

SCAPE LANDSCAPE ARCHITECTURE DPC

**HAYWARD REGIONAL SHORELINE MASTER PLAN
TASK 4 - PROGRESS UPDATE**

OCTOBER 10, 2019

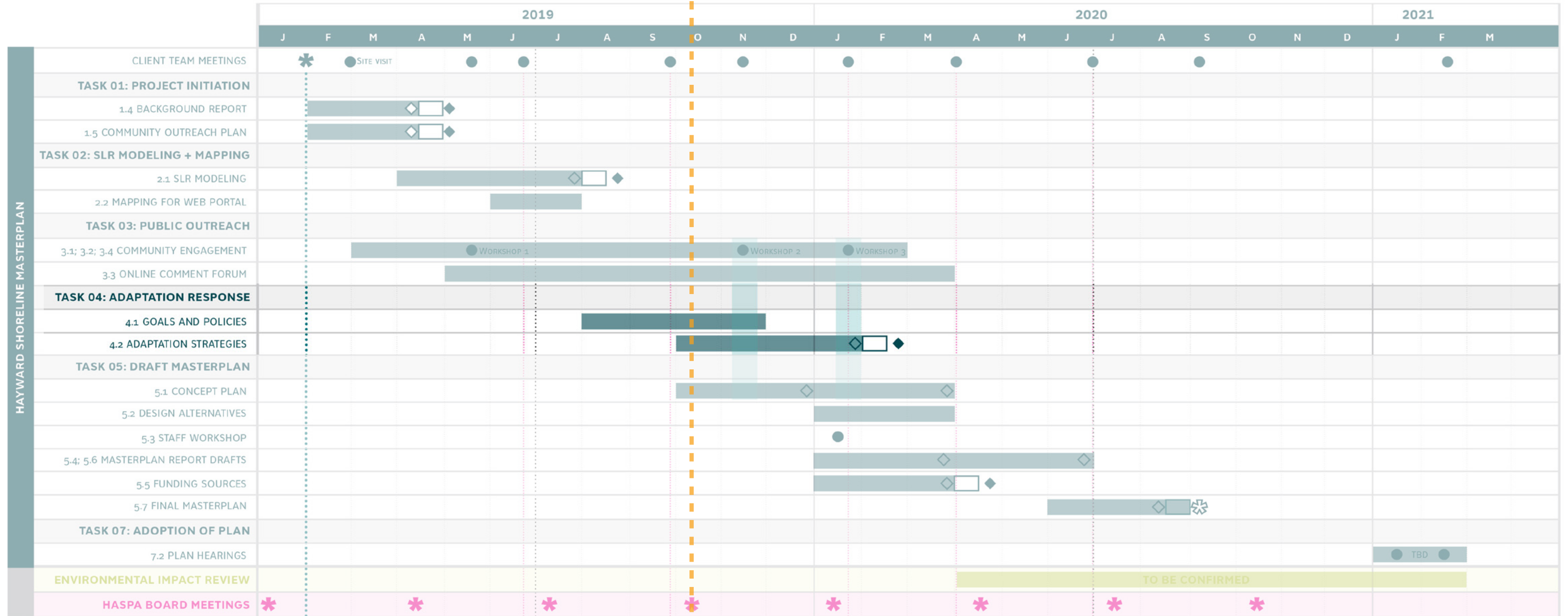
TASK 4 RECENT PROGRESS UPDATE

AGENDA

- **Project Schedule**
- **Inundation Maps and Conclusions**
- **Project Goals**
- **Policy Considerations**
- **Stakeholder Meetings**
- **10/1 Charrette Update**
- **Adaptation Strategies**
- **Public Engagement**
- **Next Steps**

SCHEDULE

WE ARE HERE:
HASPA QUARTERLY MEETING



- * PROJECT KICK OFF
- IN-PERSON MEETING / WORKSHOP (Content to be submitted 1 week prior to event)
- ◇ DRAFT REPORT SUBMISSION
- ◆ FINAL REPORT SUBMISSION (Assumes 5 days for edits, subject to adjustments based on client feedback)
- CLIENT REVIEW PERIOD (Assumes an average of 10 days, subject to adjustments based on project phase deliverables)
- ✱ FINAL MASTERPLAN REPORT SUBMISSION
- * HASPA BORAD MEETING (Assumes in person meeting 2 weeks before or 2 weeks after)

