

Envisioning the Fairfield-Suisun Community's New Wetland Project



April 27, 2024



Photo: Karl Nelson

Community Wetland Project

WORKSHOP AGENDA

1. Welcome & Introductions
2. Presentation
 - Project Location & Existing Conditions
 - Project Goals
 - Project Alternatives
3. Facilitated Discussion
4. Closing & Next Steps



We agree that...



All ideas and points of view have value



Assume positive intent



Dialogue over debate through mindful listening



Take space, make space



Introductions



Regional Context

PLANNING FOR THE FUTURE MUST TAKE INTO ACCOUNT THE INCREASES IN MAJOR WILDFIRES, EXTREME FLOODING, AND PROLONGED DROUGHT THAT ARE ALREADY HAPPENING TODAY.

And the fact that these impacts disproportionately affect our low-income and communities of color.

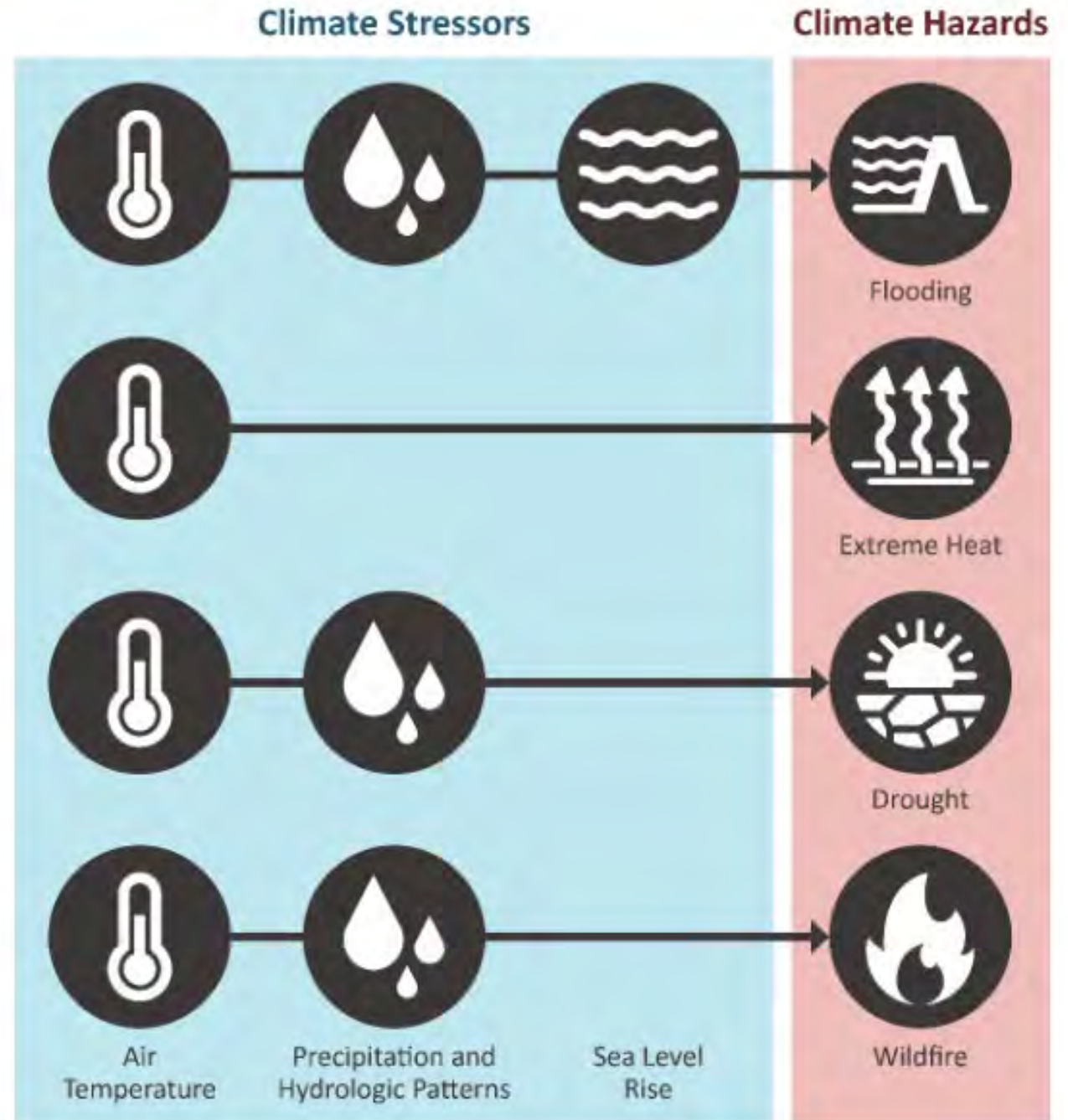


17.9 BILLION

dollar value of residential and commercial buildings will be threatened by sea-level rise in California by 2050.



Future Climate Hazards

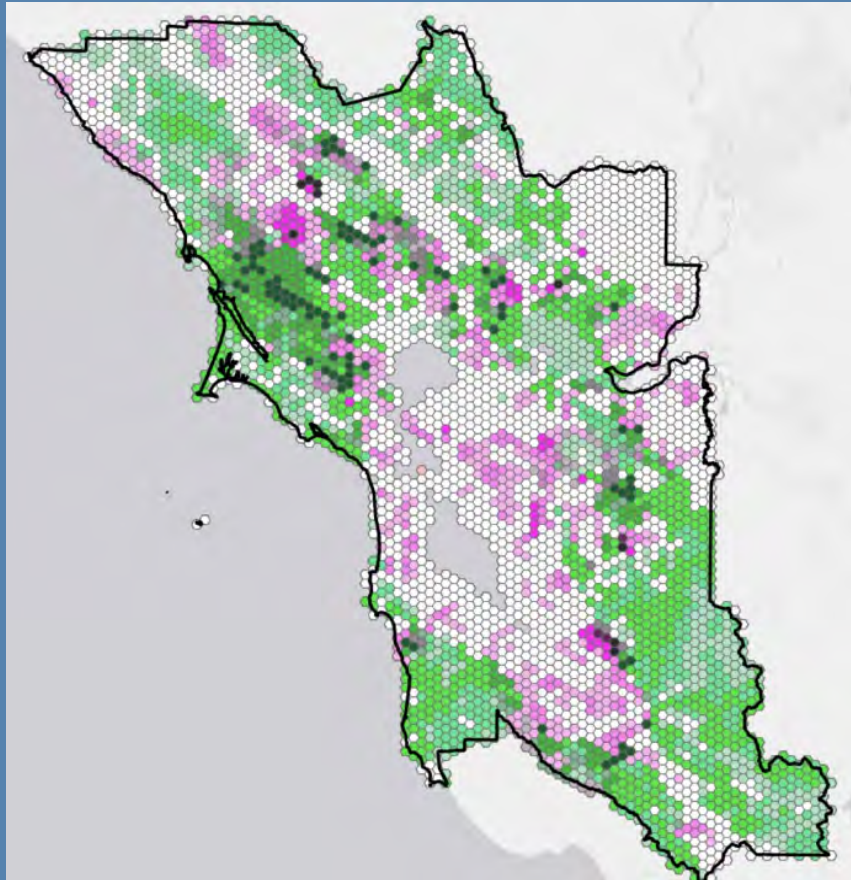


Source: Delta Stewardship Council (DSC)–
Vulnerability Assessment (2021)
[https://storymaps.arcgis.com/stories/c0b36285
d38e456c961d344b89c045b6](https://storymaps.arcgis.com/stories/c0b36285d38e456c961d344b89c045b6)

