

Tilden Nature Area: Jewel Lake Study
Restoration and Public Access Feasibility for Wildcat Creek's Jewel Lake Reach

Project Briefing



AGENDA

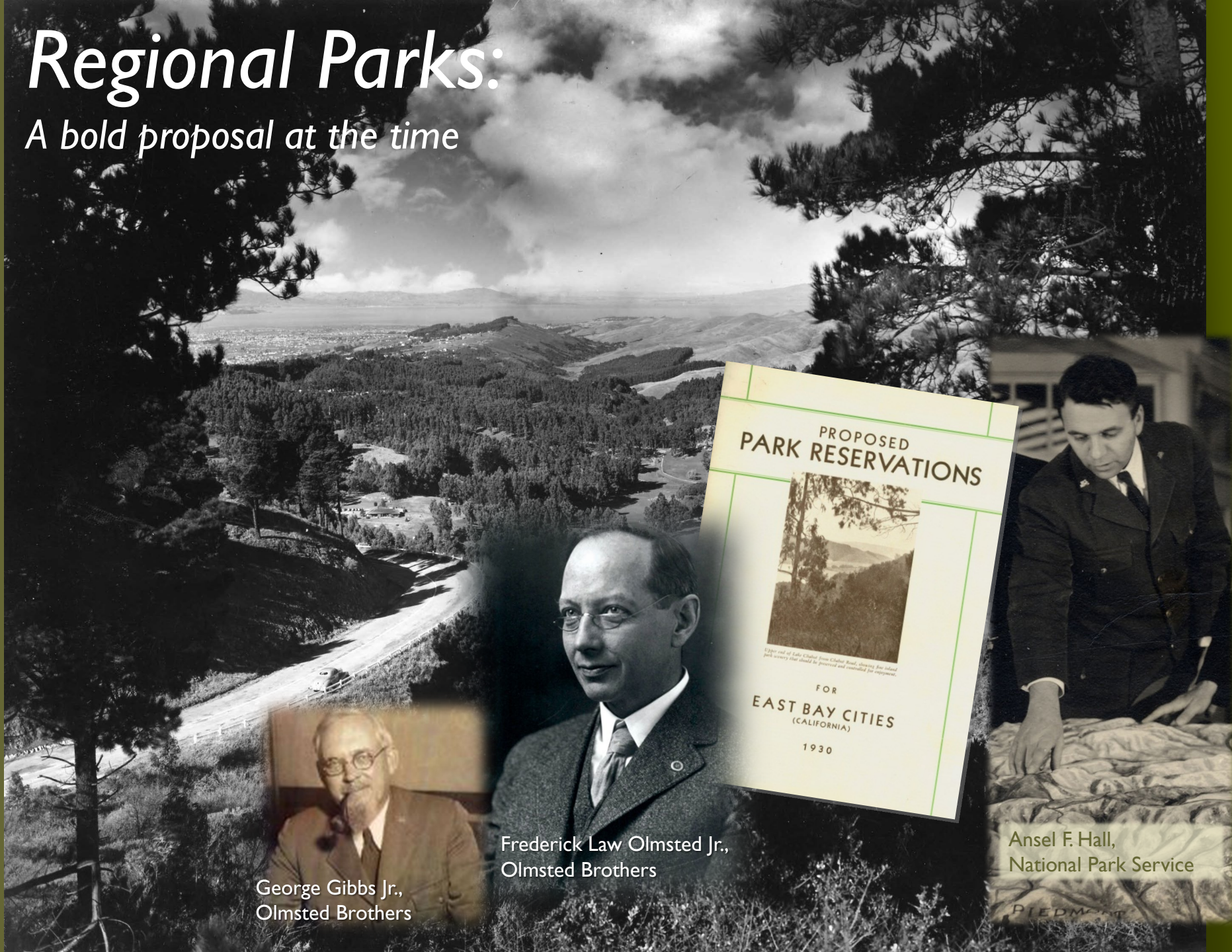
- Review Study Purpose & Timeline
- Review input from public outreach & previous Board Executive Committee Mtg
- Update on Project Analysis
- Next Steps
- Discussion





Regional Parks:

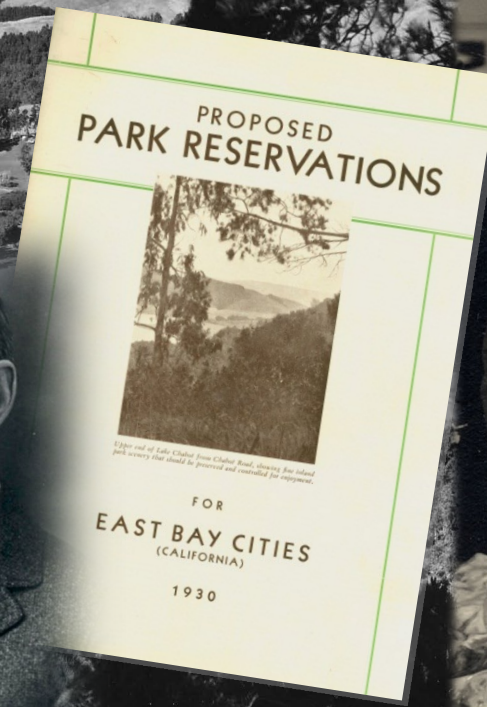
A bold proposal at the time



George Gibbs Jr.,
Olmsted Brothers



Frederick Law Olmsted Jr.,
Olmsted Brothers



Ansel F. Hall,
National Park Service

FEASIBILITY STUDY PURPOSE

ENHANCE NATURAL PROCESSES & HABITAT

- Enhance Native Species Habitat
- **Provide Fish/Salmonid Passage**
- **Prevent Sediment Accumulation**

