

INCREMENTAL
Sea Level Rise

INSTANTANEOUS
Seismic

TOP DOWN

BOTTOM UP

COMMON GROUND

An Approach to the Incremental + Instantaneous
Dynamics of the Bay Area Shoreline

RESILIENT
BY
DESIGN
BAY AREA CHALLENGE

COMMON GROUND THE TEAM

LANDSCAPE ARCHITECTURE
ART, EDUCATION, SCIENCE
ARCHITECTURE
COASTAL ENGINEERING
FINANCIAL ADVISING
BENTHIC ECOLOGY
URBAN DESIGN
TERRESTRIAL ECOLOGY
COMMUNITY ENGAGEMENT
HYDROLOGY
TRANSPORTATION ENGINEERING

TLS Landscape Architecture

Exploratorium

Michael Maltzan Architecture

Guy Nordenson and Associates

Sitelab Urban Studio

HR&A Advisors

Lotus Water

Rana Creek Design

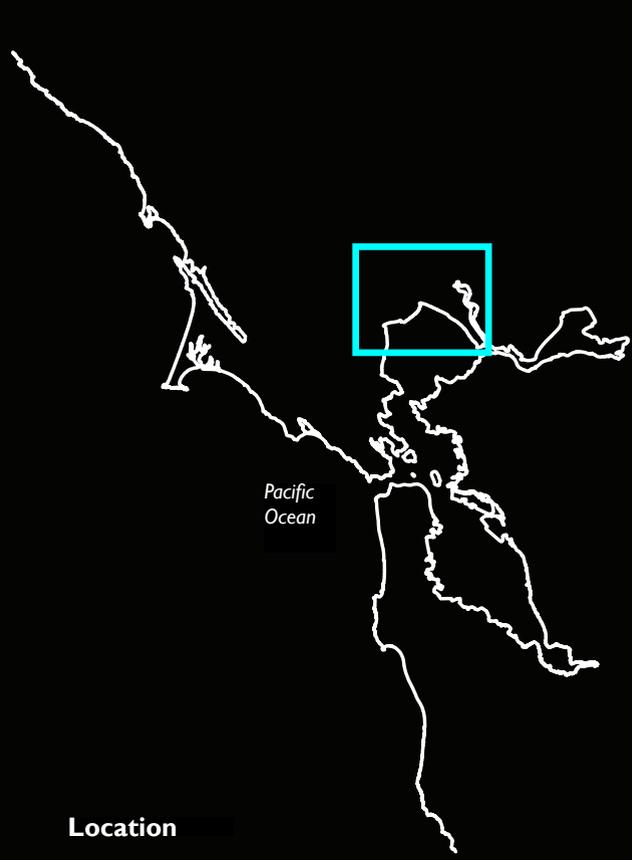
Dr. John Oliver

Richard Hindle, UC Berkeley

Fehr & Peers Transportation Consultants



SR37 & THE BAYLANDS



THE SITE

+ KING TIDES 2017

+ BLOCKING
NATURAL FLOWS

+ CONSTRUCTION
STARTS 2088

+ LOWEST COST OPTION
AT \$1.2 BILLION



WHY IS THIS CRITICAL



+ SEARS POINT

+ SONOMA

+ NAPA

+ SR 37

+ BAYLANDS

+ AMERICAN
CANYON

+ MARE ISLAND

+ VALLEJO

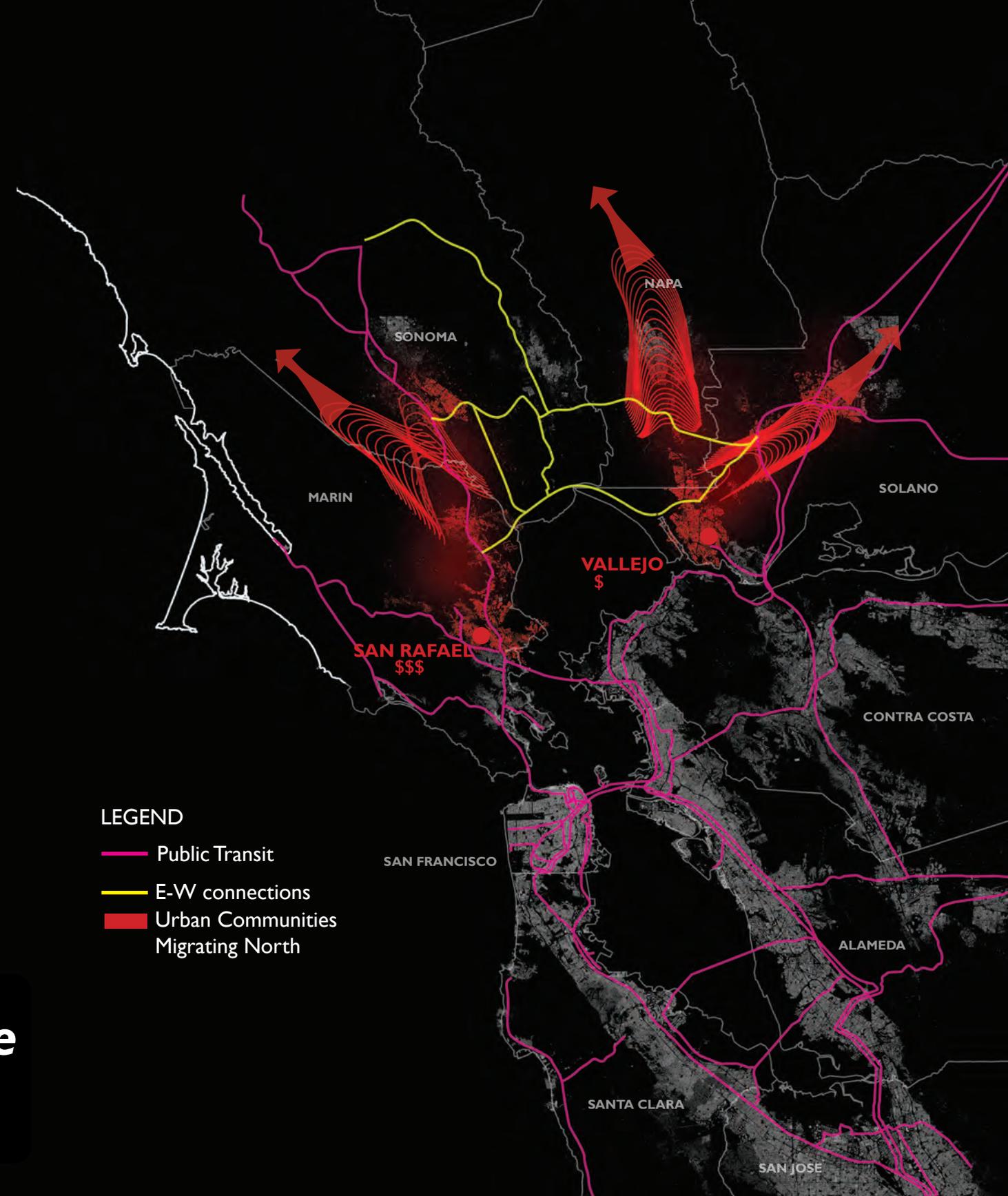
WHY SR 37 ?

