



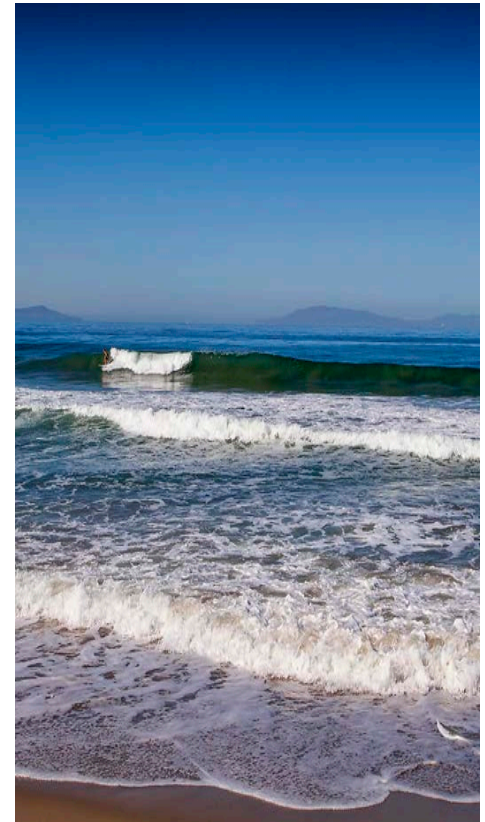
# LOCAL COASTAL PLAN UPDATE

March 14, 2018

ADAPTATION STRATEGY RESULTS  
CONCEPTUAL SEA LEVEL RISE & ADAPTATION POLICIES

# Agenda

- I. Local Coastal Program (LCP) Overview**
- II. Next Steps and Schedule**
- III. Coastal Hazards Review**
- IV. Vulnerability Assessment Review**
- V. Adaptation Strategy Results**
- VI. Conceptual SLR & Adaptation Policies**
- VII. LCP Policy Next Steps**



# Introductions: City and Consultant Team

## ▶ **Development Services**

- *Planning Division*

## ▶ **Rincon Consultants**

- *Project management*
- *Technical Analysis*
- *Environmental Analysis*
- *Policy Development*

## ▶ **RRM Design Group**

- *Community Engagement*
- *LCP Policy Development*

## ▶ **Revell Coastal**

- *Coastal Hazards Modeling*
- *Adaptation Analysis*

## ▶ **Everest International**

- *Drainage Analysis*
- *Adaptation Analysis*
- *Tsunami modeling*

## ▶ **Dr. Phil King**

- *Economic Analysis*

# I. Oxnard's Local Coastal Program (LCP)

- ▶ 1972, voters approve Proposition 20 “Coastal Zone Conservation Act”
- ▶ 1976, Legislature adopts Coastal Act, funding to develop LCPs.
- ▶ 1982, Oxnard adopts Coastal Land Use Plan (land uses and 95 policies).
- ▶ 1986, Oxnard adopts Chapter 17, Coastal Zoning Ordinance.
- ▶ Various amendments over 30 years.
- ▶ Four Planning Areas:

1. ***McGrath-Mandalay***
2. ***Oxnard Shores***
3. ***Channel Islands Harbor***
4. ***Ormond Beach***

