

Memorandum

Date: 12-7-2017
To: YJWCD Board
From: Craig Ullmann, P.E.
Subject: **Lake Avery Analysis Status**

AG Job No.: 10-118

As requested, Applegate Group has been performing additional analysis for the potential enlargement of Lake Avery. While our work is not finished as of the date of this memo, the following serves as a general summary of where we are at. A full updated memo will be provided prior to the end of December 2017.

- Hydrology reports were obtained from the Dam Safety Branch of the State Engineers Office. A review of these documents reveals that the current spillway was sized to pass a smaller flood than current standards would require. This makes the potential for a simple spillway crest raise doubtful.
- Even though the State is currently conducting a new hydrology study on the design parameters for high hazard dams, this work is unlikely to reduce the inflow hydrograph to a point where a simple raise is possible. This is due, in part, to the fact the the spillway does not meet current standards. A reduction of the required flood event may simply return the design flow to a point where the current spillway meets standards.
- Increasing the storage at Avery without increasing the dam height is still possible but it will likely require the removal of the existing concrete ogee weir crest and constructing a labyrinth weir in its place. An example of a labyrinth weir is depicted below. This would increase the cost of this option from previous estimates, however, this is still the most cost effective option evaluated during our past studies.