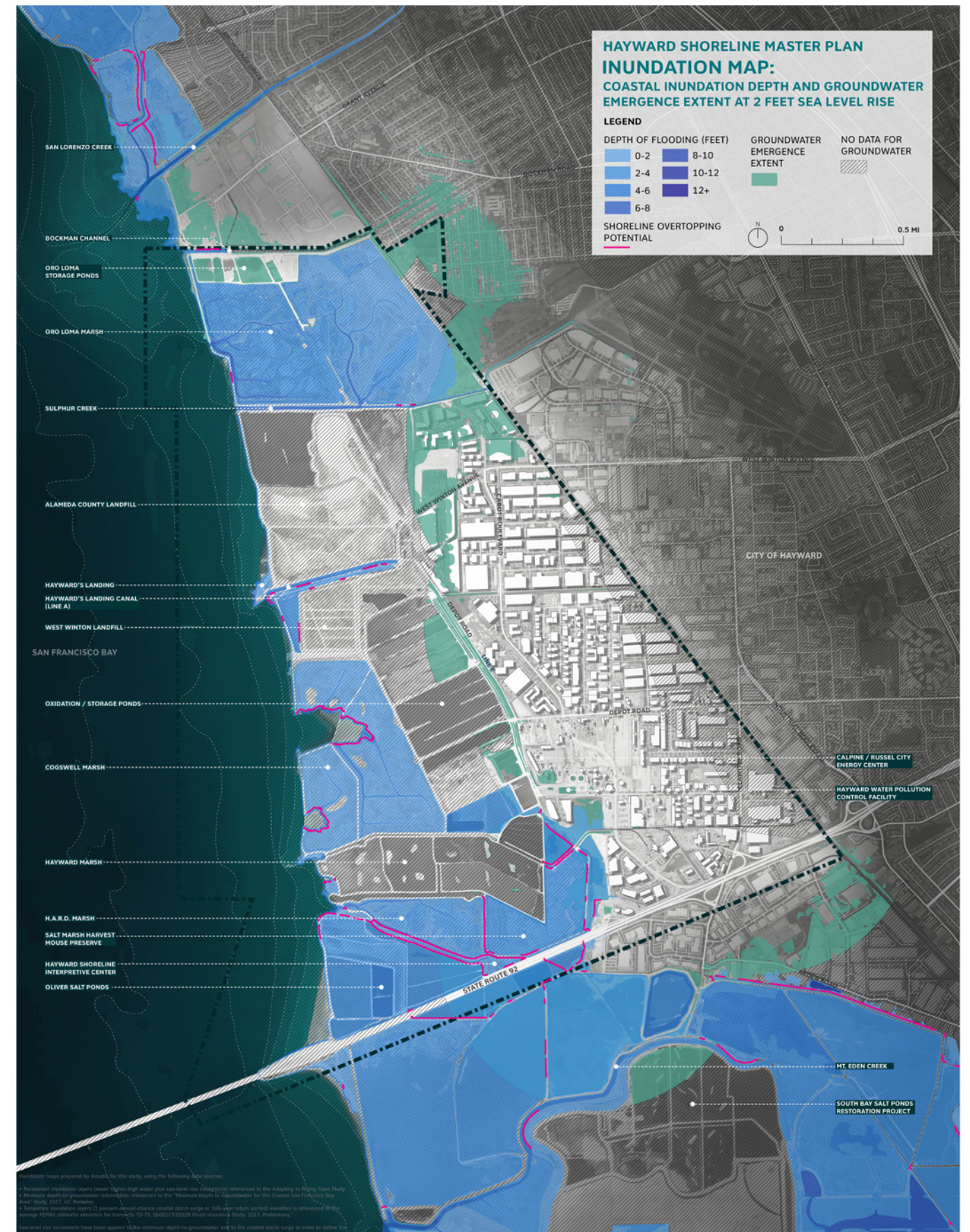
INUNDATION MAPS

2' SCENARIO

2' SCENARIO

SLR AND GROUNDWATER

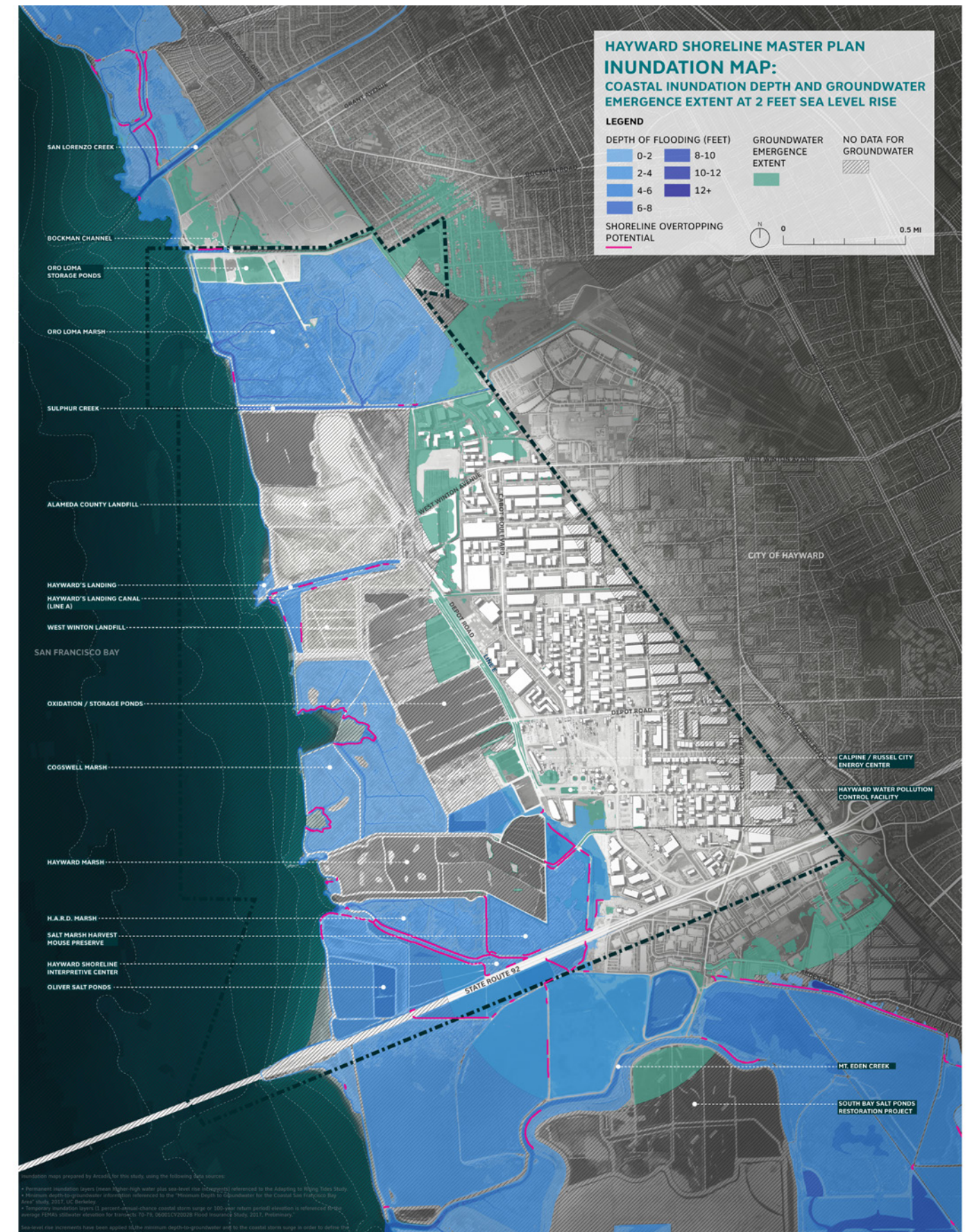
- Northern industrial neighborhoods are impacted by groundwater before SLR inundation.
- SLR impacts tidally influenced natural features and the Oliver Salt Ponds
- SLR impacts to recreational resources, include Bay Trail, Interpretive Center, and access points.
- Areas of groundwater emergence are roughly correlated with areas of 100-year flood risk.



2' SCENARIO

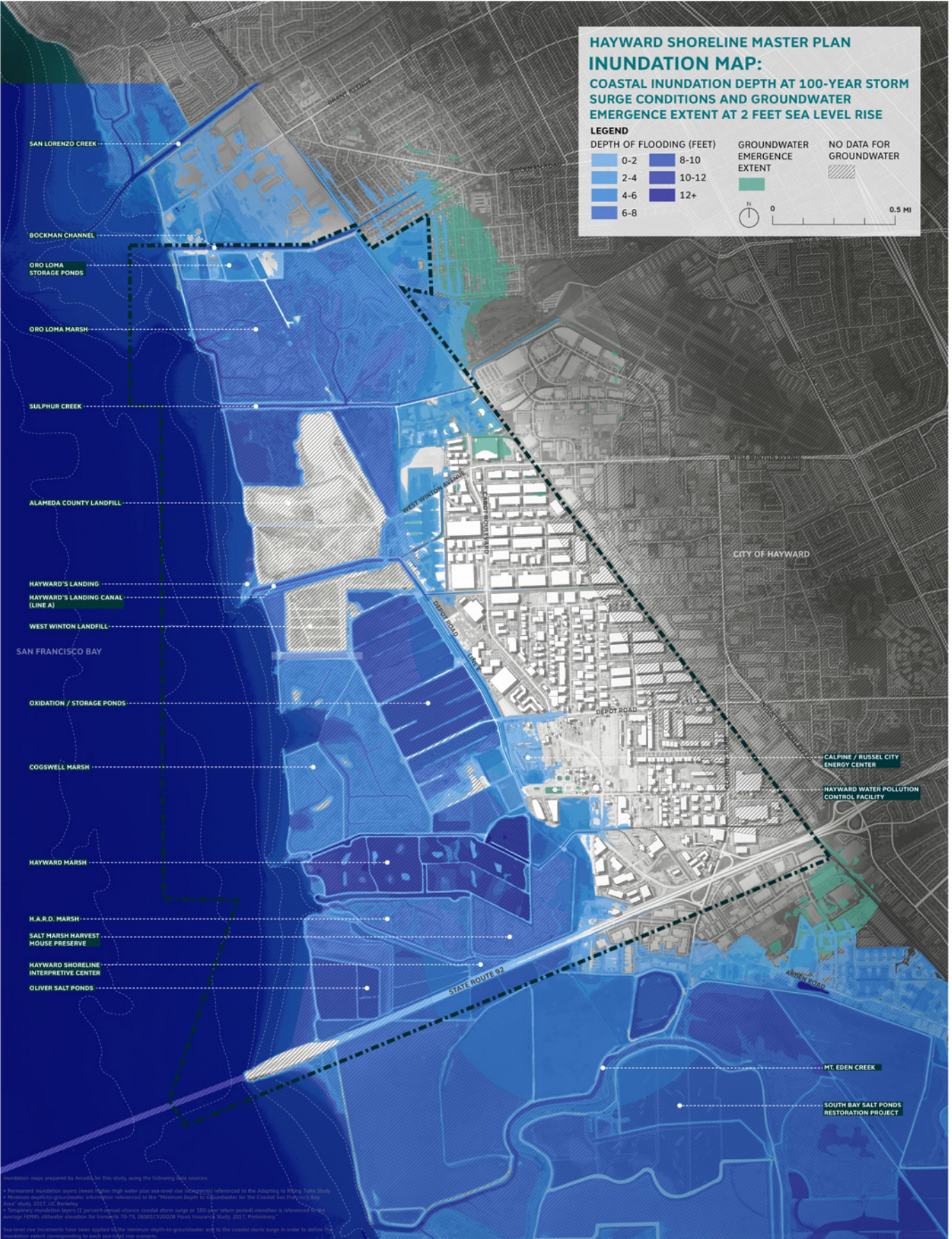
IMPACTED AREAS

- Potential to address SLR impacts with strategic infrastructure improvements.
- Areas impacted by SLR:
 - Oro Loma sludge storage areas
 - Tidally influenced natural features
 - Oliver Salt Ponds
 - West Winton Industrial Park
 - Limited impacts to Bay Trail
 - Access to Interpretive Center
 - Line A flood control channel
- Groundwater emergence impacts:
 - Oro Loma Wastewater Treatment Plant
 - Oxidation ponds
 - Calpine/Russell City Energy Center
 - Northern industrial neighborhoods
 - Line E flood control channel



