Lake Santee

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Lake Santee Wetlands & Conservation Program

Welcome LSPOA Members

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Lake Santee Wetlands & Conservation Program



Sediment mitigation



Erosion prevention

- Sediment mitigation
- Erosion prevention
- Water clarity improvement
- Farmland nutrient filtering



Water clarity improvement



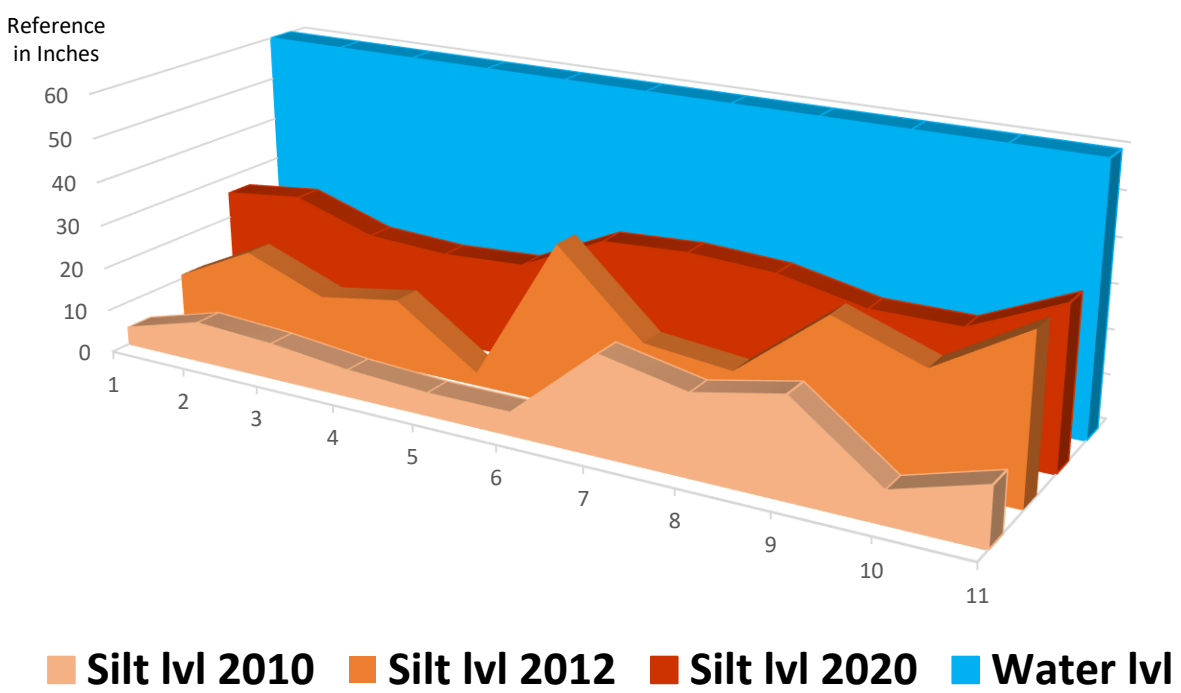
Farmland nutrient filtering

Agenda:

- Video presentation
- Current situation
- Lake health history
- Proposal for North end
- Proposal for cove dredging
- Program output & long-term expectations

Current Situation

- **Current situation:** Lake Santee is filling with silt and sediment at a rate of 4000 cubic yards per year.





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Current Situation



Figure 21. Meander 2 showing slumping closeup (7/19/21)



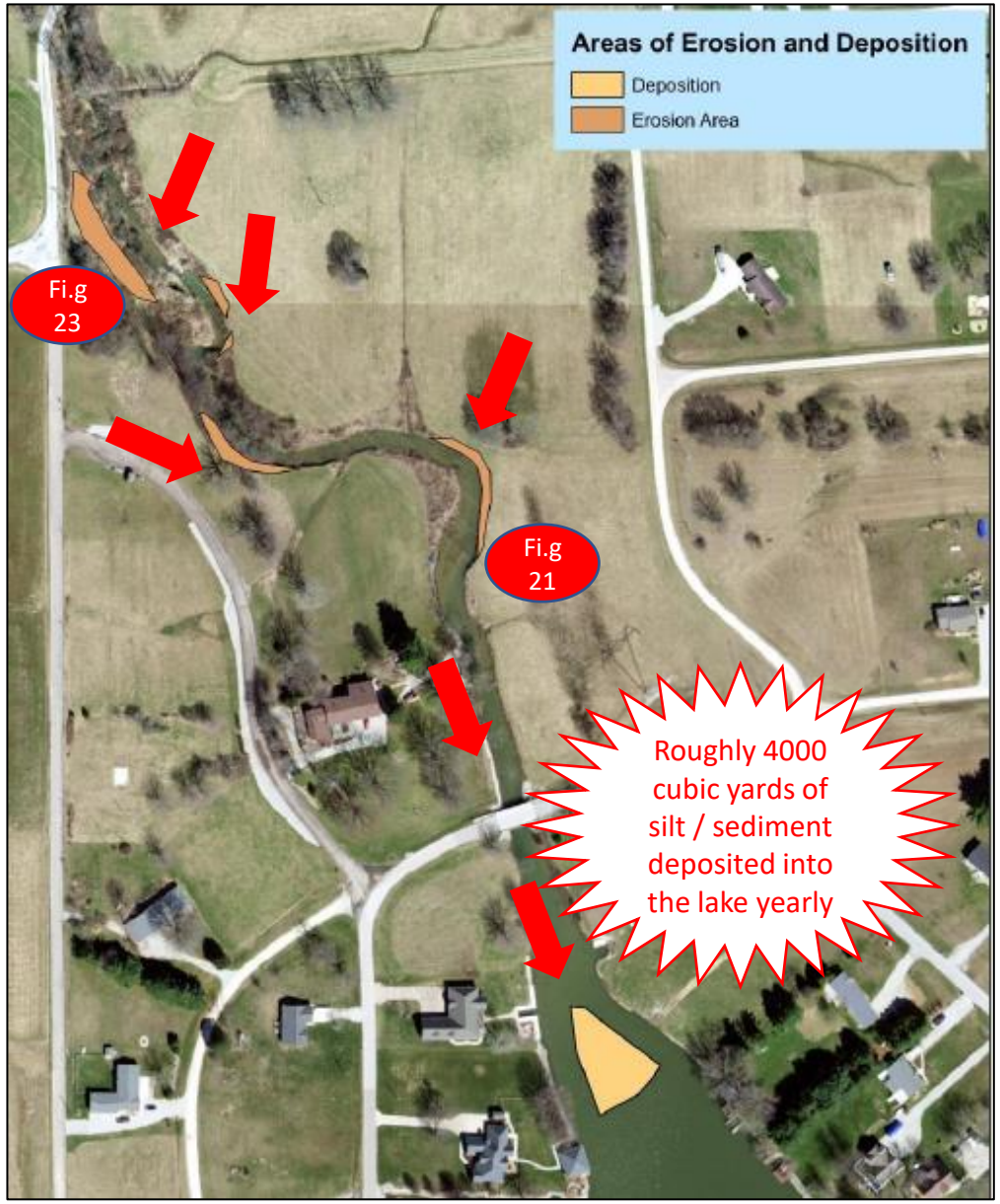
Figure 22. Eroding bank north of bridge looking northwest (7/19/21)

