September 3, 2013

Col. Joel Cross, Commander
US Army Corps of Engineers, Omaha District
Attn: Chatfield Reservoir Storage Reallocation FR/EIS
1616 Capitol Ave.
Omaha, NE 68102-4901

Dear Colonel Cross:

The following comments are submitted on behalf of the Audubon Society of Greater Denver (ASGD), Save the Poudre: Poudre Waterkeeper, and Clean Water Action, on the Army Corps of Engineers' ("Corps") Chatfield Reservoir Storage Reallocation Final Integrated Feasibility Report and Environmental Impact Statement ("FR/FEIS").

ASGD is a grassroots conservation organization based in Littleton, Colorado, with about 3,000 members in the Denver metro area. Our mission is to advocate for the environment through research, education and conservation. Save the Poudre is an organization of diverse people and groups joined together to protect the Cache la Poudre River. Clean Water Action is a one-million-member group whose goals include clean, safe and affordable water, prevention of health-threatening pollution, creation of environmentally safe jobs, and empowerment of people to make democracy work.

Representatives of ASGD have been involved with the Chatfield Reallocation project for almost 12 years and have actively participated in the Chatfield "cooperators" meetings. While we commend the Corps, the Colorado Water Conservation Board and the project proponents for initiating the "cooperators" process, we must express frustration that most of our comments and concerns as expressed during the cooperators meetings, in emails to the Corps and in comments on the Draft FR/EIS were not substantively considered and addressed in the process leading to the FEIS. A genuine collaboration process goes beyond simply sitting at the table!

It is probably safe to say that initially all parties involved, including ASGD, thought that the impacts of the proposed Chatfield Reallocation would be fairly benign and the project relatively straightforward. In hindsight, perhaps, everyone should have been more sensitive to the fact that the project was proposed in one of Colorado's premier state parks.

The perception, or misperception, that this is a benign project seems to have continued through much of the process even though it is now abundantly clear, as the FEIS documents, that the adverse environmental and recreational impacts are massive and some of the impacts very difficult, if not impossible, to fully mitigate. In hindsight, and as documented in the FEIS, the proposed Chatfield Reallocation is far more complex and

environmentally damaging than anyone initially envisioned. Clearly this posed major challenges for the Corps as well as all the other entities involved in the Chatfield study.

While it is clear that NEPA compliance is the Corps' responsibility, it appears that the process and the contents of the FEIS were largely driven by the project proponents with limited oversight by the Corps, an Agency responsibility that goes beyond the individual project managers. Perhaps another manifestation of the perception that this was a benign project was the Corps' assignment of staff project managers with limited experience in dealing with complex and controversial water projects and the requirements under NEPA. The fact that there were 4 project managers over the course of the NEPA process did not help in providing solid, sustained Corps leadership on such a complex project. This is NOT intended as a criticism of the project officers, as they were put in an extremely difficult situation that would have challenged even a seasoned veteran. Clearly the project is far more complex, has much greater impacts, and consequently is far more controversial than anyone initially envisioned. The unfortunate net results of the Corps' not exercising its duty to impartially analyze the project are the numerous arbitrary and capricious decisions which led to the selection of the most environmentally damaging alternative as the "preferred" alternative.

In reading the FEIS and Appendices we were very disappointed that, although some minor concerns received responses, virtually all of our major concerns noted in our comment letter on the DEIS were not addressed in the FEIS. While there have been some improvements such as more detailed information on mitigation and the Corps' responses to some comments, the fatal flaws remain, including noncompliance with NEPA and the Clean Water Act and a mitigation plan that falls far short of replacing the many environmental and recreational values which would be lost if the project proceeds as currently proposed.

Perhaps one consistent theme in the FEIS is an obvious bias toward the alternative supported by the water providers rather than the objective, impartial analysis required under NEPA (40 CFR 1502.1, Purpose "It shall provide full and fair discussion…"). A bias toward the "Preferred Alternative" is further supported by the various "policy waivers" granted for the project.

More specific concerns and comments on the FEIS are contained in the following discussions. It is clear, however, that the discrepancies and the deficiencies in the FEIS, including violation of Federal statutes as well as the Corps' own Planning Objectives and Planning Constraints, are of such magnitude that they can only be addressed through the preparation of a Supplemental EIS (40 CFR 1502.9(c)).

Executive Summary

The Army Corps of Engineers, Omaha District ("Corps") is still in violation of the National Environmental Policy Act ("NEPA") in its Final Integrated Feasibility Report and Environmental Impact Statement ("FR/EIS") for the Chatfield Reservoir Storage Reallocation Project ("Chatfield Reallocation") because it:

1) failed to explore all reasonable alternatives,
2) failed to offer a reasonably foreseeable "no action" alternative,
3) failed to disclose and discuss all relevant information pertaining to the water supply yield of each alternative,
4) failed to offer appropriate mitigation by lack of firm, enforceable commitments and overreliance on "adaptive management," and
5) failed to comply with NEPA and the Clean Water Act by segmenting the proposed Reallocation project into three separate components.

As proposed, the Chatfield Reallocation results in the inundation of 587 acres of recreational and wildlife habitat in Chatfield State Park, approximately 200 acres of mature, irreplaceable cottonwood gallery forest and many acres of high quality wetlands, bird habitat, free-flowing reaches of the South Platte, Plum Creek and Deer Creek and critical habitat for the Preble's meadow jumping mouse (FEIS p. 2-65, Tbl. 2-9). Furthermore the newly reallocated space in Chatfield Reservoir might be entirely filled only 18% of days, allowing the participating providers access to their water just 3.5 out of every 10 years (ibid). During the remaining dry years, Chatfield Reservoir will be surrounded by a "bathtub ring" of barren, dusty mud/sand flats (FEIS p. 4-78-79). We request that the Corps provide a Supplemental Environmental Impact Statement ("SEIS") that includes objective discussions of all reasonable alternatives, a reasonably foreseeable "no action" alternative, disclosure of relevant (safe or firm) water supply yield, definite and enforceable mitigation measures, and assessment of the complete project as required by NEPA and the Clean Water Act.

Introduction

Chatfield State Park is one of the premier Parks in the Colorado State Parks system. It hosts more than 1.6 million visitor days per year and offers its visitors a wide range of activities such as bicycling, hiking, fishing, swimming, power-boating, kayaking, balloon launches, dog-training, scuba-diving, horseback riding, model airplane flying, picnicking, camping, bird watching, and wildlife photography. Situated at the conjunction of the foothills and the plains, and at the confluence of the South Platte River and several of its tributaries, it hosts a wide diversity of terrestrial and aquatic wildlife, all within a relatively short drive from the Denver metro area. Chatfield has been designated as an Important Bird Area by the National Audubon Society in recognition of its importance to breeding, migratory and wintering avian species. In short, Chatfield possesses rich and diverse biological and recreational resources.

Throughout the many years that the proposed Chatfield Reallocation has been under study, there has been an inadequate effort to inform park visitors of the ongoing study. A very limited number of signs were placed, often at locations where one would not have time to read them as there would be pressure by cars behind waiting to proceed. In addition, at times the listed phone number was either incorrect or led to a busy signal and no response.

ASGD agrees with Colorado State Parks (now Colorado Parks and Wildlife) that "it is of the utmost importance that the longstanding, positive recreational experience provided at Chatfield State Park be maintained following the reallocation of any storage project" (Letter of Dean Winstanley, Director, to Gwyn Jarrett,10/4/2010). Since much of this positive recreational experience depends on the existing ecosystems and vegetation present at Chatfield, their maintenance is equally important, as is fully compensating for the effective loss of 587 acres of recreational land and wildlife habitat that would be lost if the project proceeds.

The Feasibility Report/Final Environmental Impact Statement released to the public on August 2, 2013, contains over 3,200 pages of text in the primary document (FEIS) and appendices. We have reviewed both, and have found them to be repetitive, confusing and often inconsistent. Information that is crucial to the project is hidden in obscure appendices; egregious statements of support for the preferred alternative are everywhere, and some critical information is missing completely.

To read and evaluate this massive document the Corps allowed only 30 days, disregarding the fact that many reviewers are volunteers working outside their regular paying jobs and that many folks had planned their vacations for August before the start of school. Furthermore there was no information in the media, until late in the process, that the FEIS was even out for public review.

I. The FEIS fails to meet the requirements of the National Environmental Policy Act for description of impacts, consideration of reasonable alternatives, disclosure of all relative information on the project, and taking a "hard look" at environmental consequences.

A. The description of impacts is partial, scattered and often misleading and the Corps violated NEPA by failing to disclose and discuss all relevant information for the Project.

NEPA ensures that relevant information will be made available to the public so that the public may play a role in both the decision-making process and the implementation of that decision. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). Congress sought to provide the public with the statutory means for being informed about (and commenting on) the environmental impacts of proposed agency action. *Baltimore Gas & Electric Co. v. Natural Resources Defense Council*, 462 U.S. 87, 97 (1993). "Action forcing" provisions within NEPA require federal agencies to examine and report on the environmental impacts of federal actions (Ibid.).

The Corps violated its duty of full disclosure by hiding and not fully discussing the project's dependable yield of zero and the nature of the water rights of the new water storage owners. Related to the water rights question is the basic matter of how much water the reallocation would actually provide. The standard metric for water supply planning is either "safe yield" or "firm yield" and not "average year yield" as is used in

the FEIS . There are accepted methods for calculating "firm" and /or "safe" yield. Unfortunately, these do not appear in the FEIS or Appendices. Instead, buried in Appendix BB, "Project Waivers," is a discussion of "dependable yield," which seems similar to what is generally referred to as "safe" or "firm" yield. In this appendix the Corps notes that there are several "common measures of dependable yield…" and then concludes that "At Chatfield, all of those measures of dependable yield are 0." **This is a very significant conclusion that has critical implications for the project and should be noted in the Executive Summary as well as key points of the FEIS and not relegated to an obscure appendix that few individuals will ever read.** The Corps conclusion of zero dependable yield indicates that this project in fact cannot guarantee a reliable water supply beyond the small amounts of return flows already in existence. This conclusion is also stated in a Corps power point presentation (Corps of Engineers Water Supply Workshop, 2-4 June 2009, Tulsa OK, "Chatfield Lake, CO Cost of Storage for M&I Water Supply**"). A full discussion of this critical fact is required for the Corps to comply with its full disclosure duties under NEPA.**

The Corps' Use of Unfamiliar, Confusing Terms Hides the Fact That These Water Rights Are Completely Unreliable.

As indicated in ASGD and Poudre's comment letter, the standard representation of a water supply yield is not "average year yield" but "firm yield" or "safe yield," for which there are acceptable calculation methods and definitions (Letter from Carol DeStefanis to Col. Robert Ruch). Nonetheless, the Corps utilized average year yield throughout the DEIS and FR/EIS, and the only references to firm and safe yield are in the public comments contained in Appendix DD of the FR/EIS. The Corps should reanalyze the yield of the proposed Chatfield Allocation in terms of firm and/or safe yield in order to ensure full disclosure to the public of the potential yield of this project.

Safe yield is described as "the maximum quantity of water which can be reliably available throughout the most severe drought of record." THEODORE M. HILLYER & GERMAIN A. HOFBAUER, INST. FOR WATER RES., A HANDBOOK ON WATER SUPPLY PLANNING AND RES. MGMT., APP. G, AT G-3 (1998) [hereinafter HANDBOOK]. Firm yield is the amount of water that can be released without failure even in the driest of years. The Corps, in its response to comments, states that average year yield is "the average yield that can be expected over a long period of time." FEIS app. DD, at 117. Based on this definition from the Corps, average year yield is incomparable to firm or safe yield.

By using average year yield in the FR/EIS, the Corps is misleading the public and not fully disclosing the water that would actually be available. If the Chatfield Reallocation project proceeds as outlined in the FR/EIS, the Chatfield Reservoir will be able to store up to 20,600 acre-feet of water. However, in actuality, the reservoir will store much less than that amount the majority of the time. The Corps looked at 59 years worth of data and determined that "due to a combination of relatively low inflows in most years and the relatively low seniority of water rights held by the water providers, 20,600 acre-feet would have been able to be stored in Chatfield Reservoir 16 of the 59 years" (FEIS at 1-13). In addition, the Corps has acknowledged that the period of record (POR) over-

estimates the flows. In other words, the maximum storage of 20,600 acre-feet will not be achieved for 82% of the days in a 59-year period (FEIS at 4-38). Based on that study, the Corps calculated the average year yield of water the rights that will be produced by Chatfield to be approximately 8,539 acre-feet. Therefore, this "average year yield" misleads the public into believing that Chatfield will store 8,539 acre-feet of water every year because it completely hides the frequency of dry years where the average will not be met. It also hides the fact that because the water rights are so junior, that amount of water will rarely be stored in the reservoir. In order for the water to be stored in Chatfield Reservoir, all other senior water rights must be satisfied before the junior water rights (FEIS at ES-6). Despite the rare occurrence of complete storage at 20,600 acre-feet, the Corps is willing to completely decimate hundreds of acres of land and critical habitat for a space that will potentially only be used 18% of days at best. The Corps should reanalyze the yield of the Chatfield Reallocation using firm or safe yield so that it is not misleading the public as to the amount of water that will actually be delivered from the reservoir at any given time.

As alluded to in ASGD and Poudre's comment letter, the Corps also made use of the unfamiliar term "dependable yield" in the DEIS, although with much less frequency (twelve times) than average year yield. Dependable yield first appears in Appendix BB describing that the project has 0% dependable yield. The fact that the new water rights will have a 0% dependable yield is extremely important but is diluted by the fact that it's attached to an unclear term and buried in Appendix BB instead of being addressed in the executive summary (Letter from Carol DeStefanis to Col. Robert Ruch).

Dependable yield has been used in water supply planning documents, although this is highly unusual. When drafters utilize dependable yield, it appears to be analogous to safe yield, but it is completely unclear as to whether this was the Corps' intent in the Chatfield Reallocation FR/EIS. Examination of other water planning documents produced by the Corps reveals that firm and safe yield are primarily the terms that are used when describing water source supply ability. A Water Supply Handbook, written by the Corps, uses only safe yield throughout the document. HANDBOOK. Additionally, in the Wilson Lake Water Supply Study Draft Environmental Report, also prepared by the Corps, safe yield was the term used to describe the supply yield. U.S. Army Corps of Engineers, Dep't of the Army, Wilson Lake Water Supply Study Draft Environmental Report (Nov. 2004). In order to rectify its violation of NEPA's requirement for full disclosure, the Corps must explain in detail its utilization of unsupported water supply yield terms, which is also in contrast to its own apparent standards.

The purpose of NEPA is to provide the public with all relevant information so that it has an opportunity to become informed and participate in the government decision-making process and implementation. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). In ASGD and Poudre's comment letter, they expressed concern over the Corps' use of "dependable yield" and "average year yield" throughout the DEIS. Letter from Carol DeStefanis to Col. Robert Ruch. The Corps, through its continued use of these unfamiliar terms in the FR/EIS, has violated its duty of full disclosure under NEPA.

The **fact that the providers' water rights are very junior, dating from 1983 or later, has critical implications for environmental impacts on the State Park as well as on how much water the project could actually provide, and deserves full disclosure in the FEIS.** It means that the providers' water rights will rarely be in priority. The Corps has violated its duty for full disclosure due to the overall scattered organization and inconsistent information on actual water rights in the FEIS. An unorganized and inconsistent document leaves readers confused and unable to fully participate in the public process because they do not understand the full effects the project will have (see ASGD comments on the DEIS, and the Battelle Independent Peer Review Report).

An example of the lack of clarity and specificity of the water rights information is Table 3, from Attachment 1 to Appendix V (Biological Assessment), which few people will look at. This table does not identify priority date, location, or magnitude of the water right – very basic factual information. Another example of lack of, or more specifically misinformation, is the Corps' response to comments (# 529, 537, 578) on the issue of water rights. Here the Corps' response refers readers to the report "Chatfield Reallocation Study Storage Use Patterns" dated February 2003 by Brown and Caldwell. In the first place, this report is not readily available. More critically, this report is OUT OF DATE and includes water rights for only 5 of the current participants in the reallocation project. Once again, the Corps has failed in its duty to provide critical information to the reviewing public.

