



# VILLAGE OF BALD HEAD ISLAND

***Shoreline Management Project 2025***

***Information and Q&A Session #2***

**Tuesday, February 20th, 2024**



# Discussion Topics

- History, Purpose, Need, and Scope of the Project.
- March 5, 2024, GO Bond Referenda:
  - \$13,500,000 for the Project on the West End of South Beach.
  - \$4,500,000 for the Project on the East End of South Beach.
- Tax impacts
- Project Timeline.
- Q&A.



# History

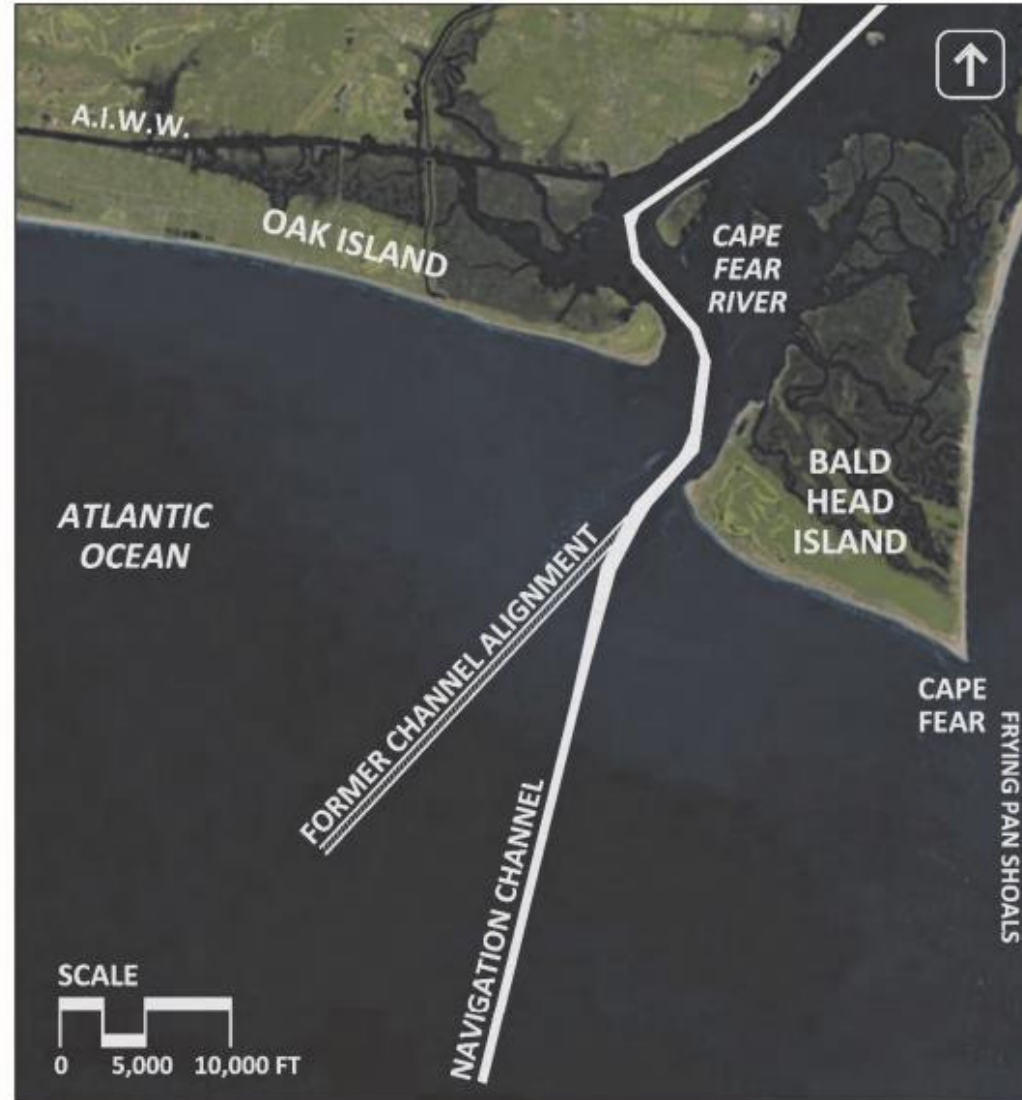
- Our shorelines consist of public beaches which are ever-changing.
- Proximity to shipping channel, required channel maintenance dredging, and storms all have a constant impact on the beaches.
- The Village has had little to no influence over sand placement during federally funded dredging projects.
- Village began to take control of our destiny in the decade of 2000s.
- ✓ • Many property owners and voters were not here then, thus the need to acquaint new property owners and reacquaint long-term property owners.
- ✓ • Much has been invested to sustain our shoreline over time (+ 20 years).



# History: Pre-2000

- The Cape Fear River is a federally authorized navigation channel for the Port of Wilmington. The US Army Corps of Engineers (USACE) is responsible for keeping the channel open for shipping.
- Consequently, the public beach eroded into private property as the channel pulled sand from Bald Head. Houses were lost. Infrastructure was threatened.
- 1994 – 645 foot sand bag revetment in front of BHI Club (Village funded).
- 1996 – 16 soft groins installed in front of Club (Village funded).
- ✓ • The expansion of the Wilmington Harbor Project (WHP) in 2000-2001 led to the creation of the Wilmington Harbor Sand Management Plan (WHSMP) to strategically allot sand from the dredging project to nearby beaches, including BHI.

# Realignment of Navigation Channel

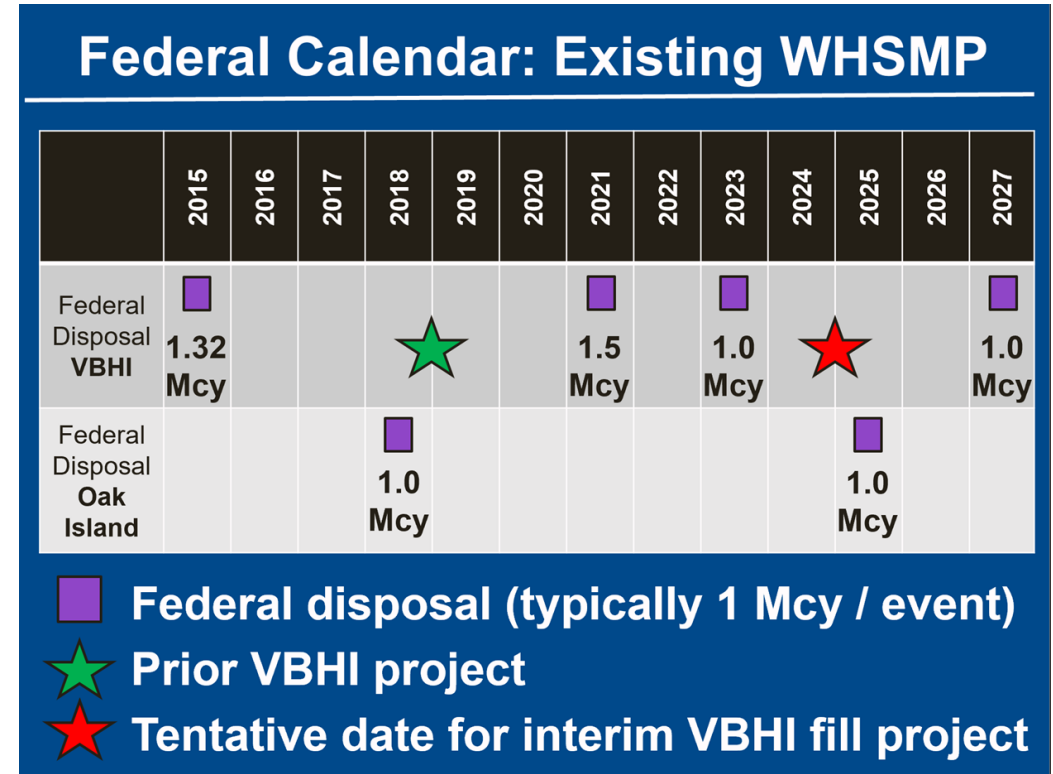




# What is the Sand Management Plan?

The Wilmington Harbor Sand Management Plan (WHSMP) ensures the beach-quality material that migrates into the navigation channel from the surrounding beaches goes back onto the beaches from whence it came.