MAINTAIN PUBLIC DESTINATION

- Maintain Level of Public Access
- Maintain / Provide a “Destination”
- Maintain Lake as Open Water

STUDY TIMELINE

Fall 2020/
Summer
2021

Feasibility Analysis

- Inventory & Analysis, Conditions Assessment
- Staff to Staff Agency Stakeholder Outreach

Summer/
Fall 2021

Concept Evaluation

- Staff to Staff Agency Stakeholder Outreach
- Board Executive Committee Review
- Public Workshop #1

Fall/Winter
2021, 22

Study Findings

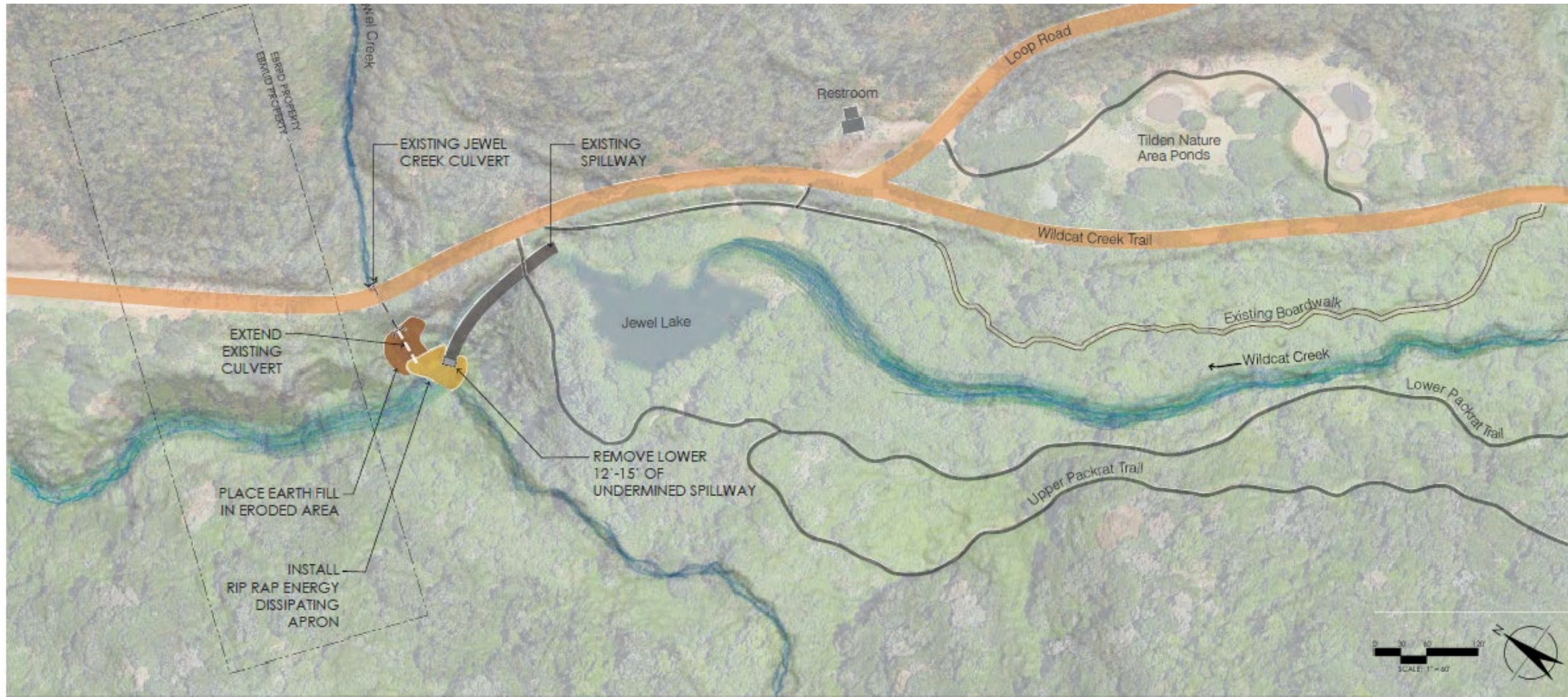
- Agency Stakeholder Outreach (RWQCB, Tribes)
- **Board Exec Recommendation (Concepts 3, 4) → Workshop #2**

Spring/Summer
2022

Board Consideration

- Board Exec Recommendation (Preferred Concept) → Workshop #3
- Board Review and Consideration
- Proceed with developing Preferred Concept

