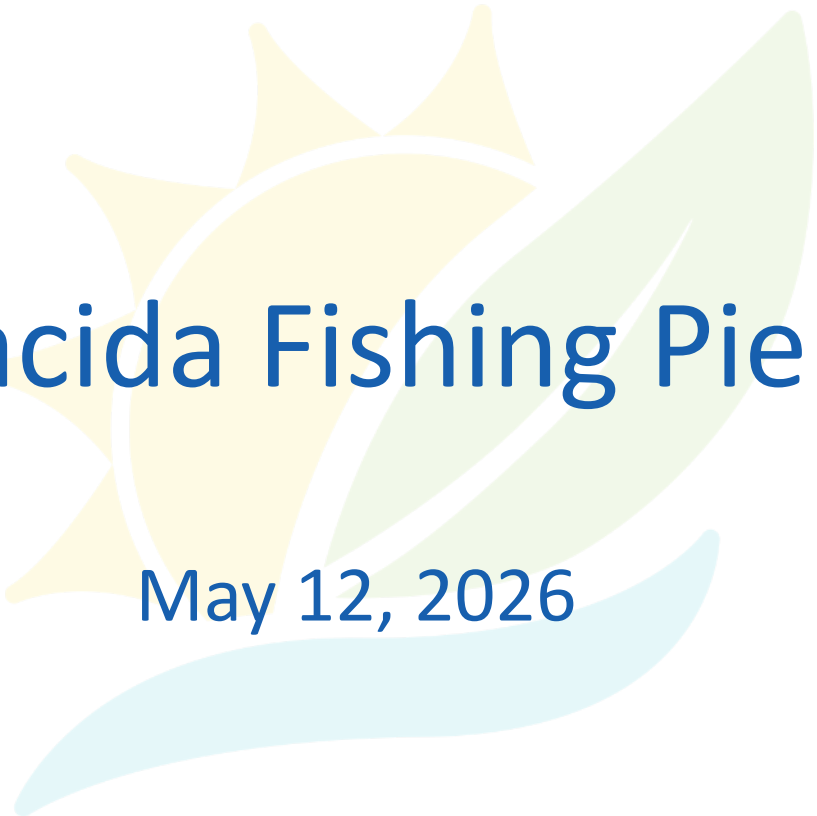




Placida Fishing Pier

May 12, 2026



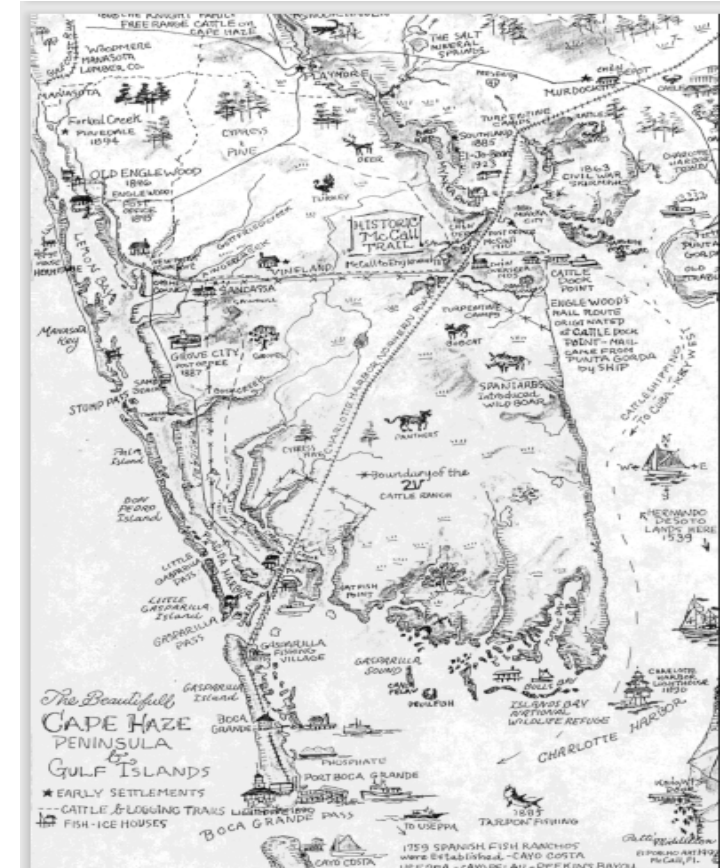
CHARLOTTE COUNTY
FLORIDA

Placida Fishing Pier

- The Board of County Commissioners (BCC) approved a contract with Coastal Engineering Consultants (CEC)
 - To provide design, permitting, and limited construction observation services for the Placida fishing pier
 - Early task was to explore alternative layouts, materials, and construction methods to improve resiliency, ADA compliance, and FEMA alignment
- CEC developed a 'technical memo' to provide schematic-level design alternatives

Placida Fishing Pier

- History of the fishing pier
 - Originally constructed in early 1900s as a railroad trestle for phosphate shipping
 - Rail line was vacated in the early 1980s
 - After the rail line stopped operation, the north trestle was transformed into a popular fishing pier



Placida Fishing Pier





Placida Fishing Pier

CEC evaluated the structures to provided alternatives for the causeway, backwall and pier:

- Causeway – 3 options
- Backwall – 1 option
- Pier – 3 options

Placida Fishing Pier

Evaluation took into account:

- Storm Resiliency: Improve survivability against hurricanes, wave action, and storm surge
- FEMA Compliance: Align with FEMA Public Assistance guidance and cost-reasonable design
- Current structure analysis: review current historic railroad trestle foundation, pier decking, approach, bulkhead and revetment
- Public Use & Safety: Provide safe, functional, and user-friendly access
- ADA Compliance: Ensure pier access meets current ADA standards
- Cost-Effectiveness: Balance capital investment with long-term maintenance needs.

Causeway option 1 – pre-storm

Description:

