CENTENNIAL
WATER AND SANITATION DISTRICT

July 21, 2010

Senator Mark Udall
United States Senate
Washington, DC 20510

Dear Senator Udall,

Thank you for your past support of the Chatfield Reservoir Reallocation project. In our past discussions, you have asked how your office might offer help to this valuable water supply opportunity. **We now request that help at a critical juncture in the FS/EIS process.**

We request that you communicate directly with Jim Martin, Regional Administrator, USEPA, Region 8 and Col. Robert Ruch, Commander, USACE, Omaha District to convey the following key messages:

1) **Understand the critical need for this project in the Denver metropolitan area and northeast Colorado;**
2) **Clarify the urgency for the two agencies, the EPA and the Corps of Engineers, to give high priority to resolving their policy dispute about the applicable regulations; and**
3) **Establish a new, empowered and motivated "working committee" of their agencies, the Colorado Water Conservation Board, and the Chatfield Reservoir Reallocation Coordinating Committee to collectively find a path to resolving the two agencies' policy differences.**

The Chatfield Reservoir Reallocation draft Feasibility Study and Environmental Impact Statement (FS/EIS) are currently being completed by the U. S. Army Corps of Engineers (USACE or Corps) Omaha District. The Corps expects to release the draft FS/EIS for public comment by the end of October 2010. Chatfield Reallocation would enable 14 Colorado Front Range water providers to secure critical, renewable and sustainable water supplies by optimizing existing infrastructure to efficiently capture surface water. Reallocation of the existing storage space in Chatfield does not require construction and does not involve the discharge of fill material into wetlands. Consequently, no 404 permitting requirements are triggered by reallocating this existing water storage space. The only discharge of fill materials into wetlands associated with this project result from replacing recreation facilities and mitigating impacts to environmental resources. The

62 West Plaza Drive
Highlands Ranch, Colorado 80129
www.highlandsranch.org

303-791-0430 Telephone
303-791-0437 Engineering Fax
303-791-3290 Financial Services Fax

water providers, as project proponents, have committed to fund and implement mitigation for these impacts. The Chatfield project represents a shining example of how regional water supply planning can successfully use a transparent and collaborative approach involving diverse stakeholders.

The Chatfield Reservoir Reallocation Oversight Committee appreciates your leadership, commitment and assistance with the FS/EIS. We are nearing an important milestone with the expected release of the FS/EIS for public review. An issuance of the Record of Decision (ROD) by the Assistant Secretary of the Army (Civil Works) is expected in 2011.

Here is the critical issue: The USACE and the U. S. Environmental Protection Agency (USEPA) have a difference of opinion regarding compliance with the Clean Water Act (CWA) Section 404(b)(1) guidelines. We understand the key difference, in simple terms, is that the Corps Civil Works Program applies the 404(b)(1) guidelines differently than the Corps Regulatory Program with regard to the timing of when mitigation is considered. The Civil Works program utilizes a six step planning process developed under the auspices of the *Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies* developed by the National Water Resource Council. The process is a systematic approach that utilizes clear criteria to make determinations and decisions about proposed water projects, including consideration of environmental impacts and mitigation. This process requires that appropriate mitigation of adverse effects is to be an integral part of each alternative plan under consideration.

On the other hand, guidance on the determination of mitigation is provided to the Regulatory Program in a 6 February 1990 Memorandum of Agreement (MOA) between the EPA and the Department of the Army (Civil Works is specifically excluded in that memo). Per the memo, only the Least Environmentally Damaging Practicable Alternative (LEDPA) may be permitted for a 404 permit, and mitigation may only be considered after the LEDPA has been identified. Thus, the USEPA asserts that they believe the Corps' identified preferred plan (Reallocation at Chatfield) is not the LEDPA, and, as such, they believe that the Corps is not in compliance with the CWA. This dispute is causing USEPA to publicly state that they may veto the Chatfield Reservoir Reallocation project. **We are particularly concerned that this dispute may result in significant project delays or, worse yet, a project veto after years of exhaustive investigations, evaluation and screening of numerous alternatives and expenditures of millions of dollars of federal, state and local funds**. Colorado cannot sustain another loss of an environmentally balanced, locally supported regional water supply project similar to USEPA's veto of Two Forks.

While we are very pleased with the progress the Corps has made on the FS/EIS, we are concerned that issues identified by USEPA, Region 8 still have not been resolved. Attached are copies of letters between the two agencies dating from May 2009:

- *Humberto Garcia, Program Director, Ecosystems Protection Program, USEPA, Region 8 letter to Col. David Press, Commander, USACE, Omaha District dated May 13, 2009.*
- *Larry Svoboda, Director, NEPA Program, USEPA, Region 8 letter to Col. David Press, Commander, USACE, Omaha District dated May 15, 2009.*
- *Col. Robert Ruch, Commander, USACE, Omaha District letter to Carol Campbell, Assistant Regional Administrator, Ecosystems Protection and Remediation, USEPA, Region 8 dated February 3, 2010.*
- *Carol Campbell, Assistant Regional Administrator, Ecosystems Protection and Remediation, USEPA, Region 8 letter to Col. Robert Ruch, Commander, USACE, Omaha District dated May 18, 2010.*

In their letter, the Corps states that while the two processes are distinct, they believe that either approach meets the intent of the flexible language contained within the CWA. We would agree, and in addition, we would suggest that the Civil Works planning process is much more conducive to collaboration with the diverse group of stakeholders involved in the Chatfield Study. It appears that many of the other water supply projects that are currently being planned under the purview of the Corps regulatory program would enjoy more success if they were able to utilize a more rigorous collaborative decision-making process such as that employed by the Civil Works program. The Civil Works planning process that has been undertaken by the Omaha District does a good job at incorporating community concerns about the impacts of the reallocation regarding the environmental and recreational impacts at Chatfield Reservoir, and should be commended. A broad cross-section of municipal, agricultural and environmental interests in the South Platte River Basin encompassing a wide area of northeast Colorado, including the Denver metropolitan area, has been included. Chatfield Reservoir Reallocation represents a breakthrough in bringing together diverse, and many times, competing interests in the pursuit of one goal – to increase the storage capacity of an existing flood control reservoir. The Chatfield Reservoir Reallocation study/project will contribute to solving critical multi-use water supply needs along the South Platte River in northeastern Colorado and metropolitan Denver. The study/project enjoys broad support from municipal, agricultural and environmental interests. It would:

- Make use of an existing water storage facility to meet additional water demands;
- Avoid the controversy and cost of constructing a new water storage facility;
- Reduce cities' and special districts' dependence on non-renewable groundwater; and

- Provide for enhanced in-stream flows resulting in environmental and recreational benefits, particularly in drought years, along the South Platte River in the 53-mile Denver urban river corridor from Chatfield Reservoir to below the Adams County-Weld County line.

In particular, the looming water supply crisis facing Colorado is now reality. In the attached selected pages from *Colorado Water Conservation Board Colorado's Water Supply Future Statewide Water Supply Initiative (SWSI) Phase 2* report (November 2007) on the water supply gap for the South Platte Basin, a shortfall of 90,600 acre-feet was identified for 2030. Chatfield Reservoir Reallocation will not address the entire shortfall, but the preferred alternative of 20,600 acre-feet of storage will help to lessen the shortfall the basin is facing. In wet years, thousands of acre feet of water beyond our agreed upon allocation of flows downstream in the South Platte River into Nebraska, are never captured and used by Colorado's farmers and municipalities.

In recent years approximately 400 farmers were directed by the State Water Engineer to shut down their irrigation wells due to a lack of rain and snowmelt runoff water to support diversions within Colorado's priority system. Many of those farmers were no longer able to viably farm their acreage, which also impacted rural communities in northeast Colorado. Storage in Chatfield would help some of these farmers to continue pumping their wells under future dry conditions.

Some suggest that water conservation will be the complete and total remedy for Colorado's water supply problems. The municipal and agricultural water users that would benefit from Chatfield all have active water conservation efforts underway. A report on these conservation plans, *Summaries of Participants' Water Conservation Programs*, undertaken by the Chatfield Reservoir Reallocation water users is attached. However, the result of these water conservation efforts, though critical, will still require development of additional water supply sources. Chatfield Reservoir Reallocation provides one of those potential sources.

The opportunity to potentially use released flows from Chatfield Reservoir to help the environment needs to be fully exploited. The involvement of environmental organizations in the FS/EIS study process has contributed to developing a realistic environmental mitigation plan that addresses the impacts of the reallocation of water storage in Chatfield. In a letter dated June 21, 2010, sent by Barbara Biggs, Government Affairs Officer for the Metro Wastewater Reclamation District, to USEPA, Region 8 Regional Administrator Martin and Assistant Regional Administrator Carol Campbell, Ms. Biggs states that "the District believes that the completion of the Chatfield Reallocation project will provide environmentally beneficial and necessary base flows that will help maintain a thriving aquatic community in the South Platte River."

We understand that there will be environmental and recreational impacts because of the proposed water storage reallocation. We believe the draft FS/EIS addresses these major concerns and we are committed to fully fund and implement the measures required to mitigate those impacts. We understand that USEPA, Region 8 has not had the benefit of seeing the most recent work that addresses these concerns. We are hopeful that this additional information along with a more thorough understanding of the severe water shortages facing the state will help to move this study and project forward.

Again, we request that you communicate directly with Jim Martin, Regional Administrator, USEPA, Region 8 and Col. Robert Ruch, Commander, USACE, Omaha District to convey the following key messages:

1) **Understand the critical need for this project in the Denver metropolitan area and northeast Colorado;**
2) **Clarify the urgency for the two agencies, the EPA and the Corps of Engineers, to give high priority to resolving their policy dispute about the applicable regulations; and**
3) **Establish a new, empowered and motivated "working committee" of their agencies, the Colorado Water Conservation Board, and the Chatfield Reservoir Reallocation Coordinating Committee to collectively find a path to resolving the two agencies' policy differences.**

Several of us will be traveling to Washington, DC, on September 21 through 23 and look forward to meeting with you. We hope that the dialogue regarding Chatfield reallocation will move forward during the intervening weeks.

Sincerely,

John Hendrick

John Hendrick
General Manager
Centennial Water and Sanitation District

On behalf of the 14 Water Providers involved in the Chatfield Reservoir Reallocation Project: City of Aurora, Central Colorado Water Conservancy District, Denver Botanic Gardens at Chatfield, Western Mutual Ditch Company, Town of Castle Rock, Castle Pines Metropolitan District, Castle Pines North Metropolitan District, Centennial Water and Sanitation District, Center of Colorado Water Conservancy District, Colorado Division of Parks and Outdoor Recreation, Mt. Carbon Metropolitan District, Perry Park Country Club, Roxborough Water and Sanitation District and South Metro Water Supply Authority

Attachments (7)

USEPA, Region 8 letter dated May 13, 2009
USEPA, Region 8 letter dated May 15, 2009
USACE, Omaha District letter dated February 3, 20104521
USEPA, Region 8 letter dated May 18, 2010
Colorado Water Conservation Board Colorado's Water Supply Future Statewide Water Supply Initiative (SWSI) Phase 2 report dated November 2007 (selected pages)
Summaries of Participants' Water Conservation Programs
Metro Wastewater Reclamation District letter dated June 21, 2010

cc: Honorable Bill Ritter, Governor, State of Colorado
Jim Martin, Regional Administrator, USEPA, Region 8
Carol Campbell, Assistant Regional Administrator, USEPA, Region 8
Bert Garcia, Ecosystems Protection Program Director, USEPA, Region 8
Jim Luey, NEPA Compliance and Review Program Director, USEPA, Region 8
Karen Reed, Wetlands and Tribal Unit Chief, USEPA, Region 8
Brent Truskowski, Project Officer, USEPA, Region 8
Col. Robert Ruch, Commander, USACE, Omaha District
Kayla Eckert Uptmor, Chief of Planning, USACE, Omaha District
Eric Laux, Project Manager, USACE, Omaha District
Gwyn Jarrett, Project Manager, USACE, Omaha District
Chatfield Reservoir Reallocation Water Providers (listed above)
Mike King, Executive Director, Colorado Department of Natural Resources
Alex Davis, Colorado Department of Natural Resources
Bob Randall, Colorado Department of Natural Resources
Jennifer Gimbel, Director, Colorado Water Conservation Board
Tom Browning, Colorado Water Conservation Board
Jeff Shoemaker, Executive Director, The Greenway Foundation

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

Ref: 8EPR-EP

MAY 13 2009

Colonel David C. Press
Commander
U.S. Army Corps of Engineers, Omaha District
1616 Capitol Avenue
Omaha, NE 68102-4901

Dear Colonel Press:

The Environmental Protection Agency Region 8 (EPA) has reviewed the Preliminary Draft Environmental Impact Statement (PDEIS) and Feasibility Report for the Chatfield Storage Reallocation Project. We are writing to notify you of our overarching concerns regarding the scope of analysis for this project and the potential for significant environmental impacts from the proposed action, and to request a meeting to discuss EPA's concerns. EPA acknowledges the need to ensure adequate water supply storage for the project sponsors. However, EPA wants to ensure that the decision of selecting an appropriate storage solution is made consistent with the relevant laws and regulations. As you are well aware, Chatfield is a valuable environmental and recreational resource in close proximity to Denver. Therefore, it is in the public interest that the U.S. Army Corps of Engineers (Corps) carefully consider the anticipated adverse impacts to Chatfield and thoroughly evaluate the practicability of other alternatives, so that the alternative selection withstands close scrutiny. EPA is offering to work with the Corps to resolve these issues in order to allow the project to move forward.

