



375 Beale Street  
Suite 700  
San Francisco, CA 94105

## Meeting Agenda

### Bay Area Regional Collaborative

*ABAG - BAAQMD - BCDC - MTC*

*Zack Wasserman, Chair  
Cindy Chavez, Vice Chair*

*John Gioia, Pradeep Gupta, Scott Haggerty, Brad Wagenknecht,  
David Hudson, Nick Josefowitz, Anne Halsted, Rod Sinks  
Jake Mackenzie, Nathan Miley, Julie Pierce, Dave Pine,  
David Rabbitt, Mark Ross, Jim Spering, and Amy R. Worth*

*Non-voting member: James E. Davis and Dan McElhinney*

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Friday, June 15, 2018

10:00 AM

Board Room - 1st Floor

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This meeting is scheduled to be webcast live on the Metropolitan Transportation Commission's Website: <http://mtc.ca.gov/whats-happening/meetings> and will take place at 10:00 a.m.

#### 1. Roll Call / Confirm Quorum

#### 2. Pledge of Allegiance

#### 3. Approval of Minutes

[18-0345](#) Approval of the Bay Area Regional Collaborative Minutes of April 20, 2018

Action: Board Approval

Attachments: [03\\_BARC\\_GB\\_Minutes\\_20180420.pdf](#)

#### 4. Updates from BARC Member Agency Executive Directors

[18-0441](#) Updates from BARC Member Agency Executive Directors

Action: Information

Presenter:

- Greg Nudd, Deputy Air Pollution Control Officer - Policy, Bay Area Air Quality Management District
- Larry Goldzband, Executive Director, Bay Conservation and Development Commission
- Alix Bockelman, Deputy Executive Director, Policy, Association of Bay Area Governments/Metropolitan Transportation Commission

## 5. BARC Executive Director Report

[18-0439](#) Update on Key Projects  
**Action:** Information  
**Presenter:** Allison Brooks, Executive Director, BARC  
**Attachments:** [05 BARC ED Update 06 15 18.pdf](#)

## 6. Resilient Infrastructure as Seas Rise (RISER) SF Bay Project

[18-0440](#) Resilient Infrastructure As Seas Rise  
**Action:** Information  
**Presenter:** Mark Stacey, Department of Civil and Environmental Engineering, UC Berkeley  
**Attachments:** [06 RISER Stacey 15June2018.pdf](#)

## 7. Plan Bay Area 2050 Horizon Planning Process

[18-0442](#) Horizon and Plan Bay Area 2050  
**Action:** Information  
**Presenter:** Dave Vautin, Principal Planner, MTC  
**Attachments:** [07 Horizon and Plan Bay Area 2050 - Overview \(June 2018\).pdf](#)

## 8. Public Comment

## 9. Adjournment / Next Meeting

**The next meeting of the BARC Governing Board will be Friday, September 21, 2018 at 10:00 a.m. at the Bay Area Metro Center, 375 Beale Street, San Francisco, CA.**

The Governing Board may take action on any item listed in the agenda.

This meeting is scheduled to end promptly at 12:00 p.m. Agenda items not considered by that time may be deferred.

The public is encouraged to comment on agenda items by completing a request-to-speak card and giving it to BARC staff or the chairperson.

Although a quorum of the Governing Board may be in attendance at this meeting, the Governing Board may take action only on those matters delegated to it. The Governing Board may not take any action as the Bay Area Regional Collaborative Governing Board unless this meeting has been previously noticed as a Bay Area Regional Collaborative Governing Board meeting.



## Legislation Details (With Text)

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**File #:** 18-0345      **Version:** 2      **Name:**  
**Type:** Minutes      **Status:** Committee Approval  
**File created:** 4/20/2018      **In control:** Bay Area Regional Collaborative  
**On agenda:** 6/15/2018      **Final action:**  
**Title:** Approval of the Bay Area Regional Collaborative Minutes of April 20, 2018  
**Sponsors:**  
**Indexes:**  
**Code sections:**  
**Attachments:** [03 BARC GB Minutes 20180420.pdf](#)

Date	Ver.	Action By	Action	Result
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### Subject:

Approval of the Bay Area Regional Collaborative Minutes of April 20, 2018

### Action:

Board Approval

**Attachments:**      BARC Governing Board Minutes 20180420



## Agenda Item 3

375 Beale Street  
Suite 700  
San Francisco, CA 94105

# Meeting Minutes - Draft

## Bay Area Regional Collaborative

*ABAG - BAAQMD - BCDC - MTC*

*Zack Wasserman, Chair  
Cindy Chavez, Vice Chair*

*John Gioia, Pradeep Gupta, Scott Haggerty, Brad Wagenknecht,  
David Hudson, Nick Josefowitz, Anne Halsted, Rod Sinks  
Jake Mackenzie, Nathan Miley, Julie Pierce, Dave Pine,  
David Rabbitt, Mark Ross, Jim Spering, and Amy R. Worth*

*Non-voting member: James E. Davis and Dan McElhinney*

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Friday, April 20, 2018

10:00 AM

Board Room - 1st Floor

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This meeting is scheduled to be webcast live on the Metropolitan Transportation Commission's Website: <http://mtc.ca.gov/whats-happening/meetings> and will take place at 10:00 a.m.

### 1. Roll Call/Confirm Quorum

#### Rollcall

**Present:** 16 - Board Member Josefowitz, Board Member Sinks, Board Member Spering, Board Member Gioia, Board Member Pierce, Board Member Worth, Board Member Rabbitt, Board Member Halsted, Board Member Pine, Board Member Mackenzie, Board Member Halsted, Board Member Gupta, Board Member Davis, Board Member Hudson, Board Member Wagenknecht, and Board Member Haggerty

**Absent:** 3 - Board Member Wasserman, Board Member Miley, and Board Member McElhinney

### 2. Pledge of Allegiance

### 3. Approval of Minutes

**This was adopted.**

[18-0255](#) Approval of the Bay Area Regional Collaborative Minutes of November 17, 2017 and February 16, 2018

**Action:** Board Approval

**Attachments:** [BARC Governing Board Minutes 20171117.pdf](#)  
[BARC Governing Board Minutes 20180216.pdf](#)



#### **4. Updates from BARC Member Agency Executive Directors**

[18-0303](#) Updates from BARC Member Agency Executive Directors

**Action:** Information

- Presenter:**
- Jack Broadbent, Executive Director, Bay Area Air Quality Management District
  - Larry Goldzband, Executive Director, Bay Conservation and Development Commission
  - Alix Bockelman, Deputy Executive Director, Association of Bay Area Governments/Metropolitan Transportation Commission

#### **5. BARC Executive Director Report**

[18-0251](#) ABAG General Assembly, Resilient by Design Bay Area Challenge, Coordination on work with disadvantaged communities

**Action:** Information

**Presenter:** Allison Brooks, BARC Executive Director

#### **6. Raising the Bar on Regional Resilience**

This was adopted.

[18-0254](#) Raising the Bar on Regional Resilience - Approval of Report

**Action:** Board Approval

**Presenter:** Allison Brooks, Executive Director, Bay Area Regional Collaborative

**Attachments:** [Raising the Bar on Resilience\\_DRAFT\\_20171113.pdf](#)

## 7. BARC Budget Fiscal Year 2018 - 2019

### 7 [18-0304](#) BARC Budget Fiscal Year 2018 - 2019

**Action:** Board Approval

**Presenter:** Allison Brooks, BARC Executive Director

**Attachments:** [BARC FY19 Draft Budget 04\\_17\\_18.pdf](#)

**This Action Item was approved.**

**Aye:** 16 - Board Member Josefowitz, Board Member Sinks, Board Member Spering, Board Member Gioia, Board Member Pierce, Board Member Worth, Board Member Rabbitt, Board Member Halsted, Board Member Pine, Board Member Mackenzie, Board Member Halsted, Board Member Gupta, Board Member Davis, Board Member Hudson, Board Member Wagenknecht and Haggerty

**Absent:** 3 - Board Member Wasserman, Board Member Miley and Board Member McElhinney

## 10. Public Comment

Jane Kramer was called to speak

Jane Kramer was called to speak on item 6.

## 8. Climate Program Updates

### [18-0253](#) 9a. Global Climate Action Summit 2018 9b. Bay Area Air Quality Management District Climate Protection Grant Program

**Action:** Information

**Presenter:** Abby Young, Climate Protection Manager, Bay Area Air Quality Management District

## 9. Adapting to Rising Tides (ART) Bay Area Update Adapting to Rising Tides (ART) Bay Area Project Update

### [18-0252](#) Adapting to Rising Tides (ART) Bay Area Project Update

**Action:** Information

**Presenter:** Carey Batha, ART Program Manager, Bay Conservation and Development Commission

## 11. Adjournment



## Legislation Details (With Text)

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**File #:** 18-0441      **Version:** 1      **Name:**

**Type:** Report      **Status:** Informational

**File created:** 5/21/2018      **In control:** Bay Area Regional Collaborative

**On agenda:** 6/15/2018      **Final action:**

**Title:** Updates from BARC Member Agency Executive Directors

**Sponsors:**

**Indexes:**

**Code sections:**

**Attachments:**

Date	Ver.	Action By	Action	Result
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**Subject:**  
Updates from BARC Member Agency Executive Directors

**Presenter:**

- Greg Nudd, Deputy Air Pollution Control Officer - Policy, Bay Area Air Quality Management District
- Larry Goldzband, Executive Director, Bay Conservation and Development Commission
- Alix Bockelman, Deputy Executive Director, Policy, Association of Bay Area Governments/Metropolitan Transportation Commission

**Recommended Action:**  
Information

**Attachments:**      List any attachments.



## Legislation Details (With Text)

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**File #:** 18-0439      **Version:** 3      **Name:**  
**Type:** Report      **Status:** Informational  
**File created:** 5/21/2018      **In control:** Bay Area Regional Collaborative  
**On agenda:** 6/15/2018      **Final action:**  
**Title:** Update on Key Projects  
**Sponsors:**  
**Indexes:**  
**Code sections:**  
**Attachments:** [05\\_BARC ED Update 06\\_15\\_18.pdf](#)

Date	Ver.	Action By	Action	Result
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**Subject:**  
Update on Key Projects

**Presenter:**  
Allison Brooks, Executive Director, BARC

**Recommended Action:**  
Information

**Attachments:**

# BARC Executive Director Report

**BARC Governing Board  
June 15, 2018**



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**Regional  
Collaborative**



# For Today

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1. ABAG General Assembly - Summary
2. Carbon Free Future – Expanding on Solar work
3. Resilient by Design Bay Area Challenge
4. Adapting to Rising Tides Bay Area



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# 1. ABAG General Assembly

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## Overarching Questions:

- *How can our institutions evolve to meet 21<sup>st</sup> Century challenges?*
- *What is the role of regional agencies in addressing big resilience issues like wildfires, earthquakes, flooding and energy?*





# 1. ABAG General Assembly

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## Next Steps on Issue Areas:

### Wildfires:

- White Paper outlining the policy tools jurisdictions have to prepare for wildfires.
- Ongoing technical assistance to jurisdictions, including providing support to submit grants for FEMA funding.

### Earthquakes:

- Region-wide inventory of fragile buildings and an assessment of the scale and cost of work that would be required to bring all the housing up to a certain level of performance.
- Project will link seismic retrofit to affordable housing preservation.
- Technical Assistance – e.g. Assisting San Jose in implementing our Soft Story Model Ordinance
- Integrating seismic impacts and policies into the Horizon modeling process





# 1. ABAG General Assembly

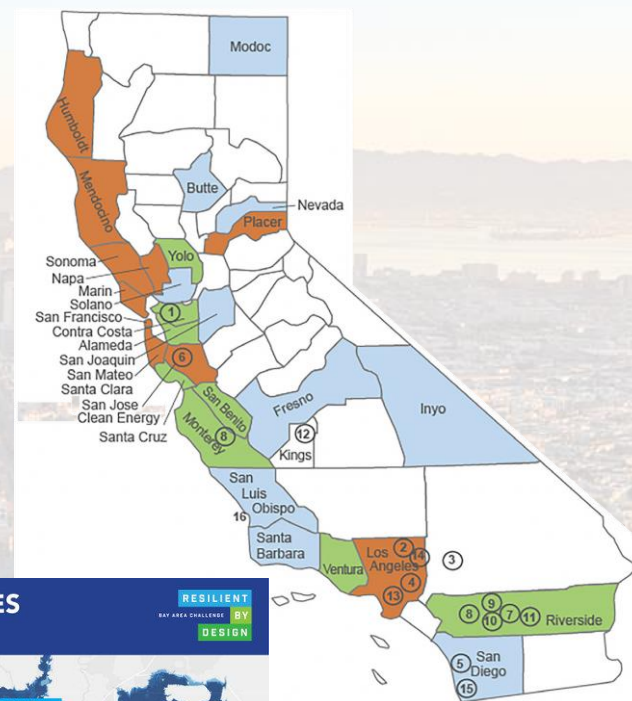
## Identified Next Steps on Issue Areas:

### Energy:

- Convene Bay Area CCA's to identify regional level coordination opportunities – data, legislative actions, etc.

### Flooding/Sea Level Rise:

- Assessment & strategic plan
- Establishing clear road maps for RBD project implementation



## 2. Carbon Free Future

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- California Energy Commission voted 5-0 to adopt standards requiring solar systems for new homes. First in nation. Goes into effect Jan. 1, 2020.
- BAAQMD, BayREN, BARC – looking to expand project focus on slate of policies and actions, in addition to solar ordinance, to help jurisdictions, and Bay Area region, reach zero-net carbon. Focus may include:
  - Continuing to bring best practices to scale
  - Standardization of policies across jurisdictions
  - Ways to streamline permitting process
- BAAQMD will announce first slate of recipients from Climate Program Grants – many will help us advance innovations on this front.



# 3. Resilient by Design - STATS

## Participation:

- 250 attendees at presentations by Design Teams (May 17)
- 3,400 tuned in to YouTube livestream
- Over 500 people came out to Final Event (May 18)
  - 122 agencies represented
  - 141 Stakeholders from community, business, and educational organizations
- 9,300 unique visitors to website in May



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# 3. Resilient by Design – Next Steps

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## Next Steps (Summer/Fall 2018):

- Assessment/Evaluation of the project
- Phase II Work Plan – near-term to longer-term implementation of projects, ongoing community capacity building, regional-scale actions, legislative agenda



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## 4. ART Bay Area

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**Regional Scale Analysis to Understand Sea Level Rise Impacts on transportation network, people and places to get to implementation strategies.**

- BCDC team working closely with Horizon team at MTC/ABAG.
- Integrating other analysis:
  - Operational Landscape Units -SFEI and SPUR
  - Prof. Mark Stacey, UC Berkeley.

**Upcoming Regional Working Group:**

- June 19, 2018 – San Francisco Estuary Institute



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# THANK YOU!

**Allison Brooks**

**[Abrooks@bayareametro.gov](mailto:Abrooks@bayareametro.gov)**

**(415) 778-5265**



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## Legislation Details (With Text)

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**File #:** 18-0440      **Version:** 2      **Name:**  
**Type:** Report      **Status:** Informational  
**File created:** 5/21/2018      **In control:** Bay Area Regional Collaborative  
**On agenda:** 6/15/2018      **Final action:**  
**Title:** Resilient Infrastructure As Seas Rise  
**Sponsors:**  
**Indexes:**  
**Code sections:**  
**Attachments:** [06\\_RISER\\_Stacey\\_15June2018.pdf](#)

Date	Ver.	Action By	Action	Result
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**Subject:**  
Resilient Infrastructure As Seas Rise

**Presenter:**  
Mark Stacey, Department of Civil and Environmental Engineering, UC Berkeley

**Recommended Action:**  
Information

**Attachments:**      List any attachments.

# Future San Francisco Bay Shorelines and Regional Interdependence

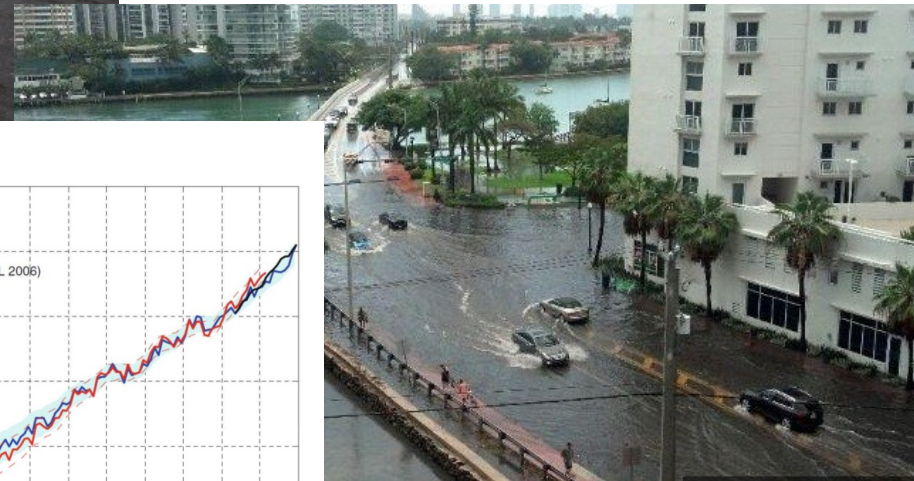
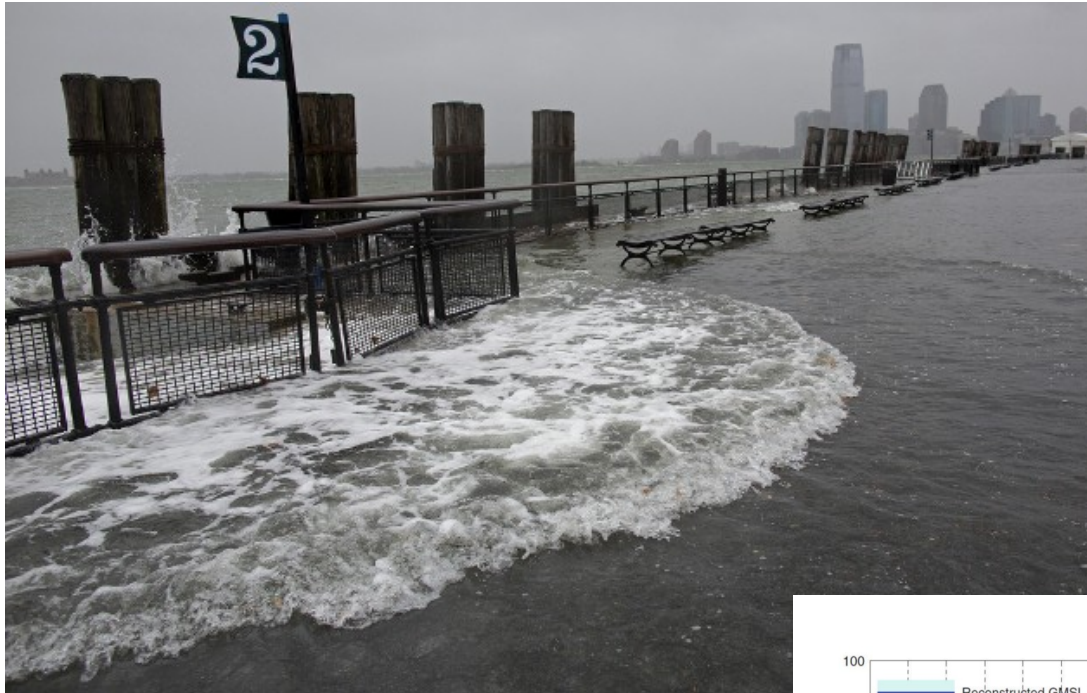


Mark Stacey  
RISER Project  
UC-Berkeley, UC-Davis, NYU, USGS  
Sponsor: NSF-CRISP

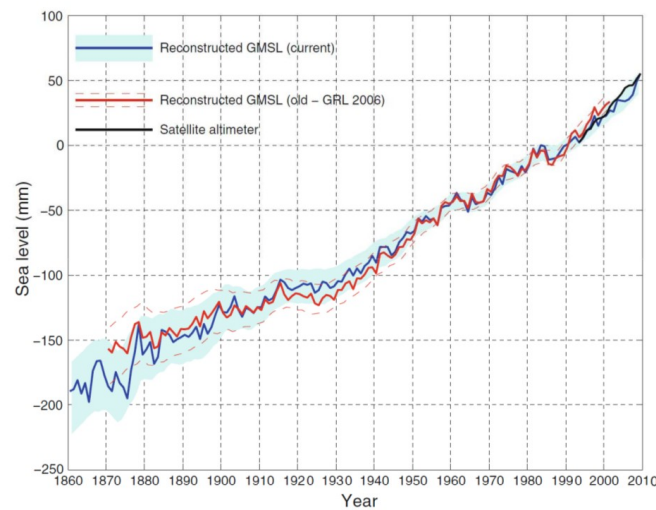
Bay Area Regional Collaborative  
Board Meeting  
June 15, 2018



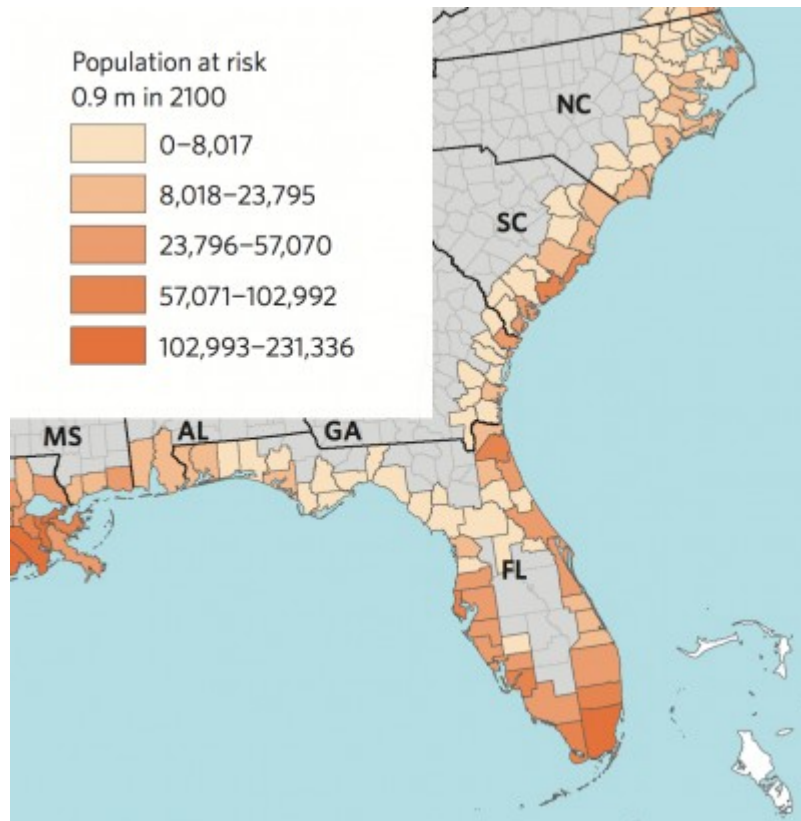
# Coastal Flooding: An Emerging “Nuisance”?



