

September 3, 2013

U.S. Army Corps of Engineers, Omaha District  
CENWO-PM-AA  
ATTN: Chatfield Reservoir Storage Reallocation FR/EIS  
1616 Capitol Avenue  
Omaha, NE 68102-4901

Dear Comment Evaluator:

Thank you for the opportunity to comment on the Chatfield Reservoir Storage Reallocation FEIS.

I'm an avid wildlife photographer with a life-long interest in sharing my appreciation for nature with others. I've spent many pleasant hours watching and photographing wildlife in Chatfield State Park and would hate to see it irreparably damaged by the Reallocation Project.

As you might imagine from my brief introduction, I am concerned about many aspects of the Reallocation Project. Time constraints force me to limit my comments to only five areas:

- Colorado's need for a comprehensive water plan,
- The excessive, but unrecognized, collateral costs of the Reallocation Plan,
- Failure of the FEIS to include all potential inflows for Alternative 4,
- Concerns about environmental mitigation,
- Lack of independent monitoring for environmental mitigation, and
- Errors, inconsistencies, and missing information.

### **Need for a comprehensive plan**

I understand the need for water – though I have serious questions about whether or not we are using our water supplies wisely.

- Do we really need to replace drought-tolerant prairie vegetation with bluegrass?
- Does it make sense to grow water-demanding crops in a semi-arid climate?
- Is it realistic to continue business as usual while unsustainable water supplies are being exhausted?
- Are current estimates of future water demands realistic? Won't people find sensible ways to economize as water inevitably becomes more expensive?
- Could Colorado water laws and administrative procedures be modified to encourage more effective use of our limited water resources?

These are hard questions beyond the scope of the FEIS, but maybe they need to be addressed before we jump into the deep end of the pool (so to speak) with the Reallocation Project. Hopefully, the Colorado Water Plan currently being created by the Colorado Water Conservation Board and others will have some answers. We should wait for the answers before irreparably damaging Colorado's most popular state park.

## **Excessive collateral costs**

The FEIS rightly expresses concern about having adequate water to support Colorado's burgeoning population. In two sentences, the rationale for the Reallocation Project is “We have capacity to store more water in an existing reservoir. Let's use it.” A burgeoning population will also need more urban and suburban parkland. Chatfield State Park could help satisfy increasing needs for parks. Let's not destroy it.

The FEIS estimates the post-construction cost of recreational benefits foregone as a flat \$697,100 per year. The more people we have, the more people will want to use parks. Actual costs of recreational benefits foregone will increase in proportion to increases in population. Because people are learning to conserve water, future demands for water are unlikely to increase as rapidly as the population. In 2050 the need for parks will be greater than the need of water.

Parkland is expensive. Chatfield State Park is located in the 80125 zip code. A year ago a search of real estate for sale in that zip code found 20 parcels land of one acre or larger. Offering prices ranged from \$14,261 to \$280,172 per acre with a mean price of \$40,095 per acre. Today's prices are likely to be higher. At \$40,000 per acre it would cost \$23.5 million to purchase “replacement” parkland for the 587 acres of Chatfield State Park that would be flooded by the Reallocation Project. I put quotes around “replacement” because it's unlikely that any land could be found with the qualities of the land that the Reallocation Project would destroy. FEIS Appendix K Table 16 does propose a budget of \$16.2 million for property acquisition associated with environmental mitigation. However, none of this land would be acquired for parks.

In the previous paragraph I said that today's real estate prices may be higher. When it becomes apparent what a mess the reallocation will make of Chatfield State Park, tomorrow's real estate prices may be lower. People eager to buy homes near a beautiful reservoir surrounded by cottonwoods and riparian areas filled with wildlife aren't likely to want to live near a reservoir that would often be surrounded by mosquito-breeding mud flats and a 12-foot high bathtub ring.

This is pure speculation, but I can't help wondering why several water providers have dropped out of the Reallocation Project leaving the project 20% under-subscribed. Could it be that these providers have found less expensive, more efficacious ways to meet their needs?

As a taxpayer, I'm especially disturbed that the State of Colorado will be expected to underwrite up to \$77 million of the costs for the Chatfield project this fiscal year (\$28 million for “implementation of the Chatfield reservoir reallocation project” and \$49 million for “the CWCB construction fund for the Chatfield reservoir reallocation project” according the legislative summary of SB 13-281). We can't even manage to keep lines painted on our highways and we're being asked to help fund a project that will benefit at most only a small number of our citizens. It doesn't make sense.

