

Operations & Engineering Workgroup

April 13, 2022



Agenda

- Updated Workgroup Charter: Material Change
- Biological Assessment/ ITP Operations
- Contract Strategy Sub-Workgroup progress update
- Amendment 3 project schedule update
- Engineering and Construction Manager report
- Upcoming meetings

Updated Workgroup Charter & Guidelines

JP Robinette

Highlights from the Updated Charter

Approved at March Joint Meeting

Standing meetings every two months

- Public meetings (in accordance with the Brown Act)
- Ad-hoc meetings scheduled as needed

Material change focus area: *“Evaluation and recommendations related to material changes, as defined in the Authority’s bylaws, regarding the project’s schedule, costs, and operations.”*

Material Change Overview

As defined in Authority's Bylaws

- Material change: “where the variance between a parameter of the Project Baseline and the forecast exceeds the Board-approved threshold”
- Examples of material change thresholds for the Operations and Engineering Workgroup
 - Ability to obtain dam safety related permits
 - Significant changes to existing conveyance assets
 - 10% change in direct construction **cost**
 - 5% change in annualized yield (**operations**)
 - 6 month increase in construction **schedule**



Material changes in the project's **cost**, **schedule**, and **operations** all “move the needle” on **affordability**

Example: today's topics of contract strategy and schedule move the needle on Project cost

Some things we can't impact without reducing performance of the project, but we are in the driver's seat on:



Our pace

A3 Project Schedule

- Impacts when we start financing (interest rates)
- Impacts escalation we pay for construction

