# Appendix 5A-4 HEC5Q and Reclamation Temperature Model Assumptions Callouts

## Introduction

The assumptions for all Sites model simulations are summarized in Appendix 5A Attachment 1 Model Assumptions.

### HEC5Q and Reclamation Temperature Modeling Assumptions Callouts

The following matrix summarizes the assumptions used for the HEC5Q and Reclamation Temperature models:

* No Action Alternative 011221
* Alternative 1A 011221
* Alternative 1B 011221
* Alternative 2 011221
* Alternative 3 020121

|  | **No Action Alternative (NAA)** | **Alternative 1A(ALT 1A)** | **Alternative 1B(ALT 1B)** | **Alternative 2(ALT 2)** | **Alternative 3(ALT 3)** |
| --- | --- | --- | --- | --- | --- |
| Period of simulation | 82 years (1922-2003) | Same as NAA | Same as NAA | Same as NAA | Same as NAA |
| Climate | Current climate conditions | Same as NAA | Same as NAA | Same as NAA | Same as NAA |
| Boundary flows and storages | Monthly timeseries (from CalSim II output). | Monthly timeseries (from CalSim II output). | Monthly timeseries (from CalSim II output). | Monthly timeseries (from CalSim II output). | Monthly timeseries (from CalSim II output). |
| Trinity Lake | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. |
| Lewistown Lake | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. |
| Whiskeytown Lake | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. |
| Shasta Lake | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. |
| Keswick Reservoir | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. |
| Black Butte Lake | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. |
| Shasta Temperature Management | Temperature schedules developed to match Shasta Summer Cold Water Pool Management in 2019 NMFS BiOp. | Temperature schedules developed to match Shasta Summer Cold Water Pool Management in 2019 NMFS BiOp. | Temperature schedules developed to match Shasta Summer Cold Water Pool Management in 2019 NMFS BiOp. | Temperature schedules developed to match Shasta Summer Cold Water Pool Management in 2019 NMFS BiOp. | Temperature schedules developed to match Shasta Summer Cold Water Pool Management in 2019 NMFS BiOp. |
| Trinity Temperature Management | Releases allowed from lower, auxiliary outlet when normal outlet release are too warm. | Releases allowed from lower, auxiliary outlet when normal outlet release are too warm. | Releases allowed from lower, auxiliary outlet when normal outlet release are too warm. | Releases allowed from lower, auxiliary outlet when normal outlet release are too warm. | Releases allowed from lower, auxiliary outlet when normal outlet release are too warm. |
| Lake Oroville | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. |
| Thermalito Afterbay | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. |
| Folsom Lake | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. |
| Lake Natoma | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. |
| Folsom Temperature Management | Similar to 2009 NMFS BiOp Appendix B (See 2015 LTO for details). | Similar to 2009 NMFS BiOp Appendix B (See 2015 LTO for details). | Similar to 2009 NMFS BiOp Appendix B (See 2015 LTO for details). | Similar to 2009 NMFS BiOp Appendix B (See 2015 LTO for details). | Similar to 2009 NMFS BiOp Appendix B (See 2015 LTO for details). |
| New Melones Lake | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. |
| Lake Tulloch | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. |
| Goodwin Reservoir | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. | Monthly timeseries (from CalSim II output). Limited to physical specifications of reservoir. |