Then there is the question of yield. Yield from the project will be at best unreliable – so unreliable in fact that the Army Corps of Engineers rates the dependable yield as 0 and has negotiated a special deal that will charge water providers only 41% of the cost of storage. Who's going to pay the other 59%? One way or another it's going to be put off onto taxpayers who will not benefit from the project. In fact,

many of them will be negatively impacted because the project will eviscerate a state park that they love.

At best the proposal is penny wise and pound foolish. However, as I'll explain in the following section, the selection of Alternative 3 may be penny foolish as well.

### **Missing inflows for Alternative 4**

In discussing the average yields presented in Table 5-2, the FEIS states, “These average year yields are based on volumes that could be stored from inflows during the 1942–2000 period of record (POR), including some years of severe drought when the only water stored were flows that were captured for reuse, for a minimum drought-year yield of 2,379 acre-feet.” It appears that these “non-natural” water sources were considered only for Alternative 3.

Table 1 at the end of this section shows results from a simple model based on data in Appendix BB Enclosure 2. Clearly, water from “non-natural” sources could be used to increase the yield of Alternative 4 as well as Alternative 3. In fact, these calculations estimate that inclusion of “non-natural” sources would increase the yield of Alternative 4 by 52% compared with an increased yield for Alternative 3 of only 25%.

There is one minor difference between these calculations in my Table 1 and those in Appendix BB. For some reason, the calculations in Appendix BB treated the years 1958 and 1998 differently than the other 57 years in the period of record. Instead of using the full 2,379 acre-feet of water from “non-natural” sources that could be stored in Chatfield in 1958 and 1998, the calculations in Appendix BB use only 1,336 acre-feet. Curiously, the Appendix BB calculations with the unexplained adjustments to inflows in 1958 and 1998 exactly match the target average annual yield of 8,539 acre-feet. Whatever the situation was in 1958 and 1998, it did not affect the calculations for Alternative 4. In both years inflows from natural sources exceeded the 7,700 acre-foot storage capacity for Alternative 4. Calculations for Alternative 4 used no “non-natural” sources either year.

I have constructed a more detailed spreadsheet model based on

- the average monthly inflow rates presented in Appendix H, page H-B-5;
- the average monthly gain or loss from precipitation and evaporation from Appendix H Table 6 and an increase in the surface area of the conservation pool from 1,429 acres at 5,432 feet (Appendix J, page 7) to an estimated 2,009 acres at 5,437 feet;
- and monthly outflows at a rate of 7,700 acre-feet per year (641.7 acre-feet per month) when stored water is available.

Inflows are not captured if they would increase storage to more than 7,700 acre-feet. Outflows are not released if they would decrease storage below zero.

I'd be happy to share more details about my model with anyone who's interested, but I'd be the first to admit that the model is incomplete. Using monthly data introduces artifacts that could be reduced by using weekly, daily or even hourly data. Capping outflow rates at 641.7 acre-feet per month may have been unnecessary and unrealistic. No allowance was made for outflow adjustments based on predictions of runoff from snowpack and meteorological expectations. No seasonal variation was

assumed for inflows of “non-natural” water or outflows of water for beneficial use. Evaporation losses and precipitation gains were calculated for a surface area of 2,009 acres regardless of how much water was in the reservoir. In spite of its shortcomings, I’m confident that the model is adequate to demonstrate the importance of including “non-natural” water in calculations for Alternative 4 and to give a reasonable estimate of the effect of doing so.

That said, my calculations may suffer from a lack of current data. The inflow rates presented in Appendix H, page H-B-5, haven't changed between the DEIS and the FEIS even though some water providers have dropped out and presumably taken their water rights with them. However, it's unlikely that the results would be qualitatively different for more current data.

Both the simple model and the more detailed model unequivocally demonstrate the significance of including inflows of “non-natural” water in Alternative 4. Results for the simple model can be read directly from Table 1: average annual yields of 3,061 acre-feet without “non-natural” sources and 4,658 acre-feet with “non-natural” sources. Average annual yields for the more detailed model were somewhat greater: 3,074 acre-feet without “non-natural” sources and 4,949 acre-feet with “non-natural” sources. Both calculated yields without “non-natural” sources are approximately equal to the average annual yield of 3,160 acre-feet assumed for Alternative 4 in the FEIS. When as much of the “non-natural” water as possible was captured, the more detailed model showed an average annual outflow for beneficial use of 4,949 acre-feet – 57% more than the 3,160 acre-feet assumed for Alternative 4 in the FEIS.

