Ad Hoc Adaptive Management Plan Committee

College Lake Integrated Resources Management Project

Meeting No. 1, April 29, 2021

Teleconference:
1-877-309-2073; 627-883-237#
https://www.gotomeet.me/PVWater/college-lake-project

Pajaro Valley Water Management Agency

Introductions

- Welcome
- Discuss Meeting Guidelines
- Roll Call
- Review Meeting Objectives

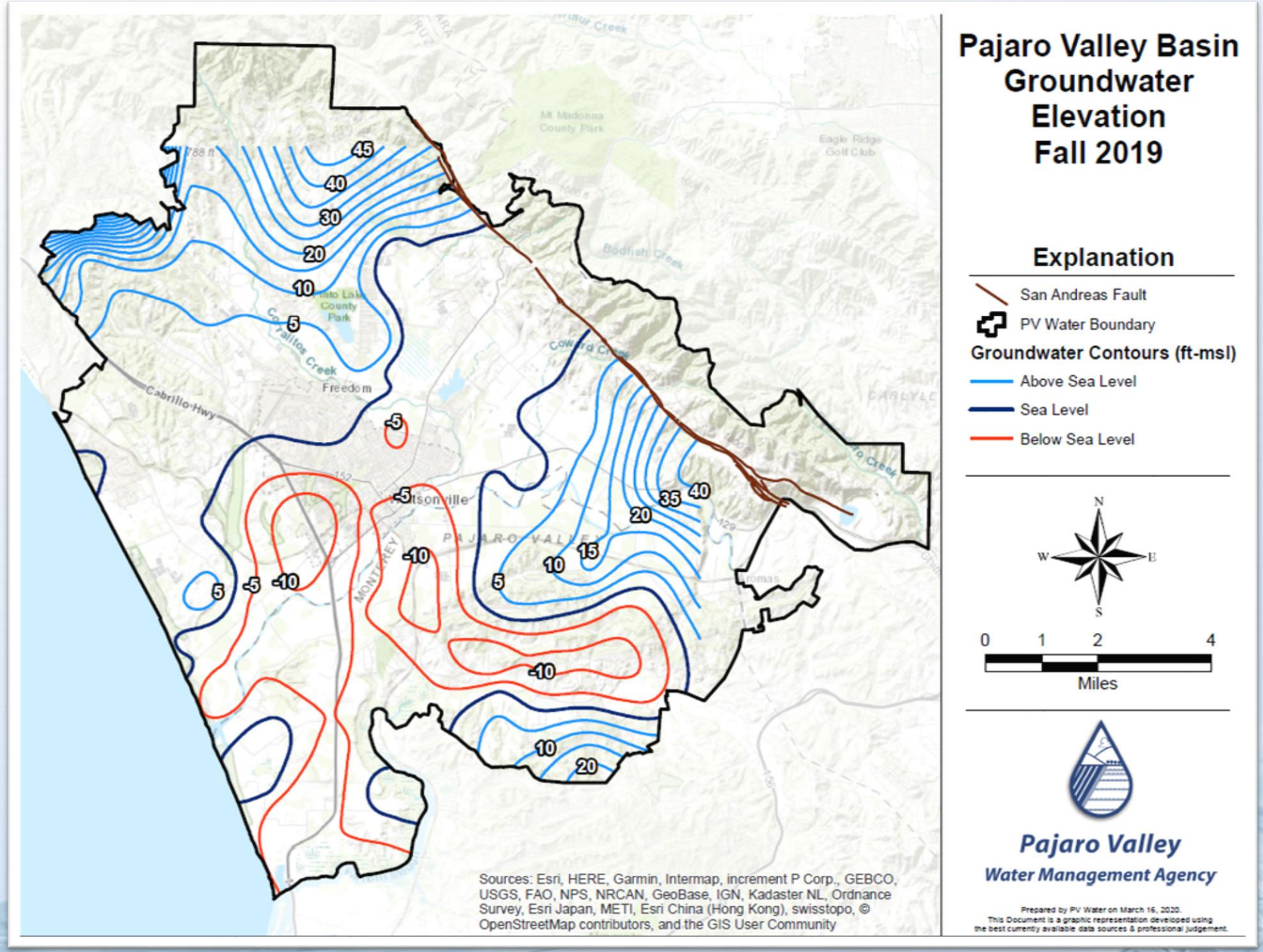
Introduction of the Project Team in Attendance Today

- PV Water
  - Brian Lockwood, General Manager
  - Casey Meusel, Associate Hydrologist
  - Marcus Mendiola, Water Conservation and Outreach Specialist
- Consultant Team
  - John Hunter, Ph.D., ESA
  - Alena Maudru, ESA
  - Chris Hammersmark, Ph.D., cbec eco-engineering
  - Gary Kittleson, Wildlife Biologist
  - Mike Podlech, Fisheries Biologist

Presentation Overview

- Introductions
- Overview of the College Lake Integrated Resources Management Project
- Overview of Adaptive Management and committee's Role in Development of the Adaptive Management Plan
- Break
- Consider approval of Committee Bylaws
- Election of Committee Officers: Chair & Vice
- Discussion of Draft Objectives
- Next Steps
- Adjourn at 4:30 pm

Overview of the College Lake Integrated Resources Management Project


Pajaro Valley Basin Groundwater Elevation Fall 2019
Explanation
San Andreas Fault
PV Water Boundary
Groundwater Contours (ft-msl)
Above Sea Level
Sea Level
Below Sea Level
N
W
E
S
0 1 2 4
Miles
Pajaro Valley
Water Management Agency
Prepared by PV Water on March 16, 2020.
This Document is a graphic representation developed using the best currently available data sources & professional judgement.
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community
45
40
30
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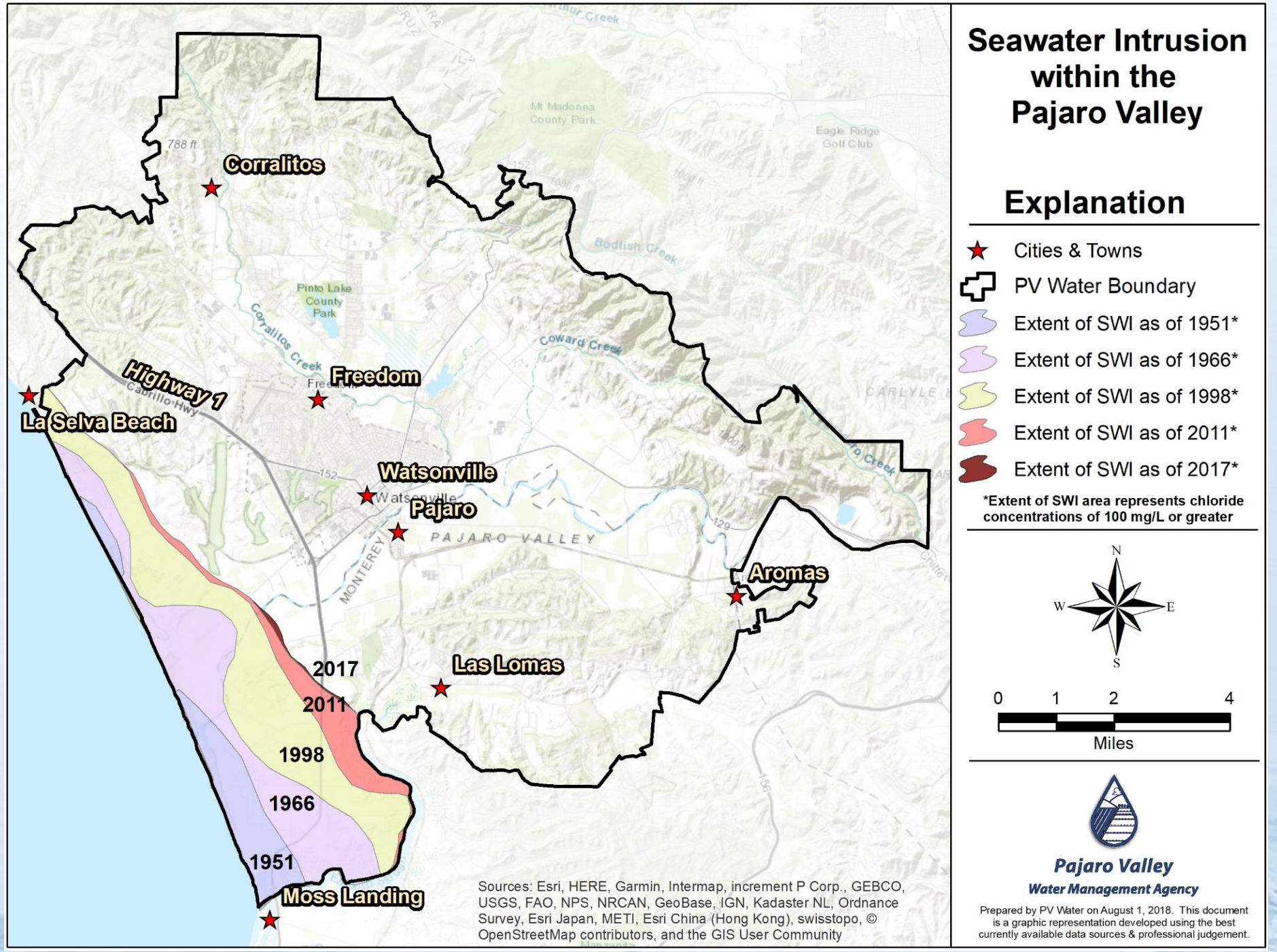
-5
-10
35
15
Freedom
Watsonville
Cabrillo Hwy
Coward Creek
Bodfish Creek
Mt Madonna County Park
Eagle Ridge Golf Club
Monterey
PAJARO VALLEY