- Increasing frequency, increasing cost

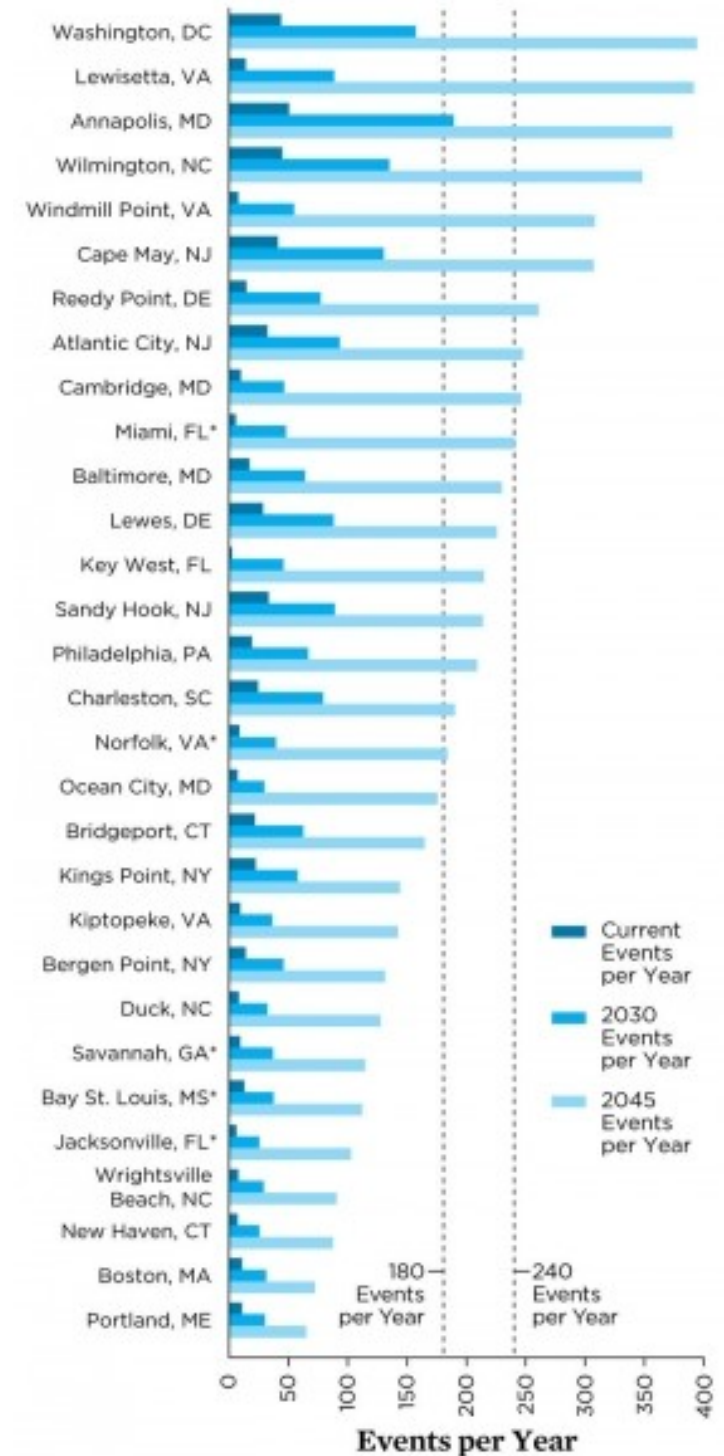


# Coastal Populations



- Recent studies documented millions in the US that are vulnerable to flooding from future sea level rise
  - Disruption of infrastructure systems expands footprint

Tidal Flooding Today, in 2030, and in 2045

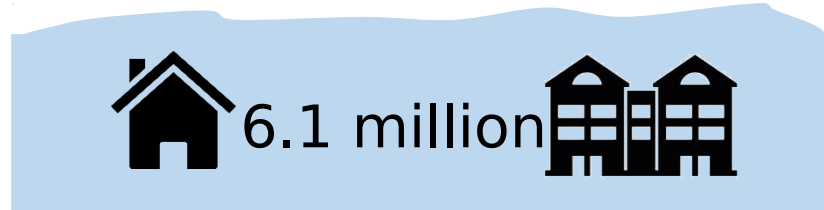
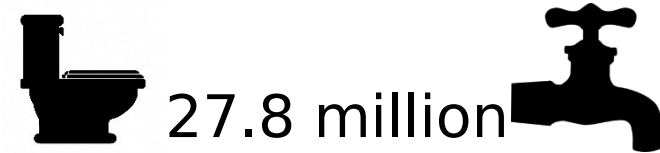


# Coastal Infrastructure Disruptions

## 3ft SLR

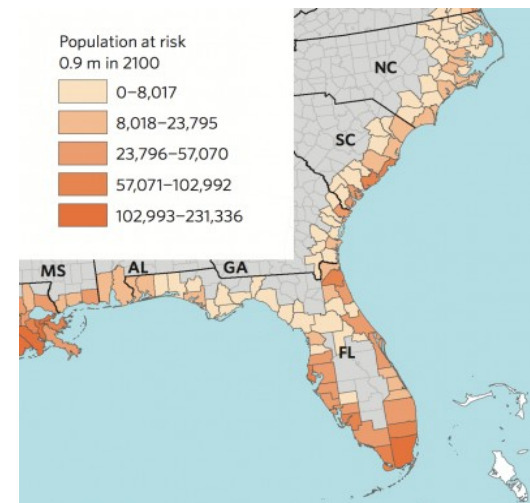


## 6ft SLR



Direct flooding data from Hauer et al. (2016)

- Accounting for wastewater infrastructure increases footprint of coastal flooding by a factor of more than 4





# “Nuisance Flooding”: San Francisco Bay



- Tidal inundation already occurring along SF waterfront and at Tam Junction in Marin County
  - January (annual peak) high tides inundate currently
  - Future: daily high tides?

# More than a “nuisance”

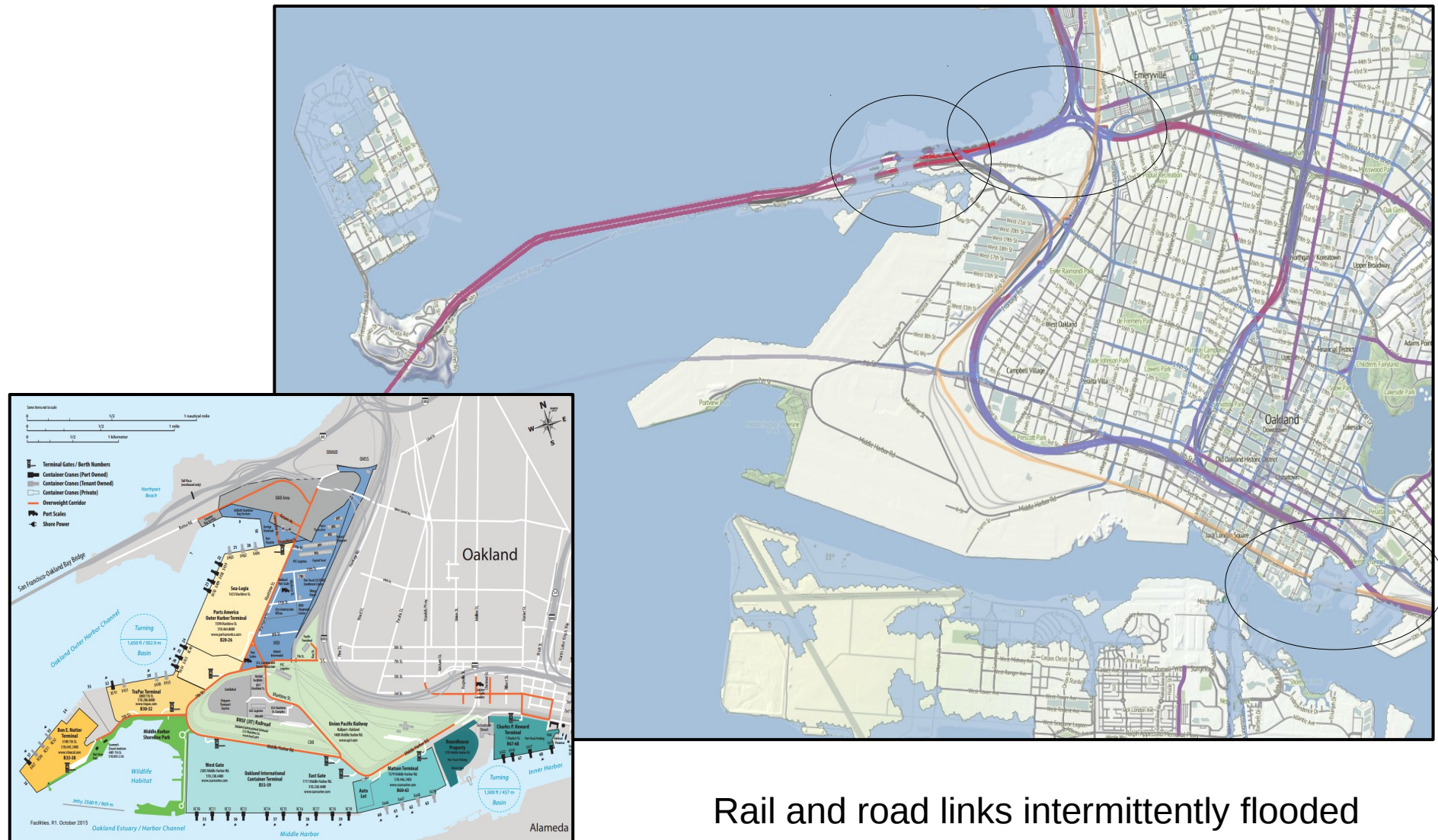
- Critical elements of regional, national and global transportation system disrupted



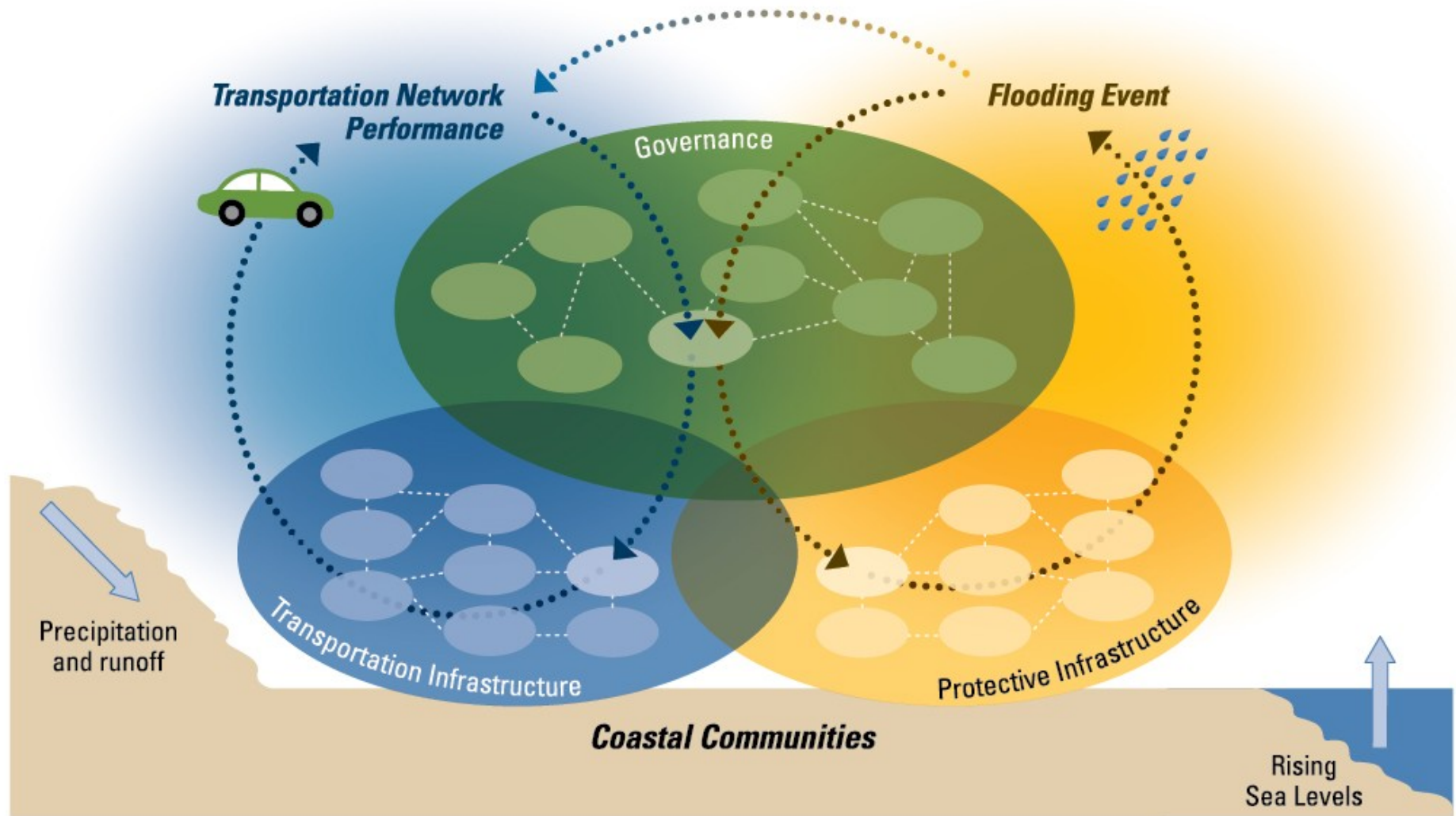


# Shorelines as the transition

- Port of Oakland vulnerability most pronounced in linkages to land-based transportation



# Challenges to Coastal Community Resilience

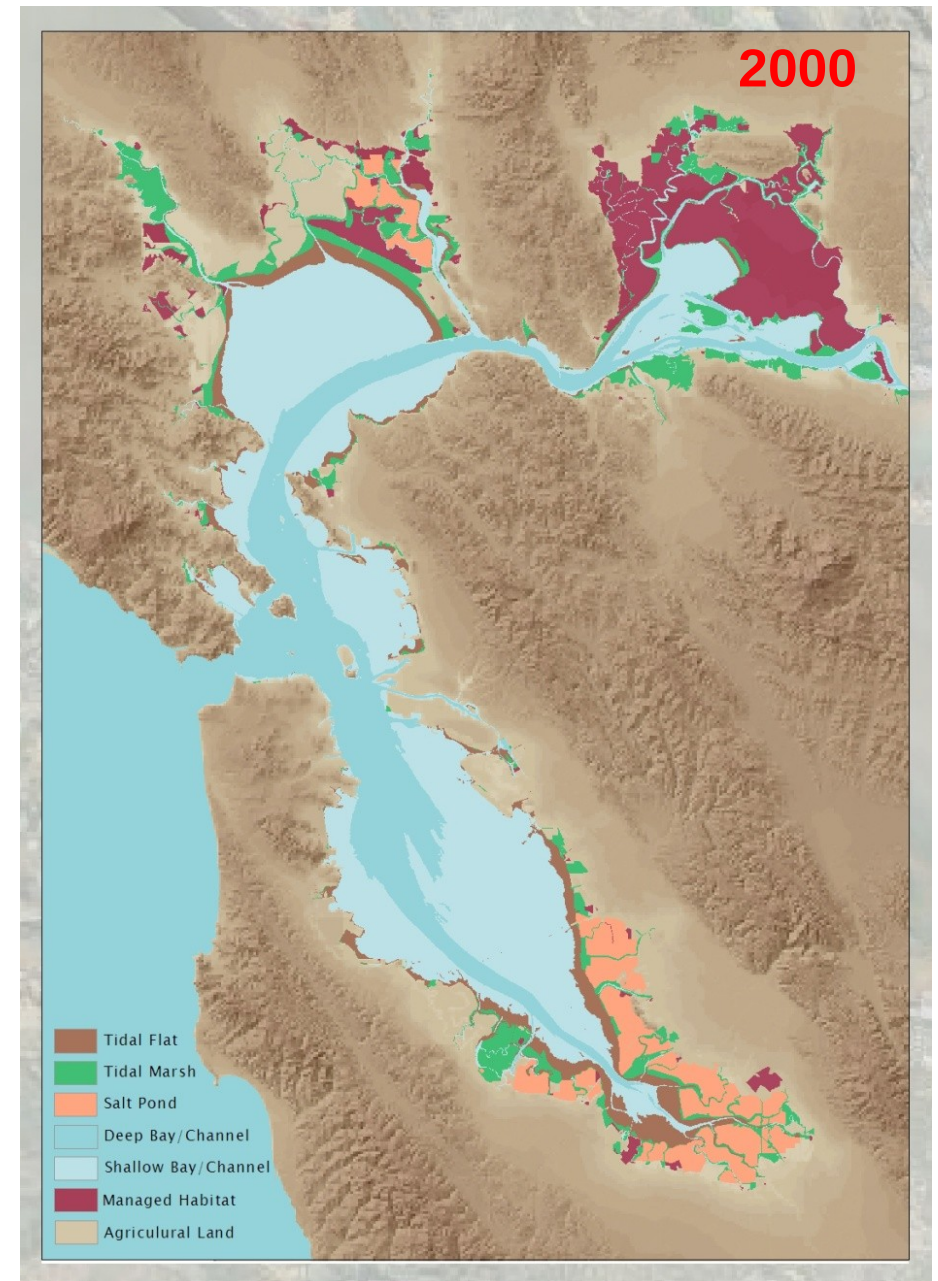
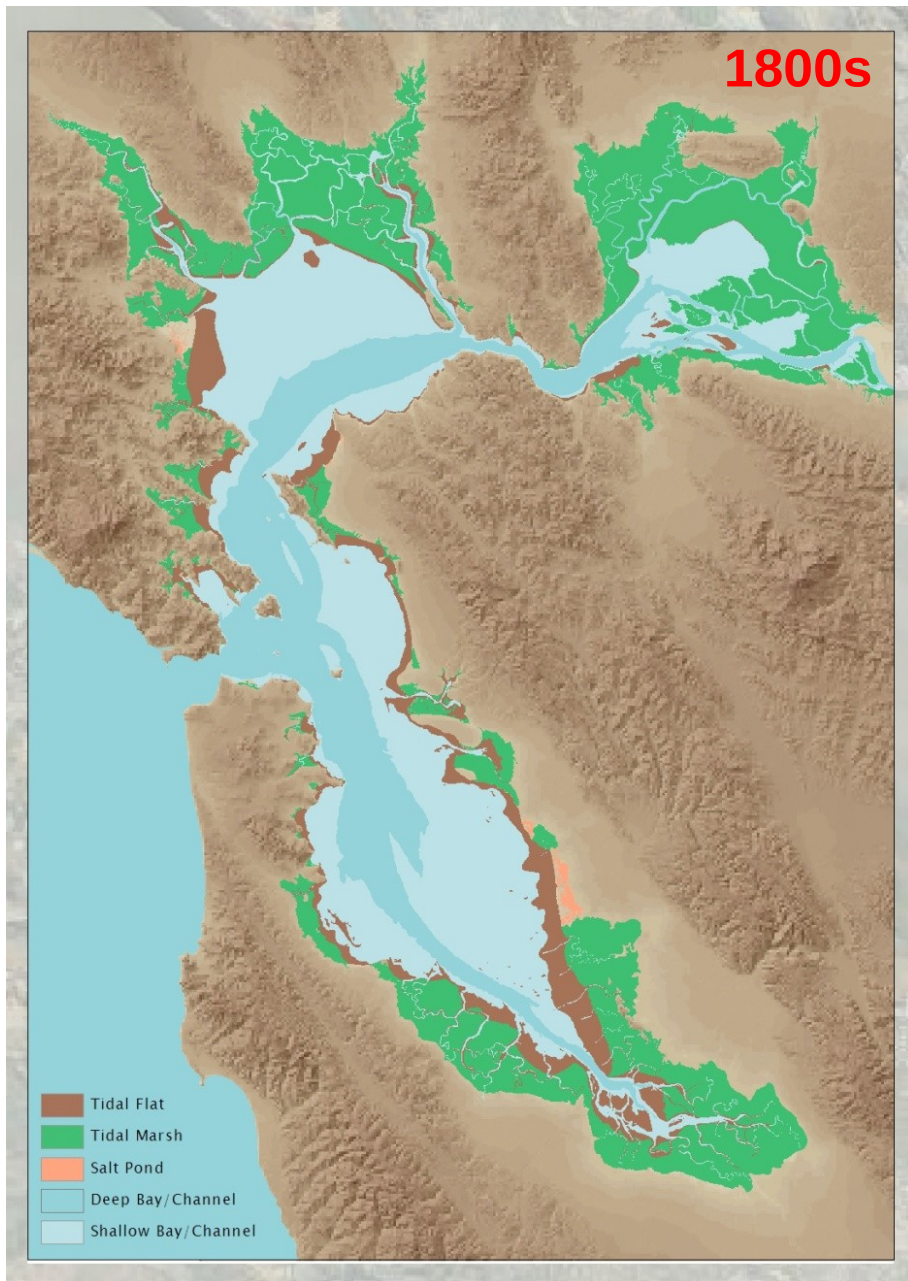


- RISER Project integrates hydrodynamic model of flooding, behavioral model of traffic flows and empirical evaluation of decision-making network
  - Driven by scenarios for environmental forcing and shoreline configurations

**Important Theme: Local-regional Linkages and Network Effects Create Interdependencies**



# Changes to SF Bay Shorelines

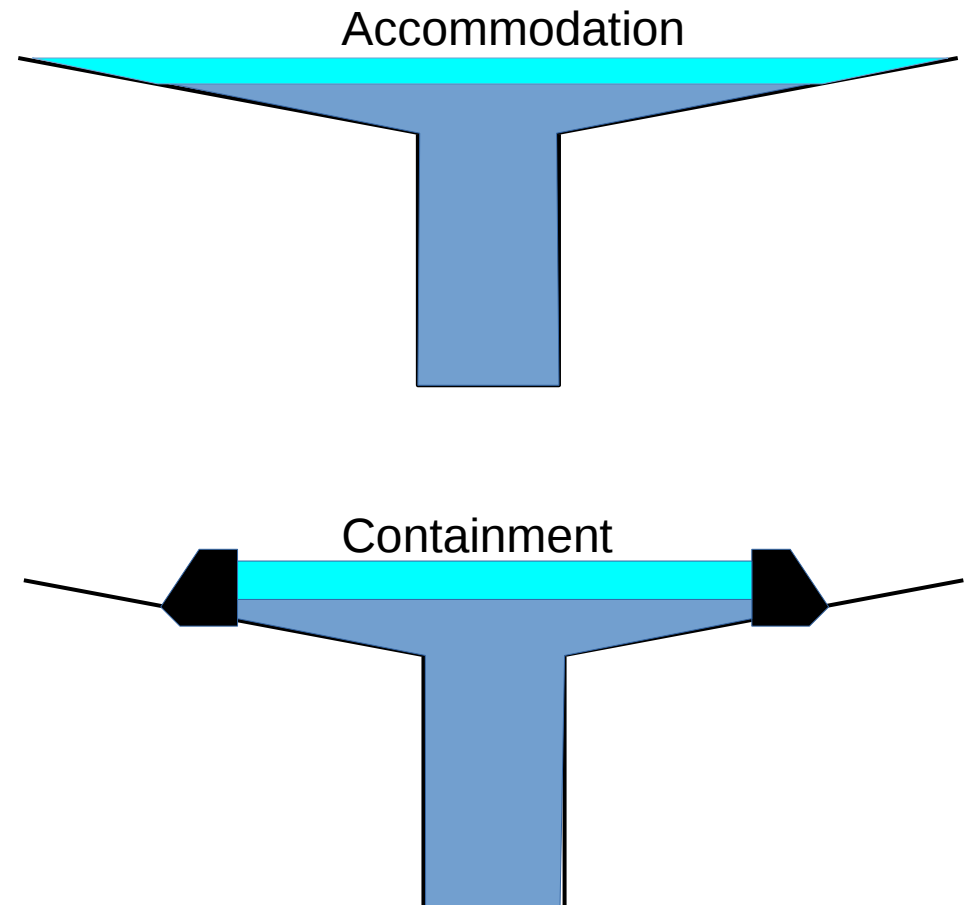
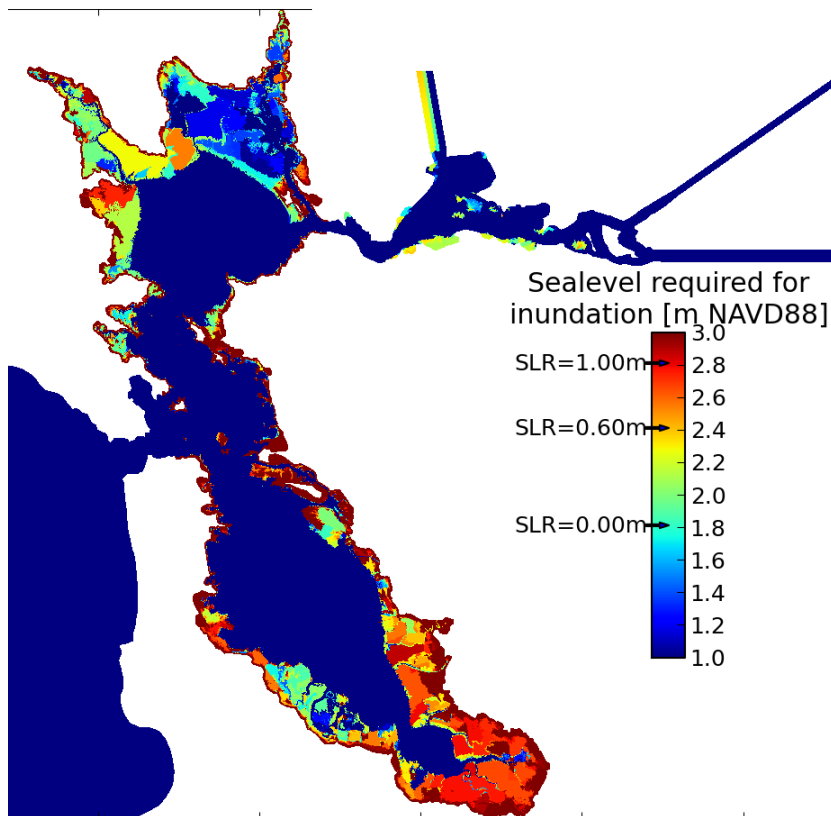


