



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 8**

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October 16, 2008

Ref: 8EPR-EP

Colonel David C. Press  
Omaha District Commander  
U.S. Army Corps of Engineers, Omaha District  
1616 Capital Avenue  
Omaha, Nebraska 68102

Re: Public Notice No. 200380509  
Northern Colorado Water Conservancy  
District, Northern Integrated Supply Project

Dear Colonel Press:

This letter provides clarification and further comments on the above-referenced proposed Northern Integrated Supply Project (NISP). These comments are being sent consistent with Part IV(3)(b) of the Clean Water Act (CWA) Section 404(q) Memorandum of Agreement (MOA) between the Environmental Protection Agency (EPA) and the Department of Army. It is EPA's opinion, based on currently available information that the project, as proposed will have substantial and unacceptable impacts to aquatic resources of national importance (ARNIs).

EPA is concerned that the proposed action, Alternative 2, will have substantial and unacceptable impacts to the water quality, stream morphology, aquatic life and riparian systems associated with 55 miles of the mainstem Cache la Poudre (Poudre) River and the mainstem South Platte River below the confluence with the Poudre River. EPA identified concerns regarding the impacts of this project in our attached September 22, 2008 letter to the Corps which was sent in accordance with Part IV (3)(a) of the MOA, the Agency's responsibilities under the National Environmental Policy Act (NEPA), 42 U.S.C. Section 4332(2)(C), and Section 309 of the Clean Air Act, 42 U.S.C. Section 7609. The September 22, 2008 letter provides detailed comments on the proposed CWA Section 404 Permit and the Draft Environmental Impact Statement (DEIS) issued to support the CWA Section 404 permit action. EPA incorporates by reference our September 22, 2008 letter.

As part of EPA's continuing efforts to evaluate NISP, EPA requested copies of all of the public comments on the NISP DEIS submitted to the Corps during the public comment period. While the Corps was unable to share these comments with EPA within the 25 day time period designated in the MOA for preparation of this letter, EPA did obtain and has reviewed and

evaluated information from comments made publicly available or from comments sent to the EPA as a courtesy.

### **Aquatic Resources of National Importance/Site Description**

The Poudre and South Platte River corridors represent ARNIs, in part, due to the critical habitat functions they provide for fish and wildlife species in a semi-arid region, as well as their educational and recreational values. Both the Poudre and South Platte represent perennial, mainstem river corridors in a semi-arid high plains landscape. Because wetlands comprise an estimated 1-2% of the arid landscape in Colorado, the riparian wetland complexes, which are special aquatic sites (40 CFR 230.41), associated with these rivers provide a rare and unique habitat. Segments of the Poudre River downstream of the proposed discharge are moderate gradient and are characterized by pool and riffle complexes, also special aquatic sites under the Section 404(b)(1) Guidelines (40 CFR 230.45).

The Poudre River (including segments downstream of the proposed diversion point) is used extensively by the public for recreational activities including canoeing, hiking, biking, swimming, fishing and wildlife viewing. In 1996, Congress designated 45 miles of the lower Poudre River and lands within its 100 year floodplain as a National Heritage Area (NHA) “to provide for the interpretation... of the unique and significant contributions to our national heritage of cultural and historic lands, waterways and structures within the Heritage Area.” The economic and societal benefits of these recreational and educational opportunities are tightly coupled with maintaining the integrity of the Poudre River and associated floodplain riparian and wetland areas.

Further detail describing key characteristics and unique values of the South Platte and Poudre River systems was provided in EPA’s September 22, 2008 comment letter.

### **Compliance with Clean Water Act Section 404(b)(1) Guidelines**

Based on the currently available information, EPA believes the proposed action fails to comply with the Clean Water Act Section 404(b)(1) Guidelines (Guidelines) due to:

- 1) availability of less environmentally damaging practicable alternatives (230.10(a)),
- 2) potential for violations of state water quality standards (230.10(b)),
- 3) potential for the proposed action to cause or contribute to significant degradation to waters of the U.S. (230.10(c)), and
- 4) lack of a detailed mitigation plan (230.10(d)).

