



Resilient Woods Hole Community Visioning Workshop

FEBRUARY 9, 2022



Welcome

*Leslie-Ann McGee
Director of Special Projects/Resilient Woods Hole Manager
Woods Hole Oceanographic Institution*

A G E N D A

Introductory Remarks

Climate Change and Woods Hole Presentation

Question & Answer

Flood Risk Reduction at the Property Scale

Falmouth Sewer Resiliency Project

ResilientWoodsHole Breakout Rooms:

- *Important Features in Woods Hole*
- *Flooding in Woods Hole: Past, Present, Future*
- *Adaptation Strategies and Vision for Woods Hole*

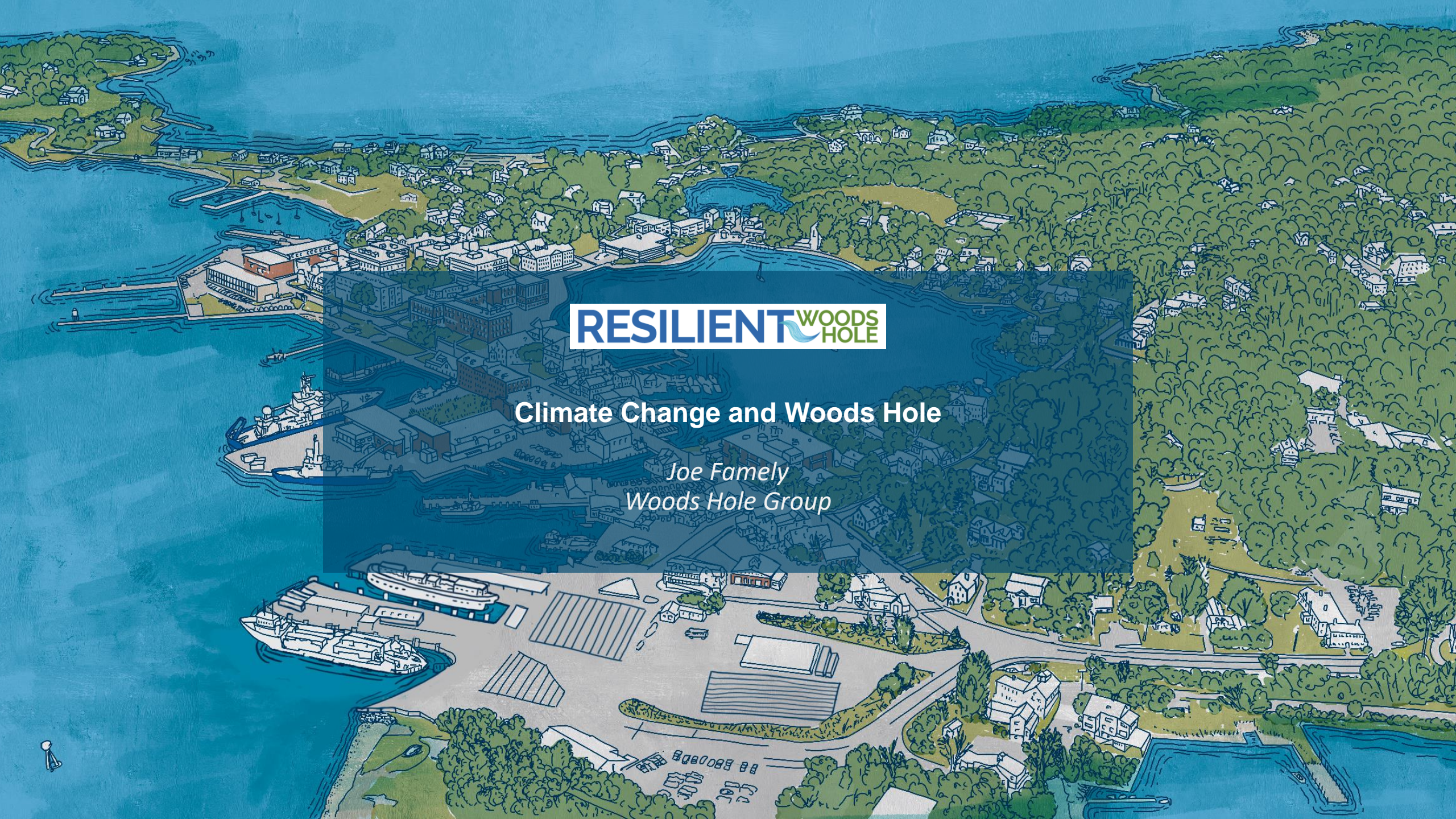
Optional Discussion Rooms:

- *Flood Risk Reduction at the Property Scale*
- *Falmouth Sewer Resiliency Project*

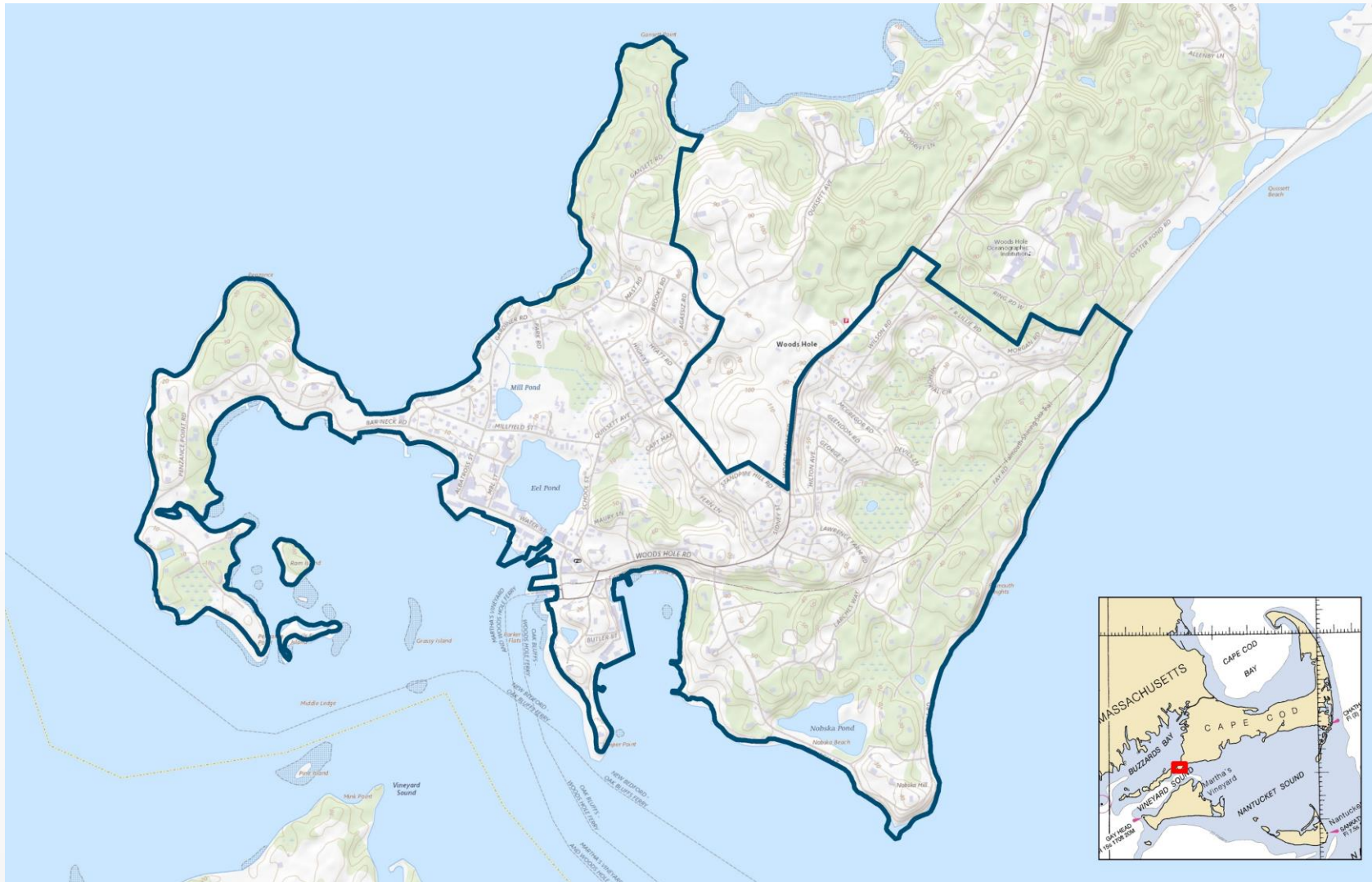


Climate Change and Woods Hole

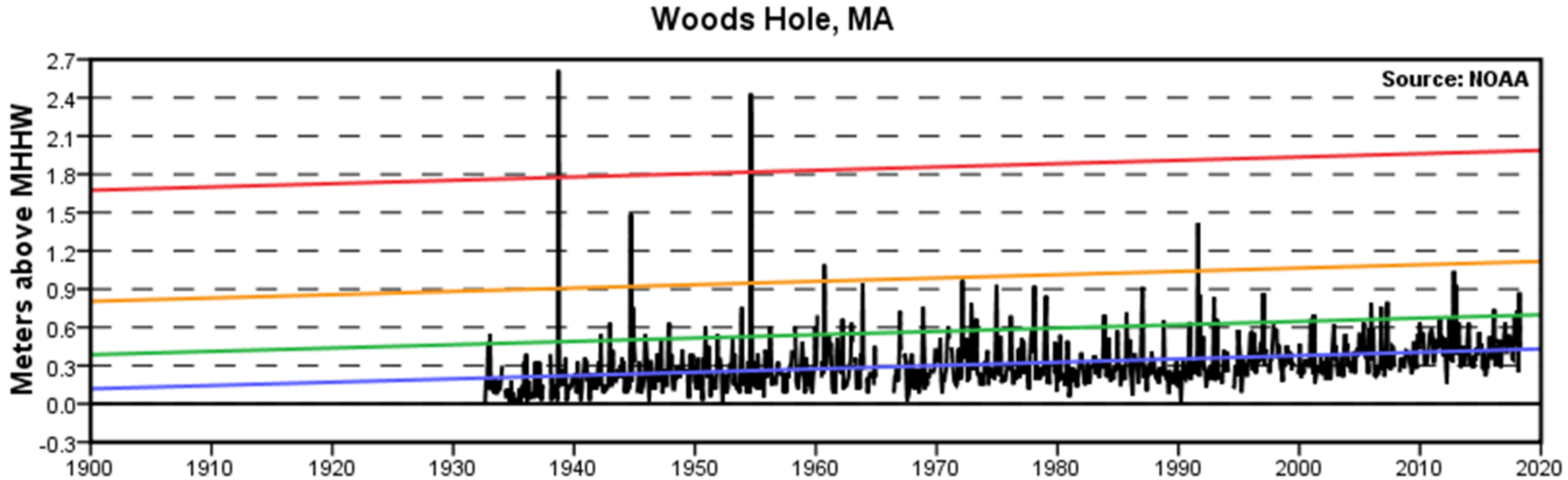
*Joe Famely
Woods Hole Group*



ResilientWoodsHole Study Area



Extreme Water Levels in Woods Hole (Station 8447930)



1938

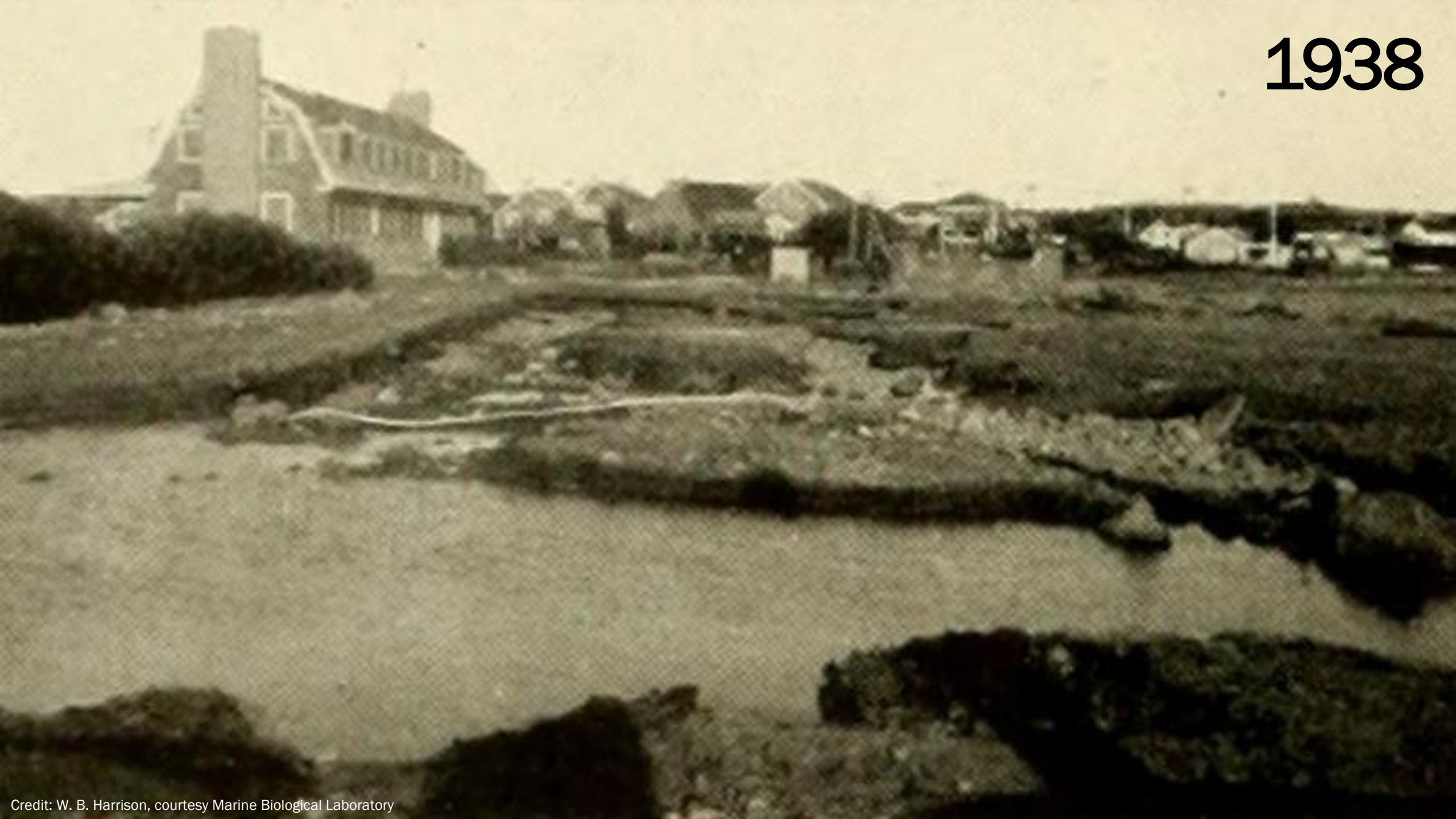


1938

surge +8.5 FT MHHW



1938



1954

surge +7.9 FT MHHW

1954



1954



1991

surge +4.6 FT MHHW

1991



2018



2.74 FT NAVD88

+1.90 FT MHHW

2018

3.72 FT NAVD88

+2.88 FT MHHW

2018

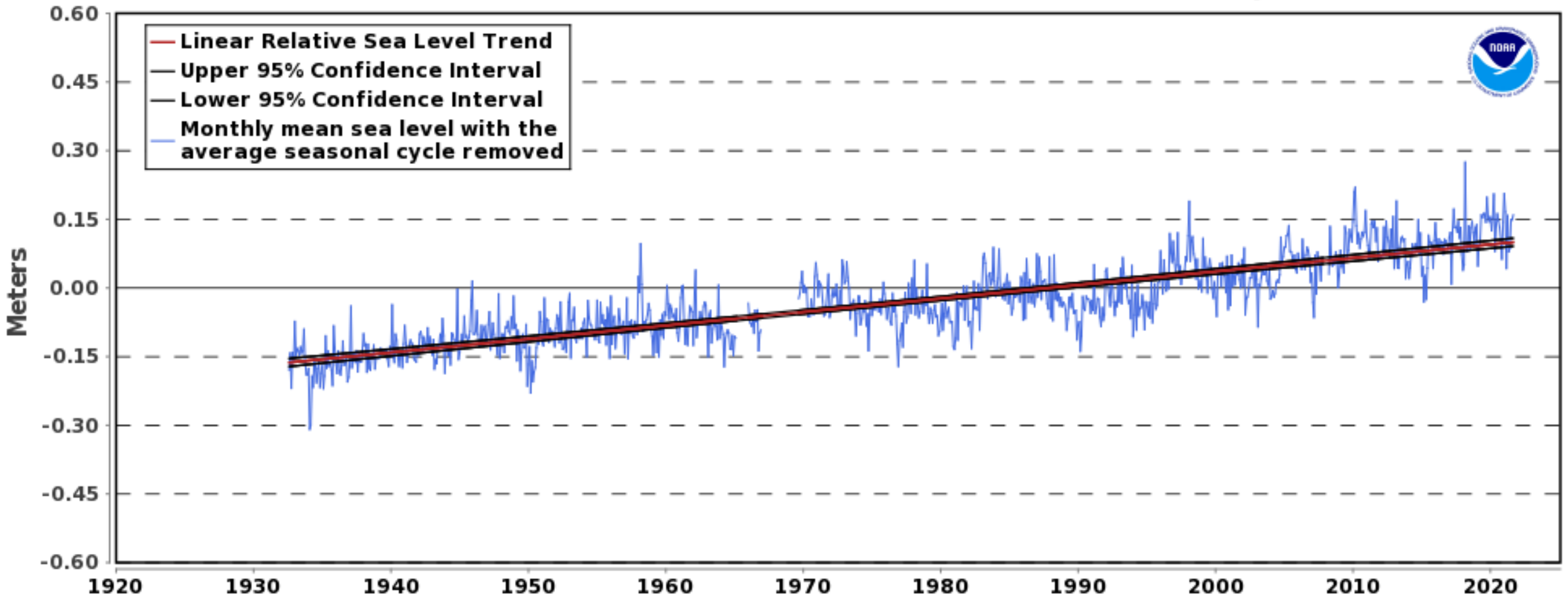


Historical Sea Level Rise

Woods Hole Tide Gauge, Station 8447930

8447930 Woods Hole, Massachusetts

2.95 +/- 0.17 mm/yr



The relative sea level trend is 2.95 millimeters/year with a 95% confidence interval of +/- 0.17 mm/yr based on monthly mean sea level data from 1932 to 2020 which is equivalent to a change of 0.97 feet in 100 years.