- History of 'reclamation' transforming to 'restoration'

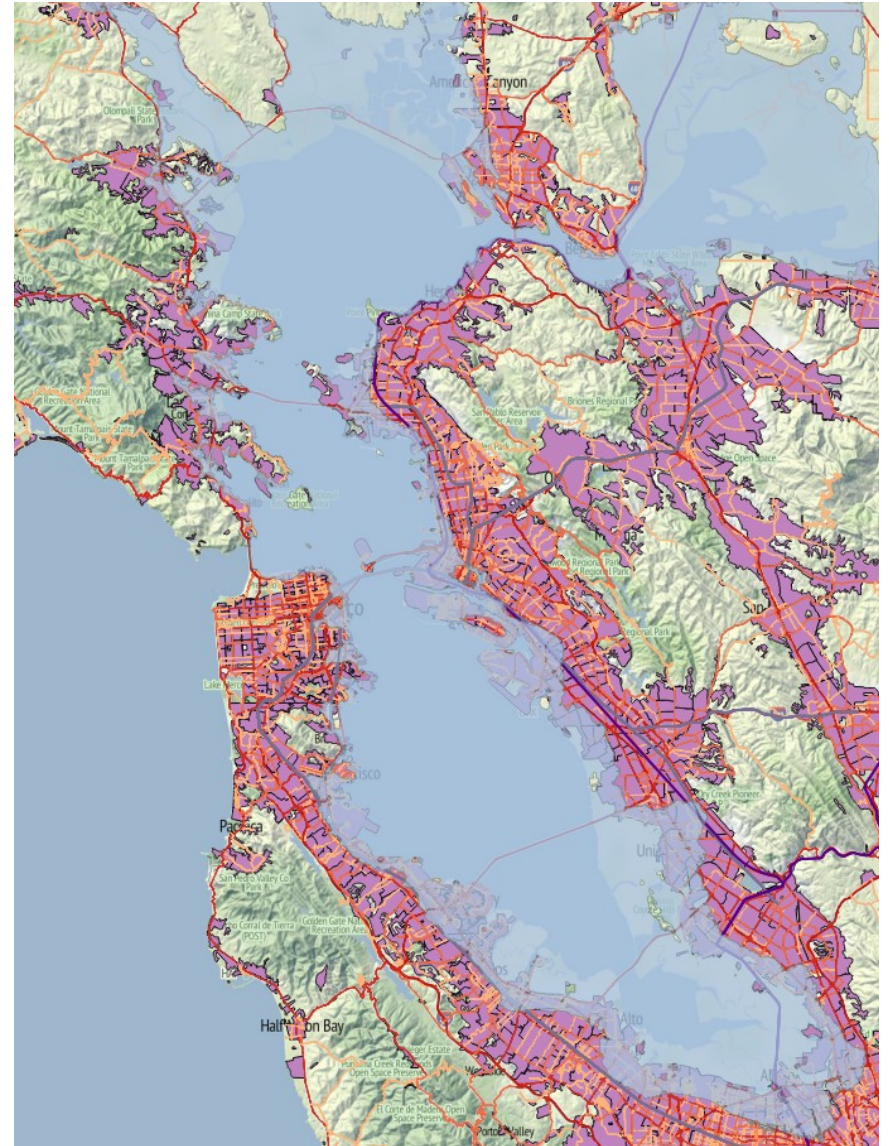
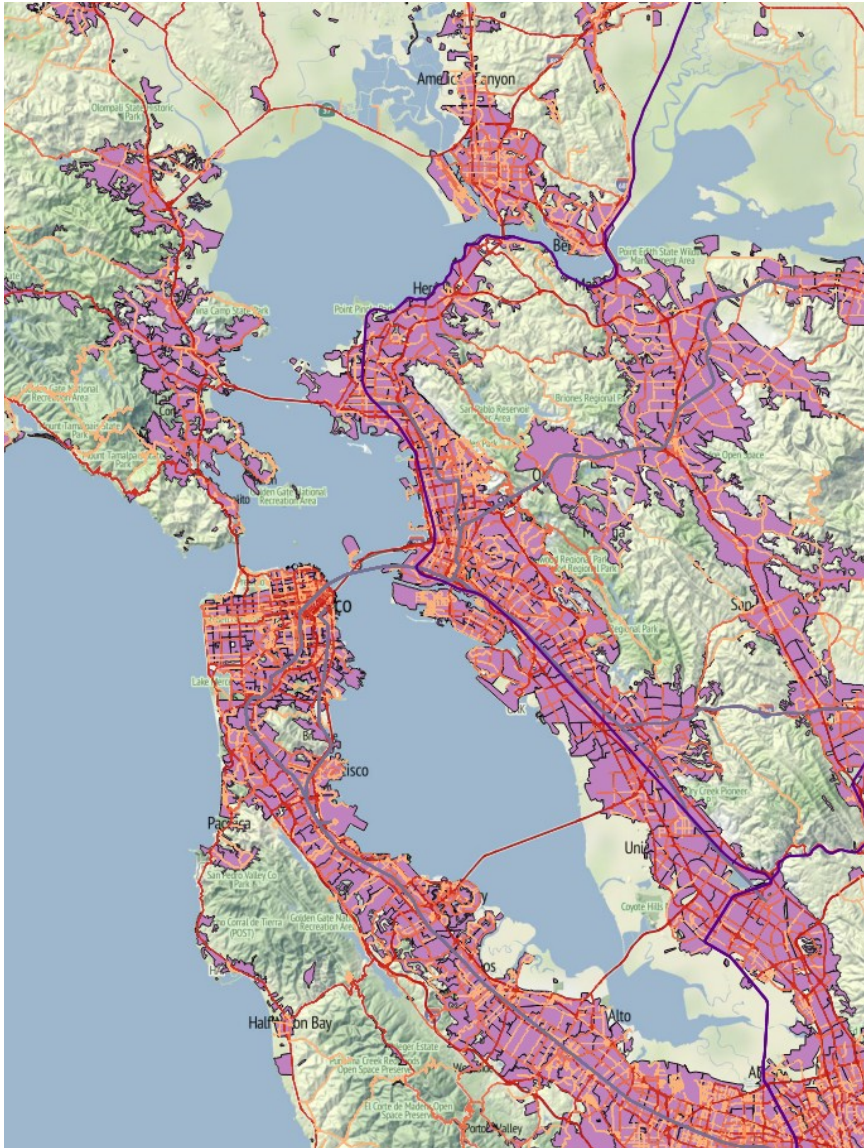


# Accommodation and Containment: SF Bay

- Management question: where, and to what extent, do we accommodate the rising water associated with sea level rise?
  - Implications for hydrodynamics and infrastructure function



# Accommodation in an urban estuary

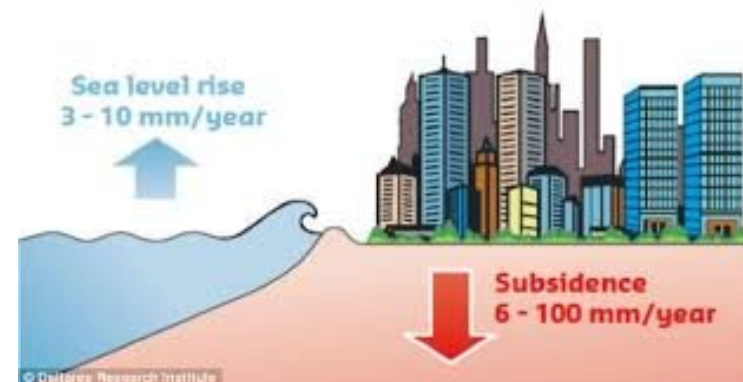
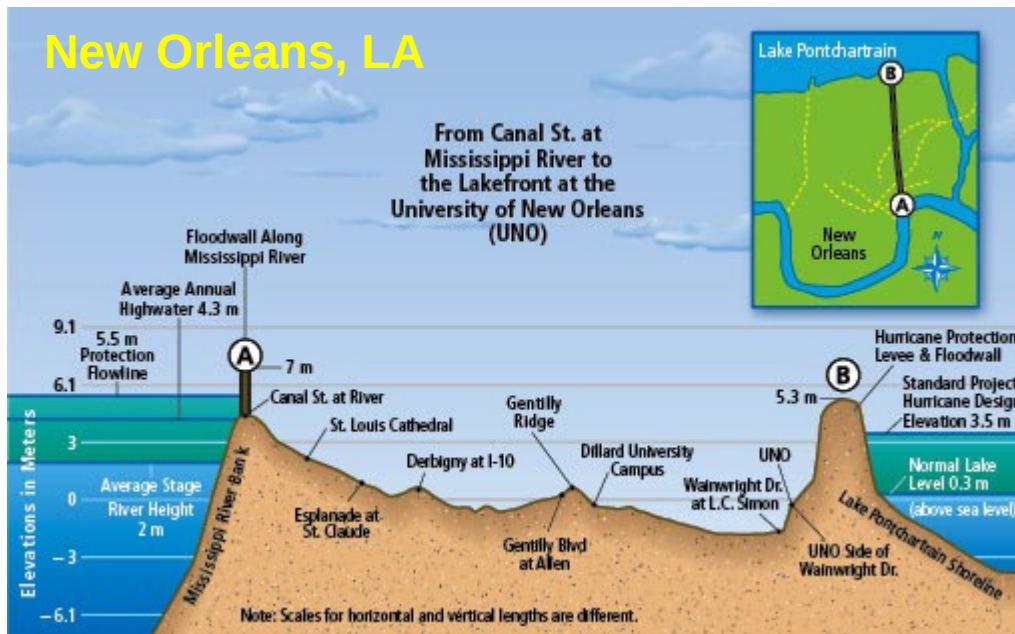


- Decisions demand consideration of interacting vulnerabilities



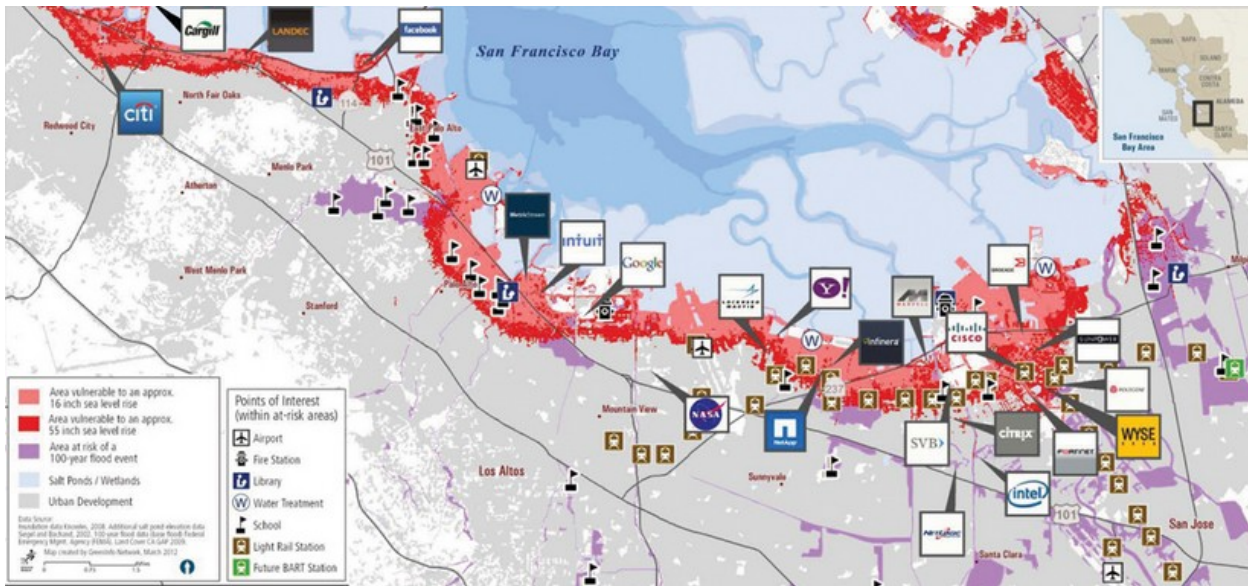
# Individual Community Decision-Making

- Individual actor likely to extend protections vertically over time
  - Addresses near-term threat with incremental investment
  - No accounting of regional benefits (or costs) of alternative actions



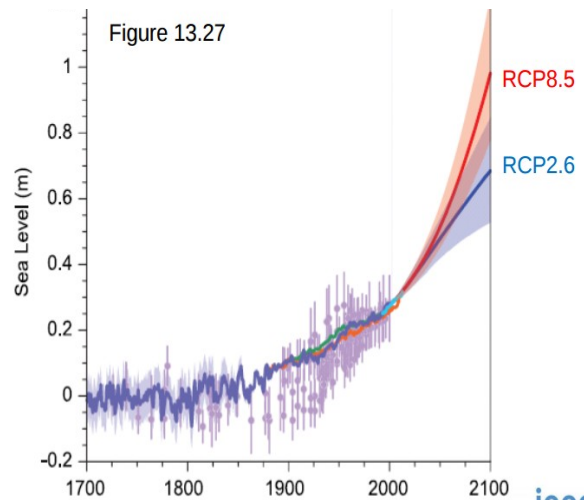
# Challenge: Governance structures

- Jurisdictions at range of scales with overlapping responsibility
  - Property owners, cities, county, state
  - Airports and transportation network
  - Cross-cutting agencies: Bay Conservation and Development Commission, e.g.

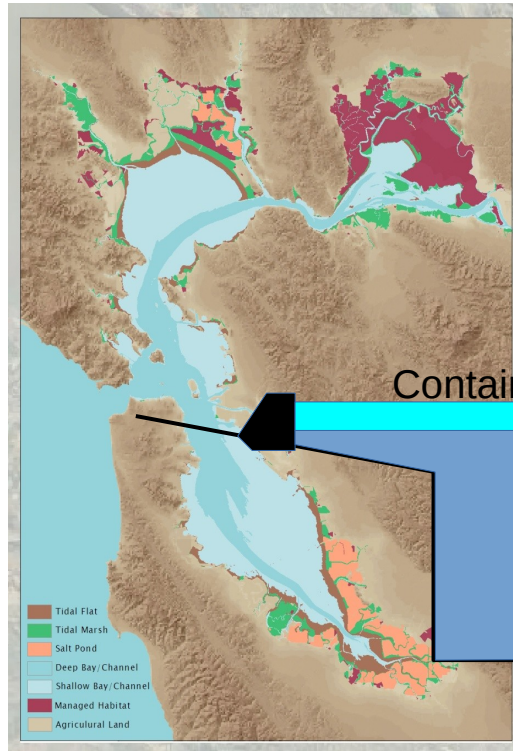
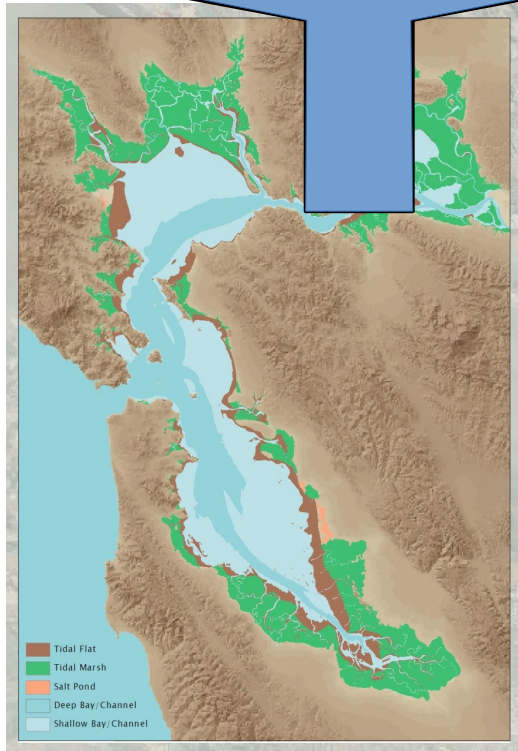




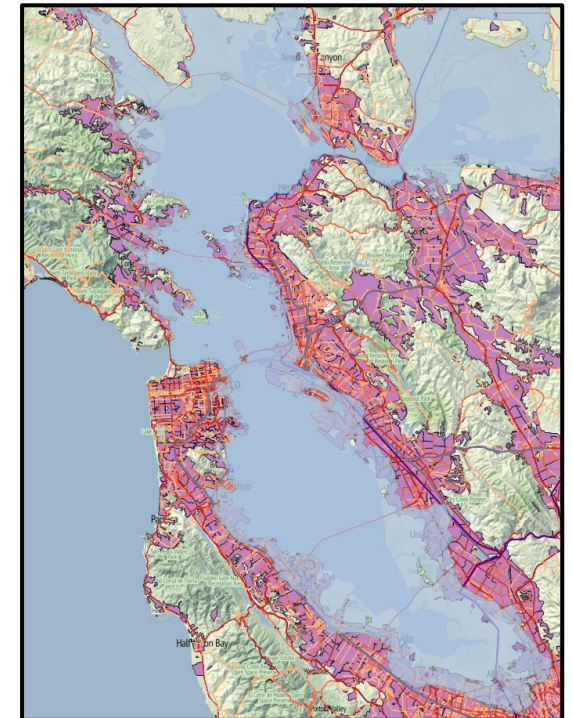
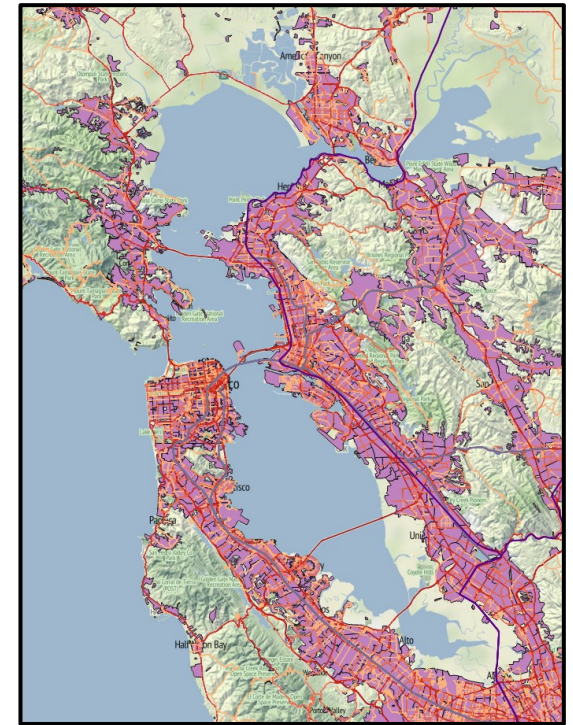
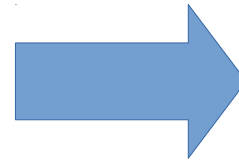
# Shoreline and Sea Level Scenarios



Accommodation

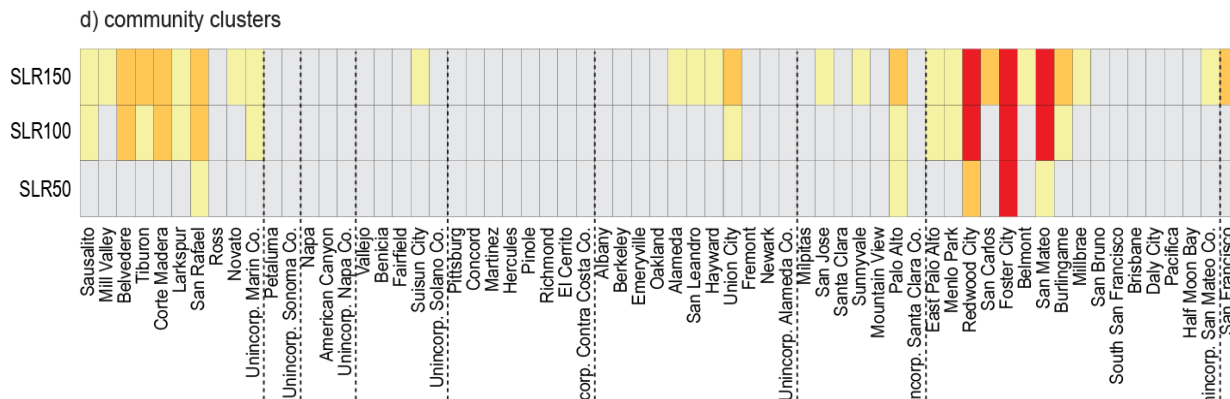
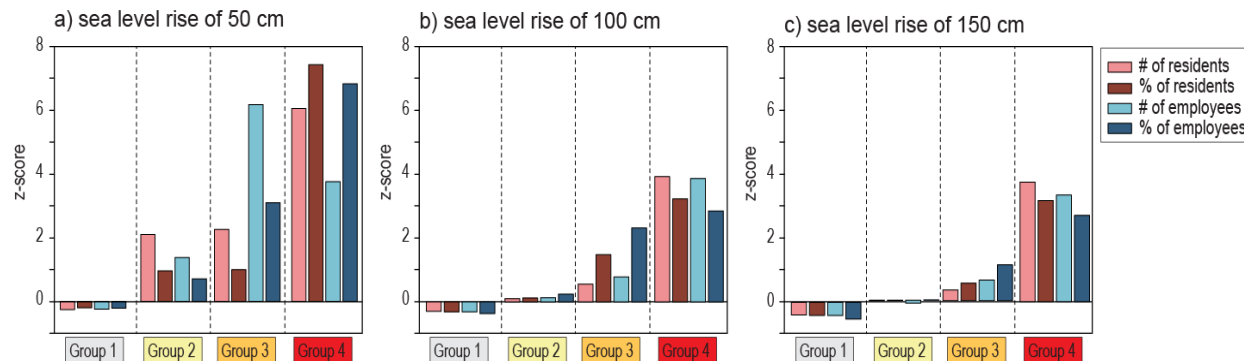
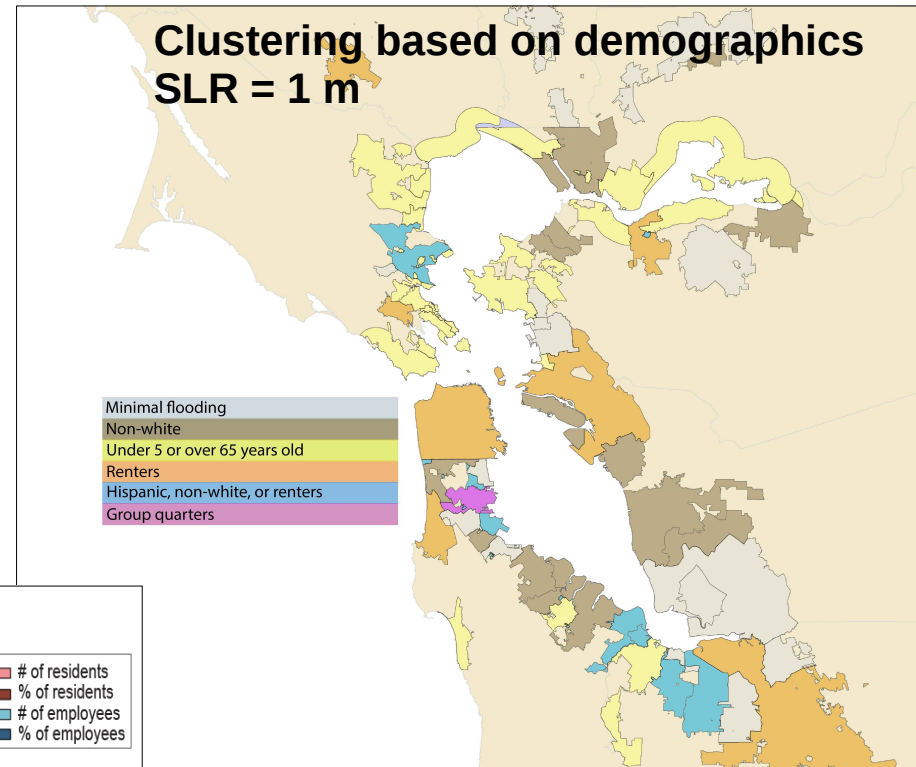


