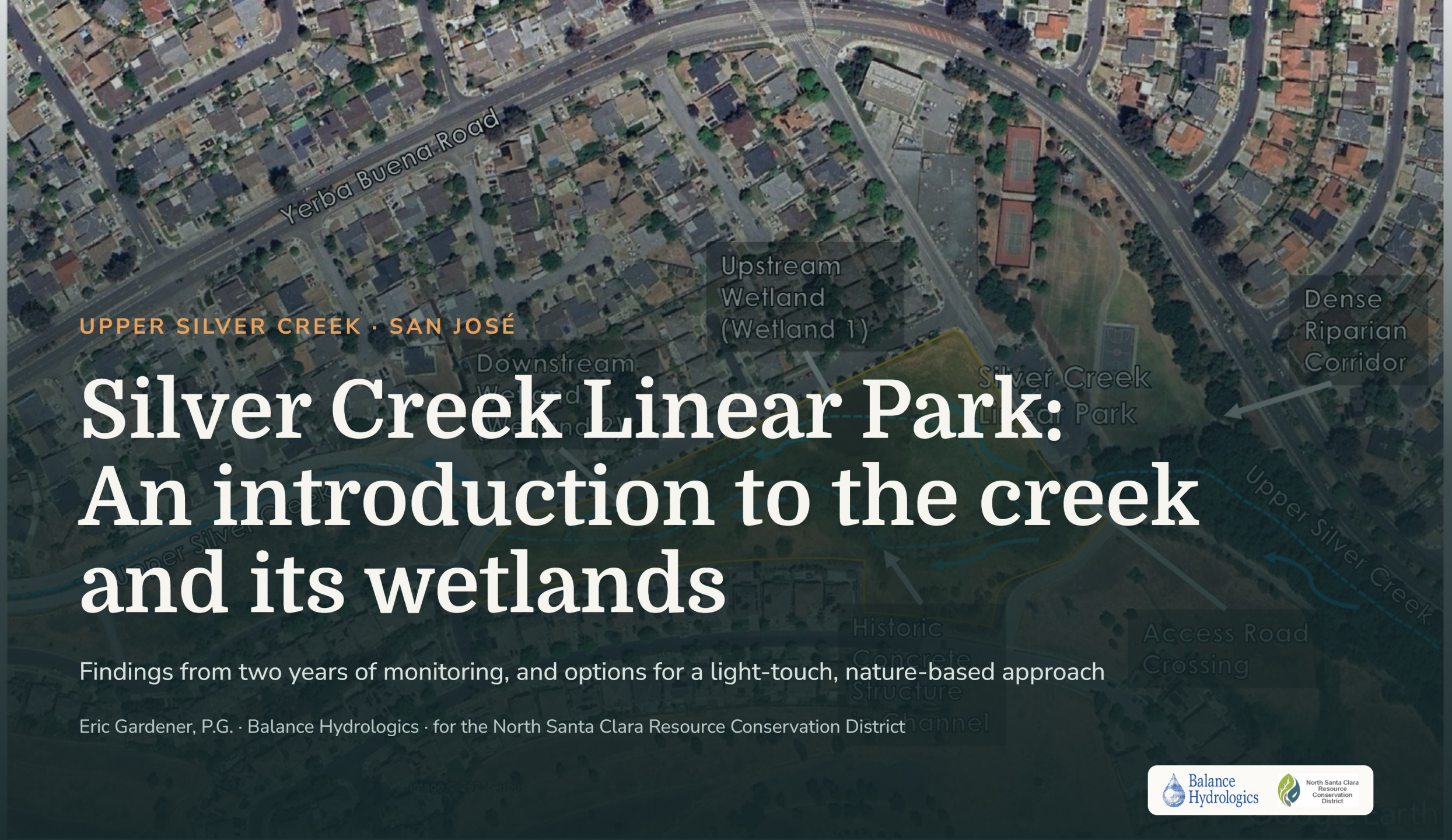


UPPER SILVER CREEK · SAN JOSÉ

Silver Creek Linear Park: An introduction to the creek and its wetlands

Findings from two years of monitoring, and options for a light-touch, nature-based approach

Eric Gardener, P.G. · Balance Hydrologics · for the North Santa Clara Resource Conservation District

Balance Hydrologics

North Santa Clara Resource Conservation District

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for his valuable input

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Monitoring effort

for his field observations and contributions to the monitoring

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THE PROJECT AT A GLANCE

How we got here

A small stretch of Upper Silver Creek in a small community park, with two wetlands the RCD has watched change for two decades.

