CITY OF MANHATTAN BEACH CITY HALL
1400 Highland Avenue, Manhattan Beach, CA 90266

WEBSITE: www.citymb.info • **PHONE:** (310) 802-5000

TO: Honorable Mayor and Members of the City Council

FROM: Carrie Tai, Community Development Director

MEETING: City Council Regular Meeting, November 17, 2020

SUBJECT: Agenda Item No. 15 – Update on Climate Ready Manhattan Beach

DATE: November 17, 2020

SUPPLEMENTAL ATTACHMENT

ATTACHMENT(S):

1) PowerPoint Presentation

CLIMATE READY MANHATTAN BEACH

NOVEMBER 17, 2020

CLIMATE READY MANHATTAN BEACH

Assessment

- Sea Level Rise (SLR) Vulnerability & Hazards Assessment
- SLR & Beach Erosion Analysis
- Groundwater & SLR Hazard Analysis
- Multi-hazard Confluence Modeling on Stormwater Infrastructure
- Greenhouse Gas (GHG) Emissions Inventory

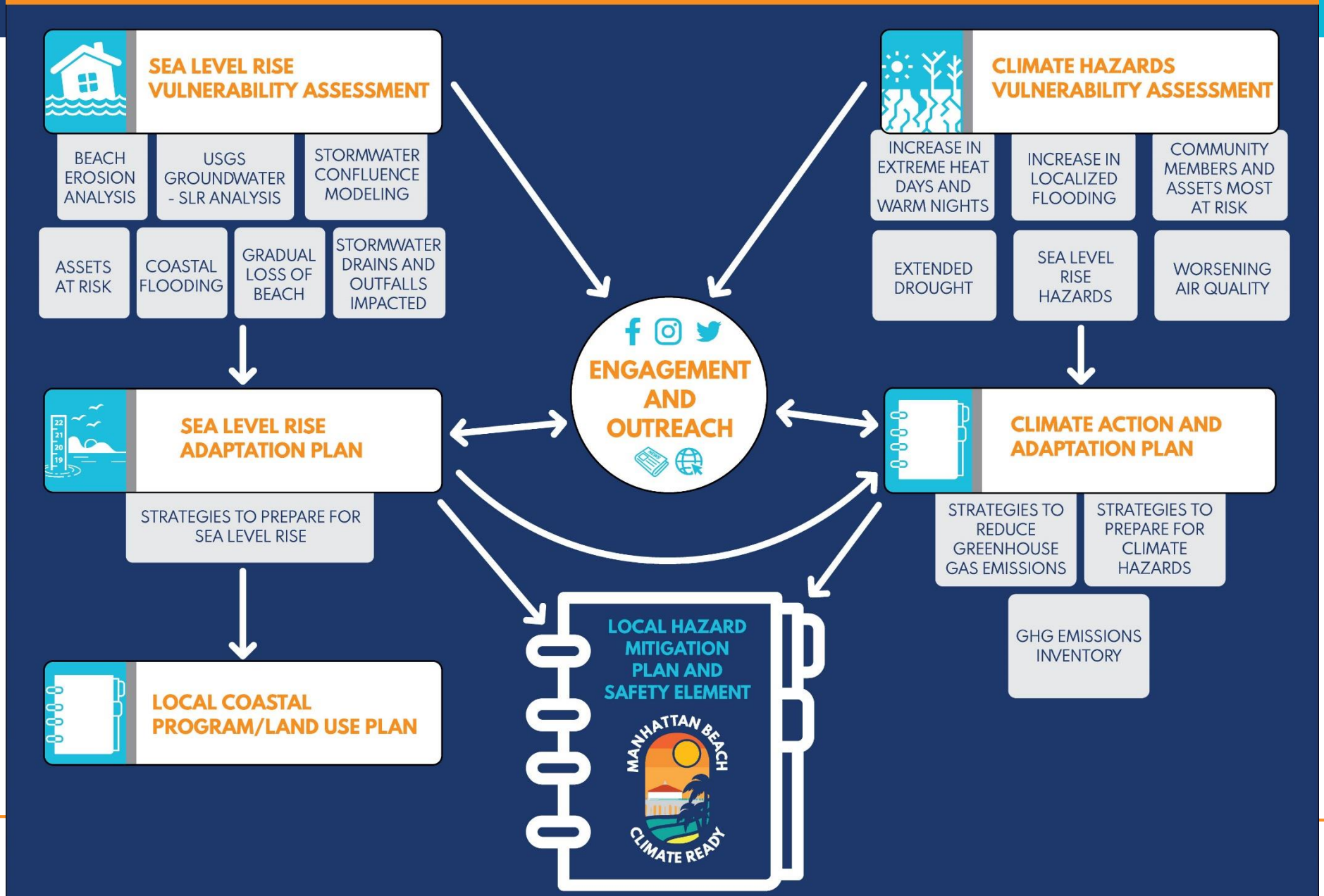
Public Engagement

- Public Engagement Strategy
- Virtual Reality → Look Ahead MB
- Public Surveys, Focus Groups, & Workshops

Action

- Beach Dune Restoration
- Climate Action & Adaptation Plan
- Local Hazards Mitigation Plan Update
- General Plan Safety Element Update
- Local Coastal Program - Land Use Plan Update