Containment



# Shared Experiences

- Inundation map merged with census data
  - Clusters based on similarities between communities
  - Clustering varies with time (sea level) and data considered

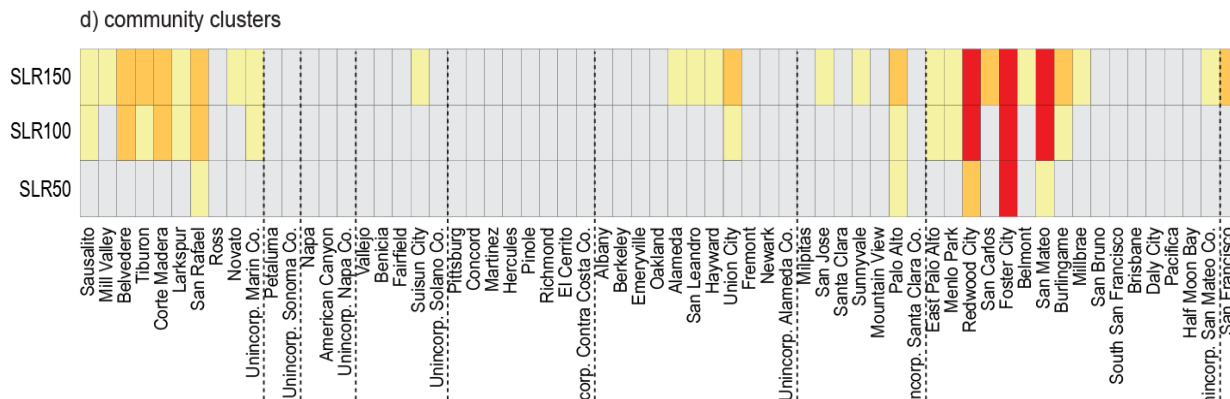
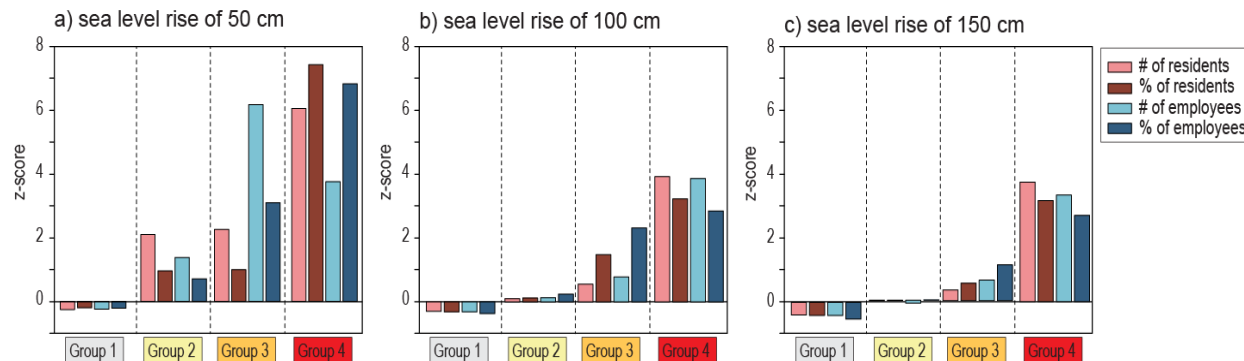
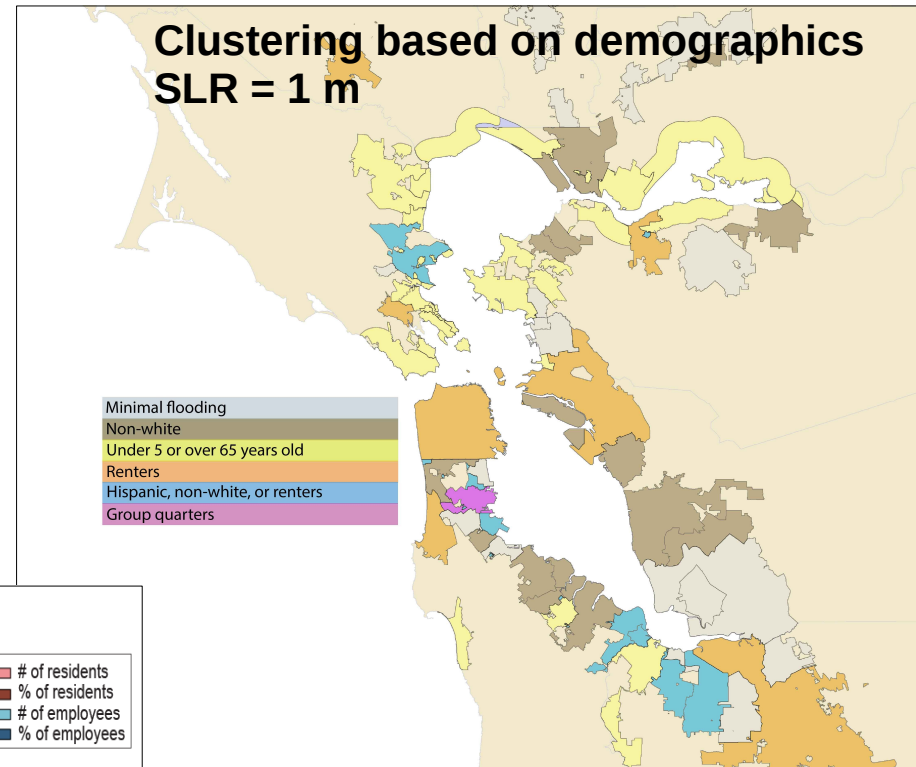


**Time development of clusters**

Hummel et al., in press at *Regional Environmental Change*

# Shared Experiences

- Inundation map merged with census data
  - Clusters based on similarities between communities
  - Clustering varies with time (sea level) and data considered



**Time development of clusters**

- Regional Opportunity
  - Communities with similar risks may benefit from sharing knowledge
  - Future clustering may motivate unanticipated connection

Hummel et al., in press at *Regional Environmental Change*



# Interdependent Vulnerabilities

- Disruption by flooding on Berkeley water front
  - 90% capacity reduction
- Behavioral model adjusts traffic patterns
  - Model built from cell phone data
- Travel time increases:
  - Green: 0%
  - Orange-Yellow: 0-50%
  - Red: >50%

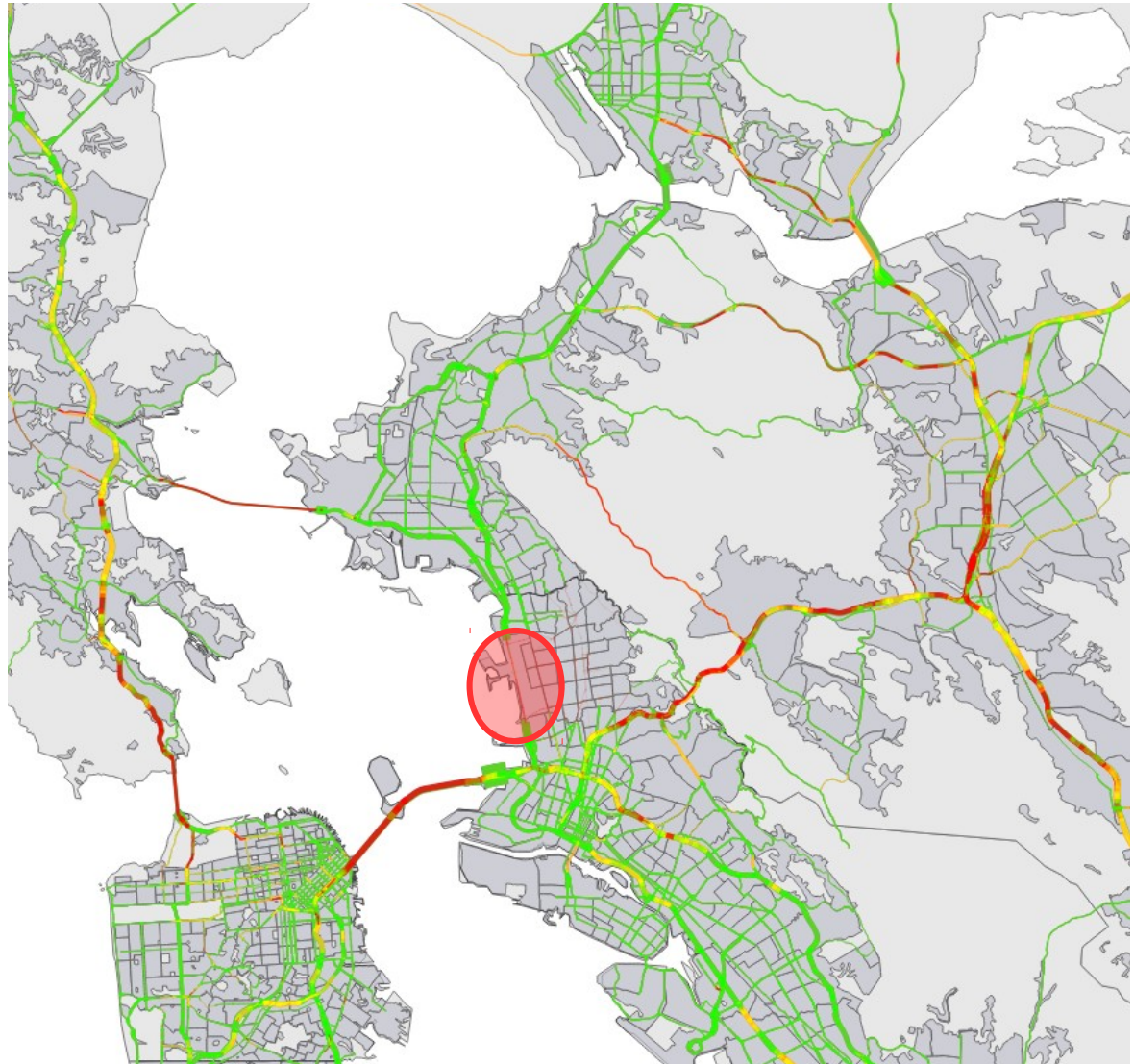
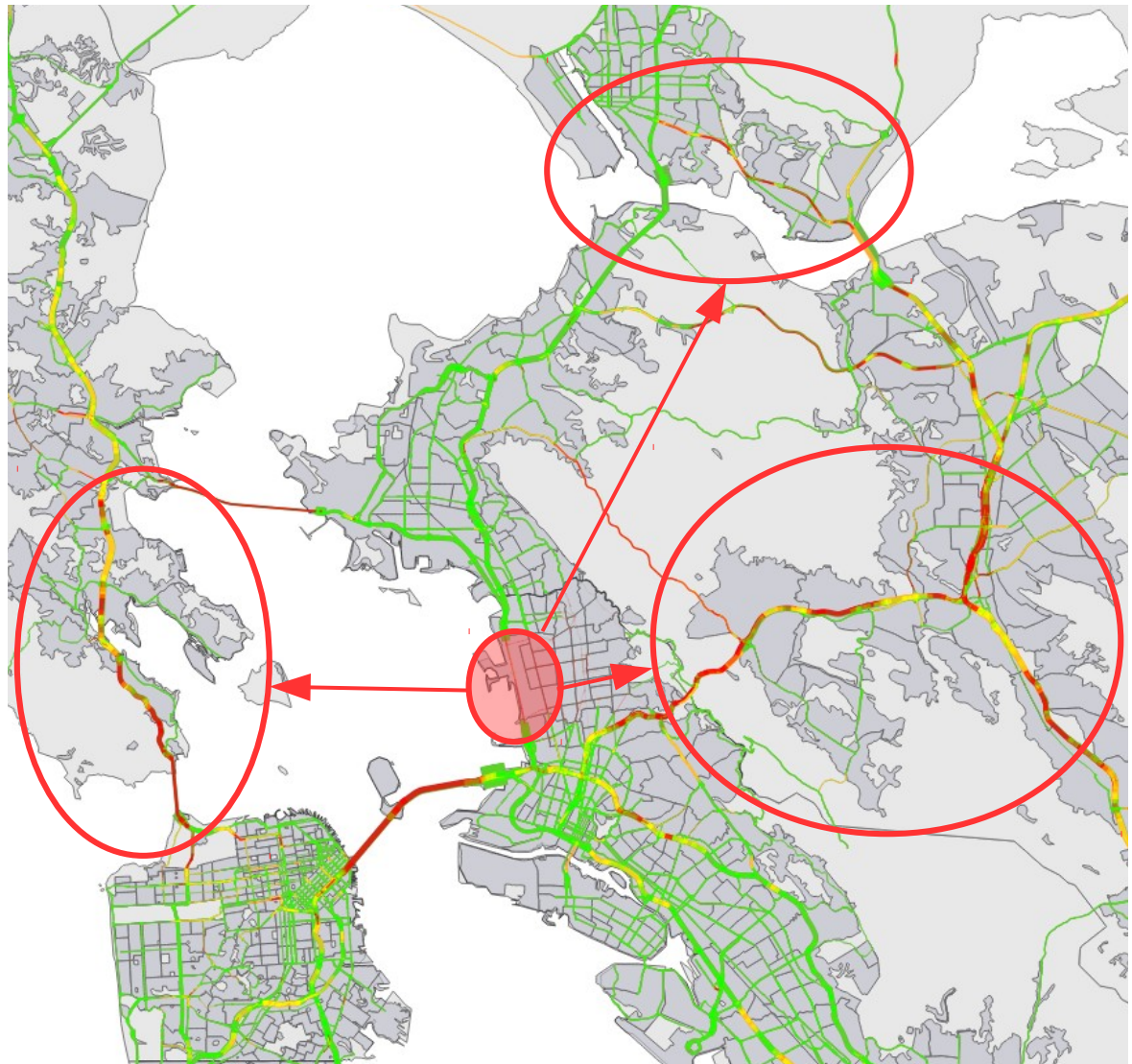


Figure from Sheehan and Pozdnukhov, unpublished



# Interdependent Vulnerabilities

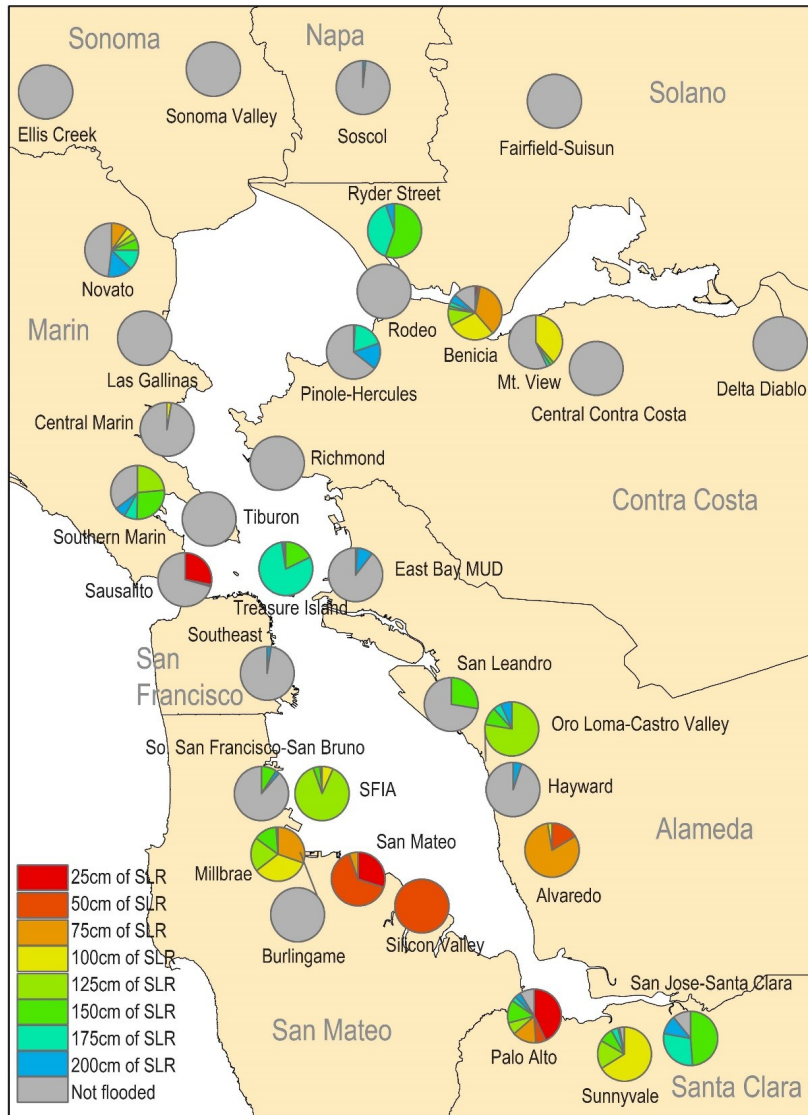
- Disruption by flooding on Berkeley water front
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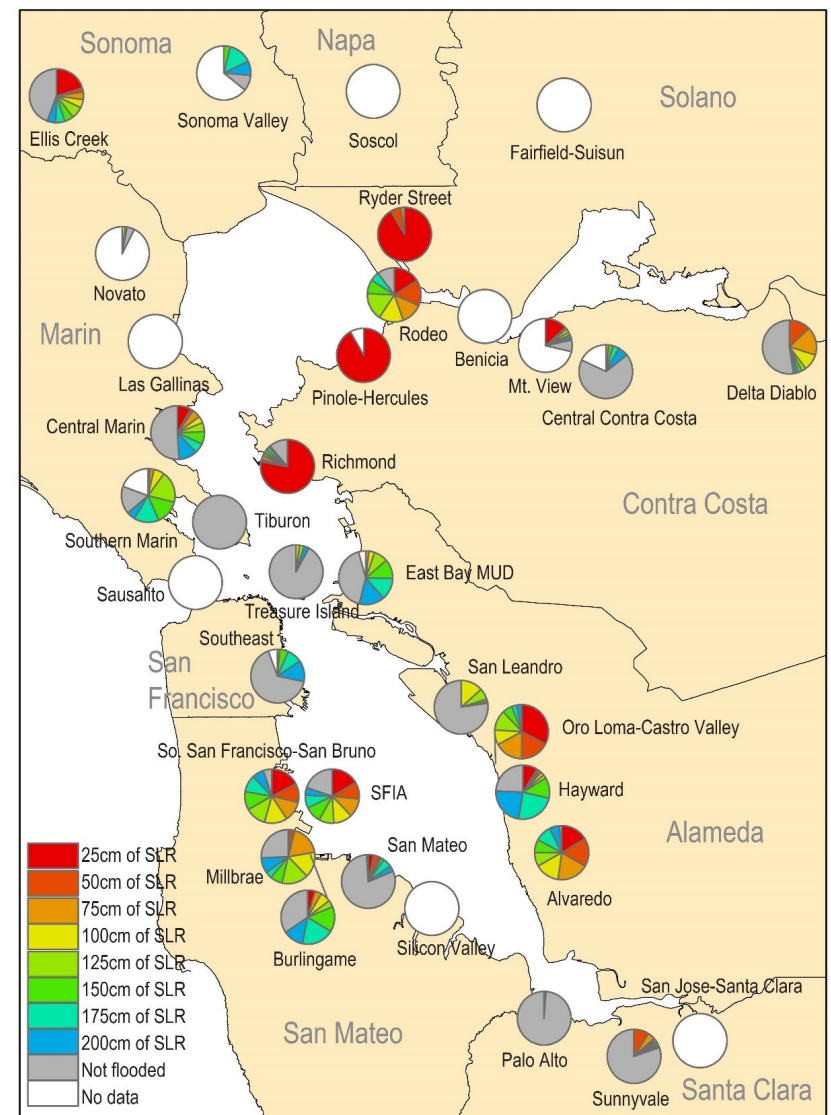
- Regional Costs due to Local Vulnerability
  - Localized inundation event creates regional changes in travel times and costs
  - Creates incentive for regional investment in local protections

