

Keeping on the Right Track: Regional transportation infrastructure & equity initiatives

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Regional Scale Approach to Climate Adaptation & Equity in San Francisco Bay Area

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**CLIMATE ADAPTATION FORUM
Environmental Business Council of New England +
Sustainable Solutions Lab, UMASS Boston
November 20, 2020**



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Bay Area Air Quality Management District (BAAQMD)

Bay Conservation and Development Commission (BCDC)

Metropolitan Transportation Commission (MTC)

California State Coastal Conservancy (SCC)

Caltrans District 4

SF Water Quality Board



To Be Discussed

BARC Sea Level Rise Efforts:

1) Coordinated Regional-Scale Planning

- a. Adapting to Rising Tides Bay Area
- b. Sustainable Communities Strategy - Plan Bay Area 2050

2) Developing Multi-benefit Strategies

- a. Resilient by Design Bay Area Challenge



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Sea Level Rise: What's at Risk?

ALREADY SEEN:
+ 8 inches SLR

PROJECTED BY 2050:
+ 12 to 32 inches

King Tides in Richardson Bay, November 2018
(Photo by Schuyler Olsson)

Adapting to Rising Tides Bay Area Asset Categories



Building on a History of Agency Collaboration



Collaborating to Solve Regional Challenges

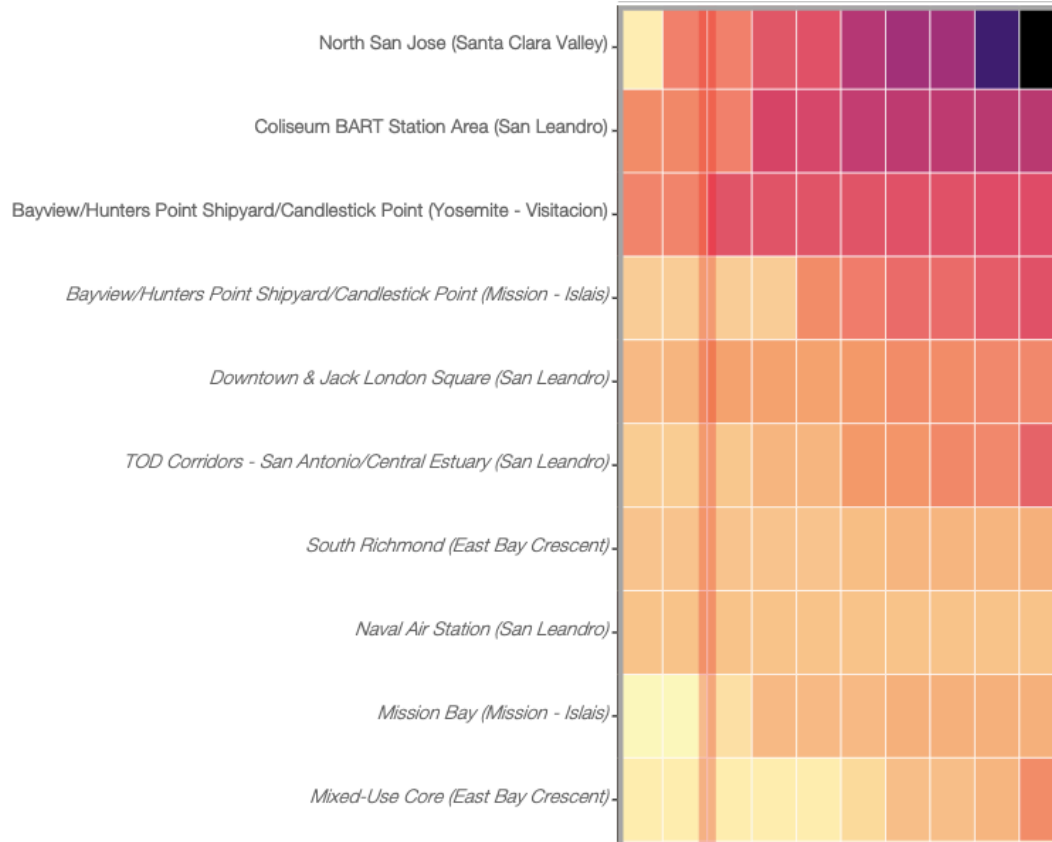


Over 500 participants over 2.5 year process!