Seawater Intrusion within the Pajaro Valley

Explanation

- Cities & Towns
- PV Water Boundary
- Extent of SWI as of 1951*
- Extent of SWI as of 1966*
- Extent of SWI as of 1998*
- Extent of SWI as of 2011*
- Extent of SWI as of 2017*

*Extent of SWI area represents chloride concentrations of 100 mg/L or greater

N
W E
S

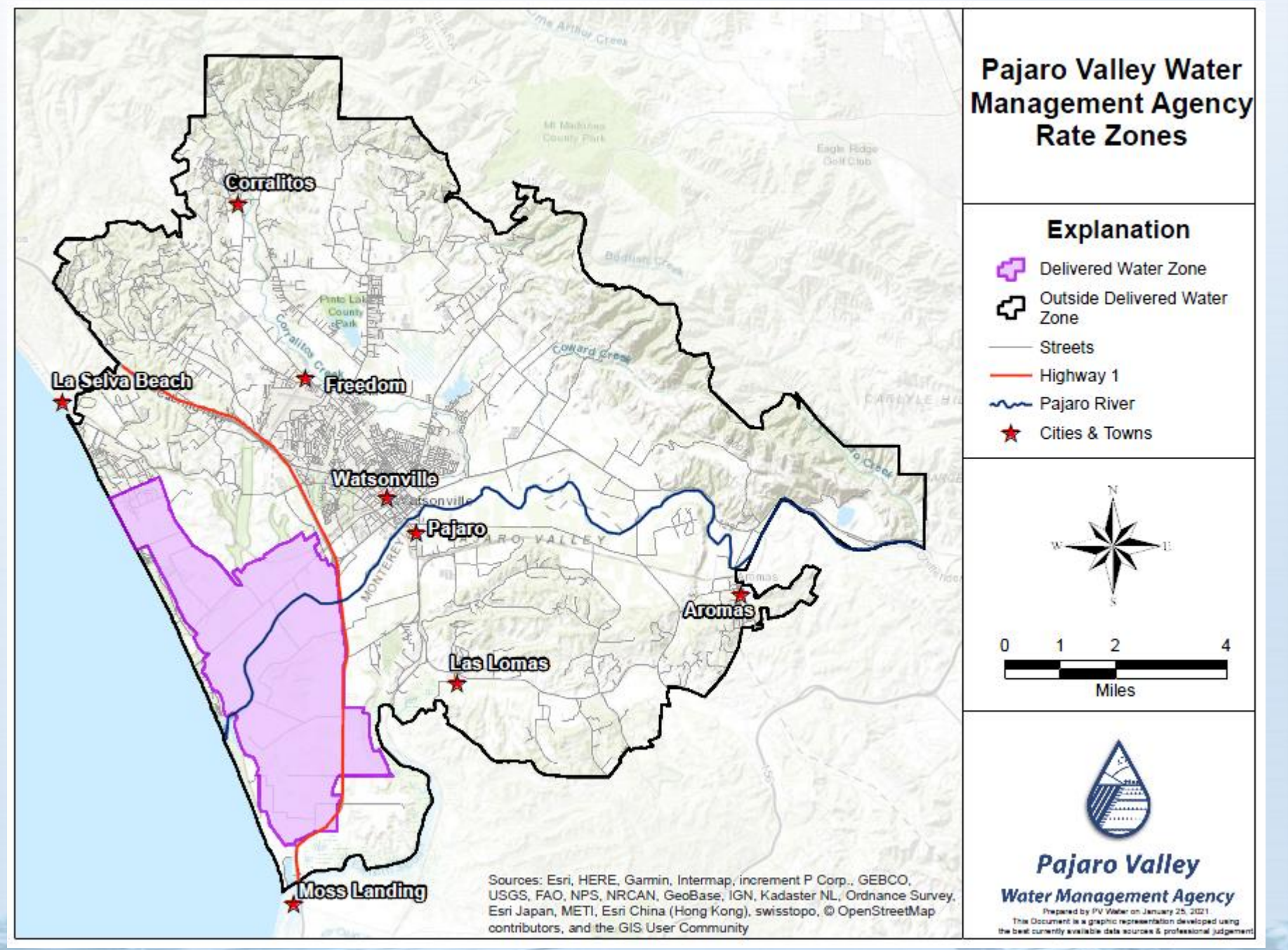
0 1 2 4
Miles

Pajaro Valley
Water Management Agency

Prepared by PV Water on August 1, 2018. This document is a graphic representation developed using the best currently available data sources & professional judgement.

PVWMA0119i1-10591A.00.pptx/7

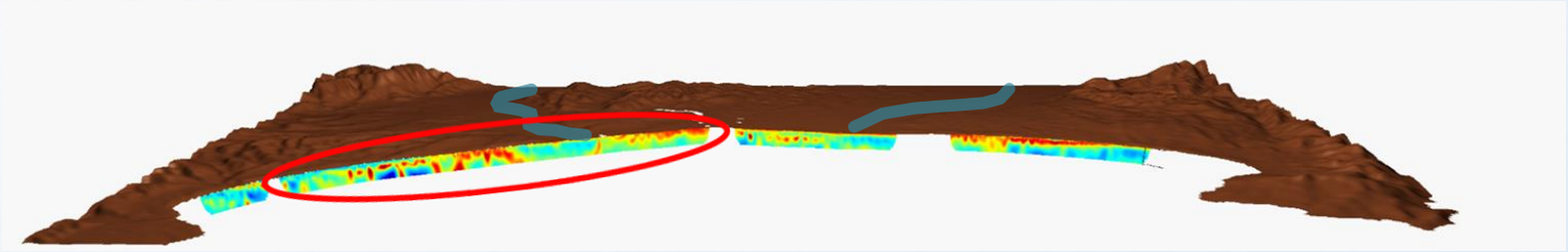
Delivered Water Zone, with F-Pipeline Service Area