CLIMATE READY MB PROCESS

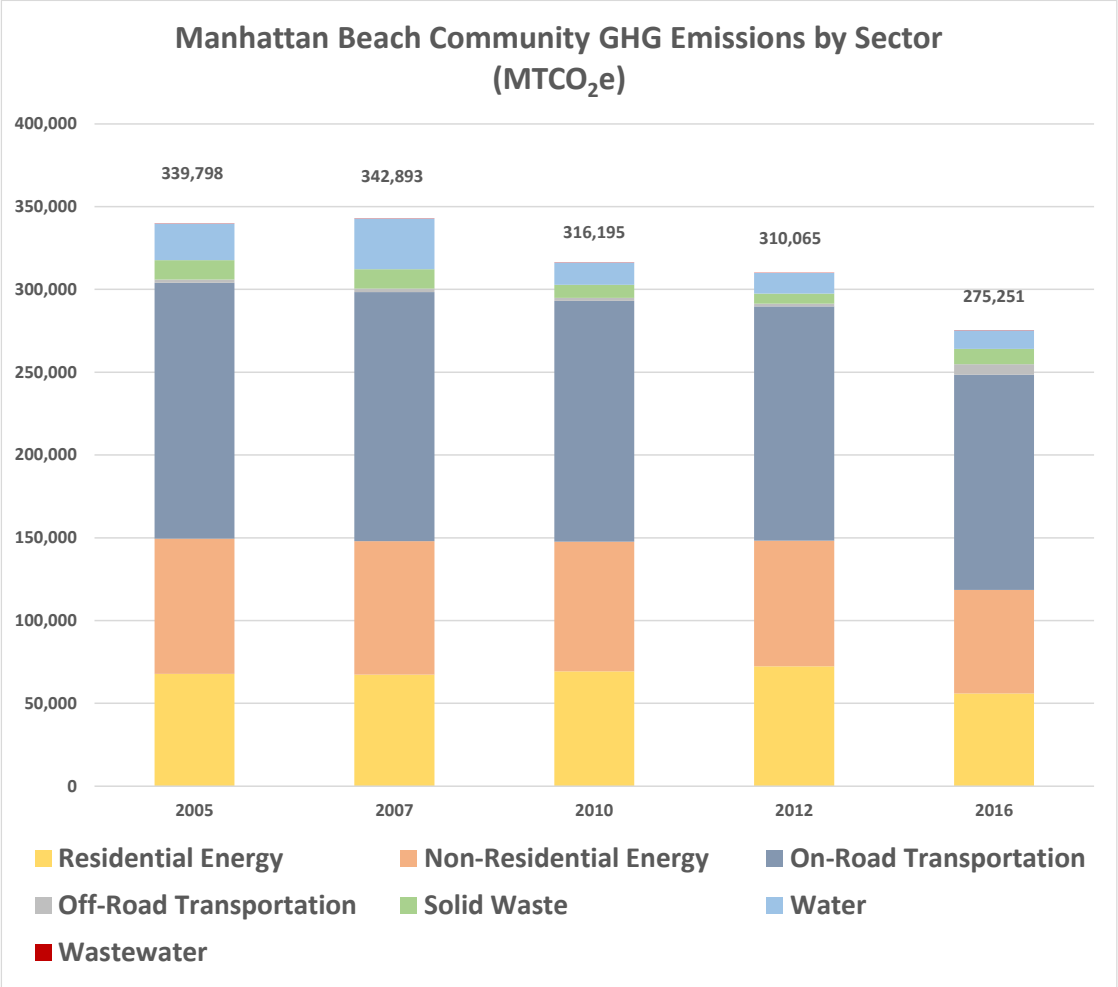


MANHATTAN BEACH GHG EMISSIONS

Manhattan Beach GHG Emissions Since 2005

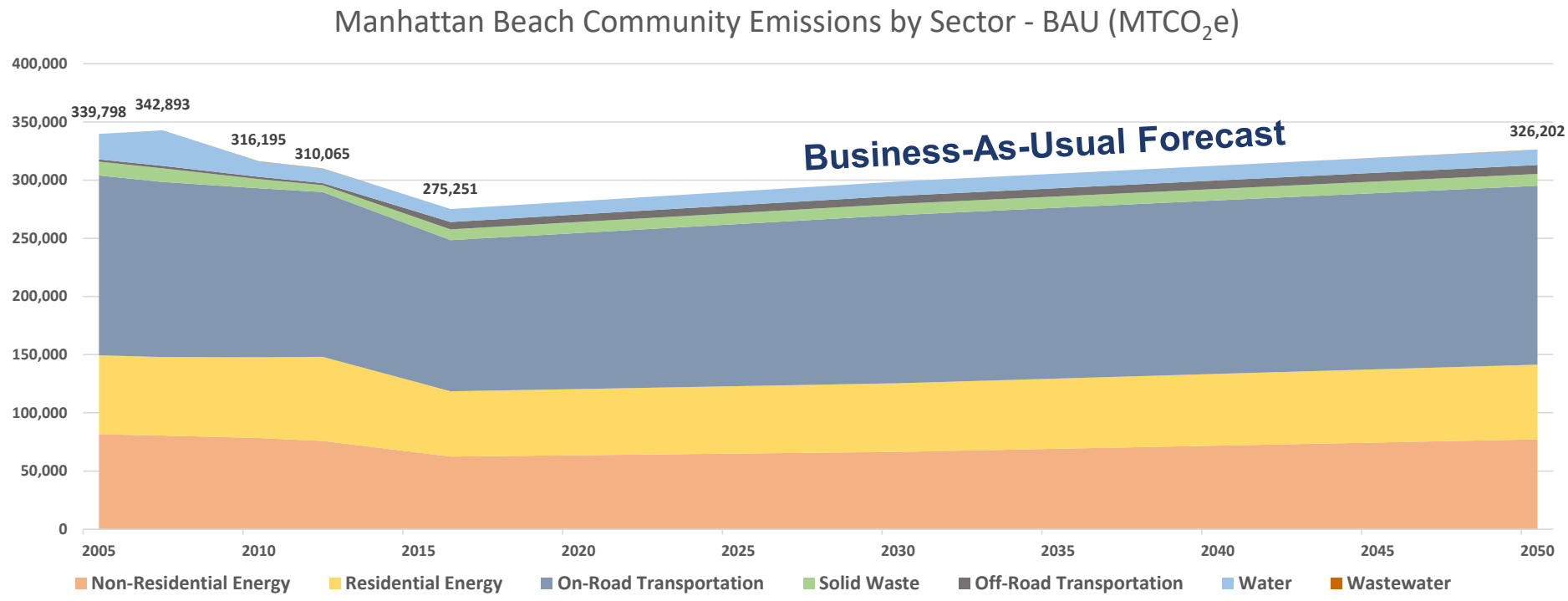
Preliminary Results

- 9% reduction from 2005 to 2012
- 19% reduction from 2005 to 2016
- Transportation = largest contributor, followed by building energy use



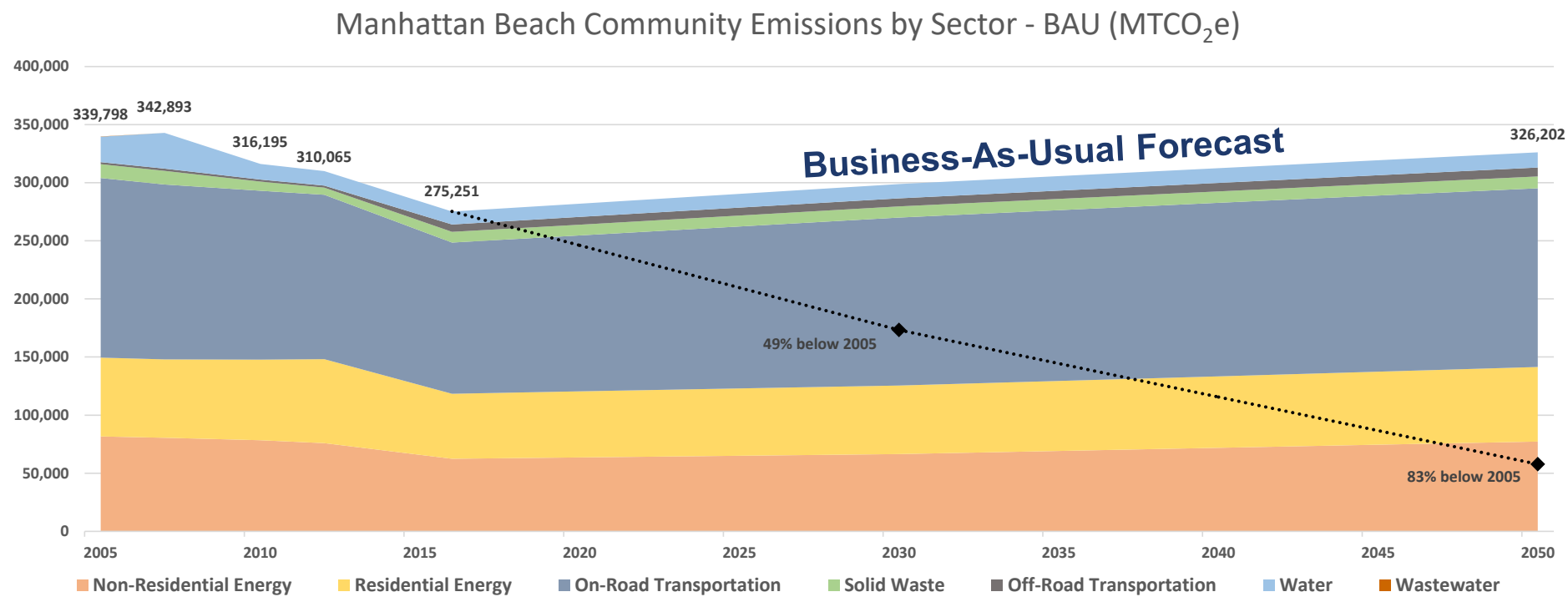
MANHATTAN BEACH GHG EMISSIONS

Manhattan Beach GHG Emissions: Inventory and Forecast



MANHATTAN BEACH GHG EMISSIONS

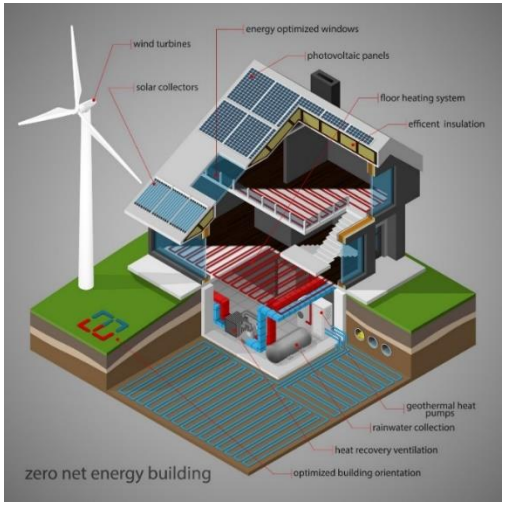
Manhattan Beach GHG Emissions: Draft Targets