Building Local Capacity, Region-Wide



Delivering Data, Setting Foundation



- Data – definitive answers about what gets wet, where, and when
- Foundation to guide local and regional decision-making
- Builds networks and local and regional capacity
- Informs local and regional planning, including Plan Bay Area



ART Bay Area + Plan Bay Area



- Prioritize protecting high-importance transportation
- Multi-benefit investments

- Ensure future growth is resilient
- Protect existing investments in people and economy

- Protect vulnerable areas not suitable for development
- Identify new natural systems services such as “flood protection”

- Capacity building for adaptation
- Reduce additional factor for housing displacement

What's at Risk (40-100 years)?



5 million
daily highway
vehicle trips



13,000 existing
housing units

104,000
existing jobs

60,000 daily
rail commuters

70,000 new,
planned housing
units

85,000 new,
planned jobs

28,000 socially
vulnerable
residents



20,000 acres
of depressional
wetlands,
lagoon and tidal
marsh habitat

ART Bay Area Systems: Transportation

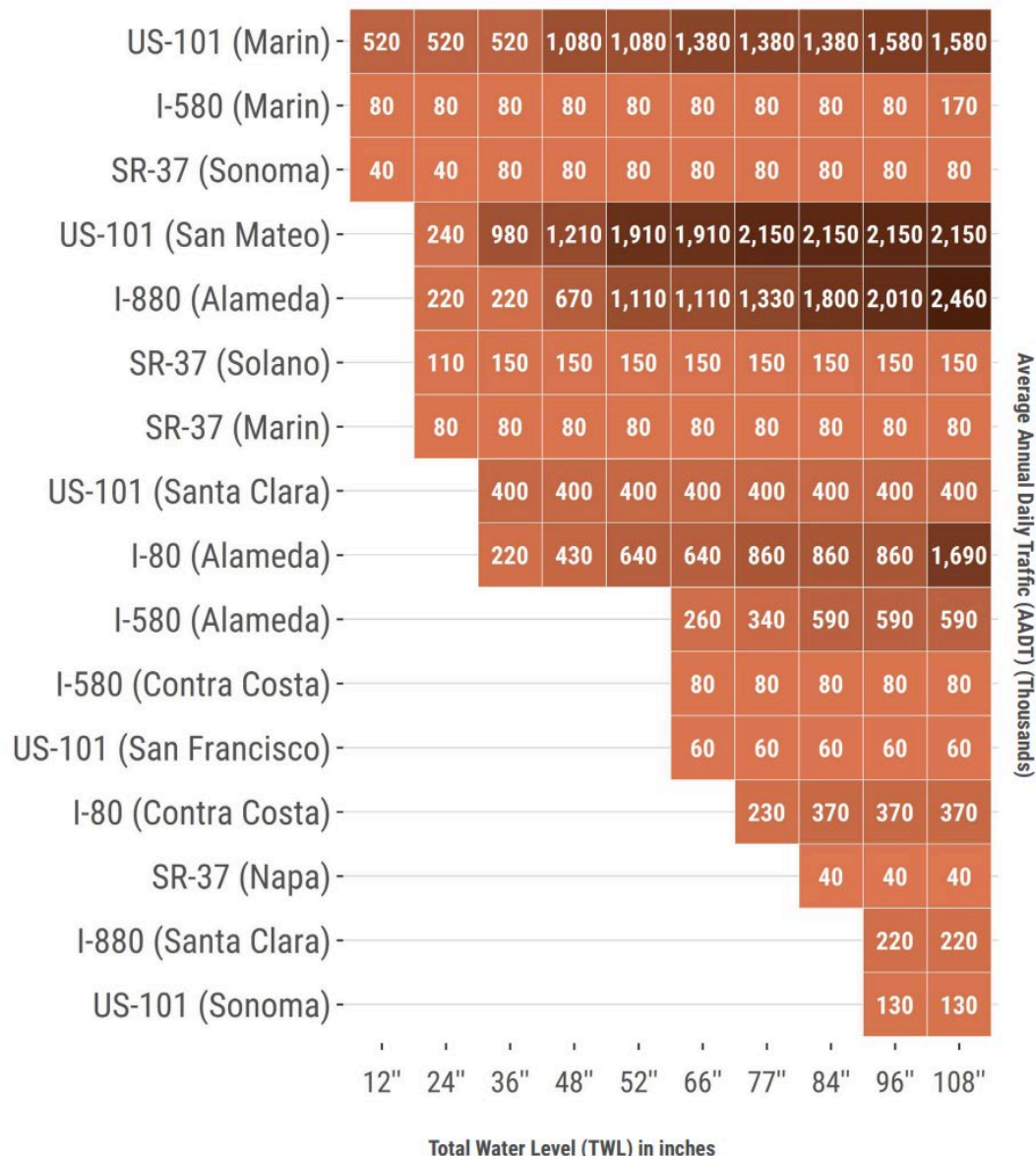


Asset Type	Consequence Indicator	Units
Passenger Rail Lines	Passenger Flow	Passengers per average weekday
Passenger Rail Stations	Ridership	Passengers per average weekday
Freight Rail Lines	Freight Train Flow	Freight trains per day
Highways	AADT	Annual average daily traffic
	Truck AADT	Annual average daily truck traffic
	Lifeline Route	Binary (yes or no)
High Quality Bus Routes	Number of Impacted HQ Bus Routes	HQ Bus Routes (meters)
SF Bay Trail	Miles of Impacted Trail	Bay Trail (meters)
Regional Bicycle Network	Miles of Impacted Bicycle Infrastructure	Bicycle routes (meters)
Ferry Terminals	Ridership	Passengers per average weekday
Airports	Passengers	Boardings per year
	Cargo Volume	Pounds of freight per year (millions)
Seaports	Cargo Volume	Dollar value of exports and imports



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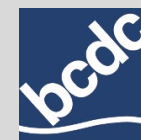
HIGHEST DAILY VEHICLE TRAFFIC IMPACTED BY FLOODING BY COUNTY HIGHWAY SEGMENTS



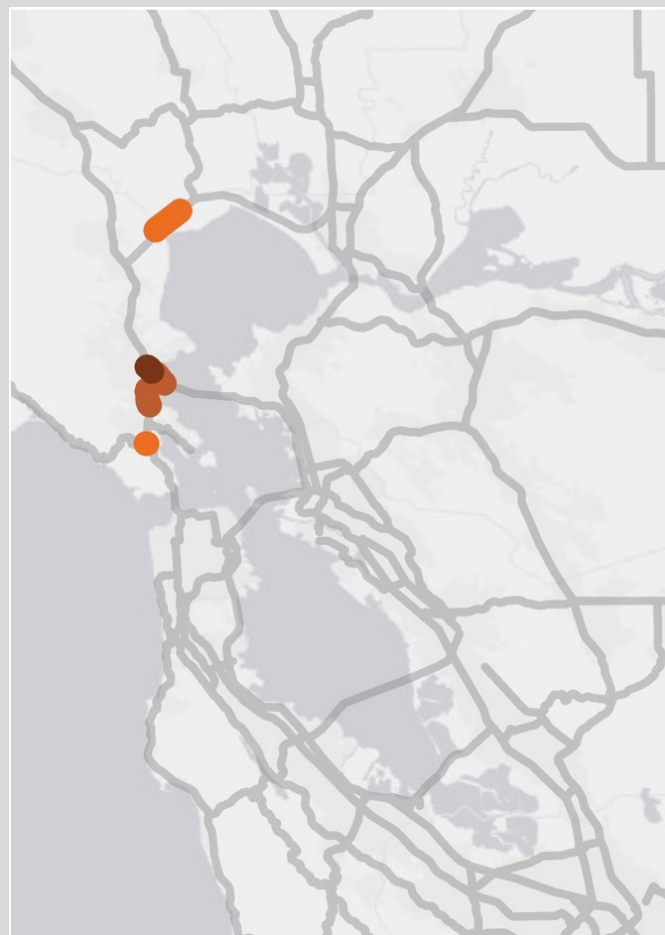
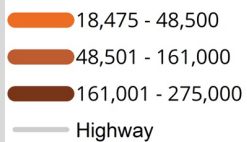
Where are
highway
consequences
highest?

