



# Water Management Strategies

## Stakeholder Meeting

April 8, 2021

# Agenda



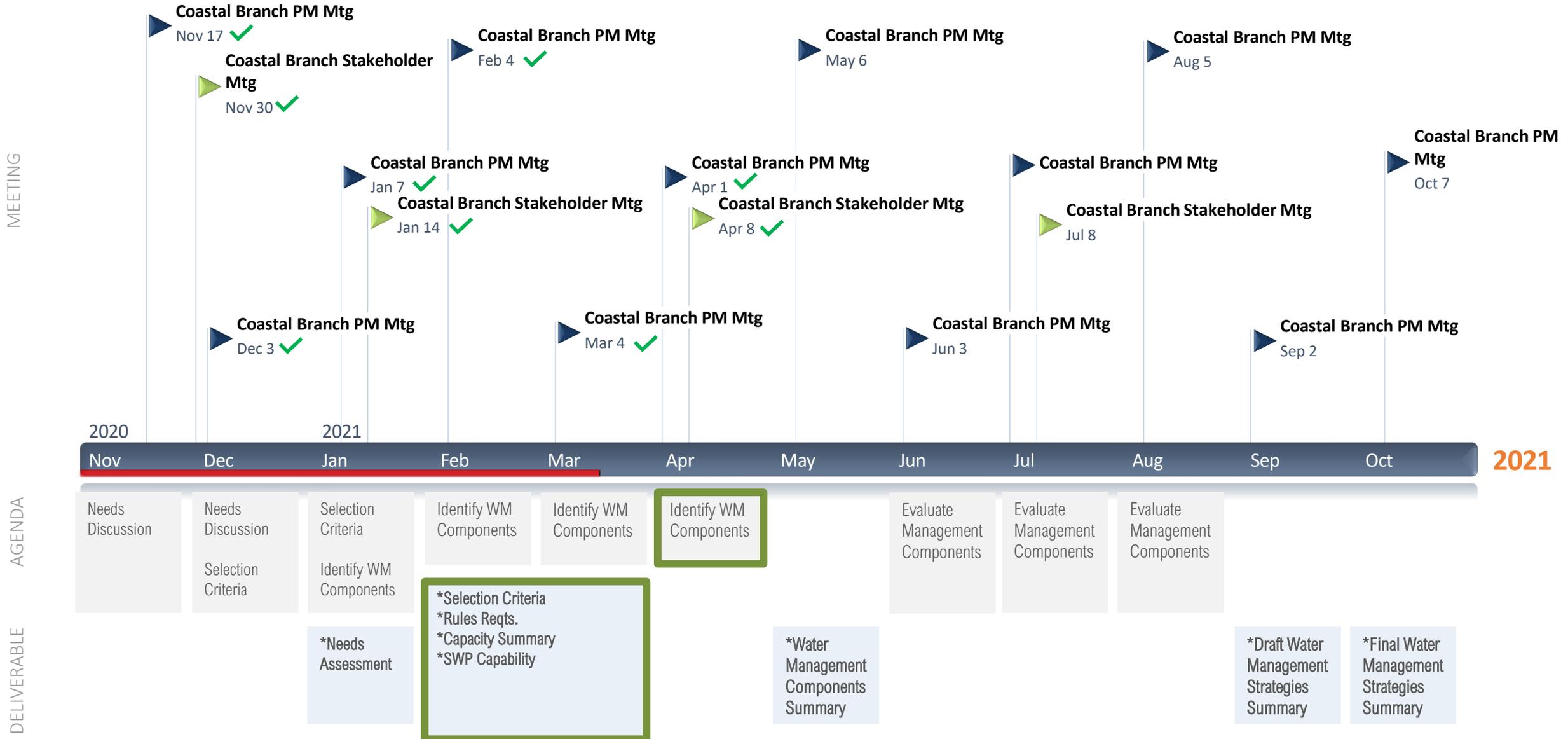
- Purpose and Goals
- Schedule
- Document Outline
- Progress Updates
  - Needs Assessment
  - Selection Criteria
  - Rules and Requirements
  - Capacity
  - SWP Capability
  - Water Management Components
- Next Steps

# Purpose and Goal

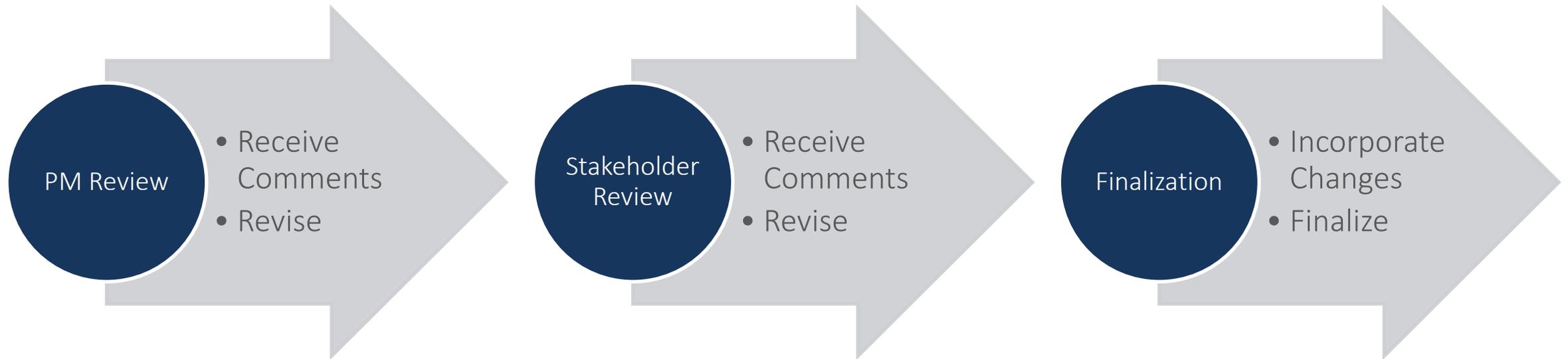
To develop water management strategies to maximize yield of the State Water Project for San Luis Obispo and Santa Barbara counties through an iterative process of stakeholder engagement.



# Water Management Strategies Schedule



# Review Process



# Section Key

Status:

Review and Comment In Progress



Status:

Reviewed and Approved





## ✓ DOCUMENT OUTLINE

1. Purpose
2. Executive Summary
3. Background
4. Needs Assessment
  - a. Intro
  - b. Geographical
  - c. Other Considerations
5. Rules and Requirements
  - a. Intro
  - b. State Water Project (SWP)
  - c. State Water Resources Control Board (SWRCB)
  - d. Environmental Permitting
  - e. Groundwater Basin Constraints
6. Conveyance Capacity
  - a. Intro
  - b. Local
    - i. Coastal Branch
  - c. State
    - i. Aqueduct
  - d. Qualitative Description
    - i. Chorro Pipeline
    - ii. Lopez Pipeline
    - iii. Lake Nacimiento
      1. Reservoir
      2. Pipeline
    - iv. Lake Cachuma
      1. Reservoir
      2. Tunnel
    - v. Santa Ynez/Edna Valley
    - vi. Salinas Pipeline
    - vii. Santa Margherita Lake
7. State Water Project Supply Capability
8. Selection Criteria
  - a. Water Supply and Reliability
  - b. Water Quality
  - c. Ability to Permit
  - d. Cost
  - e. Proximity
  - f. Equity
  - g. Reliability
9. Water Management Components
  - a. Intro
  - b. Physical
    - i. Bank
    - ii. Potential for new features
  - c. Operational
    - i. Transfers
    - ii. Exchanges
10. Evaluation of Management Components
  - a. Approach to Component Analysis
  - b. Component Group A
    - i. Features
    - ii. Summary
  - c. Component Group B
  - d. Etc.
11. Recommendations



## ✔ NEEDS ASSESSMENT

# Categories of Need



# Regions Review

## Central Coast Water Authority

### North County

- City of Santa Maria
- Golden State Water Company
- City of Guadalupe

### Mid County

- City of Buellton
- Santa Ynez RWCD, Improvement District #1
- City of Solvang
- Vandenberg Air Force Base

### South Coast

- Goleta Water District
- City of Santa Barbara
- Montecito Water District
- Carpinteria Valley Water District
- La Cumbre Mutual Water Company

## San Luis Obispo County Flood Control and Water Conservation District

### North SLO

- County of SLO C.S.A. No. 16, I.D. #1 (Shandon)

### Central SLO

- California Men's Colony (State)
- County of SLO (Op Center & Reg. Park)
- City of Morro Bay
- SLO Co. Comm. Coll. District (Cuesta College)

### South SLO

- Avila Beach Community Services District
- Avila Valley Mutual Water Company, Inc
- Oceano Community Services District
- City of Pismo Beach
- San Luis Coastal Unified School District
- San Miguelito Mutual Water Co.