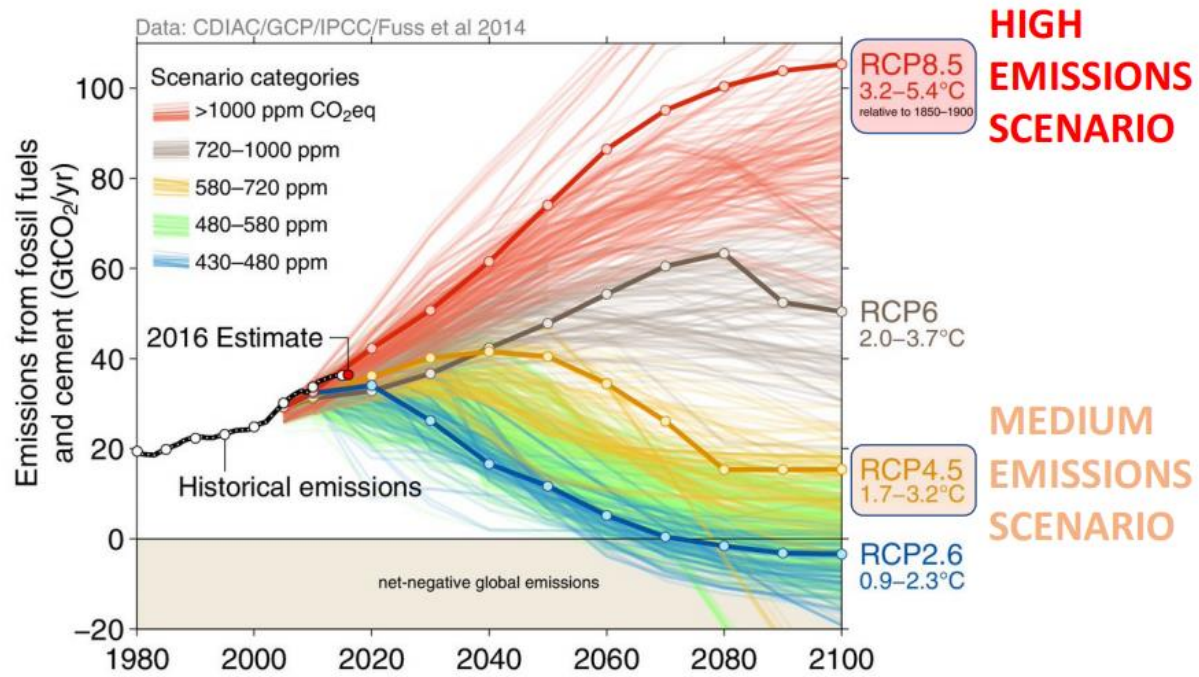
2017



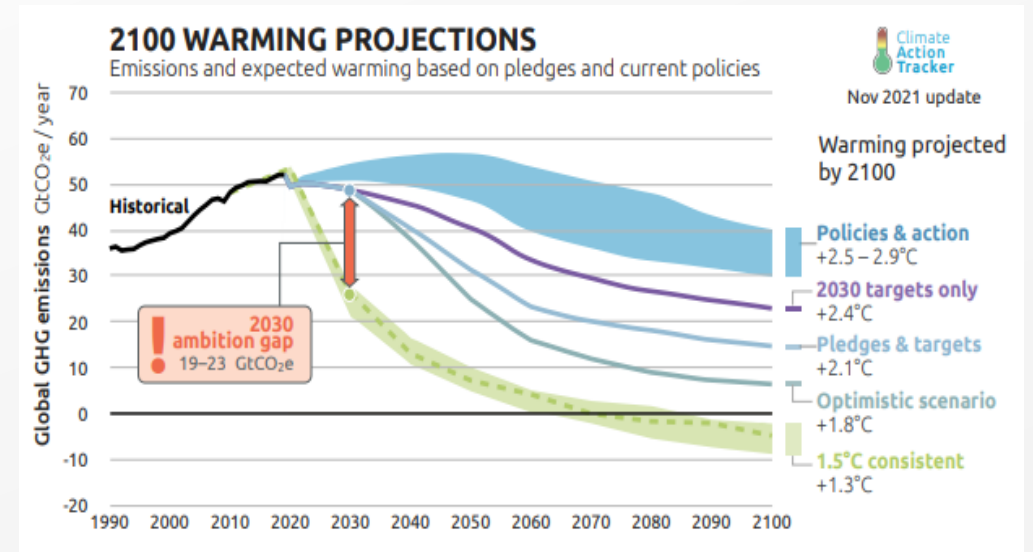
MA EOEEA Downscaled Climate Change Projections

<https://resilientma.org/data/documents>

WHAT MASSACHUSETTS MODELED



CURRENT TRAJECTORY (POST COP26)



<https://climateactiontracker.org/>

MA EOEEA Probabilistic Sea Level Rise Projections

Woods Hole Tide Gauge, Station 8447930 (DeConto & Kopp, 2017)

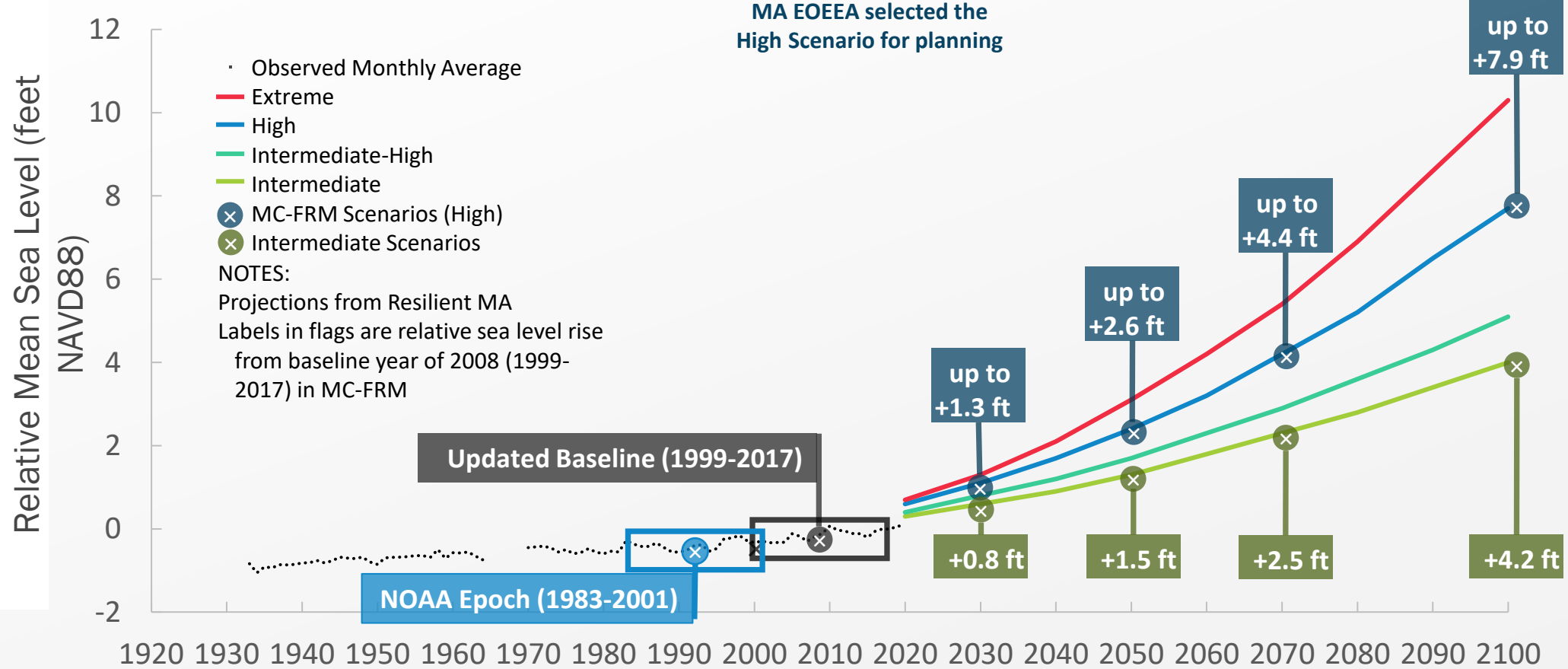
Probabilistic Crosswalk:
Confidence intervals indicate the probability (%) that SLR has not been underpredicted given various emissions and ice sheet melt contributions

High Scenario	
>99.5%	RCP 4.5
99.5%	RCP 8.5
95%	RCP 4.5 + ice
83%	RCP 8.5 + ice

Intermediate Scenario	
95%	RCP 4.5
83%	RCP 8.5
50%	RCP 4.5 + ice
<50%	RCP 8.5 + ice



MA EOEEA selected the High Scenario for planning



Mean High Water 2050
2070



Sea Level Affecting Marshes Model

<https://www.mass.gov/service-details/sea-level-affecting-marshes-model-slamm>

Model Inputs

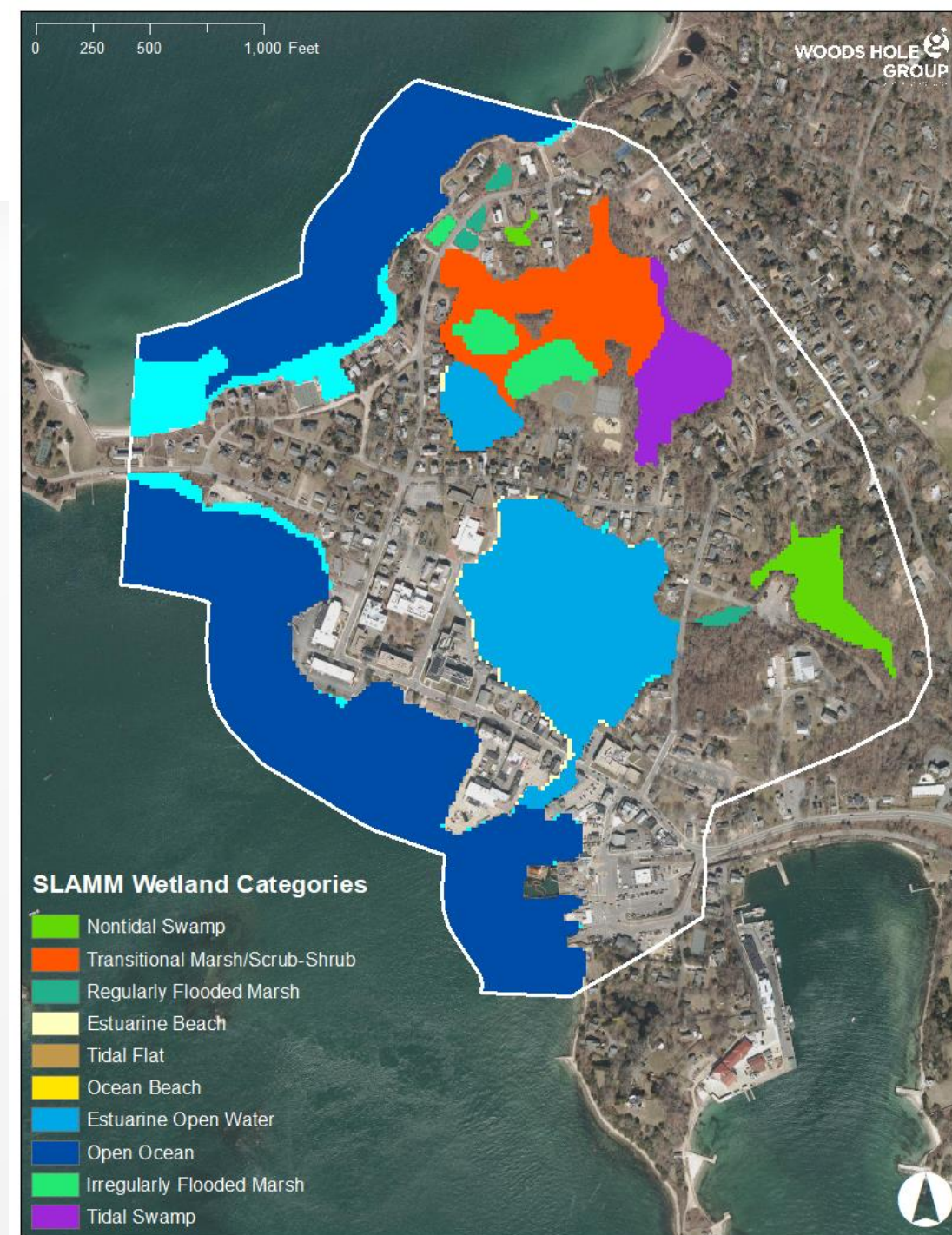
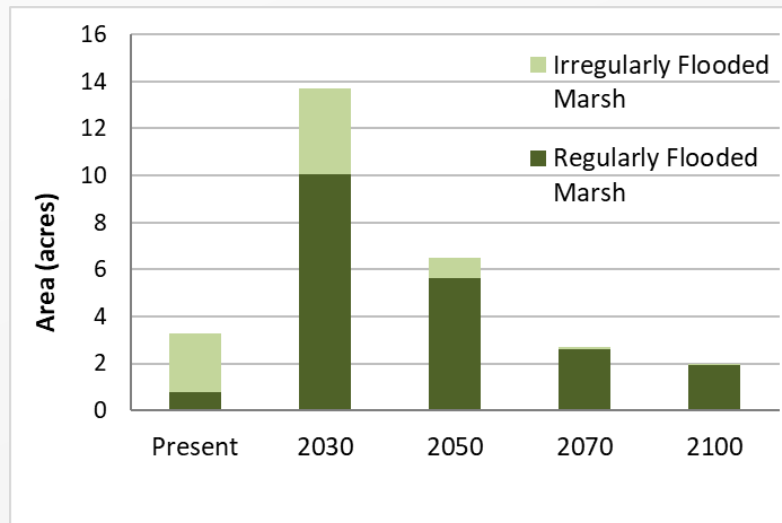
Existing vegetation and topography

Sea level rise projections

Tidal range and attenuation

Marsh accretion and erosion factors

In Woods Hole, salt marsh may initially expand, but then decline.



Sea Level Affecting Marshes Model

<https://www.mass.gov/service-details/sea-level-affecting-marshes-model-slamm>

Model Inputs

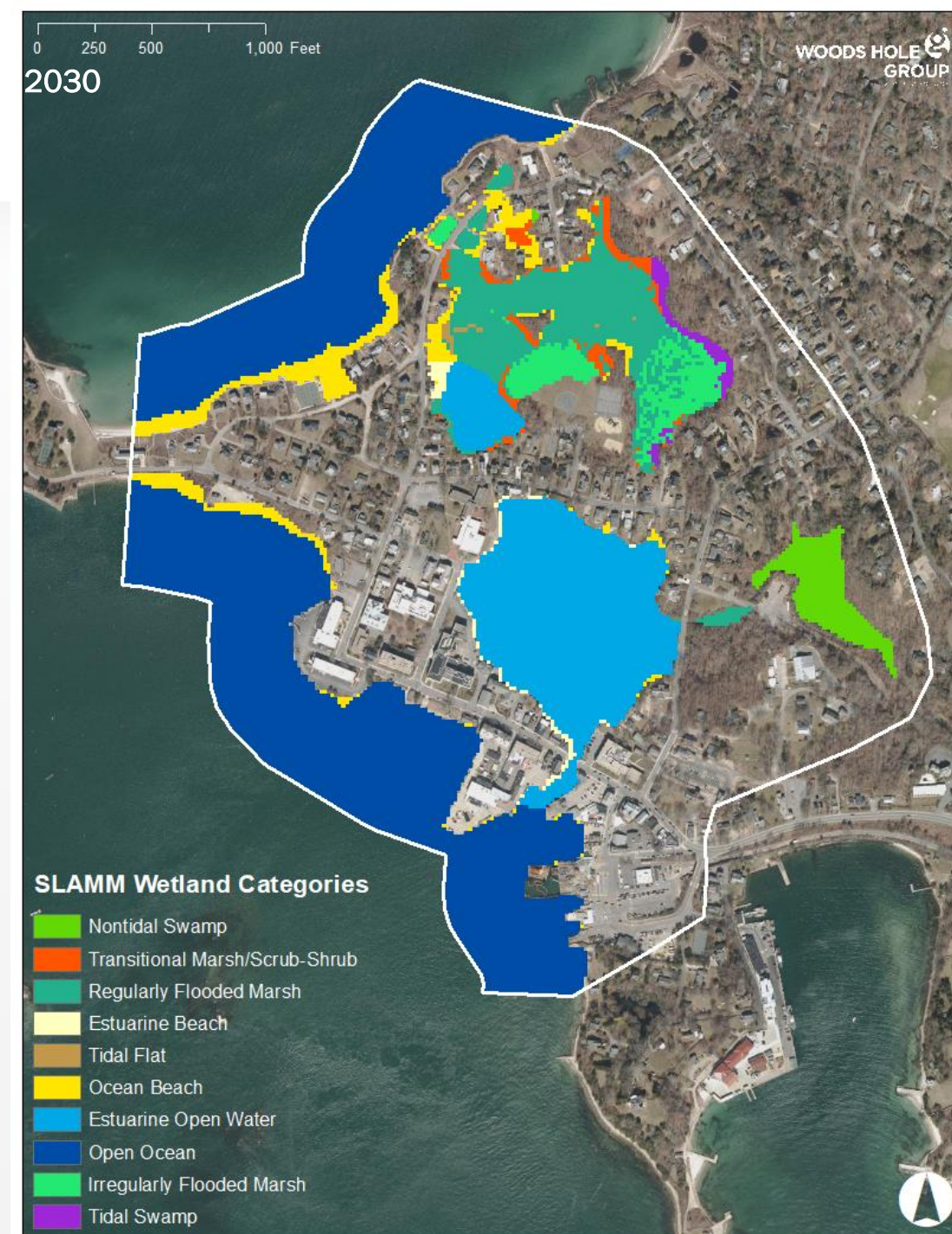
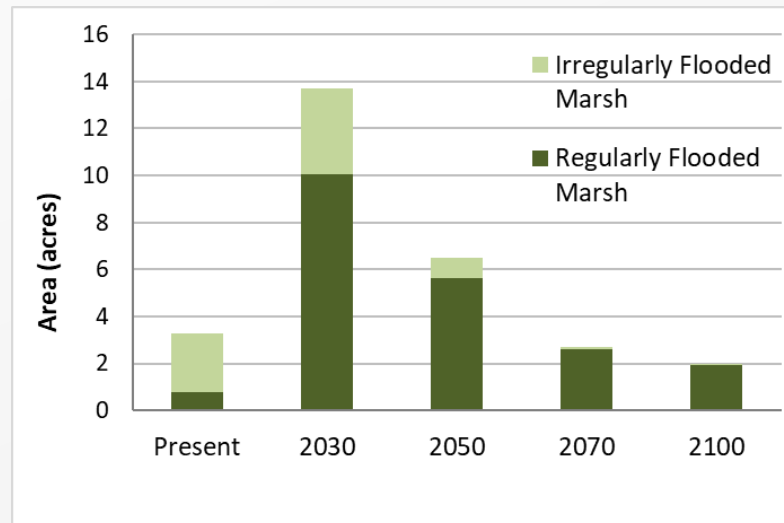
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Sea Level Affecting Marshes Model