#### **40 CFR §230.10(a) Alternatives Analysis:**

Our September 22, 2008 letter included detailed comments regarding the adequacy of the alternatives analysis. Significant concerns remain regarding the alternatives analysis and further information is needed in order to identify the least environmentally damaging practicable alternative (LEDPA). EPA remains concerned that the use of screening criteria had the effect of constraining the alternatives analysis and thus limiting the further evaluation of alternatives. This is consistent with comments EPA made as a cooperating agency during preparation of the



DEIS. In addition, it appears that meeting *a portion* of the region's future water demand is the basic (i.e., overall) project purpose for NISP rather than the defined "40,000 AF of new reliable municipal water supply." (DEIS p. ES-2). Therefore, the 'No Action' alternative, or similar regional coordinated supply projects that do not require a large reservoir for storage, should be considered as practicable alternatives. As stated in the NISP Wetlands and other Waters Technical Report (page 54), the "No Action Alternative would involve almost no changes in baseline stream flows or stream stage (ERO 2008) because this alternative relies on the transfer of agricultural water. The transferred water is similar to the amount of water that is currently consumed by crop use, and the transfer would require the historical amount and timing of return flows to be maintained." Such alternatives that rely on transferred waters that maintain historical flows would have significantly less impacts to the Poudre and South Platte River corridors.

#### 40 CFR §230.10(b) Water Quality:

The DEIS does not adequately address the project's potential to exacerbate existing water quality impairments to the Poudre and South Platte Rivers. The Colorado Water Quality Control Division (WQCD) has identified two segments of the Poudre River downstream of the proposed discharge as impaired due to exceedence of the applicable State water quality standards (WQS). These two segments are included on the 2008 Colorado CWA Section 303(d) List of Threatened and Impaired Waters for pH, copper, selenium, and *E. coli*. The South Platte River is listed by Nebraska as impaired for selenium; additional loading and potential exceedence of water quality standards may occur following release of waters from Galeton Reservoir. The WQCD has stated that it expects copper and pH levels to increase in the Poudre River with reduced flows in summer and fall and that *E. coli* impairment would also persist with reduced flows (September 12, 2008 letter to Chandler Peter, from Steven H. Gunderson, Director, WQCD, Re: Northern Integrated Supply Project, Draft Environmental Impact Statement (WQCD Letter), p.3).

In addition to the pollutants for which the Poudre River is currently impaired, the DEIS does not adequately analyze and disclose projected changes in temperature and dissolved oxygen, which the DEIS identifies as expected impacts of the project (DEIS Section 4.5.3.2). Elevated temperatures are expected in reaches with anthropogenic flow reductions as compared to reaches with unreduced flow (Petts and Bickerton 1994, Cazaubon and Giudicelli 1999, Rader and Belish 1999, Dewson et al. 2007), a response that also occurs in natural channels following drought (Cowx et al. 1984). In 1997 the WQCD adopted new temperature standards for the Poudre River and intends to adopt new standards for the South Platte River in June 2009 (see WQCD Letter at p.5). These new standards "are designed to maintain a normal pattern of seasonal fluctuation to preserve thermal spawning cues. They also consider normal pattern of summertime diel fluctuation to allow for daily high temperatures in the summer" (See WQCD Letter at p.6). The potential for exceedence of temperature standards was mentioned in the DEIS, however, the DEIS did not adequately analyze future changes to these parameters associated with significant flow reductions.

Increased temperature due to flow reductions may have significant effects on other regulated pollutants (e.g., ammonia), dissolved oxygen concentrations, eutrophication and aquatic life conditions. Dissolved oxygen concentrations will decline with increased water temperatures. Increases in temperature and nutrient concentrations, and reduced current



velocities can lead to shifts in periphyton communities (McIntire 1966, Poff et al. 1990, Suren et al. 2003, Dewson et al. 2007), which can further exacerbate low dissolved oxygen conditions, increased ammonia toxicity, and changes in pH (Biggs 2000). These water quality changes are likely to affect regulated pollutants, aquatic life, recreation and aesthetics downstream of the proposed diversion point. A more thorough analysis and disclosure of these potential effects is necessary to gauge project impacts and determine appropriate mitigation.

#### 40 CFR §230.10(c) Significant Degradation:

The DEIS and technical reports do not adequately characterize the potential secondary and cumulative impacts of the proposed action to the aquatic resources of the Poudre and South Platte Rivers. However, based upon details included in the public comments and review of supporting scientific literature, the proposed action may cause or contribute to significant degradation of waters of the U.S. The impacts of greatest concern to the EPA include the potential for adverse changes to water quality, channel form and function, aquatic life and riparian wetland communities following the removal of medium and high spring flow events and reduced summer baseflows. In addition, EPA estimates up to 6,909 acres of additional wetland impacts resulting from projected changes in land use, construction and development under the proposed action could result and thus should be evaluated as cumulative impacts. A thorough analysis of these potential effects is necessary to gauge the overall project impact and determine the feasibility and appropriateness of mitigation.

