LARIMER COUNTY
COMMITTED TO EXCELLENCE

ENVIRONMENTAL AND SCIENCE ADVISORY BOARD

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To: Larimer County Board of Commissioners

From: Michael Lee Jones, Chair

Date: August 18, 2015

Subject: NISP SDEIS Review

The Environmental and Science Advisory Board has reviewed the Supplemental Draft Environmental Impact Statement (SDEIS) for the Northern Integrated Supply Project (NISP) and offers the following comments.

General Observations:

The environmental analysis for the SDEIS has significantly advanced from the Draft Environmental Impact Statement (DEIS). Notable examples include the updated hydrologic modeling using a Common Technical Platform (CTP) for NISP and the Halligan/Seaman projects, and the hydraulic modeling of sediment transport and aquatic habitat at the six Poudre River study sites.

The SDEIS updates the Participants' current water conservation measures. It is important to acknowledge that conservation measures have resulted in decreases in per capita water use. While conservation measures have helped to manage existing developed water supplies, the Participants have demonstrated that they have a need for additional water in the future.

Even with the advances noted above, gaps remain in the information necessary to make the final selection of the least damaging practical alternative and appropriate mitigation measures. Examples of information not available for public review at this SDEIS stage include preparation of the Supplemental Biological Assessment, completion of the Phase II water quality and stream temperature modeling, and completion of the mitigation plan.

We appreciate the Army Corps of Engineers (Corps) taking another look at hazardous materials contamination at the Atlas Missile Site. We believe that the impact assessment is sound and the proposed project changes are appropriate to address potential impacts.

The No Action alternative developed for the SDEIS does not accurately describe the current trajectory of events because it requires development of a new water project (Cactus Hill Reservoir) that would require a separate permitting process similar to NISP.

Based on the limited available data, the Preferred Alternative (Alternative 2) has an important advantage over Alternatives 3 and 4 in that it requires the smallest total withdrawal of water. However, a number of specific issues discussed below prevent an effective assessment of the impacts from any of the alternatives compared to current or future conditions.

Serious Concerns:

Impacts on Surface Water

As was criticized in the DEIS, *monthly* flow data are not applicable for evaluating environmental impacts of the alternatives on streamflow and create a false impression that environmental impacts have been properly characterized. Instead, *minimum* and *maximum daily* flow data provide the most appropriate information to assess environmental effects. However, daily flow data presented in the SDEIS are mostly *median* flows, which are also uninformative of environmental effects. New figures need to be created illustrating the *minimum* and *maximum* daily flows of each of the alternatives.

Figures of the more useful daily flow data are poorly presented in the SDEIS and technical reports such that it is difficult to adequately assess environmental impacts. For example, figures of the time series of the maximum, mean, median, and minimum daily flows (e.g., Water Resources Technical Report Figure 6.15) do not graph the y-axis on a logarithmic scale. Another example is the figures of daily flow duration curves (e.g., SDEIS Figure 4-30) that do not graph the y-axis on a logarithmic scale. Distinguishing the effects of the alternatives on daily flow durations at high and low exceedance probabilities is problematic because of this incorrect scaling. Additionally, figures such as SDEIS Figure 4-2 need to compare the minimum and maximum, not the median, daily flows. Full interpretation of environmental impacts would be facilitated if these figures displayed the effects of the alternatives as a percentage change from the current or future conditions hydrology.

No standard scientific performance metrics are given in the SDEIS or technical reports as evidence of how well the CTP hydrology model performed. Confidence in any of the flow-related resource effects analyses is limited because it is unknown how well the CTP simulated the observed streamflow.

Impacts to Fish Habitat

Habitat suitability curves were developed from data on habitat use by fish during low flows, but the depths and velocities measured during this time do not represent the depths and velocities available during high flows. The curves are scientifically and statistically unsound because they were projected from low flow data into times of high flows that are beyond the range of observed depths and velocities. Interpretations of habitat use during spring runoff are unfounded because the lack of observations results in predictions with extreme uncertainty. Moreover, the interpretation that habitat use by fish will increase during spring runoff because the alternatives will reduce high flows demonstrates a misunderstanding of fish ecology in rivers that are primarily influenced by snowmelt. High flows are important, not for habitat use by fish during spring runoff, but because they maintain the channel and resulting habitat that is available to fish during low flows throughout the remainder of the year. Predicting habitat use by fish in the main channel during spring runoff is not meaningful, except for adults of species that spawn during this time.