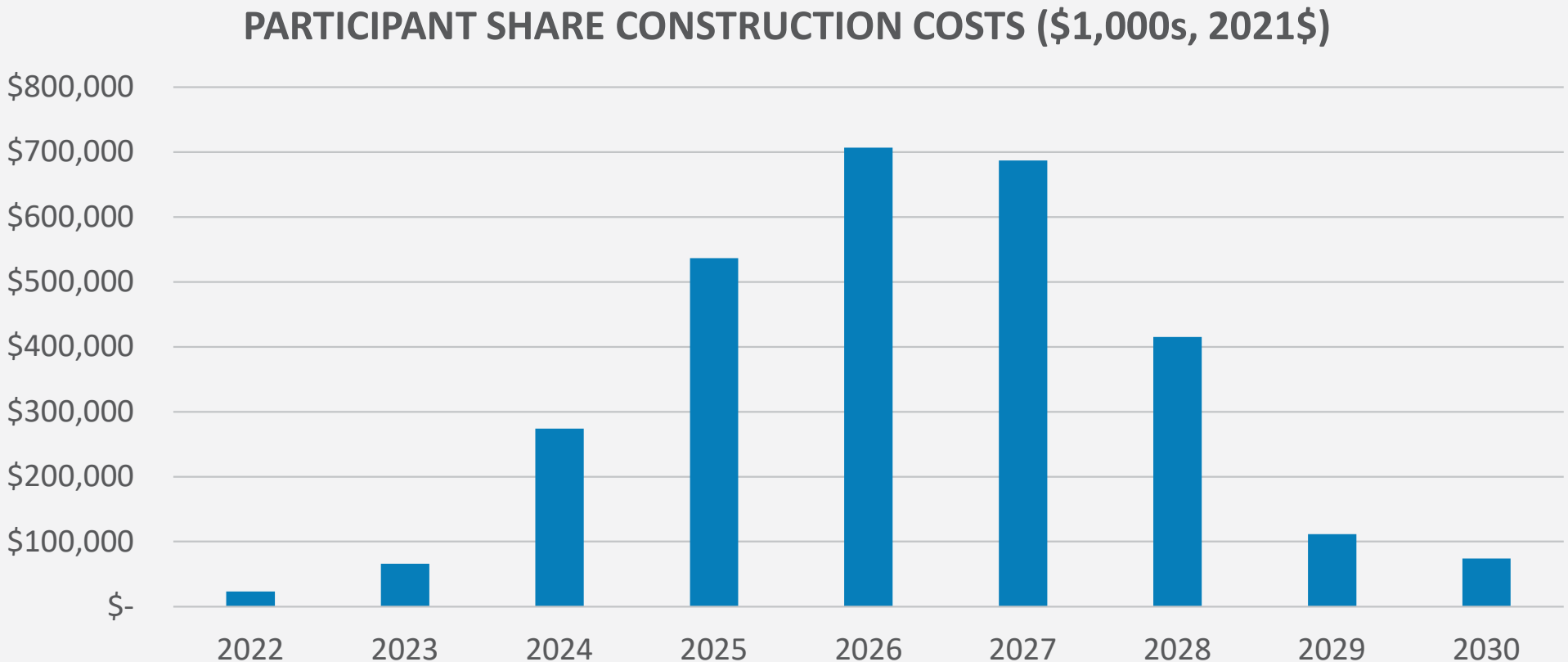
Controlling construction costs

Contract Strategy

- Delivery method and risk allocation

Our allocation method (shifts costs to others)

Example: our delivery decisions and pace move the needle on project cost



Delivery considerations (assumes financing participants):

- Timing of locking **interest rates** \pm 10%
- Increased construction cost **escalation** by 0.5% increases annual costs by 3.5%
- Each additional \$100M in **construction costs** increases annual costs by 3.4%

Biological Assessment / Operations ITP – Initial Modeling Results

Erin Heydinger

Background - Changes from RDEIR/SDEIS Model

- Climate condition: 2035 Central Tendency, 15 cm sea level rise
- Deadpool reduced to 60 TAF
- Shifted focus to Alternative 3
- Revised diversion criteria:
 - Bend Bridge pulse flow protection
 - 10,700 cfs at Wilkins Slough Oct-June
 - No Fremont Weir Notch criteria
 - Diversions permitted Sept. 1 – June 15
- Releases to SOD participants in all year types
- Refined release operations through Dunnigan Pipeline to account for restrictions at Knights Landing
- Expanded operations to improve Shasta cold water pool, fall flow stability, and spring pulse actions
 - Requested by Reclamation

Slide 9

HE0

Prior comment:

Please add what was assumed for changes to "make room" for Reclamation (Jerry?)

This is shown in slide 9 - storage allocation

Heydinger, Erin, 2022-04-12T00:26:29.256

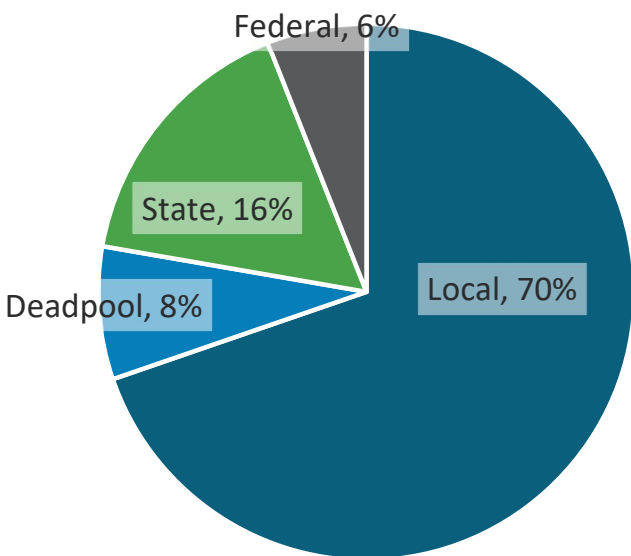
Takeaways from Updated Modeling

1. More federal investment results in less cost for local PWAs and more efficient reservoir operations (greater overall releases)
2. Benefits for local PWAs do not substantially change with model updates and increased federal investment
3. Changes in modeling and federal storage result in greater overall anadromous fish benefits

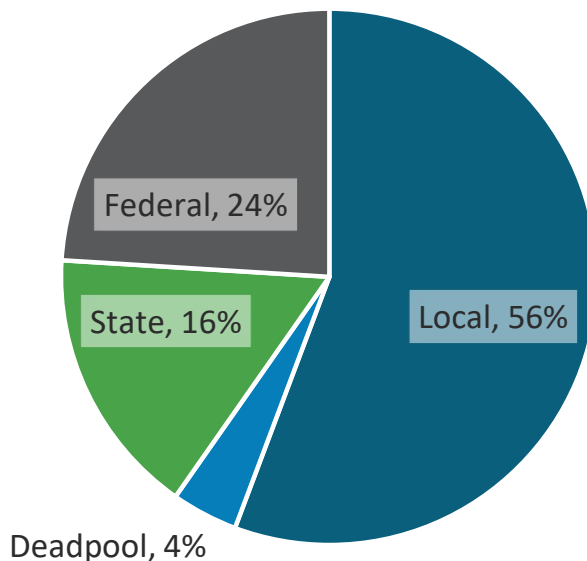
Alt 3 Reclamation Reallocates Storage Space from Local PWAs, but Reduces PWA Cost too

