

Reservoir Committee and Authority Board Meeting

Agenda Item 3.1: Lower CBD Cost
Updates for the Project Cost Estimate

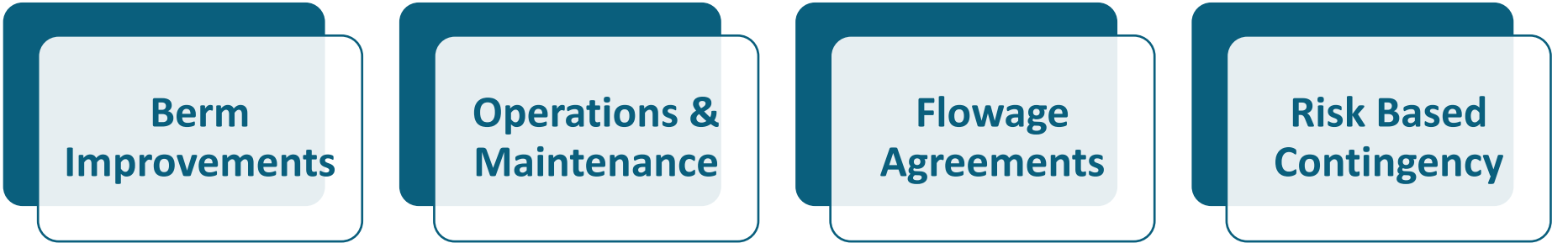
May 22, 2026



Current Cost Included for the Lower CBD

- Risk based contingency for Extending Dunnigan Pipeline to the Sacramento River – \$64,750,000
- Non-Contract Costs: Portion used for Lower CBD Flow Monitoring and Hydraulic Modeling Analysis

Lower CBD Cost Updates



**Berm
Improvements**

**Operations &
Maintenance**

**Flowage
Agreements**

**Risk Based
Contingency**

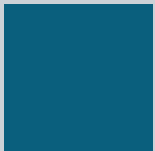
Addition of Berm Improvements Costs are Not Recommended



New Berms expose Sites to assume flood risk in winter operations due to real or perceived impacts



Operate to max. WSEL levels / max flows in the CBD and modulate Sites flows when/if ambient flows are high in the Lower CBD



Conservation easement land and Agricultural land both have berm impact issues (O&M, drainage, access)

O&M and Flowage Agreements

- Operations and Maintenance costs added for Lower CBD items such as:
 - Weed abatement
 - Flow monitoring and metering program
 - Dredging / clean up
 - Other Contract Operations
- Flowage Agreements
 - Adding costs for development and execution of flowage agreements

Risk Based Contingency Updates

- Extension of Dunnigan Pipeline to the River costs (without design contingencies) rose from \$129m to \$236m in draft Conveyance Capacity TM.
 - With 50% likelihood of occurrence this accounts for an additional \$54m
- Drivers on Cost Differential:
 - Detailed bottom-up estimate vs. original Unit price per LF
 - Added valve vault, tunneling, and increased to costs per linear foot for pipeline installation
 - Dewatering assumptions were increased which impacted costs per LF.

Additional Lower CBD Considerations

Lower CBD Operational Losses

- Evapotranspiration
- Seepage
- Overflows onto adjacent Lands
- Start up filling of Lower CBD
- *Offsetting Losses:
Ambient Lower CBD flows*

Opportunity Costs of High Flows in Lower CBD Impacting Sites Releases

- Rice field drain: Typically, 1-2 weeks late August / early September (+/-)
- Fall Storms

Recommend Cost Changes for Baseline Report Project Cost Estimate

- Add approximately \$100,000,000 to the management budget for the Lower CBD
- Add to plan of finance Lower CBD O&M annual budget
- Upon initiation of Phase 3, proceed with board approved studies and evaluations necessary to proceed with a dual strategy of:
 - Continuing work on the use of the Lower CBD system
 - Additional conceptual analysis of an extension of the Dunnigan Pipeline to the Sacramento River as more is learned about use of the Lower CBD system.

Questions?