Upstream erosion and farmland run off is a major contributor to the amount of silt, sediment & unwanted nutrients introduced into the lake yearly



Figure 23. Closeup eroding bank north of bridge looking west (7/19/21)

Unprotected embankments & unrestricted waterflow during heavy rains have been identified as largest contribution to this situation



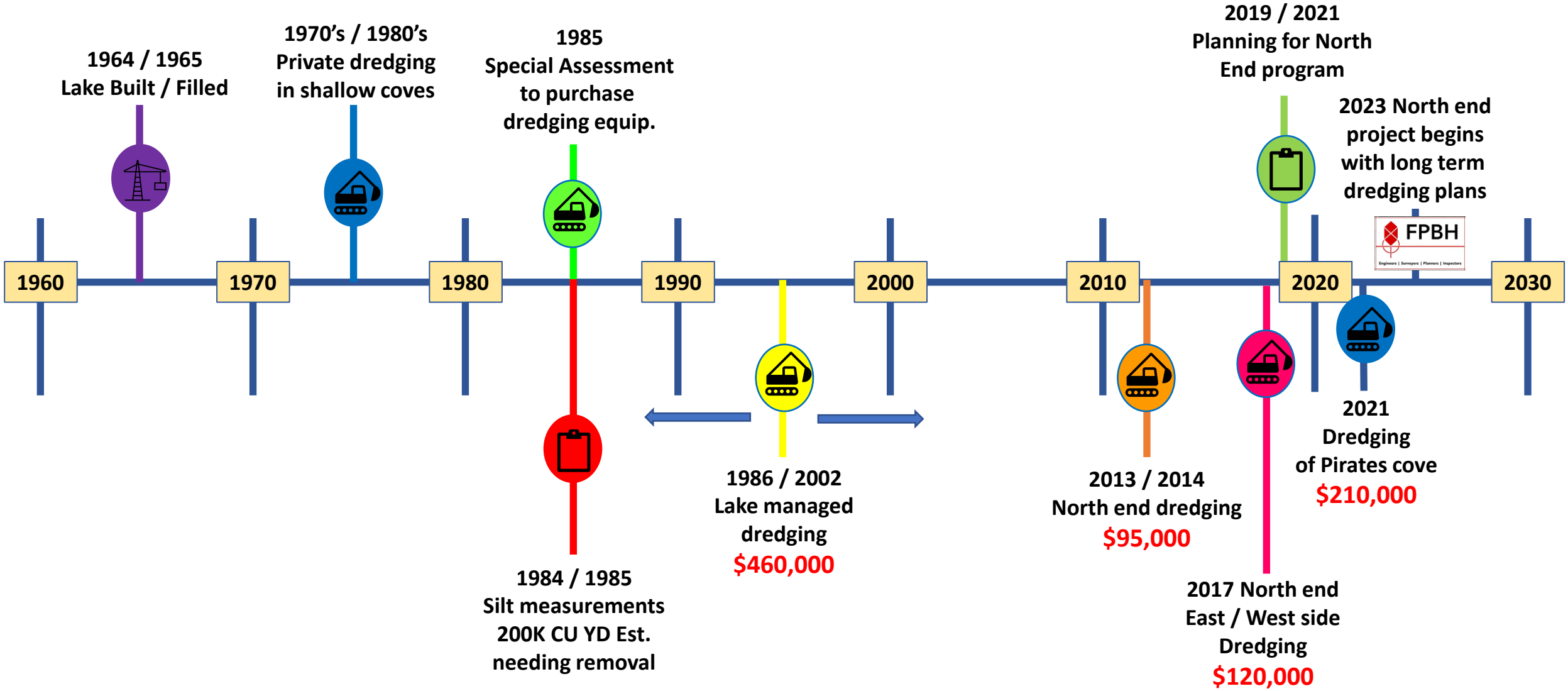
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Lake Health History

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Lake Health History

Years of dredging have been futile because we have not addressed the root cause





Large amounts of silt and sediment building up on a yearly basis

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Mitigation Options

Do Nothing Alternative

- Would not address 4000 cubic yards/year of incoming sediment.
- Would not address incoming unwanted farmland nutrients and chemicals.
- Would not address current and future erosion issues.
- Would not address upstream impacts during heavy rainfall such as upstream road construction and farmland activity.