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Model Inputs

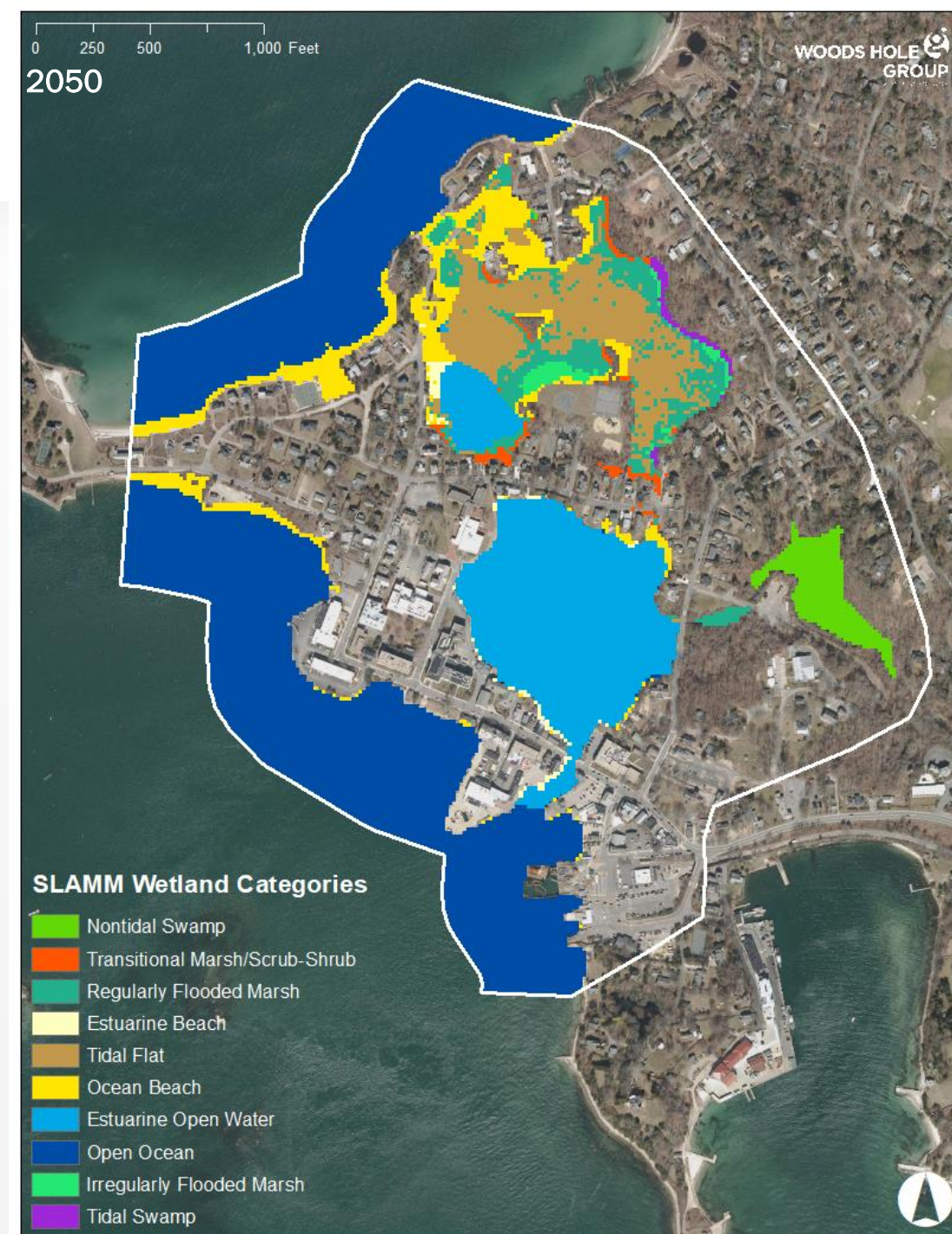
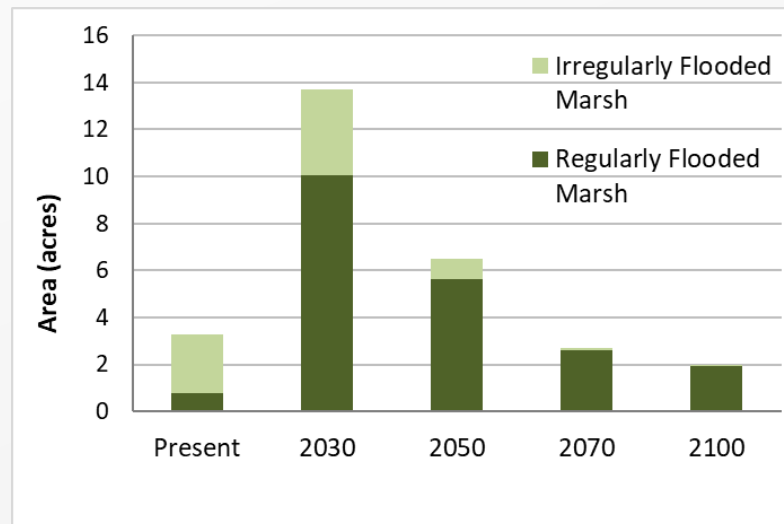
Existing vegetation and topography

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Sea Level Affecting Marshes Model

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Model Inputs

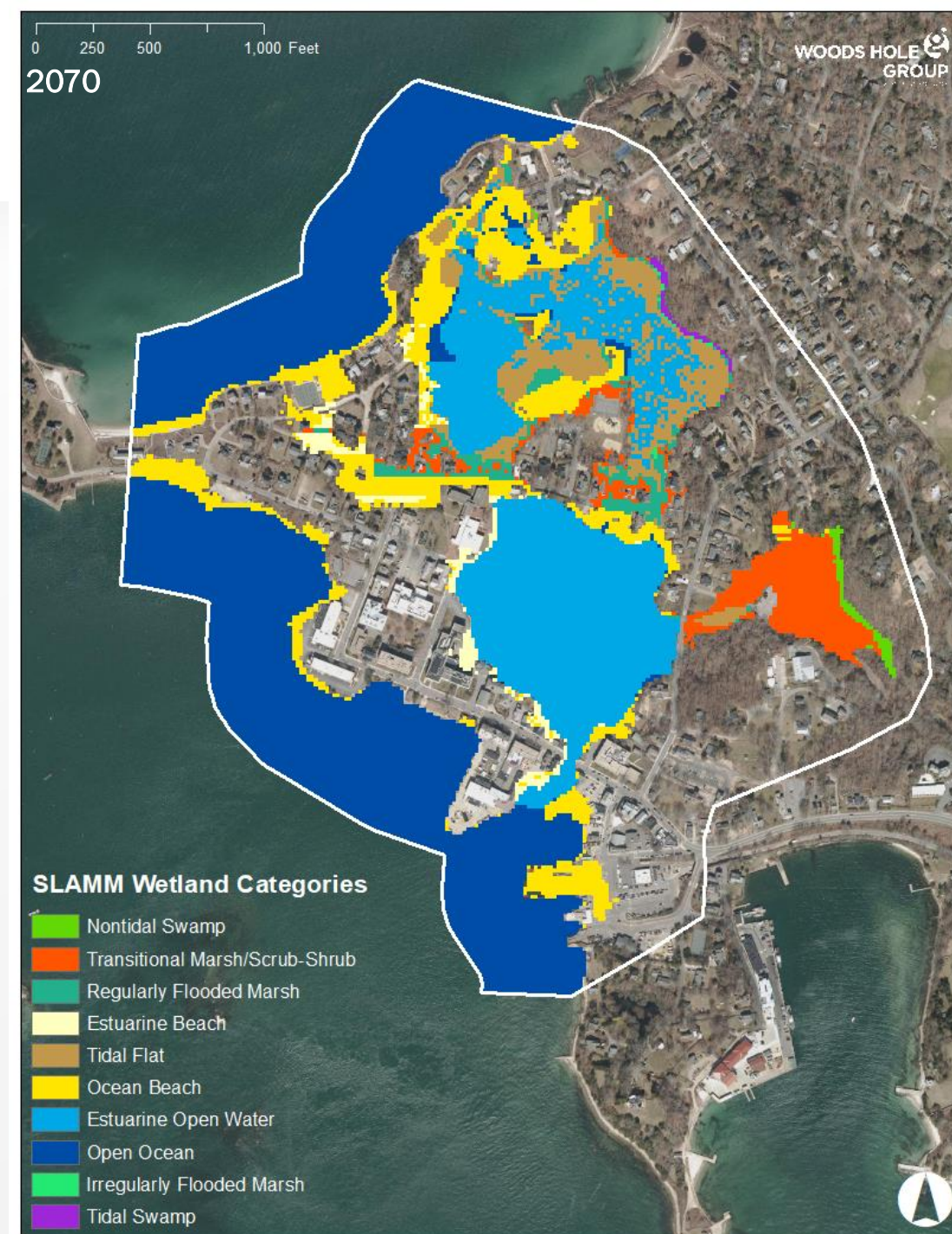
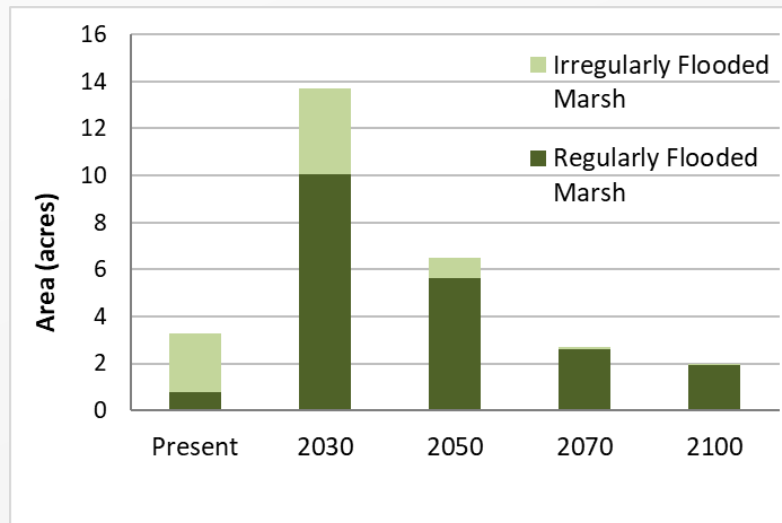
Existing vegetation and topography

Sea level rise projections

Tidal range and attenuation

Marsh accretion and erosion factors

In Woods Hole, salt marsh may initially expand, but then decline.



Sea Level Affecting Marshes Model

<https://www.mass.gov/service-details/sea-level-affecting-marshes-model-slamm>

Model Inputs

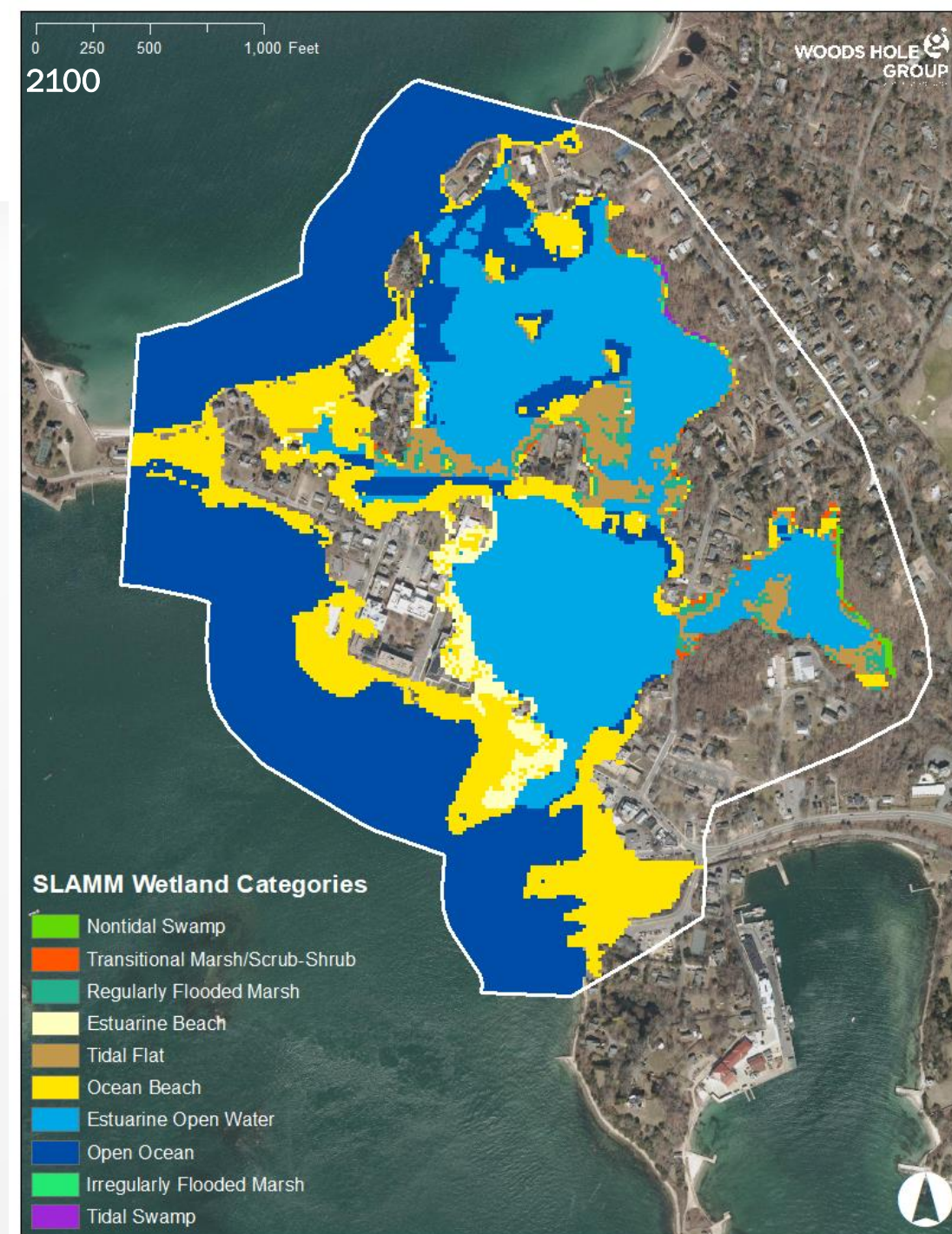
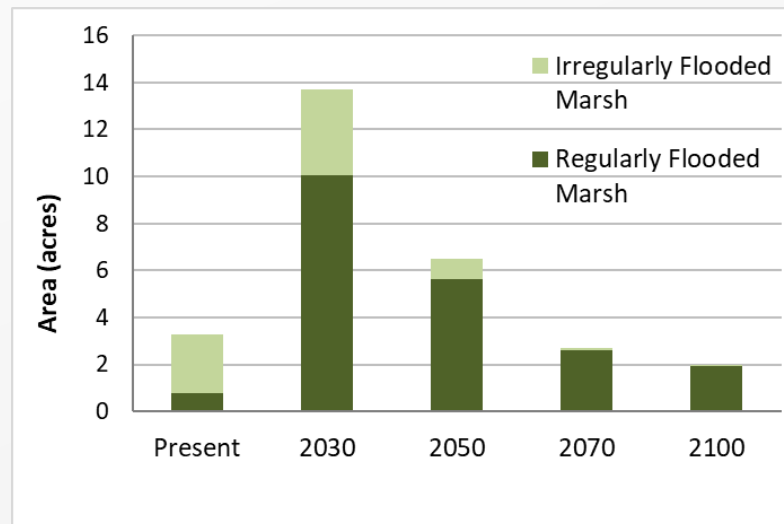
Existing vegetation and topography

Sea level rise projections

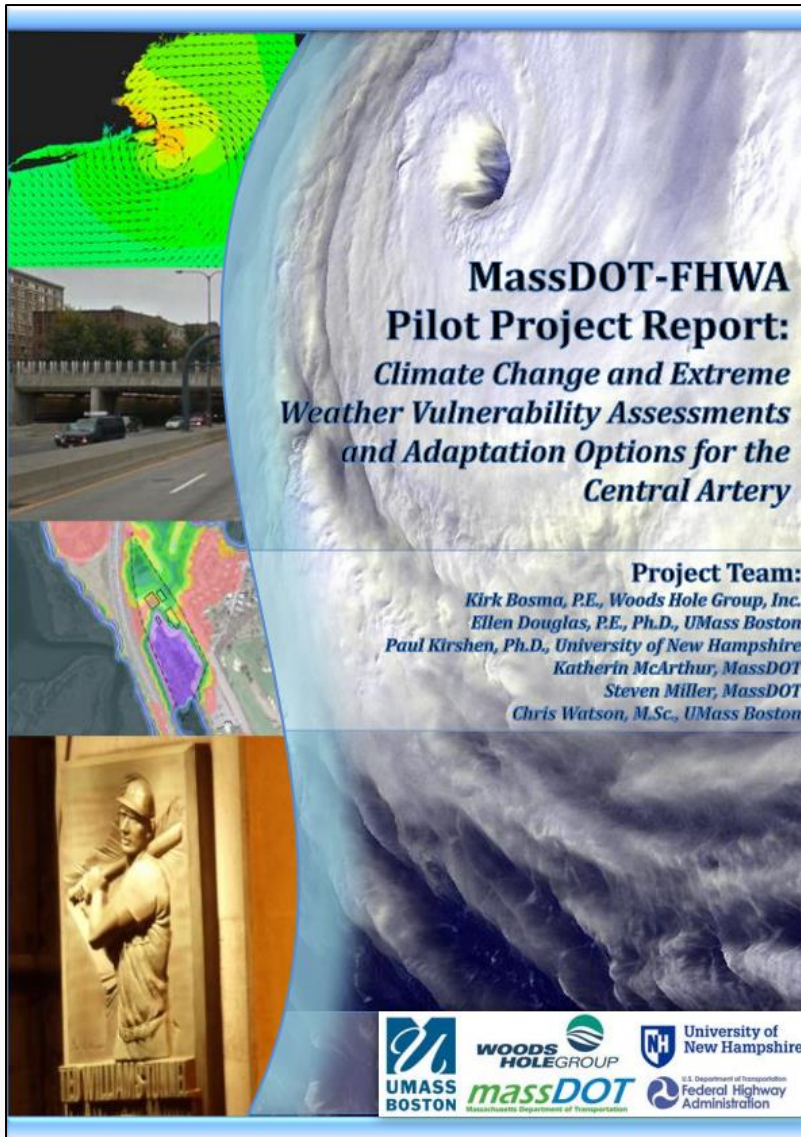
Tidal range and attenuation

Marsh accretion and erosion factors

In Woods Hole, salt marsh may initially expand, but then decline.



