

LIDO BEACH DUNE PROJECT

Informational Meeting
– March 26, 2025

Presented By:
City of Sarasota
Taylor Engineering



INTRODUCTIONS



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City of Sarasota



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City Engineer Emeritus
City of Sarasota



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Senior Advisor/Coastal Engineer
Taylor Engineering

OUTLINE



Lido Beach Drone Flight December 2024 (Taylor Engineering)



Introductions



Background



Proposed Lido
Beach Dune
Project Design



Looking Forward



Open Discussion

BACKGROUND



Lido Beach Drone Flight December 2024 (Taylor Engineering)

Benefits of Dunes and Beaches

- Act as a buffer between coastal infrastructure and storm surge/high waves
 - Absorb wave energy, thus reducing damage to upland structures
- Provide habitat and nesting for plant and animal species
- Provide recreational space for residents and tourists
 - **Significant economic driver for coastal communities!**



Lido Beach Following 2021 Beach Nourishment (Taylor Engineering)



Lido Beach Following 2024 Hurricanes (Taylor Engineering)

Added Benefits of Vegetated Dune Systems

- Provide a higher level of protection from storms
 - Root system helps stabilize the dune interior and reduce erosive impacts
- Trap wind blown sediment
 - Encourage growth
- Further enhance coastal ecosystem
 - Support a high biodiversity of flora and fauna
 - Provide habitat/nesting for local, migratory, and endangered species
- Provide privacy to private property

Lido Beach Dune Vegetation 2020 (Taylor Engineering)



USACE New Pass Navigational Dredge Project

- New Pass is a federally authorized channel being dredged for navigational purposes.
- Lido Beach is the recipient of 'beneficial disposal' of the dredge material.
- This project will look like a nourishment project to people walking on the beach.
- The City is working closely with the USACE and our next step is to finalize documentation so the project can go out to bid.

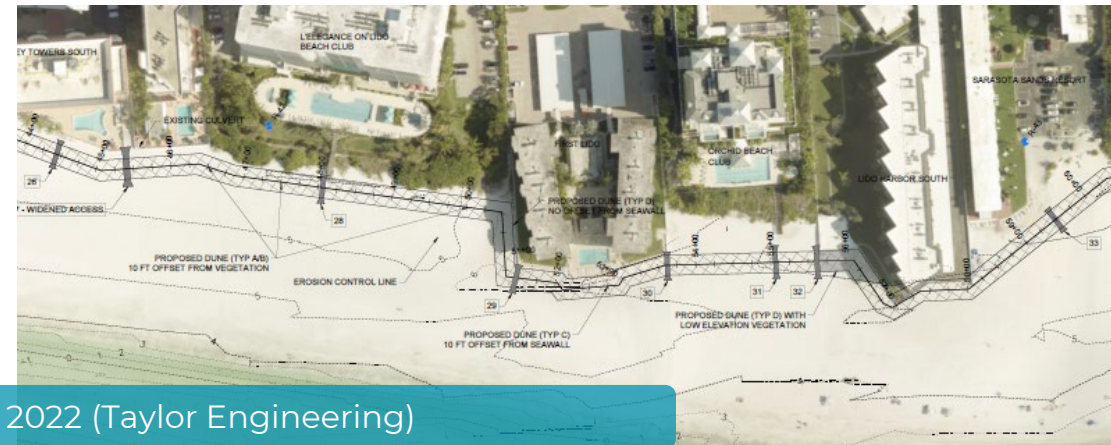


Lido Beach USACE Beach Limits
Rendering 2022 (Taylor Engineering)

Lido Beach Dune Project

- Discussions between Taylor Engineering and the City of Sarasota began in 2020
 - Goal to add a dune feature the next time USACE constructed the federal beach nourishment project
- Public outreach during preliminary design/permitting phase in 2021
- Permit modification request submitted in 2022

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Permit Level Design Drawings Submitted in 2022 (Taylor Engineering)

Lido Beach Dune Project

- Permit Modification No. 0039755-006-JN approved by FDEP in 2023
 - Modifies the existing New Pass Beach Restoration permit to add a dune feature on the south end of Lido Key
- Additional public outreach during creation of dune management plan in 2023
- Significant hurricane impacts in 2024



PROPOSED LIDO BEACH DUNE PROJECT DESIGN

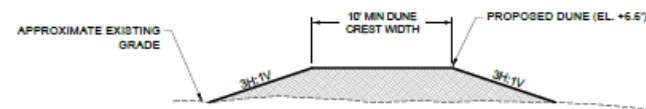


Lido Beach Drone Flight December 2024 (Taylor Engineering)

