meeting with DNR
 - Drawings and Cost Estimate Revised based on DNR notes presented today, August 5th, 2017

Results of DNR Field Trip

- DNR Field Trip resulted in confirmation of standard limits for the dredging plan
 - Max Slope 3H:1V
 - Min Offset from Shore: 10 feet
 - Min Offset from submerged woody vegetation: 10 feet

Results of DNR Field Trip



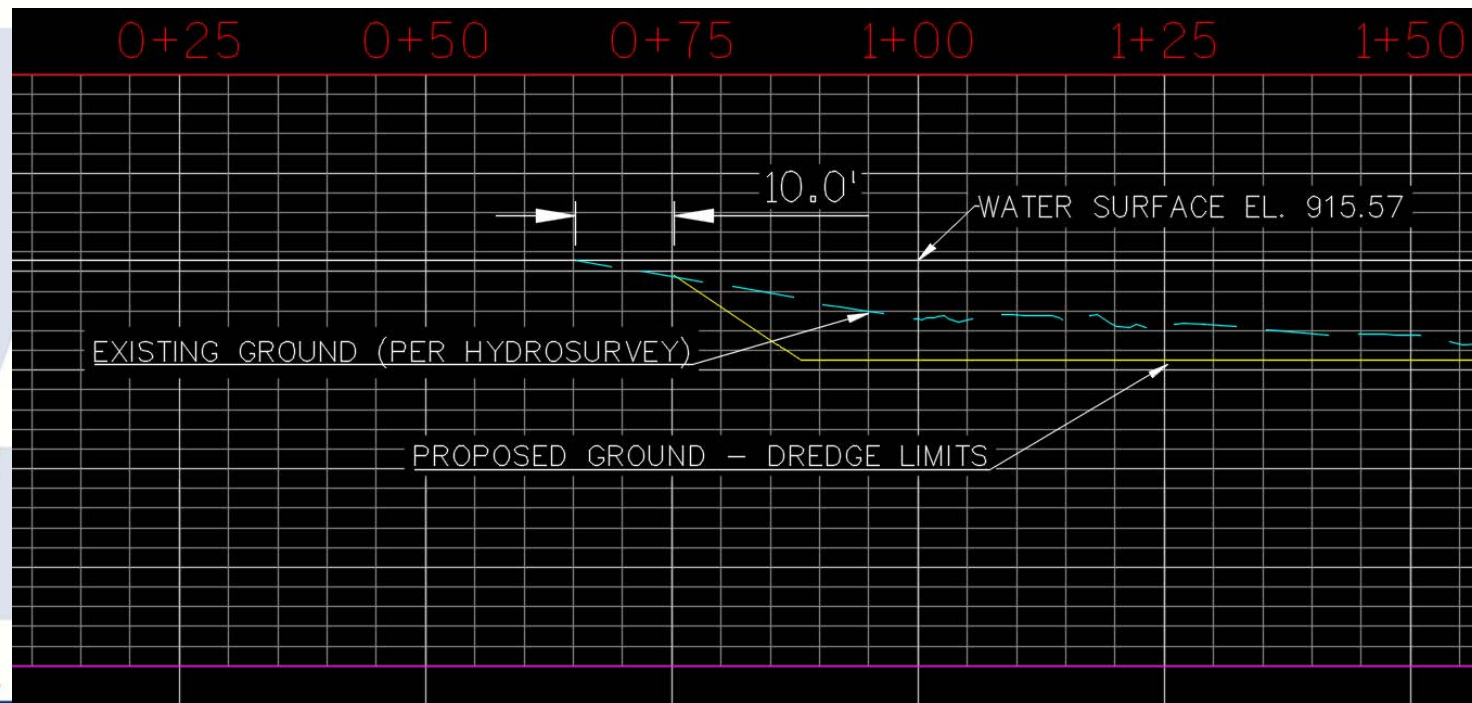
EXAMPLE BAY 5

- Example Bay 5 – Dredging to 5 feet water depth (EL. 910.5) with DNR offsets
 - Red area would not be dredged – already deeper than 5.0 feet. Blue areas would be dredged while maintaining DNR off-sets)