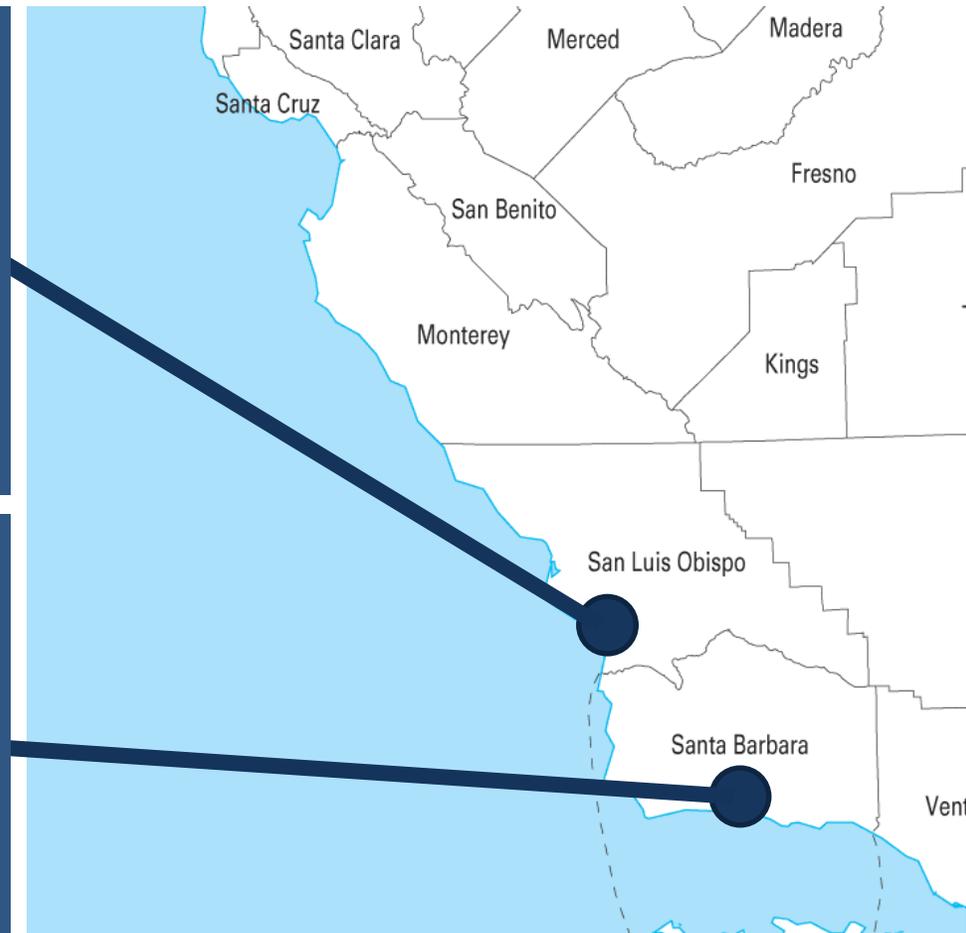
# Regional Needs Findings

## San Luis Obispo County Flood Control and Water Conservation District

- North SLO cost control for SWP supplies
- Central and Southern SLO cost control and dry year need

## Central Coast Water Authority

- Cost control and affordability
- Northern need for SWP water quality
- Mid County and South Coast supply need during dry years