Wetlands & Conservation Program (Preferred)

- Addresses the problem of large amounts of the sediment introduced to the lake yearly.
- Minimizes unwanted farmland nutrients and chemicals being introduced to the lake by acting as a large natural bio filter.
- Corrects and helps prevent future lake owned property erosion.
- Minimizes future costs associated with lake dredging.
- Potential to improve water quality and clarity over time.
- Protects the lake from large upstream impacts during heavy rain fall events.
- Alignment with future environmental guidelines.

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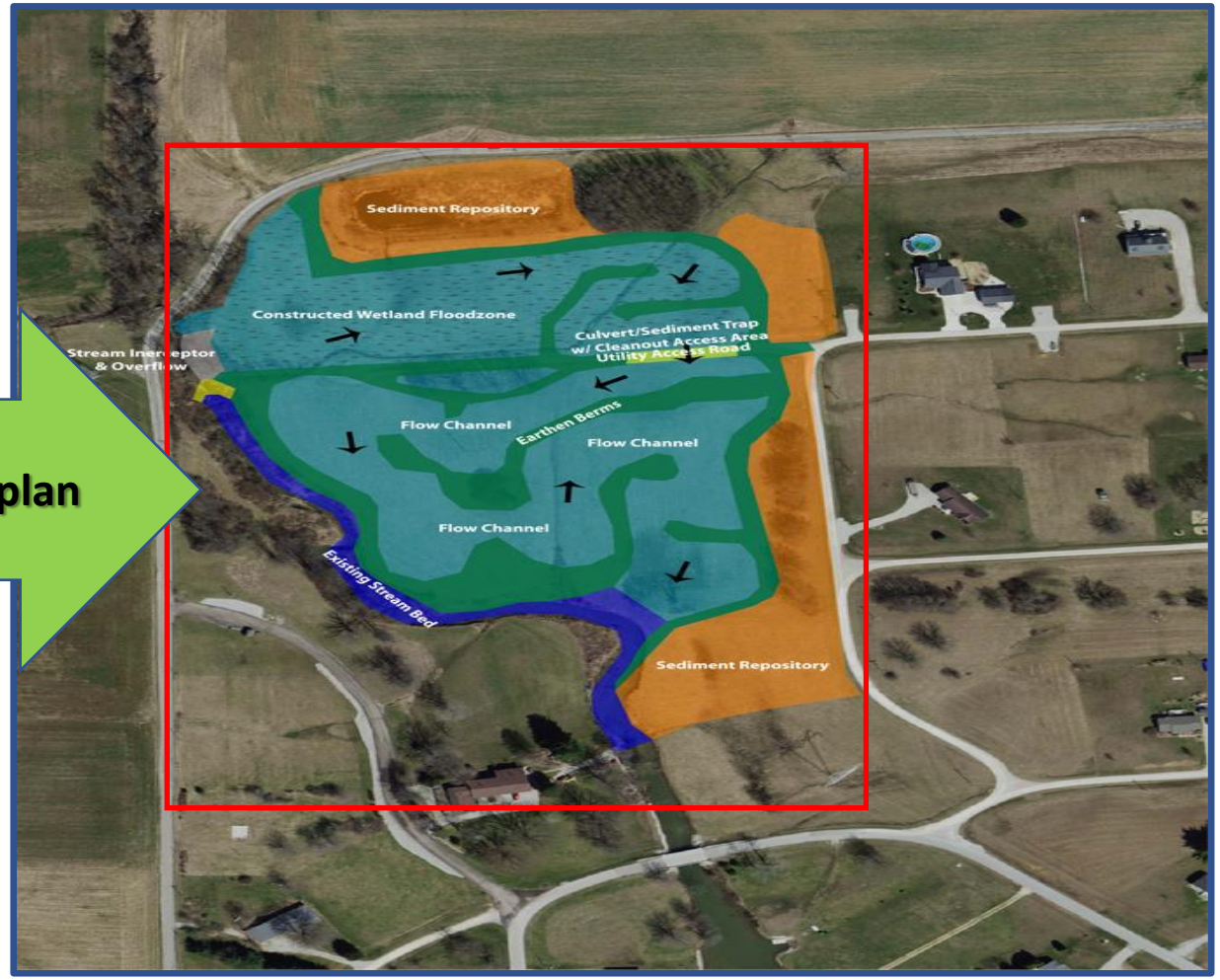
Resolution