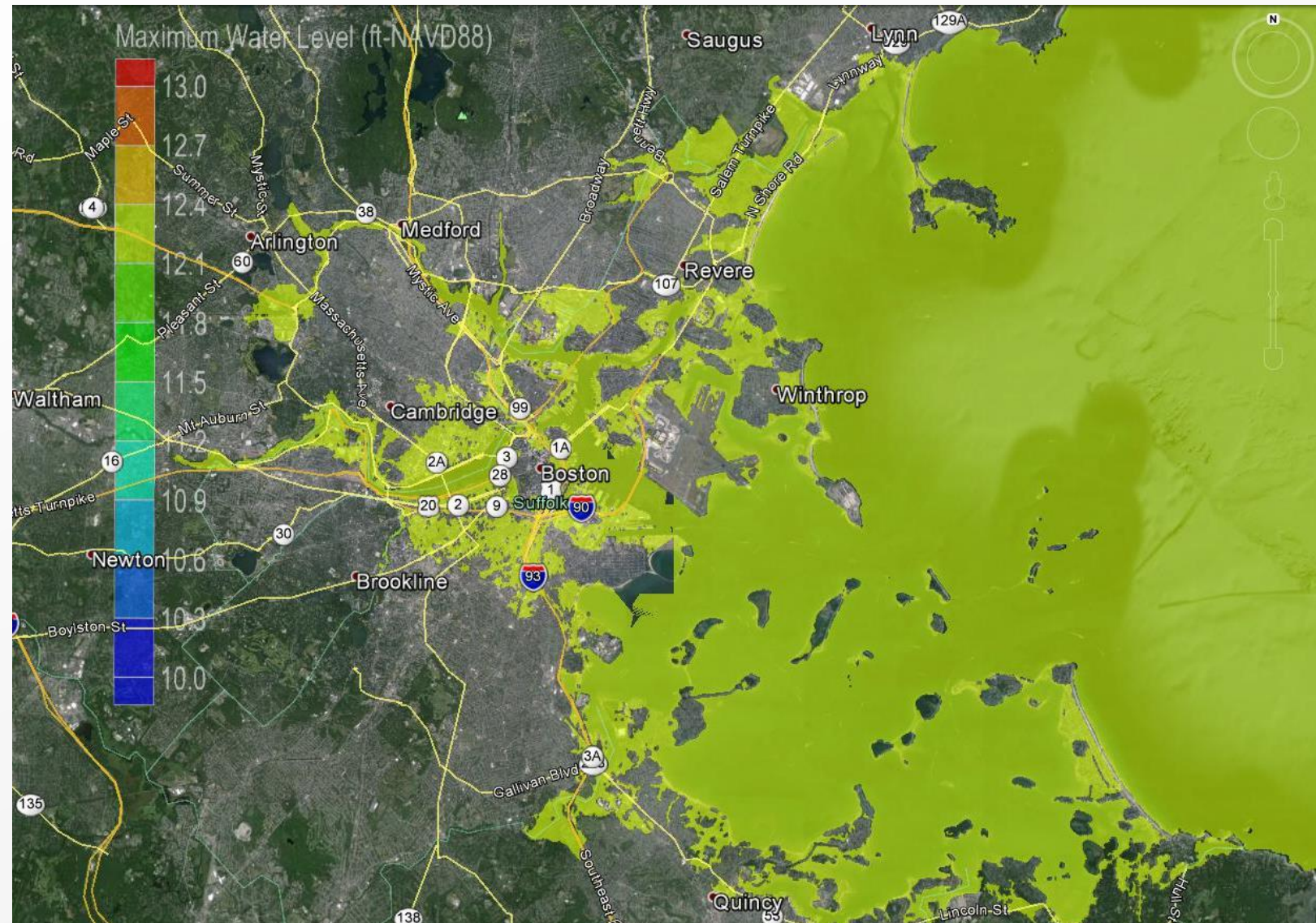
Future-facing, Hydrodynamic, and Probabilistic



**MassDOT-FHWA
Pilot Project Report:
Climate Change and Extreme
Weather Vulnerability Assessments
and Adaptation Options for the
Central Artery**

Project Team:
Kirk Bosma, P.E., Woods Hole Group, Inc.
Ellen Douglas, P.E., Ph.D., UMass Boston
Paul Kirshen, Ph.D., University of New Hampshire
Katherin McArthur, MassDOT
Steven Miller, MassDOT
Chris Watson, M.Sc., UMass Boston

Logos:
UMASS BOSTON, WOODS HOLE GROUP, University of New Hampshire, U.S. Department of Transportation Federal Highway Administration, Massachusetts Department of Transportation



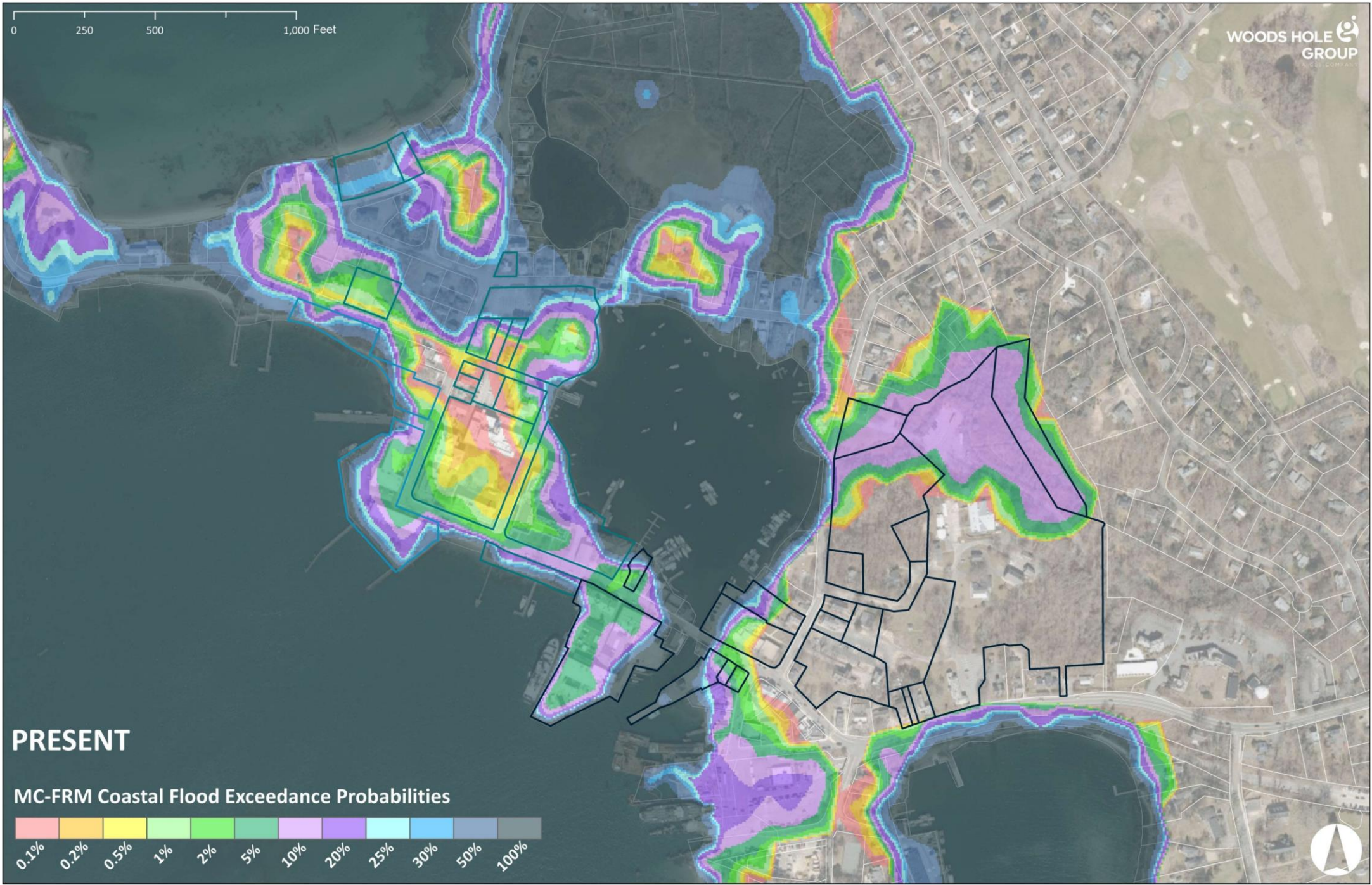
Massachusetts Coast Flood Risk Model (MC-FRM)



Massachusetts Coast Flood Risk Model (MC-FRM) Resolution



0 250 500 1,000 Feet

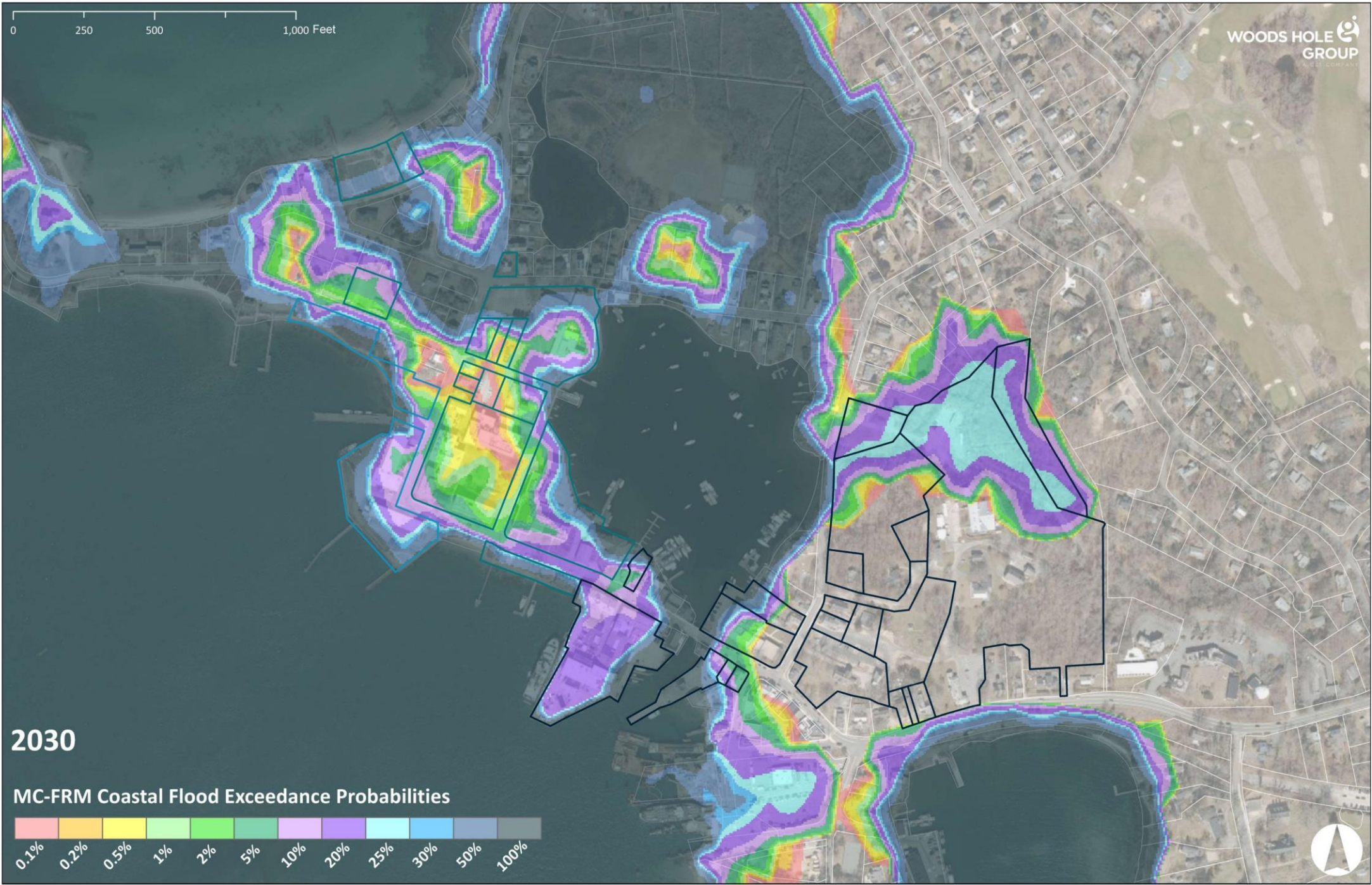


PRESENT

MC-FRM Coastal Flood Exceedance Probabilities



0 250 500 1,000 Feet

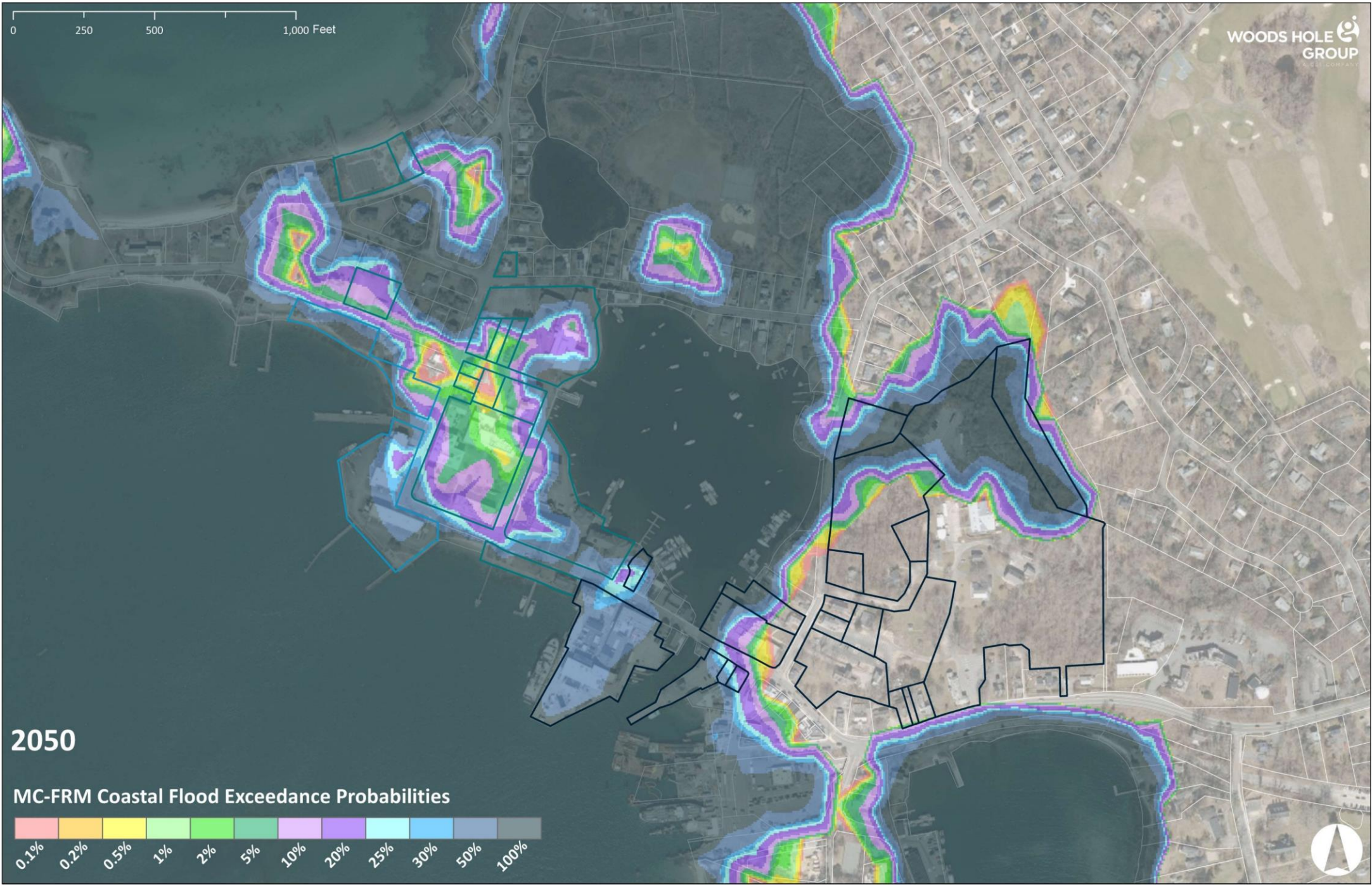


2030

MC-FRM Coastal Flood Exceedance Probabilities



0 250 500 1,000 Feet

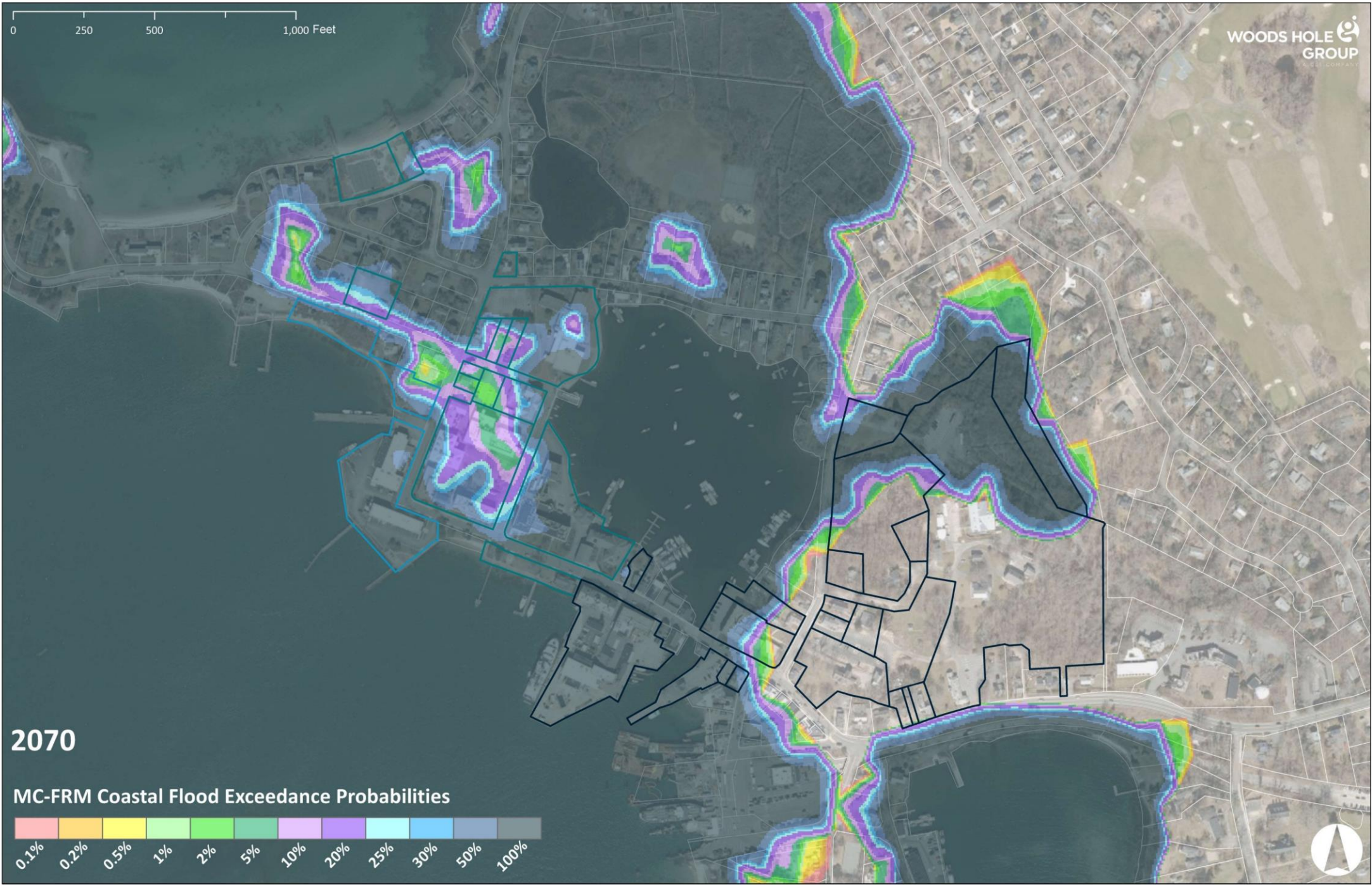


2050

MC-FRM Coastal Flood Exceedance Probabilities



0 250 500 1,000 Feet



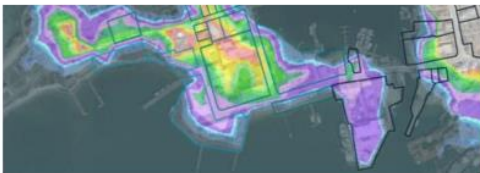
2070

MC-FRM Coastal Flood Exceedance Probabilities





Woods Hole Village Climate Change Vulnerability Assessment and Adaptation Plan



October 2020

PREPARED FOR:
Woods Hole Oceanographic Institution
Marine Biological Laboratory
NOAA Northeast Fisheries Science Center

PREPARED BY:
Woods Hole Group, Inc.
A CLS Company
307 Waterhouse Road
Bourne, MA 02532 USA