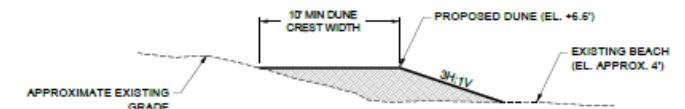
Permitted Lido Beach Dune Project

- Permitted design allows for the City of Sarasota to restore the dunes atop the existing beach berm at Lido Key
- Permitted design includes:
 - Dune restoration from ~R-37 to R-43
 - 12,000 cy of beach compatible sand from an upland source
 - Maximum dune elevation of +6.6 feet NAVD88
 - Corresponds with the 25-year storm water elevation
 - Dune planting and fencing

Typical Dune Cross-Sections from Permitted Design (Taylor Engineering)



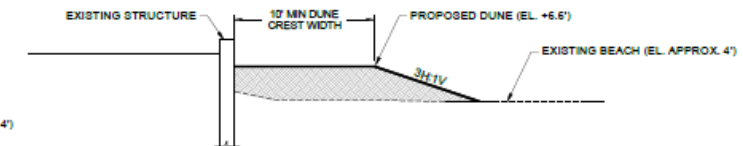
TYPICAL DUNE CROSS-SECTION AT NATURAL GRADE A: SLOPE LANDWARD & SEAWARD



TYPICAL DUNE CROSS-SECTION AT NATURAL GRADE B: SLOPE SEAWARD ONLY



TYPICAL DUNE CROSS-SECTION AT EXISTING STRUCTURE C: VARYING DUNE OFFSET

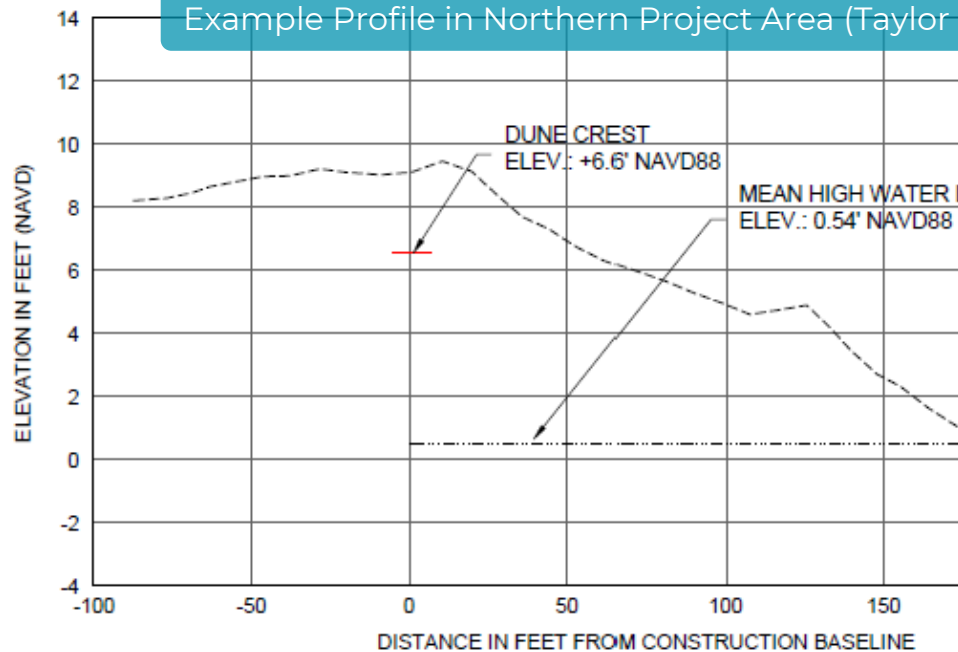


TYPICAL DUNE CROSS-SECTION AT EXISTING STRUCTURE D: NO DUNE OFFSET

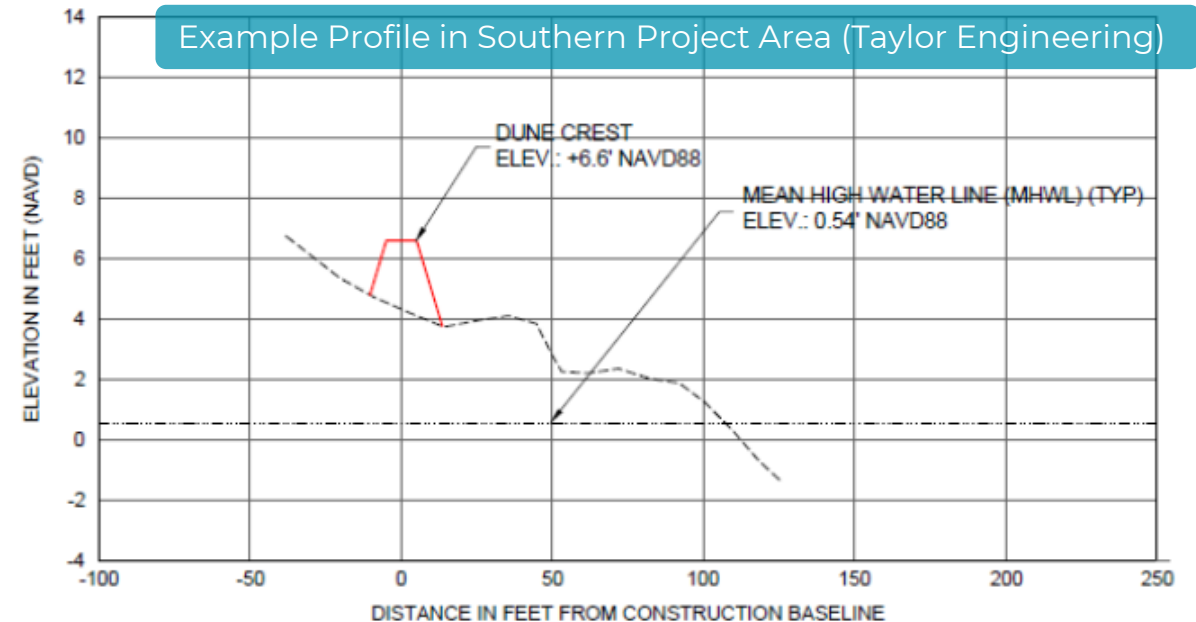
Proposed Lido Beach Dune Project

- Hurricane Helene and Hurricane Milton impacts
 - Surveyed post-storm conditions on October 31st, 2024
 - Approximately 3,200 cy required to fill dune template

Example Profile in Northern Project Area (Taylor Engineering)



Example Profile in Southern Project Area (Taylor Engineering)



Proposed Lido Beach Dune Project

- Recommendations
 - Sieved over wash sand as the primary sand source to fill in the template in the southern project area
 - Dune planting and fencing throughout the project area (per permit)