- Scenarios Modeled: Alternatives 3A and 3B

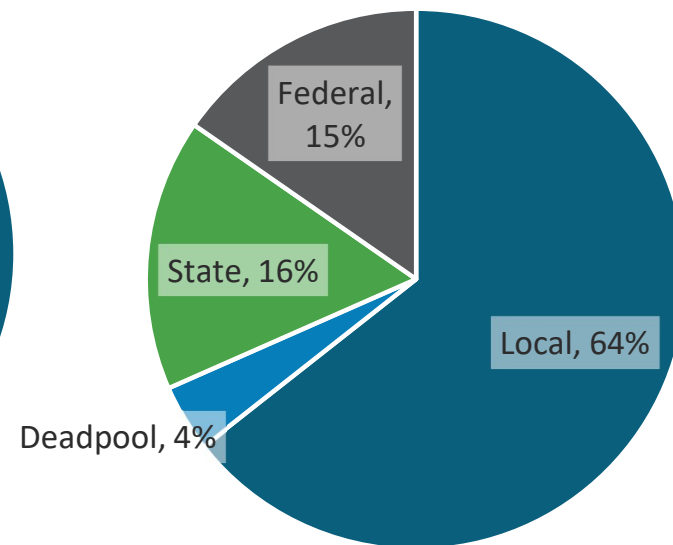
Alternative 1B
RDEIR/SDEIS



Alternative 3A



Alternative 3B



Storage allocation for each alternative developed based on Principles of Storage (April 2021), Amendment 2 participation

Slide 11

HE0

Note (and I will do so in the presentation) that Reclamation is getting 25% of ACTIVE storage under Alt 3A. The reason it is shown as 24% is because of the deadpool. We usually don't include deadpool in our storage allocation percentages.

Heydinger, Erin, 2022-04-04T22:37:33.811

JR1

It reduces cost, but not on a \$/AF of storage basis, right?

JP Robinette, 2022-04-07T16:53:40.586

JR2

Isn't the basic assumption that on alt 3B Reclamation is paying for non-storage benefits? If that is the case, 3B reduces the unit cost for participants by reducing their share of capital cost in the project without forfeiting storage.

JP Robinette, 2022-04-07T16:56:41.247

Reclamation Investment Improves Overall Project Performance

Project Releases

	Alternative 1B Historic (TAF)	Alternative 3A 2035 CT (TAF)	Alternative 3B 2035 CT (TAF)
Wet	82	103	108
Above Normal	132	390	318
Below Normal	222	354	322
Dry	449	443	451
Critical	338	288	290
Average	234	284	274

More federal investment results in less cost for local PWAs due to lower storage allocation and more efficient reservoir operations (greater overall releases).

Local PWAs Supplies do not Substantially Change with Reclamation Investment

Project Releases

	Alternative 1B Historic	Alternative 3A 2035 CT	Alternative 3B 2035 CT
North of Delta	29	26	27
South of Delta	111	109	127
State	65	61	63
Reclamation	28	88	58
Total	234	284	274

Benefits for local PWAs do not substantially change with model updates and increased federal investment.

SOD increases under Alt 3B due to increased storage and movement of water in Wet and Above Normal years. NOD more static due to less active use of storage.