The origin of the stored water (i.e. the specific water right) has specific environmental impacts; it is essential to very clearly identify and describe the specific water rights to be stored in Chatfield Reservoir, especially with regard to native vs. west slope water and surface vs. reusable groundwater. Furthermore, should the proposed project proceed, it is essential that the Record of Decision (ROD) include a condition to the effect that any request to store water from any source not clearly identified in the FEIS would require a reopening of the public review and approval process. This requirement is consistent with the approach the Corps took in approval of Parker WSD Rueter-Hess Reservoir and the Corps requirement to evaluate environmental impacts in accordance with 33 CFR Part 325.7(a).

Another example of vague statements on water rights is in the criteria for selection of alternatives in Chapter 2. This now states that "To advance, concepts would not require the acquisition of water rights through new filings or by purchasing and transferring existing water rights from current water providers *in an unreasonably foreseeable time frame*" (P. 2-10). We have no idea of what "an unreasonably foreseeable time frame" is. However a description of the project in Appendix V (P. 1) says reallocated space would be filled "using existing or new water rights." (*our emphasis*). This fuels speculation that some of the water providers are really seeking the Chatfield storage in order to transfer previously-undisclosed water rights or new rights to Chatfield. As stated above, the water rights proposed for storage in the reallocation must be clearly defined to comply with NEPA's requirement of full disclosure.

A particularly egregious mis-use of "water rights" and "yield" is the Corps' refusal to distinguish yield from ground water and yield from surface water. (see Corps' response comment, App. DD, P. 118). Yield from groundwater is dependable year after year whereas yield from surface water is highly variable, depending upon the nature of the individual water right and hydrologic conditions. By ignoring this critical difference the Corps is biasing the analysis of the proposed project and alternatives, clearly in violation of NEPA.

- **The Corps failed to comply with NEPA by failing to take a "Hard Look" at the Environmental Consequences of the Project.** NEPA ensures that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning the significant environmental impacts. *Robertson*, 490 U.S. at 349. While NEPA does not require agencies to elevate environmental concerns above all others, it does require them to take a "hard look" at the environmental consequences before taking major action. *Baltimore Gas*, 462 U.S. at 97. "[T]he comprehensive 'hard look' mandated by Congress and required by [NEPA] must be timely, and it must be taken objectively and in good faith, not as an exercise in form over substance, and not as a subterfuge designed to rationalize a decision already made." *Forest Guardians v. U.S. Fish and Wildlife Service*, 611 F.3d 692, 712 (19th Cir. 2010) (quoting *Metcalf v. Daley*, 214 F.3d 1135, 1142 (9th Cir. 2000)).

The Corps violated its duty to take a "hard look" at the environmental consequences through its actions that showed the FEIS to be an exercise in form over substance. The Corps has shown a lack of receptivity to comments made by environmental, non-governmental organizations as well as the State of Colorado. A lack of receptivity or concern to comments by those entities is evidence that the Corps is simply doing the FEIS to rationalize the decision it has already made. For example, the Corps has refused to provide visual representations of impacts, it has refused to consider alternatives such as increased water conservation, use of alternative existing infrastructure, or storage in other existing reservoirs, it disregarded information on bird species provided by a number of knowledgeable groups and it has failed to respond to concerns expressed by Colorado Department of Natural Resources and State Parks to maintain the quality of the recreational experience at Chatfield State Park (Winstanley, ibid).

The providers will be able to fill the entire reallocated space at Chatfield "less than 50% of the time" and "there would be years when the water providers would not have either the legal priority and/or physical availability of water to store water in the reallocated space." (FEIS, p. 4-165). The hydrologic modeling suggests water levels would reach 5444' only 18% of days (Table 2-9). During the growing season, when most inflows occur, water levels will rarely reach elevations of 5440', 5441' and 5442', perhaps 1 year out of 8 (p. 4-65). Enclosure 2 in Appendix BB suggests that the providers' water will be available perhaps 3.5 years in 10. All this modeling is based on a period of record of which the FEIS says "inflows during the entire period of record tend to be greater, on average, than those expected during future conditions for all alternatives" (p. 4-93). **The FEIS needs to include an updated estimate of how often, and how much of, the providers' water will be available for storage.**

To comply with NEPA requirements of disclosure, it is necessary to fully describe the specific nature of the water rights to be stored at Chatfield and clearly disclose the "safe" or "firm" yield that the proposed project would actually provide**. This should be done before the issuance of the ROD.**

Furthermore, the Corps has made numerous policy exceptions to even make the Chatfield Reallocation feasible: reduction in costs of storage, waiver of the requirement to build facilities above the 10-year flood pool, and lack of conformance with its own policies regarding 404 (b)(1) guidelines of the Clean Water Act.

The FEIS still includes no Coordinated Plan of Operations for the reservoir. This makes the evaluation of impacts extremely difficult. The Corps says repeatedly that the FEIS analyzes a "worst case scenario," but without a Coordinated Plan of Operations there is no clue as to when the additional water will enter the reservoir, at what point it will be taken out and by whom, how long water will be stored and resulting changes in water levels and thus readers cannot judge. The hydrologic models cited in the FEIS do not reflect current conditions (FEIS, P. 5-18) including the water rights that may be stored in the reallocated space by current providers. A Plan of Operations was supposed to be delivered to the Colorado State Parks Board by July 2005 (report by Paul Flack to the Parks Board, 1/21/05), and it still has not appeared. If operations depend on conditions year-to-year, the Corps should at least provide scenarios for dry, average and wet years, as was requested by State Parks (letter of Dean Winstanley to Gwyn Jarret, 4/5/2010).

Many of the impacts to Park and downstream resources could be alleviated or avoided by management of reservoir water levels, as is acknowledged in the Compensatory Mitigation Plan and Adaptive Management Plan (Appendices K and GG). In addition, the recent withdrawal of the Cities of Brighton and Aurora and the Roxborough WSD will change the way water might be managed in Chatfield Reservoir. Therefore inclusion of a Coordinated Plan of Operations is crucial. This deficiency must be remedied prior to issuance of a ROD.

The FEIS does not mention the potential impact of the preferred alternative on the exercise of downstream rights on the South Platte River. The City of Littleton and the South Suburban Parks and Recreation District hold instream flow rights on the South Platte, which are "senior to many of the pending rights currently under adjudication by the water providers." (Staff Comments to the South Suburban Parks and Recreation Board, 7/25/12). The discussion of downstream impacts is obscured by the fact that flow measurements quoted are from the Denver gage, approximately 15 miles downstream from Chatfield Dam, below the junction with several tributaries. The discussion would be more accurate if data from the gage at Chatfield or Littleton's gage in South Platte Park were used. The impacts of the preferred alternative on South Platte River flows are described as negligible; but the mean annual outflow from the reservoir into the South Platte would be the smallest of all alternatives (FEIS, p.4-86). South Platte Park is also an Important Bird Area designated by the National Audubon Society

and ASGD is concerned about Reallocation impacts there. The FEIS should therefore discuss impacts on the exercise of downstream water rights and include data from gauges at Chatfield and South Platte Park. There should also be a discussion of the impacts of reduced instream flows on water quality and on jurisdictions which are discharging treated effluent into the river.

No visual representations of the impacted areas in the State Park before project, at high water and at low water were included in the FEIS despite repeated requests by ASGD and the Sierra Club over several years. "A picture is worth a thousand words." Visuals were finally put together for the public meetings but assumed regrowth of vegetation, including trees, on the lands below 5444' that will be problematical given the water level fluctuations mentioned in various places in the FEIS. "The drawdown zone would be in a cycle of disturbance that would limit vegetation establishment to annuals, biennials, and short-lived perennials" (FEIS p. 4-60). These visuals are located on the Corps' website but not in the FEIS. They are also misleading because the representations of current conditions used winter/early spring vegetative conditions, failing to show the full leaf-out of the trees and the shade and aesthetic satisfaction they provide to Park users. Thus the visuals show a better-than-average result while under-representing the current values of the Park's tree-lined shores and riparian zones. ASGD attached a set of visuals to our comments on the DEIS that we believe is actually more representative of conditions now, at potential high water, and at low water after vegetation is removed.

The executive summary, which is the one section most people will read, contains an inadequate discussion of impacts, only stating that "it is difficult to say what the exact new condition of environmental resources at Chatfield will be for Alternatives 3 and 4, due to the expected but unpredictable high level of fluctuations of water levels" (FEIS p. ES-10). Here again the lack of a Coordinated Plan of Operations for the Reservoir makes evaluation of impacts difficult, but the important point is that the public is only given references to the FEIS, whereas the point of the Executive Summary is to provide a summary WITHIN ITS OWN PAGES of the projects' major impacts, among other items. This Executive Summary lists all the supposed advantages of the preferred alternative, including costs, without revealing its impacts. It must be rewritten to include a statement of major impacts, for example acres of trees cut down, mature cottonwood forest lost, recreation facility relocation, loss of wetlands and Preble's habitat, expected water level fluctuations and frequency as well as the Corps' determination of 0 dependable yield.

The description of impacts in the FEIS and its Appendices differs from section to section. For example the Tree Management Plan (Appendix Z) states that at least 243.5 acres of cottonwood trees and 52.8 acres of willows will have to be removed below 5439' msl. The Plan also states that an additional 61.1 acres of trees might have to be cut down between 5439 and 5444 ft. msl. The Biological Assessment (App. V) says 43 acres of native cottonwood and 211 acres of other trees will be removed. Table 4-8 however shows only 185.7 acres of cottonwoods and 16.7 acres of sandbar willow would be lost due to inundation under Alt. 3. Other figures given are 474 acres of vegetation removed and 587 acres lost to inundation (ibid), 586 acres of wildlife habitat inundated (p.4-83),

618.54 acres of habitat for birds and other wildlife lost (p. 5-17), and 676 acres of wildlife habitat lost if shoreline habitat is included (p. 4-83). These and other multiple figures make it very difficult to judge both impacts and adequacy of the CMP.

Trees at Chatfield are primarily in riparian areas, and since riparian areas contain the wetlands , Preble's mouse and bird habitats that are the Comprehensive Mitigation Plan's (CMP) targeted environmental resources, we would have thought that consistent and accurate enumeration and description of the acres affected would be a priority in this FEIS. The Corps should ensure that these varying figures be clearly explained prior to issuance of a ROD.

The description of downstream impacts in Chapter 4 text contradicts the information in Fig.4-12, p. 4-54. We note that Fig. 4-12 has been revised from the DEIS. The figure shows slight decreases in flows in the South Platte River 10 months out of 12 for Alt. 3, no change in September, and a slight positive impact in July. What is missing is the percentage increase or decrease in flows which was shown in the original Figure 4-12. Meanwhile the text discusses the benefits that could accrue to increased flows in the summer months or during winter conditions, which are not supported by the Figure. The CMP contains no commitments to increase flows. This contradiction is an important flaw in the DEIS and in the way Alt. 3 has been promoted to the public, i.e. as way to restore South Platte River habitats through Denver.

Another apparent contradiction is that base flow in winter is described as a "critical aquatic stressor" (ibid.) but the FEIS then states that the slight decrease in winter flows predicted would result in minimal or no impact to aquatic biota. However, in Chapter 5 (Sect. 5.3.4, p. 5-13) under "major potential adverse impacts" we see "Depletion of winter base flows below Chatfield Reservoir under Alternatives 3 and 4." Daily decreases in flow could be even more severe. The modeling in Appendix J using data from 1991 to 2000 calculated an average of 4.3 days/year that flows were less than the identified critical low flow under baseline conditions, and 21 days/year that flows were less than the critical low flow for "with-project" conditions. Additional releases of 0.6 acre-feet per year would be required to eliminate low flows for baseline conditions but releases of 19.6 acre-feet per year would be required to eliminate low flows for "with-project" conditions, a 30-fold increase (App. J, p. 58). There is no commitment in the CMP or Adaptive Mangement Plan that these releases would occur. The conclusion that the decreases in winter flows downstream of the reservoir would result in minimal or no impact (FEIS, p. 4-54) seems erroneous.

B. A full range of reasonable alternatives was not seriously considered or discussed in depth in the FEIS.

Alternatives are "…the heart of the environmental impact statement." (40CFR Part 1502.14). Furthermore, it is the responsibility of the lead Federal Agency, in this case the Corps of Engineers, to "Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated" (40 CFR Part 1502.14(a)).

The statement of "purpose and need" is critical, for as the Corps correctly notes, "The Statement of purpose and need is important in determining the range of alternatives to be evaluated in this combined FR/EIS as required by NEPA" (FEIS, p. 1-13). Furthermore the Corps states, "The purpose and need is to increase availability of water, providing an additional average year yield of up to approximately 8,539 acre-feet of municipal and industrial (M&I) water, sustainable over the 50-year period of analysis, in the greater Denver metro area so that a larger proportion of existing and future water needs can be met." (FEIS, ibid.). While this statement of purpose and need is sufficiently broad so as to not unduly narrow the range of alternatives (i.e. water conservation, acquisition of agricultural water rights, etc.) the Corps has clearly evaluated alternatives on a much more restricted basis as described below. It is also important to note that, very appropriately, water storage is NOT mentioned in the purpose and need statement. However, the purpose and need statement specifically states a "yield of approximately 8,539 acre-feet" (FEIS, ibid.) which just happens to be the average yield of the project proponents' alternative. This induced a strong bias in any subsequent analysis.

The discussion of alternatives in the FEIS does not comply with the requirement to "objectively evaluate all reasonable alternatives" and appears to be more of an attempt to justify the alternative preferred by the project proponents and keep their costs low rather than an "objective evaluation." Following are several clear examples of this biased analysis.

Chatfield water providers' **water conservation programs** were "eliminated" because "conservation measures alone would not meet the overall purpose and need of the project." We are not aware that anyone has suggested that conservation, by itself, could meet all future needs. However, implementation of serious conservation measures, coupled with other alternatives (i.e. gravel pit storage, ground water recharge and recovery) could meet the purpose and need. While Appendix AA does describe the providers' water conservation programs, many do not quantify either in terms of gpcd or acre-feet, the water savings associated with their programs. The "SWSI Conservation Levels Analysis Final Report" prepared for the Colorado Water Conservation Board (Great Western Institute, June 2010) discusses the challenge of evaluating the effectiveness of existing conservation programs.

Agencies cannot disregard alternatives merely because they do not offer a complete solution to the problem. *Davis v. Mineta*, 302 F.3d 1104. 1122 (10th Cir. 2002); *Natural Resources Defense Council v. Morton*, 458 F. 2nd 827, 836 (D.C. Cir. 1972). Thus the Corps violated the NEPA requirement to explore all reasonable alternatives when it eliminated the increased water conservation alternatives, including the Chatfield Water Providers M&I Conservation Programs and the Central Colorado Water Conservation District Efficiency Programs, from further consideration (FEIS, Table 2-4, p. 2-30). Its rationale for elimination states that "the water shortages…faced by the water providers…will not be resolved by water conservation measures alone and therefore water conservation is not an equivalent practicable alternative to the proposed project" (p. 2-18). The water conservation programs work toward the purpose and need of the

project by lowering the demands for water, thereby alleviating a significant portion of the environmental harm that storing more water would cause. Because the Corps does not have an adequate reason for eliminating the water conservation alternatives, it needs to explore them even if it is in conjunction with other alternatives discussed below.

Another glaring weakness in the FEIS and Appendix AA is the lack of discussion of how water conservation programs integrate with the project proponents' over-all water supply planning efforts. Given the recognized limitations on water supply, increasing demands, and the impacts of climate change, there is universal recognition that serious water conservation must be an integral component of water resources management. This is a major deficiency in the FEIS which should be corrected prior to the issuance of the ROD, to quantify the providers' water conservation programs and discuss how these programs fit into their water supply planning portfolios.