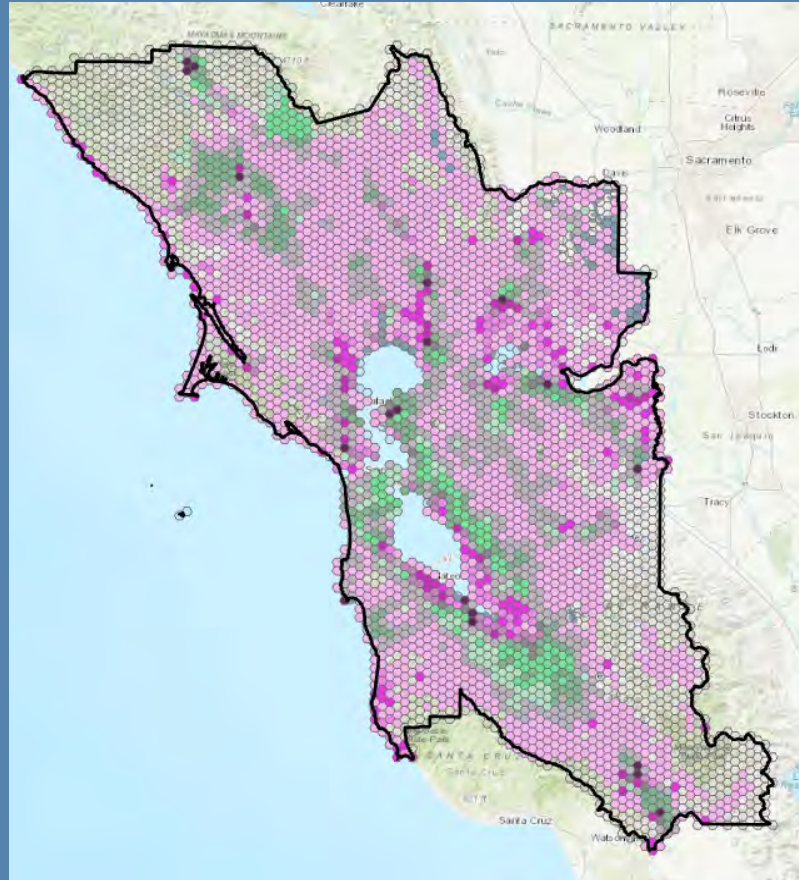


THEMATIC HOTSPOTS MAPS

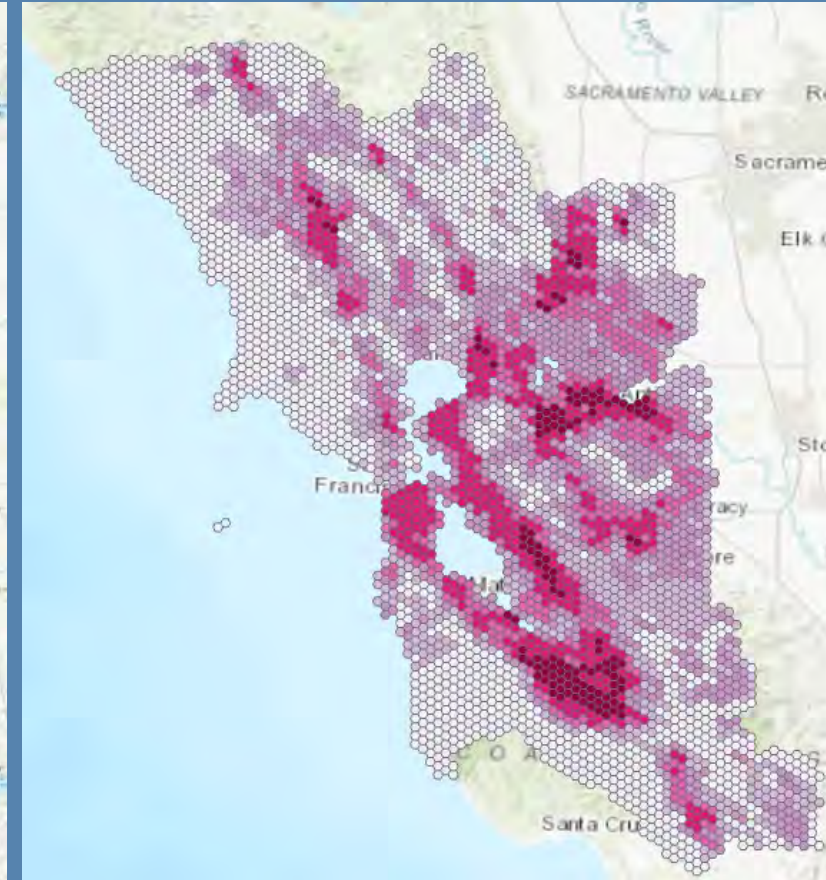
WILDFIRE



FLOODING



EXTREME HEAT



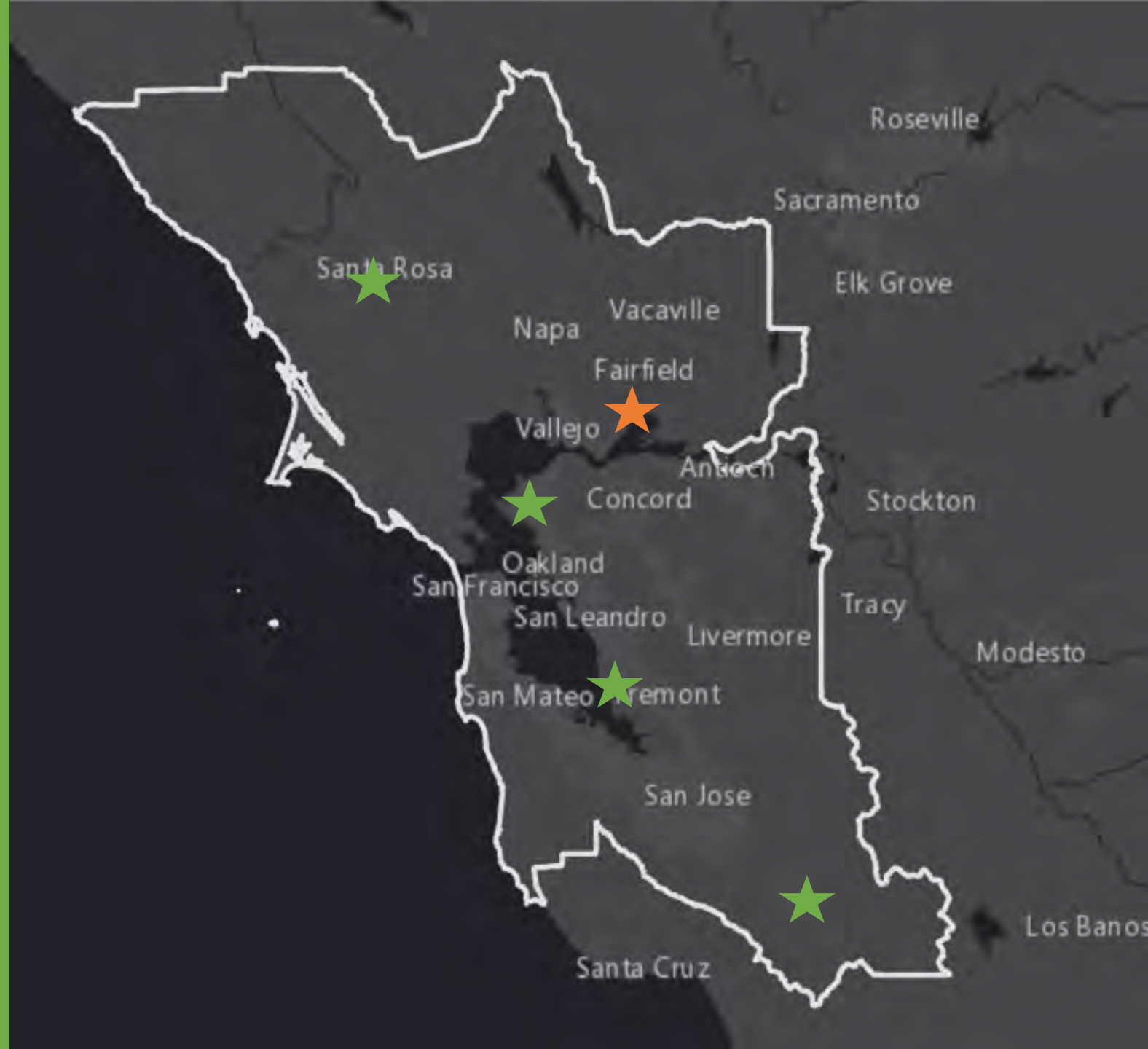


GREENBELT ALLIANCE

RESULTS

5 Hotspot Focus Areas

- Southwest Santa Rosa
- Suisun City & Fairfield
- North Richmond
- Newark Area Shoreline
- Gilroy & 101 Corridor



Stricter Nitrogen Regulations



The Bay's resilience to nutrients is being stressed by the changing climate.



The historically "normal" levels of nitrogen may now be too much for the Bay's ecosystem.

Nutrients in San Francisco Bay can lead to excessive algal growth. In turn, algal blooms can deplete oxygen, release toxins, and harm aquatic organisms.

Nutrients in the water



Excessive algal growth



Less oxygen in the water



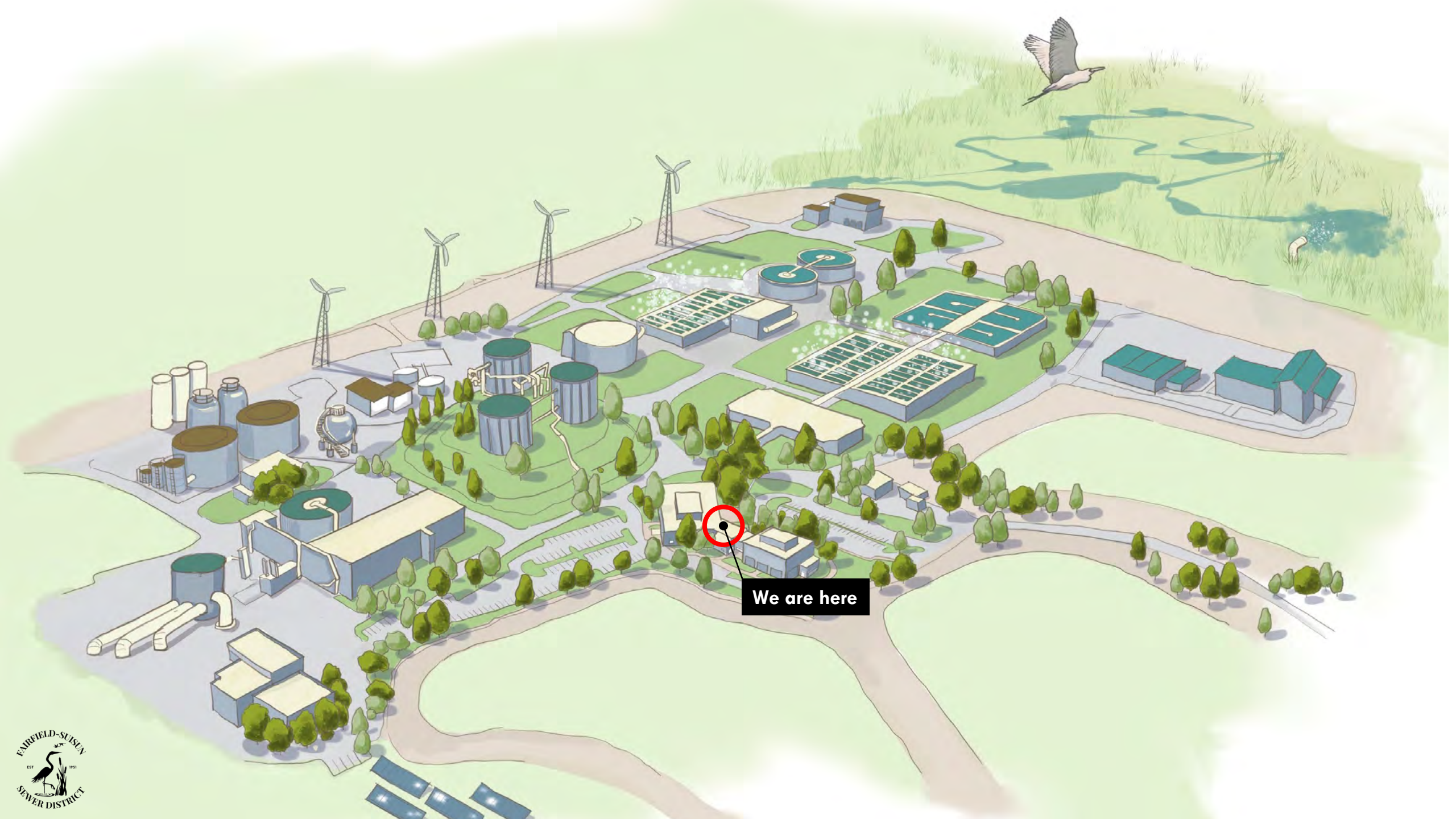
Some algae release toxins



Stress on aquatic organisms

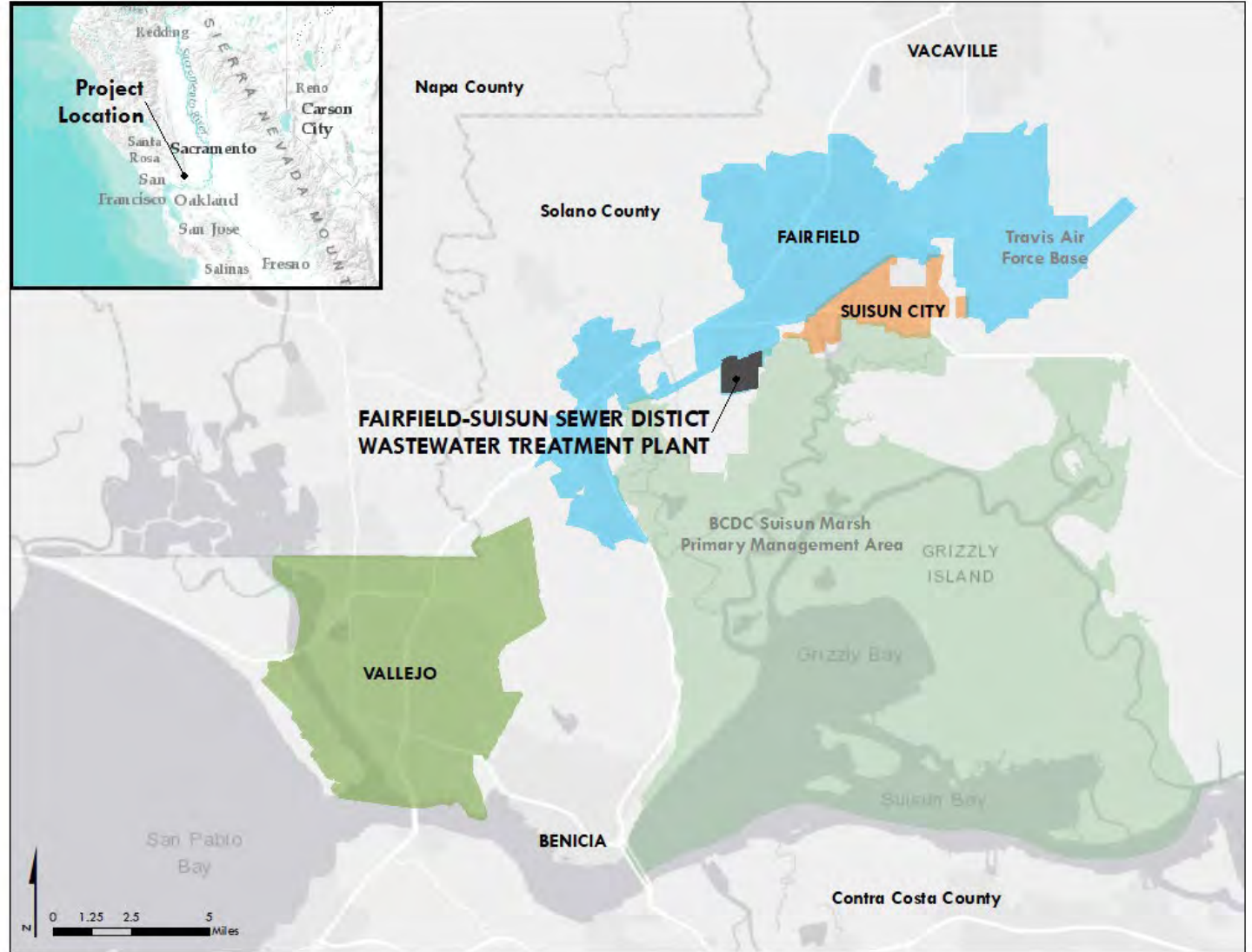


Project Site



We are here







Fairfield-Suisun Sewer District



PURPOSE

Protect the public health and the environment for the communities we serve in an efficient, responsible and sustainable manner.



VISION

Be a recognized leader in our industry.



MISSION

Achieve our purpose by excelling individually and organizationally.