At present time Bald Head Island receives material every two out of three maintenance events. The third maintenance event calls for beach disposal at Caswell Beach on Oak Island.



# South Beach Erosion 1990's



# South Beach Erosion 2003





# South Beach Erosion 2003



# House Moving 2004



# South Beach Erosion 2011



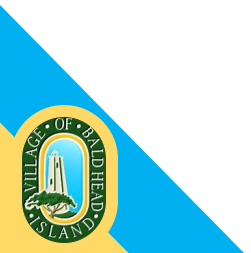
September 2011



December 2011



November 2023





## 2000 to Now (cont.)

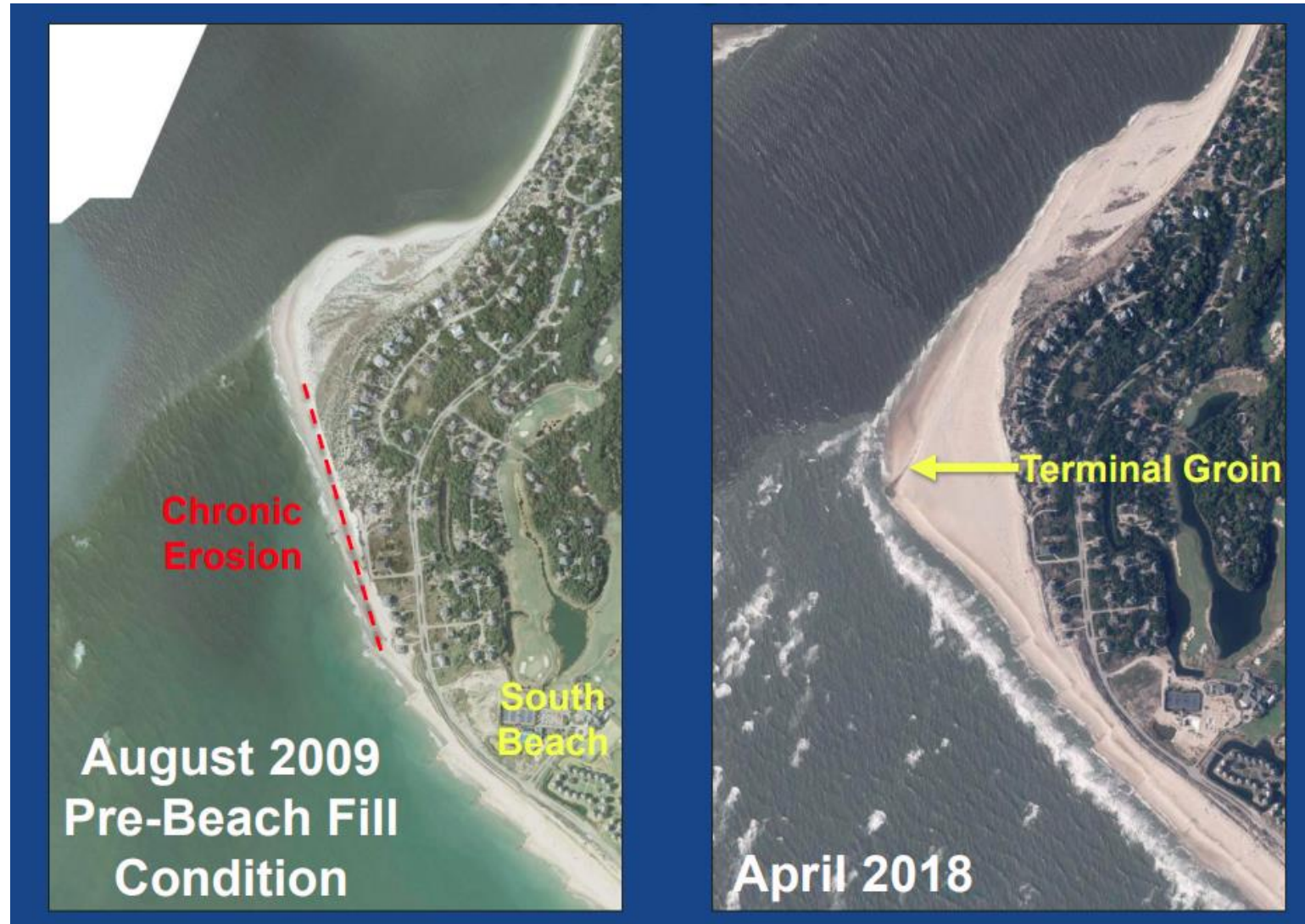
- 2007 - Supplemental funding by the state and BHI (through additional taxation dedicated to stabilization) are required to fund the WHSMP.
- ✓ • 2009 - This begins the annual dedication of property tax revenues to shoreline protection, including approval by Village Council for creation of MSD Zones (A & B).
- 2009 – WHSMP dredging occurs, sand placed on Caswell and Oak Island beaches. Rehabilitation of groin field. Lack of sand on BHI results in devastating erosion.
- ✓ • 2010 – Village funds 1st "engineered beach" project with voter approved GO Bond for \$18M which includes 1.85Mcy sand and replacement of 16 soft-tube groins.



## 2000 to Now (cont.)

- 2011 – No federal funding for SMP. Hurricane Irene damaged the engineered beach and 5 soft groins. Village pays \$230k for additional 350' sandbag revetment and repair to groin field to protect South Bald Head Wynd and utility infrastructure.
- 2012 – Village had spent to date \$25M cumulatively to study and mitigate (beach renourishment) WHP erosion impacts.
- Channel shoaling causes USACE to move buoy 12 and conduct emergency dredging depositing sand offshore.
- ✓ • The Village seeks and obtains legislative approval to install a Terminal Groin at the Point located between the west and south beaches.

# Before and After – Terminal Groin





## 2000 to Now (cont.)

- 2012-2013 – Sand loss and 5 westernmost groins replaced due to damage from Hurricane Irene. BH Creek "emergency sand source" - FEMA PA funded \$1.88M.
- ✓ • 2015-2016 – 1300' Terminal Groin constructed for \$8M during WHP dredging, MOU with ACOE to place sand in fillet area. Rock extensions & spurs to jetties at the marina entrance channel completed.
- 2017 – 2 detached rock breakwaters added north of the marina entrance.
- 2018 – WHP channel maintenance performed in summer (budget shortfall/higher bids), Sand to Caswell and Oak Island beaches.
- ✓ • 2018-2019 – Village Projects spends \$11.7M to place 1Mcy of sand from Jay Bird Shoals onto south beach, and \$1.5 M to replace 13 soft-tube groins.



## 2000 to Now (cont.)

- ✓ • Combined WHP channel maintenance and Village projects result in some building back of the west beach and 60% or so of south beach eastward from the terminal groin.
- ✓ • 2020 – 2021 - WHP channel maintenance placed 1.8Mcy of sand, well above expected amounts, along South Beach to Captain Charlies Quarters.
  - Village begins planning for locally funded project in 2025.
  - 2022 – Sand tube revetment constructed in front of Shoals Club (not Village-funded)
  - 2023 – WHP channel maintenance placed 1.0Mcy of sand along 60% of south beach.