Clearly, inflows of “non-natural” water should be included in FEIS yield calculations for Alternative 4. Other calculations and conclusions in the FEIS should be adjusted accordingly.

For example, based on FEIS Table 5-2, the average annual yields for Alternative 4 would be:

NTGW	3,333 acre-feet
Gravel Pits	2,046 acre-feet
Chatfield Reservoir	3,160 acre-feet

If cost calculations were based on the more realistic values for Chatfield Reservoir, NTGW and gravel pits could both be reduced by 33.65%:

NTGW	2,224 acre-feet
Gravel Pits	1,366 acre-feet
Chatfield Reservoir	4,949 acre-feet

When cost estimates associated with NTGW and gravel pits are reduced by 33.65%, total investment cost for Alternative 4 becomes \$104,815,788 compared to \$109,913,461 for Alternative 3, and total annual NED costs become \$6,832,262 for Alternative 4 compared to \$7,923,208 for Alternative 3. Alternative 4 would also have the least financial cost: \$108,554,125 for Alternative 4 compared to \$122,680,085 for Alternative 3.

The FEIS is misleading because “non-natural” inflows are considered for Alternative 3 but not for Alternative 4. **Contrary to the conclusions reported in the FEIS, financial considerations favor selecting Alternative 4, not Alternative 3.**

Year	Table 1. Total Storable Inflows Based on Data in Appendix BB Enclosure 2					
	Alternative 3			Alternative 4		
	20,600 AF Maximum Storage			7,700 AF Maximum Storage		
	Natural Sources (AF)	Non-natural Sources (AF)	Total (AF)	Natural Sources (AF)	Non-natural Sources (AF)	Total (AF)
1942	20,600	0	20,600	7,700	0	7,700
1943	11	2,379	2,390	11	2,379	2,390
1944	6,430	2,379	8,809	6,430	1,270	7,700
1945	6,419	2,379	8,798	6,419	1,281	7,700
1946	0	2,379	2,379	0	2,379	2,379
1947	20,600	0	20,600	7,700	0	7,700
1948	20,600	0	20,600	7,700	0	7,700
1949	20,600	0	20,600	7,700	0	7,700
1950	958	2,379	3,337	958	2,379	3,337
1951	1,220	2,379	3,599	1,220	2,379	3,599
1952	1,142	2,379	3,521	1,142	2,379	3,521
1953	129	2,379	2,508	129	2,379	2,508
1954	0	2,379	2,379	0	2,379	2,379
1955	1,538	2,379	3,917	1,538	2,379	3,917
1956	0	2,379	2,379	0	2,379	2,379
1957	20,600	0	20,600	7,700	0	7,700
1958	15,959	2,379	18,338	7,700	0	7,700
1959	801	2,379	3,180	801	2,379	3,180
1960	1,526	2,379	3,905	1,526	2,379	3,905
1961	2,676	2,379	5,055	2,676	2,379	5,055
1962	147	2,379	2,526	147	2,379	2,526
1963	912	2,379	3,291	912	2,379	3,291
1964	171	2,379	2,550	171	2,379	2,550
1965	20,600	0	20,600	7,700	0	7,700
1966	0	2,379	2,379	0	2,379	2,379
1967	838	2,379	3,217	838	2,379	3,217
1968	0	2,379	2,379	0	2,379	2,379
1969	20,600	0	20,600	7,700	0	7,700
1970	20,600	0	20,600	7,700	0	7,700
1971	5	2,379	2,384	5	2,379	2,384
1972	2	2,379	2,381	2	2,379	2,381
1973	20,600	0	20,600	7,700	0	7,700
1974	2,153	2,379	4,532	2,153	2,379	4,532
1975	24	2,379	2,403	24	2,379	2,403
1976	0	2,379	2,379	0	2,379	2,379
1977	0	2,379	2,379	0	2,379	2,379
1978	11	2,379	2,390	11	2,379	2,390
1979	6,419	2,379	8,798	6,419	1,281	7,700
1980	20,600	0	20,600	7,700	0	7,700
1981	0	2,379	2,379	0	2,379	2,379
1982	0	2,379	2,379	0	2,379	2,379
1983	20,600	0	20,600	7,700	0	7,700
1984	20,600	0	20,600	7,700	0	7,700
1985	20,600	0	20,600	7,700	0	7,700
1986	21	2,379	2,400	21	2,379	2,400
1987	20,600	0	20,600	7,700	0	7,700
1988	4,819	2,379	7,198	4,819	2,379	7,198
1989	7	2,379	2,386	7	2,379	2,386
1990	7	2,379	2,386	7	2,379	2,386
1991	20	2,379	2,399	20	2,379	2,399
1992	0	2,379	2,379	0	2,379	2,379
1993	958	2,379	3,337	958	2,379	3,337
1994	1,224	2,379	3,603	1,224	2,379	3,603
1995	20,600	0	20,600	7,700	0	7,700
1996	129	2,379	2,508	129	2,379	2,508
1997	1,153	2,379	3,532	1,153	2,379	3,532
1998	15,959	2,379	18,338	7,700	0	7,700
1999	20,600	0	20,600	7,700	0	7,700
2000	129	2,379	2,508	129	2,379	2,508
<b>Total:</b>	<b>403,517</b>	<b>102,297</b>	<b>505,814</b>	<b>180,599</b>	<b>94,234</b>	<b>274,833</b>
<b>Average:</b>	<b>6,839</b>	<b>1,734</b>	<b>8,573</b>	<b>3,061</b>	<b>1,597</b>	<b>4,658</b>

