

# Nuisance Flood Plan – Monitoring Report

## 2021 Quarterly Threshold Review

<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	
<u>4</u> High Tide <u>1</u> Heavy Rainfall >1” <u>&lt;1’</u> Depth <u>2 days</u> Duration <u>avg</u> Extent <u>1/Qtr</u> Frequency  <b>1 NF Event</b>	<u>1</u> High Tide <u>1</u> Heavy Rainfall >1” <u>&lt;1’</u> Depth <u>&lt;1 day</u> Duration <u>avg</u> Extent <u>1/Qtr</u> Frequency  <b>2 NF Events</b>	<u>0</u> High Tide <u>4</u> Heavy Rainfall >1” <u>1’-2’</u> Depth <u>1+ day</u> Duration <u>avg</u> Extent <u>4/Qtr</u> Frequency  <b>4 NF Events</b>	

	Nuisance Flood Area (Tidal)	Special Flood Hazard Area (FEMA)
<b>Frequency</b>	3.7 times per year average	0.1 times per year average
<b>Depth</b>	1 foot	2 to 4+ feet
<b>Duration</b>	One tide cycle (2 to 3 hours)	Multiple tide cycles (1 to 3 days)
<b>Extent</b>	Area <span style="float: right;">72 acres</span> Buildable % <span style="float: right;">4%</span> Structures <span style="float: right;">450</span>	Area <span style="float: right;">1,157 acres</span> Buildable % <span style="float: right;">58%</span> Structures <span style="float: right;">2,500</span>

- Tracking the number of minor flooding days per year, and comparing prior years of data from the tide gauge provides an important planning tool to identify changing conditions. New community responses may be initiated when:

	2020 Annual
✓ <b>FREQUENCY</b> - Nuisance Flooding exceeds 10 to 12 events per year	8 events, only 2 events exceed the Nuisance Flooding threshold (2.3’ NAVD88) based on tidal influence
✓ <b>DEPTH</b> - Flood depths during nuisance flooding events reach 2 feet deep (moderate flooding) on a sustained annual basis	Tidal events do not exceed Minor Flooding, Additional study required for rainfall events
✓ <b>DURATION</b> - Nuisance flood duration regularly exceeds one tide cycle	One extended event September 19-23
✓ <b>EXTENT</b> - When the extent of local nuisance flooding doubles in area, or exceeds 10% of the community buildable area	Typical Minor Flooding events only during this period, Additional study required for area comparison