Wetlands & Conservation Program

- Silt & sediment capture
- Farmland run off nutrient mitigation

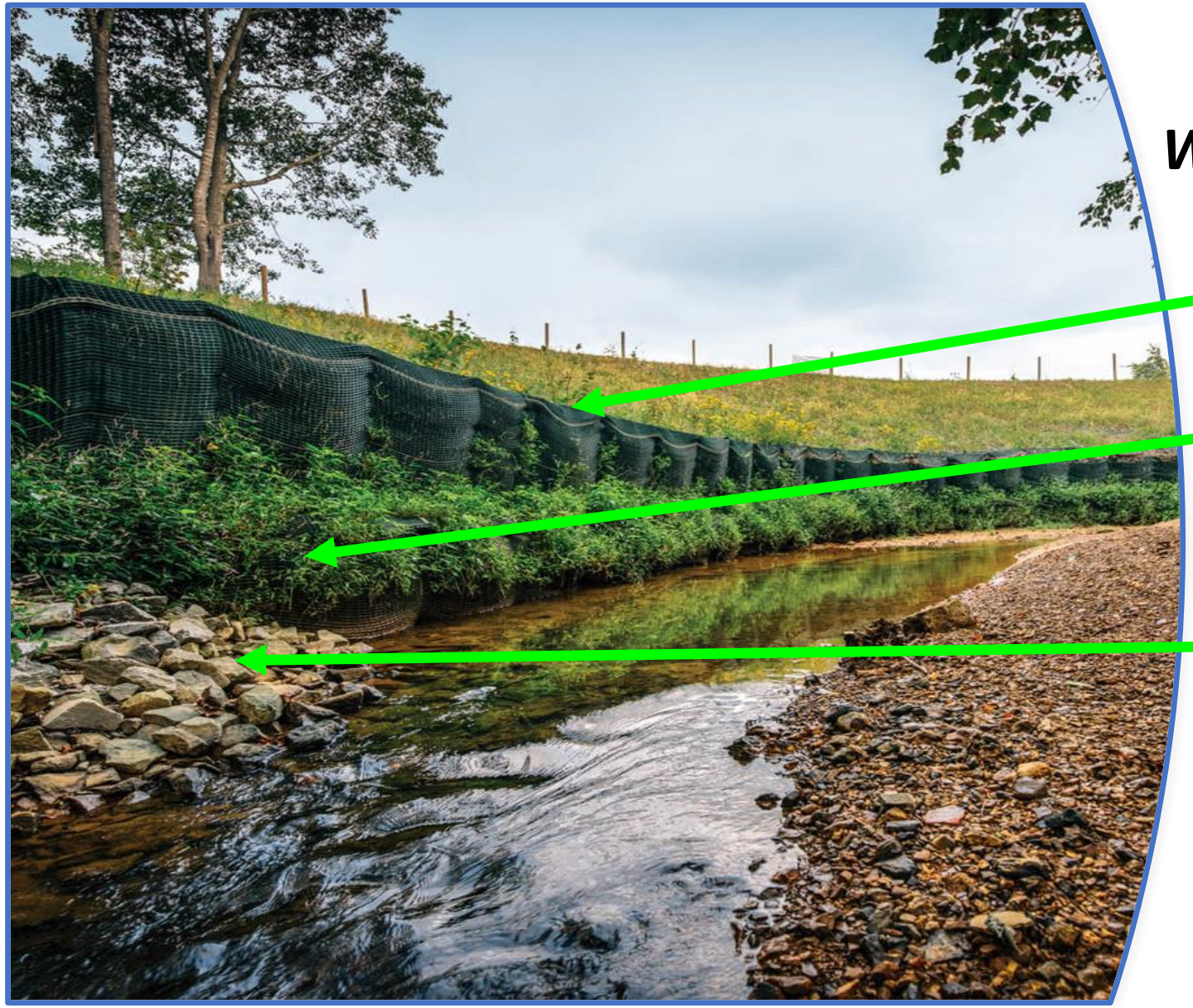


Proposed construction plan



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Resolution



Wetlands & Conservation Program

- **Embankment stability**
- **Strategic placed vegetation for water purification**
- **Erosion prevention**