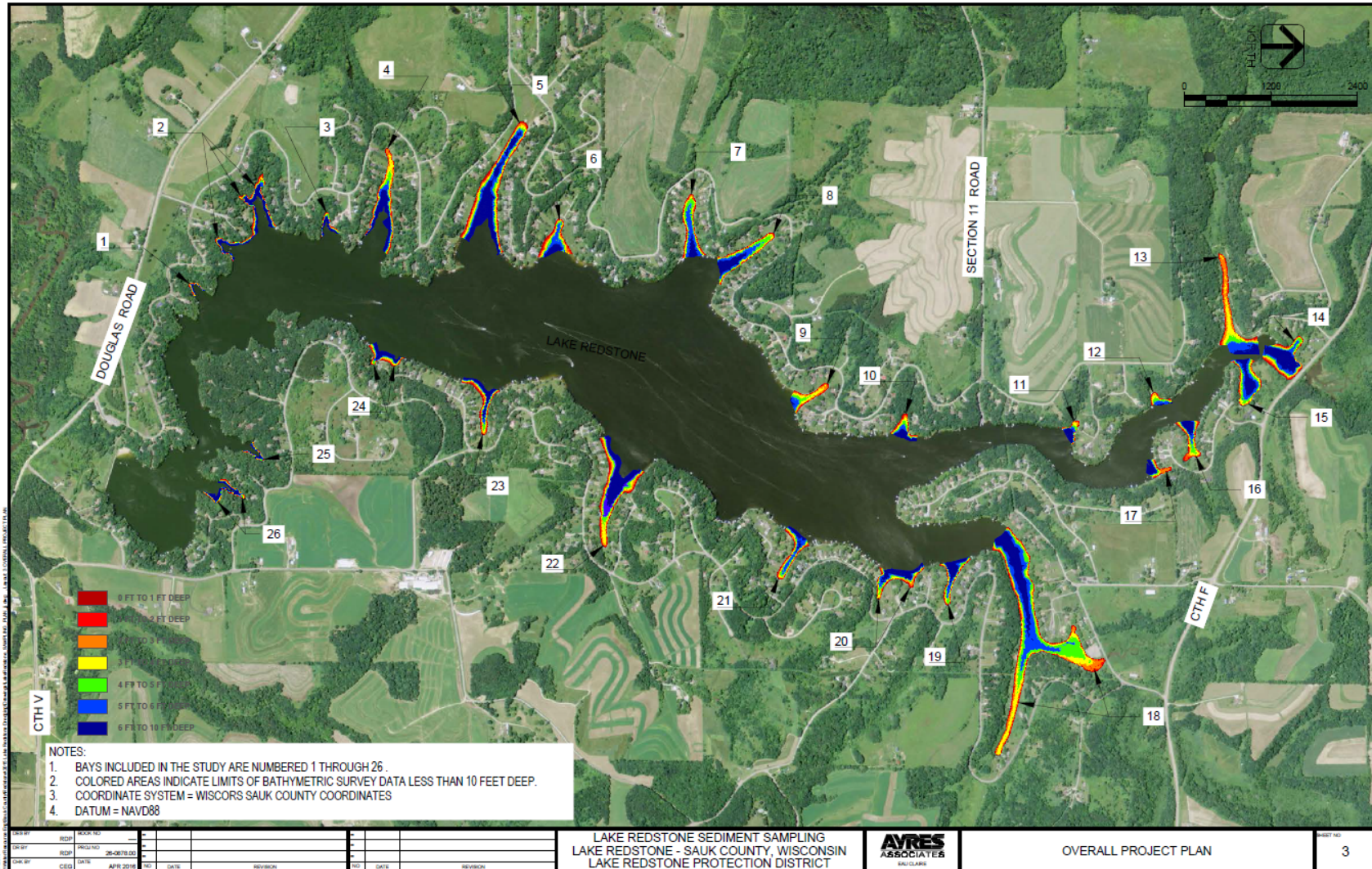


EXAMPLE BAY 5

- Example Bay 5 – Dredging to 5 feet water depth (EL. 910.5) with DNR offsets
 - Zoomed in Section View of the beginning of the alignment through Bay 5. Note approx. 75 feet at tip of bay is all below 5 feet depth.



