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John Urbanic, NISP EIS Project Manager
U.S. Army Corps of Engineers, Omaha District
Denver Regulatory Office
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Via E-mail: nisp.eis@usace.army.mil

Dear Mr. Urbanic:

On behalf of Colorado Trout Unlimited and the Rocky Mountain Flycasters Chapter of Trout Unlimited (TU), we appreciate this opportunity to comment on the Final Environmental Impact Statement (FEIS) for the Northern Integrated Supply Project (NISP). TU is a non-profit conservation organization with approximately 150,000 members nationwide, 12,000 in Colorado, and more than 800 in the Rocky Mountain Flycasters chapter spanning Larimer and Weld Counties. These counties encompass the entire watershed of the Cache la Poudre River (Poudre). For more than three decades, TU members have been advocates for and on-the-ground volunteers committed to conserving, protecting, restoring and sustaining the Poudre and its watershed. Through these comments we are neither supporting nor opposing any specific alternative, but rather wish to focus attention on some key issues from the FEIS. The focus of our review of the FEIS is on impacts to the Poudre through its coldwater habitat reaches, upstream of Mulberry St in Fort Collins.

Sedimentation / flushing flows. Analysis presented in the FEIS indicates that reduction in the magnitude, duration and frequency of higher flow periods will reduce the capacity for sediment transport – which would create risk of sediment accumulating and potentially having deleterious effects on macroinvertebrate populations and fish spawning habitat. For the upper reaches of the watershed, however, this concern is dismissed based on a conclusion that the reach is sediment-limited:

The reaches upstream of I-25 are supply limited – meaning that sediment transport potential is much greater than sediment supply and over time, flows are generally able to transport all incoming material (sands and gravels) through the reaches largely without deposition. Under these conditions, a reduction in sediment transport potential is not predicted to cause a substantial change in the channel unless a threshold is reached whereby upstream (or in-channel) sediment supply exceeds sediment transport potential, or vegetation effects start to dominate. [FEIS, 4-206]

Given the magnitude of past modification of the Poudre, of depletions associated with the proposed project, and of reasonably anticipated future impacts, it would seem that the Poudre could indeed be at risk of reaching a threshold – a tipping point – at which the currently observed supply limited conditions could change and depositional impacts could start to occur. We did not see where the FEIS provided any clear analysis demonstrating why the Corps would conclude

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that such a change would not occur. We recognize that this is an issue fraught with uncertainty; accordingly we would suggest that sediment conditions and depositional patterns be a subject of ongoing monitoring and adaptive management as discussed below. This is particularly important since the FEIS itself includes a caution that (for the Ft Collins reach):

It is possible that the reduced incidence of flows around the current 1- and 2- year flood level would increase the likelihood that colonizing vegetation can become established before it is scoured out by subsequent high flows. Channel contraction can then be driven by vegetation in the absence of abundant sediment.

While the proposed mitigation plan includes a program for providing periodic flushing flows, we believe this issue creates enough uncertainty about potentially significant impacts to the Poudre that it should be included by the Corps as a subject of a robust monitoring and adaptive management plan. That will allow evaluation over time of whether currently proposed flow volumes, duration and frequency are sufficient to mitigation effects, or if adjustments of those measures (within the context of project operations) – or other interventions such as physical modification of channel habitat – may be needed to ensure the expected outcomes for flushing of fine sediments and maintenance of general channel condition.

Mitigation plan. TU participated in the public process leading to the state Fish and Wildlife Mitigation and Enhancement Plan. We supported its approval by the Colorado Parks and Wildlife Commission and appreciated some of the key measures included to minimize NISP effects and to offset impacts through improvements to currently limiting conditions. These include:

- Shifting NISP diversions from Munroe Canal (as originally contemplated) downstream to the Poudre Valley Canal
- Delivering a portion of NISP water to users through the Poudre, bolstering base flow conditions through 11.5 miles of the river including portions that can currently be fully dewatered
- Conducting stream habitat improvements on key reaches of the Poudre
- Modifying diversion structures to provide for fish passage
- Managing NISP operations to provide for periodic higher flows based on a decision matrix reflecting reservoir levels, snowpack, and previous years' peak flow deliveries

These are important measures to the health of coldwater fisheries in the Poudre, and we urge the Corps to include them as conditions for any approved permit. These mitigation measures should also be incorporated as part of ongoing monitoring and adaptive management, to ensure that they achieve the intended results (for sediment transport, fish passage, streamflow, etc.) or if they do not, to determine what adjustments must be made.

Water quality. TU contracted with Dr. Ashley Rust to complete a review of the water quality analysis, including the updated modeling efforts, from the FEIS. Dr. Rust was generally complimentary of the work done by the Corps' consultant team, but noted uncertainty associated with any modeling exercise (emphasized in bold):

The Hydros Water-Quality Analysis Effects Report is a thorough evaluation of the NISP alternatives' impacts on 37 water quality constituents. From the information in the report, I believe Hydros used a sound modeling platform and scientific approach to model calibration, validation and testing. **It is modeling, however, which is a predictive tool, meaning best knowledge of current parameters are entered in the model to predict**

how a natural system will behave in the future. There is error inherent in every modeling exercise.