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Resolution Cost Breakdown

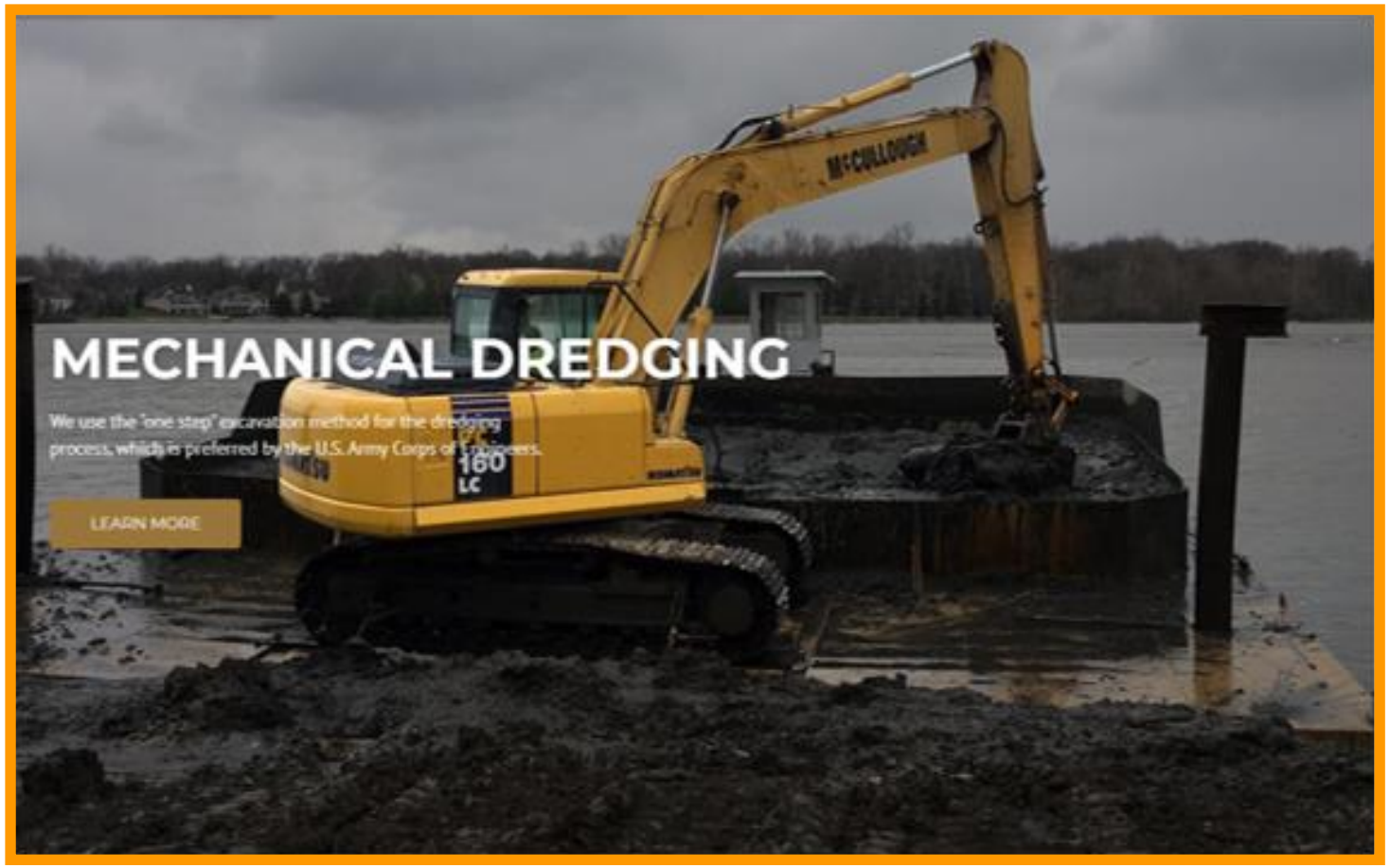


Wetlands & Conservation Program

- **General Project Descriptions**
- 1 Mobilization
- 2 Utility Coordination
- 3 Culvert Installation
- 4 Excavation
- 5 Flow control structure
- 6 Riprap
- 7 Live Stakes
- 8 Wetland Seeding
- 9 Wetland Plug Placement
- 10 Berm/Road Seeding
- 11 10% Contingency
- **Subtotals *$ 953,000.00***

- **Miscellaneous Costs**
- **ENGINEERING**
- Engineering Modeling/Design $ 57,000.00
- Inspection/Contract Administration $ 19,000.00
- Permits $ 14,000.00
- **Subtotals *$ 90,000.00***
- ***TOTAL COST $ 1,043,000.00***

