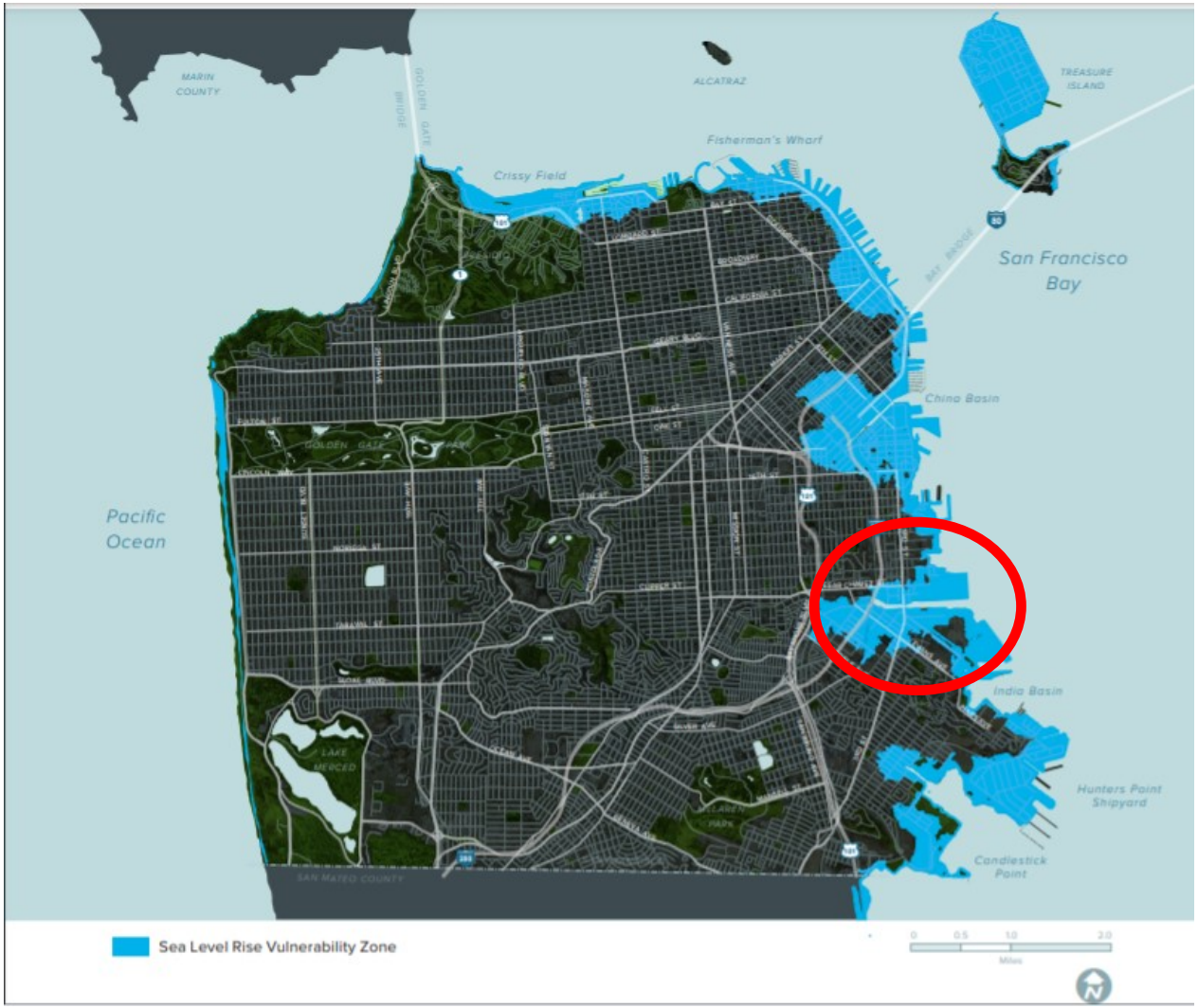
SFMTA

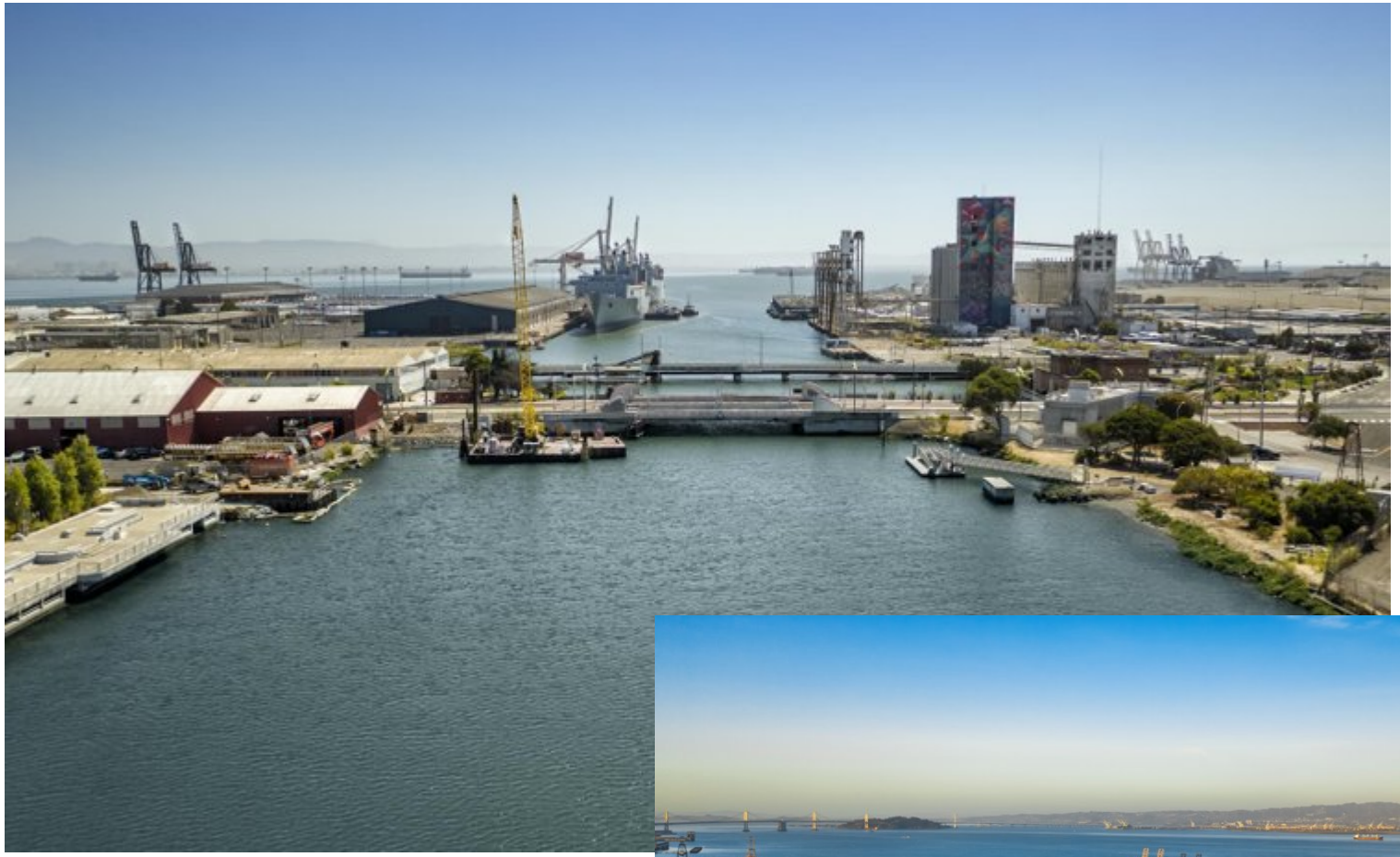
Islais Creek Adaptation Strategy: building a more resilient shoreline community and transportation system