## ✓ SELECTION CRITERIA

# Regional Objectives

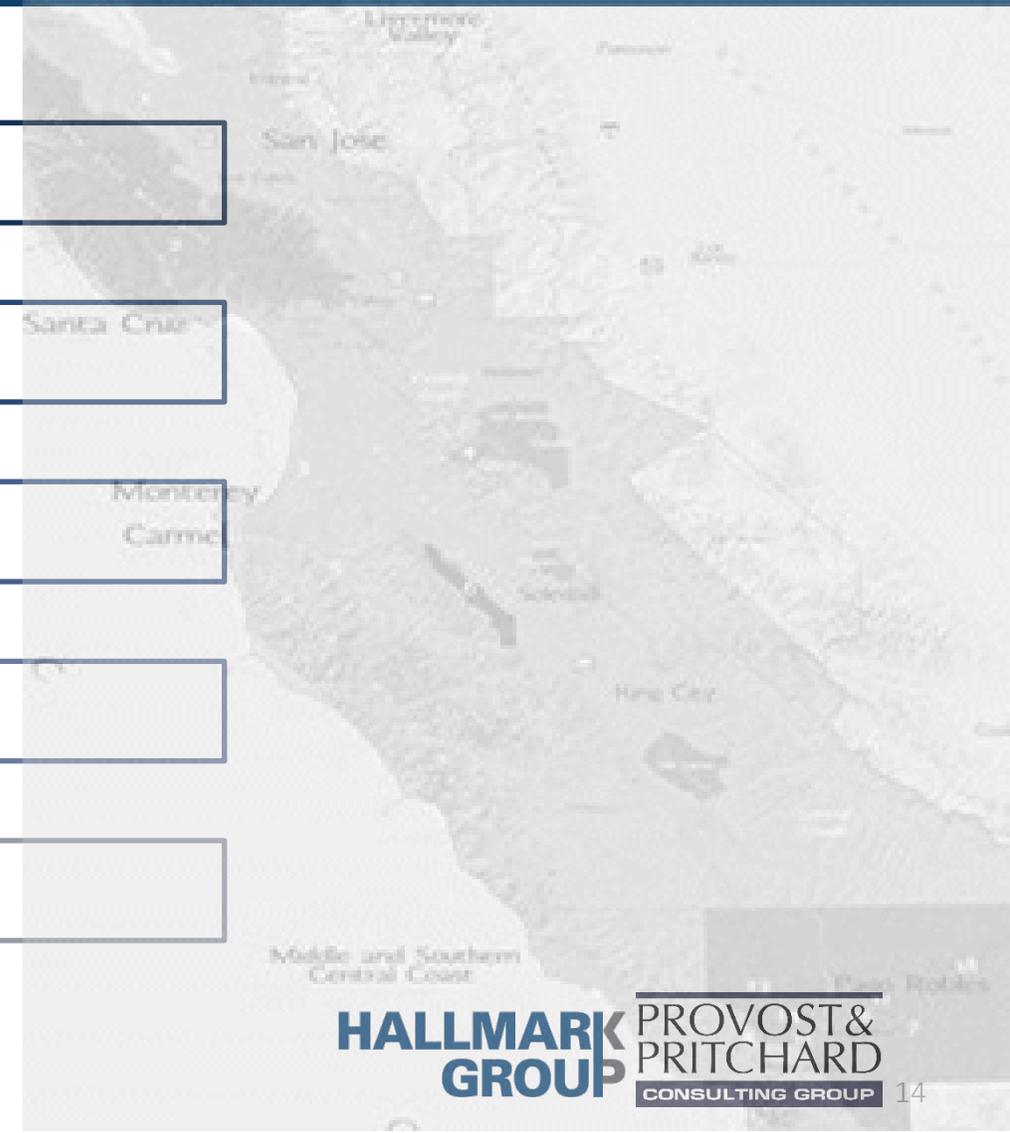
Water Supply

Groundwater Monitoring and Management

Ecosystem and Watershed Goal

Flood Management

Water Resources Management and Communications



# Selection Criteria

To best determine if a management measure should be implemented

| Criteria          | Measure                            | Considerations   |
|-------------------|------------------------------------|--|
| Water Supply      | acre-feet<br>cubic feet per second | Does the amount of volume or flow satisfy the participant need under a particular condition?   |
| Water Quality     | Maximum level and concentration    | Is there difference in resulting water supply; how well does water supply meeting water quality needs; are there any negative adverse water quality effects? |
| Ability to Permit | Weeks                              | How lengthy and difficult would permitting process be?   |
| Cost              | Dollars                            | Is it affordable for the short term? Long term?  |
| Proximity         | Yes or no                          | Is the measure local or imported? Will it shift supply to a more sustainable/long-term solution?   |
| Equity            | Yes or no                          | Do alternatives maintain or improve DAC and tribal access to adequate water supplies?  |
| Reliability       | More or less                       | Is the supply cost and availability assured?<br>Focus on moderate or extreme dry years?  |



## RULES AND REQUIREMENTS

# SWP Water Management Options

As of February 28, 2021 or Earlier

- **Water Transfers**
  - Single Year – Provided for in new contract amendment
  - Multiple Year – Require DWR approval subject to Article 15A
  - Permanent – Provided for in Monterey Amendment
- **Water Exchanges**
  - Provided for in Monterey Amendment, criteria subject to new contract amendment criteria
- **Storage within Service Area**
  - No contractual limitations
- **Storage Outside of Service Area**
  - Storage and transfer allowed in same Year
  - Water stored outside of service area can be transferred to another contractor



# Water Transfers

- **SWP “In-Project” Transfers**

**Annual** – One-year transfers between SWP contractors included in new Water Management Amendment; Non-Signers limited to Turnback Pool

**Multiple Year** – SWP Contract provided for multiple year transfers among SWP contractors, subject to DWR approval

**Permanent** – Prior SWP contract amendments provided for permanent transfer of Table A amounts among SWP contractors

- **“Outside” Water Transfers**

Subject to various water rights and area of use constraints



# Water Exchanges

*Water provided by one agency in return for some fraction to be returned in future years.*

- Typically, multi-year programs that provide **return of some water in dry years** when needs are greater
- SWP contract provides for “bona-fide” exchanges, with **conditions based on SWP allocations**
- Water Exchanges can often be described as **storage programs**
- Transfers can also be developed that **mimic exchange program**



## Storage

- No SWP restrictions on water stored within agency's own service for future local use
- SWP contract provisions have conditions for storage outside of SWP contractor's own service area
- Storage allowed in available SWP storage facilities (e.g., San Luis Reservoir) subject to spill
- Storage allowed in other SWP contractors service area subject to SWP contract provision and conditions defined by partners

# Other Considerations

- California Environmental Quality Act (CEQA) and other permitting applies to actions
- Santa Barbara and San Luis Obispo Counties must approve transactions as SWP contract holders
- Delta Stewardship Council consistency determination with Delta Plan required on some types of actions
- SWP water rights permit restricts use



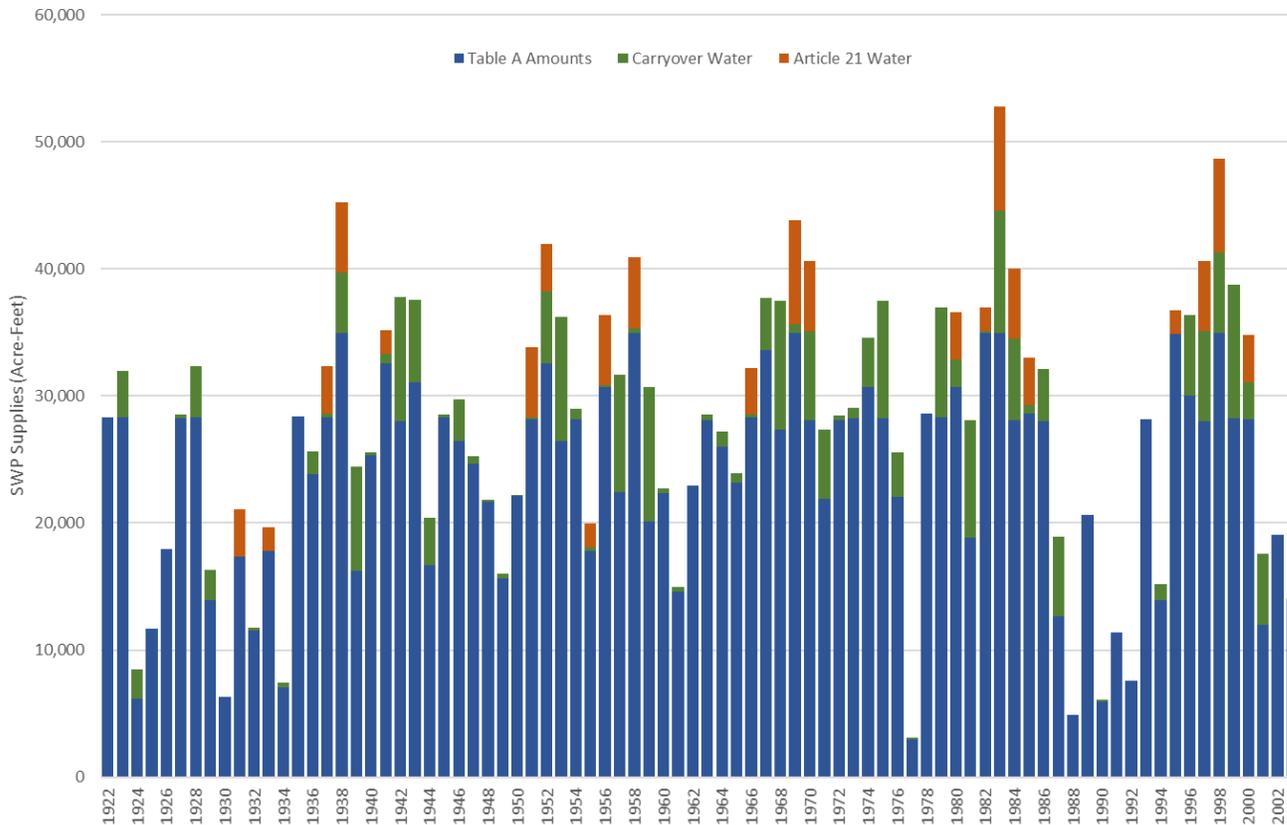
 SWP SUPPLY CAPABILITY

# Supply Capability Approach

- Use CALSIM-2 operations studies prepared for DWR's 2019 SWP Delivery Capability Report
- CALSIM-2 studies include current Delta regulatory constraints, new CVP Coordinated Operations Agreement and revised Oroville Reservoir carryover policies
- CALSIM-2 includes 1922-2003 period; does not simulate 2010s drought
- CALSIM-2 more indicative of water available as opposed to ability to delivery