CONCEPT 1 – LAKE TRANSITIONS TO MEADOW



\$1.3 - \$2.0

| | |
|-------|-------|
| \$0.8 | \$1.2 |
| \$0.3 | \$0.5 |

**Concept 1
Lake to Meadow**

LEGEND

Total Cost

Maintenance & Monitoring
Cost (50-yr Timeframe)

Construction & Administration
Cost

Design & Permitting Cost

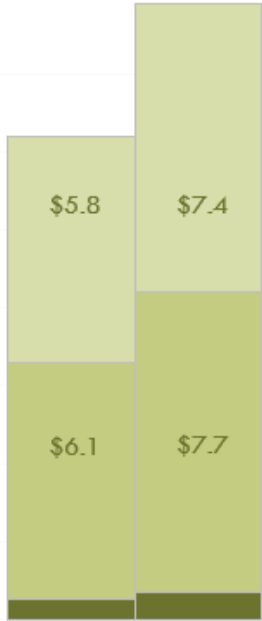
Emphasizes nature’s ability to reclaim human-made infrastructure.

Investment reflects the need to maintain the spillway’s safety.

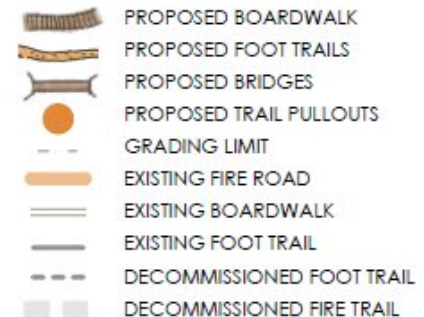
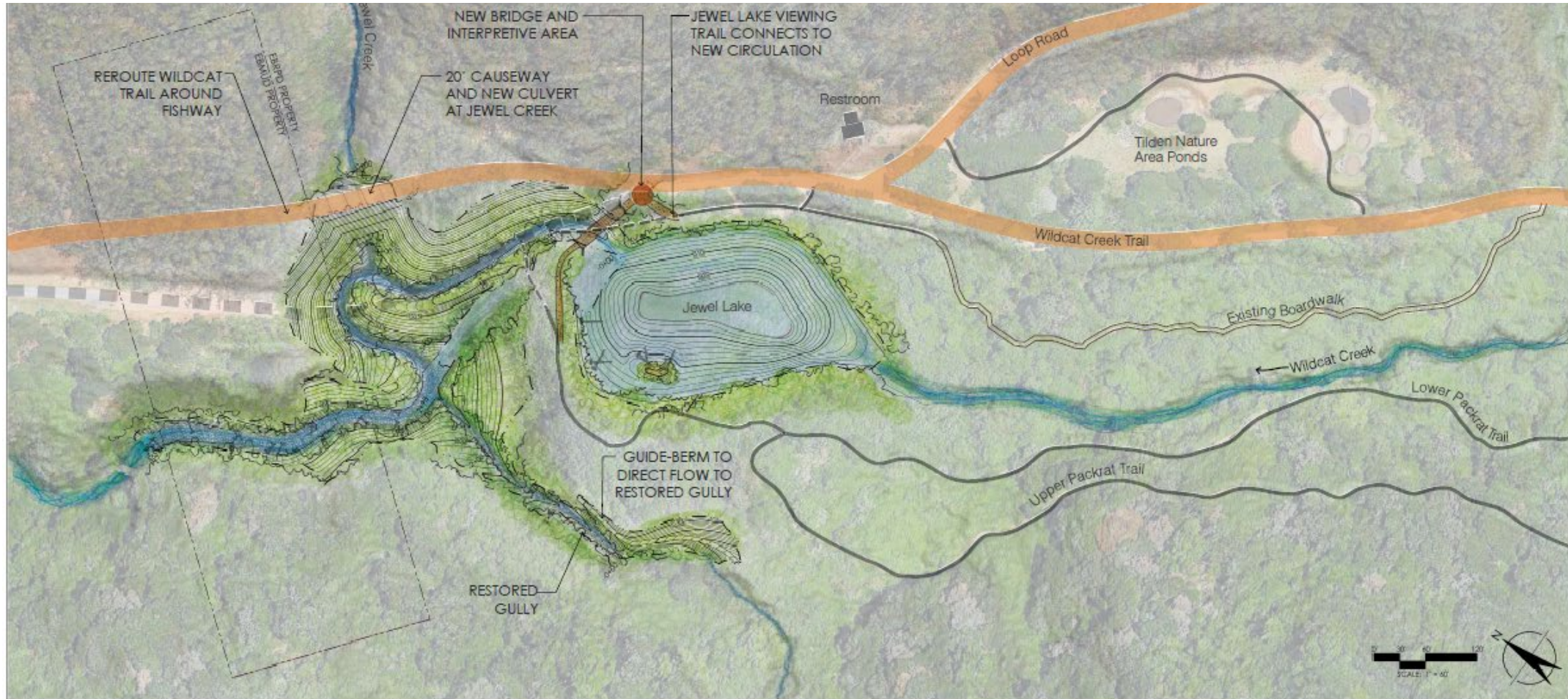
- EXISTING FIRE ROAD
- EXISTING BOARDWALK
- EXISTING FOOT TRAIL

CONCEPT 2 – MAINTAIN LAKE + FISHWAY

\$12.4 - \$15.8



**Concept 2
Lake + Fishway**



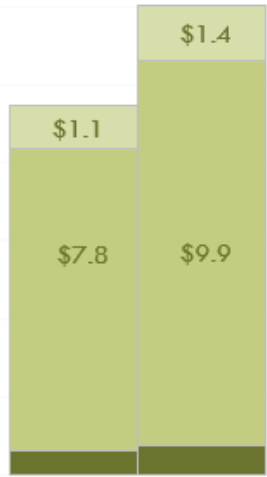
Emphasizes preserving the existing user experience and aesthetics of the lake.