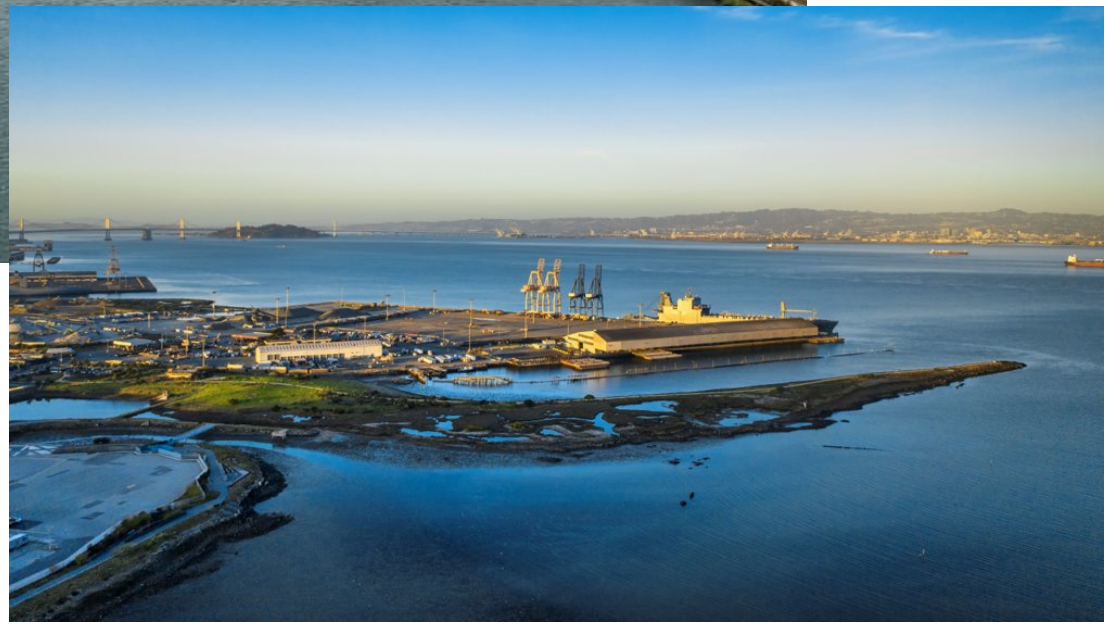
SFMTA PAG
May 25, 2021

Flood risk will likely impact the multimodal system along our shoreline



Islais Creek





Goals:

Pier 80

Muni Metro East

Warm Water Cove Park

1. A socially and environmentally resilient neighborhood
2. Authentic and transparent public engagement during and beyond planning
3. A transportation system that is resilient and adaptable to flood risk
4. A healthy environment for residents, workers, and ecologies
5. A sustainable economy that benefits local residents, workers, and industries

Adrian Moreno
Automotive Supervisor I, Coach Acceptance
Marin Sr. Muni Facility

I AM ISLAIS

"When we get any rain, we see flooding at the facility... We are also concerned about impacts to businesses around us - we want them to succeed and flooding impacts them too."

ISLAIS CREEK ADAPTATION STRATEGY

Ayanna Banks
Material Classifier
Recology Recycling Facility

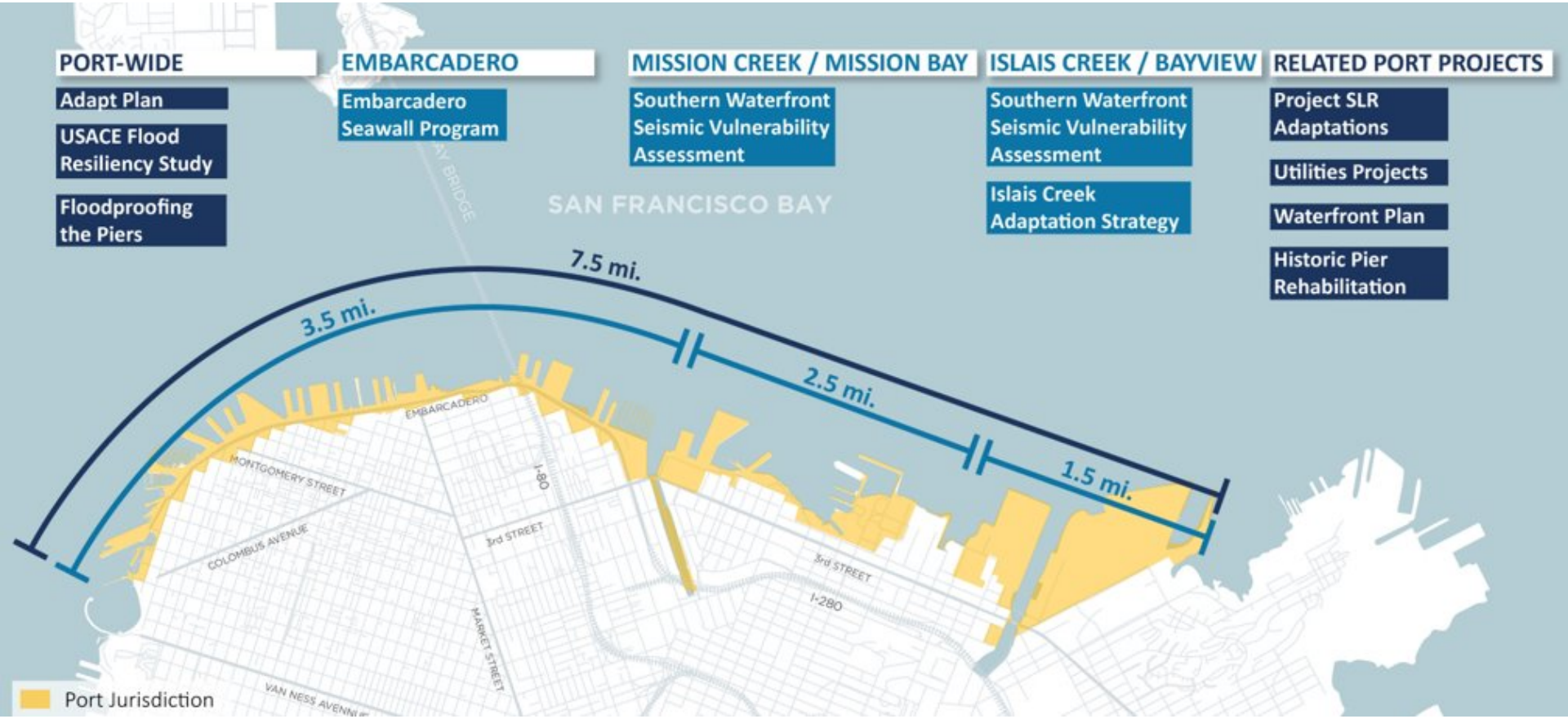
I AM ISLAIS

"Working at Recology changed how I thought about the environment and why taking care of it is important... My job makes me want to learn more about how [our actions] are affecting the environment."