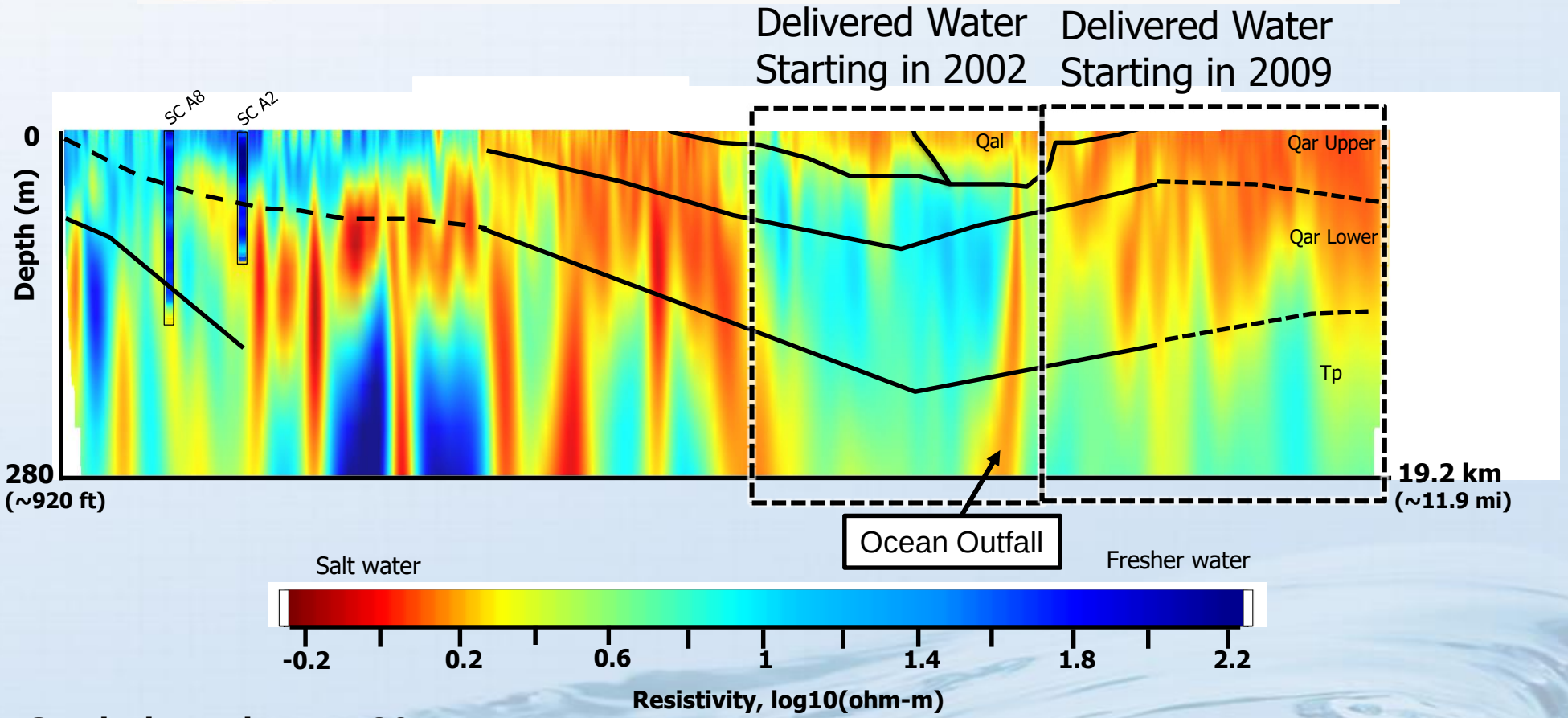


Existing Water Supply Facilities to Reduce Overdraft & Seawater Intrusion

- **Harkins Slough Facility**
  - Managed Aquifer Recharge & Recovery
  - Stream flow diversion
  - 10,000 AF recharged since 2002
- **Recycled Water Facility**
  - 4,000 AFY irrigation season capacity since 2009
  - Drought tolerant supply
  - Reduces discharge of secondary effluent to marine sanctuary
- **Coastal Distribution System**
  - Over 21 miles of water conveyance pipeline
- **Blend Supplies**