Invested in constructing a fishway and periodic dredging reflects a modest effort to improve fish habitat.

| LEGEND | |
|---|-------|
| Total Cost | |
| Maintenance & Monitoring Cost (50-yr Timeframe) | \$5.8 |
| Construction & Administration Cost | \$7.4 |
| Design & Permitting Cost | \$6.1 |

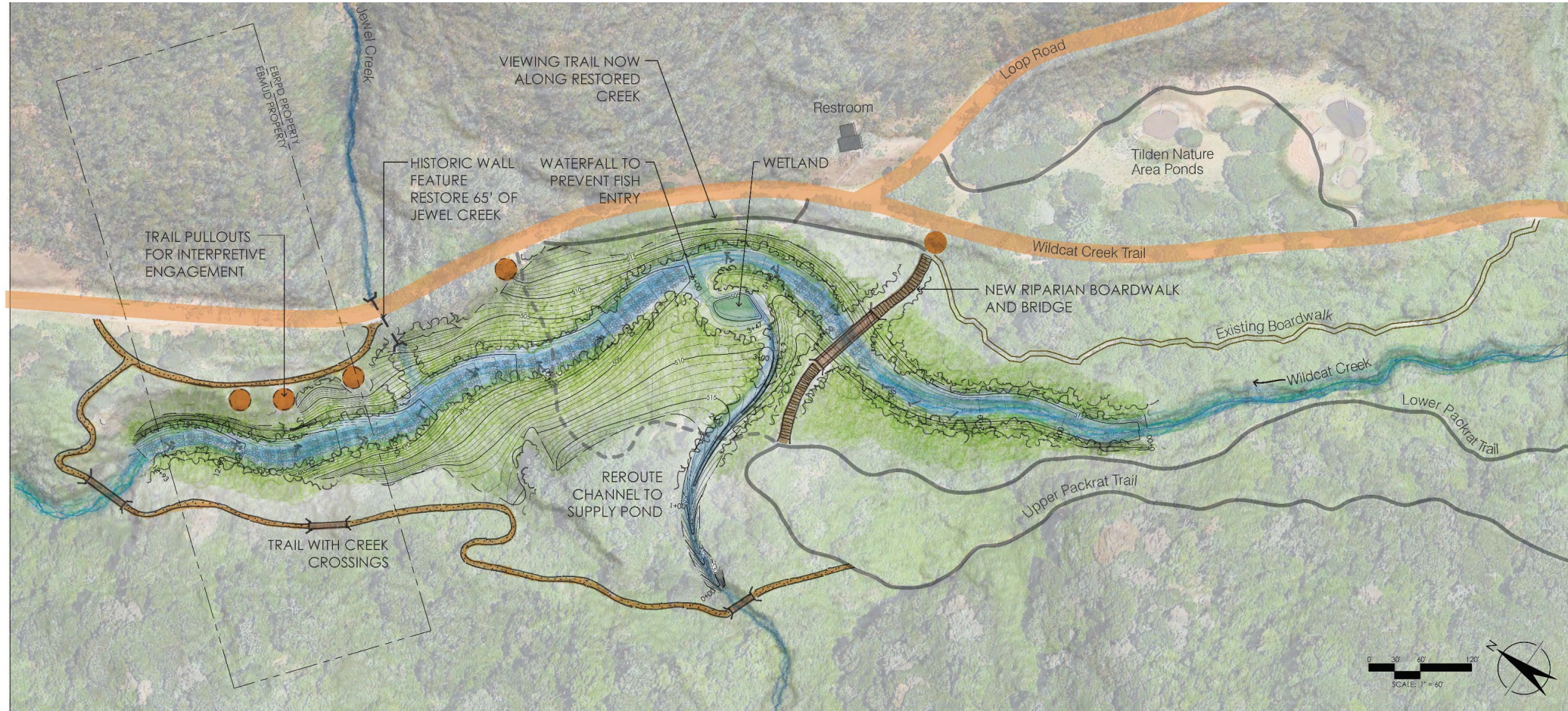
CONCEPT 3 – RESTORE WILDCAT CREEK

\$9.5 - \$12.0



Concept 3
Restore Wildcat Creek

| LEGEND |
|---|
| Total Cost |
| Maintenance & Monitoring Cost (50-yr Timeframe) |
| Construction & Administration Cost |
| Design & Permitting Cost |