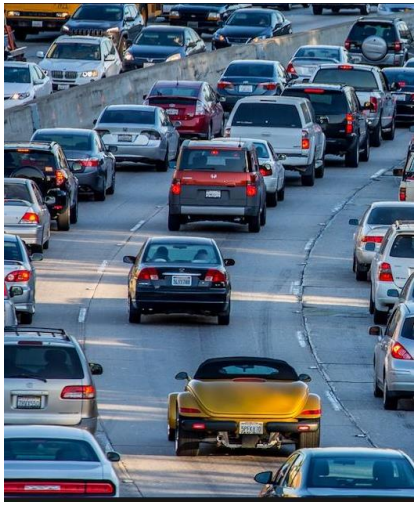


CA GHG EMISSIONS REDUCTIONS

State of California Actions to Reduce GHG Emissions

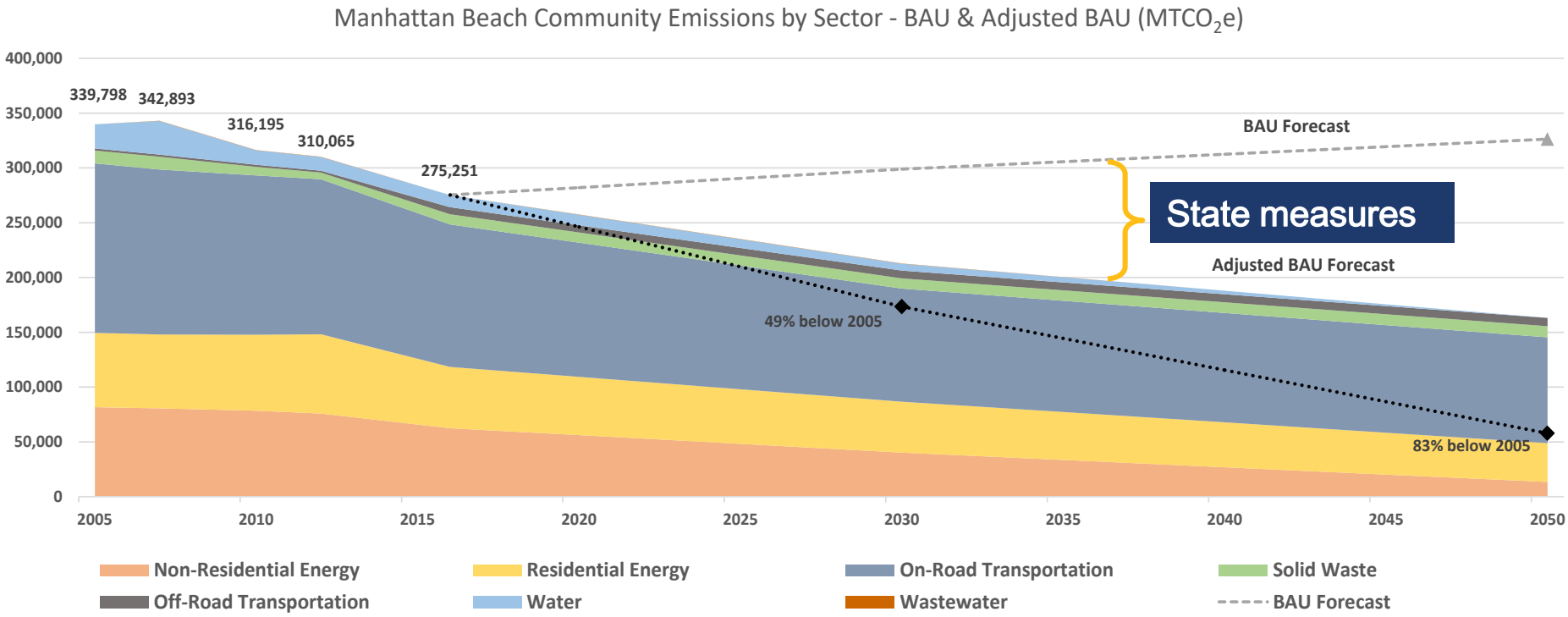
- Passenger Vehicle efficiency standards (Pavley; Advanced Clean Cars)
- Low Carbon Fuel Standard (LCFS)
- Renewables Portfolio Standard (RPS)
- Title 24 Building Energy Standards
- Solid Waste Diversion Mandates





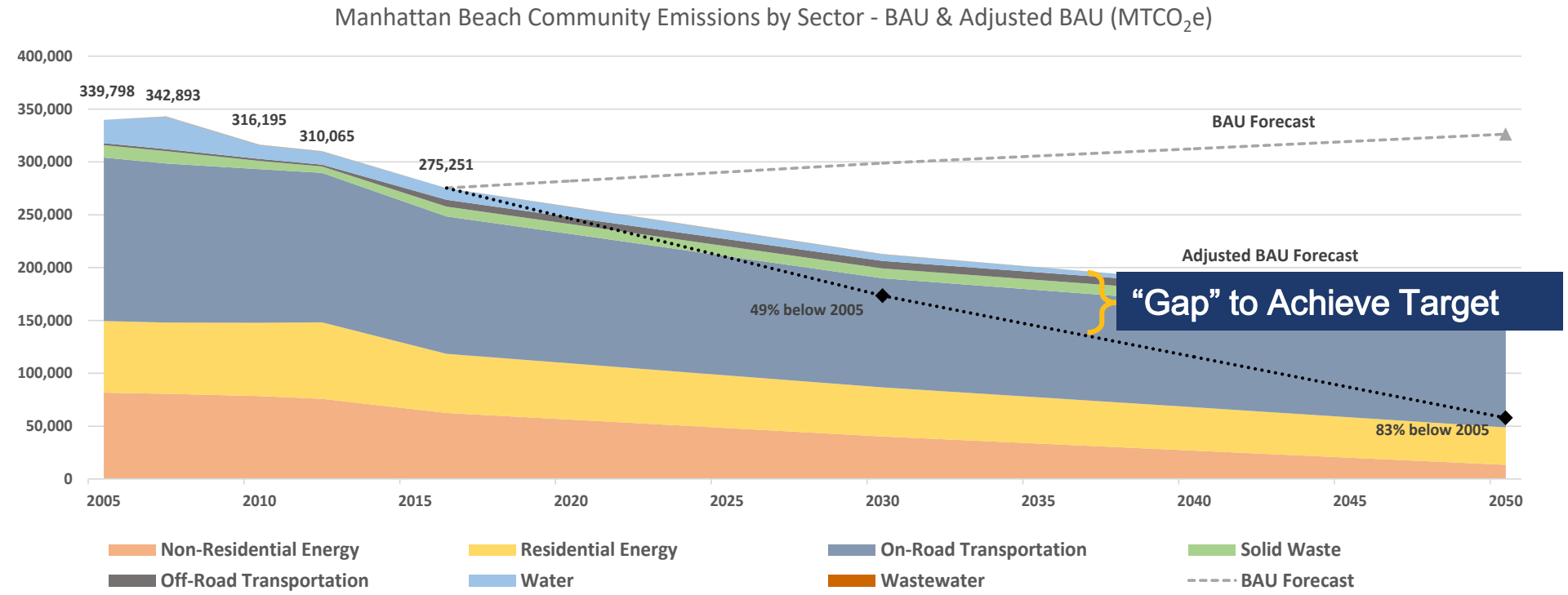
MB GHG EMISSIONS – STATE ACTIONS

Manhattan Beach GHG Emissions: Reductions from State Measures



MB GHG EMISSIONS – LOCAL ACTION

Manhattan Beach GHG Emissions: Reductions Needed from Local Measures



CLOSING THE EMISSIONS GAP

Closing the Gap: Regional Measures to Reduce GHG's

- LA Metro stations
- Express Lanes/Congestion Pricing
- Goods movement measures
- Regional EV plans

CLOSING THE EMISSIONS GAP

Closing the Gap: Local Measures to Reduce GHGs

- Local energy efficiency programs
- Local rooftop solar installations
- Community Choice Aggregation (CPA)
- Bike and pedestrian infrastructure
- EV charging stations
- Local transit improvements; support
- Transit-oriented development (TOD)
- Transportation demand management programs
- Organic waste collection/diversion
- Carbon sequestration
- Shade trees/heat island reduction

