ATTACHMENT 3

Trinity River Restoration Program

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MEMORANDUM

TO: TRINITY MANAGEMENT COUNCIL (TMC)

FROM: DESIGN TEAM (DRAFTED BY DJ BANDROWSKI)

SUBJECT: NEW DESIGN PROCESS AND TECHNICAL ROUNDABLE SUMMARY

This memo is to provide you an update on the Design Team's (Channel Rehabilitation Workgroup) 2015 design process and related lessons learned from a recent technical roundtable discussion held on December 8th, 2014. Over the last couple years, the broader Design Team and the four associated Design Groups (State, Federal, and both Tribes) have transitioned into a process of using more analytical tools to evaluate design alternatives that help inform design decisions. However, due to compressed design schedule timelines and an increased level of effort to perform associated analyses, we are often faced with balancing technical quality with maintaining momentum and meeting our schedule. In addition, it is paramount that the Design Team can justify technical decisions using a consistent process that allows time for necessary analyses and alternative evaluation.

During our recent technical roundtable discussion, this issue of analytical information became even more apparent when we became distracted by discussing technical opinions rather than data or analysis. The use of qualitative observation vs. quantitative data/analysis often creates confusion. The primary issue we were discussing at the technical roundtable was regarding meander bends and the associated physical processes and hydraulic dynamics associated with channel manipulation. It became clear throughout out meeting that we were mostly on the same page regarding this issue, but because we were discussing theory rather than empirical information, we were sidetracked as a result. Once we introduced quantitative examples and details from the design complex at Dutch Creek, we were able to evaluate the issue more thoroughly. Therefore, the principal lesson learned during our technical roundtable was that we need to be more purposeful at evaluating alternatives with the appropriate level of analysis and empirical data. This refined approach will be articulated in more detail later in this memo.

Over the last year, it has become apparent that we need a refined design process to handle the complexity of our projects and increase our efficiency without compromising technical quality or timeline. The new 2015 design process that has been developed is an effort to increase synergy within the Design Team and harness the strengths and skillsets of our individual design groups and organizations. Capitalizing on our teams' strengths, decreasing redundancy, and streamlining the process are some of the principal tenants of this new design framework. The principal change in the design process is to have each of the four Design Groups focus on the

design components that they have the most advanced skills in performing, not just for their site but for all the sites being designed. The assignments of these components are the following:

- 2D Hydraulic / Morphodynamic / Habitat Modeling Components: *Federal Design Group*
- 1D Hydraulic Modeling / FEMA Floodplain Analysis Components: *State Design Group*
- Revegetation Design and Analysis Components: *Hoopa Valley Tribe Design Group*
- Large Wood Design and Analysis Components: *Yurok Tribe Design Group*

This integrated design approach and shared responsibility across sites will encourage more coordination and synergy between the Design Groups, help create increased efficiencies, and reduce reliance on external private consulting firms.

Each of the four Design Groups will maintain their principal responsibility of developing design alternatives and associated Digital Terrain Models (DTM's) for their assigned project site. However, two additional changes will be adopted: One, we will move away from an arbitrary percentage based design increments (10-30-50-90%, etc.) and instead focus on design steps that follow a logical sequence of evaluating alternatives. The important component of this change is that the Design Groups will move away from two-dimensional alternatives and be required to document their design alternatives using three-dimensional DTM's, even for the initial design concepts. And two, instead of developing a large, site-specific design report at each design increment (10%, 30%, etc.), we will focus on documenting the design alternatives through short technical memos including drawings showing cross-sections, profiles, and planviews.

The other design components (1D/2D hydraulics, reveg, wood, etc.) developed by the assigned Design Group will also document their analysis in technical memos. An example of this documentation efficiency is in the development of a single Existing Conditions Report. In the past, each Design Group developed their own existing conditions documentation, which was often inconsistent to each other. Now this report will be developed by the entire Design Team partnership, capitalizing on the group's skill sets and expertise.

The question of how the new 2015 design process will help resolve the issues discussed at the technical roundtable meeting is relevant and important. It will now be required by each Design Group to analyze and compare alternatives using empirical information tied to defined goals/objectives and quantitative metrics. This will include topographic dimensions and associated drawings, 2D hydraulic response at key flows, rearing habitat gains based on habitat suitability criteria (HSC), and proposed design evolution at each complex. The alternative analysis and comparative evaluation are key steps, but they will have to be scalable to the level of design being performed. In order to resolve the concerns brought up during the technical roundtable discussion, we will incorporate this process into the final stage of the Dutch Creek design.

As the workgroup coordinator I want to thank the entire Design Team for their hard work, dedication, and commitment to restore the Trinity River and for all their input to help refine the design process. As part of the adaptive management process, the Design Team continues to follow the TRRP mandate: to restore – adapt – improve. The Design Team appreciates the support that has been provided by the Trinity Adaptive Management Working Group (TAMWG) and the Trinity Management Council (TMC). We look forward to our collaboration as we engage on the Phase II channel rehabilitation projects.