Apply same offsets from Bay 5 to areas shown below. Dredging in Red (0-2 ft), Orange (2-3 ft), Yellow (3-4 ft), and Green (4-5 ft) Blue areas and non-shaded areas not proposed for dredging.



Updated Opinion of Probable Cost

- Based on 2017 95% Bid Ready Drawings
 - Offsets and 3H:1V slopes reduced total volume by about 15%

Opinion of Probable Cost

August 2017

Opinion of Probable Cost

Lake Redstone Protection District - Potential Dredging

Lake Redstone Protection District (LRPD)

Sauk County, WI

DESCRIPTION		UNITS	QUANTITY	UNIT PRICE	TOTAL PRICE
1	Mobilization	LS	1	\$ 20,000.00	\$ 20,000.00
2	Erosion Control	LS	1	\$ 25,000.00	\$ 25,000.00
3	Dredging - Hydraulic	CY	85,000	\$ 20.00	\$ 1,700,000.00
4	Disposal Site - Sized for Proejct Only (100,000 CY)	LS	1	\$ 170,000.00	\$ 170,000.00
5	Site Restoration	LS	1	\$ 10,000.00	\$ 10,000.00
SubTotal:					\$1,925,000
Contingency (10%)					\$192,500
Construction Total:					\$2,117,500