Increased water conservation may not in itself solve Front Range water supply shortages but it is an important component of future water supply plans. Even the sample "Resolution of Support" in the packet sent to all the providers by Capitol Representatives for them to present to their Boards and City Councils includes "aggressive water conservation measures" in the mix of strategies for Front Range water supply (email from David Howlett. Capitol Representatives, June 2012). We know that water conservation can have dramatic effects. For example, a September 2010 brochure from Denver water states that its customers are using 19% less water than they did before the drought of 2002, despite population increases.

The Corps violated NEPA when it eliminated water conservation for not offering a complete solution to the project's purpose and need.

As stated in ASGD's and Poudre's comment letter to the DEIS, the Corps violated NEPA when it eliminated the increased water conservation alternatives from detailed consideration merely because "the water shortages . . . faced by the water providers . . . will not be resolved by water conservation measures alone and therefore water conservation is not an equivalent practicable alternative to the proposed project" (Letter from Carol DeStefanis, President, Audubon Soc'y of Greater Denver, to Col. Robert Ruch, Commander, U.S. Army Corps of Engineers, Omaha Dist. (Sep. 5, 2012) (on file with author). Furthermore, the Corps failed to consider the concept of water conservation efforts above and beyond those that are already in place. The Corps should have actively considered enhanced water conservation as a component of the alternatives for the Chatfield Reallocation, rather than eliminate the concept entirely because it cannot satisfy the project purpose alone.

As noted previously, an agency may not eliminate a reasonable alternative from an EIS merely because it does not offer a complete solution to the problem. *Davis v. Mineta*, 302 F.3d 1104, 1122 (10th Cir. 2002); *Natural Res. Def. Council v. Morton*, 458 F.2d 827, 836 (D.C. Cir. 1972). In *Davis*, the court found it improper for an agency to dismiss alternatives that, standing alone, did not fulfill the purpose and need of the project. 302 F.3d at 1121-22. Even though specific road expansions and mass transit systems

alternatives alone would not have completely solved the project's purpose and need of improving traffic in an area near Salt Lake City, the court ruled that the alternatives should have been discussed because they could have satisfied the project's goals if considered in conjunction with other alternatives. *Id.* Similarly, in *Morton*, which involved a NEPA analysis for oil and gas leases, the court recognized that "[i]f an alternative would result in supplying only part of the energy that the lease sale would yield, then its use might possibly reduce the scope of the lease sale program and thus alleviate a significant portion of the environmental harm attendant on offshore drilling." 458 F.2d at 836.

The Corps failed to rectify this violation when it responded to ASGD's and Poudre's comment by saying, "[w]ater conservation goals and amounts were considered when determining the amount of water needed for future use, some of which would be provided by the proposed Chatfield Reservoir Reallocation Project. Water shortages of sustainable water supplies faced by the water providers **cannot be resolved by water conservation alone**" (FEIS app. DD, p. 7). As this response demonstrates, the Corps continues to violate NEPA in the FR/EIS by illustrating the fact that it eliminated the water conservation alternatives because they cannot satisfy the water providers' needs alone. Examples of reasons for elimination of water conservation alternatives that go beyond the Corps' treatment of this concept in the Chatfield Reallocation EIS can be seen in the Draft Environmental Impact Statement for the Northern Integrated Supply Project ("NISP"), which was also drafted by the Corps, Omaha District. The NISP project was proposed to address current and future water needs of twelve towns and water districts in Colorado. U.S. Army Corps of Engineers, Draft Environmental Impact Statement for Northern Integrated Supply Project ES-1 (Apr. 2008). In the NISP EIS, the Corps eliminated agricultural water conservation as a project alternative for various explicit reasons, including:

- The amount of C-BT water that could be conserved would have to be augmented to avoid injury to downstream users. This would effectively reduce the potential firm yield for NISP.
- Conserved water would be considered "salvaged" or "saved" and, therefore, part of the stream system and subject to diversion by water rights senior to NISP. This would reduce the firm yield available for NISP.
- There is no guarantee that irrigation system improvements would produce the desired result.
- This concept does not provide a reliable, firm water supply.
- This concept does not meet the NISP purpose and need.

Id. at 2-12 to 2-13.

The Corps did not follow similar conventions in the Chatfield Reallocation FR/EIS and, therefore, continues to violate the provisions of NEPA.

The Corps further responded to comments regarding the elimination of water conservation alternatives by stating,

> The DEIS did consider assembling combination[s] of various concepts into alternatives, particularly concepts that individually could not meet the purpose and need of the project. For the example of the upstream existing reservoirs and gravel pits, these concepts were eliminated from further consideration due to the limited storage capacity of each individual entity, plus the cost and logistics of combining them with other small capacity reservoirs (FEIS app. DD, at 7)

. This response refers to the combinations of concepts that the Corps considered for "upstream existing reservoirs and gravel pits" but does not involve water conservation concepts, which were still eliminated for their inability to completely satisfy the project's purpose.

In the Corps' responses to comments, it also made reference to the fact that water conservation programs are already in place and thus cannot be utilized as valid alternatives to the preferred option.

> In the cases of the Chatfield Water Provider M&I Conservation Programs and the Central Colorado Water Conservancy District Efficiency Program, these 'building block' concepts were eliminated **because these programs are already in place** and, even with these proactive conservation programs enacted, there is still a need for additional water supply. One could view each alternative evaluated as also including the various conservation programs as components. (FEIS app. DD, p. 7).

The Corps should **actively** consider additional water conservation efforts as a component of the main alternatives for the Chatfield Reallocation FR/EIS, rather than suggest through dubious language that "one could view" each alternative as already including such measures.

There are a number of other projects for which EISs have been written that successfully utilized enhanced water conservation as a component of the alternatives that were evaluated. For example, an EIS was prepared for the Yakima River Basin Integrated Water Resource Management Plan ("Yakima"), a project proposed to address the water supply and ecosystem restoration needs of the Yakima River Basin. Bureau of Reclamation, Dep't of the Interior, Final Programmatic Environmental Impact Statement for Yakima River Basin Integrated Water Resource Management Plan i (Mar. 2012). The Yakima EIS included "enhanced water conservation" as a component of the preferred alternative, so that water demand would be reduced and water supply improved. *Id.* at 2-13. The enhanced water conservation element of the project "includes conservation measures for irrigation district infrastructure improvements, on-farm conservation and irrigation efficiency improvements, as well as a program for commercial, industrial, municipal and domestic conservation." *Id.* at 2-35.

The EIS for the Shasta Lake Water Resources Investigation ("Shasta"), which was a project proposed to modify the Shasta Dam and Reservoir to increase survival of fish

populations and increase water supply and reliability, considered water conservation as a component of each alternative despite the fact that the project participants were already engaging in similar conservation efforts. (Bureau of Reclamation, Final Programmatic Environmental Impact Statement for Shasta Lake Water Resources Investigation, ES-6, 2-24 (Jun. 2013)). The Bureau of Reclamation explained in this EIS that,

"All action alternatives include a water conservation program for new water supplies that would be created by the project to **augment current water use efficiency practices**. . . . Funding . . . would focus on assisting project beneficiaries (agencies receiving increased water supplies because of the project), with developing new or expanded urban water conservation, agricultural water conservation, and water recycling programs. Program actions would be a combination of technical assistance, grants, and loans to support a variety of water conservation projects, such as recycled wastewater projects, irrigation system retrofits, and urban utilities retrofit and replacement programs." *Id.* at 2-24.

The Corps violated NEPA in the DEIS when it eliminated enhanced water conservation as an alternative merely because it cannot satisfy the project purpose alone, and it failed to rectify this violation in the FR/EIS. As the Yakima and Shasta EISs illustrate, the Corps could have, and should have, actively pursued water conservation as a component of the alternatives in the Chatfield Reallocation FR/EIS.

The failure of the Corps to seriously consider, evaluate and quantify how water conservation programs, in conjunction with other readily available water management options can meet future water needs (i.e. groundwater storage/reuse, gravel pits, etc) clearly demonstrates the Corps' failure to "rigorously explore and evaluate all reasonable alternatives" (40CFR Part 1502.14(a)). The Corps violated NEPA in the DEIS when it eliminated enhanced water conservation as an alternative merely because it cannot satisfy the project purpose alone, and it failed to rectify this violation in the Final FR/EIS.

The Chatfield area contains a tremendous amount of "water infrastructure" (dams, diversions, pipelines, reservoirs, gravel pits, etc.) which should have been evaluated as potential alternatives to Chatfield storage (see email Gene Reetz to Gwyn Jarrett, Feb. 22, 2011). It is not unreasonable to think that some combination of these facilities could be less environmentally damaging than Chatfield. Bias in application of the screening criteria seems to have eliminated consideration of such an alternative (i.e. gravel pit storage is OK for downstream entities but was eliminated for upstream entities).

A specific example of bias in the alternative analysis is that the Corps eliminated consideration of the ARS gravel pit which is immediately adjacent to Chatfield. The Corps cited the gravel pit as having a storage capacity of 4,500 AF despite the fact that representatives of the ARS gravel pit have informed the Corps that preliminary geotechnical investigations show a capacity of 11,000 AF of storage when expanded. Ironically, the Corps has included Penley reservoir in Alternative 1, which has a capacity of 12,725 AF but is much further away and has a number of serious environmental problems including geologic faults and unstable soils in the immediate area.

ASGD has repeatedly commented that the Corps should more objectively evaluate alternatives (a fundamental requirement of the NEPA process) to the proposed Chatfield Reallocation project. A number of key providers in the proposed Chatfield Reallocation have withdrawn from the project. Presumably their water supply needs have not diminished but they simply have recognized that there are BETTER PRACTICABLE ALTERNATIVES to the project. This basic actuality documents that there are viable options to the proposed Reallocation. The fact that the Corps has not seriously evaluated viable alternatives is but one of numerous examples of the Corps being arbitrary and capricious.

To date, the following entities have dropped out: Parker Water and Sanitation District, the Cities of Englewood, Brighton and Aurora, Perry Park and Roxborough Water and Sanitation District. Once the true cost of the project (especially the cost per unit of actual water yield), the long-term obligations for mitigating the many adverse project impacts, and the obvious complexities of managing and delivering water to numerous individual entities become clear, we would not be surprised to see more providers withdraw from the Reallocation project in favor of other alternatives.

ASGD also suggested (email Gene Reetz to Gwyn Jarret, Oct. 17, 2011**) that Project WISE (which could eventually provide 60,000 acre-feet per year) and storage in Rueter-Hess Reservoir (**email Gene Reetz to Gwyn Jarret, Feb. 22, 2011**) should be evaluated as possible alternatives to Chatfield.** However, both those were eliminated without substantial analysis, a clear indication of bias towards the "preferred" alternative. Interestingly, Fig. X-X in Appendix S (Attachment to letter of USACE, Feb. 29, 2008 to Georgiana Contiguglia, CO Historical Society) shows a proposed pipeline from Chatfield to Rueter-Hess reservoir as part of Alternatives 1, 3 and 4.

In eliminating Project WISE water and storage in Rueter-Hess, the FEIS completely ignores the fact that a number of the providers who seek storage in Chatfield have also applied to store Project WISE water in Rueter-Hess (NWO-1997-80472-DEN). In response to this pubic notice, ASGD (letter December 26, 2011 from Arlene Raskin, President ASGD to Chandler Peter, CoE) stated that "…it is critical to evaluate if the WISE/Rueter-Hess proposal could reduce or eliminate the need for additional Chatfield storage." And, "Since the Corps of Engineers has lead responsibility for both the proposed permit amendment to the existing 404 permit for Rueter-Hess Reservoir and the Chatfield Reallocation study, we assume that the Corps will closely coordinate these two proposals to insure that water supply needs can be met in the least environmentally damaging way…" The link between some Chatfield providers and Project WISE water storage in Rueter-Hess and storage in Chatfield has been ignored in the FEIS. The relationship between these two efforts must be addressed. Unfortunately, to date we have not seen any documentation that the Corps has made any attempt to review the relationship between these two Corps projects.

Storage in Rueter-Hess Reservoir was originally dismissed in the DEIS because "Parker WSD has no plans to make this reservoir available" (Table 2-4, P. 2-30). No evidence

was given that the providers discussed Rueter-Hess water storage with Parker WSD except this brief negative statement, and the statement is contrary to published reports on Rueter-Hess: "The 45,200 ac.-ft. excess capacity [above needs of Parker, Castle Rock, Castle Pines and Stonegate] will be available for sale, the revenue of which will help reduce PWSD debt." (Colorado Public Works Journal, Vol 6, Issue 3, January 2010). This excess capacity is over twice the storage space requested in the preferred alternative of the Chatfield Reallocation. Further, "PWSD, having always envisioned the project [Rueter–Hess] as ultimately benefitting [sic] the region and not just the District, reasoned to the other water providers that if they were really interested in becoming partners, the expansion should be implemented immediately to save overall cost." (Ibid) As of March 2012 three of the Chatfield providers - Castle Rock, Castle Pines North and Stonegate Village – owned 11,000 af of storage capacity in Rueter Hess (Denver Business Journal, March 21, 2012). The above statement in the DEIS, Table 2-4, has been deleted in the Final EIS, which we take to mean that it was invalid.

The Corps' comments in App. DD (page 20) state that "Rueter-Hess is not located on a stream and still requires infrastructure for any inflows and outflows from the dam. This, in addition to the location of the reservoir, makes Rueter-Hess not a viable storage vessel for the majority of the participants in the Chatfield Reallocation project." Yet the Corps carried forward the Penley Reservoir concept, which also requires infrastructure, and that site is not located on a stream. This is an other indication of the Corps' arbitrary and capricious actions. The location of Rueter-Hess reservoir is evidently not a deterrent for Centennial WSD, which joined Project WISE in April 2013.

According to the March 2012 "The Waterline" (Rueter-Hess Reservoir Completed) Rueter-Hess Reservoir has a capacity of 72,000 acre-feet and "The reservoir is owned and managed by the Parker Water and Sanitation District and will service both Parker Water customers, as well as those in the Douglas County communities of Castle Rock, Castle Pines North and Stonegate through partnership agreements. Other Douglas County communities may join as partners in the future." The fact that Parker is open to having other communities "join as partners in the future" clearly documents that storage in Rueter-Hess should be evaluated as an alternative to Chatfield storage.

The WISE Partnership Release (October 4, 2011) reviews the overall project, discusses the many benefits and describes the following water delivery:

"Water delivered

- Phased in deliveries between 2013 and 2020 to allow South Metro to build the infrastructure for distribution.
  * 2013-2020 – 5,000 acre-feet per year guaranteed minimum. Additional water can be provided if available.
  * 2020 and beyond - `10,000 acre-feet per year on average (100,000 acre-feet over 10-year periods of time). Additional water can be provided if available.
- Engineering studies suggest significant additional amounts may be available in the future as much as 60,000 acre-feet /year"

Clearly this could meet, and ultimately exceed, the annual yield of additional Chatfield storage.

Further documentation of the link between the proposed Chatfield Reallocation and project WISE is the fact that Centennial officially joined WISE on April 1, 2013. (see Attachment A).

By dismissing storage in Rueter-Hess Reservoir and Project WISE the Corps has clearly and grossly failed in its duty to "Rigorously and objectively evaluate all reasonable alternatives" (40 CFR Part 1502.14(b)). It is unquestionable that storage in Rueter-Hess and Project WISE meet the "purpose and need" statement and in all probability would do so in a far less environmentally damaging way.