# Timeline of Shoreline Stabilization Projects

Beach disposal or sand placement activities at Bald Head Island since 1991.

Year	Volume	Sponsor	Location
1991	0.35 ± Mcy	VBHI	(Sta. 24+00 to 138+00)
1996	0.65 ± Mcy	VBHI	(Sta. 24+00 to 142+00)
1997	0.45 ± Mcy	VBHI	(Sta. 24+00 to 128+00)
2001	1.849 ± Mcy	USACE*	South Beach (Sta. 41+60 to 205+50)
2005	1.217 ± Mcy	USACE*	South Beach (Sta. 46+00 to 126+00)
2006	47,800 cy	VBHI	West Beach (Sta. 16+00 to 34+00)
2007	0.9785 ± Mcy	USACE*	South Beach (Sta. 46+00 to 174+00)
2009/10	1.850 ± Mcy	VBHI	West Beach (Sta. 8+00 to 32+00) South Beach (Sta. 40+00 to 190+00)
2012	137,990 cy	FEMA/VBHI	West Beach & Western South Beach
2013	1.566 ± Mcy	USACE*	South Beach (Sta. 44+00 to 150+00)
	92,500 cy		West Beach (Sta. 8+00 to 27+00)
2015	1.33 ± Mcy	USACE*	South Beach (Sta. 41+50 to 154+00)
2016/17	50,000 cy	VBHI	West Beach and Row Boat Row
2018/19	1.1 Mcy	VBHI	South Beach (Sta. 49+00 to Sta. 146+00)
2021	1.61 Mcy	USACE	South Beach (Sta. 60+00 to Sta. 212+00)
2023	1.3 Mcy	USACE	South Beach (Sta. 60+00 to Sta. 165+00)

