Table 1: SUMMARY OF AD HOC COMMITTEE COMMENTS AND QUESTIONS

Comment No.	Comment	Significance	IRB Comments
1	The use of the term "Comprehensive Needs Assessment" implies a more thorough examination of needs than currently proposed via the identified six (6) tasks and may be interpreted by the public as misleading.	Medium/ High	The IRB agrees that the title of the study (taken alone) could lead many stakeholders to expect a more expansive scope than currently envisioned. Expectations surrounding a "Comprehensive Needs Assessment" will vary widely according to the perspective of the reader of the final report. A significant risk in not addressing the comment would be the ability for detractors to discount or dismiss the study as not being comprehensive. This comment is closely related to IRB recommendation M1-22. It would seem that recommendation 1c from the Ad Hoc committee would be a reasonable approach to addressing this concern. The introduction of the final report could define the scope of the CNA effort, and it could identify other items not addressed in the scope of the CNA along with how those issues are being addressed by DWR. To implement recommendation 1a of the Ad Hoc Committee, consider renaming the study "Facility Needs Assessment". This would eliminate potential criticism surrounding the term "comprehensive" and would help focus expectations that the study is mainly about assessing the physical features of the facility and not the human or organizational factors within DWR or the operation of the facility. DWR may also consider providing the Ad Hoc Committee a briefing on some of the other efforts that DWR has completed and continues to undertake to address other issues of concern to the Ad Hoc Committee such as site security, terrorism, etc.
2	Proposed criteria by which to evaluate "safety" and "reliability" have not been provided, thus precluding the Ad Hoc Committee from	Medium	While the basis for this comment demonstrates some understanding of risk and safety, the comment itself indicates an unrealistic view of safety. The notion that there is a discrete threshold between safe and unsafe conditions is not an appropriate model for assessment of safety issues. Safety will always exist as a continuum. Even the occupational health and

	communicating to the public the proposed thresholds between safe/not safe and reliable/not reliable.		safety industry (which specializes in this topic) has no widely accepted metrics to define the threshold between safe and unsafe conditions. Regulators such as OSHA and FERC can establish minimum requirements for safety, but these do not imply absolute safety and they are subject to change when significant accidents/incidents occur. Responsible parties (such as dam owners) must understand the risk environment in which they operate and make reasonable decisions about the tradeoffs between safety practices/investments and other factors. We agree with the aspect of the comment that calls for documenting the factors/metrics to be considered in decision making. At the same time, we believe it would be misleading to the public to propose specific thresholds of safety other than those specified by regulation. We see this as an area that requires discussion with the Ad Hoc committee on basic concepts of safety including "Hierarchy of Controls". A basic tenet of risk management is that greater potential consequences require greater levels of safety controls/investments to meet societal risk aversion expectations.
3	Timely public dissemination of select relevant documentation will aid the Ad Hoc Committee to fulfil its role of communicating accurate information and context about the current needs assessment for Oroville Dam and appurtenant structures initiative.	Medium	DWR and other infrastructure owners have significant challenges in determining the appropriate balance between sharing and withholding information. Without question sharing of information is tremendously beneficial when shared with those who intend to use it to protect or benefit others. However, sharing it publicly also makes that information available to those who wish to do harm to America's infrastructure, economy, people, and/or facilities. The basis provided for comment 1 indicates a desire to include security in the CNA. A key element of any security program is an information security component in which information is scrutinized prior to dissemination. Key information in the wrong hands can provide important targeting information and vulnerabilities that can potentially be exploited to do harm. While we agree with the usefulness of the information to the Ad Hoc committee, DWR must also consider a higher-level purpose of protecting

