

9-A)



City Council Agenda Item

Meeting of June 11, 2024

TO: The Honorable Mayor and Members of the City Council

FROM: Monte K. Falls, P.E., City Manager *MK Falls LIS*

DATE: June 5, 2024

SUBJECT: Humiston Park: Boardwalk Replacement Alternatives

REQUESTED BY: City Manager/Public Works Director

The following is requested as it relates to the above-referenced agenda item:

- Request Council review and approval based on the attached supporting documentation.
 - Request Council review and direction based on the attached supporting documentation.
 - No action required. (Discussion only)
 - No action required. (Information only)
-



City of Vero Beach Departmental Correspondence

To: Monte K. Falls, P.E., City Manager

Via: Matthew T. Mitts, P.E., Public Works Director *MTM*

From: Danessa R. Chambers, P.E., Assistant City Engineer

Subject: Humiston Park: Boardwalk Replacement Alternatives
(PW Project # 2022-44)
Cost: \$709,097 - \$1,991,059

Date: June 4, 2024

Background:

Hurricane Nicole made landfall as a category 1 hurricane south of Vero Beach on November 9th, 2022. The storm resulted in substantial beach erosion and caused damages to the Humiston Boardwalk. The concrete boardwalk was constructed 50± years ago and was near the end of its design life. The post hurricane condition of the boardwalk was unsafe for public access and as such, the boardwalk was demolished after the storm event for safety purposes.

The City engaged Coastal Technology Corporation (Coastal Tech), our continuing professional engineering services provider for coastal/marine engineering to evaluate replacement alternatives for the boardwalk. Coastal Tech has provided the below replacement alternatives for the City's consideration.

Alternative No.	Boardwalk Type	Facility Location	Estimated Cost
Alternative 1	Concrete Boardwalk	Face of Dune	\$1,991,059
Alternative 2	Wood Boardwalk	Back of Dune	\$1,594,008
Alternative 3	Concrete Sidewalk	Back of Dune	\$709,097

In addition to the boardwalk replacement, the current temporary lifeguard tower is nearing the end of its design life. A more permanent solution is needed. The layout and location of the previous lifeguard room, which was on the north side of the existing waterfront pavilion at Humiston Beach, did not provide enough visibility along the coast. The lifeguards would often

station themselves on the boardwalk for improved visibility. Once an alternative is selected for the boardwalk, the design will be coordinated with Recreation and the lifeguards to determine lifeguarding elements that should be included in the final design.

Funding:

It is estimated that there will be \$284,000 in funding provided from the Federal Emergency Management Agency (FEMA).

There are no other funds identified in the current Five Year Capital Program for the Humiston Boardwalk replacement.

Recommendation:

- Place this item on the June 11th City Council Meeting
- Select one of three boardwalk replacement alternatives presented

Attachments:

Humiston Park: Boardwalk Replacement Alternatives presentation

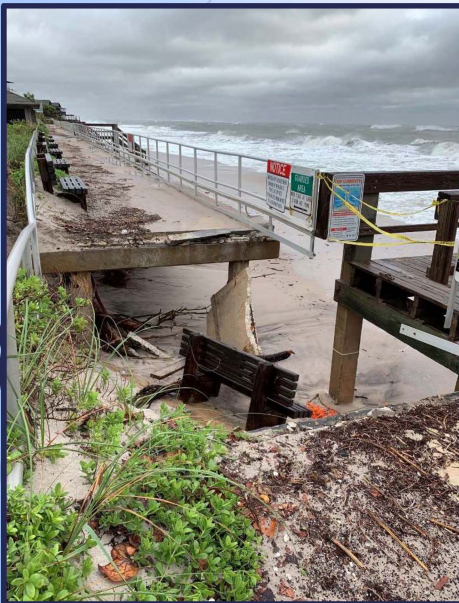


Humiston Park Boardwalk Replacement Alternatives

June 11, 2024

Presented by: Danessa Chambers, P.E.