Future Steps

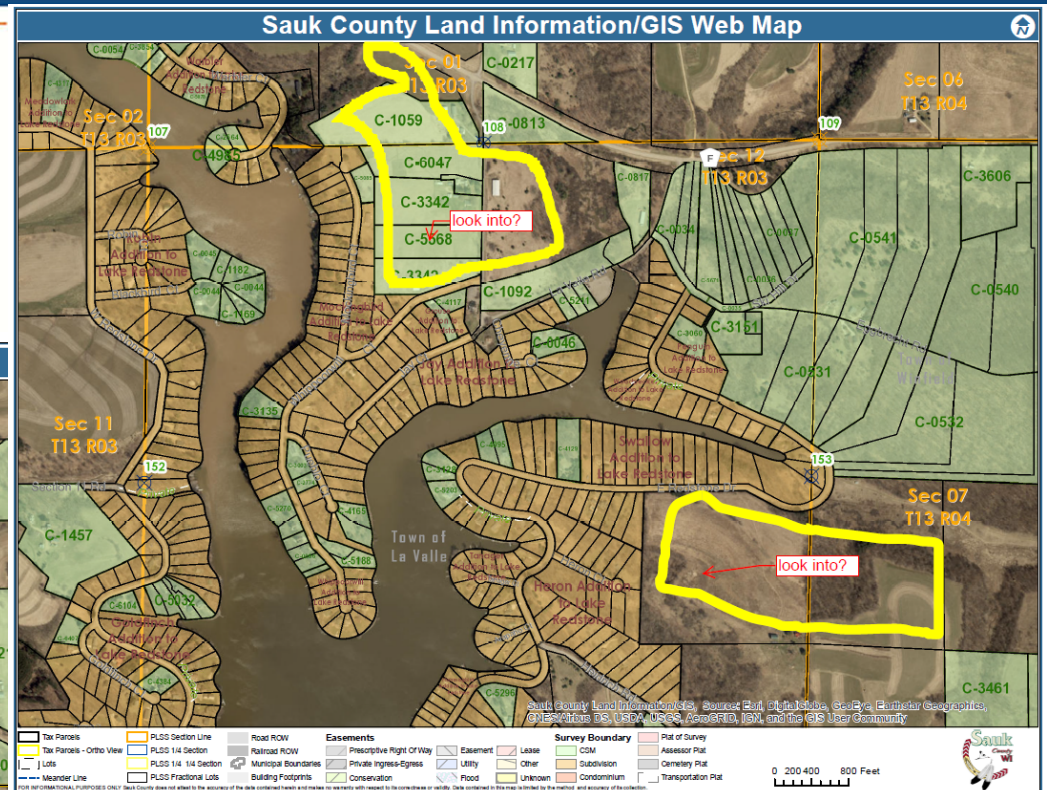
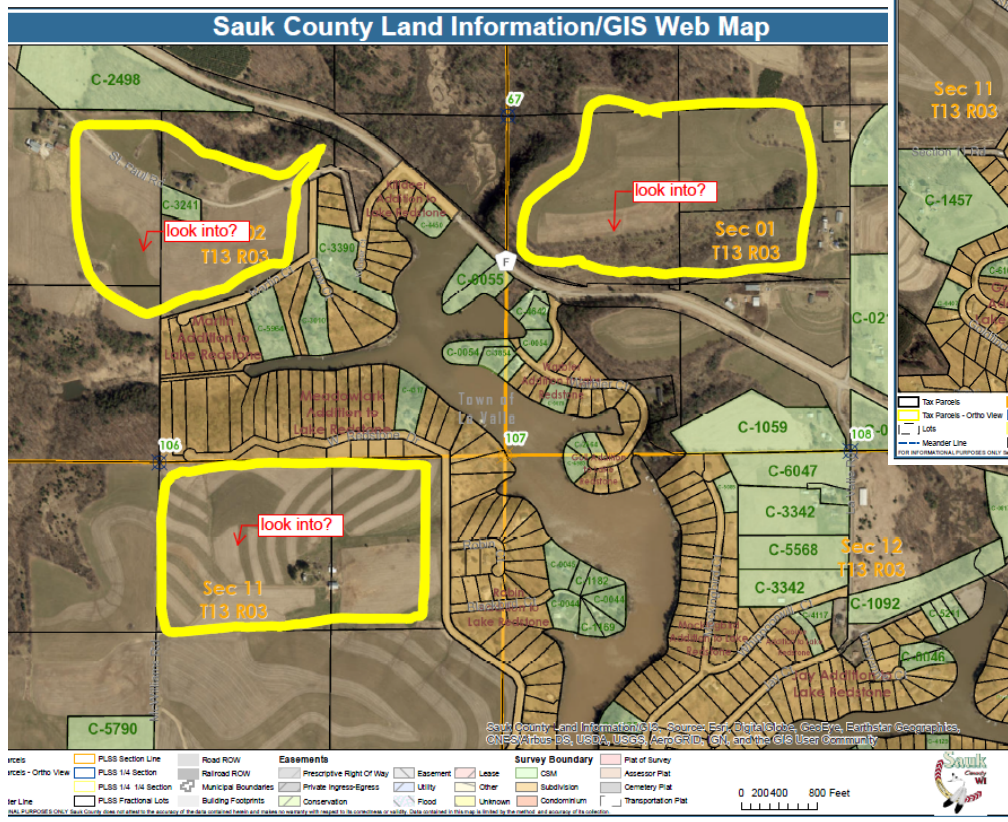
- Identify priorities and desired depth of water in each priority.
- Identify a disposal site for the dredge spoils
- Complete design of disposal site
- Apply for dredging and disposal site permits
- Bid Project
 - Accept a bid and sign contract with Contractor
- Complete Work