Geophysical Survey Shows Improvements

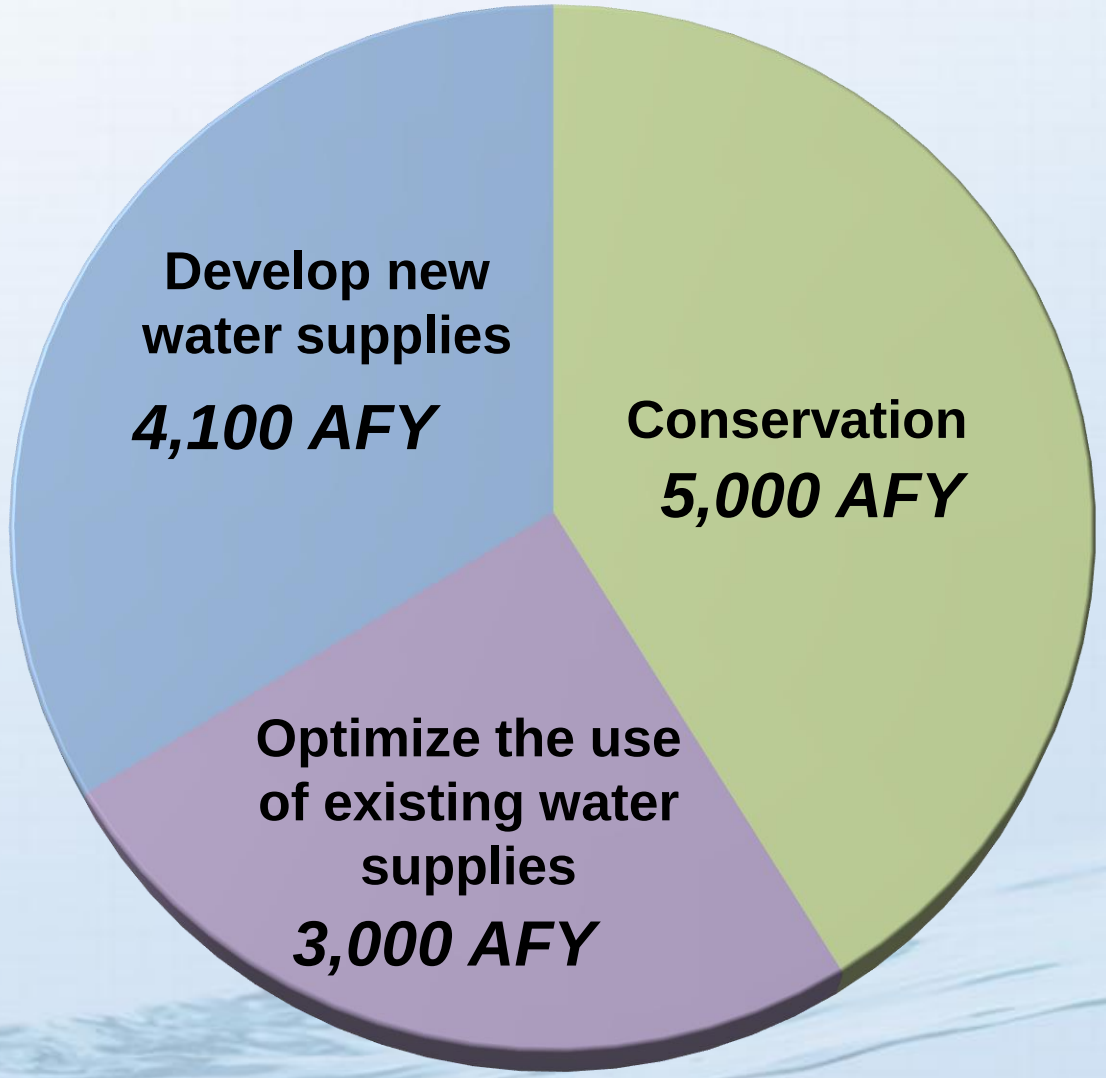




Goebel, et al, JoH, 2017

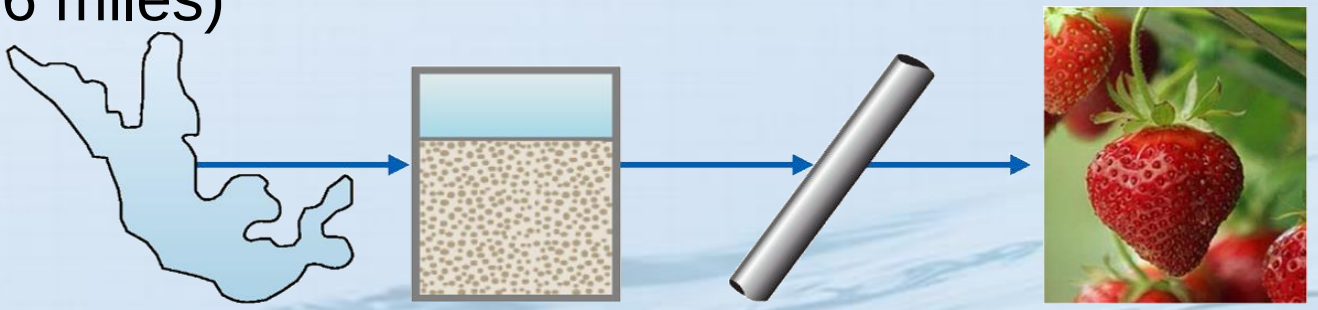
Geologic Cross Section: Hanson et al., 2002; Brabb et al., 1997

Basin Management Plan Update contains three primary components to achieve 12,100 ac-ft/yr



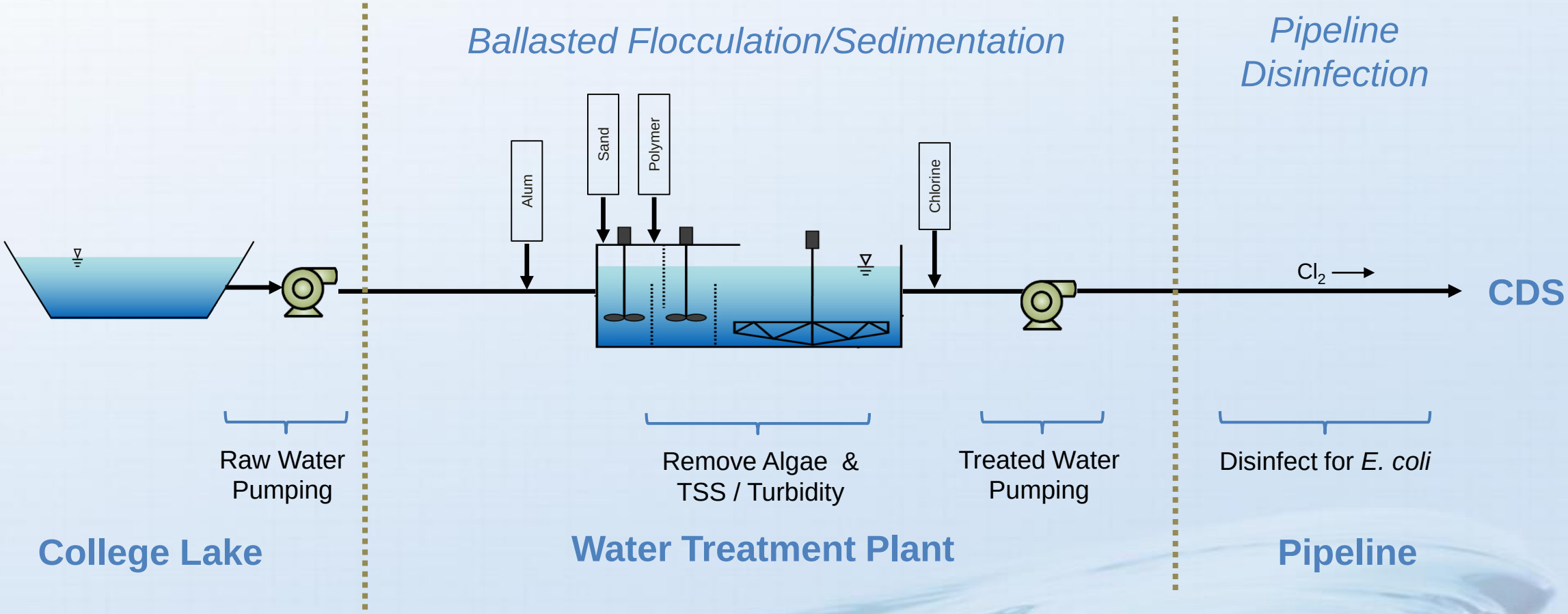
College Lake Integrated Resources Management Project

- Projected Yield: 1,800 to 2,300 AFY
- Water Storage Area (285 acres, 1764 AF)
- Weir Structure, Screened Intake, and Pump Station
- Water Treatment Plant (~5 acres)
- Pipeline (~6 miles)