Changes in Modeling and Federal Storage Result in Greater Anadromous Fish benefits

SALMOD – Decrease in Long-Term Average Salmon Mortality

Alternative (relative to baseline)	Fall Run	Late-Fall Run	Spring Run	Winter Run
Alternative 3 (historic, RDEIR/SDEIS)	3%	0%	3%	8%
Alternative 3A 2035 CT	9%	0%	39%	12%
Alternative 3B 2035 CT	7%	1%	29%	11%

Important for federal funding, meeting project objectives

Next Steps

- Agree on changes to storage allocation among Local PWAs to "make room" for Reclamation @ Alt 3 level
 - Voluntary reductions or adjust participation to storage ratio (1:6.234)
 - Rebalance to final participation levels before Phase 3
- Provide input on storage space for offer letter to Reclamation
- Complete other models required for Biological Assessment/Operations ITP
- Complete modeling for Final EIR/EIS

Contract Strategy Sub- Workgroup Progress Update

Henry Luu



Terminology

Contract Strategy	<ul style="list-style-type: none">• The recommended evaluation process / criteria used to identify contract packages and delivery methods with the intent of maximizing benefits and reducing risk to the JPA and Sites Project overall.
Values and Priorities	<ul style="list-style-type: none">• The high-level vision and preferences that will help inform the Contract Strategy.
Contract Package	<ul style="list-style-type: none">• A specified scope of work that will be assigned to a selected designer, contractor, or collaborative delivery team.
Delivery Method	<ul style="list-style-type: none">• The contracting method used to deliver a specific scope of design and / or construction work. CMAR, Design-Build, traditional “hard” bid, and Design-Build-Operate are all delivery methods.
Collaborative Delivery	<ul style="list-style-type: none">• Delivery methods intended to foster cooperation and optimally allocate risk between all parties involved in delivering a project. CMAR, Design-Build, and Design-Build-Operate are all examples of collaborative delivery.