Figure 2-14. County highway segments with highest impacts to highway vehicles by flooding at ten TWLs as measured by impacts to annual average daily traffic (AADT). "Highest" impacts refer to segments ranking in the top five for highest consequences at one or more TWL. Darker colors reflect greater consequences.

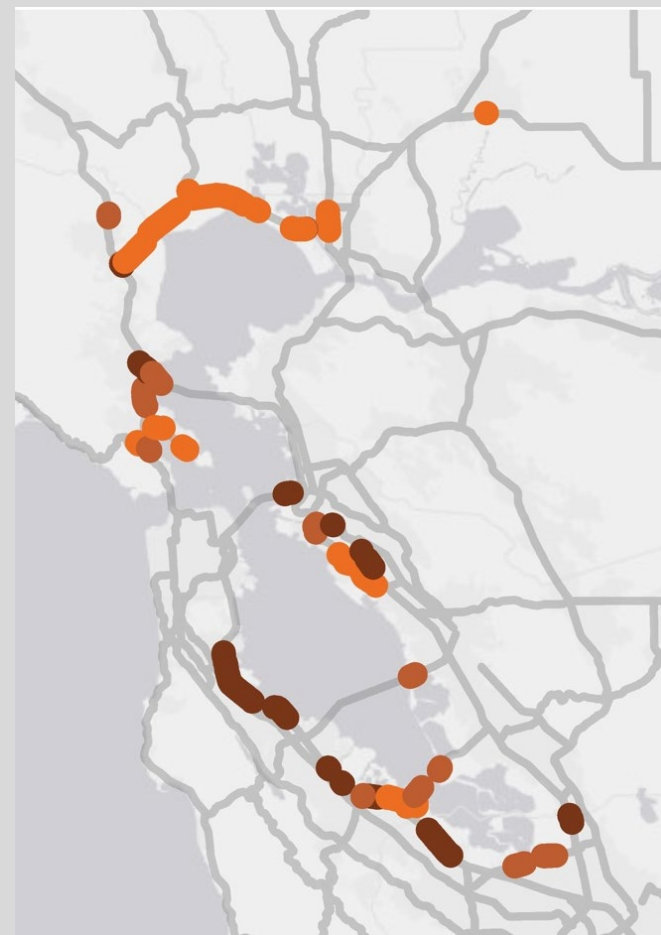
Maps of Regional Highway Consequences



Average Annualized Daily Traffic (AADT)