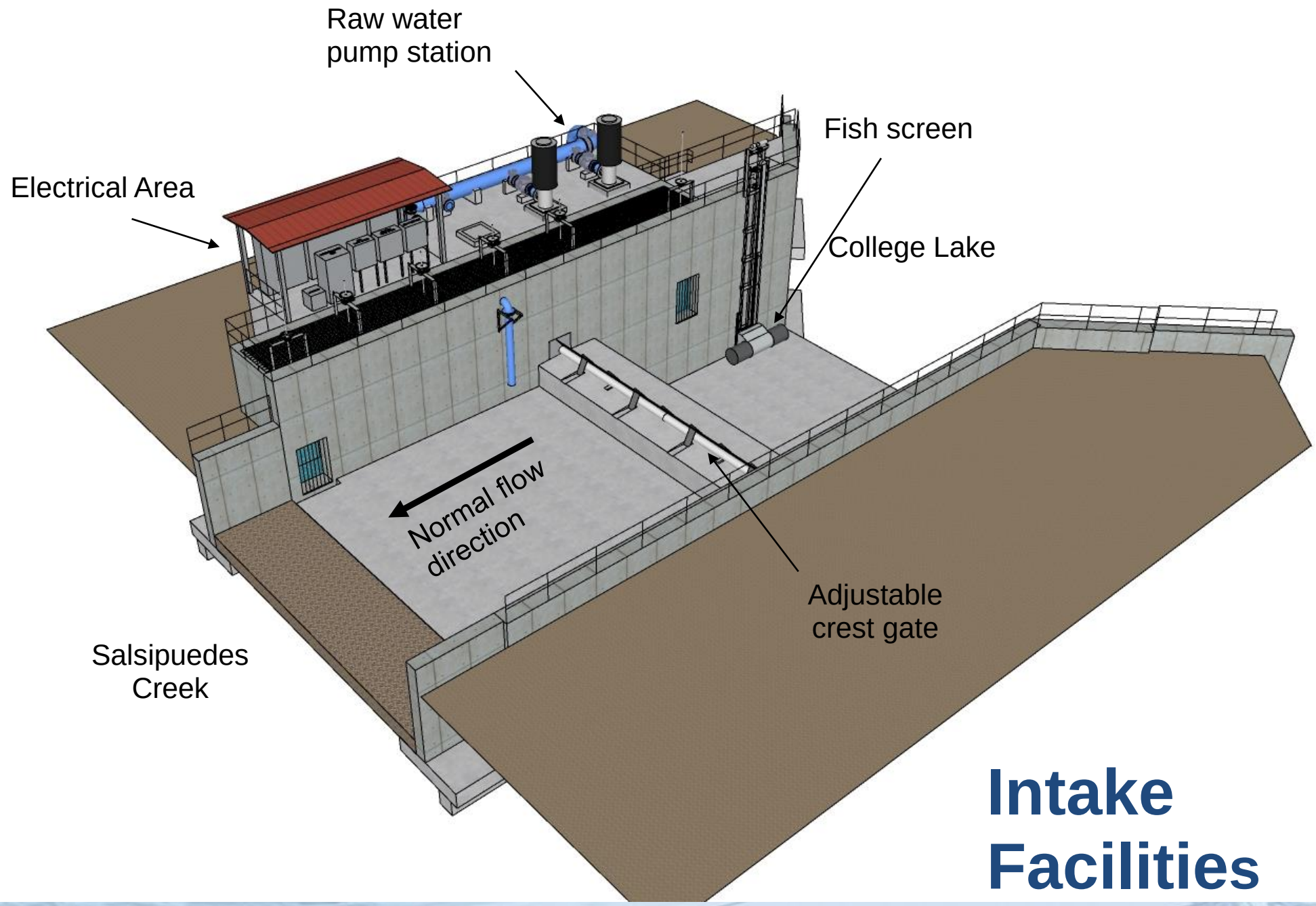


Source Treatment Conveyance End Users

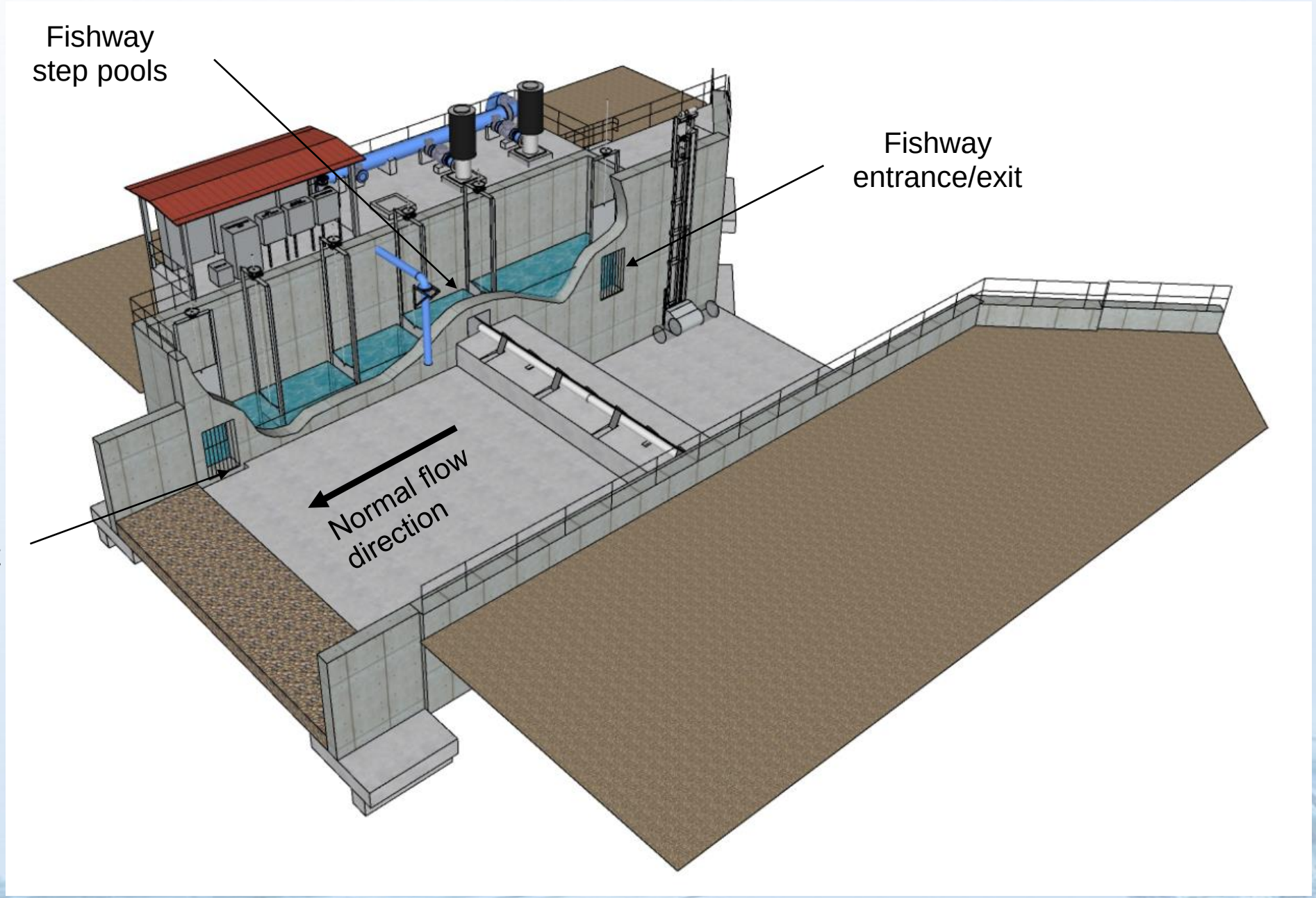
Project Overview



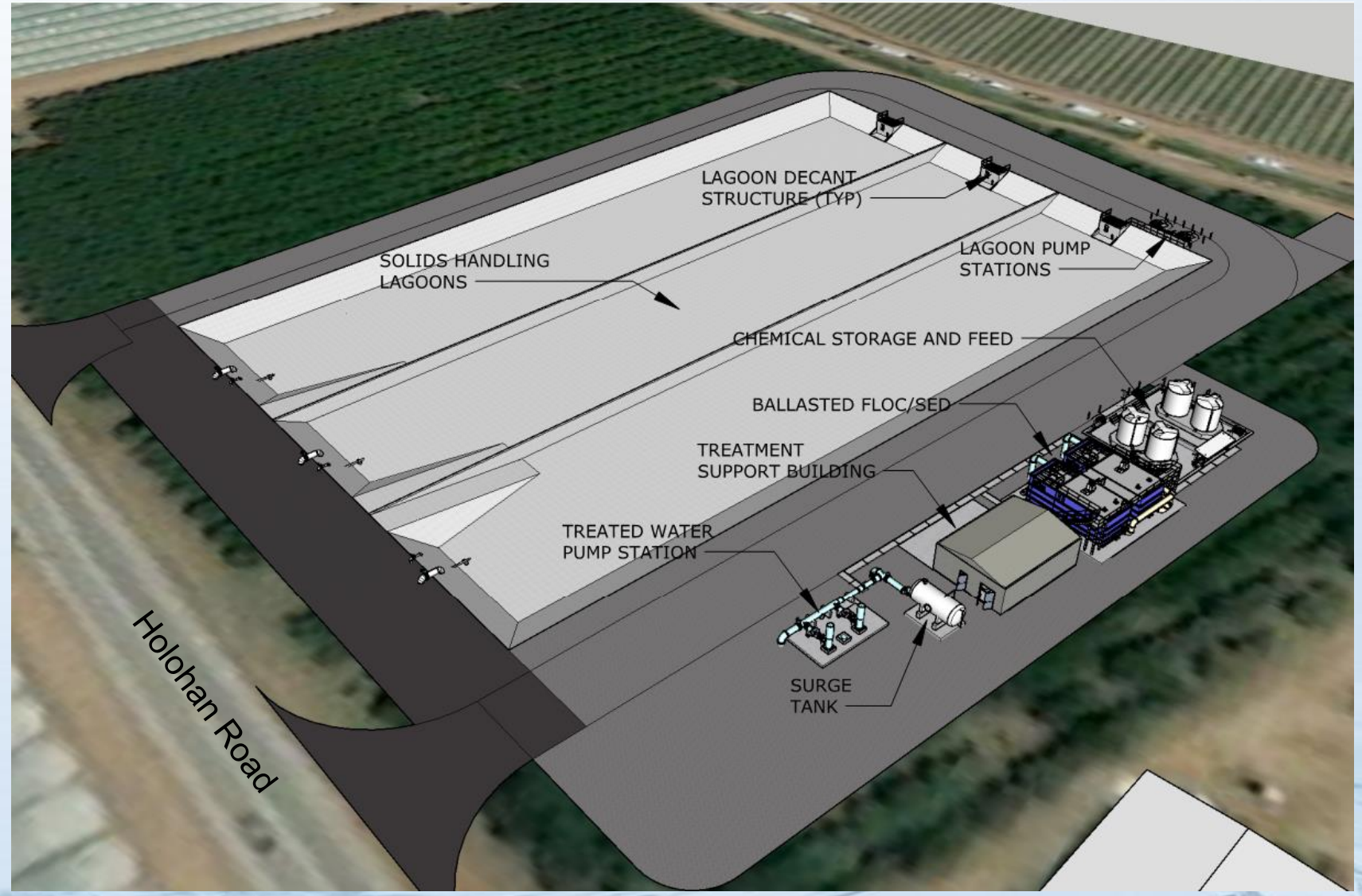
Location of Facilities



Intake Facilities

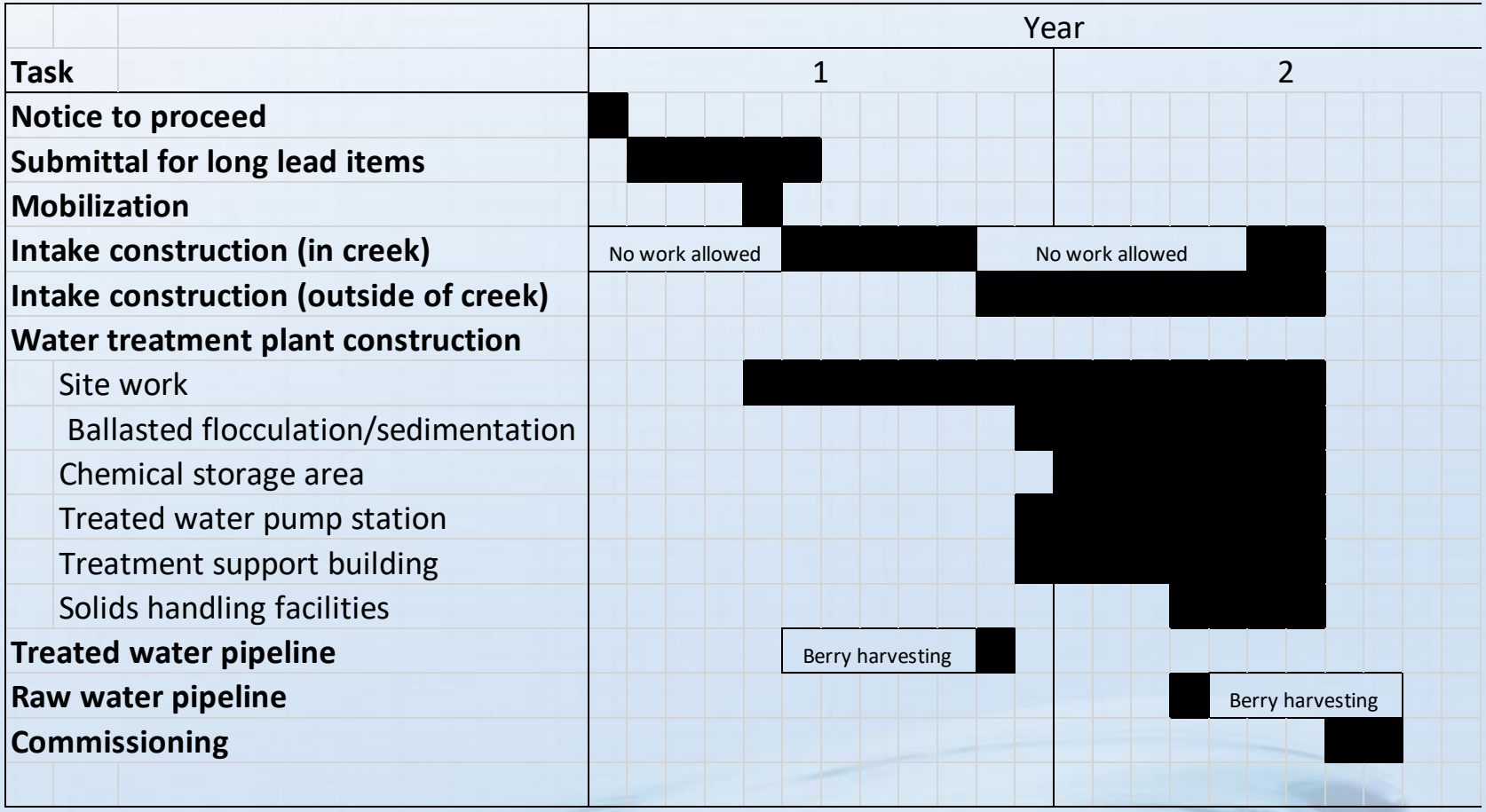

Fishway
step pools
Fishway
entrance/exit
Fishway
entrance/exit
Normal flow
direction

Water Treatment Plant



Preliminary Construction Schedule

- Intake construction is critical path