CORE VALUES

As we strive to realize our vision of the future, our actions and efforts will be guided by a certain set of values. These core values are our pledge to each other and to the community as to how we will conduct business.



Core Values



Global Thinking

We strive to consider the broadest consequences of our actions.



Positive Working Relationships

We value strong working relationships - both internally and externally.



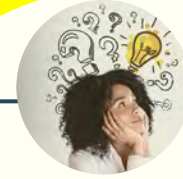
Proactivity

We are future driven. We anticipate challenges and prepare for them.



Honesty and Integrity

We practice honesty and integrity in all that we do.



Creativity

We value innovation and look for new and unique ways to conduct business.



Ownership

Each of us is responsible for the District's success.



Fun

We appreciate the importance of fun in a productive workplace.



Solution Driven

Finding solutions is just as important as identifying problems. When we see a problem, we provide a solution.



Fiscally Prudent

We take our fiduciary responsibility seriously. Our decision process balances cost and results.



Quality

We take pride in our work and strive for excellence.

Our Community

DEMOGRAPHICS

City Population



94533	→	79,665
94534	→	39,318
94585	→	29,560

TOTAL CITY POPULATION

148,543

Disconnected Youth



94533	→	10%
94585	→	10%

Fairfield-Suisun Sewer District
Wastewater Treatment Plant

Median Household Income



94533	→	\$79,259 USD
94534	→	\$121,478 USD
94585	→	\$86,000 USD

BAY AREA MEDIAN HOUSEHOLD INCOME

\$128,151

Income below poverty level



94533

10.9%

94534

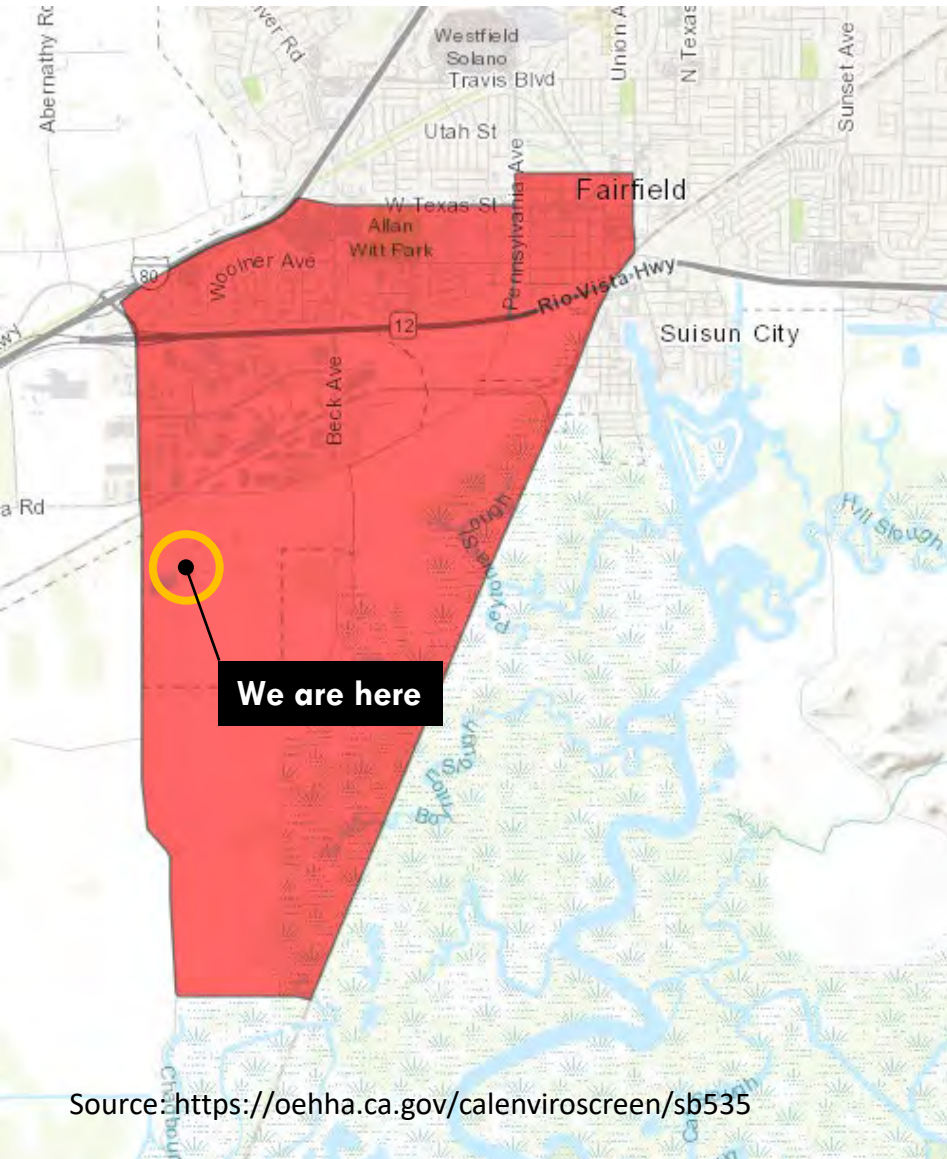
4.01%

94585

9.72%

Fairfield (94533)
Fairfield (94534)
Suisun City (94585)

Disadvantaged Community (DAC) Mapping



SB 535 Disadvantaged Communities 2022



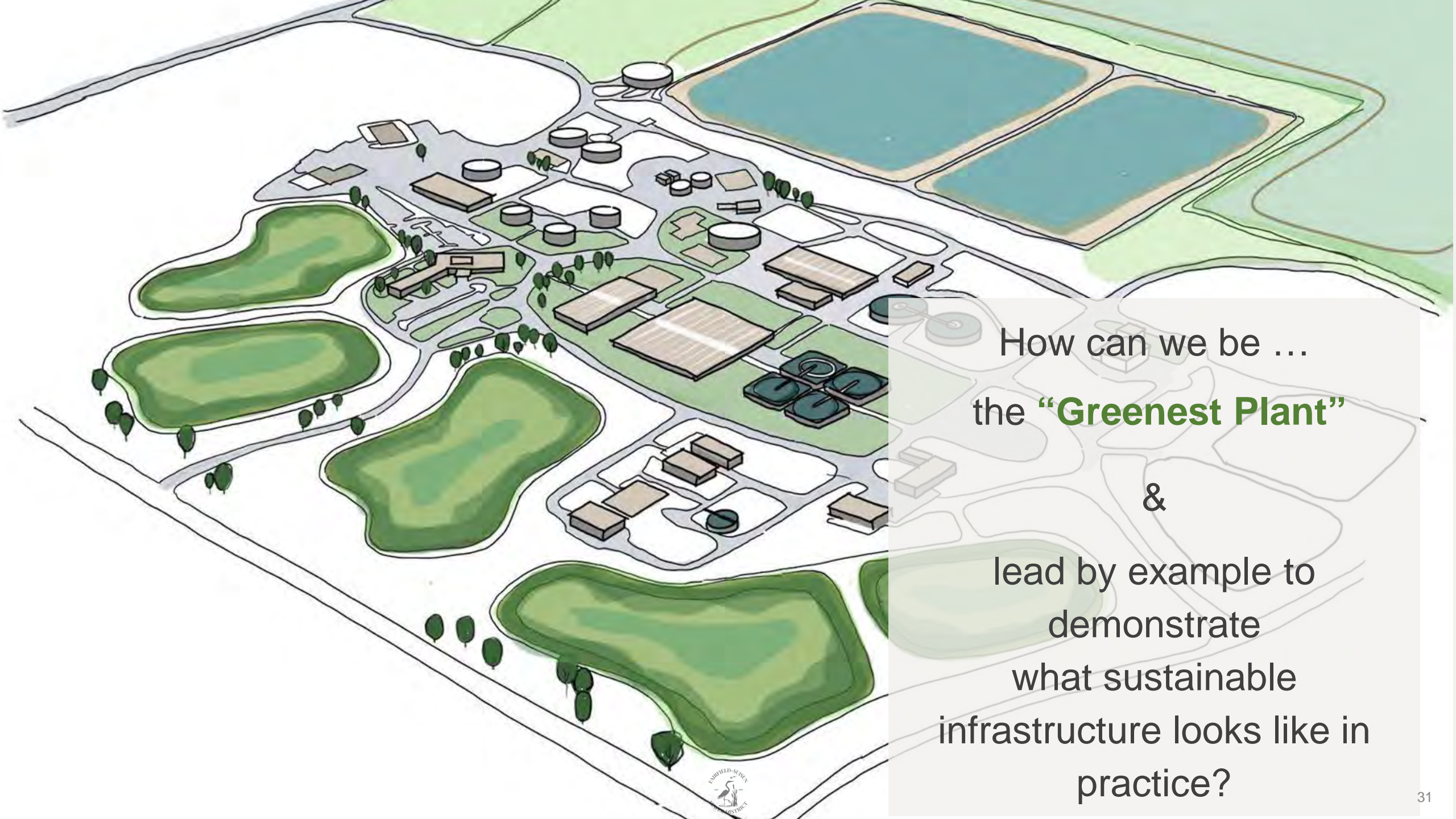
Census Tract	6095252402
ZIP	94534
Population	5,549
County	Solano
CalEnviroScreen 4.0 Percentile	84.3
Disadvantaged Communities Category	CalEnviroScreen 4.0 Top 25%



CW^oEA

California Water Environment Association

2022-23 Large Plant of the Year

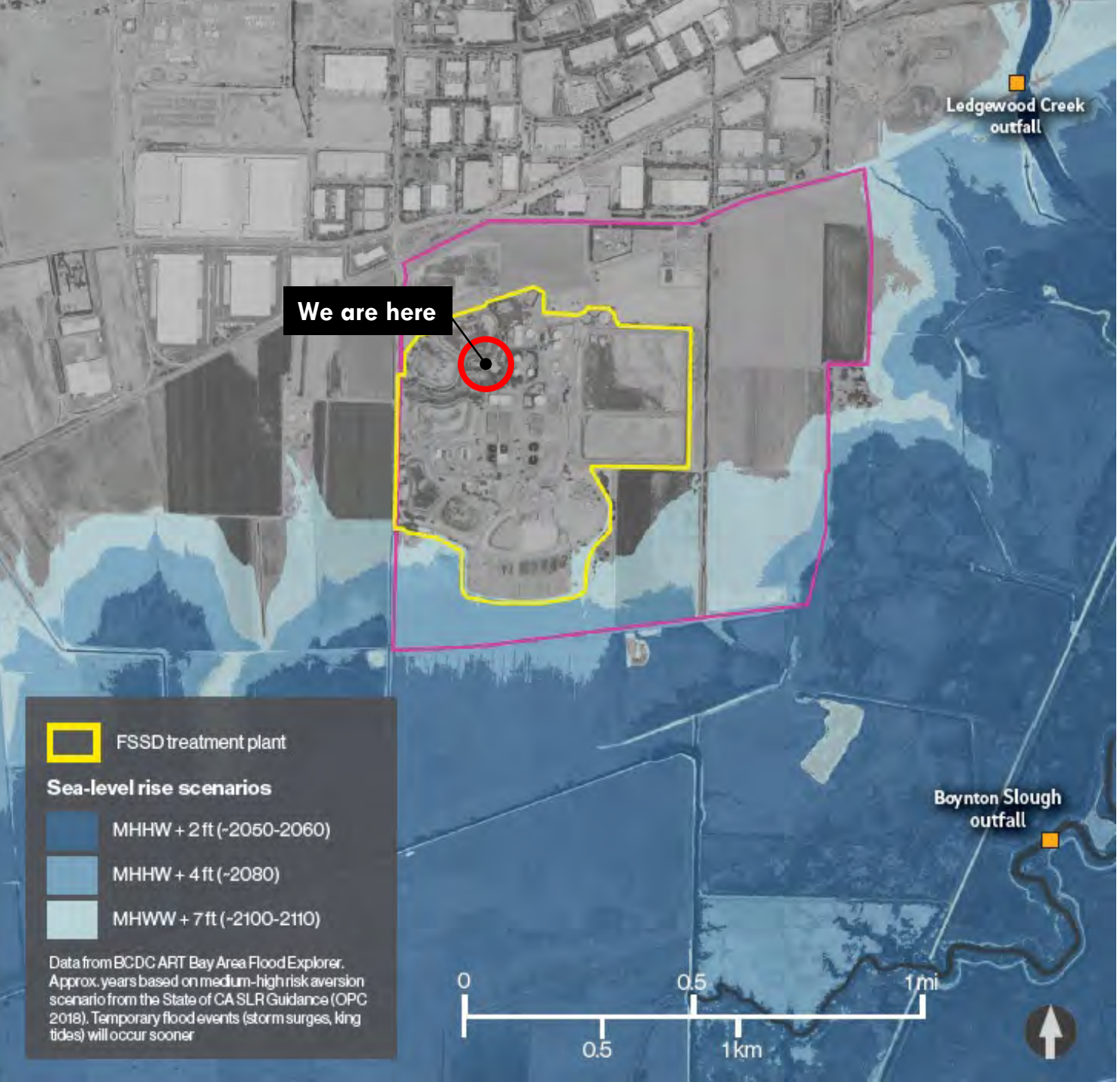


How can we be ...
the **“Greenest Plant”**

&

lead by example to
demonstrate
what sustainable
infrastructure looks like in
practice?