Typical Dune Planting Details from Permit (Taylor Engineering)

STANDARD PLANTING AREA

COMMON NAME	SCIENTIFIC NAME	SIZE	% OF TOTAL	SPACING	ESTIMATED QUANTITY
SEA OATS	UNIOLA PANICULATA	2" LINER	70%	18" O.C.	44,890
BITTER PANICUM	PANICUM AMARUM	2" LINER	15%	18" O.C., EVENLY DISTRIBUTED AMONG SEA OATS	9,620
WEST COAST DUNE SUNFLOWER	HELIANTHUS DEBILIS SSP. VESTITUS	2" LINER	15% - NO SINGLE SPECIES SHALL ACCOUNT FOR GREATER THAN 5%		9,620
BLANKET FLOWER	GAILLARDIA PULCHELLA	2" LINER			
RAILROAD VINE	IPOMOEA PES-CAPRAE	2" LINER			
BEACH MORNING GLORY	IPOMOEA IMPERATI	2" LINER			
SEA PURSLANE	SESUVIUM PORTULACASTRUM	2" LINER			

LOW ELEVATION PLANTING AREA

COMMON NAME	SCIENTIFIC NAME	SIZE	% OF TOTAL	SPACING	ESTIMATED QUANTITY
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SEA PURSLANE	<i>SESUVIUM PORTULACAISTRUM</i>	2" LINER	20%		3,450

TYPICAL DUNE PLANTING TYPE



VEGETATION AVOIDANCE --
TYP POST AND ROPE INSTALLATION

LOOKING FORWARD



Lido Beach Drone Flight December 2024 (Taylor Engineering)

TIMELINE

***Dates highly dependent on
permitting agency timelines**



MARCH 2025

First
informational
meeting



JUNE 2025

Bid project



WINTER 2025*

USACE beach
nourishment project
Dune walkovers project

APRIL/MAY 2025

Prepare 90% and 100% design documents



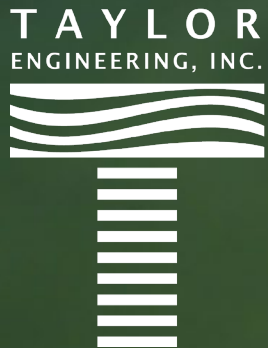
FALL/WINTER 2025*

Dune project construction



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**THANK YOU!
QUESTIONS?**

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TYPICAL DUNE PLANTING TYPE