# Wastewater Infrastructure Vulnerabilities

## Surface Water Flooding



## Groundwater Flooding

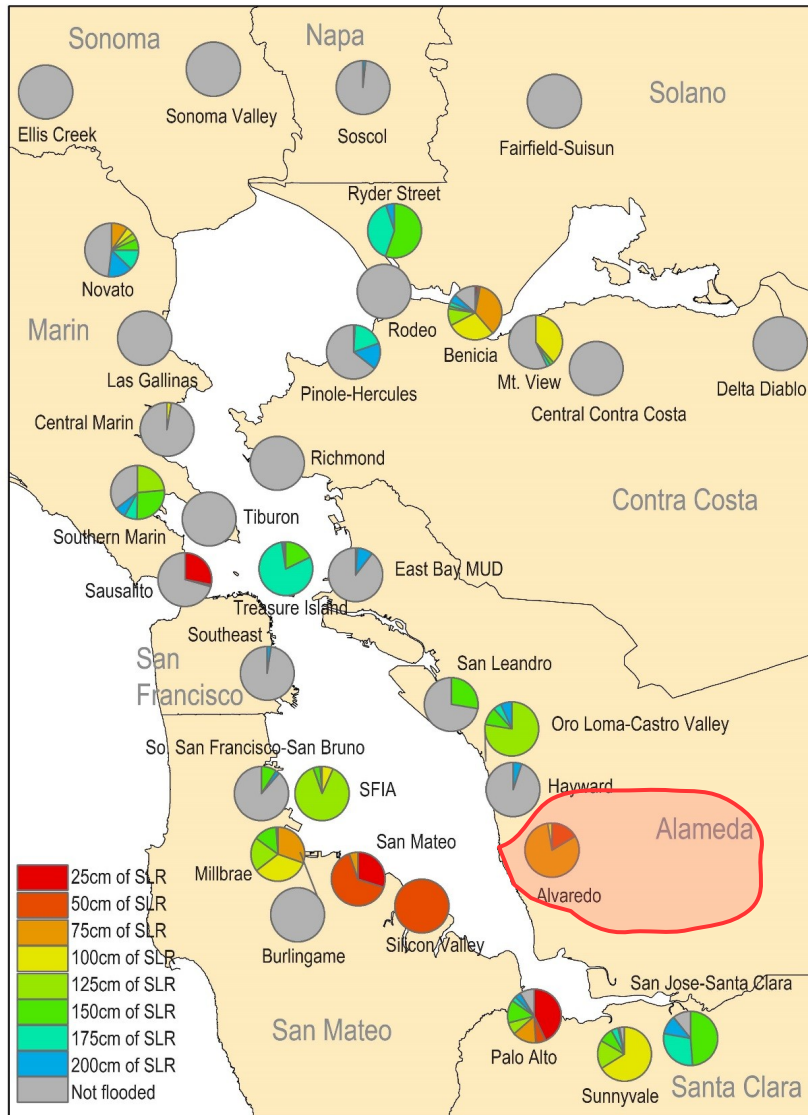


From Hummel et al., in press at *Earth's Future*

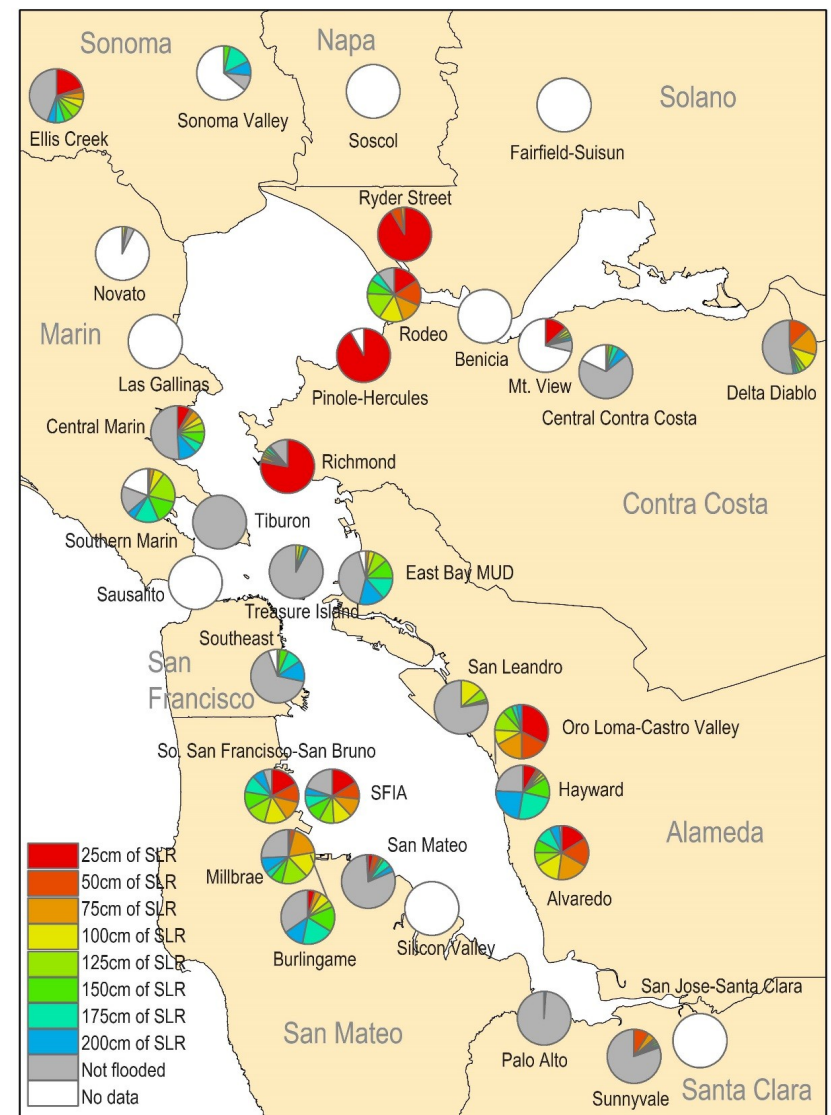


# Wastewater Infrastructure Vulnerabilities

## Surface Water Flooding



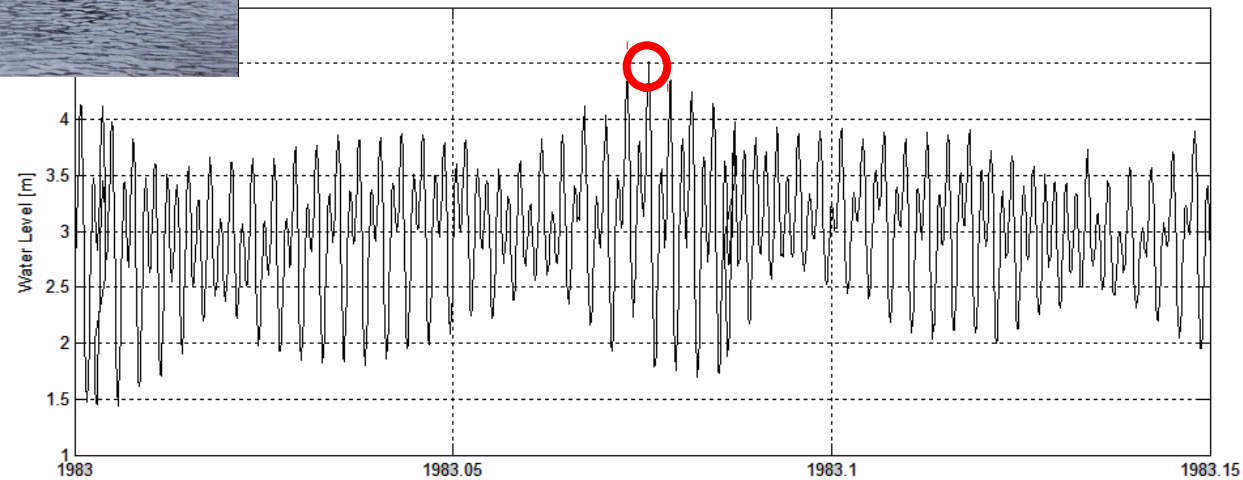
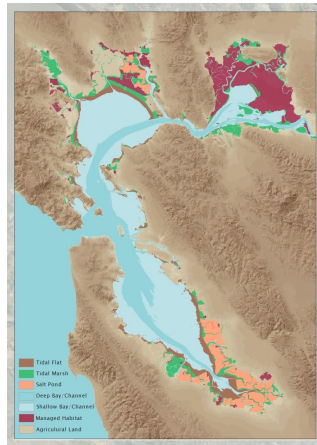
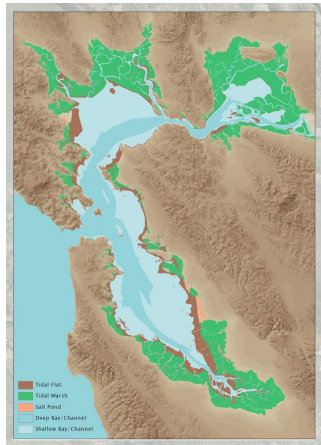
## Groundwater Flooding



Lack of redundancy in wastewater network means vulnerabilities at key locations (WWTPs) create disruption for population served by facilities

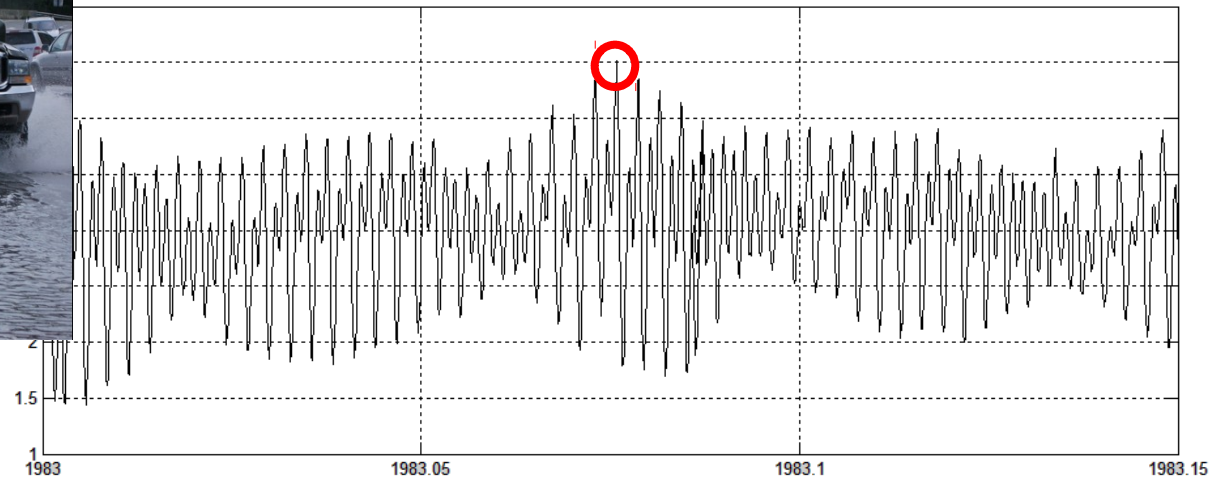
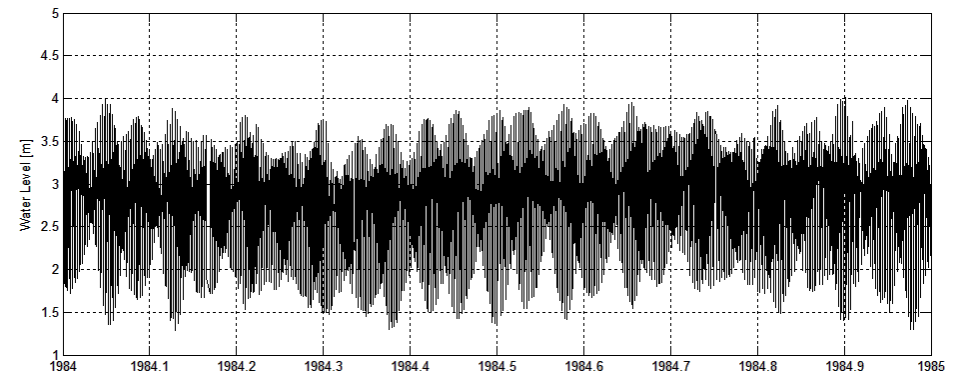
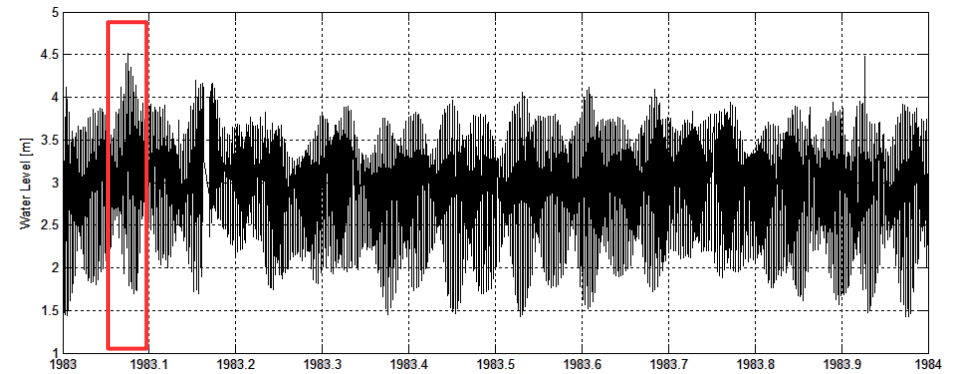
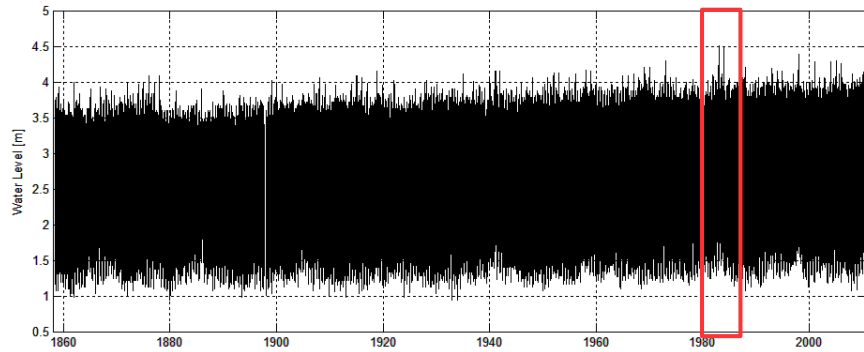


# Importance of the tides in SF Bay



- Tides dominate signature of high water events
  - Need to consider interaction of tides with the basin

# Importance of the tides in SF Bay

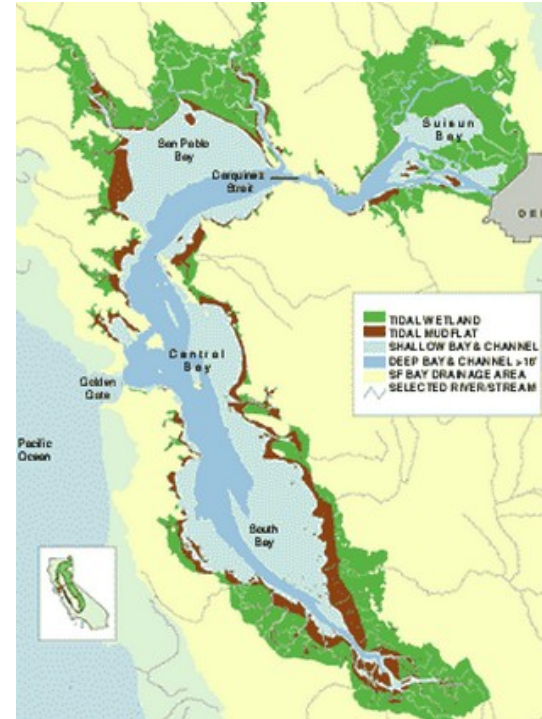


# Tides in basins: Amplification v. Dissipation

- Tides can be amplified in basins
  - Set by interplay of tidal forcing and bathymetry and shorelines
- Friction and interaction with perimeter dissipate tidal energy
  - Wetlands, topography and shallow regions
- San Francisco Bay experiences both
  - South Bay: Amplified
  - North Bay: Dissipated



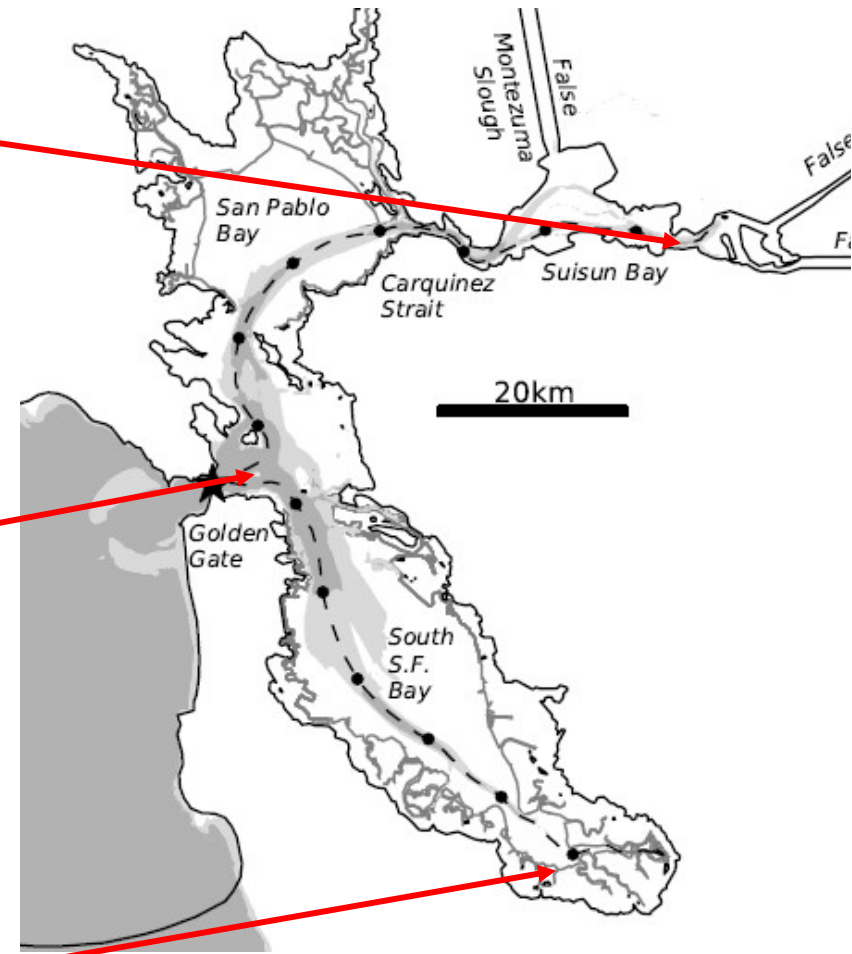
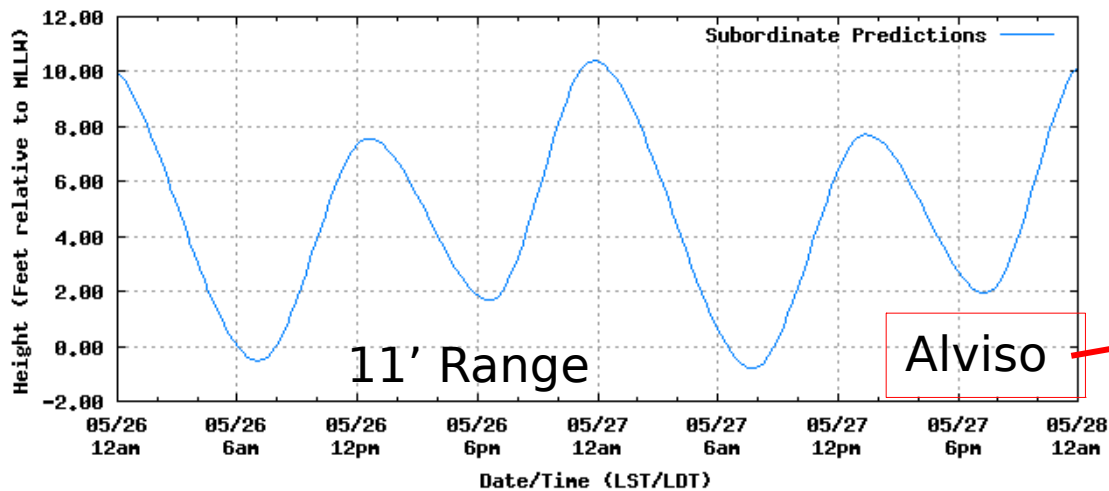
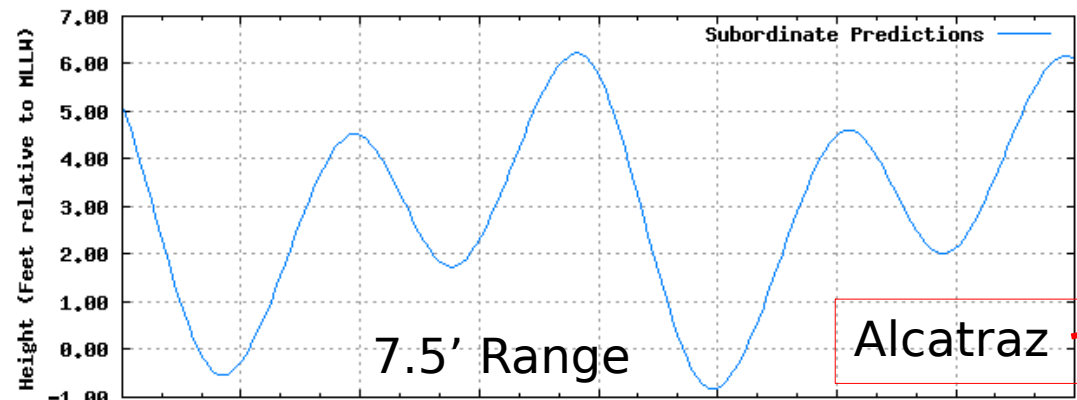
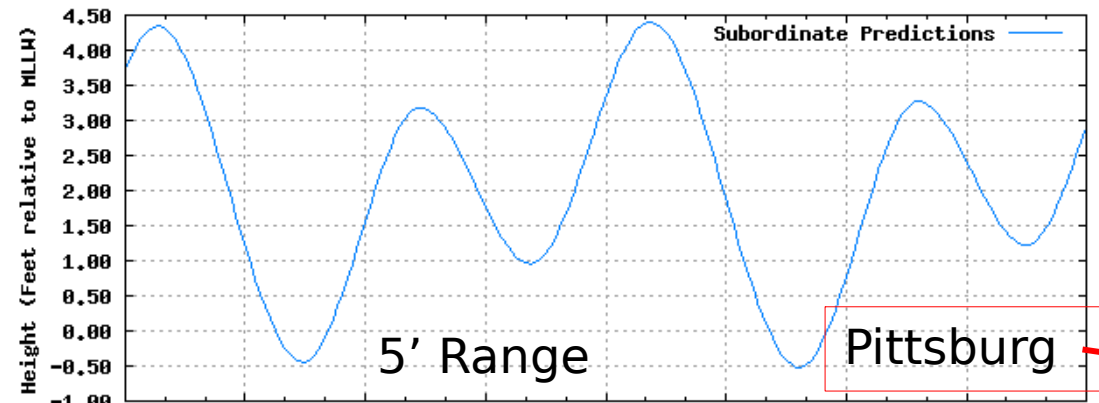
*Bay of Fundy, Low and (nearly) High Tide*



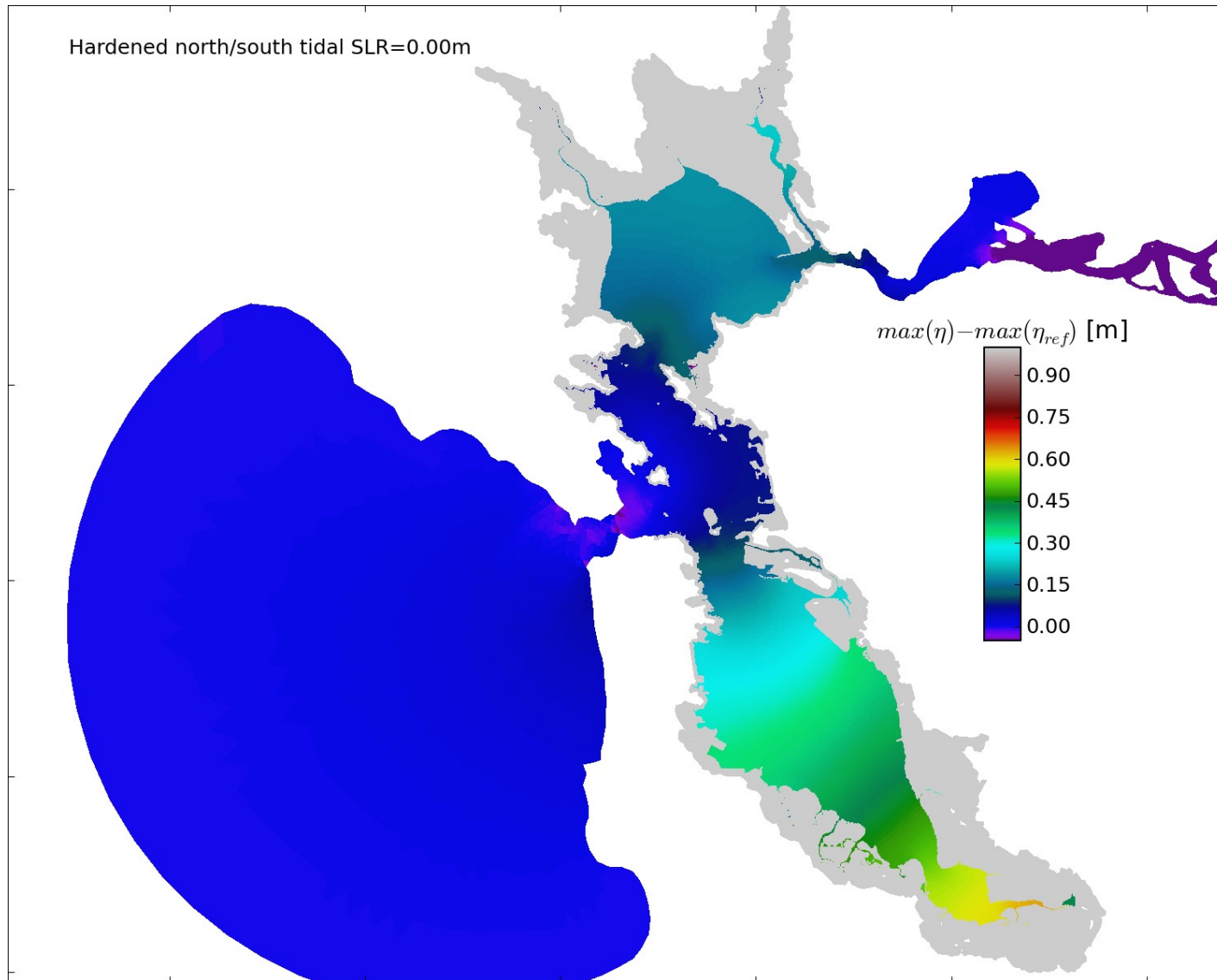
*Historical SF Bay*



# Examples: SF Bay



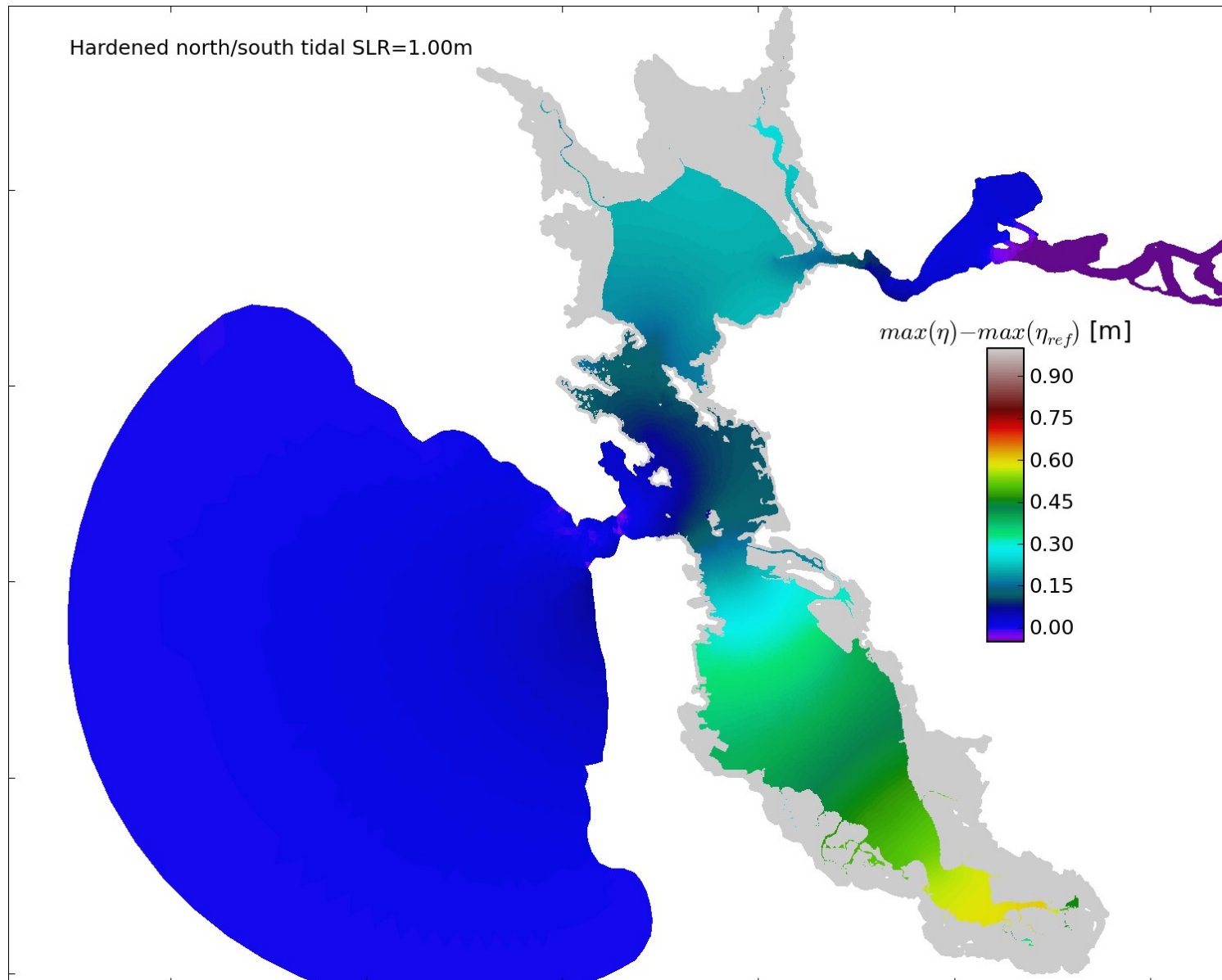
# Current conditions with tidal forcing



Colors show water elevation *above* high water level in ocean (M2 tides)