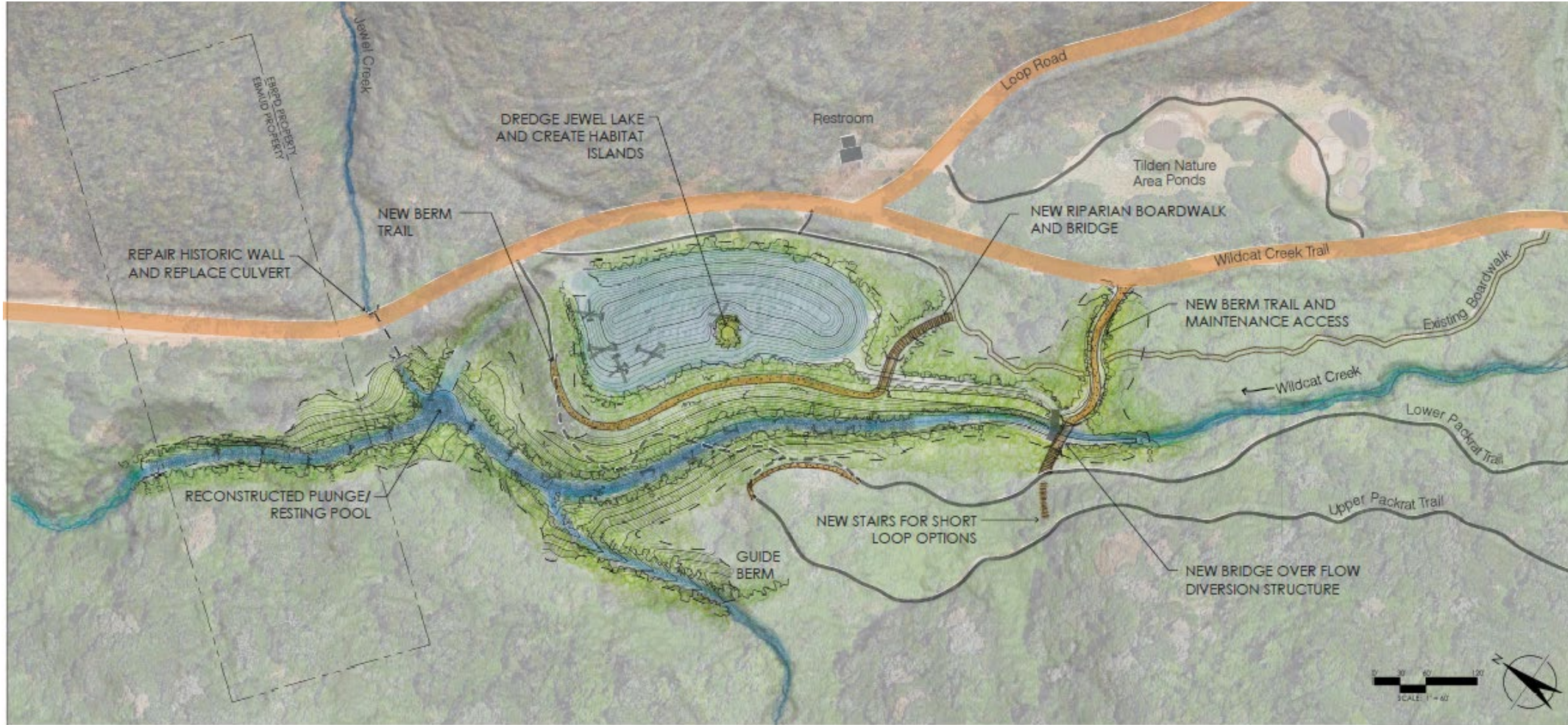
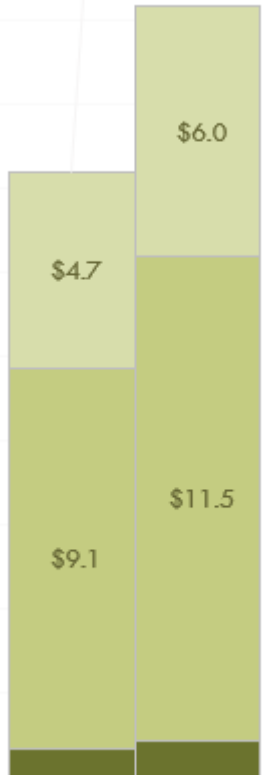
Emphasizes restoring natural habitats for critical species recovery and removing dams that do not support essential societal needs.

Investment reflects an interest to minimize long-term maintenance liabilities.