2' SCENARIO

100 YEAR STORM + SLR AND GROUNDWATER

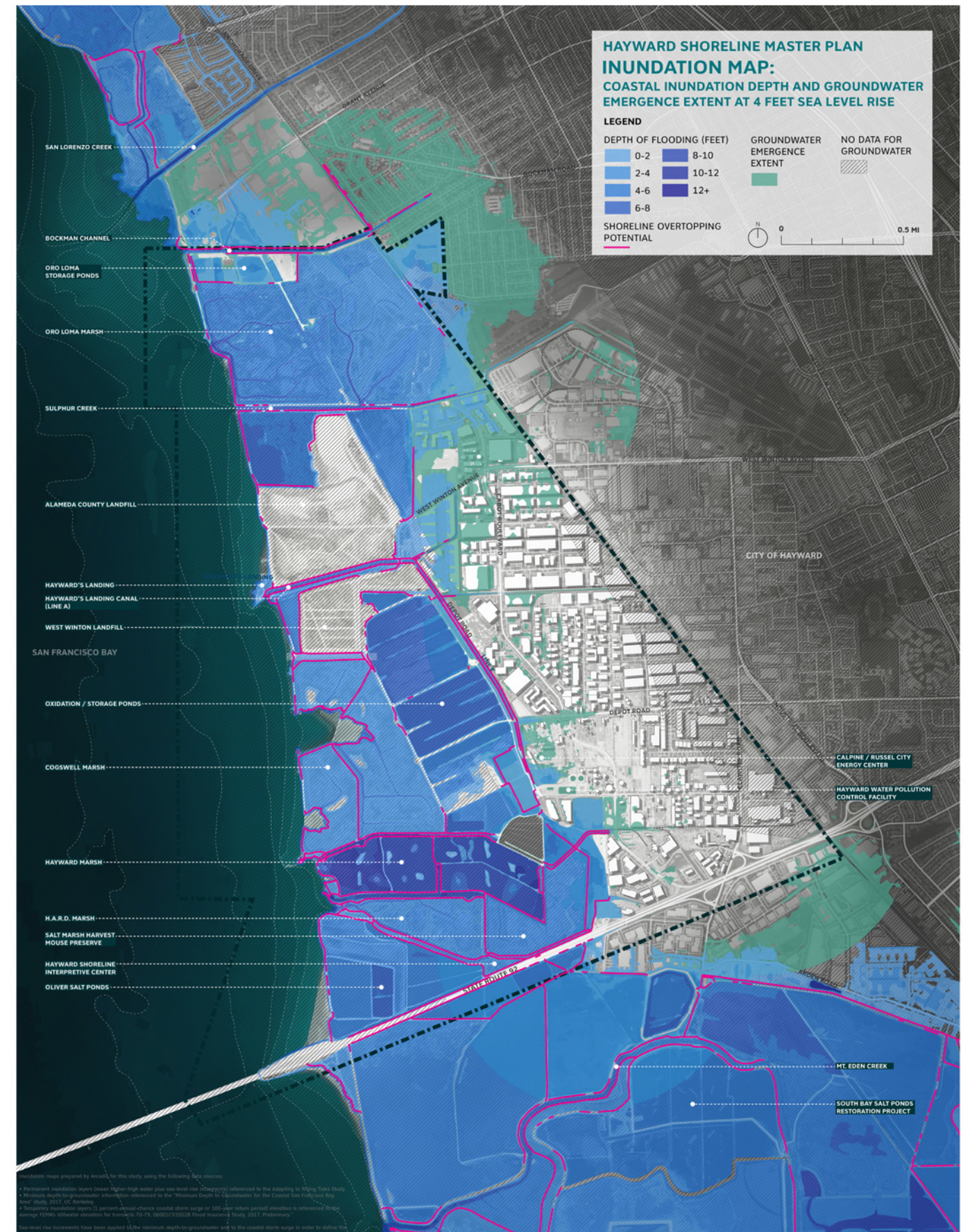


4' SCENARIO

4' SCENARIO

SLR AND GROUNDWATER

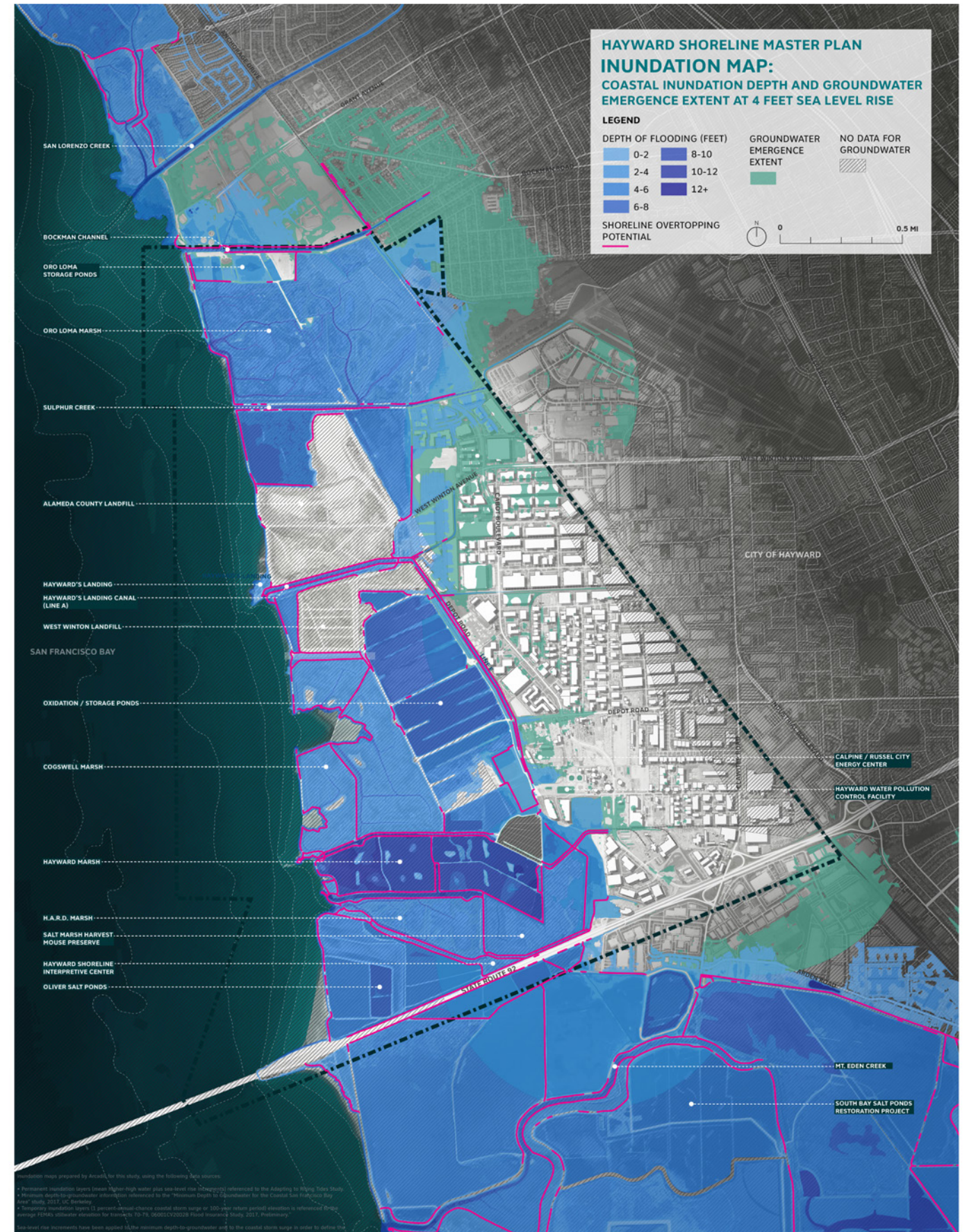
- Many areas impacted by groundwater with 2' of SLR are now impacted by SLR.
- SLR directly impacts critical infrastructure (San Mateo, Oro Loma, railroad)
- Major SLR impacts to recreational resources include Bay Trail, Interpretive Center, and access points.
- Most natural features are impacted by SLR.
- Areas of groundwater emergence are roughly correlated with areas of 100-year flood risk.



4' SCENARIO

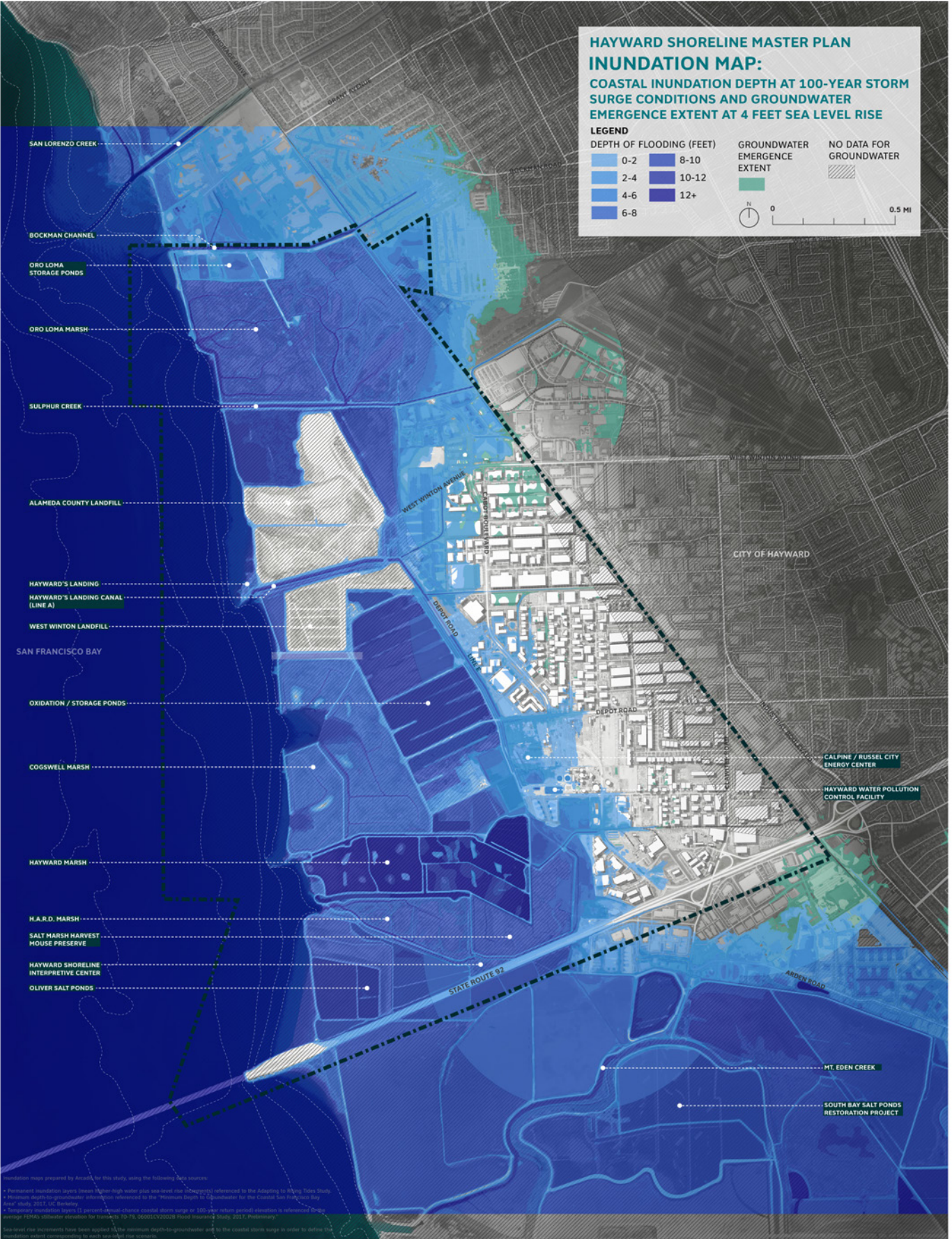
IMPACTED AREAS

- **Additional Sea Level Rise Impacts:**
 - Oro Loma Wastewater Treatment Plant
 - San Lorenzo Community Center Park
 - Oxidation Ponds
 - Bay Trail
 - San Mateo Bridge approach
- **Overtopping contribution to inundation extent:**
 - Interpretive Center Building
 - San Lorenzo Park
 - West Winston Industrial Park
 - Calpine/Russell City Energy Center
 - Railroad
 - Sulphur Creek (both sides)
- **Additional Groundwater emergence impacts:**
 - West Winton Industrial Park
 - Residential areas north of the study area