Gray areas show extent of grid

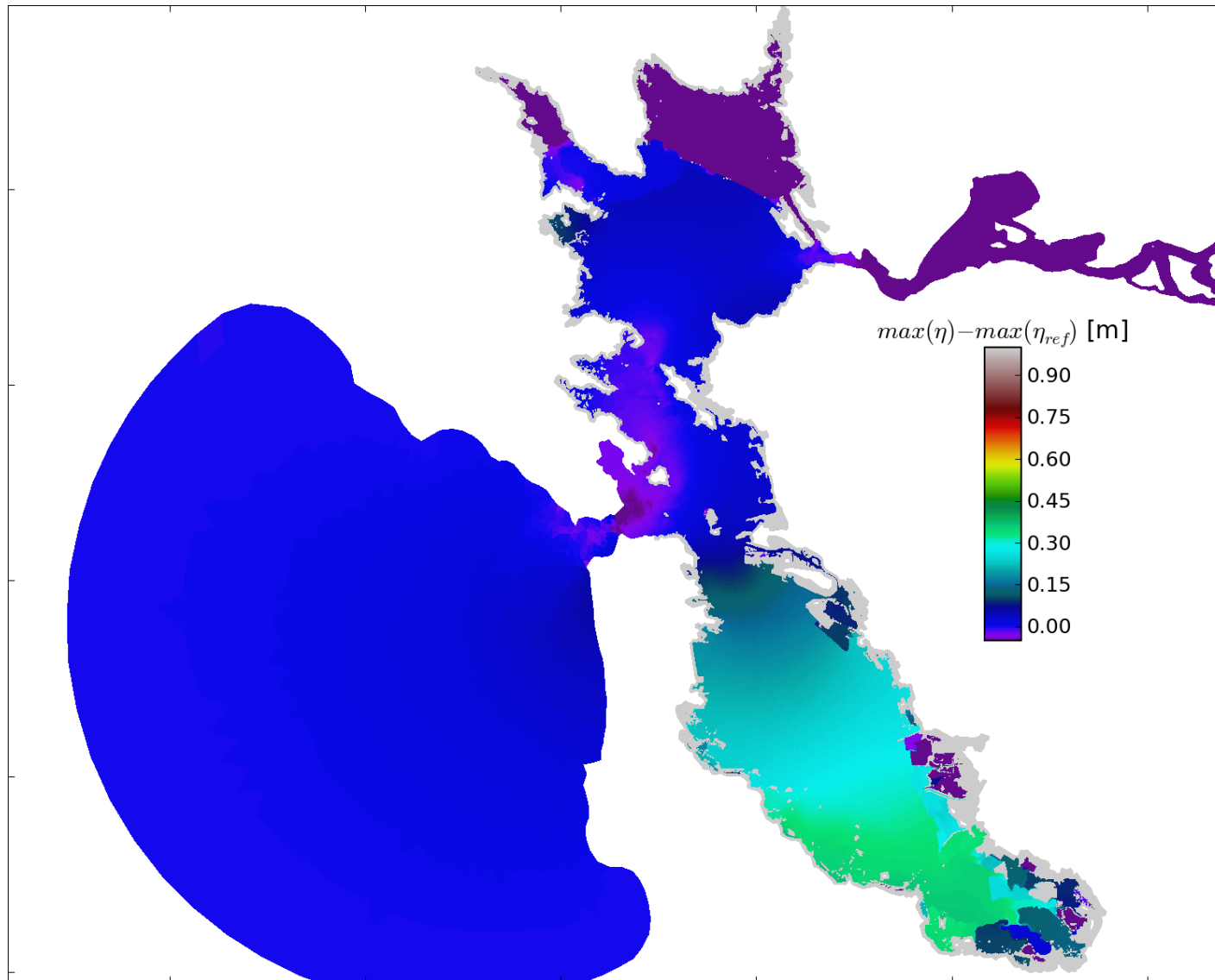
# Full Containment, 1 meter SLR



Very similar to current conditions. SLR adds linearly to current water levels



# Full Accommodation

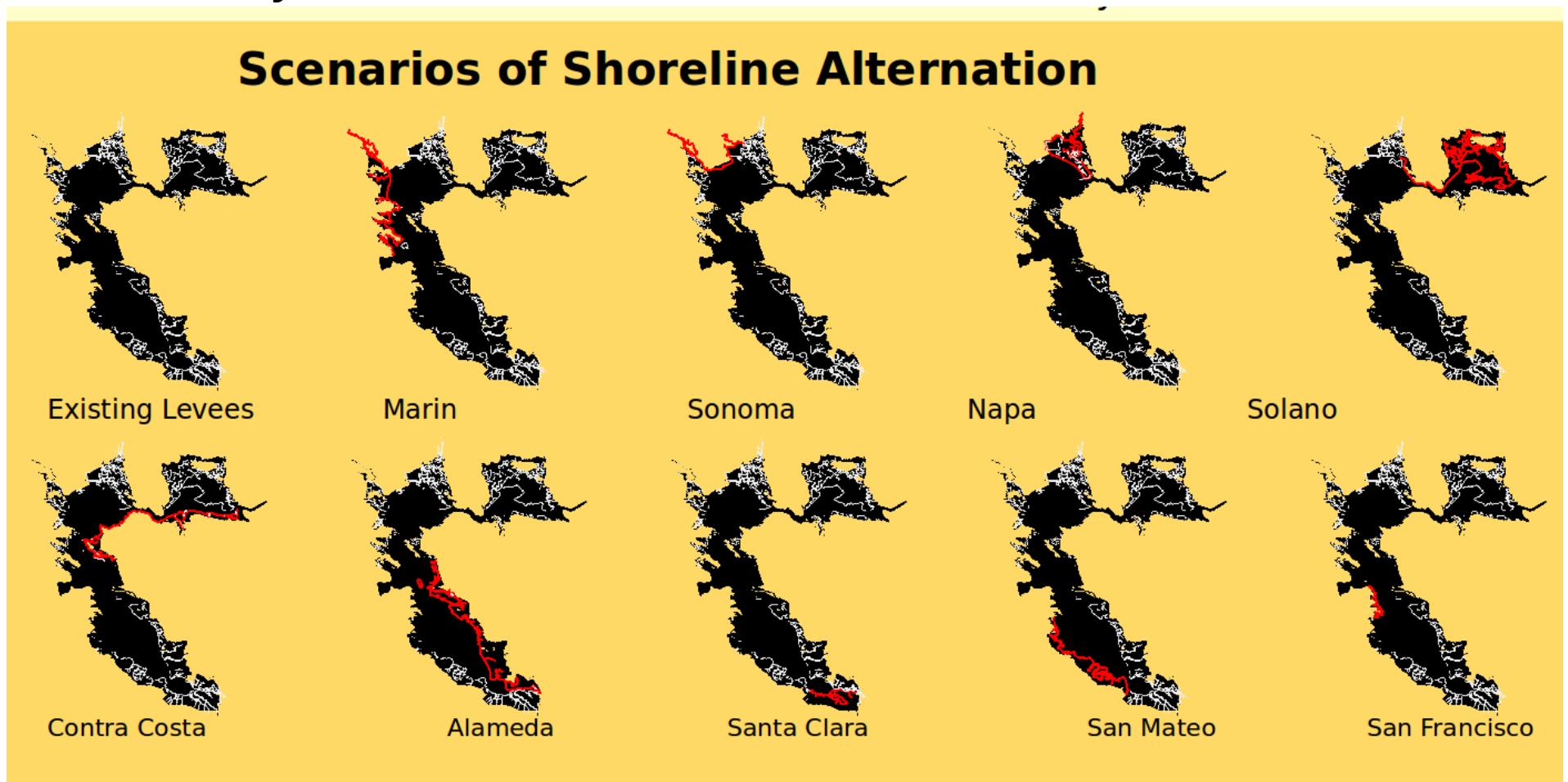


Water level in south bay is only 40-45 cm above ocean water level.

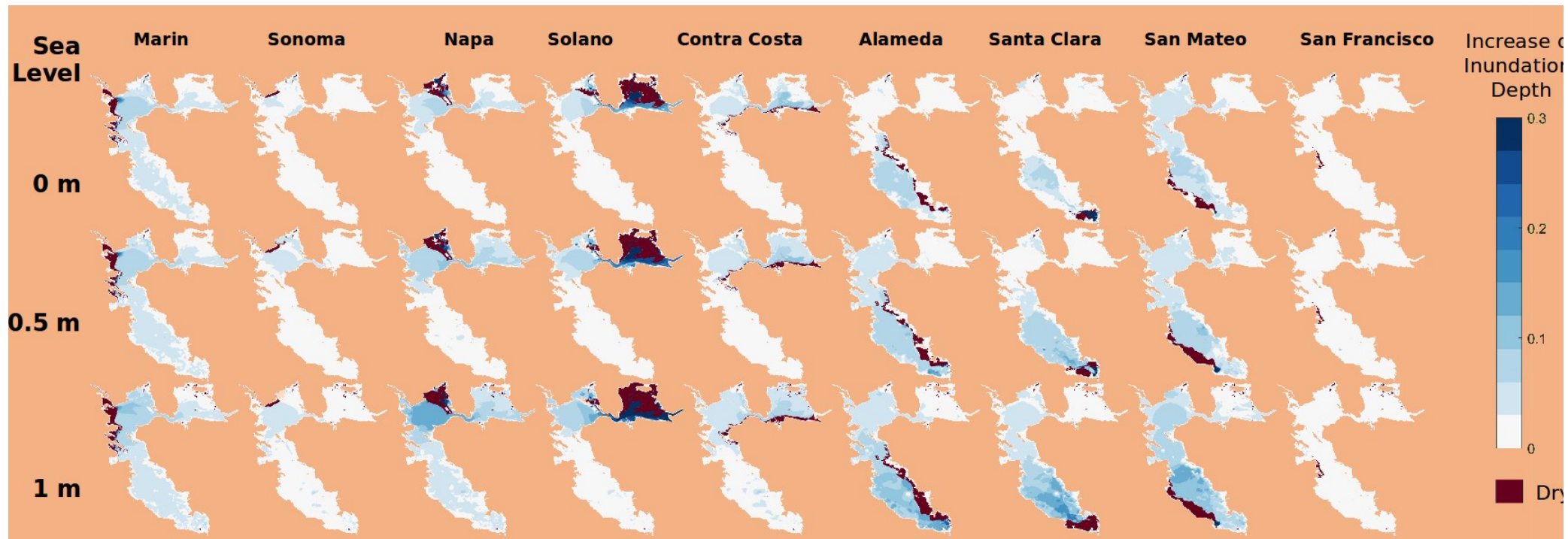
With full containment (previous), was ~60 cm above ocean water level.

# County-by-county protective measures

- Existing topography/levees in white
  - Red lines show hardened shorelines for 9 county-by-county scenarios



# Water level response to county actions

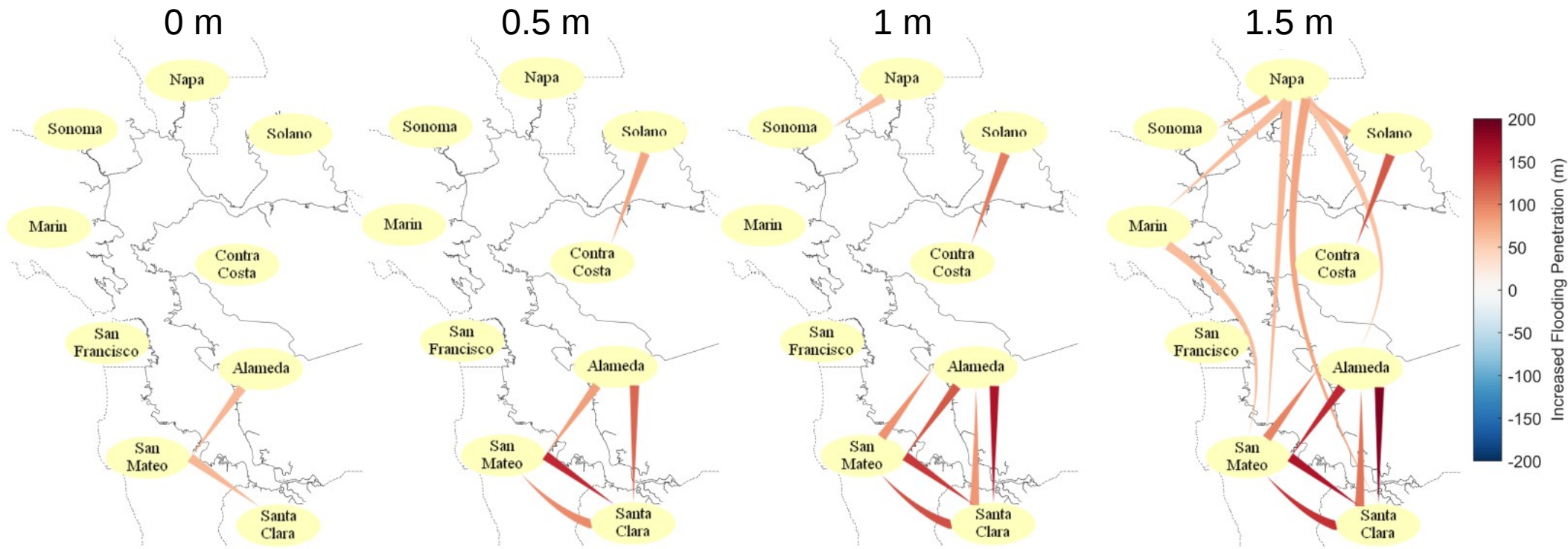


- Shades of blue show how water level increases when walls are raised



# Interdependent Adaptation

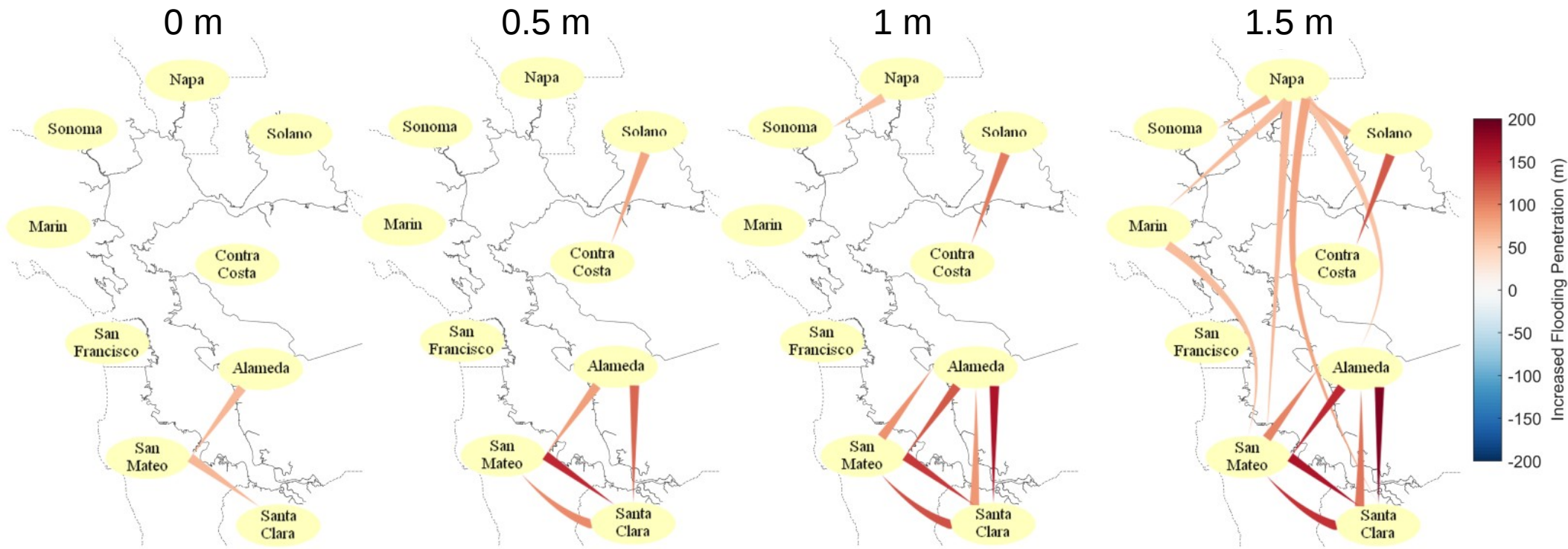
- Defining direct influence of action by one county on flooding in another
  - County-by-county shoreline protective action
  - Quantify change in flooding in other counties for 4 SLR scenarios



From Wang et al., in press at *Earth's Future*

# Interdependent Adaptation

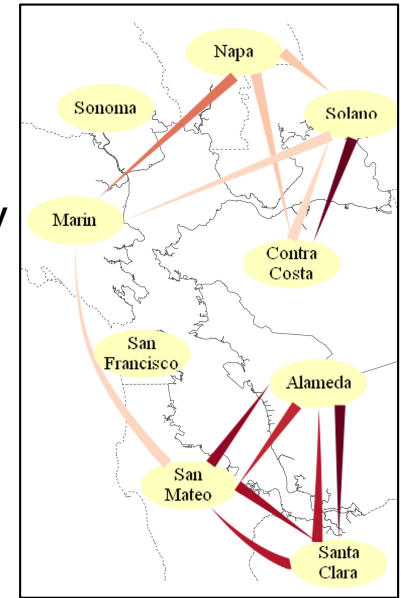
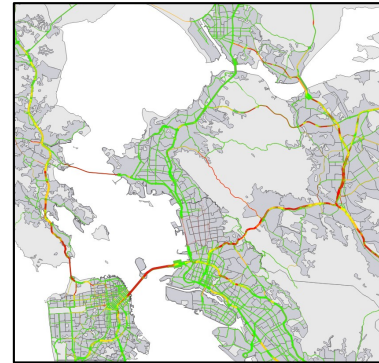
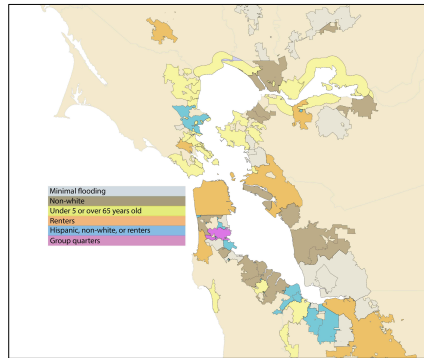
- Defining direct influence of action by one county on flooding in another
  - County-by-county shoreline protective action
  - Quantify change in flooding in other counties for 4 SLR scenarios



- Regional Impacts of Local Actions
  - Direct interactions means counties planning activities must account for others
  - Strongly motivates coordinated actions

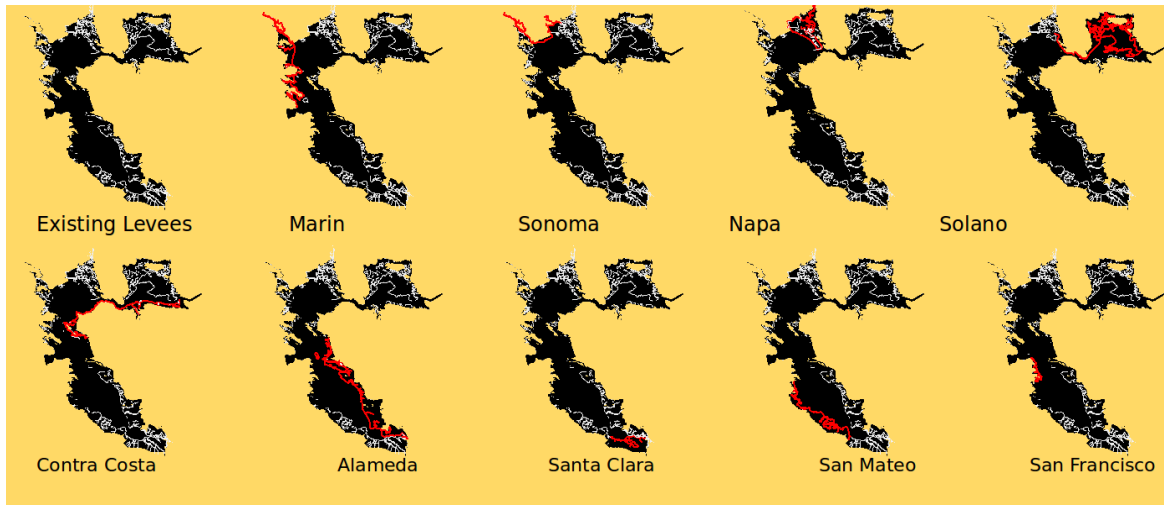
# Regional Coordination in SLR Adaptation

- Summary of interdependencies
  - Shared Experience: Value of sharing knowledge
  - Interdependent Vulnerability: Regional cost from local vulnerability
  - Interdependent Adaptation: Regional impacts of local actions