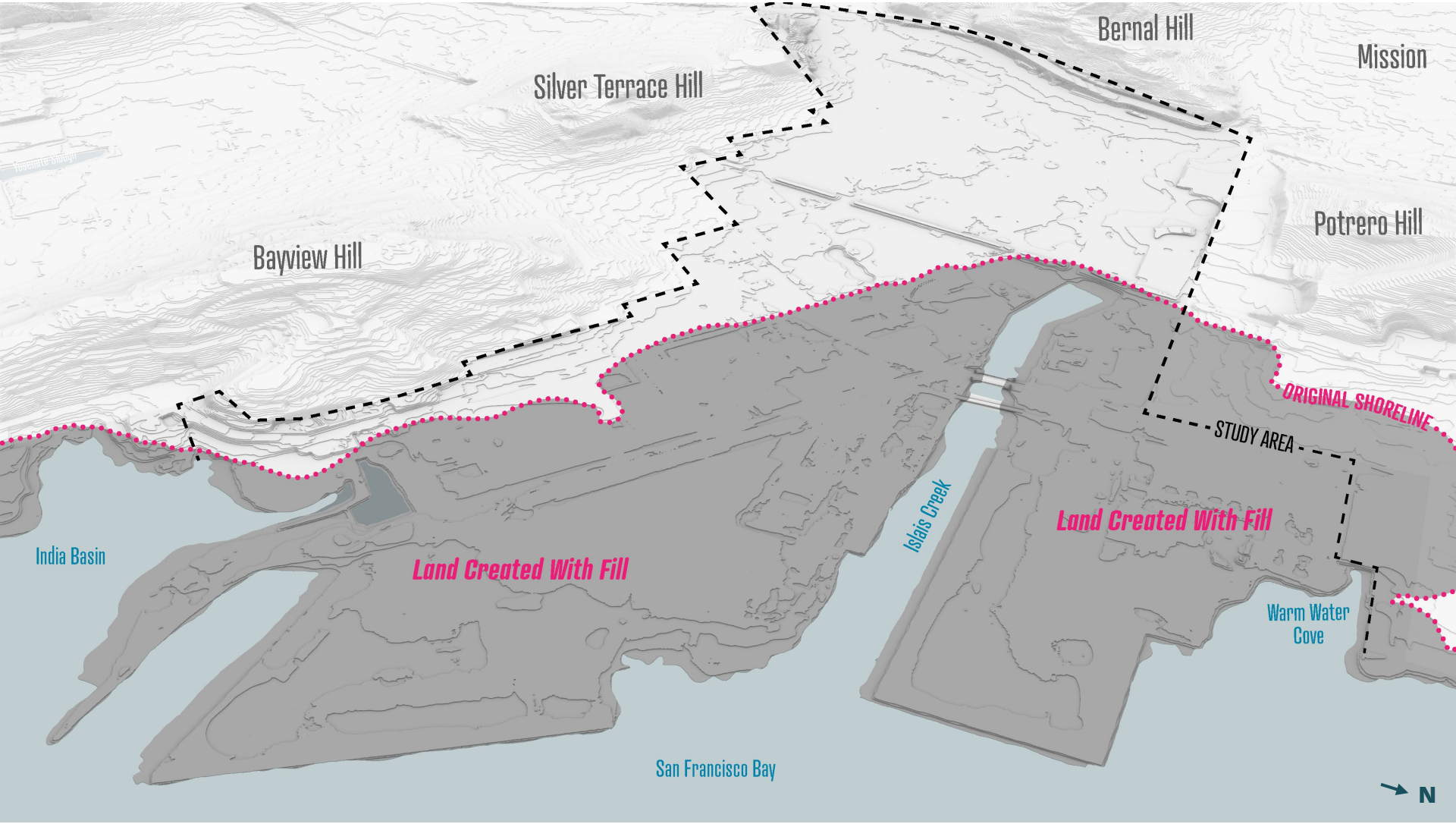
ISLAIS CREEK ADAPTATION STRATEGY


I AM
ISLAIS
"We must stop sea level rise becasue it could damage infrastructure like roads, Muni, businesses and water treatment plants!"
ISLAIS CREEK ADAPTATION STRATEGY
I AM
ISLAIS
"I want the city to be safe and stop global warming, so people can live without worrying about floods. We can use the sun for power and use less energy!"
ISLAIS CREEK ADAPTATION STRATEGY