This letter is intended to convey the overarching concerns of the EPA Wetlands program, in particular, in regard to the lack of a thorough Clean Water Act §404(b)(1) analysis. We expect the EPA National Environmental Policy Act (NEPA) program to provide a separate correspondence voicing their concerns regarding this PDEIS soon.

As you are aware, federal agencies must analyze the environmental impacts of certain actions as required by NEPA, §404 of the Clean Water Act (CWA) and its implementing regulations, as well as Executive Order 11990. Among other requirements, these authorities mandate that information pertaining to any projects affecting wetlands and waters of the United States must be thoroughly disclosed and evaluated, and the least environmentally damaging practicable alternative (LEDPA) must be selected.

As an initial matter, EPA is concerned that the analysis in the PDEIS considers the raising of water levels in the reservoir separately from the other associated actions, including the relocation of infrastructure. In the case of a civil works project like this one, EPA understands

the Corps is bound by all substantive requirements normally required of an individual permit applicant according to 40 CFR 230.2(a)(2); 33 CFR § 336.1(a); Army Corps of Engineers, *Planning Guidance Notebook*, App. C, C-6. These requirements include consideration of a single and complete project as well as compliance with the CWA §404(b)(1) Guidelines. In this instance, the raising of the water levels at Chatfield Reservoir and all actions that must be taken as a result of the higher water levels must be evaluated together as a single and complete project. EPA believes the Corps must consider the scope and impacts of the entire project when conducting the analysis required by the CWA §404(b)(1) Guidelines and in determining the LEDPA.

In addition, EPA is concerned the PDEIS inappropriately constrained the alternatives analysis given the identified purpose and need of the action, to increase availability of water in the greater Denver area. According to the PDEIS, alternatives were selected, designed and evaluated to determine the best and highest use of Chatfield Reservoir. Instead of analyzing all potential alternatives against the purpose and need of the project and implementing the requirements of NEPA, CWA § 404 and its implementing regulations and Executive Order 11990, the clear focus of the PDEIS is on the reallocation of storage space in Chatfield Reservoir. This analysis began with the assumption that "new storage space made available in an existing structure is without the costly and (presumably) more environmentally impacting action of constructing new storage facilities" (page 2-3 PDEIS). However, as shown in Chapter 2 of the PDEIS, the preferred alternative is potentially the most environmentally damaging alternative analyzed. EPA is concerned that the PDEIS does not adequately consider alternatives for increasing water supply that may be less environmentally damaging than the reallocation at Chatfield. The PDEIS provides much of the analysis required for a CWA §404(b)(1) analysis in its current form, however EPA does not believe that an adequate practicability analysis was done, which allowed alternatives to be discarded rather than fully considered and analyzed. EPA strongly recommends the alternatives analysis thoroughly address all appropriate alternatives for increasing water supply and adequately consider the practicability of each alternative.

Among the issues EPA has identified thus far regarding the environmental impacts of this project, the project as proposed in the PDEIS will potentially inundate approximately 587 acres of shoreline; including 81.8 acres of what EPA believes to be high quality wetlands. The project also impacts 75.3 acres of Prebles Mouse habitat, and 81.8 acres of bird habitat. The project would also inundate approximately 200 acres of mature, difficult to replace cottonwood galleries. Although the PDEIS states that these impacts will be mitigated for, and provides a conceptual plan which will only inundate these resources if mitigation can be found in advance of the impacts, EPA does not believe that adequate mitigation can be found in the affected watersheds.

In addition, EPA is concerned with the high probability of violating certain water quality standards for Chatfield Reservoir. The current water quality standards for chlorophyll *a* and phosphorus are predicated on the reservoir having no further assimilative capacity. According to the PDEIS, the project is predicted to cause a significant increase of nutrients due to what is termed the new lake effect. EPA also believes that the wetlands which will be inundated currently provide some nutrient uptake functions which will be lost, thereby increasing further

the nutrient load reaching the reservoir as a result of this project. The increase in phosphorus load will likely result in violations of the associated water quality standards.

We look forward to working closely with the Corps to resolve the issues raised by this letter. If you have any questions regarding this letter, please contact Brian Caruso of my staff at 303-312-6573.

Sincerely,

Humberto L.Garcia Jr., Program Director
Ecosystems Protection Program

cc: Eric Laux, USACOE-Omaha
Tim Carey, USACOE-Denver

Printed on Recycled Paper

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

MAY 15 2009

Ref: EPR-N

Colonel David C. Press
Commander
U.S. Army Corps of Engineers, Omaha District
1616 Capitol Avenue
Omaha, NE 68102-4901

Re: EPA Comments on the Preliminary Draft Environmental Impact Statement for Chatfield Storage Reallocation Project

Dear Colonel Press,

The U.S. Environmental Protection Agency, Region 8 (EPA) has reviewed the U.S. Army Corps of Engineers' (Corps) Preliminary Draft Environmental Impact Statement (PDEIS) for the Chatfield Storage Reallocation (Chatfield) Project. EPA offers these comments in accordance with our responsibilities under Section 102(2)(C) of the National Environmental Policy Act (NEPA), 42 U.S.C. Section 4332(2)(C), and our authority pursuant to Section 309 of the Clean Air Act (CAA), 42 U.S.C. Section 7609, and Section 404 of the Clean Water Act (CWA), 33 U.S.C. 1344. The NEPA staff has worked closely with the Wetlands program and we concur with the overarching concerns raised in their letter (attached). Additionally, we offer the following, more detailed comments on the alternatives considered in the PDEIS. In order to best resolve these concerns, we would like to request a meeting with you and your staff as soon as possible.

Background

The Colorado Water Conservation Board (CWCB), a division of the State of Colorado's Department of National Resources, requested that the Corps consider reallocating space within Chatfield Reservoir for water supply purposes, on behalf of a group of 15 water users in the Denver metropolitan area. Some of the water users requesting the reallocation currently rely on non-tributary groundwater from the Denver Basin aquifer, which cannot be replenished with run-off water from rain or snow-melt. To decrease their dependence on nonrenewable aquifers, many

water users have secured rights to surface water in the South Platte River and Plum Creek. These sources are considered renewable, because they can be replenished with seasonal run-off from rain or snow-melt. However, because many of the water users' surface water rights are considered junior, they can only call on this supply when the rivers are high enough to accommodate senior rights first. If approved, a reallocation at Chatfield would store renewable surface water for storage and use during low-flow periods, thereby helping these regional water users meet demand for municipal and industrial needs in response to population growth in the region, and provide additional water supplies for agricultural and recreational uses.

Four alternatives were evaluated in the PDEIS, including the No Action Alternative. The proposed action, Alternative 3, would use Chatfield Reservoir to store renewable surface water from Plum Creek and the South Platte River for storage and use during low-flow periods. Under this alternative, storage from the flood control pool would be reallocated to the joint flood control-conservation pool. The elevation of the multipurpose/conservation pool would be raised 12 feet; from 5,432 mean sea level (msl) to 5,444 feet msl. The average annual yield under Alternative 3 is estimated at 8,539 acre-feet. However, the exact pool elevation of 5,444 feet msl would not be achieved every year due to fluctuations in the amount of runoff available on an annual basis; elevations would fluctuate up to 21 feet, creating water levels anywhere from 5,423 msl to 5,444 msl (page 4-24).

EPA understands that the planning process has been underway for several years, and that the project sponsors strongly support Alternative 3. Unfortunately, EPA was not involved in the development of this document, and it was not until February 2009 that we realized the project involved the discharge of dredged and fill material in waters of the U.S. and, therefore, triggered the substantive requirements of an individual 404 permit. EPA's review of the PDEIS has identified significant concerns with regard to the project's conformity with the CWA Section 404(b)(1) Guidelines, as well as impacts to water quality, wetlands and habitat for endangered species. EPA is also concerned with the lack of a detailed mitigation plan for offsetting these impacts. EPA believes these concerns, summarized below, must be addressed prior to moving forward with issuing the DEIS.

Clean Water Act Section 404 Issues

EPA believes the PDEIS does not provide sufficient information to establish compliance with the CWA Section 404(b)(1) Guidelines, 40 CFR Part 230 (Guidelines). Specifically, the PDEIS does not include a complete 404(b)(1) alternatives analysis and, based on the information in the document, EPA believes the Proposed Action is not the Least Environmentally Damaging Practicable Alternative (LEDPA). The Corps has indicated that it plans to provide a 404(b)(1) analysis for the relocation of the swim beach but does not intend to apply the 404(b)(1) analysis to other elements of the proposed action, including the relocation of infrastructure like recreational facilities and roads, which would also impact Waters of the U.S. However, EPA is concerned that the project is being improperly segmented, as all proposed relocation of infrastructure is a direct result of the proposed rising elevation of the reservoir for water storage. Therefore, EPA believes a (b)(1) alternatives analysis is needed that considers the entire proposed action as a single and complete project, in determining the LEDPA.

For purposes of both NEPA and Clean Water Act requirements, the analysis regarding the availability of less environmentally damaging practicable alternatives (40 CFR §230.10(a)) does not appear sufficient. EPA believes the PDEIS inappropriately constrained the alternatives analysis given that the purpose and need for action is identified as increasing availability of water in the greater Denver area. Council on Environmental Quality regulations require the EIS to examine all reasonable alternatives to the proposal (Section 1502.14). The PDEIS only rigorously explored and objectively evaluated the reallocation of storage space in Chatfield Reservoir. This alternative has significant environmental impacts, and EPA is concerned that the PDEIS does not adequately consider alternatives for increasing water supply that may be less environmentally damaging than the reallocation at Chatfield. This will be particularly important to the 404 program, as the 404 program outlined in a separate letter to you. EPA strongly recommends that all reasonable alternatives that are practicable and feasible from a technical and economic standpoint be considered in the DEIS.

Water Quality

EPA believes the PDEIS may not adequately address the project's potential to exacerbate existing water quality concerns in Chatfield Reservoir. The Chatfield Reservoir Clean Lakes Study identified potential water quality problems for Chatfield Reservoir because of increases in eutrophication caused by nutrient loading and other pollutants. At the same time a Total Maximum Annual Load was approved by the State for phosphorous, the Colorado Water Quality Control Division developed a target for chlorophyll-a (page 3-10). The PDEIS states that its water quality model predicts the Proposed Action would result in a long-term phosphorous concentration increase of 60 percent over the No Action alternative. The increased phosphorus load will likely result in violations of the associated water quality standards. Furthermore, E. coli concentrations are estimated to be highest under Alternative 3, which would have the greatest potential increase in shoreline areas. The PDEIS states that E. coli concentrations could increase by roughly 32 percent, which is an aesthetic and a human health concern for this recreational amenity. In addition, several segments of the South Platte River below Chatfield Reservoir are on the State's 303(d) list of impaired water bodies for E. coli. This project would likely increase loads of E. coli into these already impaired water bodies. EPA believes these are significant impacts, and the PDEIS must analyze these potential impacts fully and mitigate as much as possible.