4' SCENARIO

100 YEAR STORM + SLR AND GROUNDWATER

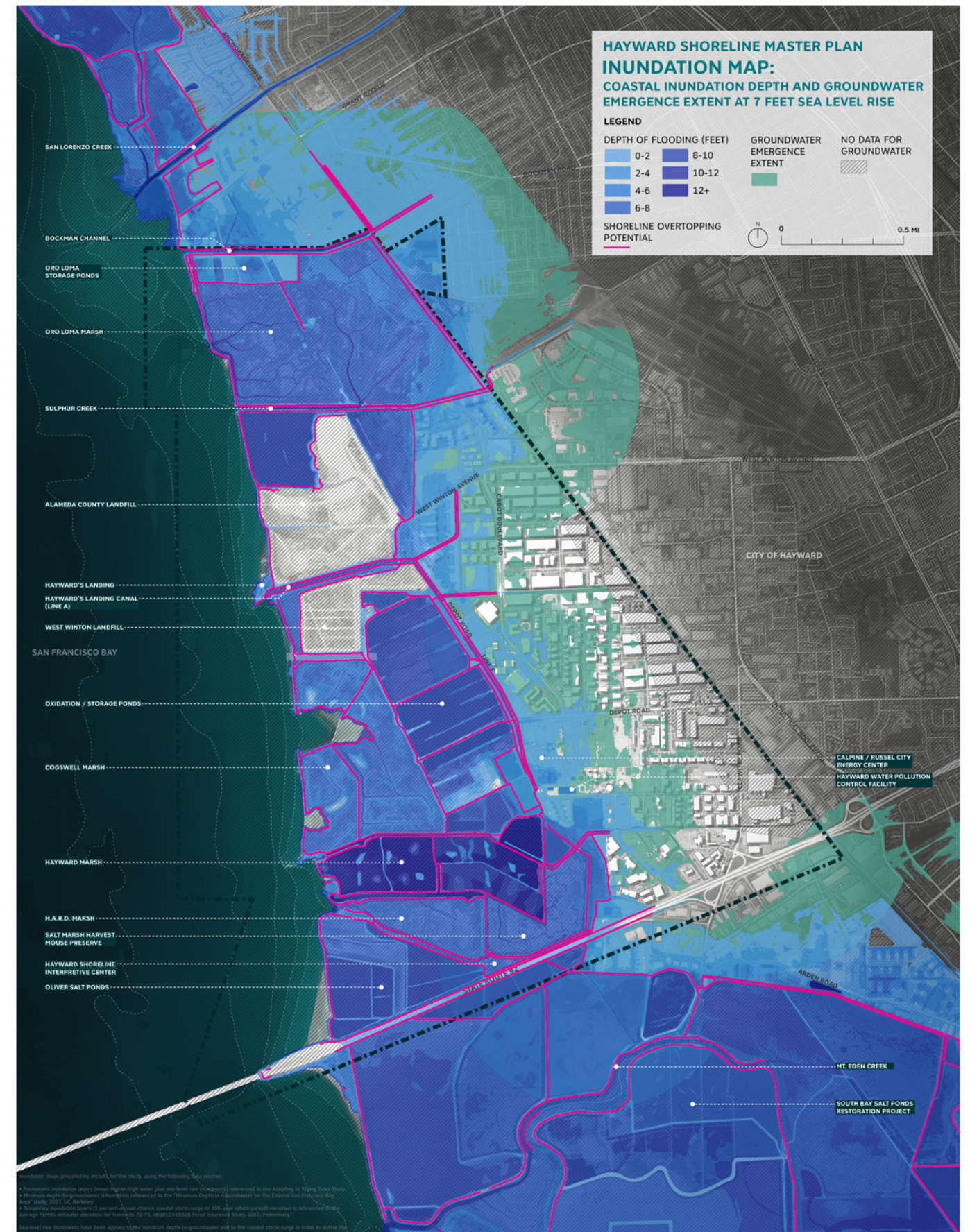


7' SCENARIO

7' SCENARIO

SLR AND GROUNDWATER

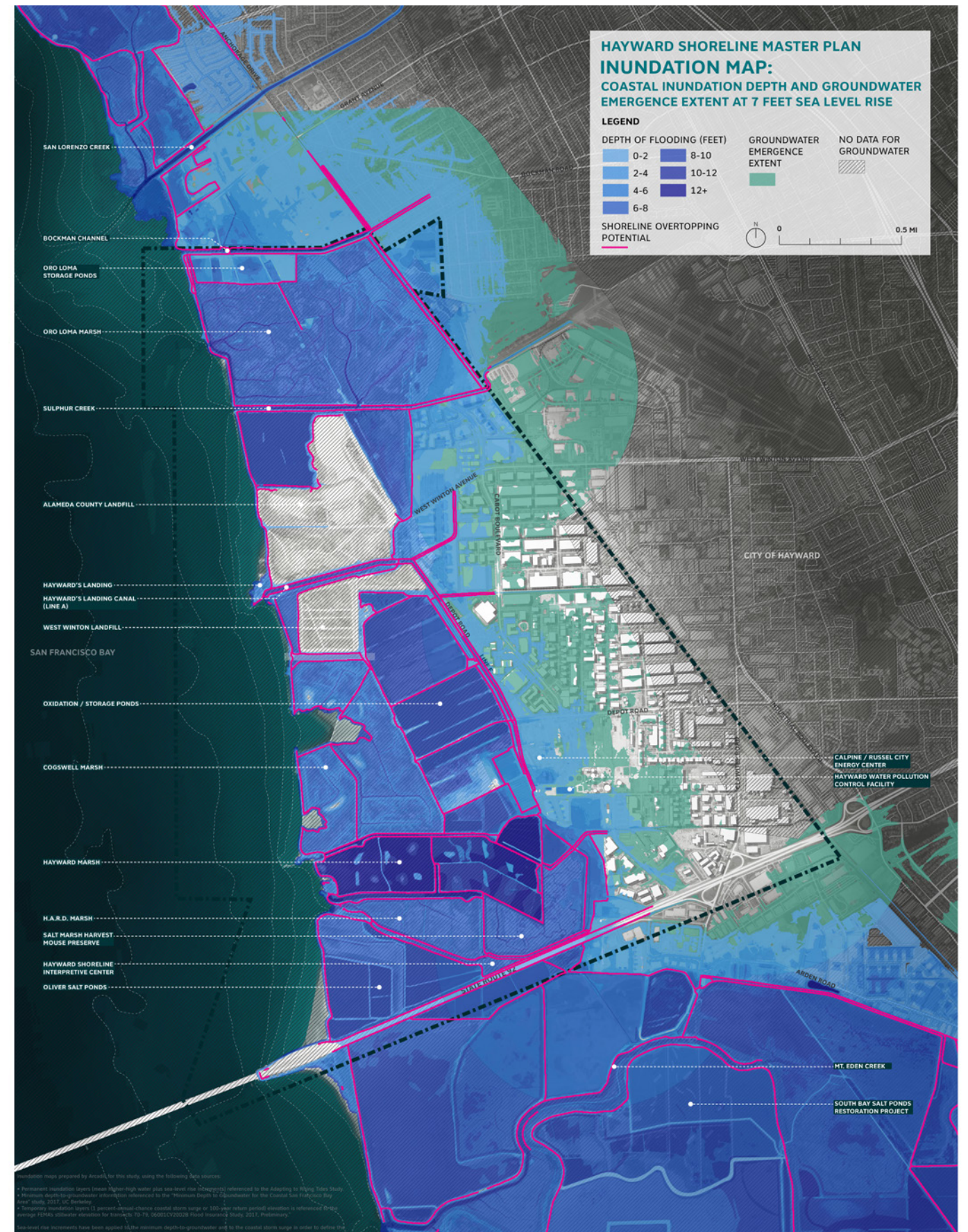
- Almost all critical infrastructure is impacted by SLR
- Major SLR and groundwater impacts to all industrial neighborhoods.
- All stormwater and flood control channels experience significant backups.
- All natural and recreational features experience severe SLR inundation.
- Areas of groundwater emergence are roughly correlated with areas of 100-year flood risk.