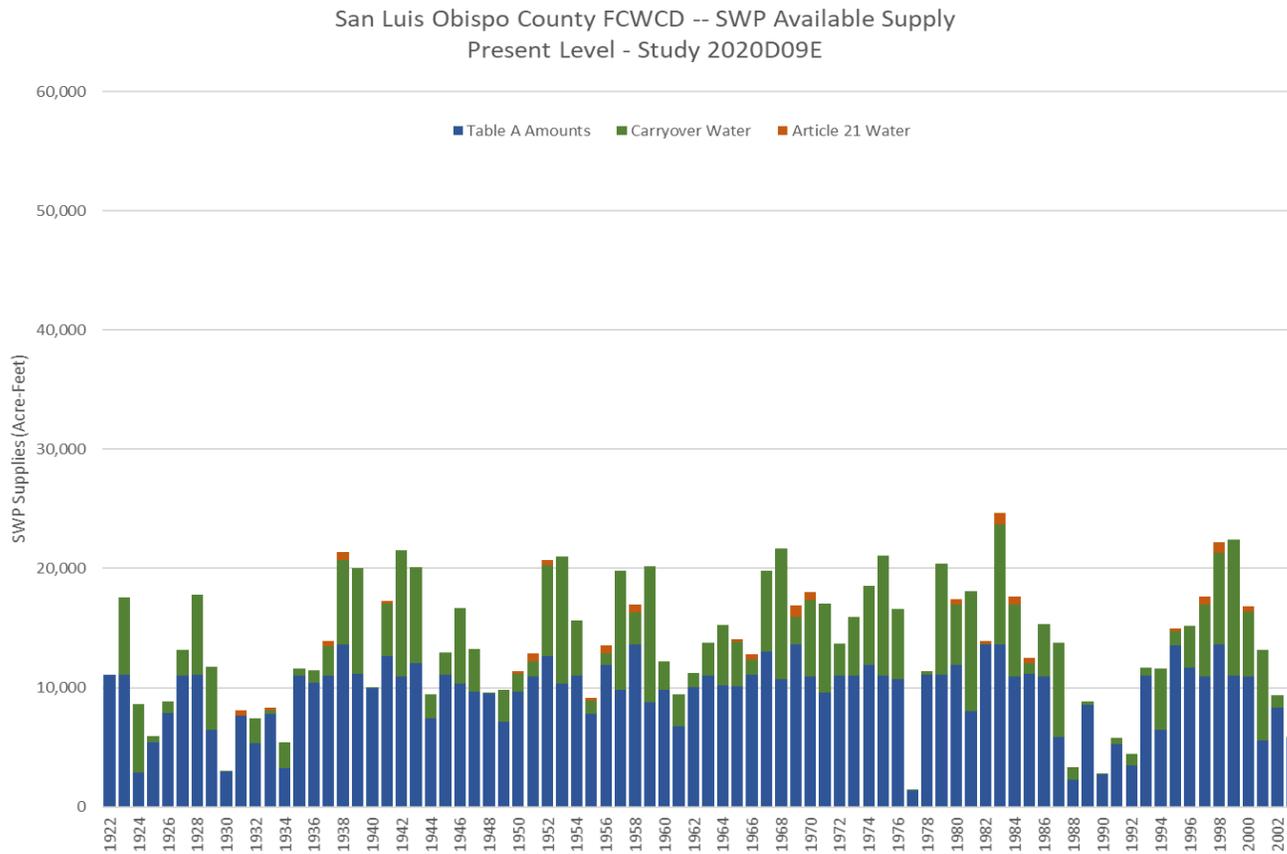
# Santa Barbara Coastal Branch Contractors

Santa Barbara County FCWCD -- SWP Available Supply  
Present Level - Study 2020D09E



- CALSIM-2 shows SWP average deliveries as 59% of Table A Amounts
- Deliveries limited in droughts – 1930s, 1976-77, early 1990s
- CALSIM-2 carryover water includes assumed Coastal Branch Contractors carry-over in San Luis Reservoir

# San Luis Obispo Coastal Branch Contractors



- CALSIM-2 shows SWP average deliveries as 58% of Table A Amounts
- Lower average delivery amount due to lower average year deliveries; more spills of carryover water in San Luis Reservoir



# CONVEYANCE CAPACITY

# SWP-CCWA Conveyance Facilities

North to South:

- Reach 7 – SWP California Aqueduct
- Reach 31A – DWR Coastal Branch
- Reach 33A – DWR Coastal Branch
- Reach 4 – CCWA Coastal Branch
- Reach 5A – CCWA Coastal Branch
- Reach 6 – CCWA Coastal Branch

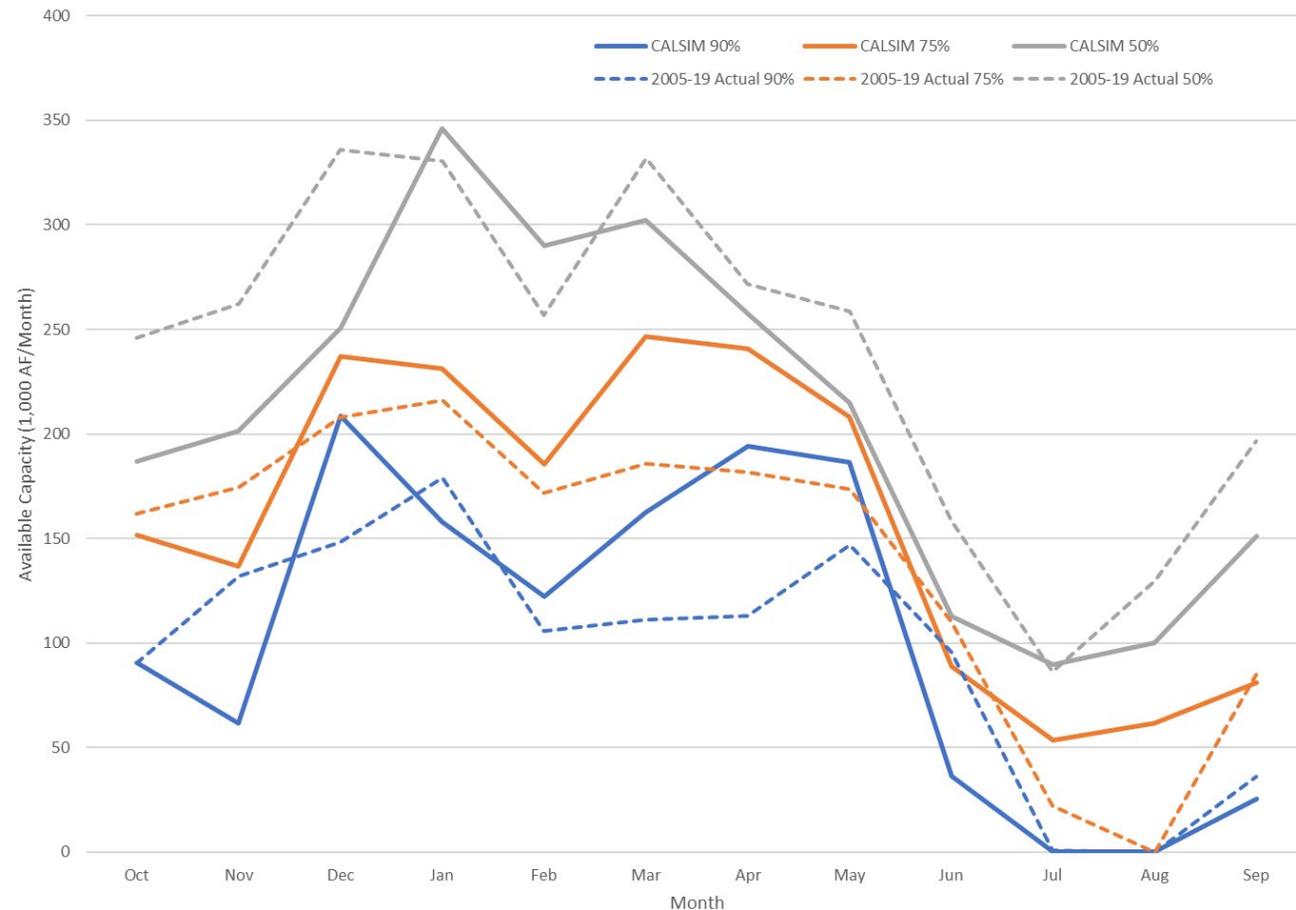


# Conveyance Capacity Approach

- Identify timing of bottlenecks on SWP and Coastal Branch for 90%, 75%, 50%
- Two complementary analyses
  - Historical: Analyze Coastal Branch 1998-2020 historical and SWP 2005-2019 historical data
  - CALSIM-2: Use projections for 1922-2003 for 2019 SWP DCR
- Different strengths and weaknesses
  - Historical reflects variations in actual operations, but not able to distinguish between regulatory and operational shifts
  - CALSIM-2 reflects regulatory and operational changes but misses fine points of SWP contractor operations