CONCEPT 4 – LAKE + BYPASS CHANNEL

\$14.4 - \$18.3



Concept 4
Lake + Bypass Channel

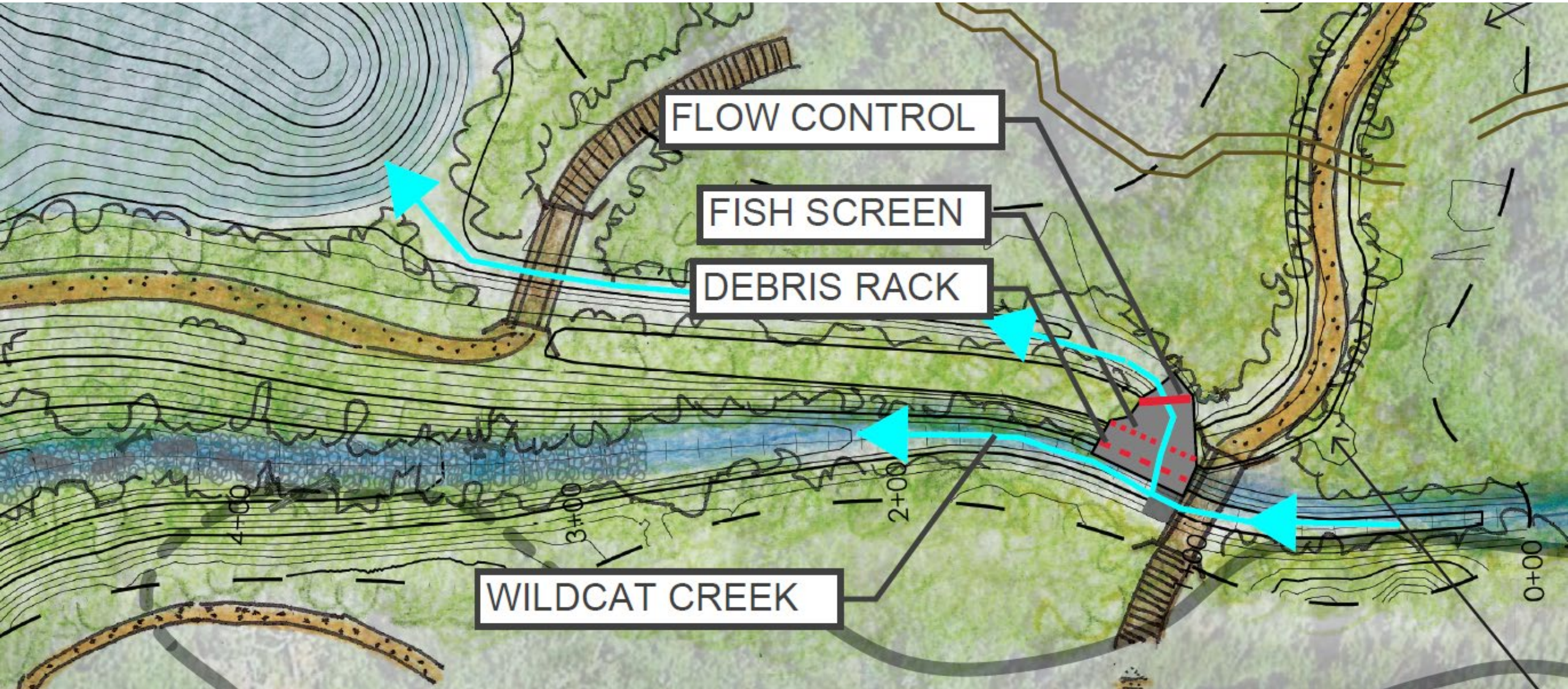
| LEGEND |
|---|
| Total Cost |
| Maintenance & Monitoring Cost (50-yr Timeframe) |
| Construction & Administration Cost |
| Design & Permitting Cost |

Emphasizes both native fish passage requirements and the recreational and aesthetic value of the lake.

Investing in perpetual flow-split operations and maintenance indicates our commitment to an open water visitor experience.

- PROPOSED BOARDWALK
- PROPOSED FOOT TRAILS
- PROPOSED BRIDGES
- GRADING LIMIT
- EXISTING FIRE ROAD
- EXISTING BOARDWALK
- EXISTING FOOT TRAIL
- DECOMMISSIONED FOOT TRAIL

CONCEPT 4 – LAKE + BYPASS CHANNEL



DIVERSION STRUCTURE



DEBRIS RACK
(clearing sediment)



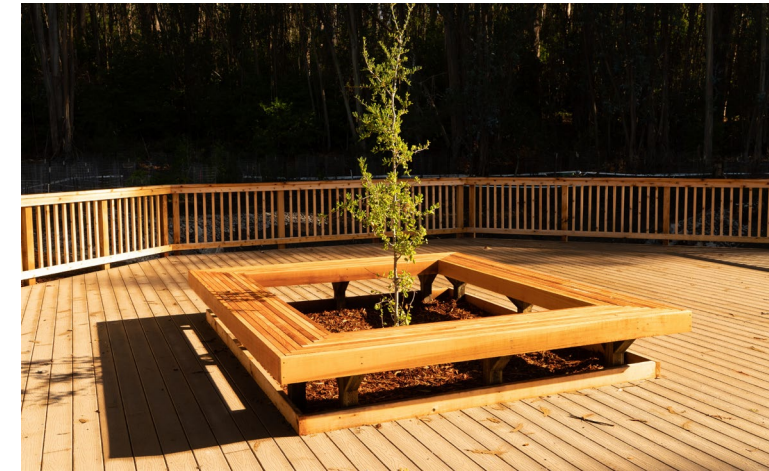
FISH SCREEN
(screen fouling)