#### *Stream Morphology/Aquatic Life Concerns*

The proposed action will result in a loss of spring peak flows and subsequent influences on channel form and complexity, sediment transport and deposition, and influences on the biological communities dependent on these flows. In snowmelt dominated systems, spring peak flows transport the majority of sediment, maintain channel capacity, reduce channel narrowing and vegetation encroachment, and maintain bedform sequences (i.e., riffle and pool complexes) and grain-size distribution of bed sediments (Andrews 1984, Andrews and Erman 1986, Rathburn et al. *in press*). Reducing the magnitude and frequency of these flows can reduce the transport of sediments, leading to a shift towards finer grained bed sediments, reduced channel complexity and increased vegetation encroachment. Flows of the magnitude and frequency necessary to maintain channel capacity and avoid vegetation encroachment would be eliminated in all but extreme high flow years under the proposed discharge (September 12, 2008 letter to Mr. Chandler J. Peter, from Brian Bledsoe, Ph.D., P.E., Re: Draft Environmental Impact Statement – Northern Integrated Supply Project (NISP), Applicant: Northern Colorado Water Conservancy District).

Project-induced changes in flow characteristics will adversely impact aquatic life in the Poudre and South Platte ecosystem due to changes in aquatic habitat, including changes in stream morphology and water quality (see attached figure, Poff et al. 1997, Dewson et al. 2007). In the DEIS, impacts to aquatic life were concluded to be minor, or in some cases beneficial, however the analysis failed to consider potential impacts to aquatic communities caused by changes in water quality or physical habitat. The physical habitat of aquatic communities includes not only flow regime, but substrate characteristics and channel complexity. Deposition



of fine sediments alters substrate characteristics (grain-size distribution) which will adversely impact spawning site availability for fish, and habitat and refugia for aquatic macroinvertebrates. Additionally, loss of high magnitude spring peak flows can reduce channel complexity, which, in turn, reduces habitat heterogeneity for fish and invertebrates (e.g., riffle and pool complexes). Furthermore, peak flows that mobilize and transport medium sized sediments (sands and gravels) abrade periphyton assemblages from larger substrates, and loss of this abrasive ability with reduced flows will facilitate periphyton growth and survival and alter the algal and macroinvertebrate assemblages.

Detailed comments and references to the scientific literature in the NISP DEIS comment letters submitted by the State of Colorado and the City of Fort Collins on September 12, 2008 and September 10, 2008, respectively, are consistent with the concerns presented earlier in this letter. Based upon this information and additional scientific information included in NISP DEIS comment letters submitted by B. Bledsoe, Ph.D., P.E., N.L. Poff, Ph.D., and K. Fausch, Ph.D., professors at Colorado State University, the proposed reduction in flows and alteration to the natural flow regime will have significant adverse effects on aquatic ecosystem diversity, productivity and stability, as well as on life stages of aquatic life and other wildlife dependent on aquatic ecosystems.

#### *Riparian Wetland Communities Concerns*

The DEIS fails to adequately characterize or quantify impacts to riparian wetland complexes within the Poudre and South Platte River corridors resulting from significant reductions in peak flows and overbank flooding events. The DEIS and the Vegetation Technical Report state that the reduction in peak flows would have little effect on riparian vegetation and wetland resources because these communities are supported by groundwater levels and stream baseflow conditions (rather than peak flows). Research and historical accounts have shown that flow regulation can have significant influence on riparian vegetation communities (Rood and Mahoney 1990, Tyree et al. 1994, Rood et al. 1995, Poff et al. 1997, Kranjcec et al. 1998, Scott et al. 1999, Nilsson and Berggren 2000, Obedzinski et al. 2001, Rood et al. 2003, Jansson et al. 2000). Rood and Mahoney (1990) concluded that diversion impacts, including attenuation of spring floods, led to drought stress responses and reduced poplar seedling replenishment. Other studies have highlighted the links of drought stress to alluvial groundwater and stream flows (Tyree et al. 1994, Obedzinski et al. 2001, Rood et al. 2003). Furthermore, declines in tree growth, an indicator of long term stress, have been shown to be a consequence of changes in seasonal streamflow patterns, near elimination of overbank flooding and lowering of the water table (Reily and Johnson 1982, Kranjcec et al. 1998, Scott et al. 1999). Changes in flow regime have also been attributed to increased establishment of invasive species (Lesica and Miles 1999, Obedzinski et al. 2001, Stromberg et al. 2007).