ResilientWoodsHole Phase 1

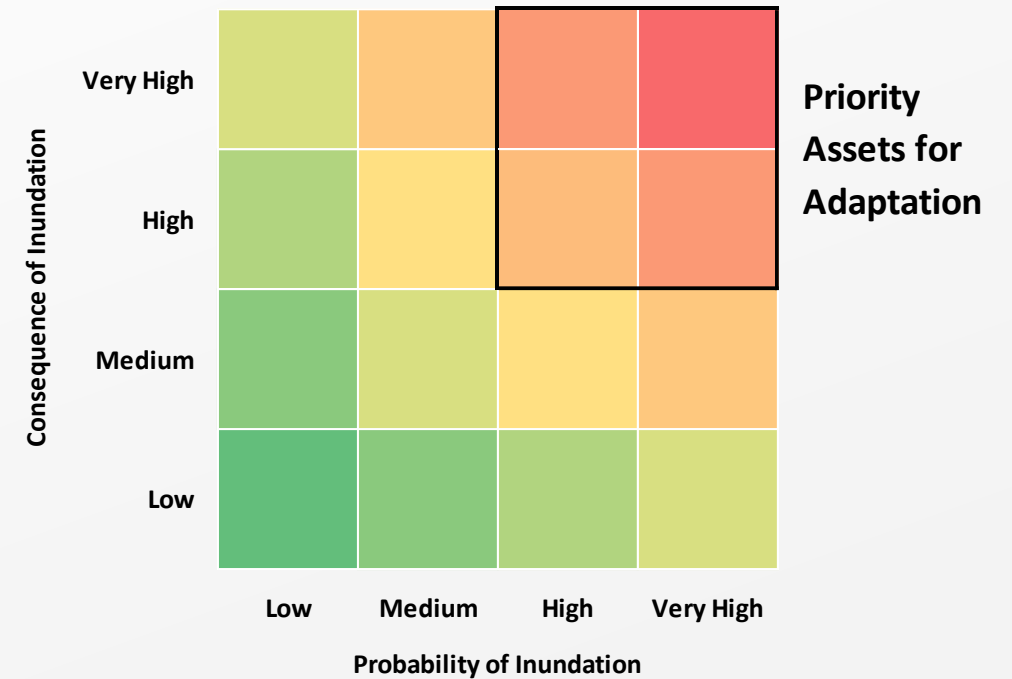
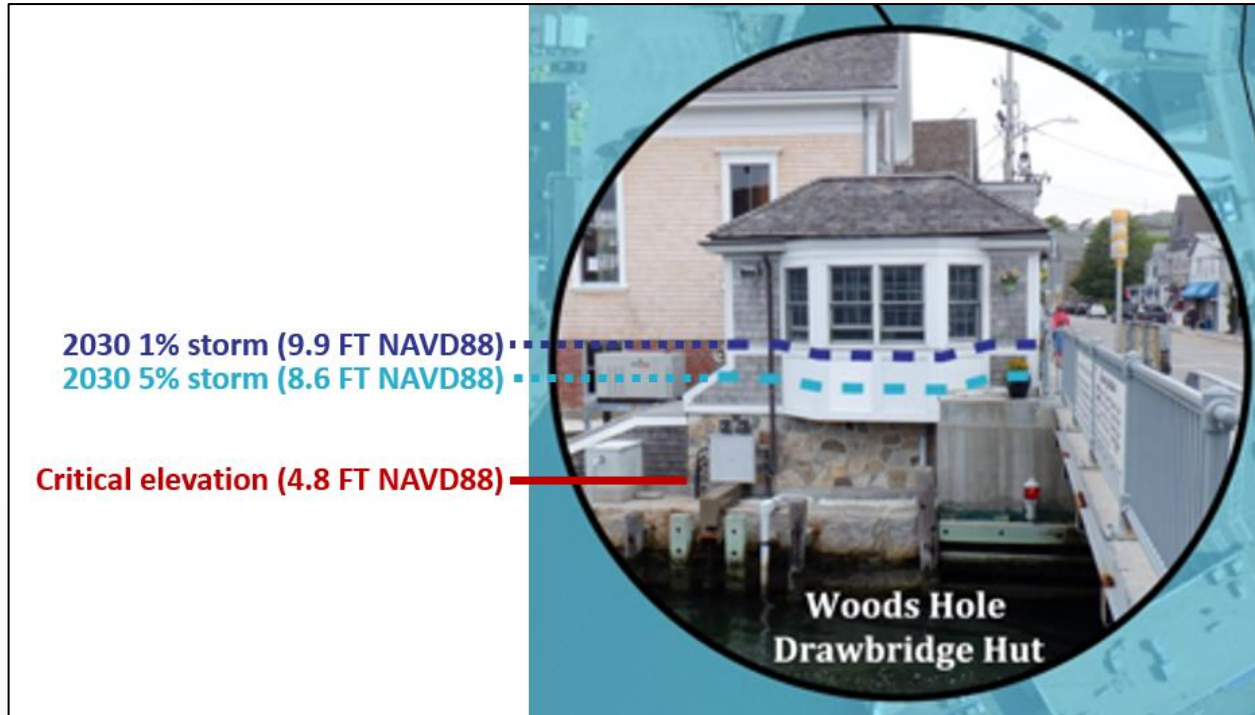
What are the potential impacts of climate change on scientific operations and research in Woods Hole?

Climate Change Vulnerability Assessment (WHOI/MBL/NOAA)

<https://resilientwoodshole.org/news-and-events/#reports>



Using MC-FRM to prioritize investments in adaptation over time



WHOI/MBL/NOAA Climate Change Vulnerability Assessment



Iselin

Asset Type: Buildings

Critical Elevation (CE): 6.08 FT. NAVD88

Threshold Description:

North Alvin high bay 1300 Door - systems at grade

Room 138 (prior survey)

Climate Vulnerability Assessment – Asset Profile



Probability of Exceedance Summary Table

Probability %	Present		2030		2050		2070	
	Flood Elevation FT. NAVD88	Depth Over CE FT.	Flood Elevation FT. NAVD88	Depth Over CE FT.	Flood Elevation FT. NAVD88	Depth Over CE FT.	Flood Elevation FT. NAVD88	Depth Over CE FT.
0.1	10.7	4.62	11.8	5.72	14.5	8.42	16.6	10.52
0.2	10	3.92	11.1	5.02	13.7	7.62	15.7	9.62
0.5	8.8	2.72	10	3.92	12.6	6.52	14.6	8.52
1	8.1	2.02	9.3	3.22	11.8	5.72	13.8	7.72
2	7.4	1.32	8.6	2.52	10.9	4.82	12.9	6.82
5	6.5	0.42	7.7	1.62	9.8	3.72	11.8	5.72
10	5.8	-	7	0.92	9	2.92	10.9	4.82
20	5	-	6.2	0.12	8	1.92	9.9	3.82
25	4.7	-	5.9	-	7.7	1.62	9.6	3.52
30	4.5	-	5.7	-	7.4	1.32	9.3	3.22
50	3.7	-	4.8	-	6.4	0.32	8.3	2.22
100	2.1	-	3.3	-	4.6	-	6.4	0.32

Consequence of Exceedance

Scores	Direct Impacts			Mission Impairment			Sum	Consequence Score
	Service Loss Extent	Service Loss Duration	Cost of Damage	Research & Applied Science	Operations & Economic Activity	Education & Outreach		
	4	4	3	3	4	2	20	83

Risk of Exceedance

Time horizon	Probability of Exceedance	Consequence Score	Risk Score	Risk Rank
Present	5	83	417	8/36
2030	20		1667	4/36
2050	50		4167	-
2070	100		8333	-



X



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WHOI/MBL/NOAA Climate Change Vulnerability Assessment



Climate Vulnerability Assessment – Asset Profile



Lillie Laboratory

Asset Type: Buildings
 Critical Elevation (CE): 5.17 FT. NAVD88
 Threshold Description:

Loading dock slab entry from 2017 ELV CERT

Additional CEs:

Lillie Fuel Tank (5.30 FT. NAVD88), Lillie/MRC Junction Box (9.33 FT. NAVD88),
 Lillie Transformer (9.89 FT. NAVD88), Lillie/MRC Meter Box (11.37 FT. NAVD88)

Probability of Exceedance Summary Table

Probability %	Present		2030		2050		2070	
	Flood Elevation FT. NAVD88	Depth Over CE FT.	Flood Elevation FT. NAVD88	Depth Over CE FT.	Flood Elevation FT. NAVD88	Depth Over CE FT.	Flood Elevation FT. NAVD88	Depth Over CE FT.
0.1	10.6	5.4	11.7	6.5	14.3	9.2	16.6	11.4
0.2	9.8	4.6	11.0	5.8	13.5	8.4	15.7	10.5
0.5	8.9	3.7	10.0	4.8	12.5	7.3	14.6	9.4
1	8.2	3.0	9.3	4.1	11.6	6.5	13.8	8.6
2	7.5	2.3	8.6	3.4	10.8	5.7	12.9	7.7
5	6.5	1.3	7.7	2.5	9.7	4.5	11.8	6.6
10	5.8	0.6	7.0	1.8	8.9	3.7	10.9	5.7
20	5.0	-	6.2	1.0	7.9	2.8	9.9	4.7
25	4.7	-	5.9	0.7	7.6	2.4	9.6	4.4
30	4.5	-	5.7	0.5	7.3	2.1	9.3	4.1
50	3.7	-	4.8	-	6.3	1.2	8.3	3.1
100	2.1	-	3.3	-	4.6	-	6.4	1.2

Consequence of Exceedance

Scores	Direct Impacts			Mission Impairment			Sum	Consequence Score
	Service Loss Extent	Service Loss Duration	Cost of Damage	Research & Applied Science	Operations & Economic Activity	Education & Outreach		
4	4	4	4	4	4	3	23	96

Risk of Exceedance

Time horizon	Probability of Exceedance	Consequence Score	Risk Score	Risk Rank
Present	10	96	958	6/54
2030	30		2875	3/54
2050	50		4792	2/54
2070	100		9583	1/54



X



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WHOI/MBL/NOAA Climate Change Vulnerability Assessment



Gear Shed

Asset Type: Buildings
 Critical Elevation (CE): 5.09 FT. NAVD88
 Threshold Description:
 Grade at bay door (LIDAR)



Probability of Exceedance Summary Table

Probability %	Present		2030		2050		2070	
	Flood Elevation FT. NAVD88	Depth Over CE FT.	Flood Elevation FT. NAVD88	Depth Over CE FT.	Flood Elevation FT. NAVD88	Depth Over CE FT.	Flood Elevation FT. NAVD88	Depth Over CE FT.
0.1	10.7	5.61	11.8	6.71	14.5	9.41	16.6	11.51
0.2	10	4.91	11.1	6.01	13.7	8.61	15.7	10.61
0.5	8.8	3.71	10	4.91	12.6	7.51	14.6	9.51
1	8.1	3.01	9.3	4.21	11.8	6.71	13.8	8.71
2	7.4	2.31	8.6	3.51	10.9	5.81	12.9	7.81
5	6.5	1.41	7.7	2.61	9.8	4.71	11.8	6.71
10	5.8	0.71	7	1.91	9	3.91	10.9	5.81
20	5	-	6.2	1.11	8	2.91	9.9	4.81
25	4.7	-	5.9	0.81	7.7	2.61	9.6	4.51
30	4.5	-	5.7	0.61	7.4	2.31	9.3	4.21
50	3.7	-	4.8	-	6.4	1.31	8.3	3.21
100	2.1	-	3.3	-	4.6	-	6.4	1.31

Consequence of Exceedance

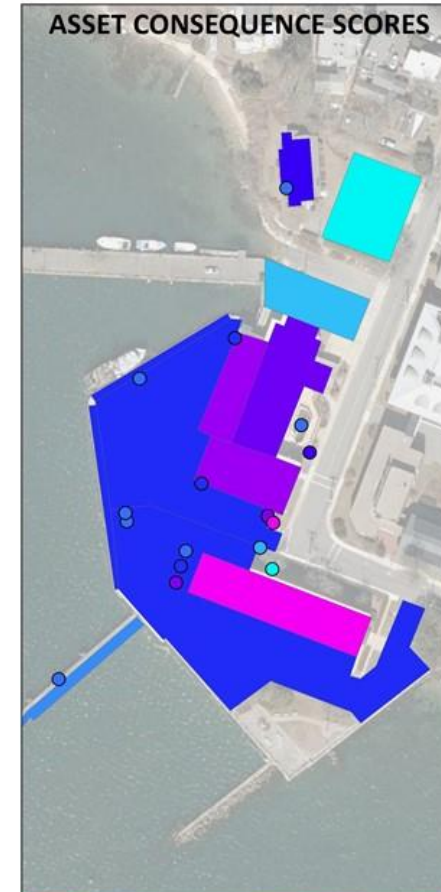
Scores	Direct Impacts			Mission Impairment			Sum	Consequence Score
	Service Loss Extent	Service Loss Duration	Cost of Damage	Research & Applied Science	Operations & Economic Activity	Education & Outreach		
	2	4	4	3	3	1	17	71

Risk of Exceedance

Time horizon	Probability of Exceedance	Consequence Score	Risk Score	Risk Rank
Present	10	71	708	3/27
2030	30		2125	2/27
2050	50		3542	3/27
2070	100		7083	2/27



X



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ResilientWoodsHole Phase 2 Report



January 2022

PREPARED FOR:
Woods Hole Oceanographic Institution
Marine Biological Laboratory
NOAA Northeast Fisheries Science Center

PREPARED BY:
Woods Hole Group, Inc.
A CLS Company
107 Waterhouse Road
Bourne, MA 02532 USA

ResilientWoodsHole Phase 2

What are the potential impacts of climate change on the broader Woods Hole community?

Extended Climate Change Vulnerability Assessment (Woods Hole residential community, businesses, roadways, lifelines), supplemental adaptation planning (WHOI/MBL/NOAA) and initial outreach.

<https://resilientwoodshole.org/news-and-events/#reports>

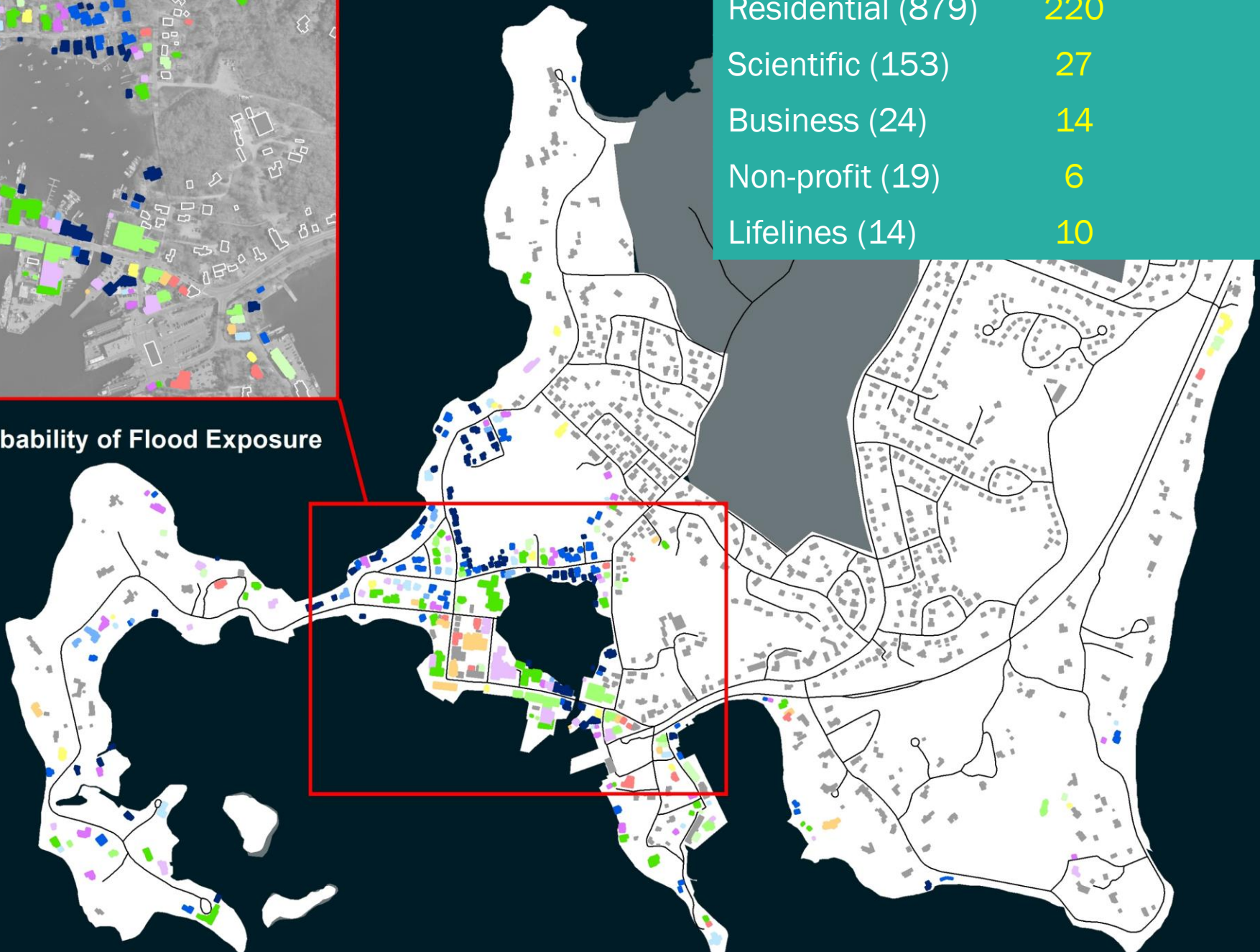


1% Probability Present

Residential (879)	220
Scientific (153)	27
Business (24)	14
Non-profit (19)	6
Lifelines (14)	10

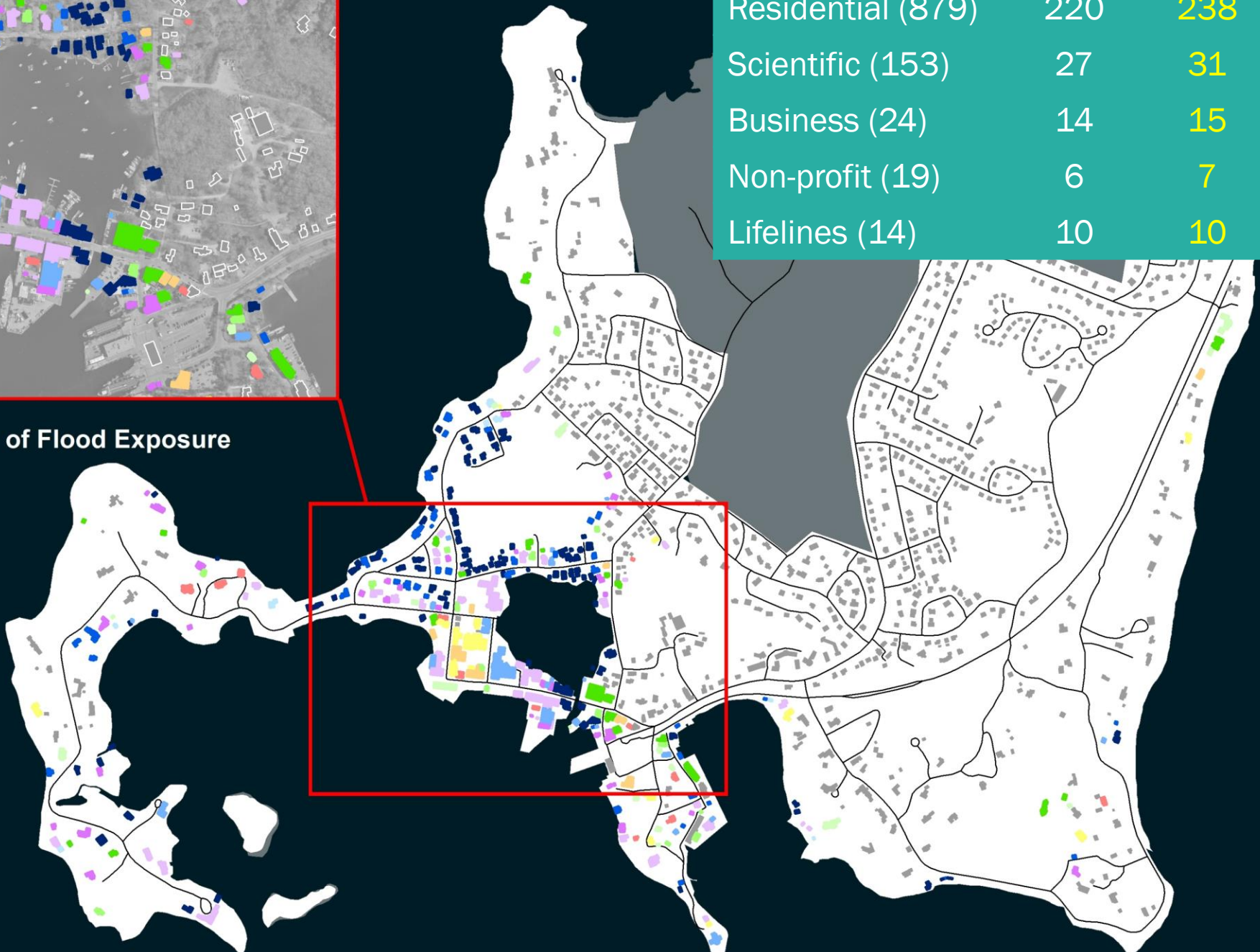
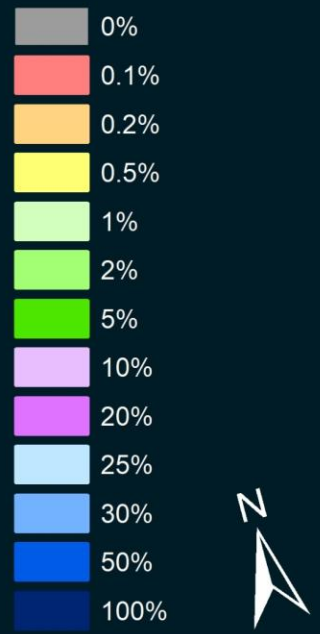
Present Day MC-FRM Probability of Flood Exposure