Oxnard, California Code of Ordinances

CHAPTER 17: COASTAL ZONING

ARTICLE I. GENERAL PROVISIONS

17.1. Title

17.2. Purpose

17.3. Definitions

17.4. Establishment of coastal sub-zone districts

17.5. General requirements

ARTICLE II. COASTAL SUBZONES

17.10. B-S-1, Single-Family Beach, Sub-Zone

17.11. B-W-1, Single-Family Wave-Oriented, Sub-Zone

17.12. B-W-2, Townhouse Wave-Oriented, Sub-Zone

17.13. B-S-C, Coastal Medium-Density, Sub-Zone

17.14. B-S-C, Coastal Medium-Density Multiple-Family, Sub-Zone

17.15. CFC, Coastal Planned Community, Sub-Zone

17.16. MHP-C, Coastal Mobile Home Park, Sub-Zone

17.17. CNC, Coastal Neighborhood Commercial, Sub-Zone

17.18. CV-C, Coastal Village Serving Commercial, Sub-Zone

17.19. CID, Coastal Dependence Industrial, Sub-Zone

17.20. EC, Coastal Energy Facilities, Sub-Zone

17.21. COO, Coastal Oil Development, Sub-Zone

17.22. RC, Coastal Recreation, Sub-Zone

17.23. RP, Coastal Resource Protection, Sub-Zone

17.24. HCL, Harbor Channel Islands, Sub-Zone

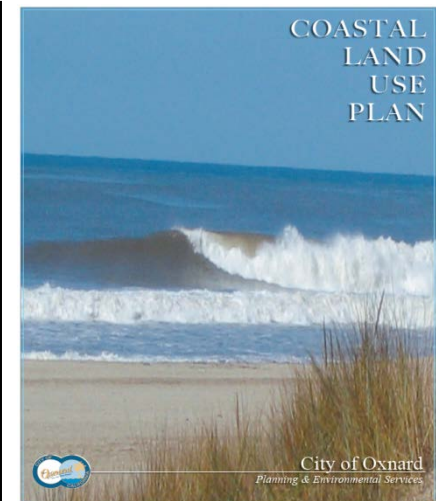
17.25. R-2E, Beachfront Residential, Sub-Zone

ARTICLE III. SPECIFIC COASTAL DEVELOPMENT AND RESOURCE STANDARDS

17.30. Purpose

17.31. Habitat areas

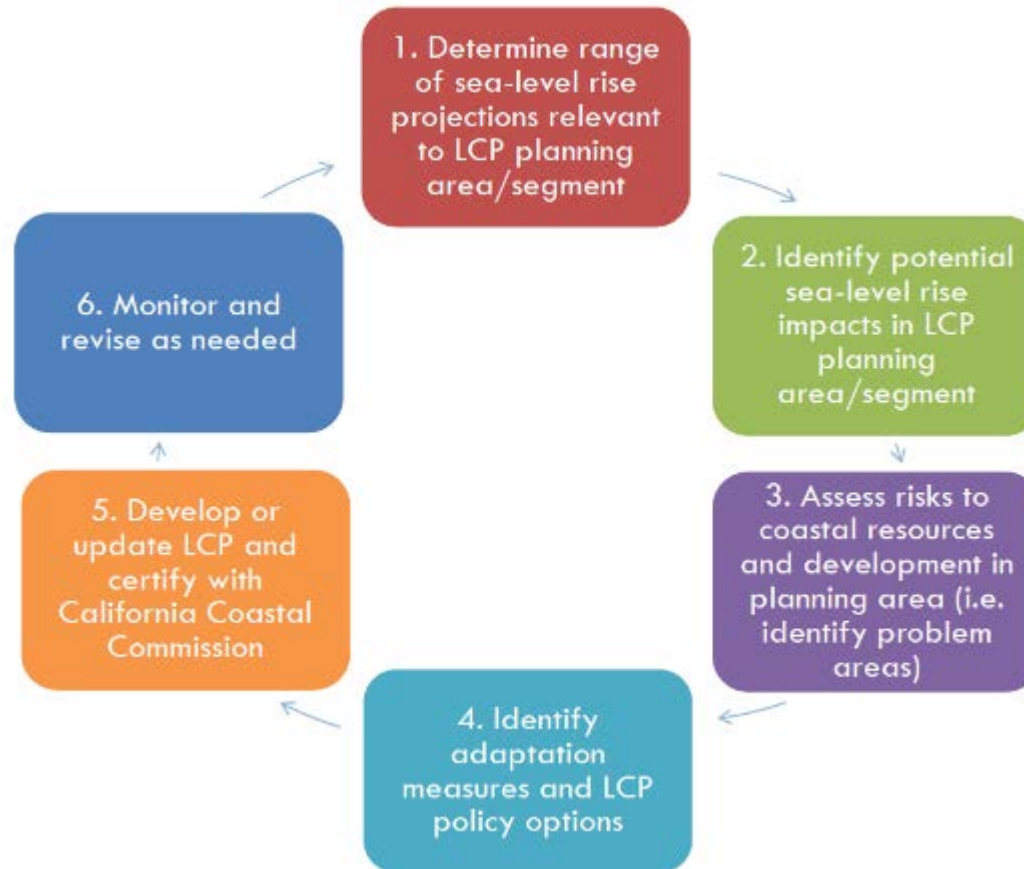
17.32. Diking, dune/dune, fill/dike, and shore-line structures



# Need for LCP Update:

1. Most all developments completed or approved
2. Several LCP policies outdated
3. Consistency with goals and policies in the 2030 General Plan
4. Ormond Beach Wetland Restoration planning initiated, Halaco closed, Once-through Cooling (OTC) phasing out
5. McGrath State Beach closure, relocation planning
6. Coastal Commission SLR Policy Guidance adopted August 2015
7. Coastal Commission Draft Residential Adaptation Policy Guidance released July 2017 and Revised March 2018