The predominance of scientific literature highlights the importance of spring snowmelt peak flows to the long term viability and maintenance of a functioning riparian community. Further information regarding the impacts to and importance of the riparian corridor can be found in the City of Fort Collins' NISP DEIS detailed comments (September 10, 2008 letter to Mr. Chandler J. Peter, from Darin Atteberry, City Manager, City of Fort Collins, Re: Comments on Draft Environmental Impact Statement for Northern Integrated Supply Project (City of Fort



Collins Letter)). Removal of these moderate and high flow events, as proposed in the DEIS, will have substantial and unacceptable impacts on the riparian and wetland ecosystem diversity, productivity, and stability, including loss of fish and wildlife habitat and loss of the functional capacity of riparian wetlands. Furthermore, the proposed action will have significant adverse effects on recreational, aesthetic, and economic values of the Poudre and South Platte River corridors (see City of Fort Collins Letter, Part V; and September 15, 2008 letter to Mr. Chandler J. Peter, from Jon G. Monson, Director, Greely Water and Sewer Department, City of Greely, Re: The Northern Integrated Supply Project (“NISP”) Draft Environmental Impact Statement (“DEIS”)).

#### 40 CFR §230.10(d) Mitigation:

Based upon information provided in the DEIS, which lacks an adequate detailed mitigation proposal for indirect impacts to the Poudre and South Platte Rivers other than adaptive management, and given the importance of moderate and high spring snowmelt peak flows to the long-term maintenance of the Poudre and South Platte River corridors, EPA is concerned that mitigation for adverse and unavoidable impacts associated with an altered flow regime will not be feasible, and therefore inadequate to offset these extensive losses. After supplemental information and analyses are provided which adequately characterize the adverse and unavoidable impacts to waters of the U.S., the applicant must develop and submit a complete mitigation plan (guidance can be found under 40 CFR §230.94, *Compensatory Mitigation for Losses of Aquatic Resources (Mitigation Rule)*). Until a mitigation plan is proposed that will offset the impacts highlighted above, this project will cause or contribute to significant degradation of waters of the U.S.

#### Summary

Based on the current information available, the proposed action will have substantial and unacceptable impacts on aquatic resources of national importance. Additional information is needed in order to adequately evaluate all practicable alternatives. The applicant has not yet clearly demonstrated the lack of availability of less environmentally damaging practicable alternatives, adequately evaluated potential violations of water quality standards, adequately evaluated secondary and cumulative adverse impacts to the aquatic ecosystem or provided a detailed mitigation plan for the proposed action. Therefore, at this time, the proposed action is not in compliance with the Clean Water Act Section 404(b)(1) Guidelines. EPA requests that the Corps hold the NISP Clean Water Act Section 404 Permit in abeyance until compliance with the Guidelines is adequately demonstrated. EPA believes that significant work remains to analyze potential impacts, and this additional information should be submitted to EPA as soon as possible so EPA can analyze these impacts.

In accordance with Part IV(d) of the CWA Section 404(q) MOA, EPA will notify the Corps within 15 days from receipt of the draft permit regarding whether EPA will request higher level review of the permit. If the Corps does not choose to accept these comments in accordance with the procedures outlined in the CWA Section 404(q) MOA, EPA may further consider its next steps for review of this project, based upon the significance of potential adverse environmental impacts to waters of the U.S. EPA requests that prior to the Corps’ decision to

issue a permit, the Corps provide a copy to EPA of the draft permit and decision document to facilitate agency review and comments. EPA believes this information exchange is critical to ensure that all relevant factors and remaining issues are addressed prior to permit issuance consistent with the purpose of the CWA Section 404(q) MOA.

EPA is prepared to work with the Corps to address the issues we have raised in our comments. The most knowledgeable person on my staff is Brian Caruso. He can be contacted at (303) 312-6573 or [caruso.brian@epa.gov](mailto:caruso.brian@epa.gov).

Sincerely,



Carol Rushin  
Acting Regional Administrator

Cc: Martha Chieply, Branch Chief, Army Corps of Engineers, Omaha District  
Chandler Peter, U.S. Army Corps of Engineers, Omaha District



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**Attachments:**

1. Figure providing a summary of the effects of decreased stream flow on habitat conditions and invertebrate community abundance, diversity, and composition (from Dewson et al. 2007).
2. EPA comment letter to the Corps, dated September 22, 2008



**Attachment 1:**

A summary of the effects of decreased stream flow on habitat conditions and invertebrate community abundance, diversity, and composition (from Dewson et al. 2007).