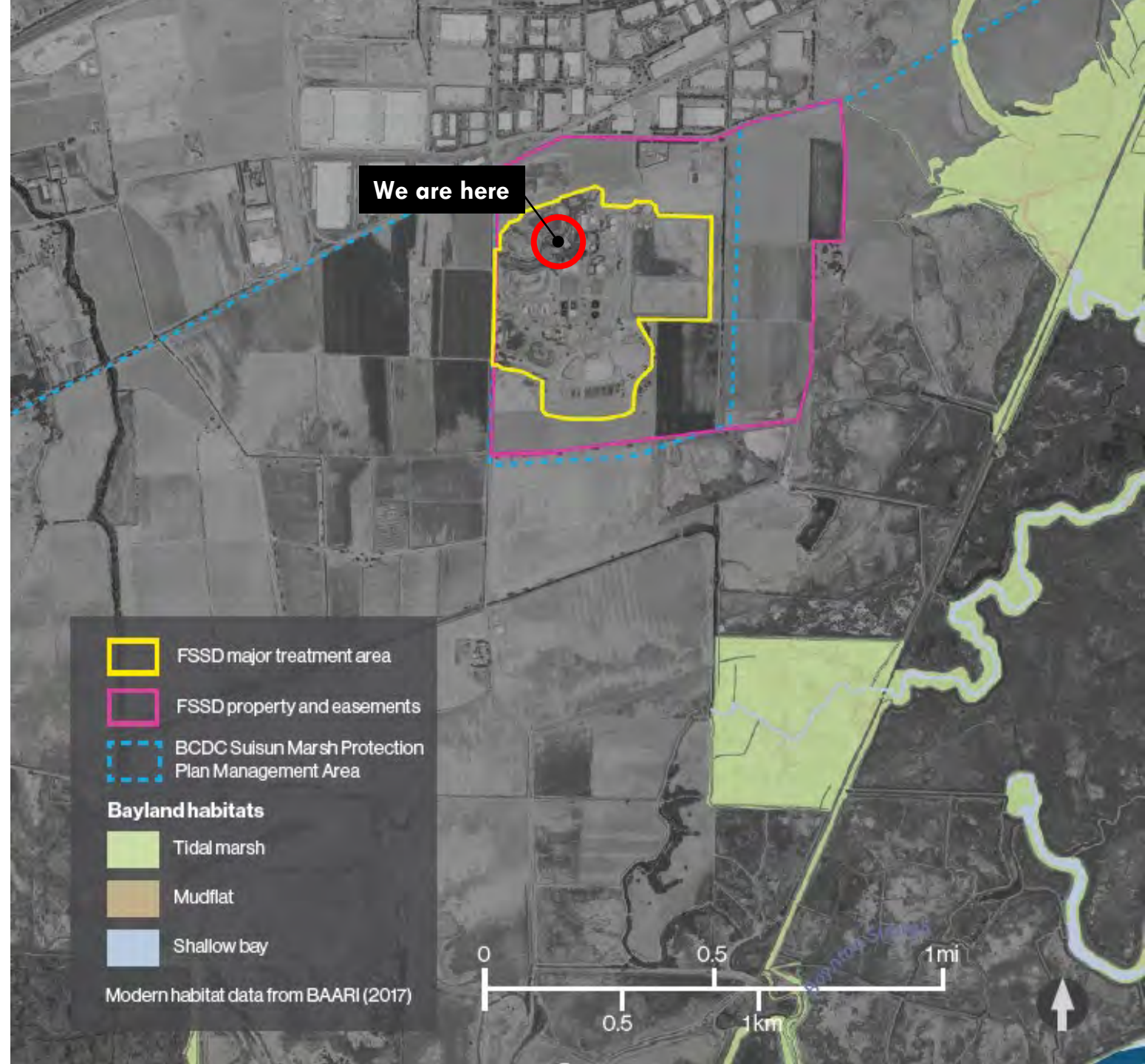
Sea Level Rise



HISTORICAL Baylands Habitat



MODERN Baylands Habitat



On FSSD Property ...



RESILIENT & GREEN MASTER PLAN



Master Plan Vision

Develop a flexible and cohesive plant-wide plan with a diversity of multi-benefit projects that promote sustainability, equity, and climate resilience and are aligned with future development.

When implemented, the Resilient & Green Master Plan projects will enhance the Fairfield-Suisun Sewer District's purpose to protect public health and the environment for the communities we serve in an efficient, responsible and sustainable manner.

These projects aim to shift people's perception of the wastewater industry from dirty and dangerous **TO** clean and safe.

perception of
and dangerous to

diverse strategies
ation with staff
is

ryee ownership,
is and enhance
ve recruitment

s into projects to
ducation while

ion, maintenance
(especially staff and money), and monitoring
projects

- Identify techniques to address uncertainty (e.g., climate or funding)

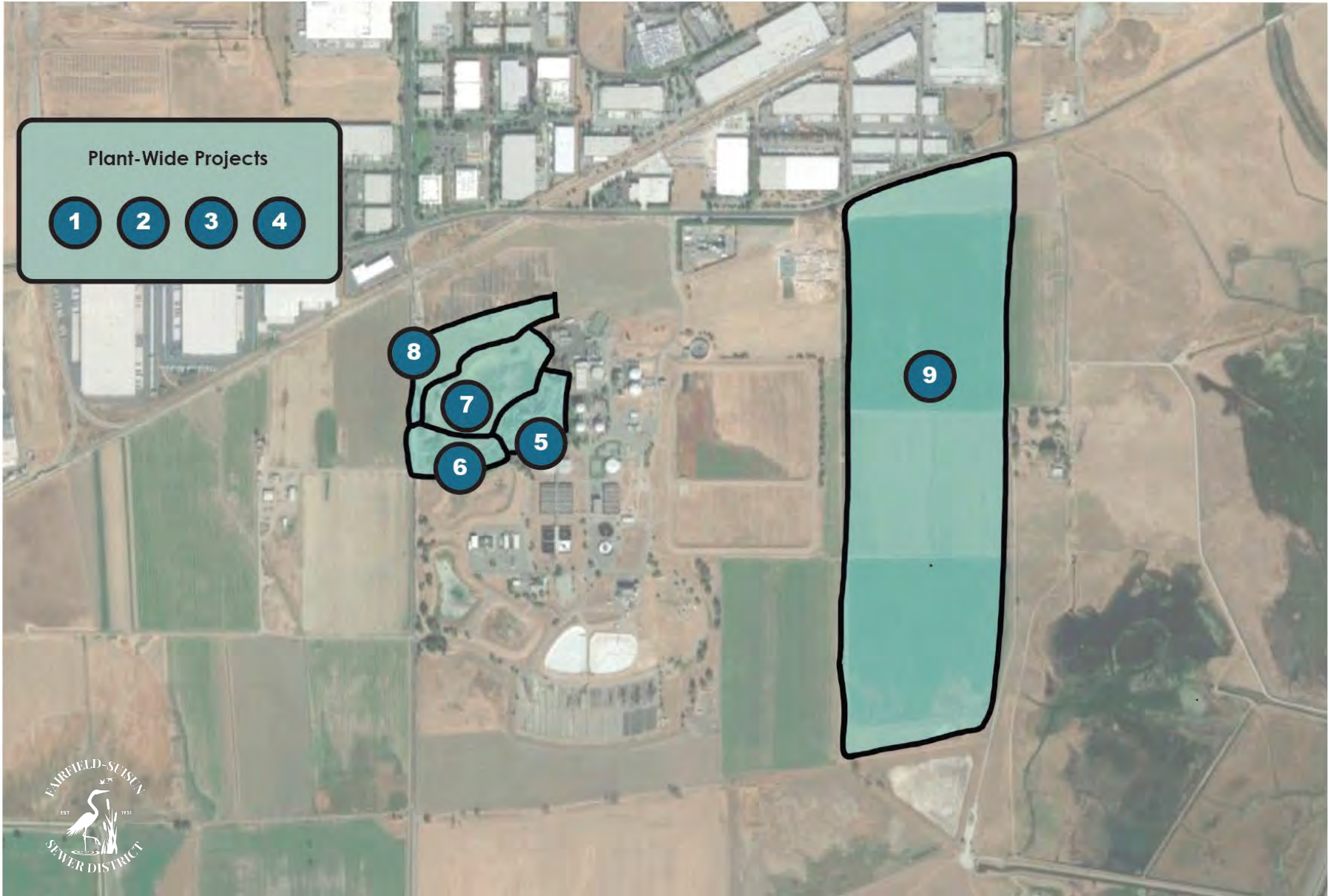
Prepared in Partnership with:





Resilient & Green Master Plan Site Key

This Resilient & Green Master Plan identifies four (4) overarching planning programs that integrate into five (5) implementation projects. These programs are essential building blocks to integrate into individual projects, which then cohesively link all the projects together.



Plant-wide Resilient & Green Programs

- 1 Resilient & Green Maintenance
- 2 Clean Energy & Zero Carbon Vision
- 3 Interpretive Education & Outreach Plan
- 4 Arts, Science & Culture Initiative

Near Term Projects (1-2 years)

- 5 Front Entry Gardens
- 6 Ice Plant Replacement



Medium Term Projects (3-5 years)

- 7 Freshwater Wetlands
- 8 The Grove + Hedgerow Perimeter

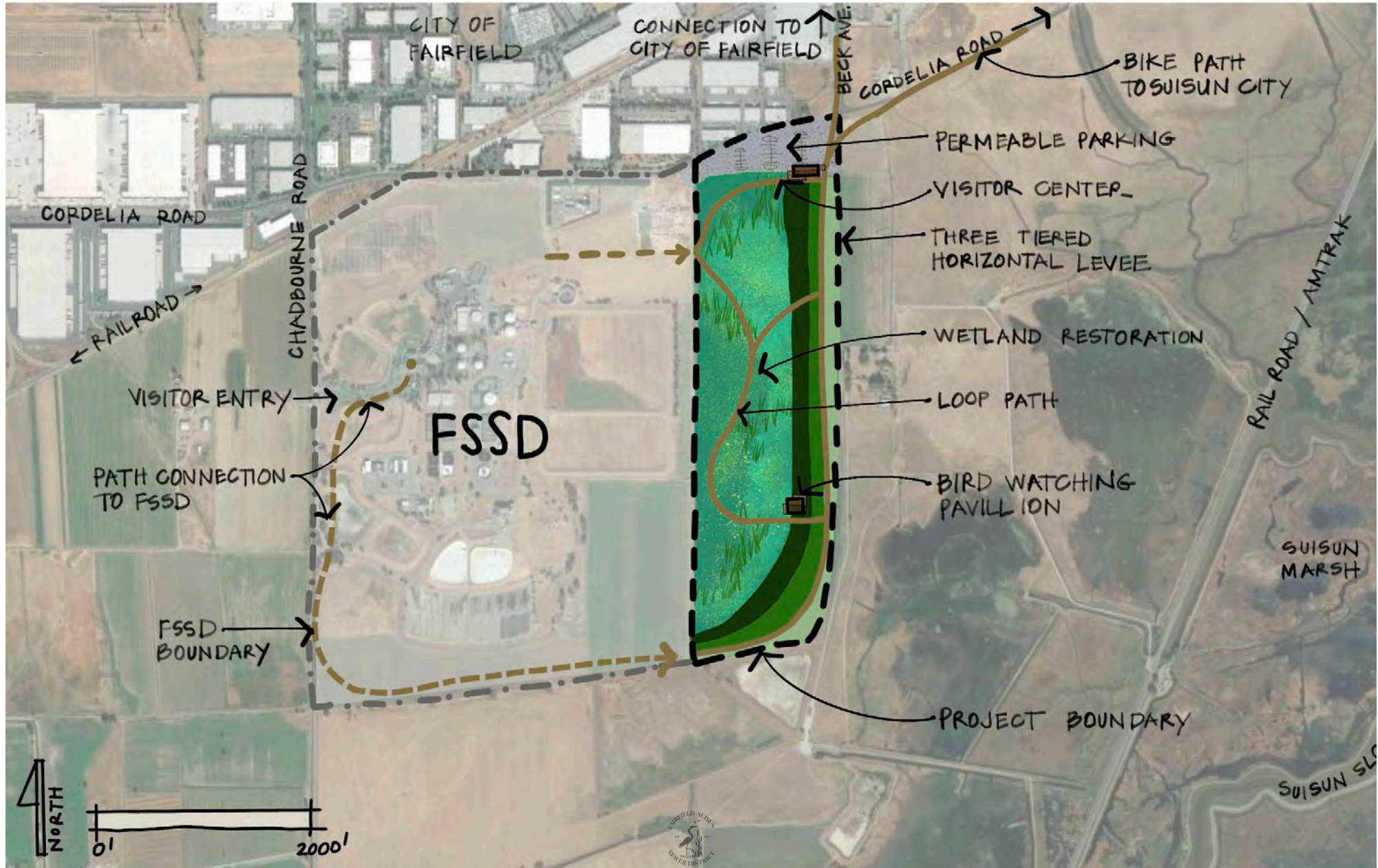


Long Term Projects (5-10 years)