## **Concerns about environmental mitigation**

Environmental mitigation, particularly off-site mitigation, strikes me as a sham. If someone bulldozed my home in Denver, building someone else a new house in Colorado Springs wouldn't do much to mitigate my loss. Tidying up the habitat around Sugar Creek isn't going to do much to help Preble's mice that would be displaced or drowned by the Reallocation Project.

The planned on-site mitigation wouldn't be much better. Chatfield State Park has an abundance of wildlife. It's difficult to imagine that some species wouldn't be hurt by changing the character of large areas from one habitat type to another. Just the process of making the changes is bound to create chaos in the natural world.

“Quantifying” the process with an “ecological functions approach” does little to allay my concerns. Trees and shrubland have both been assigned an ecological function index of 0.69. Replacing an acre of trees with an acre of shrubland doesn't do much for birds that nest in trees. EFA may be a useful tool for initial estimates, but getting EFUs to balance should not be the only determinant for the suitability of a mitigation plan.

Today, 38 years after the Chatfield Dam was completed, nature has apparently managed to adapt to the changed environment that we've created, although in some cases like the heron-less heron rookery adaptation has meant abandonment. There is only one possible way to mitigate damages to Chatfield State Park that would be incurred by using Chatfield Reservoir to collect water from intermittent undependable sources: Store the water somewhere else.

## **Independent monitoring for environmental mitigation**

With the possible exceptions of the Chatfield Reservoir Mitigation Company, which would be financed by funds in escrow, and the Army Corps of Engineers nearly everyone involved in monitoring environmental mitigation has compelling financial interests in spending as little money as possible. I don't object to spending money efficiently, but I'm concerned that poorly executed environmental mitigation could be worse than doing nothing at all. I'd like to have more assurance that whatever environmental mitigation is done is done well.

As the Comprehensive Mitigation Plan (CMP) and Adaptive Management Plan (AMP) are currently designed the Army Corps of Engineers has final decision authority over all issues. I think of the Corps' expertise as being in areas like building dams and controlling floods, not assessing ecological values of various habits. I don't object to the Corps' having final authority over issues relating to flood control and public safety, but I'd like to have an agency dedicated to protecting the environment making decisions about whether or not core objectives of the CMP and AMP have been met.

One might argue that the Technical Advisory Committee (TAC), which is two layers down in the organizational chart from the Corps, will provide important advice on environmental matters. I'm skeptical. According to Appendix GG, the TAC will tentatively be comprised from the following

- Environmental organizations;
- Chatfield Water Providers;

- Colorado Division of Parks and Wildlife (CPW);
- Chatfield State Park;
- Douglas County Land Trust or other land conservation organization;
- Colorado Water Conservation Board and/or CDNR;
- Denver Water;
- Corps;
- U.S. Environmental Protection Agency (EPA);
- U.S. Fish and Wildlife Service (USFWS); and
- Other “in-stream” interests, including governmental and nongovernmental downstream water interests.

If, as seems to have been the case in developing the CMP, each Chatfield Water Provider would have a representative on the TAC, this would be a big, cumbersome body dominated by water providers – hardly the kind of group that I'd expect to say something like, “No, that mitigation is inadequate. The wetland that you created is going to dry up before the summer is over. We'll have to get the Chatfield water providers to pony up some more money to make it right.”