NORTH BAY IS AFFORDABLE AND GROWING

THERE LIMITED PUBLIC TRANSIT IN NORTH BAY

SR 37 IS KEY CORRIDOR FOR PEOPLE TO GET TO WORK

‘2/3 of all trips on SR 37 are made by those earning at or below the median income.’



LEGEND

- Public Transit
- E-W connections
- Urban Communities Migrating North

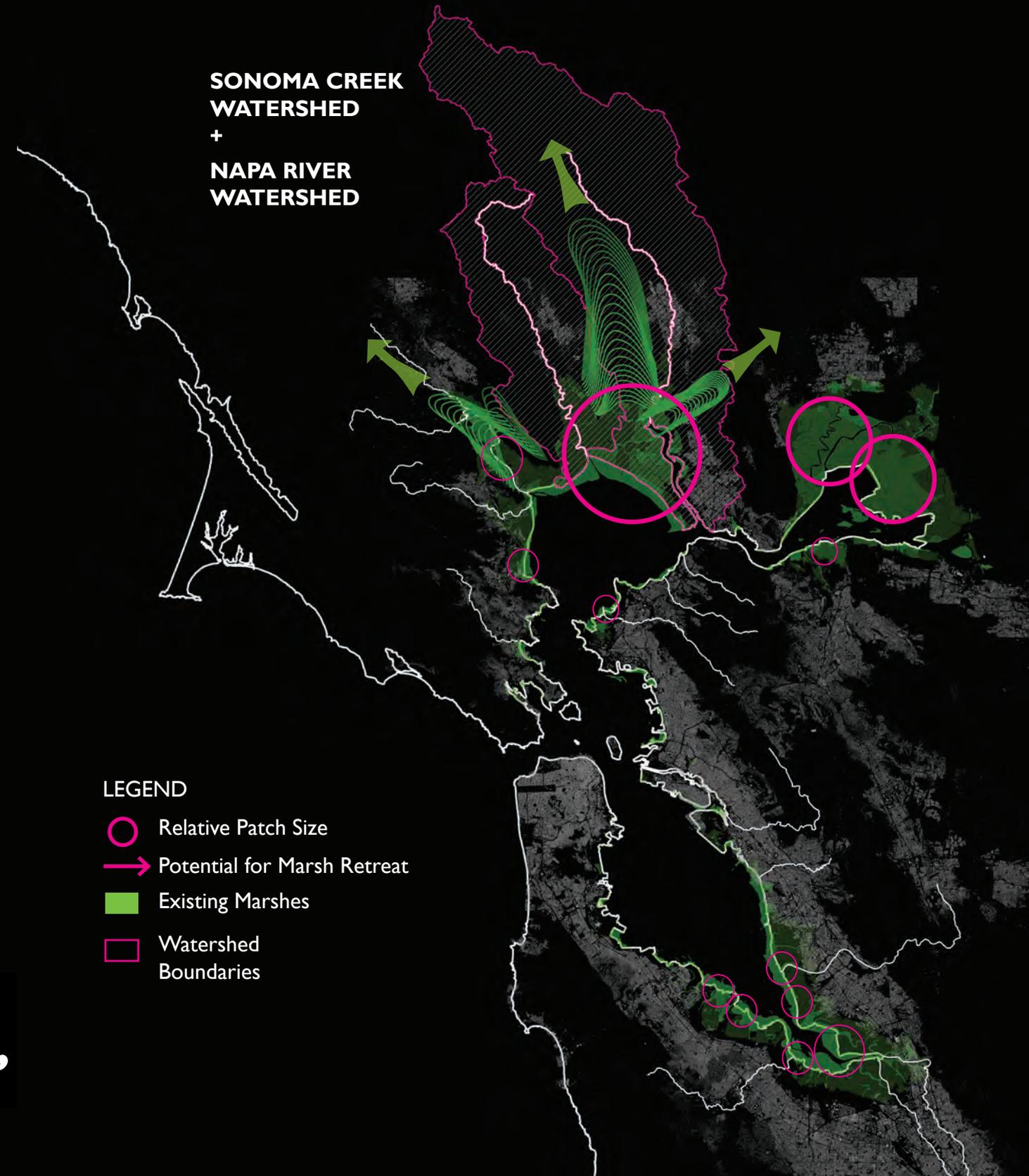
WHY THE NORTH BAYLANDS ?

**MARSHES HAVE SPACE TO
RETREAT UPLANDS**

**LARGEST PATCH OF BAYLANDS
IN THE BAY AREA**

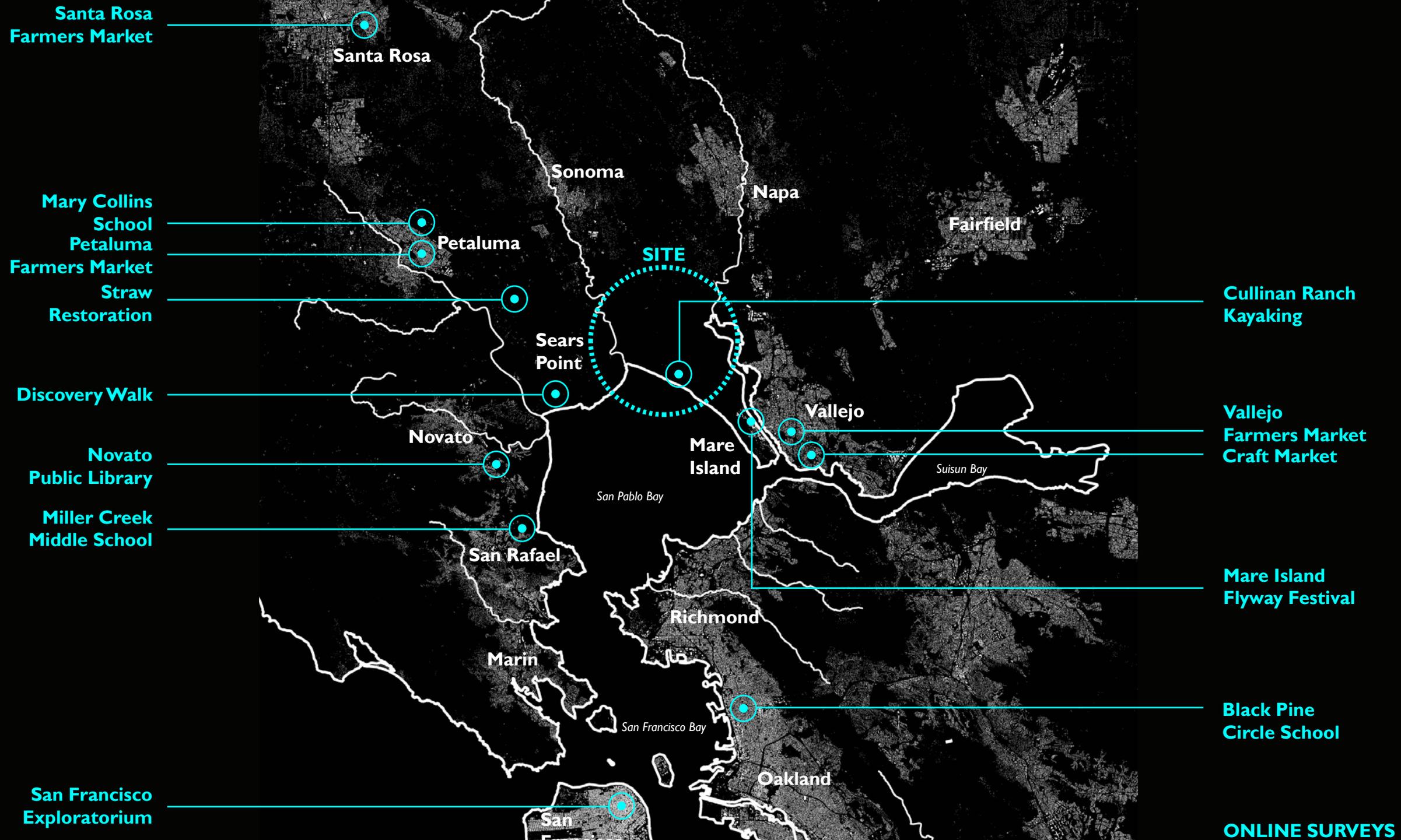
**1/3rd OF BAY'S SEDIMENT COMES FROM NAPA
AND SONOMA WATERSHED**