- Schedule risks
  - Property rights
  - Water right
  - Environmental permitting



Overview Adaptive Management & Committee's Role in Development of the AMP

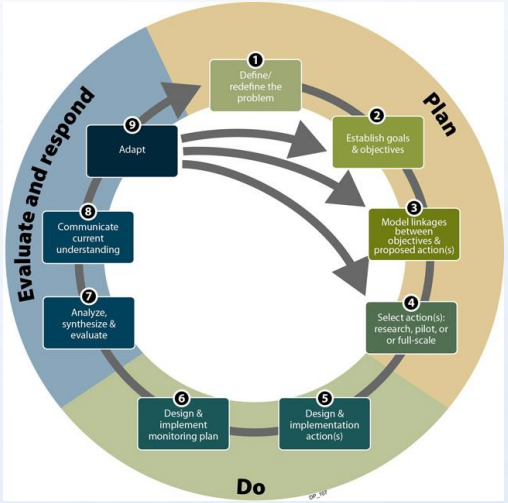
Outline

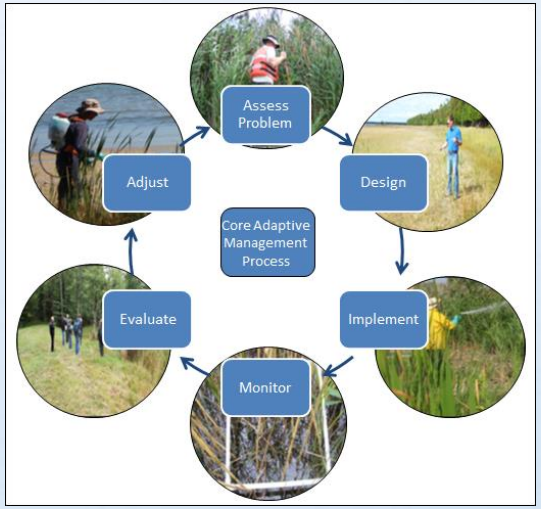
- Adaptive management defined, described, and applied
- College Lake Project AMP
  - Objectives
  - Metrics
  - Action triggers
  - Potential management actions
- Committee's role in developing the plan