- 0%
- 0.1%
- 0.2%
- 0.5%
- 1%
- 2%
- 5%
- 10%
- 20%
- 25%
- 30%
- 50%
- 100%



1% Probability	Present	2030
Residential (879)	220	238
Scientific (153)	27	31
Business (24)	14	15
Non-profit (19)	6	7
Lifelines (14)	10	10

2030 MC-FRM Probability of Flood Exposure

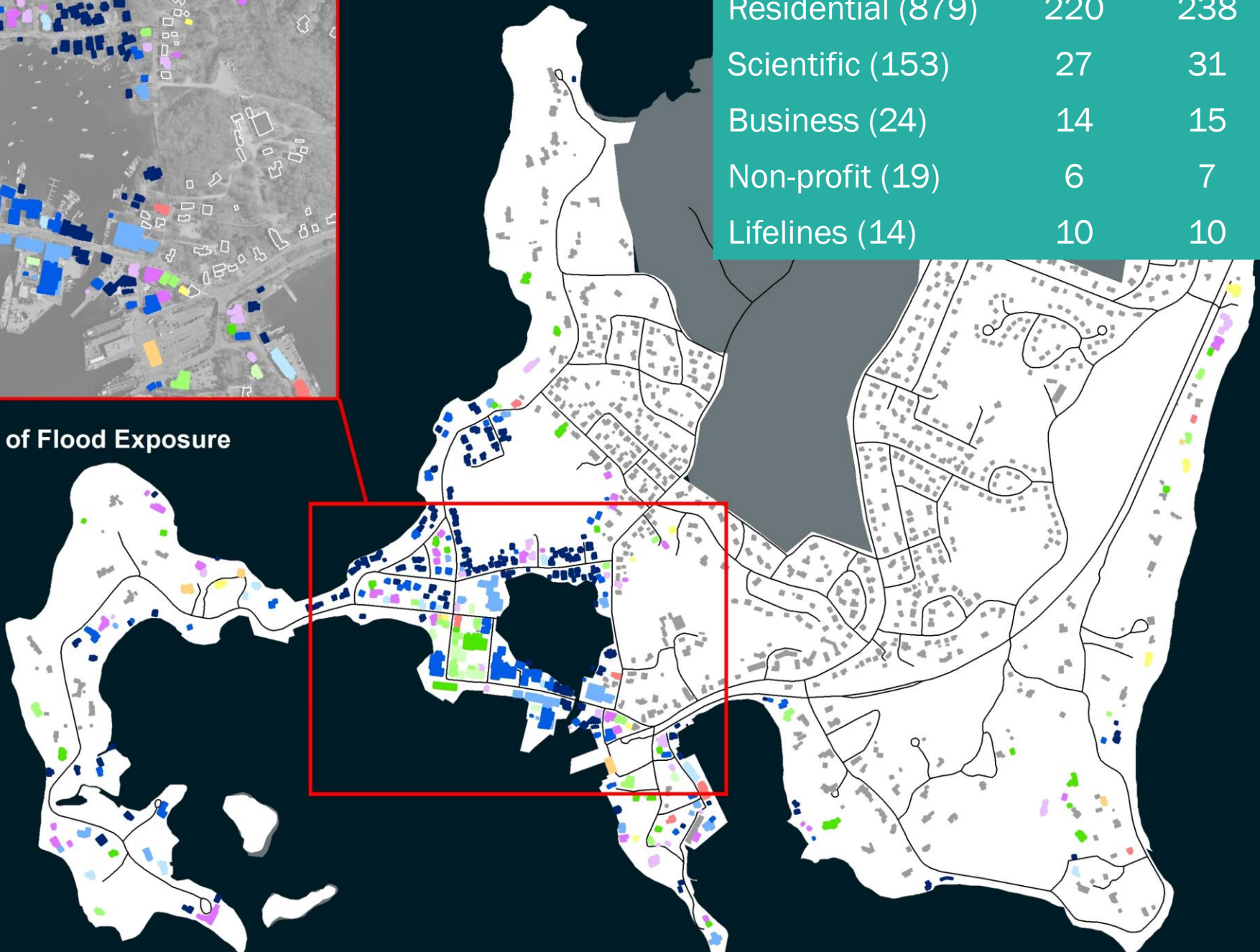




1% Probability	Present	2030	2050
Residential (879)	220	238	257
Scientific (153)	27	31	44
Business (24)	14	15	17
Non-profit (19)	6	7	7
Lifelines (14)	10	10	11

2050 MC-FRM Probability of Flood Exposure

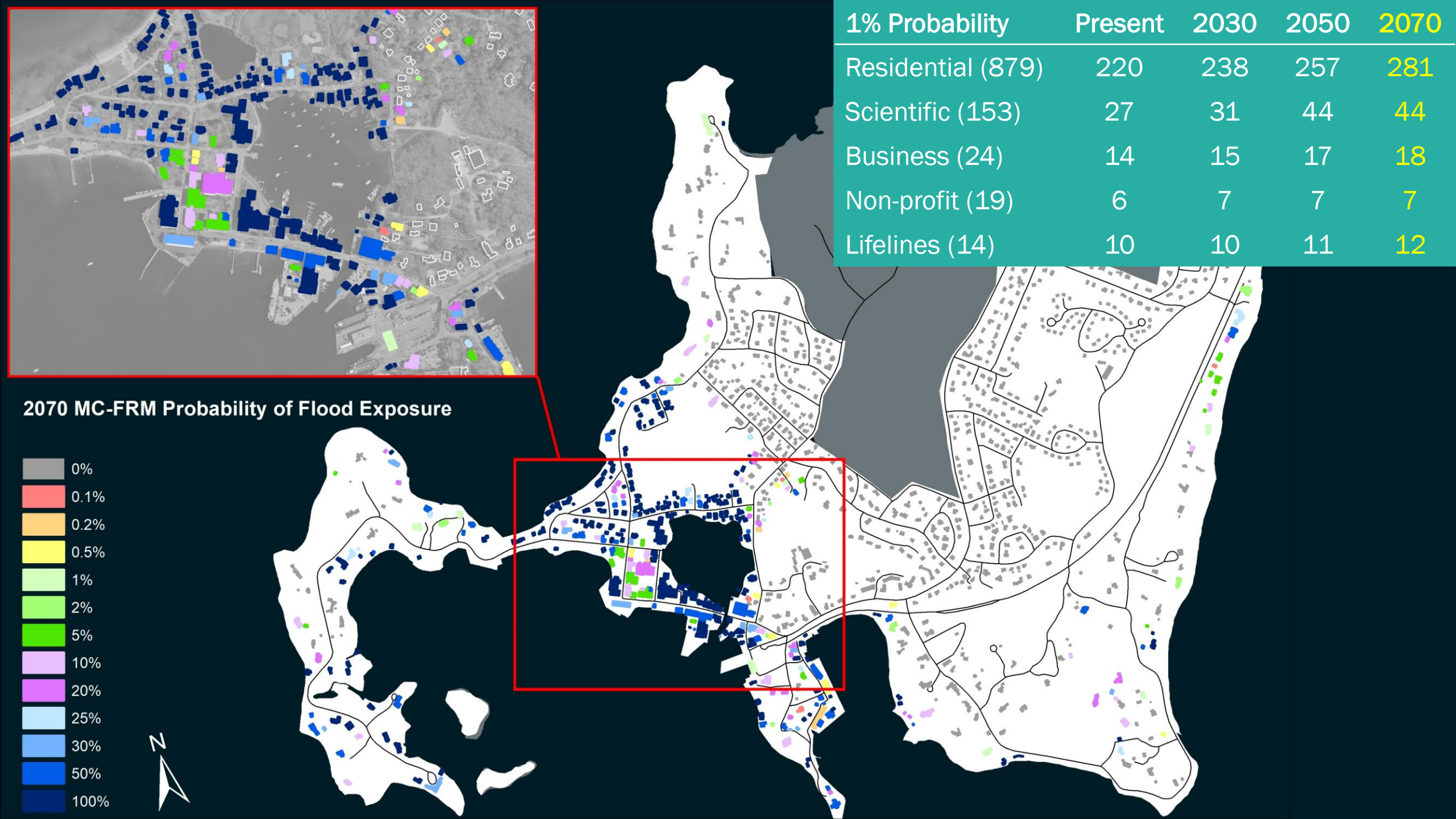
- 0%
- 0.1%
- 0.2%
- 0.5%
- 1%
- 2%
- 5%
- 10%
- 20%
- 25%
- 30%
- 50%
- 100%



1% Probability	Present	2030	2050	2070
Residential (879)	220	238	257	281
Scientific (153)	27	31	44	44
Business (24)	14	15	17	18
Non-profit (19)	6	7	7	7
Lifelines (14)	10	10	11	12

2070 MC-FRM Probability of Flood Exposure

- 0%
- 0.1%
- 0.2%
- 0.5%
- 1%
- 2%
- 5%
- 10%
- 20%
- 25%
- 30%
- 50%
- 100%



Counts of Buildings Exposed to Projected Flooding

1% annual chance event has a 9.6% chance of occurring in a 10-year period

10% annual chance event has a 65.1% chance of occurring in a 10-year period

25% annual chance event has a 94.4% chance of occurring in a 10-year period

	Present					2030					2050					2070				
	WHOI-MBL-NOAA	Lifelines	Business	Residential	Non-Profit	WHOI-MBL-NOAA	Lifelines	Business	Residential	Non-Profit	WHOI-MBL-NOAA	Lifelines	Business	Residential	Non-Profit	WHOI-MBL-NOAA	Lifelines	Business	Residential	Non-Profit
0%	117	3	6	634	12	110	3	6	616	12	107	1	6	604	12	104	0	5	590	12
0.1%	36	11	18	245	7	43	11	18	263	7	46	13	18	275	7	49	14	19	289	7
0.2%	33	10	16	237	7	41	11	17	253	7	44	12	18	270	7	48	14	19	286	7
0.5%	28	10	15	230	7	36	10	15	251	7	44	11	18	265	7	46	13	19	285	7
1%	27	10	14	220	6	31	10	15	238	7	44	11	17	257	7	44	12	18	281	7
2%	25	7	14	211	6	28	10	15	225	7	37	11	17	256	7	44	11	18	273	7
5%	19	6	12	205	5	25	8	14	217	6	32	10	15	243	7	44	11	17	265	7
10%	8	5	12	178	4	23	7	12	203	5	29	10	15	219	7	37	11	17	250	7
20%	1	4	10	162	4	10	6	12	178	4	24	9	14	206	5	32	10	15	232	7
25%	1	2	8	137	4	8	4	9	151	4	24	8	12	180	4	30	10	15	210	6
30%	1	1	7	120	4	8	4	9	143	4	24	7	11	170	4	30	10	15	200	5
50%	1	1	6	110	4	1	3	7	132	4	15	6	11	158	4	26	10	13	190	5
100%	1	0	6	55	3	1	0	6	94	4	1	3	8	122	4	19	6	12	153	4

Vulnerable at 1% Annual Chance
Present 3.5/20.6 miles



Present Day MC-FRM Probability of Flood Exposure

- Dry
- 0.1
- 0.2
- 0.5
- 1
- 2
- 5
- 10
- 20
- 25
- 30
- 50
- 100



Vulnerable at 1% Annual Chance
Present 3.5/20.6 miles
2030 4.0/20.6 miles



2030 MC-FRM Probability of Flood Exposure

- Dry
- 0.1
- 0.2
- 0.5
- 1
- 2
- 5
- 10
- 20
- 25
- 30
- 50
- 100

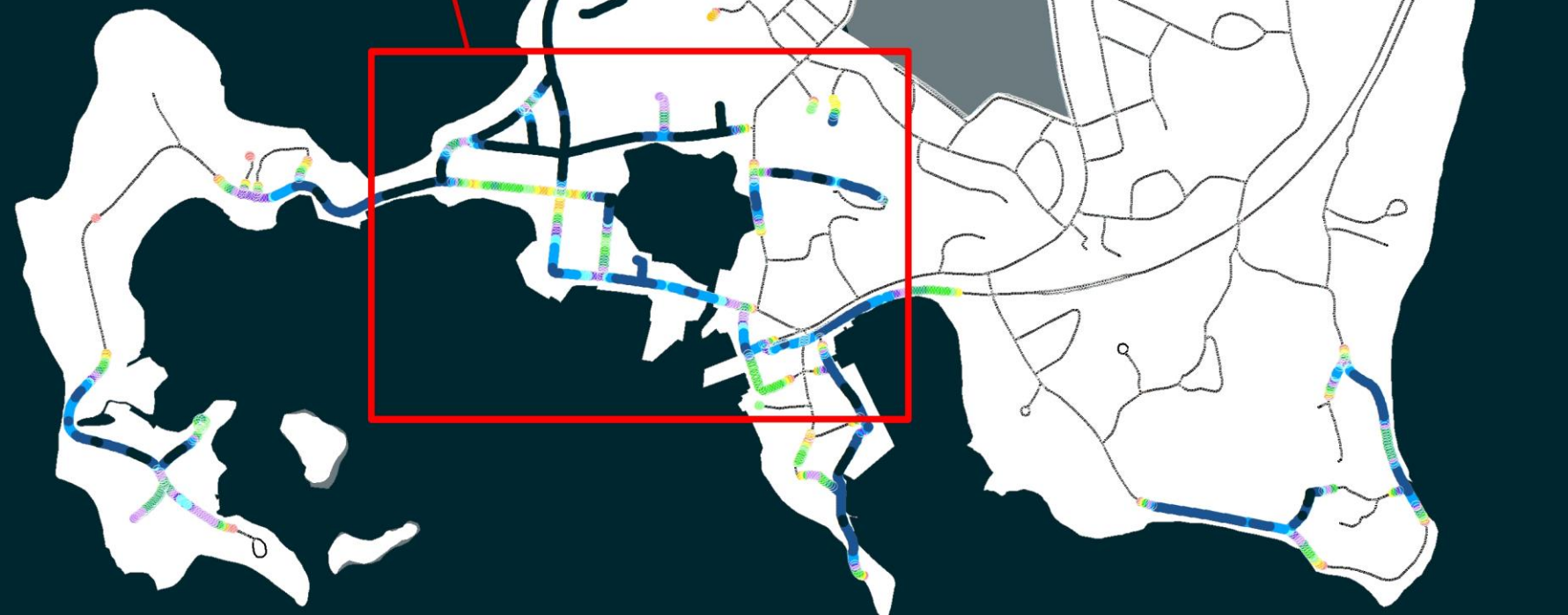


Vulnerable at 1% Annual Chance
Present 3.5/20.6 miles
2030 4.0/20.6 miles
2050 4.9/20.6 miles



2050 MC-FRM Probability of Flood Exposure

- Dry
- 0.1
- 0.2
- 0.5
- 1
- 2
- 5
- 10
- 20
- 25
- 30
- 50
- 100



Vulnerable at 1% Annual Chance
 Present 3.5/20.6 miles
 2030 4.0/20.6 miles
 2050 4.9/20.6 miles
2070 5.4/20.6 miles



2070 MC-FRM Probability of Flood Exposure

- Dry
- 0.1
- 0.2
- 0.5
- 1
- 2
- 5
- 10
- 20
- 25
- 30
- 50
- 100

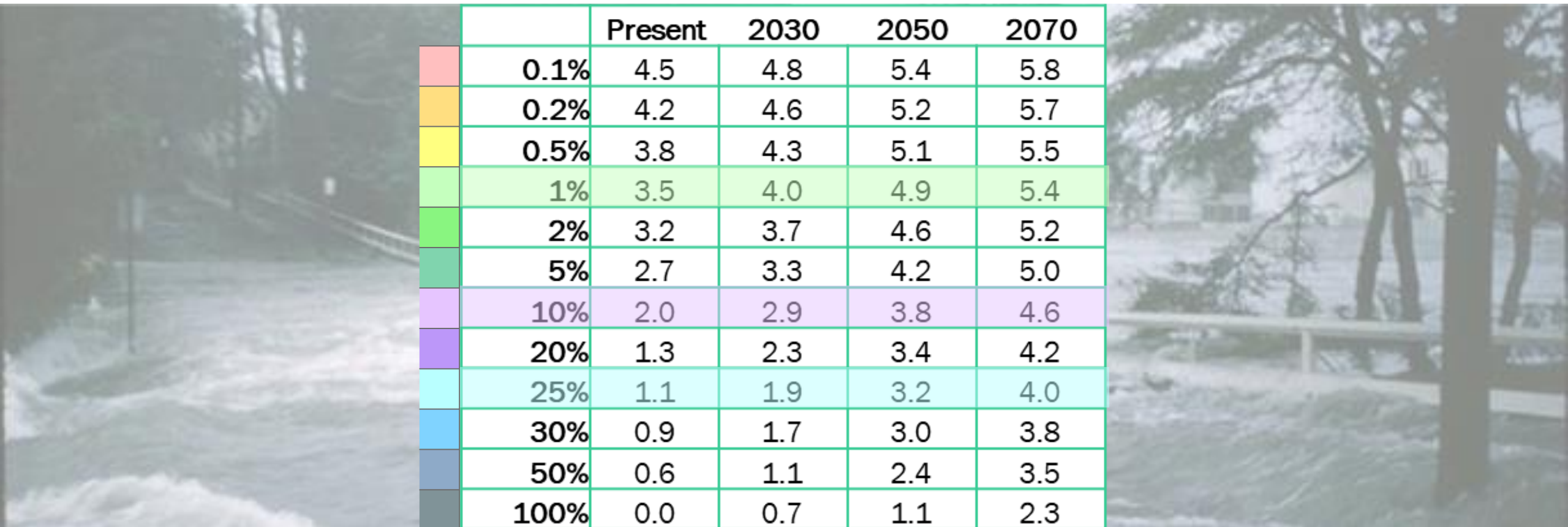


Road Miles Exposed to Projected Flooding

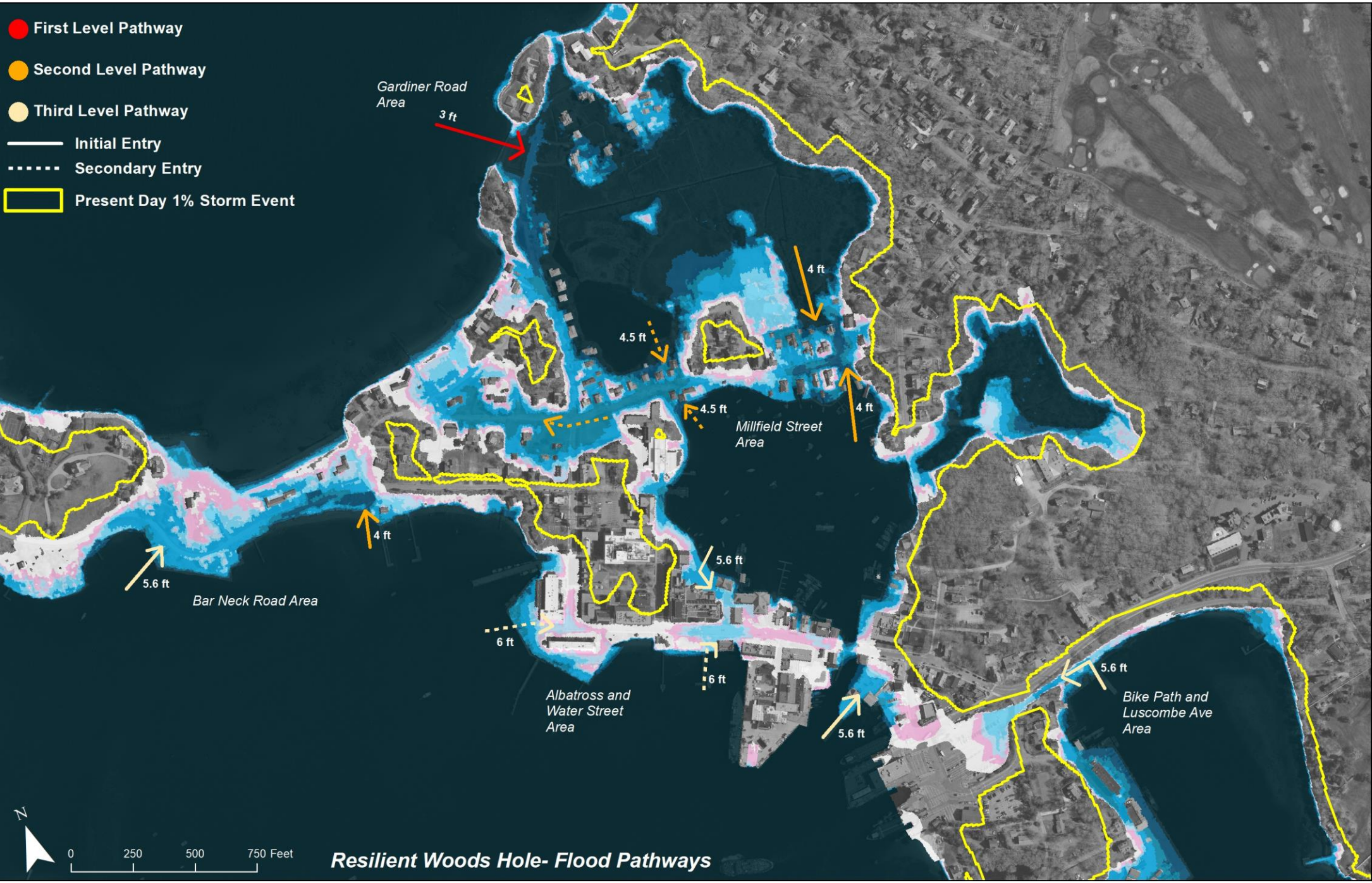
1% annual chance event has a 9.6% chance of occurring in a 10-year period