Initial "Engineered Beach" Project



2nd Project



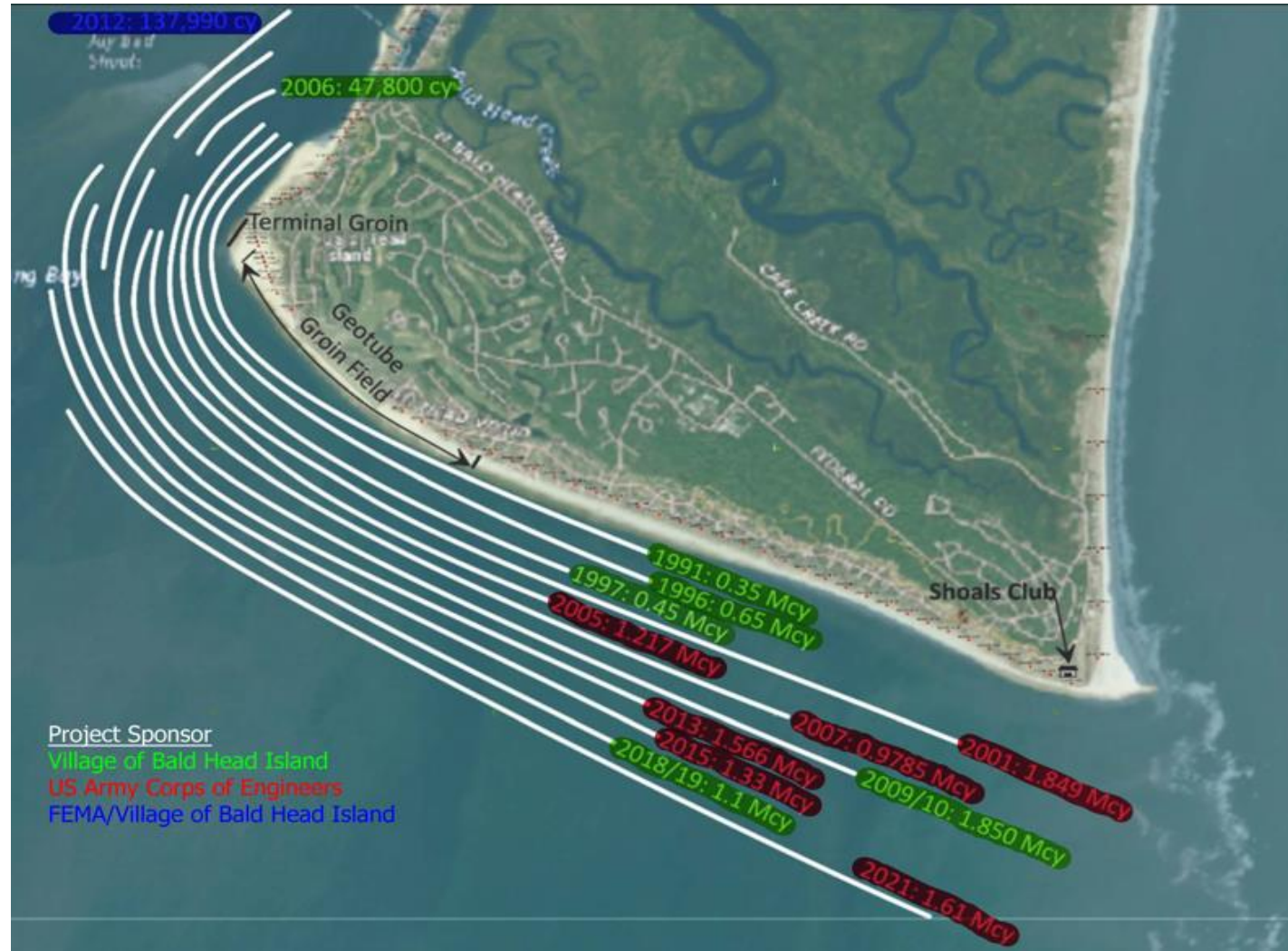
Last 2 were Corps SMP Projects

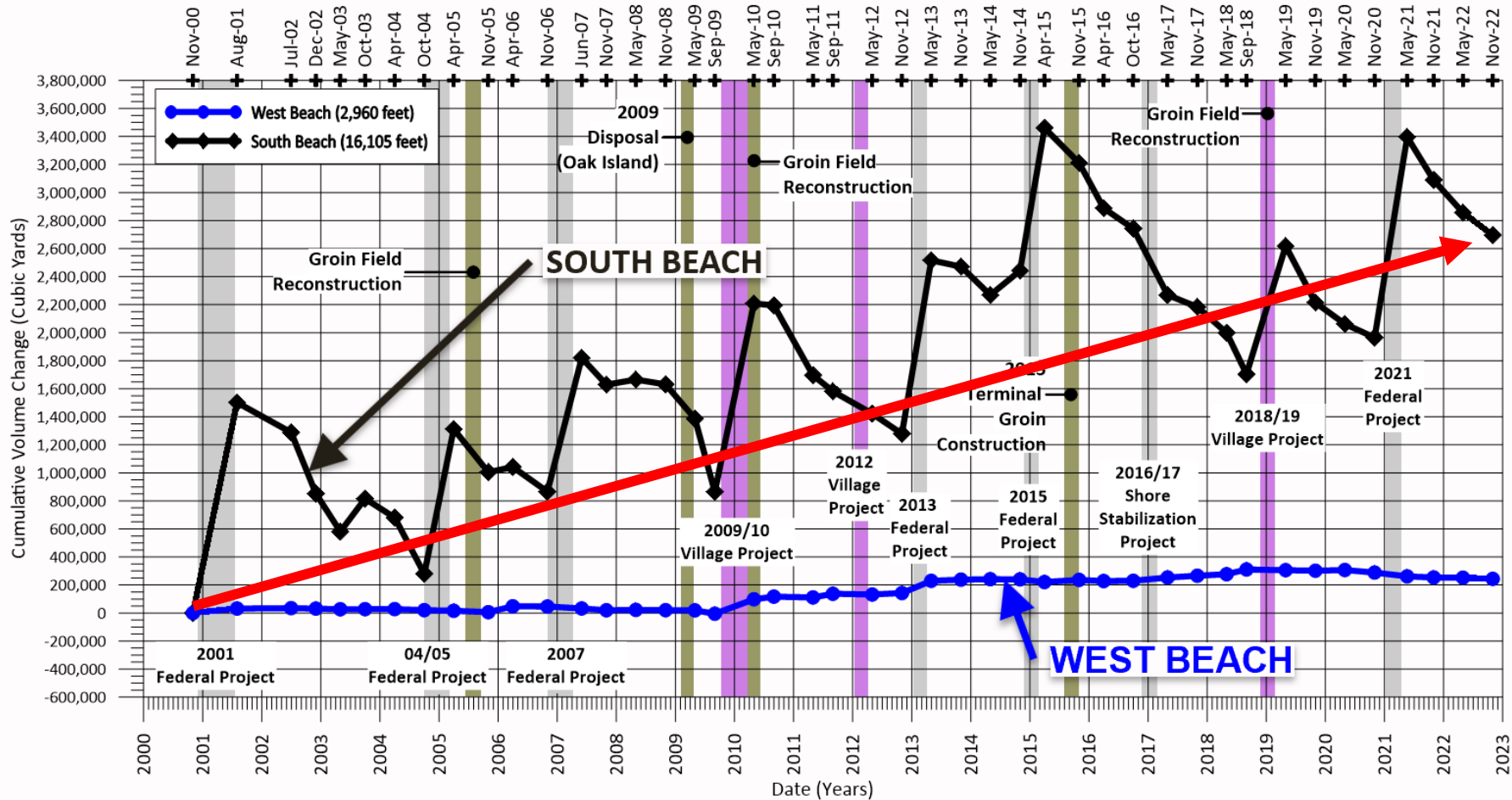
\* Disposal pursuant to the WHSMP. Dredge volume estimate (pre-losses).



# Timeline of Shoreline Stabilization Projects

Beach disposal or sand placement activities at Bald Head Island since 1991.





**South Beach and West Beach Conditions (2000-2022)**

# Before and After South Beach Sand Placement & BHI Dune Planting



**Before (2005)**



**After (2007)**

# Before and After – Mid Section of South Beach



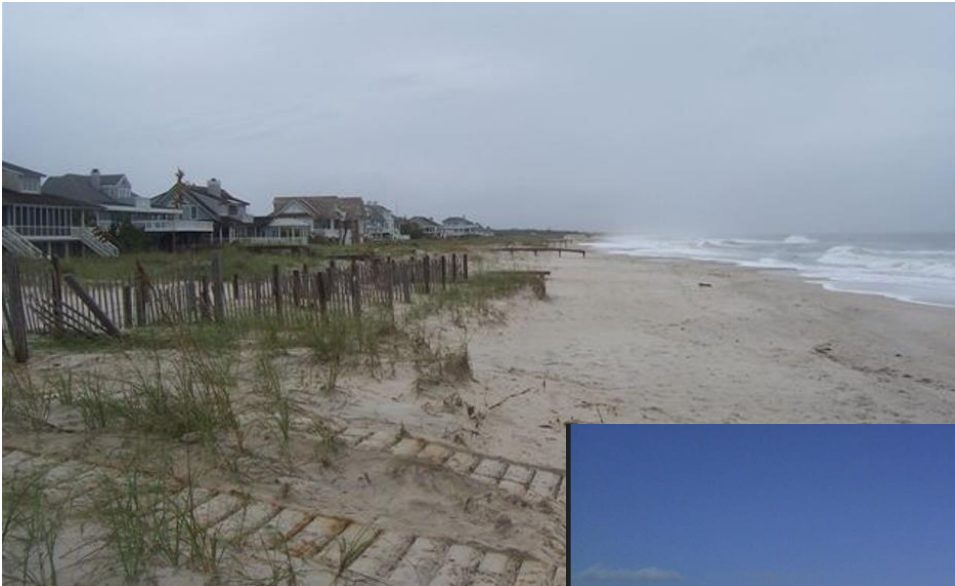
# Before and After – South Beach



# Before and After – South Beach



# Before and After – East Beach North View





# Before and After – East Beach South View





# What Have We Learned?

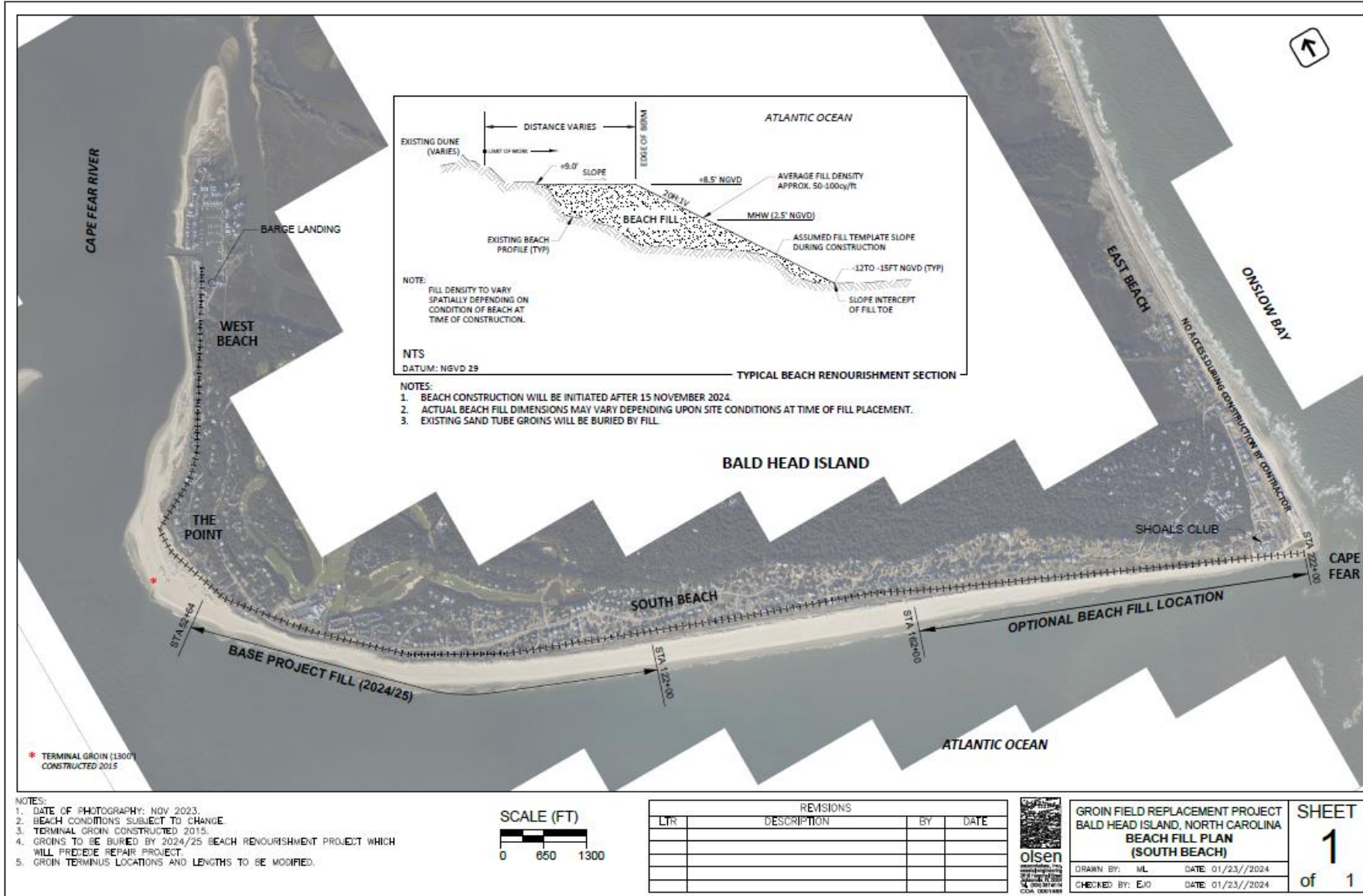
- ✓ • Engineered shoreline stabilization with structures work.
- ✓ • Public Utility infrastructure (water and sewer system, roads, etc.) is now better protected.
- ✓ • Property values and investments have been protected and enhanced.
- ✓ • Bird nesting and turtle nesting areas are preserved and/or enhanced at various locations along the oceanfront shoreline.
- ✓ • Engineered (non-federal) beach is eligible for FEMA post-disaster funding to mitigate storm damage.



