



Agenda Report

2725 Judge Fran Jamieson
Way
Viera, FL 32940

Consent

F.3.

5/6/2025

Subject:

South Beaches 2025-26 Dune Project Maintenance including Hurricane Milton Response

Fiscal Impact:

Total South Beaches Dune Maintenance Project cost including sand, dune vegetation, permit-required monitoring and permitting/oversight is expected to be \$13.4 million and initially be funded by the Tourism Development Tax Beach Improvement Fund. Cost-share reimbursement from FEMA and State Grants combined is expected to be \$7.4 million.

Dept/Office:

Natural Resources Management Department

Requested Action:

It is requested that the Board authorize: 1) the County Manager to execute a change order of up to \$10.9 million to an existing contract with Dickerson Infrastructure Inc. to repair the South Beaches engineered dune project; 2) the County to obtain and record voluntary easements for beach and dune renourishment in the South Beaches; 3) use of county owned/managed land for temporary construction access; 4) the County Manager or designee to execute Task Orders or Contracts work in excess of \$200,000 for associated tasks required to complete the project and comply with permit conditions; 5) staff to seek FEMA & additional state funding for reimbursement; and 6) necessary budget change requests.

Summary Explanation and Background:

In 2004-2005, in response to Hurricane Jeanne, Brevard County constructed an engineered dune project along approximately 12 miles of developed shoreline in the South Beaches. This project has been maintained as required by FEMA, most recently in 2023-24 after Hurricanes Ian and Nicole. In late 2024 Hurricane Milton, followed by fall winds and king tides caused significant erosion in portions of the South Beaches.

The South Beaches project has been successful at protecting both upland parks and properties, as well as sea turtle nesting habitat in the Archie Carr National Wildlife Refuge. This work is consistent with the States designation of this area as the Brevard Barrier Island Area (BBIA) of Critical State Concern. To date approximately \$33.5 million has been spent on sand and dune vegetation to preserve this shoreline of which Brevard County's cost share after all qualified reimbursement has been about 9% due to highly successful leveraging of state and Federal Emergency Management Agency (FEMA) funding. To assure future FEMA eligibility, Brevard County must demonstrate that we actively maintain the project as needed. Hurricane Milton combined with more recent weather has caused sufficient erosion that sand placement is warranted to help meet the FEMA project maintenance requirement.

Timely pursuit of contracting is necessary for multiple reasons: 1) Beach Quality sand obtain from upland

quarries is in limited supply and contracting will allow sand production to begin 2) Work is estimated to require 4 to 5 months to complete 3) Beach placement work should begin November 2025 to ensure completion prior to the May 1, 2026 start of marine turtle nesting season and 4) Shoreline that is not restored prior to May 2026 will remain vulnerable through the next hurricane season.

Dickerson Infrastructure Inc. remains under contract with Brevard County from a 2023 Bid #3-23-30 for the South Beaches Project maintenance event that was completed in 2023-24. Dickerson is willing to honor the January 2023 bid price of \$55.81 per cubic yard. Staff believes this cost remains fair for the 2025-26 work needed, particularly given recent inflation seen in construction costs. This cost is significantly lower than the \$65 per cubic yard use by FEMA to estimate project cost. Executing a change order to the existing contract will allow project preparation and sand production to begin promptly and ensure timely completion of the work.

The anticipated Change Order cost for sand placement totals approximately \$10,819,550. Total cost for the project is estimated at \$13.4 million including sand placement, installation of dune vegetation, beach tilling, permitting, construction oversight and three years of mandated environmental and physical monitoring. Reimbursement of up to \$4.8 million is expected through the FEMA process (FEMA Subject Matter Expert Report attached). Partial reimbursement of up to an additional \$2.6 million will be sought through FDEP via existing State grants previously approved by the Board. After these anticipated reimbursements the final net cost to the County will be approximately \$6 million. Project funding is available in the Tourism Development Office Beach Improvement Budget, within reserves. To meet permit requirements and project schedule, the County Manager will need to execute subsequent contracts, change orders and task orders for all associated work.