20+ years

RCD documents the corridor as it shifts from cattle grazing to City open space

2020

Monitoring plan set with CDFW, the Water Board and Valley Water

2022–24

Two years of water-level monitoring with staff and volunteers

2025

Findings shared with the agencies, Valley Water and the City

2026

Report and recommended approach

Today

Sharing what we've learned with the Board

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WHAT WE SET OUT TO LEARN

The question: will these wetlands last?

2 years

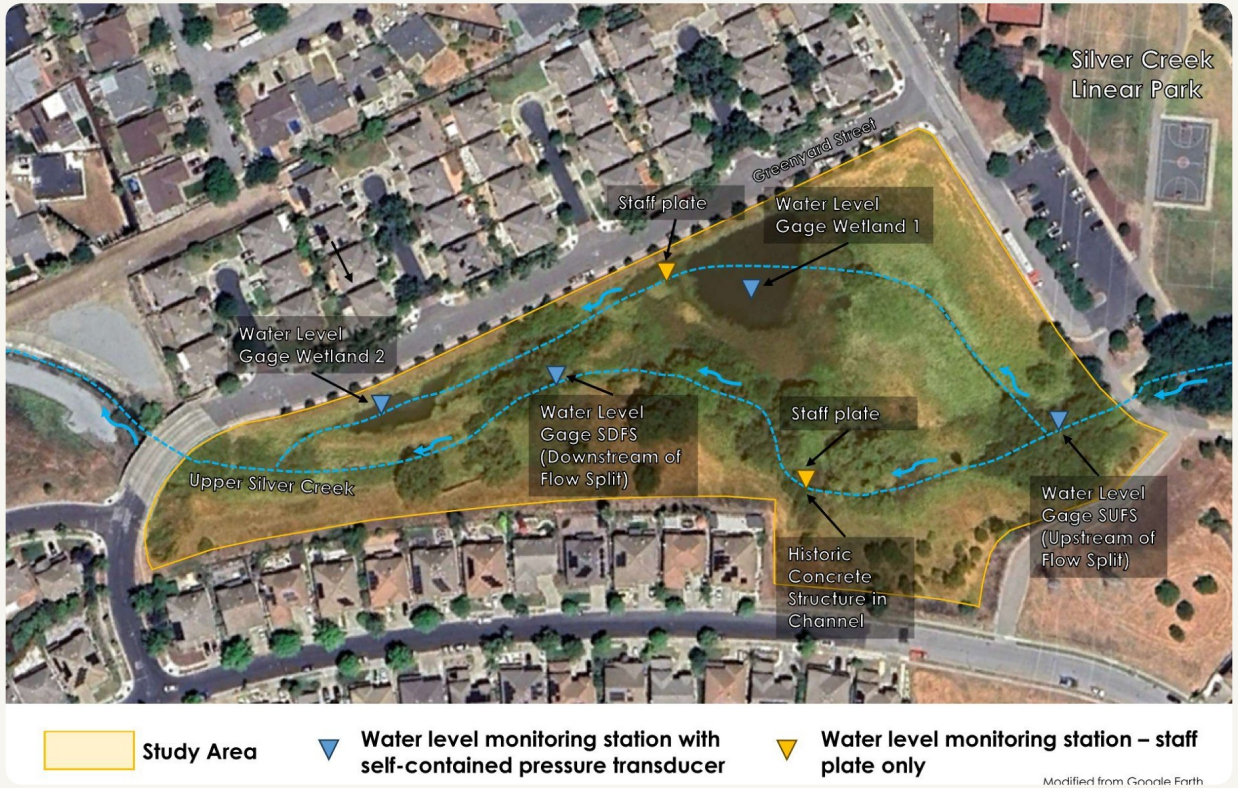
of water levels, recorded every 15 minutes (Jan 2022 – Feb 2024)

6 stations

in the creek and both wetlands, water level monitored by staff and volunteers

Historic land-use change

Aerial photos, from 1939 to 2025, plus site history and geology



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THE SHORT VERSION

Three reasons behind our recommendation

1

Creeks naturally move on their own

The park sits where the creek naturally drops sediment and shifts course.