# 2025 Plan as Proposed

- East end of public south beach - the last mile - has seen little sand placement since 2000 with only 4 projects having extended past Killegray Ridge/Floras Bluff.
- Private properties at this location have seen the loss of property to the ocean.
- The Village is currently seeking a two-pronged solution.
- ✓ • Section A maintains the existing terminal groin fillet extending through the soft-tube groin field through sand placement from Jay Bird Shoals (both required conditions by the State and ACOE).
- ✓ • Section B places sand at the east end of south beach to mitigate chronic erosion.

# Proposed Beach Fill Locations





# Section A – West End Project

- Dredges approximately 500Kcy of sand from Jay Bird Shoals borrow site.
- Places sand within the Terminal Groin fillet.
- Places sand further eastward through the soft-tube groin field.
- Replaces the 13 soft-tube groins in the area.
- Total cost of this project is \$13.5M to be paid off in seven years.
- No impact on taxes is expected as we will complete our debt service obligation from the 2018-2019 project in 2025.
- Focus on continued long-term maintenance of shoreline in meeting State & ACOE requirements of the Terminal Groin legislation and soft-tube groin field per the Sand Management Plan (SMP).



## Section B – East End Project

- Dredges approximately 500Kcy of sand from Jay Bird Shoals borrow site.
- Places sand from the Flora's Bluff/Killegray Ridge area eastward to the Point at Cape Fear.
- Total cost of this project is estimated at \$4.5M to be paid off in seven years.
- Village has requested a federal grant for \$4.5M for this project. If received, it will not be necessary to issue \$4.5M in bonds, thus no impact on taxes. We are expecting approval.
- If the federal grant is NOT approved, there will need to be an increase in the property tax rate(s) to cover the debt service obligation.



# East End Project – Other Village Actions

- Continue to work with coastal engineer to study the area as sand movement is less drastic than on west end of south beach and the east end erosion problem is potentially subject to natural recovery thereby obfuscating a Village fill project.
- Work with the USACE on an agreement that may allow Village input on future sand placement for WHP projects with cost sharing.
- Seek approvals to use Frying Pan Shoals as a future "long-term" borrow site.
- Seek state approval to install soft groin field on east end including a long-term plan for maintenance.
- Seek state approval to install a terminal groin at the Point at Cape Fear to slow the movement of sand along east and south beaches.



# Project Funding and Potential Borrowings

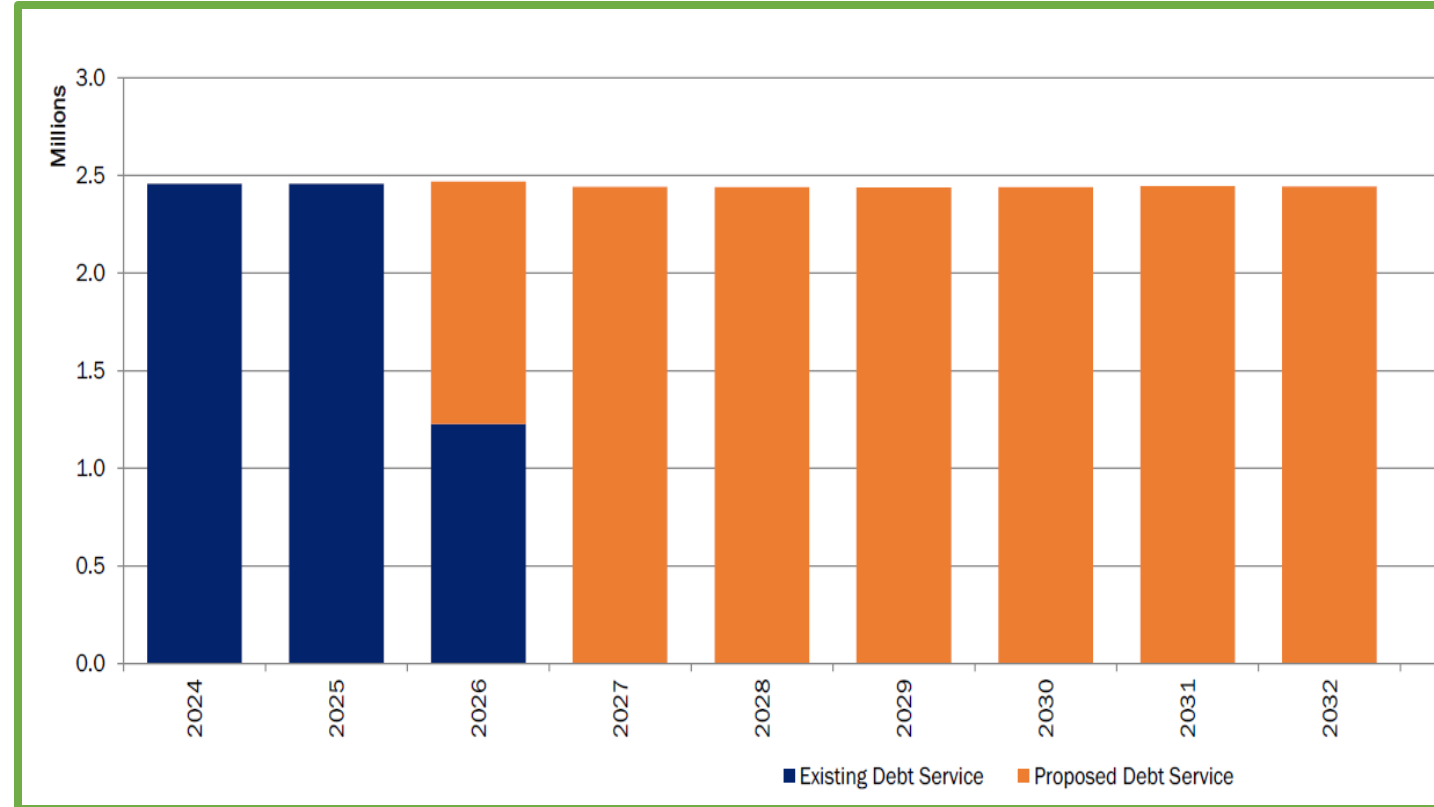
- The Village Council, after receiving public comment during the December 2023 public hearing, has approved holding two General Obligation Bond referenda to fund beach improvements, including replacement of a groin field and transporting and providing additional sand and dunes, all for the control of beach erosion and flood and hurricane protection.
- **3 possible scenarios to fund projects:**
  - Scenario A would require the passing of Referendum A for **\$13.5 million**.
  - Scenario B would require the passing of both Referendum A and B for an additional **\$4.5 million**.
  - Scenario C would require the passing of both Referenda and the Village could call on the remaining funds from the prior GO Bond for an additional **\$2.2 million**.