Dredging Program



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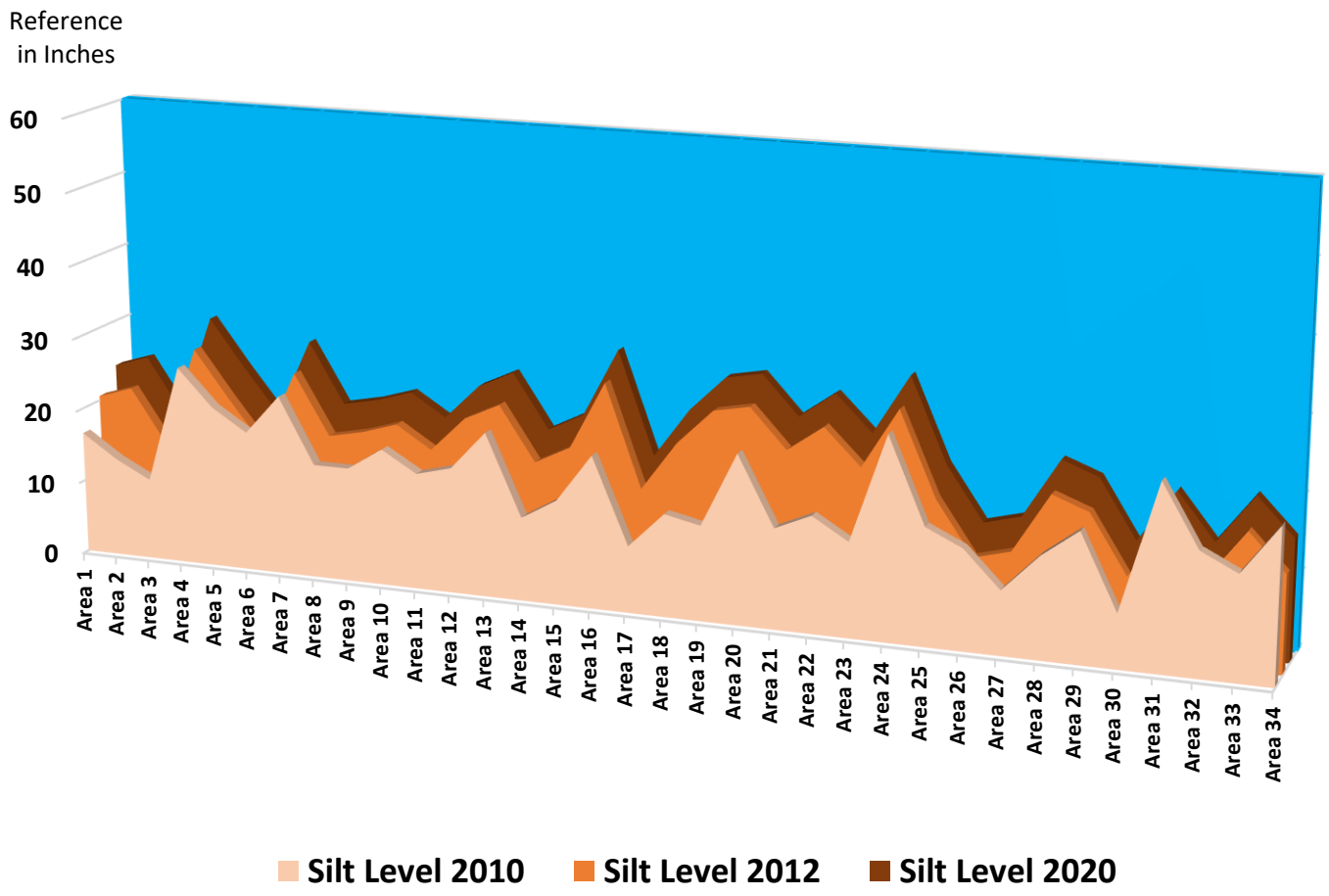
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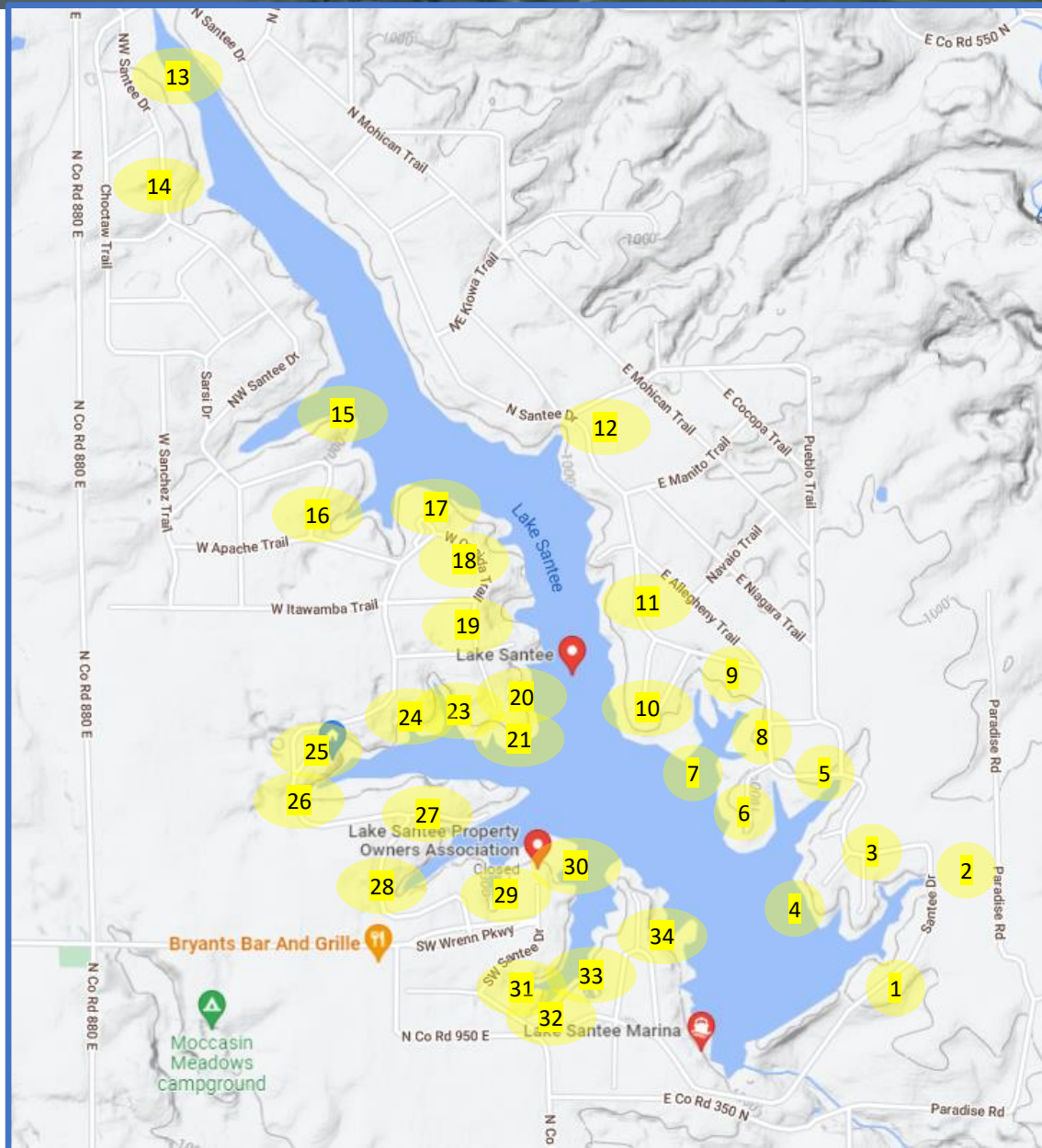
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Dredging Proposal

Silt Level Over Time





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Dredging Proposal

Fishtail Cove







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Dredging Proposal

Sunset Cove





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Dredging Proposal

Anchor Cove





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Dredging Proposal

Beach Cove





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Dredging Proposal

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Fishing Cove





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Dredging Proposal

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Pirates Cove





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Dredging Proposal

Dredging will continue in 2022 with Pirate's Cove and continue in following years as we address other coves and areas in need of dredging.

Cove	Acres	Cubic Feet	Cubic Yards	Cost
Fishtail Cove	0.570	49,658	1,839	$40,462
Anchor Cove	0.541	47,132	1,746	$38,404
Beach Cove	1.182	102,976	3,814	$83,906
Sunset Cove	0.583	50,791	1,881	$41,385
Fishing Cove	14.180	1,853,042	68,631	$1,509,886
			Total	$1,714,044

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Total Cost Overview

Silt/Sediment mitigation program……	$1,043,000
Dredging program……	$1,714,000
	$2,757,000

How is this program funded?