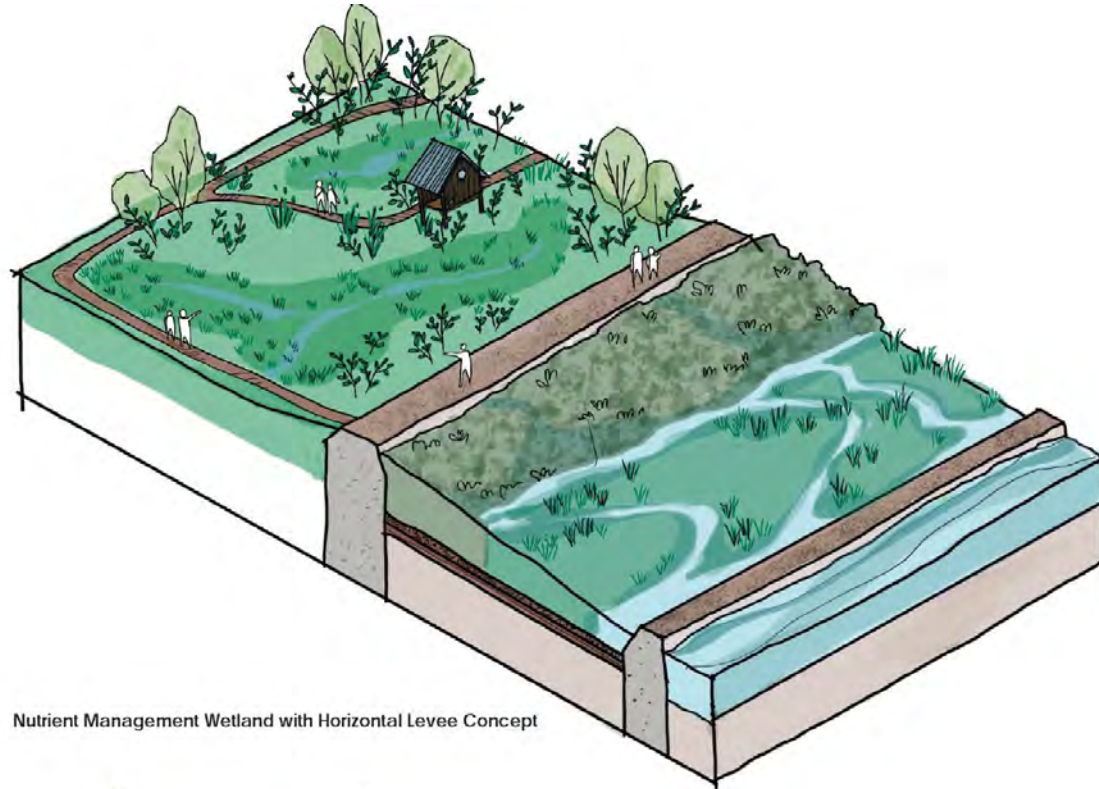
- 9 Community Treatment Wetland & Climate Resiliency



Community Treatment Wetlands



Community Treatment Wetlands



Nutrient Management Wetland with Horizontal Levee Concept

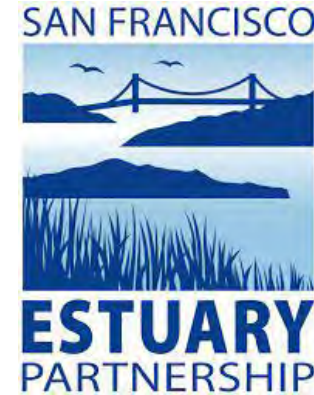


Site Section - NTS

Initial Vision ...

- Reduce nutrients reaching the San Francisco Bay
- Sea-level rise adaptation and resilience for FSSD and surrounding properties
- Equitable access to open space and walking trails

Project Timeline & Funding



October 2023

Executed **\$300,000** Environmental Protection Agency, Water Quality Improvement Fund Sub-grant Agreement with Association of Bay Area Governments (ABAG) with the San Francisco Estuary Partnership

January 2024

Launch Community Survey

Today

Collect Feedback on Initial Project Alternatives (10% Design)

December 2024

Draft 30% Project Design Documents

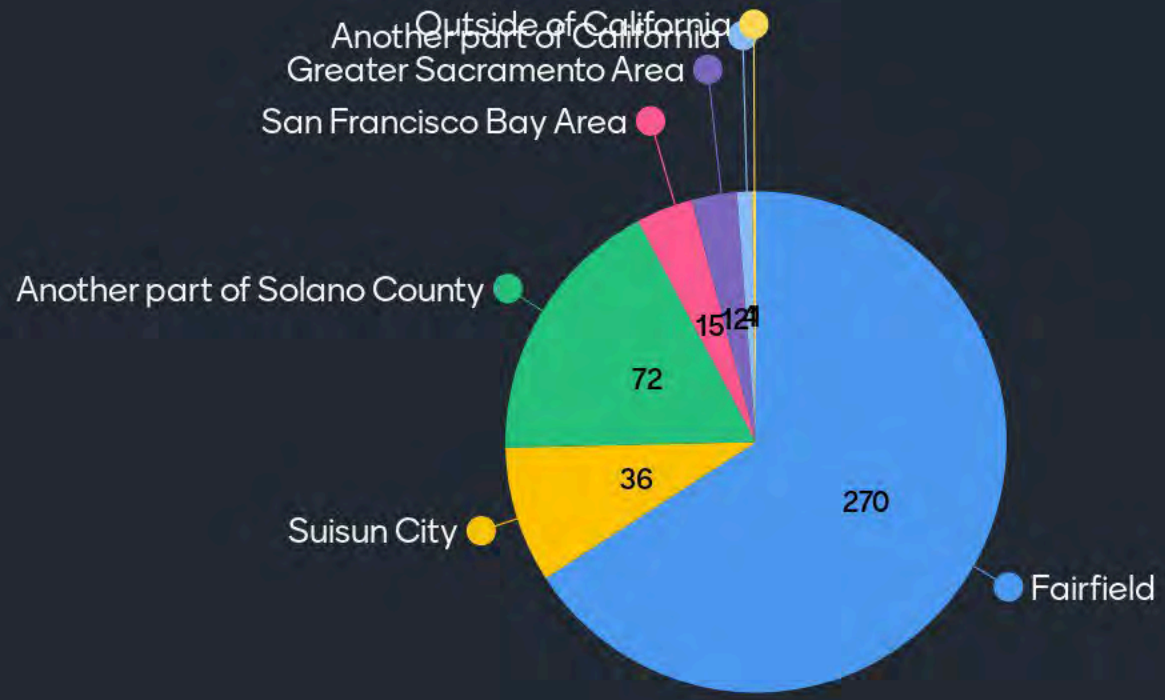
Next Phase?



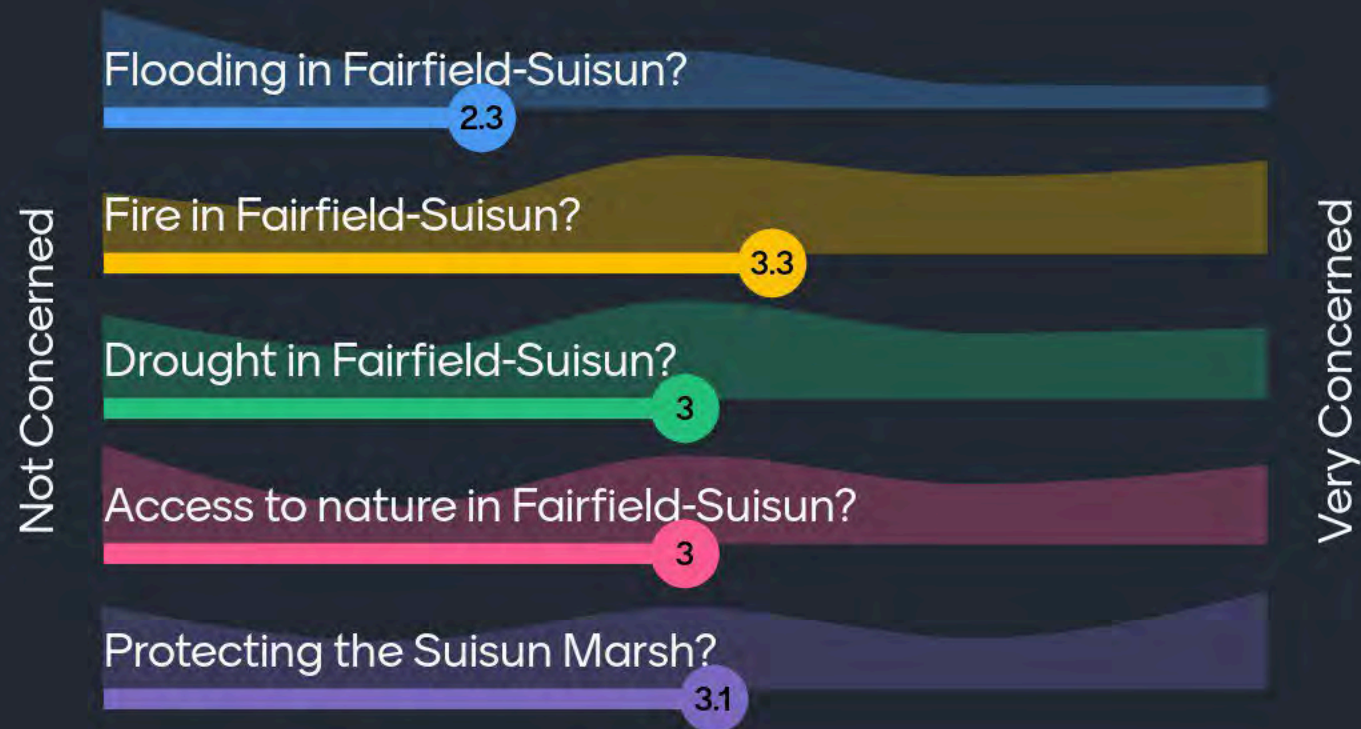
What we've heard from the Community, so far...



Do you live in...



How concerned are you about ...