Previous sand placement in the South Beaches has been completed under the authority of short term "permission letters" signed by property owners. New letters must be obtained frequently as the letters expire or properties change hands. The process of repeatedly obtaining permission letters is burdensome and creates the risk of leaving gaps in the project if a property owner cannot be located in the limited timeline before each project. To improve efficiency, and ensure all properties benefit from future projects, staff proposes to obtain and record voluntary easements authorizing the County to place sand and plant herbaceous dune vegetation seaward of existing dune vegetation as part of the South Beaches beach and dune nourishment project. The language of the Voluntary Easement will be prepared and approved by the County Attorney's Office.

Clerk to the Board Instructions:

Timely receipt of Clerk's memorandum will facilitate execution of project. Therefore, please email Mike.McGarry@brevardfl.gov <<mailto:Mike.McGarry@brevardfl.gov>> as soon as Clerk's memo is complete, we will arrange hardcopy pickup.



Kimberly Powell, Clerk to the Board, 400 South Street • P.O. Box 999, Titusville, Florida 32781-0999

Telephone: (321) 637-2001
Fax: (321) 264-6972
Kimberly.Powell@brevardclerk.us

May 7, 2025

MEMORANDUM

TO: Virginia Barker, Natural Resources Management Director

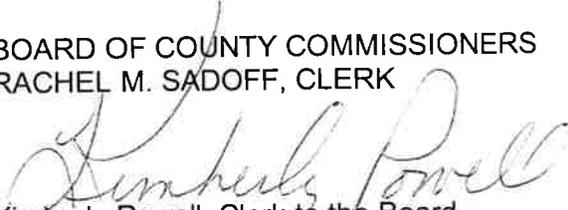
RE: Item F.3., South Beaches 2025-26 Dune Project Maintenance Including Hurricane Milton Response

The Board of County Commissioners, in regular session on May 6, 2025, authorized the County Manager to execute a Change Order of up to \$10.9 million to an existing Contract with Dickerson Infrastructure Inc. to repair the South Beaches engineered dune project; directed the County to obtain and record voluntary easements for beach and dune renourishment in the South Beaches; approved use of County owned/managed land for temporary construction access; authorized the County Manager, or designee, to execute task orders or contracts work in excess of \$200,000 for associated tasks required to complete the project and comply with permit conditions; directed staff to seek Federal Emergency Management Agency (FEMA) and additional State funding for reimbursement; and approved all necessary Budget Change Requests.

Your continued cooperation is always appreciated.

Sincerely,

BOARD OF COUNTY COMMISSIONERS
RACHEL M. SADOFF, CLERK


Kimberly Powell, Clerk to the Board

cc: County Manager
County Attorney
Finance
Budget

DR-4834-FL

Applicant: Brevard County, FL

South Beaches Engineered Dune Project

Project # 804068

Category G Engineered Beach

Location

The “South Beaches Engineered Dune Project” is located on the Gulf Coast of Florida in Brevard County (see [Attachment 1. South Beach Engineered Dune Project Location Map](#)) and Fig. 1 of [Attachment 2. Brevard Post-Milton Assessment 2024_12-6-2024](#)

Project Location

The South Beaches project segment comprises 13.1 miles of Atlantic Beach shoreline dune along Melbourne Beach, Brevard County, Florida, between FDEP Reference Monuments R-141 and R-213.

North Endpoint at R-141: 28.0476, -80.5479

South Endpoint at R-213: 27.8762, -80.4555

Project Length: 69,580 FT

There are no federally constructed shoreline management projects within Project template. The Project is not a specifically authorized and constructed Corps of Engineers (USACE) Coastal Storm Risk Management project. *Therefore, the beach is not a federally constructed shoreline under the specific authority of USACE (PAPPG, p.180).*

The South Beaches Engineered Dune Project (Project) is a non-federal, designed, constructed, and maintained for post-storm restoration project. The Project was constructed by Brevard County in 2004/05 after severe storm impacts. The Project is wholly above the mean high-water line..

Therefore, the Project is the legal responsibility of the Applicant requesting assistance (PAPPG, p.52).