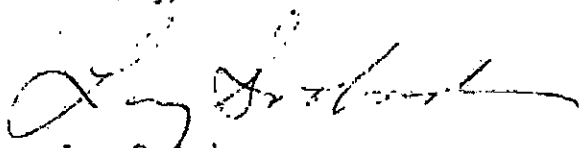
Lack of Mitigation

The PDEIS states that the Proposed Action will potentially inundate approximately 587 acres of shoreline, including 81.8 acres of what EPA believes to be high quality wetlands. The project would also impact 75.3 acres of Preble's Mouse habitat and 81.8 acres of bird habitat, and inundate approximately 200 acres of mature, difficult-to-replace cottonwood galleries. The PDEIS states that these impacts will be mitigated, and the document provides a conceptual plan which states that they will only inundate these resources if mitigation can be found in advance of the impacts. While there appears to be an intention to replace the functions and values of those resources, EPA does not believe that adequate mitigation can be found in the affected watersheds. We are also concerned that the PDEIS does not address the feasibility of

implementing the proposed mitigation.

EPA appreciates the opportunity to comment at this stage of the planning process. We are committed to working with the Corps and other stakeholders to improve the analysis of potential impacts of this proposal as we coordinate to identify an alternative that satisfies the project purpose and ensures effective protection for human health and the environment. We look forward to scheduling a meeting with you to discuss our concerns at your earliest convenience. If we may provide further explanation of our concerns, please contact Melanie Wasco of my staff at (303) 312-6540, or me at (303) 312-6004.

Sincerely,



Larry Svoboda
Director, NEPA Program

CC:

Tim Carey, U.S. Army Corps of Engineers
Eric Laix, U.S. Army Corps of Engineers

Printed on Recycled Paper

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
1616 CAPITOL AVENUE
OMAHA NE 68102-4901

REPLY TO
ATTENTION OF

February 3, 2010

District Commander

Carol Campbell
Assistant Regional Administrator, Ecosystems Protection and Remediation
U.S. Environmental Protection Agency Region 8
1595 Wynkoop Street
Denver, Colorado 80202-1129

Dear Ms. Campbell:

The U.S. Army Corps of Engineers, Omaha District (Corps) has reviewed the concerns expressed in your agency's letters dated 13 May 2009 and 15 May 2009. We appreciate your review of our preliminary draft Feasibility Study and Environmental Impact Statement (preliminary FS/EIS). As our aim is to ensure open communication, the Corps has worked to regularly coordinate with its federal and non-federal partners, including the EPA, throughout the conduct of the Chatfield Reallocation Study. The subject letters sent by the EPA convey several concerns pertaining to the study. The key concerns are discussed below.

Clean Water Act Compliance

The EPA mentioned in their letters that the preliminary FS/EIS does not provide sufficient information to establish compliance with Clean Water Act (CWA) Section 404(b)(1) guidelines based on the fact that the document does not contain a complete 404(b)(1) analysis and the belief that the preliminary proposed action is not the Least Environmentally Damaging Practicable Alternative (LEDPA).

Because the document reviewed by the EPA is preliminary, not all analysis had yet been completed, including the 404(b)(1) evaluation. When the preliminary FS/EIS are completed and ready for public review, the document will demonstrate that the recommended plan is in compliance with Guidelines by ensuring a complete evaluation of the effects of the proposed discharge, as well as a thorough public review process.

While implementation of the CWA under the Regulatory program ensures compliance for proposed projects under its purview by applying the guidelines developed jointly between the EPA and the Corps (40 CFR 230), Civil Works proposed projects apply the Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies (P&G). While separate processes, it is our opinion that there is no overarching conflict in addressing water resource development projects through either approach; this opinion is based upon the flexibility of the language contained within the CWA regulations and additional guidance provided to Districts to insure prudent implementation of these programs.

Printed on Recycled Paper

One difference that exists in application of the Guidelines between the Civil Works process and that of the Regulatory process is the timing of when mitigation is considered in the project development process. Guidance for the Regulatory program is provided in a 6 February 1990 Memorandum of Agreement (MOA) between the EPA and the Department of the Army Concerning the Determination of Mitigation Under the Guidelines, i.e. the LEDPA. Mitigation is not to be considered in identifying the LEDPA, but is added to the LEDPA only after it has been identified. However, as stated in the purpose, "This MOA is specifically limited to the Section 404 Regulatory Program." In contrast, the Civil Works program must apply the P&G in the development of alternatives, and must consider appropriate mitigation as an integral component of each alternative plan.

With regard to practicability, the analysis must include alternatives "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes." We believe application of the P&G methodology for this analysis provides a comprehensive approach in the determination of practicability.

Range of Alternatives

The EPA identified a concern that the preliminary FS/EIS inappropriately constrained the alternatives analysis given the purpose and need statement contained in the document. The statement of purpose and need is important in determining the range of alternatives to be evaluated in the preliminary FS/EIS. In the case of this study, the purpose and need is currently stated "to increase availability of water, sustainable over the 50-year period of analysis, in the greater Denver area so that a larger proportion of existing and future (increasing) water needs can be met." In this context, we believe the preliminary FS/EIS evaluates an adequate range of alternatives for meeting the stated purpose and need to which our agency is responding, and does not unnecessarily constrain the alternatives to reallocated storage within Chatfield. In identifying the purpose and need, the Corps was very deliberate in not focusing only on storage alternatives, as the underlying need is not storage, but water supply. In fact, components of the other alternatives being compared in detail include surface storage in sandpits, continued reliance on non-tributary groundwater, and the construction of a new surface storage. In addition, a broad range of other alternatives were also considered, but eliminated from further study.

It should be noted that any alternative evaluated in our study will only provide for a portion of the overall need in the Denver Metropolitan area. There will be many other water supply projects pursued in future years in order to meet growing water supply demand. In this light, it is very practical to closely consider taking advantage of the opportunities that Chatfield might provide in meeting part of this demand. These opportunities include, but are not limited to: 1) Chatfield is an existing facility; 2) Chatfield exists directly on the main tributary of the South Platte, ideally suited for capturing flows, and 3) Chatfield sits relatively high within the basin, allowing gravity flow delivery of water.

Sufficiency of Mitigation

As we mentioned above, the document reviewed by the EPA is preliminary and does not contain all of the components that the completed product will. One of the pieces not yet completed in the preliminary FS/EIS is the mitigation plan; however, we believe that sufficient mitigation is likely available to compensate for the ecological values impacted by the recommended plan. The Corps is working closely with the U.S. Fish and Wildlife Service, Colorado Department of Wildlife, and other stakeholders in this effort. It is worth noting that the current planning effort for mitigation is taking a systems approach, both looking to the effected watershed and considering existing regional conservation and recovery plans that have been developed by others to identify the most appropriate mitigation sites. In addition, rather than utilizing a basic unit of measure (such as acres), the mitigation plan will use an ecologically based unit to measure impacts, and demonstrate how those values will be replaced via plan implementation.

Water Quality

The EPA mentions that it does not believe the preliminary FS/EIS adequately address the project's potential to exacerbate existing water quality concerns in Chatfield Reservoir. Regarding the concern over phosphorus loading, a worst-case/best-case assessment was completed, using a detailed localized analysis. A range of hypolimnetic depths were considered in order to capture the range of all possible anaerobic conditions that might occur in Chatfield, since anoxic conditions lead to mobilization of constituents bound to reservoir sediments, particularly phosphorus. While the EPA's concerns appear to be focused on the scenarios where there is a significant increase in the hypolimnetic zone, there appears to be more evidence to accept the best-case scenario based on the fact that anoxia seems to be a rare phenomenon in Chatfield. Likewise, the *E. coli* analysis provides a worse case scenario, and likely oversimplifies the issue, and overestimates the potential increase that would truly be expected. The Corps plans to revise this analysis in order to more realistically explain the expected relationship of a reallocation with water quality.

Again, thank-you for taking time to review our preliminary FS/EIS. We look forward to working closely with you to resolve any issues you may have. In the spirit of cooperation, we would like to meet with you very soon to discuss these issues and our planned direction to complete this study. Eric Laux is the Chatfield Reallocation Study project manager and the main point of contact for the study. You may contact him directly at (402)995-2682 if you have any questions or concerns. He will soon be in contact to discuss timing of such a meeting. I am also providing a copy of this letter to Humberto L. Garcia Jr. and Larry Svoboda from your agency.

Sincerely,

Robert J. Ruch
Colonel, Corps of Engineers
District Commander

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

MAY 18 2010

Ref: 8EPR-EP

Colonel Robert J. Ruch
District Commander
U.S. Army Corps of Engineers, Omaha District
1616 Capitol Avenue
Omaha, Nebraska 68102-4901

Re: Chatfield Reallocation Study

Dear Colonel Ruch:

Thank you for your February 3, 2010, letter regarding the Chatfield Reallocation Study. The Environmental Protection Agency (EPA) is committed to open communication with the U.S. Army Corps of Engineers (Corps) on the Chatfield Storage Reallocation project to ensure the long-term water needs of the Denver metropolitan area are addressed while protecting this valuable urban amenity. We understand the Feasibility Study/Draft Environmental Impact Statement (FS/DEIS) has not been finalized and are hopeful our concerns may be resolved prior to publication of the FS/DEIS. This letter applies to the Clean Water Act Section 404 issues as our NEPA review will be performed when the FS/DEIS is published.

One of the major issues facing the western United States is a projected shortage of potable water delivery reservoirs. As a result, my staff has recently reviewed several EIS documents for water supply projects, mainly in conjunction with the Corps' regulatory program. As you are aware, EPA and the Corps must review all water supply projects and ensure that regulations for environmental protection are consistently and properly applied.

The Chatfield Reservoir State Park (Chatfield) provides a broad array of uses ranging from traditional uses such as camping and boating to more distinctive uses such as scuba diving. The proximity to the Denver metropolitan area combined with the diversity of available activities makes it a very important resource in Colorado and deserving of protection. These resources, in an otherwise arid region of the western United States, are valuable to not only birds, fish and other wildlife but to the residents of the Denver area as well.

Compliance with applicable Clean Water Act (CWA) requirements for the Corps' civil works projects such as Chatfield must be ensured. The requirements include selection of the Least Environmentally Damaging Practicable Alternative (LEDPA) in accordance with the Clean Water Act (CWA) §404(b)(1) Guidelines (Guidelines). In your February 3, 2010, letter you indicate that rather than considering the Guidelines in Corps' civil works projects, the Corps applies the *Economic and Environmental Principles and Guidance for Water and Related Land*

Resources Implementation Studies (P&G). Consideration of the P&G does not preclude applicability of and compliance with the Clean Water Act requirements, including the Guidelines, to civil works projects. In particular, EPA notes the Corps' regulations at 33 C.F.R. § 335.2 state "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."

In order to comply with the Guidelines, alternatives must be considered prior to mitigation to identify the LEDPA. The Guidelines require avoidance and minimization of adverse impacts and the selection of the LEDPA before applying compensatory mitigation for unavoidable impacts. This sequencing requirement was clarified in the February 6, 1990 *Memorandum of Agreement between the EPA and Department of Army Concerning the Determination of Mitigation Under the CWA Section 404(b)(1) Guidelines* (Mitigation MOA) and the *2008 Compensatory Mitigation for Losses of Aquatic Resources Final Rule*. According to the Corps *Mitigation MOA Q's and A's* and the *Memorandum for See Distribution, Subject: Section 404 Mitigation Memorandum of Agreement*, February 7, 1990, the Department of Army intended integration of this sequencing framework into all Corps activities including civil works projects. In addition, the sequencing requirement applicability to Corps civil works projects was affirmed in the recent *§404(c) EPA Final Determination regarding the Proposed Yazoo Backwater Area Pumps Project, Issaquena County, Mississippi*, which stated that "adverse environmental impacts associated with the proposed discharge of fill material to waters of the United States first be avoided to the maximum extent practicable and then minimized to the extent appropriate and practicable. For unavoidable impacts which remain, compensatory mitigation is required to offset wetland and other aquatic resource losses." (p. 60).