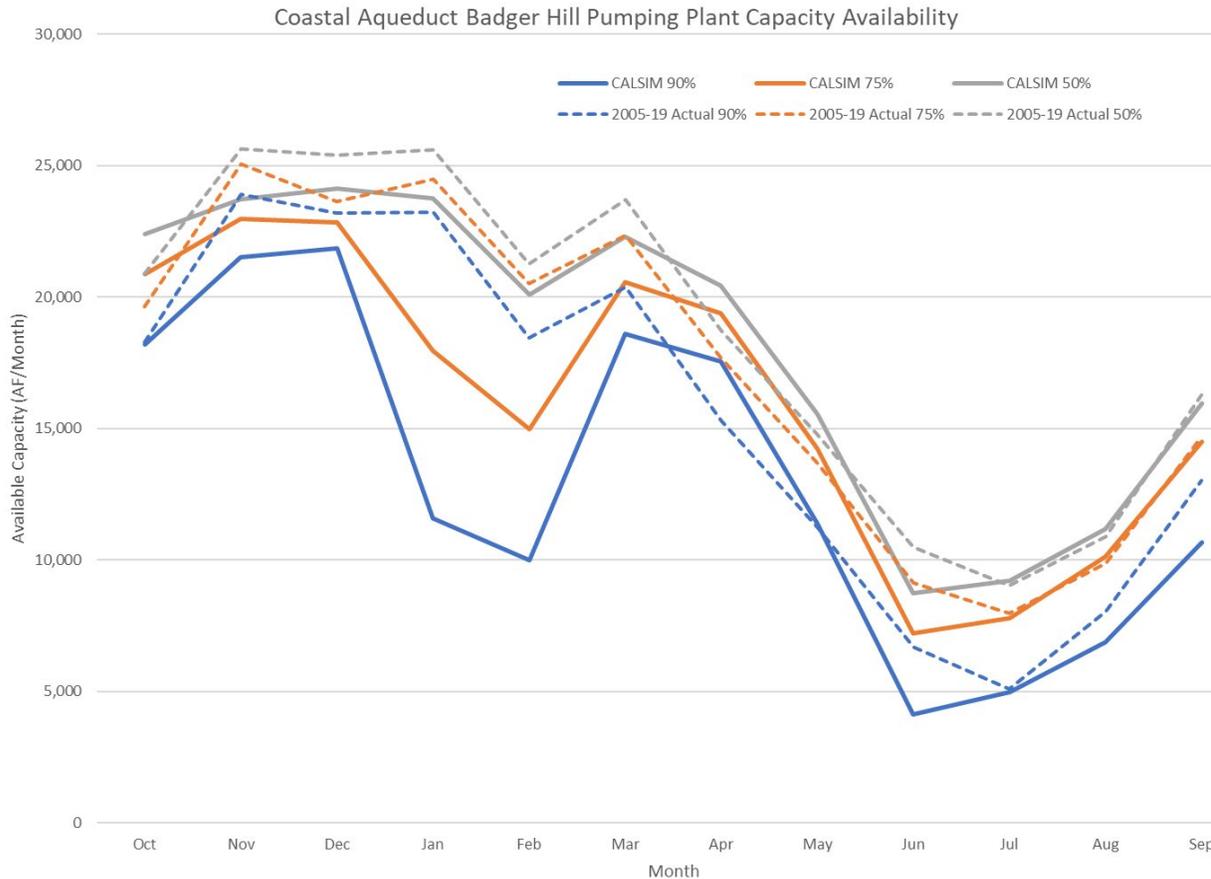
# California Aqueduct San Joaquin Valley Reach 7

California Aqueduct Check 21 Capacity Availability



- California Aqueduct Check 21 near Kettleman City
- Aqueduct subject to groundwater subsidence with 2.3 foot freeboard reduction
- Operational capacity reduced from 8,100 cfs to 6,900 cfs
- Serious Peaking (July-August) limitations in high delivery years

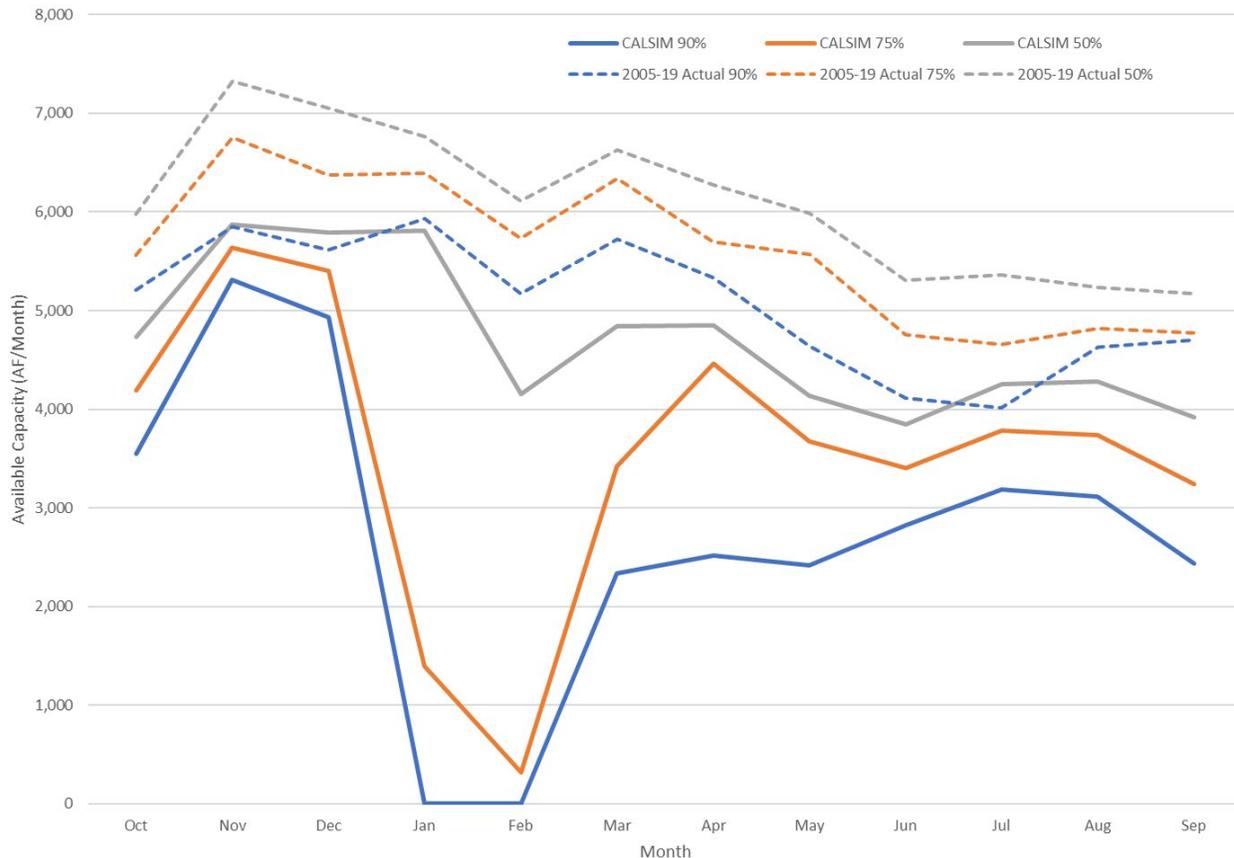
# SWP Coastal Branch Phase 1 San Joaquin Valley Reach 31a