***'the largest patch of baylands
in the Bay Area will be inundated by 2100'***



REACHING OUT TO PEOPLE

Very few live at the site, but 550,000 people live in cities around the baylands.



IDENTITY

“IT SEEMS AS IF NOTHING IS THERE”

“DON’T KNOW THE RIGHT SPOTS TO CHECK OUT”

“DIDN’T KNOW I COULD VISIT”

“JUST PASS THRU ON THE WAY TO THE RACE TRACK”

ADAPTING GROUND

“STOP FLOODING”

“REPLENISH THE SOIL THAT ERODED DURING FARMING YEARS”

“SLOUGH HEAVEN”

“MORE PROTECTION OF THE WETLANDS”

“KIDS LEARNING CENTER”

“CAUSEWAY TO REPLACE 37, MORE RAPID (AFFORDABLE) TRANSIT”

“AFFORDABLE, SUSTAINABLE BUILT HOUSING WITH ACCESS TO TRANSPORTATION”

“NOT EASILY ACCESSED”

MOBILITY

“PICNIC PAVILIONS, MORE KAYAK ACCESS POINTS, DISPERSED TENT CAMPING SITES!”

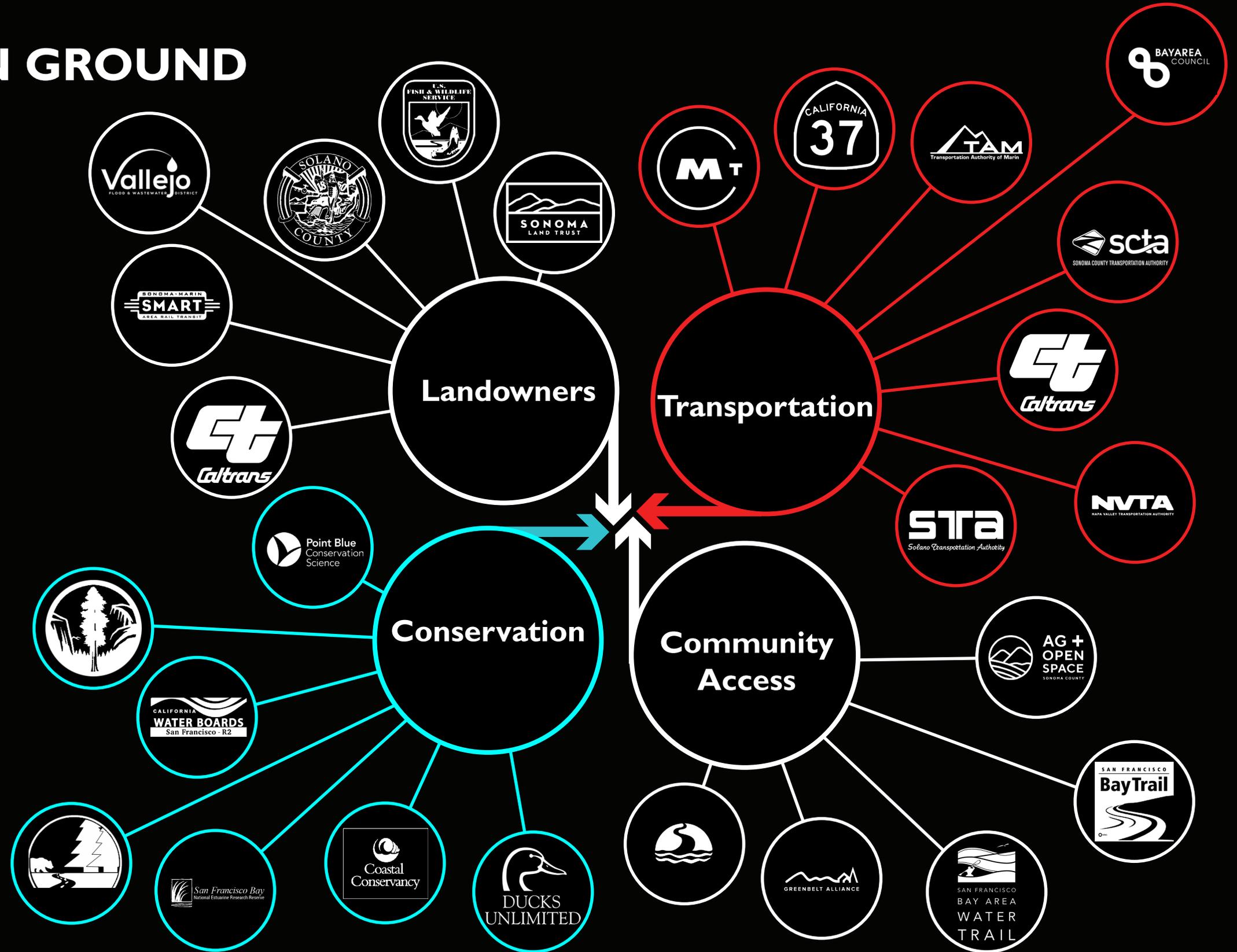
“A WAY TO EXPLORE”

“WALKING TRAILS & ONES THAT DISABLED PEOPLE CAN USE”

“MORE ACCESS!
VALLEJO HAS NOTHING,
THIS NEEDS TO CHANGE”

EXPAND THE CONSTITUENCY

FINDING COMMON GROUND



ALTERNATE ALIGNMENTS



BERM IN PLACE



SAN PABLO BAY BRIDGE/TUNNEL



SRI2 ALIGNMENT



CAUSEWAY IN PLACE



NORTHERN ALIGNMENT



SCENIC BAYWAY+RAIL

CAUSEWAY ALTERNATIVES

NORTHERN ALIGNMENT

- Moderate Cost - major section rests on firm ground
- Unobstructed flows for ecological processes
- Politically challenging and multiple land owners
- Loss of access to Mare Island, Cullinan, Tubbs Island



SOUTHERN ALIGNMENT

- Iconic “Front Door or Window” - adding value & beauty through design
- Allows for Strip Marsh migration
- Majority of section to be built on soft ground and runs through refuge
- Retains access for communities in Vallejo and Mare Island to the baylands