As we discussed in our May, 2009 letter, the Corps is required by regulation to analyze the alternatives to ensure the selection of the LEDPA. In order to assure compliance with the Guidelines, the alternatives must be reanalyzed to determine how each alternative avoids and minimizes impacts to waters of the United States independent of mitigation. We look forward to discussing these issues prior to the issuance of the FS/DEIS. If you have any questions, please contact Karen Reed, Wetlands and Tribal Unit Chief, at 303-312-6019 (reed.karen@epa.gov) or Brent Truskowski, Wetlands Team, at 303-312-6235 (truskowski.brent@epa.gov).

Sincerely,

Carol L. Campbell
Assistant Regional Administrator,
Office of Ecosystems Protection
and Remediation

COLORADO DEPARTMENT OF NATURAL RESOURCES

SWSI Statewide Water Supply Initiative

Colorado Water Conservation Board

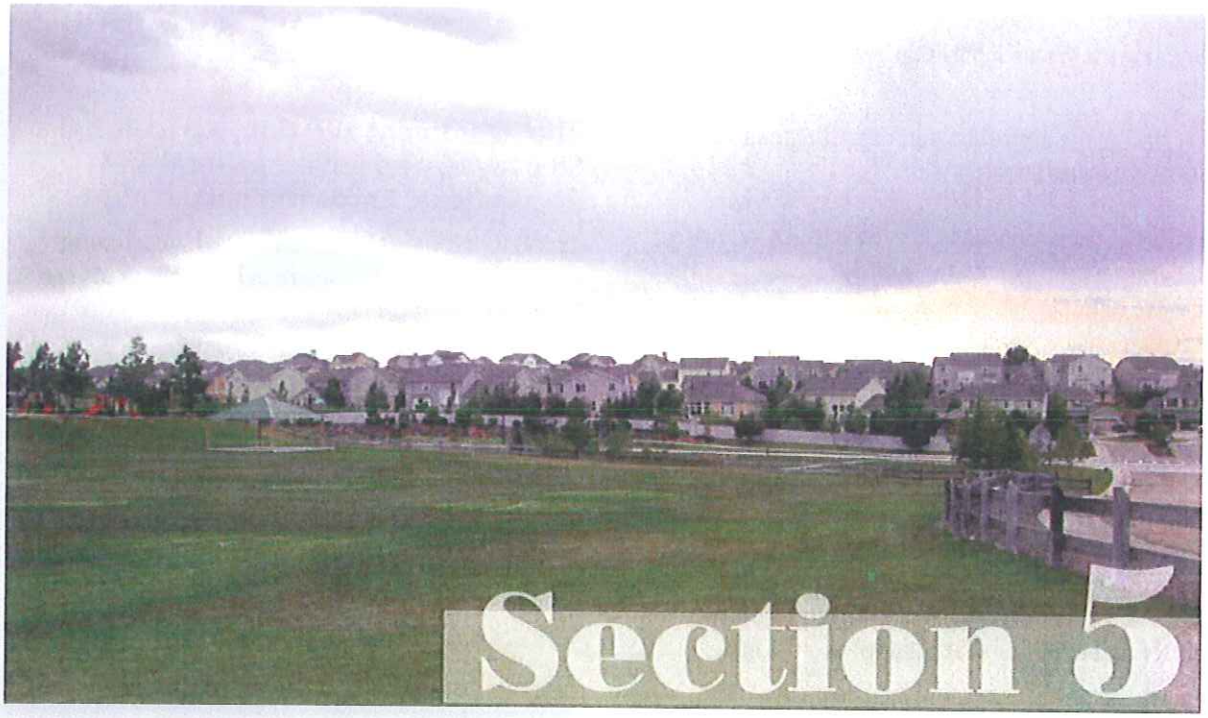
Colorado's Water Supply Future
Statewide Water Supply Initiative - Phase 2

CDM

November 2007

Technical Roundtable Report Sections:

- Conservation and Efficiency
- Alternative Agricultural Water Transfer Methods to Traditional Purchase and Transfer
- Delineating and Prioritizing Colorado's Environmental and Recreational Resources and Needs
- Addressing the Water Supply Gap



Section 5

Addressing the Water Supply Gap (between Current Supply and Current and Future Water Needs) Technical Roundtable

5.1 Overview of Addressing the Gap Technical Roundtable

In 2003, the State Legislature authorized the Statewide Water Supply Initiative (SWSI). The legislation requested that the Colorado Water Conservation Board (CWCB) complete a comprehensive study to:

1. Examine all aspects of Colorado water use over the next 30 years.

2. Evaluate water supply and water management alternatives in each river basin.

3. Formulate strategies and build consensus on alternatives to meet future water needs.

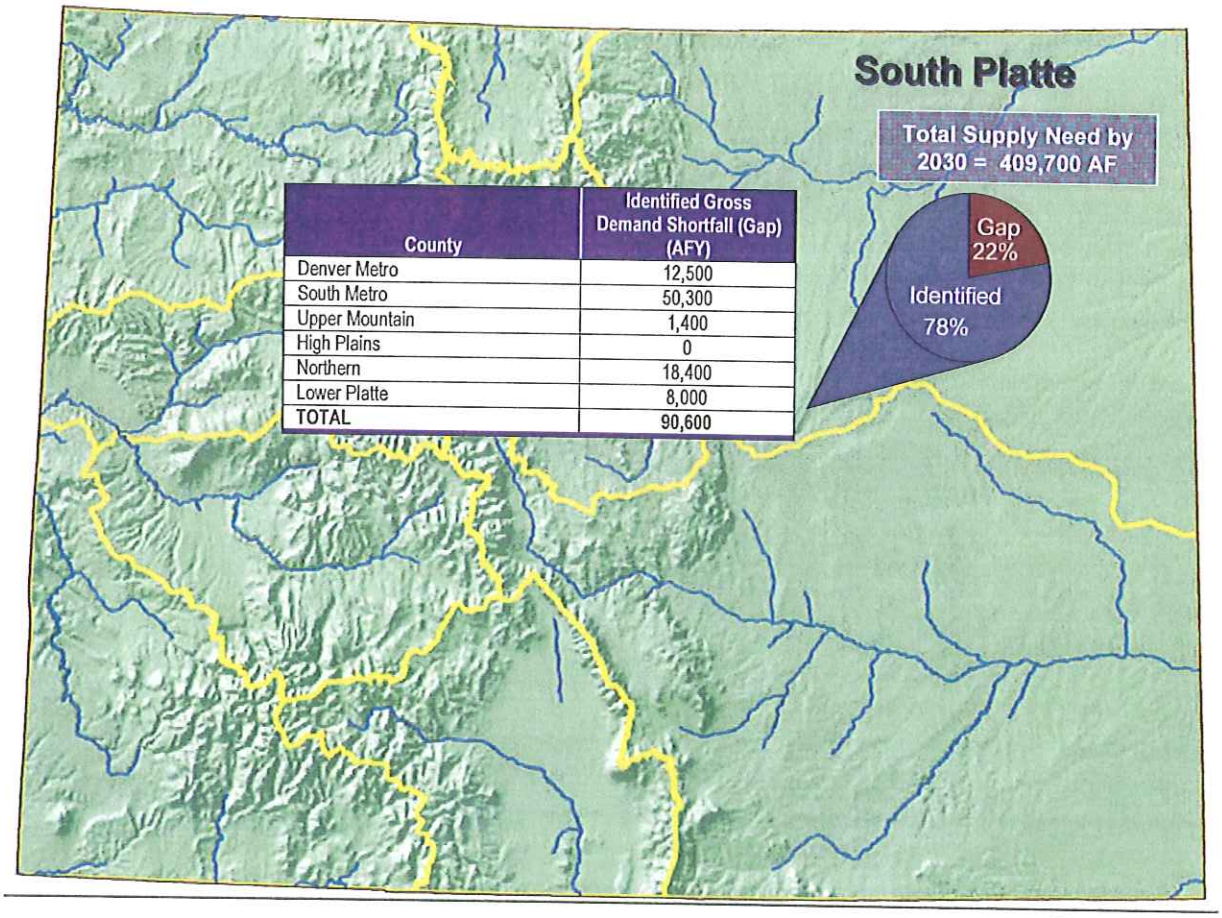
To assist with the completion of SWSI and to address these goals, the CWCB established basin roundtables in each of Colorado's eight major river basins. The legislation also required that the study be complete in 18 months. With this ambitious mandate, the CWCB forged ahead with the recognition that water issues have always been contentious and building consensus would be a significant challenge. In fact, near the completion of SWSI, many of the basin roundtables raised concerns that they needed more time to understand and define their water supply and water needs, and

South Platte Basin

- Competition for water is fierce and it is unclear how much competition there is for the same water supplies.
- Transfers of agricultural water rights to M&I use will continue to be a significant option for meeting future needs.
- There is support for a market for agricultural water transfers but concerns over impacts to rural communities from water transfers are a key concern.
- South Metro reliance on non-renewable groundwater is an unresolved issue.
- Water reuse and conservation are major components to meeting future water needs but this will put added pressure on agriculture as return flows diminish.
- The urban landscape is very important to the economy and an important component to quality of life.

Yampa/White/Green Basin

- No significant gap identified.
- Agriculture, tourism, and recreation are important components to this basin's economy.
- Industrial uses, especially power production, are a major water use.
- Uncertainties associated with potential oil shale and energy development.
- The basin is not developing as rapidly as other portions of the state.
- Concern that the basin will not get a "fair share" of water use under the Colorado River Compact.
- Implementation of a successful Endangered Species Program is vital to ensuring protection of existing and future water uses.



County	Identified Gross Demand Shortfall (Gap) (AFY)
Denver Metro	12,500
South Metro	50,300
Upper Mountain	1,400
High Plains	0
Northern	18,400
Lower Platte	8,000
TOTAL	90,600

Figure 5-12
Summary of Gap Analysis for South Platte Basin

Summaries of Participants' Water Conservation Programs

City of Aurora

Aurora Water currently has an extensive water conservation program. Aurora Water's water conservation program is a multi-faceted approach including programs in the following areas:

Conservation Education/Outreach, Xeriscape Education and Demonstration Gardens, Demand Management/Water Budgets/Conservation Pricing, Program Evaluation/Research, Legal Remedies/Ordinances, Financial Rebates/Incentives and Peer Agency Collaboration/Outreach.

Key Accomplishments in 2008
Rebated our customers to convert almost 350,000 square feet of high water use landscape into water wise, Colorado appropriate, landscaping saving Aurora approximately 3,043,551 gallons/ 9.34 acre feet annually. Rebated 1192 toilets that replaced older inefficient models saving over 35 acre feet annually. Rebated 1816 high efficiency washing machines saving over 63 acre feet annually.

Staffing
In 2008, the Aurora Water conservation division employed 11 full-time employees (FTE), 3 contract employees, 1 temporary seasonal water monitor and 3 temporary seasonal interns.

Adult Education
Since 2003, Water Conservation staff has facilitated free classes for Aurora Water customers. 2008 was the beginning of a new effort to collaborate with other city departments and local organizations to bring a holistic view of water use.

Winter Conservation Classes
From February through April, Water Conservation held 8 indoor classes on a range of subjects.

Summer Xeriscape Classes
The bulk of classes and attendance occurs at the summer classes held at the Xeriscape demonstration gardens. Two types of classes are taught; rebate-centric and specific landscape topics.

Youth Education
In 2008, Aurora Water hosted the 15th annual Aurora Youth Water Festival at the Community College of Aurora where 1,400 fifth grade students attended and participated in numerous presentations and exhibits on water.

Classroom presentations and other events
In 2008, Water Conservation Youth Program carried out 76 school presentations educating 3027 students and providing 50 contact hours for teachers. Also, the Youth Program carried out 5 school assemblies educating 1347 students. Additionally, the youth education program assisted with a Girl Scout Badge day and AQWUA teen camp at the Aurora Reservoir educating 67 students.

Forests to Faucets Teacher Training
Aurora Water's Conservation and Clean Water Program staff teamed up to create the Forests to Faucets teacher training. This is a Project WET-based teacher training where 25 teachers were trained in various water resource supply, conservation, and water quality areas. Staff time for the Youth education program is estimated at 2760 hours for the year.

Water Management Plan
Since 2002, Aurora Water has created an annual Water Management Plan (WMP) to address drought conditions and demand response. This includes mandatory days of the week watering, hours of allowed irrigation, and enforcement of waste of water.