12" TWL

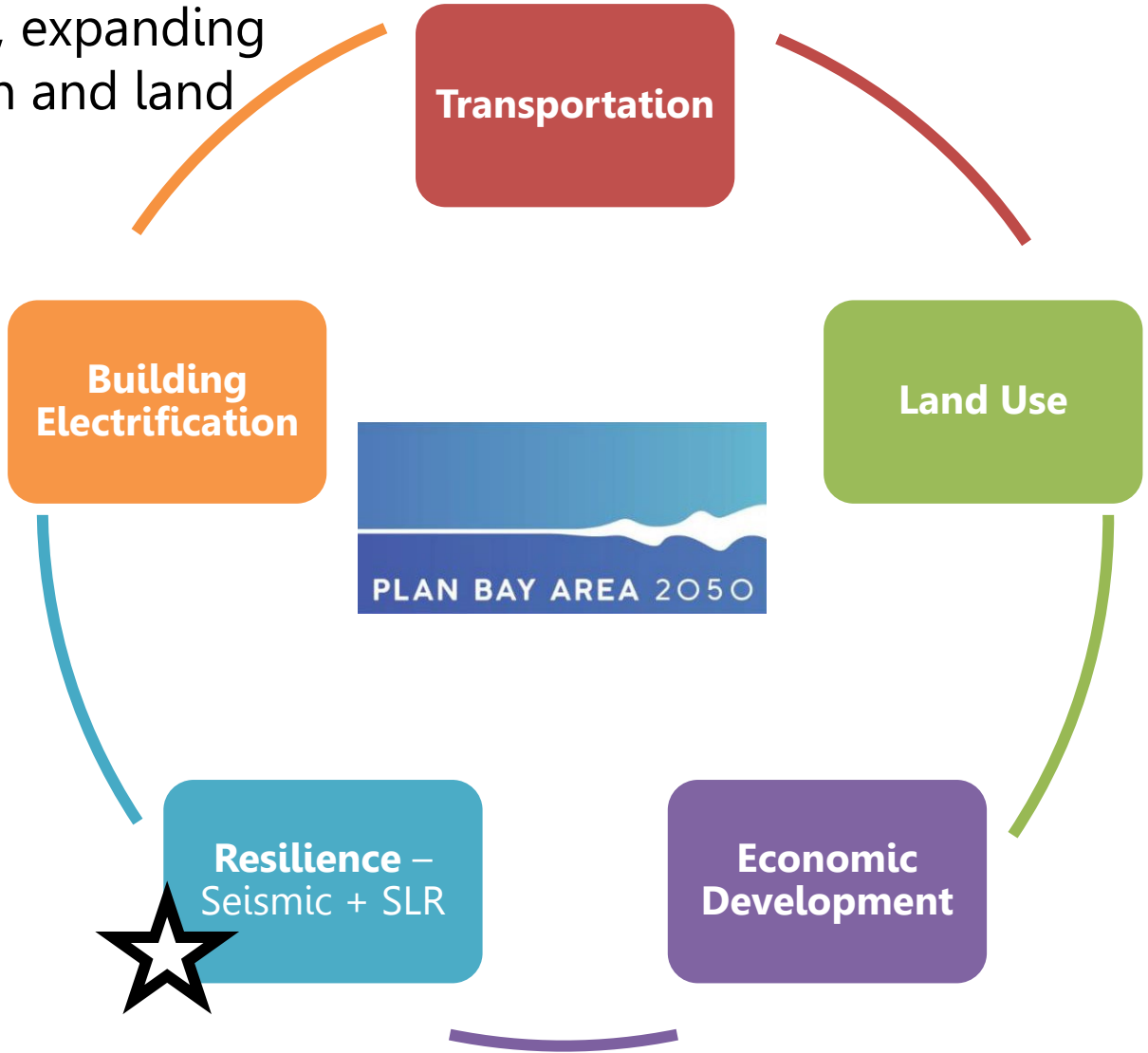


48" TWL

PLAN BAY AREA 2050

We are creating the region's first comprehensive plan, expanding beyond transportation and land use.

Plan Bay Area 2050 presents specific strategies to address SLR challenges through 2050, while **ART Bay Area** and other local area planning for SLR will delve into longer-term strategies with much more localized detail.



Creative Problem Solving

RESILIENT

BAY AREA CHALLENGE

BY

DESIGN



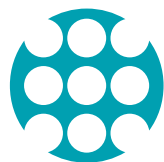
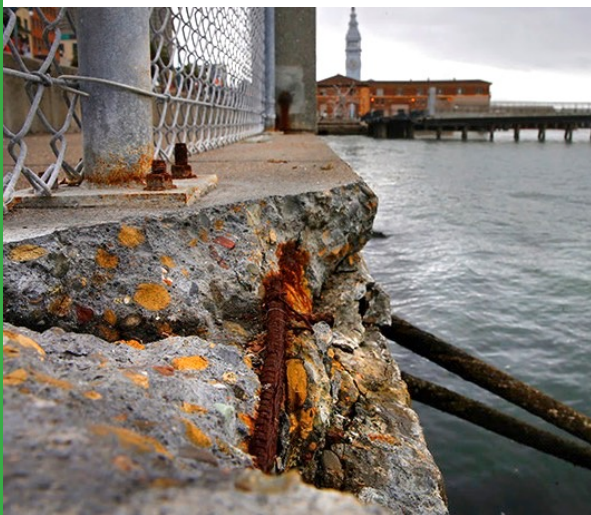