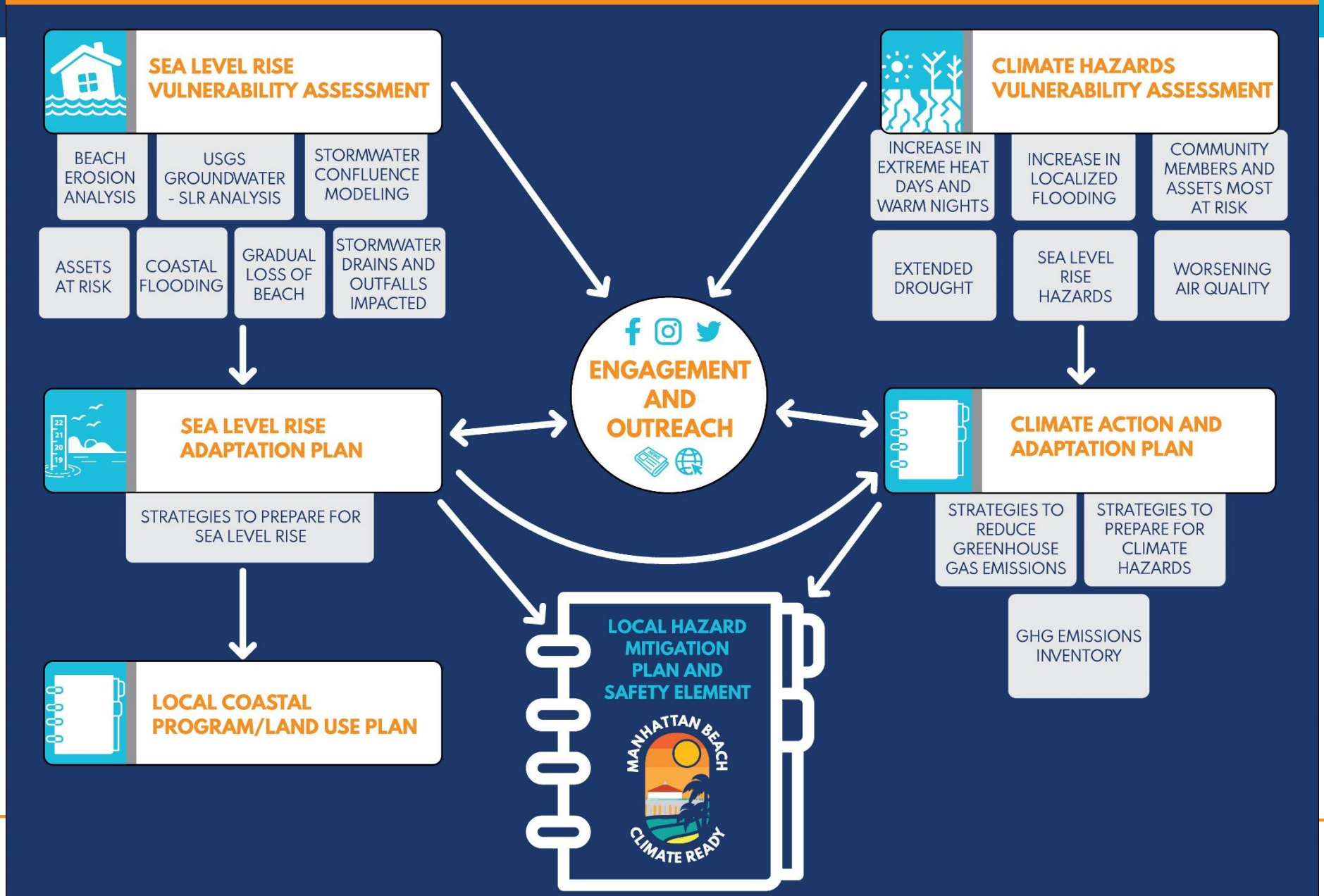
CLIMATE ACTION & ADAPTATION PLAN

MB Climate Action & Adaptation Plan

Preliminary Goals and Objectives

- Enable CEQA streamlining: Align with state GHG targets and facilitate CEQA review of future development projects
- Increase resilience to climate change
- Identify and emphasize co-benefits, including cost savings, business opportunities, public health, equity and environmental stewardship

CLIMATE READY MB PROCESS



Current Vulnerabilities

1980's El Niño event showing waves at the Manhattan Beach Pier

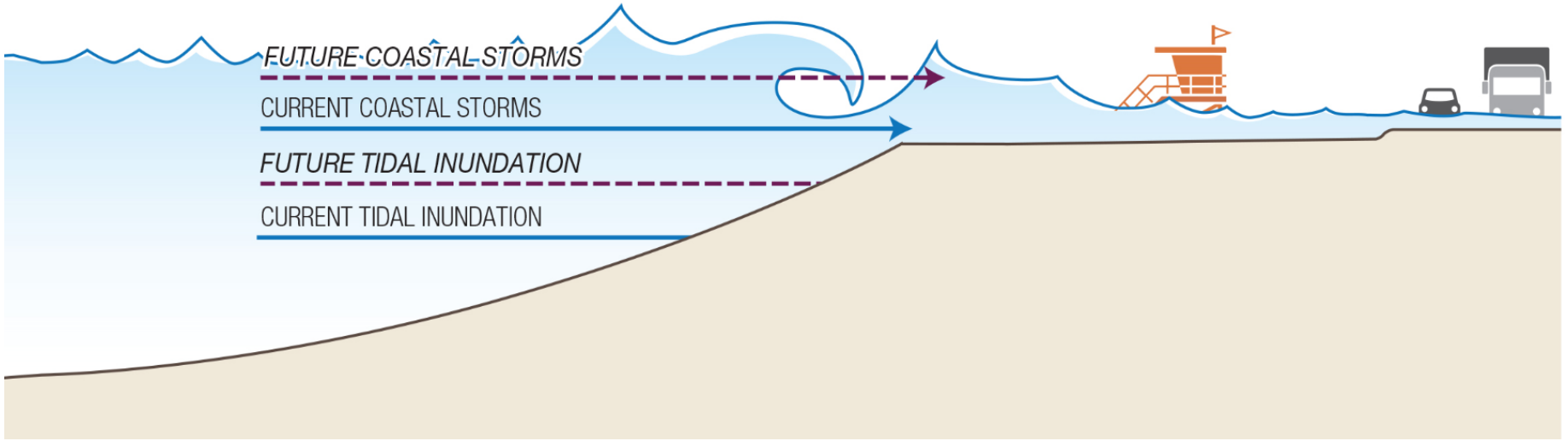
2020 king tide event

CLIMATE READY MANHATTAN BEACH

Sea Level Rise Projections

Scenario	Probability SLR meets or exceeds by 2100	Potential Amount of Sea Level Rise (ft)
Existing conditions	N/A	0
Low	50%	2.5
Medium - Low	5%	4.1
Medium - High	1%	5.7
High	0.5%	6.6
Extreme	unknown	9.8