Waterfront Resilience Program

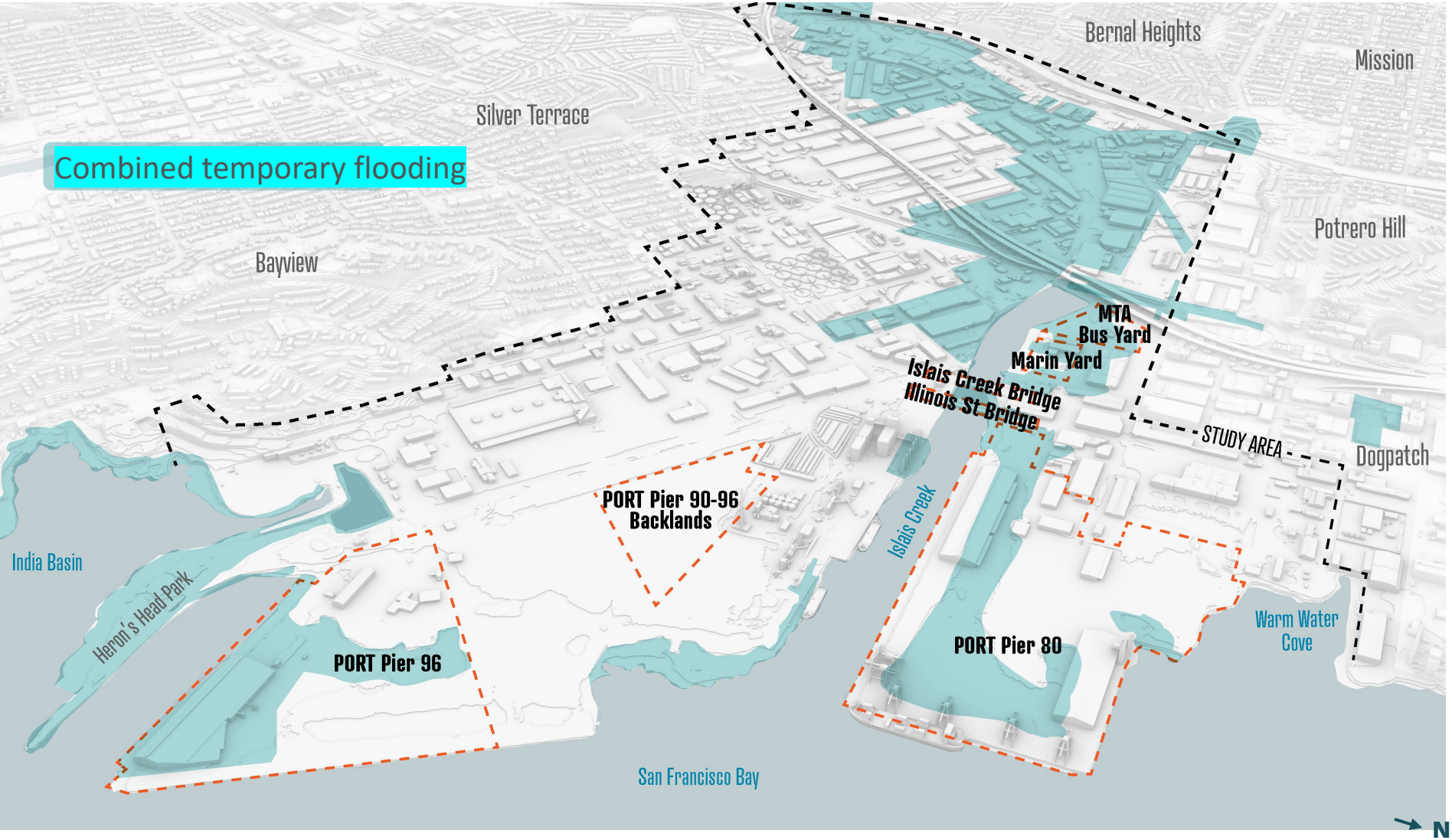


Shoreline History



Shoreline Assets

100-Year Storm Event



2018 Rain Event + High Tide

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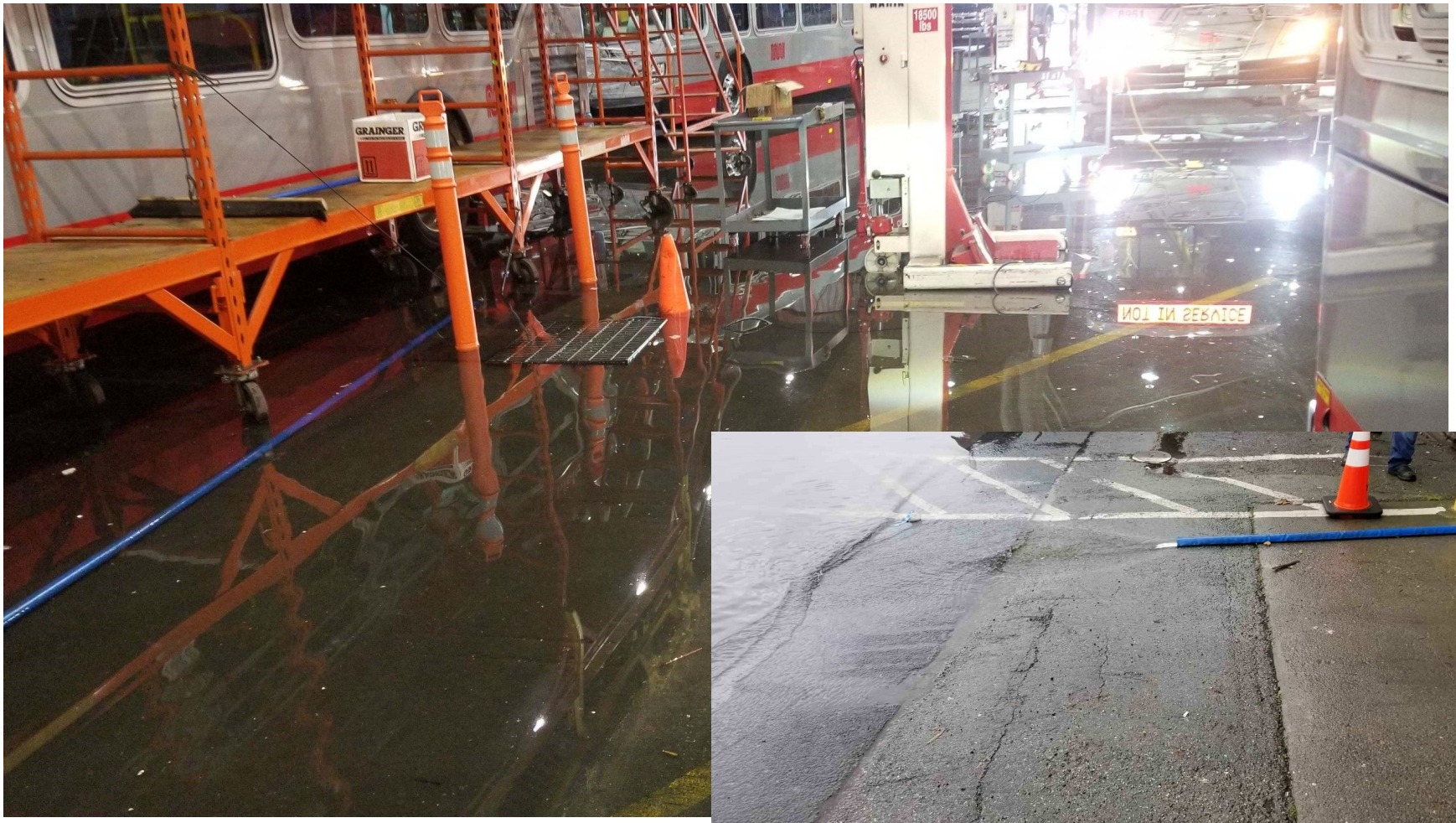
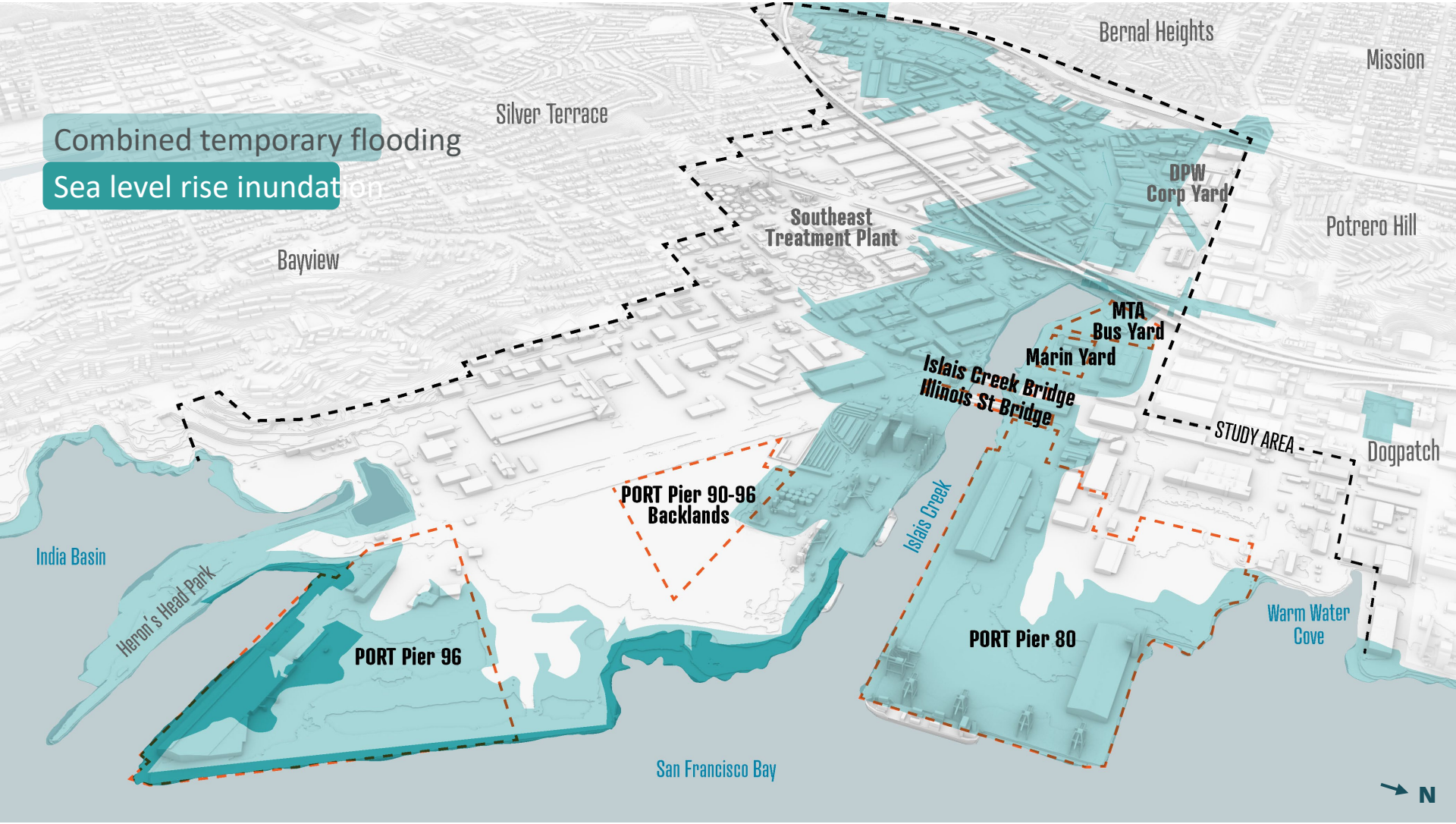
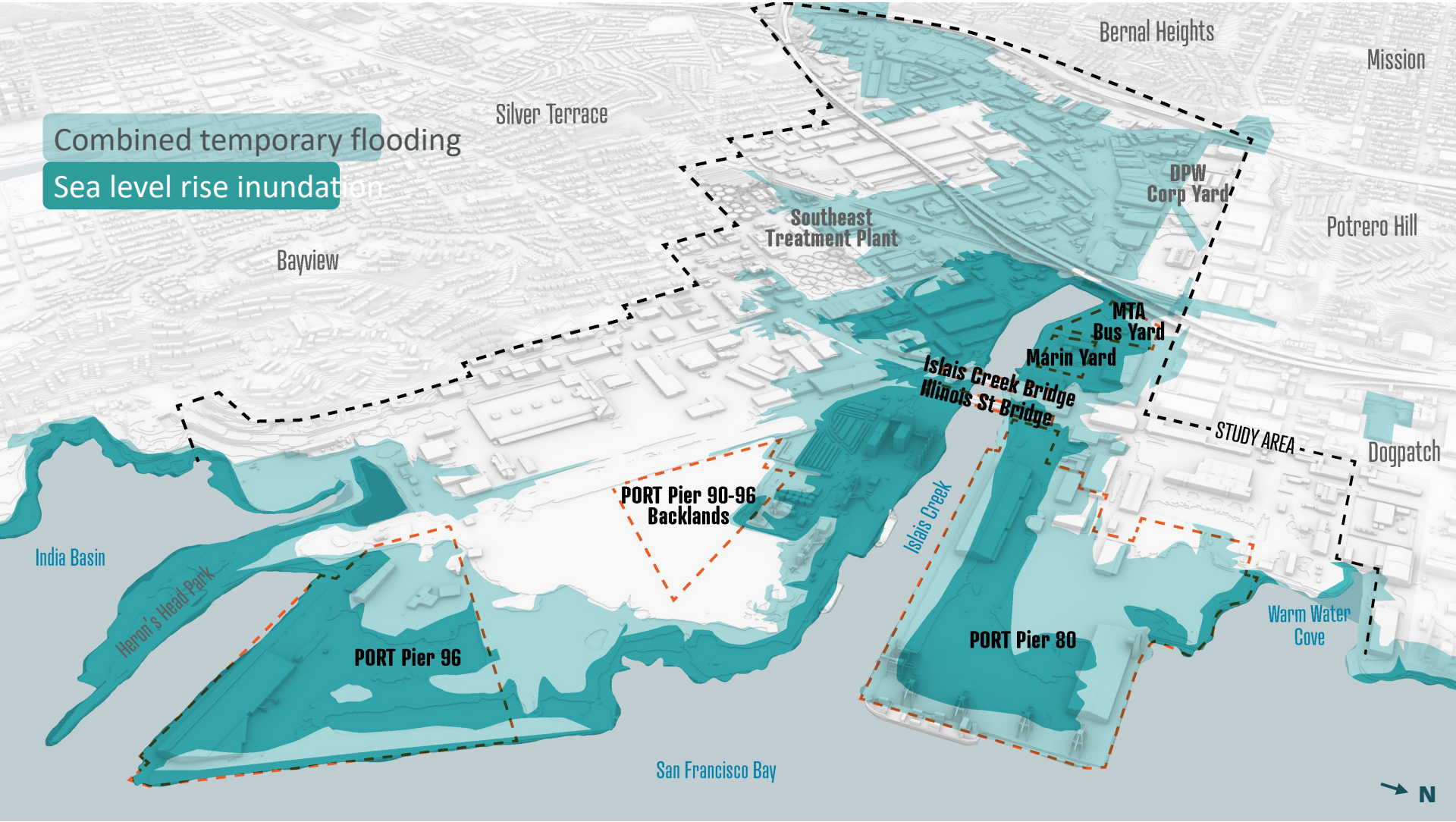
2018 Rain Event + High Tide