# Debt Obligations – Referendum A

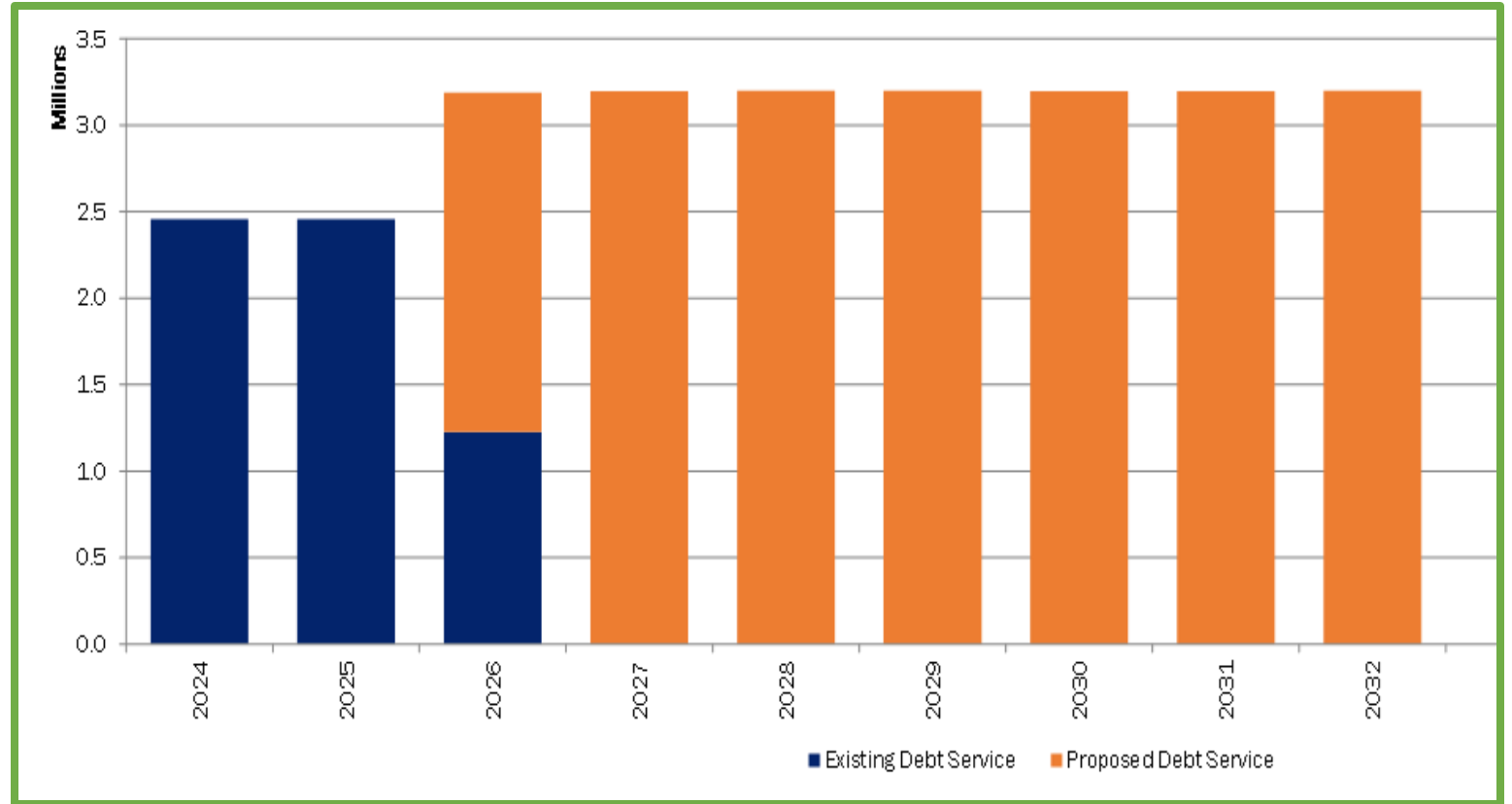
- **\$13.5M** over a 7-year term at an estimated 4.50%:
- The proposed debt service would begin in FY 2026
- Structured so that the combined existing 2018 GO Bond plus the proposed GO Bond would match the Village's prior debt service payments on the existing 2018 GO Bond (~\$2.5 million)
- Would remain at that level for the remaining 6 years.





# Debt Obligations – Referendum B

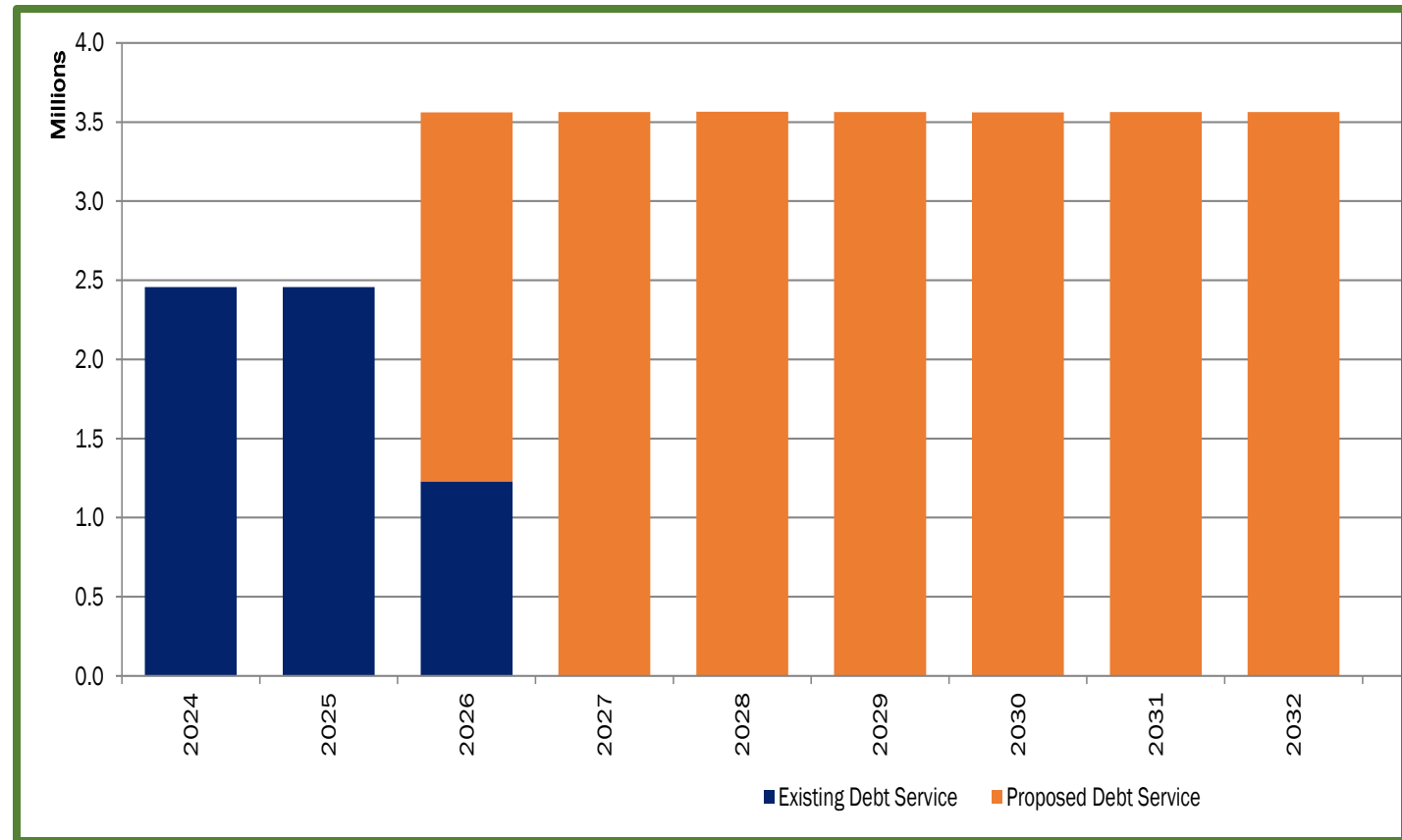
- **Additional \$4.5M** over a 7-year term at 4.50%:
- Would begin in FY 2026
- The combined existing 2018 GO Bond plus the proposed GO Bond would increase to ~\$3.2 million in FY 2026
- Would remain at that level for the remaining 6 years.