- Rebuild the causeway and 8-foot asphalt path to pre-storm elevations/slopes
- Use limestone subbase, geotextile, and riprap above mean high water
- Repair smaller damaged path areas.
- Permitting is comparatively simple because the footprint stays unchanged and fill is above mean high water.

Causeway option 1 – pre-storm

Pros:

- Lowest cost, permitting & environmental impacts
- Timely permitting without federal approval
- Uses existing alignment/material

Cons:

- Only slightly improved storm resilience
- Moderate longevity and long-term maintenance
- Remains comparatively vulnerable

Causeway option 1 – pre-storm

Order-of-Magnitude Cost:

- Costs shown are order-of-magnitude estimates for comparison only and do not represent final construction cost or project budgets.

Causeway Option 1			
Item	Quantity	Unit Cost	Total
Mobilize/Demobilize	1	\$ 95,000	\$ 95,000
Fill	335 cy	\$ 120	\$ 40,250
Asphalt	2725 sf	\$ 3	\$ 8,176
Curb	488 lft	\$ 50	\$ 24,400
Riprap	1218 tons	\$ 180	\$ 219,327
Geotextile Fabric	8059 sf	\$ 8	\$ 64,470
Reset Light Poles	3	\$ 800	\$ 2,400
Environmental Protection	1	\$ 18,000	\$ 18,000
Total			\$ 473,000
Contingency (25%)			\$ 119,000
Grand Total			\$ 592,000

Causeway option 2 – hazard mitigation

Description:

- Harden the causeway and widen the crown to move breaking wave energy away from the walking path
- Install geotextile and new riprap from the existing toe upward
- Preserve existing mangroves
- Install curb/footer and rebuild the terminal path section
- Fill extends seaward of mean high water in sawfish habitat - it requires federal permitting and consultation, potentially taking well over a year

Causeway option 2 – hazard mitigation

Pros:

- Greatly improved flood/storm resilience
- High longevity
- Low long-term maintenance

Cons:

- Higher cost
- Moderate environmental impacts
- Prolonged permitting requiring state and federal approval

Causeway option 2 – hazard mitigation

Order-of-Magnitude Cost:

Causeway Option 2			
Item	Quantity	Unit Cost	Total
Mobilize/Demobilize	1	\$ 130,000	\$ 130,000
Fill	630 cy	\$ 120	\$ 75,568
Asphalt	2725 sf	\$ 3	\$ 8,176
Curb	488 lft	\$ 50	\$ 24,400
Riprap	1626 tons	\$ 180	\$ 292,717
Geotextile Fabric	11388 sf	\$ 8	\$ 91,104
Reset Light Poles	3	\$ 800	\$ 2,400
Environmental Protection	1	\$ 25,000	\$ 25,000
Total			\$ 650,000
Contingency (25%)			\$ 163,000
Grand Total			\$ 813,000

Causeway option 3 – hazard mitigation with living shoreline

Description:

- Similar to Option 2, but adds terraced shelves seaward of mean high water planted with red mangroves and riprap on the seaward face to break wave energy
- Reduces riprap quantity by about 15 percent versus Option 2
- Adds maintenance for mangroves until established
- Federal permitting/consultation is still required.

Causeway option 3 – hazard mitigation with living shoreline

Pros:

- Improved and sustainable once established
- Positive environmental benefit with mangrove plantings
- Highest structural longevity
- Lowest long-term maintenance once established

Cons:

- Highest causeway cost
- Highest permitting impacts
- Prolonged state/federal approval
- Vulnerable until shoreline planting is established

Causeway option 3 – hazard mitigation with living shoreline

Order-of-Magnitude Cost:

Causeway Option 3			
Item	Quantity	Unit Cost	Total
Mobilize/Demobilize	1	\$ 135,000	\$ 135,000
Fill	630 cy	\$ 120	\$ 75,568
Asphalt	2725 sf	\$ 3	\$ 8,176
Curb	488 lft	\$ 50	\$ 24,400
Riprap	1365 tons	\$ 180	\$ 245,782
Geotextile Fabric	9562 sf	\$ 8	\$ 76,496
Mangroves	203	\$ 400	\$ 81,156
Reset Light Poles	3	\$ 800	\$ 2,400
Environmental Protection	1	\$ 26,000	\$ 26,000
Total			\$ 675,000
Contingency (25%)			\$ 169,000
Grand Total			\$ 844,000

Backwall – replace seawall

Description:

- Install a precast concrete seawall panel structure at the base of the pier
- Move seawall waterward by 12 feet to mean high water
- Add two 20-foot return walls to form a three-sided cell
- Fill with subbase, place riprap on the seaward face, and extend the asphalt path between the return walls to the pier
- Since it is above mean high water, permitting is limited to FDEP exemption verification
- No federal authorization is required

Backwall – replace seawall

Pros:

- Greatly improved resilience
- High longevity
- Low maintenance
- Improved long service life
- Timely permitting without federal approval

Cons:

- It is an all-new element with a relatively high construction

Backwall – replace seawall

Order-of-Magnitude Cost:

Backwall Replacement			
Item	Quantity	Unit Cost	Total
Mobilize/Demobilize	1	\$ 42,000	\$ 42,000
Seawall	52 lft	\$ 1,460	\$ 75,920
Aluminum handrail	40 lft	\$ 250	\$ 10,000
Riprap	326 cy	\$ 180	\$ 58,759
Geotextile Fabric	1524 sf	\$ 8	\$ 12,192
Environmental Protection	1	\$ 8,000	\$ 8,000
Total			\$ 207,000
Contingency (25%)			\$ 52,000
Grand Total			\$ 259,000

Pier option 1 – repair existing structure

Description:

- Remove the displaced 35-foot section at the base and rebuild a new 23-foot section from the new back wall to the intact pier
- Remove the displaced terminal 30 feet but leave piles
- Repair uplifted & missing decking, stanchions, guard timbers, and rails
- Incorporate ADA improvements