THE BAYWAY: Design Principles

1. PRIORITIZE ELEVATED CAUSEWAY STRUCTURE



2. IMPROVE HABITAT & HYDROLOGIC CONNECTIVITY



3. RESPOND TO INTRINSIC QUALITIES OF THE LANDSCAPE



4. MAKE AN ICONIC FRONT DOOR TO BAYLANDS OPEN SPACE



SCENIC HIGHWAYS

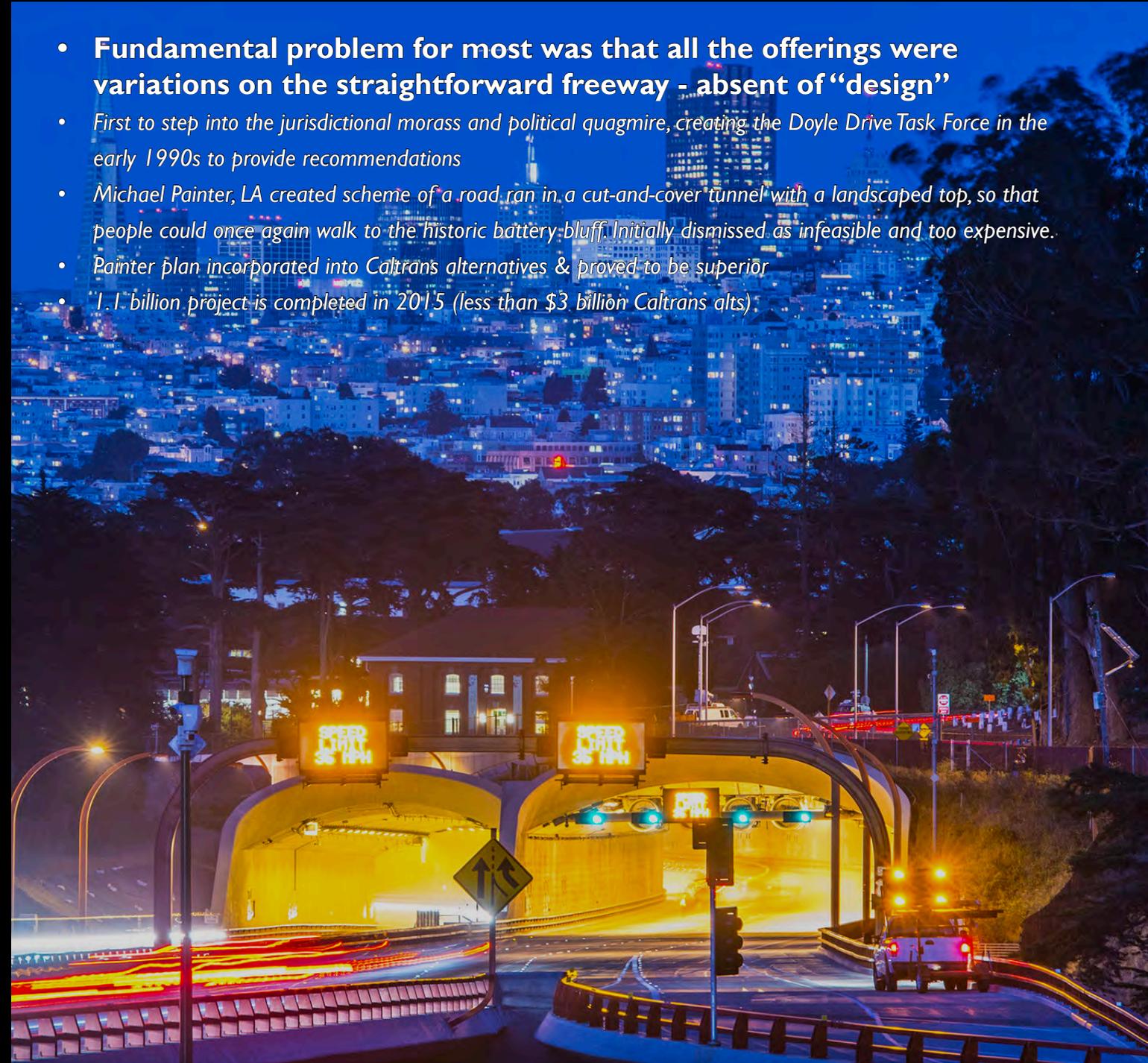
Chesapeake Bay Bridge and Tunnel

- **Governing body of the District - innovative capital/operations model for complex context.**
- *Mission: To provide the traveling public with a safe, cost effective, and unique driving experience across the scenic Chesapeake Bay.*
- Ranked among the **Top 25 Virginia attractions most frequently visited by travelers, #3 for the Coastal Virginia/Chesapeake Bay regions.**
- Crosses over and under open waters - 17.6 miles
- Sponsor programs for birdwatching, Special Olympics Torch Run, etc.
- Gross toll revenue for calendar year 2016 totaled **\$57,475,733**