Mid-Century Flood Risk = 65”



2080 Flood Risk = 94”



Shoreline Adaptation Toolkit

COMPREHENSIVE ADAPTATION STRATEGY

Hard
Nature-Based
Earthen
Event-Based

Toolkit Strategies

A hardened vertical structure, that is anchored into and above the ground on both sides.

Supporting or creating a beach through strategic placements of fine or coarse sand – can attenuate waves in front of other structures.

Engineered structure made of packed earth with an impermeable core.

Adding a hardened lip or wall to an existing shoreline structure.

A variety of solutions that support flood protection and wave attenuation properties of natural shorelines.

Installed mechanical devices that can be raised during storm events.

Raising a pier, either from underneath by increasing the height of the support structures, or by adding to the height of the pier surface itself.

Shoreline recreation and open spaces that are designed to accommodate water during storm events without resulting in permanent damage.

Flood barriers that can be temporarily installed during storm events.

Armoring placed on the slope of embankments or berms as a defense against erosion - revetments can be constructed from large rocks, tetrapods, etc.

A gently sloping earthen structure, possible backed by a levee, providing and ecotone slope for marsh vegetation and attenuating wave action.

Diffuse inland green infrastructure strategies that absorb stormwater to prevent ponding and reduce peak flows during flood events.

Structural armoring built on the slope of embankments, such as interlocking concrete tiles or steps.

Structures that are placed in the water offshore to attenuate wave action – may be hardened structures or green/living structures.

Strategies that allow the shoreline edge to migrate inland, with associated land use changes behind.

Elevating bridges, roads, or other infrastructure to be above flood waters. Raised infrastructure can also contribute to the protection of inland assets.

Earthen non-engineered mounds, potentially vegetated.

Elevating individual structures inland to be above flood waters, with measures like pile supports or elevated foundations.