Humiston Boardwalk Condition Post Hurricane Nicole



Phased Temporary Access

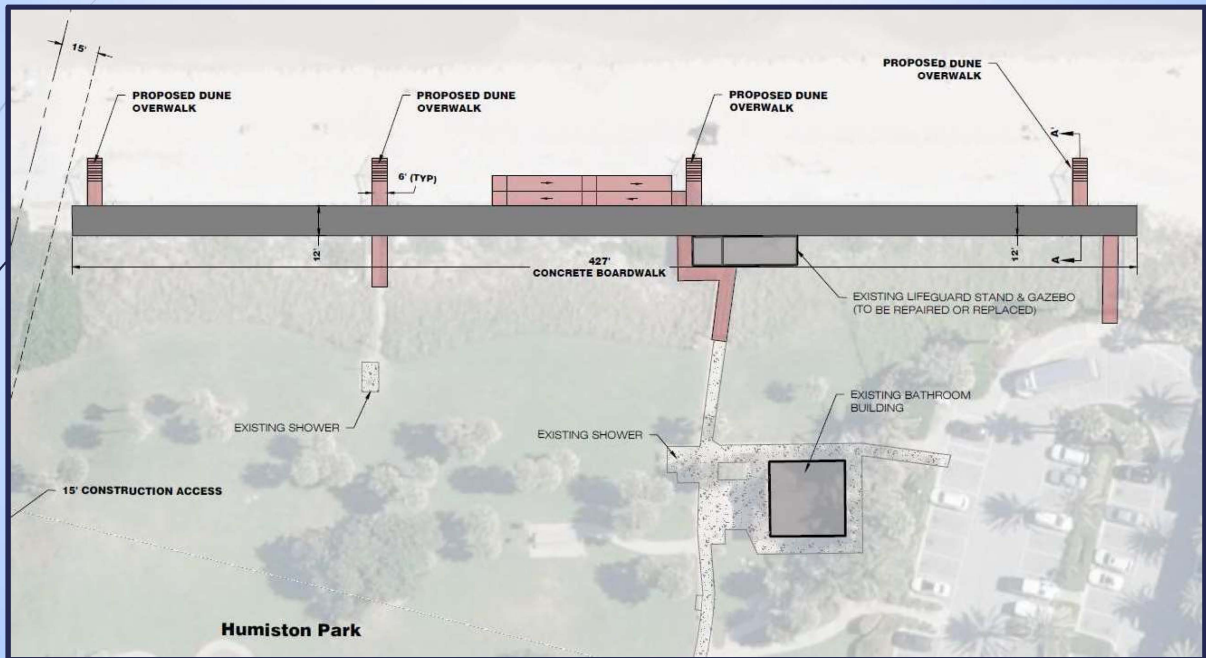
Phase I



Phase II



Alternative 1: Concrete Boardwalk



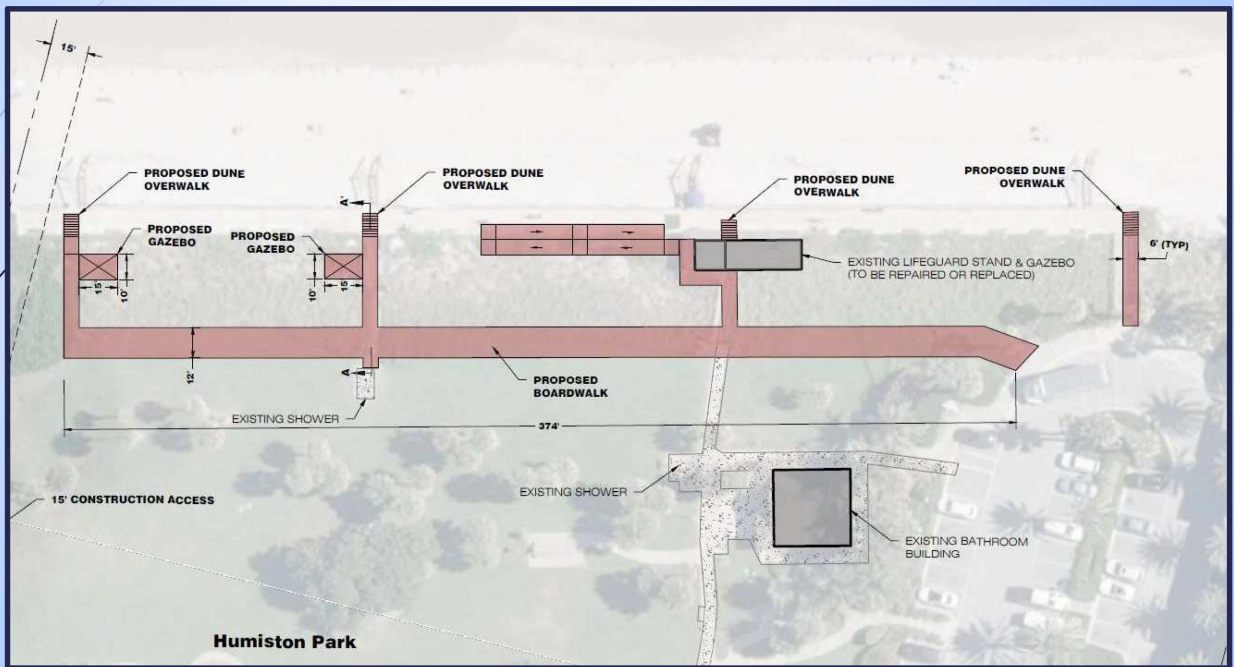
Example (Alternative 1)



Cost Estimate (Alternative 1)

Alternative 1 In-Kind Boardwalk Replacement						
Item	Description	Quantity		Unit Cost		Cost
1	Mobilization/Demobilization	1	LS	\$80,000	LS	\$80,000
2	New Concrete Boardwalk	5,128	SF	\$175	/SF	\$897,400