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Input vs Output

INPUT

$240 annual dues / assessment increase

OUTPUT

LSPOA

- Reduction in dredging costs over time
- Reduction in lake treatment costs over time
- Improved water clarity
  Plant life and fish spawning

LSRWWD

- Reduced cost for chemical treatment
- Overall water quality improvements
- Extending resource life while reducing operational costs

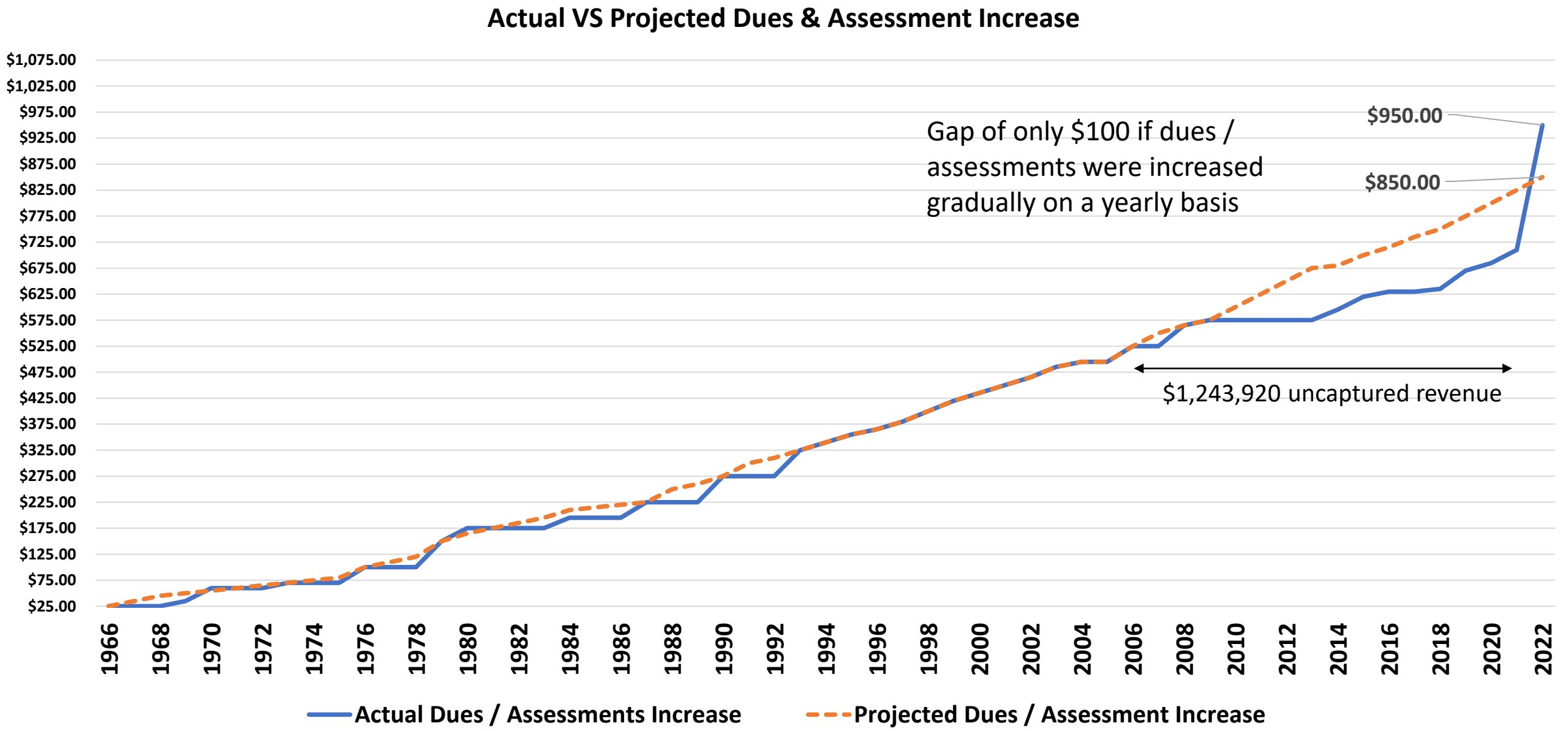
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LSPOA Financial

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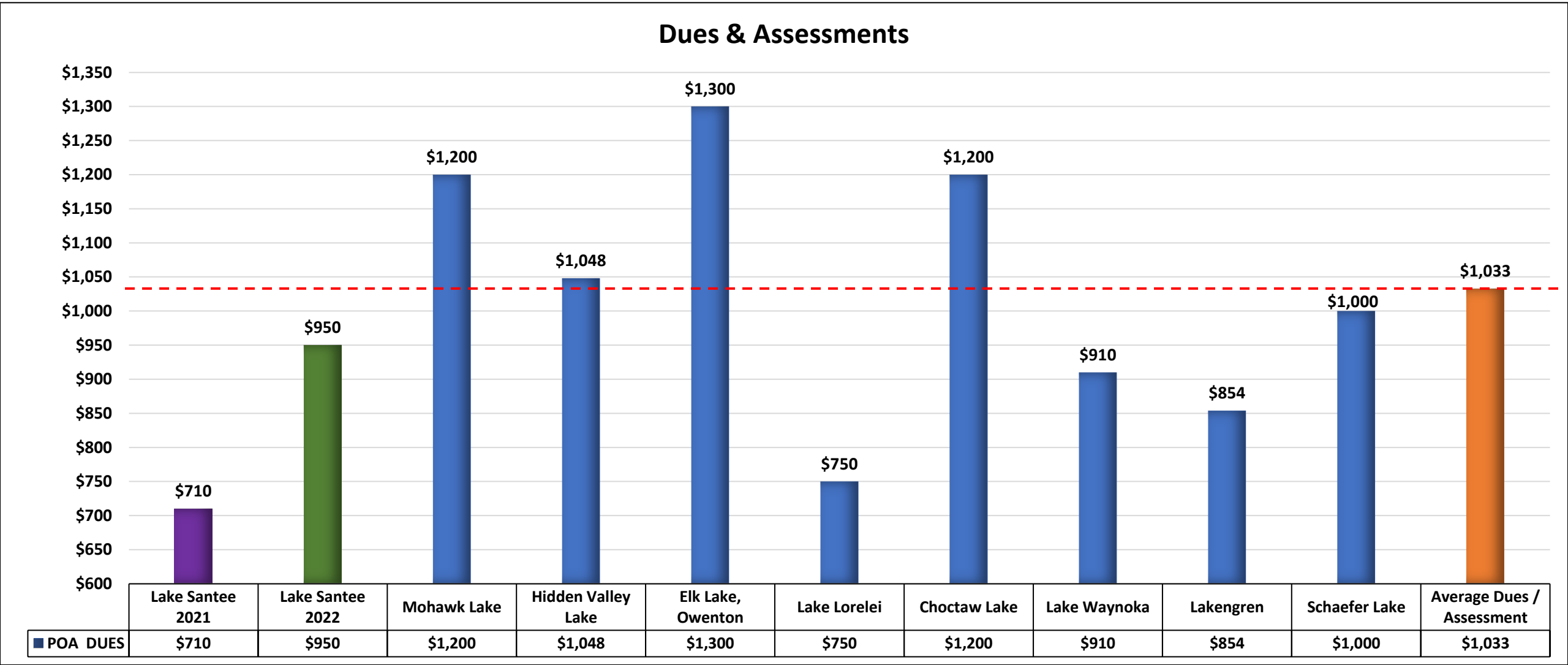
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Lake Dues & Assessment Comparison