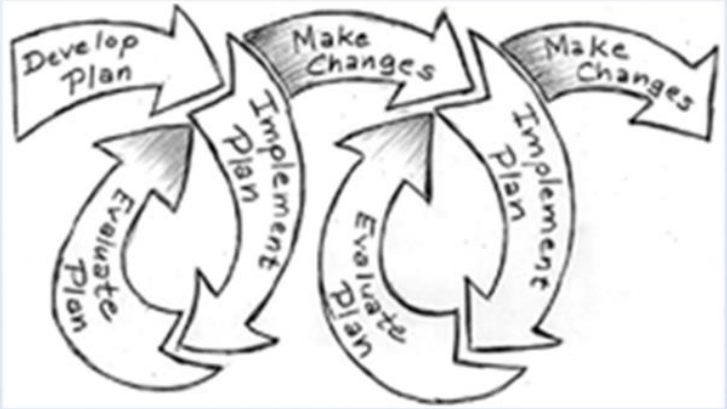
Adaptive Management Defined

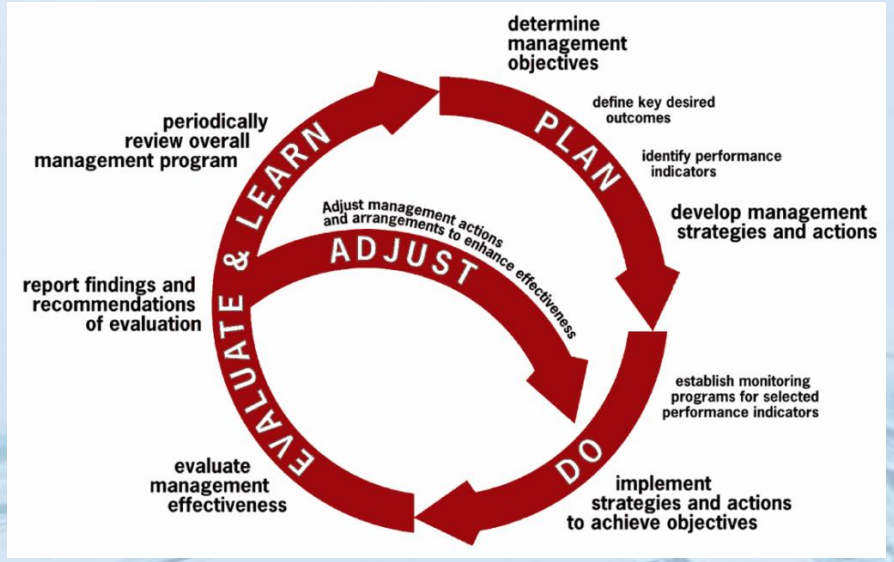
- Not just “learning by doing”
- Structured decision-making process informed by monitoring
- College Lake Project EIR cites Delta Reform Act definition:
  - “a framework and flexible decision-making process or ongoing knowledge acquisition, monitoring, and evaluation leading to continuous improvements in management planning and implementation of a project to achieve specified objectives.”

Adaptive Management Described: Do, Monitor, Evaluate, Adjust (Repeat)





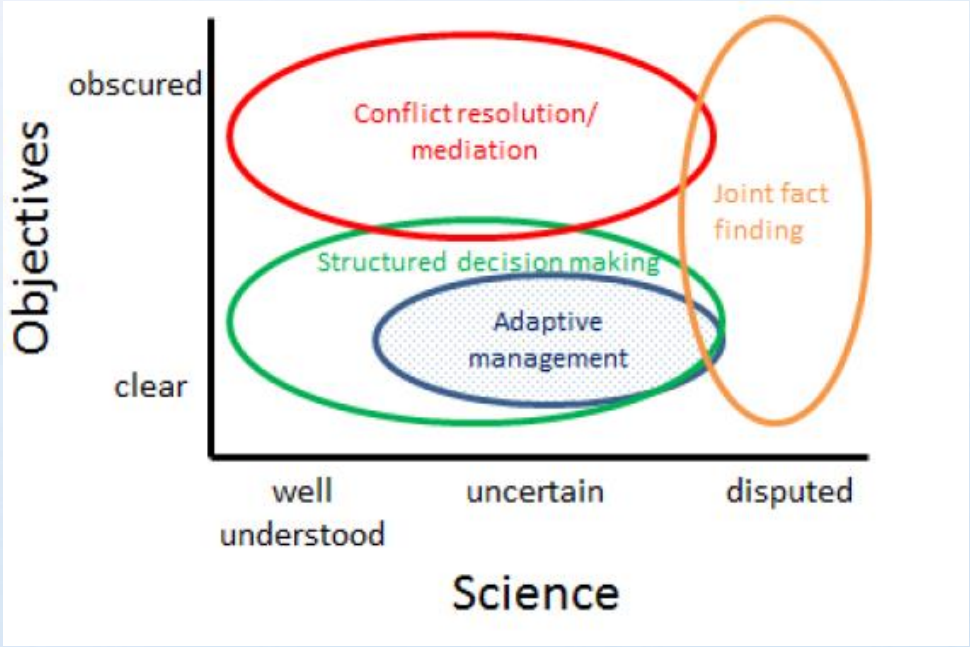




Sources from upper left: Delta Stewardship Council 2013, Conservation Measures Partnership 2007, Great Lakes Phragmites Collaborative 2017, Napa County Watershed Information & Conservation Council 2021, and TNC 2021

Adaptive Management Applied

- In situations with both:
  - Moderate uncertainty
  - Moderate control
- Not intended for revising project purpose or scope
- Now applied widely, including to:
  - Compensatory mitigation plans
  - Habitat Conservation Plans, Natural Community Conservation Plans
  - Major restoration projects/programs
- Complexity/scale varies, especially between program and project levels

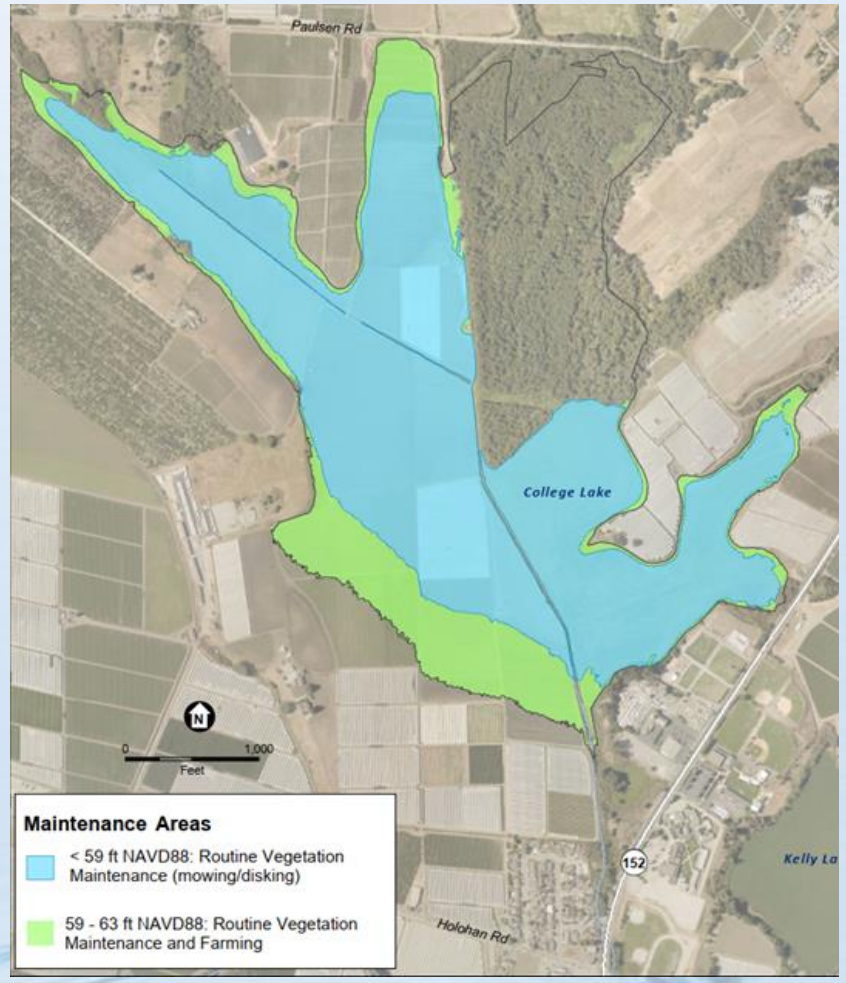


USFWS and NMFS 2016

College Lake Project
Adaptive Management Plan

- For multiple resources, maintain/attain status, and as needed adjust management.
- Core content that guides management[1]:
  - Objectives (desired outcomes)
  - Metrics (monitored variables)
  - Action triggers (thresholds, decision criteria)
  - Potential management actions
- Content needs to address monitoring, reporting, decision-making, and updating plan