3	Aluminum Guardrail	836	LF	\$100	/LF	\$83,600
4	Dune Overwalks	1,152	SF	\$150	/SF	\$172,800
5	ADA Ramp	900	SF	\$150	/SF	\$135,000
6	Dune Planting	9,778	Plant	\$3	/Plant	\$29,333
7	Site Restoration	1	LS	\$20,000	LS	\$20,000
Subtotal:						\$1,418,133
Contingency: 30%						\$425,440
Design, Permitting, Construction Phase: 8%						\$147,485.87
Total Cost:						\$1,991,059

Alternative 2: Wood Boardwalk



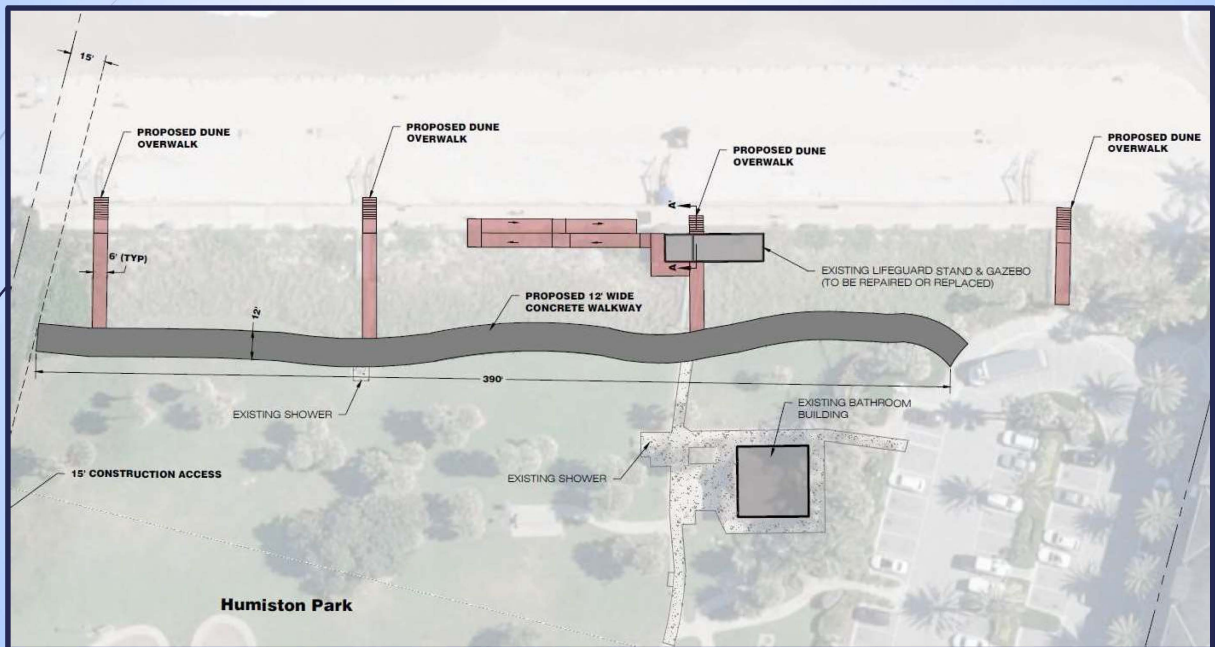
Example (Alternative 2)