Sea Level Rise Impacts



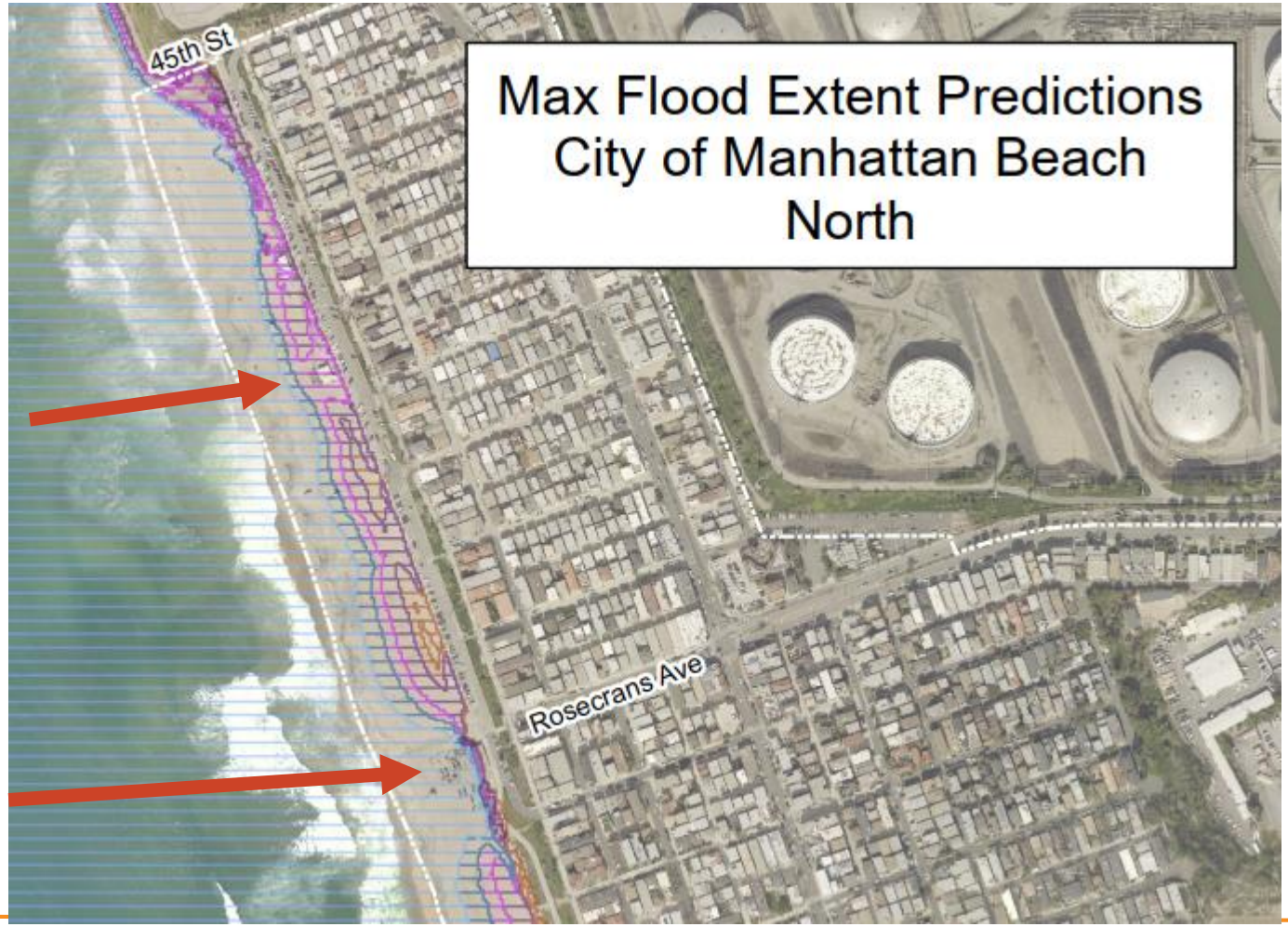
NOTE: Sea, tide, and storm surge levels are for illustrative purposes only and do not depict actual or projected levels.