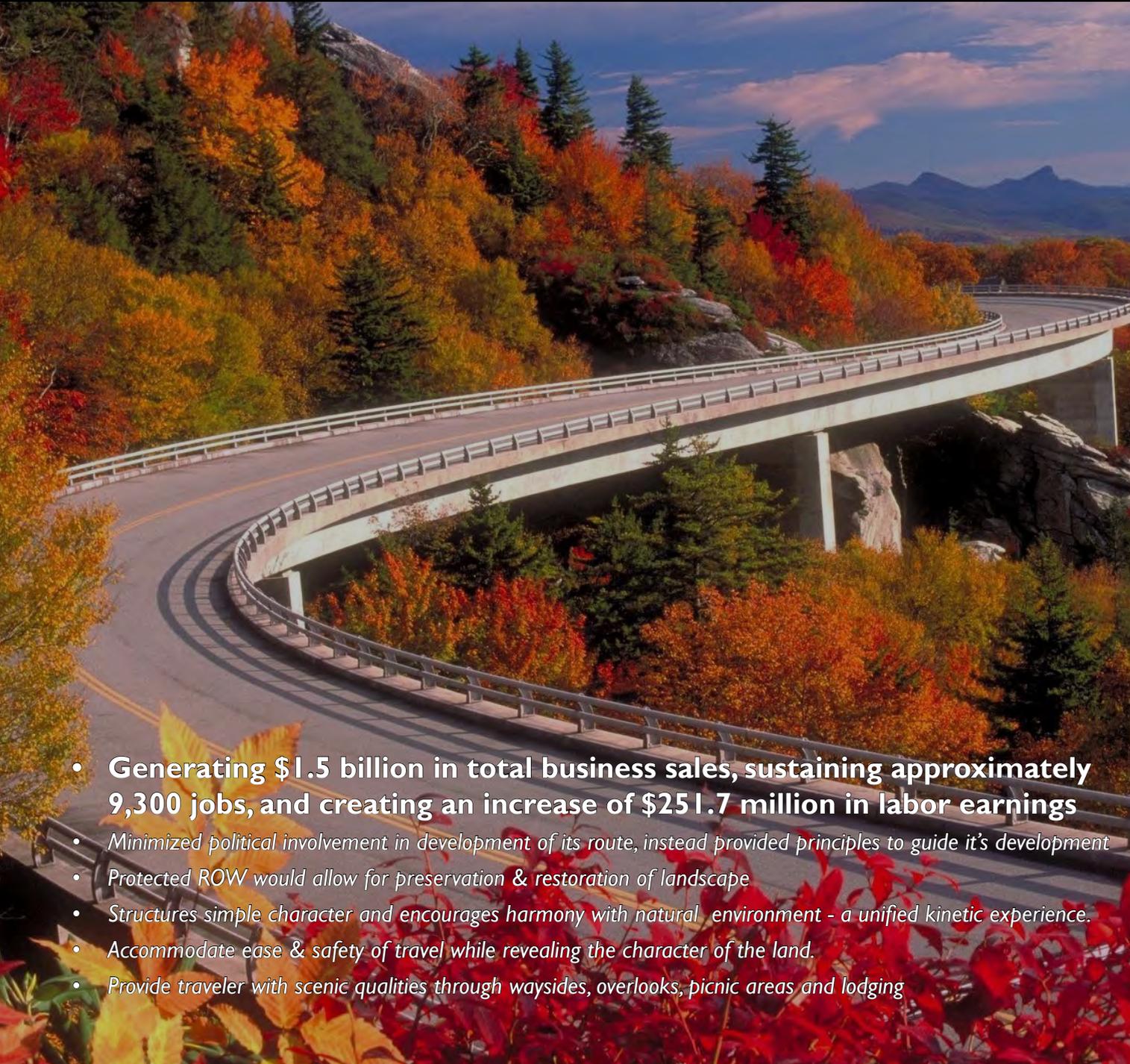
Doyle Drive, Presidio

- **Fundamental problem for most was that all the offerings were variations on the straightforward freeway - absent of “design”**
- *First to step into the jurisdictional morass and political quagmire, creating the Doyle Drive Task Force in the early 1990s to provide recommendations*
- *Michael Painter, LA created scheme of a road, ran in a cut-and-cover tunnel with a landscaped top, so that people could once again walk to the historic battery bluff. Initially dismissed as infeasible and too expensive.*
- *Painter plan incorporated into Caltrans alternatives & proved to be superior*
- *1.1 billion project is completed in 2015 (less than \$3 billion Caltrans alts)*



PARKWAYS

Blue Ridge Parkway



- **Generating \$1.5 billion in total business sales, sustaining approximately 9,300 jobs, and creating an increase of \$251.7 million in labor earnings**
- *Minimized political involvement in development of its route, instead provided principles to guide it's development*
- *Protected ROW would allow for preservation & restoration of landscape*
- *Structures simple character and encourages harmony with natural environment - a unified kinetic experience.*
- *Accommodate ease & safety of travel while revealing the character of the land.*
- *Provide traveler with scenic qualities through waysides, overlooks, picnic areas and lodging*

Bronx River Parkway



- **Road closed on Sunday's for pedestrian/bicycles only**
- *13 mile-long road part of a larger effort to save Bronx River from further degradation through land reclamation.*
- *Park on both sides - turned an abandoned wastelands into a park accessible between Westchester County and NYC*
- *Use of overpasses at crossings and curvilinear alignment/reduced speed*
- *Varying width of entire parkways creates additional visual interest*
- *Excludes commercial vehicle*

INTERNATIONAL

Norwegian Scenic Routes

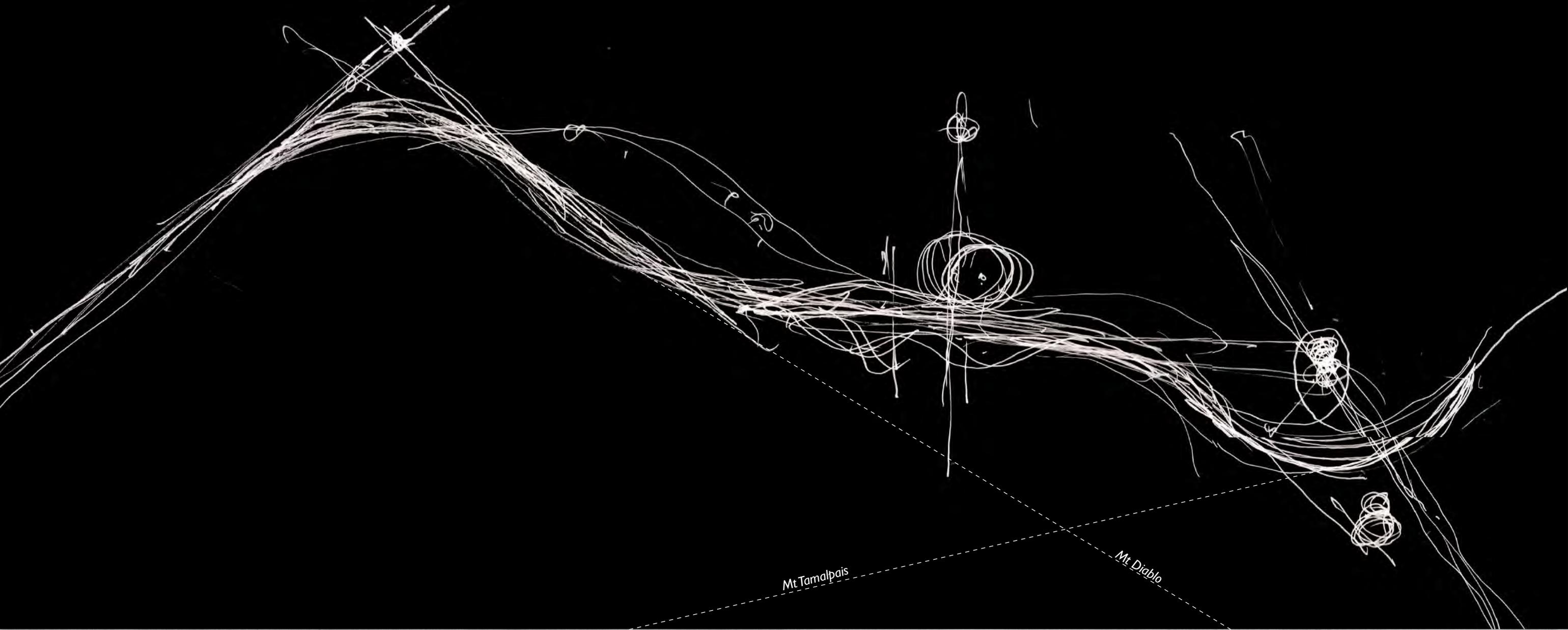
- **One in every 15 Norwegian employee works in tourism industry today.**
- *Since 2004 contributes to 4.2 % of their GDP.*
- *Starting in 1994, they took 20 yrs to upgrade and connect existing highways*
- *Goal improving scenic experience and invite tourists.*
- *Boost to appreciation of nature*



ØRESUND BRIDGE



- **This bridge follows a scenic curved alignment to reduce ecological impacts.**
- *10 mile long road and rail link between Sweden and Denmark*
- *Independent owner and operator - joint venture with history of building & financing hinterland infrastructure.*
- *Entitled to levy charges from users to cover operating and interest expense and finance repayment of loans for construction*
- *Bridge proved to be a great success for growing economy with a population of 3.7 million on either ends*
- *Artificial island supports ecological haven for flora and fauna*