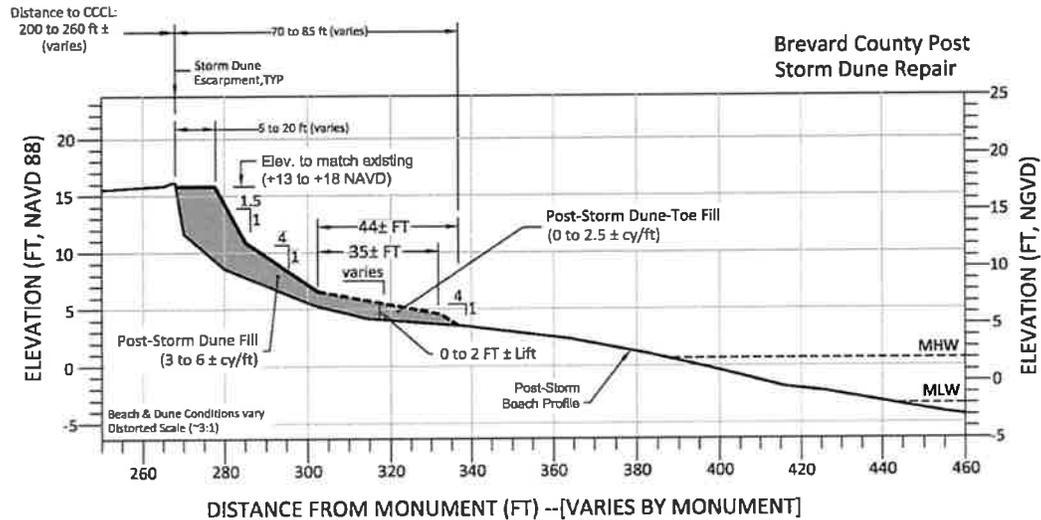
Damage Description and Dimensions

During the declared incident period from October 05, 2024 – November 02, 2024, Hurricane Milton generated storm surge and wave action that caused beach and dune erosion in Brevard County, Florida. A major disaster, DR-4834-FL, was declared on October 11, 2024. Photos of the beach taken after the storm are shown in [Attachment 3. 4834 Brevard Co. Dune Photo Page](#)

PROJECT HISTORY/MAINTENANCE:

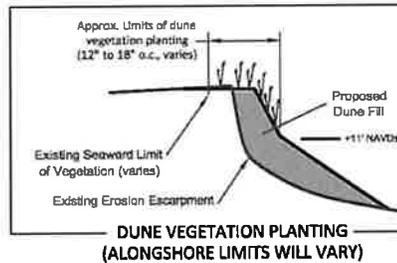
Design

The original South Beaches Engineered Dune Project was constructed in 2004/2005. Typical design sections for the Project are shown below:

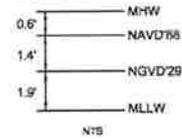


DUNE VEGETATION PLANTS SHALL BE:

- 80%-100% SEA OATS (UNIOCLA PANICULATA)
- 0-20% PANIC GRASS (PANICUM AMARUM)



APPROX. TIDAL DATUMS



To date, all sand utilized for the initial construction and subsequent maintenance of the project has been derived from various beach-compatible upland sources and placed to the project area by truck haul. Future project renourishment (construction) is anticipated to utilize beach-quality sand from upland sources.

In summary, the Project was constructed by the placement of imported sand—of proper grain size—to a designed elevation, width, and slope (PAPPG, p. 180).

Maintenance

The first maintenance nourishment of the South Beach Engineered Dune Project was completed in 2006. FEMA participated in cost share for the 2004/05, 2006, 2009, 2017, 2017/18, 2019/20, and 2023/24 project activities. Additional maintenance and storm related repairs are detailed in [Table 1](#) and on [pg. 6 of Attachment 2](#) and are as follows:

Table 1 – Summary of South Beaches Engineered Dune projects.

| Dates | Cause of Erosion | Sand Placed (cy) | Vegetation Planted (units) |
|----------------------|---|------------------|----------------------------|
| Dec 2004 to Apr 2005 | Hurr. Charley, Frances and Jeanne | 252,200 | |
| Feb to Apr 2006 | Hurr Wilma | 47,770 | |
| Feb to Apr 2007 | Hurr. Charley, Frances, Jeanne, and Wilma | | 495,000 |
| Feb to Apr 2008 | TS/Hurr Noel | 30,948 | 41,062 |
| Jan to Apr 2009 | TS Fay | 69,132 | 135,000 |
| Dec 2013 to Apr 2014 | Hurr Sandy | 47,262 | 13,200 |
| Oct 2016 to Apr 2017 | Hurr Matthew | 99,382 | 375,500 |
| Dec 2017 to May 2018 | Hurr Irma | 78,828 | 451,592 |
| Dec 2019 to Apr 2020 | Hurr Dorian | 99,898 | |
| Dec 2020 to Feb 2021 | Storm waves (nor'easters) | 47,167 | 430,000 |
| Jan 2023 to Apr 2023 | Hurr Ian & Nicole | 244,450 | |
| Nov 2023 to Mar 2024 | Hurr Ian & Nicole | 140,830 | Pending (2025) |