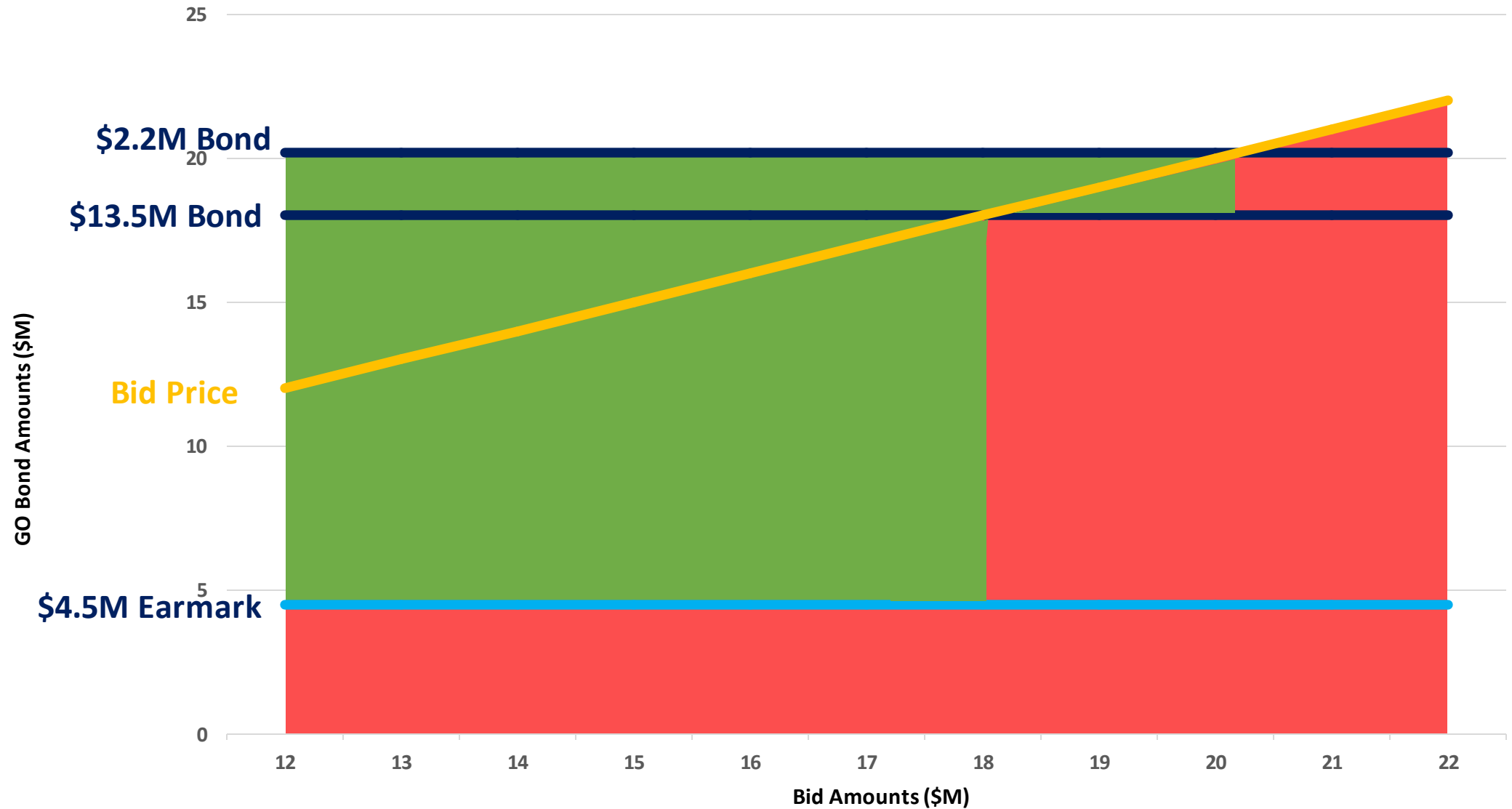
# Debt Obligations – “Worst Case” Scenario

- **Previously authorized \$2.2M** (of \$2.3m) from a prior beach project – never called.
- Estimated over a 7-year term at 4.50%:
- Would begin in FY 2026
- The combined existing 2018 GO Bond plus the proposed GO Bonds, and previously authorized bond would increase to ~\$3.6 million
- Begin in FY 2026 and remain at that level for remaining 6 years.



