



Requested Action:

Review and comment on modeled conveyance and storage losses and confirm the available storage assumptions.

Detailed Description/Background:

The Principles for the Storage, Delivery and Sale of Sites Reservoir Project Water (Storage Principles) describes a framework for procedures related to Sites Project water. This includes system losses, available storage, and allocation. The purpose of this document is to summarize assumptions for system losses and available storage as currently modeled. This information was requested for presentation to the Board by the O&E workgroup.

- Losses are assessed from the points of diversion to the point of delivery, and the processes for measuring, accounting, and assessing these losses will be described in the Operations Plan. The attached Figure 1 and Table 1 depicts the flow pathways and assumed numerical loss values in the operations model respectively. The adopted Storage Principles established the point of delivery for all Storage Partners as the outlet of the reservoir, however the Authority intends to work with Storage Partners to establish a secondary point of delivery that would represent where the Storage Partner takes control of their Sites water.
- The Available Storage¹ in Sites Reservoir is calculated to be 1.41 million acre-feet (MAF) which includes recent survey refinements and assumes a 60 thousand acre-foot (TAF) dead pool. The 1.41 MAF is the storage available to be allocated to Storage Partners.
- A “low storage level” (i.e., approaching dead pool level) in Sites Reservoir occurs infrequently as modeled in CalSim II but may result in limitations to releases due to water quality constraints. Allocating the volume in storage and facility capacities in these scenarios can get complicated. A process for

¹ Available Storage is defined in the Storage Principles as that portion of Sites Reservoir that can be filled, minus dead storage and any storage space intentionally left unfilled at the direction of the Storage Partner who has contracted for that storage space.

resolving potential conflicts in these occurrences will be described in the Operations Plan and will likely evolve as operational experience is gained.

Available Storage in Sites Reservoir

The EIS/EIR describes a 1.5 MAF reservoir based on a water surface elevation of 498 feet above mean sea level (MSL). Based on 2022 LiDAR information, the reservoir capacity at a water surface elevation of 498 feet has been recalculated and is estimated to be 1.47 MAF. With prior Board concurrence, the dead pool is currently assumed to be 60 TAF. All reservoirs have a dead pool of unavailable stored water. Based on survey refinements and the dead pool, the volume of Available Storage in Sites Reservoir has been refined and is calculated to be 1.41 MAF. The volume of Available Storage represents the storage space in Sites Reservoir to be offered to Storage Partners.

The Reservoir Operations and Engineering Workgroup discussed this topic and recommended that Staff establish a standard approach to releasing water when releases need to be limited due to water quality concerns that allows for discretion from the RC/AB to agree on another approach in real-time. At the suggestion of the O&E Workgroup, Staff will be proposing language that could be included in Project documents (e.g., the Operations Plan) to provide guidance on how to manage a scenario when the total volume of Storage Partner water in storage cannot be released from the reservoir. The O&E Workgroup discussed that providing a “default” recommended approach will help in a water quality concern that occurs shortly after reservoir construction and/or occurrences that require a quick reaction. But as operational experience is gained, it is important to provide the RC/AB flexibility to develop an agreed upon alternative approach based on the given water quality concern and real-time operational considerations.

Prior Authority Board Action:

None.

Fiscal Impact/Funding Source:

None.

Staff Contact: Angela Bezzone, JP Robinette and Ali Forsythe

Attachments:

Attachment A - Conveyance & Storage Facility Schematic

Attachment B – Conveyance & Storage Loss Summary Table

Figure 1. Schematic of Sites Project Facilities

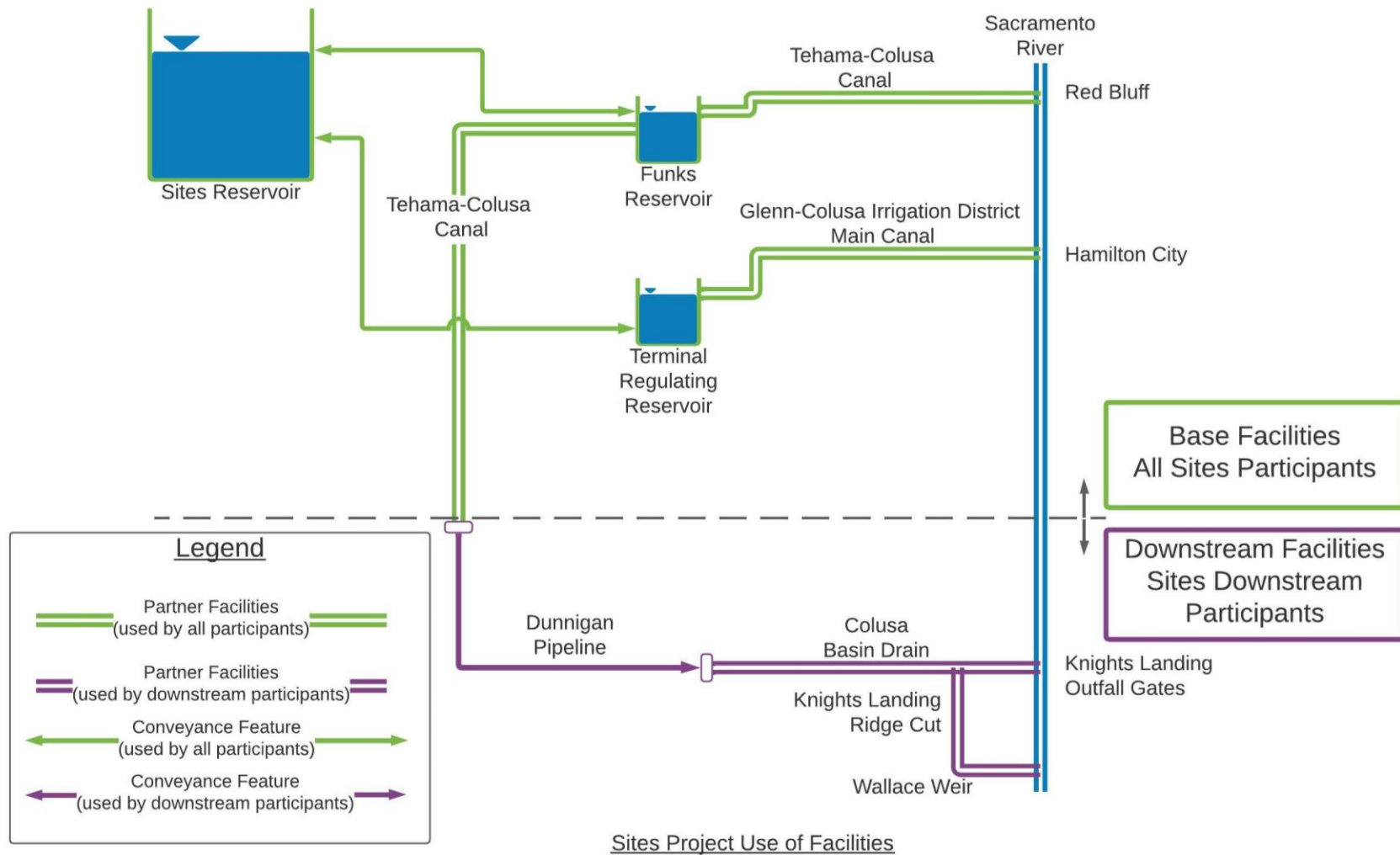


Table 1. Summary of Modeled and Applied Losses

Facility Use	Facility	Modeled Loss	Applied Loss	
Diversion Conveyance	TC Canal	1% year-round	Difference of measured diversions and total pumped into Reservoir through I/O Tower	
	GCID Main Canal	2% or 13% seasonally		
Reservoir	Evaporation	10% of diversions long-term average	Refined with future measurements	
	Seepage/other	~1-2% for 1.8 MAF reservoir		
Delivery Conveyance	CBD and Knights Landing Ridge Cut	None modeled	Difference of measurements at Dunnigan Pipeline and KLOG or Wallace Weir	
	NOD Deliveries	None modeled	Pending wheeling agreements	
	Yolo Bypass	13% loss April – October	n/a	
	North Bay Aqueduct		13% via Yolo Bypass	Consistent with State Water Contract or DWR Wheeling Agreement
			23% long-term average Carriage Water (CW) via Delta	Consistent with State Water Contract
Delta Export Facilities		23% long-term average CW	Consistent with current practices for calculating CW	