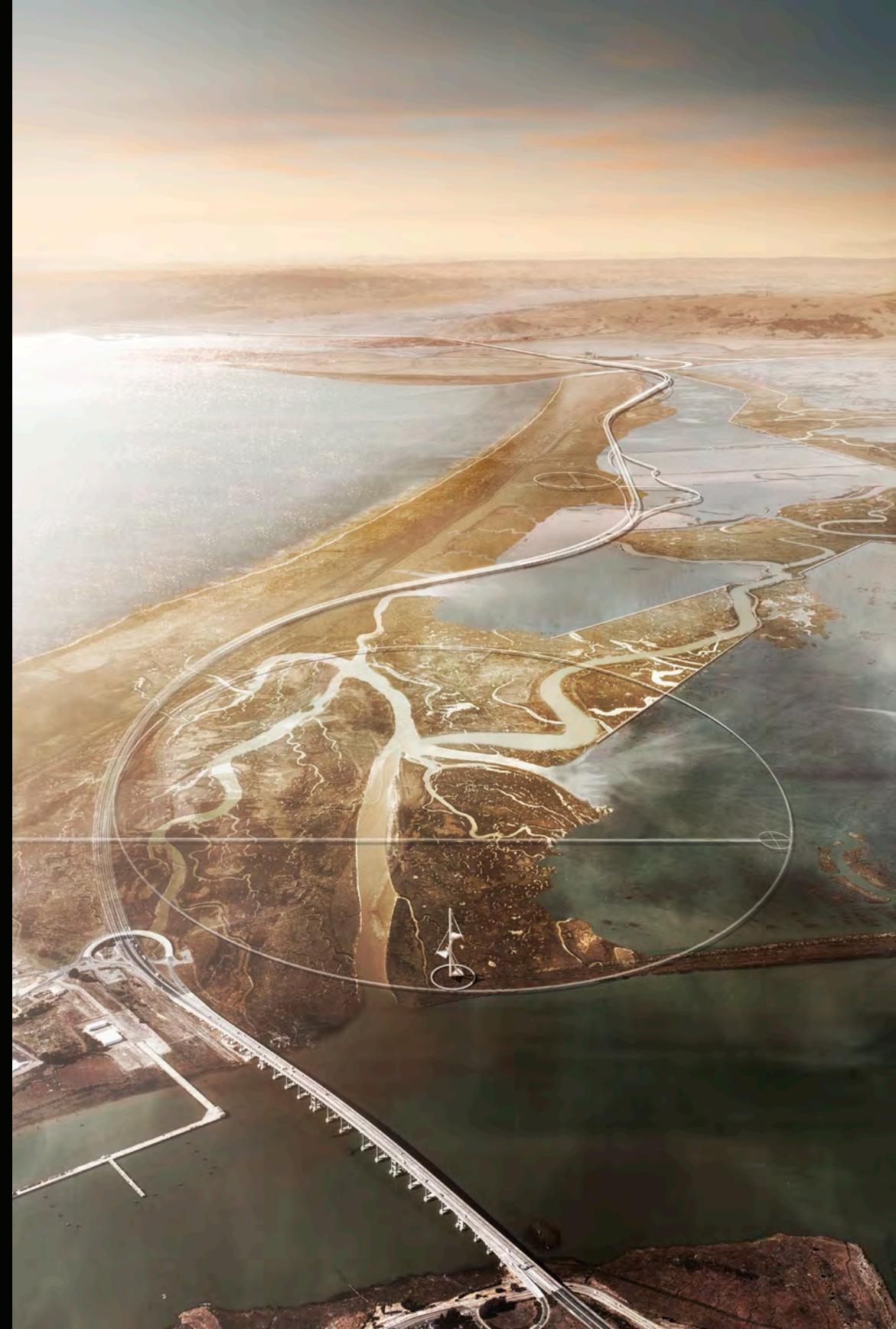
HINRICH'S
**ECOLOGICAL
CENTRAL PARK**
by
COMMON GROUND T.L.S.

THE GRAND BAYWAY

ICONIC FRONT DOOR

IMPROVED HABITAT CONNECTIVITY

BRINGING PEOPLE TO THE BAYLANDS



THE GRAND BAYWAY EXISTING ALIGNMENT



THE GRAND BAYWAY NORTHERN ALIGNMENT



THE GRAND BAYWAY



THE GRAND BAYWAY



THE BAYLANDS & SR 37

1968



MOUNT TAMALPAIS

SAN PABLO BAY

+Intake channel & levee used for managed ponds

Extensive mudflats +

Scarp & marsh extends to south after
SR 37 embankment construction

SR37 road embankment constructed +
1928 for \$484,954 using dredge fill
from borrow ditch alongside road

Cullinan Salt Ponds +

+ Digitized from: U.S. Geological Survey 1949, photorevised 1968
+SR37 Reference Appendix to the Journals of the State & Assembly 1929

THE BAYLANDS & SR 37

2050 - SR 37 Southern Option



MOUNT TAMALPAIS

SAN PABLO BAY

Extensive mudflats +

Retreating scarp with sea level rise +

*Elevate SR 37 to a causeway & remove other barriers to achieve unimpeded tidal & hydrological connectivity.

*Recommended actions from Bayland Goals Report 2015





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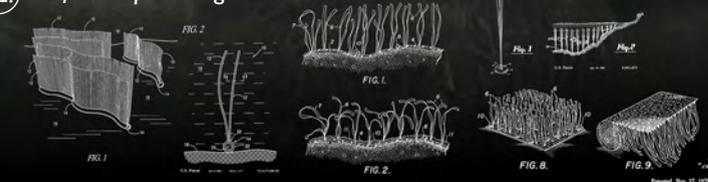
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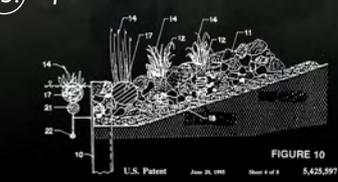
16

- 1. Western Sandpiper
- 2. Overlook Tower
- 3. River Otter
- 4. Fall Run Chinook
- 5. Canvasback Duck
- 6. Napa River
- 7. American Avocet
- 8. Great Egret
- 9. American Bittern
- 10. Tule Elk
- 11. Bird Tower
- 12. Artificial Aquatic Vegetation
- 13. Aquaculture Breakwater
- 14. Aquatic Fiber Substrate
- 15. Artificial Islands
- 16. Artificial Floating Islands