# Coastal Commission Sea Level Rise Guidance

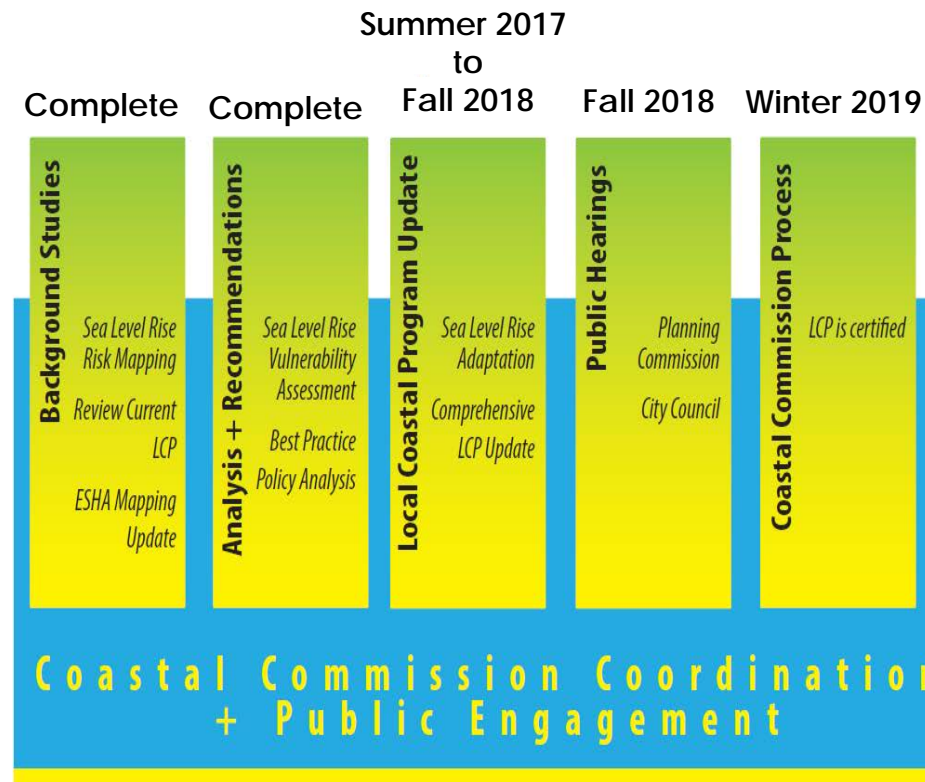


# Completed Tasks

- ▶ Reviewed current LCP and 2030 General Plan for consistency.
- ▶ Mapped Environmentally Sensitive Habitat Areas (ESHA).
- ▶ Mapped Coastal Hazards with SLR incorporated.
- ▶ Completed Tsunami and Drainage Vulnerability.
- ▶ Draft Vulnerability Assessment and Fiscal Impact Report.
- ▶ Draft Adaptation Strategy Report.
- ▶ Coordination with Coastal Commission, Agencies, Technical Stakeholders, etc.
- ▶ Public Outreach:
  - General public and interest groups
  - Technical Advisory Committee

## II. Next steps

- ▶ Update Coastal Land Use Plan.
- ▶ Submit for Coastal Commission Review.
- ▶ Re-submit for Certification.
- ▶ City Hearings and Adoption.