			that information which could be used to bring harm to the people of the Feather River Valley, California and the nation.
4	Provide the proposed metrics that will be used to 'determine' the existing level of reliability and resilience as well as modifications to the existing level of reliability and resilience through the proposed 'enhancements.'	Medium/ High	The IRB considers the requested information to be a subset of the evaluation framework addressed by recommendation M3-1 in its report dated December 14, 2018.
5	Confirm that USACE has been appropriately engaged in Task 2 "Operations Needs Assessment to Support Development of Alternative Reservoir Outflow Enhancements" as this task directly relates to flood control operations, which are regulated per the 1970 Operations Manual, and established through the cost-share agreement between USACE and State of California on March 8, 1962.	Medium/ High	While the IRB agrees that such engagement would be beneficial, the IRB believes the CNA study can reasonably proceed to propose and evaluate possible technical safety enhancements. Specific enhancements would certainly have to be coordinated with USACE if there is a decision to pursue implementation of one or more alternatives.
Other Questions 1	*Directed to the IRB:* Please explain the reasoning behind examining active management of the lake levels at 350' to 640' in the context of the CNA. What is the driving force behind this question?		The recommendation was made looking beyond the CNA study toward decisions about investments to be made to improve the safety and reliability of Oroville Dam. In water resources, it is frequently difficult to justify significant capital investment solely on the desire to improve safety. Recognizing that a safety improvement of a low level outlet that would allow the release of water below elevation 640 could have other significant benefits to project purposes may improve the chances for securing the funding to implement such an alternative.
02/19-1	With source of funding established, please explain the risk assessment criteria for establishing priorities and timelines for recommendations coming out of both the Level 2/Part		At the December meeting of the IRB, DWR and its consultants presented a conceptual model for their evaluation framework. The IRB looks forward to IRB Meeting #4 to see how the evaluation framework has evolved over the past several months. As captured in recommendation M01-02, the IRB has a keen interest in any issues identified through the Level 2/Part 12D

	12D, and the CNA process. Does the framework weight public safety, water deliveries, etc.?		processes that would indicate a risk to the public that warrants expedited action.
02-19-2	In the 2014 Part 12D Probable Failure Mode (PFM) Analysis report, 12 of the 13 PFM candidates under Operations were redacted under CEII. DWR has considered hiring an independent consultant to help communicate CEII information so as to engage the Ad Hoc Group in these important matters. - What is the status of improving the communication in these areas? - Are there limits in the current Water Control Manual (WCM) that are a candidate for a Probable Failure Mode?		The IRB supports the sharing of information generated in the CNA process to the extent possible without exposing the public to unnecessary risk from adversaries who wish to bring harm to the nation.
02-19-3	The upcoming Level 2/Part 12D will be a very extensive process with the largest and most qualified team ever assembled for the Oroville Facility. In preparation numerous seismic and geology analysis/studies have been completed to help in the evaluation of both Static Loading and Earthquake-Loading PFM Candidates. DWR contributed data and was a co-funder in the development of Atlas 14 which became effective in California 2011. Why wasn't a new PMF study performed ahead of the Level 2/Part 12D and CNA process to be compliant with new standards and		It is the IRB's understanding that an updated PMF study was completed and submitted to FERC for review. The IRB emphasizes that the assessment of a facility for only the rarest of floods is not adequate for a credible assessment of hydrologic risk. The evaluation must also consider performance of the facility for a range of lesser floods to ensure there are no issues to be addressed at loading levels with much higher probabilities.

	for evaluation of Flood Loading and Operational PFM Candidates?		
02/19-4	There seems to be some confusion regarding the restored capacity of the combined Main Flood Control Outlet (FCO) and the Emergency Spillway. A letter from FERC stated the combined output of both FCO and Emergency spillway is 400,000 cfs that appears to be much lower than prior estimates of the capacity needed to pass the Probable Maximum Flood (PMF). Can you please elaborate on this discrepancy? Also, is a new PMF being created? If so, please explain the process and who will be involved in constructing a new PMF?		The IRB anticipates there will be a number of issues of confusion/conflict as the information in the CNA develops. It is frequently important to better understand the context in which statements are made. The process of documenting the CNA studies should help to provide the context for a number of pieces of information in the public domain without context.
02/19-5	Downstream communities are concerned about the Department of Water Resources (DWR) current ability to forecast inflows into Lake Oroville during the winter season. There are many variables within the hydrology equations used to determine risks. These include: a) Wetness Index b) SPF rain on snow melt inflow increases. c) Accuracy of upstream reservoir storage credits d) Accuracy of predicting inflows from upstream river gages In your Level 2 analysis, are you going to review your current		The IRB agrees with seeking the best methods for forecasting reservoir inflows and outflows and sharing information on the accuracy of forecasted values and the implications of forecasted conditions on reservoir storage. The variability associated with the multitude of parameters associated with precipitation, runoff and conveyance will always result in uncertainty associated with such forecasts. Better methods and tools serve to reduce the range of uncertainty.

	forecasting capabilities and equipment to ensure forecasted inflows are more accurate? How can you be more transparent with the public on reservoir flood capacity and forecasted inflows?		