In summary, the Applicant has established and adhered to a maintenance program involving periodic renourishment with imported sand to preserve the original design (PAPPG, p. 180).

INCIDENT-RELATED DAMAGE:

The principal erosion was observed along the South Beaches shoreline. Volumetric losses attributed to **Hurricane Milton** were computed by Foth-Olsen above approximate elevation of +6.4 ft NAVD from pre- and post-storm beach profile surveys. The pre- and post-storm beach profile surveys were conducted by Morgan & Eklund, Inc. at average 2,000-ft spacing alongshore from landward of the dune crest to below the MHWL at 40 R Monuments within the project template: R-143, R-145, R-147, 149, 151, 153, 155, 157, 159, 161, 162, 163, 165, 167, 169, 171, 173, 175, 177, 179, 181, 183, 184, 185, 186, 187, 188, 189, 191, 193, 195, 197, 199, 201, 203, 205, 207, 209, 211, and 213. Pre and post storm profiles are available in [Attachment A](#).

Surveys were conducted as follows:

Pre-Storm: 11-12 March 2024

Post-Storm: 24-28 October 2024

The topographic surveys ([Attachment B](#)) show incident related sand loss for the South Beaches Engineered Dune Project equates to 50,710 CY as measured by the pre-storm (3-6 11-12 March 2024) and post-storm (24-28 October 2024). Volumetric changes specific to each R monument in the project template are presented in [Table 3 of Attachment 2](#).

Background Accretion

Background accretion (volume changes) are accounted by previous assessment of February 2021 to June 2022 surveys, during which no fill was placed and no unusual storm activity occurred. These changes were documented in the post-Ian and post-Nicole damage assessment (Olsen, 2022). Comparison of the February 2021 and June 2022 surveys indicated that a total of +11,190 CY was gained above +6.4 ft NAVD during this period (481 days), or +23.3 CY/day.

Using this historical background change value, the March 11-12, 2024 survey to the October 24-28, 2024 survey (~226 days) yields a background volume gain of approximately 226 days x +23.3 CY/day = +5,266 CY.

Dune Access

Repair of storm-erosion damage will practically require an additional 888 cy of sand placement to build sand ramp to beach and restore upland staging areas, based upon historical project construction precedent. At each of eight staging sites, 111 cy of sand will be used to construct ramp for heavy equipment access.

Total Incident Related Sand Loss = Survey Losses + Background Accretion + Dune Access

= 50,710 CY + 5,266 CY + 888 CY

= 56,864 CY of Hurricane Milton related sand loss within the project template from R-141 to R-213

Scope of Work

WORK TO BE COMPLETED

The Applicant will place the **Hurricane Milton** repair of **56,864 CY** of beach quality sand within the existing Project template at the engineer's discretion based on field conditions at time of construction.

Repair of erosion caused by Hurricane Milton will occur in one sand placement project activity over one construction season through one contract.

Road trucks shall transport sand from upland sources to then deliver and dump the sand to the construction staging areas, located immediately upland of the dune crest. The sand will be then transferred by excavator to off-road beach trucks which shall then traverse the beach and place the sand to the dune (within approximately 1 mile in either direction from the staging areas), after which a bulldozer will shape the sand into the construction template against the eroded dune face. The beach transit & work areas shall be filled, and the staging areas restored, within several weeks after construction. Post-construction dune/beach profile survey data will be collected.

Beach Access Locations:

Eight previously established staging areas may be utilized, located at approximately R-140.2, R-151.2, R-157, R-165.4, R-179, R-187.5, R-192.6, and R-205.8, as identified in the project’s permit drawings (see Attachment C).