2

Today's wetlands run on borrowed time

The wetlands rely on a ditch that is sensitive to debris damming, dry out fast, and are slowly filling in with sediment.

3

Working with nature is easier than against it

It costs less, needs less upkeep, and has the regulators' support.

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THEME 1 · CREEKS NATURALLY MOVE ON THEIR OWN

This creek has been moved before





In 1939: orchards and fields, with the creek on a different path **(blue dashes)**.

Since then: ditched, pushed against the hillside and channelized downstream.

Efforts to lock creeks like this in place have often failed (working against nature).

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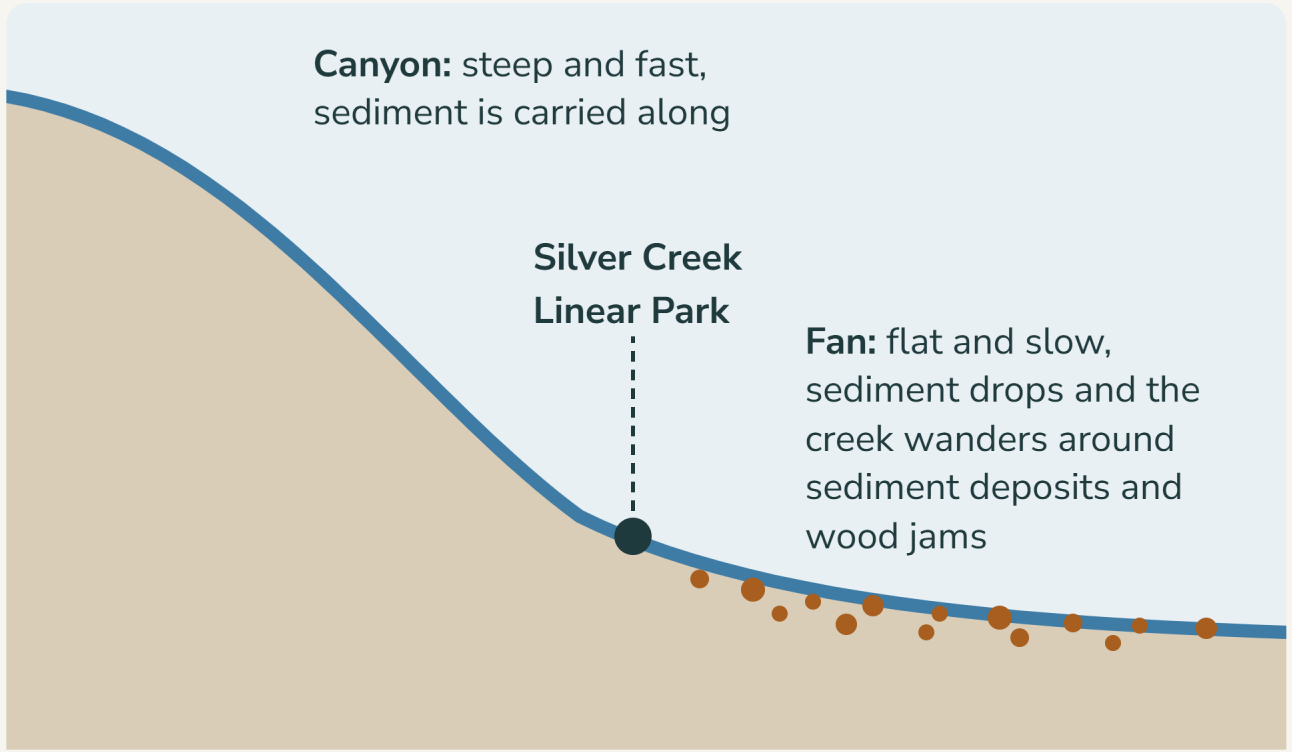
THEME 1 · CREEKS NATURALLY MOVE ON THEIR OWN

The park sits where the creek slows down and drops its load

Steep canyon upstream.

At the park it hits flat ground, an **“alluvial fan,”** slows down and drops that material.