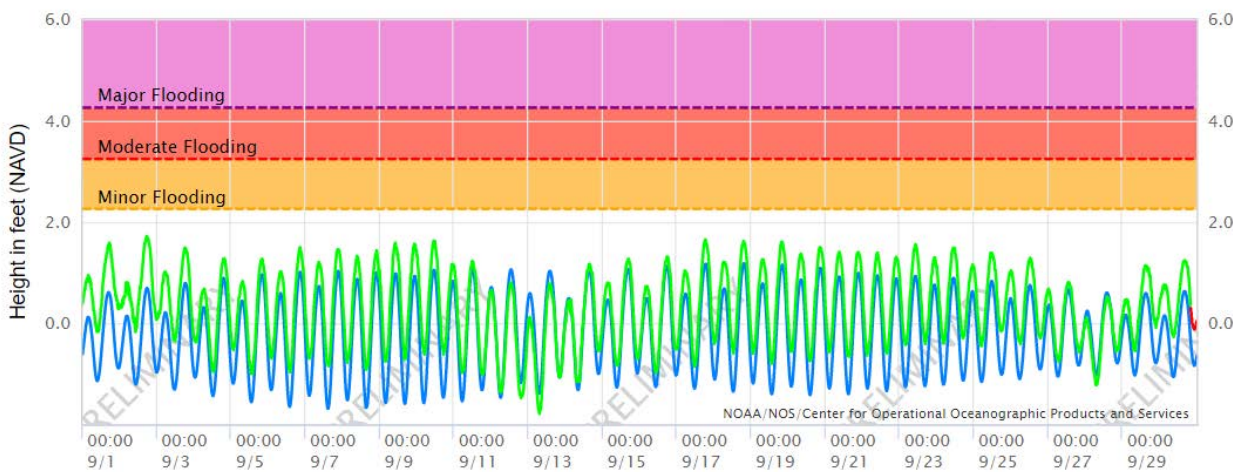
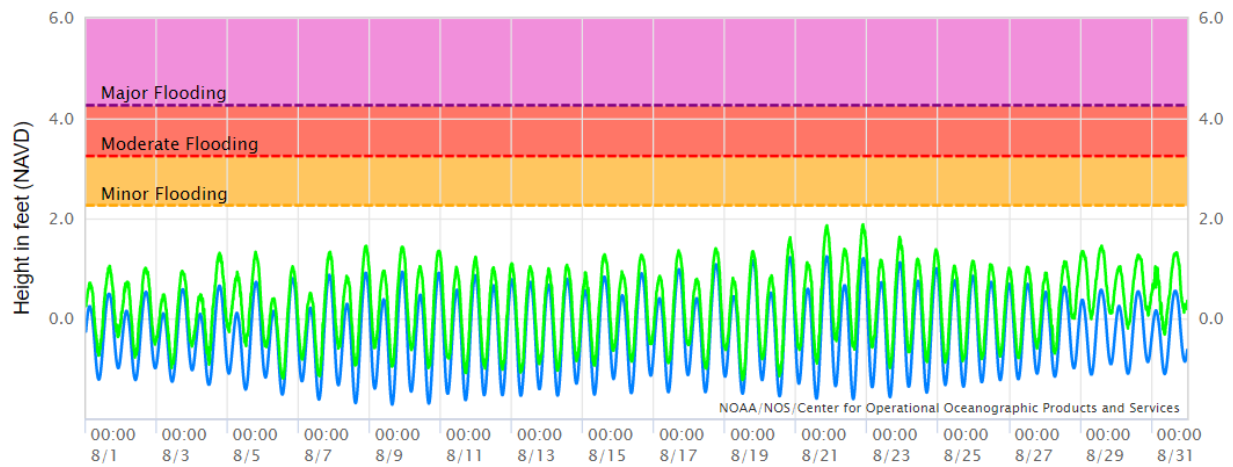
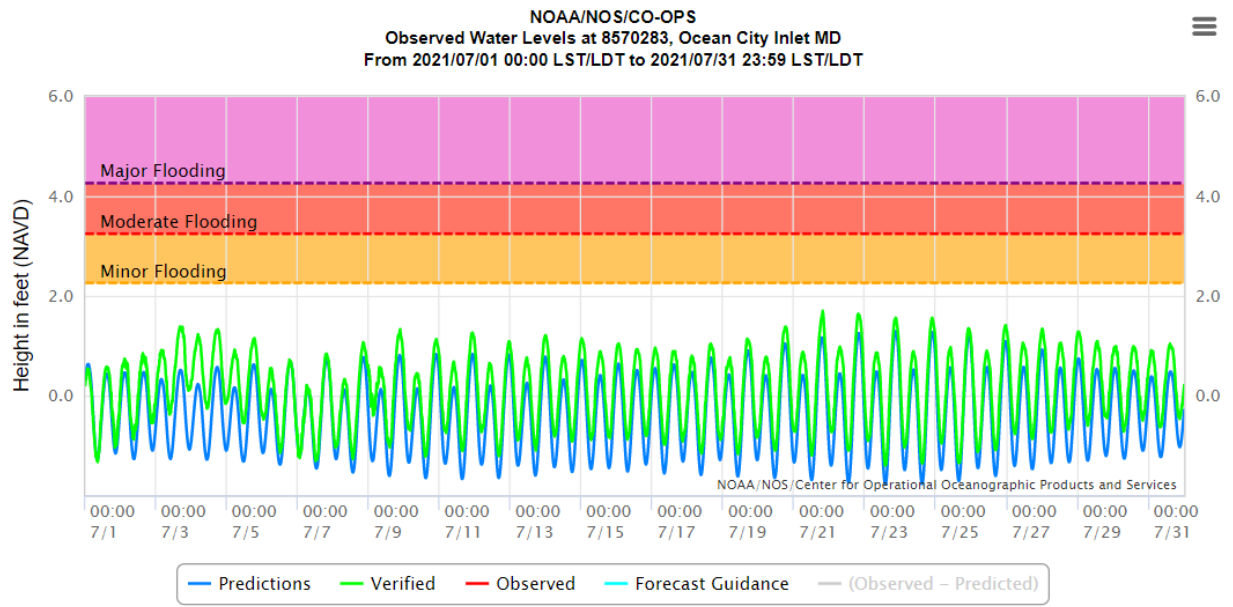
- When any one or more annual threshold(s) are exceeded, the Nuisance Flood Plan work group will meet to evaluate the data and community concerns, and will present a report to the Mayor and City Council with recommendations for action.

