



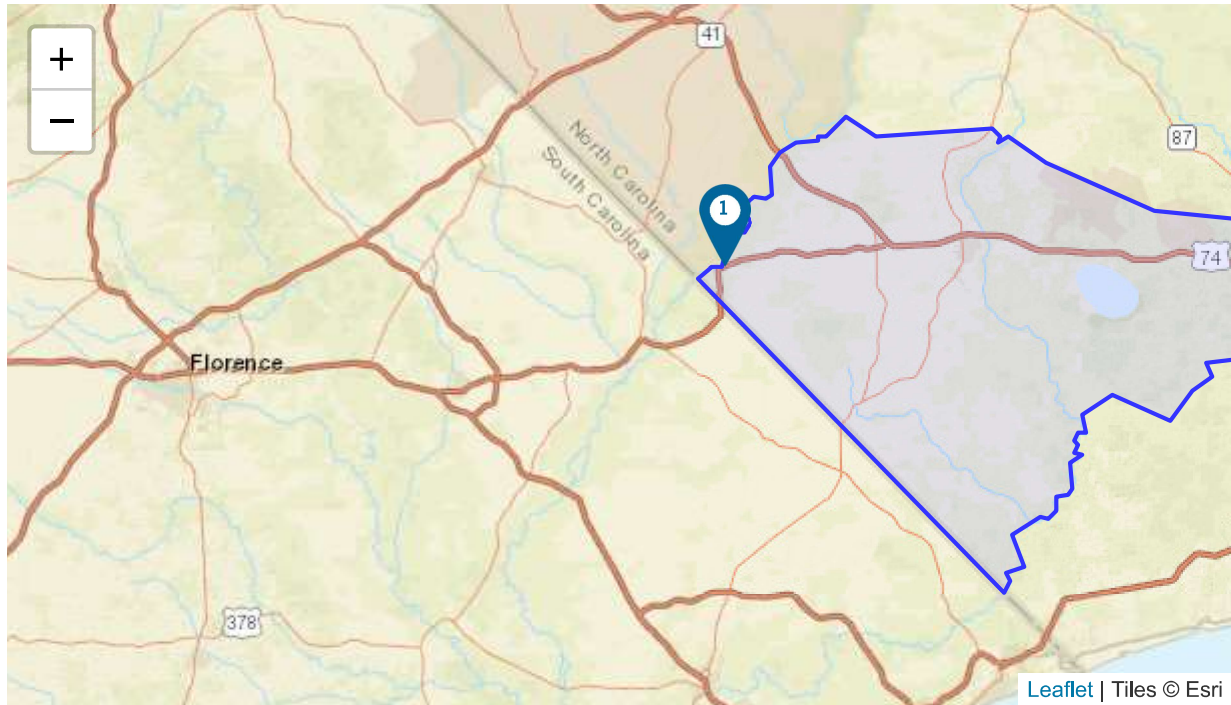
FEMA

# Benefit-Cost Calculator

V.6.0 (Build 20211021.0641)

## Benefit-Cost Analysis

**Project Name:** Fair Bluff Park Phase 2



Map Marker	Mitigation Title	Property Type	Hazard	Benefits (B)	Costs (C)	BCR (B/C)
1	Acquisition @ Fair Bluff, North Carolina		DFA - Riverine Flood	\$ 3,211,170	\$ 2,872,644	1.12
<b>TOTAL (SELECTED)</b>				<b>\$ 3,211,170</b>	<b>\$ 2,872,644</b>	<b>1.12</b>
<b>TOTAL</b>				<b>\$ 3,211,170</b>	<b>\$ 2,872,644</b>	<b>1.12</b>

Property Configuration	
Property Title:	Acquisition @ Fair Bluff, North Carolina
Property Location:	28439, Columbus, North Carolina
Property Coordinates:	34.31496, -79.03271
Hazard Type:	Riverine Flood
Mitigation Action Type:	Acquisition
Property Type:	Non-Residential Building
Analysis Method Type:	Historical Damages

Cost Estimation	
Acquisition @ Fair Bluff, North Carolina	
Project Useful Life (years):	100
Project Cost:	\$2,801,298
Number of Maintenance Years:	100 Use Default:Yes
Annual Maintenance Cost:	\$5,000

Comments

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**Mitigation Project Cost:**

The initial cost is based on \$997,600 for acquisition, \$1,153,698 for demolition, \$450,000 for remediation, and \$200,000 for stormwater improvements for remaining infrastructure.

