Draft Individual Review Form

Proposal number: 2001-K200-2 **Short Proposal Title: Mill Creek Anadromous Fish Adaptive Management Enhancement Plan**

Reviewer is employed by the US Department of the Interior, which has considered and may fund elements of the proposal.

1a) Are the objectives and hypotheses clearly stated?
Provide detailed comments in support of your conclusion [Note: in the electronic version, this will be an expandable field]

An objective of improving adult salmon migration into lower Mill Creek is fairly clearly stated but is not adequately described. Adequate information is not provided on the degree of the existing problem or the degree to which the proposed project could address the problem. The stated hypothesis is that "supplemental in-stream flows in lower Mill Creek will generate suitable environmental cues and hydrologic conditions for adult spring-run chinook fish passage", but information is not presented on the frequency or duration of periods when these environmental cues and hydrologic conditions are not currently generated.

A second objective, "define the scientific uncertainties of the Mill Creek natural flow regime to develop a long-term solution to the fish passage problem" is stated in the proposal section on "Expected Products/Outcome." This second objective is unclear to this reviewer.

1b1) Does the conceptual model clearly explain the underlying basis for the proposed work?
Provide detailed comments in support of your conclusion [Note: in the electronic version, this will be an expandable field]

Section C. 1. B. "Conceptual Model" is a set of generalized descriptions of elements of the proposal, and does not explain the underlying basis for the proposed work. It is possible to infer a conceptual model from the proposal as a whole, which simply stated is that at some times during some salmon migration seasons there is not enough water in the lower two miles of Mill Creek to permit upstream migration, but that manipulation of a small portion of permitted diversions can provide substantial increases in migration success if it is managed by discoverable scientific criteria.

1b2) Is the approach well designed and appropriate for meeting the objectives of the project?
Provide detailed comments in support of your conclusion [Note: in the electronic version, this will be an expandable field]

The proposal does not provide evidence that the approach is well designed and appropriate for substantially improving passage of adult spring-run chinook into Mill Creek.. Section C.2.b. , "Approach", is confusing , describing various measures that could be achieved, such as April-June base flows of 50 cfs, without specifying the exact role of the proposed project in achieving these flows, or specifying when during periods of widely varying natural flows these minimums would be achieved, or what portion of the salmon runs might be affected if they are not. A second approach involving shutting off up to 150 cfs of irrigation diversions for three-day periods is described, without information on its timing on its relative impact on existing hydrology and therefore on its probable biological benefit. It is stated that an existing fisheries restoration project with at least some similarities to the proposed project already exists, but the relationship between the two projects is not clear. In Section 2.g. "Feasibility", evidence is cited that the existing program did permit upstream salmon migration following very low flows in May, 1990, so the proposed project could have a positive effect on salmon migration under some conditions.

The proposal does not provide evidence that the scientific program would improve the usefulness of the acquired water, or that an institutionalized adaptive management program would be necessary to determine if low water is blocking fish migration and that a pulse of water should be allowed to pass the diversion point. There is no explanation of why these functions would not continue to be within the capabilities of the California Department of Fish and Game and the local water company.

1c1) Has the applicant justified the selection of research, pilot or demonstration project, or a full-scale implementation project?
Provide detailed comments in support of your conclusion [Note: in the electronic version, this will be an expandable field]

The proposal does not appear to address this question specifically. However, the question is probably not applicable, because the central substantive feature of the project appears to be the acquisition of a proffered water right, which would not lend itself to a research or demonstration project. The elements of the project that would be funded through this proposal would consist essentially of research and project management, and are appropriately described as such.

1c2) Is the project likely to generate information that can be used to inform future decision making?
Provide detailed comments in support of your conclusion [Note: in the electronic version, this will be an expandable field]

It is not clear from the proposal that the project is likely to generate information that will usefully inform future decision making. There is an expressed intention to study the effects of whatever variation in flows the project induces when fish are migrating. Since the hydrological impact of the proposed project is not specifically described, and may be relatively small, and since the studies are not described, it is not possible to predict whether the approach will provide any useful information.