Stage	NWS Elevation (MLLW datum)	FEMA Elevation (NAVD88 datum)
Major	6.0+ feet	4.3+ feet
Moderate	5.0 feet	3.3 feet
Minor	4.0 feet	2.3 feet
Action	3.5 feet	1.3 feet

NWS	Elevation (Feet above MHHW)	Elevation (NAVD)	Event Date	Rainfall	Event Type	MyCoast
			9/9/2021	1.91"	TS Ida (remnant)	
			8/21/2021	1.95"	TD Fred (remnant)	
			7/30/2021	1.02"	Thunderstorm	
			7/9/2021	0.8"+	TS Elsa	
			6/9/2021	1.3"	Thunderstorm	
			5/29/2021	0.79"	High Tide plus rainfall event (2")	
			4/25/2021	0.46"		
			3/18/2021	1.43"		
		2.71	2/1/2021	0.93"	Nor'easter WS Orlena	*
	3.94	2.21	12/17/2020		Winter Solstice High Tide	
	4.27	2.53	10/30/2020	1.98"	Rainfall	
	3.86	2.13	9/21/2020		H Teddy	*
	3.90	2.17	9/17/2020	1.38"	Coastal Flood Advisory	
	4.03	2.30	8/17/2020		Coastal Storm	
			8/4/2020	1.23"	TS Isaias 1.23" Rainfall Wind	
			7/10/2020	1.92"	TS Fay 5" Rainfall Event	
			7/7/2020	2.56"	Rainfall	*
	4.02	2.29	4/4/2020		Coastal Storm	*
Minor Flooding	4.10	2.37	12/2/2019		Winter Storm	
	4.30	2.57	11/18/2019		Coastal Storm	
	4.72	2.99	10/12/2019		TS Melissa	
	4.89	3.16	10/11/2019		Coastal Storm	
	4.85	3.12	10/11/2019		Coastal Storm	
	4.64	2.91	10/10/2019		Coastal Storm	
	4.32	2.59	9/6/2019	1.63"	H Dorian 1.63" Rainfall	
	4.27	2.54	10/27/2018		Noreaster	
	4.06	2.33	10/12/2018		TS Michael	
	4.58	2.85	9/9/2018		H Florence/Isaac/Helene	
			6/9/2018	7.5"	7.5" Rainfall Event	
	4.01	2.28	3/21/2018		Noreaster	
	4.35	2.62	3/7/2018		Noreaster, TS Riley	
	4.09	2.36	11/8/2017		Winter Storm	
	4.47	2.74	9/19/2017		TS Jose	
			7/28/2017	1.76"	1.76" Rainfall	
			7/14/2017	1.2"	Flash Flood 1.2" Rainfall	