Damage Analysis Parameters - Damage Frequency Assessment	
Acquisition @ Fair Bluff, North Carolina	
Year of Analysis Conducted:	2021
Year Property was Built:	1965
Analysis Duration:	57 Use Default:Yes

Historical Damages Before Mitigation										
Acquisition @ Fair Bluff, North Carolina										
Damage Year	Recurrence Interval (years)	OTHER	OPTIONAL DAMAGES			VOLUNTEER COSTS		TOTAL		
		Damages (\$)	Category 1 (\$)	Category 2 (\$)	Category 3 (\$)	Number of Volunteers	Number of Days	Damages (\$)	Current Dollars?	Inflated Damages (\$)
2016	0	2,494,000	485,000	47,157.6	11,676	0	0	3,037,834	No	3,462,455
2018	0	0	0	33,684	8,340	0	0	42,024	No	44,763
2021	0	0	0	6,736.8	0	0	0	6,737	No	6,737

Comments

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**Damages Before Mitigation:**

Damages before mitigation are calculated by the \$2,494,000 appraised value of the 51 properties in the project area, the NC DOT \$485,000 estimate to repair damages to US 76 from Matthew (category 1). Category 2 is the impact to commercial truck detour around Fair Bluff calculated by 15.6 cents X 40 tons = \$6.24 per mile X 9-mile detour = \$56.16 per detour X 60 vehicles per day = \$3,368.40 times 14 days in 2016, 10 days in 2018, and 2 days in 2021. Category 3 is the impact to trains not running, valued at \$834 a day for 14 days in 2016 and 10 days in 2018.

Annualized Damages Before Mitigation  
Acquisition @ Fair Bluff, North Carolina

Annualized Recurrence Interval (years)	Damages and Losses (\$)	Annualized Damages and Losses (\$)
19.3	6,737	301
29	44,763	6,788
58	3,462,455	59,697
Sum Damages and Losses (\$)		Sum Annualized Damages and Losses (\$)
	3,513,955	66,786

Expected Damages After Mitigation  
Acquisition @ Fair Bluff, North Carolina

Recurrence Interval (years)	OTHER	OPTIONAL DAMAGES			VOLUNTEER COSTS		TOTAL
	Damages (\$)	Category 1 (\$)	Category 2 (\$)	Category 3 (\$)	Number of Volunteers	Number of Days	Damages (\$)
50	200,000	0	0	0	0	0	200,000

Comments

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**Damages After Mitigation:**

The expected damages after mitigation are based on expected flood of the project area from a 50-year storm event and the need to repair or replace the \$200,000 stormwater infrastructure constructed for this project.

Annualized Damages After Mitigation

Acquisition @ Fair Bluff, North Carolina

Annualized Recurrence Interval (years)	Damages and Losses (\$)	Annualized Damages and Losses (\$)
50	200,000	4,000
Sum Damages and Losses (\$)		Sum Annualized Damages and Losses (\$)
	200,000	4,000

Standard Benefits - Ecosystem Services

Acquisition @ Fair Bluff, North Carolina

<b>Total Project Area (acres):</b>	21.7
<b>Percentage of Green Open Space:</b>	90.00%
<b>Percentage of Riparian:</b>	0.00%
<b>Percentage of Wetlands:</b>	0.00%
<b>Percentage of Forests:</b>	0.00%
<b>Percentage of Marine Estuary:</b>	0.00%
<b>Expected Annual Ecosystem Services Benefits:</b>	\$162,255.24

Comments

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**Total Project Area:**

The project area is 21.7 acres. At least 90% of the project area will be Green Open Space.

Benefits-Costs Summary

Acquisition @ Fair Bluff, North Carolina

<b>Total Standard Mitigation Benefits:</b>	\$3,211,170
<b>Total Social Benefits:</b>	\$0
<b>Total Mitigation Project Benefits:</b>	\$3,211,170
<b>Total Mitigation Project Cost:</b>	\$2,872,644
<b>Benefit Cost Ratio - Standard:</b>	1.12
<b>Benefit Cost Ratio - Standard + Social:</b>	1.12