Another example of inconsistencies and bias is in the evaluation of the yield of the 4 alternatives selected for detailed analysis and which meet the "purpose and need." The amount of water in the Denver Basin aquifer system is enormous: "Current estimates are that the basin contains over 200 million acre-feet of recoverable water in storage." (Colorado Foundation for Water Education, 2007. Citizen's Guide to Denver Basin Groundwater.) Hence pumping of non-tributary groundwater is a "safe" or "firm" yield for the period of analysis. It is estimated that at the permitted authorized pumping rate of as much as 350,000 acre-feet per year, "the 200 million acre-feet of water in storage would last approximately 570 years" (ibid). The current discussion puts yield from groundwater (wells), which is reliable year to year, on the same level as yield from snow melt and rain water, which is notoriously variable. This is like comparing apples to oranges. All the alternatives should be evaluated based on a "firm" or "safe" yield so they can be appropriately compared.

Corps personnel evidently endorsed the project years before the writing of the DEIS. "If we can lower the antecedent flood (inflow design flood) by 10% we can carve out the 20,600 AF additional storage space" (comments of by Doug Clemenson, USACE, Minutes of Cooperators meeting, 6/22/05). At best this is cheerleading for the project, at worst an indication that data would be manipulated to reach the desired result. In fact the antecedent inflow design flood was lowered from 50% to 40%. This is yet more evidence of bias in favor of the providers' preferred alternative.

Study-specific Planning Objectives and Planning Constraints were ignored in considering alternatives. The very first "Planning Objective" listed in the Executive Summary (p. ES-5) states, in part, "Increase availability and reliability of water supplies…" yet the Corps concludes (App. BB) the project has "low reliability" and also, "At Chatfield, all those measures of dependable yield are 0." Violating a critical planning objective is another example of bias toward the project preferred by the water providers. The cited Objective from the Executive Summary is not included in the Planning Objectives listed in Chapter 2, an example of the inconsistencies of the EIS.

Constraints listed in Chapter 2 include "Maintain the conservation pool in Chatfield between 5,423 ft. msl and 5,432 ft. msl…" Alternatives 3 and 4 violate this study-

specific constraint, as the conservation pool will rise to 5444' msl. Existing contracts between the State, the Corps of Engineers and Denver Water for the regulation of water storage between elevations 5,423 feet and 5,432 feet "are an absolute constraint on any proposals that may affect the elevation of the water stored in Chatfield Reservoir." (letter of Grady McNeill, CDOW and Bahman Hatami, DPOR, 8/5/09). We have found no evidence in the FEIS that this constraint has been addressed.

Penley reservoir is not a realistic alternative for upstream providers (See Section C). Strong local opposition and reported geologic faults and soil conditions in the area may make this dam site infeasible. The Douglas County Planning Commission voted 8-0 against a permit for construction of this dam. This feature should be re-examined and another official "no action" alternative devised. We note that the Batelle Independent Peer Review did not regard Alternative 1 as a true "no action" alternative due to the proposed construction of Penley and recommended another be designed to avoid biases in evaluating alternatives (p. A 6-7). It appears as though Penley Reservoir was thrown up as a "straw man" to ensure an adequate number (though not quality) of alternatives and favorable support for the "preferred" alternative.

The FEIS does not mention who developed the **Criteria for selection** of alternatives in Chapter 2 but they were obviously designed for the benefit of the project proponents and not to promote an objective consideration of alternatives.

The comparison of costs of the alternatives is biased in favor of the preferred alternative. Reasons for this conclusion include:

a. The Corps is charging the providers only 41% of the cost of storage (see Appendix BB). A Power Point presentation given by the Corps at a Water Supply Workshop in Tulsa, OK June 2-4 2009 clearly lays out the rationale for this strategy, which makes the preferred alternative look $20 million cheaper than the low cost alternative (#2). If the true cost of storage were included, the cost of the preferred alternative would be at least $204.4 million (power point available at www.corpsresults.us/docs/CleanWaterSupplyWorkshop).

b. The Corps waived the requirement to build the relocated recreational facilities above the 10-year flood pool, which reduces the costs of dredging and filling for Alt. 3 (App. BB). We understand that the Corps was accommodating concerns of Colorado State Parks about distances from the facilities to the water line, but this decision masks the impacts of the (occasional) increased reservoir water levels. In addition, the location of the new recreational facilities incurs costs of its own, some of which are not included in the Recreation Facilities Plan (App. M) – see our comments in Section VI.

c. Weighting factors in the calculations of Ecological Function Units for off-site mitigation lead to a reduced acreage for mitigation and thus to lower costs for Alternative 3. See our section V below.

The biases in the evaluation of alternatives and the glaring omissions can only be addressed through a revised and objective analysis of alternatives in order to comply with CEQ regulations. It is also critical that alternatives be evaluated based on a "firm" or "safe" yield and not on an "average" yield so there can be a true comparison of what they can actually provide. The Corps needs to exercise its responsibilities and leadership, as well as expertise, and not let the NEPA process be driven by the project proponents. The current "preferred" alternative is BY FAR the most environmentally damaging alternative and it is inconceivable that there are not less environmentally damaging ways of meeting the "purpose and need."

NEPA requires agencies to briefly discuss the reasons for eliminating alternatives from detailed study. 40 CFR § 1502.14(a). EIS's have been deemed insufficient when their reasons for eliminating alternatives are too brief and perfunctory. *Village of Palatine v.U.S. Posta. Service,* 742 F.Supp.1377, 1382 (N.D.III 1990). The Corps has provided reasons that are too brief and perfunctory for eliminating alternatives as in the above cited cases. As was already discussed, the fact that an alternative does not, standing alone, fulfill the purpose and need is not reason to eliminate it. Outside of that reason for eliminating the increased water conservation alternatives, the Corps simply states that the alternatives constitute independent parallel action that would occur with or without the Chatfield expansion (FEIS, 2-23). This brief explanation does not satisfy the requirement of NEPA that the Corps discuss the reasons for eliminating the alternative.

The Corps cannot eliminate reasonable alternatives simply because they require action by entities outside itself. *Morton,* 458 F. 2nd at 836. Thus the Corps violated NEPA when it eliminated the Rueter-Hess, South Platte, McLellan and Platte Canyon Reservoirs due to the owners having "no plans" to make it available. This is analogous to the situation in *Morton* because it would require action by entities outside of the Corps. Because the Corps reasons for eliminating storage in Rueter-Hess and other Reservoirs are insufficient they are in violation of NEPA.

In conclusion, the Corps has failed to discharge its duties under NEPA because it 1) does not fully disclose all relevant information about the project, 2) does not take a "hard look" at environmental consequences, 3) does not explore all reasonable alternatives that meet the "purpose and need" and 4) fails to meet the study objective to avoid and minimize environmental impacts under NEPA (Batttelle Independent Peer Review Report, p. A-6). **We recommend that a Supplemental FEIS be issued that includes an alternative that incorporates increased water conservation, storage of water in gravel pits, aquifer storage and recharge, and use of Reuter Hess reservoir (Project Wise). It should also evaluate alternatives based on "firm" or "safe" yield and eliminate biases in the cost estimates of alternatives. It should also clearly specify the exact water rights proposed for storage in Chatfield Reservoir.**

C. The Corps Violated NEPA When It Offered New Construction of Penley Reservoir as the Reasonably Foreseeable "No Action" Alternative.

The Corps did not offer a reasonably foreseeable "no action" alternative when it included construction of the new regional storage reservoir, Penley Reservoir, for which build

plans have been canceled, as a component. An example of an appropriate "no action" alternative for the Chatfield Reallocation includes the use of gravel pits, enhanced water conservation, and storage of water in existing reservoirs. Courts have held that the "no action" alternative is not a do nothing alternative but must include a discussion of "reasonably foreseeable development" that would result from rejection of the proposed action. *Young v. General Services Admin.*, 99 F. Supp. 2d 59, 62, 74-75 (D.D.C. 2000). Penley Reservoir cannot be considered reasonably foreseeable development because the plans for its construction have been canceled.

The "no action" alternative devised by the Corps for the Chatfield Reallocation FR/EIS includes construction Penley Reservoir, as well as use of downstream gravel pits (FEIS at 2-37 to 2-57). In their letter, ASGD and Poudre stated that, "Penley reservoir is not a realistic alternative for upstream providers. Strong local opposition and reported geologic faults and soil conditions in the area may make this dam site infeasible. The Douglas County Planning Commission voted 8-0 against a permit for construction of this dam" (Letter from Carol DeStefanis to Col. Robert Ruch). Additionally, the Denver Post released an article in July of 2011 indicating that the developers of the Penley Reservoir had pulled their application to build it. (Carlos Illescas, *Developers Scrub Penley Reservoir Project in Douglas County*, THE DENVER POST (Jul. 29, 2011, 1:00 AM), http://www.denverpost.com/ci_18572689). Another DEIS commentor included this reference in their letter to the Corps. FEIS app. DD, at 90.
The Corps responded to these comments in the FR/EIS regarding the feasibility of the Penley Reservoir as part of the "no action" alternative:

Penley Reservoir was proposed by local sponsors as a project they would pursue in the absence of the reallocation of Chatfield Reservoir. Accordingly, it was considered in the analysis. The Penley Reservoir concept was screened forward for detailed analysis as an alternative due to its reasonable cost potential, upstream storage body with sufficient volume, and minimal environmental impacts. The detailed analysis indicated that Penley Reservoir is a viable alternative although less consistent with the Corps' Environmental Operating Principles and more expensive than the Recommended Plan. *Id.* at 12.

The Corps went on to say,

> Because the proposed action is a specific project (reallocation at Chatfield), it is logical and appropriate to identify another alternative(s) that would be likely to proceed in order to meet the purpose and need of [sic] identified in the DEIS. Penley and gravel pits reasonably represent the types of actions that the water providers would take if reallocation did not occur. The Penley project provides an appropriately developed alternative from which to make reasonable comparisons between the proposed action and alternatives. Although it is true that Douglas County Planning Commission rejected a proposal for the Penley Reservoir recently, that does not mean that the alternative does not provide a reasonable representation of a reservoir that might be constructed in the future. *Id.* at 90-91.

Despite the unavailability of the Penley Reservoir and the potential for adverse geologic faults and soil conditions in the area where it would be built, the Corps continues to maintain that Penley is a reasonably foreseeable option that should be a component of the "no action" alternative. However, the fact that the Penley Reservoir proposal was rejected by the local planning commission, was pulled by its developers, and is infeasible due to the likelihood of geologic faults and poor soil conditions in the area does not equate to "reasonably foreseeable." Furthermore, the Corps identified elsewhere in the responses to comments that "[a]ny water concept that is **not available for use** simply cannot be considered for detailed evaluation." *Id.* at 91. In utilizing the Penley Reservoir as a component of the "no action" alternative, the Corps is contradicting its very own stated policy to reject unavailable concepts from further evaluation.

In establishing valid concepts for the Chatfield Reallocation "no action" alternative, the Corps should have more seriously considered other storage concepts, such as the utilization of upstream gravel pits, enhanced water conservation, and storage of water in existing reservoirs. Specifically, the Corps should have considered the options that are obviously more reasonably foreseeable due to the fact that several of the original water providers who have since dropped out of the project (namely, Englewood, Parker Water & Sanitation District, Brighton, Aurora, Perry Park, and Roxborough Water & Sanitation District) have chosen them as viable alternatives.

II. The project as described in the DEIS does not comply with the Clean Water Act or Executive Order 11990.

One of the most serious flaws in the DEIS is the incorrect application of Section 404 of the Clean Water Act. While the Corps does not issue 404 permits for its own activities, Corps regulations clearly state that the Clean Water Act Section 404(b) guidelines do apply.

As stated in the Corps' regulations 33CFR Section 335.*2 "…the Corps does not issue itself a CWA permit to authorize Corps discharges of dredged material or fill material into U.S waters, but does apply the 404(b)(1) guidelines and other substantive requirements of the CWA and other environmental laws."*

Similarly, 33 CFR Section 336.1 states *"(a) Applicable laws. Section 404 of the CWA governs the discharge of dredged or fill material into waters of the U.S. Although the Corps does not process and issue permits for its own activities, the Corps authorizes its own discharges of dredged or fill material by applying all applicable substantive legal requirements, including public notice, opportunity for public hearing, and application of the Section 404(b)(1) guidelines."*

Furthermore, the Corps' Planning Guidance Notebook (Engineer Regulations 1105-2-100) elaborate on the requirement for compliance with the 404 (b)(1) guidelines. As stated in C-6, "Water Quality and Related Requirements":

"*a. Purpose. This section provides guidance for the consideration of water quality and related programs in Civil Works planning studies…*

c. Conducting the Section 404(b)(1) Evaluation in the Planning. During feasibility planning, District commanders shall conduct and, to the fullest extent practicable, complete the investigations and analysis required by the Section 404(b)(1) Guidelines. Water quality and related information used in the evaluation will provide documentation to demonstrate that the recommended plan is in compliance with the Clean Water Act.

d. Clean Water Act: Section 404. Feasibility report recommending projects involving the discharge of dredged or fill material in the waters of the United States, including wetlands, shall be developed consistent with Section 404(b)(1) Guidelines…..

e. Section 404(b)(1) Evaluation Documentation. District commanders shall include in their feasibility planning report, analysis and documentation necessary to demonstrate that the recommended plan is in compliance with the 404(b)(1) Guidelines…"

The Guidelines require the Corps to examine practicable alternatives to the proposed discharge and only allow it to issue permits for the Least Environmentally Damaging Practicable Alternative (LEDPA*). Memorandum of Agreement Between the Department of the Army and the Environmental Protection Agency: The Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines (MOA).* The LEDPA is determined by evaluating the direct, secondary, and cumulative impacts on the ecosystems of each proposed alternative.

The Federal Wetland Permitting Program: Avoidance and Minimization Requirements.

The Guidelines emphasize that avoidance of impacts is the first step and prohibit a discharge if there is an alternative that will do less damage to the aquatic ecosystem. Additionally the Corps must clearly demonstrate that the alternatives that do not require a discharge of dredged or fill material in the waters of the U.S. are either not practicable or have other adverse environmental consequences. *Before the Administrator, United States Environmental Protection Agency, Subject: Draft Environmental Impact Statement for the White Pine Energy Station Project, Nevada 2007 WL 7398139 (E.P.A.)* The Corps' decision to choose Alternative 3 and allow discharge of dredge and fill materials into the waters of Chatfield State Park is a direct violation of the Guidelines. That Alternative is not the Least Environmentally Damaging Practicable Alternative and could be avoided altogether by choosing a different proposed project alternative. The Corps failed to meet its burden of proving that all other options were not practicable or had other adverse environmental consequences. The documentation in the FEIS is that Alternative 3 is not only not the LEDPA, it is in fact the MOST damaging alternative (Table 2-9).

The Corps improperly excluded alternatives from its preliminary list that should have been considered and analyzed in depth. ASGD believes that the least environmentally damaging alternative would be a combination of aggressive water conservation, gravel pit storage, aquifer storage and recharge, use of WISE water and storage in Rueter-Hess reservoir. This combination was not analyzed in detail yet would result in the avoidance of discharging dredge and fill material into the waters of Chatfield State Park. The

Corps should re-evaluate its decision due to its obligation to choose the Least Environmentally Damaging Practicable Alternative under the 404 (b)(1) guidelines and take into account the multitude of ways that the broad project purpose and need could be achieved.

Alternative 3 is a Single Project and Must be Analyzed as a Whole. Appendix W, "CWA Section 404(b)(1) Analysis Dredge and Fill Compliance," under 2.2 provides a "general description of dredge and fill activities" and then incorrectly states that these activities are "…incidental to the proposed reallocation." These activities (relocation of recreation facilities, and on-site and off-site environmental mitigation) are clearly not "incidental" but are essential components of the reallocation plan.

It is absolutely inconceivable that the Corps would authorize the reallocation without these elements of the project. Furthermore, it is Corps policy to look at a single and complete project and not to segment individual components. The Corps has used a "but for" analysis to determine what is a complete project. In the case of the Chatfield reallocation, the relocation of recreation facilities, on-site environmental mitigation and off-site mitigation would NOT be needed but for the reallocation. Therefore, those activities are a requirement of the reallocation and should not be separated from the reallocation. Furthermore, Section 116 of the Omnibus Appropriations Act of 2009 (P.L. 111-8) identifies responsibilities of the Colorado Department of Natural Resources and notes, "..and any required mitigation which results from implementation of the project." Clearly mitigation is a requirement and not an "incidental" part of the project.