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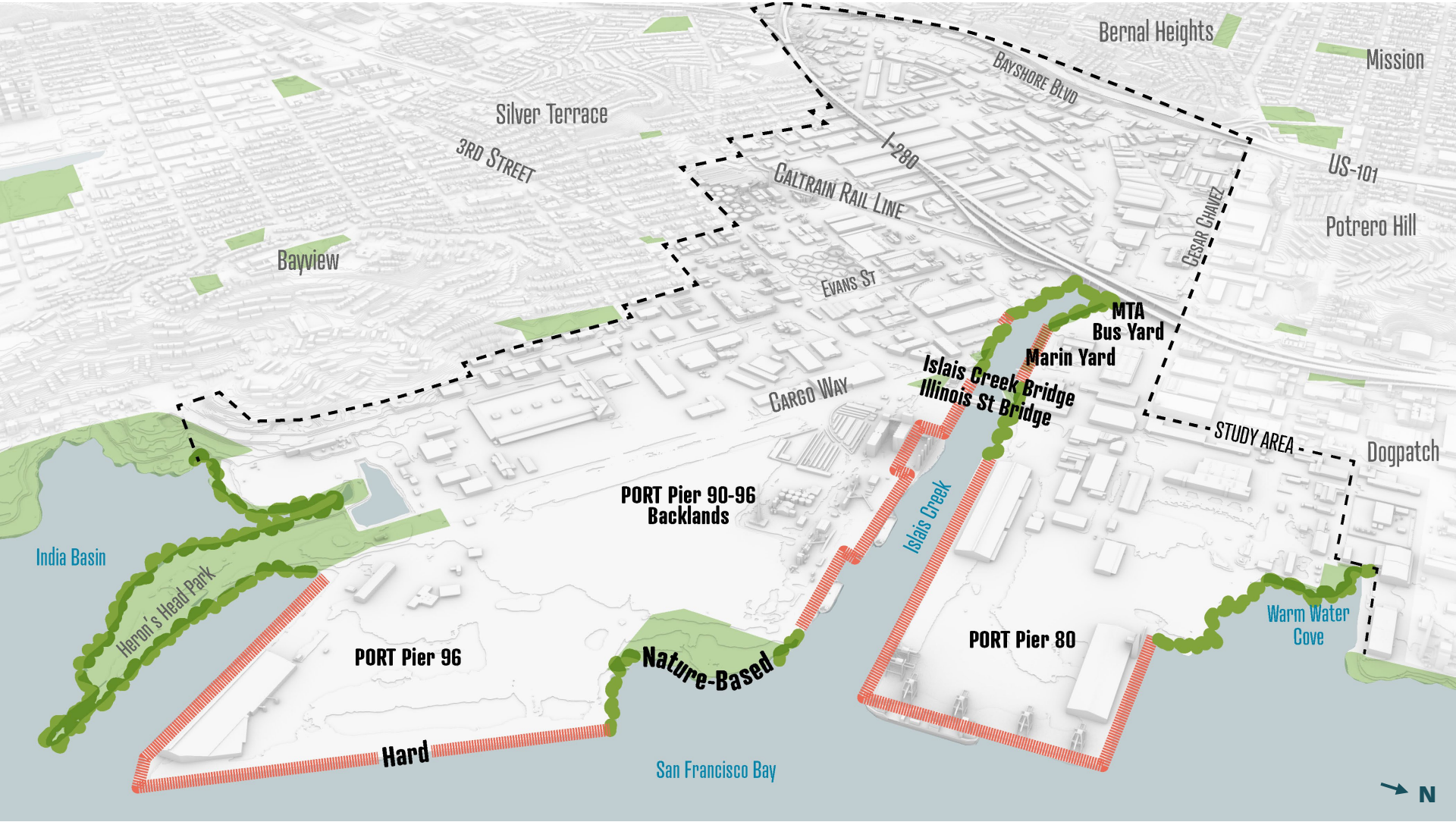
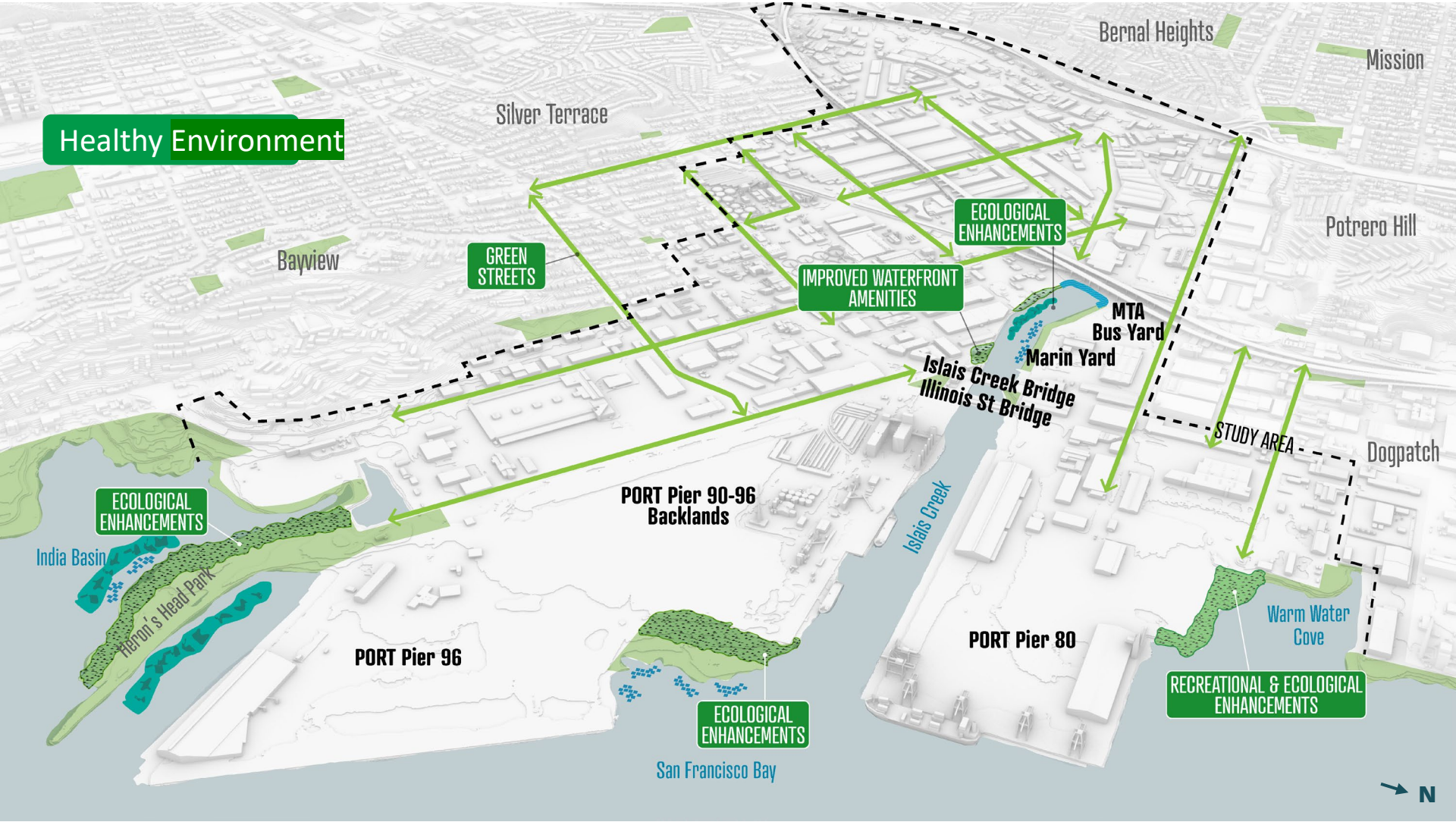
Shoreline Adaptation Strategies