Soil and irrigation system inspections and irrigation plans review

In order to support and enforce the lawn permit and irrigation standards ordinances, Aurora Water employs water conservation field personnel, an irrigation plans examiner and an irrigation system inspector. In 2008, Water Conservation conducted 1024 soil inspections to ensure proper soil amendment was added and tilled, 857 residential and commercial irrigation systems were inspected and 49 sets of commercial, large HOA, and multi-family irrigation system plans were reviewed for water-efficient design.

Staff time spent on soil and irrigation inspections is estimated at 600 hours for soil inspections, 400 hours for residential irrigation inspections and 180 hours for commercial irrigation inspections. Plans review is estimated at 1200 hours.

City of Aurora's CWCB approved water conservation plan can be found at **http://cwcb.state.co.us/conservation/relatedInformation/wcps/**

Arapahoe County Water and Wastewater Authority (ACWWA)

Arapahoe County Water and Wastewater Authority's (ACWWA) Water Conservation Plan was approved by the Colorado Water Conservation Board in 2007. ACWWA's plan focused on the reduction in per tap water use and an overall reduction in demand. ACWWA has implemented a tiered rate structure and billing system designed to encourage efficiency. Both residential and commercial customers are charged according to an increasing block rate structure.

ACWWA also has aggressively implemented a non-potable irrigation program, using raw alluvial water and treated effluent for landscape irrigation. This allows the maximization of ACWWA's water supply through reuse for irrigation purposes. ACWWA currently has the 2nd highest number of individual customers using treated effluent for irrigation under the Colorado Department of Public Heath and Environments Regulation 84: Reclaimed Water Control Regulation program in the State of Colorado. ACWWA also operates a State approved augmentation plan which increases the utility of its water supply.

ACWWA currently distributes Water Leak Detection Kits which consist of an instructional card and dye tablets to help customers identify leaky toilets within their homes. ACWWA also conducts an outreach program to HOAs within its service area in an effort to educate the consumers on various ways to save water. During the peak usage months, ACWWA has implemented a Watering Schedule, which assists in maintaining an efficient water management/operations program, including conservation.

In 2010, ACWWA will begin a pilot rebate program for customers who purchase high efficiency clothes washers and sprinkler controls that respond to the weather. ACWWA also has plans to modify their current web page to include increased awareness of water conservation with links to other helpful resources.

ACWWA's CWCB approved water conservation plan can be found at **http://cwcb.state.co.us/conservation/relatedInformation/wcps/**

City of Brighton

On August 11, 2008, the Colorado Water Conservation Board approved the City of Brighton's updated Water Conservation Plan. Although the City of Brighton has had an approved Water Conservation Program in place since 1995, the City recognized the need to develop, implement, and monitor additional measures and programs in order to achieve

additional savings and reduce water use demands.

The water conservation measures and programs are focused on those activities that will occur over the next ten years. Through initial screening efforts the potential programs identified include:

- Water efficient fixtures and appliances
- Low water use landscaping, drought- resistance vegetation, efficient irrigation
- Water efficient industrial and commercial processes
- Water reuse systems
- Distribution system leak identification and repair
- Public education and customer audits
- Water rate structure and billing systems that encourage water efficiency
- Regulatory measures
- Incentives including rebates

Due to limited budgets, annually approximately $30,000, the City will focus on programs expected to provide the largest results, with some programs implemented and/or retired over time. Central to the City's desire to reduce future water demand is its need to postpone future capital improvement projects to expand both its water and wastewater treatment facilities. The City will need to continuously weigh the cost/benefit of various water conservation measures and programs with the cost to develop, treat and deliver new water supplies.

The estimated water savings that the City's water conservation efforts are expected to yield from 98 acre-feet to 123 acre-feet for a total cumulative savings of 1,051 acre-feet in 10 years. The expected overall cost to implement the plan over the next ten years is $3.9 million therefore; the City will be pursuing water efficiency grants with the CWCB Office of Water Conservation and Drought Planning. The City will monitor the progress of its proposed water conservation programs such that the actual water savings are tracked and reported on a regular basis to the City Council and the public.

City of Brighton's CWCB approved water conservation plan can be found at **http://cwcb.state.co.us/conservation/relatedInformation/wcps/**

Castle Pines Metropolitan District

On October 15, 2009, Castle Pines Metropolitan District (CPMD) submitted a Water Conservation Plan to the Colorado Water Conservation Board (CWCB) for review and approval. This Plan complies with the Water Conservation Act of 2004 and follows the Water Conservation Plan Development Guidance Document established by the CWCB. The draft plan was available for public review and comment from July 27, 2009 to September 26, 2009.

The scope of the Water Conservation Plan (Plan) include water conservation goals, cost/benefit analyses for various chosen conservation activities as well as those not chosen for implementation, descriptions of selected activities, and the specific protocol for implementation of chosen activities. The Plan indicates that CPMD will evaluate each conservation activity. Specifically, CPMD has and will evaluate the actual cost/benefit ratios compared to the projected cost/benefit ratios of each conservation activity. Copies of the Plan are available on the website www.castlepinesmetro.com.

The conservation goal focused on the highest water use categories and is identified in the Plan as 16% reduction in peak day demand. CPMD plans to attain this goal through the following activities:

- 4-tiered block rate structure
- Educational seminars for residents
- Educational seminars for landscape contractors working within CPMD's service area
- Water-wise demonstration garden available to public
- Residential and commercial water audits conducted by staff
- Advanced leak detection for distribution system
- Residential and commercial rebates for installation of weather-based irrigation technology
- Residential and commercial rebates for installation of tipping bucket rain gauges
- Residential and commercial rebates for irrigation system repairs
- Residential and commercial rebates for sub-soil improvement and existing plant replacement with water-wise plant material
- Irrigation Plan submittal and approval for retrofits or new landscape installation
- Irrigation system audits provided by third party organizations
- Reuse water supplied to both golf courses for irrigation

CPMD teaches by example through its indoor and outdoor water conservation activities which include installation of five dual-flush toilets in its office building and use of a central irrigation control system that utilizes on-site weather data to manipulate amount of water applied through irrigation events.

CPMD has witnessed conservation success even though the Plan has not yet been approved by the CWCB. A major success in 2009 was one Sub-association used 2.7 MG less water than the average used between 2004 and 2008. This was accomplished through intense educational efforts and communication between CPMD, a Sub-association Board member and the Sub-association landscape manager on irrigation repairs, leak detection, and central irrigation control system management.

More successes include 30 to 50 % water use reductions due to ET Controller installations, irrigation repairs, and irrigation clock management in single-family residences.

Castle Pines North Metropolitan District

Introduction

The Castle Pines North Metropolitan District currently serves approximately 3,200 single family residential homes and some retail development. The current population of Castle Pines North is approximately 9,600 people. The current service area covers approximately 3.8 square miles of land. The District is approximately 93% built out with only 240 empty single family lots available. Currently the Castle Pines North Metropolitan District is supplied by 11 Denver Basin groundwater wells. During the irrigation season wastewater return flows generated by the Castle Pines North Metropolitan District are delivered to a non potable reuse system that is used to irrigate The Ridge Golf Course.

On June 19, 2006 the Castle Pines North Metropolitan District became the first entity in the State of Colorado to develop and adopt a water conservation plan in accordance with the recommendations outlined in the Colorado Water Conservation Board's (CWCB) Water Conservation Plan Development Guidance Document. Castle Pines North Metropolitan District's Conservation Plan became the model document and its format has been copied by many other entities throughout the State of Colorado.

Conservation Plan Goals

The Conservation Plan established by the Castle Pines North Metropolitan District

(CPNMD) plan established six goals that are shown below.

1. Provide a water savings target of an additional 175 to 220 AFY based on 2003 water demand patterns (16 to 20 gpcd based on projected population at build out) through existing and additional conservation measures and programs.
2. Select conservation measures and programs that target outdoor irrigation and customers of high use. Target customers include the following:
   - Residential (indoor and outdoor usage)
   - District irrigation of parks and open space
   - HOA irrigation
3. Closely monitor District irrigation on parks and open space.
   - Maintain 2005 irrigation levels on parks and drip irrigation
   - Reduce open space irrigation by an additional 10 percent (5.9 AF) with a total outdoor District usage not to exceed 93 AFY. (District metered usage in 2005 was 98.9 AF)
4. Provide assistance to the homeowner associations in reducing irrigated turf by 25 percent.
5. Select conservation measures and programs that is compatible with the community.
6. Establish a monitoring system that collects a sufficient amount of data to effectively measure the success of conservation programs and measures on an annual basis.

Rate Structure

In June 2004 the Castle Pines North Metropolitan District implemented one of the most innovative tiered water rates structures in the State of Colorado. This Inclining Block Rate Structure is unique in that it uses average monthly irrigation requirements in addition to actual lot size to determine a customer's monthly water budget. In other words, every month each and every lot has a separate and unique irrigation water budget. In conjunction with the monthly water budget the District has also implemented a four tier pricing system. The 2009 residential water rates and tiers are shown below.

Residential Water Usage, Per 1,000 Gallons, Per Month

Tier 1 $ 3.30 within budgeted gallons

Tier 2 $ 4.28 100.01% - 120% over budgeted gallons

Tier 3 $ 5.96 120.01% - 140% over budgeted gallons

Tier 4 $ 11.38 Greater than140.01% over budgeted gallons

*Winter Budget = 9,000 gallons at Tier 1

Rebates

In addition to implementing the Tiered Water Budget as described above the District has been offering rebates to its customers since 2005. Currently the Castle Pines North Metropolitan District is offering the following rebates:

Item	Benefit	Rebate: Up To
Rain Sensors	Overrides irrigation system by detecting rainfall.	$100 (Limit one per household)
Programmable Irrigation Clock	Sets time limits to help conserve water; allows every 3rd day cycle.	$75 (Limit one per household)
ET Controller (Residential)	Regulates irrigation based on climatic factors (e.g. temperature & humidity) that influence evapotranspiration.	$200 (Limit one per household)
ET Controller (HOA/Commercial) Effective 6-1-2009	Same as Residential.	Varies For single controllers with 24 or more zones, rebate will equal 50% of purchase price. For smaller controllers, rebate will be $200 for every 6 zones. Plans must be approved by the District in advance.
Sod Replacement (Residential)	Uses xeriscaping and/or artificial turf to replace sod and/or high maintenance grass/plants.	$0.40/sq. ft. (500 sq. ft minimum – 4,000 sq. ft. maximum – Plans are to be approved by the District in advance.
Sod Replacement (HOA/Commercial) Effective 6-1-2009	Same as Residential.	Up to $0.40/sq. ft. (500 sq. ft minimum – no maximum limit. – Plans are to be approved by the District in advance.
Low Flow Toilets	Uses 1.6 gallons per flush; Old toilets use three to five gallons per flush.	$100 / toilet (Limit three per household - applies to replacement toilet ONLY)
Front Loading or Low Usage Washing Machines	Uses 27 gallons or less per load; less efficient machines use up to 45 gallons per load.	$125 / machine (Limit two per household)
Water Efficient Showerhead (NEW)	Uses 2.4 gallons per minute vs. 4 gallons per minute.	$10/showerhead (Limit four per household – applies to replacement showerheads ONLY)

On average the District has expended approximately $25,000 per year on rebates. In 2009, the District has expended over $36,000 in rebates which equates to approximately 2% of overall water sales revenue.

Other Conservation Programs

In September 2007 the Castle Pines North Metropolitan District was given a grant by the Colorado Water Conservation Board for the purchase and installation of a computerized irrigation control system. The system selected by the Castle Pines North Metropolitan District is known as the Calsense Control System. The Castle Pines North Metropolitan District became the first entity in the State of Colorado to implement this sophisticated system. Currently this system monitors and controls all of the District's four parks and several large areas of irrigated open space. The system monitors, temperature, precipitation, humidity and automatically adjusts irrigation system run times on a daily basis. This control system automatically shuts down individual zones that may have developed a leak from either a missing head or a pipe break. This system alone has saved the District hundreds of thousands of gallons of water over the past two years. The District is currently in the process of offering the use of this system to several large Homeowners Associations in the Castle Pines North Community.

In Calendar Year 2008 the District, working in conjunction with several water conscious homeowners to develop a water conservation outreach program aimed at elementary school students. This program became know as WARP (Water Awareness Responsibility Program). Castle Pines North Metropolitan District's proactive support of this innovative water conservation program has enabled the program to be expanded throughout the Douglas County School system and has been presented to thousands of students throughout Douglas County.