The FEIS states (page ES-12) "Environmental mitigation and recreation modification are SIGNIFICANT COMPONENTS [emphasis added] of the plan, as they are REQUIRED [emphasis added] to address the adverse impacts caused by changing the operations of the reservoir, which would involve significant change in how water levels fluctuate within the reservoir." The Compensatory Mitigation Plan also states that "The CMP, as presented in this report, is considered an integral part of the recommended plan, and as such, its implementation **must be carried out** concurrently as part of the overall project" (CMP, p. 1). The FEIS (p. 4-59) also says, " In addition, beyond the mitigation measures that are *part of the Selected Plan* [Alternative 3]…" (emphasis added). Clearly these statements recognize that the reallocation, environmental mitigation and recreation modifications together are one project and could not proceed otherwise.

The Corps again makes reference to the essential nature of the relocation of recreational facilities in the FR/EIS, stating that "[t]he Recreation Facilities Modification Plan is considered to be an integral component of the Selected Plan, as it is required to address the adverse impacts caused by operating the reservoir under the new system, which involves a significant change in how water levels fluctuate within the reservoir" (FEIS p. 6-2). The relocation and mitigation have no independent utility, no life of their own, and are simply illogical when viewed in isolation. Therefore, all components of the Chatfield Reallocation project need to be viewed together, resulting in the entire project engaging in dredging and filling of waters of the U.S., not just the relocation and mitigation. The Corps must redo its 404(b)(1) alternative analysis to look at the entire Chatfield

Reallocation project and not just the alternatives to the mitigation and relocation. The Corps must consider alternatives that fit the purpose of the entire project and follow the 404(b)(1) Guidelines.

NEPA explicitly states that agencies must consider connected actions when determining the scope of an EIS (40 CFR § 1508.25). Connected actions must be analyzed as a whole and are those that "[a]utomatically trigger other actions which may require environmental impact statements…[c]annot or will not proceed unless other actions are taken previously or simultaneously…[or][a]re interdependent parts of a larger action and depend on the larger action for their justification." Ibid.

The Corps incorrectly tries to segment the Chatfield Reallocation plan. Segmentation is an attempt to avoid environmental regulation by dividing one project into smaller projects and not analyzing the impacts of the project as a whole. *Stewart Park & Reserve Coal, Inc. (SPARC) v. Slater*, 352 F.3d 545, 559 (2nd Cir. 2003). "Segmentation is to be avoided in order to insure that interrelated projects, the overall effect of which is environmentally significant, not be fractionalized into smaller, less significant actions." *Town of Huntington v. Marsh*, 859 F.2d 1134, 1142 (2nd Circ. 1988). A project should not be segmented if it "has no independent utility, no life of its own, or is simply illogical when viewed in isolation" (Op.cit.). Segmentation is inappropriate because the Reallocation and mitigation have "no independent utility, life of their own, [and are] simply illogical when viewed in isolation."

By illegally segmenting the complete project (which undeniably consists of the reallocation, environmental mitigation and recreation modification) the Corps is blatantly attempting to avoid compliance with the Clean Water Act, specifically Section 404. Among the more critical Section 404 implementation regulations are:

- **40 CFR Sect. 230.10(a)** – " no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem…" The Corps brought forth 4 alternatives which meet the "purpose and need" and presumably are "practicable." Of those, the Preferred Alternative does not have the least adverse impact on the aquatic ecosystem but in fact has the GREATEST adverse impact.
- **40 CFR Section 230.30** – Threatened and endangered species. This section states that compliance or non-compliance with Subpart B should be judged, in part, by "The impairment or destruction of habitat to which these species are limited." The Corps' Preferred Alternative destroys 456 acres of Preble's mouse habitat, including 155 acres of critical habitat (CMP, Table 6, P. 89; Biological Assessment, Tables 4 & 5, p. 20).
- **40 CFR Section 230.32**. - This section discusses "other wildlife." "(a)wildlife associated with aquatic ecosystems are resident and transient mammals, birds, reptiles and amphibians." "(b) Possible loss of values" specifically notes, "These adverse impacts upon wildlife habitats may result from changes in water levels…" The "preferred alternative" results in substantial changes in water levels.
- **Subpart E** identifies "Special Aquatic Sites" and notes that impacts to those "…should be considered in making a finding of compliance or non-compliance in

Subpart B." Among the special aquatic sites are "Sanctuaries and refuges" (230.40), "wetlands" (230.41), and "riffle and pool complexes" (230.45). The Preferred Alternative adversely impacts all these special aquatic sites.

- **Subpart F** – Potential Effects on Human Use Characteristics." Section 230.51 discusses possible loss of values to recreational fishing; Section 230.52, possible loss of values to water-related recreation, Section 230.53, possible loss of values of "beauty" and Sect. 230.54, loss of value to designated parks. The Preferred Alternative would result in a loss of values to all these Human Use Characteristics.

Therefore it is essential that the Corps redo the 404(b)(1) analysis for the complete project and that this be available for public review and comment in a Supplemental FEIS.

The Corps Violated Its Own Guidelines in Determination of Alternatives.

The Corps' consideration of mitigation in the alternative analysis clearly violates the standards set out by *Memorandum Of Agreement Between the Department of the Army and the Environmental Protection Agency: The Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines (*"MOA").

The Corps cannot include mitigation in its alternative analysis.

The Corps in looking at 404(b)(1) alternatives should have followed the MOA. The MOA "provides guidance to Corps and EPA personnel for implementing the Guidelines and must be adhered to when considering mitigation requirements for standard permit applications." *MOA*, Sept. 6, 1990, *available at* http://www.epa.gov/owow/wetlands/regs/mitigate.html. That statement shows that the Corps has to follow the MOA when involved in 404(b)(1) analysis. The MOA goes on to say that, "compensatory mitigation **may not be used** as a method to reduce environmental impacts in the evaluation of the least environmentally damaging practicable alternatives for the purposes of requirements under Section 230.10(a)." (*MOA*) (*emphasis added*).

Instead of utilizing the MOA, the Corps incorrectly used *The Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies* ("P&G"). FEIS at ES-1, W-1. P&G is a federal water resource guidance document created to ensure consistency for federal agencies in formulating and evaluating water project planning. P&G focuses on economics and evaluating water projects (including the alternatives) using Economic Development Standards. P&G, March, 10, 1983, *available at:* http://planning.usace.army.mil/toolbox/library/Guidance/Principles_Guidelines.pdf. P&G guidelines are not appropriate in a 404(b)(1) analysis. The MOA takes precedent when 404(b)(1) guidelines are involved and prohibits this method of evaluation.

It is clear that the Corps improperly considered mitigation in their evaluation. On FEIS page ES-7, two of the criteria listed for devising project alternatives are mitigation feasibility and environmental impacts that include the ability to mitigate. Regarding the four chosen alternatives, the Corps also stated that the "impacts associated with each alternative would be fully mitigated and would result in alternatives with minimal net

effects, and alternatives that would be relatively equal when considering net environmental effects" (FEIS p. W-1). On page 5-23, the Corps indicates that Alternative 3 is the least environmentally damaging because the environmental effects will be fully mitigated. Because the Corps used the P&G guidelines, their entire alternative analysis is incorrect and should be redone to exclude mitigation.

Alternative 3 may violate the Clean Water Act because it destroys Preble's Meadow Jumping Mouse Critical Habitat. The Clean Water Act prohibits discharge of dredge or fill material if it would likely result in the destruction or adverse modification of a critical habitat. 40 CFR § 230.10(b)(3). "Destruction or adverse modification means a direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species" (50 CFR § 402.02.).

The proposed Reallocation will inundate 454 acres of Preble's habitat, of which 155 acres is critical habitat (FEIS 2-70); relocation of the Plum Creek recreation facilities will destroy an additional 2.5 acres. The discharge of dredge and fill material will be employed to accomplish the recreation relocation and mitigation components of Alternative 3 (App. W, p. 5). Since all of the components of Alternative 3 are connected, there is no Alternative 3 without the relocation and mitigation components, and there is no relocation and mitigation without dredging and filling. Although the US Fish and Wildlife Service made a determination on adverse modification in its Biological Opinion, we want to call attention to these provisions of the Clean Water Act.

Selection of Alternative 3, which impacts 157.2 acres of wetlands (Table 2-9) as the "preferred alternative" is completely inconsistent with Executive Order 11990: Protection of Wetlands. This EO states, in part,
"Section 1.(a). Each agency shall provide leadership and shall take action to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities…"

III. The project does not comply with the Corps own Planning Objectives and Constraints:

The **Planning Objectives** (FEIS p.ES-5) include "fully mitigating unavoidable significant impacts" and "minimizing environmental impacts". In fact the preferred alternative causes unavoidable significant impacts: a net loss of mature cottonwood forest, free-flowing stream segments, 155 acres of critical habitat for the Preble's mouse, and 587 acres of publicly-accessible land in the Park. The CMP does not provide for their replacement, except that possibly some off-site mitigation lands may be open to the public. See our discussion of mitigation in Part V for further details. Therefore the Corps is not complying with this Planning Objective.

The preferred alternative is the most environmentally damaging one (see Table 2-9) of those considered; minimizing environmental impacts would require approval of another alternative (see discussion in Part I).

One of the "Planning Objectives" is "Become less reliant on non-renewable ground water by utilizing renewable water supplies, thus extending the availability and life of these critical aquifers for use by future generations." In order to achieve this commendable planning objective, should the Corps approve the reallocation, it is essential that there be a legally binding agreement between either the water providers and the Corps, or the water providers and Colorado DNR that the providers would, in fact, reduce ground water pumping in an amount equal to water they derive from Chatfield storage. Absent such an agreement, Chatfield storage would simply be used for additional growth with no reduction in ground water pumping.

Constraints include "the project should not rely on the use of others' land or on their project capability" (FEIS, p.ES-5). This is also a study-specific constraint (P. 2-6). Much of the mitigation (a part of the project) for the loss of wetlands, bird and Preble's mouse habitat calls for protection and habitat enhancement of land acquired in fee simple or with conservation easements on private lands – others' lands. The mitigation for Preble's habitat in the South Platte River Critical Habitat Unit is on US Forest Service land and involves redesign of a Douglas County road. The FEIS does not say who owns the right of way but it is certainly not held by the Corps. We are not sure what this constraint actually means but it seems to have been applied in an arbitrary and capricious manner.

Constraints also include "public acceptability" but the providers and the Corps have made little attempt to engage a broad spectrum of the public to determine "acceptability" of the project. The Chatfield providers have used a coordinated PR effort to solicit local government support but this differs radically from an open and honest public discussion of project impacts. There has never been much material descriptive of the project at the State Park itself beyond a few awkwardly placed signs on which the phone number of reference was incorrect for an unknown amount of time – at least 5 months, probably more.

IV. The FEIS contains incomplete resource information that biases evaluation of impacts.

The FEIS still contains some inaccuracies regarding the presence or absence of species in the project area:

The US FWS list of Birds of Conservation Concern was updated in 2008 and includes the burrowing owl. Neither Appendix F nor the Birds of Conservation Concern list in the FEIS (Chapter 4, P. 3-47) include this species, which has been sighted within the past year on the prairie dog town by the south entrance to Chatfield State Park and is listed as a Special Status species that occurs in the Park in Table 3-5. Cassin's finch also appears in the FWS list but not on the Chatfield list of Birds of Conservation Concern (it is listed in the Park's bird list as a migrant). Snowy egret and white-faced ibis appear in Table 3-5 but not in Appendix F. This inaccuracy is relatively easy to repair.

A close examination of the records of bird species observed in the park in breeding, migration and wintering seasons must be done and accurately reported prior to issuance of the ROD. Inaccuracies result in an understatement of biological resource values of bird species and could influence the Ecological Functions Approach and mitigation plan.

The data on which estimates of species abundance, species richness and species diversity were primarily based were collected during point counts on only two mornings of two days in one year. The FEIS states that "the findings in Table 3-3 are based on one season of field data…..Additional years of field data would increase precision" (p. 3-49). This sentence gives the impression that data collection occurred repeatedly over the field season, rather than on just two mornings late in the nesting season. The Reallocation study has been going on for many years and the failure to collect more field data could be construed as yet more evidence of bias towards the preferred alternative (including no allocation of funds for more field work). Table 3-3 does not seem to have included information submitted by the sources cited on p. 3-48 which include winter, spring and fall counts; these would also have increased precision and they should have been used in calculating the estimates in Table 3-3. We feel these figures under-represent the bird resource at Chatfield and bias the mitigation process.

The discussion of climate change has been expanded but its implications have not been incorporated into a model for water inflows at Chatfield. The FEIS does note (p. 4-39) "The Corps model uses inflows during the 1942-2000 POR, which tend to be greater on average than that predicted for future conditions for all alternatives" which at least acknowledges the scientific concerns on climate change and reduced flows. The FEIS then continues (p. 4-39) "This results in a greater probability of adequate mitigation for all types of inundation-related environmental impacts." Use of this model has thus possibly resulted in an overestimate of inflows and how they will function in mitigating impacts in this FEIS, which suggests that many of the figures and suppositions for re-establishment of vegetation in the FEIS and CMP may be in error.

The fact that the Corps discusses the potential impact of climate change solely in terms of reduced inflows, resulting inundation impacts and needed mitigation but totally ignores the impacts on <u>project yield</u> (after all this is a water supply project) is another example of being arbitrary and capricious and failing its duty to do an objective analysis.

To essentially ignore climate change is unacceptable, particularly given the nature of the junior water rights of the project proponents and the already questionable project yield. Therefore **to insure better decision-making, the Corps should conduct an analysis of impacts of climate change on the proposed project, and at a minimum, do a sensitivity analysis of inflows and project yield.** Given the critical importance of this basic issue, this should be included in a Supplement to the FEIS.

V. Mitigation of Impacts is a major justification for the Preferred Alternative but the mitigation plan is highly speculative.

A. The environmental impacts of the proposed project will be immediate and concrete, but the planned mitigation contains major uncertainties.

On- and offsite mitigation relies to a great extent on the creation of riparian forests, riparian shrublands and wetlands on what are now upland grasslands (e.g. CMP p. 59). The draft mitigation plan called for installation of metal sheet pilings to "pool" the groundwater (and surface water, when available) behind the pilings; this "pool" would then support the planted/seeded/volunteer wetlands vegetation. Part of the mitigation for the lost mature cottonwood forests would evidently be accomplished this way.

However, data gathered after publication of the draft EIS revealed that the groundwater is too far below the surface to use as a reliable source of water for mitigation. Now most mitigation areas will be created by distributing surface water via channels and ditches from another source (CMP. P 34). The uncertainties include:

1. The actual source and RELIABILITY of the water supply for mitigation. Will these sources include wells, streams, old borrow pits (gravel ponds), old stock ponds? Some of these are supplied by groundwater.

2**. Whether water rights will be required for such diversions.** The Corps says not (CMP Sect. 6.1.1.4, p. 53) but court cases filed regarding use of groundwater along the lower South Platte River (near Greeley) found that use of groundwater by junior water rights holders was harming senior surface water rights, and the junior holders were told to cease groundwater pumping. We wonder whether Adaptive Management may have to include defending the Corps policy in future legal actions. The CMP does say that "if it is determined more is needed, the Chatfield Water Providers will secure the necessary water rights and augmentation supplies" but does not say from where these supplies will come. Nor does the Adaptive Management Plan.

3. Whether the Corps, Colorado DNR, the Providers, etc. will in fact be able and/or willing to monitor the mitigation closely and ensure the creation of these wetlands is successful in the long term. Across Wadsworth Blvd. from Chatfield Reservoir, on Corps land, are three ponds that were created to provide wetlands mitigation for the construction of Hwy. C-470 about 23 years ago. These three areas have largely lost their function as wetlands due to lack of a reliable water supply, thus the 404 permit mitigation requirement for these CDOT wetlands has never been fulfilled. We have repeatedly brought this to the Corps' attention but nothing has been done. The failure of Corps oversight for this relatively small-scale wetlands mitigation does not inspire confidence that the Corps will enforce the mitigation provisions of the Chatfield CMP requiring wetlands creation.