Lubell et al., In preparation for  
*Nature Climate Change*

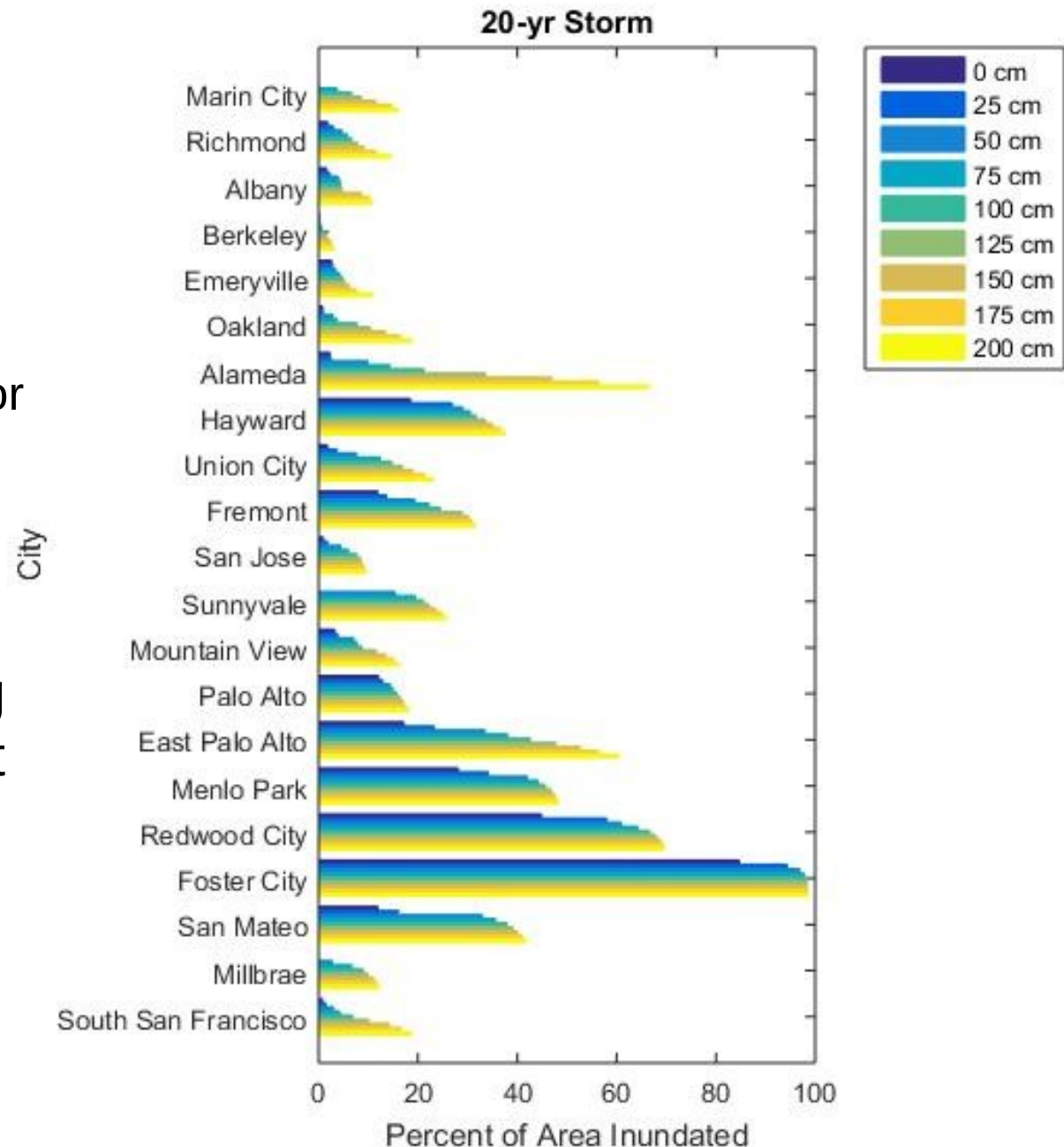
- Consider interaction between shorelines and transportation infrastructure





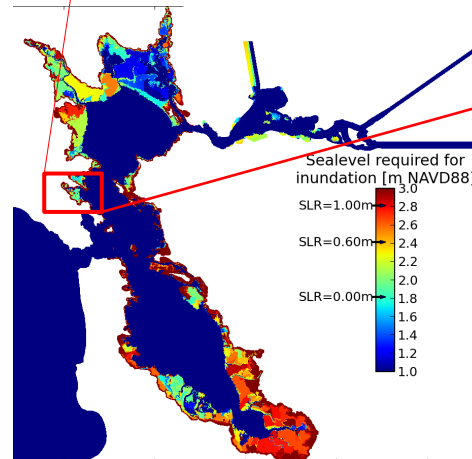
# Barriers to Regional Action: Timing

- Different communities feel the threat of coastal flooding with different levels of urgency
  - For some it is immediate, for others it is decades away
- Regional coordination requires an understanding of shared vulnerabilities at a particular time of action or planning



# Barriers to Regional Action: Socio-economics

- Heterogeneity in socio-economic power
  - Many vulnerable bayfront communities have limited ability to invest for long-term
  - Interdependencies may create regional incentives for investment

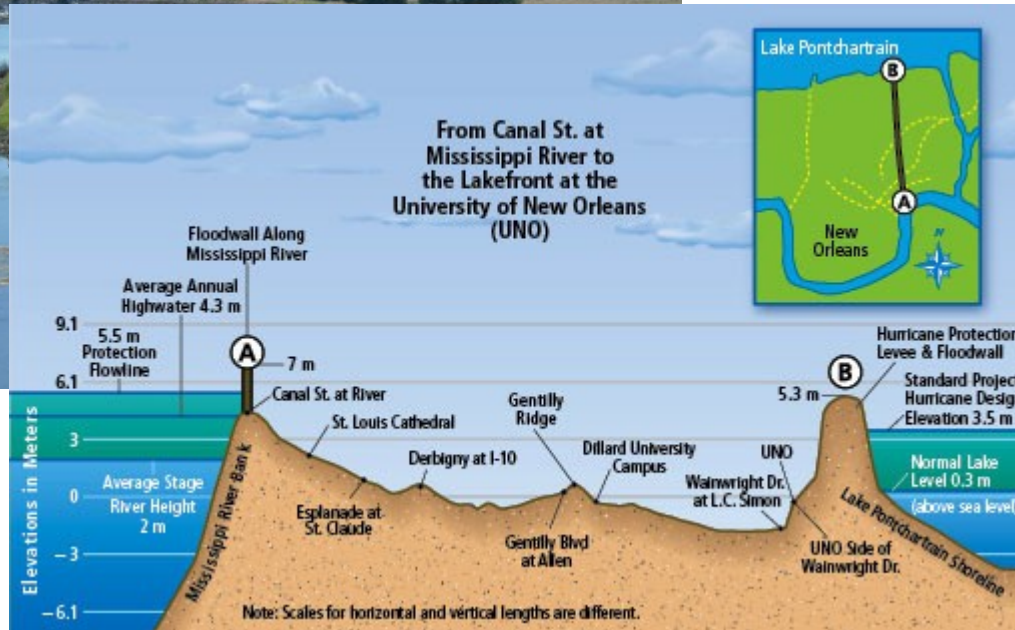


# Path Dependency in Decision-Making

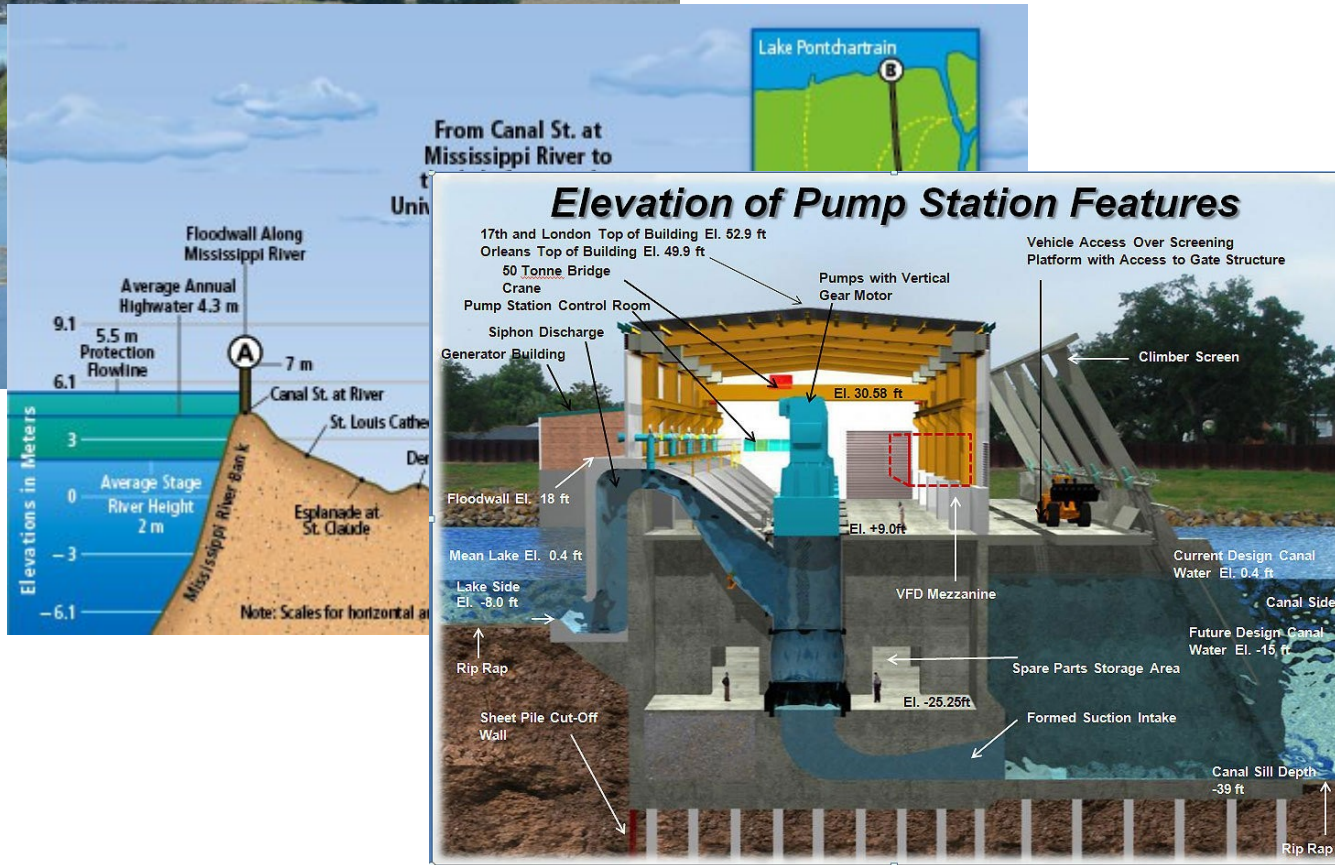




# Path Dependency in Decision-Making

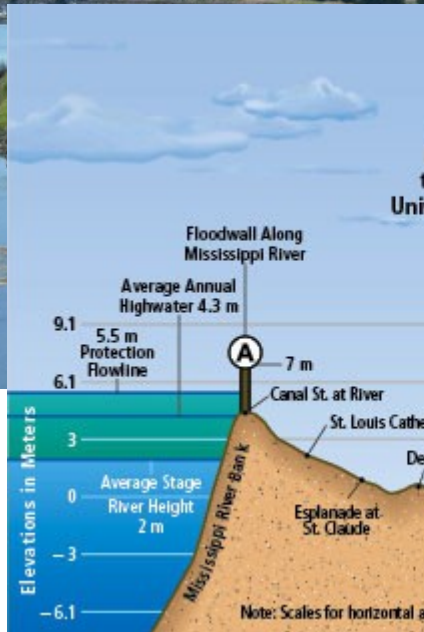


# Path Dependency in Decision-Making





# Path Dependency in Decision-Making



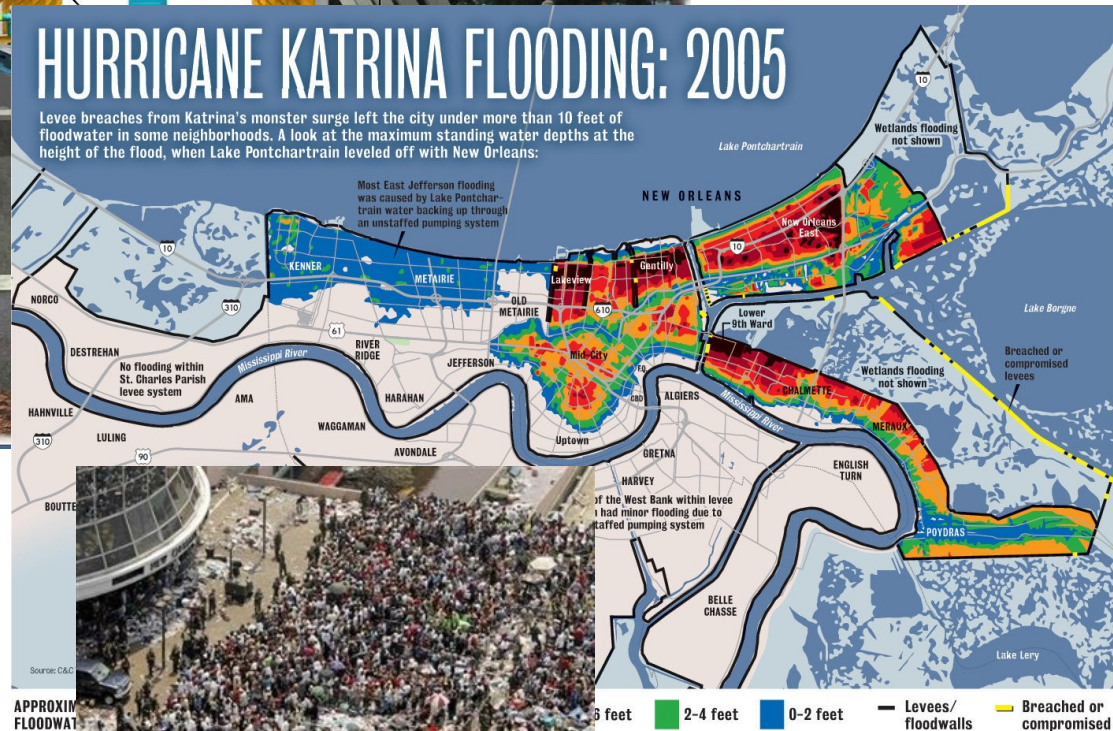
From Canal St. at  
Mississippi River to

## Elevation of Pump Station Features



## HURRICANE KATRINA FLOODING: 2005

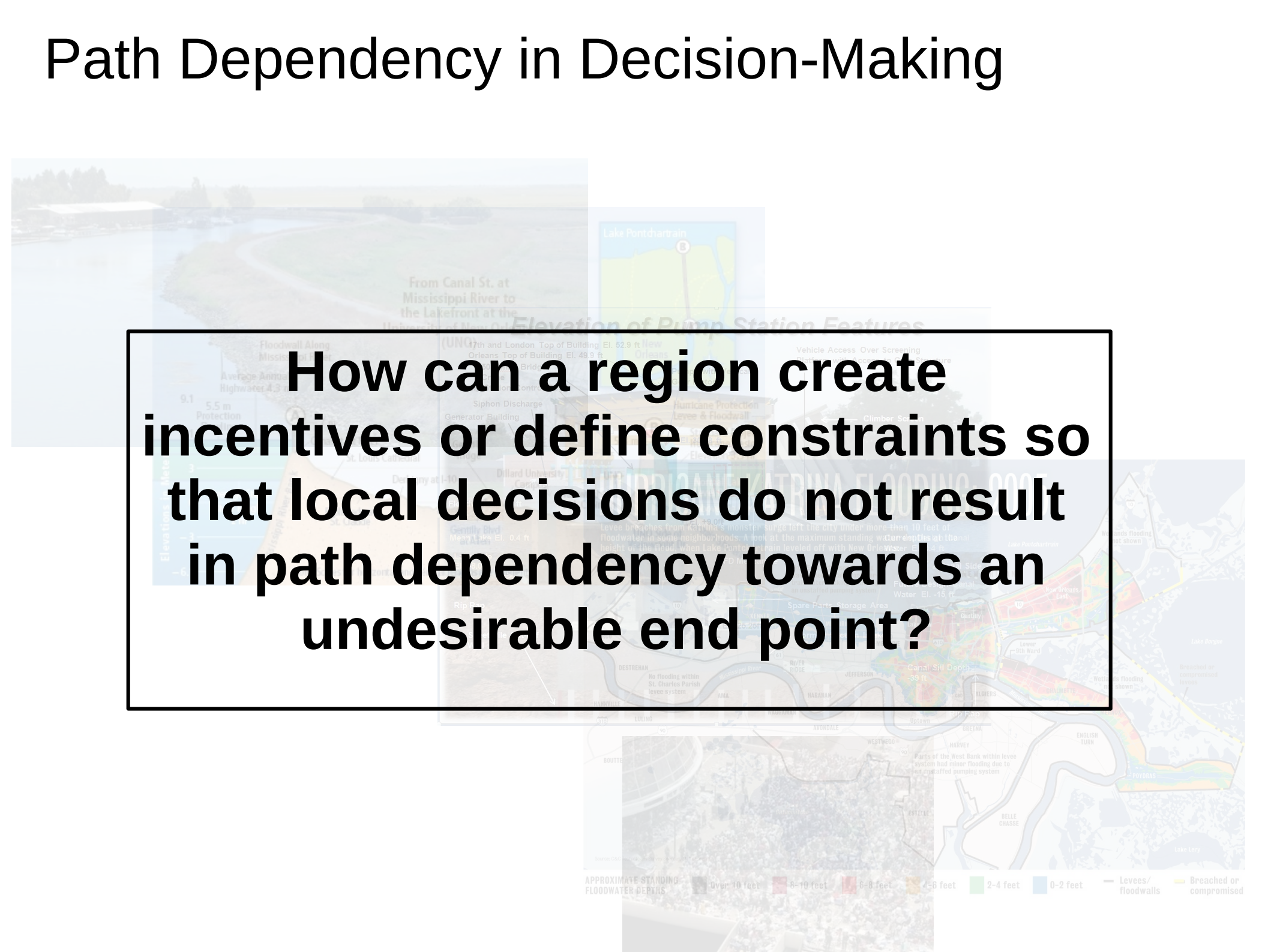
Levee breaches from Katrina's monster surge left the city under more than 10 feet of floodwater in some neighborhoods. A look at the maximum standing water depths at the height of the flood, when Lake Pontchartrain leveled off with New Orleans:



APPROXIMATE  
FLOODWATER



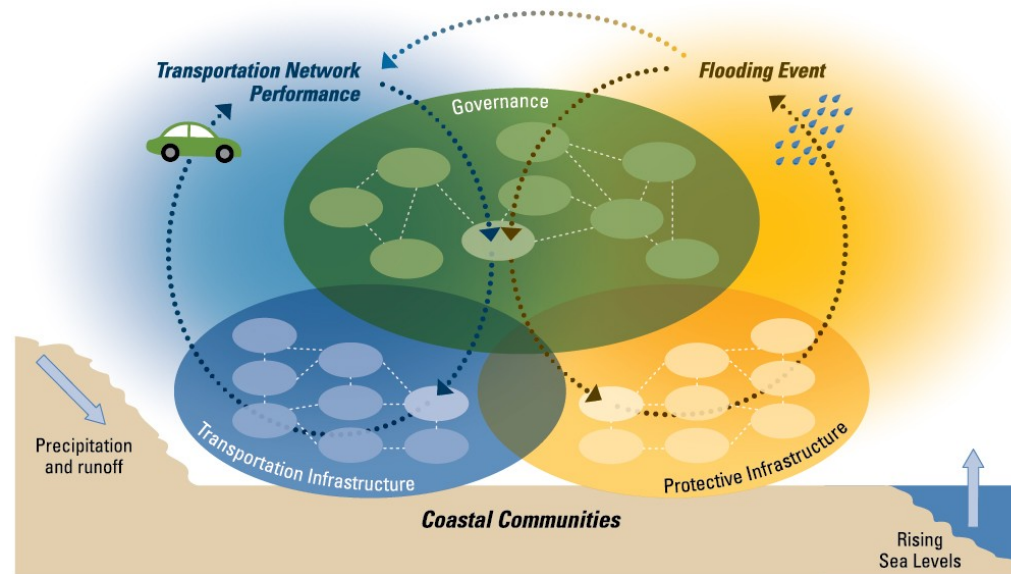
# Path Dependency in Decision-Making

The background of the slide is a collage of various maps and images related to flooding and infrastructure. It includes a map of Lake Pontchartrain, a map of the Mississippi River levee system, a map of New Orleans showing flood depths, and a map of the Gulf Coast showing levee breaches. The text is overlaid on a semi-transparent black box in the center of the collage.

**How can a region create incentives or define constraints so that local decisions do not result in path dependency towards an undesirable end point?**

# Opportunities and Challenges

**Immediacy of threat to local communities creates inequities in response – Regional interdependence provides counterbalance.**



## **Opportunities from Regional Analyses:**

- Consider future scenarios
  - Move discussion beyond immediate threats and consider end state for region
  - Scenario-based approach can help eliminate “leader-follower” dynamics
- Establish local-regional interactions
  - Regional costs of local action or inaction (vulnerabilities)
  - Local impacts of regional strategies



Questions?