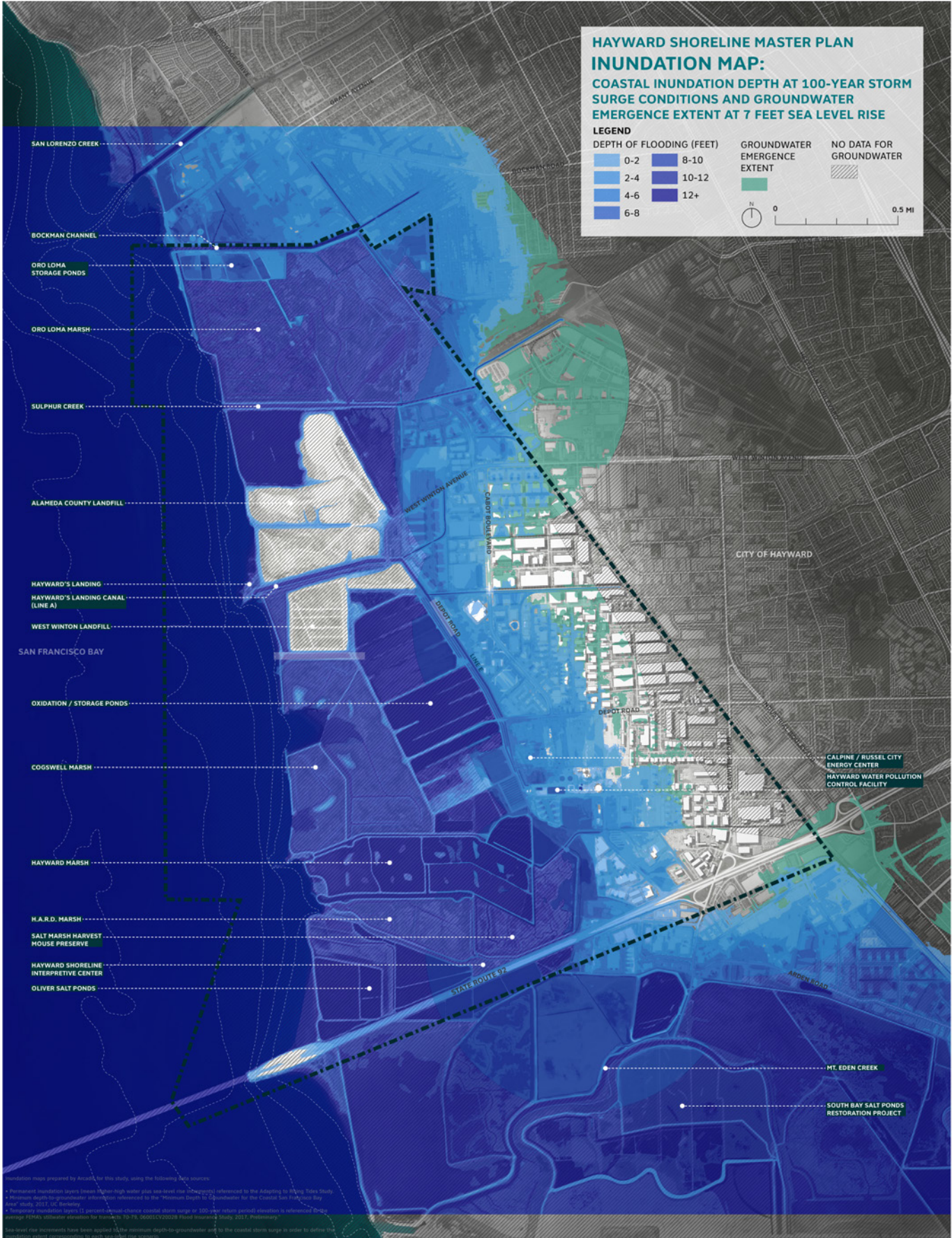
7' SCENARIO

IMPACTED AREAS

- **Additional Sea Level Rise Impacts:**
 - Route 92 and bridge approach significantly affected
 - Landfill perimeters inundated
 - Oro Loma Wastewater Treatment Plant
 - Some impacts to Hayward Wastewater Treatment Facility
 - Hayward Marsh
- **Overtopping contribution to inundation extent:**
 - Observed along most levees and embankments
 - Contributes to inundation on Route 92 bridge approach
- **Additional Groundwater emergence impacts:**
 - Significant impacts to industrial area and neighborhoods
 - Hayward Executive Airport
 - Route 92 interchange



100 YEAR STORM + SLR AND GROUNDWATER



PROJECT GOALS

CREATE A RESILIENT SHORELINE FOR PEOPLE AND ECOLOGY

- **ENHANCE THE SHORELINE'S ECOLOGICAL
VALUE AND ADAPT TO SEA LEVEL RISE**
- **ENHANCE RECREATIONAL OPPORTUNITIES
AND ADAPT TO CLIMATE CHANGE**
- **CREATE A MANAGEMENT FRAMEWORK FOR
ADAPTING TO SEA LEVEL RISE OVER TIME**
- **PROVIDE REFUGE FROM CLIMATE CHANGE
TO ENDANGERED SHORELINE SPECIES**

ENHANCE THE SHORELINE ENVIRONMENT TO REDUCE RISK TO CRITICAL INFRASTRUCTURE

- **ALIGN WITH AND ENHANCE EXISTING MANAGEMENT
AND CAPITAL IMPROVEMENT PLANS**
- **REDUCE RISK TO REGIONAL CRITICAL UTILITIES
FROM SEA LEVEL RISE, GROUNDWATER
INTRUSION, AND FLOOD EVENTS**
- **REDUCE RISK TO TRANSPORTATION
INFRASTRUCTURE FROM SEA LEVEL RISE,
GROUNDWATER INTRUSION, AND FLOOD EVENTS**
- **REDUCE RISK TO AGENCY ASSETS (SAN FRANCISCO
BAY TRAIL AND MARSH RESTORATION PROJECTS)**

BUILD SOCIAL RESILIENCE IN THE COMMUNITY

- **PROMOTE SOCIAL EQUITY, ENVIRONMENTAL JUSTICE, AND PUBLIC HEALTH**
- **PRESERVE THE LOCAL ECONOMY AND INCREASE RESILIENCE TO CLIMATE CHANGE**
- **PREVENT THE DISRUPTION OF KEY COMMUNITY SERVICES**

BUILD CAPACITY FOR FUTURE GENERATIONS TO ADAPT TO CLIMATE CHANGE

- **BUILD ORGANIZATIONAL AND
COMMUNITY CAPACITY**
- **PROMOTE EDUCATION AND
UNDERSTANDING OF CLIMATE CHANGE
IMPACTS TO THE SHORELINE**
- **FOSTER STEWARDSHIP OF THE SHORELINE'S
CULTURAL AND ECOLOGICAL RESOURCES**

POLICY CONSIDERATIONS

KEY POLICY CONSIDERATIONS

- **There is broad support and consensus around the need to plan for sea level rise with a focus on habitat restoration, and an evolving playbook on how to balance long-term, conflicting needs.**
- **There is an extensive permitting process and many regulatory requirements that will likely drive the implementation process.**
- **There are many stakeholders in how water is managed with specific interests that will need to be navigated in order to identify an implementable strategy.**
- **Innovative approaches to shoreline access may be needed to allow for a full exploration of potential strategies.**
- **There are opportunities for the Master Plan to advance regional policy on climate adaptation and ecosystem management.**

RELEVANT ENTITIES

LOCAL ENTITIES

- Hayward Area Shoreline Planning Agency (HASPA)
- Hayward Area Recreation and Park District (HARD)
- City of Hayward
- Union Sanitary District
- Calpine (Russell City Energy Center)

RELEVANT AGENCIES AND REGULATIONS

REGIONAL ENTITIES

- East Bay Regional Park District (EBRPD)
- San Francisco Bay Restoration Regulatory Integration Team (BRRIT)
- Alameda County Flood Control & Water Conservation District (ACFCWCD)
- Alameda County Mosquito Abatement District (ACMAD)
- East Bay Dischargers Authority (EBDA)
- East Bay Municipal Utility District (EBMUD)
- San Francisco Bay Trail
- San Francisco Bay Area Planning and Urban Research Association (SPUR)
- San Francisco Bay Restoration Authority
- Alameda County Water District (ACWCD)
- Association of Bay Area Governments (ABAG)
- SF Regional Water Quality Control Board (WQCB)

RELEVANT AGENCIES AND REGULATIONS

STATE ENTITIES

- California Environmental Quality Act (CEQA)
- Pacific Gas & Electric (PG&E)
- Caltrans (California Department of Transportation)
- California Department of Fish and Wildlife (CDFW)

RELEVANT AGENCIES AND REGULATIONS

FEDERAL & NATIONAL ENTITIES

- Union Pacific Railroad
- U.S. Fish and Wildlife Service (USFWS)
- NOAA National Marine Fishers Service (NMFS)
- FEMA
- USACE