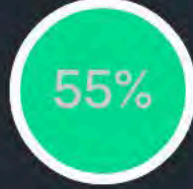
Please rate your level of interest in the District creating this type of project:



Not Interested

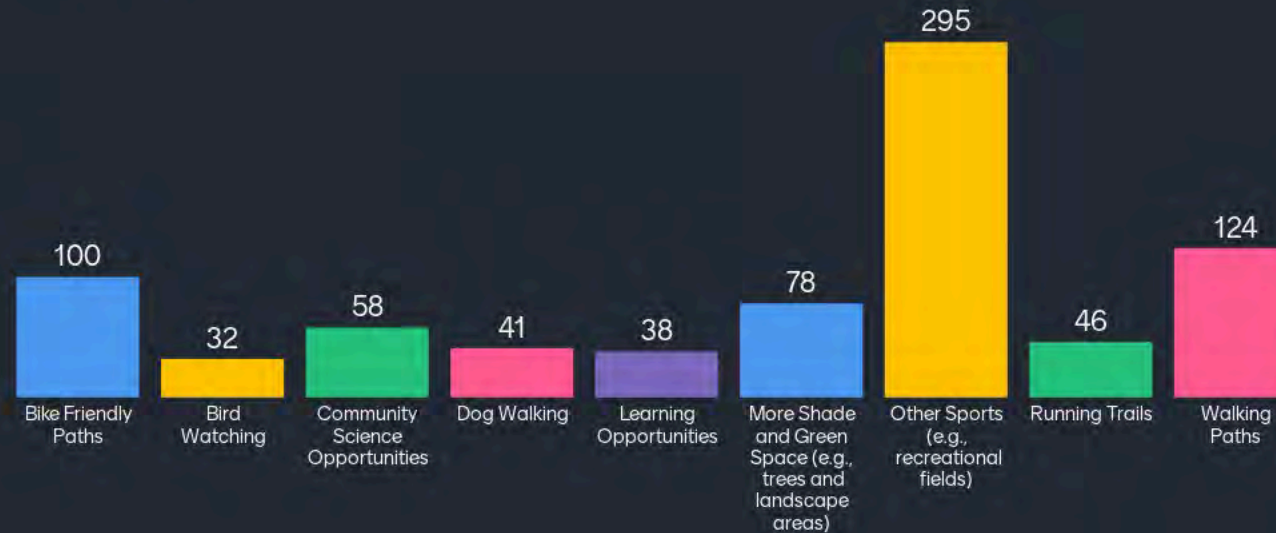


Moderately Interested



Very Interested

What type of community resources would you like to see included in the Community Treatment Wetland Project?



If you were to visit the wastewater treatment plant, how would you get here?



Some Comments ...

I would like to know how the space will be safe and secure to go to and take my family to. There are a lot of homeless that camp around Cordelia road and I feel like this would be a magnet for them.

A place free of homeless encampments. A place with beautiful yet practical gardens.

Playgrounds/spaces accessible for children w/ special needs

Making sure everyone feels welcome in the new space.

Low-income portions of the community are hard to reach. This project could benefit them and you should make it a priority to engage with those portions of the community for their input.

Please invest in a baseball field. Our kids have no where to play... we often have to rent space in other towns

We need more community accesible sports facilities

Sports complex with lights

A community center where we could rent and host a party or BBQ would be nice

Do people really want to hike around a sewer pond? The smell would be amazing. Homeless is another concern. how to keep homeless from setting camp in the area.

I would like to see safe places to have kids play sports that would bring in revenue for our city.

Having some nature

Athletic fields for the youths of Solano County.

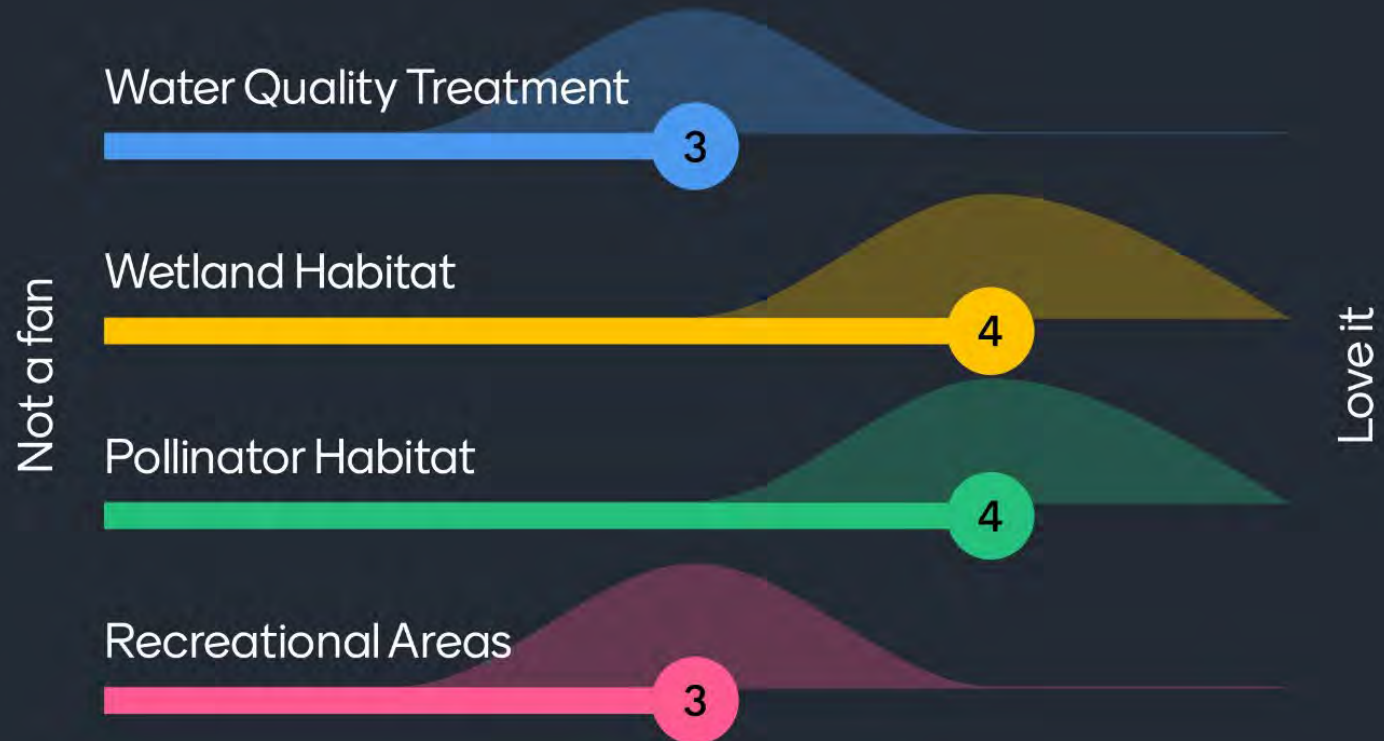
Some of 241 comments



7th Graders voting on what they want to see in a Community Wetlands Project (February 2024)

From 250 students ...

What type of community resources would you like to see included in the Community Treatment Wetland Project?



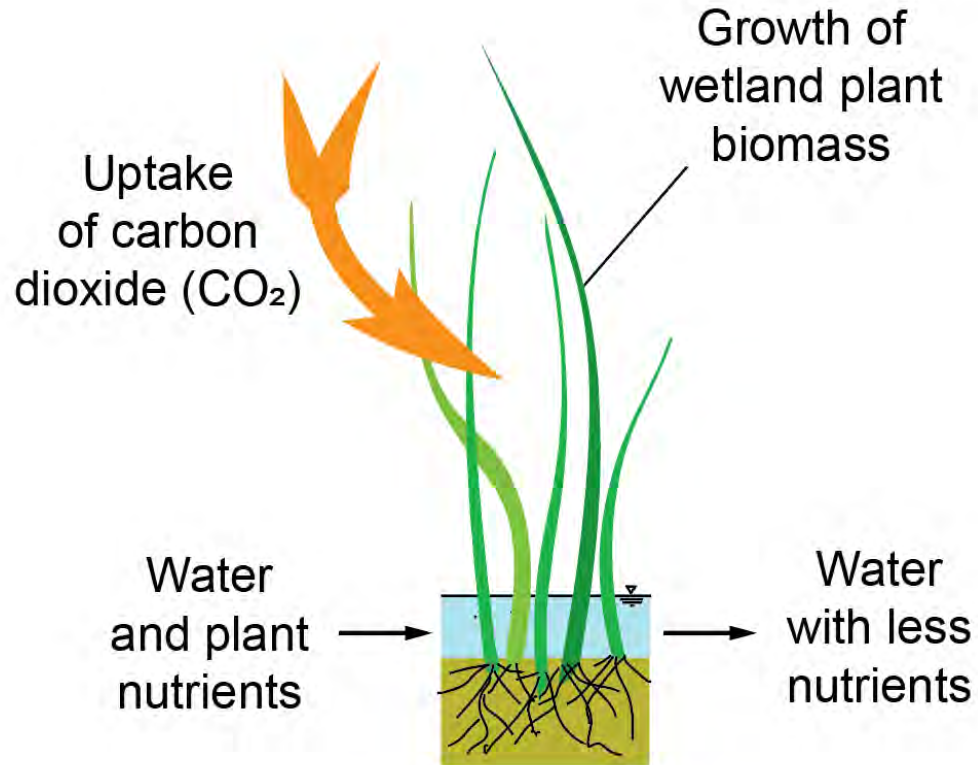
Initial Project Alternatives

Design Principles

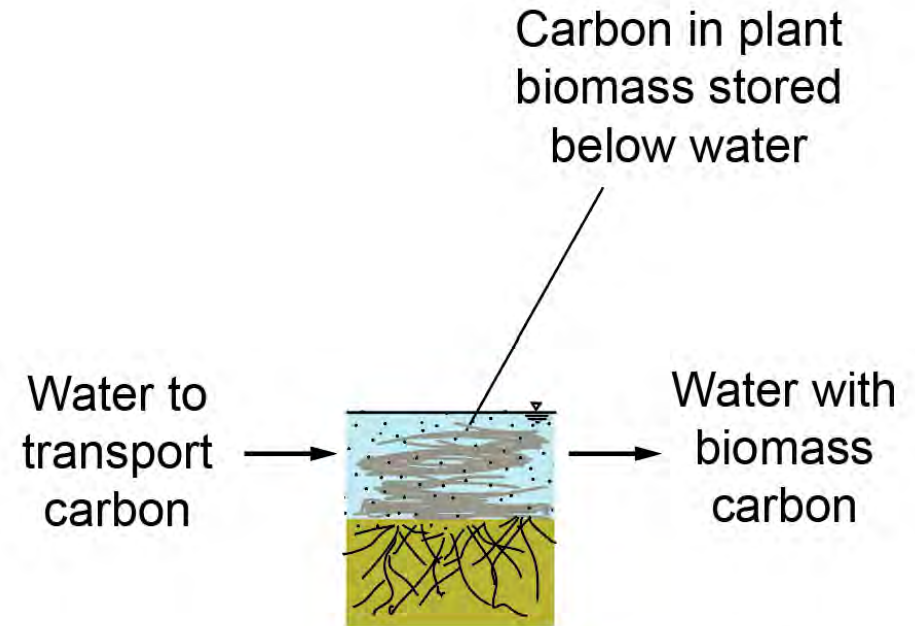
1. Adaptive management with **sustainable operation & maintenance**
2. **Nitrogen removal** and **carbon capture**
3. **Flood protection** and **sea level rise resilience**
4. **Habitat** value and diversity
5. Integrated facilities for community **access**



What is a Carbon Capture Wetland?