Community Goals



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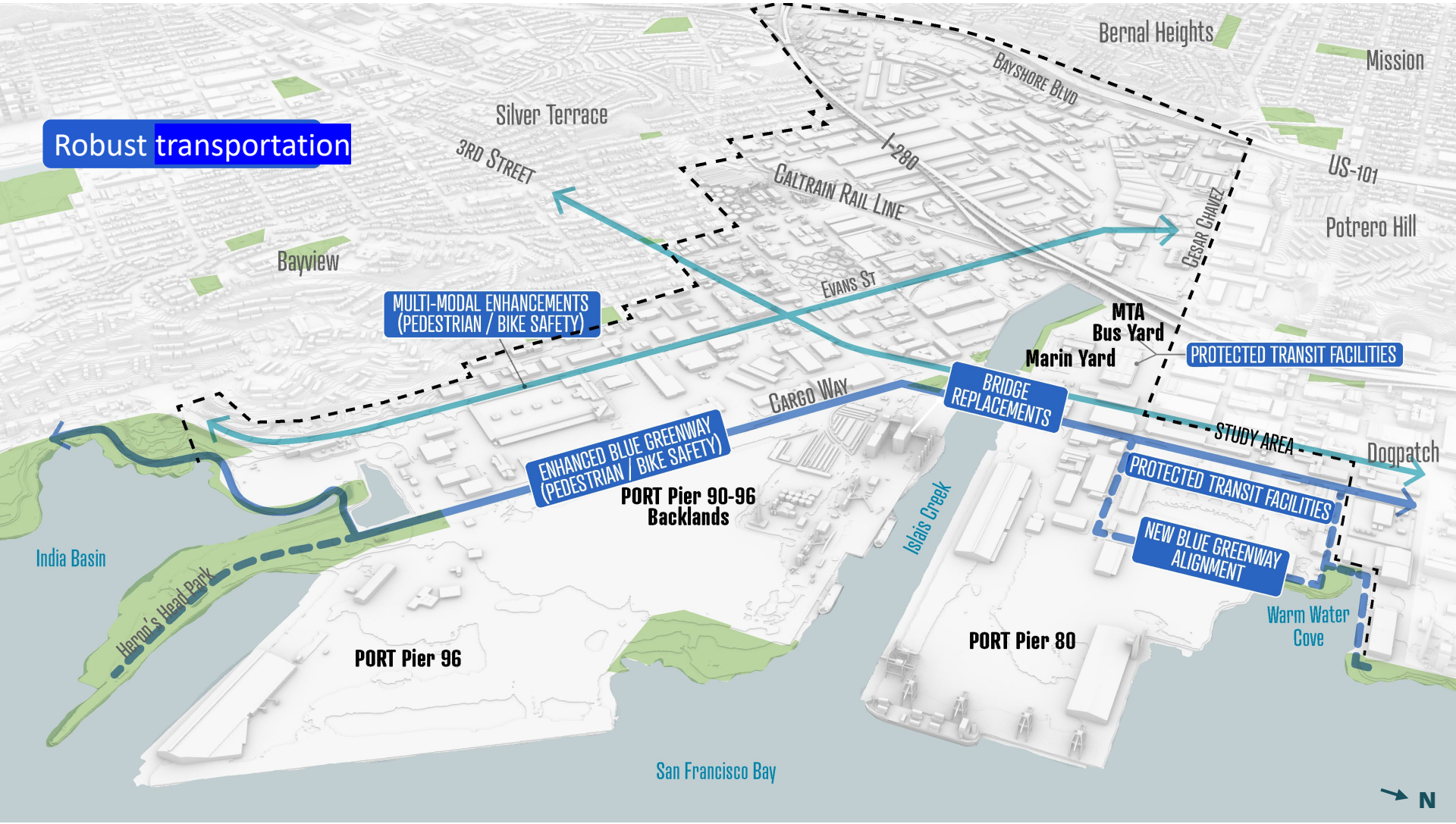

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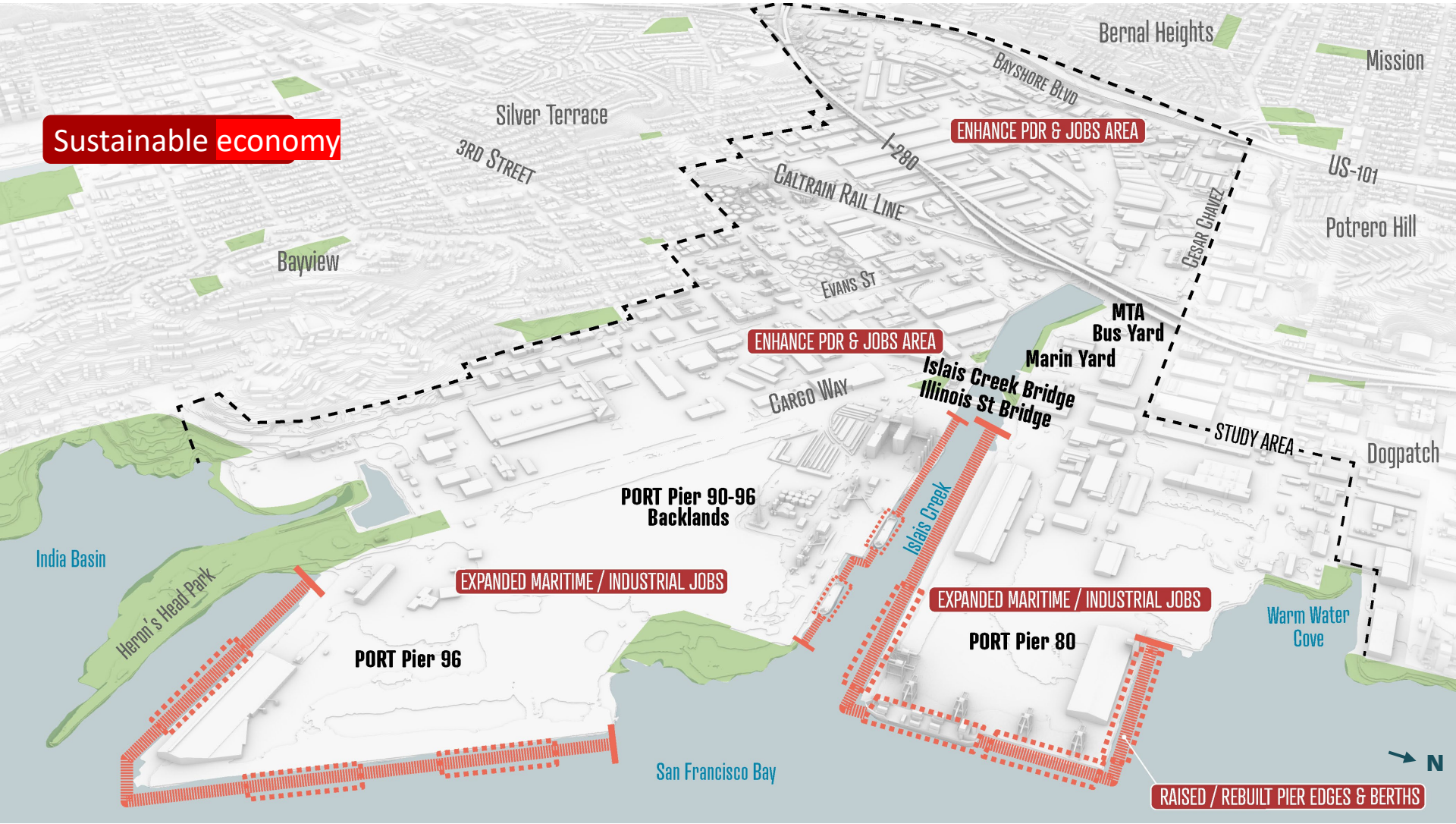
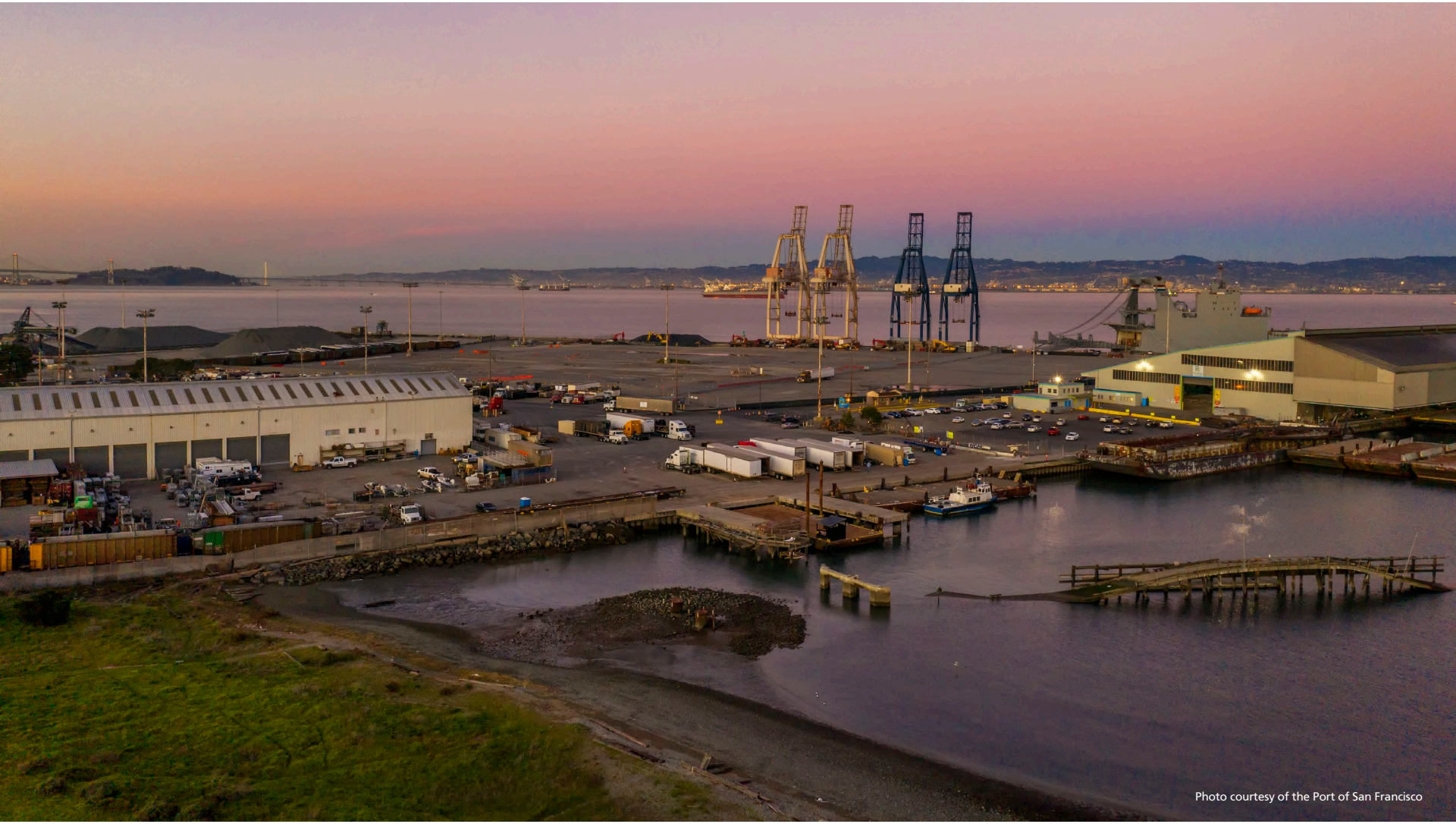