Project Phases



# III. Coastal Hazards Review

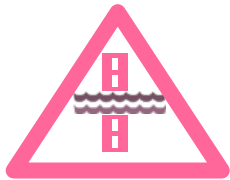


# Definition of Hazards



## Erosion

when the land is worn away by water, wind, or ice



## Coastal Storm Flood

when flooding occurs in eroded areas



## Coastal Storm Wave

when water levels rise & waves reach further inland

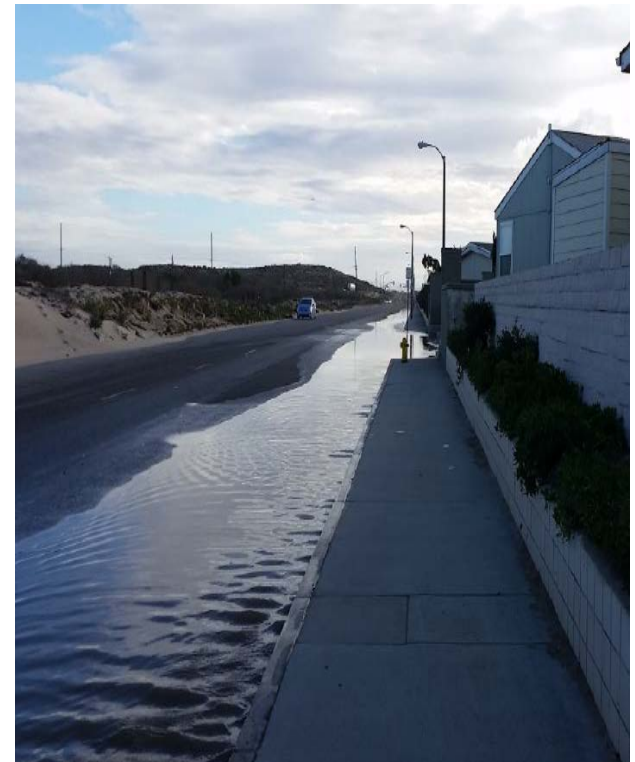


## Tidal inundation

when the tide rises & water covers land normally dry

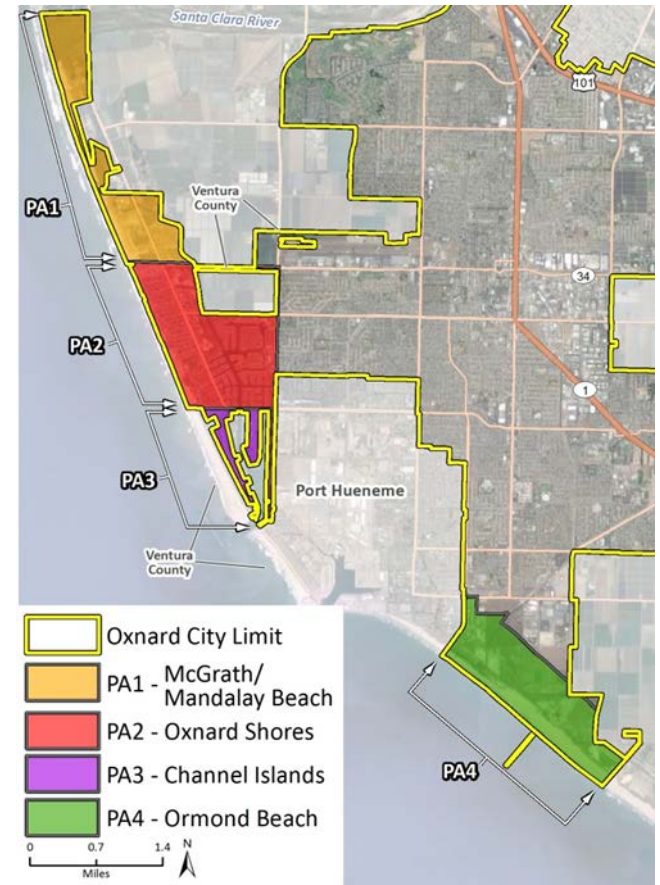


# Oxnard Shores – December 11, 2015



# Coastal Hazards increase with SLR

- ▶ Used TNC Coastal Resilience Modeling.
- ▶ <http://Maps.coastalresilience.org>
- ▶ SLR Projections: 2030, 2060, and 2100.
- ▶ Four Coastal Hazards, combination of all Coastal Hazards, and Tsunami modeled.
- ▶ By Four Planning Areas and Port Hueneme.
- ▶ Did not consider any adaptation strategies.
- ▶ SLR Atlas available online at <http://www.oxnardlcpupdate.com/documents.html>



# IV. Vulnerability Assessment Review

- ▶ Evaluated impacts of coastal hazards.
- ▶ Included both public and private property.
- ▶ Market value of land and replacement cost value of structures were used (USD 2017).
  - Ventura County Property Tax data for each parcel.
  - Replacement costs estimated per square foot using FEMA's Hazard Guidance.
  - Depth of flooding based on FEMA guidelines with SLR added.
- ▶ In process of being finalized with Coastal Commission.