CLIMATE READY MANHATTAN BEACH

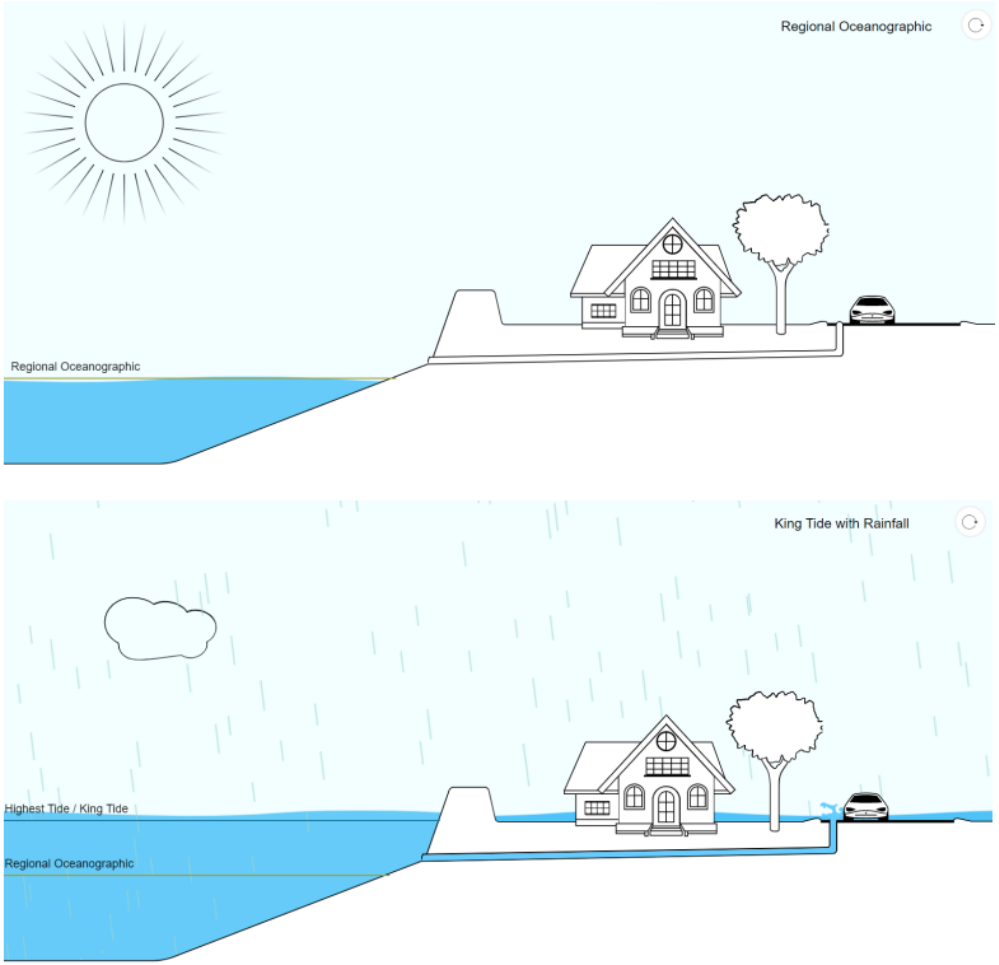
Sea Level Rise Impacts

Food Stand and Rentals

Bathrooms and Parking

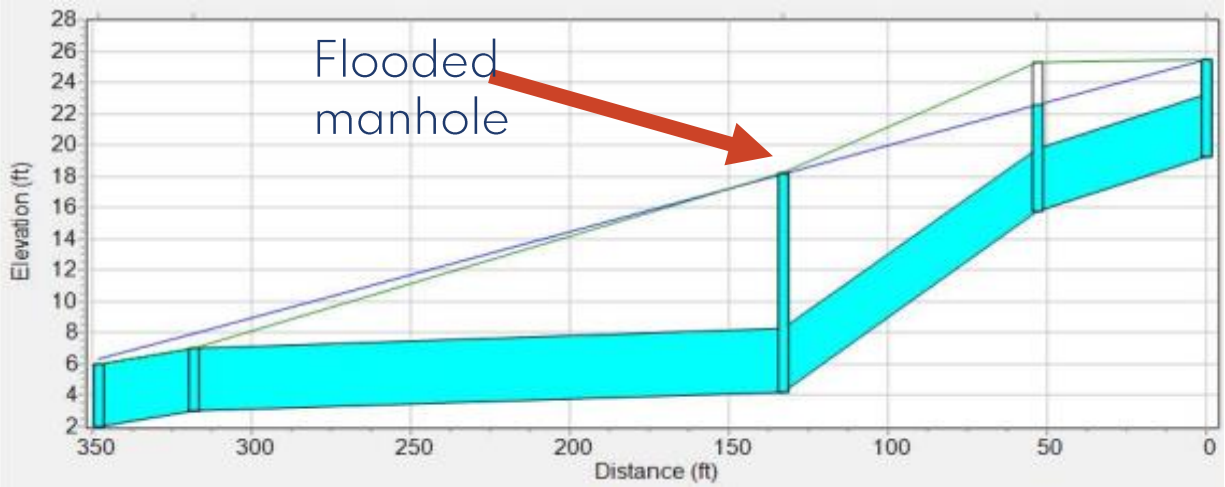


Stormwater Flooding



CLIMATE READY MANHATTAN BEACH

Stormwater Confluence Results

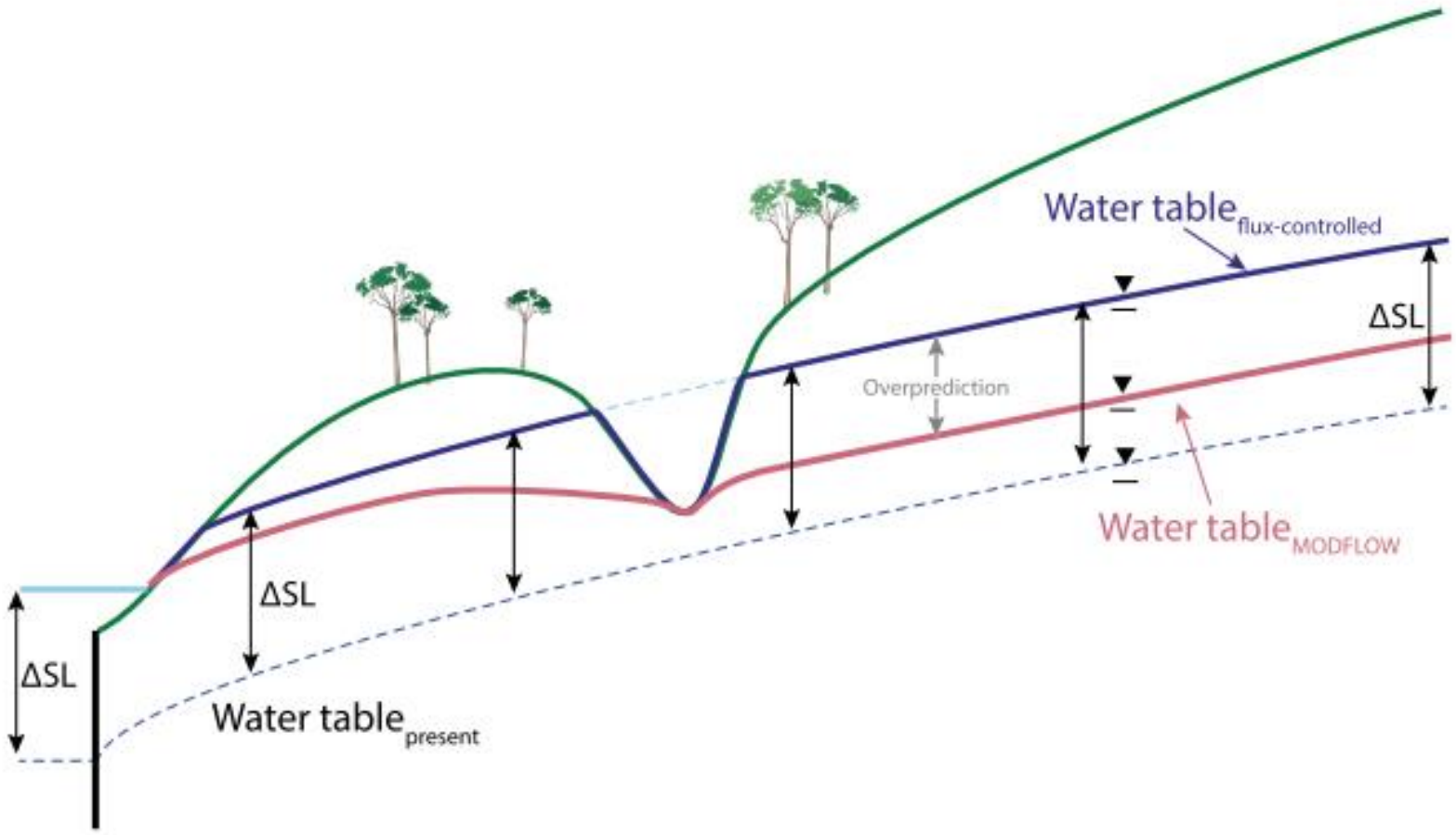


Stormwater outfalls

Beach Erosion

Year	Total beach width (ft)	% Loss
2020	370	0%
2030	360	2%
2040	350	5%
2050	330	11%
2060	310	16%
2070	290	22%
2080	260	29%
2090	230	37%
2100	200	47%

Groundwater Flooding



VIRTUAL REALITY – LOOK AHEAD MB

LOOK AHEAD MANHATTAN BEACH

Visualizing Sea Level Rise & Climate Solutions

www.citymb.info/ClimateReadyMB

MANHATTAN BEACH CLIMATE READY

ClimateAccess

USGS science for a changing world

WHITESPACE

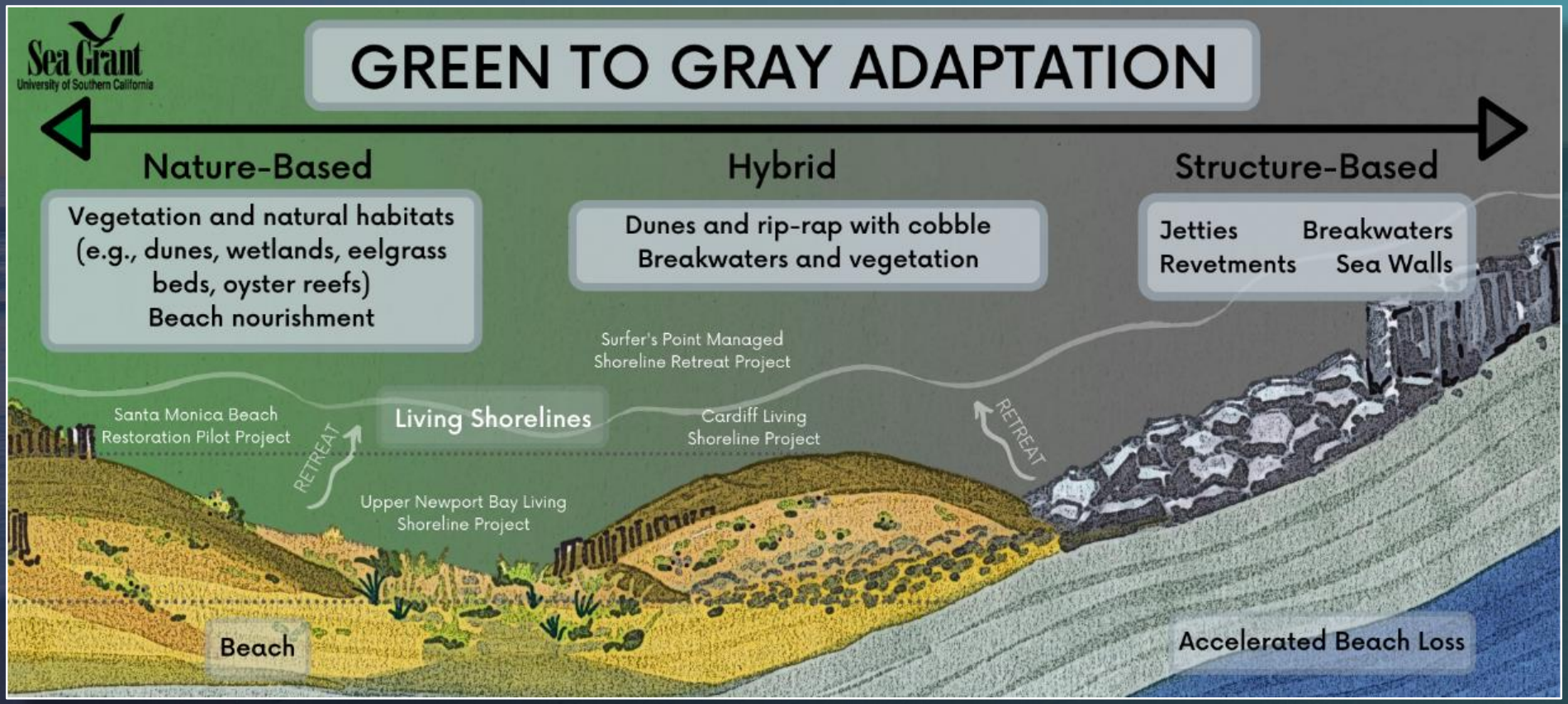
Manhattan Beach Dune Restoration Project

Karina Johnston
Science Director, The Bay Foundation

Chris Enyart
Watershed Program Manager, The Bay Foundation


manhattan beach, ca
18 -118.4195 33.8965
Pan Zoom
Draw Report
GIS File Report
Known Issues
King Tides
Get Data
Print Map
Manhattan Beach
Bruce's Beach
County Lifeguard Station
Flooding Vulnerability
2100 sea level rise +
20-year storm event
USGS
www.ourcoastourfuture.org
CoSMoS

MANHATTAN BEACH
CLIMATE READY



Replicated from: Grifman, Grubbs, and Johnston 2020
Credit: M. Grubbs, USC Sea Grant adapted from NOAA 2015

Adaptation Strategy: Living Shorelines Provide Protection from Climate Change

1. Kelp forests, oyster beds, and eelgrass habitats
2. Beaches, foredunes, and wetlands
3. Coastal bluffs and back dunes

Benefits and Ecosystem Services

- Buffer effects of sea level rise and storm erosion
- Sediment / sand retention
- Infrastructure protection
- Recreational opportunities / education
- Carbon sequestration
- Support wildlife and rare species
- Nutrient cycling