An Open Call

San Francisco Chronicle

Design teams compete for best solution to sea-level conundrum

An ambitious design competition that seeks to make the Bay Area a model for how to prepare for sea-level rise kicks off this week.



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RbD Projects



- ❑ **The Estuary Commons | All Bay Collective**
San Leandro Bay
- ❑ **Resilient South City | HASSELL+**
South San Francisco
- ❑ **The Grand Bayway | Common Ground**
San Pablo Bay
- ❑ **Unlock Alameda Creek | Public Sediment**
Alameda Creek, Oakland
- ❑ **South Bay Sponge | Field Operations Team**
East Palo Alto to Sunnyvale
- ❑ **Islais Hyper-Creek | BIG+ONE+Sherwood**
Islais Creek, San Francisco
- ❑ **Peoples Plan | P+SET**
Marin City
- ❑ **Elevate San Rafael | Bionic Team**
San Rafael
- ❑ **ouR-HOME | The Home Team**
North Richmond

Project Objectives

Raising awareness about flooding &
what we can do about it





Innovative Engagement

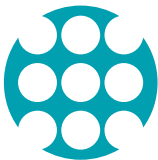


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Community Events



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Cross-Sector Partnerships



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Co-Designing Solutions



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Youth Engagement



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Connect & Collect: Resilient South City

San Mateo County

Collect & Connect - Resilient South City is a proposal to create more public space and access along South San Francisco's Colma Creek, aiming to reduce the impacts of flooding, mitigate against sea-level rise vulnerability, restore native flora and fauna, and create more amenity and healthy lifestyle opportunities by connecting a continuous green corridor from Orange Memorial Park to a new public park at the shoreline.



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An aerial photograph showing a complex river delta system with multiple channels and islands. A proposed elevated highway, identified as Highway 37, is shown as a series of white lines curving through the landscape. The surrounding area is a mix of brownish-green land and dark water. The overall tone is sepia or aged, giving it a historical or conceptual feel.

The Grand Bayway

Solano County | Napa County | Sonoma County

The project considers a new future for highway 37 as an elevated scenic byway, creating an iconic “front door” to a vast ecological open space previously known to few. Accessible to cyclists, runners, kayakers, campers, and fishermen, the Grand Bayway will become a Central Park with more 21st century sensibilities for rapidly expanding North Bay communities.