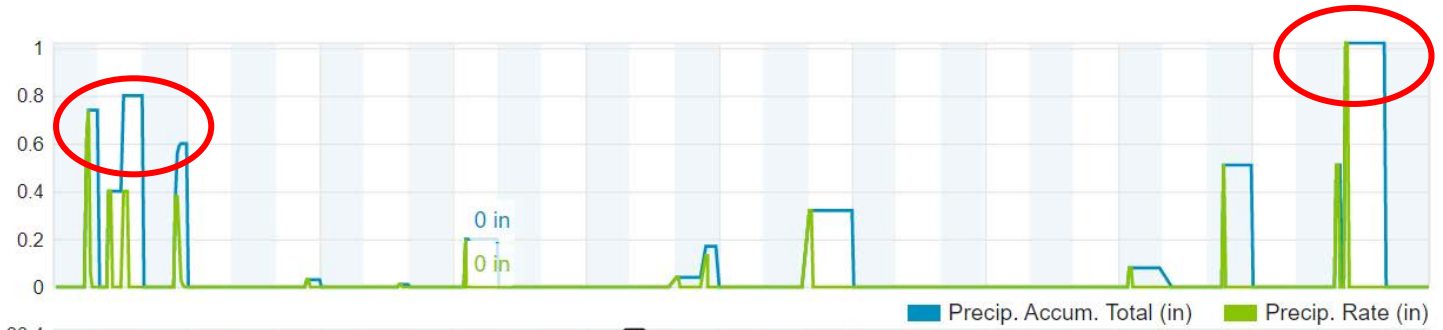
# Nuisance Flood Plan – Monitoring Report