POLICY MATRIX

AGENCY	GENERAL ROLE(S) / MISSION	PLANNING & REGULATORY JURISDICTION / LAND OWNERSHIP RELEVANT TO STUDY AREA AND MASTER PLAN	RELEVANT REGULATIONS, PLANS, POLICIES, AND GUIDANCE
Hayward Area Shoreline Planning Agency (HASPA)	<ul style="list-style-type: none">Joint powers agency comprised of representatives from Hayward Area Recreation and Park District, East Bay Regional Park District, and the City of Hayward.Work with the Hayward Area Shoreline Citizens Advisory Committee (HASCAC) to coordinate agency planning activities and adopt and carry out policies for the improvement of the Hayward Shoreline for future generations.	<ul style="list-style-type: none">Under a joint exercise of powers agreement, HASPA is charged with the power to undertake all planning activities associated with sea level rise, and the power to develop plans for, prepare studies and reports, and make recommendations for the Hayward Shoreline.¹	<ul style="list-style-type: none">Preliminary Study of the Effect of Sea Level Rise on the Resources of the Hayward Shoreline (2011)Adapting to Rising Tides Resilience Study (March 2015)²
Hayward Area Recreation and Park District (HARD)	<ul style="list-style-type: none">Independent special use district created to provide park and recreation services for the over 280,000 residents in the Hayward area.Member of HASPA	<ul style="list-style-type: none">Owns and manages the HARD marsh, 79-acre, fully tidal marshes comprised of mudflats and low marsh habitats along the Hayward Shoreline, in addition to over 40 parks and trails in Hayward, as well as playground areas and playing fields at local schools.³Runs the Hayward Shoreline Interpretive center, which features exhibits, programs, and activities designed to inspire a sense of appreciation, respect, and stewardship for the bay, its inhabitants, and services they provide.	<ul style="list-style-type: none">Regulations Governing Use of Parks, Recreation Areas, and Facilities⁴
East Bay Regional Park District (EBRPD)	<ul style="list-style-type: none">Regional park district managing 73 parks and over 124,000 acres of space and acres of space and 1,250 miles of trails throughout East Bay in Alameda and Contra Costa counties.Member of HASPA	<ul style="list-style-type: none">Owns and manages Cogswell Marsh (250 acres tidal/low marsh habitat), Salt Marsh Harvest Mouse Preserve (27 acres muted tidal system), Hayward Marsh (145-acre fresh and brackish water marsh, relies on secondary treated effluent as freshwater source).Supports proposed project to modify Hayward Marsh to convert from a freshwater effluent fed system to a fully tidal or muted tidal system. EBRD plans to put out a bid for full design in the future.Operates and manages the SF Bay Trail.	<ul style="list-style-type: none">Ordinance 38 Rules and Regulations⁵2013 Master Plan⁶ - defines the mission and vision for the Park District for its stewardship and developmentBoard of Directors has adopted multiple plans including: ADA Self Evaluation and Transition Plan, Environmental Review Manual, Park Operations guidelines, Sustainability Policy, Wildlife Hazard Reduction and Resource Management PlanDistrict Standard Plans⁷ - design guidelines for districtsClimate Smart Initiative⁸ that promotes adaptive management
<div><div>1</div><div>2</div><div>3</div><div>4</div><div>5</div><div>6</div><div>7</div><div>8</div></div> <div><div>https://lafco.acgov.org/lafco-assets/docs/JPAs/HASPA%20(Hayward%20Area%20Shoreline%20Planning%20Agency).pdf</div><div>http://www.adaptingtorisingtides.org/wp-content/uploads/2014/12/HaywardShorelineResilienceStudyReport_sm.pdf</div><div>https://www.hayward-ca.gov/residents/arts-leisure/parks-recreation</div><div>https://www.haywardrec.org/DocumentCenter/View/2874/District-Regulation-Handbook?bidId=</div><div>https://www.ebparks.org/activities/ord38.htm</div><div>https://www.ebparks.org/civicax/filebank/blobdload.aspx?BlobID=23499</div><div>https://www.ebparks.org/about/bids/district_standard_plans.htm</div><div>https://www.ebparks.org/climatesmart.htm</div></div>			

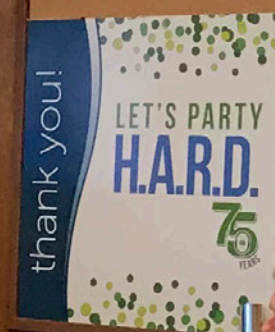
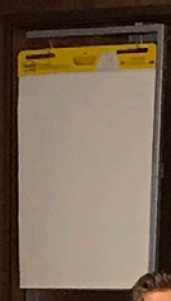
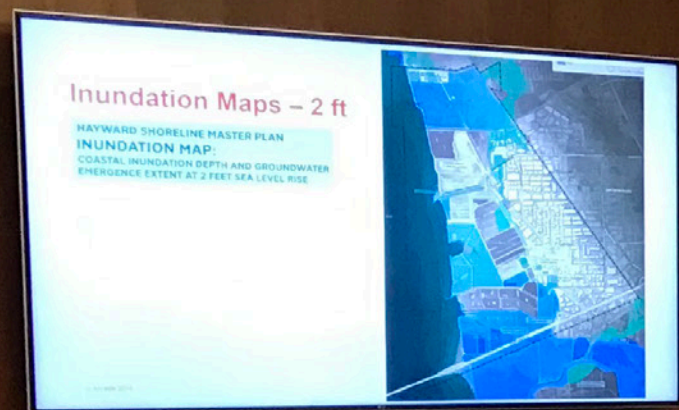
AGENCY	GENERAL ROLE(S) / MISSION	PLANNING & REGULATORY JURISDICTION / LAND OWNERSHIP RELEVANT TO STUDY AREA AND MASTER PLAN	RELEVANT REGULATIONS, PLANS, POLICIES, AND GUIDANCE
City of Hayward	<ul style="list-style-type: none">Land use planning and zoningConducts development and environmental reviewCapital improvement planningHazard mitigation planningMember of HASPA	<ul style="list-style-type: none">Manages capital improvement plan for city infrastructure, including the wastewater treatment plant and local roadwaysDevelops changes to the zoning code to implement land use plans	<ul style="list-style-type: none">General Plan Comprehensive Plan 2040Capital Improvement Budget⁹Economic Development Strategic Plan¹⁰Design Guidelines¹¹Neighborhood Plans¹²2016 Hayward Local Hazard Mitigation Plan¹³
San Francisco Bay Restoration Regulatory Integration Team (BRRIT) ¹⁴	<ul style="list-style-type: none">Composed of staff from the six state and federal regulatory agencies with jurisdiction over wetlands restoration projects: U.S. Army Corps of Engineers (Corps); U.S. Fish and Wildlife Service (USFWS); NOAA National Marine Fisheries Service (NOAA Fisheries); San Francisco Bay Regional Water Quality Control Board (RWQCB); California Department of Fish and Wildlife (DFW); and San Francisco Bay Conservation and Development Commission (BCDC). Also includes representatives from the U.S Environmental Protection Agency (EPA).	<ul style="list-style-type: none">The purpose of the BRRIT is to improve the permitting process for multi-benefit wetland restoration projects and associated flood management and public access infrastructure in San Francisco Bay.	<ul style="list-style-type: none">Webinar on how to submit projects¹⁵
California Environmental Quality Act (CEQA)	<ul style="list-style-type: none">Broad environmental law with a goal of disclosing to the public the significant environmental effects of a proposed project through the preparation of an Initial Study (IS), Negative Declaration (ND), or Environmental Impact Report (EIR).Unlike NEPA, requires adoption of all feasible measures to mitigate environmental impacts	<ul style="list-style-type: none">CEQA applies to all discretionary projects proposed to be conducted or approved by a California public agency, including private projects requiring discretionary government approvalConstruction of seawalls, revetments/riprap, bulkheads, or super levee that would modify land near the shoreline or elevate land might trigger CEQAGeologic Hazard Abatement Districts are exempt from CEQAImpacts to wetlands would have to be addressed under CEQA	<ul style="list-style-type: none">Governor's Office of Planning and Research (OPR) and the Natural Resources agency develop CEQA guidelines¹⁶
<div><div>9</div><div>10</div><div>11</div><div>12</div><div>13</div><div>14</div><div>15</div><div>16</div></div> <div><div>https://www.hayward-ca.gov/your-government/documents/capital-improvement-program</div><div>https://www.hayward-ca.gov/your-government/documents/economic-development-strategic-plan</div><div>https://www.hayward-ca.gov/your-government/documents/planning-documents</div><div>https://www.hayward-ca.gov/your-government/documents/planning-documents</div><div>https://www.hayward-ca.gov/sites/default/files/pdf/2016%20City%20of%20Hayward%20Local%20Hazard%20Mitigation%20Plan.pdf</div><div>http://www.sfbayrestore.org/san-francisco-bay-restoration-regulatory-integration-team-brrit</div><div>https://www.youtube.com/watch?v=UBcWVP9qQfM&feature=youtu.be</div><div>http://opr.ca.gov/ceqa/updates/guidelines/</div></div>			

STAKEHOLDER MEETINGS

STAKEHOLDER MEETINGS TAKEAWAYS

- **Hayward Public Works**
 - Supports using landfills as recreational lookouts.
- **Alameda County Flood Control District**
 - Indicated a willingness to provide tidal connections to wetlands from FCCs.
- **South Bay Salt Ponds**
 - Provided contacts at BRRIT to begin discussing the Hayward Shoreline Master Plan.
- **SFEI**
 - Provided additional adaptation strategies for the design team.
- **Bay Trail**
 - Receptive to potential Bay Trail relocation within the Hayward Shoreline to allow for a varied experience.
- **BCDC**
 - Shared relevant studies and draft reports with the team.
 - Provided an introduction to BCDC members of BRRIT.
- **Caltrans**
 - Provided relevant studies and traffic data for the San Mateo Bridge.