## Legislation Details (With Text)

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**File #:** 18-0442      **Version:** 1      **Name:**

**Type:** Report      **Status:** Informational

**File created:** 5/22/2018      **In control:** Bay Area Regional Collaborative

**On agenda:** 6/15/2018      **Final action:**

**Title:** Horizon and Plan Bay Area 2050

**Sponsors:**

**Indexes:**

**Code sections:**

**Attachments:** [07\\_Horizon and Plan Bay Area 2050 - Overview \(June 2018\).pdf](#)

Date	Ver.	Action By	Action	Result
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**Subject:**  
Horizon and Plan Bay Area 2050

**Presenter:**  
Dave Vautin, Principal Planner, MTC

**Recommended Action:**  
Information



H O R I Z O N



# Overview & Progress to Date

**Horizon & Plan Bay Area 2050**

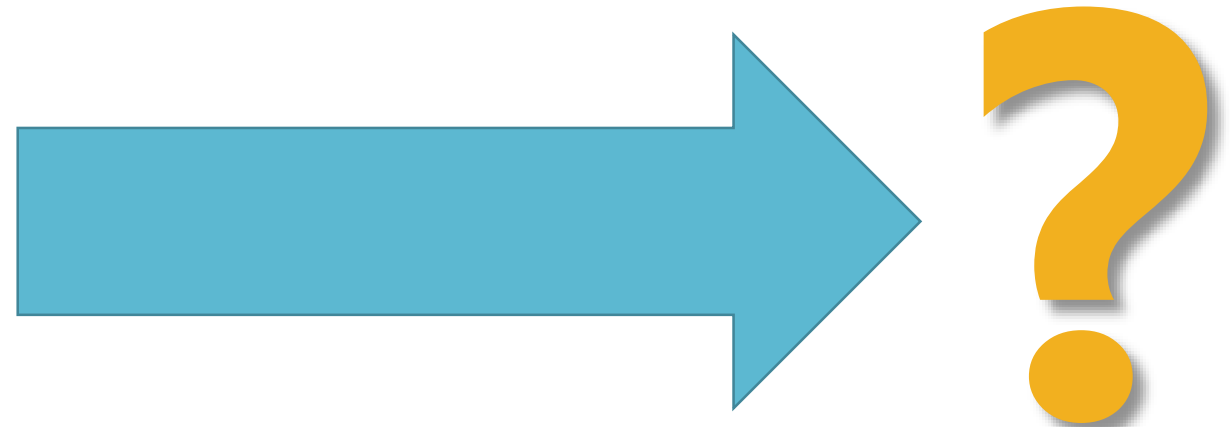
Dave Vautin, Principal Planner - MTC/ABAG

BARC Board - June 15, 2018





We live in a time of incredible uncertainty. **And our regional plans need to acknowledge this reality.**



**Our region's history inspired our thought process on how to prepare for ever-changing circumstances.**





1906 – Earthquake on San Andreas Fault

**Our resilience to external forces – environmental, political, economic, technological – has been our greatest strength.**



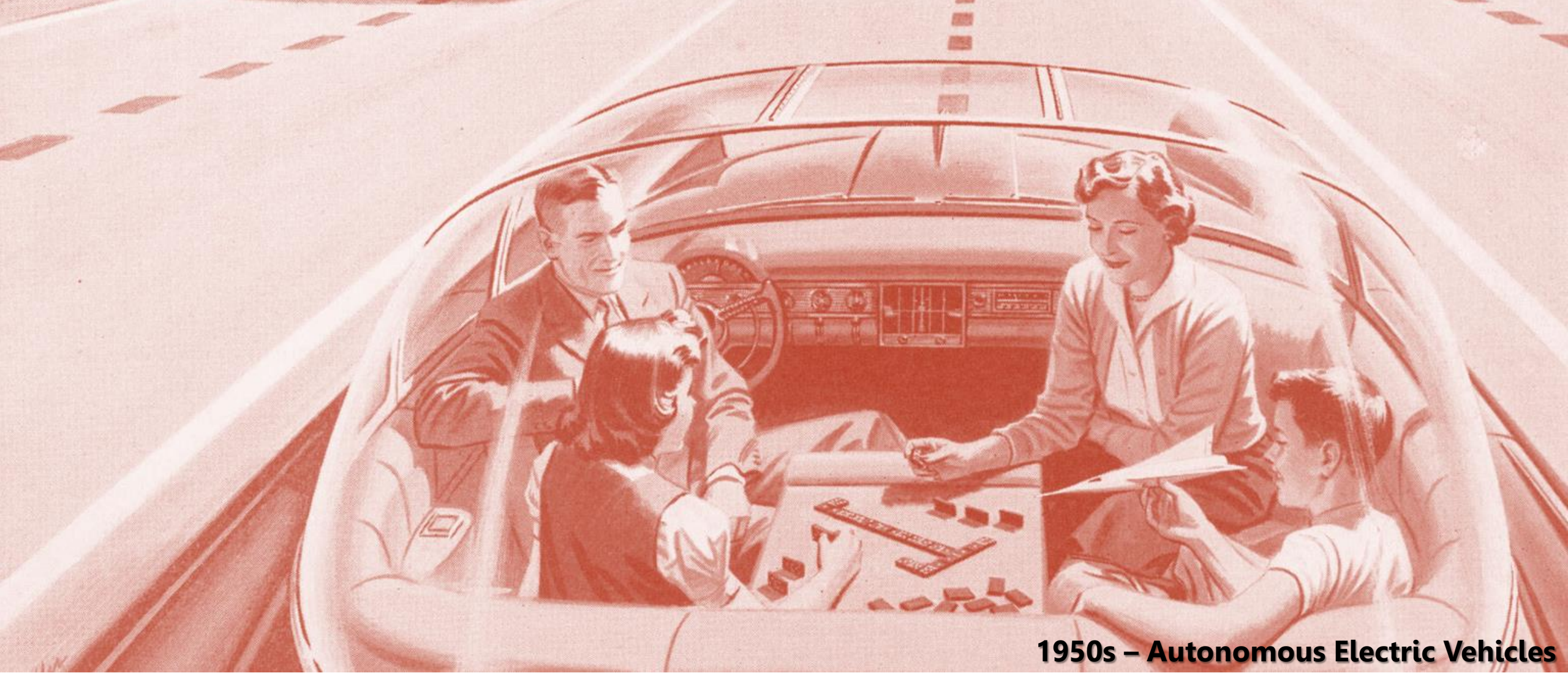
NOT TO BE RELEASED  
FOR PUBLICATION  
NAVY YARD MARE ISLAND, CALIF

RESTRICTED



**Unanticipated events – such as wars and earthquakes – shaped our region.**

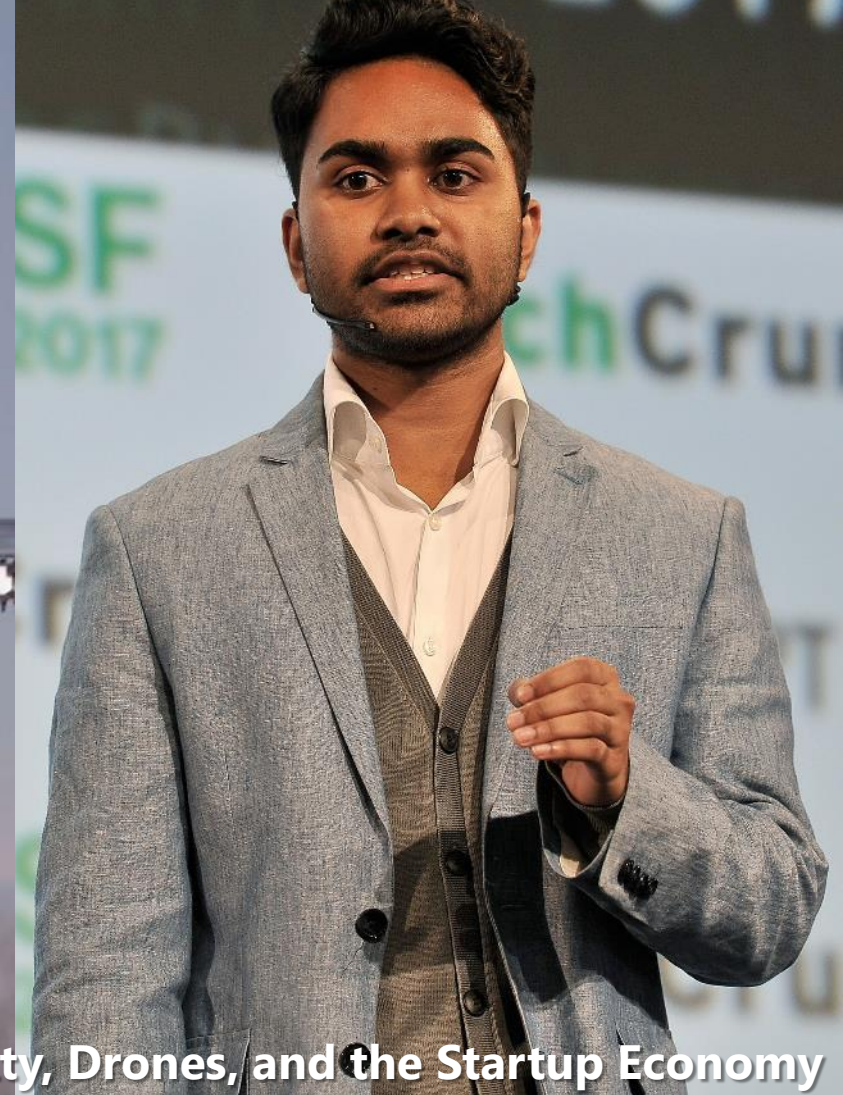




**1950s – Autonomous Electric Vehicles**

**We've long dreamed about innovations that could change our lifestyles and our communities...**





2010s – Virtual Reality, Drones, and the Startup Economy

**... but with the accelerating pace of innovation, shifts may occur sooner than expected.**





Immigration Crackdowns, Displacement, and Vulnerability to Disasters

**The challenges we face are not merely technological  
– they are political, economic, and environmental.**





**Yet we have a history of taking action to address regional crises – will we rise to the challenges of the 21<sup>st</sup> century?**



The background is a scenic landscape photograph. In the foreground, there are rolling hills covered in tall, golden-brown grass. A few green trees are scattered across the middle ground. In the distance, a body of water is visible, surrounded by more hills. The sky is a mix of orange and blue, suggesting a sunset or sunrise. The sun is a bright yellow circle on the horizon, with rays of light extending outwards.


The **Horizon** initiative seeks to explore a suite of challenging questions that transcend the traditional framework used for past **Plan Bay Area** efforts.





**What might  
autonomous vehicle  
adoption mean for our  
pipeline of  
transportation  
investments?**



An aerial photograph showing a large area of a city that has been completely destroyed, likely by a wildfire. The landscape is covered in ash and charred tree trunks. A few intact houses are visible in the bottom left corner, and a road with some traffic runs through the center. In the background, a more developed area with many buildings is visible under a hazy sky.

**What strategies should  
we consider to prepare  
for increasingly-  
frequent disasters?**





**What changes need to be made to land use and transportation policies to tackle rising sea levels?**




A large white sign with the word "FORECLOSURE" in bold red capital letters. Below it, a red sign with the word "sale" in white is partially visible. The signs are in front of a house with a brown tiled roof and some trees.

**FORECLOSURE**

sale

**How should the region respond if economic output, population, and employment suddenly boom or bust?**



A photograph of a modern automotive assembly line. White robotic arms with red joints are positioned over a car body. The car is on a red conveyor belt. The background shows more of the factory floor with other cars and equipment.

**What role should  
government play to  
ensure that everyone  
benefits in tomorrow's  
economy?**



A satellite image of Earth showing a large, swirling storm system over the ocean, with landmasses visible in the upper right and lower left.

**What actions can we  
take to improve our  
resilience to  
geopolitical and  
economic shifts?**





**Spring 2015 to  
July 2017**



**February 2018  
to June 2019**



**July 2019 to  
June 2021**

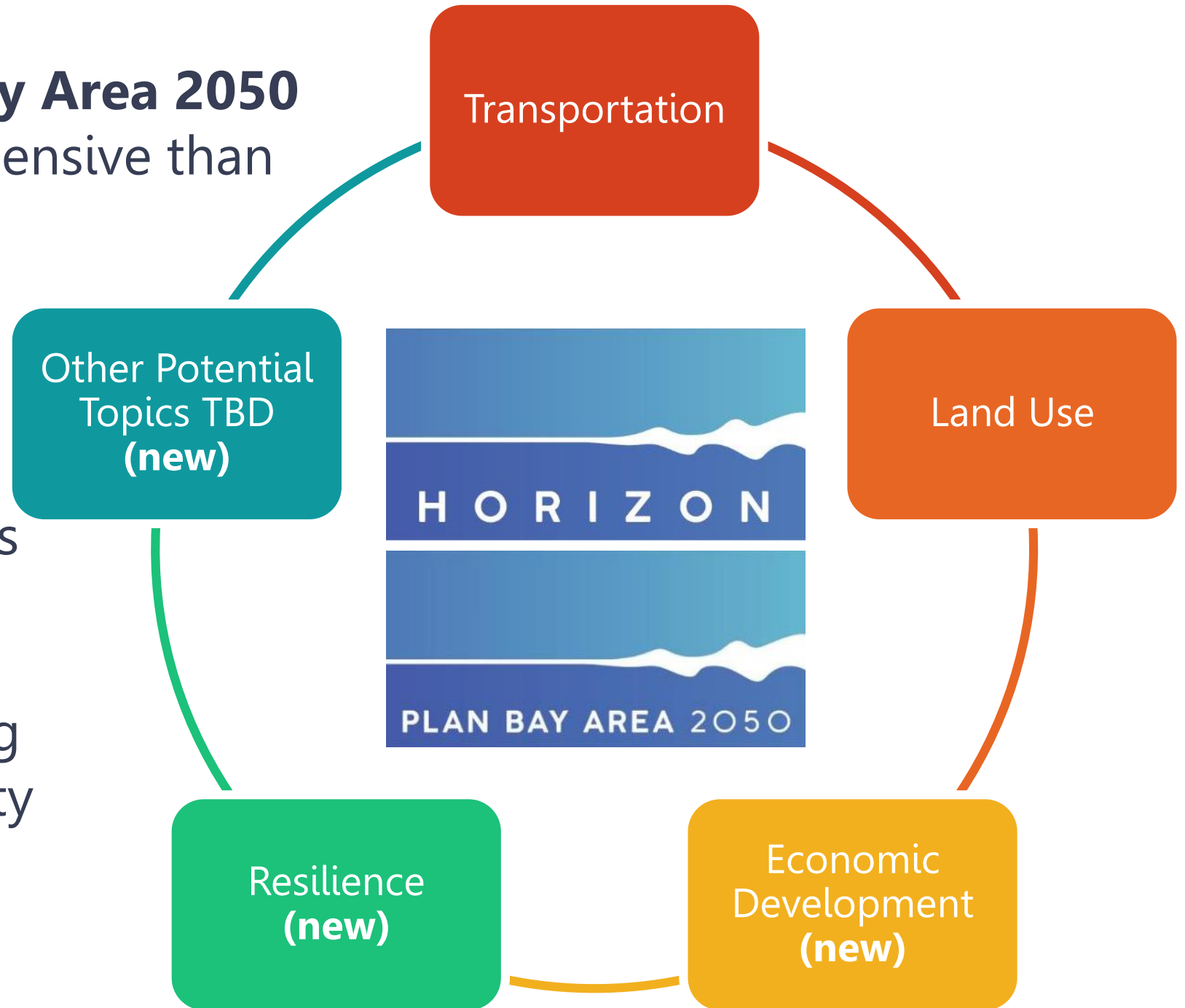
High-performing strategies and projects from *Horizon* – those that are resilient to uncertainties – **will be recommended for inclusion in the Preferred** Plan Bay Area 2050 (RTP/SCS).



# Horizon and Plan Bay Area 2050

will be more comprehensive than past RTP/SCS cycles.

**Horizon's** Guiding Principles and **Plan Bay Area 2050's** goals & targets will guide decision-making and integrate cross-cutting issues, including equity and sustainability.



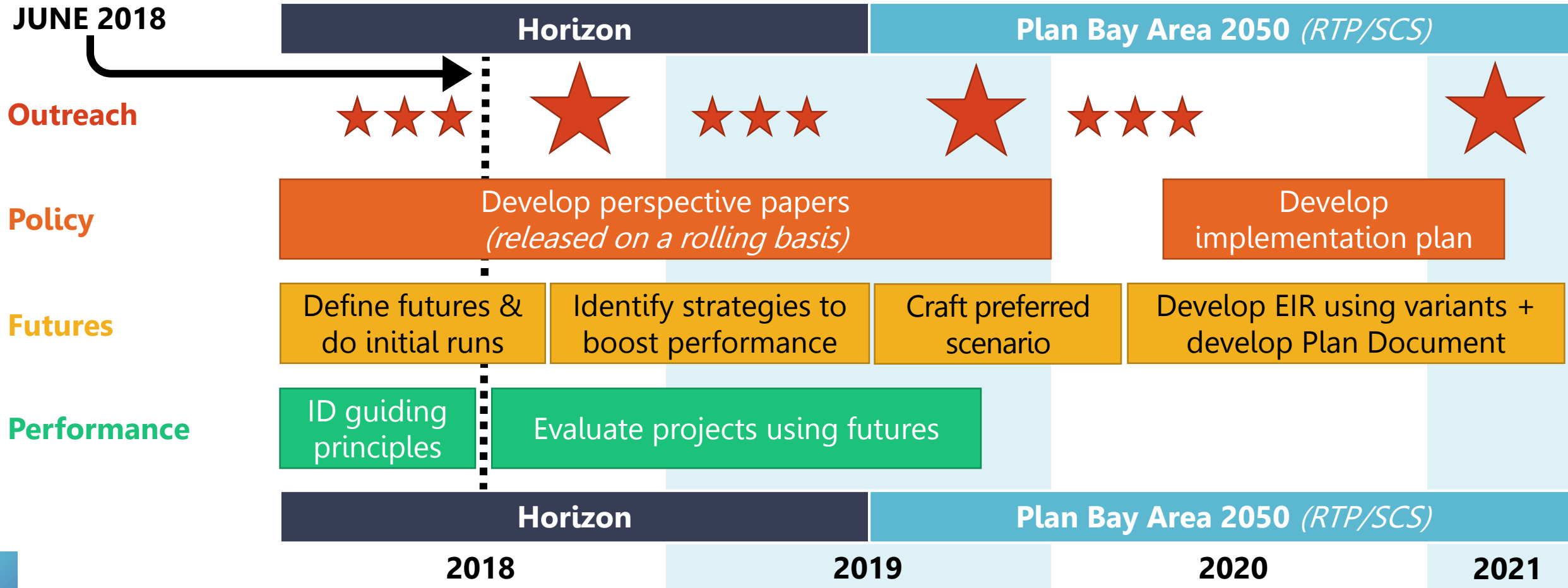
The background of the slide is a collage of images. The top half features an aerial view of a high-speed train with a white, blue, and red livery crossing a bridge over a dry riverbed in a desert landscape. The bottom half is a solid blue rectangle containing the text. The bottom left corner shows a close-up of the train tracks and surrounding dry vegetation.

# Progress to Date

**Horizon Update:** June 2018



# Horizon + Plan Bay Area 2050 Overview



# Public & Stakeholder Outreach

- **Round 1 Public Outreach**
  - Pop-Ups
  - Online Surveys
  - Request for Transformative Projects
- **Ongoing Stakeholder Outreach**
  - Regional Advisory Working Group
  - Online Surveys
  - Webinars





# Round 1 Outreach

YES Conference	Feb. 24
NVTA Transit Center (Napa)	Feb. 28
Santa Rosa Junior College	Feb. 28
Pickleweed Library (Marin)	March 3
Newark Farmer's Market	March 4
Clement St. Farmer's Market (SF)	March 4
Berryessa Flea Market (San Jose)	March 4
Vallejo Art Walk	March 9
Stoneridge Mall (Pleasanton)	March 10
Campbell Farmers Market	March 11
Sunday Streets Mission District (SF)	March 11
Diridon Caltrain Station (San Jose)	March 13
Broadway Plaza Mall (Walnut Crk)	March 17
Strong Girls Conference (Sta Rosa)	March 17
Marin Farmer's Market	March 18
Sebastopol Farmer's Market	March 18
Castro Valley Middle School	March 19
SF Ferry Building	March 22
Berkeley Farmers Market	March 22
Lake Merritt	March 24
East Palo Alto Farmers Market	March 24
Sunday Streets Excelsior District (SF)	March 25
Mountain View Farmers Market	March 25
Redwood City Library	March 26
Richmond Library	March 26
Oxbow Market (Napa)	March 27
Jelly Belly Factory (Fairfield)	March 27
Daly City Farmers Market	March 29

**10,000+**  
comments  
*when combined with*  
***Horizon*** online survey

**Of the 28 events, 17 were  
located in or serving  
communities of concern**

*The San Francisco Bay Area  
aspires to be:*



**AFFORDABLE**

All Bay Area residents and workers have sufficient housing options they can afford – households are economically secure.



**CONNECTED**

An expanded, well-functioning transportation system connects the Bay Area – fast, frequent and efficient intercity trips are complemented by a suite of local transportation options, connecting communities and creating a cohesive region.



**DIVERSE**

The Bay Area is an inclusive region where people from all backgrounds, abilities, and ages can remain in place – with access to the region's assets and resources.



**HEALTHY**

The region's natural resources, open space, clean water and clean air are conserved – the region actively reduces its environmental footprint and protects residents from environmental impacts.



**VIBRANT**

The Bay Area region is an innovation leader, creating quality job opportunities for all and ample fiscal resources for communities.

# Final Guiding Principles



# Creating **Futures** to Explore

3-Minute Video –  
Summary of April 23<sup>rd</sup>  
**Horizon** Peer Exchange

<https://youtu.be/1rDmygU5yn0>



# Perspective Papers



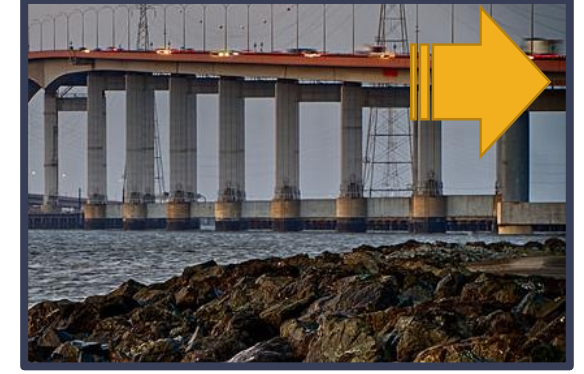
1) Autonomous Vehicles



2) Climate Mitigation



3) Growth Strategies



4) Crossings



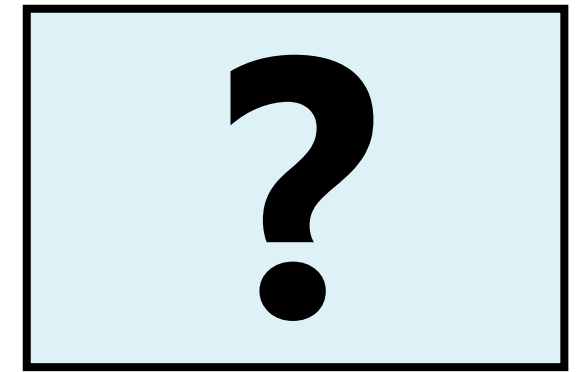
5) Future of Jobs



6) Governance



7) Better Buildings



*More to Come?*



# Project Performance – Benefit-Cost Analysis

## Benefits – for travelers & society



Travel Time



Noise



Travel Costs



Health



Safety



*Other  
Potential  
Benefits?*



Emissions

*Incorporates benefits for  
all modes: autos, trucks,  
transit, walking, biking*

## Costs – for public sector



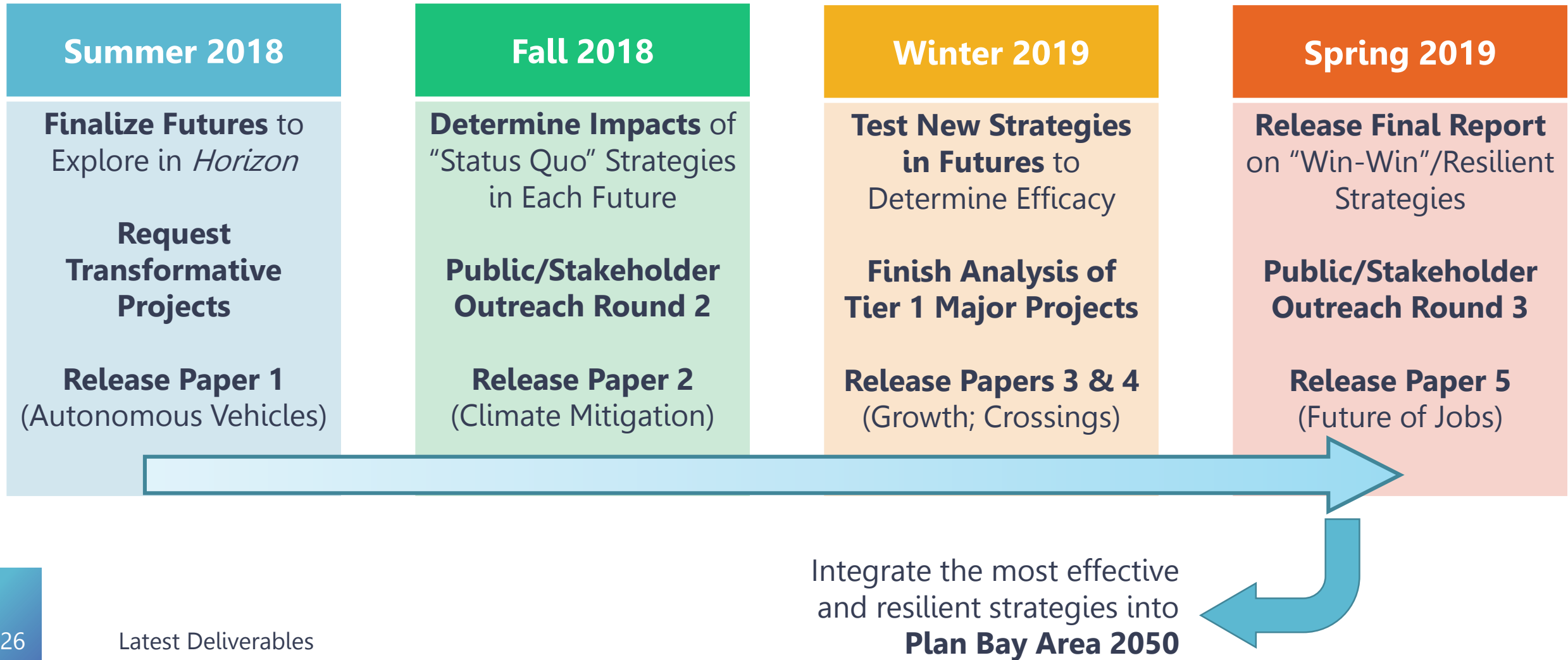
Capital Costs



Net Operating &  
Maintenance Costs

$$\text{Benefit-Cost Ratio} = \frac{\text{Benefits}}{\text{Costs}}$$

# What's Next for **Horizon**







H O R I Z O N



# Questions?

For more information, go to: [mtc.ca.gov/horizon](https://mtc.ca.gov/horizon).