CMAR = Construction Manager at Risk

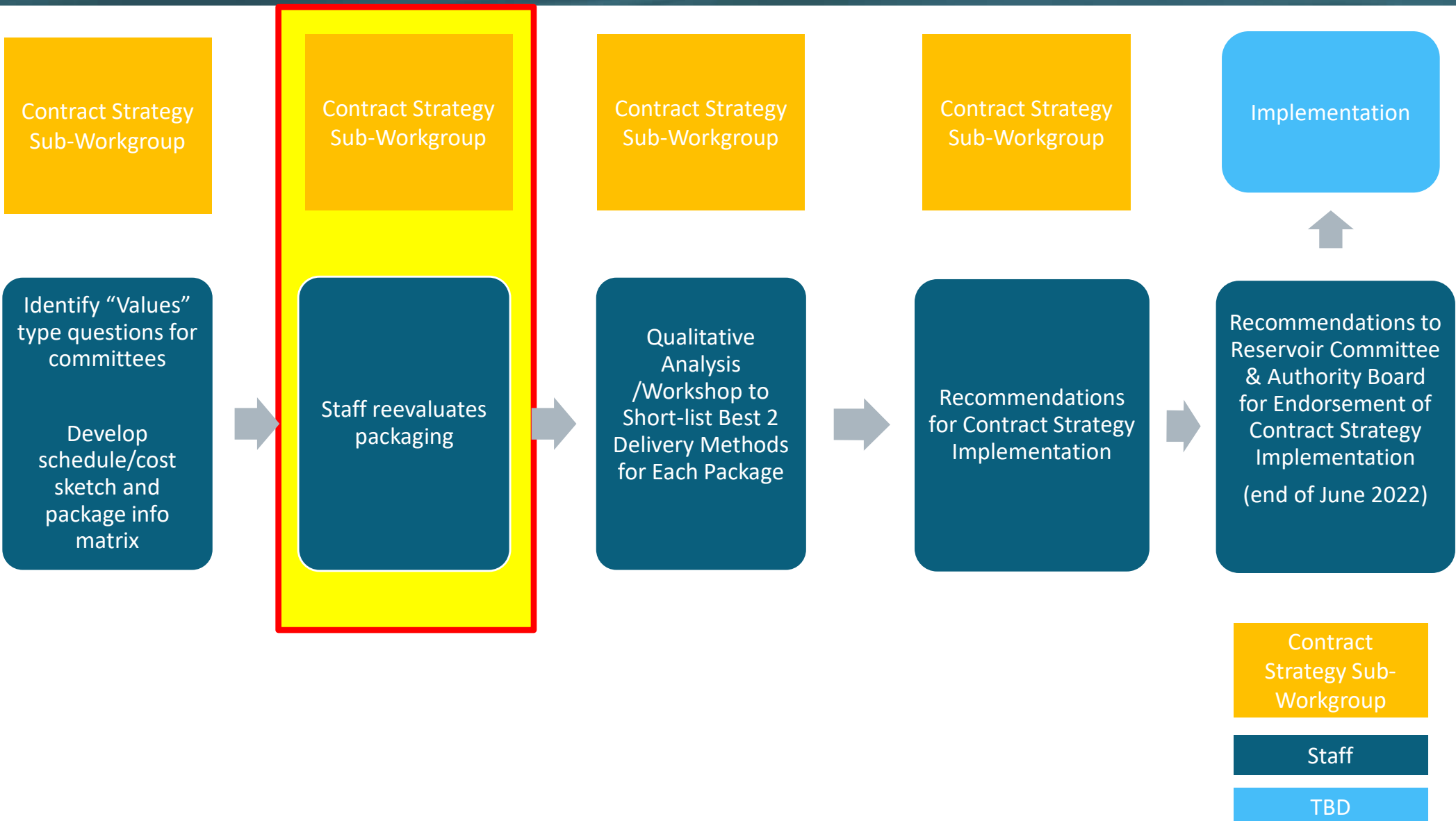
Process for Input to Contract Strategy



Key Take-aways

- **Oversight**: Recommend bringing on operation staff early for design input.
- **Construction Contracts**: The number and size of construction contracts should prioritize qualified contractors and management of cost & risk.
- **Project Costs**: Cost certainty must be established as soon as possible.
- **Project Schedule**: Look for opportunities to expedite schedule in order to reduce Project costs.
- **Project Risks**: Balance risks with values – *share* risks with partners.

Next Steps



Timeline

- Draft Contract Strategy – June/July 2022
- Adoption of Contract Strategy – July/Aug 2022
- Project Master Schedule – Sept/Oct 2022
- Initiate potential scope amendment and budget reallocation conversations in Oct 2022
 - Alignment with Contract Strategy

Amendment 3 Project Schedule Update

Marcus Maltby

Background

Focus:

- Amendment 3 Work Period (1/1/22 - 12/31/24)

Goals:

- Develop a detailed planning level schedule to help guide decision making.
- Establish “Baseline” schedule to track progress and manage changes

Schedule Takeaways

1. Critical path for Investor Commitment goes through Updated Project Cost Estimate and Geotech Work Packages 3 & 4.
2. Other key activities narrowly off the critical path are:
 - WIFIA Negotiations with approximately 4 months of float
 - Water Right Permit with approximately 7 months of float
3. Contract Strategy will drive the development of the schedule through project completion

3 Paths to Investor Commitment

Construction



Investor Commitment – “3 Big Questions”



What do we get?

- Water Right Permit
- Participant Specific Model
- ESA Permits

What does it cost?

- Updated Project Cost Estimate
- Geo Work Packages 3 & 4
- Mitigation Cost Estimate
- Land Cost Established

How do we pay for it?

- WIFIA Term Sheet and Document Development
- Final Rating Assessment
- Finalize WIFIA Application

3 Paths to Investor Commitment

Construction



Investor Commitment – July 2024



What do we get?

- Water Right Permit
- Participant Specific Model
- ESA Permits

December 2023

What does it cost?

- Updated Project Cost Estimate
- Geo Work Packages 3 & 4
- Mitigation Cost Estimate
- Land Cost Established

July 2024

How do we pay for it?

- WIFIA Negotiations
- Finalize WIFIA Application
- Indicative Rating Assessment

March 2024

Next Steps

1. Track Against Established Baseline (ongoing)
2. Master Schedule through Project Completion
 - Target completion date: *October 2022*
 - Predecessor: Contract Strategy – *August 2022*

Engineering and Construction Manager Report

JP Robinette

Upcoming Meetings

Joint Sites Ag District Structuring Workshop

Friday, April 15, 2022 (9:00 am – 10:30 am)

Reservoir Committee

Friday, April 22, 2022 (9:00 am – 12:00 pm)

Authority Board

Wednesday, April 27, 2022 (1:30 – 4:00 pm)

Operations & Engineering Workgroup

Wednesday, June 8, 2022 (1:30 – 3:30 pm)

Thank you!