In addition to the programs described above the Castle Pines North Metropolitan District has implemented a wide variety of water saving programs and projects that clearly demonstrate the District's commitment to water conservation. Those programs and their approximate cost are listed below:

Project Name	**Cost**
Installed approximately1.54 Acre of Water efficient turf on Monarch Blvd.	$ 250,000
North Open Space Xeriscape Demonstration Garden	$ 80,000
Landscape Master Plan replace turf in street rights of way with Xeric Material	$1,000,000
Remove one acre of Turf in North Open Space and replace with Native Grass	$ 25,000
Install Synthetic Turf Soccer Field at Lagae Park	$ 500,000

Summary

The District number one goal as established in its water conservation plan was to reduce water use by 16 – 20 gallons per capita day as compared to 2003 water use. In 2003 the per capita water use for Castle Pines North Metropolitan District was approximately 178 gallons per capita day. In 2009 the gallons per capita day was reduced to approximately 142 gallons per capita day which far exceeds the goal of 20 gallons per capita day reduction

established in the Castle Pines North Metropolitan District's Water Conservation Plan.

Castle Pines North Metropolitan District's CWCB approved water conservation plan can be found at **http://cwcb.state.co.us/conservation/relatedInformation/wcps/**

Town of Castle Rock

In December 2006 the Town of Castle Rock (Town) adopted a Water Conservation Master Plan (Master Plan). The conservation goals identified in the 2006 Water Conservation Master Plan include:

- Reduce current and future water demands – Specifically reduce average water consumption by year 2030 from 165 gallons per capita per day (gpcd) to 135 gallons per capita per day. Only three years after adoption of the Master Plan, the Town's gpcd consumption is already reduced by over 10%.
- Create a community culture that includes water conservation
- Ensure financial stability

The implementation strategies identified in the 2006 Water Conservation Master Plan include:

- Implement landscape regulations for new development that result in efficient use of water, is aesthetically pleasing, and enhance the type of land use
- Implement incentive programs that encourage existing properties to be water efficient and aesthetically pleasing
- Implement rate strategies, such as a water budget rate structure, that reward efficient water use and discourage water waste; and
- Implement public education programs that allow the Community to make conservation a way of life.

Since the adoption of the Master Plan, the Town has implemented all of the strategies listed above with great levels of success and vast community support and participation.

- **Landscape Regulations & Principles**. In July 2003, the Town adopted the Landscape Regulations & Principles. The plan is currently being updated and will require "water-wise" landscape designs for all nonresidential, residential builders, and multi-family developments. Ultimately, the goal will be to move away from the current three-day watering schedule as a demand management tool, and instead encourage smart landscaping practices that reduce water consumption.
- **Conservation Rebates**. Beginning in 2006, the Town implemented three conservation rebates for all qualified Town customers. In June 2009, the Town added three more rebates. The conservation rebates include:
    - SMART Irrigation Controller
    - High Efficiency Washer
    - Three-day programmable Timer
    - Rotary Nozzle Replacement
    - Rain Sensor
    - Smartscape Renovation
- **Water Budget**. In August 2008 the Town transitioned from an inclining block rate structure to a "water budget" rate system for all non-residential customers. The water budget rate system for residential customers followed in August 2009. Currently, the Town employs two seasonal employees to patrol and monitor water usage and adherence to the mandatory watering schedule. The revenue generated from watering violations has funded the conservation education and rebates programs.

- **Conservation Education**. Town staff has developed and administers frequent

"Water Wiser" classes for customers concentrating on water conservation practices, maintenance and management of sprinkler systems, and principles of Xeriscape. The Town also maintains several Xeriscape demonstration gardens open to the public with signage to identify plants and care instructions.

- **Landscape Retrofit Projects.** The Town has recently completed 2 different projects, totaling over $500,000 to retrofit water thirsty median landscaping into water wise Xeriscape designs and efficient irrigation designs. Projects like this are anticipated to save hundreds of thousands of gallons each irrigation season.

Town of Castle Rock's CWCB approved water conservation plan can be found at **http://cwcb.state.co.us/conservation/relatedInformation/wcps/**

Centennial Water and Sanitation District

On February 24, 2009, the Colorado Water Conservation Board approved the updated Water Conservation Plan of Centennial Water and Sanitation District. The Water Conservation Plan meets the requirements of the Water Conservation Act of 2004 and Colorado Revised Statute 37-60-126.

Centennial's Water Conservation Plan includes the evaluation of a number of existing and potential water conservation measures. Below is an explanation of current water conservation activities as well as those recommended for future implementation in the Water Conservation Plan.

Current Water Conservation Activities

Conservation Promoting Rate Structure

In the spring of 2003 CWSD was the first water provider in Colorado to adopt the water budget rate structure as a means to encourage water conservation through water rates. This new rate structure provided individualized water budgets for all accounts and emphasized the importance of staying within that budget with a financial impact on customers who used more water than their allocated water budget. The water budget rate structure has played an important role in the water savings that Centennial Water has experienced through its conservation program.
Residential water budgets are formulated with an indoor and an outdoor component. The indoor component is 12,000 gallons every two months based on an assumed 65 gallons per capita per day for a family of three. Customers can sign an affidavit to receive an additional indoor allowance for larger families.
The outdoor component is based on the customer's actual lot size multiplied by an irrigable area factor of 45 percent. The 45 percent irrigable area factor was established based on a sample of aerial images for typical Highlands Ranch homes. An allowance of 27 inches of water based on historical evapotranspiration (ET) rates for the area, minus average annual measurable rainfall, is provided. These budgeted outdoor amounts are then allocated based on historical ET for the weeks within each billing cycle.
Non-residential irrigation customers are budgeted similarly to the outdoor component of residential customers. The difference is that non-residential customers receive a budget based on actual irrigated area regardless of plant type. The customer is responsible for supplying the landscape area data to the District.
Non-residential indoor water budgets are calculated based on the size of the meter servicing the business. Each customer is allotted 189,000 gallons per ¾" equivalent.

Rates

Residential		
% of Budget	Summer	Winter
0-100 %	$ 2.55	$ 2.55
101 - 120%	$ 3.50	$ 3.50
121 - 140%	$ 5.25	$ 3.50
Over 140 %	$ 7.90	$ 5.80

Non-Residential		
% of Budget	Indoor	Irrigation
0-100 %	$ 2.55	$ 2.55
101 - 120%	$ 3.50	$ 4.00
121 - 140%	$ 3.50	$ 7.00
Over 140 %	$ 5.80	$ 12.00

There have been several issues that have been addressed since the adoption of the water budget in 2003.

- Adding a permit program to increase the water budget over a 3 week period once per year for customers wanting to add new sod or make repairs in April, May, September or October discourages planting during the heat of the summer.
- A variance for households with a population greater than three persons supports fairness throughout the service area.
- Water budgets were increased by 1,000 gallons per equivalent per month during the winter to accommodate winter watering of trees and shrubs, enabling customers to care for their landscape during the winter months.
- In 2007 the non-residential irrigation water rates for water use above 100% of budget were increased in order to help encourage water conservation in that customer group.
- In December 2007 non-residential indoor water budgets were changed from allotments based on historical usage to an allotment based on meter size as state above. Budgets based upon historical usage were not effective in promoting water conservation.
- In 2009 all irrigation customers using non-potable irrigation were assigned irrigation budgets similar to potable water customers. Previously, non-potable customers were billed at the base non-potable rates as per our rules and regulations.

The water budget rate structure has been well received by customers of the District, and has been a successful water conservation measure. The flexibility of the water budget rate system allows the District to adapt to different issues as they arise.

Metering

The District has been 100 percent metered since construction began in 1981. Commercial irrigation only meters have been encouraged since 1981 and since 2003 commercial combination indoor and irrigation meters are no longer allowed. Centennial Water has an ongoing program to conduct maintenance, sample meter accuracy and replace aging meters on a scheduled basis. Residential water meters are repaired or maintained in compliance with American Water Works Association standards. Commercial meters are pulled annually and checked for accuracy. Any repairs or maintenance is also done at this time.

Water Conservation Specialist

In 2004 the District hired a full-time Water Conservation Coordinator to oversee the direction and implementation of its water conservation programs. Technical assistance is offered for both indoor and outdoor water conservation techniques including but not limited to water use audits, leak detection, appliance water use, landscape materials, irrigation efficiency and controller scheduling. In addition the water conservation coordinator conducts public education programs, evaluates water conservation measures, and manages the water monitors employed during the irrigation season.

Water Efficient Fixtures and Appliances

In accordance with the District's rules and regulations, and the uniform plumbing code, low-flow or water efficient plumbing devices are required on all new construction. In 1992 the U.S. Congress passed the U.S. Energy Policy Act which established maximum allowable water flow rates for plumbing fixtures. Beginning January 1, 1994 all plumbing fixtures sold in the U.S. met these requirements. Seventy percent of homes in Highlands Ranch were built in 1994 or later. Seventy three percent of commercial construction occurred in 1994 or later.

Water Reuse Systems

Centennial Water's water reuse system of legally reusable water consists of two methods: (1) further treatment and direct reuse of reclaimed wastewater for irrigation and (2) recapture by direct diversion or exchange of reusable water discharged to the South Platte River including indoor return flow and lawn irrigation return flow credits. Currently the Waste Water Treatment Plant, Redstone Park, the Highlands Ranch Golf Club and the Wind Crest Assisted Living development use reclaimed water for their irrigation. In 2009 additional filters were purchased to increase capacity of the reclaimed irrigation water system from 3 MGD to 7 MGD. In 2006, 281 AF of reuse water was used for irrigation, and 3,873 AF was recaptured or exchanged, resulting in a total of 4,154 AF of water that would have otherwise been supplied through either surface or groundwater resources.

Leak Identification and Repair

A distribution system leak identification and repair system is used by the District. Using sophisticated leak detection equipment, District staff can locate leaks within the distribution system and perform the necessary repairs.

System Audits

System wide audits are conducted by the District annually to determine the efficiency of the water distribution system. There are three pieces of data used to perform this evaluation: total water production, total water billed to customers and water accounted for, but not billed. The water unaccounted for is calculated by subtracting all accounted for water (total water billed and accounted for/not billed) from the total water production. The American Water Works Association guidelines consider up to 10 percent unaccounted for water to be acceptable. Over the past 11 years, the average percentage of unaccounted for water was 6.79 percent, showing that the District's water system is consistently within an acceptable range.

System Pressure Management

The District's water system contains five different pressure zones that are monitored at the water treatment plant for safety and optimal service. In addition service pressure regulation is mandated by the District on domestic water service lines and irrigation service lines.

Education/Information Dissemination/Xeriscape Promotion

The District has a continuous public education program to help inform its customers of ways to conserve water both indoors and outdoors. This program includes:

1. **Water conservation workshops** are offered throughout the year to both residential and commercial water users to promote water use efficiency.
2. **Water education literature** is available at the District office building and is handed out at all public events.
3. Free **home water management kits** that include a shower timer, rain gauge, shower/faucet flow bag, toilet leak detection tablets and the above literature. These kits are also available at the District office building and all public events.
4. **Promotion of low water use landscapes and efficient irrigation practices** with xeriscape literature, workshops, and demonstration gardens.

5. **Water conservation section on the District's web page** has all of the aforementioned literature available to residents. The web page also contains links to other resources that will help customers conserve water.
6. **Water monitors** patrol the service area during the summer months to ensure compliance with mandatory water conservation measures and help educate customers.
7. **Collaboration** with water conservation groups in the South Metro area, such as the Douglas County Water Resource Authority, to share and partner in water conservation efforts.

Regulations/Ordinances

Centennial Water and Sanitation District has placed several regulations governing the direct use of water in the rules and regulations.

- Outdoor sprinkler irrigation is prohibited from 10 a.m. until 6 p.m. daily. The District also recommends that customers follow a voluntary three day per week watering schedule.
- Hand watering trees, shrubs and plants is allowed at any time, as long as a hose is held or a water conserving method is used (such as a drip, micro spray, deep root watering device or watering can).
- Wasteful water practices, such as allowing excess water to flow in street gutters and neglecting to repair leaks, are prohibited.