10% annual chance event has a 65.1% chance of occurring in a 10-year period

25% annual chance event has a 94.4% chance of occurring in a 10-year period



		Present	2030	2050	2070
	0.1%	4.5	4.8	5.4	5.8
	0.2%	4.2	4.6	5.2	5.7
	0.5%	3.8	4.3	5.1	5.5
	1%	3.5	4.0	4.9	5.4
	2%	3.2	3.7	4.6	5.2
	5%	2.7	3.3	4.2	5.0
	10%	2.0	2.9	3.8	4.6
	20%	1.3	2.3	3.4	4.2
	25%	1.1	1.9	3.2	4.0
	30%	0.9	1.7	3.0	3.8
	50%	0.6	1.1	2.4	3.5
	100%	0.0	0.7	1.1	2.3



Resilient Woods Hole- Flood Pathways



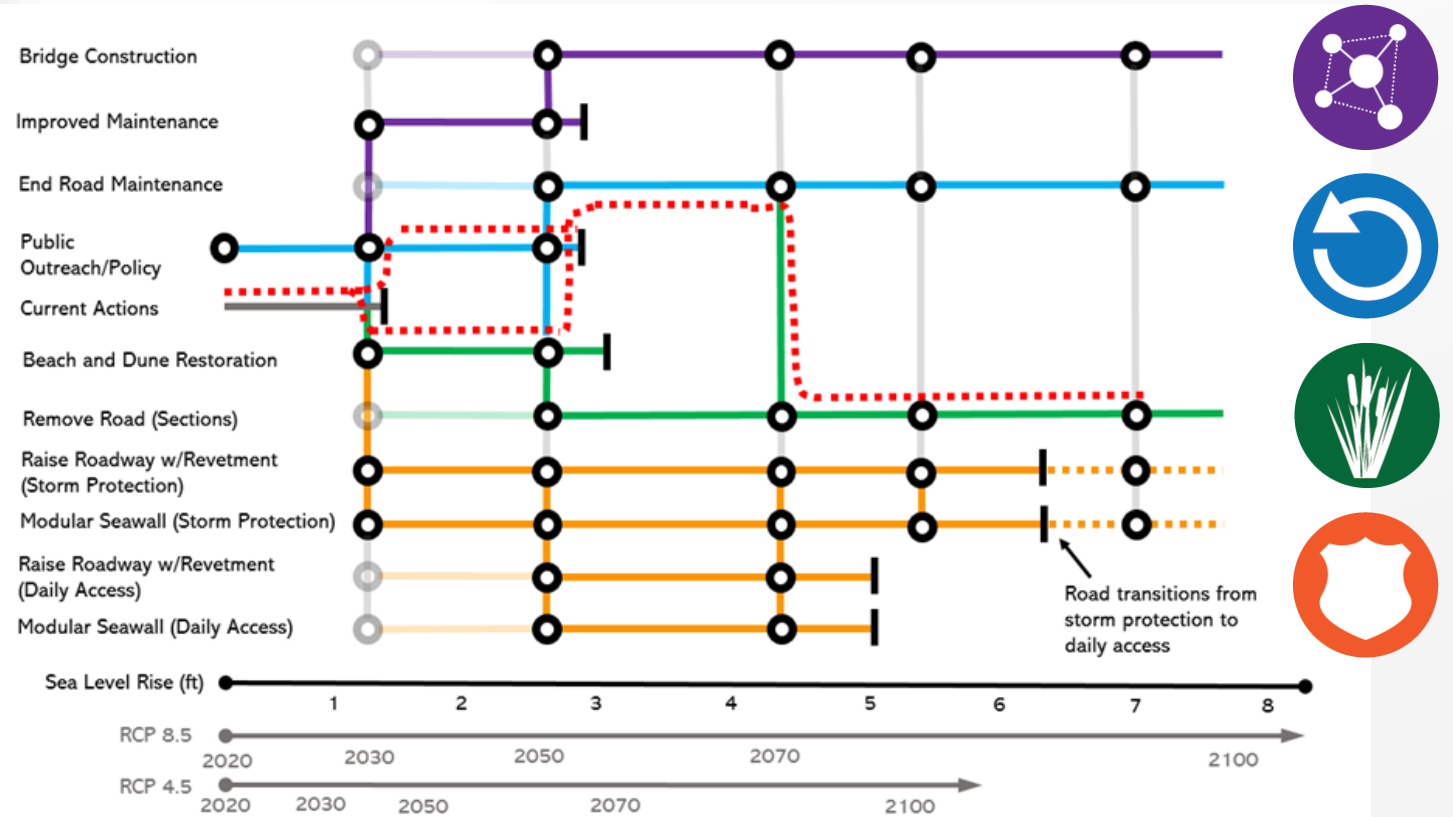
Resilient Woods Hole Phase 3

How can we work together to ensure the future of our vibrant and productive seaside community?

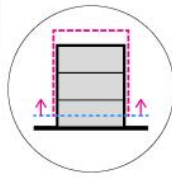
Comprehensive phased strategy for Woods Hole Village that integrates resilient design concepts and community visioning.

ResilientWoodsHole Phase 3 - Goals

1. Develop community-wide **understanding of local climate impacts**.
2. Build effective **partnerships** for Village planning and visioning.
3. Develop **short-, mid-, and long-term climate adaptation actions** across strategic themes.
4. Identify key **thresholds and transition points**, based on adaptive management
5. Chart **dynamic adaptation pathways** that optimize community outcomes over time, based on community preferences and scientific projections.



Adaptation Strategies – Building Scale



Building Form + Access



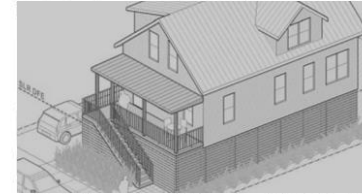
Elevate on extended foundation walls or open foundation



Elevate on fill



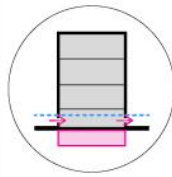
Repurpose/Relocate Ground Floor Use



Exterior circulation to SLR-DFE



Interior circulation to SLR-DFE



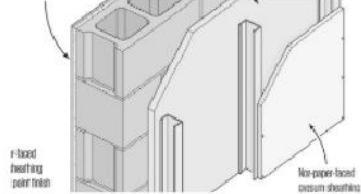
Building Adaptation



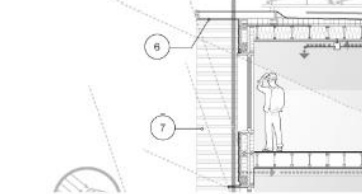
Wet Floodproofing



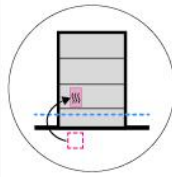
Dry Floodproofing



Flood Damage-Resistant Materials



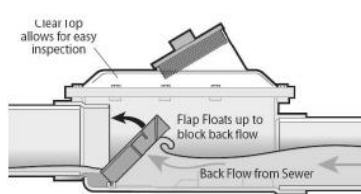
Enhanced Building Envelope



Building Systems



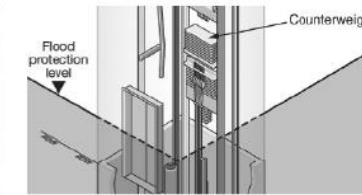
Protecting Critical Systems



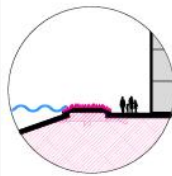
Backflow Prevention



Back-up Systems



Resilient Elevators



Site



Vegetated Berm



Deployable Barriers

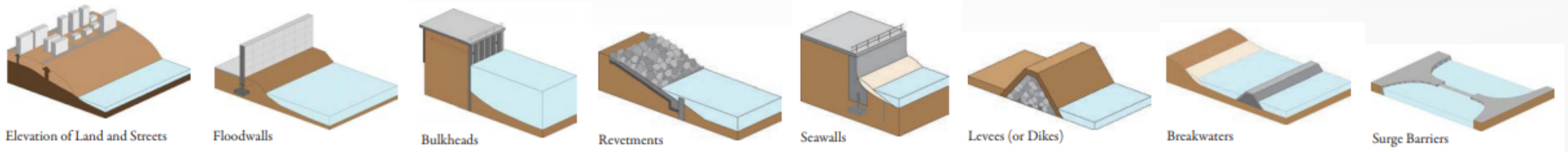


Perimeter Wall

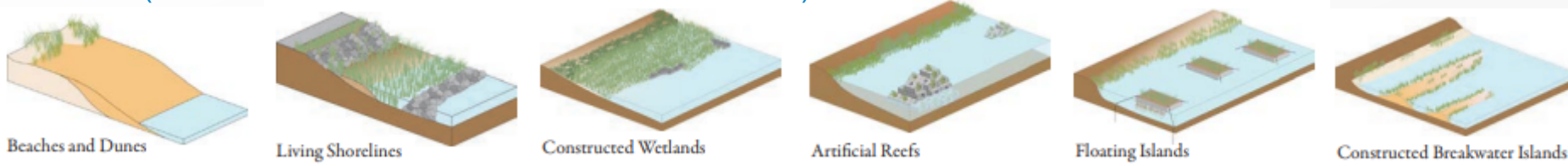
(Credit: Modified from Boston Planning & Development Agency, Coastal Flood Resilience Design Guidelines)

Adaptation Strategies – Landscape Scale

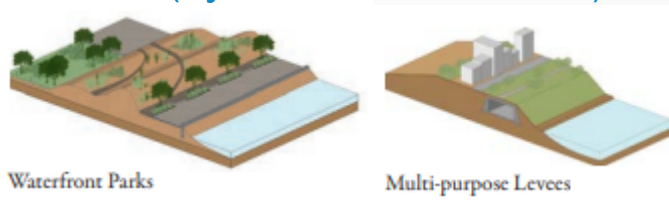
Protect (hardened infrastructure)



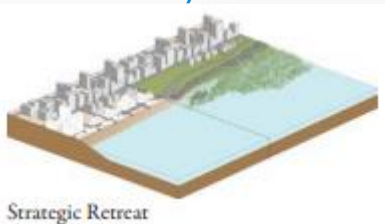
Protect (natural or nature-based infrastructure)



Protect (hybrid infrastructure)



Relocate/Retreat



(Credit: Modified from NYCPlanning, Coastal Climate Resilience Urban Waterfront Adaptive Strategies)



RESILIENT WOODS HOLE

Questions?



Flood Risk Reduction At The Property Scale

*Shannon Hulst
Deputy Director/CRS Coordinator
Cape Cod Cooperative Extension*



Parcel-Level Flood Mitigation Options

February 9, 2022

Shannon Hulst, CFM
Cape Cod Cooperative Extension/Woods Hole Sea Grant

Resilient
Woods Hole

Things to Keep in Mind

Flood insurance implications

50% Rule

- › General
- › Foundations

Historic structure considerations



Structural Changes



Relocation

- › Structure/site
- › Stairs/deck etc. when applicable

Elevation

Fill basement

Wet floodproofing (e.g. flood vents)

Use flood-resistant materials below Base Flood Elevation

Dry floodproofing

Non-Structural Changes

Start with Elevation Certificate

- › Letter of Map Amendment

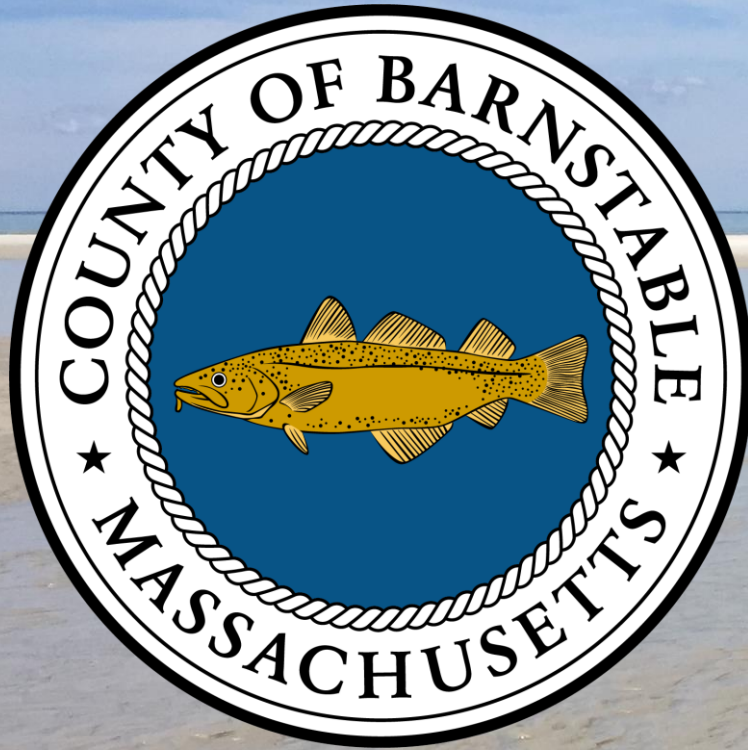
Regrading/positive drainage

Elevate/protect mechanicals & utilities

Emergency measures (e.g. sandbagging)

Barriers





Woods Hole



Sea Grant

Thank You!

Shannon.hulst@barnstablecounty.org
(508) 375-6952



Falmouth Sewer Resiliency Project

*Amy Lowell
Wastewater Superintendent
Town of Falmouth*



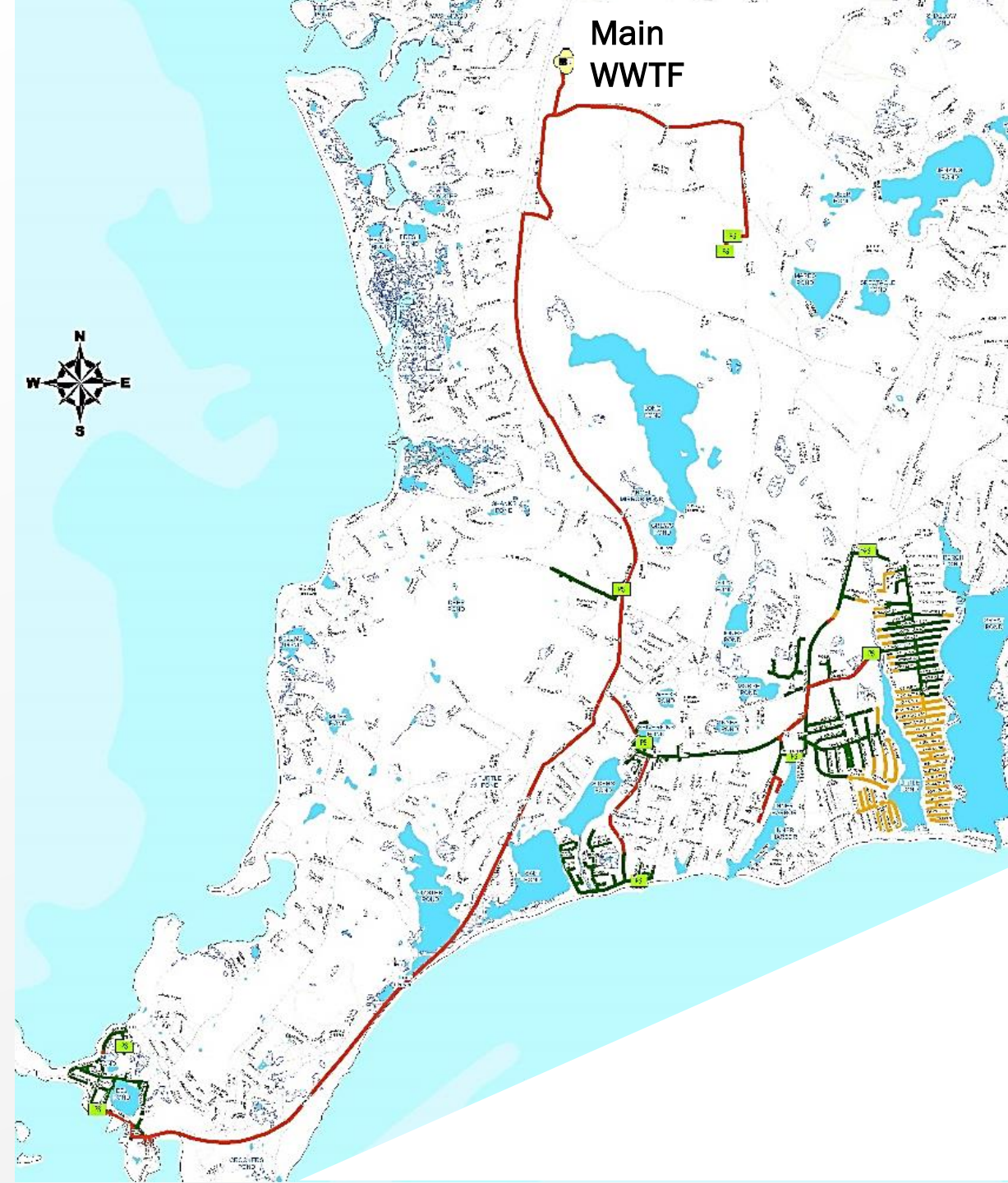
Conceptual Design of Flood Resiliency Improvements for Falmouth Sewer Infrastructure