# 8 Sectors Evaluated



Residential Land



Commercial Land



Oxnard Municipal Buildings



Power Plants



Channel Islands Harbor



Hazardous Waste



Coastal Access



Infrastructure

# Vulnerability Summary

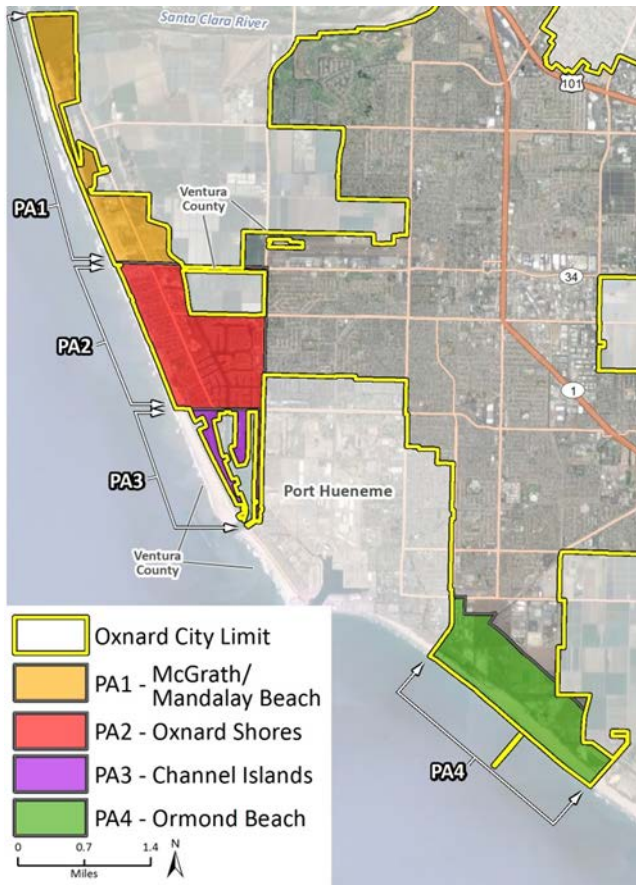
- ▶ Erosion biggest threat to all sectors
  - Except
    - Commercial land and Channel Island Harbor -Tidal Inundation.
    - Halaco Superfund Site – Coastal Storm Flooding.
- ▶ No large damage to commercial and municipal properties due to coastal hazards.
- ▶ Coastal hazards are projected to impact 415 acres of publicly-accessible beach at McGrath State Beach and Oxnard Shores.
- ▶ Residential Land losses are estimated to total more than \$300 million by 2030 due to erosion.

# V. Adaptation Strategy Results





# Organization by Planning Area



- ▶ PA 1 – McGrath-Mandalay
- ▶ PA 2 – Oxnard Shores
- ▶ PA 3 – Channel Islands Harbor
- ▶ PA 4 – Ormond Beach

Each Planning Area has geography and land uses that requires a different mix of adaptations.

Adaptation planning already underway in some planning areas (i.e. McGrath and Ormond Beach)

Adaptations need to ‘work’ together, and coordinate with State, County, Port Hueneme, Harbor District, and U.S. Navy.

# What are SLR/LCP Adaptation choices ?



## **ACCOMMODATION**

Modify existing developments or design new developments.



## **GREEN PROTECT**

Dunes and other natural features reduce storm damage potential.



## **HARD PROTECT**

Armoring with rocks, seawalls, groins, dikes, and other hard infrastructure.



## **MANAGED RETREAT**

Relocate or remove existing development.

# Cost/Benefit Analysis

- ▶ Net benefits in the analysis include
  - Recreational value in the form of beach attendance.
  - Costs associated with construction and maintenance of the adaptation strategy.
  - Property damage costs that would occur as a result of the adaptation strategy.
- ▶ Factors not included in analysis
  - Public access
  - Economic value of commercial development (e.g. Channel Islands Harbor)
  - Ecological impacts
  - Visual impacts

These will need to be balanced against the economic costs during the policy development phase.