FLOW CONTROL
(water level monitoring)

POTENTIAL DESTINATIONS FOR WALKS

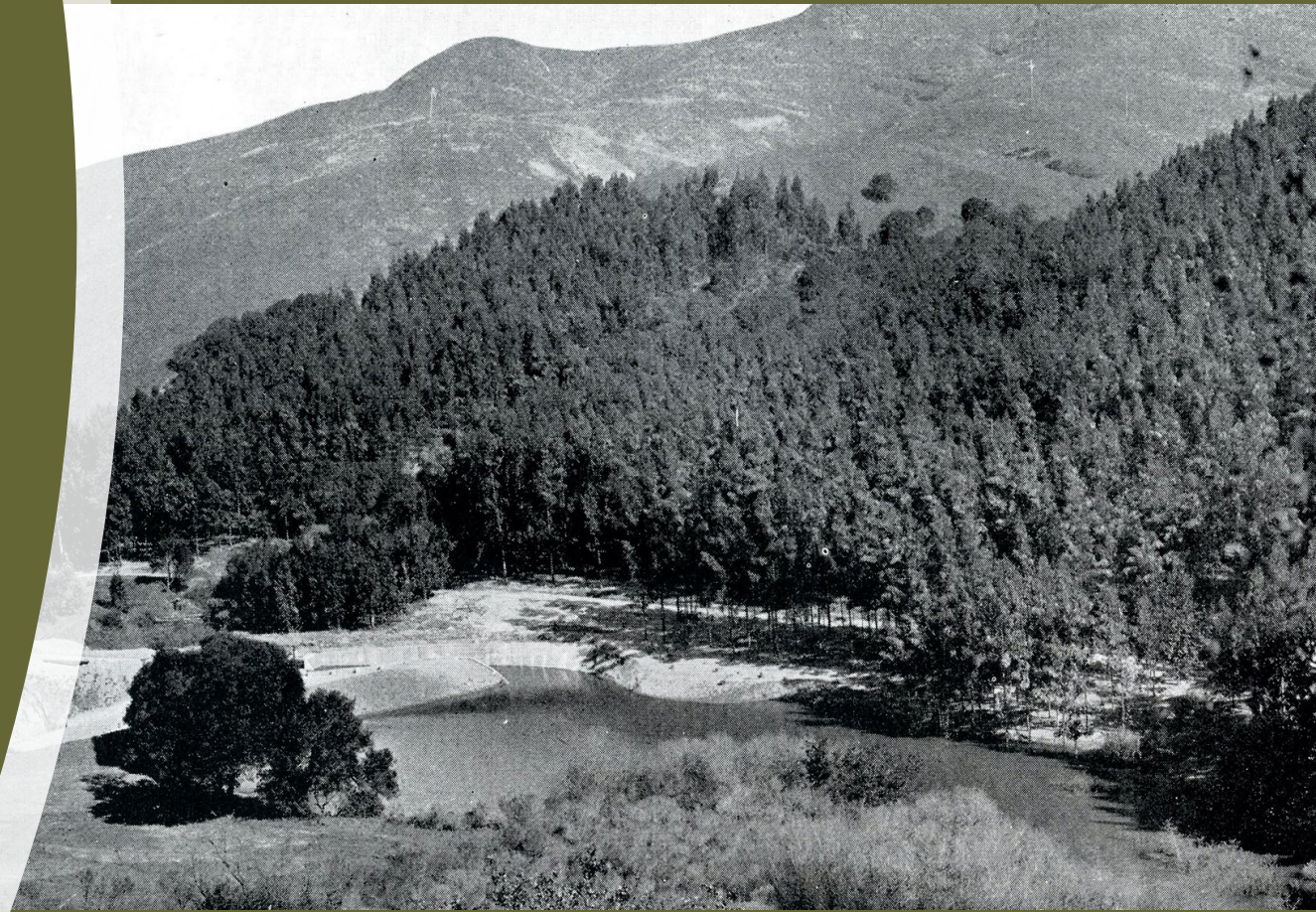
Project team to work with Tilden Nature Area staff for place-making



REVIEW BOARD EXEC MTG #1

September 14, 2021

- Support for both Restoring Wildcat Creek (Concept 3) and Lake + Bypass Channel (Concept 4)
- Recreational/Aesthetic Value of Lake
- Recognize Opportunities to Improve Wildlife Habitat
- Role of Dams in West and Trend to Naturalize Watersheds



REVIEW PUBLIC MEETING

October 14, 2021

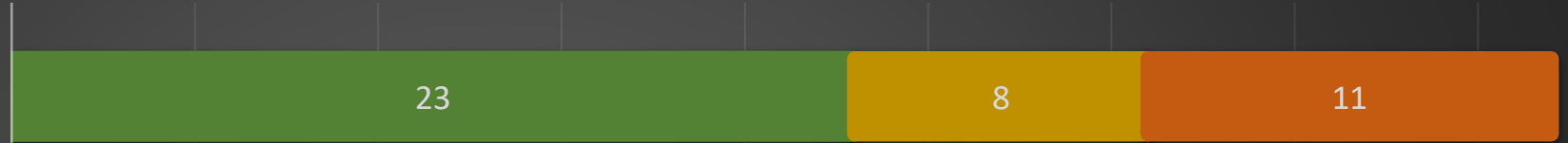
- Support for Concepts 3 and 4
- Sense of urgency for action
- 42 respondents to survey