Resilient Woods Hole Forum

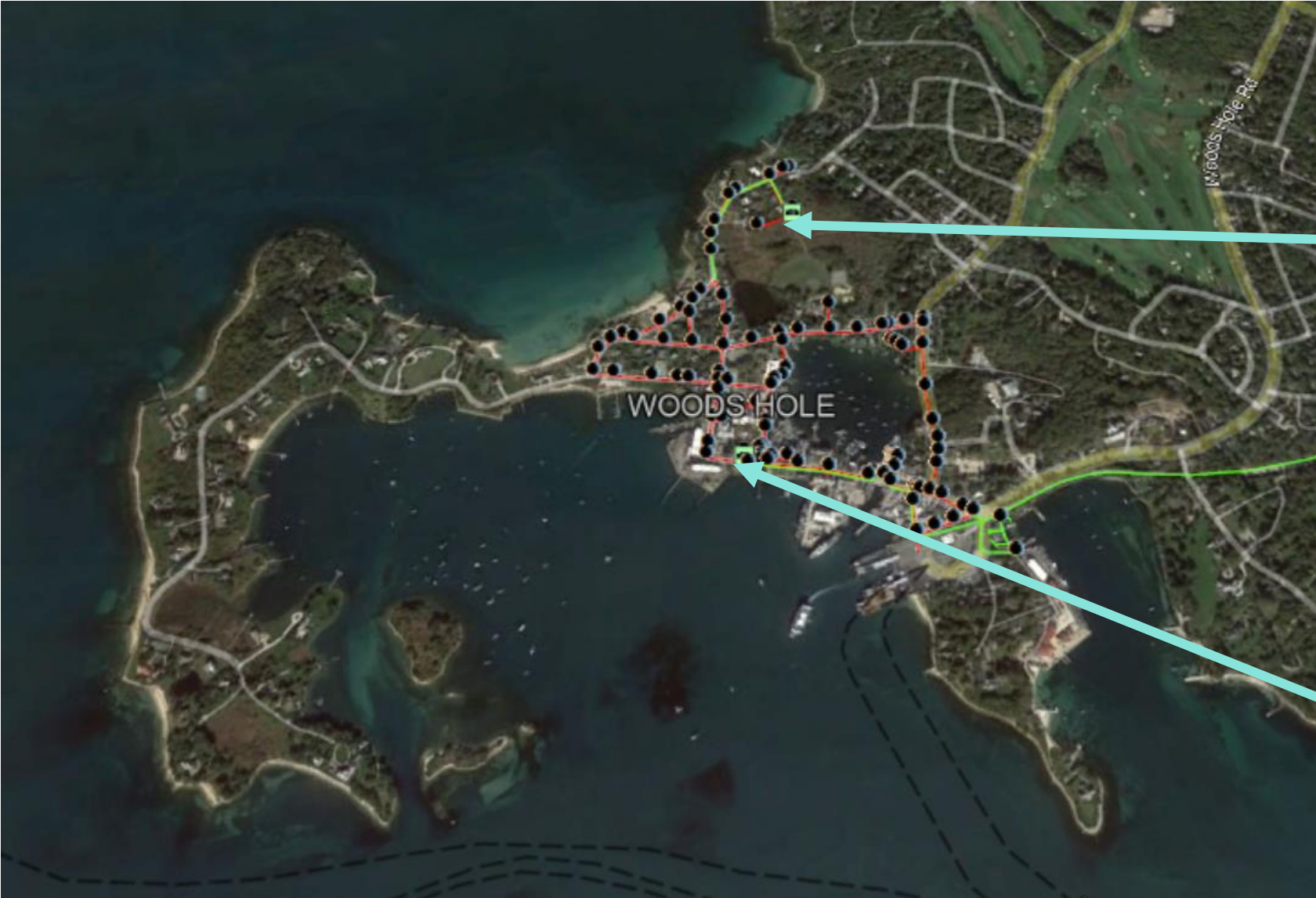
February 9, 2022

Amy Lowell - Wastewater Superintendent

Anastasia Rudenko - GHD



Town Wastewater Infrastructure in Woods Hole



Park Road Lift Station



Water Street Lift Station

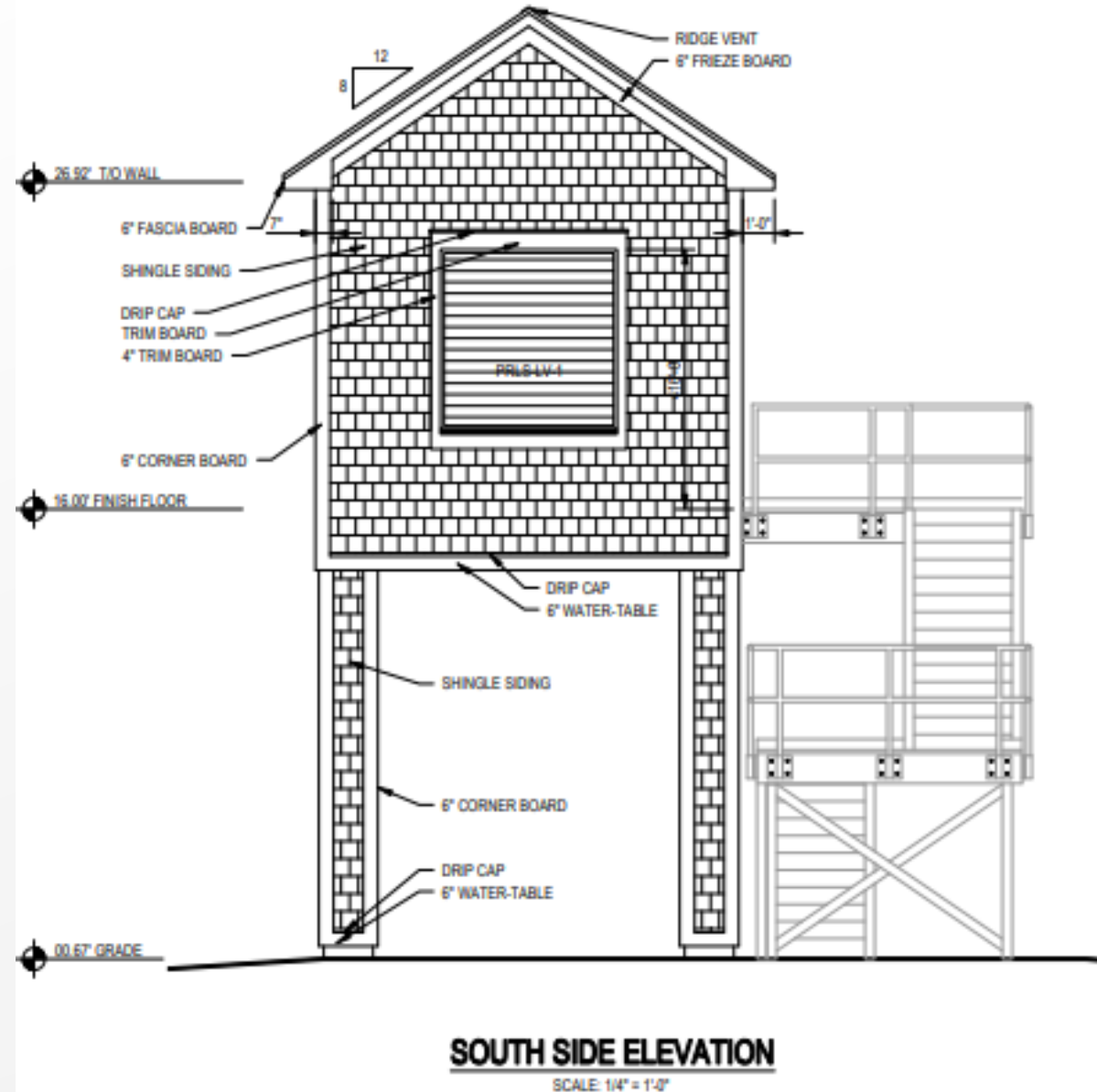


Wastewater System Operation As Sea Level Rises

- Optimum: Continuous operation, even during and immediately after flood events.
- Will not be possible under some flood conditions because:
 - Equipment will get damaged by flood water and/or
 - System will be overwhelmed (pipes full of flood water; pumps cannot keep up)
- Evaluating options to maintain operations in year 2030, 2050, 2070
- Options provide different levels of flood protection and operability at different costs (pros and cons)

Options for Park Road Lift Station

- Nature-based solutions to protect station
- New elevated lift station
- Flood-proof existing lift station
- New package submersible lift station
- Eliminate lift station - convert gravity system to low pressure (grinder pump) system



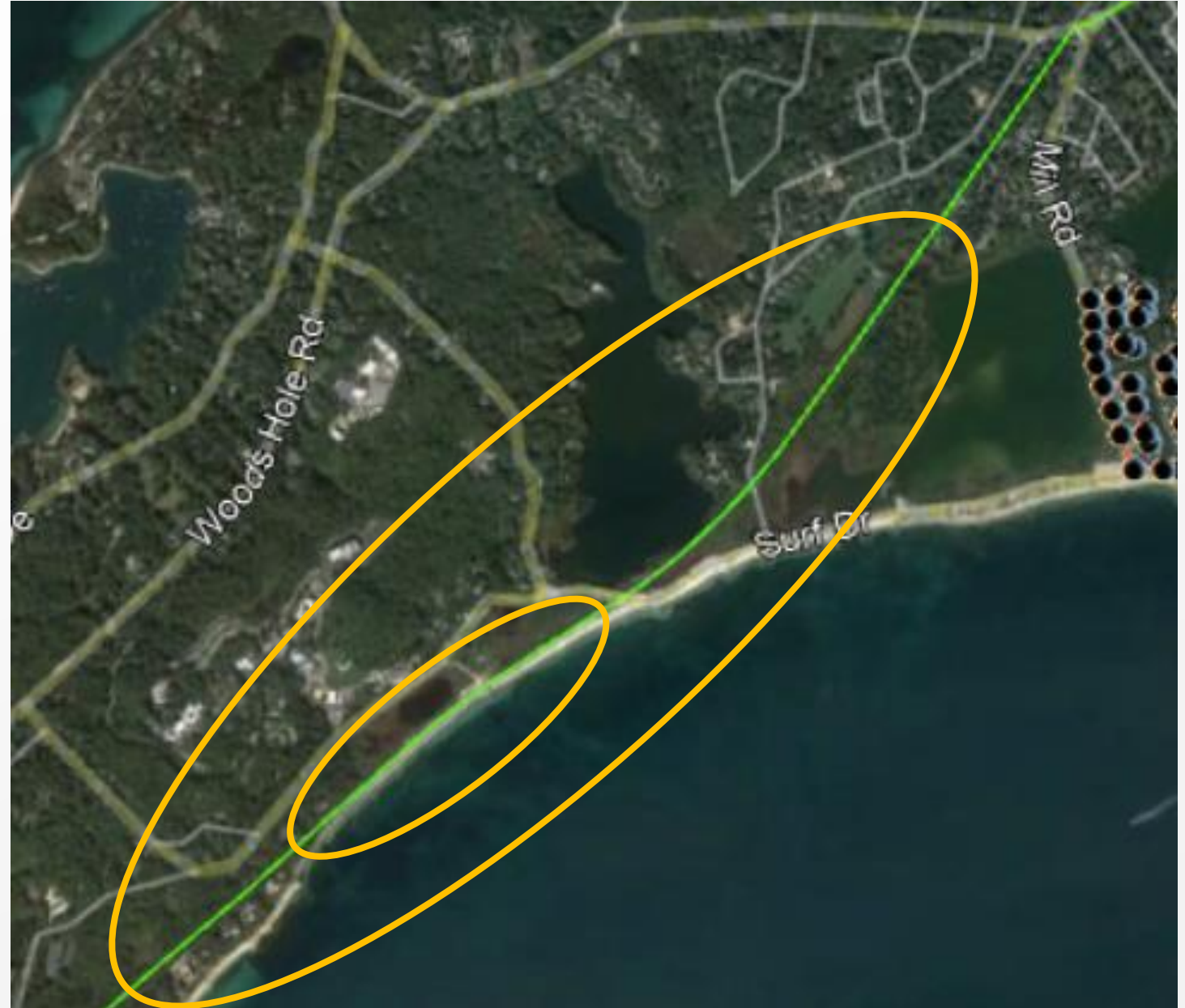
Options for Water Street Lift Station

- Structural reinforcement
- Elevation of critical components
- Flood doors
- Waterproofing/sealing
- Nature-based solutions



Options for Woods Hole Force Main

- Relocation
 - What length to relocate?
 - What new route?
- Nature-based solutions



Interested?

Please join us in the
“sewer planning break out session” later
during this forum

email: amy.lowell@falmouthma.gov



RESILIENT WOODS HOLE

Breakout Sessions

Workshop Phase: Input Breakout Rooms



Room A: Important Features

Host: Brittany Hoffnagle

- What is important in Woods Hole?

<https://tinyurl.com/RWHimportant>



Room C: Adaptation Strategies and Vision

Host: Nasser Brahim

- Which strategies do you support?
- What else would benefit Woods Hole?

<https://tinyurl.com/RWHadaptation>



Room B: Flooding (Past, Present, Future)

Host: Joe Famely

- Where have you observed flooding?
- How is it impacting Woods Hole?

<https://tinyurl.com/RWHflooding>

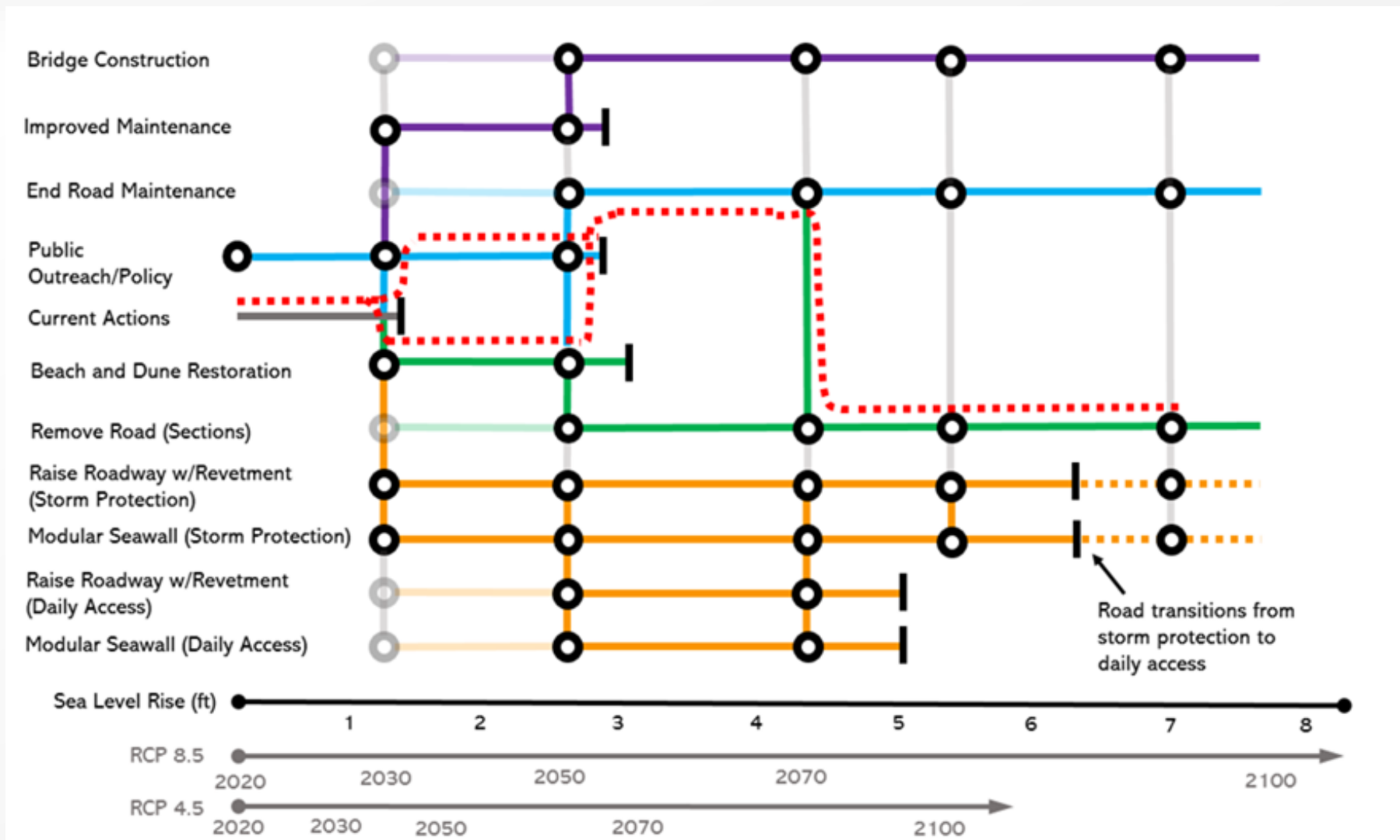
RESILIENT WOODS HOLE



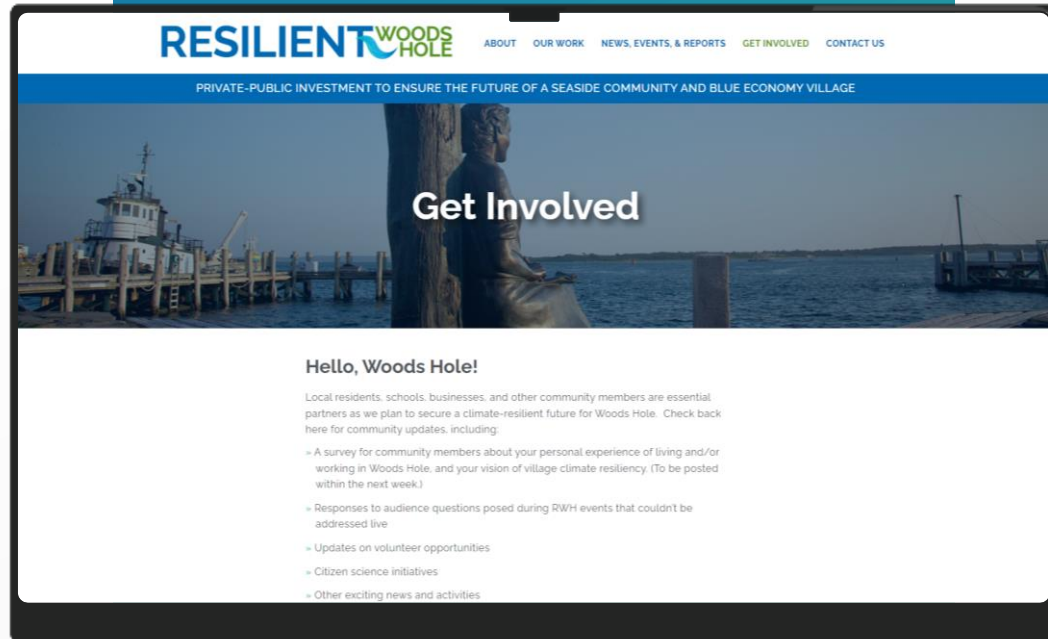
RESILIENT WOODS HOLE

Next Steps

What's next for ResilientWoodsHole?



How do I engage further?



<https://resilientwoodshole.org/>

Input Map: Important Features

tinyurl.com/RWHimportant

Input Map: Adaptation and Vision

tinyurl.com/RWHadaptation

Input Map: Flooding

tinyurl.com/RWHflooding

Stakeholder Input Survey

tinyurl.com/SurveyRWH



RESILIENT WOODS HOLE

Thank you