Water monitors are used throughout the irrigation season to both ensure water regulation are followed as well as provide education to customers throughout the community. In 2009 501 residential customers were contacted by water monitors with 422 receiving a warning for violating watering restrictions. 27 non-residential customers received watering violations in 2009.

Technical Assistance

Water audits are conducted by District staff at homes and businesses that request this service or have been determined by staff to have irregularly high use.

Through partnership with the Center for Resource Conservation **irrigation audits** are available to residential, commercial and home owner association customers. The purpose of offering irrigation audits to the Districts customers is to help improve irrigation efficiency. In 2009, 221 residential audits and 6 large property audits were performed, totaling 595 audit hours. Approximately $30,000 dollars were spent on irrigation audits in 2009.

The District hosts annually a **Certified Landscape Irrigation Auditor class and exam** offered by the Irrigation Association for local landscape contractors and designers. This course is designed to increase the knowledge and skill level of landscape contractors and designers in the area of irrigation efficiency.

Residential Toilet Rebate (Pre-1994 Construction)

This program is targeted at the homes built in Highlands Ranch before January 1, 1994. Beginning in 1994 all toilets sold in the United States were required to meet the low-flow standard of 1.6 gallons per flush established by the Environmental Protection Agency. This program provides a $75 dollar rebate for customers who replace older high volume toilets.

The program started in August of 2009 and as of December, the District has replaced 184 toilets at a cost of $13,800.

Future Water Conservation Activities

Through development of the approved Water Conservation Plan, several measures were identified for possible future implementation. Those measures are described below.

Commercial Pre-Rinse Sprayer
Pre-rinse sprayers rinse large food waste from pots, pans, utensils, and dishware before they enter a dishwasher. Water conserving valves use less water and have equal to or better rinsing effectiveness due to improved spray pattern.

Non-Residential ET Controller Rebate
Evapotranspiration, or ET, is the amount of water used by plants through the combined processes of evaporation and transpiration. ET controllers automatically change the irrigation controller settings to apply only the amount of water needed to replace ET. It is estimated that 15 percent of water used to irrigate landscapes can be saved when using ET controllers.

Residential and Non-Residential Rain Sensors
Rain sensors are devices that automatically interrupt the regular irrigation schedule in the event of a rain storm. This program would provide an incentive for homeowners, businesses and home owner associations to install rain sensors.

Non-Residential Turf Replacement Rebate
This program would provide an incentive to replace high water using turf with low water using plant materials. By replacing turf with more water efficient plant materials and following the principles of xeriscape, it is estimated that the landscape would use between 30 to 50 percent less water.

Ongoing monitoring and evaluation of current and future conservation measures is planned by Centennial Water to ensure cost-effectiveness and actual water savings. To date, it is estimated that the water conservation program consisting of the measures and programs listed above saves approximately 2,000 acre-feet annually, or 11,500 acre-feet since 2003. Centennial Water has identified a water conservation goal of an additional 1,000 acre-feet annually. In order to meet this goal Centennial currently budgets approximately $200,000 per year for water conservation.

Centennial Water and Sanitation District's CWCB approved water conservation plan can be found at **http://cwcb.state.co.us/conservation/relatedInformation/wcps/**

Center of Colorado Water Conservancy District

Center of Colorado is a water conservancy district formed under C.R.S. 37-45-101,et. seq. Its jurisdictional boundaries encompass all of Park County, which is the headwater county for most of the major tributaries for the South Platte River. Unlike most of the other municipal participants in the Chatfield reallocation project, Center of Colorado does not provide treated/potable water to residential and commercial customers. Rather, Center of Colorado intends to use its 0.64% of the project allocation in Chatfield Reservoir as part of its county-wide plan for augmentation. Park County is a rural county with a primarily decentralized population base. Thus, unlike in the more densely populated urban centers along the Front Range, most of the water users within Park County are not connected to central water and wastewater systems, but rather, operate their own wells and diversions. Under its plan for augmentation, Center of Colorado sells and leases augmentation water to commercial, industrial and domestic users to augment depletions caused by the individual user's wells and/or surface water diversions. Since it does not supply municipal water directly to customers, Center of Colorado has not adopted a water conservation plan in the manner of the other

municipalities and water districts who are members of the Chatfield reallocation project.

However, Center of Colorado, as part of its augmentation plan, has in place guidelines and rules and regulations that lead to the conservation and promote the efficient use of water resources within its service area. These include the following:

- All water users under the plan are required to be metered, thus all water used is strictly accounted for and leakage and overuse can be identified and remedied.

- The average consumption of water per capita for in-house domestic uses is 0.026 acre feet per year which is very low by municipal standards.

- Large tracts of lawn irrigation are discouraged and the plan has implemented a specific rate structure for lawn irrigation.

- Center of Colorado has prioritized the allocation of its augmentation water supplies with first priority going to:

  1. Existing water users who are currently out of compliance;
  2. Commercial and industrial users;
  3. Domestic users, including persons who wish to upgrade their types of use.

Cottonwood Water and Sanitation District

As part of our efforts to develop a Water Conservation Plan for Cottonwood Water and Sanitation District, the District reviewed the plans of Denver Metro Area water providers. The model used was simply based on promoting reduced water consumption by providing an equitable allocation of the water supply to each of its customers based upon the volume of water a customer reasonably needs, and significantly increasing rates beyond the allocation.

Summarized below is the water conservation plan for Cottonwood that began May 1, 2003. The plan features include an indoor and irrigation allocation, cash incentives for the installation of low flow fixtures, and an increasing block rate structure.

An annual in-home/commercial allocation based on the average historic consumption.

The annual indoor allocation for a residence is based the non-irrigation months of January/February 2003. Analysis of these two months indicates that the average per person consumption is approximately 65 gallons per day assuming an average of 3 people per single family home.

We recognize that the proposed allocation is for a typical household of three people and that there will be families that have either more or less than the basis for the typical. The proposed plan would increase the indoor allocation by 1,860 gallons per month per person for each person living in the home above 3.

On the commercial side, the allocation is simply based on the average monthly consumption during January and February 2003. In the case of the multi-family homes, the allocation will be based on the number of occupied units per meter times an average of 2.2 people per unit and 65 gallons per person per day. This allocation is identical to the single-family home allocation with exception to the number of people 2.2 (multi-family) versus 3 people per single family home. As with the single-family homeowners, if and when the occupancy increases, the allocation will be increased.

Annual irrigation allocation based on 30-inches over the landscape area.

The annual irrigation allocation is based on the providing sufficient water for a healthy lawn. According to Colorado landscape experts, Kentucky bluegrass requires approximately 24 to 30-inches inches of water per year to remain healthy. Therefore, we propose that each single-family homeowner receive an allocation of approximately 54,200 gallons based upon 30 inches per year for irrigation. This allocation is based on an average landscape area of 2900 square feet and makes no distinction between grass and shrubs. Again, as with the in-home allocation, if the landscaped area can be shown to be greater than the average, the allocation would be increased.

Similarly, the commercial sites will receive an allocation based on the total irrigated acreage times 30 inches per year of irrigation. The amount of irrigated acreage for the commercial sites will be based upon measurements made from aerial photography, or from field estimates.

An increasing block rate structure consisting of a fixed fee plus a consumption charge: (2009 rates)

Fixed Fee - Collected to cover the fixed costs of the District: $16.06 /month

"Water Conserving" Rate – Base rate charge for consumption up to the property's allocation: $3.10 /1000gallons

"Excessive" Rate – Twice the "Water Conserving" Rate for consumption from 100% to 150% of the property's allocation: $6.20/1000 gallons

"Abusive" Rate – Three times the "Water Conserving" Rate for consumption above 150% of the property's allocation: $9.30/1000 gallons

Cash incentives for the installation of Ultra Low Volume toilets, Water Wise Washing Machines and Low flow fixtures.

Cottonwood Water instituted a rebate program, similar to Denver Water's, for the purchase and installation of Ultra Low Volume (1.6 gals versus 3 to 5 gals for the standard) toilets, low flow shower heads and purchase of horizontal axis/front loading washers. The rebate program consists of a $100 cash incentive for each ultra low flush toilet (three per household) that is purchased and installed by the customer, $125 rebate for horizontal axis/front loading washers (one per household) and $20 each for each low flow shower head (three per household). The program is limited to $50,000 on a first come first basis. We require that the customer provide proof of purchase and evidence of installation of the new toilets, washers, and low flow showerheads. A conservative estimate shows that if all 1520 single-family homes replaced an average of two toilets each with a total of 6 flushes per day, this would reduce consumption by approximately 16 acre-ft.

In summary, the water conservation plan described above is intended to reduce consumption rather than restrict water usage and thus extend the economic life of the groundwater supply.

Central Colorado Water Conservancy District

CCWCD is committed to natural resource management. We deliver water with extreme efficiency, ensure that our members have the latest irrigation technology, and support critical water science research. Our programs have received national recognition, with organizations providing over 1.5 million grant dollars.

Colorado Agricultural Conservation Outreach (CACO)

CACO is our premiere conservation program. It supplies ultra-efficient irrigation equipment to farmers, and provides outreach seminars and in-field conservation services to the Colorado public. In two years, over $150,000 of precision irrigation equipment has been awarded to irrigators.

CCWCD Contract Audit
Drought conditions demand accurate water accounting. CCWCD is sitting down with every member of its irrigation community, unrolling a map, and discussing how water moves on their farm. With this data, CCWCD will manage its water with unparalleled accuracy.

Conservation Science and Research
Central is partnered in two, long-term water science studies. With the United States Geological Survey (USGS), CCWCD is investigating water use efficiency and aquifer return flows of flood and pivot irrigation systems. With the Colorado State University, CCWCD is photographing the land with an airplane equipped with multispectral remote sensing. These pictures will reveal irrigation uniformity and the efficiency of various irrigation methods. In addition, CCWCD is actively collecting water quality data throughout the region, utilizing its extensive network of monitoring stations.

Water Metering and Telemetry Program
Every well pumping within the district must have a flow meter, and in the past 5 years, CCWCD has installed over 1000 meters on irrigation wells. Now the first phase is complete, and CCWCD is currently installing radio telemetry on 200 of its flow meters. This equipment will provide real-time data feeds about irrigation pumping, and will be transmitted to our website for member reference and CCWCD's accounting.

Green Reservoir Design
CCWCD spearheads a new type of "green" reservoir: a small, natural looking depression where water is allowed to rest, and infiltrate into the ground. By making reservoirs this way, water managers can clean surface water through a filtration process similar to home water purifiers. In addition, connecting the reservoirs with the natural hydrology of the region allows for storage capacity greater than traditional designs, and conserves energy by moving water with gravity and natural hydrological flows. These sites provide a wildlife benefit by establishing critical ephemeral pools for migrating waterfowl, boosting recreation and environmental education potential at the sites.

Denver Botanical Gardens

In 2009, DBG Chatfield installed a computerized Rainbird ET Site Controller with a weather station to monitor garden and turf irrigation on the site. This system allows DBG Chatfield to irrigate to about 80 % of evapotranspiration rate of turf and gardens. Additionally, all gardens constructed at Chatfield utilize native, water efficient plants that minimize the need for supplemental irrigation. This system controls about 90% of all Denver Water used on the site and will be expanded as funding allows.

Additionally, soil for new turf and gardens planted on the site, is amended with 3 cubic yards of organic compost per thousand square feet prior to planting, to increase water holding capacity. This was started in 2008 in cooperation with Denver Water when the amphitheater was constructed.

In the next two to three years, we are planning to utilize underground, drip irrigation on our 10 acres of pumpkins and 7 acres of vegetable crops. This system will be controlled by Rainbird ET Site Controller as well.

Mount Carbon Metro District

Mount Carbon Metropolitan District is currently reviewing water conservation measures and will

develop appropriate incentive and regulations to promote efficient use of water within the district. The district has already initiated a water use monitoring program to record water use and assess water losses within the system. Incentives and regulations for future water conservation within the district will include the following:

- Commercial and Residential High-Efficiency Toilets and Urinals
- Commercial and Residential Smart Irrigation Systems
- Residential High-Efficiency Clothes Washers
- Xeriscape Programs

In addition to these incentives, the district will provide consumer education information to promote water conservation for all customers. Tiered rate structures and water restrictions during drought conditions will also be part of the water conservation measures.