- Badger Hill Pumping Plant
- 26% Share of Capacity for Coastal Contractors
- 70% Share of Capacity for Kern County
- Peaking (July-August) limitations in high delivery years
- CALSIM and Historical Analyses show similar results

# SWP Coastal Branch Phase 2 Polonio Pass Reach 33a

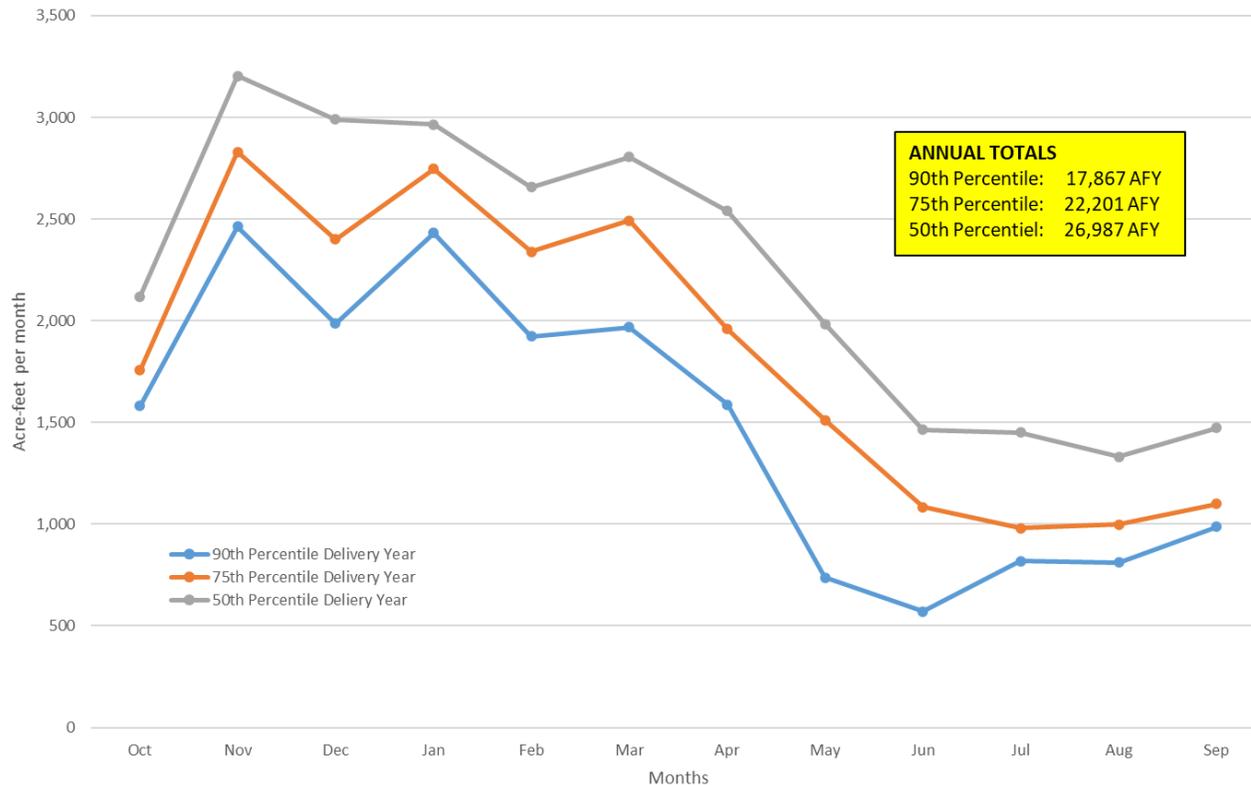
Coastal Aqueduct Polonio Pass Pumping Plant Capacity Availability



- Polonio Pass Pumping Plant
- 80% Share of Capacity for Coastal Contractors
- 20% Share of Capacity for Energy Efficiency Flexibility
- No limitations based on historical operation
- CALSIM projections show unrealistic January-February limitations; not used

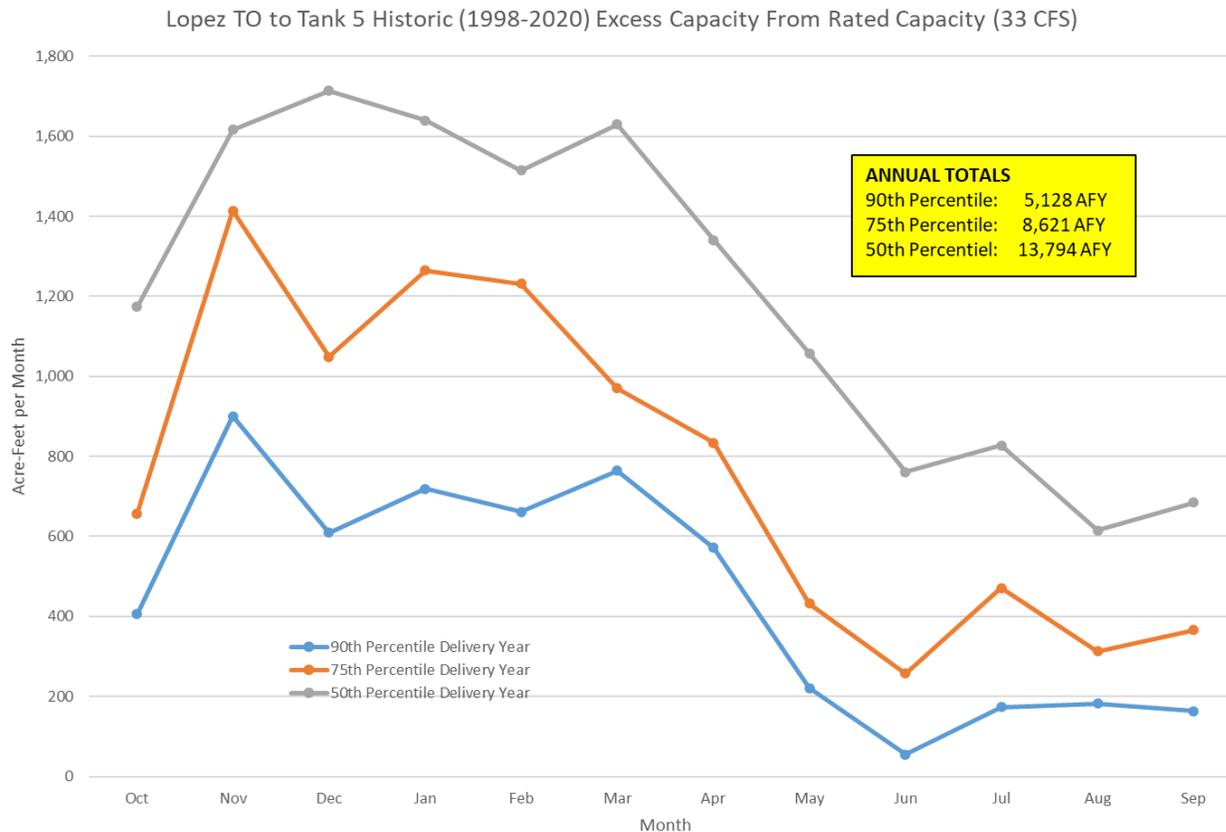
# Coastal Branch Reach 4

WTP to CVTO Historic (1998-2020) Excess Capacity  
From Rated Capacity (71 CFS) - Including CVTO Deliveries