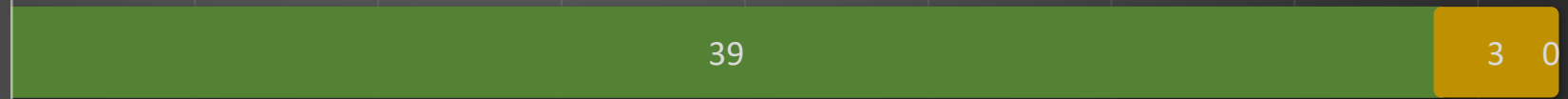
Public Survey Highlights

It is important that the project:

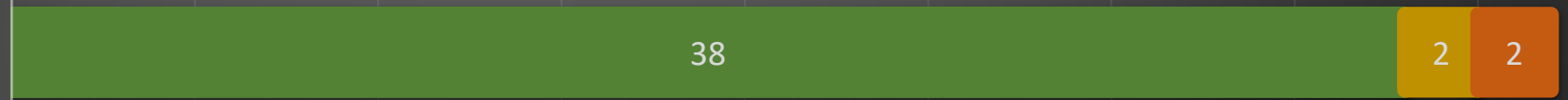
Maintains or provides a "Destination" for walks



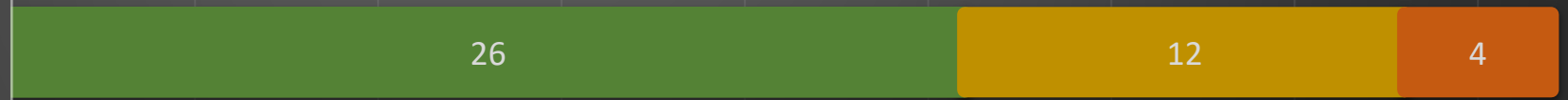
Enhances habitat for native species



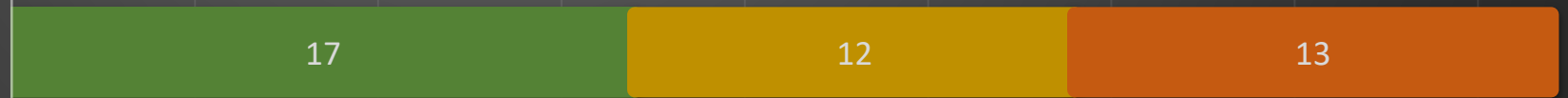
Prioritizes Fish/Salmonid Passage



Focuses on restoring the historic Wildcat Creek



Provides an open water lake area



NUMBER OF RESPONSES

Agree Undecided Disagree

REGIONAL WATER BOARD INPUT

February 3, 2022

Support Restore Wildcat Creek (Concept 3)

- Viewed as pure restoration, no mitigation expected

Could accept Lake + Bypass Channel (Concept 4)

Anticipated permit requirements:

- Compensatory mitigation
- Daily and Perpetual monitoring and maintenance of diversion for fish passage and annual reporting.



PROJECT BIOLOGISTS

- Rainbow trout are priority
- Lake is a net detriment for rainbow trout
- Fish screen required
- Similar wildlife habitat available nearby
- Birding along boardwalk is undisturbed



Concept 3: Restore Wildcat Creek

| | STRENGTHS | WEAKNESSES |
|-------------------------------------|---|---------------|
| RAINBOW TROUT HABITAT | Best option for trout habitat Fully Naturalized Channel | |
| OPEN WATER | Prevents predation of trout | No open water |
| POTENTIAL FOR SUCCESS | High – simpler project Numerous restoration examples | |
| OPERATIONS & MAINTENANCE | Self-Sustaining Natural Processes Restored Does not introduce complex additional infrastructure | |
| PERMITTING CONSIDERATIONS | Viewed as pure restoration No mitigation likely | |
| PUBLIC INPUT | Public support for creek restoration Trout Unlimited Regional Water Quality Control Board | |
| CLIMATE CHANGE RESILIENCY | High – matches natural habitat and increased baseflow | |

Concept 4: Lake + Bypass Channel

| | STRENGTHS | WEAKNESSES |
|-------------------------------------|------------------------------------|--|
| RAINBOW TROUT HABITAT | Good | Potential for fish stranding if not maintained properly |
| OPEN WATER | Yes Preserves aesthetic amenity | Needs perpetual management Provides habitat for invasives |
| POTENTIAL FOR SUCCESS | | Moderate Design & Maintenance is complex Water quality uncertainty |
| OPERATIONS & MAINTENANCE | | Managed System Daily Operations & Perpetual Maintenance Required |
| PERMITTING CONSIDERATIONS | | Mitigation will be required O&M Legally Binding and perpetual |
| PUBLIC INPUT | Moderate public support | |
| CLIMATE CHANGE RESILIENCY | | Less flow in channel |

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