## 2021 Tide Elevations Q3

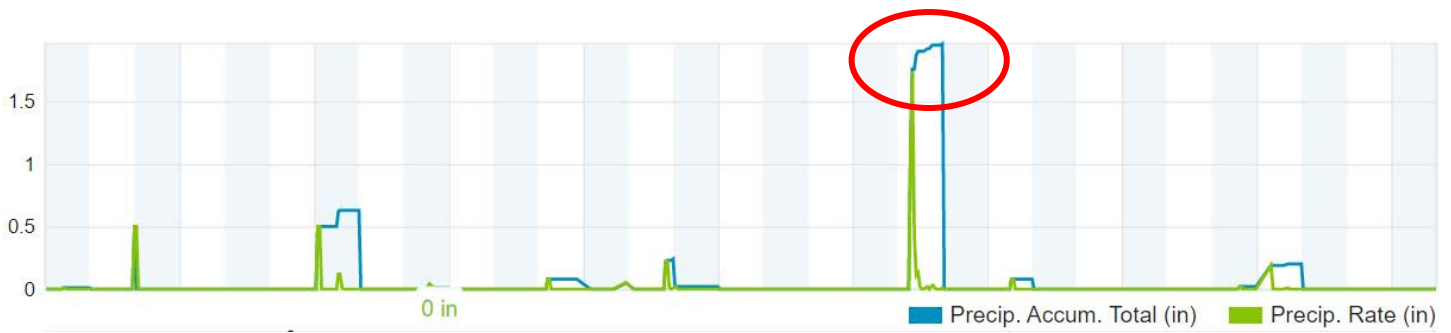


# Nuisance Flood Plan – Monitoring Report

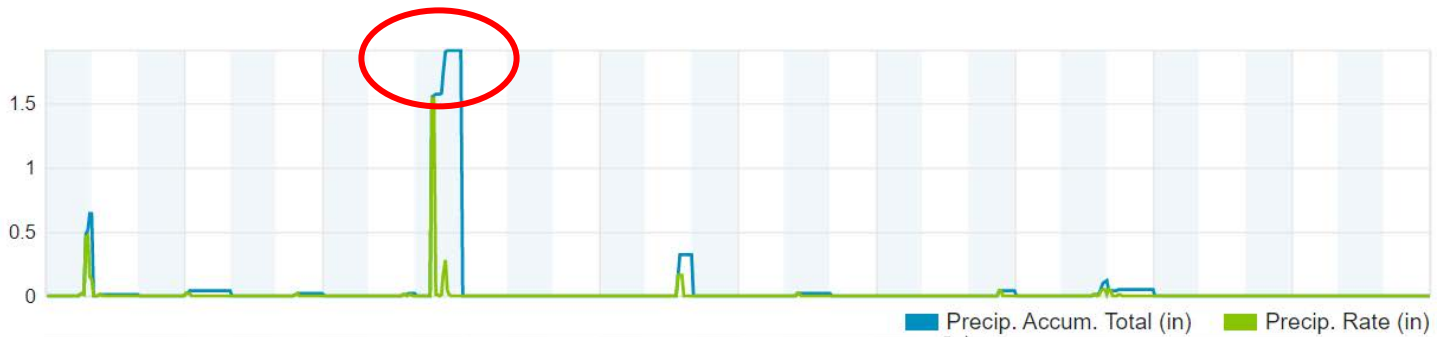
## 2021 Rainfall Events Q3



**July 2021 Rainfall (50<sup>th</sup> Street – KMDOCEAN6) 7.9.21 and 7.30.21 high event 1.02in.**



**August 2021 Rainfall (50<sup>th</sup> Street – KMDOCEAN6) 8.21.21 high event 1.95in.**



**September 2021 Rainfall (50<sup>th</sup> Street – KMDOCEAN6) September 9, 2021 high event 1.91in.**

## Nuisance Tidal Flooding Report

See attached reports from 9.9.2021

Nuisance flooding similar to prior events

---

**Subject:** Report on TS Elsa

**Date:** Saturday July 9, 2021

Ocean City update at 0230 hours 9 July 2021. Storm began impacting the Town at 2230 hours. Tornado warning was issued from NWS Wakefield around 2348 hours for Ocean City. All notifications and Citywide "All Call" made. Heavy rains and winds impacted through 0030 hours. Winds dropped and rain fall became very light afterward. Flooding downtown caused the closing of Philadelphia Ave south of the Route 50 Bridge and Transportation System re-route to N. Division due to high water. MD SHA (8 personnel) and CHART (1 person) assisted OCPD with roadway closures and Public Works (5 personnel) crews began windshield damage assessments and debris clean-up throughout Town. MD SHA performed debris clean-up on Coastal Highway and State roads in Town. All operations completed with all personnel MD SHA, MD CHART and OC DPW released at 0230 hours. Total rainfall of 2.0 + inches from 2230 – 1230 hours and highest gust recorded at 61 mph confirmed by NWS Wakefield from the SE. Philadelphia Avenue had flooding from 15<sup>th</sup> street south and some flooding was report in Caine's Woods and Coastal highway south bound 100<sup>th</sup> street area. **Water level at Wicomico Street estimated at 2 plus feet in the middle.** All flooding was due to the high rain fall in short period. Low tide helped the water to run off quickly except south of the 50 bridge which took several hours. All flooding has subsided, all streets passable and operations back to normal at 0200 hours. Debris was light with tree branches, trash containers, signs, some shingles and guttering. No structural or building damages observed or reported. Damage card remains open and a daylight re-assessment will be conducted. The EOC is returning to normal level 4 (Green) at 0245 hours. Wakefield Weather updated on windshield observations. There were no power issues reported, calls for service were normal, no injuries related to the storm and no additional issues. No unmet needs or resource requests.