4. Whether the "broad guidelines" in the Adaptive Management Plan (App. GG) can deal with the uncertainties of this wetlands creation/mitigation. This Plan nowhere discusses how water supplies will be ensured for the mitigation areas, just mentions "additional irrigation."

5. Wetlands creation is more of an art than a science, and the literature is full of documentation of efforts that have failed. The upland areas designated for conversion to wetlands are grasslands because water is limited, and conversion may be difficult and expensive. Since the difficulties of creating wetlands are well known, both the Corps and EPA have in the past required a ratio of mitigation to impacted areas of 2:1 or more. The Fish and Wildlife Service Region 6 wetland mitigation policy suggests a ratio of no less than 2:1 also (FWS, Planning Aid Letter, Feb.2006).

6. Under the Compensatory Management Plan (CMP) most of the mitigation EFUs will be obtained offsite. The percentage is quite high: 98% of migratory bird EFUs (368 out of 377 EFUS needed), 75% of wetlands EFUs (90 out of 123), and 84% of Prebles mouse EFUs (229 out of 275 needed for mitigation of impacts). Overall, only 85 onsite EFUs will be provided, as against 775 EFUs needed, or 11% (Table 6, p. 89 in CMP). We realize there are complications: some off-site mitigation for Preble's is being measured in stream miles and acres rather than in EFUs, but even then the figures are not reassuring: 4.1 stream miles of habitat onsite will be "mitigated" by the improvement of 4.5 stream miles offsite at Sugar Creek; 454 acres of habitat could be lost at Chatfield to inundation vs. 381 acres enhanced on Sugar Creek. The first priority of the CMP is onsite mitigation (CMP, p. 18), but as it turns out, very little of that could be/would be done, since not all lands in Chatfield State Park are available for mitigation. The State Park's natural resources could take a very hard "hit" while most mitigation would be offsite.

The major uncertainty here is that lands tentatively identified for offsite mitigation may not be available for easement or acquisition, since this program depends on willing sellers. The Adaptive Management Plan (AMP) identifies this uncertainty and lists one Contingency: "broaden geographic scope of the target off-site mitigation areas." To what areas could it be extended? More specific strategies are needed and the CMP and ROD need to include statements of commitment that these actions would actually be taken if needed.

B. Provisions in the Compensatory Mitigation Plan (CMP) provide no mitigation for several types of impacts:

1. The net loss of a complex, mixed age cottonwood forest, including mature Plains cottonwoods.
2. The loss of free-flowing stream segments on the South Platte River, Plum Creek and Deer Creek.
3. The loss of 587 acres of land for wildlife and recreational purposes that will be either inundated or turned into barren sand/mud flats.
4. The net loss of 155 acres of critical habitat for Preble's meadow jumping mouse.
5. The loss of 15.6 acres of native perennial grasslands.

1. Forest containing 60-to-100-year-old trees cannot be recreated in the project time frame of 50 years and is essentially a total loss. The biological, recreational, and particularly aesthetic characteristics of this forest have been de-emphasized by the use of the Ecological Functions Unit Approach, and the mitigation measures described in the

CMP 1) do not replace them in the project time frame and 2) are highly speculative (see discussion above). These measures include acquisition and protection of 23.5 acres of mature cottonwood off-site, creation of 13 acres dedicated to cottonwood regeneration off-site and 10 acres for cottonwood regeneration on-site, to replace 45 acres of mature cottonwoods to be bulldozed out. The fallacies involved here include:

The method to identify the acreage of "mature cottonwoods" is unclear: many of the individual trees are part of a mixed-age, highly diverse forest that includes snags, a grass/forb layer, a shrub layer, and young to middle-aged trees. How did the singling out of 45 acres of "mature cottonwoods" occur in this riparian forest? Are trees along Deer Creek included? Trees at Massey Draw picnic area? Perhaps the FEIS should say "mature cottonwood forests" (eg. In Tables 4-14 and 4-15) since singling out the trees themselves ignores the value of the forest as a whole and minimizes the statements of impact to birds and other wildlife.

Protection of an existing resource elsewhere (cottonwood gallery forest) is not the same as replacement of the resources lost. Again, we are speaking of the diverse, mixed-age forest dominated by mature trees aged 60-100 years old. IF it exists off-site, it is not replacing forest lost at Chatfield. This is a NET LOSS of this valuable habitat type. Plains cottonwood riparian woodland is one of the rarest, most threatened and most ecologically valuable vegetation types in Colorado. The Colorado Natural Heritage program classifies it as G2G3, S2 (globally imperiled, globally vulnerable, State imperiled).

2. There is no mitigation in the CMP for loss of free-flowing stream segments on the South Platte River, Deer Creek and Plum Creek. These segments provide unique recreational opportunities in the State Park (not discussed in Chapter 3) and aquatic habitats (temperature regimes, flows, substrates, etc.) and species different from lacustrine habitats.

Corps comments (App. DD, P. 62) say "Riverine segments .. are recognized in the EIS to have been influenced by the reservoir and will be inundated more frequently under the reallocation….the character of the habitats will have changed to aquatic taxa more tolerant to a larger range of temperature, flow and dissolved oxygen concentrations, such as those species that currently exist in the reservoir setting." In other words this habitat type will be changed from riverine to lacustrine. The trees that shade the streams and influence temperature regimes will be gone, changing the whole recreational, biological and aesthetic nature of the stream corridors.

The Corps also comments that "Riverine wetlands will be mitigated on and off site" (ibid). We have seen nothing in the mitigation plan that addresses free-flowing stream segments. Stream restoration mitigation activities that the providers "plan" to do off-site are not included in the Federally Recommended Plan and will be completely voluntary; we cannot consider them as part of the CMP or part of the project's mitigation unless they are guaranteed in the ROD.

There is in fact NO possible mitigation for the loss of free-flowing stream segments or for the attendant recreation benefits they provide.

3. We concur with the comments of the Colorado Department of Natural Resources: the 587 acres of land that is intermittently inundated with water stored in the Reallocated Space will become unusable for recreation" (DNR to the Corps, 10/4/12, p. 7). It is not clear that the offsite mitigation lands will be accessible to the public; in fact the EIS, Sec. 3.1.1 still says "The offsite mitigation lands would not be open to the public," as does the Real Estate Appendix L. There is some discussion of opening lands acquired in fee title to public access if that will not affect the mitigation activities (creation of wetlands?) there but this is still vague. Thus we can only conclude that the 587 acres cited above is a net loss to public use which cannot be mitigated.

4. The Preferred Alternative will result in the net loss of 155 acres of habitat for the Threatened Preble's meadow jumping mouse. The acres designated for mitigation of impacts on West Plum Creek and the South Platte River are also critical habitat, as is the 4.5 miles and 381 acres on Sugar Creek in the Pike National Forest. As Colorado Parks and Wildlife stated: "It seems that lost [critical] habitat is being replaced with existing critical habitat" (ibid).We agree with Parks and Wildlife that if Chatfield State Park loses critical habitat, it should be replaced with newly created or suitable unoccupied habitat that is not within the already designated critical habitat. Otherwise, there is a Net Loss of critical habitat for the mouse.

5. Much of the upland vegetation at Chatfield State Park is dominated by non-native grasses. Therefore the replacement and enlargement of existing areas of native perennial grassland is crucial.. The CMP does not mention mitigation for the loss of this important and unique habitat component.

C. The Compensatory Mitigation Plan (CMP, App. K) and Adaptive Management Plan (AMP, App. GG)) have serious flaws that will result in unreliable and inadequate mitigation of the many impacts to Chatfield State Park's resources.

1. Timing of mitigation activities is unclear. The EIS, Sect. 3.1.1, says that "the available onsite mitigation lands will not be determined until after the water elevations begin to increase." This seems to imply that implementation of onsite environmental mitigation will wait until after water is being stored in the reservoir at some level, which contradicts the schedule in the CMP.

In addition, the two schedules in the CMP, Tables 12 and 13 (CMP, pp. 101, 102) say something else. From Table 12 we gather that on-site environmental mitigation will begin in the same year as project approval and is scheduled to be completed two years later. Table 13 lists the milestone of completion of all onsite mitigation as three years after the project approval, when 10% of reallocated storage will be available. This seems inconsistent with the statement in Chapter 3 cited above.

The discussion in Sect. 7.2.2 (p 106 of the CMP) is confusing and seemingly contradictory. The text states that "In the event that the Chatfield Water Providers are unable to meet the mitigation schedules and their use of storage is defined by the mitigation milestones they have met, meeting any of the milestones earlier than indicated in Table 14 will allow earlier use of the reallocated storage." If the Providers have been unable to meet the mitigation schedules, this suggests that they are not passing the milestones as well. How would they meet any milestones earlier if they are behind schedule?

Nowhere in the CMP schedule of mitigation does the removal of vegetation below 5439 ft. above msl. appear. It's not clear if it would be done as needed for recreation facility location in the first three years, or as a concomitant of environmental mitigation. The preliminary operations plan described in the AMP (App. GG, p. 30) says that storage and release will be allowed after the recreation modifications are finished. The quoted passage says nothing about environmental mitigation. Further, storage and release implies that the vegetation has been cleared at least below 5439 ft. msl.

2. The Corps has expanded the description of Adaptive Management by including a whole Appendix (GG) on that topic, but the AMP itself says it presents only "broad guidelines for conducting Adaptive Management" (AMP p. 5). For example, for the Targeted Environmental Resources, the Uncertainties include "All of the compensatory mitigation measures may not be successful." (App. GG, p.8). One critical factor of the onsite and offsite mitigation will be whether the water to create wetlands will be available, and where it will come from. Nothing like this is discussed, except for a reference to "temporary irrigation" (AMP, P. 9). The AMP needs to state specific problems and list concrete measures that could be taken to solve them.

Regarding the Uncertainty of land availability, the Contingencies include "broaden geographic scope of the target off-site mitigation areas." Specific areas and even parcels should be referenced here. The Contingencies listed for Operations on p. 30 include moving water to other facilities – what facilities would be considered? What system of storage exchanges might be used? These are both other examples of "broad guidelines" that don't specify actual strategies needed for minimization of impacts.

3. The AMP contains wording that suggests commitment to full mitigation and minimization of impacts is lacking. Examples of this include the following:

A feature of the Schedule of Adaptive Management measures (App. GG, p. 6) for Operations and for Aquatic Life and Fisheries are the words "As Feasible." This does not provide confidence that adaptive management measures will actually be applied for those resources.

On page 9 of the AMP the Contingencies for Target Environmental Resources include "Adjust operations by Chatfield Water Providers in either storage or release of water <u>without adversely affecting the yield of the CWPs</u>."[our emphasis] The claim of adversely impacting yield could be used at any point to delay or veto changes in reservoir

operations that might benefit affected resources. It seems clear that the CWPs' priorities take precedence over any compensatory adjustments of reservoir water levels.

The list of Core Objectives for Operations (App. GG, p. 28, #2) calls for determining operations that could meet a target elevation and seasonal schedule of storage and releases that would minimize adverse effects on the target environmental resources and recreation, but only, again, without adversely affecting the Providers' yield. It's not clear what will happen if changes in operations that are needed to minimize impacts happen to affect yield. The 4th objective says "Continue to explore ways to adjust operations as circumstances allow…" (our emphasis). This language would allow the providers to postpone or avoid taking actions when speedy resolution is needed.

The preliminary Operations plan (p. 30) calls for each provider to make its own independent determination to use its water rights. Certainly they have the right to do this, but it makes coordinated action to minimize adverse effects very complicated and difficult. The possible Collective Operational Scenario for Operations (AMP, P. 32-34) involves trading space with Denver Water; participation by this entity is entirely speculative at this time.

The uncertainties of adaptive management in, for example, downstream river flows can be illustrated by the discussion in the AMP of the ways the Providers can adjust their operations and management to minimize impacts. For the first three years of the project, operations by the Reallocation participants will be unrestricted while studies will determine the effects of unrestricted operations. The Project Coordination Team will be "informed" of any restrictions on storage and release that might lessen environmental and recreational impacts and will "take this information into account." If the studies indicate that certain actions would clearly be beneficial AND, such operations are approved by the Project Coordination Team, AND if such actions are consistent with the FR/EIS, then such actions will be "discussed" and may be taken IF they are within system constraints and preservation of project yield (AMP, p. 31). The actual adjustment of operations has a large number of hoops to jump through, and there is nothing compulsory, no public oversight, or any grievance channels described. The AMP should include a target for a minimum flow downstream in the Core Objectives section and a range of management options on use of storage capability when the providers create flows less than the recommended minimum. This could provide a minimum level of protection for fish and wildlife resources and recreation needs downstream of the Reservoir.

4. There are no requirements that adverse effects be minimized; the Chatfield Providers will give "full consideration" to such measures but are not required to use them (AMP p. 30). If the Reallocation goes forward it is essential that there be written agreements between the Providers, the Corps and the State that actions will be taken to minimize and mitigate impacts identified during project monitoring.

D. The model for calculating EFUs to identify offsite mitigation opportunities is still using weighting factors that inflate EFU credits for offsite lands and reduces

acres required for mitigation and hence makes the preferred alternative more appealing.

This model elicited comments from the US Department of Interior (DOI), Colorado Parks and Wildlife (CPW), and Audubon, among others. All suggested that weighting factors for buffers, proximity and connection should not be used to calculate EFU credits for potential mitigation lands (offsite mitigation) but rather to compare sites being considered for acquisition or easement. The Corps commented that they revised weighting factors in consultation with the US Fish and Wildlife Service (Appendix DD, p. 64-65) but they do not describe the changes made, why they were made, what outcomes they would change, and where the changes could be found.

Our examination of the revised CMP revealed that the Corps had altered the calculations of EFUs by adding rather than multiplying factors of the model, as the DOI and others suggested, but that they had not eliminated the use of weighting factors as requested by DOI, CPW, Audubon and others to determine EFU mitigation credits on potential offsite mitigation properties. EFUs on sites for bird habitat mitigation would still be weighted, i.e. increased, for connectivity and buffers (CMP, p. 63), which inflates the number of EFUs per acre, and EFUs calculated for lands for Preble's mouse habitat mitigation are still being inflated by weighting for proximity, connectivity and buffers (ibid. p. 69-70)

As the DOI comments pointed out, "sites that would be impacted at Chatfield Reservoir support these same characteristics [proximity, buffers, and connectivity]…Selected mitigation properties ideally would replicate these site characteristics and not be weighted to provide enhanced mitigation credit based on their presence….it would be more equitable if, under the CMP, both positive and negative weighting is employed to reflect whether or not mitigation sites include characteristics of impact sites where EFUs are lost." (DOI to Corps, 9/5/12, p. 3).

While we appreciate the Corps' changes in the operation of the model, the further recommended changes in the use of weighting factors should be made. Otherwise, the end result of the Corps' current use of weighting factors is that the acreage needed to supply the EFUs required for off-site mitigation – 89% of mitigation EFUs - is underestimated. We noted in comments on the Draft FR/EIS, that for rare and threatened resources like mature cottonwood forest and T & E species, the ratio of mitigation to impact acres should be at least 2:1, and in some cases is required by agency policy to be greater than that. To comply with legal requirements to avoid, minimize and/or mitigate environmental impacts, these calculations of EFU mitigation credit opportunities on offsite lands should not be inflated.

The Corps' comments on our concerns about the calculation of EFIs (App. DD P. 70) show how subjective this process really is, and how much the calculations of the model that end up as EFUs depend on opinion – informed opinion, to be sure, but opinion nonetheless. The Battelle Independent Peer Review also reflects these concerns: it states that "The Ecological Functional Value (EFV) system and Habitat Suitability Index (HSI) seem to be subjective, do not have a clear link to ecological impacts, and may not

accurately reflect changes in habitat quality" and "Lack of explanation for EFV scoring and the use of seemingly subjective scoring and ranking analyses could produce results that are unrepeatable and do not have any clear ecological meaning, ultimately affected the justification for the mitigation proposal" (Independent Peer Review Report p. A-34).