Over time this fills low spots and pushes the creek into new paths. **That will keep happening.**



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THEME 2 · TODAY'S WETLANDS RUN ON BORROWED TIME

The wetlands depend on a sensitive "flow split"

Around 2015, a small ditch was cut from the creek to the wetlands. It splits the flow in two.

Which way the water goes depends on where and how logs and debris happen to pile up.

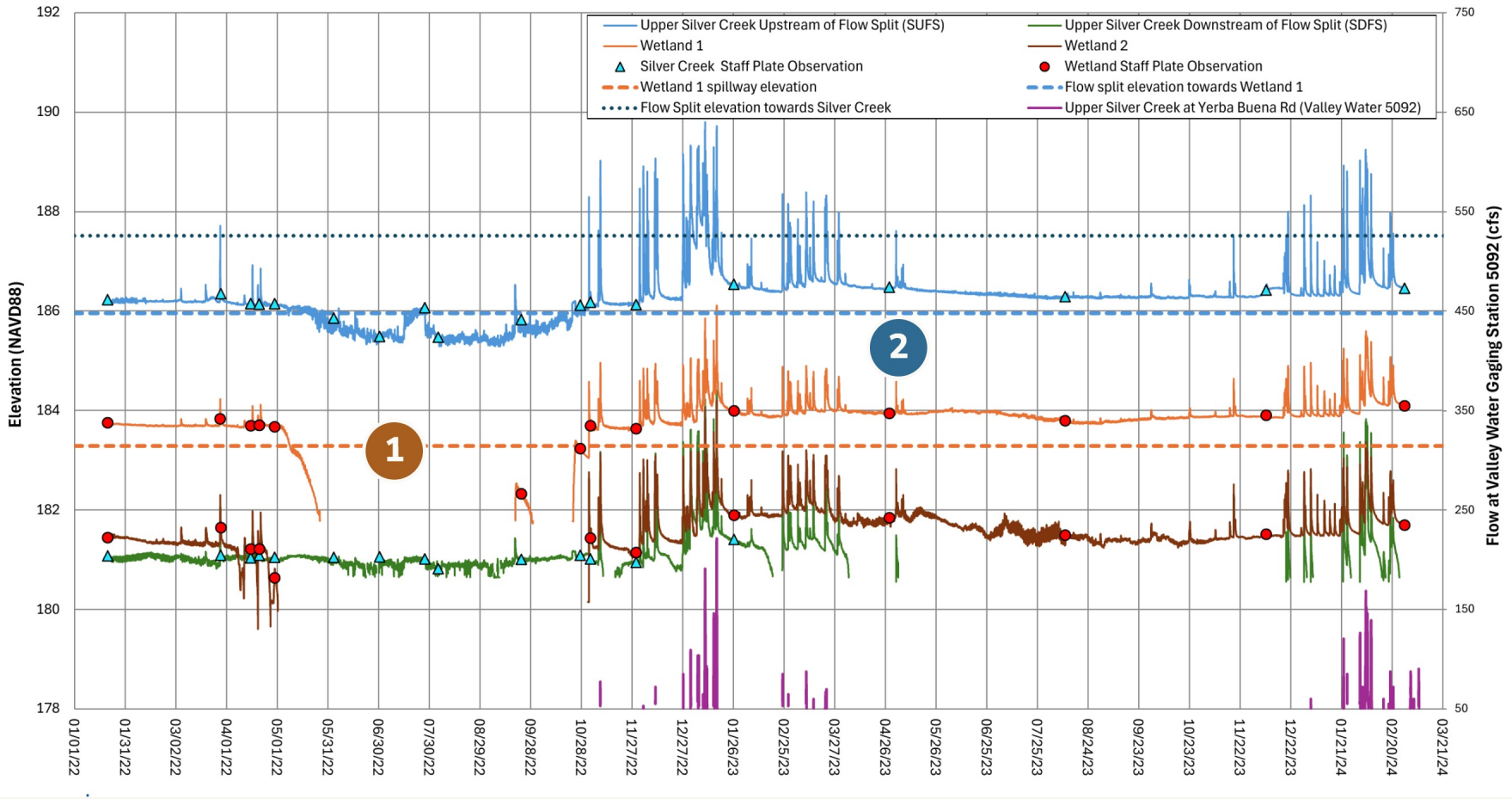
2023 Woodjam — debris built up in one winter (2023), sending nearly all the water to the wetlands



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THEME 2 · TODAY'S WETLANDS RUN ON BORROWED TIME

Cut off from the creek, the wetlands dry up in about a week



1

May 2022: the creek **(blue)** drops below the wetland feeder ditch. The upper wetland **(orange)** is dry in **about 6 days**.