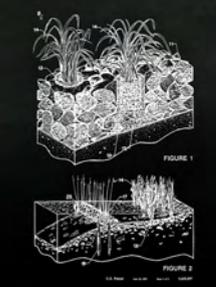
12. Artificial Aquatic Vegetation



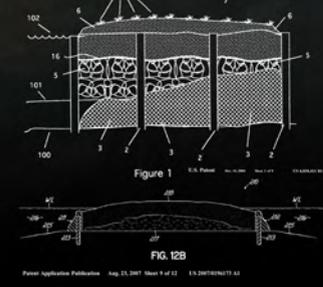
13. Aquaculture Breakwater



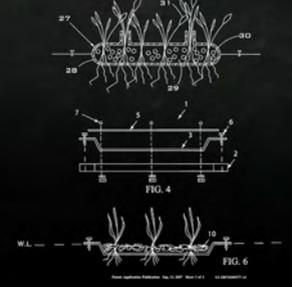
14. Aquatic Fiber Substrate



15. Artificial Islands



16. Artificial Floating Islands



HYPER ACCRETION GARDENS

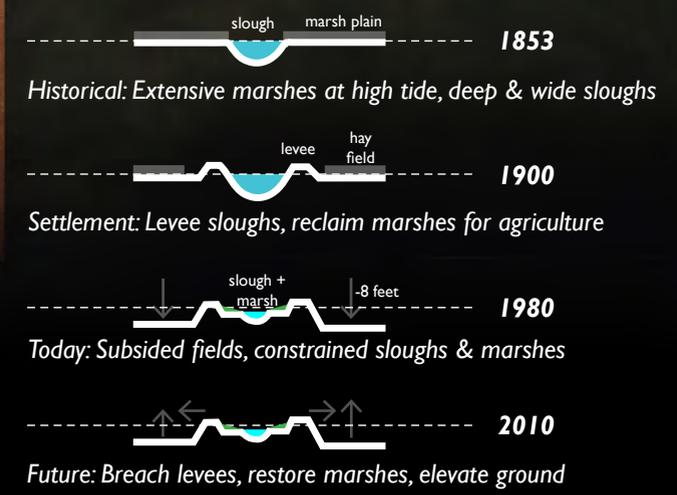
Gaining ground



Sediment Layer - Megaflood, Spring 2025

Sediment Layer - Initial Breach, 2020

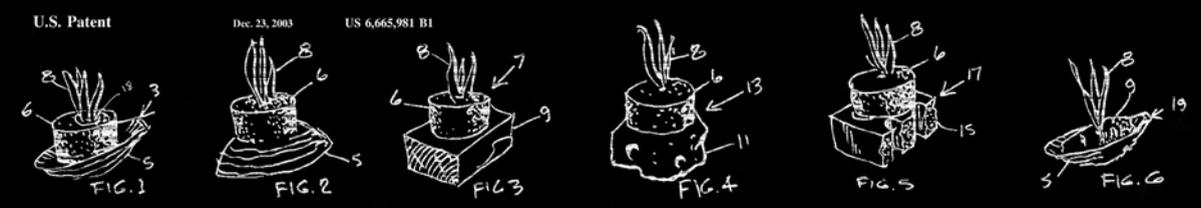
Sediment Layer - Gradual Accretion and Settling, 2021-2024



- 1. Sonoma Creek
- 2. Wind Sculpture
- 3. Slough Marsh
- 4. Wetland Monitoring
- 5. Existing Levee and High Marsh Plain
- 6. Low Marsh Plain
- 7. Low Marsh/Mudflat
- 8. Levee Breach Gates

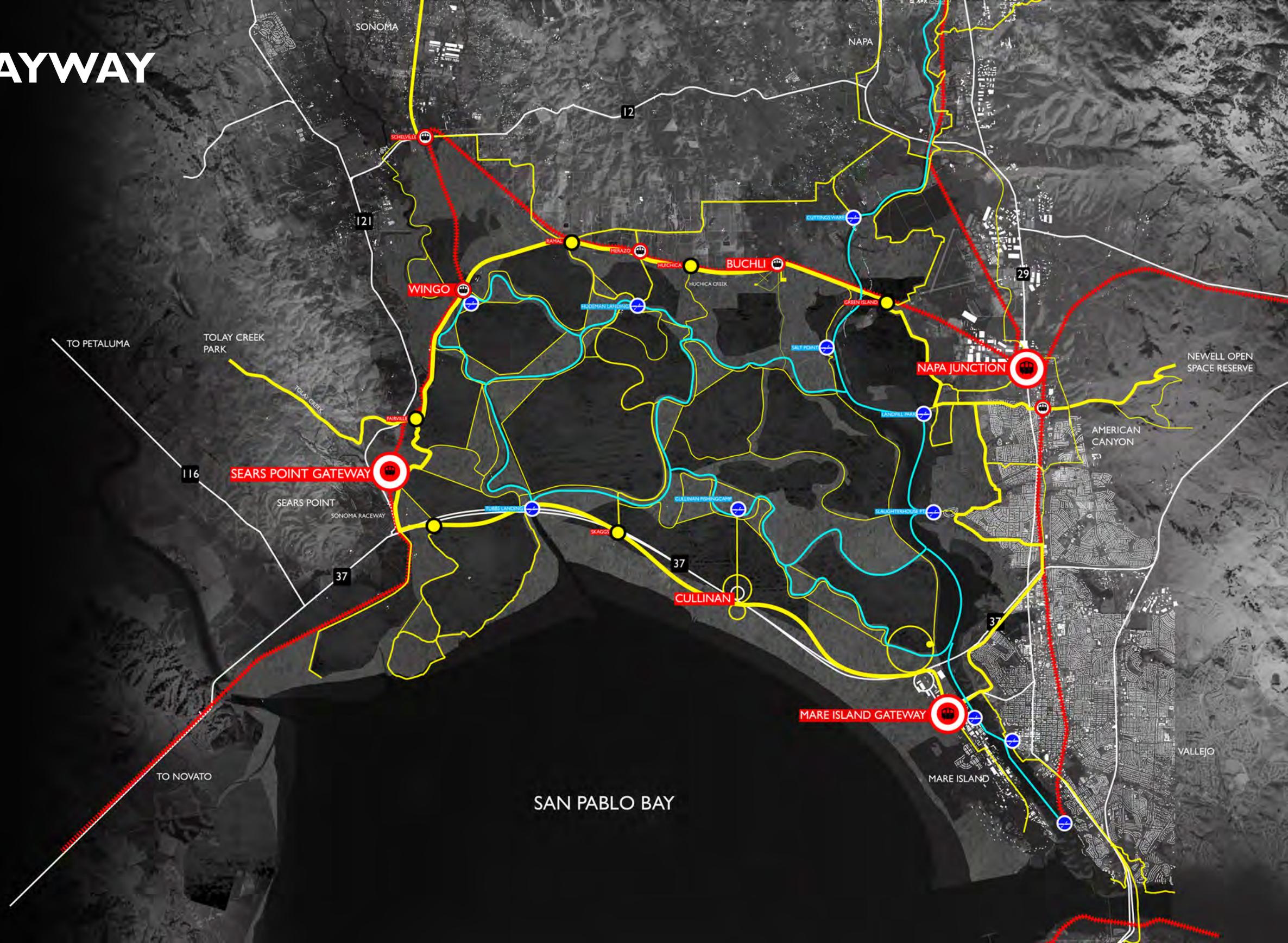
- 9. Wattle Wall Hyper-Accretion Garden
- 10. Mudflat/New Sediment Accretion
- 11. New Chamfer Levee and Trail
- 12. Overlook Tower
- 13. Wingo
- 14. Poplar Trees
- 15. Aquatic Planting Armatures