- Above Chorro Valley Turnout
- Available capacity relatively low (<20%) May-August in high delivery years (90-percentile)
- Relatively high-capacity availability in other months (September-April) and in low-delivery years
- Similar results for Reach 5a

# Coastal Branch Reach 6



- Below Santa Maria Turnout
- Available capacity relatively low (<12%) May-August in high delivery years (90-percentile)
- Relatively high-capacity availability in other months (September-April) and in low-delivery years

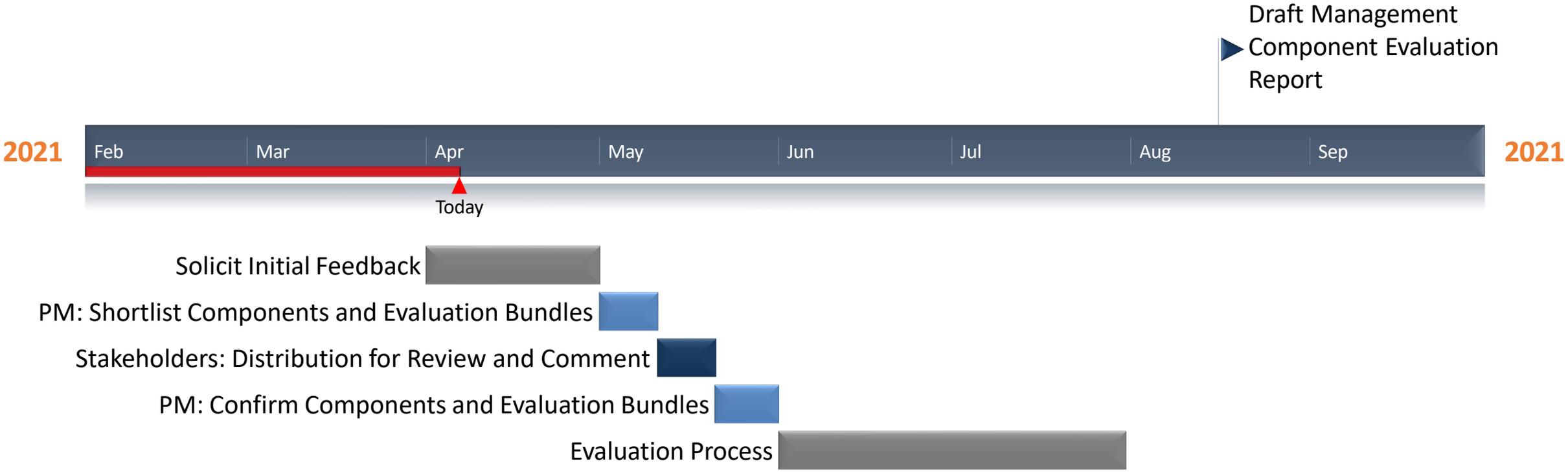
# Supply and Conveyance Next Steps

- **Supply Capability** and **Conveyance Capacity** are input information for evaluating Water Management Components
- Look for **timing** of Supply Capability and Conveyance Capacity to transfer/exchange/store water
- **Limited on-peak** (May through August) capacity for additional water supply in high delivery years
- Analysis to look at **operations and costs** of typical Water Management Components



 WATER MANAGEMENT COMPONENTS  
IDENTIFICATION

# Process to Select and Evaluate Components



- Consultant Activities
- PM Activities
- Stakeholder Activities

# State Water Project Management Strategy

## Water Management Components

- Identify specific water management alternatives
- Initial list developed based on current and expected projects
- Potential water management alternatives continually subject to change
- Exchange and Banking program costs and parameters defined in program agreements
- Identify typical Central Coast SWP contractor management needs

# Local Partners



Note: Annual and/or multi-year sales of State Water directly to new individual users to offset groundwater pumping would likely only be feasible if mechanisms exist to regulate/limit recharge and recovery rights of the recipient (see SLO County FC&WCD WMT Amendment Resolution Provision 8)