Physical habitat data presented in the SDEIS and technical reports provide flawed information for determining environmental impacts of the alternatives on fish (e.g., Figure 3-2, Aquatic Biological Resource Effects Technical Report). The data that are presented for weighted usable area (WUA) in median, 20th and 80th percentile *WUA years* are artificial and unrealistic representations of habitat availability in any given year. They are specific to each species and life stage of fish, meaning that they are not comparable to one another and are unacceptable for discriminating the different effects of the alternatives. Figures should present data for WUA in median, 20th and 80th percentile *streamflow years* because it allows the differentiation of the alternatives' effects on fish by showing how WUA will be affected in any given dry, average, or wet streamflow year.

Impacts to Water Quality

Water quality impacts to the Poudre River below the project diversion are a serious issue that has not been addressed in adequate detail in the analyses and proposed mitigation actions. The information in the SDEIS is insufficient to demonstrate that exceedances of water quality standards will not occur. We acknowledge that additional important Phase II water quality modeling is still ongoing and strongly urge the Corps to issue the completed modeling study as an addendum to the SDEIS so that it can be subject to public review prior to publication of the Final Environmental Impact Statement (FEIS).

Mitigation Measures:

The descriptions of mitigation actions are still not specific enough, despite numerous comments from stakeholders (e.g., EPA Region 8 and City of Fort Collins) that reviewed the DEIS in 2008. Likewise, the mitigation activities generally do not explain how or why they will be effective at alleviating adverse environmental impacts.

Hydrology will be impacted by the project, creating a cascade of impacts that include changes in stream morphology and sediment transport, alteration of aquatic and riparian habitat, degradation of water quality, and increased risk of flooding in the lower reaches of the Poudre River. The mitigation measures under consideration are not sufficient to address these serious impacts. Acceptable mitigation actions also need to include the provision for episodic high spring flows in the Poudre River to promote natural geomorphic processes and rejuvenation of instream and floodplain habitat. Such a measure would ideally be provided in partnership with other projects (e.g., Halligan/Seaman) to increase its effectiveness.

A credible rationale should be provided regarding the effectiveness of two proposed actions in mitigating adverse environmental impacts of the Preferred Alternative: 1) the proposed low flow augmentation to maintain 10 cubic feet per second (cfs) in winter, and 2) the proposed channel and habitat improvements to rehabilitate two 1.2-mile river reaches. An explanation should be provided in the SDEIS or technical reports that clarifies why releasing this minimum flow or rehabilitating this distance of river at these two sites would be beneficial to aquatic or riparian biological resources. It is suggested that the low flow augmentation will increase habitat availability for fish, but this alone is not a well-reasoned argument for its effectiveness.

As shown in the SDEIS and technical reports (i.e., Stream Temperature and Dissolved Oxygen Analysis, Table 4), temperature excursions are already happening in March and July through September in Segment 10, and in July and August in Segment 11. These temperature excursions are likely to increase with the Preferred Alternative, particularly in July and August. The proposed low flow augmentation would not mitigate this impact because water releases would occur in September and in November through April, but not in July and August, when excursions will have the most significant environmental impact on fish. Furthermore, the proposed Glade Reservoir enlargement also would not mitigate temperature excursions in July and might exacerbate them. However, this proposed mitigation (i.e., enlargement) is illogical because it would attempt to mitigate the adverse impact of Glade Reservoir during summer low flows by intensifying its adverse impact on spring high flows.

Principal Recommendation:

We recommend that the additional technical information and mitigation measures planned for the FEIS be prepared and presented as part of an addendum to the SDEIS. The addendum will allow the public and the Corps access to adequately detailed information that is sufficient to select the least damaging practical alternative and evaluate necessary mitigation measures.