# PA 1 McGrath-Mandalay

## Adaptation Strategy Examined



### Managed Retreat

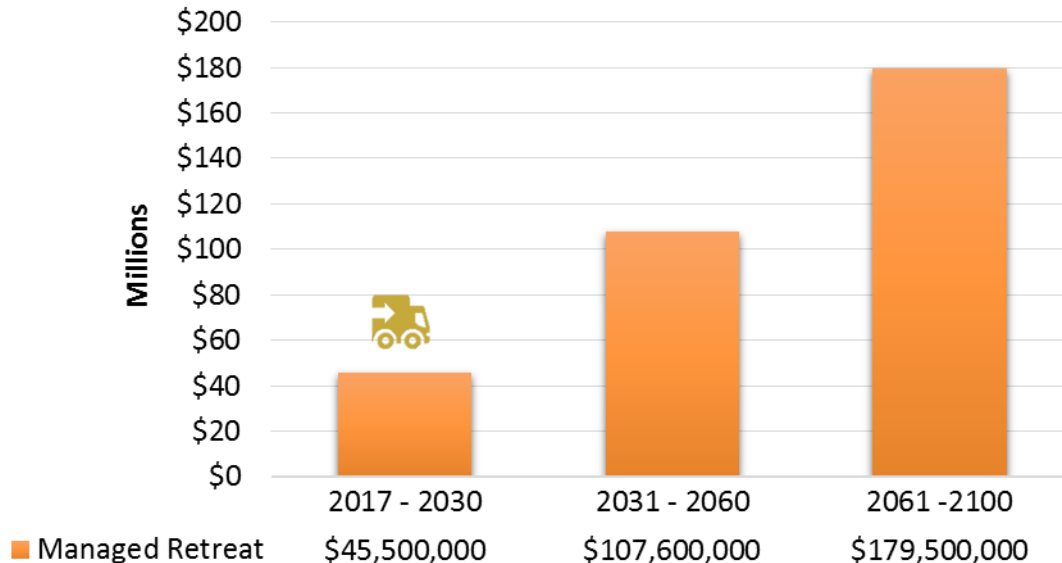
- ▶ Relocation of McGrath State Beach facilities to higher ground within the park.
- ▶ Consistent with Oxnard's 2030 General Plan policies (ER-3.1, SC-2.4, CD-21.3, ICS-17.1, and SH-3.5)
- ▶ Future Conditions
  - Decommissioning of Mandalay Generating Station (MGS) after 2020.
  - SCE McGrath Peaker removal after 25 year permit expires.



Source: vcstar

# PA 1 McGrath-Mandalay Results

Net Benefits (2017 dollars)



## Managed Retreat cont.

- ▶ Demolition and relocation costs of the McGrath State Beach facilities were not included (between \$278,000 and \$418,000).
- ▶ Analysis estimates the decommissioning of the MGS site \$24 - \$36 million. Not included in analysis – timing uncertain.

# PA 2 Oxnard Shores

## Adaptation Strategies Examined



### Green Protect

- ▶ Create dunes from 5<sup>th</sup> Street south.



### Accommodation

- ▶ Modifications of stormwater drainage/pump system.



### Hard Protect

- ▶ Build a seawall from 5<sup>th</sup> Street south.

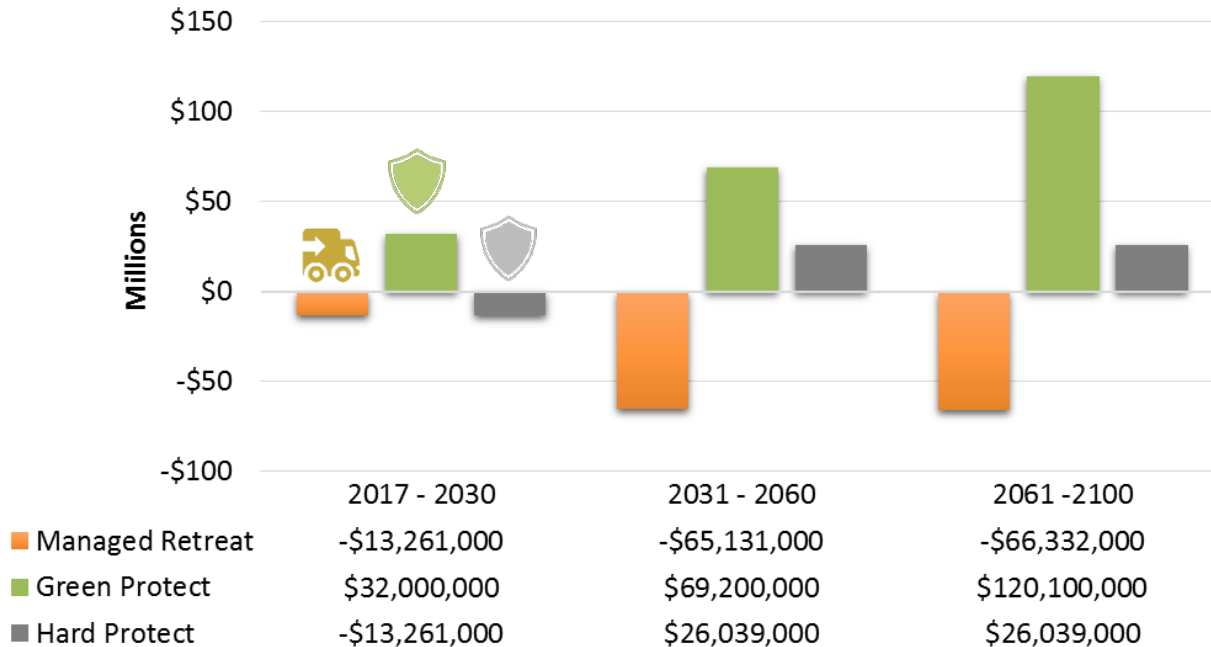


### Managed Retreat

- ▶ Removal of public and private development in Oxnard Shores.