1 – As described in Consolidated Final Environmental Impact Report for the College Lake Integrated Resources Project (PV Water 2019)



Objectives

- Desired outcomes or performance measures that serve to guide decision making and evaluation of success.
- Important attributes include:
  - **S**pecific
  - **M**easurable
  - **A**ttainable
  - **R**elevant
  - **T**ime-bound

Monitored Metrics

- Metrics are monitored variables used to evaluate project outcomes (e.g., progress towards a measurable objective, success)
- Important attributes include:
  - Relevance
  - Responsiveness
  - Cost-effectiveness
  - Reliability of interpretation
  - Transparency/ease of communication

Action Trigger

- Limiting value of a metric that triggers management actions (threshold, decision criteria)
- Key attribute is relationship to objective and potential management actions:
  - Indicates risk of undesirable outcome
  - Allows for actions to avoid or rectify undesirable outcome
- Natural variability complicates selection of action triggers.

Source: Art Projects for Kids 2021

Potential Management Actions

- Range, types of potential actions/adjustments identified
- Actions may include:
  - Evaluations
  - Coordination/consultations
  - Adjustments to operations, maintenance practices
  - Remedial actions
  - Collaboration on off-site actions (e.g., up or down stream of College Lake)

Source: Art Projects for Kids 2021

Committee's Role in AMP Development (Slide I of II)

- Review and provide recommendations on:
  - Objectives
  - Monitoring parameters
  - Monitoring-based thresholds that when crossed, trigger adaptive management actions
  - Management actions that could potentially be implemented when thresholds are crossed
  - Reporting and plan update procedures
- Also inform the development of the draft AMP overall

Committee's Role in AMP Development (Slide II of II)

- Four-meeting format with the following main topics:
  - Meeting 1
    - Solicit input on objectives
  - Meeting 2
    - Review draft objectives
    - Solicit input on metrics, action triggers
  - Meeting 3
    - Review draft metrics, action triggers
    - Solicit input on potential management actions
  - Meeting 4
    - Review draft potential management actions
    - Solicit input on draft AMP document

Discussion

Break

Consider Approval of Committee Bylaws

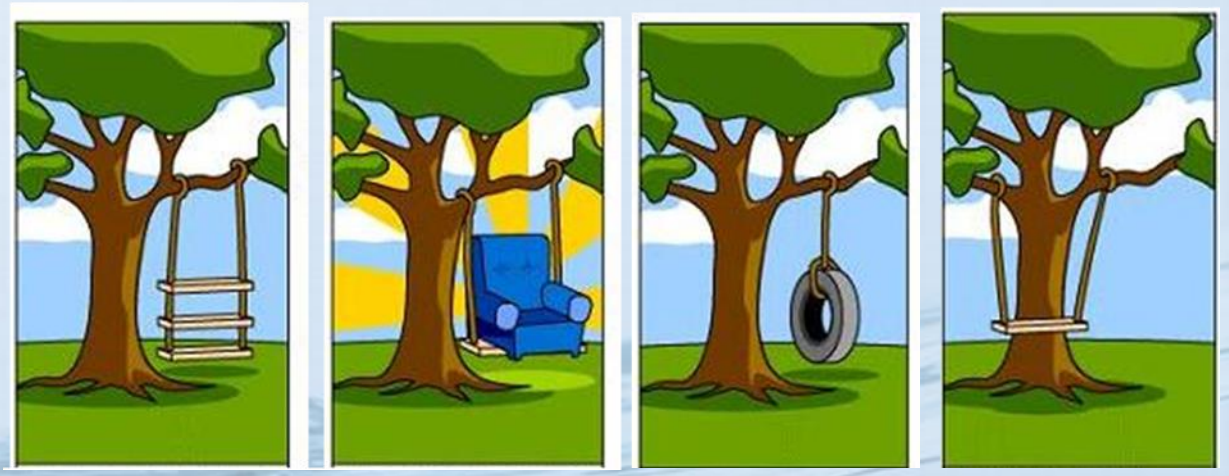
Election of Committee Officers: Chair & Vice Chair

Discussion of Draft Objectives

Discussion of College Lake Objectives

- Objectives to be discussed one at a time.
- Criteria to consider:
  - Consist with project's purpose, scope, other objectives
  - No conflicts with constraints (e.g., permits)
  - Related metrics cost-effective, reliably interpreted
  - **Not problematically ambiguous**

Note: metrics, triggers provide additional specificity.



Fish Passage Preliminary Objective

- Facilitate fish passage between Salsipuedes Creek and College Lake between December 15th and May 31st.
  - Changes to preliminary objective in Final EIR:
    - Added the seasonal period when operations would be managed for fish passage

Credit: John McMillian/Trout Unlimited

Water Supply and Storage Preliminary Objective

- Substantially contribute to the Pajaro Valley's water supply needs in a timely manner consistent with the BMP Update goals.
  - Changes to preliminary objective in Final EIR:
    - Replaced "Preserve water storage capacity at College Lake" with related project-specific objective adopted by the PV Water Board of Directors.

Credit: cbec eco-engineering

Flooding Preliminary Objective

- Avoid exacerbating existing flood hazards outside the proposed water storage area.
  - Changes to preliminary objective in Final EIR:
    - None

Credit: cbec eco-engineering

Farming Preliminary Objective

- Promote farming within the College Lake basin between 59 feet and 63 feet elevation NAVD88.
  - Changes to preliminary objective in Final EIR:
    - None

Credit: cbec eco-engineering

Waterfowl Habitat Preliminary Objective

- Preserve waterfowl habitat quality of College Lake.
  - Changes to preliminary objective in Final EIR:
    - Replaced “Support continued waterfowl use …” with “Preserve waterfowl habitat quality…” for consistency with text of draft permit from SWRCB[1]

1 – State Water Resources Control Board, Division of Water Rights. 2021. Draft Permit. Revised March 19. Application A032881.

Credit: Pierre Martin (eBird S57765139)

Water Quality Preliminary Objective

- Minimize conditions that can contribute to algal blooms, including cyanobacteria blooms.
  - Changes to preliminary objective in Final EIR:
    - None

Credit: Raphael Kudela, UCSC

Invasive Species Preliminary Objective

- Control invasive animal species pursuant to a plan approved by the appropriate regulatory agencies.
  - Changes to preliminary objective in Final EIR:
    - Replaced “invasive fish species” with “invasive animal species” for consistency with text of draft permit from SWRCB[1]

Credit: commons.wikimedia.org

1 – State Water Resources Control Board, Division of Water Rights. 2021. Draft Permit. Revised March 19. Application A032881.

Research Preliminary Objective

- Support research and citizen science focused on key uncertainties affecting management.
  - Changes to preliminary objective in Final EIR:
    - Not in Final EIR, added to support adaptive management and to continue existing PV Water management practices.

Credit: CSU Monterey Bay

Additional Discussion of Draft Objectives

Questions and Comments

Thank You