# Local Surface Reservoir Storage

Nacimiento Reservoir –Salinas Reservoir

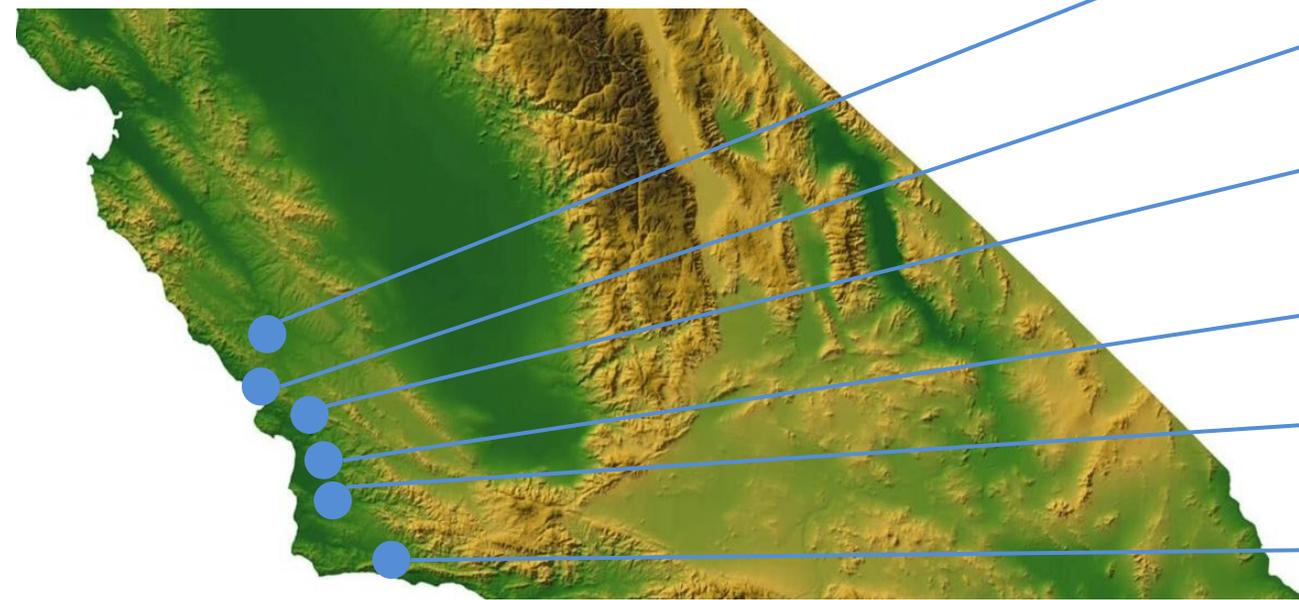
Whale Rock Reservoir

Chorro Reservoir

Lopez Lake Reservoir

Twitchell Reservoir

Lake Cachuma Reservoir



# Local Exchanges/Transfers



SLO Uncontracted  
SWP Table A

Additional SWP  
Table A

South Coast Wet  
Year Table A

Other

# External Groundwater Banking

McMullin Area Groundwater Bank

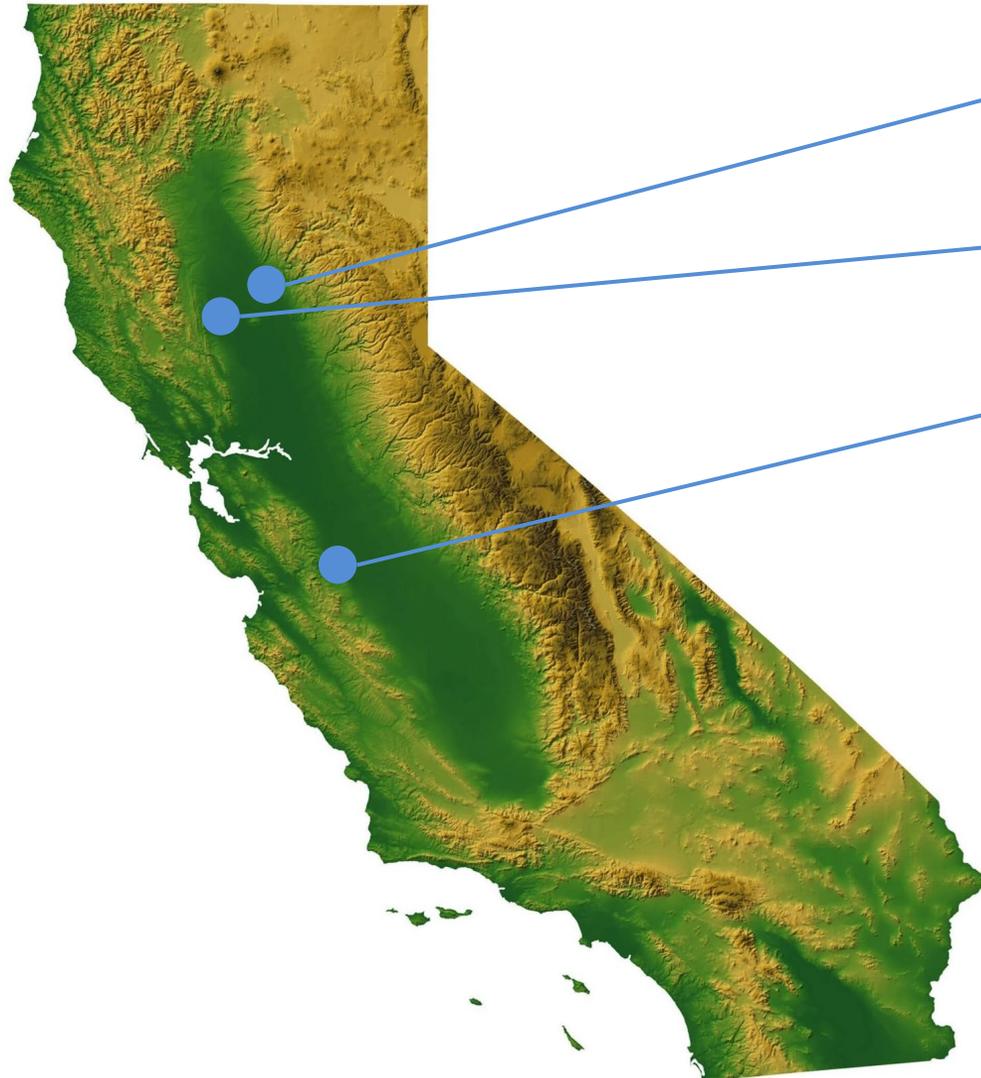
Kern Fan Banking Projects

Rosedale-Irvine Ranch Banking

Antelope Valley-East Kern Water Agency

Other

# External Surface Reservoir Storage



Lake Oroville

Sites Reservoir

SWP San Luis Reservoir

Other

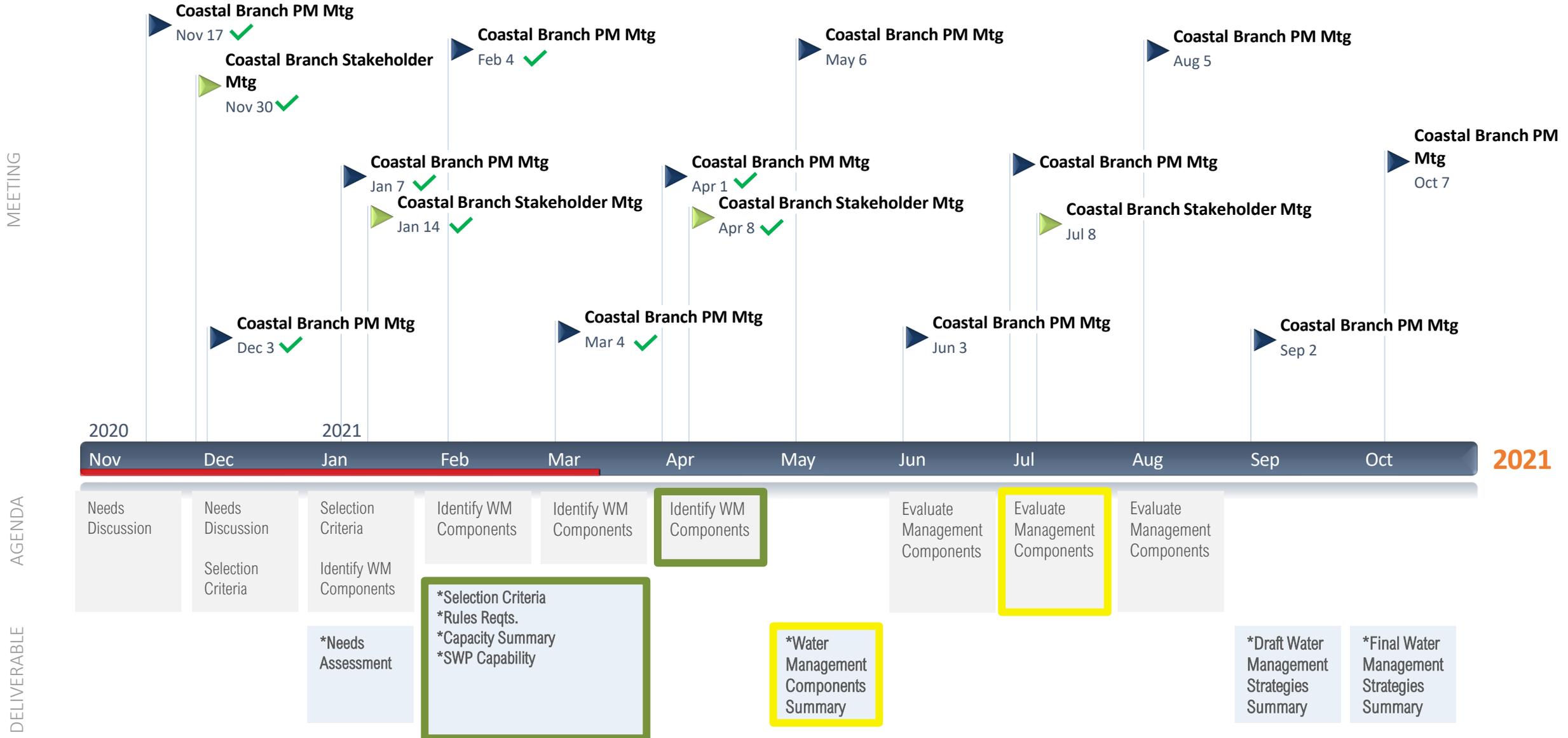
# External Exchanges/Transfers/Sales

- CVP
- SLDMWA
- Westlands Water District
- Valley Water (SWP and CVP)
- Berrenda Mesa
- Temperance Flat
- Raising San Luis Reservoir
- MWD Integration
- Casitas via Cachuma through new pipeline



## NEXT STEPS

# Water Management Strategies Schedule



# Next Steps



Stakeholder Feedback: Document Outline

Stakeholder Feedback: Rules/Capacity/SWP Capability Summary

Finalize Water Management Components

Evaluate Water Management Components

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