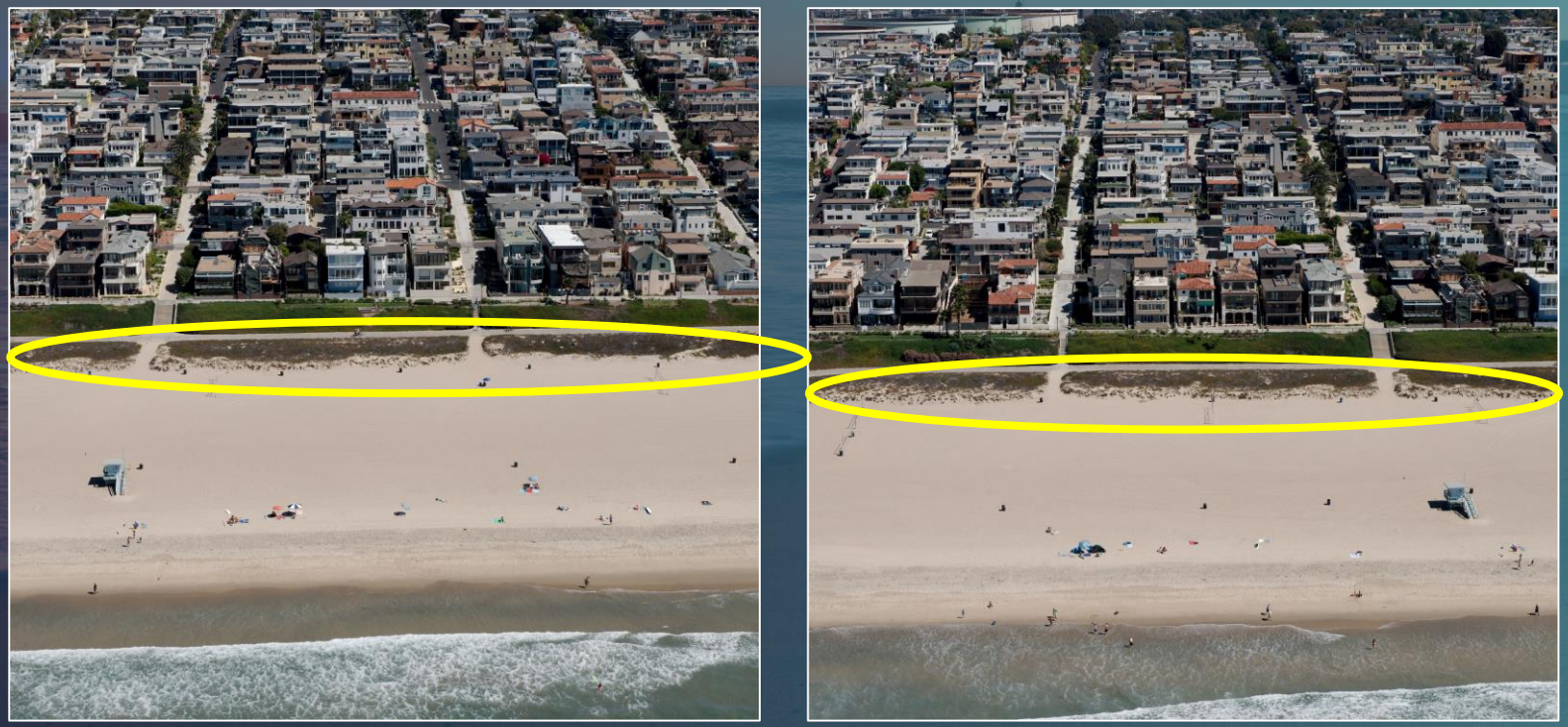
THE BAY FOUNDATION

Manhattan Beach Dune Restoration Project

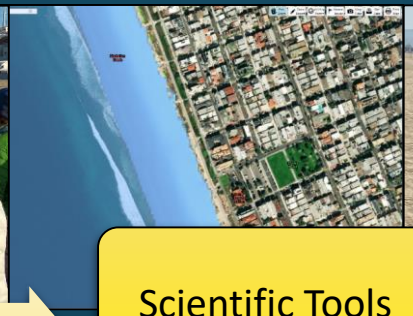
EXISTING CONDITIONS

Overall Site

N 1" = 250'



Dune Public Comments Video
www.santamonicabay.org



Stakeholder Engagement

Scientific Tools and Monitoring

Planning and Design

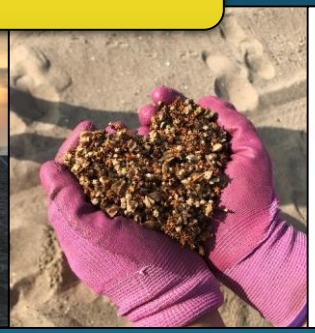
Permitting

Implementation

aintenance and Monitoring

Over 40 public comments received to date – all being incorporated

THE BAY FOUNDATION



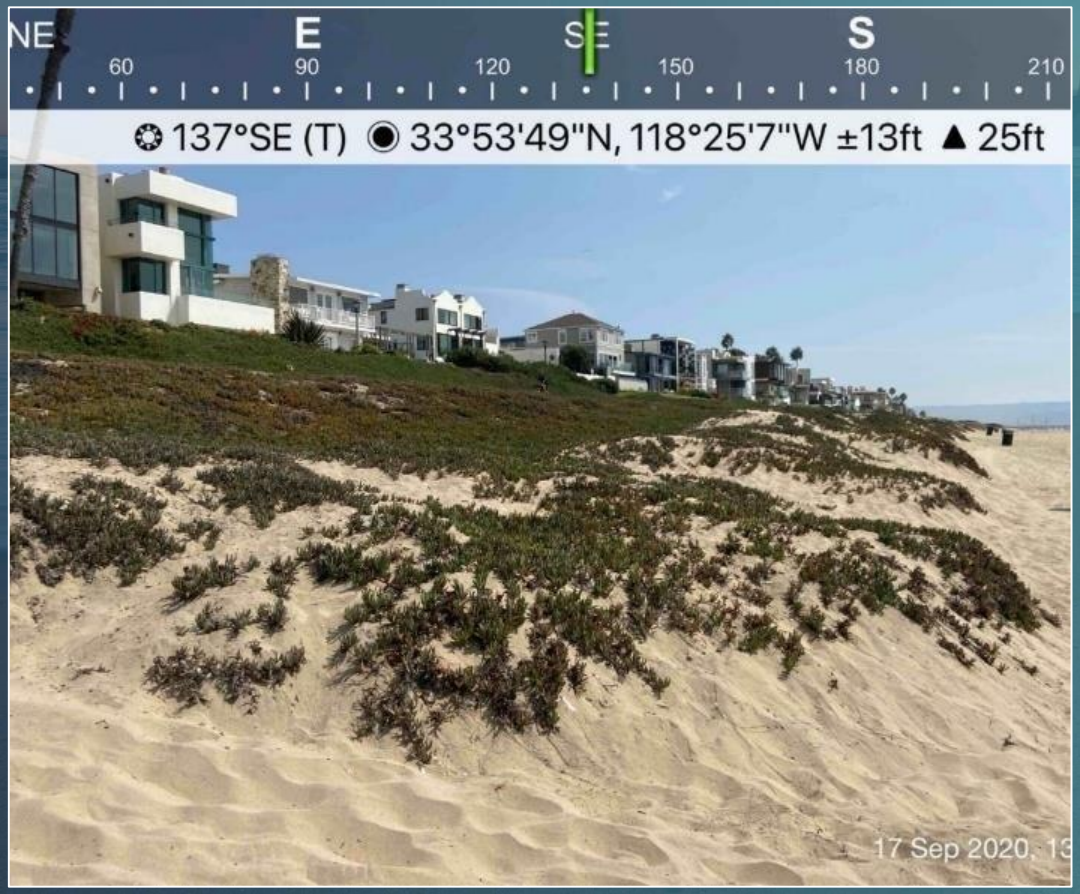
MANHATTAN BEACH SINCE 1912

CALIFORNIA COASTAL COMMISSION


THE
BAY FOUNDATION


W
NW
N
NE
E
270
300
330
0
30
60
90
358°N (T) 33°53'55"N, 118°25'9"W ±141ft ▲ 25ft