**Bob Rhode, Emergency Management Coordinator/Planner**

**Town of Ocean City, Maryland Emergency Services**

**Public Safety Building 6501 Coastal Highway Ocean City, Maryland 21842**

**Office: 410.723.6650 Cell: 443.235.4443 Fax: 410.723.6962**

Email: [brhode@oceancitymd.gov](mailto:brhode@oceancitymd.gov)



# Nuisance Tidal Flooding Report

## Ocean City, MD



09/09/2021 | 9:24 am



### Tidal Overview

0 hours 27 minutes before high tide

Data from **OCEAN CITY (FISHING PIER)** (1.1 miles away)  
(NWS flood status: **Not defined**)

High Tide (Predicted): 9:51 am, 4.4'



[\(Click here for full tide details from NOAA Tides & Currents\)](#)

### Weather Overview

Wind Speed: 9.4 MPH

Wind Direction: SSW (207°)

Temperature: 76°F

Rainfall (Calendar Day): 1.08"

Rainfall (Past 24 Hours): 0.27"

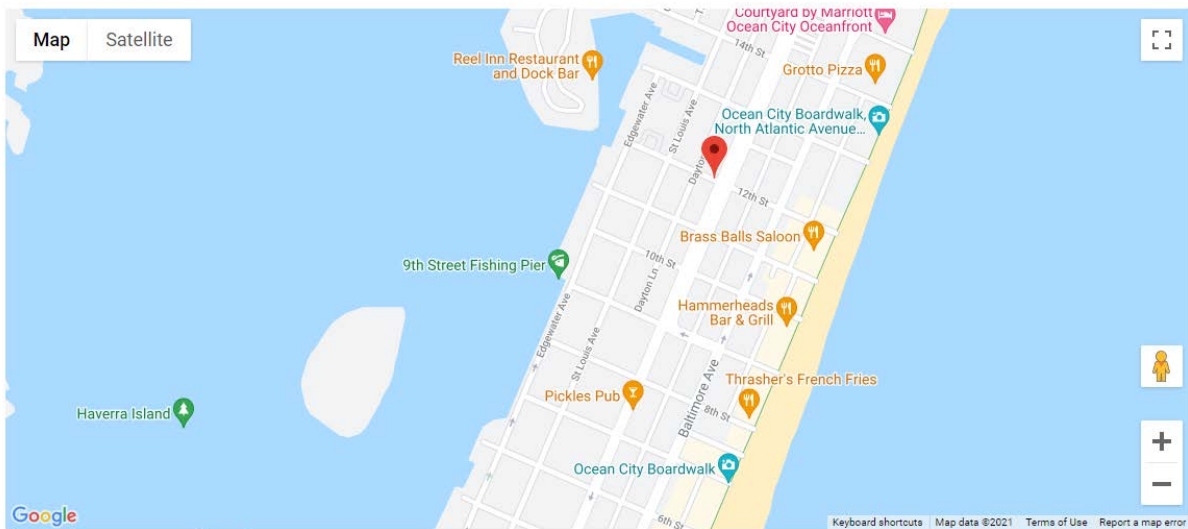
[\(Click here for full weather details from DarkSky\)](#)

### Riverine Overview

Data from **BIRCH BRANCH AT SHOWELL, MD**  
(8.7 miles away)

Water level: 4.38' (NWS flood status: Not defined)

[\(Click here for full riverine details from USGS\)](#)



Weather icons courtesy of [Icons8](#).

# Nuisance Tidal Flooding Report

Ocean City, MD



09/09/2021 | 9:23 am



## Tidal Overview

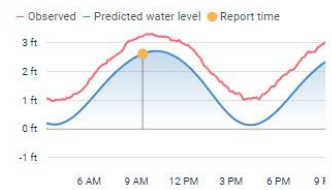
0 hours 52 minutes before high tide

Data from **OCEAN CITY INLET** (1.1 miles away)

Water Level (at time of report): 9:23 am, 3.2'

(NWS flood status: **None**)

High Tide (Predicted): 10:15 am, 2.7' (NWS flood status: **None**)



[\(Click here for full tide details from NOAA Tides & Currents\)](#)