10/1 CHARRETTE



Wi-Fi NETWORK: HARD Guest
PASSWORD: welcome09



STRATEGIES

NATURE-BASED STRATEGIES



NATURE-BASED STRATEGIES



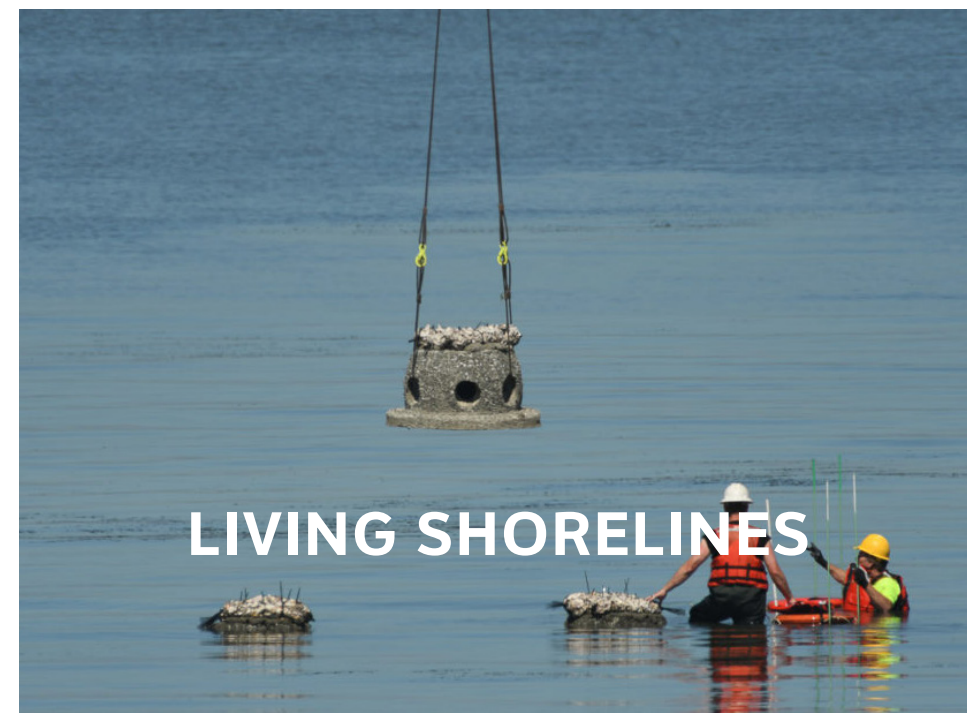
**TRIBUTARY CONNECTION
TO BAYLANDS**



UPLAND OPPORTUNITIES



**SUBMERGED AQUATIC
VEGETATION RESTORATION**

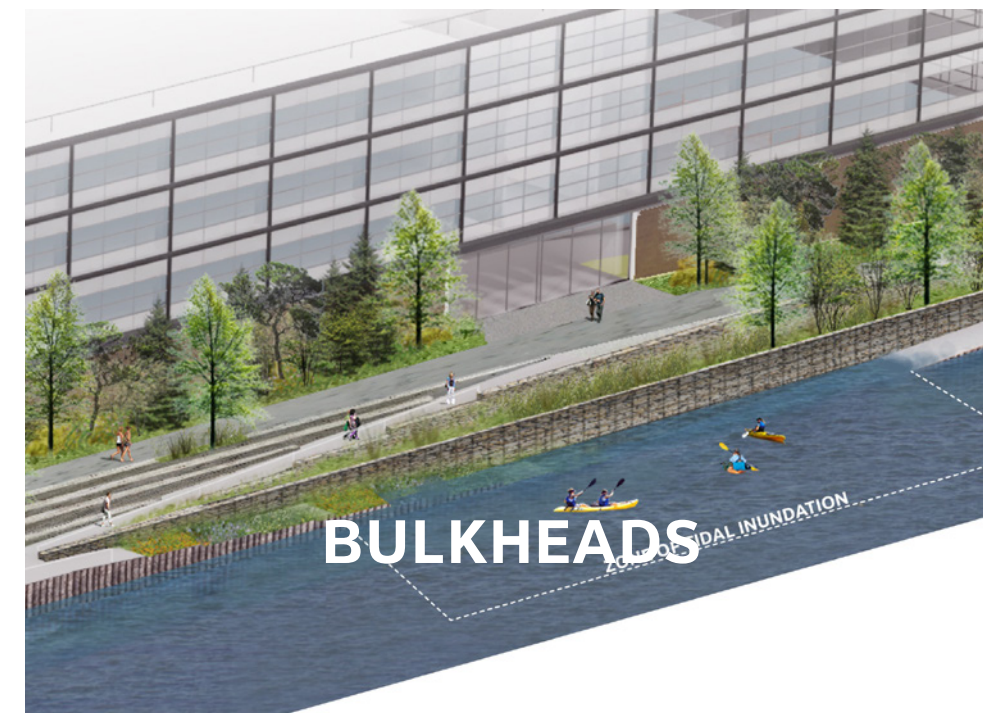


LIVING SHORELINES

NATURE-BASED STRATEGIES

- TIDAL MARSH RESTORATION
- TIDAL MARSH AND MUDFLAT NOURISHMENT
- MARSH AND MUDFLAT MIGRATION PLANNING
- FINE AND COARSE GRAIN BEACHES
- POLDER MANAGEMENT / DIKED POND MANAGEMENT
- ECOTONE / HORIZONTAL LEVEE
- TRIBUTARY CONNECTION TO BAYLANDS
- UPLAND OPPORTUNITIES
- REEFS AND LIVING BREAKWATERS
- SUBMERGED AQUATIC VEGETATION RESTORATION

ENGINEERED STRATEGIES



ENGINEERED STRATEGIES

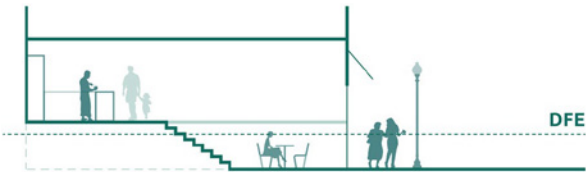
- **LEVEE IMPROVEMENTS**
- **EDGE STABILIZATION AND EROSION PROTECTION (CRITICAL INFRASTRUCTURE)**
- **TRANSPORTATION ELEVATION OR REALIGNMENT**
- **TIDE GATES AND WATER CONTROL STRUCTURES**
- **WASTEWATER TREATMENT ADAPTATION**
- **GROUNDWATER SOLUTIONS**
- **TIDAL WETLAND**
- **LAND ELEVATION**

NON-STRUCTURAL STRATEGIES



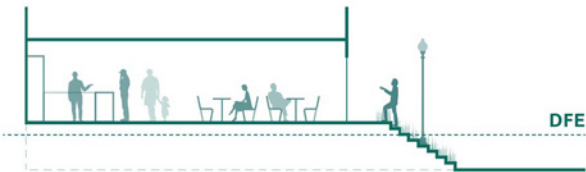
STRATEGY 1

First floor program on a split level, with floodable areas and elevated protected areas above the Design Flood Elevation (DFE).



STRATEGY 2

Elevated first floor with outdoor steps leading up to the first level, that incorporate planting and street life.