# PA 2 Oxnard Shores Results

Net Benefits (2017 dollars)



## Accommodation

- ▶ Cost to add pumps to the storm drain system to address tidal inundation/flooding is estimated from \$0.8m to \$1.2m
- ▶ Would not provide complete protection against coastal flooding and erosion resulting from a 100-year storm event.

# PA 3 Hollywood Beach (County) / Channel Islands Harbor (City)

## Adaptation Strategies Examined



### Green Protect

- ▶ Dune Construction along Hollywood Beach shoreline.



### Hard Protect

- ▶ New Seawall and/or revetment from Channel Islands Blvd to Channel Island Harbor entrance.



### Managed Retreat

- ▶ Removal of development in the Channel Islands Harbor.








### Accommodation

- ▶ Elevate Channel Islands Harbor.



# PA 3 Hollywood Beach (County) / Channel Islands Harbor (City)

- ▶ Net benefits with Green Protect in 2060. 
- ▶ Overall net costs across all strategies by 2100.   
- ▶ Did not account for the benefit of protecting CI Harbor. CI Harbor contributes economic value to the County – approximately \$121 million per year.
- ▶ Accommodation 

Engineering strategies (e.g. bulkheads, buildings, and pads) were not included in the analysis because highly dependent on specific engineering design.
- ▶ Channel Islands Harbor Public Works Plan provides policy direction for development and retrofitting in Channel Islands Harbor.
- ▶ Coordination with Harbor and County will be required.

# PA 4 Ormond Beach

## Adaptation Strategies



### Green Protect

- ▶ Implement Ormond Beach Restoration and Access Plan.
- ▶ Design wetlands to protect existing industrial development.



### Managed Retreat

- ▶ Remove Ormond Beach Generating Station (OBGS) and Halaco Superfund Site.
- ▶ Relocate Oxnard Water Treatment.



Source: [californiabeaches.com](http://californiabeaches.com)

# PA 4 Ormond Beach

## Adaptation Strategies



### Green Protect

- ▶ Implement Ormond Beach Restoration and Access Plan.
  - Costs being estimated by the State Coastal Conservancy, Oxnard, and TNC.
  - Benefits would mostly be ecological. Not quantified in the analysis.



### Managed Retreat

- ▶ Remove OBGS and Halaco Superfund Site.
  - Costs for Halaco are being estimated by EPA.
- ▶ Relocate Oxnard Water Treatment
  - Estimated cost - \$400 million to \$650 million.
  - Would require substantial upgrades to stay in current location.

# Adaptation Summary

## ► Planning Area 1 Managed Retreat

- Only reasonable option, consistent with City policy
- Net-benefits in all time horizons

## ► Planning Area 2 Oxnard Shores

- Green Protect yields the most benefits in all time horizons due to value of the property in this Planning Area



## ► Planning Area 3 Hollywood Beach (County) / Channel Islands Harbor (City)

- By 2060, Green Protect yields positive net benefits
- Overall negative net benefits all scenarios by 2100 – due to increased erosion/flooding
- Analysis does not consider the economic value of Channel Islands Harbor – economic driver in County
- Regional Coordination needed

## ► Planning Area 4 Ormond Beach

- Costs and benefits associated with wetland restoration depend on the design of the OBRAP plan.

# Discussion Break

- ▶ Any questions regarding adaptation report?
  - Strategies
  - Analysis
  - Results

City of Oxnard  
Local Coastal Program Update  
Sea Level Rise Adaptation Strategy Report  
Draft  
January 2018



# VI. Conceptual SLR and Adaptation LCP Policies

- ▶ Results of Adaptation Report show that Green Protect and Managed Retreat have most net benefits
- ▶ Consistent with Coastal Commission Guidance
- ▶ Plans are already being developed for certain areas (McGrath State Beach & Ormond Beach)
- ▶ New SLR and Adaptation LCP policies from recent draft California Coastal Commission Residential Adaptation Policy Guidance.



