

**Requested Action:**

Confirm the level of service standards being used for the engineering feasibility analysis, which establish criteria for operations related to diversion and conveyance into and out of the Sites Reservoir.

**Detailed Description/Background:**

In April 2020, the Sites Project Authority accepted the Sites Project Value Planning Alternatives Appraisal Report (Value Planning). This Value Planning document is the guide for level of service standards as the Project team continues to advance feasibility analysis.

Confirming level of service standards as the feasibility analysis proceeds ensures appropriate sizing of project facilities and can avoid costly rework. This will be the first of several check-ins with the Reservoir Committee (RC) and Authority Board (AB) regarding level of service standards, which are policy level directions. All other conditions and analysis in the engineering process are technical judgments made at the staff level and will be consulted with the workgroups as necessary.

Two fundamentally critical components that defines the level of service standards for the Project are the diversion and conveyance capacity into and out of the reservoir. The current direction taken for accomplishing diversions from the Sacramento River and conveyance to the Sites Reservoir are as follows:

- The feasibility design assumes a 2,100 cubic feet per second (cfs) diversion and conveyance capacity within the Tehama-Colusa (TC) Canal to Sites Reservoir. Improvements at the Red Bluff pumping plant are necessary to increase diversion capacity from 2,000 cfs to 2,500 cfs. The TC Canal has an upstream capacity of 2,530 cfs.
- The GCID Main Pump Station capacity is 3,000 cfs. Diversion and conveyance capacity within the GCID Main Canal to Sites Reservoir is assumed to be 1,800 cfs, provided improvements are made to the head gates and potentially other canal structures. Verification of the GCID Main Canal capacity is recommended. A table-top analysis will be conducted and depending on the results, a field test may be required for verification.
- The feasibility design incorporates diversion features that will provide a combined 3,900 cfs to Sites Reservoir.
- The pump stations and pipelines from the canals to the Sites Reservoir inlet/outlet (I/O) are being sized to accommodate the corresponding flows in the canals. Optimizing the facilities (e.g. number of pumps, pump drive systems, etc.) will occur later in preliminary engineering.
- The reservoir I/O tower is sized for maximum operation flows of 3,900 cfs. The I/O works, consisting of the tower and reservoir low-level intake, is sized

for emergency release flows of up to 16,000 cfs, which is dictated by DSOD criteria and are orders of magnitude greater than routine operational flows.

Another important conveyance component is release criteria from Sites Reservoir to the Sacramento River. The Value Planning document indicated a release capacity of up to 1,000 cfs from Sites Reservoir into Funks Reservoir, where it enters the TC Canal, flows downstream and into the proposed Dunnigan Pipeline and into the Colusa Basin Drain (CBD). The following are key criteria and analysis of current conditions:

- The same pipelines that convey water into the reservoir will be operable for releases.
- Capacity of the lower TC Canal, downstream of Funks Reservoir, was analyzed during Value Planning with results indicating availability for additional conveyance of up to 1,000 cfs.
- The Dunnigan Pipeline is being sized for gravity flow to carry 1,000 cfs within a single pipe system.
- Results from the hydraulic modeling of the CBD indicate use of the CBD as a project conveyance feature is viable. Additional analysis for releases that are less than 1,000 cfs into the CBD is recommended to evaluate potential for extending release timeframes, which may provide greater operation flexibility and/or release volumes from the reservoir.
- In addition to releases to the CBD, the feasibility design also accommodates 1,000 cfs releases from Sites Reservoir to the GCID Main Canal through the proposed TRR facilities. The proposed level of service standard for conveyance of water from Sites Reservoir to the CBD/Sacramento River and GCID Main Canal is 1,000 cfs.

The diversion and conveyance level of service standards that are established above are consistent with the Value Planning efforts and provides guidance for analysis related to project features.

**Prior Action:**

None.

**Fiscal Impact/Funding Source:**

This analysis of level of service standards is part of the engineering process and is included in the engineering task orders. The standards establish design criteria, which translates to project costs and reliability of benefits which are two important factors in evaluating affordability for investors.

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**Attachments:**

None.