With the $240 assessment increase LSPOA is still below average in comparison to communities like ours



	Lake Santee 2021	Lake Santee 2022	Mohawk Lake	Hidden Valley Lake	Elk Lake, Owenton	Lake Lorelei	Choctaw Lake	Lake Waynoka	Lakengren	Schaefer Lake	Average Dues / Assessment
POA DUES	$710	$950	$1,200	$1,048	$1,300	$750	$1,200	$910	$854	$1,000	$1,033

Dredging of LSPOA coves 2023 & future

How Long Will It Take?

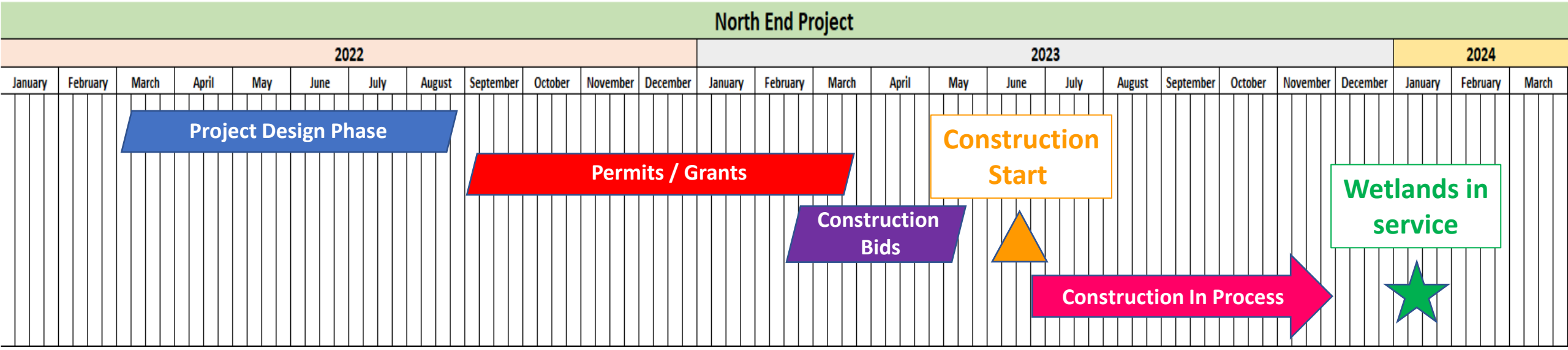
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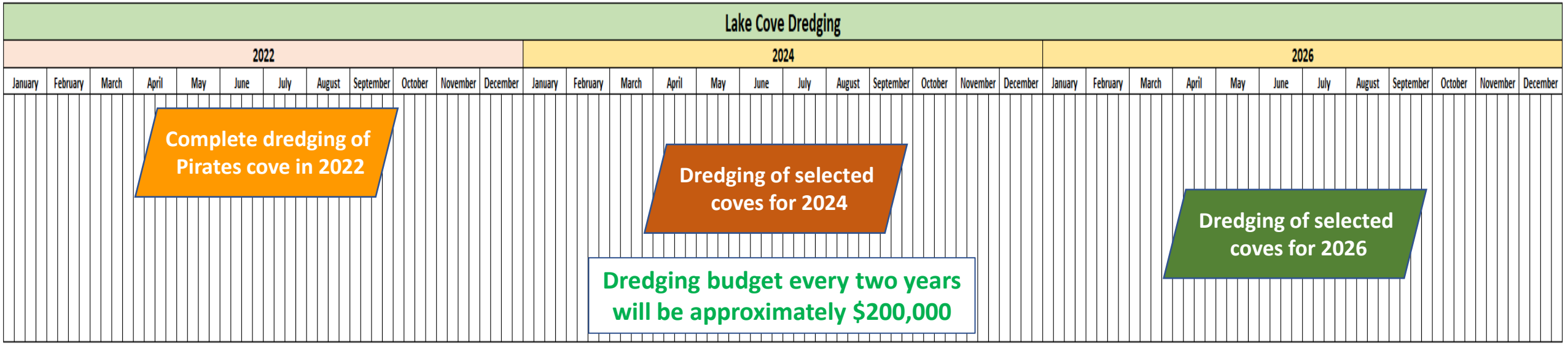
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Project Schedule

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- If we do nothing, we will continuously pay to remove silt / sediment without gaining anything!





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Recap



- COMMUNITY INVESTMENT
- FUTURE COST MITIGATION
- LONG TERM DREDGING PLAN
- IMMEDIATE ACTION AT NORTH END
- CLEANER WATER BEING PROCESSED BY RWWD
- SUSTAINED PROPERTY VALUES

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Questions & Answers

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