The Corps' comments regarding participation by Cecily Mui and Ann Bonnell were only partially answered. These two people were in fact on the committee working on EFU values, along with biologists from agencies and consulting firms, but evidently did not get to vote on changes made after their final input at the last committee meeting. At Cecily and Ann's request, Upland habitat had been given a score of 1.0 and a designation of "Supports Sensitive Species." Without consulting them, the Committee changed the designation to "Limited Habitat" and lowered the score to 0.5. This perhaps reflected the value of upland habitats to Preble's mouse, but we note that the Rocky Mountain Bird Observatory and the National Audubon Society report that many grassland bird species are in danger and declining. In this project it is not just the loss of Upland habitat to inundation that concerns us (270 acres, Table 4-9) but also the loss to wetlands creation and facility construction and the enormous disturbances to areas where sand and gravel will be mined to elevate roads, the balloon launch, picnic areas and other facilities. The extent of this "borrowing" has only come to light in recent years on this project and in the Final FR/EIS.

In addition, the FEIS has omitted helpful discussions on habitat classification and the development of the rating system that were included in the Draft Ecological Functions Report (ERO, 11/08). Their inclusion would give greater transparency and explanation of the science behind the Ecological Functions models.

E. The lack of certainty about pool level fluctuations throws some of the on-site mitigation into question. These fluctuations are variously given as 28.2 feet (p.4-74) on rare occasions during the growing season, seasonal fluctuations of up to 21 feet (Table 2-9 and p. 4-91), average peak fluctuations of 3 feet or 2-3 feet during the growing season (4-81), on rare occasions 20 feet (4-81), and up to 7.1 feet for alt. 3 (4-74) or 7.3 feet (4-114). The Colorado Department of Natural Resources has estimated the fluctuations at 17 feet (CDNR letter to Corps, dated 10/4/12, p. 4). Though the exact figures differ, the FEIS also includes statements like "the exact new condition for each alternative is unknown due to the high fluctuation of the water levels associated with certain alternatives" (P. 4-61). The reasons for, and timing of, water level fluctuations are not included in discussions of impacts; the fluctuations are just referred to in the context of whatever topic happens to be at hand. The DEIS needs to clearly describe why, when and where these fluctuations would occur under the preferred alternative.

Some onsite mitigation depends on high water levels to supply or replenish soil moisture content and provide a substrate for vegetation growth (see below). Without a schedule of storage and release that would be part of a Coordinated Operations Plan for the Reservoir, we cannot evaluate the probability of success of this mitigation. The EIS text in Chapter 4 regarding vegetation re-establishment states that *"this modeling and assumptions described in Table 4-9 are hypotheses of vegetation community change*

above the alternative maximum pool levels…Likewise the figures in Table 4-9 do not represent promises of mitigation…" Several pages later the DEIS states that projected increases in pool fluctuations under Alternative 3 *" make it likely that Tables 4-8, 4-9 and 4-10 …..overestimate future conditions"* (of vegetation re-establishment). This uncertainty renders impact discussions very difficult; a Coordinated Reservoir Operations Plan is needed to remedy this and should be included with the ROD.

The FEIS estimates that 65 new acres of plains cottonwoods would develop in the 0 to 6-foot band above the projected pool elevation levels for Alt. 3 (Table 4-10). If water is estimated to be at the new high water mark only 18% of days (Table 2-9) and below 5440 about 50% of the time (Table H-8) based on the Period of Record (POR) appropriate soil conditions and water supply for these trees may be lacking in the future, especially as climate change progresses. The FEIS does not say how long these stands of trees would take to develop and become mature if indeed they do become established. Plans for natural recruitment here and in other onsite mitigation areas should be given little credit for mitigation if not accompanied by specific measures for water supply and a dedicated funding source to carry out the mitigation.

It is unclear how many acres of cottonwood riparian forest would be removed. Appendix Z refers to 243.5 acres of "cottonwoods" including many large trees. Table 4-9 (P. 4-82) says Alt. 3 would result in the loss of 185.7 acres of narrowleaf and plains cottonwood forest, including mature cottonwood forest. Later text mentions 43 acres of mature cottonwoods. The many references and conflicting acreages confuse the evaluation of impacts on this rare and valuable habitat type.

Mitigation for mature cottonwood forest is still patently inadequate: 13 acres on site for "recruitment of new cottonwood growth," protecting up to 22.5 acres of existing mature cottonwood habitat off site, and designating up to 10 acres of off-site mitigation lands for recruitment. We have discussed the fact that this represents a significant net loss of this habitat type; protection of existing mature cottonwood forest does not replace or alleviate lost forest. Only if the acquired habitat is very valuable and in imminent danger of being lost, and/or important for sustaining T & E species can protecting existing habitat be regarded as anything but a net loss. Trading acres of standing mature trees for acres of "recruitment" does not come close to replacing or recreating the ecological functions of the irreplaceable old growth forest. The ecological values of scattered, regenerating parcels are not equal to those of a contiguous forested area due to edge effect and penetration of external influences into the small parcels.

We recommend that, should the project go forward, mitigation include a written commitment to manage reservoir water levels to preserve as much of the cottonwood forest, especially that containing mature cottonwoods, as possible. Offsite mitigation should require as much as a 10:1 ratio of mitigated lands to impacted lands, as the Corps has sometimes required when using protection of existing habitat to mitigate for wetland losses under the Clean Water Act.

Upland areas destined for conversion to wetlands should be thoroughly evaluated first. There's a reason they are grasslands rather than wetlands, and conversion may be difficult and expensive. Since created wetlands are not likely to replace the functions of those already in existence, we recommend that replacement acreage exceed lost acreage by a ratio of 2:1. Under FWS Region 6 wetland mitigation policy, compensatory mitigation through creation of wetlands should occur at a recommended ratio of no less than 2:1 (FWS, Planning Aid Letter, February 2006).

ASGD has earlier expressed concern that the natural wetlands now in existence on the west side of Plum Creek are proposed as a site for wetlands creation and enhancement as part of the mitigation (email from Gene Reetz to Gwyn Jarret, 4/25/12) . These wetlands are already a diverse and functioning part of the natural process of stream dynamics at Plum Creek, a typical "sand creek" whose course can change from year to year. Attempting to stabilize and enhance such a functioning system may do more damage than good, and we recommended that further, objective analysis of the site be done before any mitigation is attempted there. The Corps has stated in their response (App. DD) that no existing wetlands will be affected by mitigation activities.

F. The model for bird habitat was reviewed only by Corps personnel, while the model for Preble's mouse habitat was reviewed by an outside consultant and FACWet, a Colorado-specific model developed by CSU, EPA, CDOT and others, was used for wetlands. The bird habitat model also needs independent outside peer review, especially in light of comments made by the reviewer about the need to review assumptions behind using the June 2006 point counts (C-2, App. K). The CMP states that the EFI has not been field tested or calibrated, and it was created solely for the Chatfield project. This makes outside peer review even more important.

G. The use of the Ecological Functions Approach obscures the ratio of mitigation to impacted acres. Compare the examples cited in App. C of App. K, where these ratios were 6.5 acres protected to 1 acre lost and 3 acres protected to 1 acre lost. Since successful creation of wetlands is uncertain and mature cottonwood forests cannot be replaced within the project's time frame, we suggest a ratio of at least 2:1, as the FWS suggests may be appropriate for wetlands and high-quality migratory bird habitat (Planning Aid Letter, Feb. 2006) and in the case of the cottonwoods, even more. This reflects the difficulty of successful wetlands creation and the rarity of the mature cottonwood-dominated forest.

H. Part of the on-site mitigation for wetlands loss involves converting upland areas to new wetlands and significantly impacts grassland habitats. Combined with other actions such as excavation of fill material (borrow pits), the result is a loss of 222 acres of upland grassland habitat (Table 4-14). Although grasslands are a common habitat in the study area, they are increasingly impacted by conversion to croplands, frequent haying, field abandonment and a lack of fire, invasive plants, resource extraction and urbanization (e.g. Highlands Ranch). A higher percentage (21.3 %) of grassland birds face declining population trends or major threats than any other group of species (National Audubon Society, State of the Birds USA 2004). While riparian and wetland

habitats are rarer than grasslands, the latter habitat type should not be eliminated without any kind of mitigation as they are important in themselves and critical to the biodiversity of the Park. Enhancement of remaining upland habitat (mitigation for the mitigation?) is one option. Certainly the 15.6 acres of native grasslands lost (Table 4-10) should be replaced. The NRCS has commented that a decrease in upland habitat will likely cause significant impacts to the wildlife species currently using the site (App. S). The FEIS needs to address the loss of grassland/upland habitat and how losses will be mitigated.

I. Offsite mitigation for Preble's mouse habitat will include redesign of the road and drainage improvement on Douglas CR 67, currently a dirt road adjacent to Sugar Creek. The factors that have contributed sediments that have severely degraded Sugar Creek's aquatic and riparian habitats are "routine road maintenance" and "road location and design." These are actions by other parties than the providers and should be the responsibility of Douglas County. We question whether the providers should receive mitigation credit for correcting the actions of others on lands not owned by them or by the Corps.

Colorado State Parks and the Colorado Natural Areas Program "Stewardship Prescription" for the Preble's mouse states that the intent of this management prescription is to provide park managers with sufficient information to "1. Manage selected park lands to protect, preserve and enhance habitat suitable for Preble's…" (CSP and CNAP, 12/2/99). Obviously these two State agencies are assuming responsibilities for managing mouse habitat in State Parks. The Reallocation would inundate some lands bordering the South Platte River and Plum Creek that have been enhanced for Preble's at Chatfield. This is contrary to the goals of both agencies. The CMP doesn't seem to take into account these State responsibilities for this enhancement.

J. Description of mitigation/ relocation of some recreation facilities is missing in Appendix M. There are no picnic areas mentioned in the list of relocated facilities at Massey Draw; we could not find a mention of the old asphalt trail on the west side of the South Platte River, south of the main park road, and its replacement is unclear; horse trails on both sides of the river that would be lost to inundation are not mentioned either. The loss of these trails, the aesthetic impact on riders renting horses from Chatfield Livery, and the economic impact on the Livery, are not discussed in the FEIS. The creation of a borrow pit very close to the Livery will also certainly affect the business's income. Did the economic studies examine these impacts? What mitigation is planned? Relocation of picnic areas will involve bringing in fill material to elevate them above the 5444' msl line. How these facilities will be accessed at high water, how they will be protected from wave action, and how they will be made accessible to visitors with disabilities is not discussed. The FEIS needs to show (with drawings or computer-generated images) what these new facilities will look like, as ASGD representatives have requested a number of times. If designs have not yet been finalized, neither have costs; this casts uncertainty over the cost figures for mitigation in Alternative 3.

A definitive plan for the Marina relocation has not been finalized, and costs included in the mitigation calculations will have to be adjusted when that occurs. This, along with other items we have mentioned may affect the status of Alt. 3 as the cheapest alternative.

K. Representation among the entities managing the mitigation is too limited. The CMP states that the water providers will form the "Chatfield Reservoir Mitigation Company, as a vehicle for facilitating the coordinated management of the process for implementing the Plans [CMP, AMP and Recreation Modification Plan]" (App. K, p. 93, 107; App. GG p. 4) this entity will also be responsible for day-to-day tasks of implementing the obligations in the project decision documents (App. K p. 108)**.** We are glad to see that the revised text of the CMP clearly states the Corps' ultimate responsibility for successful implementation. However senior management oversight of the implementation will reside with a Project Coordination Team (ibid.). The PCT would be aided by a Technical Advisory Committee, and an Operations Advisory Committee, whose comments and recommendations it can "accept or reject" (App. GG p. 4). There is no representation on the PCT of a non-involved neutral party, whose impartial considerations would be extremely valuable. Nor is there any representation planned for Colorado State Parks on the Operations Advisory Committee, a significant oversight given that most of the impacts of the Reallocation occur in Chatfield State Park. Since the operations of the reservoir would also involved a federally-protected species the US Fish and Wildlife Service should also be represented on the Operations Advisory Committee. We urge that this oversight be corrected.

The CMP and AMP do not clearly define the role of the Chatfield Reservoir Mitigation Company vis-vis the PCT and later text refers simply to "the Chatfield Water Providers."

In Sect. 7.1.3 of the CMP the text states that the PCT would be given no opportunity to review and comment on the providers' protection of properties or buffers within the target area. Protection efforts are often complicated. The Corps, either alone or through the PCT, is responsible for project implementation, thus the providers' ability to act without oversight in this case is questionable.

L. The draft mitigation plan for the Chatfield Reallocation project is exceedingly complex and will require extensive oversight to insure that it is successfully implemented with the on-the-ground environmental results. As the approving Federal Agency, the Corps will have the ultimate responsibility that this occur (CMP, p. 94, 108). Therefore, if the Corps approves the Reallocation, it is essential that the Corps devote the necessary resources (staff time, travel funds, etc.) to carry out its oversight responsibilities. This would be a serious obligation on the part of the Corps and should not be taken lightly. Although in Chapter 7 the DEIS states that "all costs are 100% non-federal" this does not take into account these Corps responsibilities and the costs that accompany them. The statement should be deleted. In addition, the State of Colorado has allocated $62 million dollars, through SB 13-181, for "implementation" of the Chatfield Reallocation project. This is pubic money that could be used for other, less damaging water projects; if it isn't paid back, the taxpayers of Colorado are stuck with

these costs, contrary to the providers claims that "no tax dollars will be used for this project."

It is not unusual that actual costs of a project, including mitigation, exceed the anticipated costs. If the Reallocation is approved there must be enforceable provisions for additional funding, should it be necessary to fulfill mitigation requirements (P. 9, CEQ Memorandum for Heads of Federal Departments and Agencies, Jan. 14 2011).

CEQ has also stated that "Public involvement is a key procedural requirement of the NEPA review process and should be fully provided for in the development of mitigation and monitoring procedures. Agencies are also encouraged…to consider including public involvement components in their mitigation monitoring programs" (ibid, p. 13). Further, the Dept. of the Army specifically has promulgated regulations that "seek to integrate robust engagement of the interested public in the mitigation monitoring program." (Appendix to Memorandum cited above, p. 19). The ROD needs to include a clear statement of public involvement in the mitigation monitoring of the Chatfield Reallocation project.

On P. 15 the CEQ memorandum states that "If a mitigation commitment…fails to mitigate the environmental effects as predicted, the responsible agency should further consider whether it is necessary to prepare supplemental NEPA analysis and documentation." Has the Corps made provision for these circumstances?

M. Mitigation Outside the Federally Recommended Plan. Colorado law requires that the Chatfield Water Providers apply for, obtain and implement a Fish and Wildlife Mitigation Plan. The mitigation being negotiated between the providers and Colorado Parks and Wildlife is being considered ONLY because of the Corps' proposed action regarding the Reallocation. These mitigation measures, described in Chapter 6, Table 6-1, should be part of the Federally Recommended Plan and included in the ROD as a condition of the Corps' approval of the Reallocation. For this reason, the ROD should not be issued until the Colorado Parks and Wildlife Commission has reviewed and approved the proposed mitigation.

VI. Additional deficiencies in the FEIS

A. Cumulative Impacts. The discussion of "Cumulative Impacts" (Section 4.19) is inadequate and needs to be revised in order to comply with CEQ regulations (Section 1508.25 (a)(1)). While this section mentions some projects/activities that may have a cumulative impact, there was no attempt to quantify the impacts. For example, the Denver Water projects – Chatfield Reservoir Drought Drawdown, Last Chance Water Diversion to Conduit 20 at Kassler, and the Denver Water temporary Chatfield Pump Station – could have a significant impact on Chatfield Reservoir water levels and reservoir fluctuations, particularly when combined with the proposed Reallocation. ASGD commented on this in our scoping letter of March 5, 2005. Given the critical issue of reservoir levels and fluctuation, those cumulative impacts must be quantified.