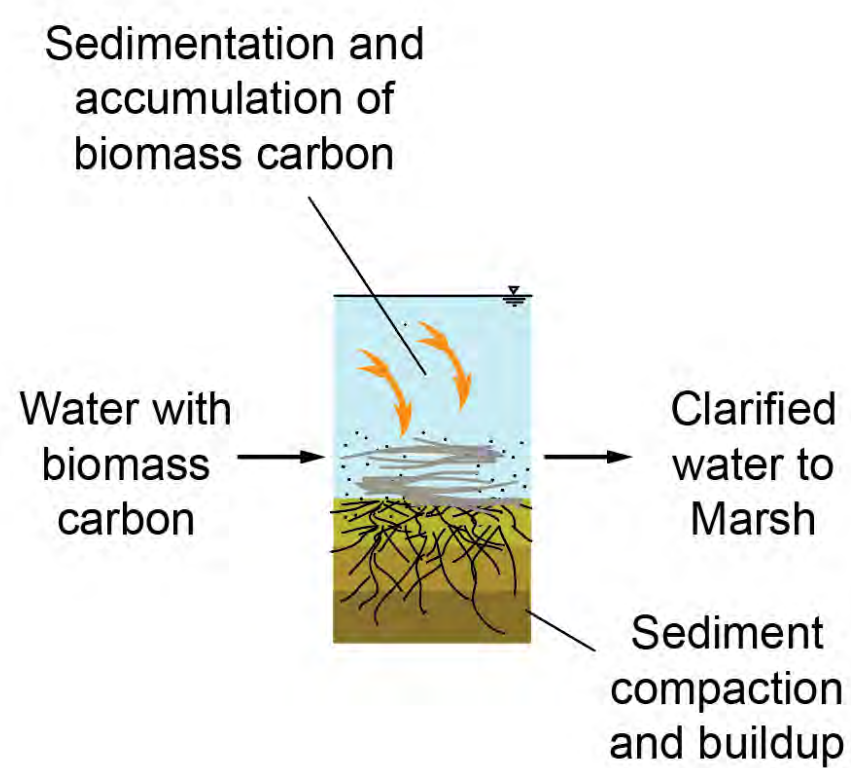


Summer season plant growth and carbon uptake

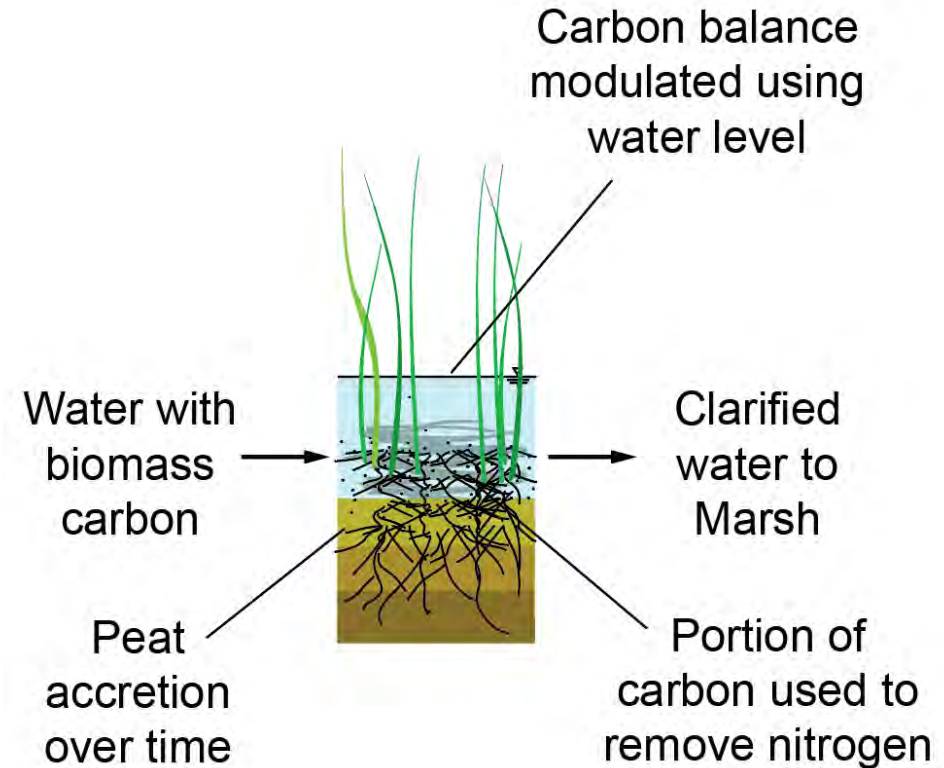


Winter season plant decay and carbon transport to peat building

What is a Peatland for Elevation Building?

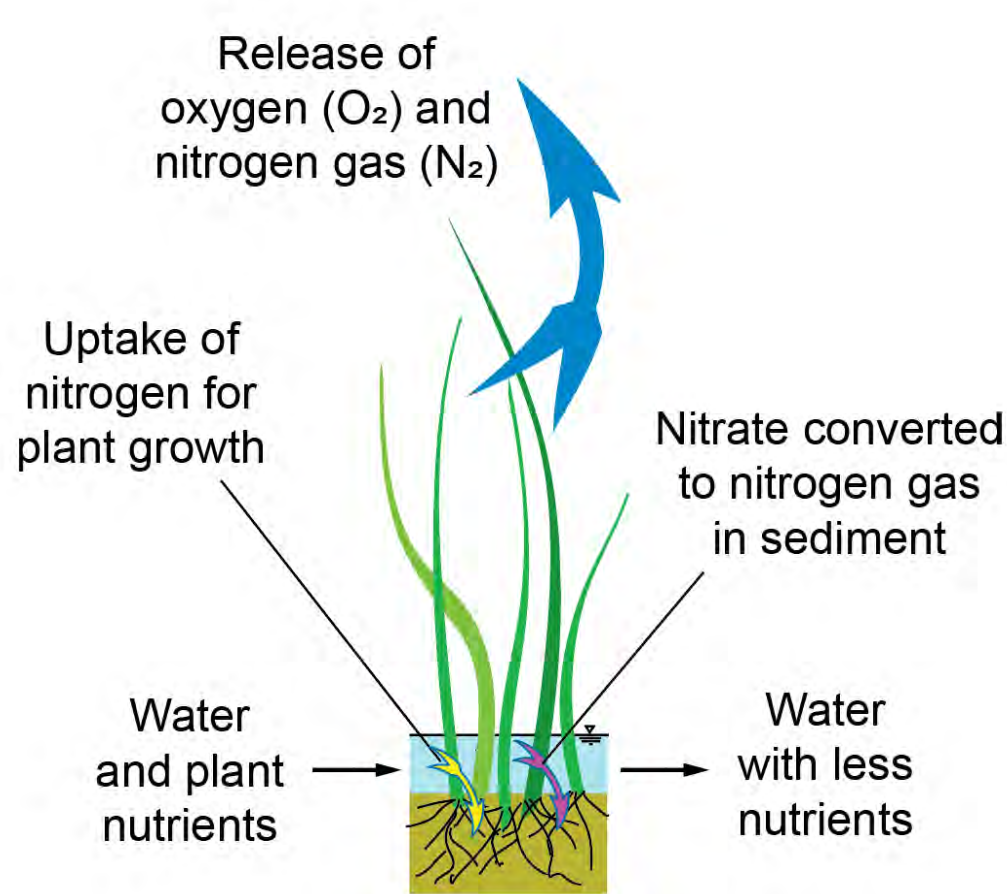


Winter season carbon storage and accumulation as peat



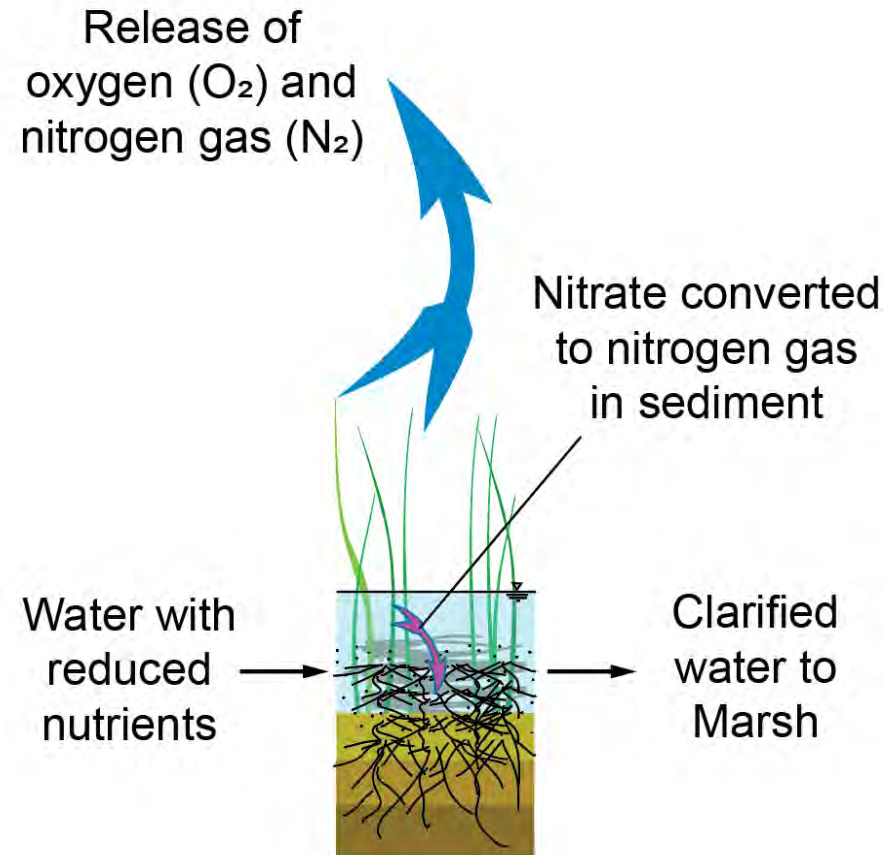
Summer season biodegradable carbon used for nitrate removal

What is Nitrogen Removal in Wetlands?



Summer season plant growth and carbon uptake

Carbon capture treatment wetlands



Summer season biodegradable carbon used for nitrate removal

Peatland elevation building treatment wetlands

Alternative 1: Maximize Resilience

Fairfield-Sulsun Sewer District Community Treatment Wetland



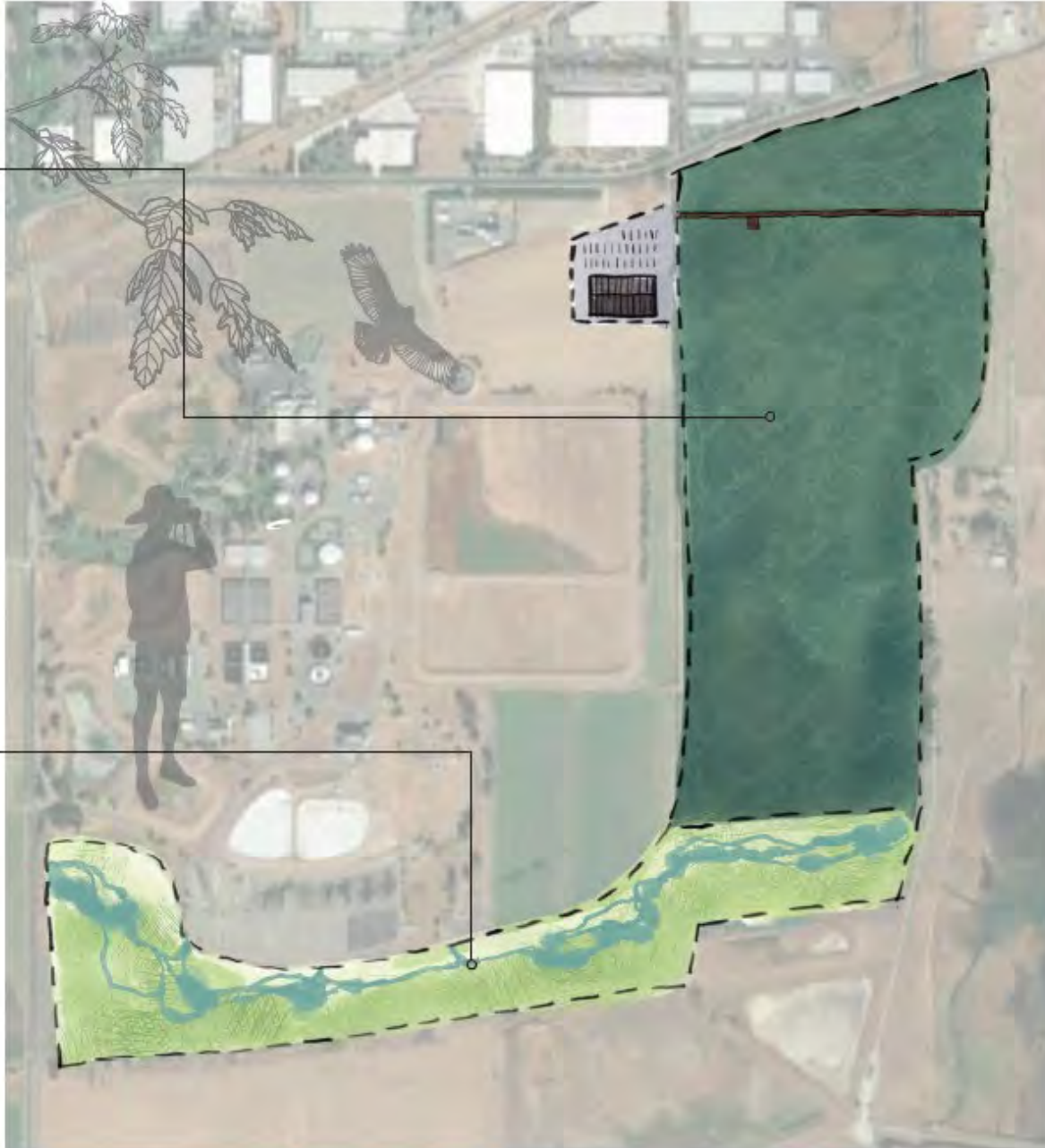
NITROGEN REMOVAL AND CARBON CAPTURE IN TREATMENT WETLAND

The nutrients contained in wastewater effluent will be used to capture atmospheric CO₂ in the form of native wetland plant biomass



CARBON STORAGE IN ENGINEERED PEATLAND

The carbon captured in-situ and in the upstream wetlands will accumulate in peat building wetlands and over many years will result in elevation gain.