To make matters potentially worse, recommendations of the TAC can be overridden by the Project Coordination Team, which consists of senior representatives from the Corps, the Colorado Department of Natural Resources (CDNR), and the Chatfield Water Providers. Because Colorado Water Conservation Board (CWCB), which currently owns 20% of the Alternative 3 storage allocation, is one of its major divisions, CDNR has a financial interest in minimizing mitigation costs rather than maximizing mitigation effectiveness. Certainly, the Chatfield Water Providers have an interest in minimizing costs as well. The Corps could be left standing alone to defend environmental interests against financial interests. I'm uncomfortable with the situation.

Reading Appendix GG left me with many other questions:

- How will members of the TAC be determined?
- Will the TAC have a budget?
- What sort of access will the TAC have to staff?
- Who will write the TAC's annual reports?
- What happens if escrowed funds for operating the Chatfield Reservoir Mitigation Company turn out to be insufficient?
- What happens if the Chatfield Reservoir Mitigation Company fails to perform adequately?

The following structural changes would help eliminate potential conflicts of interest in monitoring environmental mitigation:

- Water providers would use escrowed funds to contract with an independent “lead agency” like USFWS to supervise environmental mitigation. (I'd rule out CPW for this role because it's a division of CDNR).
- The lead agency would perform management functions only. It would not do environmental mitigation itself.
- Funding for the lead agency would include adequate support for staff activities such as monitoring and report writing.
- Through a competitive bidding process the lead agency would contract with an outside company to do the mitigation. Chatfield Water Providers, who would pay for the mitigation, and

- the lead agency would both have to approve the contract.
- The lead agency would appoint outside representatives to a TAC that would consist of
  - One representative from the lead agency who would chair the committee
  - One representative from the Corps
  - One representative from the Chatfield Water Providers
  - One representative from CDNR
  - Two representatives from CPW (one with expertise in parks, the other with expertise in wildlife)
  - Four outside representatives unaffiliated with the lead agency, the Corps, the Chatfield Water Providers, or CDNR. At least two of the outside representatives should be from environmental organizations.
- Meetings of the TAC would be open to the public with a reasonable amount of time allotted for public comments.
- Except in emergency situations, meetings of the TAC would be publicly announced at least two weeks prior to the meetings.
- Core mitigation objectives would be considered to be met when approved by the lead agency, two thirds of the TAC, and the Corps.

Although I'm skeptical about the ecological functions approach and the mitigation objectives, I feel strongly that whatever the objectives are, decisions about whether or not they are met need to be unbiased by conflicting interests of the agency making the decision. A structure like the one I've proposed would go a long way toward eliminating my concern that conflicting interests could influence these decisions.

### **Errors, inconsistencies, and missing information**

In the relatively brief time that I've had to examine the FEIS I've noted several problems. I'll list them below in no particular order.

- On average, approximately 20% of the water added to Chatfield Reservoir in Alternative 3, would be reused water from “non-natural” inflows. Although it seems likely that the quality of this water would differ from the quality of water from natural inflows, I found no mention of reused water in discussions of water quality. Perhaps this water is already flowing into Chatfield Reservoir. Details are not included in the FEIS.
- Appendix K Table 12 is missing year 8.
- In Appendix K Table 16, the last entry “Annual Management (years 13 through 50)” total costs appear to be calculated for 1,018 acres and 37 years. Years 13 through 50 cover a period of 38 years.
- Starting and ending times and investment rates for calculating interest during construction and present values of investments were difficult to determine and confusing.
- Appendix Y reports two different values for total environmental investment costs: \$58,545,585 in Table 1 and \$60,907,261 in Table 3. Appendix O uses the values from Appendix Y Table 1. The reason for the discrepancy may be explained by a statement on page 5-1, 2,256 pages away from Appendix Y Table 1: “Because of the present valuing process, the project first costs in



Appendix Y will not be duplicated in Appendix O...” I’m not sure what this means. Appendix O Table 4 appears to list first costs. Environmental mitigation costs are the same as those in Appendix Y Table 1. However, costs for wells and gravel pits in Appendix O Table 4 are different from those in Appendix Y Table 1. Clarity is needed.