## CALIFORNIA COASTAL COMMISSION RESIDENTIAL ADAPTATION POLICY GUIDANCE

*Interpretive Guidelines for Addressing Sea  
Level Rise in Local Coastal Programs*



MARCH 2018

REVISED

# VI. Conceptual SLR and Adaptation LCP Policies

- ▶ Policy Categories
  - Understanding SLR
  - Avoid Siting New Development In Hazard Areas
  - Moving Development Away From Hazards (*for Planning Area 1 –McGrath Mandalay*)
  - Building Barriers To Protect From Hazards (*Planning Area 2 & 3*)
  - Community Scale Adaptation Planning



## CALIFORNIA COASTAL COMMISSION RESIDENTIAL ADAPTATION POLICY GUIDANCE

*Interpretive Guidelines for Addressing Sea  
Level Rise in Local Coastal Programs*



Photo Credit: Mary Malala

MARCH 2018

REVISED

# Understanding SLR

- ▶ **Identify and Using Best Available Science**
- ▶ **Map Coastal Hazards**
- ▶ **Identify Risks from Groundwater Inundation**
- ▶ **Site-specific Coastal Hazard Study Requirements**
- ▶ **Assumptions of Risk, Waiver of Liability, and Indemnity for New Development in Hazard Areas**
- ▶ **Real Estate Disclosure Of Hazards**



# New Development In Hazard Areas

- ▶ **Minimize Siting New Development in Hazard Areas**
- ▶ **Discourage Shoreline Armoring to Protect New Development**
- ▶ **Removal Conditions or Development Duration (Planning Area 1 – McGrath-Mandalay Only )**

# Building Barriers To Protect From Hazards

- ▶ **Pursue Green Shoreline Protection in Planning Area 2 – Oxnard Shores**
- ▶ **Design Adaptation For Waterway Communities (Seabridge And Mandalay Bay) and Channel Islands Harbor**
- ▶ **Allow Protective Devices for Waterway Communities and Channel Island Harbor**

# Moving Hazards Away From Development

- ▶ **Adequate Drainage and Erosion Control for New Development – Based on Site Specific Studies**
- ▶ **Flood Hazard Mitigation for New Development**

# Community Scale Adaptation Planning

- ▶ **Coordinate Adaptation Planning at a Regional Level with County of Ventura, Naval Base Ventura County, BEACON and others**
- ▶ **Establishment of SLR Overlay Zone to Designate Where SLR Policies Apply**
- ▶ **Continue to Facilitate Planning Efforts Currently Underway for Ormond Beach and McGrath State Beach**
- ▶ **Coordinate Regionally to Create a Comprehensive Beach Nourishment and Management Plan**

# VII. LCP Policy Next Steps

- ▶ Gather and incorporate feedback
  - Technical Advisory Committee
  - Public Stakeholders
  - Meetings with various Agencies  
(Ventura County, Navy, Public Works, etc.)
- ▶ Submit entire LUP to Coastal Commission at end of month.
- ▶ Develop Local Implementation Plan (LIP)
  - Zoning ordinances required to implement the LUP.
- ▶ Initial thoughts? Questions?



# Thank You



Home FAQs Documents Meetings & Dates Participate/Comments



## Welcome to Oxnard's Local Coastal Plan Update

The City of Oxnard's Local Coastal Plan (LCP) Update project is a collaborative planning and outreach process that will revise the City's existing LCP to bring it into conformance with Coastal Commission policy directives and approaches to address climate change adaptation strategies, such as those for sea level rise.

City staff and consultants have begun putting together a draft of the LCP document. The City will continue to update this website as additional information becomes available. We need your ideas and input to develop an LCP that's right for Oxnard!



### News

The Sea Level Rise Atlas has been completed and is now available for public review.

[SLR Atlas Document](#)

### Upcoming Events

Public Workshop  
*Adaptation Strategy Results & Conceptual Policies*  
Wednesday, March 14, 2018  
6:30 p.m. - 8:30 p.m.

[Event Notification](#)

[Agenda](#)

### Quick Links

[City of Oxnard Website](#)

[Cal Coast Weekly Wave](#)

[Project Documents](#)

[Upcoming Meetings](#)

- ▶ All final documents available on Oxnard LCP website.
- ▶ <http://www.oxnardlcpupdate.com>
- ▶ Any questions or comments email Isidro Figueroa at [isidro.figueroa@oxnard.org](mailto:isidro.figueroa@oxnard.org).