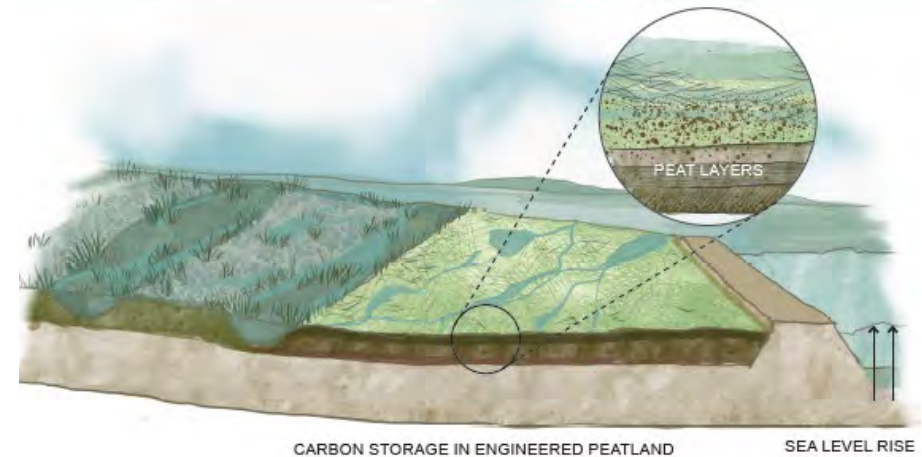


MOST

- treatment wetland area
- carbon capture
- nutrient uptake
- elevation building
- flood protection and sea level rise resilience

LESS

- habitat diversity
- public access
- operations & maintenance complexity
- expensive



CARBON STORAGE IN ENGINEERED PEATLAND

SEA LEVEL RISE

Alternative 2: Maximize Community Access and Recreation

Fairfield-Suisun Sewer District Community Treatment Wetland



NITROGEN REMOVAL AND CARBON CAPTURE IN TREATMENT WETLAND

The nutrients contained in wastewater effluent will be used to capture atmospheric CO₂ in the form of native wetland plant biomass



PUBLIC ACCESS TO WALKING TRAILS

A network of trails provides community access through wetland and riparian areas. Educational opportunities are integrated into the site using kiosks, outdoor classrooms, and community science initiatives.



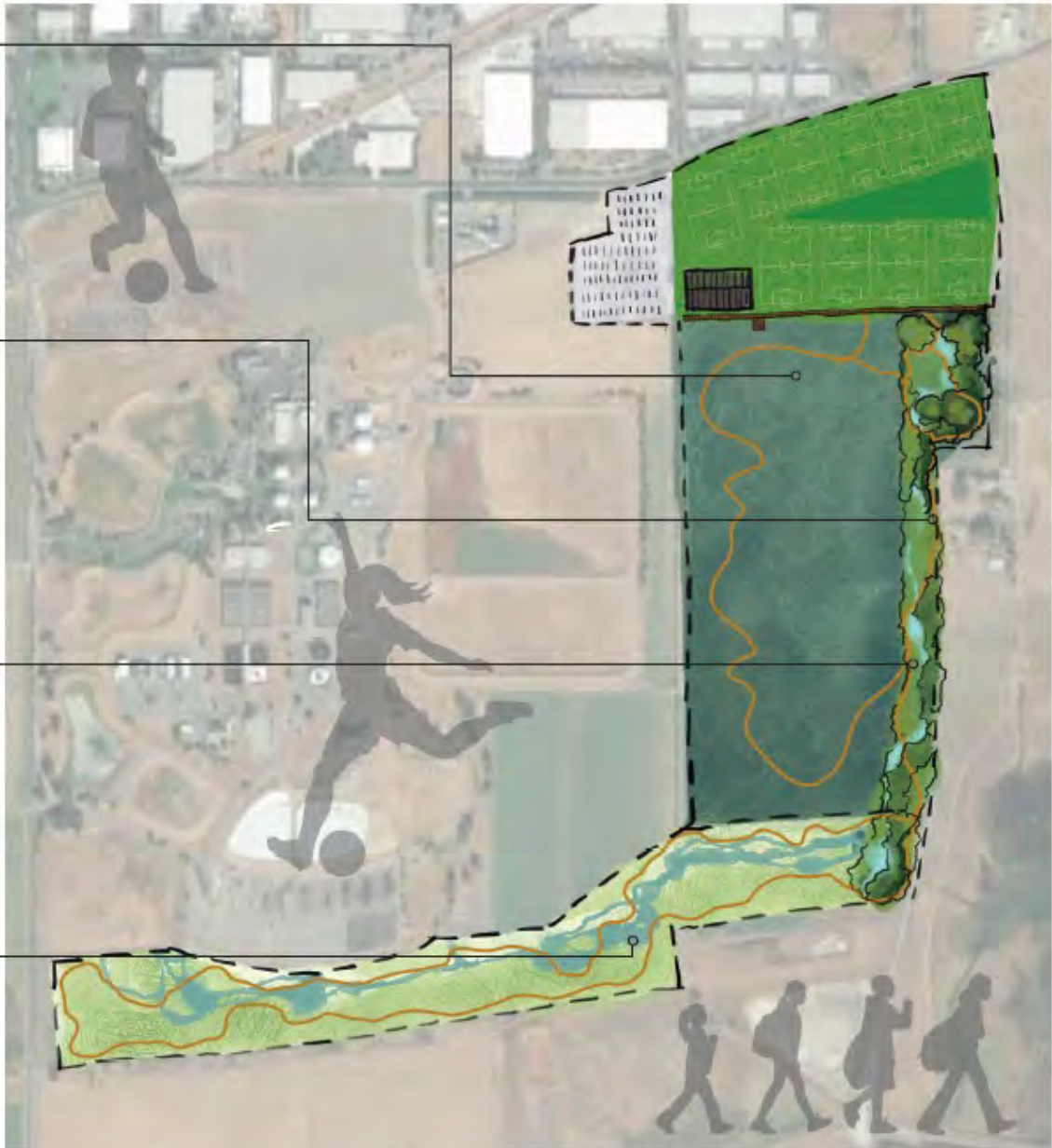
RIPARIAN ZONE

Constructed habitat that provides access to food, water, nesting areas, and migration corridor for various local wildlife. Riparian zones do not specifically contribute to meeting water quality objectives for the project.



CARBON STORAGE IN ENGINEERED PEATLAND

The carbon captured in-situ and in the upstream wetlands will accumulate in peat building wetlands and over many years will result in elevation gain.

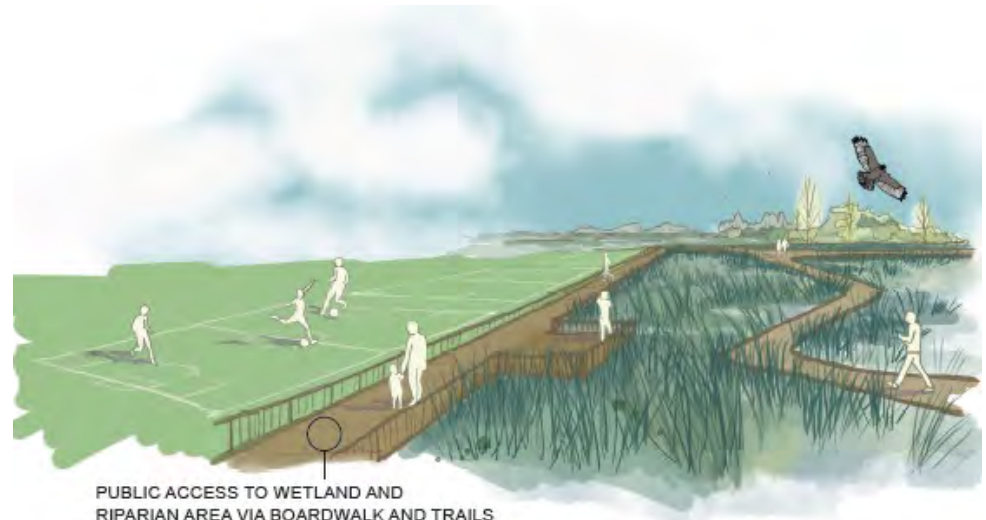


MOST

- public access
- recreational and educational opportunities
- expensive
- operations and maintenance complexity

LESS

- habitat diversity
- treatment wetland area
- carbon capture
- nutrient uptake
- elevation building



PUBLIC ACCESS TO WETLAND AND RIPARIAN AREA VIA BOARDWALK AND TRAILS

Alternative 3: Maximize Habitat

Fairfield-Suisun Sewer District Community Treatment Wetland



NITROGEN REMOVAL AND CARBON CAPTURE IN TREATMENT WETLAND

The nutrients contained in wastewater effluent will be used to capture atmospheric CO₂ in the form of native wetland plant biomass.



RIPARIAN ZONE

Constructed habitat that provides access to food, water, nesting areas, and migration corridor for various local wildlife. Riparian zones do not specifically contribute to meeting water quality objectives for the project.



CARBON STORAGE IN ENGINEERED PEATLAND

A network of trails provides community access through wetland and riparian areas. Educational opportunities are integrated into the site using kiosks, outdoor classrooms, and community science initiatives.



MOST

- habitat diversity
- wetland migration area

LESS

- public access
- treatment wetland area
- carbon capture
- nutrient uptake
- elevation building
- expensive (mid-level)



Your feedback!



Small group discussions
– so we can hear from everyone!



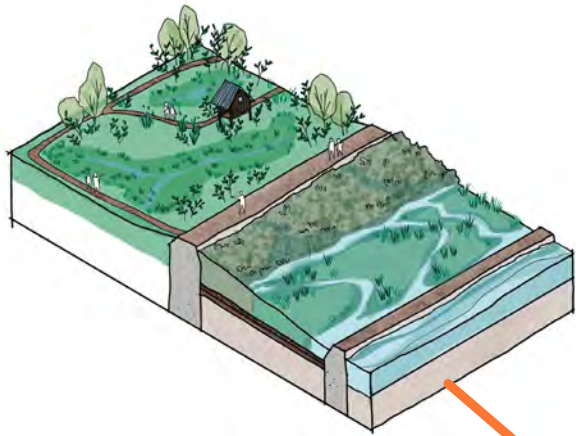
Dot voting

Next Steps

Thinking holistically ...

LEGEND

- Existing 36-inch and 48-inch Force Mains
- Central Pump Station
- Central Pump Station Junction Box
- Suisun Pump Station
- FSSD Wastewater Treatment Plant



PILOT Freshwater Wetlands



Answer research questions like ...

How might we optimize wetland maintenance, operation, design to ...

- Remove nutrients?
- Remove CECs? (e.g., PFAS)
- Sequester Carbon?
- Build Elevation?
- Benefit / Engage our community?

Opportunity to involve community and youth ... data collection...

Next Steps for this Project

Today

Collect Feedback on Initial Project Alternatives (10% Design)

May 2024

Let us know your comments! (& suggestions for how to improve)

Project Alternative Fact Sheets and Presentation, will be:

1. **Emailed** to those of you on our email list
2. Posted to our **website**

<https://www.fairfieldsuisunsewer.ca.gov/public-outreach/community-wetland/>

Emily Corwin
ecorwin@fssd.com
707-428-9138

December 2024

Draft 30% Project Design Documents

Next Phase?



Partners



SOLANO
Resource
Conservation
District

Closing and Thank you! (let's eat:)