2a) Are the monitoring and information assessment plans adequate to assess the outcome of the project?
Provide detailed comments in support of your conclusion [Note: in the electronic version, this will be an expandable field]

The monitoring and assessment plans are vague, and consist mainly of 1) a plan to monitor critical riffles by watching them on an unspecified schedule, 2) a suggestion that existing California Department of Fish and Game monitoring "will be supported and may be expanded as necessary", and 3) a statement that installation of a fish counter should be investigated. It is not clear how often the flow of Mill Creek would be measurably affected by the project, and therefore how often there might be measurable outcomes. The existing project as described seems to be put into effect late in the spring under very dry conditions, so the opportunity to monitor results may be absent in most years.

Adding to the necessarily sporadic nature of monitoring is the absence of potential scientific controls, so an adaptive management program would not develop as an experiment but as a series of independent observations. Specific hydrology and run timing, as well as the shape of the stream channel, will be different from year to year, so results in any one year will not necessarily be comparable to those of another, even if a number of dry years occur in succession. It appears that management of this small portion of Mill Creek diversion rights may have to react to chance development of temporary late-season migration barriers in dry years, and that there may be little opportunity to develop detailed operating criteria as implied in the proposal.

2b) Are data collection, data management, data analysis, and reporting plans well-described, scientifically sound and adequate to meet the proposed objectives?
Provide detailed comments in support of your conclusion [Note: in the electronic version, this will be an expandable field]

No. The section of the proposal on data-handling states only that the project proponents would provide annual reports on the project to various agencies, and would "conduct studies."

3) Is the proposed work likely to be technically feasible?
Provide detailed comments in support of your conclusion [Note: in the electronic version, this will be an expandable field]

The water acquisition by the project proponent, and its management by the Department of Fish and Game and the local water agency is feasible. Apparently the water right acquisition would reinforce a pre-existing arrangement between state agencies and the water agency, which is reported to have had positive results as recently as 1990 and has therefore been proved feasible.

The suggested peripheral activities such as the proposed "conservancy fund", "monitoring and research", and "long-term fish passage restoration studies" are too vaguely described and therefore too insubstantial to be accepted as feasible ways of improving resource management in the project area.

4) Is the proposed project team qualified to efficiently and effectively implement the proposed project?
Provide detailed comments in support of your conclusion [Note: in the electronic version, this will be an expandable field]

The proposed project team appears qualified to carry out Tasks II and III, which involve developing ways to provide the local water agency with a volume of water equal to the volume of the transferred water right.

There is no evidence that the project team has expertise in biological resource management or fishery biology, although a fisheries biologist to be named later is included in the statement of qualifications. This unfilled position, and the weakness of the biological material presented indicates that the existing team is not qualified to plan or carry out a biological management program.

Miscellaneous comments
[Note: in the electronic version, this will be an expandable field]

Overall Evaluation Summary Rating	**Provide a brief explanation of your summary rating**
☐ Excellent ☐ Very Good ☐ Good ☐ Fair ☒ Poor	[Note: in the electronic version, this will be an expandable field]

Poor. The proposal consists largely of generalized intentions rather than a logical plan of action, and provides little evidence suggesting that it would improve anadromous fish management. The possibility for improving salmon migration on Mill Creek by institutional means appears essentially realized by the acquisition of the water right, which is described as funded through a separate process, and by the apparent willingness of the Department of Fish and Game and the local water company to cooperate in managing it as they are reported to have done in the last drought. The proposal envisions a major biological field management and monitoring program in the lower two miles of Mill Creek to analyze the

impact of adding no more that 7.5 percent of adjudicated flow back into the creek and to address passage problems that are not clearly described. To improve its rating, the proposal would need to include a description of the problem it is intended to resolve, a clear scientific rationale, a step by step plan of action, a description of the environment in which operations are to be carried out, and the participation of qualified resource management biologists experienced in field monitoring and assessment.