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March 25, 2005

Mr. Don Chapman
Riverside Irrigation District
P. O. Box 455
Fort Morgan, CO 80701

Mr. Mark Wagner, Esq
Hill, Robbins, P.C.
1441 18th Street, Suite 100
Denver, CO 80202

Re: Riverside's Objection to Consolidated Case Nos. 92-CW130,
Northern Colorado Water Conservancy District's
South Platte Water Conservation Project

Dear Don & Mark

The Riverside Irrigation District (The District) and Riverside Reservoir and Land Company (The Company) are objectors in Consolidated Case Nos. 92-CW130, District Court, Water Division No. 1. The Applicant, Northern Colorado Water Conservancy District (NCWCD), proposes to divert unappropriated water from the South Platte River basin to storage in Galeton Reservoir. Then through a combination of intra-canal and river exchanges the stored water will be exchanged up the Cache la Poudre River for use within the NCWCD. This letter is a description of the potential impact the proposed project will have upon water rights of Riverside.

The combination of water rights owned by Riverside (Riverside Irrigation District and Riverside Reservoir and Land Company) that could be impacted by this project include storage rights in Riverside Reservoir, recharge and storage rights for Vancil Reservoir, a direct flow right, and alluvial wells. The District owns shares or rights in Weldon Valley Ditch, Jackson Lake Company and Morgan-Prewitt Reservoir Company. Riverside has agreements that entitled it to stream accretions from several groundwater recharge projects under the Riverside system. The appropriation dates of these water rights range from April 1, 1902 through June 17, 1986.

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The District has a pending application for Greasewood Reservoir, which will have multiple uses including irrigation and recharge. These pending water rights will be impacted also.

This analysis relied in part on the following documents, reports, and data that were provided by NCWCD.

1. August 19, 2002 letter from Douglas Sinor to Mark Wagner and David Robbins.
2. Draft decree, dated August 19, 2002 for Consolidated Case No. 92CW130.
3. Draft Report, "South Platte Water Conservation Project, Daily Analysis of South Platte River Flows," Northern Colorado Water Conservancy District, March 1996.
4. "Project Completion Study Report, South Platte Water Conservation Project," Northern Colorado Water Conservancy District, August 2002.

Water Supply Availability

NCWCD's South Platte Water Conservation Project engineering report stated that their point flow analysis determined the maximum amount of water that can be removed from the stream and not cause a deficiency to any other diverter. NCWCD engineering report claims that during days of "no call" in their historical period of study, the SPWCP would have been able to divert that amount of water without causing injury to senior water rights. That claim is not correct.

NCWCD's period of study was 1974 through 1994. Riverside has several water rights which are senior to the SPWCP's appropriation date, December 11, 1992, that were decreed within their study period. Many of these water rights are for groundwater recharge projects that Riverside is entitled to a portion through numerous agreements. Another is Riverside's Vancil Reservoir water rights that were decreed in 86CW387 and 88CW221.

It is our opinion that NCWCD point flow analysis is analysis of the historical operations within the South Platte River and is not representative of the water availability in the period after 1994. A review of the State Engineer water rights tabulation found that there are numerous water rights, including Riverside's, that were decreed within NCWCD's study period. Many of these water rights were in the development stage within that period and not being utilized to their full decreed potential. Full utilization of these water rights to their decreed limits would

decrease the SPWCP project yield. For example, NCWCD reports that the majority of its divertible flow occurs November through March. In this period, the numerous recharge plans in the South Platte are exercising their decreed senior water rights for recharge. Their full decreed use is not reflected in the NCWCD analysis. The use of senior decreed water rights in the future would reduce the water available to the SPWCP project below NCWCD projected yield. It is our opinion that NCWCD needs to include the impact of these more senior water rights in its analysis, before it can state that water is available for the SPWCP.

Potential Impact of Proposed Exchanges

NCWCD proposes to exchange Galeton Reservoir water upstream to several canals and reservoirs in the Cache la Poudre River basin. The Greeley No. 2 Canal and Larimer & Weld Canal are the downstream points on the river of any exchange.

Typically, when an exchange on the river occurs at the downstream point of the exchange an amount equal to the diversion at the upstream point is released to the river. There is a reduction in streamflow between the two points. It is our opinion that proportionate decrease in stream will not result in the same proportionate decrease in losses through the reach. As a result, injury will occur.

Transit loss on streamflow is attributable to two factors; evaporation from the water surface and seepage loss from the channel. Seepage loss occurs through that portion of the river channel that is wetted by the streamflow. This area is commonly referred to as the wetted perimeter. Seepage loss provides water to the riparian vegetation but it is not the sole source of supply to the vegetation. Subsurface flows toward the river and precipitation may also be a source of supply. If NCWCD exchanges change the water surface area and/or the wetted perimeter in a lesser amount proportional than the change in stream flow, the streamflow remaining will bear the burden of the an increase in streamflow losses. As a result, the streamflow below the downstream point of the exchange will be reduced by an amount greater than the amount diverted at the upstream point of exchange. This has the most potential of occurring when streamflows are low, such as in the November through March period. NCWCD has stated that this period is when most of the divertible flow is available.

In water rights transfers in which only a portion of a water right is transferred out of a canal it is common term and condition within decrees to compensate the canal for the incremental loss in order to prevent injury to other water rights. NCWCD exchanges will have the same injurious impact on the river and other water rights, as does the impact on a canal when only a portion of the canal is transferred.

The SPWCP proposed to use water normally diverted at the headgate of the Larimer and Well and Greeley No. 2 canals in its exchanges. These water will be replace internally within each canal system and based on available maps and figures provided in engineering report that replacement will occur in the lower third of each canal. As a result, there will be a reduction in seepage losses in the upper two-thirds of each canal. Historically, these seepage losses have accrued to the Cache la Poudre River. Loss of these accretions to the stream will cause injury to downstream water rights including Riverside's.

Reuse of Appropriated Water.

NCWCD draft decree proposes, "to use, reuse and successively use the appropriated water including to extinction." NCWCD has provided no information or data on how this will be accomplished. Reuse and successively use should not be allowed without specific engineering studies that can demonstrate how this can be accomplished.

Summary

Based on a review of several document provided by NCWCD and my general knowledge of the South Platte River basin, I have concluded that:

- 1) NCWCD has over-stated the potential yield of the SPWCP.
- 2) The proposed exchanges will cause injury to other water rights if the river is not compensated for an increase of incremental stream loss in the exchange reach.
- 3) The proposed exchanges will cause injury to South Platte River water rights if historical return flow from the Larimer & Weld Canal and Greeley No. 2 Canal are not maintained.
- 4) NCWCD has not provided information and data on the reuse and successively use of the appropriated water will be accomplished. Additional engineering needs to be provided.

Mr. Chapman & Wagner

3/25/2005

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As always, please call if you have any questions.

Sincerely,

Ivan Engineering, Inc.

A handwritten signature in black ink, appearing to read "Ivan A. Walter". The signature is fluid and cursive, with the first name "Ivan" and last name "Walter" clearly distinguishable.

Ivan A. Walter, P.E.

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