Common Ground



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Elevated Highway 37



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THE FLOOD TERRACE TRAIL



Public Sediment



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Unlock Alameda Creek

Alameda County

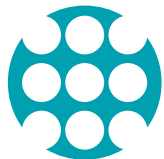


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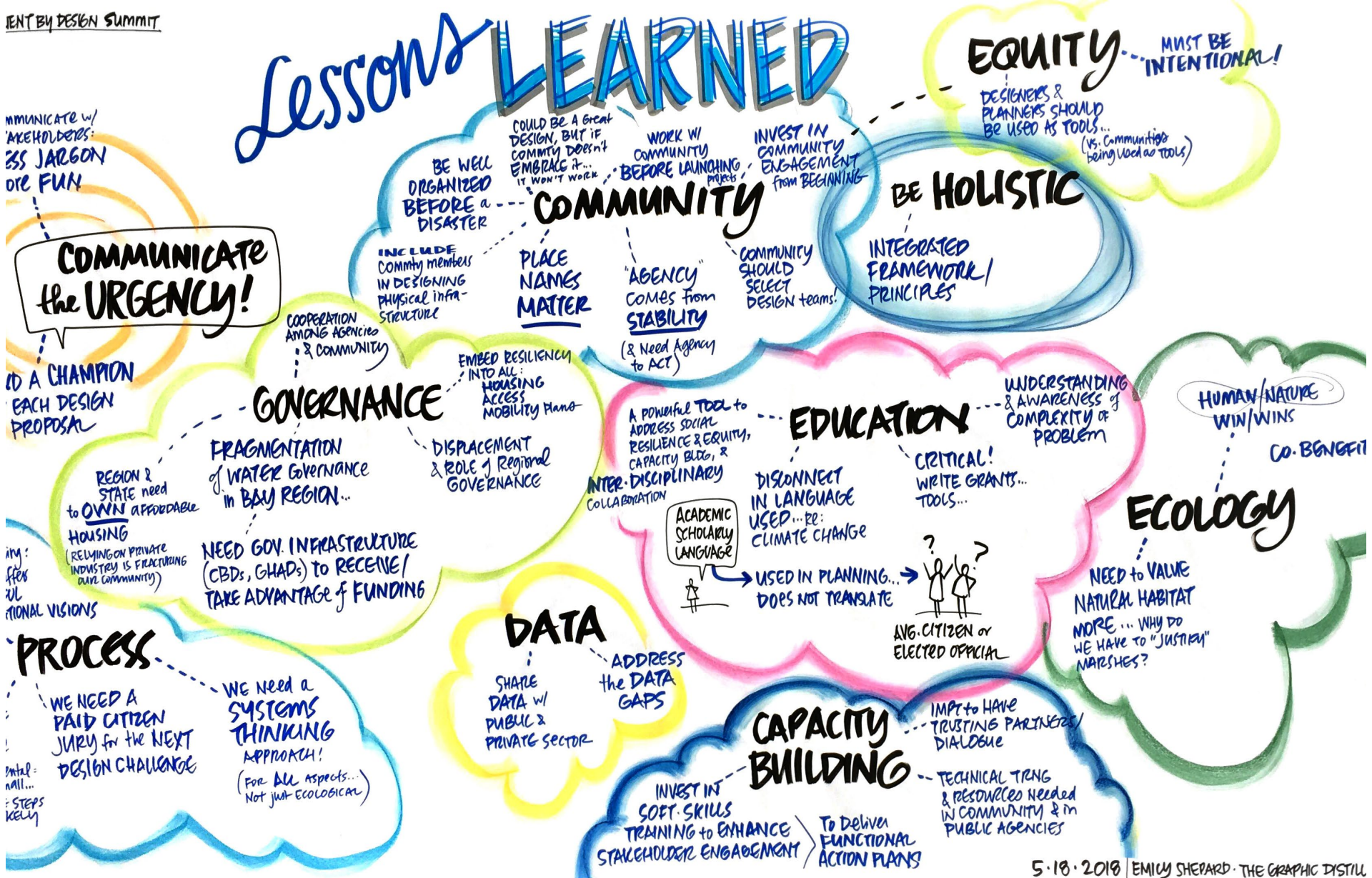
Public Sediment for Alameda Creek aims to reconnect sediment flows from Alameda Creek to the marshes and mudflats at the bay's edge, creating protective ecological infrastructure that adapts to sea level rise.

Where we are headed:

1. Integrated planning for housing, transportation, and sea level rise/multiple hazards – **it's critical to plan for multiple issues at once, with everyone at the table**
2. Being **proactive vs. reactive** – wildfires are a lesson in the need for planning and investments before disaster strikes
3. Getting to a **comprehensive regional strategy** for equitable adaptation and resilience
 - **Legislation, State Guidance, Targeted Resources**
 - **Regional Strategy + Local Planning + Community-Driven Implementation**
 - **Shared Foundation of Data & Science**
 - **Inclusive network of stakeholders engaged in collaborative problem solving**



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5.18.2018 | EMILY SHEPARD · THE GRAPHIC DISTILL



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