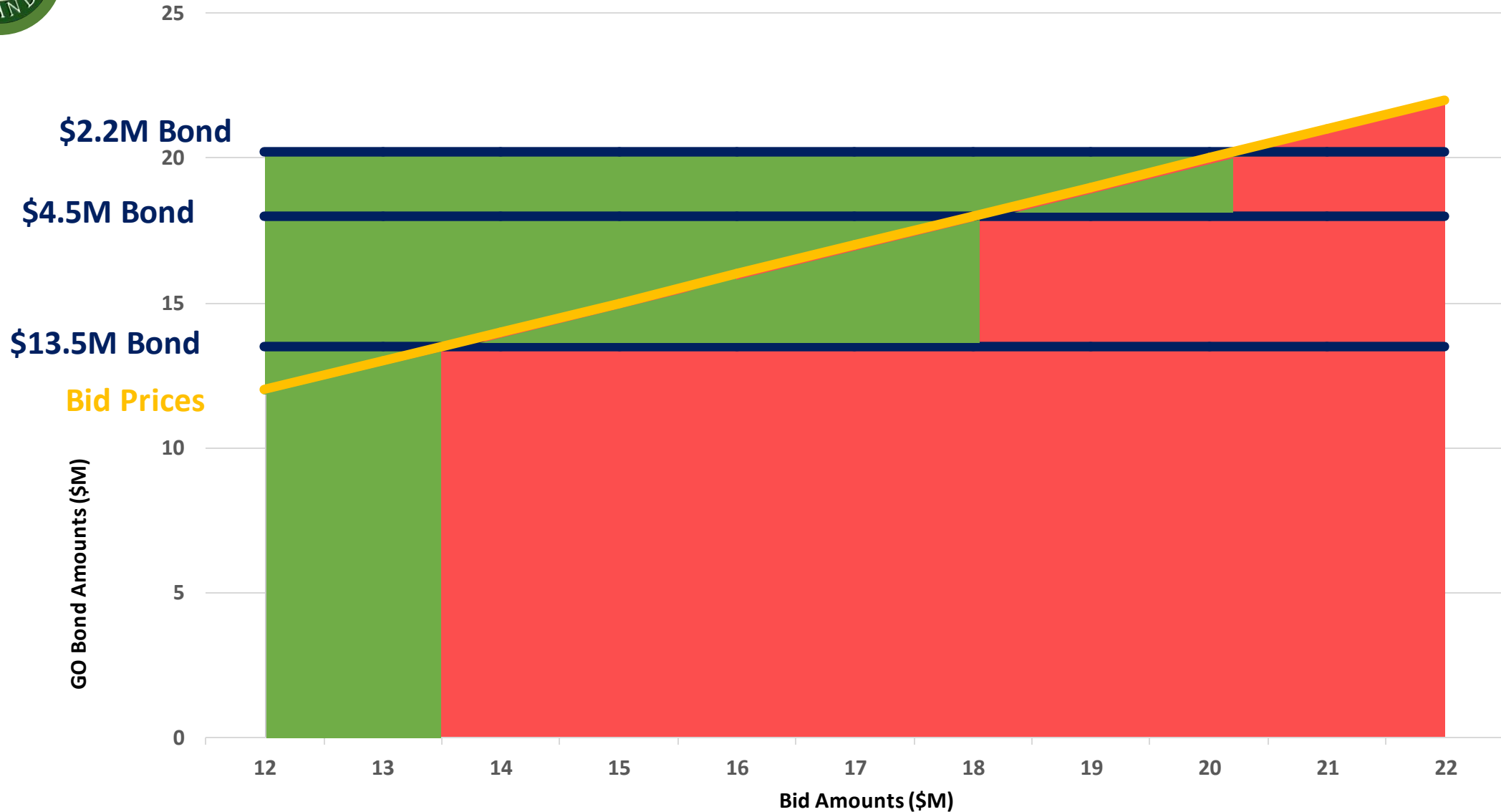


# Project Funding and Limits (w/ Earmark)





# Project Funding and Limits (w/o Earmark)





# Tax implications of Scenario A (\$13.5M)

- According to estimates from our financial advisors, current property tax rates are expected to cover the debt service obligation for this project.

Current Tax Rates:	
Island Wide	\$0.5779
MSD Zone A	\$0.0668
MSD Zone B	\$0.0383



Proposed Tax Rates:	
Island Wide	\$0.5779
MSD Zone A	\$0.0668
MSD Zone B	\$0.0383



# Tax implications of Scenario B (Add'l. \$4.5M)

- If federal grant is approved, there will be little to no impact on property tax rates.
- If federal grant is not approved and the Village is approved to borrow the full \$4.5M for Scenario B (in addition to the \$13.5M for Scenario A) there would be possible tax implications (total \$18M):
  - Conservative estimates:
    - The island-wide rate would need to be increased by \$0.0350.
    - Both MSD Zones would need to be increased by \$0.0125, each.

# Tax implications of Scenario B (Add'l \$4.5M)(cont.)

## \$ Impact of Property Tax Rate on Tax Bills:

Island Wide			
Assessed Value of Homes	Current Tax Rate \$0.5779	Proposed Tax Rate \$0.6129	Difference \$0.0350
\$500,000	\$2,890	\$3,065	\$175
\$1,000,000	\$5,779	\$6,129	\$350
\$1,500,000	\$8,669	\$9,194	\$525
\$2,000,000	\$11,558	\$12,258	\$700
\$2,500,000	\$14,448	\$15,323	\$875

MSD Zone A			
Assessed Value of Homes	Current Tax Rate \$0.0668	Proposed Tax Rate \$0.0793	Difference \$0.0125
\$500,000	\$334	\$397	\$63
\$1,000,000	\$668	\$793	\$125
\$1,500,000	\$1,002	\$1,190	\$188
\$2,000,000	\$1,336	\$1,586	\$250
\$2,500,000	\$1,670	\$1,983	\$313

MSD Zone B			
Assessed Value of Homes	Current Tax Rate \$0.0383	Proposed Tax Rate \$0.0508	Difference \$0.0125
\$500,000	\$192	\$254	\$63
\$1,000,000	\$383	\$508	\$125
\$1,500,000	\$575	\$762	\$188
\$2,000,000	\$766	\$1,016	\$250
\$2,500,000	\$958	\$1,270	\$313

**Example: Property in MSD Zone A or B, valued at \$1.5M, would see a tax bill increase of \$713.**







# Tax implications of Scenario C (Prev. \$2.2M)

- If the Village is approved to borrow the full \$4.5M and the \$13.5M and has to utilize additional funds remaining from the prior GO Bond of \$2.2M - there would be possible tax implications:
  - Conservative estimates:
    - The island-wide rate would need to be increased by \$0.0550.
    - Both MSD Zones would need to be increased by \$0.0183, each.

# Tax implications of Scenario C (Add'l \$2.2M)(cont.)

## \$ Impact of Property Tax Rate on Tax Bills:

Island Wide			
Assessed Value of Homes	Current Tax Rate <b>\$0.5779</b>	Proposed Tax Rate <b>\$0.6329</b>	Difference <b>\$0.0550</b>
\$500,000	\$2,890	\$3,165	\$275
\$1,000,000	\$5,779	\$6,329	\$550
\$1,500,000	\$8,669	\$9,494	\$825
\$2,000,000	\$11,558	\$12,658	\$1,100
\$2,500,000	\$14,448	\$15,823	\$1,375

MSD Zone A			
Assessed Value of Homes	Current Tax Rate <b>\$0.0668</b>	Proposed Tax Rate <b>\$0.0851</b>	Difference <b>\$0.0183</b>
\$500,000	\$334	\$426	\$92
\$1,000,000	\$668	\$851	\$183
\$1,500,000	\$1,002	\$1,277	\$275
\$2,000,000	\$1,336	\$1,702	\$366
\$2,500,000	\$1,670	\$2,128	\$458

MSD Zone B			
Assessed Value of Homes	Current Tax Rate <b>\$0.0383</b>	Proposed Tax Rate <b>\$0.0566</b>	Difference <b>\$0.0183</b>
\$500,000	\$192	\$283	\$92
\$1,000,000	\$383	\$566	\$183
\$1,500,000	\$575	\$849	\$275
\$2,000,000	\$766	\$1,132	\$366
\$2,500,000	\$958	\$1,415	\$458

**Example: Property in MSD Zone A or B, valued at \$1.5M, would see a tax bill increase of \$1,100**





# Project Schedule

**Began Project Discussions:**

February 2022  
Council Retreat

**Capital Project Ord. Created:**

August 2022

**JBS Borrow Site:**

Core Sampling/ Cultural Resources Investigation  
Summer/ Fall 2022

**Project Engin./ Design**

Winter 2022

**JBS Environment Assessment:**

Winter 2022 –  
Summer 2023

**Permit Applications Submitted:**

August 2023

**LGC App. Submitted /Accepted:**

November 2023

**GO Bond Public Hearing:**

December 2023

**GO Bond Referendum:**

March 2024

**LGC Decision on Application:**

May 2024

**Project Bid:**

Summer 2024

**Award Contract:**

Fall 2024

**Begin Construction:**

January 2025

**GO Bond Executed:**

February 2025

**Project Completed:**

May 2025



# Timeline to March 5th Referendum

- February 9, 2024 – Last day to register for the primary and referendum.
- February 15, 2024 – Early voting starts.
- February 27, 2024 - Absentee ballot request deadline (5:00 PM).
- March 2, 2024 – Early voting period ends.
- March 5, 2024 – Primary Day.
- By March 15, 2024 - Canvass of returns by Board of Elections.



# What Happens if Not Approved?

- Monitor pending natural recovery of the beaches.
- Potential threat to loss of public & private infrastructure landward of the frontal dune system (i.e., primary dune for storm protection, water, sewer, roads).
- More properties along the eastern end of South Beach will lose sand and thus the ability to remodel or rebuild.
- The Shoals Club will lose one pool relatively soon and perhaps a second thereafter.



# Thank YOU...

- ...for your investment in Bald Head Island.
- ...for your time today.
- Continue to educate yourself and PLEASE vote.





Q & A

Questions?