

# MONROE COUNTY, FLORIDA KEYS

## COASTAL STORM RISK MANAGEMENT (CSRМ)

### WQPP Steering Committee Meeting

November 29, 2023

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# MONROE COUNTY, FLORIDA KEYS



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## PROJECT AUTHORITY & FUNDING

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- Section 8401 of the Water Resources Development Act of 2022
- \$916,000 in the FY2023 Energy & Water Appropriations Bill

### OVERARCHING EXISTING PROBLEMS

- Structures (commercial and residential) and critical infrastructure in the Florida Keys are vulnerable to damage from inundation caused by storm surge.
- Critical transportation routes (U.S. Route 1 specifically) are vulnerable to damage from wave energy and erosion caused by coastal storms. Inundation caused by storm surge limits or in some locations prevents vehicle travel on U.S. Route 1, the only evacuation route out of the Florida Keys northward toward mainland Florida, during and immediately before and/or after a coastal storm event.
- Critical infrastructure, U.S. Route 1, and structures throughout the Florida Keys are vulnerable to damage caused by coastal storm events which contributes to both direct and indirect life loss and overall human health and safety risk to the population of the Florida Keys.
- There are rich environmental resources that are unique to the study area that are vulnerable to the effects of coastal storms.

### NON-FEDERAL SPONSOR

Monroe County



## THE AUTHORIZED PLAN

### THE RECOMMENDED PLAN FEATURES INCLUDES:

- Dry floodproofing 53 critical infrastructure buildings
- Dry floodproofing 1,052 commercial structures
- Elevating 4,698 residential structures
- Shoreline stabilization in Six (6) locations along U.S. Route 1
  - 1. West Summerland Key (550 Ft.)
  - 2. Bahia Honda Key (1,300 Ft.)
  - 3. Long Key (870 Ft.)
  - 4. Fiesta Key West (1,350 Ft.)
  - 5. Fiesta Key East (900 Ft.) – **Completed 3/21**
  - 6. Indian Key Fill (400 Ft.)





## THE AUTHORIZED PLAN

### THE RECOMMENDED PLAN FEATURES INCLUDES:

- **Dry floodproofing 53 critical infrastructure buildings**
  - Structures will be floodproofed up to the maximum of three feet above the existing first floor elevation as required to reduce damage to the structure and contents caused by storm surge.
- **Dry floodproofing 1,052 commercial structures**
  - Structures will be floodproofed up to the maximum of three feet above the existing first floor elevation as required to reduce damage to the structure and contents caused by storm surge.
- **Elevating 4,698 residential structures**
  - Structures will be elevated up to the maximum of 12 feet above ground level as required to reduce damage to the structure and contents caused by storm surge associated with the 100-year return period (0.01 AEP), including sea level rise estimated to occur by 2084 based on the USACE high projected sea level change rate.
- **Shoreline stabilization in Six (6) locations along U.S. Route 1**
  - These six rock revetment structures range in height from five (5) to seven (7) feet
  - Designed to reduce damage to a total of approximately 5,500 feet of roadway by stabilizing the shoreline and reducing the risk of washout.
  - Vehicle traffic can resume more quickly after a storm event, and they will maintain connectivity between the islands of the Keys and to the mainland.



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## THE AUTHORIZED PLAN



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### THE RECOMMENDED PLAN ECONOMIC SUMMARY & COST APPORTIONMENT:

Recommended Plan Economic Summary	Total
Total Project Cost	\$2,772,359,000
Total Average Annual Cost	\$85,557,000
Average Annual Benefits	\$131,603,000
Benefit to Cost Ratio (2.5%)	1.5
Total Annual Net Benefits	\$46,046,000

(1) Discount rate: 2.5%, October 2020 Price Level

(2) Estimates rounded

	Federal (65%)	Non-Federal (35%)	Total
Total Project Cost	\$1,802,033,000	\$970,326,000	\$2,772,359,000
LERRD Credit	\$0	\$58,925,000	\$58,925,000
Cash Contribution	\$1,802,033,000	\$911,401,000	\$2,713,434,000



## THE AUTHORIZED PLAN

### FIRST ORDER OF WORK – U.S. ROUTE 1 SHORELINE STABILIZATION

- If U.S. Route 1 is damaged during a coastal storm event, the inability to travel by automobile between the islands and/or to the Florida Mainland would likely increase mortality of the approximately 6,000 residents in the Keys that would not evacuate.
- Residents unable to leave the islands due to U.S. Route 1 damage would be subjected to prolonged power loss and reduced or no access to emergency services and medical care which are two major contributing factors to fatalities following a storm event.
- Damage to U.S. Route 1 also prevents the residents who followed evacuation orders from returning to their homes and businesses and delays post-storm cleanup and repair efforts, which can exacerbate damage initially caused by the storm and hinder community recovery after a storm event.

<b>Grand Total U.S. Route 1 Shoreline Stabilization</b>	<b>\$24,814,000</b>
1. West Summerland Key Alignment	\$2,509,000
2. Bahia Honda Key Alignment	\$5,803,000
3. Long Key Alignment	\$4,557,000
4. Fiesta Key West Alignment	\$5,041,000
5. Fiesta Key East Alignment	\$3,452,000
6. Indian Key Fill Alignment	\$3,452,000

<b>Federal (65%)</b>	<b>Non-Federal (35%)</b>
\$16,129,000	\$8,685,000



## PROJECT TIMELINE & PATH FORWARD

**WE ARE HERE**



### PROJECT TIMELINE



### \* DATES ARE SUBJECT TO APPROPRIATIONS OF FUNDS

- Dates shown here are a **best-case** scenarios.
- The Six (6) Part U.S. HWY 1 (Overseas Highway) Revetment is estimated to take Five (5) months for each section.
- The construction period for each structure contained in the non-structural component (elevation or floodproofing) would be no more than three (3) months.

### CURRENT PROJECT NEEDS:

- Executed Design Agreement (DA) October 2023
- Non-Federal Matching Funds in the amount of \$513K (after execution of the DA)
- Jacksonville District and County Staff to work together to complete design

# QUESTIONS

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<https://www.saj.usace.army.mil/FloridaKeysCSRMFeasibilityStudy/>



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