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September 26, 2014

Representative Randy Fischer
Chairman of WRRRC
State Capitol
200 E. Colfax Ave., Room 271
Denver, CO 80203

and

Water Resources Review Committee
Colorado State Legislature
200 E. Colfax Ave.
Denver, CO 80203

Subject: South Platte Basin Implementation Plan and its use in the Colorado Water Plan.

Dear Chairman Fischer and WRRRC Members:

The purpose of this letter is twofold: to transmit my comments and recommendations on the "South Platte Basin Implementation Plan" and to ask for your Committee's action that will result in a Colorado Water Plan that will provide the guidance, framework and an action plan to assure Colorado citizens will have a dependable water supply for the year 2050. I have testified several times recently before your Committee. Since August 8, 2014 I have spent considerable time and effort to read and analyze the SPBIP.

My Comments are based on over 50 years professional experience working on ground and surface water issues in the South Platte Basin and include 11 years as Assistant State Engineer (1980-1991) including a variety of duties: well permitting, water administration, hydrologic investigations and modeling and extensive litigation and negotiations. My comments are a critical assessment of the SPBIP.

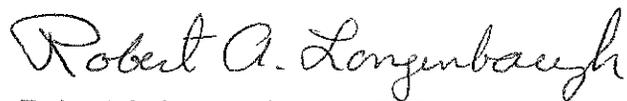
I have read the 224 page BIP report and scanned the additional 126 pages of appendices. I have focused my attention on the "Executive Summary" and "Subsection 3 entitled Water Availability - Challenges and Opportunities." I am attaching a red line copy of those two sections for your review. My comments include suggestions for additional descriptions or explanations plus critical assessment of other topics. There are a number of statements that I believe may be inaccurate.

I have prepared the enclosed three page bullet point summary of my analyses of the SPBIP document. I hope to briefly testify at your WRRC September 30, 2014 meeting on the key points. I would be happy to meet with individual WRRC members or before the whole Committee, if it would be helpful.

My second reason for this letter is to ask the WRRC to seriously consider Article 98 C.R.S. which specifies your duties for managing and administering the waters of Colorado. This along with Senate Bill 14-115 I believe clearly requires your consideration of the process and the work products that will produce an acceptable "Colorado Water Plan." If one or more of the eight Basin Implementation Plans needs more work or input in order to accurately reflect current and projected 2050 water supply issues, then I recommend that the needed inputs be developed so that the Colorado Water Plan is the desired useable document.

Thank you for considering my requests. I trust my analyses and summary comments on the SPBIP have been useful.

Respectfully Submitted



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Consultant Water Engineer, Retired
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Enclosures: Summary Comments
Red Lined Executive Summary and Subsection 3

Summary Comments on the South Platte Basin Implementation Plan
July 31, 20014 Draft

Prepared by: Robert A. Longenbaugh, P.E.

The following bullet points summarize my professional review and comments on that draft.

- 1) The draft does not adequately consider the quantity of ground water now stored in the South Platte and Republican River drainage basins. Nowhere in the report does it recognize the 10.5 million acre feet of water now stored in the South Platte alluvial aquifer some of which can clearly be put to beneficial use to further water needs of Colorado, if managed properly.
- 2) The history of how irrigation wells were drilled to supplement inadequate and undependable surface water supplies is crucial to understand current water administration problems. It was ground water return flow to the River that caused the South Platte to become a perennial stream. The use of irrigation wells today and for the next 35 years is paramount to keeping a sustainable irrigated economy in both river basins. Over 10,000 irrigation wells existed in 1965 that supplemented the inadequate and undependable surface supplies; many of which are now abandoned.
- 3) The ground water aquifers and their use for storing excess river flows when precipitation is above normal must be one of the top priorities in the State Water Plan. Currently the aquifer is not being managed for storage and the aquifers are over full causing private and public property damage from rapidly rising ground water levels.
- 4) Both the surface and ground water must be managed to maximize the water available to meet future Colorado citizen's needs. The 1969 Ground Water Administration Act specifically requires the management of both the ground and surface water while also preventing injury to vested water rights. Current water administration only address the prevention of injury issue. To plan for 2050 we must return to an aggressive program of conjunctive use. We now have 4,000 of the original 9,000 decreed large capacity wells in the South Platte Basin that are totally or partially curtailed from pumping their decreed amounts.
- 5) Prudent ground water pumping must be allowed to provide water for irrigation, municipal use and industrial needs when there is insufficient river flows such as early spring before the snow melt, in the fall and winter periods and especially during drought periods. Current well pumping with augmentation does not allow the wells to supply water during droughts. Emergency pumping during drought periods into surface canals or municipal systems is needed. The withdrawn ground water must be recharged with excess stream flows following the drought. Managing aquifer pumping within sustainable limits is critical to Colorado's water future.