Perry Park Country Club

In 2004, Perry Park Country Club installed a state of the art irrigation system with individually programmable sprinkler heads and an on-site weather-evapotranspiration station. This system can conserve water in dry years by limiting irrigation to critical greens, tees, and fairways areas.

Following installation, each individual head was percent adjusted to only irrigate the minimum water required to keep the Club's turf healthy. Since installation, approximately $10,000 is spent annually for system upkeep allowing the system to continue to run at full efficiency.

In 2008, wireless sub-surface soil sensors were installed to increase efficiency of the system. Along with the Club's on site weather station, these sensors are monitored daily to provide the data necessary to apply the minimum water required for our turf.

After initial installation, the Club has averaged a 25 percent annual savings of water use from the previous irrigation system. This equates to conserving about 45 acre-feet annually. The sub-surface probes have added an additional 3 percent savings or 3.9 acre-feet annually.

And finally, remote access has recently been added to the operation of the Club's irrigation system. This feature allows for monitoring and operation anywhere Internet access is available. Any sudden condition changes (i.e. weather, ET rates) can be monitored and the system can be shut off or adjusted remotely.

All of these upgrades, along with extensive training and education, continue to conserve water at Perry Park Country Club for now and the foreseeable future.

Pinery Water and Wastewater District

The Pinery Water and Wastewater District has a Water Conservation Plan that was approved by in 2002. A Draft of a new Water Conservation Plan has been submitted to CWCB and comments have been received. The Pinery is working on finalizing the plan for resubmission to the CWCB before the end of the year.

The new plan builds on the conservation programs already in place and has a heavy focus on reducing the outdoor demand within the District. A reduction of indoor water use is also part of the program but it is felt that the opportunities for significant conservation savings are greater with a stronger focus on outdoor use. The focus on outdoor is in part driven by the fact that there was a 20% reduction in outdoor use when the District imposed voluntary watering restrictions during the drought of 2002 and 2003.

The Pinery currently has in place an aggressive tiered rate structure which provides a significant water conservation incentive. The District also

provides courtesy meter reads on request so customers can better understand how much water they use during an irrigation cycle. Currently customers are billed bi-monthly and the courtesy meter reads are a way to provide more timely information to customers without altering the current billing arrangement. The District is working to implement monthly billing and plans to have new meter routes in place in 2010 for a possible conversion to monthly billing in 2011. Monthly billing will also provide a mechanism for monitoring of system wide leakage and changes in usage.

The education component of the Pinery's program is primarily contained in regular newsletters to customers. In addition the District has toilet test tablets and water conservation kits available in the main office. Copies of the newsletters can be found on the District's website at http://www.pinerywater.com. The Pinery also is an active member in the Douglas County Water Resource Authority which is providing HOA education and training as well as focus on water conservation education in the schools.

The Pinery operates under a state approved augmentation plan that allows for credits for return flows from the District's wastewater treatment plant as well as credits for lawn irrigation return flows. The District exchanges these return flows on Cherry Creek to provide additional water to its customers.

Roxborough Water and Sanitation District

Roxborough Water and Sanitation District (RWSD) has successfully implemented a combination of water conservation measures resulting in per capita water use well below average for the Front Range Area. The primary components of RWSD's conservation program include watering restrictions, education, conservation pricing, customer consumption monitoring, and conservation rebates. Since 2002, RWSD's water conservation efforts have reduced per capita water use by over 16%. The average water consumption for RWSD residential units is 83,000 gallons per year, or 90 gpcd, approximately one half of the per unit residential consumption experienced by some of the major water providers in the area.

Watering Restrictions

Watering restrictions have proven to be the most effective method for reducing water demand, and RWSD restricts outdoor watering to two days per week. Watering restrictions have been the key to the overall reduction in water use, and have also successfully reduced maximum day demands.

Education

Public education is essential to any conservation program, and RWSD provides conservation education to customers through multiple sources including newsletters, the District's web site, seminars, and demonstration projects. RWSD's educated customer base contributes significantly to the low per capita water use in the District.

Conservation Pricing

A conservation based rate structure provides financial incentives conservation. RWSD's increasing block rate structure provides significant conservation incentives, particularly to customers in the highest water use brackets.

Customer Consumption Monitoring

RWSD monitors customer consumption, and personally contacts customers with unusually high consumption. Personal contact provides the opportunity to assist customers in reducing consumption, as well as raising customer awareness of normal consumption.

Conservation Rebates

RWSD provides conservation rebates for installation of high efficiency appliances. In 2008 and 2009, the District provided approximately $24,000 in rebates to almost 200 customers. Besides improving water efficiency, the popularity of the rebate program demonstrates the community's interest in water conservation.

State Parks

Chatfield State Park obtains potable water from Denver Water and acts as a water distributor in providing for the needs of park facilities, grounds, and over 1.7 million annual park visitors on properties managed by the park through a lease with the U.S. Army Corps of Engineers, which owns the property. The majority of the water delivery infrastructure and end use appliances was originally designed and built by the USACE in the late 1970's.

In order to maximize water conservation, Chatfield State Park utilizes the following practices:

- All new or replacement facilities and appliances meet water conservation, low flush, and low flow standards.
- Use of pay showers and washing machines in campground visitor service centers.
- Vehicle washing and Aquatic Nuisance Species decontamination equipment meet low flow criteria.
- Nighttime sprinkler watering of the only park turf grass area at the swim beach is accomplished according to the recommended Denver Water schedule.
- Drip lines are used only until new shrubs and trees are established.
- Ongoing efforts to remove Russian Olive and Tamarisk.
- Use of native vegetation whenever possible for revegetation efforts.
- Continuous monitoring of invoices and meters for evidence of leaks.

Stonegate Village Metropolitan District

Stonegate Village Metropolitan District ("SVMD") provides water and wastewater services to residents and businesses located in Douglas County. In addition to the residents of the SVMD, SVMD provides these same services, by contract, to residents and businesses in the adjacent Lincoln Park Metropolitan District and Compark Business Campus Metropolitan District. At build-out, SVMD will serve approximately 4700 single family equivalents (SFE).

SVMD has taken three steps to promote water conservation to its customers. First, it has established the following outdoor watering schedule:

- No outdoor watering before April 15th or after October 15th
- Addresses ending with an even number (0, 2, 4, 6 or 8) may water Sunday, Tuesday and Friday.
- Addresses ending with an odd number (1,3,5,7 or 9) may water Monday, Thursday and Saturday.
- No watering is permissible on Wednesday
- Watering is permissible between the hours of 7 pm and 8 am on your designated watering days.
- Three week grace period with no watering restrictions is granted for users with new lawns provided the installation occurs prior the Memorial Day or after Labor Day.

Second, established an increasing fee structure based on water use as follows:

- $1.61 per 1,000 gallons for the first 6,000 gallons
- $2.95 per 1,000 gallons for the next 6,000 gallons
- $4.29 per 1,000 gallons for the next 6,000 gallons
- $5.36 per 1,000 gallons for the next 6,000 gallons
- $7.50 per 1,000 gallons for the next 6,000 gallons

Thirdly, SVMD utilizes treated effluent from its wastewater treatment plant to irrigate approximately 150 acres of parks and open space.

In addition to the above, SVMD is currently working on a rebate programs that encourage removal of Kentucky Bluegrass, installation of ET Controllers, installation of approved rotary nozzles and purchase of High Efficiency Clothes Washers.

Finally, the SVMD is a member of the Douglas County Water Resource Authority which, among others, is dedicated to water resource conservation and education.

Western Mutual Ditch Company

Western Mutual Ditch Company is an agricultural organization that coordinates very closely with the Central Colorado Water Conservancy District in the operation of its water conservation program. This coordination includes active participation in the Colorado Agricultural Conservation Outreach program. This program supplies ultra-efficient irrigation equipment to farmers, and provides outreach seminars and in-field conservation services to the Colorado public.

In addition, all agricultural production wells used by members of the Western Mutual Ditch Company are metered and flow amounts are carefully recorded and reported to appropriate officials.

Douglas County Water Resources Authority

Douglas County Water Resources Authority (DCWRA) is not a participant in the Chatfield Reallocation project but, instead, is a regional collection of 19 governments, created in 1992, dedicated to water resource conservation, education and policy formation. All nine of the participants in the Chatfield project located in Douglas County are members of DCWRA and contribute financially to its water conservation activities. These innovative activities have included:

- Distribution of 108,000 newly created DVDs on Xeriscape principles to all single family residents in Douglas County.
- Educational and training programs targeted to elementary and middle school teachers.
- Member surveys on water conservation programs to facilitate information sharing.
- Promotion of county, state and federal legislation promoting water conservation.
- Creative conservation awareness programs with corporate partners.
- Training 160 high school students as Water Ambassadors who then trained another 2,000 fourth grade students in water conservation principles.
- Advertisements during Colorado Rockies broadcasts reaching 16 million persons
- Creation of conservation tip videos (available for viewing at the Authorities website: DCWater.org).
- Promotion of the EPA WaterSense program.

METRO WASTEWATER RECLAMATION DISTRICT

6450 York Street - Denver, Colorado 80229-7499
(303) 286-3000 Telefax (303) 286-3030
www.metrowastewater.com

Charles W. Long, Chairman of the Board
Curt A. Aldstadt, Chairman Pro Tem
Margaret R. Medellin, Secretary
George L. Dumas, Treasurer

Catherine R. Gerali, District Manager

June 21, 2010

James B. Martin, Regional Administrator
U.S. Environmental Protection Agency – Region 8
1595 Wynkoop St. (8RA)
Denver, CO 80202-1129

Carol Campbell, Assistant Regional Administrator
Department of Ecosystems Protection and Remediation
1595 Wynkoop St. (8EPR)
Denver, CO 80202-1129

Re: Chatfield Reallocation

Dear Mr. Martin and Ms. Campbell:

The Metro Wastewater Reclamation District (District) has been involved in the Chatfield Reallocation effort as a downstream stakeholder since 1998. The District's interest in this project revolves around the environmentally beneficial use of the water to enhance baseline flows during low flow conditions in the South Platte River for the protection of the aquatic life community.

A study performed in 1998 by the Chatfield Reallocation team and included as an appendix to the Environmental Impact Statement demonstrated that releases of the additionally stored water from the reallocation during periods of low flow would increase habitat for aquatic life.

Flows upstream of the District during the non-irrigation season are completely diverted to the Burlington Wellington canal to fulfill the water rights of the Farmers Reservoir and Irrigation Company (FRICO) to fill Barr Lake. The result of this complete diversion of the South Platte River creates flows as low as 4 cubic feet per second (cfs) above the District and has resulted in the District being the South Platte River 85% of the time annually. In 2006, the District completed the *South Platte River Segment 15 – Aquatic Life/Habitat Assessment Project* (copy enclosed). This assessment demonstrated that aquatic life throughout the River, particularly in the reach from the Burlington Headgate to the District's effluent and all reaches from the Burlington Ditch to the vicinity of the Brighton Ditch, would benefit from increased flows, especially in typically dry winter months when the Burlington storage rights are in priority. The importance of these flows in the future as water demands increase will be particularly important to maintain a healthy aquatic ecosystem. The District's Habitat Study predicts that due to the increased demand for water by municipalities in the Denver metropolitan region over the next ten years, flows in the South Platte River are expected to be reduced by another 80 cfs, and the

River is likely to go dry during low flow conditions below the Fulton Ditch diversion located approximately one-quarter mile upstream of 104th Avenue in Thornton.

As a result, the District believes that the completion of the Chatfield Reallocation project will provide environmentally beneficial and necessary base flows that will help maintain a thriving aquatic community in the South Platte River. As recently as the 1970s, the South Platte River was considered to be devoid of aquatic life. It is now recognized as having one of the healthiest and most diverse populations of native fish species of any warm water stream in the State. We believe efforts to improve low flow conditions are critical to preserving the River, and we urge Region 8 to support this important project.

Yours truly,

Barbara J. Biggs
Governmental Affairs Officer

Enclosure

BJB:wlh
cc: Alex Davis, Colorado Department of Natural Resources
Tom Browning, Colorado Water Conservation Board
Jennifer Gimbel, Colorado Water Conservation Board
Jeff Shoemaker, Greenway Foundation
Julie Vlier, TetraTech (w/encl.)
Jim Dorsch, Metro Wastewater