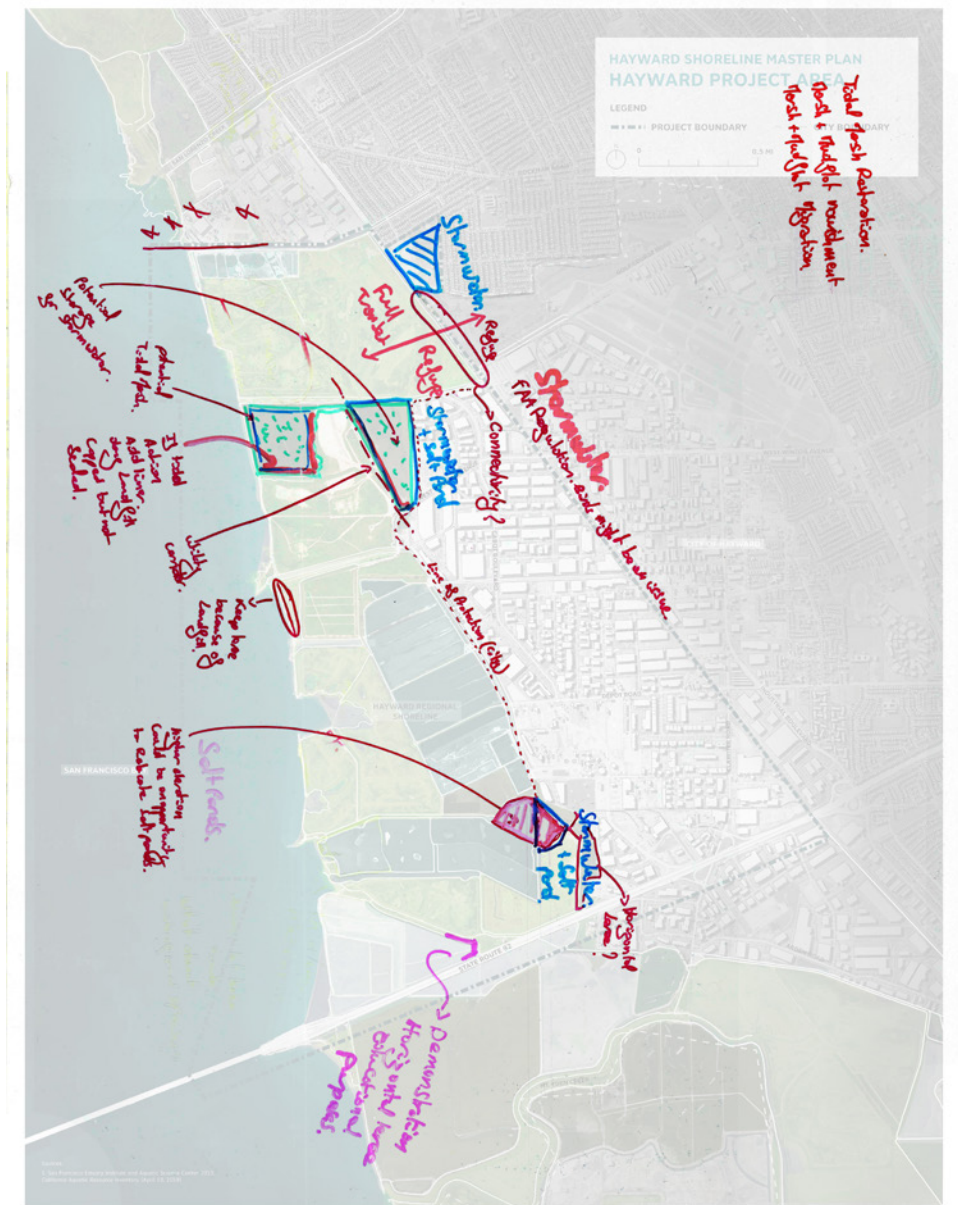
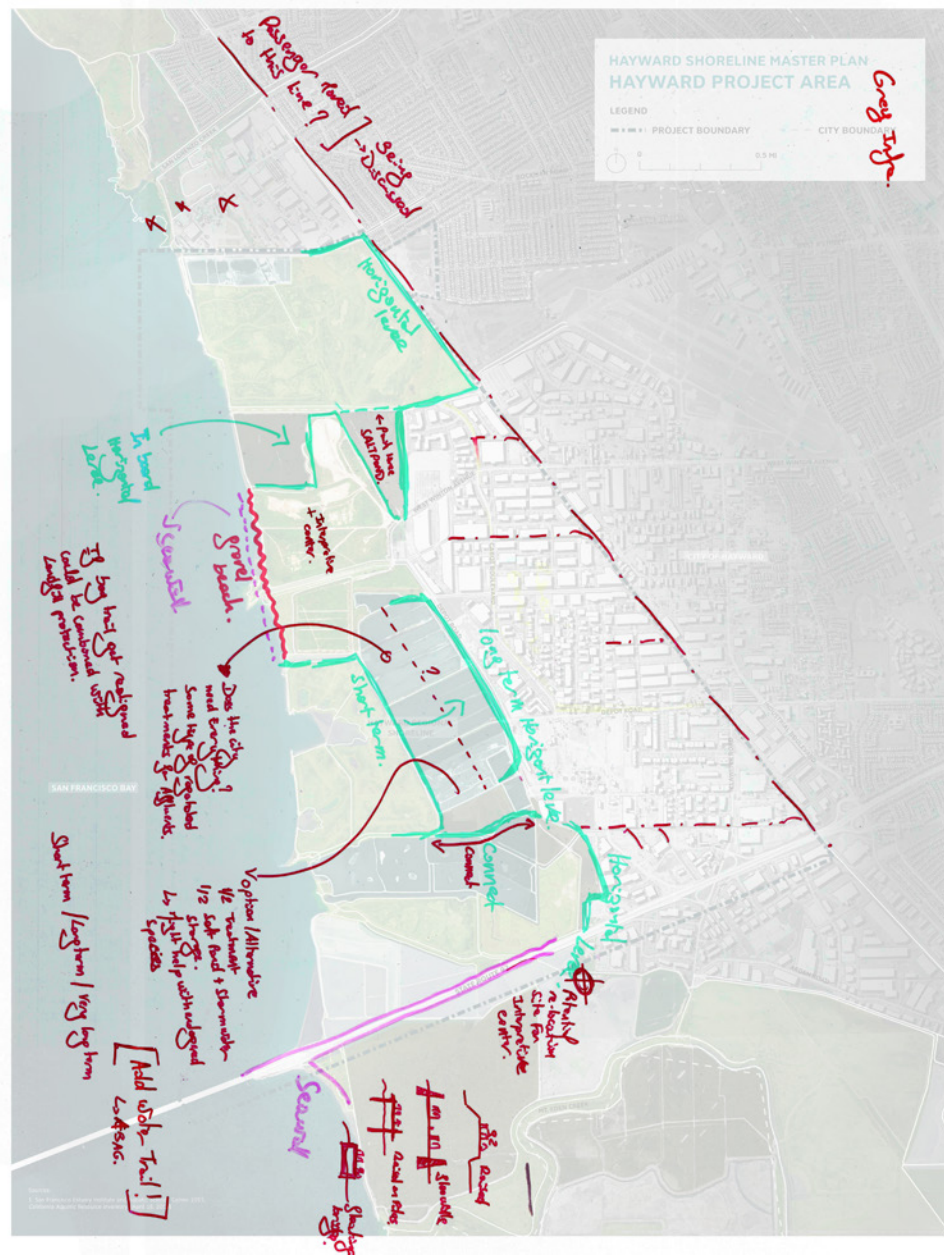
BUILDING AND ZONING CODE CHANGES



NON-STRUCTURAL STRATEGIES

- **MANAGED RETREAT**
- **BUILDING AND ZONING CODE STANDARDS**
- **GRANTS/LOANS FOR BUILDING-SCALE ADAPTATION**
- **OUTREACH AND TECHNICAL ASSISTANCE ON FLOOD INSURANCE/RETROFITTING STRATEGIES**
- **IMPROVED PUBLIC ACCESS**
- **SCIENCE/ACADEMIC PARTNERSHIPS**

CHARRETTE SKETCHES



NEXT STEPS

JOIN US FOR A SHORE TOUR!

FOR THE HAYWARD REGIONAL SHORELINE MASTER PLAN

WHEN:

SUNDAY, OCTOBER 27, 2019

1:00 - 3:00 PM

WHERE:

**HAYWARD SHORELINE
INTERPRETIVE CENTER**

4901 BREAKWATER AVE, HAYWARD, CA

Join us for an interactive tour of the Hayward shoreline! The Shore Tour is part of the Hayward Area Shoreline Planning Agency's efforts to engage the public in their planning for the **future resilience of our shoreline**. Anyone is welcome! Join the team of naturalists and planners for a walk along the shoreline to highlight some of its key geographic features and to demonstrate **how sea level rise may impact the shoreline** and its surrounding area. We welcome your further input!

All ages are welcome. Space is limited so please RSVP soon! The event will include a naturalist led afternoon walk and **kid friendly activities**. Refreshments will be served. Please wear shoes that allow for walking on dirt paths and bring a jacket, as the shoreline can get windy!



— Salt Marsh
Harvest Mouse

— Pickleweed

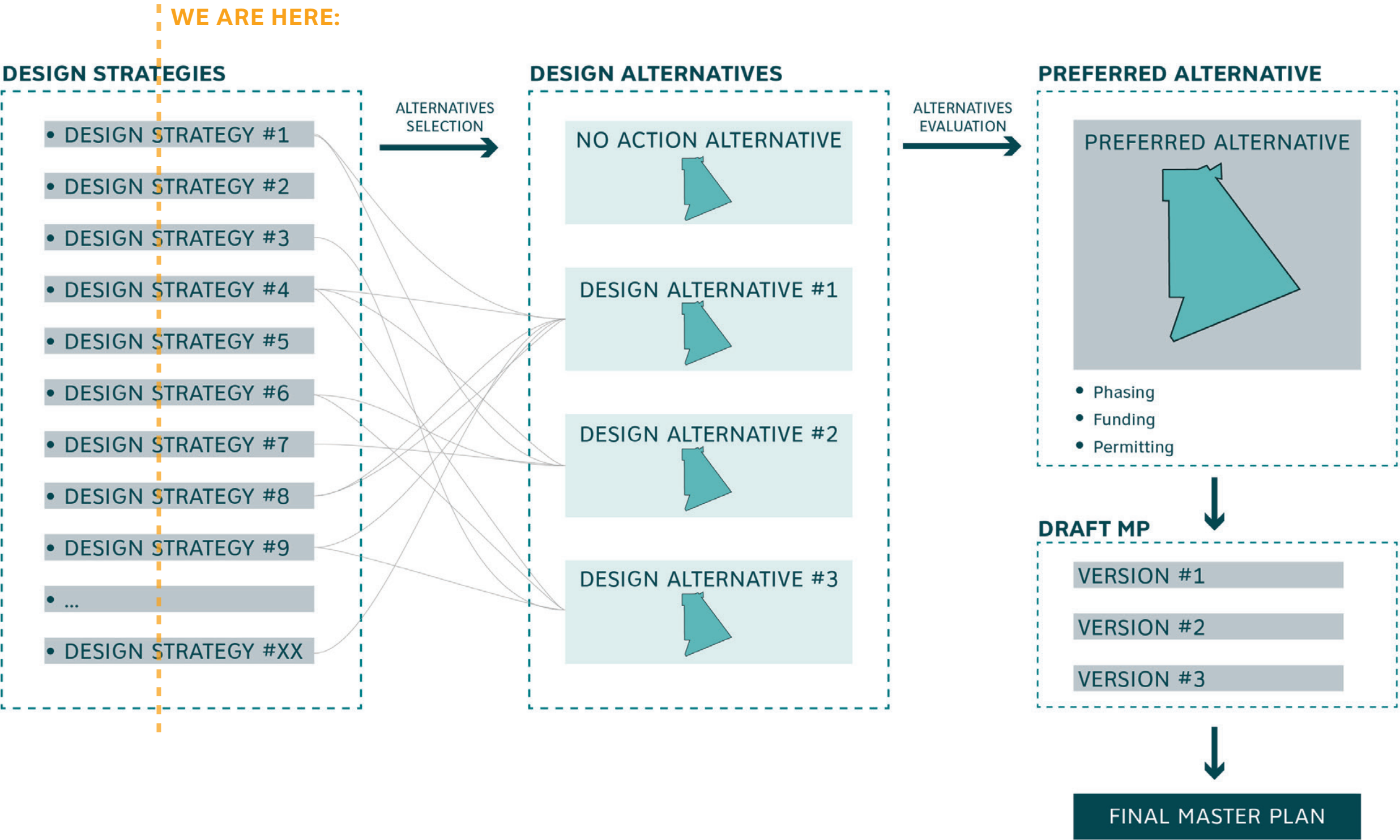


RSVP AT:

<http://bit.ly/310uANF>

NEXT STEPS

TASKS 4 & 5



THANK YOU!