- In Appendix O Table 4 the investment costs per acre-foot of NTGW vary dramatically between Alternatives 2 and 4: \$68,831,840 for 5,275 acre-feet (\$13,049 per acre-foot) for Alternative 2; \$25,728,406 for 3333 acre-feet (\$7,719 per acre-foot) for Alternative 4. Per unit costs for Alternative 4 are more than 40% less than those for Alternative 2. Such large inconsistencies cry out for an explanation.
- OMRR&R costs for wells presented in Appendix O Table 5 also differed dramatically between Alternatives 2 and 4: \$233 per acre-foot for Alternative 2; \$138 per acre-foot for Alternative 4. Again, with no explanation, per unit costs for Alternative 4 are more than 40% less than those for Alternative 2.
- In Appendix O Table 4 the investment costs per acre-foot for gravel pit storage also varied substantially between Alternatives 2 and 4: \$76,669,431 for 3,248 acre-feet (\$23,605 per acre-foot) in Alternative 2; \$58,134,041 for 2,046 acre-feet (\$28,414 per acre-foot) in Alternative 4. The per unit costs for Alternative 4 are approximately 20% higher for Alternative 4 than those for Alternative 2. The difference is especially disturbing because gravel pits envisioned for Alternative 2 could also be used for Alternative 4. Again, the numbers are stated without a necessary explanation.
- As with the OMRR&R costs for wells, the OMRR&R costs for gravel pits in Appendix O Table 5 differed substantially between Alternatives 2 and 4: \$169 per acre foot for Alternative 2; \$232 per acre-foot for Alternative 4. Without any explanation, the per unit costs for Alternative 4 are roughly 37% greater than those for Alternative 2. Again, the difference is especially disturbing because gravel pits envisioned for Alternative 2 could be used for Alternative 4. The difference should be justified.

One other example that sticks in my mind is (as best I can tell) neither erroneous nor inconsistent. It does have two pieces of missing information. One isn't far away. The other can be guessed with a fair degree of certainty. The paragraph from page 5-7 is a superb example of both pedantry and obscurity:

[a] The cost of storage ratio is calculated from the formula  $\text{reallocated storage}/\text{usable storage}$  or  $0.0899 = 20,600 / (234,932 - 5,670)$  where  $234,932 - 5,670$  is the usable storage. [b] In terms of percent the ratio is 8.99 percent. [c] The ratio is multiplied by the joint-use costs to obtain the cost of storage. [d] The FY 2013 updated cost of storage is currently estimated to be \$39.1 million ( $\$435,568,800 \times 8.99 \text{ percent}/100$ ) and an estimated \$3.8 million (capitalized value;  $\$1,897,200 \times 0.0899 \times 22.43449$ ) for OMRR&R related to the proposed water supply purpose.

I've labeled sentences so I can refer to them. Sentence [a] explains how to plug numbers from a nearby table into a trivial formula. Sentence [b] explains that a decimal number can be converted into a percent and gives the result of doing so. Sentence [d] is a two-part wonder. The first part explains how to calculate 8.99% of \$435,568,800. The second part explains that \$3.8 million can be obtained by multiplying three numbers: \$1,897,200 which is not defined until two paragraphs later; 0.0899 which has been explained in excruciating detail; and 22.43449 which appears nowhere else in the entire 3208-page FEIS and is (based on a good guess and subsequent numerical verification) a factor that converts 50 equal annual payments at an interest rate of 3.75% per year into a present value.

Readers of a science-based document deserve better. Explanations should be concise. Assumptions should be stated. Critical terms and factors should be defined. Inconsistencies should be justified. Guessing should be unnecessary. Calculations should be verifiable.

## Conclusions

- I would like the Reallocation Project to be abandoned so that Chatfield State Park can be enjoyed by future generations as much as I've had the opportunity to enjoy it myself.
- Decisions about Chatfield reallocation should be made within the context of the comprehensive Colorado Water Plan currently being developed.
- Collateral costs and losses associated with reallocation are too great to justify the small undependable yield that reallocation would generate.
- If identical water sources had been considered for Alternatives 3 and 4, yields for Alternative 4 would be considerably higher than the estimates in the FEIS. An unbiased comparison of Alternatives 3 and 4 would find that Alternative 4 is more cost-effective than Alternative 3. Alternative 4 is likely to be less environmentally damaging as well. In these respects Alternative 4 would be preferable to Alternative 3.
- Plans for environmental mitigation require additional analysis. The ecological functions approach by itself is not adequate to determine the suitability of the mitigation plans.
- Management of and approval of environmental mitigation should be handled by an independent agency that would have expertise in ecology and be uninfluenced by financial concerns of either the Chatfield Water Providers or the Colorado Department of Natural Resources. I've suggested a structure that would address this concern.

Thank you again for providing the opportunity to comment on the Chatfield Reallocation Project.

Sincerely yours,



Robert N. Stocker, Ph.D.