Cost Estimate (Alternative 2)

Alternative 2 Landward Wooden Boardwalk						
Item	Description	Quantity		Unit Cost		Cost
1	Mobilization/Demobilization	1	LS	\$50,000	LS	\$50,000
2	New Wooden Boardwalk	4,580	SF	\$150	/SF	\$687,000
3	Dune Overwalks	1,160	SF	\$150	/SF	\$174,000
4	ADA Ramp	900	SF	\$150	/SF	\$135,000
5	Gazebos	160	SF	\$250	/SF	\$40,000
6	Dune Restoration	9,778	Plant	\$3	/Plant	\$29,333
7	Site Restoration	1	LS	\$20,000	LS	\$20,000
Subtotal:						\$1,135,333
Contingency: 30%						\$340,600
Design, Permitting, Construction Phase: 8%						\$118,074.67
Total Cost:						\$1,594,008

Alternative 3: Concrete Sidewalk



Example (Alternative 3)



Example (Alternative 3)



Cost Estimate (Alternative 3)

Alternative 3 Concrete Sidewalk						
Item	Description	Quantity		Unit Cost		Cost
1	Mobilization/Demobilization	1	LS	\$30,000	LS	\$30,000
2	Concrete Sidewalk	531	SY	\$130	/SY	\$68,972
3	Dune Overwalks	1,360	SF	\$150	/SF	\$204,000
4	ADA Ramp	900	SF	\$150	/SF	\$135,000
5	Dune Restoration	9,778	Plant	\$3	/Plant	\$29,333
6	Sand Fill & Grading	240	Ton	\$50	Ton	\$12,000
7	Site Restoration	1	LS	\$20,000	LS	\$20,000
Subtotal:						\$499,306
Contingency: 30%						\$149,792
Design, Permitting, Construction Phase:						\$60,000.00
Total Cost:						\$709,097

Summary

Cost Comparison		
Alternative 1 Concrete Boardwalk	Alternative 2 Wood Boardwalk	Alternative 3 Concrete Sidewalk
\$1,991,059	\$1,594,008	\$709,097

Estimated FEMA reimbursement is \$402,000. Temporary access solutions anticipated to cost \$118,000 leaving **\$284,000 of FEMA funding** towards the selected alternative.

All alternatives include:

- Four (4) dune crossovers
- One (1) or more pavilions/gazebos
- An ADA access ramp required per FL Building Code (\$135,000)
- Viewing benches
- A twelve (12) foot wide walkable beachfront surface
- Maintenance access on the north side of the park

Lifeguard Considerations

Previous station with poor visibility



Current temporary station



Lifeguard Considerations

Conceptual rendering from 2018



Questions?

\$284,000 in FEMA Funding

Alternative 1 Concrete Boardwalk	Alternative 2 Wood Boardwalk	Alternative 3 Concrete Sidewalk
\$1,991,059	\$1,594,008	\$709,097
	