Another cumulative impact that does not appear to have been addressed at all is the cumulative impact of flow depletions on the Platte River System. The FEIS notes there will be a reduction in flows below Chatfield but the cumulative impact section does not mention other proposed water projects that will also reduce flows in the Platte River. Also, as noted in another part of this comment letter, there is speculation that the water providers may acquire/transfer additional water rights, not described in the FEIS for Chatfield. This could lead to additional depletions and cumulative impacts. Consequently the cumulative impacts to hydrology must be revised.

B. Water quality issues . Chatfield reservoir has higher than optimal phosphorus levels and has been a source of phosphorus-rich discharges that municipalities downstream have to deal with. Under the preferred Alternative, 474 (plus or minus) acres of vegetation in the reallocated space will be periodically inundated; the decomposition of vegetation on these acres can lead to lower oxygen levels in the water. In turn these can impact aquatic species in localized areas of the reservoir. Lower dissolved oxygen can also cause the methylation of mercury, which will move up the food chain to people who catch and eat the fish at Chatfield. Periodic inundation and decomposition of vegetation will also increase phosphate and ammonia loading. The inundated areas will be relatively shallow and solar radiation on these areas will increase water temperatures. Increased storage and increased fluctuations could harm aquatic species by increasing the erosion of fine sediment (Colorado State Parks, list of Anticipated Recreational and Wildlife Impacts).

The Corps' comments (App. DD p. 114-115) state that more recent data on water quality will be incorporated into the "Localized Model" and that the results of this modeling will be used to improve the overall accuracy of the water quality assessment in the FEIS. They do not say where this reassessment will appear. The Corps' comment on the statements of frequency and duration of water levels under each alternative (p. 113) in the EIS do not acknowledge the fact that modeling based on the POR does not take into account current conditions.

The discussion of impacts of Alt. 3 does not mention possible water pollution by herbicides if/when weed control is done. There are many statements in the FEIS and appendices about the importance of weed control on the areas cleared of trees. We doubt that it will be done by only or strictly biological or mechanical methods and ask that an evaluation of herbicide use and its impacts on water quality be included in the FEIS.

Should the project be approved, the CMP must include a vigorous water quality monitoring program and strict provisions (including funding) for implementation including aeration, should that prove necessary, included in the mitigation plan.

Chapter 4 (Environmental Consequences) provides only a cursory discussion of potential downstream water quality impacts of the proposed alternative. **Given the projected decrease in flows (10 months out of 12) there should be an analysis of potential impacts to downstream discharges and whether there will be a need to upgrade any treatment plants to meet the new flow conditions.** The costs of such upgrades would be a direct result of the reallocation and therefore must be included in the economic

analysis of the project. It is inappropriate to defer such an analysis to an optional future study as mentioned in the Adaptive Management Plan (App. GG, P. 26-27), as this simply hides the true cost of the proposed reallocation project.

C. The Corps "Planning Guidance Notebook" (Engineer Regulations `1105 -2-100) specifically requires evaluation of "aesthetics" as part of the planning process and states (page C-38) "It is National policy that aesthetic resources be protected along with other natural resources." This requirement has not been adequately addressed in the FEIS. During the Chatfield "cooperators" process ASGD specifically requested that either artists' renditions or computer simulations of Chatfield reservoir under different water levels be included in the EIS so that the decision-makers and the public could see the potential impacts. Even though such illustrations are common in EISs, the Corps said they could not do this. However limited visual simulations are actually included in App. M and should be in Chapter 4 as well. Clearly the acknowledged water level fluctuations of the preferred alternative would result in a bathtub ring and acres of unvegetated mud/sand flats (the Corps' discussion in Sect. 4-14 says "mud flats") replacing the existing vegetation which is to be "cleared" and resulting in an extremely negative effect on aesthetics. Picnic grounds now shaded by cottonwood trees will be changed to isolated and exposed areas with no shade, for many years. Section 4.14.3 should include visualizations of the reservoir at key locations at high, average and low water conditions so that the aesthetic characteristics are made clearly visible.

The Planning Guidance also notes the importance of "Project Setting" (page C-39). The fact that the proposed project would take place in a premier State Park, where aesthetics are an especially critical natural resource was largely ignored in the DEIS and FEIS. This is but another example of non-compliance with guidance, in order to avoid discussing the true impacts of the preferred alternative.

The Corps cites the Comparative Study of Reservoir Fluctuation Zones in Appendix HH as showing that the bathtub ring and mud/sand flats will probably be vegetated with little possibility for noxious weed invasions. Several conditions make the validity of this study questionable. Of all the reservoirs included in the study most are used only for flood control (like Cherry Creek) and irrigation (like Barr Lake) (Table 1, p. 2). Only Pueblo Reservoir is used for M & I, and none have anything like the number of providers involved that Chatfield would have under Alternative 3. The Study contains comments such as "The most commonly observed situation was a lack of living vegetation within the majority of fluctuation zones" (p. 15) and "The most common situation observed at the reservoirs reviewed was the majority of the fluctuation zone void of vegetation, with pockets of vegetation at inlets and deltas. It is likely this will also be the situation at Chatfield." Although the study concludes that leafy spurge is infrequently observed at the reservoirs reviewed, it does not say whether there is a seed reservoir for that species, which is certainly the case at Chatfield, where leafy spurge is abundant on, for example, the Denver Water property upstream.

D. Comments concerning Appendix M – Recreation Facilities Modification Plan

It appears after 10 months of work on the Draft little was changed in this area of planning. In a number of areas in the Final, items that should have been updated or finished were not. For example:

1. The tables at the end of M which show park visitor numbers and income stop in 2003. The park turns in monthly and annual reports that are available to the public for this information. The Park Manager can certainly furnish this information, which is vital in determining revenue loss during construction. All Colorado State Parks have seen big increases in revenue and participation in recent years due to the high cost of gasoline and traffic congestion on roads leading to the mountains.

2. An outside firm brought in to study whether the bridge over the So. Platte River in the park should be raised in place or moved south around the south end of the new water storage limit determined that the road should be moved south. It appears that sometime after the study, perhaps because of a southern route's impacts on Preble's Mouse habitat, all the pictures showing the planned location of the bridge put it in the same location it is now, with elevation of the road bed. There should be a narrative with the study explaining why this firm's recommendations were not used. We must assume that is the case since there are diagrams with elevation gain, etc.

3. It was mentioned that costs of utilities are not perfect because information not available. The listed cost of a water tap at each picnic area at $2,000.00 is outdated; a five minute call to the water sales department at Denver Water will inform you that an irrigation tap for 5,000 sq ft is $9,000.00 using Denver treated water. The price is derived by using a base cost for that type of tap plus a hefty cost per each square foot irrigated. If the new facilities are to include drinking fountains, then a commercial permit is required; some other complex calculations make the price higher. The Denver Water employee contacted stated they could not remember whether there was a line to tap into on the west side picnic areas. It would not have taken much research in the last year to come up with better costs. **Whether a tap is even available should be studied, because this is essential to the recreation facilities' relocation.** We found nothing in App. M about the cost of buying water for irrigation. In addition, having buried "Bubblers" and irrigation pipes at the beach when sod and sand will be under water at times and will need periodic bulldozer relocation of sand and sod, is going to be a very real and perhaps unmitigatable problem.

4. Planting evergreens where they may be inundated even for short times is a waste. In this very park, every evergreen that was planted or replanted in the flood zone after flood events was lost again in the next event. Ask any of the long time workers at the park. If evergreen means Juniper, park visitors will not be able to stand under one of them for shade. No mention of species other than deciduous or evergreen was mentioned.

5. It was nice to have simulations of shoreline for the beach at different lake levels showing the expanse of exposed shorelines at 5426'. Why wasn't this done for the other areas? It would be especially useful for Fox Run with the new cove and Plum Creek Picnic area showing total water in the old area, but not showing how it would look with

the newly located picnic and other amenities farther out from the storage when the water is at 5426'.

6. Planting 1 1/2" caliper deciduous trees will make great bark food for the rodents and little shade or wind protection for park visitors. Labor for planting and wrapping and watching over irrigation cycles is not mentioned in costs. The Park staff is already barebones. How many paid employees will be needed to care for the erosion and plant care? This cost should be listed. Weed control compensation may be mentioned elsewhere, but some of this will need to be year-round compensation.

7. No mention is made of what materials, and their cost, will be used to prevent massive erosion of newly elevated picnic areas constructed with fill dirt. This loose soil with no vegetation to hold it will be fair game for wave action, rain events and water level changes even at the 5444' level.

8. No inventory was made of existing trees for picnic areas. The few being planted will definitely provide much less shade and wind protection than enjoyed by visitors now. This is a very large loss of part of the park experience now enjoyed by visitors.

9. It was mentioned that some fill and gravel may be mined within the park. It was also mentioned that cost of any possible royalties for mineral rights involved was not calculated. A five minute call to the Corps of Engineers would have provided the information as to whether mineral rights came with the lands condemned for the flood control reservoir. In Colorado mineral rights and surface rights are often two separate items in a land sale. It appeared that whoever wrote the narrative thought the State Park would have that control. They would have only leased the surface rights from the Corps. The Corps and a five minute call would solve this mystery.

10. Page M 3-14, construction happening at the Marina in November – March should be difficult as the lake usually has 6-12" of ice on its surface from about January into March.

D. The Corps Violated Council on Environmental Quality's Regulations for Proper Responses to Comments in Environment Impact Statements.

The Corps failed to comply with regulations set forth by the CEQ for drafting agency responses to public comments on EISs. Per the CEQ's regulations that govern the manner in which agencies must solicit and address comments on EISs, "all substantive comments received on the draft statement (or summaries thereof where the response has been exceptionally voluminous), **should be attached to the final statement whether or not the comment is thought to merit individual discussion** by the agency in the text of the statement." 40 C.F.R. § 1503.4 (2013). The Corps violated this provision of the CEQ regulations when it did not include ASGD and Poudre's comment letter as an attachment to the FR/EIS. A number of other comment letters were included as attachments in Appendix DD of the FR/EIS; however, the Corps failed to include ASGD and Poudre's letter and those of many others. *See* FEIS app. DD.

Moreover, the Corps placed the public comments and its responses to them in a table in Appendix DD, where it referenced the commentors by number in a column labeled "Commentor Number." Nonetheless, the Corps did not include an index anywhere in the FR/EIS for the reader to be able to decipher which commentor number corresponded to which commentor. It is important for a reader of the FR/EIS to know which individuals and/or organizations submitted certain comments, since the originator of a comment can strengthen or weaken its influence and authority. Most other EISs utilize a similar "commentor number" system when including public comments in an EIS, but these EISs, including those drafted by the Corps, Omaha District, also include a commentor index, which the Corps failed to do for the Chatfield Reallocation FR/EIS. *See* U.S. Army Corps of Engineers, Dep't of the Army, Reuter-Hess Reservoir Final Environmental Impact Statement (Jul. 2003); Fort Carson, CO & U.S. Army Environmental Command, Dep't of the Army, Final Environmental Impact Statement for Implementation of Fort Carson Grow the Army Stationing Decisions (Feb. 2009).

E. Application of the protections of the Migratory Bird Treaty Act is still unclear. Potential "take" of nesting birds, their eggs, nests and young could occur during tree clearing and also during demolition and reconstruction of recreational facilities. Appendix Z mentions this and states that measures will be taken to avoid impacts during the breeding season. The FWS considers the primary migratory bird nesting season to be April 1 to July 15 (Planning Aid Letter, Feb. 2006) but owls begin breeding in February and the young stay in or near the nest until late August or early September (Kingery, H.E. (ed.). 1998. Colorado Breeding Bird Atlas; [1]). Red-tailed hawks begin breeding in March (ibid, [2]). Although the Corps states in their response to public comments that the Migratory Bird Treaty Act will be observed, App. 7 to Appendix M , Construction Concept Analysis, includes a chart of construction during off- and high- season that apparently shows work at Massey Draw, Eagle Cove, Jamison and particularly Deer Creek scheduled during the off season through May 15, i.e. during migratory bird nesting season. Work at all these sites requires "clear and grub" of the on-site trees. These actions would seem contrary to the protections provided by the MBTA, so work schedules and bird nesting seasons need to be better examined and coordinated and a figure or table outlining the exact schedule of work included in the chapter on Environmental Consequences. If the project moves forward, we recommend further that any vegetation removal, demolition and construction take place between Sept. 1 and Jan. 31 to avoid "take" as defined by the Migratory Bird Treaty Act.

Comments on the US Fish and Wildlife Service's Biological Opinion:

This document was published in August 2013, about a week after the FEIS.
We have reviewed it and find it incredible that the agency can approve the net loss of 155 acres of Preble's mouse critical habitat, an estimated 369 mice, and the loss of 456 acres total of Preble's habitat. The Biological Opinion relies heavily for its No Jeopardy opinion on the mitigation plan and cites figures in the FEIS and Biological Assessment to the effect that water levels will be stable at 5440' msl and seasonal fluctuations during the growing season limited to 2-3 feet. Given the uncertainties about frequency and

duration of water level fluctuations cited in the FEIS, the fact that the hydrologic modeling does not reflect current cconditions, and the speculative nature of the mitigation plan (see our Section V) this acceptance seems unwise. We question whether the dictates of the Endangered Species Act are complied with.

Conclusions

As documented in the preceding discussion, the FEIS contains fatal deficiencies that can only be corrected through the preparation of a Supplemental Final Environmental Impact Statement. Among the items that should be included are:

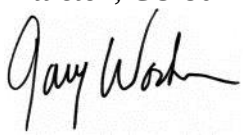
- A Coordinated Plan for Reservoir Operations
- A clear discussion of the "safe" or "firm" yield of the proposed reallocation and alternatives
- Specific identifications of the individual water providers' water rights to be stored in Chatfield
- A revised Clean Water Act Section 404 analysis that includes the complete project
- A clear description of the reservoir fluctuations with illustrations of key locations under high, normal and low water levels.
- An objective evaluation of legitimate alternatives including quantified water conservation measures, use of upstream gravel pits and existing storage facilities, aquifer storage and recovery, storage in Rueter-Hess reservoir, and Project WISE
- A quantification of cumulative impacts
- A mitigation plan that has specific commitments, addresses the loss of free flowing segments of the South Platte and Plum Creek and the mature cottonwood forests, compensates for the loss of 587 publicly-accessible acres, and relies less on "adaptive management"
- A computation of costs for Alt. 3 that does not include results of policy waivers and does include the possible costs of downstream water quality impacts.

It is essential that the Supplemental FEIS be done in an objective manner, consistent with CEQ regulations, and that it not include the biases evident in the current FEIS.

Rightly or wrongly, the Corps is widely perceived as being insensitive to environmental concerns. Clearly the Corps has recognized this perception and has attempted to incorporate environmental values in its overall mission (i.e..Appendix C, Environmental Evaluations and Compliance, Engineer Regulations 1105-2-100, Planning Guidance Notebook). However, selecting the most environmentally damaging alternative as the Preferred Plan raises serious questions regarding the Corps' commitment to the environment. Furthermore, to do so on land owned by the Corps, on behalf of U.S. citizens, is a betrayal of the Corps broader responsibilities.

Thank you for this opportunity to comment.
Sincerely,

Carol DeStefanis, President
Ann Bonnell, 2nd Vice-President
Pauline P. Reetz, Conservation Chairman
Gene R. Reetz, Special Technical Advisor to the Reallocation
9308 S. Wadsworth Blvd.
Littleton, CO 80128



Gary Wockner, PhD
Colorado Program Director
Clean Water Action
655 Broadway, Suite 825
Denver, CO 80203

Mark J. Easter, Board Chair
Clean Water Action
PO Box 20
Fort Collins, CO 80522