Pier option 1 – repair existing structure

Pros:

- Lowest pier cost & most economical
- Moderate service life remaining
- Timely permitting is more feasible
- Significantly reduces landfill disposal of creosote timber
- Preserves a historic structure
- Can restore public access fastest

Cons:

- Same flood/storm resilience as existing
- Moderate longevity & maintenance
- Likely still some federal authorization
- Structure remains older and less resilient than full replacement

Pier option 1 – repair existing structure

Order-of-Magnitude Cost:

Pier Option 1			
Item	Quantity	Unit Cost	Total
Mobilize/Demobilize	1	\$ 39,000	\$ 39,000
Demo	585 sf	\$ 35	\$ 20,480
Replace Pier Section	196 sf	\$ 155	\$ 51,150
Handrail	50 lft	\$ 200	\$ 10,000
Lifted decking	60 ft	\$ 95	\$ 5,700
Missing Decking	36 ft	\$ 138	\$ 4,950
Stanchions	204 lft	\$ 35	\$ 7,140
Top rail	150 lft	\$ 20	\$ 3,000
Horizontal rail	174 lft	\$ 15	\$ 2,610
Guard timber	124 lft	\$ 35	\$ 4,340
ADA Improvements	15	\$ 2,366	\$ 35,490
Environmental Protection	1	\$ 6,000	\$ 6,000
Total			\$ 192,000
Contingency (25%)			\$ 48,000
Grand Total			\$ 240,000

Pier option 2 – replace with timber pier

Description:

- Replace the pier with a new 9-foot by 660-foot timber structure on the existing alignment/footprint over existing jacketed piles
- Provide ADA access points on at least 25 percent of the structure
- Retain old piles for habitat benefit

Pier option 2 – replace with timber pier

Pros:

- Greatly improved flood/storm resilience
- Improved ADA compliance
- High longevity with low long-term maintenance
- All-new structure while still preserving marine habitat by leaving existing piles in place

Cons:

- High cost
- Prolonged state/federal permitting
- Lengthy timeline

Pier option 2 – replace with timber pier

Order-of-Magnitude Cost:

Pier Option 2			
Item	Quantity	Unit Cost	Total
Interim Repair			
Interim Pier Repair	1	\$ 192,000	\$ 192,000
Long Term Replacement			
Mobilize/Demobilize	1	\$ 379,000	\$ 379,000
Demo	6093	\$ 40	\$ 243,720
New pier	5940	\$ 155	\$ 920,700
Handrail	1329	\$ 200	\$ 265,800
Fire	1	\$ 10,000	\$ 10,000
Environmental Protection	1	\$ 73,000	\$ 73,000
Total			\$ 2,085,000
Contingency (25%)			\$ 522,000
Grand Total			\$ 2,607,000

Pier option 3 – replace with hybrid structure

Description:

- Replace the pier with a new 9-foot by 660-foot hybrid structure using battered steel pipe piles with concrete caps
- HDPE sleeves filled with concrete
- Treated lumber stringers, synthetic decking, and hardwood/synthetic railing
- Utilities such as lighting and water could be added

Pier option 3 – replace with hybrid structure

Pros:

- Greatly improved resilience
- Improved ADA compliance
- High longevity with low maintenance
- Utilities can be added

Cons:

- Highest initial cost
- Highest permitting impacts
- Prolonged state/federal approval
- Longest timeline

Pier option 3 – replace with hybrid structure

Order-of-Magnitude Cost:

Pier Option 3			
Item	Quantity	Unit Cost	Total
Interim Repair			
Interim Pier Repair	1	\$ 192,000	\$ 192,000
Long Term Replacement (base cost)			
Mobilize/Demobilize	1	\$ 964,000	\$ 964,000
New pier	5,940 sf	\$ 155	\$ 920,700
Demo	6,093 sf	\$ 40	\$ 243,720
Handrail	1,329 lf	\$ 200	\$ 265,800
Fire	1	\$ 10000	\$ 10,000
Design Considerations (to be added to base cost)			
Steel Pipe Pile with Concrete Cap	56 bents	\$ 27,300	\$ 1,528,800
Ipe Stanchions	1,329 lf	\$ 50	\$ 66,450
Water	1	\$ 562,100	\$ 562,000
Electrical	1	\$ 71,750	\$ 71,750
Environmental Protection	1	\$ 184,000	\$ 184,000
Total			\$ 5,010,000
Contingency (25%)			\$ 1,253,000
Grand Total			\$ 6,263,000

Comparison

	Causeway			Backwall	Pier		
	Option 1: Repair to Pre-Storm Condition	Option 2: Hazard Mitigation	Option 3: Hazard Mitigation with Living Shoreline	Replace with Concrete Seawall	Option 1: Repair Existing Structure	Option 2: Replace with Timber Structure	Option 3: Replace with Hybrid Structure
Length	300 FT	300 FT	300 FT	52 FT	637 FT	660 FT	660 FT
Elevation	5.8 FT NAVD	6.0 FT NAVD	6.0 FT NAVD	Match pier	6.0 FT NAVD	TBD	TBD
Flood/Storm Resilience	Slightly improved	Greatly improved	Improved, vulnerable until established	Greatly improved	Same as existing	Greatly improved	Greatly improved
ADA Accessibility	Same as existing	Same as existing	Same as existing	Same as existing	Improved, compliant with current guidelines	Improved, compliant with current guidelines	Improved, compliant with current guidelines
Use of Existing Structure	Utilize existing alignment and material	Utilize existing alignment and material	Utilize existing alignment and material	All new	Significant reuse of older components	All new	All new
Structural Longevity	Moderate	High	Highest	High	Moderate	High	High
Permitting Impacts	Lowest	Moderate	Highest	Moderate	Lowest	Moderate	Highest
Environmental Impacts	Low	Moderate	Positive benefit with mangrove plantings	Low	Low	Low if existing piles remain in the water	Low if existing piles remain in the water
Construction Cost	Lowest (\$592K)	High (\$813K)	Highest (\$844K)	High (\$259K)	Lowest (\$240K)	High (\$2.6M)	Highest (\$6.2M)
Long Term Maintenance Cost	Moderate	Low	Lowest once established	Low	Moderate	Low	Low
Navigational Impacts	Not applicable	Not applicable	Not applicable	Not applicable, above MHW	Same as existing	Same as existing	Improved, structure will be lighted
Overall Assessment	Improved, but still vulnerable. Timely permitting will not require federal approval.	Improved but most costly. Prolonged permitting requires state and federal approval.	Improved and sustainable once established. Prolonged permitting requires state and federal approval.	Improved with long service life and low maintenance cost. Timely permitting will not require federal approval.	Moderate service life remaining in structure. Most economical. Timely permitting will not require federal approval.	Improved but costly. Prolonged permitting requires state and federal approval.	Improved but most costly. Prolonged permitting requires state and federal approval.

Recommendation

CEC

Causeway: Option 3

- Improved and sustainable once established, Positive environmental benefit with mangrove plantings, Highest structural longevity, Lowest long-term maintenance once established

Pier: Option 1

- Lowest pier cost & most economical, Moderate service life remaining, Timely permitting is more feasible, Significantly reduces landfill disposal of creosote timber, Preserves a historic structure, Can restore public access fastest

Recommendation

Staff

Causeway: Option 3

- Improved and sustainable once established, Positive environmental benefit with mangrove plantings, Highest structural longevity, Lowest long-term maintenance once established

Pier: Option 2

- Greatly improved flood/storm resilience, Improved ADA compliance, High longevity with low long-term maintenance, All-new structure while still preserving marine habitat by leaving existing piles in place
- Current structure only has a life expectancy of 10 years before full replacement is needed

Questions