THE
BAY FOUNDATION


NE
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137°SE (T) 33°53'49"N, 118°25'7"W ±13ft ▲ 25ft
17 Sep 2020, 13


1:25 / 1:43

City of Manhattan Beach's Official Flower Beach Evening Primrose

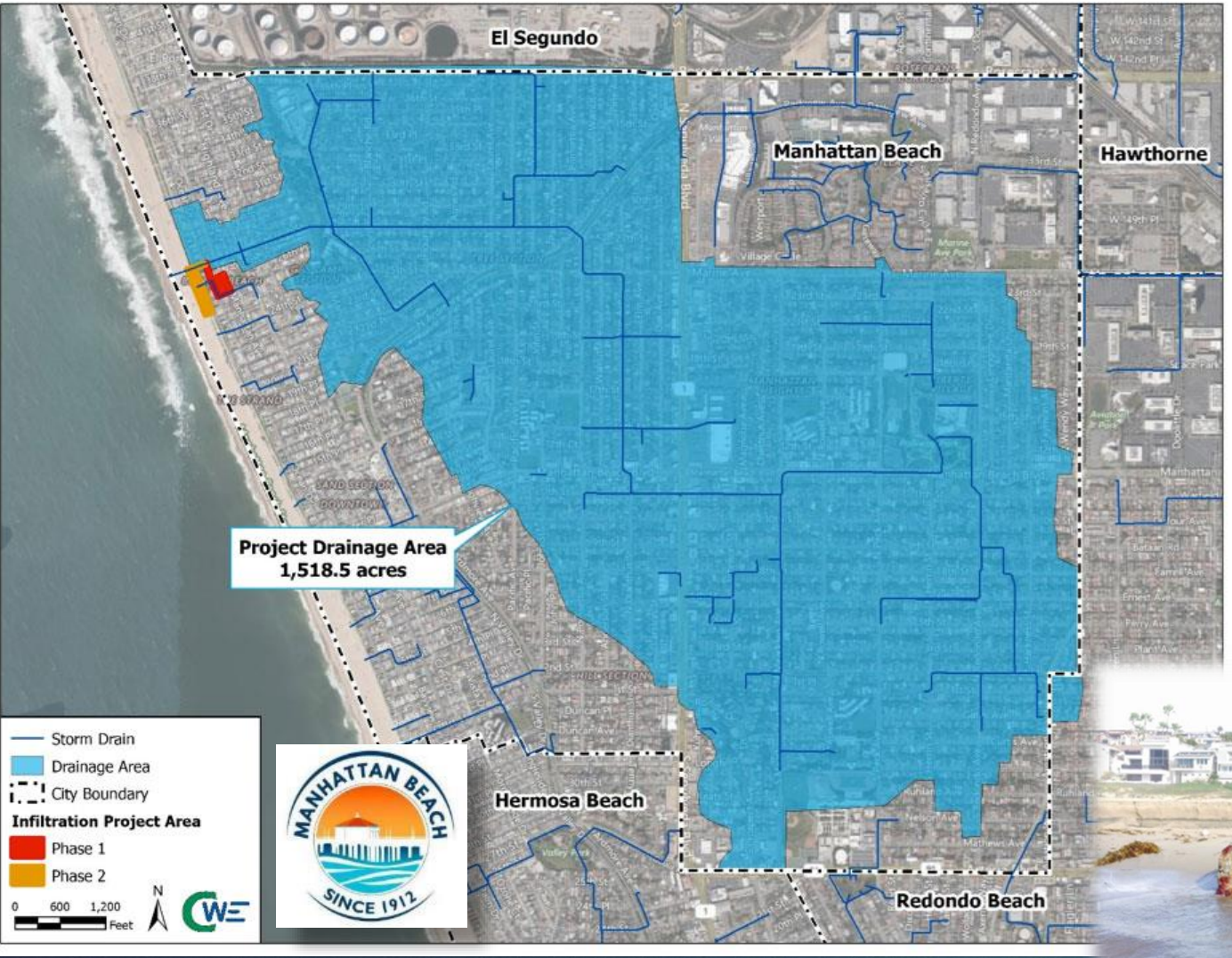
THE BAY FOUNDATION

Urban Tides Walks

Pictures of a restored dune in Santa Monica

Stormwater

- $5.5M allocated over the next five years
- Regional infiltration project – planning stage
- Strand infiltration project – feasibility stage
- Storm Drain Master Plan



Collaboration and Support is Vital

City of Manhattan Beach, The Bay Foundation, LA County Department of Beaches and Harbors, USGS, CA Coastal Conservancy, CA Coastal Commission, Beach Ecology Coalition, LA County Lifeguards, LA County Department of Public Works, USC Sea Grant Program and AdaptLA, Coastal Municipality Partners, Loyola Marymount University's Coastal Research Institute, MB Sustainability Task Force, Green Cities CA, Heal the Bay, Sen. Ben Allen, members of the public!

Thank you, Partners!

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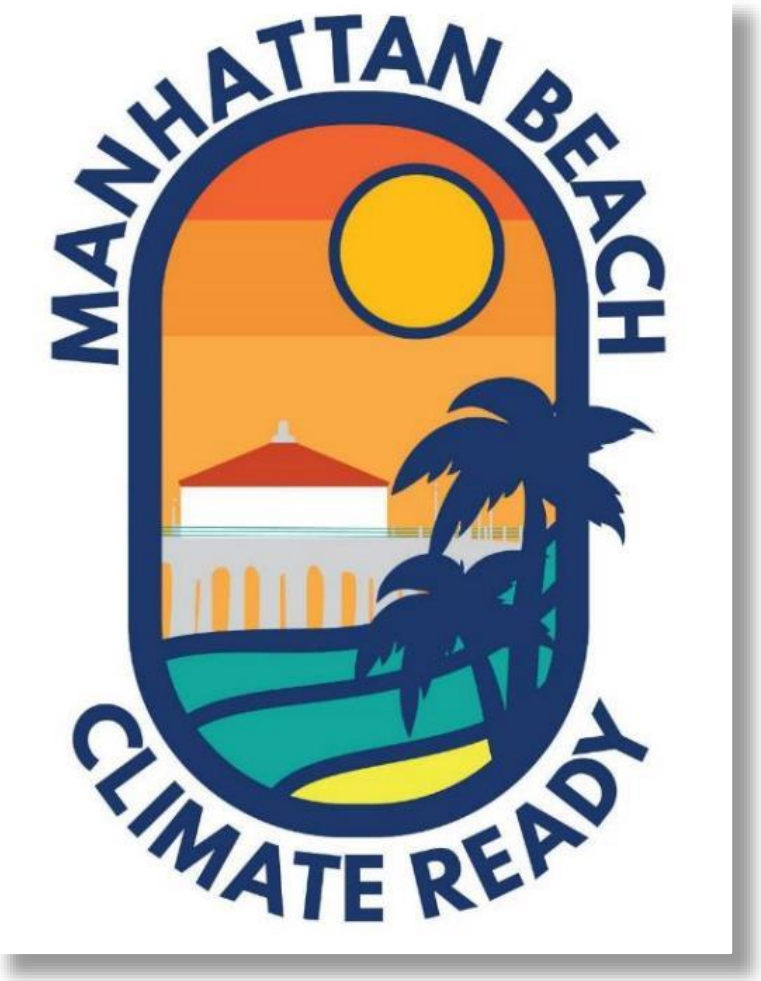
PUBLIC ENGAGEMENT STRATEGY

- Sustainability Task Force assistance
- Engage diverse participation and communities disproportionally vulnerable to climate change
- Create community empowerment
- Increase awareness of climate change hazards
- Educate on individual carbon footprint
- Collaborate on developing strategies
- Increase understanding of climate science

PUBLIC ENGAGEMENT STRATEGY



- Focus group meetings
- Look Ahead Manhattan Beach Virtual Reality
- Community workshops
- Sustainability Task Force meetings
- Meetings with appointed and elected officials

NEXT STEPS

- Gather input to inform sea level rise vulnerability assessment and climate action & adaptation plan
- Focus Groups & Virtual Public Workshops starting in February 2021
- Look Ahead Manhattan Beach Virtual Reality and Survey

www.citymb.info/ClimateReadyMB