Sand Source

Beach compatible sand will be obtained from a properly licensed, permitted, and qualified supplier of the material (upland mine). The exact source of the material will be determined through the bid selection process. The sediment from the supplier will be similar in Munsell color and grain size distribution to the material in the existing coastal system at the beach placement site.

Engineer’s Estimate of Probable Cost:

Table 4 – Estimated cost to repair South Beaches Engineered Dune Project damages from Hurricane Milton.

| Items | Unit | Unit Price | Quantity | Price |
|---|-------------|--------------------------------------|-----------------|--------------------|
| Beach fill | Cubic Yard | \$65 | 56,864 | \$3,696,160 |
| Engineering/Design/Monitoring (2026) | LS | \$95,000 | LS | \$95,000 |
| Construction Review Contract (2026) | LS | \$350,000 | LS | \$350,000 |
| Beach Tilling & Phys Monitoring (Post- and 3-years post-const, 2026-29) | LS | \$300,000 | LS | \$300,000 |
| Marine Turtle Monitoring (3 years) | LS | \$450,000 | LS | \$450,000 |
| Public Assistance 406 Mitigation | LS | Allowance: 15% of beach fill cost | LS | \$554,420 |
| Total | | | | \$5,365,580 |

Explanation of Items

“Engineering/Design/Monitoring” includes: Post-Storm & Post-Construction physical surveys to document dune physical conditions, compute storm erosion losses, design repair plan and prepare construction drawings, evaluate upland sand sources for sand compatibility, acquire permit modifications for new sand sources and new construction staging areas, conduct pre-construction conference, prepare as-built sediment QA/QC evaluation per permit requirements, photo document pre/post repair conditions, update the Project summary report.

“Construction Review Contract” is for construction supervision of Contractor.

The “Beach Tilling & Phys Monitoring (3-yrs post-construction, 2026-29)” task includes:

Permit-required beach tilling and escarpment removal for 3 years following construction (spring 2027, 2028, 2029).

Permit-required physical dune surveys, analysis and physical monitoring summary report for 3 years following construction (spring 2027, 2028, 2029).

The “Marine Turtle Monitoring (3 Years)” task includes:

Permit-required daily field surveys & annual reporting of marine turtle nesting activity along the project area during nesting seasons following construction activities (2026) plus two seasons thereafter (2027, 2028).

Cost per CY = All Inclusive Cost / Total CY in place

= \$4,811,160 / 56,864 CY

= \$84.6082 / CY

Hurricane Milton Related Sand Replacement Estimate

= Hurricane Sand Loss x Cost per CY

= 56,864 CY x \$84.6082 / CY

= **\$4,811,160**

Schedule

The County proposes the following schedule:

- Category G Engineering Report Submittal: January 2025
- FEMA Requests for Information and Responses: January 2025 – March 2025
- Environmental and Historic Preservation Review: March – June 2025
- Revised Project Worksheet and FEMA Approval: June – July 2025
- Final Design: August 2025
- Bid Process: September – November 2025
- Construction: January 2026 – March 2026

ENVIRONMENTAL COMPLIANCE

Sand Source

Beach compatible sand will be obtained from properly licensed, permitted, and qualified suppliers of the material (upland mine). The exact source of the material will be determined through the bid selection process.

Construction Method

The construction method that will be used is described in the Scope of Work, above.

All work will be conducted within the existing project template, from R-141 to R-213.

Environmental Permits

FDEP permit 0388538-001-JC ([Attachment D](#)) issued 6 October 2020 and expiring 6 October 2035

Dept of the Army permit SAJ-2008-04456 ([Attachment G](#)) issued 15 March 2018, re-verified 28 June 2022, and valid through 14 March 2026 with further renewal pending.

- Biological Opinion (from permit SAJ-2008-04456) is included as [Attachment E](#)

Coastal Barrier Resources Act

CBRS System Unit FL-13, "Spessard Holland Park" an Otherwise Protected Area is within the Northern End of the Project template near R-141.

CBRS System Unit P09A, "Coconut Point" is within the Project template from R-155 to approx. R-166 – 240.

CBRS System Unit P10P, "Vero Beach" an Otherwise Protected Area is adjacent to the south end of the Project near R-213.