2

2023–24: storm debris altered the flow split, so water kept flowing to the wetlands which then **stayed wet all year**.

Groundwater is 20–30 ft down, too deep to help. The creek is the wetlands' main water source.

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THEME 2 · TODAY'S WETLANDS RUN ON BORROWED TIME

And the wetlands are slowly filling in

The **yellow outline** shows the upper wetland's edge in 2007. Plants and sediment have since crept in from the upstream end.

In winter 2023 alone, we saw fresh sediment near the ditch inlet to the wetland.

> **Bottom line:** as built, these wetlands won't last on their own. But the same process can create new ones.



Modified from Google Earth

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WHY THIS RESEARCH MATTERS

A small study broadened the question

WHERE WE STARTED

Are these wetlands sustainable?

The focus was on the wetlands themselves.

When the flow split changed on its own, we learned even more about how the creek-wetland system works.

WHAT LOOKING AT THE WHOLE CORRIDOR SHOWED

- The wetlands depend entirely on the creek; no groundwater feeds them
- Cut off from the creek, they dry in about 6 days
- The creek naturally shifts and drops sediment, slowly filling them

The better question: How can the creek and wetlands thrive together over time?

Water-level monitoring equipment, volunteer readings and historic photos gave us a **holistic view**, and a sounder basis for every option that followed.

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THEME 3 · WORKING WITH NATURE IS EASIER THAN AGAINST IT

We weighed three options

Option	What it involves	Disturbance	Cost (initial+ upkeep)	Permits	Upkeep	Wetlands long-term
1. Light touch	Remove invasive plants, plant natives, add a viewing platform and signs	Low	Lowest	Easier	Low	Less likely
2. Engineered flow split	Build a structure to steer baseflow into the wetlands; directing high flow sediment down creek channel	Medium	High	Difficult	Forever	Only if maintained
3. Natural mosaic	Use grading equipment to place: earthen plugs, logs and new connections so the creek builds and renews wetlands itself	High	Moderate	Easier to moderate	Low	Yes, as they shift and renew

Agency advice: **“Restore for function, not form.”** They opposed a structural fix.

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THE PREFERRED APPROACH

A light touch now, then let the creek do the work

OPTION 1 · CARE FOR WHAT'S THERE

Healthier habitat and a place to see it

- Remove invasive plants
- Plant native streamside species
- Add a viewing platform and interpretive signs

OPTION 3 · WORK WITH THE CREEK

Wetlands that renew themselves

- Earthen "plugs" that slow water and form ponds
- Anchored logs that build natural variety
- More openings between creek and wetlands

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THE PATH FORWARD

No one can do this alone



Modified from Google Earth, Valley Water

City of San José

Owns the park; signs off on any work, including a viewing platform

Valley Water

Holds a maintenance easement; must agree to changes in the creek

CDFW and Regional Water Board

Issue permits; already support the light-touch approach

North Santa Clara RCD

Brings partners together and is well placed to pursue funding

The City and Valley Water haven't committed yet. The RCD's relationships keep that door open.

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WHAT HAPPENS NEXT

Next steps

1

Biological survey

Which plants and wildlife use the site today. How can the habitat be enhanced?

2

Select a preferred concept

Choose the concept to carry forward together with interested parties

3

Concept drawings

Early visuals to share with the public and funders

4

Partner buy-in

Agreement from the City of San José and Valley Water, who own and maintain the land

5

Design studies

Creek survey and flood modeling to make sure flood safety holds

WORTH CONSIDERING

Could the project be phased, starting with a viewing platform and interpretive signs? That step needs only the City's sign-off.

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WHERE THIS LEAVES US

A strong foundation, built by the RCD

A trusted record

20+ years of RCD observation and two years of solid data

Partners at the table

State agencies engaged from day one, with the RCD bringing everyone together

A clear path

Clear next steps that the City, Valley Water and funders can join

Thank you. Questions?

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