Dr. Rust additionally raised concern that – while models did not predict impacts that would result in new violations of stream standards – ecologically significant cumulative effects might still result.

While none of the constituents are predicted to increase above water quality standards, it is the cumulative effect that concerns me. Hydros used a subjective ranking system to demonstrate whether water quality effects were: “major”, “moderate”, “minor, or “negligible”. For most constituents, changes in concentration were classified as negligible or minor. However, the same changes in concentration are still statistically significant. They are classified as minor because they are not exceeding standards. While they may be thought of as minor increases in concentration during the water withdrawal months, the cumulative effect of most constituents increasing in concentration during runoff, an ecologically important time of year where fish are spawning, insects are emerging, plants are receiving nutrients and there is a hydrologic exchange between the river and its floodplain has potential to be more than minor. The cumulative effect could impact the biota in and around the River.

The FEIS itself acknowledges that modeling of water quality related to new reservoirs “cannot be used to predict compliance with standards, since the model is not calibrated to existing data” (FEIS p. 4-95). Similarly, “Results from the Poudre River monthly mass balance water-quality model cannot be used to predict compliance with standards because the model simulates monthly medians rather than daily concentrations” (FEIS p.4-107).

In light of the inherent uncertainties of these modeling exercises, as well as the potential for cumulative impacts among water quality measures that may have ecological significance even if individual constituent standards are not violated, Dr. Rust recommended – and we request the Corps to include as part of monitoring and adaptive management for any approved permit – ongoing monitoring of water quality, riparian vegetation, and fish populations and aquatic insect life in the Poudre.

Monitoring and adaptive management. In light of the uncertainties already noted with the FEIS analysis of impacts, and the inherent need to track effectiveness of mitigation strategies, **we believe that a robust monitoring and adaptive management program is essential with any action alternative adopted by the Corps in its final Record of Decision.** We believe the framework for adaptive management proposed in the Mitigation Plan is a good starting point, but that the Corps should both include additional definition of what metrics will be monitored and what standards are expected for mitigation outcomes, and that the adaptive management program should not be limited in time to the 20 years following project completion but should continue so long as the project continues to operate and create impact on the Poudre. While some mitigation plan resources (such as dollars allocated for channel modification work) will be spent down within that shorter time span, other issues are not so limited – such as maintenance of mitigation improvements and possible adjustments in operations based on monitoring results (e.g., realigning the balance among magnitude, duration and frequency for peak flows). The effects of any action alternative will not cease after 20 years, and because rivers are inherently dynamic systems, the environmental context of project impacts may shift in ways that necessitate adaptation in mitigation efforts to ensure their continued effectiveness.

We believe that continuous monitoring of the physical, biological, and chemical state of the Poudre River is paramount. This should start now to establish a baseline and continue through construction, and remain for years afterward on regular, recurring intervals. Sites for data collection should include upstream of the initial withdrawal at Poudre Valley Canal, between there and the point at which Glade deliveries return to the Poudre, at representative locations within the reach covered by the alternate conveyance plan, and at representative locations from that point to the South Platte confluence.

At minimum, physical instrument measures should include real-time transmissions of in situ flow, water color, bedload content and embeddedness, and temperature. Water samples should be routinely collected and analyzed for harmful biota (algae), pollutants, and critical chemicals (to be determined). We suggest this should occur at least monthly, to characterize conditions across the varied hydrologic and environmental conditions of the year. Biological monitoring should include characterization of riparian vegetation (species assemblage and condition), fisheries, and macroinvertebrates.

The results should be available on a public website. Standard and critical values for each measured property should be established and, when limits are exceeded, they should be addressed. Updated water quality information should be used to calibrate and update the Hydros model.

The overall objective for the monitoring and adaptive management program should be to track conditions on the river and project impacts, as well as the success of mitigation measures being implemented to address those impacts, so as to ensure that the Poudre is and will remain healthy.

In the response to comments appendix, the Corps notes its familiarity with the “Learning by Doing” collaboration for adaptive management on the Fraser and Colorado Rivers. We again commend this model for an adaptive management program on the Poudre. In the response to comments, the Corps stated that it would be open to this should an appropriate organization be available to manage such an effort. We believe that the working committee concept described in Northern’s proposed Mitigation Plan – working on a consensus basis – is the natural analog to the Learning By Doing committee for adaptive management implementation on the Poudre. As with Learning by Doing, the Corps should have a defined party (likely the Corps itself) who would be charged with making final decisions in the absence of committee consensus. That said, we believe that such a committee, including Northern, counties, local municipalities, affected water districts, conservation interests, and Colorado Parks and Wildlife, would have strong incentive to seek consensus solutions; while having a “backstop” decision-maker is essential, our hope and expectation is that it ultimately would be used rarely if at all.

Thank you for your consideration of these comments.

Sincerely,



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