## Weather Overview

Wind Speed: 9.5 MPH

Wind Direction: SSW (207°)

Temperature: 76°F

Rainfall (Calendar Day): 1.08"

Rainfall (Past 24 Hours): 0.27"

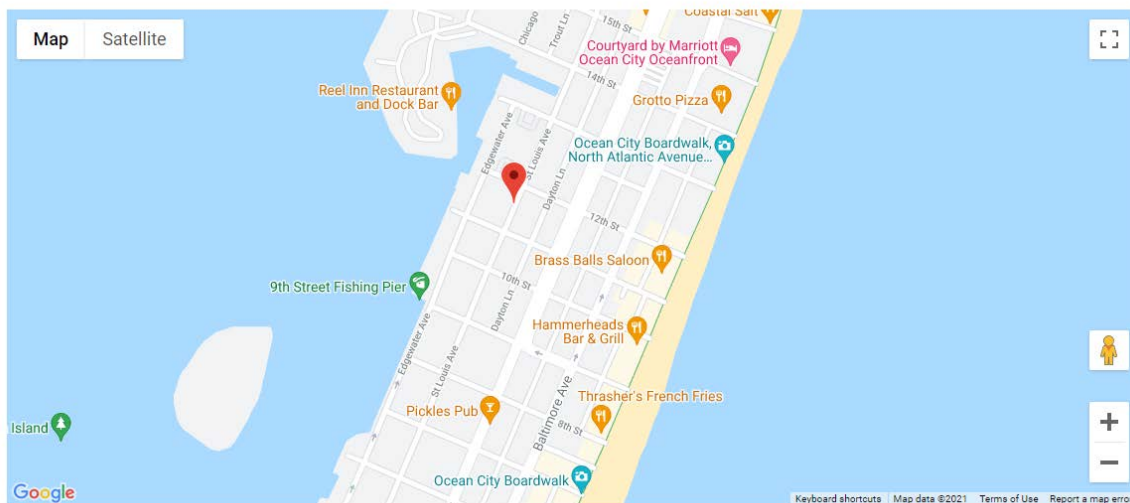
[\(Click here for full weather details from DarkSky\)](#)

## Riverine Overview

Data from **BIRCH BRANCH AT SHOWELL, MD** (8.7 miles away)

Water level: 4.44' (NWS flood status: Not defined)

[\(Click here for full riverine details from USGS\)](#)



Weather icons courtesy of [Icons8](#).

FEMA RISK RATING 2.0 FLOOD INSURANCE PRICING IMPACTS – OCEAN CITY, MD

Ocean City, MD 21842 Zip Code Area					
3,080 Single Family Homes – 75.4% or 2,323 will see an increase of \$0-10 per month in the first year					
Maximum policy cost for a Single-Family Home = \$12,125/year for \$250,000 coverage					
Total Policies	Increase	Decrease	Month (\$ increase)	Year (\$ increase)	Full Value (\$)
26,587	11,140	15,447			Annual premium increase cap of 18%
	10,491	10,623	0-10	120	-
	464	2,898	10-20	240	-
	80	691	20-30	360	-
	51	404	30-40	480	-
	32	260	40-50	600	-
	13	163	50-60	720	-
	3	132	60-70	840	-
	3	56	70-80	960	-
	3	42	80-90	1,080	-
	0	24	90-100	1,200	-
	0	154	> 100	1,200+	-

New RR 2.0 Risk Engine rating factors:

- ❖ Distance to Coast – Barrier Island: increase for any structure closer than 1,650 feet
- ❖ Distance to Ocean – Barrier Island: increase for any structure closer than 990 feet
- ❖ Elevation – Barrier Island: increase for any structure lower than 5 feet above MSL
- ❖ Foundation: increase for structure over crawl space or elevated over enclosure (not post, pile or pier)
- ❖ Replacement Value: increase for structure with higher replacement values

Note: Credit for mitigation factors is not transparent at this time