Next Steps



Project Timeline

2019–April 2021

- **Existing Conditions Analysis**
- **Combined Flood Model**
- **Key Assets Selection**
- **Engagement**
  - ✓ 3 In-Person Workshops
  - ✓ I Am Islais Campaign
  - ✓ Community Vision & Goals
  - ✓ Walking Tour
  - ✓ Y-Plan Youth Engagement
  - ✓ CBO Meetings
- **Adaptation (Exploratory) Scenarios**

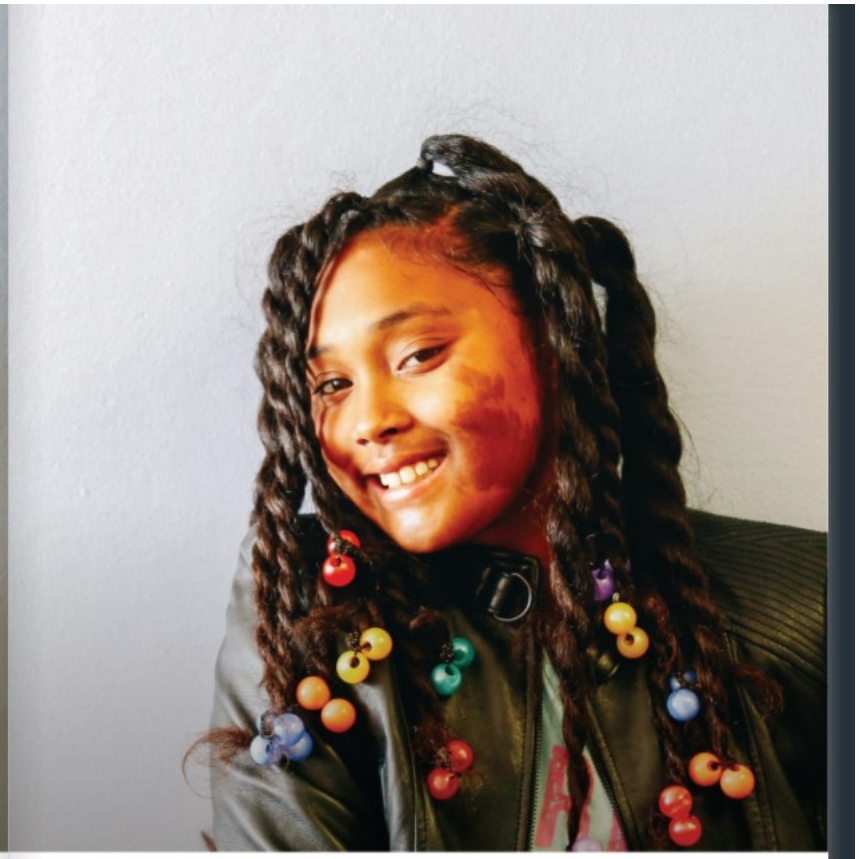
May 2021

- **Adaptation Strategies & Pathways**
  - Asset Scale
  - District Scale
- **Engagement**
  - ✓ CBO Meetings
  - ✓ Stakeholder Circle-Back Event
  - ✓ Commission & Board Hearings
- **Economic Analysis**
- **Implementation & Financing Strategy**

June 2021

- **Final Materials**
  - Incorporate Comments
  - Final report to Caltrans

Multi-Agency Coordination & Integration



I AM ISLAIS

"The climate is changing and I want to protect my cousin. She lives down the hill and the flood can get to her. We have to stay together as a community to be prepared for floods."

ISLAIS CREEK ADAPTATION STRATEGY

I AM ISLAIS

ISLAIS CREEK ADAPTATION STRATEGY