15. Aquatic Planting Armatures



THE GRAND BAYWAY

- CULLINAN
- TOLAY
- WINGO
- BUCHLI
- NAPA JUNCTION
- MARE ISLAND















NAPA JUNCTION GATEWAY

VISIT THE BAYLANDS

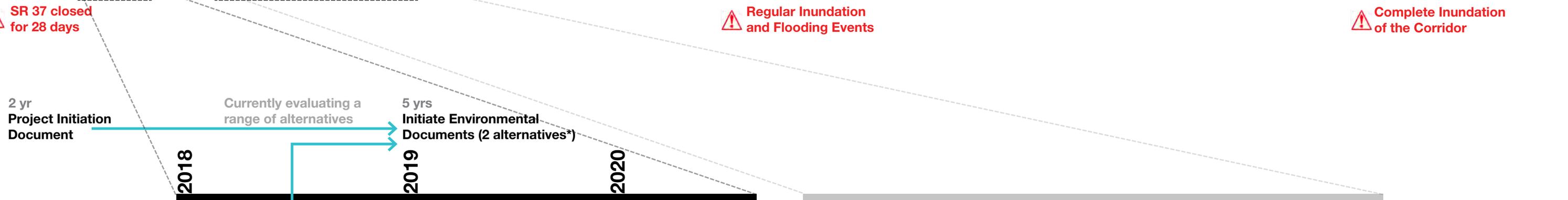


MARE ISLAND GATEWAY HUB



Bay Trail

IMPLEMENTATION



NEAR-TERM PROJECTS

- 1. Regional Entity**
Economic planning and another year initiating corridor recommendations
9-12 months
- 2. Sonoma Creek**
Baylands Outreach Strategy
12-15 months
- 3. Multi-Modal**
Public Access Study for SR37 Corridor

MID-TERM PROJECTS

- 1. Mare Island Gateway**
5-10yrs
Incorporate multimodal hub and access to the baylands
- 2. Napa Junction Gateway**
5-10yrs
Incorporate American Canyon park design and connect baylands to uplands

Scenic Causeway
Add value to chosen alternative to make it the iconic front door for the North Bay

⚠ SR 37 closed for 28 days

⚠ Regular Inundation and Flooding Events

⚠ Complete Inundation of the Corridor

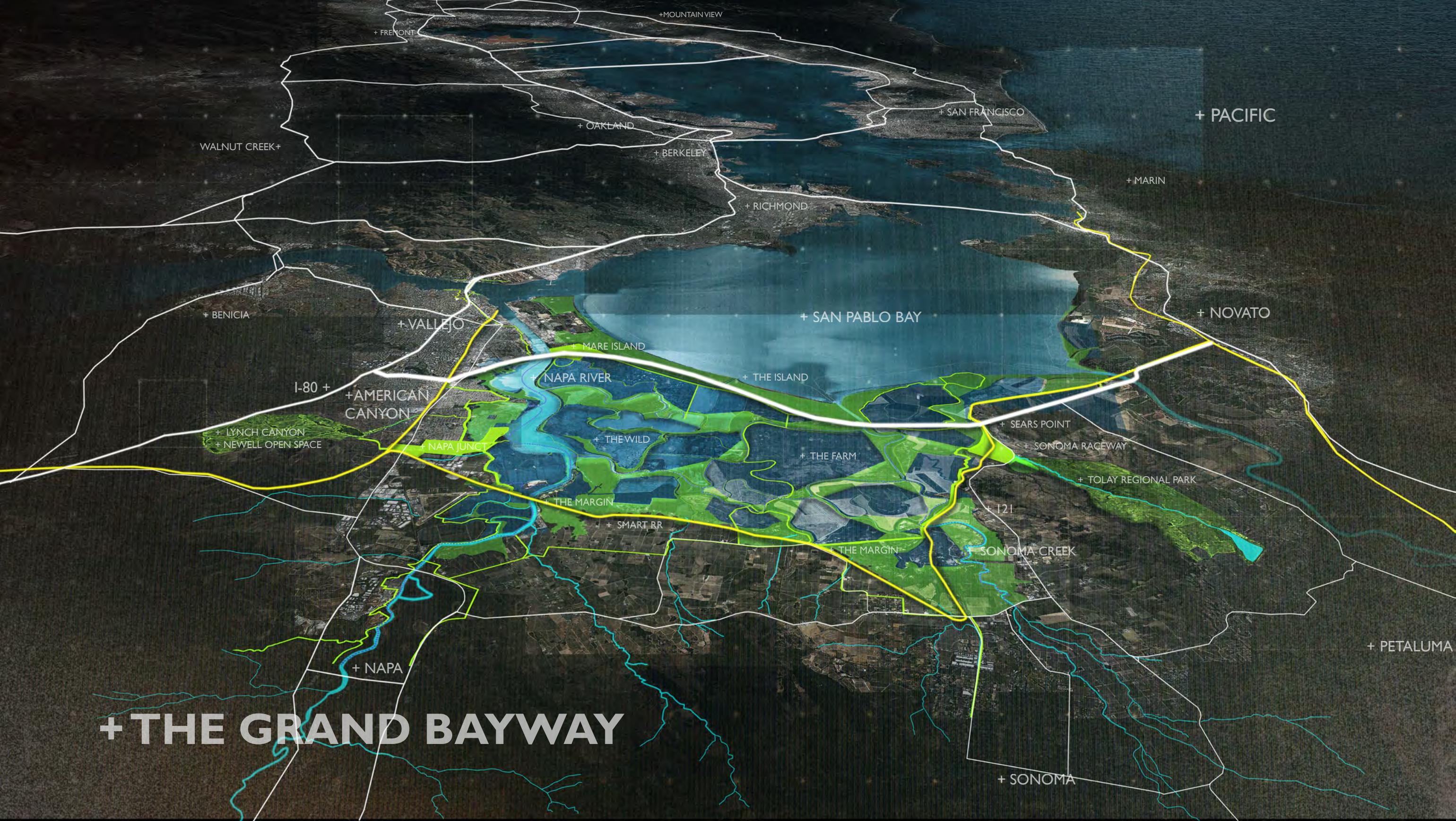
MULTI-MODAL PUBLIC ACCESS STUDY

EVALUATE ALL SR37
ALIGNMENTS TO
IMPROVE ACCESS TO
THE BAYLANDS



- LEGEND**
- Trail
 - Fishing Pier
 - Kayak/Canoe Launch
 - Parking Area
 - Wildlife Viewing
 - Restrooms
 - Refuge Headquarters
 - Picnic Tables
 - Hunting Area
 - Impassable Breaches
 - Bay Trail Planned
 - Bay Trail Existing





+ MOUNTAIN VIEW

+ FREMONT

+ PACIFIC

+ SAN FRANCISCO

+ OAKLAND

WALNUT CREEK +

+ BERKELEY

+ MARIN

+ RICHMOND

+ NOVATO

+ SAN PABLO BAY

+ VALLEJO

+ MARE ISLAND

+ BENICIA

I-80 +

+ AMERICAN CANYON

+ NAPA RIVER

+ THE ISLAND

+ LYNCH CANYON
+ NEWELL OPEN SPACE

+ NAPA JUNCT

+ THE WILD

+ SEARS POINT

+ SONOMA RACEWAY

+ TOLAY REGIONAL PARK

THE MARGIN

+ SMART RR

+ THE FARM

+ 121

+ SONOMA CREEK

+ PETALUMA

+ NAPA

+ THE GRAND BAYWAY

+ SONOMA