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## EXTERNAL MEMORANDUM

Date: September 15, 2022  
To: Tule River Tribal Council DRAFT  
Cc: Quarles & Brady, NARF  
From: NRCE, Inc.  
**RE: HISTORY OF THE LOWER BEAR CREEK PROJECT COST ESTIMATES**

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Following is a summary of the various cost estimates for a 5,000 acre-feet storage project at the Lower Bear Creek site on the South Fork Tule River within the Tule River Indian Reservation. Comments on the discrepancies between cost estimates by the Bureau of Reclamation and the Tribe's engineering consultant are provided at the end of the following a short descriptive timeline. The Tribe hired GEI Consultants, Inc. (4601 DTC Boulevard, Ste. 900, Denver, CO), on or about June 2010 for dam engineering services. Note that Operations, Maintenance and Replacement ("OM&R") have not been included in any amounts from 2011 until the GEI estimate rendered in August 2021.

### **January 2011**

Cost: \$90.7 million

Cost Reference Date: January 2011

Estimated by: GEI

Project Components: roller-compacted concrete (RCC) dam, raw water transmission line

Notes: This estimate was performed as part of a larger study looking at the costs to develop storage at four different dam sites on the Reservation (Lower Bear Creek, Upper Bear Creek, Lower Cedar Creek, Upper Cedar Creek). The Lower Bear Creek site was found to be the least expensive of the four alternatives. Cost estimates were relatively preliminary, and no OM&R costs were estimated or included.

### **June 2013**

Cost: \$159 million

Cost Reference Date: 2012

Estimated by: GEI (all components except distribution system and OM&R), NRCE (distribution system)

Project Components: RCC dam, road improvements, raw water transmission line, water treatment plant (wtp) expansion, expanded distribution system

Notes: This cost estimate was presented as part of the 2013 Water Settlement Technical Report prepared by the Tribe's consultants. It examined the costs at the same four dam sites as the 2011 estimate. It also expanded on this previous work by adding costs for roadwork, wtp expansion, and an expanded distribution system to deliver treated water. Distribution system costs were determined based on future housing areas that were all located within the original Reservation. No OM&R costs were estimated or included.

## **September 2016**

Cost: \$398 million

Cost Reference Date: July 2015

Estimated by: Bureau of Reclamation

Project Components: RCC dam, access roads

Notes: This appraisal-level cost estimate was presented as part of Reclamation's 2016 Technical Evaluation Report. This report followed the Value Planning Study that Reclamation conducted, which identified multiple project alternatives including on-Reservation dams, increasing the capacity of Lake Success, large storage tanks, on-Reservation and off-Reservation groundwater, long-term water leasing, multiple on-stream small dams, off-stream dams, and off-Reservation dams. Of these alternatives, Reclamation carried forward the Lower Bear Creek dam site as well as two downstream off-Reservation dam sites for appraisal-level analysis. These three projects were evaluated as the most favorable, with the other alternatives either being significantly more expensive and/or failing to provide adequate water. No OM&R costs were estimated or included.

## **April 2019**

In a letter from Alan Mikkelsen, Senior Advisor to the Secretary of the Interior, to Tule River Tribal Chairman Neil Peyron, the Tribe was told that the Dept. of the Interior would be willing to propose to the Working Group on Indian Water Settlements a range of \$60-\$80 million for a fund-based settlement. The letter referenced the need to fulfill the Criteria and Procedures and the need to be consistent in the Dept. of Interior's approach to settling Indian water rights claims. However, the letter made no mention of the history of the Tribe and its Reservation, the physical characteristics and water resources of the Reservation, the 2007 settlement agreement between the Tribe and its downstream neighbors, or the multiple storage project cost estimates to date. No

explanation was provided for what the Tribe might do with this level of funding that would satisfy its long-term water needs, or how this level of funding was tied to any of the cost estimates to date.

## **July 2019**

Cost: \$223 million

Cost Reference Date: May 2019

Estimated by: GEI (all components except distribution system), NRCE (distribution system)

Project Components: RCC dam, road improvements, raw water transmission line, wtp expansion, expanded distribution system

Notes: This was an update of GEI's June 2013 estimate. No OM&R costs were estimated or included.

## **August 2021**

Cost: \$306 million

Cost Reference Date: September 2020

Estimated by: GEI (all components except distribution system), NRCE (distribution system)

Project Components: RCC dam, road improvements, raw water transmission line, wtp expansion, expanded distribution system, OM&R fund

Notes: This was an update of GEI's May 2019 estimate. A cost was added for an OM&R fund. The distribution system design was expanded to serve future housing areas on lands located outside the Reservation that have been acquired by the Tribe.

## **2022 Settlement Legislation**

Cost: \$568 million

Cost Reference Date: September/October 2020

Estimated by: Bureau of Reclamation (RCC dam, access roads), GEI (raw water transmission line, water treatment plant expansion, OM&R fund), NRCE (distribution system)

Project Components: RCC dam, road improvements, raw water transmission line, wtp expansion, expanded distribution system, OM&R fund

Notes: The settlement cost was determined by indexing Reclamation's 2016 cost estimate for the RCC dam and access roads to October 2020 (\$448 million), adding the raw water pipeline, wtp expansion, and distribution system costs from the GEI/NRCE August 2021 estimate (\$70 million), and adding the OM&R fund (\$50 million).

## **Comments on the Differences between Reclamation's and GEI's Cost Estimates**

The difference between Reclamation's and GEI's cost estimates is notable, especially given that Reclamation's estimate only covers the dam and access roads, while GEI's estimates also include the raw water pipeline, wtp expansion, and expanded distribution system. Focusing on just the RCC dam, the differences between Reclamation's and GEI's cost estimates can be broken out into two general categories: 1) contingency cost multipliers; and 2) specific design and cost assumptions.

Reclamation applied larger cost multipliers for project contingencies (i.e., increases in design and construction costs to account for unknown factors and the approximate nature of the estimates) than GEI. For example, Reclamation assumed a mobilization contingency of 20% whereas GEI used 9%. The cumulative amount of Reclamation's contingencies totaled 113% of the estimated project base cost. In comparison, GEI's cumulative contingencies totaled 74% of the estimated base cost. There were also differences in the unit costs used by Reclamation for grout-enriched facing and for the RCC itself.

Reclamation's approach is more conservative, but because this is a fund-based settlement with no opportunity to seek additional funding after it is passed, it is appropriate to use Reclamation's calculations.