- 6) To manage both the ground and surface resources we need good hydrologic data. For ground water management you need data on volumes pumped, volumes recharged, water table levels, and geologic information. Both calibrated ground and surface water models would be beneficial to better manage Colorado's water resources.
- 7) The South Platte River is now in a very dynamic state. Both physical and hydrologic conditions are changing in both time and space. Conservation, reuse, and using nontributary ground water and transbasin diversions to extinction are having major impact on river flows. It is well documented that river calls and dry up of stream flow reaches is occurring more frequently. Projections for 2050 using past rates of change in this case is not good science or technology and will result in critical errors of the projected deficiencies for all water users.
- 8) Water administration must be changed to allow the State Engineer flexibility in how he distributes excess surface runoff from storm events.
- 9) There are significant problems with how state water officials are administering water. There are statutes that require the State Engineer to prevent waste, maximize beneficial use, prevent injury, administer water in the priority system, and impose retained jurisdiction in augmentation decrees to correct how those decrees are administered to prevent over augmentation. The Division I Engineer tells me he does not honor those statutory requirements because either the Bijou Irrigation District vs. Simpson Colorado Supreme Court Case in 2002 or the legislation passed in 2002, 2003 or 2004 specifically requires him to only consider the accounting of depletions due to pumping and accretions due to artificial recharge in the existing augmentation decrees. If this conflict exists, then the Legislature needs to take action to resolve this problem, clarifying the way the State Engineer should administer the water.
- 10) We don't now have priority administration. All the irrigation wells that were drilled prior to 1965 have priority dates senior to all the artificial recharge structures (first decree for artificial recharge was in 1972). Why can't irrigation wells pump some water in their own priority? Why do we have over 100 new well permits issued since 2005 in Weld, Morgan, Logan and Sedgwick counties which have resulted in new wells irrigating new lands never before irrigated, while we have over 4,000 wells curtailed that have senior appropriation dates? This situation needs to be evaluated to measure future potential problems.
- 11) We are now wasting water in the South Platte Basin: Excess flows (400,000 acre feet per year on the average) go to Nebraska; Phreatophytes are consuming over 450,000 acre feet per year and that number is increasing; Increased evaporation from the soil surface due to the high ground water levels could easily be over 100,000 acre feet/yr. If we could salvage just a portion of each of those three wastes, then the projected 2050 M&I deficiency could be greatly reduced which would reduce or eliminate the need to import water from the Colorado River Basin.

- 12) There are references in the SPBIP that there are expected changes (problems) coming: 1) in the fractured rock aquifers in the foothills and mountains; 2) the Ogallala irrigation wells in the Republican Basin; and 3) the Denver Basin Bedrock Aquifers because of declining piezometric ground water levels. There doesn't appear to be specific action items, listed to be implemented prior to 2050 to address these critical water issues. Hopefully the State Water Plan would schedule and initiate action items.
- 13) The SPBIP has been structured to implement the recommendations from SWASI 2010 and includes action items: conservation, implement IPP's, address and limit agriculture transfers, and import water from the Colorado River Basin. This is commonly referred to as the "four legs of the stool." A very important issue that is not being considered is preventing waste and implement changes to current water administration that could greatly increase our current supply. Returning to conjunctive use like we had for 25 years (1974-1999), but carefully evaluating and making changes that will prevent injury to vested water rights that occurred during that period must be considered and implemented.
- 14) Rising ground water levels in several reaches of the South Platte River must be addressed right away to prevent permanent damage to farmland productivity. Clearly putting ground to beneficial use in areas of high ground water levels will prevent waste from occurring.
- 15) There are a number of inaccurate statements in the July 31, 2014 draft of the SPBIP that should be corrected.

Should there be questions or desire to meet to discuss these comments, please call me at 970-682-2181.

Respectfully submitted

Sept 29, 2014
Date

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