

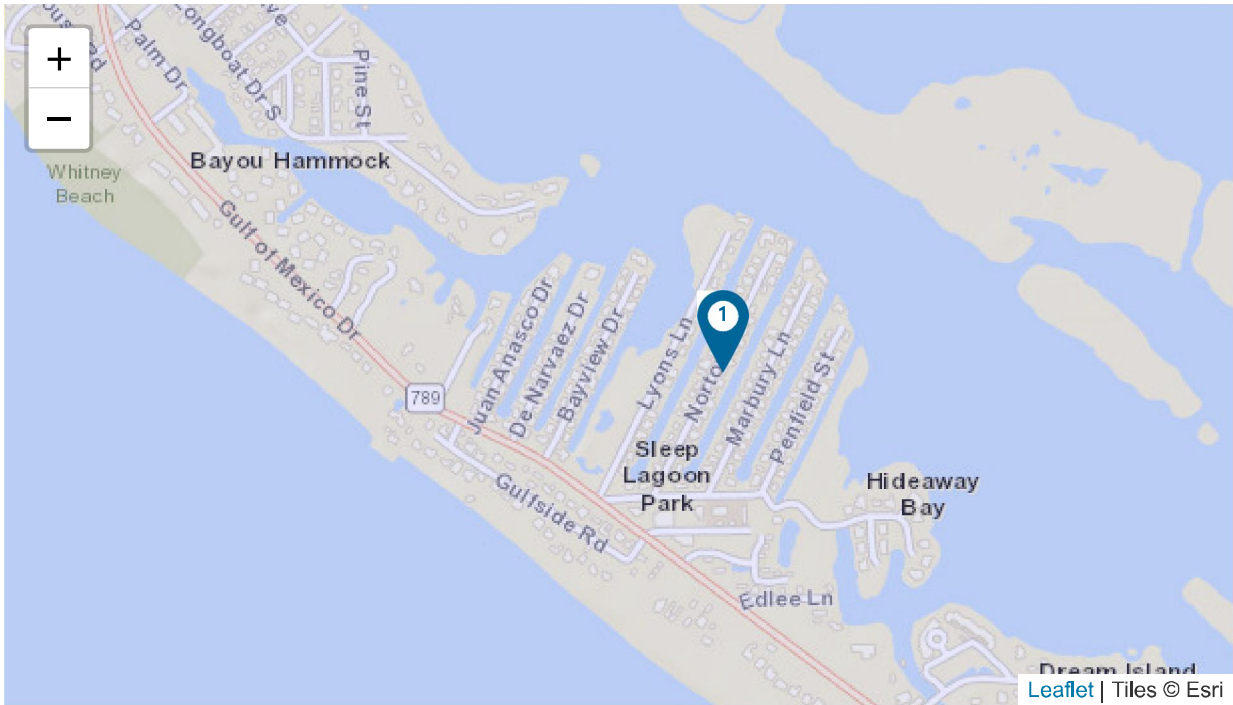


Benefit-Cost Calculator

V.6.0 (Build 20250702.1944 | Release Notes)

Benefit-Cost Analysis

Project Name: Norton Street Drainage Improvements - Sleepy Lagoon Phase 1



Map Marker	Mitigation Title	Property Type	Hazard	Discount Rate (%)	Benefits (B)	Costs (C)	BCR (B/C)
▲							
1	Drainage Improvement @ 638 Norton St, Longboat Key, FL, 34228, USA		DFA - Coastal A Flood	7.0	\$ 2,938,656	\$ 2,616,295	1.12
TOTAL (SELECTED)					\$ 2,938,656	\$ 2,616,295	1.12
TOTAL					\$ 2,938,656	\$ 2,616,295	1.12

MOLLY CHARLENE WILLIAMS, P.E.

STATE OF FLORIDA
PROFESSIONAL ENGINEER,
LICENSE NO. 54281

THIS ITEM HAS BEEN DIGITALLY
SIGNED AND SEALED BY
MOLLY CHARLENE WILLIAMS, P.E.
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Property Configuration

Property Title:	Drainage Improvement @ 638 Norton St, Longboat Key, FL, 34228, USA
Property Location:	34228, Manatee, Florida
Property Coordinates:	27.4289869, -82.6724539
Hazard Type:	Coastal A Flood
Mitigation Action Type:	Drainage Improvement
Property Type:	Residential Building
Analysis Method Type:	Professional Expected Damages

Cost Estimation

Drainage Improvement @ 638 Norton St, Longboat Key, FL, 34228, USA

Discount Rate (%):	7.0%	Use Default:Yes
Project Useful Life (years):	30	
Project Cost:	\$2,554,250	
Number of Maintenance Years:	30	Use Default:Yes
Annual Maintenance Cost:	\$5,000	

Comments

- Project Useful Life:**

30 year project useful life based on projected sea level rise.
- Mitigation Project Cost:**

Engineer's Opinion of Probable Cost submitted to the Town of Longboat Key in February 2025
- Annual Maintenance Cost:**

Typical Annual Maintenance Costs estimated by the Town of Longboat Key staff.