Bullpen



Potential NPV Costs of Measurement Differential (i.e. Losses)

- NPV Calculation Assumptions:
 - \$2,000/AF
 - 50-year lifecycle (1st 8 years no water)
 - 2% discount rate
 - Water right application – Top Speed scenario used, used average annual flow

- NPV Results for estimated loss range:

50-year NPV w/ 2% Losses	50-year NPV w/ 5% Losses
\$134m	\$334m

Recall: Conveyance water losses in CBD estimated around 2 to 5%



- Pipeline to River Construction Cost Addition \$315m

Key Takeaway: The NPV cost of losses around 5% are similar to the construction costs of a pipeline to the river

Key Steps to Setting Operational Parameters and Establishing Flowage Agreements

Install
Additional Flow
Monitoring

Get three
Additional cross
sections



Gather flow
data (1-2 years)
and gather
Landowner
data/input



Calibrate Lower
CBD Model

Build model
confidence with
Stakeholders



Define
parameters for
sites operation
that will form
agreement
basis (WSELs,
flows, land
areas impacted,
etc.)



Draft
agreements and
get signatures
on Flowage
Agreements
(2 years)

- Process on hold until 2027
- Calibrated model needed to hone Lower CBD Sites capacity impacts during transfer window from:
 - 2 weeks +/- of rice field drain (Late August/Early Sept)
 - Fall storms
- Operational Parameters timeline: 2029-30
- Flowage Agreement timeline: 2031-32

Pipeline to River Considerations

- Preliminary Assessment of Pipeline to River
 - Access, crop, and leased land impacts
 - Discharge location coordination
 - CBD benefits missed = missed opportunity
- Meeting planned with RD 108 to discuss Pipeline to River in more detail in Late May
- Once decision made to start pipeline to river, flowing water through pipe will take 6-7(+/-) years
 - Time and costs associated with Design, CEQA/NEPA, Geotech, permitting, land acquisition/easements, final design, construction, O&M
 - **Total other costs: \$75m**

3/26 Lower CBD Working Group Modeling Results Presented



Ambient Conditions during Late August Peak Flow (1,870+/- cfs)



Ambient Peak (1,870 cfs) + 1,000 cfs from Sites

How Flow is Measured through the Lower CBD

- In accordance with agreements that the Authority is working on with DWR and Reclamation, releases through the Dunnigan pipeline are **required to be measured prior to entering the lower CBD and as conveyed through KLOG.**
- The Sites Authority **will be credited for the lesser** of (1) Sites releases measured in the Dunnigan Pipeline (accounting for travel time), or (2) the amount of flow measured through KLOG.
- **Differences between these two measurements are not included in the operations model** as these differences will be measured and credited based on real-time data.

Potential NPV Costs of Measurement Differential (i.e. Losses)

Inputs for Scenario Analysis	Scenario 1	Scenario 2	Scenario 3
Value per Acre Foot of Water (3), in 2026 dollars	\$2,000	\$2,000	\$2,000
Measurement Differential Percentage (Losses)	2.00%	4.75%	5.00%
Years until flow in the Lower CBD, in years	8	8	8
Years of Lower CBD Flows included in NPV Cost Calculations, in years	42	42	42
Discount Rate, as a Percentage (4)	2.00%	2.00%	2.00%
Values from Operational Modeling	Value	Units	Notes
Average Annual PWA SOD Flow through Lower CBD - Top Speed	126,420	AF/year	See Note 1 below
Average Annual PWA NOD Flow through Lower CBD - Top Speed	12,040	AF/year	See Note 2 below
Average Annual NOD + SOD Flow through Lower CBD - Top Speed	138,460	AF/year	See Note 2 below
NPV Calculations for Measurement Differentials	Scenario 1	Scenario 2	Scenario 3
Total NOD + SOD Avg. Annual Flow, in AF	138,460	138,460	138,460
Estimated Measurement Differential, in AF	2,769	6,577	6,923
Annual Value of Measurement Differential, in 2026 Dollars	\$5,539,000	\$13,154,000	\$13,846,000
Net Present Value of Measurement Differential (5)	\$ 133,480,000	\$ 316,987,000	\$ 333,663,000

Key Takeaway: The NPV cost of losses around 5% are similar to the construction costs of a pipeline to the river