Throughout Process Continue Work to Limit Sedimentation of Lake Redstone

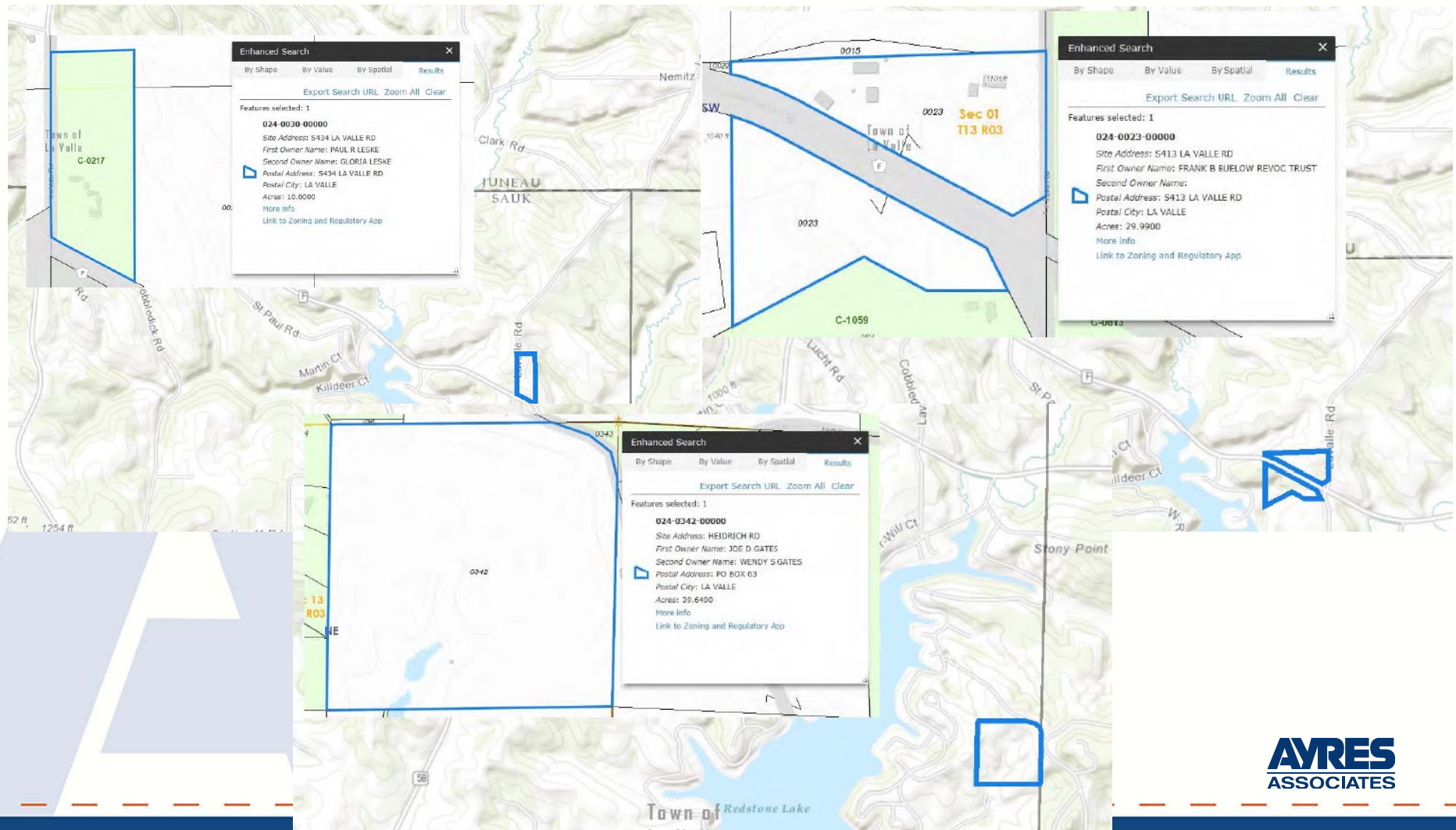
What does a Disposal Site look Like?



Potential Locations for Disposal Site at LRPD – for Discussion



Potential Locations for Disposal Site at LRPD – specifics, for discussion



Other Images