Damage Analysis Parameters - Damage Frequency Assessment

Drainage Improvement @ 638 Norton St, Longboat Key, FL, 34228, USA

Year of Analysis was Conducted:	2025
Year Property was Built:	1955
Analysis Duration:	71 Use Default:Yes

Comments

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Year Built:

Oldest home was built in 1955. Of the 46 homes, in the project area, 17 are pre-FIRM and 25 homes have Finished Floor Elevations (FFE) below ELEV 9 NAVD88. The BFE for the project area on the FIRM Panel 72081C0291F (effective August 10, 2021) is Zone AE (EL 8).

Professional Expected Damages Before Mitigation
Drainage Improvement @ 638 Norton St, Longboat Key, FL, 34228, USA

	OTHER	OPTIONAL DAMAGES			VOLUNTEER COSTS		TOTAL
Recurrence Interval (years)	Damages (\$)	Category 1 (\$)	Category 2 (\$)	Category 3 (\$)	Number of Volunteers	Number of Days	Damages (\$)
10	507,281	383,155	0	0	0	0	890,436
25	607,738	463,006	170	0	0	0	1,070,914
50	697,921	528,845	341	1,004	0	0	1,228,111

Annualized Damages Before Mitigation
Drainage Improvement @ 638 Norton St, Longboat Key, FL, 34228, USA

Annualized Recurrence Interval (years)	Damages and Losses (\$)	Annualized Damages and Losses (\$)
10	890,436	58,591
25	1,070,914	22,936
50	1,228,111	24,562
Sum Damages and Losses (\$)		Sum Annualized Damages and Losses (\$)
	3,189,461	106,089

Professional Expected Damages After Mitigation
Drainage Improvement @ 638 Norton St, Longboat Key, FL, 34228, USA

	OTHER	OPTIONAL DAMAGES			VOLUNTEER COSTS		TOTAL
Recurrence Interval (years)	Damages (\$)	Category 1 (\$)	Category 2 (\$)	Category 3 (\$)	Number of Volunteers	Number of Days	Damages (\$)
10	30,124	28,919	0	0	0	0	59,043
25	44,035	42,274	0	0	0	0	86,309
50	108,286	98,074	0	0	0	0	206,360

Annualized Damages After Mitigation
Drainage Improvement @ 638 Norton St, Longboat Key, FL, 34228, USA

Annualized Recurrence Interval (years)	Damages and Losses (\$)	Annualized Damages and Losses (\$)
10	59,043	4,283
25	86,309	2,669
50	206,360	4,127
Sum Damages and Losses (\$)		Sum Annualized Damages and Losses (\$)
351,712		11,079

Ecosystem Services Losses Avoided
Drainage Improvement @ 638 Norton St, Longboat Key, FL, 34228, USA

Total Project Area (acres):	12.5
Percentage of Urban Green Open Space:	60.00%
Percentage of Rural Green Open Space:	0.00%
Percentage of Riparian:	0.00%
Percentage of Coastal Wetlands:	0.00%
Percentage of Inland Wetlands:	0.00%
Percentage of Forests:	0.00%
Percentage of Coral Reefs:	0.00%
Percentage of Shellfish Reefs:	0.00%
Percentage of Beaches and Dunes:	0.00%
Expected Annual Ecosystem Services Benefits:	\$116,558

Social Benefits
Drainage Improvement @ 638 Norton St, Longboat Key, FL, 34228, USA

Include Social Benefits:	Yes
Number of residents who will not be displaced from the primary residence(s) due to mitigation:	46
Number of residents that work who will not be displaced from their primary residence:	23
Social Benefits:	\$313,306

Comments

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Include Social Benefits:

Project is elevating the road and installing an engineered drainage system. The existing road can flood by over one foot - impassable for 23 residents. Assuming 2 residents per household = 46 residents.

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Number of Residents:

For 23 homes that would in inaccessible due to highwater (assuming 1 ft of water makes the road impassable) - assuming 2 residents per home.

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Number of Workers:

Assuming 1 person per household works.

Benefits-Costs Summary		
Drainage Improvement @ 638 Norton St, Longboat Key, FL, 34228, USA		
Discount Rate (%):	7.0%	Use Default:Yes

Total costs:	\$2,616,295	

Total benefits without social benefits:	\$2,625,350	

Total benefits with social benefits:	\$2,625,350	

Benefit-cost ratio (BCR) without social benefits:	1.00	

Benefit-cost ratio (BCR) with social benefits:	1.12	